

**UNIVERSIDADE FEDERAL DA PARAÍBA**  
**SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E**  
**CONTRATOS**

EMITIDO EM 18/05/2016 16:35



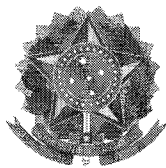
**MINISTÉRIO DA EDUCAÇÃO**  
**UNIVERSIDADE FEDERAL DA PARAÍBA**  
**PU - COMISSÃO PERMANENTE DE LICITAÇÃO**

## **TERMO DE JUNTADA POR APENSAÇÃO**

Em **18/05/2016**, atendendo o despacho do(a) **GERENTE LUIZ FELIPE PESSOA CUNHA (Matrícula: 2100579)**, faço apensar ao presente processo nº **23074.065281/2015-72** o(s) processos(s) nº(s) **23074.028490/2016-16**.

**Assinatura/Carimbo do Responsável**

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Serviço Público Federal



MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DA PARAÍBA  
SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E  
CONTRATOS

PROCESSO  
23074.028490/2016-16  
Cadastrado em 13/05/2016



Processo disponível para recebimento com  
código de barras/QR Code

<b>Nome(s) do Interessado(s):</b> AUGUSTO CESAR TEMOTEO DE OLIVEIRA	<b>E-mail:</b> ACTONET@BOL.COM.BR	<b>Identificador:</b> 1655398
<b>Assunto do Processo:</b> 995 - PEDIDOS, OFERECIMENTOS E INFORMAÇÕES DIVERSAS		
<b>Assunto Detalhado:</b> PREGÕES, PEDIDO DE LAUDO TÉCNICO CONCLUSIVO.		
<b>Unidade de Origem:</b> PU - COMISSÃO PERMANENTE DE LICITAÇÃO (11.01.12.17)		
<b>Criado Por:</b> AUGUSTO CESAR TEMOTEO DE OLIVEIRA		
<b>Observação:</b> -		

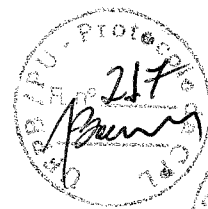
MOVIMENTAÇÕES ASSOCIADAS

Data	Destino	Data	Destino
13/05/2016	SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO (STI) (11.00.51)		
17/05/16	GPU/PU		





Universidade Federal da Paraíba  
Prefeitura Universitária  
Comissão Permanente de Licitação



UFPB/PU/CPL/MEMO Nº 035/2016

João Pessoa, 13 de Maio de 2016.

DA: COMISSÃO PERMANENTE DE LICITAÇÃO  
PREGOEIRO LUIZ GUSTAVO BRAGA FREIRE  
AO: ANALISTA DE TECNOLOGIA DA INFORMAÇÃO  
RICARDO COSTA DE CARVALHO

Prezado Senhor,

Encaminhamos a proposta da empresa **3A SOLUÇÕES EM TECNOLOGIA LTDA.**, referente ao **Pregão 005/2016**, para que seja analisada e que seja emitido um laudo técnico conclusivo, especificando se o produto ofertado pela referida empresa está de acordo com as especificações técnicas descritas no Edital e Termo de Referência deste certame.

Em virtude da exiguidade do tempo, solicitamos seu pronunciamento o mais breve possível, retornando-nos até a próxima terça-feira, **dia 17/05/2016**, para que possamos dar continuidade ao procedimento licitatório.

Atenciosamente,

**Luiz Gustavo Braga Freire**  
**Pregoeiro/PU/UFPB**





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Jd. Indianópolis 86010-760 Londrina - Pr  
CNPJ 17.023.484/0001-97 Insc. Est. 9061072109

www.3atech.com.br

## PROPOSTA COMERCIAL



A  
PREFEITURA UNIVERSITARIA DA UFPB

Prezado Senhor, a 3A SOLUÇÕES EM TECNOLOGIA LTDA, inscrita no CNPJ 17.023.484/0001-97, sediada na Rua Pacifico, 62 – Londrina – PR, telefone (43) 3355-4500, fax (43) 3355-4500, por intermédio do seu representante legal, vem por meio desta apresentar proposta de preços para o fornecimento dos materiais abaixo:

ITEM	DESCRIÇÃO	QTDE	PÇ. UNIT.	PÇ. TOTAL
6	<b>Ubiquiti UAP-AC-LITE</b> <u>Catálogo anexo à proposta</u>	400	546,13	218.452.00
7	<b>Ubiquiti UAP-AC-PRO</b> <u>Catálogo Anexo à Proposta</u>	92	2.640,48	242.924,16

TOTAL DOS SERVIÇOS: R\$ 461.376,16 (Quatrocentos e sessenta e um mil, trezentos e setenta e seis reais e dezesseis centavos)

Validade da Proposta: 60 (sessenta) dias;

Prazo de entrega: 30 (trinta) dias

Garantia: 12 meses

Dados Bancários:

Agência: 3142-9

Conta Corrente: 30.431-X

3A Soluções em Tecnologia Ltda.

# 3A Tech

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CNPJ 17.023.484/0001-97 Insc. Est. 9061072109

www.3atech.com.br

Declaramos que os preços propostos incluem todos os custos e despesas, tais como, mão-de-obra, materiais, taxa de administração, encargos sociais, trabalhistas, seguros, fretes, embalagem, lucro, necessários ao cumprimento integral do objeto deste Edital e seus Anexos.

Londrina, 13 de maio de 2016.

*Carolina Fonseca Almeida*

**3A Soluções em Tecnologia Ltda - ME**

**Carolina Fonseca de Almeida**

**CPF : 003.354.099-38**

**RG : 6.498.316-4**

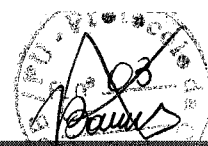
**Administradora**

**17.023.484/0001-97**

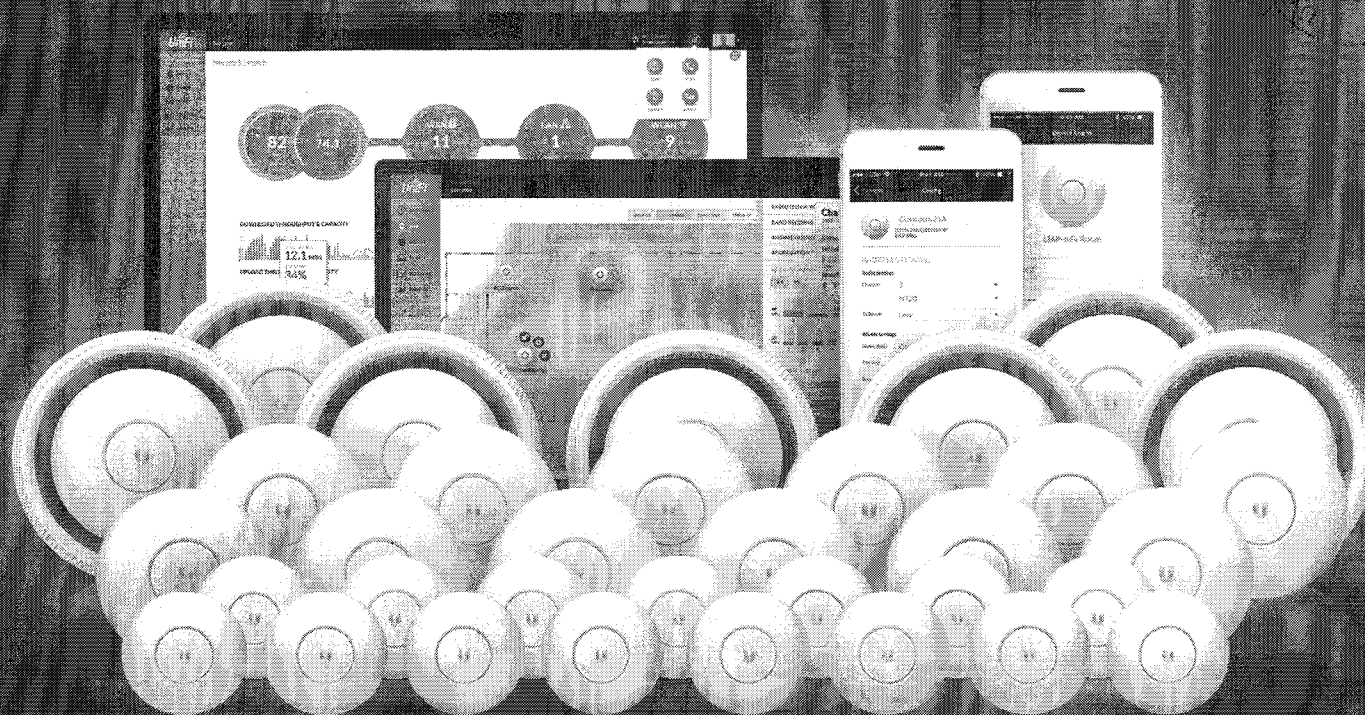
**90610721-09**

**3A SOLUÇÕES EM TECNOLOGIA  
LTDA. - ME.**

**RUA PACÍFICO, 62 - SALA 02  
JD. INDIANÓPOLIS - CEP 86010-700  
LONDRINA - PR**



# DATASHEET



**UniFi<sup>®</sup> AC**


802.11ac Dual-Radio Access Points

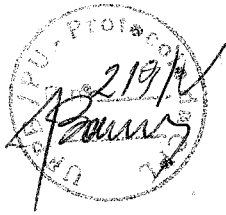
Models: UAP-AC-LITE, UAP-AC-LR, UAP-AC-EDU,  
UAP-AC-PRO, UAP-AC-Outdoor, UAP-AC

Unlimited Indoor/Outdoor AP Scalability in a Unified Management System

Breakthrough Speeds up to 1300 Mbps in the 5 GHz Band

Intuitive UniFi Controller Software

  
**UBIQUITI<sup>®</sup>**  
NETWORKS



## Scalable Enterprise Wi-Fi Management

UniFi<sup>®</sup> is the revolutionary Wi-Fi system that combines enterprise performance, unlimited scalability, and a central management controller. UniFi 802.11AC Dual-Radio Access Points (APs) have a refined industrial design and can be easily installed using the included mounting hardware.

Easily accessible through any standard web browser, the UniFi Controller software is a powerful software engine ideal for high-density client deployments requiring low latency and high uptime performance.

Use the UniFi Controller software to quickly configure and administer an enterprise Wi-Fi network – no special training required. RF map and performance features, real-time status, automatic UAP device detection, and advanced security options are all seamlessly integrated.

## Features

**Save money and save time** Unlike traditional enterprise Wi-Fi systems that use a hardware controller, UniFi comes bundled with a non-dedicated software controller that can be deployed on an on-site PC, Mac, or Linux machine; in a private cloud; or using a public cloud service.

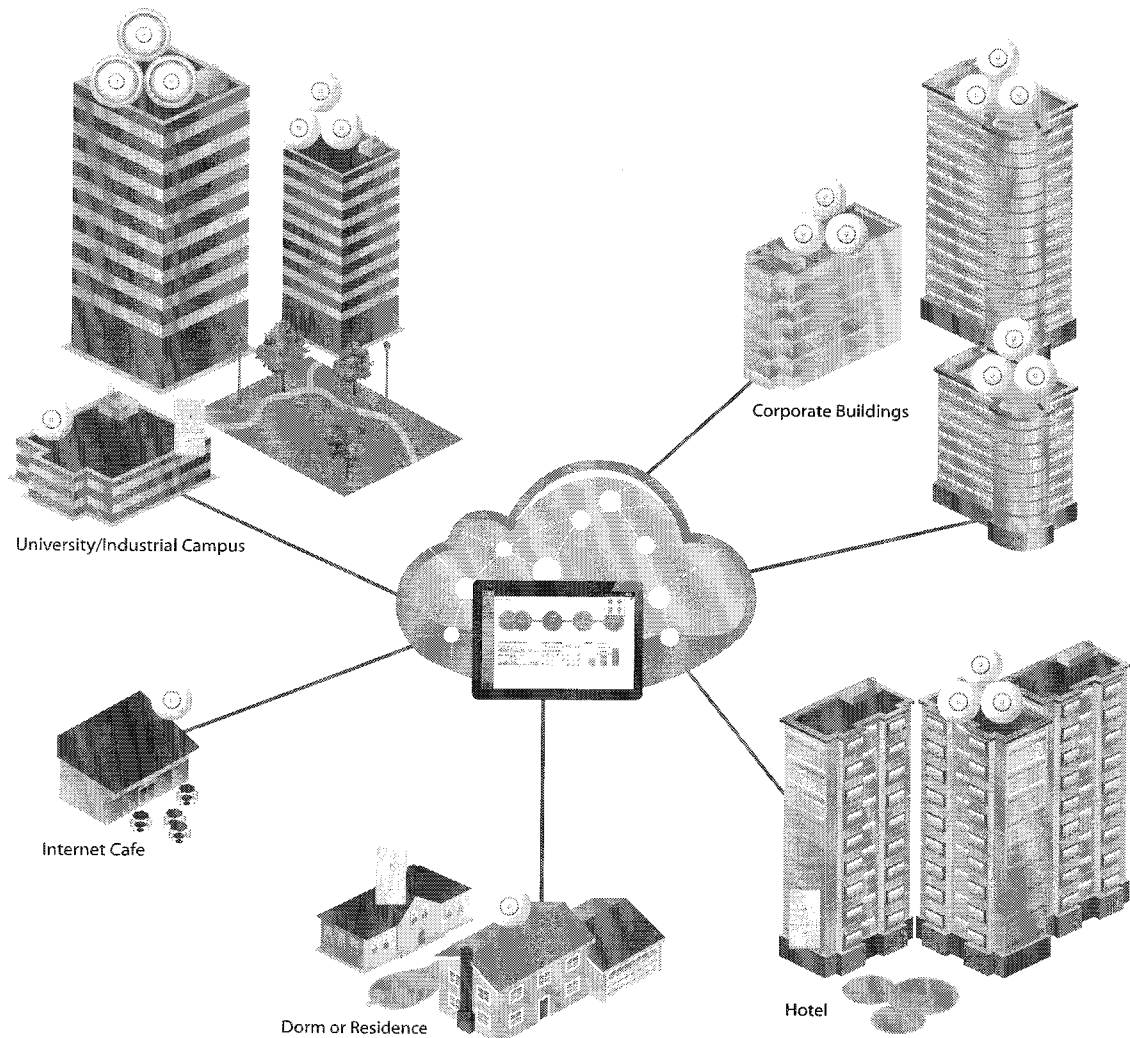
**Powerful Hardware** The UniFi 802.11AC Dual-Radio APs feature the latest in Wi-Fi 802.11AC MIMO technology.

**Intuitive UniFi Controller Software** Configure and manage your APs with the easy-to-learn user interface.

**Expandable** Unlimited scalability: build wireless networks as big or small as needed. Start with one (or upgrade to a three-pack) and expand to thousands while maintaining a single unified management system.

## Extend Your Coverage

With the UniFi Controller software running in a NOC or in the cloud, administrators can manage multiple sites: multiple, distributed deployments and multi-tenancy for managed service providers. Below are some deployment examples.





# UniFi Controller

## Packed with Features

Use the UniFi Controller to provision thousands of UniFi APs, map out networks, quickly manage system traffic, and provision additional UniFi APs.

## Breakthrough RF Map

Use the RF map to monitor and analyze radio frequencies for optimal AP placement, configuration, and troubleshooting.

## Powerful RF Performance Features

Advanced RF performance and configuration features include spectral analysis, airtime fairness, and band steering.

## Detailed Analytics

Use the configurable reporting and analytics to manage large user populations and expedite troubleshooting.

## Wireless Uplink\*

Wireless Uplink functionality enables wireless connectivity between APs for extended range. One wired UniFi AP uplink supports up to four wireless downlinks on a single operating band, allowing wireless adoption of devices in their default state and real-time changes to network topology.

## Guest Portal/Hotspot Support

Easy customization and options for Guest Portals include authentication, Hotspot setup, and the ability to use your own external portal server. Use UniFi's rate limiting for your Guest Portal/Hotspot package offerings. Apply different bandwidth rates (download/upload), limit total data usage, and limit duration of use.

All UniFi APs include Hotspot functionality:

- Built-in support for billing integration using major credit cards.
- Built-in support for voucher-based authentication.
- Built-in Hotspot Manager for voucher creation, guest management, and payment refund.
- Full customization and branding of Hotspot portal pages.

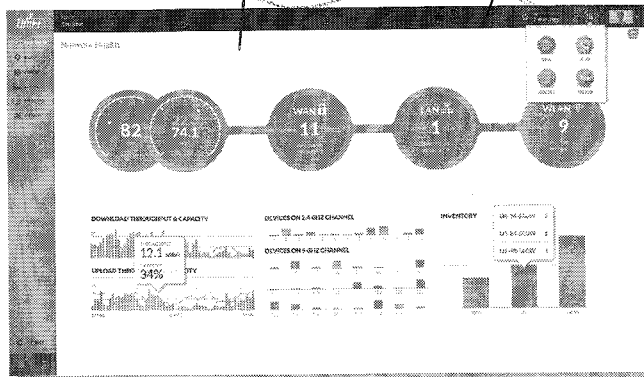
## Multi-Site Management

A single UniFi Controller running in the cloud can manage multiple sites: multiple, distributed deployments and multi-tenancy for managed service providers. Each site is logically separated and has its own configuration, maps, statistics, guest portal, and administrator read/write and read-only accounts.

## WLAN Groups

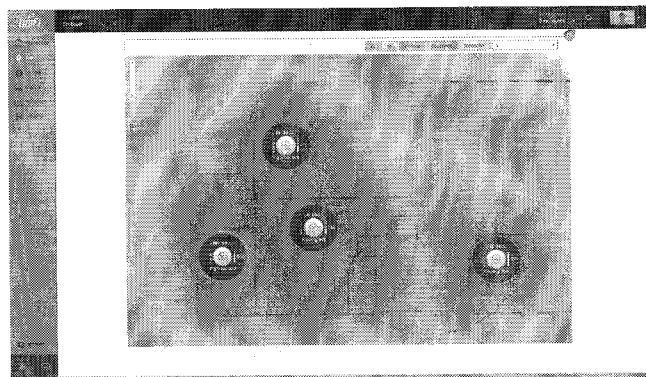
The UniFi Controller can manage flexible configurations of large deployments. Create multiple WLAN groups and assign them to an AP's radio.

\* Not currently supported by the UAP-AC or UAP-AC-Outdoor.



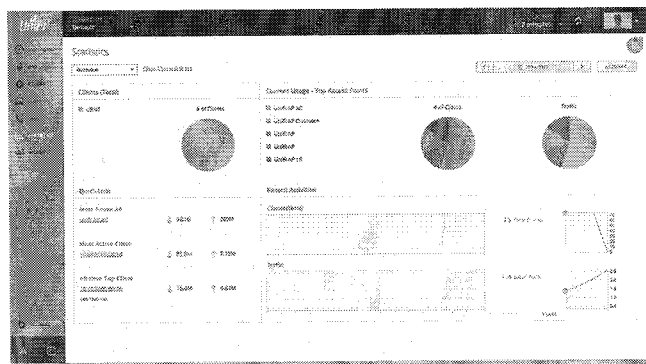
## Dashboard

UniFi provides a visual representation of your network's status and delivers basic information about each network segment.



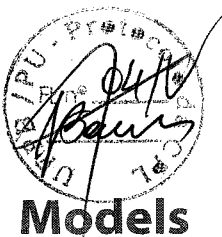
## RF Map

Monitor UniFi APs and analyze the surrounding RF environment.



## Statistics

UniFi organizes and visualizes network traffic in clear and easy-to-read graphs.



## Models



### Hardware Overview

**Easy Mounting** Sleek design for seamless integration into any environment (all accessories included).

**LED** Unique LED provisioning ring or square provides administrator location tracking and alerts for each device.

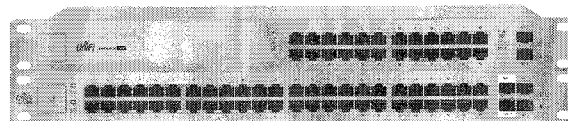
**Designed for the Great Outdoors** The UniFi AC Pro and UniFi AC Outdoor APs feature weatherproof casing designed specifically for outdoor applications.

**Advanced Acoustic Speaker** The UniFi AC EDU AP provides high-quality sound with accurate voice reproduction for announcements over Wi-Fi.

**Power over Ethernet (PoE)** Includes PoE functionality. Each single-pack includes a PoE adapter.

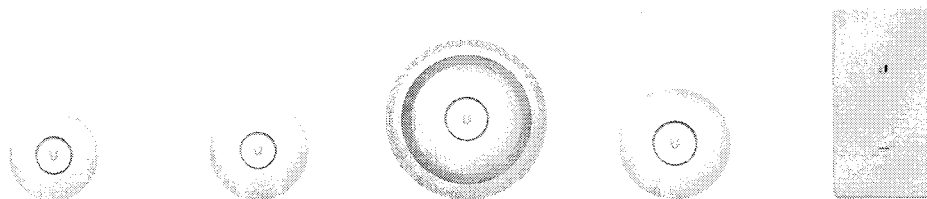
### PoE Switching

**UniFi Switch** You can power your UniFi devices with a UniFi Switch (sold separately). Available in 24- and 48-port versions with multiple power output options, the UniFi Switch conveniently offers auto-sensing IEEE 802.3af PoE/802.3at PoE+ and configurable 24V passive PoE.



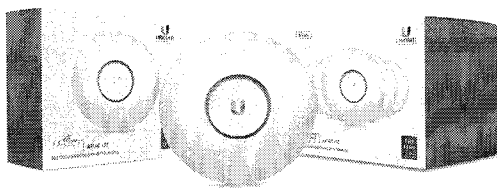
**PoE Standards** The UniFi AC EDU, Pro, and Outdoor APs are compatible with an 802.3at PoE+ compliant switch, while the UniFi AC Pro AP can also use 802.3af PoE.

### Model Comparison Chart



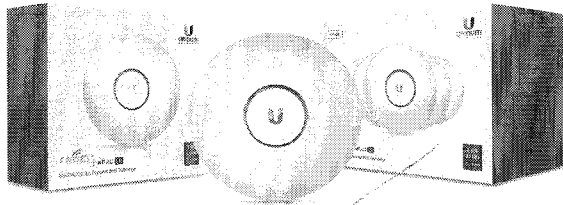
	UAP-AC-LITE	UAP-AC-LR	UAP-AC-EDU	UAP-AC-PRO	UAP-AC-Outdoor
Environment	Indoor	Indoor	Indoor	Indoor/Outdoor	Outdoor
Simultaneous Dual-Band	✓	✓	✓	✓	✓
2.4 GHz Speed*	300 Mbps	450 Mbps	450 Mbps	450 Mbps	450 Mbps
2.4 GHz MIMO	2x2	3x3	3x3	3x3	3x3
5 GHz Speed*	867 Mbps	867 Mbps	1300 Mbps	1300 Mbps	1300 Mbps
5 GHz MIMO	2x2	2x2	3x3	3x3	3x3
Range*	122 m (400 ft)	183 m (600 ft)	122 m (400 ft)	122 m (400 ft)	183 m (600 ft)
Secondary Ethernet Port			✓	✓	✓
Loudspeaker			✓		
PoE Mode	24V Passive PoE	24V Passive PoE	802.3at PoE+	802.3af PoE 802.3at PoE+	48V Passive PoE or UniFi Switch
Ceiling Mount	✓	✓	✓	✓	
Wall Mount	✓	✓	✓	✓	✓
Pole Mount					✓
Wireless Uplink	✓	✓	✓	✓	

\* Speed and Range values may vary and are based on optimal environments.



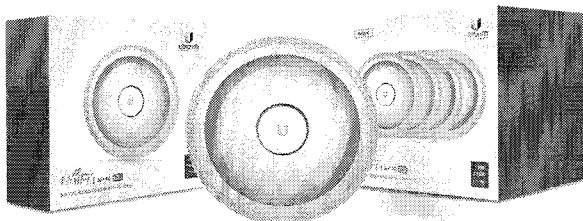
### UAP-AC-LITE

Featuring an ultra-compact design, the UniFi AC Lite AP delivers a cost-effective combination of value and performance in a reduced footprint: 25% smaller than the standard UniFi AP. The UniFi AC Lite AP provides simultaneous, dual-band, 2x2 MIMO technology and is available in single- and five-packs\*.



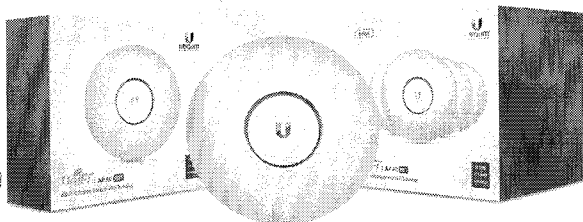
### UAP-AC-LR

Ideal for long-range deployments, the UniFi AC LR AP offers simultaneous, dual-band operation with 3x3 MIMO in the 2.4 GHz band and 2x2 MIMO in the 5 GHz band. The innovative antenna design provides a long-range, symmetrical-link coverage area, and the antenna gain of the UniFi AC LR AP performs better than one-way, high transmit power does for connecting distant clients. It is available in single- and five-packs\*.



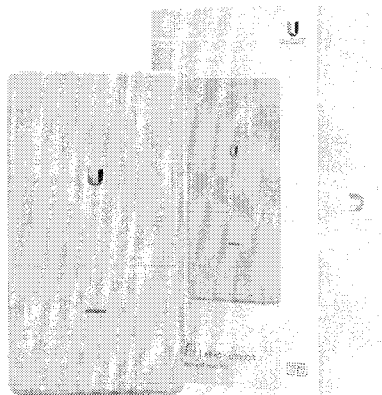
### UAP-AC-EDU

The UniFi AC EDU AP conveniently integrates Wi-Fi and public address capabilities, making it ideal for campus-wide deployment. The UniFi AC EDU AP features simultaneous, dual-band, 3x3 MIMO technology and convenient 802.3at PoE+ compatibility. It will be available in single- and four-packs\* starting in Q4.



### UAP-AC-PRO

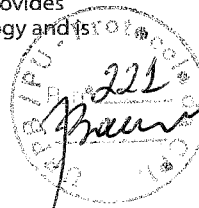
Deploy the UniFi AC Pro AP indoors or outdoors, in wireless networks requiring maximum performance. Sporting a weatherproof design, the UniFi AC Pro AP features simultaneous, dual-band, 3x3 MIMO technology and convenient 802.3af PoE/802.3at PoE+ compatibility. It is available in single- and five-packs\*.



### UAP-AC-Outdoor

The standard outdoor model, the UniFi AC Outdoor AP, offers simultaneous dual-band operation with 3x3 MIMO technology for each band. It is available in single-packs.

\* Four- or five-packs do not ship with PoE adapters; we recommend powering the UniFi APs with the UniFi Switch instead.







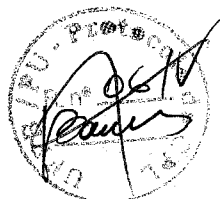
# UAP-AC-LR Specifications

UAP-AC-LR	
Dimensions	175.7 x 175.7 x 43.2 mm (6.92 x 6.92 x 1.70")
Weight	240 g (8.5 oz)
With Mounting Kits	315 g (11.1 oz)
Networking Interface	(1) 10/100/1000 Ethernet Port
Buttons	Reset
Antennas	(1) Dual-Band Antenna, Tri-Polarity, 2.4 GHz: 3 dBi, 5 GHz: 6 dBi
Wi-Fi Standards	802.11 a/b/g/n/ac
Power Method	Passive Power over Ethernet (24V), (Pairs 4, 5+; 7, 8 Return)
Power Supply	24V, 0.5A Gigabit PoE Adapter*
Maximum Power Consumption	6.5W
Maximum TX Power	
2.4 GHz	24 dBm
5 GHz	22 dBm
BSSID	Up to Four per Radio
Power Save	Supported
Wireless Security	WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES)
Certifications	CE, FCC, IC
Mounting	Wall/Ceiling (Kits Included)
Operating Temperature	-10 to 70° C (14 to 158° F)
Operating Humidity	5 to 95% Noncondensing

\* Only the single-pack of the UAP-AC-LR includes a PoE adapter.

Advanced Traffic Management	
VLAN	802.1Q
Advanced QoS	Per-User Rate Limiting
Guest Traffic Isolation	Supported
WMM	Voice, Video, Best Effort, and Background
Concurrent Clients	200+

Supported Data Rates (Mbps)	
Standard	Data Rates
802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n	6.5 Mbps to 450 Mbps (MCS0 - MCS23, HT 20/40)
802.11ac	6.5 Mbps to 867 Mbps (MCS0 - MCS9 NSS1/2, VHT 20/40/80)
802.11b	1, 2, 5.5, 11 Mbps
802.11g	6, 9, 12, 18, 24, 36, 48, 54 Mbps



## UAP-AC-EDU Specifications

DATASHEET

UniFi<sup>®</sup> AC

UAP-AC-EDU	
Dimensions	287.5 x 287.5 x 125.9 mm (11.32 x 11.32 x 4.96")
Weight	1.820 kg (4.012 lb)
Networking Interface	(1) 10/100/1000 Ethernet Port
Buttons	Reset
Antennas	(3) Dual-Band Antennas, 2.4 GHz: 3 dBi, 5 GHz: 3 dBi
Wi-Fi Standards	802.11 a/b/g/n/ac
Power Method	Passive Power over Ethernet (48V), 803.2at Supported (Supported Voltage Range: 44 to 57VDC)
Power Supply	48V, 0.5A PoE Gigabit Adapter*
Maximum Power Consumption	20W
Maximum TX Power	
2.4 GHz	22 dBm
5 GHz	22 dBm
BSSID	Up to Four per Radio
Power Save	Supported
Wireless Security	WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES)
Certifications	CE, FCC, IC
Mounting	Wall/Ceiling (Kits Included)
Operating Temperature	-10 to 70° C (14 to 158° F)
Operating Humidity	5 to 95% Noncondensing

\* Only the single-pack of the UAP-AC-EDU includes a PoE adapter.

Advanced Traffic Management	
VLAN	802.1Q
Advanced QoS	Per-User Rate Limiting
Guest Traffic Isolation	Supported
WMM	Voice, Video, Best Effort, and Background
Concurrent Clients	200+

Supported Data Rates (Mbps)	
Standard	Data Rates
802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n	6.5 Mbps to 450 Mbps (MCS0 - MCS23, HT 20/40)
802.11ac	6.5 Mbps to 1300 Mbps (MCS0 - MCS9 NSS1/2/3, VHT 20/40/80)
802.11b	1, 2, 5.5, 11 Mbps
802.11g	6, 9, 12, 18, 24, 36, 48, 54 Mbps

Loudspeaker Acoustics	
Sensitivity	94 dB (1W/1 m)
Maximum SPL	103 dB @ 1 m
Frequency Response	100 - 20,000 Hz
Type	Two-Way Speaker with Second-Order HP Filter



# UAP-AC-PRO Specifications

UAP-AC-PRO	
Dimensions	196.7 x 196.7 x 35 mm (7.74 x 7.74 x 1.38")
Weight	350 g (12.4 oz)
With Mounting Kits	450 g (15.9 oz)
Networking Interface	(2) 10/100/1000 Ethernet Ports
Buttons	Reset
Antennas	(3) Dual-Band Antennas, 2.4 GHz: 3 dBi, 5 GHz: 3 dBi
Wi-Fi Standards	802.11 a/b/g/n/ac
Power Method	Passive Power over Ethernet (48V), 802.3af/802.3at Supported (Supported Voltage Range: 44 to 57VDC)
Power Supply	48V, 0.5A PoE Gigabit Adapter*
Maximum Power Consumption	9W
Maximum TX Power	
2.4 GHz	22 dBm
5 GHz	22 dBm
BSSID	Up to Four per Radio
Power Save	Supported
Wireless Security	WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES)
Certifications	CE, FCC, IC
Mounting	Wall/Ceiling (Kits Included)
Operating Temperature	-10 to 70° C (14 to 158° F)
Operating Humidity	5 to 95% Noncondensing

\* Only the single-pack of the UAP-AC-PRO includes a PoE adapter.

Advanced Traffic Management	
VLAN	802.1Q
Advanced QoS	Per-User Rate Limiting
Guest Traffic Isolation	Supported
WMM	Voice, Video, Best Effort, and Background
Concurrent Clients	200+

Supported Data Rates (Mbps)	
Standard	Data Rates
802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n	6.5 Mbps to 450 Mbps (MCS0 - MCS23, HT 20/40)
802.11ac	6.5 Mbps to 1300 Mbps (MCS0 - MCS9 NSS1/2/3, VHT 20/40/80)
802.11b	1, 2, 5.5, 11 Mbps
802.11g	6, 9, 12, 18, 24, 36, 48, 54 Mbps



## UAP-AC-Outdoor Specifications

DATASHEET

UniFi AC

UAP-AC-Outdoor	
Dimensions	340 x 180 x 65 mm (13.39 x 7.09 x 2.56")
Weight	
With Wall Mount	1.55 kg (3.42 lb)
With Pole Mount	2 kg (4.41 lb)
Networking Interface	(2) 10/100/1000 Ethernet Ports
Buttons	Reset
Antennas	
2.4 GHz	Integrated 5 dBi Omni (Supports 3x3 MIMO with Spatial Diversity)
5 GHz	Integrated 5 dBi Omni (Supports 3x3 MIMO with Spatial Diversity)
Wi-Fi Standards	802.11 a/b/g/n/ac
Power Method	48V Passive POE or UniFi Switch
Power Supply	48V, 0.5A PoE Gigabit Adapter (Included)
Maximum Power Consumption	22 W
Maximum TX Power	
2.4 GHz	28 dBm
5 GHz	28 dBm
BSSID	Up to Four Per Radio
Power Save	Supported
Wireless Security	WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES)
Certifications	CE, FCC, IC
Mounting	Wall and Pole (Kits Included)
Operating Temperature	-30 to 60 °C (-22 to 140 °F)
Operating Humidity	5 to 80% Noncondensing

Advanced Traffic Management	
VLAN	802.1Q
Advanced QoS	Per-User Rate Limiting
Guest Traffic Isolation	Supported
WMM	Voice, Video, Best Effort, and Background
Concurrent Clients	200+

Supported Data Rates (Mbps)	
Standard	Data Rates
802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n	6.5 Mbps to 450 Mbps (MCS0 - MCS23, HT 20/40)
802.11ac	6.5 Mbps to 1300 Mbps (MCS0 - MCS9 NSS1/2/3, VHT 20/40/80)
802.11b	1, 2, 5.5, 11 Mbps
802.11g	6, 9, 12, 18, 24, 36, 48, 54 Mbps



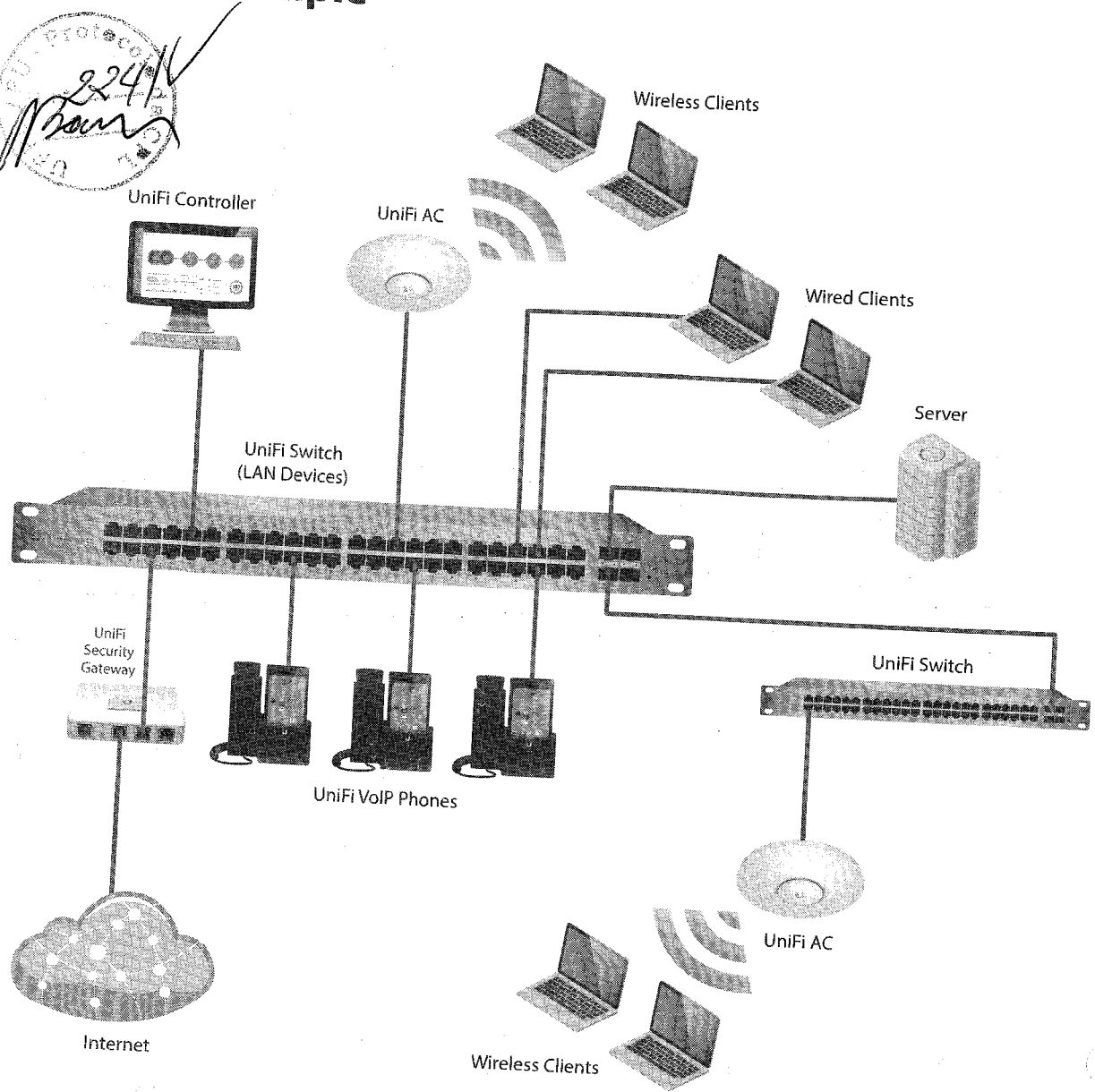
# UAP-AC (Gen1 11ac) Specifications

UAP-AC (Gen1 11ac)	
Dimensions	200 x 204 x 27 mm (7.87 x 8.03 x 1.06")
Weight	508 g (1.12 lb)
With Mounting Kits	566 g (1.25 lb)
Networking Interface	(2) 10/100/1000 Ethernet Ports
Buttons	Reset
Antennas	Integrated 5 dBi Omni (Supports 3x3 MIMO with Spatial Diversity)
2.4 GHz	Integrated 5 dBi Omni (Supports 3x3 MIMO with Spatial Diversity)
5 GHz	
Wi-Fi Standards	802.11 a/b/g/n/ac
Power Method	48V Passive POE or UniFi Switch
Power Supply	48V, 0.5A PoE Gigabit Adapter Included
Maximum Power Consumption	22 W
Maximum TX Power	
2.4 GHz	23 dBm
5 GHz	23 dBm
BSSID	Up to Four per Radio
Power Save	Supported
Wireless Security	WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES)
Certifications	CE, FCC, IC
Mounting	Wall/Ceiling (Kits Included)
Operating Temperature	-10 to 55° C (14 to 131° F)
Operating Humidity	5 to 80% Noncondensing

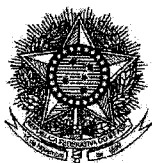
Advanced Traffic Management	
VLAN	802.1Q
Advanced QoS	Per-User Rate Limiting
Guest Traffic Isolation	Supported
WMM	Voice, Video, Best Effort, and Background
Concurrent Clients	200+

Supported Data Rates (Mbps)	
Standard	Data Rates
802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n	6.5 Mbps to 450 Mbps (MCS0 - MCS23, HT 20/40)
802.11ac	6.5 Mbps to 1300 Mbps (MCS0 - MCS9 NSS1/2/3, VHT 20/40/80)
802.11b	1, 2, 5.5, 11 Mbps
802.11g	6, 9, 12, 18, 24, 36, 48, 54 Mbps

# System Example



Specifications are subject to change. Ubiquiti products are sold with a limited warranty described at: [www.ubnt.com/support/warranty](http://www.ubnt.com/support/warranty)  
 ©2015-2016 Ubiquiti Networks, Inc. All rights reserved. Ubiquiti, Ubiquiti Networks, the Ubiquiti U logo, the Ubiquiti beam logo, and UniFi are trademarks or registered trademarks of Ubiquiti Networks, Inc. in the United States and in other countries. All other trademarks are the property of their respective owners.



CÂMARA DOS DEPUTADOS  
DEPARTAMENTO DE MATERIAL E PATRIMÔNIO



CT N.º 29/14

PROCESSO 111.357/14

DECLARAÇÃO DE CAPACIDADE TÉCNICA

Declaro, a pedido da parte interessada, que a empresa LAITANO SOLUÇÕES EM TECNOLOGIA LTDA - ME, estabelecida na Rua Dolores Maria Bruno, 185, Jardim Califórnia, Londrina-PR, CNPJ 17.023.484/0001-97, forneceu à CÂMARA DOS DEPUTADOS, CNPJ 00.530.352/0001-59, os materiais abaixo relacionados, nada havendo, até a presente data, que possa desaboná-la.

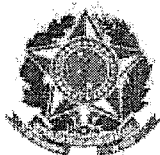
ESPECIFICAÇÃO DOS MATERIAIS

Comutadores de Rede, com garantia de 12 meses, conforme Nota de Empenho 2013NE005158(CD) e contrato 301.0/2013, com vigência de 31/12/2013 a 30/01/2015, sendo:

- 16 unidades de comutador de rede 8 portas, marca Intelbrás SG1002MR;
- 4 unidades de comutador de rede 24 portas, marca Intelbrás SG2404MR.

Brasília-DF, 05 de maio de 2014.

  
MAURO LIMEIRA MENA BARRETO  
Diretor



Serviço Público Federal  
Ministério da Educação  
**Fundação Universidade Federal de Mato Grosso do Sul**



### ATESTADO DE CAPACIDADE TÉCNICA

**Contratante:**

FUNDAÇÃO UNIVERSIDADE FEDERAL DO MATO GROSSO DO SUL  
Endereço: Av. Costa e Silva, s/n  
Campo Grande - MS  
CNPJ: 15.461.510/0001-33

**Contratada:**


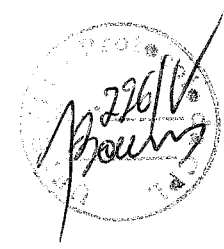
3A Soluções em Tecnologia Ltda  
Rua Pacífico, 62  
CNPJ: 17.023.484/0001-97

Atestamos para os devidos fins que a empresa 3A Soluções em Tecnologia Ltda, inscrita no CNPJ/MF sob o nº 17.023.484/0001-97, com sede na Rua Pacífico, 62 – Jardim Indianópolis – Londrina – PR, forneceu à FUNDAÇÃO UNIVERSIDADE FEDERAL DO MATO GROSSO DO SUL os serviços/produtos abaixo:

QTDE	UNIDADE	DESCRIÇÃO DOS PRODUTOS E SERVIÇOS
15	unidade	Speed Dome IP 30X
140	unidade	Câmera Fixa IP8364
30	unidade	Radio Ethernet
155	licenças	Software de Monitoramento e Gravação CFTV IP
28	unidade	Quadro de Comando
10	unidade	Poste de Concreto 15 metros
15	unidade	Aterramento e kit para raio
3	unidade	Servidor de Gerenciamento e Gravação - 32Tb
3	unidade	Servidor de Visualização
2	unidade	Ar Condicionado 12000
1	unidade	Rack 44U completo (bandeja, rodizio, ventilação, régua de tomada)
8	unidade	Monitor 42"
1	unidade	Monitor 19"
1	unidade	Mesa PTZ para Speed Dome
1	unidade	Nobreak 5 KVA
2	unidade	Switch 24 PORTAS 10/100/1000 + 04 portas SFP
33	unidade	Switch 8 portas POE 10/100/1000
1	unidade	Mobiliário
15	unidade	Conversor de Mídia com gabinete

*Assinatura*




2	unidade	Rack 12U PAREDE COM KIT VENTILAÇÃO E BANDEJAS
28	unidade	Nobreak 1,8 KVA
20	unidade	Patch panel 24P CAT 6
60	unidade	Injetor PoE
15	unidade	Protetor de surto
1	verba	Infraestrutura para Sistema de CFTV e Controle de Acesso
2	unidade	Cancela
1	verba	Acessórios para instalação de cancelas
2	unidade	Leitora de cartão de acesso e senha
100	unidade	Cartões de acesso
1	verba	Cabos e conectorizações
15000	metros	Cabo de Fibra Óptica 12FO multimodo
130	unidade	Fusão de fibra óptica
2	verba	Infraestrutura para cancelas
8500	metros	Cabo de Rede CAT 6
120	unidade	Patch cord CAT 6
240	unidade	Tomada Fêmea RJ45 CAT 6
1	verba	Projeto Executivo - As Built
1	verba	Treinamento

Atestamos ainda que consideramos a Empresa supra citada, apta ao atendimento do objetivo solicitado, não havendo nada que desabone a referida empresa.

Campo Grande, 10 de Setembro de 2015.



Adm. Marcelo Gomes Soares  
Pró-Reitor de Administração

FUNDAÇÃO UNIVERSIDADE FEDERAL DO MATO GROSSO DO SUL  
CNPJ 15.461.510/0001-97



MINISTÉRIO DA DEFESA  
EXÉRCITO BRASILEIRO  
COMANDO DE OPERAÇÕES ESPECIAIS




**ATESTADO DE CAPACIDADE TÉCNICA**

Atestamos para os devidos fins que a empresa LAITANO SOLUÇÕES EM TECNOLOGIA LTDA – ME, inscrita no CNPJ/MF sob o nº 17.023.484/0001-97, com sede na Rua Dolores Maria Bruno, 185 – Jd Califórnia – Londrina – PR, forneceu à BASE ADMINISTRATIVA DA BRIGADA DE OPERAÇÕES ESPECIAIS, através do Pregão 094/2013, os produtos abaixo:

- 01 – kit S (composto por tripé, rádio transmissor de dados, fone microfone, baterias, fonte POE, câmera dome SD8363 vivotek, bolsa e saco impermeabilizante).
- 01 – Kit E (composto por rádio, antena, rádio nanostation, mastro para antena, switch, software digifort).
- 25 – Inversor de Energia (12V para 110V de 120W)
- 05 – Encoder de vídeo e áudio 01 canal
- 05 – Kit C (composto por colete, suporte de cabeça, câmera, rádio, encoder, laringofone, bateria, inversor).
- 15 – Kit M (composto por mochila, saco impermeabilizante, tripé, rádio, encoder, laringofone, bateria, inversor, filmadora com bateria reserva, bolsa estanque).
- 05 – Kit I (composto por mochila, rádio, bateria, inversor, tripé, saco impermeabilizante).
- 11 – Kit R (composto por mochila, rádio, bateria, inversor, tripé, saco impermeabilizante).
- 03 – Kit N (composto por mochila, rádio transmissor de dados, celular com bateria reserva, baterias, inversor e saco impermeabilizante).
- 10 – Kit P (composto por mochila, rádio transmissor de dados, bateria, inversor, tripé, saco impermeabilizante).
- 02 – Switch POE 24 portas 10 / 100 / 1000 RJ-45 – marca HP
- 05 – Rotulador brother PT 80 azul/verde
- 05 – Medidor de potência ROE
- 28 – Microfone gooseneck yoga

Atestamos ainda que consideramos a Empresa supracitada, apta ao atendimento do objetivo solicitado, não havendo nada que desabone a referida empresa.

Goiânia, 18 de março de 2014.

  
CLAUDIO EDUARDO MARTINS DE FREITAS – Cel  
Ch 7ª Seq C Op Esp



**MINISTÉRIO DA DEFESA  
EXÉRCITO BRASILEIRO  
COMANDO DE OPERAÇÕES ESPECIAIS**



**ATESTADO DE CAPACIDADE TÉCNICA**

Atestamos para os devidos fins que a empresa LAITANO SOLUÇÕES EM TECNOLOGIA LTDA – ME, inscrita no CNPJ/MF sob o nº 17.023.484/0001-97, com sede na Rua Dolores Maria Bruno, 185 – Jd Califórnia – Londrina – PR, forneceu à BASE ADMINISTRATIVA DA BRIGADA DE OPERAÇÕES ESPECIAIS, através do Pregão 094/2013, os produtos abaixo:

01 – kit S (composto por tripé, rádio transmissor de dados, fone microfone, baterias, fonte POE, câmera dome SD8363 vivotek, bolsa e saco impermeabilizante).

Atestamos ainda que consideramos a Empresa supracitada, apta ao atendimento do objetivo solicitado, não havendo nada que desabone a referida empresa.

Goiânia, 26 de maio de 2014.

  
**CLAUDIO EDUARDO MARTINS DE FREITAS – Cel**  
Ch 7ª Seç C Op Esp



UNIVERSIDADE FEDERAL DA PARAÍBA  
SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E  
CONTRATOS  
EMITIDO EM 16/05/2016 16:20

S.T.I.  
FL: 23

**Processo nº. 23074.028490/2016-16**

**Assunto: 995 - PEDIDOS, OFERCIMENTOS E INFORMAÇÕES DIVERSAS**



## DESPACHO

À Prefeitura Universitária (PU)

Aos cuidados do Srº Jandir de Santana

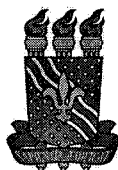
Prezado Prefeito,

Ao tempo em que o cumprimentamos, informamos atendimento à sua solicitação conforme folhas 14 a 18 do processo em tela.

À Disposição,

(Autenticado digitalmente em 16/05/2016 16:20)  
PEDRO JACOME DE MOURA JUNIOR  
SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO (STI) (11.00.51)  
DIRETOR

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c.bbn.ufpb.br.jboss-c



**UNIVERSIDADE FEDERAL DA PARAÍBA**  
**SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO**

S.T.I.  
F. 24  
A.



**LAUDO TÉCNICO**

**Processo nº:** 23074.028490/2016-16

**Interessado:** Comissão Permanente de Licitação (CPL) da Prefeitura Universitária (PU)

**Referência:** Pregão Eletrônico (SRP) PU/UFPB nº 5/2016

1. O pregão eletrônico em tela tem como objeto a *"aquisição de bens e/ou serviços de tecnologia da informação e comunicação (TIC), a fim de promover a ampliação e a modernização dos elementos ativos integrantes da infraestrutura de rede de comunicação de dados da instituição (Rede UFPB)"*.

2. Conforme consta do presente processo, a empresa 3A Soluções em Tecnologia Ltda. ofertou os seguintes produtos para o Grupo 2 (*Access point* de rede sem fio) do citado pregão eletrônico:

- a) *Access Point* (AP) do tipo 1: Ubiquiti Unifi AP AC Lite;
- b) *Access Point* (AP) do tipo 2: Ubiquiti Unifi AP AC Pro.

3. Acostado também a estes autos, consta pedido da CPL/PU para que a STI se manifeste quanto à conformidade dos produtos ofertados pela empresa supracitada com as especificações técnicas constantes do edital do referido pregão.

4. Convém mencionar que, no prazo legal para a realização de pedidos de esclarecimento sobre o citado edital, houve questionamento de terceiro sobre característica do AP do tipo 2 pleiteado pela UFPB, a saber, Ubiquiti Unifi AP AC Pro, acerca de sua utilização em ambientes externos, conforme pode ser visto nos registros do Sistema de Compras Governamentais (<http://www.comprasgovernamentais.gov.br>) relativos ao certame licitatório em questão.

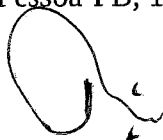
5. Em resposta, a STI reconheceu que houve erro de digitação na identificação do dito AP, haja vista que aquele *access point* não seria adequado para uso exclusivamente externo, contrariando o real interesse da UFPB. Assim, a STI orientou a CPL/PU para que fosse feita a correção do texto que identificava o produto, ou seja, onde fosse lido *"Ubiquiti Unifi AP AC Pro"* passasse a ser lido *"Ubiquiti Unifi AP AC Outdoor"* (vide cópia de e-mail anexada a este laudo).

6. Mister se faz ressaltar que a afirmação de erro de digitação tem respaldo na pesquisa de preços que estimou o preço médio daquele produto a qual foi orientada ao modelo externo (*outdoor*), como pode ser visto no processo administrativo que deu origem ao pregão eletrônico aqui referenciado.

S.T.I.  
FL. 15

7. Isto posto, ATESTO que apenas o *access point* de rede sem fio do tipo 1 ofertado pela empresa 3A Soluções em Tecnologia Ltda., **Ubiquiti Unifi AP AC Lite**, encontra-se dentro das especificações técnicas do Termo de Referência do Edital do Pregão Eletrônico (SRP) PU/UFPB nº 5/2016 e alterações posteriores.

João Pessoa-PB, 16 de maio de 2016.

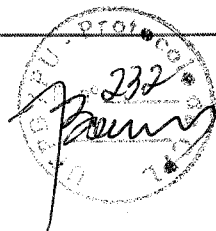


Ricardo Costa de Carvalho  
Analista de Tecnologia da Informação  
STI/UFPB  
Mat. SIAPE: 0273779-1



De: "Ricardo Costa de Carvalho" <ricardo@sti.ufpb.br>  
Assunto: Re: Pedido de Esclarecimento Pregão 005\_2016  
Data: Sex, Abril 29, 2016 17:44  
Para: cplpu@prefeitura.ufpb.br  
CC: hermes@sti.ufpb.br,superintendencia@sti.ufpb.br

S.T.I.  
16



Prezado Pregoeiro,

Em resposta à consulta realizada, informamos que:

1) Em relação ao item 2.8 do Anexo A (Especificações Técnicas) do Termo de Referência, tem procedência o questionamento feito, pois, como pode ser visto na pesquisa de mercado para estimativa do preço do bem pleiteado (documentos acostados ao Anexo D do Termo de Referência, no processo), o produto cotado foi o Ubiquiti Unifi AP AC Outdoor. Portanto, no item 2.8 em questão, onde se lê "Ubiquiti Unifi AP AC Pro", leia-se "Ubiquiti Unifi AP AC Outdoor";

2) Quanto à dúvida relativa à instalação dos access points (APs), esclarecemos que a instalação física (fixação) dos APs ficará a cargo da Contratada. A instalação lógica (por exemplo: em qual porta de qual switch o AP ficará conectado), a configuração e os testes dos APs ficarão a cargo dos técnicos da STI/UFPB.

Atenciosamente,

Ricardo Costa de Carvalho.

Analista de Tecnologia da Informação

--

Universidade Federal da Paraíba

Superintendência de Tecnologia da Informação

Av. Jardim Universitário, s/nº - Castelo Branco

58.051-900 João Pessoa - Paraíba - BRASIL

Tel.: +55(83)3216-7389 Fax: +55(83)3216-7133

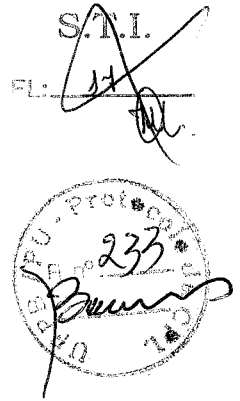
www.sti.ufpb.br

> Prezados,

>

> Confirmamos abertura do Pregão em epígrafe para o dia 06/05/2016, às

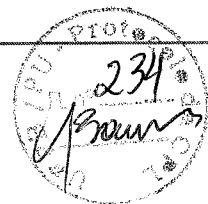
- > 09:30h, ao tempo em que pedimos o obséquio de esclarecer o seguinte
- > (reprodução de email recebido):
- >
- > "Prezado Pregoeiro(a),
- > Gentileza nos esclarecer os questionamentos abaixo referente ao processo
- > licitatório acima citado:
- >
- > Quanto ao Anexo I - Termo de Referência:
- >
- > No item 2.8 Acess Point – Tipo 2, cita o modelo de referencia como
- > "Ubiquiti
- > Unifi AP AC Pro", mas no item seguinte 2.8.1.1 cita "...Equipamento do
- > tipo
- > ponto de acesso (AP) outdoor, "
- >
- > Dúvida : O Equipamento citado como referência, de acordo com o fabricante
- > Ubiquiti Networks é para uso indireto ao tempo. Os modelos para uso
- > outdoor
- > (diretamente exposto ao tempo) seriam Unifi AP outdoor e Unifi AP AC
- > outdoor. A comissão esta ciente que o modelo escolhido não é para uso
- > diretamente ao tempo?
- >
- > Informamos que não ficou claro quem irá instalar efetivamente os
- > equipamentos Acess Point ( item 2.7 e 2.8) já que no item 16 – execução do
- > objeto cita em sua etapa 3 contratada e STI/UFPB e no sub item 16.4 fala
- > que a STI/UFPB acompanhará as atividades dos técnicos da contratada ,
- > dando
- > a entender que a instalação ocorrerá por conta da contratada. E na
- > continuidade do documento licitatório em seu Anexo I: " 7. A(s)
- > Contratada(s) deverá(ão) prover irrestritos apoio e suporte para a equipe
- > da
- > STI/UFPB responsável pela instalação, configuração e operação dos produtos
- > adquiridos ". O que leva a interpretação que a instalação dos equipamentos
- > ficará a cargo da equipe STI/UFPB. Diante disto, gostaríamos que a
- > Comissão
- > pudesse esclarecer se a contratada ficará obrigada ao fornecimento e
- > treinamento apenas ou ficará com responsabilidades de instalação dos
- > mesmos
- > ?
- > No aguardo da resposta, agradecemos pela colaboração."





>  
> Agradecemos o apoio.  
> Att.  
> Augusto Oliveira  
> Comissão Permanente de Licitação/PU  
>

S.T.I.  
FL. 18



UNIVERSIDADE FEDERAL DA PARAÍBA  
PREFEITURA UNIVERSITÁRIA - PU

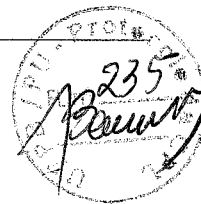
PROCESSO 23074.028490/2016-16

GABINETE DO PREFEITO

PROCESSO 23074.028490/2016-16

JOÃO PESSOA, 17 DE MAIO DE 2016

À: COMISSÃO DE PERMANENTE DE LICITAÇÃO-PU



Prezada Comissão,

Encaminho o presente procedimento Administrativo para conhecimento do despacho contido a (fl 13) e laudo técnico (fls. 14 a 18), e demais providências.

Atenciosamente,

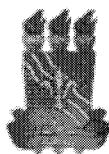
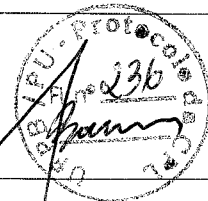
Francisco Peres da S. Júnior  
Engº Civil-CREA 160051303-4  
Mat. SIAPE 2475893

JANDIR DE SANTANA  
Prefeito Universitário  
Mat. SIAPE: 332469



**UNIVERSIDADE FEDERAL DA PARAÍBA**  
**SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E**  
**CONTRATOS**

EMITIDO EM 31/05/2016 14:00



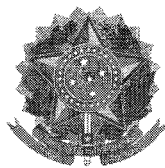
**MINISTÉRIO DA EDUCAÇÃO**  
**UNIVERSIDADE FEDERAL DA PARAÍBA**  
**PU - COMISSÃO PERMANENTE DE LICITAÇÃO**

## **TERMO DE JUNTADA POR APENSAÇÃO**

Em **31/05/2016**, atendendo o despacho do(a) **GERENTE LUIZ FELIPE PESSOA CUNHA (Matrícula: 2100579)**, faço apensar ao presente processo nº **23074.065281/2015-72** o(s) processos(s) nº(s) **23074.028170/2016-66**.

  
Assinatura/Carimbo do Responsável

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MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DA PARAÍBA  
SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E  
CONTRATOS

**PROCESSO**  
**23074.028170/2016-66**

Cadastrado em 12/05/2016



Processo disponível para recebimento com  
código de barras/QR Code

**Nome(s) do Interessado(s):**

AUGUSTO CESAR TEMOTEO DE OLIVEIRA

**E-mail:**

ACTONET@BOL.COM.BR

**Identificador:**

1655398

**Assunto do Processo:**

995 - PEDIDOS, OFERECIMENTOS E INFORMAÇÕES DIVERSAS

**Assunto Detalhado:**

LICITAÇÕES, PEDIDO DE LAUDO TÉCNICO CONCLUSIVO.

**Unidade de Origem:**

PU - COMISSÃO PERMANENTE DE LICITAÇÃO (11.01.12.17)

**Criado Por:**

AUGUSTO CESAR TEMOTEO DE OLIVEIRA

**Observação:****MOVIMENTAÇÕES ASSOCIADAS**

Data	Destino	Data	Destino
12/05/2016	SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO (STI) (11.00.51)		
30/05/16	CDL/PU		



Universidade Federal da Paraíba  
Prefeitura Universitária  
Comissão Permanente de Licitação



UFPB/PU/CPL/MEMO Nº 034/2016

João Pessoa, 12 de Maio de 2016.

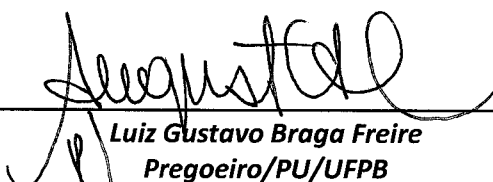
DA: COMISSÃO PERMANENTE DE LICITAÇÃO  
PREGOEIRO LUIZ GUSTAVO BRAGA FREIRE  
AO: ANALISTA DE TECNOLOGIA DA INFORMAÇÃO  
RICARDO COSTA DE CARVALHO

Prezado Senhor,

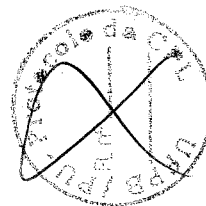
Encaminhamos a proposta da empresa **VANTAGE IT (ADTK COM. E SERVIÇOS DE INFORMÁTICA E TELECOMUNICAÇÕES LTDA.)**, referente ao **Pregão 005/2016**, para que seja analisada e que seja emitido um laudo técnico conclusivo, especificando se o produto ofertado pela referida empresa está de acordo com as especificações técnicas descritas no Edital e Termo de Referência deste certame.

Em virtude da exiguidade do tempo, solicitamos seu pronunciamento o mais breve possível, retornando-nos até a próxima segunda-feira, **dia 16/05/2016**, para que possamos dar continuidade ao procedimento licitatório.

Atenciosamente,

  
\_\_\_\_\_  
**Luiz Gustavo Braga Freire**  
**Pregoeiro/PU/UFPB**





# VANTAGEit

## PROPOSTA COMERCIAL

PREGÃO ELETRÔNICO SRP UFPB/CPL-PU Nº 005/2016

**CLIENTE:**

**MINISTÉRIO DA EDUCAÇÃO**

**UNIVERSIDADE FEDERAL DA PARAÍBA**

**PREFEITURA UNIVERSITÁRIA**



BRASÍLIA, 12 de maio de 2016.

 UNIVERSIDADE FEDERAL DA PARAÍBA.

É com grande satisfação que encaminhamos nossa proposta comercial.

Agradecemos a oportunidade e a confiança depositada em nossa Empresa, e esperamos poder estreitar ainda mais o nosso relacionamento.

Em caso de dúvidas ou questionamentos, entre em contato conosco. Estamos à disposição para atendê-lo.

Atenciosamente,

**Aline Aliskelem dos Santos (aline.santos@vantageit.com.br)**  
**Gerente Comercial**

Telefone: 55 61 3041-4909

Celular : 55 61 8366-0200

[www.vantageit.com.br](http://www.vantageit.com.br)

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Bloco B Sala 15 - Brasília - DF CEP 70.610-440  
Telefone (61) 3041-4959

### **Confidencialidade da Proposta**

As informações contidas nesta proposta são destinadas única e exclusivamente a UFPB, portanto seu conteúdo deve ser de conhecimento exclusivo desta instituição.

Solicitamos, portanto, que esta proposta não seja divulgada a terceiros nem reproduzida, em parte ou em sua totalidade, incluindo seus anexos, por quaisquer meios, sem a autorização formal da **VANTAGE IT**.

## **1. APRESENTAÇÃO.**

### **Sobre a Vantage**

*"Lideramos focados em resultados, de maneira participativa, eficiente e inovadora, garantindo a prosperidade dos negócios e a longevidade nas relações entre as pessoas. "*

Com mais de 15 anos no mercado e cobertura técnica-comercial em todo território nacional, somos um grupo econômico 100% dedicado à Tecnologia da Informação, oferecemos e entregamos capacidade técnica, infraestrutura e as melhores soluções em TI. Estamos baseados na capital federal, usufruindo geograficamente de um centro logístico muito eficiente, de modo a honrar com os mais críticos contratos de SLA (*service level agreement*), resultando em sistemas com alta disponibilidade.

### **Declaração de Negócio**

**Nossa Visão:** *Ser uma das 10 maiores empresas integradoras de tecnologia do Brasil. Com presença internacional.*

**Nossa Missão:** *Integrar soluções eficientes gerando valor para clientes, colaboradores e acionistas.*

**Nossos Valores:** *Somos comprometidos, competentes e inovadores. Superamos expectativas e valorizamos as relações.*

**Nossa Cultura:** *Lideramos focados em resultados, de maneira participativa, eficiente e inovadora, garantindo a prosperidade dos negócios e a longevidade nas relações entre as pessoas.*

### **Posicionamento Vantage**

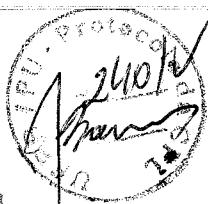
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**VANTAGE IT**



*"O sucesso de cada projeto e a satisfação de cada cliente traduzem a nossa meta!"*

Nosso objetivo é planejar e entregar soluções junto a governança participativa de cada Estado, cidade, organização e empresa, através da integração das tecnologias, criando ambientes interativos e trazendo a comunicação para o mundo real.

### Diferenciais

**Soluções Sob Medida** - Nossas Soluções são construídas de acordo com a necessidade de cada projeto, com foco na qualidade, eficiência e custos adequados a cada demanda.

**Integração inteligente de tecnologias** – Nosso amplo portfólio de produtos e serviços, conta com soluções que integram conhecimento, tecnologia e eficiência.

**Eficiência e profissionalismo** - Nos comprometemos com a qualidade técnica de nossas equipes investindo em qualificação.

### Soluções

Nossas Soluções são construídas de acordo com a necessidade de cada projeto, com foco na qualidade, eficiência e custos adequados a cada demanda.

Classificamos nossas soluções em 3 categorias:

#### 1. Soluções de Segurança Pública e Mobilidade Urbana

- 1.1. Videomonitoramento
- 1.2. RFID – Identificação por rádio frequência
- 1.3. Controle de acesso
- 1.4. Intercomunicação
- 1.5. Alarme e Incêndio
- 1.6. Controle de tráfego inteligente;
- 1.7. Fiscalização de trânsito;
- 1.8 . Mídias digitais e VideoWall;

#### 2. Soluções de Conectividade, disponibilidade e gerenciamento da informação

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- ✓ **Validade da proposta:** 60 (sessenta) dias, contados a partir da data fixada nesta licitação, para apresentação das propostas.

**Prazo de Entrega:** O prazo de entrega do objeto será de 30 (trinta) a 120 (cento e vinte) dias corridos, contados da assinatura do contrato, em função de sua complexidade, segundo o Quadro abaixo:

Tempo de fornecimento	Serviço
Até 30 (trinta) dias corridos	Entrega dos produtos
Até 90 (noventa) dias corridos	Instalação, configuração e testes dos produtos.
Até 120 (cento e vinte) dias corridos	Transferência de tecnologia e Documentação técnica dos serviços realizados

✓  
**DA GARANTIA:**

**1.1. TERMOS E CONDIÇÕES GERAIS**

1.1.1. Os produtos relativos ao objeto cuja aquisição é pretendida estarão em garantia, a partir da emissão dos respectivos termos circunstanciados de aceitação, segundo o disposto no item 9.5 do Termo de Referência;

1.1.2. A garantia para os produtos descritos neste Termo de Referência deverá ser prestada diretamente pelos respectivos fabricantes ou através de representantes autorizados;

1.1.3. No período de garantia, além daquelas asseguradas em legislação, as seguintes responsabilidades ficarão a cargo da Contratada:

1.1.3.1. Reposição de qualquer parte ou peça danificada, mesmo aquelas que porventura possam ter sido danificadas por efeitos decorrentes de descargas atmosféricas ou eletrostáticas, exceto em caso de defeitos comprovadamente decorrentes de mau uso do equipamento;

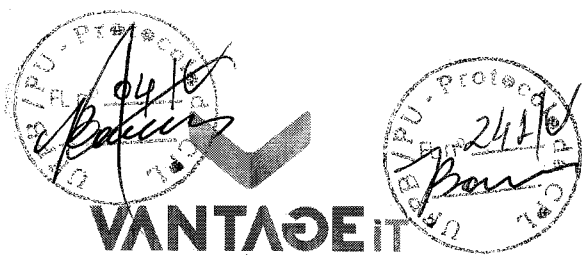
1.1.3.2. Atualização das versões de software e/ou firmware dos equipamentos adquiridos, mesmo se necessária a atualização do respectivo hardware, sem ônus para a Contratante;

1.1.3.3. Atualização de sistema operacional e aplicação de correções (patches) nos equipamentos adquiridos, quando couber, mesmo se necessária a atualização do respectivo hardware, e acréscimo de novas funcionalidades disponibilizadas ao mercado pelo fabricante do equipamento ou solução, sem ônus para a Contratante.

1.1.4. As peças, materiais e/ou acessórios necessários à reposição serão novos e originais, fornecidos pelo fabricante do equipamento, respeitado o tempo de atendimento definido em contrato;

1.1.5. Os chamados técnicos deverão ser abertos junto ao fabricante dos produtos e gerenciados pelo mesmo, preferencialmente via Internet ou através de número telefônico 0800 ou equivalente à ligação

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gratuita, momento no qual serão fornecidos o número, a data e a hora de abertura do chamado, que será considerado o início da contagem dos prazos de atendimento e solução;

1.1.6. As novas versões, releases, atualizações e correções dos softwares, sistemas operacionais e firmwares dos hardwares adquiridos, deverão ser disponibilizados à Contratante, sem ônus, durante todo o período de garantia;

1.1.7. Não haverá qualquer limitação para o número de solicitações de suporte de software ou de hardware, durante o período de garantia.

A garantia será de, no mínimo, 36 (trinta e seis) meses;

Irá contemplar suporte técnico e direito de atualização corretiva e/ou evolutiva por, no mínimo, 36 (trinta e seis) meses;

Durante o período de garantia exigido, a modalidade de atendimento técnico para correção de problemas deverá ser on-site (no local onde os equipamentos forem instalados);

Abertura de chamado em qualquer dia e horário, ou seja, 24 horas/dia em 7 dias/semana (24x7), com atendimento, solução do problema e reestabelecimento normal do produto nos prazos estabelecidos no item 13 (SLA);

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## 2. PLANILHA ORÇAMENTÁRIA

GRUPO 01					
Item	Descrição	Unidade de medida	Qtde.	Valor (R\$)	Valor Total (R\$)
<b>1</b>	<b>Switch de rede</b>				<b>R\$ 582.450,00</b>
1.1	Fabricante:D-Link Modelo:DGS-1510-28 28 Port Gigabit Stackable Smart Managed Switch including 2 10G SFP+ and 2 SFP ports (smart fans)	Unid.	85	R\$ 1.470,00	R\$ 124.950,00
1.2	Fabricante:D-Link Modelo: DGS-1510-52 52-Port Gigabit Stackable Smart Managed Switch including 2 10G SFP+ and 2 SFP ports (smart fans)	Unid.	90	R\$ 3.000,00	R\$ 270.000,00
1.3	Fabricante:D-Link Modelo: DGS-3420-28TC 10/100/1000BASE-T and 4 Combo 10/100/1000BASE-T/SFP and 4 SFP+ Mais Fonte DPS-500 - 140W Single Redundant Power Supply	Unid.	25	R\$ 7.500,00	R\$ 187.500,00
<b>2</b>	<b>Transceiver SFP</b>				<b>R\$ 33.545,00</b>
2.1	Fabricante:D-Link Modelo: DEM-310GT 1-port 1000Mbps mini-GBIC LX single-mode, SFP (up to 10km)	Unid.	90	R\$ 98,00	R\$ 8.820,00
2.2	Fabricante:D-Link Modelo: DEM-432XT 10GBASE-LR SFP+ Transceiver (w/o DDM), 10 km	Unid.	25	R\$ 989,00	R\$ 24.725,00
<b>TOTAL</b>					<b>R\$ 615.995,00</b>

1. Valor total: R\$ 615.995,00 ( SEISCENTOS E QUINZE MIL E NOVECENTOS E NOVENTA E CINCO REAIS).

## 3. CONDIÇÕES DA PROPOSTA COMERCIAL

Estão inclusos todos os custos e despesas, tais como e sem se limitar a: custos diretos e indiretos, tributos incidentes, despesas operacionais/administrativas, materiais, etc.

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2.1. LAN;

2.2. WLAN;

2.3. Segurança da informação;

### **3. Soluções de Comunicação Virtual e Conectividade Humana**

3.1. Telefonia IP

3.2. Videoconferência;

3.3. Unified Communication;

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**DADOS BANCÁRIOS PARA FINS DE PAGAMENTOS:**

BANCO DO BRASIL (Número 001)  
AG. 2486-X C/C. 29.903-0

**INFORMAÇÕES PARA ASSINATURA DO CONTRATO:**

– Nome: Aline Aliskelem dos Santos  
– Cargo: Gerente Comercial  
– RG: 2342770 SSP/DF  
– Telefone/Fax: 61 3041-4959  
– E-mail: [aline.santos@vantageit.com.br](mailto:aline.santos@vantageit.com.br)

**4. IDENTIFICAÇÃO DA EMPRESA:**

RAZÃO SOCIAL: ADTK COMERCIO E SERVIÇOS DE INFORMATICA E TELECOMUNICAÇÕES LTDA.  
CNPJ: 08.157.504/0001-21  
ENDEREÇO: 2ª Avenida, Lt 1355B, Térreo. Núcleo Bandeirante-DF CEP: 71.710-555.  
TELEFONE: (61) 3041-4959 e 3386-6069.

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**Aline Aliskelem**  
**Gerente de Contas**  
**VANTAGE IT**

**BRASÍLIA**

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## ATESTADO DE CAPACIDADE TÉCNICA

Processo Verde nº : 00801/2014

Contrato : RG/Nº 52.502

Objeto : Aquisição de Switches de Borda.

Vigência : 17/07/2014 à 16/10/2018

O SERVIÇO FEDERAL DE PROCESSAMENTO DE DADOS (SERPRO), Empresa Pública Federal, regido pela Lei nº 5.615, de 13/10/70, com sede no SGAN – Quadra 601 – Módulo "V" – Asa Norte – Brasília/DF – CEP: 70836-900, inscrito no CNPJ/MF sob o nº 33.683.111/0001-07, atesta, para os devidos fins, que a empresa ADTK COMÉRCIO E SERVIÇOS DE INFORMÁTICA E TELECOMUNICAÇÕES LTDA., pessoa jurídica de direito privado, com sede na 2ª Avenida – Lote 1355-B – Loja 01 – Térreo – Núcleo Bandeirante – Brasília/DF, inscrita no CNPJ/MF sob o nº 08.157.504/0001-21, forneceu Switches de Borda, conforme o quadro adiante:

PRODUTO	QUANTIDADE
Switch Gigabit 28 portas – Modelo D-Link DGS-3420-28PC	169
Switch Gigabit 28 portas – Modelo D-Link DGS-3420-28TC	307
Switch Gigabit 28 portas – Modelo D-Link DGS-3420-28SC	11
Switch Gigabit 52 portas – Modelo D-Link DGS-3420-52P	13
TOTAL	500

Declaramos, ainda, que os Switches de Borda foram entregues de acordo com os parâmetros de qualidade exigidos, com distribuição por localidade, de forma satisfatória e dentro dos prazos estabelecidos, não existindo, em nossos registros, até a presente data, fatos que desabonem sua conduta e responsabilidade com as obrigações assumidas.

Brasília / DF, 10 de novembro de 2014

JOSÉ FLÁVIO DE MENESES  
Chefe da Divisão de Compras Brasília  
GABSA/GACOM/SUPGA  
Telefone: (61) 2021-8422  
*Assinado Digitalmente*

PAULO AFONSO ALMEIDA DA SILVA  
Gerente do Departamento de Gestão de Contratos de Operações e Serviços de TI  
GACTI/SUPGA/DIRAD/SERPRO/SEDE  
Telefone: (61) 2021-8249  
*Assinado Digitalmente*

**ATESTADO****FORNECIMENTO DE BENS**

ATESTAMOS, para fim exclusivo de participação em licitação, que a empresa **ADTK Comércio e Serviços de Informática e Telecomunicações Ltda.** com sede à Segunda Avenida, Lote 1355-B, Loja 1, Térreo, Núcleo Bandeirante, Brasília DF, CEP: 71.720-585, inscrita no Cadastro Nacional da Pessoa Jurídica do Ministério da Fazenda – CNPJ, sob o número 08.157.504/0001-21, fornece/forneceu ao Banco do Brasil S.A., os bens abaixo relacionados:

**Ata de Registro de Preço: 2014.7419.3270**

**Vigência: 03/07/2014 a 03/07/2015**

**Bem fornecido: Switch Agência**

**Quantidade Estimada: até 9.000 (nove mil) unidades**

**Quantidade Fornecida (até 19/05/2015): 8776 (oito mil, setecentos e setenta e seis) unidades**

**Ata de Registro de Preço: 2014.7419.3485**

**Vigência: 03/07/2014 a 03/07/2015**

**Bem fornecido: Switch PAE**

**Quantidade Estimada: até 2.500 (duas mil e quinhentas) unidades**

**Quantidade Fornecida (até 19/05/2015): 25 (vinte e cinco) unidades**

Curitiba (PR), 19 de maio de 2015

Dinop / Cenop Logística Curitiba PR / Administração de Contratos 8

  
Gelson Tschoeke  
Gerente de Área

  
Sandra Regina Batista  
Gerente de Setor



## Product Highlights

### 10 Gigabit Connectivity

Ideal for deployment in SMB networks with large bandwidth demands such as data replication and backup, video-on-demand, and 10G server connections

### Comprehensive Management Solution

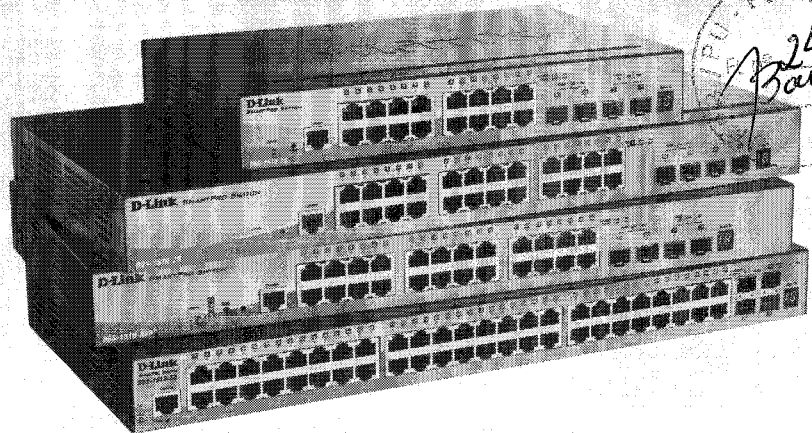
Easily manage your entire network via the Web GUI or D-Link Network Assistant with automatic switch discovery and batch operations

### Strong Security

Innovative IP-MAC-Port binding, Safeguard Engine, ACL, and ARP Spoofing Prevention protect your network from malicious attacks and unauthorized access

### Unparalleled Flexibility

Physical and virtual stacking provides redundancy and expandability, while enabling simple deployment and management



## DGS-1510 Series

# Gigabit Stackable SmartPro Switches with Uplinks

## Features

### Advanced Features

- Single IP Management (Virtual Stacking), stack up to 32 devices
- Physical Stacking via 2 10G ports, stack up to 6 devices
- Static Routing
- IPv6 Management Support
- Auto Surveillance VLAN
- Auto Voice VLAN
- Loopback Detection automatically disables a port or VLAN when a loop is detected
- Configurable MDI/MDIX
- LLDP/LLDP-MED

### Security Features

- Access Control List
- D-Link Safeguard Engine
- Port Security
- ARP Spoofing Prevention
- IP-MAC-Port Binding
- DoS Attack Prevention

### Intuitive Management

- D-Link Network Assistant Utility or Multi-language Web-based GUI
- Built-in SNMP MIB for remote NMS (D-View 6.0)
- Full CLI via console port
- IPv4/IPv6 Stack
- Dual Image

### Green Technology

- IEEE 802.3az Energy Efficient Ethernet
- D-Link Green 3.0 power-saving features

The DGS-1510 series is D-Link's latest generation of SmartPro switches with 10G port connectivity, making them ideal for deployment in the SME/SMB core. They also offer the flexibility and reliability required for medium to large scale enterprise deployments, providing a solid interconnection between core switches and edge switches. Available in 16, 24 or 48 10/100/1000 Mbps port models, these switches also include 2 Gigabit SFP ports and 2 10G SFP+ ports. The DGS-1510 Series now features an IEEE 802.3at certified 24 10/100/1000 Mbps PoE model which is ideal for simplifying deployment of VoIP phones and network cameras.

The DGS-1510 Series Gigabit Stackable SmartPro Switches with Uplinks include a PoE-enabled switch for businesses looking to power VoIP phones, wireless access points or network cameras. The DGS-1510-28P is a 24-port PoE Switch that provides 24 PoE-enabled ports that can support up to 30 W of power output following the IEEE 802.3at standard. The design allows more flexibility in power allocation for a variety of powered devices with affordable installation costs.

## Two 10G SFP+ Stacking/Uplink Ports

Depending on whether linear or fault-tolerant ring stacking is implemented, users can use one or two 10-Gigabit SFP+ ports to create a physical stack. 6 units or 288 Gigabit ports can be configured for a stack using optional direct attach cables to provide high bandwidth on the DGS-1510 Series with cost efficiency. Users can mix any models from the DGS-1510 SmartPro series in a single stack to allow simultaneous and easy configuration, management and troubleshooting.

## Flexibility and Scalability

DGS-1510 series supports virtual stacking via D-Link's Single IP Management (SIM), allowing up to 32 devices to be managed via a single IP. This simplifies management of small workgroups or wiring closets while allowing the network to be scaled to handle increased bandwidth demand. SIM not only reduces the number of IP address needed in your network but also allows switches to be stacked together over Ethernet instead of using physical uplink or stacking ports. This eliminates the need for any specialised stacking cables while at the same

## Gigabit Stackable SmartPro Switches with Uplinks

### DGS-1510 Series

...removing the distance barriers that typically limit today's options when using other stacking technology.

#### Extensive Layer 2 Features

The DGS-1510 Series switches are equipped with a complete lineup of Layer 2 features including IGMP Snooping, Port Mirroring, Spanning Tree, and Link Layer Discovery Protocol (LLDP). The IEEE 802.3x Flow Control function allows servers to directly connect to the switch for fast, reliable data transfer. At 2000 Mbps Full Duplex, the Gigabit ports provide high-speed data pipes to servers with minimum data transfer loss. Network maintenance features include Loopback Detection and Cable Diagnostics. Loopback Detection is used to detect loops created by a specific port or VLAN and automatically shut down the affected port or VLAN. The Cable Diagnostics feature, designed primarily for administrators and customer service representatives, can quickly discover the type of error on cables and determine the cable quality.

#### QoS, Bandwidth Control

The DGS-1510 Series supports Auto Surveillance VLAN (ASV) and Auto Voice VLAN, which are best suited for VoIP and video surveillance deployments. Auto Surveillance VLAN is a new, industry-leading technology built into D-Link Smart Switches. This technology consolidates data and surveillance video transmission through a single SmartPro switch, sparing businesses the expense of maintaining expensive dedicated hardware and facilities. ASV also ensures the quality of real-time video for monitoring and control without compromising the transmission of conventional network data. The Auto Voice VLAN technology enhances VoIP service by automatically placing voice traffic from an IP phone to an assigned VLAN. With higher priority and an individual VLAN, these features guarantee the quality and security of VoIP traffic. Furthermore, the DSCP markings on Ethernet packets enable different levels of service to be assigned to network traffic. As a result, these voice and video packets take precedence over other packets. In addition, with Bandwidth Control, network administrators can reserve bandwidth for important functions that require more bandwidth or might require high priority.

#### IPv6 Ready

The DGS-1510 Series is IPv6 ready and supports various IPv6 functions such as MLD Snooping, IPv6 ACL/QoS, and IMPBv6 to ensure seamless integration of next generation networks. The DGS-1510 Series also supports a IPv4/v6 dual stack function that allows the switch to act as a bridge between IPv4 and IPv6 networks. Finally, all DGS-1510 Series are certified to be IPv6 Ready Logo Phase 2, which guarantees interoperability for IPv6 environments.

#### Secure your Network

D-Link's Innovative Safeguard Engine protects the switches against traffic flooding caused by virus attacks. The switches also support 802.1X port-based authentication, allowing the network to be authenticated through external RADIUS servers. In addition, the Access Control List (ACL) feature enhances network security and helps to protect the internal IT network by screening ingress traffic based on MAC or IP addresses. The DGS-1510 Series includes ARP Spoofing Prevention, which protects from attacks on the Ethernet

network that may allow an intruder to sniff data frames, modify traffic, or bring traffic to a halt altogether by sending fake ARP messages to the network. To prevent ARP Spoofing attacks, the switch uses Packet Control ACLs to block invalid packets that contain fake ARP messages. For added security, the DHCP Server Screening feature screens rogue DHCP server packets from user ports to prevent unauthorised IP assignment.

#### Versatile Management

The DGS-1510 series provides a D-Link Network Assistant Utility and a web-based management interface that enables administrators to remotely control their network down to the port level. The D-Link Network Assistant Utility allows customers to easily discover multiple D-Link SmartPro Switches within the same L2 network segment. With this utility, users do not need to change the IP address of their PC. It also simplifies the initial setup of the SmartPro Switches. Switches within the same L2 network segment that are connected to the user's PC are displayed on screen for instant access. This allows extensive switch configuration and basic setup of discovered devices including password changes and firmware upgrades. The DGS-1510 series also supports D-View 6.0 and a fully featured Command Line Interface (CLI) via console port. D-View 6.0 is a Network Management System that allows for the central management of critical network characteristics such as availability, reliability, resilience, and security. CLI management of the switches is possible via console port and Telnet interfaces. This makes it possible to adjust basic settings, passwords, configuration files, and firmware with ease.

#### Layer 3 Traffic Management

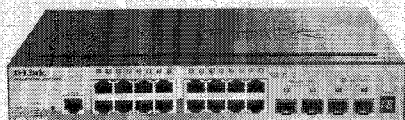
The DGS-1510 Series provides static route, allowing you to segment your network into workgroups and communicate across VLANs without degrading application performance. With these capabilities, you can boost the efficiency of your network by offloading internal traffic-handling tasks from your router and allowing it to manage external traffic and security.

#### Energy Saving

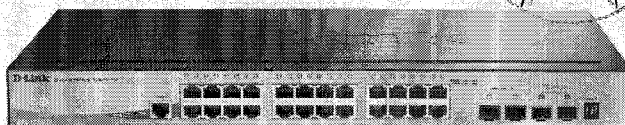
DGS-1510 switches are capable of conserving power without sacrificing operational performance or functionality by using D-Link Green 3.0 technology. Using the 802.3az Energy Efficient Ethernet standard, the network will automatically decrease the power usage when traffic is low with no setup required. For environments not fully supporting the standard, DGS-1510 switches offer advanced power-saving settings including port shutoff, LED shutoff, and system hibernation based on custom scheduling profiles. The profiles can also be applied to the PoE switch so that there is no unnecessary power consumption during off hours.

# DGS-1510 Series Gigabit Stackable SmartPro Switches with Uplinks

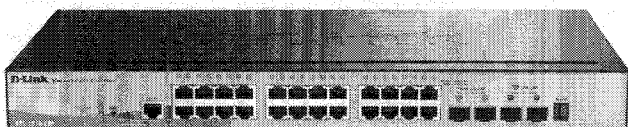
DGS-1510-20



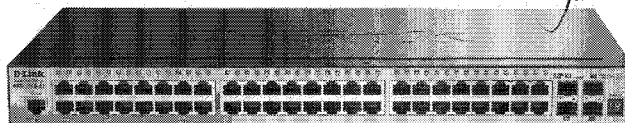
DGS-1510-28



DGS-1510-28P



DGS-1510-52



## Technical Specifications

General	DGS-1510-20	DGS-1510-28	DGS-1510-52
Port Standards & Functions	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, 802.3ae 10 GbE, IEEE 802.3x Flow Control for Full-Duplex Mode, Auto-negotiation		
Number of Ports	16 10/100/1000 Mbps, 2 Gigabit SFP, 2 10G SFP+	24 10/100/1000 Mbps, 2 Gigabit SFP, 2 10G SFP+	48 10/100/1000 Mbps, 2 Gigabit SFP, 2 10G SFP+
Network Cables	UTP Cat. 5, Cat. 5e (100 m max.) EIA/TIA-568 100-ohm STP (100 m max.)		
Full/Half Duplex	Full/half duplex for 10/100 Mbps and Gigabit speed		
Media Interface Exchange	Auto or configurable MDI/MDIX		
Performance			
Switching Capacity	76 Gbps	92 Gbps	140 Gbps
Transmission Method	Store-and-forward		
MAC Address Table	16,000 entries per device		
MAC Address Update	Up to 512 static MAC entries Enable/disable auto-learning of MAC addresses		
Maximum 64 bytes Packet Forwarding Rate	56.54 Mpps	68.45 Mpps	104.16 Mpps
Packet Buffer Memory	DGS-1510-20/28 - 1.5 MB per device DGS-1510-52 - 3 MB per device		

# DGS-1510 Series Gigabit Stackable SmartPro Switches with Uplinks

Physical Environment	DGS-1510-20	DGS-1510-28	DGS-1510-52
AC Input	100 to 240 VAC 50/60 Hz internal universal power supply		
Maximum Power Consumption	20.3 W	24 W	38.4 W
Standby Power Consumption	12.2 W	15.2 W	27.6 W
Smart Fan Quantity	1	1	2
Acoustics	43.8 dB(A)	47.5 dB(A)	44.2 dB(A)
Heat Dissipation	41.602 BTU/hr	72.292 BTU/hr	130.944 BTU/hr
Operation Temperature	-5 to 50 °C (23 to 122 °F)		
Storage Temperature	-20 to 70 °C (-4 to 158 °F)		
Operation Humidity	0% to 95% non-condensing		
Storage Humidity	0% to 95% non-condensing		
Dimensions	280 x 180 x 44 mm (11 x 7.09 x 1.73 inches) 19" standard rack mounting width, 1U height	440 x 210 x 44 mm (17.36 x 8.26 x 1.73 inches) 19" standard rack mounting width, 1U height	440 x 210 x 44 mm (17.36 x 8.26 x 1.73 inches) 19" standard rack mounting width, 1U height
Weight	1.24 kg	2.00 kg	2.40 kg
Diagnostic LEDs	Power/Stacking ID/Fan (per device), Link/Activity/Speed (per 10/100/1000 Mbps port), Link/Activity/Speed (per Gigabit SFP port), Link/Activity/Speed (per 10G SFP+ port)		
Certifications	CE, FCC, C-Tick, VCCI, BSMI, CCC		
Safety	cUL, CB		



# DGS-1510 Series PoE Gigabit Stackable SmartPro Switches with Uplinks

12  
Bury

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Bury

Technical Specifications	
General	DGS-1510-28P
Port Standards & Functions	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, 802.3ae 10 GbE, IEEE 802.3x Flow Control for Full-Duplex Mode, Auto-negotiation
Number of Ports	24 10/100/1000 Mbps PoE capable, 2 Gigabit SFP, 2 10G SFP+
Network Cables	UTP Cat. 5, Cat. 5e (100 m max.); EIA/TIA-568 100-ohm STP (100 m max.)
Full/Half Duplex	Full/half duplex for 10/100 Mbps and Gigabit speed
Media Interface Exchange	Auto or configurable MDI/MDIX
Performance	
Switching Capacity	92 Gbps
Transmission Method	Store-and-forward
MAC Address Table	16,000 entries per device
MAC Address Update	Up to 512 static MAC entries, Enable/disable auto-learning of MAC addresses
Maximum 64 bytes Packet Forwarding Rate	68.45 Mpps
Packet Buffer Memory	1.5 MB per device
PoE	
PoE Standard	IEEE 802.3af, 802.3at
PoE Capable Ports	Ports 1 to 24: Up to 30 W
PoE Power Budget	Max. 193 W
Physical & Environment	
AC Input	100 to 240 VAC 50/60 Hz internal universal power supply
Maximum Power Consumption	238.7 W (PoE on), 29 W (PoE off)
Standby Power Consumption	21 W
Smart Fan Quantity	2
Acoustics	46.4 dB(A)
Heat Dissipation	813.967 BTU/hr
Operation Temperature	-5 to 50 °C (23 to 122 °F)
Storage Temperature	-20 to 70 °C (-4 to 158 °F)
Operation Humidity	0% to 95% non-condensing
Storage Humidity	0% to 95% non-condensing
Dimensions	440 x 250 x 44 mm (17.36 x 9.84 x 1.73 inches) 19" standard rack mounting width, 1U height
Weight	2.54 kg
Diagnostic LEDs	Power/Stacking ID/Fan Error/PoE Push Button (per device), Link/Activity/Speed/PoE Mode (per 10/100/1000 Mbps port), Link/Activity/Speed (per SFP port), Link/Activity/Speed (per 10G SFP+ port)
Certifications	CE, FCC, C-Tick, VCCI, BSMI, CCC
Safety	cUL, CB

Software Features

Stackability	<ul style="list-style-type: none"> <li>Virtual Stacking Support <ul style="list-style-type: none"> <li>D-Link Single IP Management</li> <li>Up to 32 devices per virtual stack</li> <li>Up to 20G stacking bandwidth</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Physical Stacking <ul style="list-style-type: none"> <li>Supports Duplex Chain/Ring topology</li> <li>Up to 40G stacking bandwidth full duplex</li> <li>Up to 6 units per stack</li> </ul> </li> </ul>
L2 Features	<ul style="list-style-type: none"> <li>MAC Address Table: 16K</li> <li>Flow Control <ul style="list-style-type: none"> <li>802.3x Flow Control</li> </ul> </li> <li>HOL Blocking Prevention</li> <li>Jumbo Frame up to 9000 Bytes</li> <li>IGMP Snooping <ul style="list-style-type: none"> <li>IGMP v1/v2 Snooping</li> <li>IGMP v3 awareness</li> <li>Supports 512 IGMP groups</li> <li>Supports 128 static multicast addresses</li> <li>IGMP per VLAN</li> <li>Supports IGMP Snooping Querier</li> <li>Host-based IGMP Snooping Fast Leave</li> </ul> </li> <li>MLD Snooping<sup>1</sup> <ul style="list-style-type: none"> <li>Supports MLD v1/v2 awareness</li> <li>Supports 512 groups</li> <li>Supports 128 Static Multicast Addresses</li> <li>Per VLAN MLD Snooping</li> <li>Host-Based MLD Fast Leave</li> <li>MLD Snooping Querier</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Spanning Tree Protocol <ul style="list-style-type: none"> <li>802.1D STP</li> <li>802.1w RSTP</li> <li>802.1s MSTP</li> </ul> </li> <li>Loopback Detection</li> <li>802.3ad Link Aggregation <ul style="list-style-type: none"> <li>Max. 32 groups per device/8 ports per group</li> </ul> </li> <li>Port Mirroring <ul style="list-style-type: none"> <li>Support 4 mirroring groups</li> <li>One-to-One, Many-to-One</li> <li>Supports Mirroring for Tx/Rx/Both</li> </ul> </li> <li>Multicast Filtering <ul style="list-style-type: none"> <li>Forwards all unregistered groups</li> <li>Filters all unregistered groups</li> </ul> </li> <li>LLDP, LLDP-MED</li> </ul>
VLAN	<ul style="list-style-type: none"> <li>802.1Q Tagged VLAN</li> <li>4K VLAN Groups</li> <li>Configurable VID: 0~4094</li> </ul>	<ul style="list-style-type: none"> <li>Asymmetric VLAN</li> <li>Auto Voice VLAN</li> <li>Auto Surveillance VLAN</li> </ul>
Quality of Service (QoS)	<ul style="list-style-type: none"> <li>802.1p Quality of Service</li> <li>Queue Handling <ul style="list-style-type: none"> <li>Strict</li> <li>Weighted Round Robin (WRR)</li> </ul> </li> <li>8 queues per port</li> <li>Bandwidth Control <ul style="list-style-type: none"> <li>Port-based (Ingress/Egress, min. granularity for 10/100/1000Base-T ports is 64 Kb/s)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>CoS based on <ul style="list-style-type: none"> <li>802.1p priority</li> <li>VLAN</li> <li>MAC address</li> <li>Ether type</li> <li>IP address</li> <li>DSCP</li> <li>Protocol type</li> <li>TCP/UDP port number</li> <li>DSCP of IPv6 Traffic Class</li> <li>IPv6 flow label</li> </ul> </li> </ul>
L3 Features	<ul style="list-style-type: none"> <li>ARP <ul style="list-style-type: none"> <li>256 Static ARP</li> <li>Supports Gratuitous ARP</li> </ul> </li> <li>IPv6 Neighbour Discovery (ND)</li> </ul>	<ul style="list-style-type: none"> <li>Default Routing</li> <li>Static Routing <ul style="list-style-type: none"> <li>64 IPv4 Static Route Entries</li> <li>32 IPv6 Static Route Entries</li> </ul> </li> </ul>
Access Control List (ACL)	<ul style="list-style-type: none"> <li>ACL based on <ul style="list-style-type: none"> <li>802.1p priority</li> <li>VLAN</li> <li>MAC address</li> <li>Ether type</li> <li>IP address</li> <li>DSCP</li> <li>Protocol type</li> <li>TCP/UDP port number</li> <li>DSCP of IPv6 Traffic Class</li> <li>IPv6 flow label</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>ACL Actions <ul style="list-style-type: none"> <li>Permit</li> <li>Deny</li> </ul> </li> <li>Max. 256 access list</li> <li>Max. 768 rules</li> <li>Single or multiple ports (each rule)</li> <li>Time-based ACL</li> <li>ACL Statistics</li> </ul>
Security	<ul style="list-style-type: none"> <li>Port Security <ul style="list-style-type: none"> <li>Supports up to 128 MAC addresses per port</li> </ul> </li> <li>Broadcast/Multicast/Unicast Storm Control</li> <li>Dynamic ARP Inspection</li> <li>Static MAC</li> <li>D-Link Safeguard Engine</li> <li>DHCP Server Screening</li> <li>ARP Spoofing Prevention <ul style="list-style-type: none"> <li>Max. 64 entries</li> </ul> </li> <li>SSH <ul style="list-style-type: none"> <li>Supports v02</li> <li>Supports IPv4/IPv6</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>SSL <ul style="list-style-type: none"> <li>Supports v1/v2/v3</li> <li>Supports IPv4/IPv6</li> </ul> </li> <li>Traffic Segmentation</li> <li>IP-MAC-Port Binding</li> <li>DHCP snooping</li> <li>IP Source Guard</li> <li>Dynamic ARP Inspection</li> <li>DHCPv6 Guard</li> <li>RA Guard</li> <li>IPv6 Snooping</li> <li>IPv6 source guard</li> <li>DoS Attack Prevention</li> </ul>
AAA	<ul style="list-style-type: none"> <li>Compound Authentication</li> <li>802.1X Port and MAC-based Authentication <ul style="list-style-type: none"> <li>Supports RADIUS and Local Server</li> <li>Supports EAP, OTP, TLS, TTLS, PEAP</li> </ul> </li> <li>Web-based Access Control (WAC) <ul style="list-style-type: none"> <li>Port-based Access Control</li> <li>Host-based Access Control</li> <li>Dynamic VLAN Assignment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>MAC-based Access Control (MAC) <ul style="list-style-type: none"> <li>Port-based Access Control</li> <li>Host-based Access Control</li> <li>Dynamic VLAN Assignment</li> </ul> </li> <li>Japan Web-based Access Control (JWAC) <ul style="list-style-type: none"> <li>Port-based Access Control</li> <li>Host-based Access Control</li> <li>Dynamic VLAN Assignment</li> </ul> </li> </ul>
OAM	<ul style="list-style-type: none"> <li>Cable Diagnostics</li> </ul>	<ul style="list-style-type: none"> <li>Factory Reset</li> </ul>

## DGS-1510 Series Gigabit Stackable SmartPro Switches with Uplinks

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Software Features		
Management	<ul style="list-style-type: none"><li>• CLI</li><li>• Telnet Server</li><li>• TFTP Client</li><li>• IPv6 Neighbor Discovery</li><li>• Configurable MDI/MDIX</li><li>• SNMP<ul style="list-style-type: none"><li>• Supports v1, v2c, v3</li></ul></li><li>• SNMP Trap</li><li>• System Log<ul style="list-style-type: none"><li>• Max. 10,000 log entries</li></ul></li></ul>	<ul style="list-style-type: none"><li>• DHCP Client</li><li>• D-Link Network Assistant support<sup>1</sup></li><li>• SNMP</li><li>• ICMPv6</li><li>• IPv4/v6 Dual Stack<sup>1</sup></li><li>• DHCP Auto Configuration</li><li>• RMON v1</li></ul>
D-Link Green 3.0 Technology	<ul style="list-style-type: none"><li>• Power Saving by:<ul style="list-style-type: none"><li>• Link Status</li><li>• LED or Port Shutoff</li></ul></li></ul>	<ul style="list-style-type: none"><li>• System Hibernation mode</li><li>• Time-based PoE (PoE model only)</li></ul>



# DGS-1510 Series Gigabit Stackable SmartPro Switches with Uplinks

Optional SFP Transceivers	
DEM-310GT	1000BASE-LX, single-mode, 10 km
DEM-311GT	1000BASE-SX, multi-mode, 550 m
DEM-312GT	1000BASE-SX, multi-mode, 2 km
DEM-314GT	1000BASE-LHX, single-mode, 50 km
DEM-315GT	1000BASE-ZX, single-mode, 80 km
DGS-712	1000Base-T to SFP transceiver
Optional WDM SFP Transceivers	
DEM-331T	1000BASE-LX, Wavelength Tx: 1550 nm, Rx: 1310 nm, single-mode, 40 km
DEM-331R	1000BASE-LX, Wavelength Tx: 1310 nm, Rx: 1550 nm, single-mode, 40 km
DEM-330T	1000BASE-LX, Wavelength Tx 1550nm, Rx 1310nm, single-mode, 10km
DEM-330R	1000BASE-LX, Wavelength Tx 1310nm, Rx 1550nm, single-mode, 10km
Optional SFP+ Transceivers	
DEM-431XT	10GBASE-SR SFP+ Transceiver (without DDM), 80m: OM1 & OM2 MMF, 300m: OM3 MMF
DEM-431XT-DD	10GBASE-SR SFP+ Transceiver (with DDM), 80m: OM1 & OM2 MMF, 300m: OM3 MMF
DEM-432XT	10GBASE-LR SFP+ Transceiver (without DDM), 10km
DEM-432XT-DD	10GBASE-LR SFP+ Transceiver (with DDM), 10km
DEM-433XT	10GBASE-ER SFP+ Transceiver (without DDM), 40km
DEM-433XT-DD	10GBASE-ER SFP+ Transceiver (with DDM), 40km
DEM-434XT	10GBASE-ER SFP+ Transceiver (without DDM), 80km
DEM-435XT	10GBASE-LRM SFP+ Transceiver (without DDM), 220m
DEM-435XT-DD	10GBASE-LRM SFP+ Transceiver (with DDM), 220m
DEM-436XT-BXD	10GBASE-LR SFP+ Transceiver. Wavelength: Tx 1330nm Rx: 1270nm (without DDM), 20km
DEM-436XT-BXU	10GBASE-LR SFP+ Transceiver. Wavelength: Rx 1330nm Tx: 1270nm (without DDM), 20km
Optional SFP+ Direct Attached Stacking Cables	
DEM-CB100S	10-GbE SFP+ 1 m Direct Attach Cable
DEM-CB300S	10-GbE SFP+ 3 m Direct Attach Cable
DEM-CB700S	10-GbE SFP+ 7m Direct Attach Cable



For more information: [www.dlink.com](http://www.dlink.com)

**D-Link European Headquarters.** D-Link (Europe) Ltd., D-Link House, Abbey Road, Park Royal, London, NW10 7BX.  
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Updated October 2013



### Flexible Choices

- 20/48 10/100/1000BASE-T ports or 20 SFP slots
- 4 Combo 10/100/1000BASE-T/SFP ports<sup>1</sup>
- 4 10-Gigabit SFP+ uplink ports
- 802.3af and 802.3at Power Over Ethernet support<sup>2</sup>
- Optional External Redundant Power Supply

### High Bandwidth Physical/Virtual Stacking

- Physical stack of up to 12 units, 576 Gigabit ports
- Stackable through 2 10-Gigabit SFP+ ports
- Up to 40 Gbps Full-Duplex Stacking Bandwidth
- Virtual Stack of up to 32 units using single IP Management

### L3 Features

- IPv4/v6 Static Routing
- RIP/RIPng

### Quality of Service

- 802.1p Priority Queues/Multi-Layer CoS
- Time-based QoS

### Reliability

- Redundant Power Supply (RPS) support
- 802.1D/802.1w/802.1s Spanning Tree
- Loopback Detection (LBD)
- Ethernet Ring Protection Switching (ERPS)

### Security

- L2/L3/L4 Multi-Layer Access Control
- External RADIUS/TACACS+ Authentication
- SSH/SSL support
- 802.1X Guest VLAN
- Web-based Access Control (WAC)
- MAC-based Access Control (MAC)
- D-Link Safeguard Engine
- Supports Microsoft® NAP

### Traffic Monitoring/Bandwidth Control

- Traffic Segmentation
- Granular Bandwidth Control Down to 64 Kbps per port
- Granular Broadcast Storm Control Down to 1 pps per port
- 802.3ad Link Aggregation
- RMON support
- Port mirroring

### OAM

- 802.3ah Ethernet Link OAM
- 802.1ag, ITU-T Y.1731 Service OAM

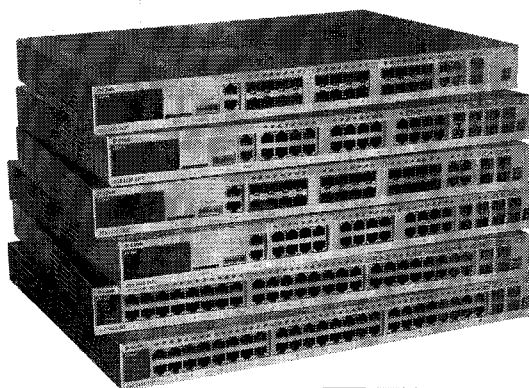
### Configuration/Management

- Web-based GUI
- Command Line Interface (CLI)
- SNMP v1, v2c, v3
- D-Link Single IP Management (SIM)
- Telnet
- Multiple Images/Configurations
- DHCP Server
- sFlow
- LLDP, LLDP-MED

### Green

- Time-based PoE<sup>2</sup>
- Power Saving

## xStack L2+ Managed Stackable Gigabit Switches



# XSTACK™

The xStack DGS-3420 series of next generation Layer 2+ Gigabit switches delivers performance, flexibility, security, multi-layer QoS, and accessibility, along with redundant power solutions for SMBs and enterprises. With high Gigabit port densities, Gigabit SFP, 10-Gigabit SFP+ support, and advanced software solutions, these switches can act as either departmental access layer devices or aggregation switches to form a multilevel network structured with backbone and centralized high-speed servers.

Service providers can take advantage of the high SFP density switches (such as DGS-3420-28SC/26SC) to structure the aggregation of Fiber to the Building (FTTB) networks that are extended to the subscribers' sites.

### Unparalleled Flexibility

Easily deployed and simple to manage, the DGS-3420 can be stacked with any switch that supports D-Link's Single IP Management to form a multi-level network structured with backbone and centralized high-speed servers. The virtual stack can include units located anywhere on the same network domain, and uses optional 10-Gigabit uplinks to move intra-stack traffic at 20 Gbps full duplex speeds.

### Redundant Ring Stacking

Alternatively, depending on whether linear or fault-tolerant ring stacking is implemented, users can use one or two 10-Gigabit SFP+ ports to create a physical stack. 12 units or 576 Gigabit ports can be configured for a stack using direct attach cables to provide high bandwidth on the DGS-3420 Series with cost efficiency.

### Security, Performance & Availability

The DGS-3420 Series provides a complete set of security features including L2/L3/L4 multi-layer Access Control Lists and 802.1X user authentication via TACACS+ and RADIUS servers.

The DGS-3420 Series offers extensive VLAN support including GVRP and 802.1Q VLAN to enhance security and performance. A robust set of L2/L3/L4 QoS/CoS solutions help ensure that critical network services such as VoIP, ERP, Intranet, and video conferencing are served with proper priority. The series also provides D-Link's Safeguard Engine to increase the switch's reliability, serviceability, and availability to prevent malicious flooding traffic caused by worms or virus infections. Bandwidth Control can be flexibly set for each port using pre-defined thresholds to assure a committed level of service for endusers. For advanced applications, flow-based bandwidth control allows easy fine-tuning of service types based on specific IP addresses or protocols.

### IPv6 Technology

The DGS-3420 Series also features comprehensive IPv6 support, including IPv6 Tunnel, ICMPv6, DHCPv6, RIPng, IPv4/IPv6 dual stack, and more. With 10-Gigabit connectivity and IPv6 support, the series enables you to future-proof your network for cost efficiency and longevity while meeting the requirements that future IPv6-capable network devices require.

### D-Link Green Technology

D-Link is striving to take the lead in developing innovative and power-saving technology that does not sacrifice operational performance or functionality. The DGS-3420 Series implements D-Link Green technology, which includes power saving through link status, smart fan design, increased heat dissipation, and cable length detection. The power-saving feature automatically powers down ports that have no link or link partner. The Smart Fan design allows the built-in fans to automatically turn on only at a certain temperature, providing continuous, reliable, and eco-friendly operation of the switch.

<sup>1</sup> For DGS-3420-28TC/28SC/26SC/28PC models  
<sup>2</sup> For DGS-3420-28PC/52P models

### Technical Specifications

#### DGS-3420-28TC

#### DGS-3420-26SC

#### DGS-3420-28SC



General	Interfaces	20 10/100/1000BASE-T ports 4 Combo 10/100/1000BASE-T/SFP ports 4 SFP+ ports	20 SFP ports 4 Combo 10/100/1000BASE-T/SFP ports 2 SFP+ ports	20 SFP ports 4 Combo 10/100/1000BASE-T/SFP ports 4 SFP+ ports
	Optional Redundant Power Supply	DPS-500	DPS-500	DPS-500
	Console Port	RJ-45		
	Management Port	10/100BASE-T		
	Alarm Port	1		
	SD Card Slot	1		

Performance	Switch Fabric	128 Gbps	88 Gbps	128 Gbps
	Packet Forwarding Rate	95.24 Mpps	65.47 Mpps	95.24 Mpps
	Packet Buffer	2 MB		
	MAC Address Table	16K Entries		
	IP v4 Routing Table	1K Entries		
	IP v6 Routing Table	512 Entries		
	IP v4 Forwarding Table	2K Entries		
	IP v6 Forwarding Table	1K Entries		
	Jumbo Frame Size	13000 bytes		

PoE	PoE Standard	-		
	PoE Power Budget	-		

Physical	MTBF (Hours)	287763 hours	301667 hours	300371 hours
	Acoustics	Max: 46.5 dB	Max: 47.7 dB	Max: 46.3 dB
	Heat Dissipation	200.5 BTU/hr	187.6 BTU/hr	205.3 BTU/hr
	Power Input	100 to 240 V AC, 50/60Hz	100 to 240 V AC, 50/60Hz	100 to 240 V AC, 50/60Hz
	Max Power Consumption	50.8 watts	60.3 watts	60.3 watts
	Dimensions (W x D x H)	441 x 310 x 44 mm	441 x 310 x 44 mm	441 x 310 x 44 mm
	Weight	4.12 kg	4.04 kg	4.06 kg
	Ventilation	via Temperature Controlled Smart Fan (> 39 °C: High Speed; < 36 °C: Low Speed) <sup>2</sup>		
	Operating Temperature	0 to 50 °C		
	Storage Temperature	-40 to 70 °C		
	Operating Humidity	10% to 90% RH		
	Storage Humidity	5% to 90% RH		
	Emission (EMI)	FCC Class A, CE Class A, VCCI Class A, IC, C-Tick		
	Safety	CB, cUL, LVD		
	Certification	IPv6 Ready Logo Phase 2		

### Technical Specifications

#### DGS-3420-28PC

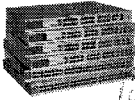
#### DGS-3420-52T

#### DGS-3420-52P



General	Interfaces	20 10/100/1000BASE-T PoE ports 4 Combo 10/100/1000BASE-T PoE/SFP ports 4 SFP+ ports	48 10/100/1000BASE-T ports 4 SFP+ ports	48 10/100/1000BASE-T PoE ports 4 SFP+ ports
	Optional Redundant Power Supply	DPS-700	DPS-500	DPS-700
	Console Port		RJ-45	
	Management Port		10/100BASE-T	
	Alarm Port		1	
	SD Card Slot		1	
Performance	Switch Fabric	128 Gbps	176 Gbps	176 Gbps
	Packet Forwarding Rate	95.24 Mpps	130.95 Mpps	130.95 Mpps
	Packet Buffer		2 MB	
	MAC Address Table		16K Entries	
	IP v4 Routing Table		1K Entries	
	IP v6 Routing Table		512 Entries	
	IP v4 Forwarding Table		2K Entries	
	IP v6 Forwarding Table		1K Entries	
	Jumbo Frame Size		13000 bytes	
PoE	PoE Standard	802.3af and 802.3at	-	802.3af and 802.3at
	PoE Power Budget	370 watts (740 watts with DPS-700 RPS)	-	370 watts (740 watts with DPS-700 RPS)
Physical	MTBF (Hours)	230906 hours	255608 hours	202462 hours
	Acoustics	Max: 52.8 dB	Max: 51.1 dB	Max: 55.4 dB
	Heat Dissipation	1630.0 BTU/hr	276.2 BTU/hr	1723.4 BTU/hr
	Power Input	100 to 240 V AC, 50/60Hz	100 to 240 V AC, 50/60Hz	100 to 240 V AC, 50/60Hz
	Max Power Consumption	478.0 watts	81.0 watts	505.4 watts
	Dimensions (W x D x H)	441 x 380 x 44 mm	441 x 380 x 44 mm	441 x 380 x 44 mm
	Weight	5.75 kg	5.07 kg	6.24 kg
	Ventilation	via Temperature Controlled Smart Fan (> 39 °C: High Speed; < 36 °C: Low Speed) <sup>1</sup>		
	Operating Temperature	0-50 °C		
	Storage Temperature	-40 to 70 °C		
	Operating Humidity	10% to 90% RH		
	Storage Humidity	5% to 90% RH		
	Emission (EMI)	FCC Class A, CE Class A, VCCI Class A, IC, C-Tick		
	Safety	CB, cUL, LVD		
	Certification	IPv6 Ready Logo Phase 2		

<sup>1</sup> By default, the fan speed is low. When the temperature inside the chassis is over 39 °C, the fan switches to high speed and remains high until the temperature is down to 36 °C.



### xStack L2+ Managed Stackable Gigabit Switches

#### Software Features

- Stackability**
  - Virtual Stacking Support
    - D-Link Single IP Management
    - Up to 32 devices per virtual stack
    - Up to 20G stacking bandwidth
  - Physical Stacking
    - Supports Duplex Chain/Ring topology
    - Up to 40G stacking bandwidth
    - Up to 12 units per stack
- L2 Features**
  - MAC Address Table: 16K
  - Flow Control
    - 802.3x Flow Control
    - HOL Blocking Prevention
  - Jumbo Frames up to 13,000 bytes
  - IGMP snooping
    - IGMP v1/v2/v3 Snooping
    - Supports 960 groups
    - Port/Host-based
    - IGMP Snooping Fast Leave
  - MLD Snooping
    - MLD v1/v2 Snooping
    - Supports 480 groups
    - Host-based MLD Snooping Fast Leave
  - Spanning Tree
    - 802.1D-2004 STP
    - 802.1w RSTP
    - 802.1Q-2005 MSTP
    - BPDU filtering
    - Root Restriction
  - Loopback Detection
  - 802.3ad Link Aggregation
  - Max. 32 groups per device
    - 8 Gigabit ports or 2 10-Gigabit ports per group
  - Port Mirroring
    - Supports 4 Mirroring Groups
    - Supports One-to-One, Many-to-One, Flow-based, and RSPAN mirroring
  - L2 Protocol Tunneling
  - ERPS (Ethernet Ring Protection Switching)
- VLAN**
  - VLAN Group
    - Max. 4K Static VLAN Groups
    - Max. 255 Dynamic VLAN Groups
  - 802.1Q Tagged VLAN
  - 802.1v Protocol VLAN
  - GVRP
  - Double VLAN (Q-in-Q)
    - Port-based Q-in-Q
  - MAC-based VLAN
  - VLAN Trunking
- L3 Features**
  - 256 IP interfaces
    - Loopback interface
    - IPv6 Tunneling
    - Proxy ARP
    - Gratuitous ARP
- L3 Routing**
  - 1K routing entries shared by IPv4/v6
    - Max. 1K IPv4 routes
    - Max. 512 IPv6 routes
  - 2K L3 forwarding entries shared by IPv4/v6
    - Max. 2K IPv4 entries
    - Max. 1K IPv6 entries
  - 256 static routing entries for IPv4, 128 entries for IPv6
  - RIP v1/v2
  - RIPng
- QoS (Quality of Service)**
  - 802.1p Class of Service (CoS)
    - 8 queues per port
  - Queue Handling
    - Strict
    - Weighted Round Robin (WRR)
    - Strict + WRR
  - CoS based on
    - Switch Port
    - VLAN
    - 802.1p Priority Queues
    - MAC Address
    - IPv4/v6 Address
    - DSCP
    - Protocol Type
    - IPv6 Traffic Class
    - IPv6 Flow Label
    - TCP/UDP Port
    - User-defined Packet Content
  - Supports following actions for flows:
    - Remark 802.1p Priority Tag
    - Remark TOS/DSCP Tag
    - Bandwidth Control
    - Flow Statistics
    - Committed Information Rate (CIR), min. granularity 1 Kbps
    - Bandwidth Control
    - Port-based (Ingress/Egress, min. granularity 64 Kbps)
    - Flow-based (Ingress, min. granularity 64 Kbps)
  - Time-based QoS
- ACL (Access Control List)**
  - Ingress ACL: support up to 6 profiles and 256 rules per profile
- Egress ACL: support up to 4 profiles and 128 rules per profile**
- ACL based on**
  - 802.1p Priority
  - VLAN ID
  - MAC Address
  - Ether Type
  - IPv4/v6 Address
  - DSCP
  - Protocol Type
  - TCP/UDP Port Number
  - IPv6 Traffic Class
  - IPv6 Flow Label
  - User-defined Packet Content
- ACL Statistics**
- Time-based ACL**
- Security**
  - SSH v2
  - SSL v1/v2/v3
  - Port Security for up to 328 MAC addresses for port/system/VLAN
  - Broadcast/Multicast/Unicast Storm Control
  - Traffic Segmentation
  - IP-MAC-Port Binding
    - ARP Packet Inspection
    - IP Packet Inspection
  - DHCP Snooping
  - DHCPv6 and NDP Snooping
  - Supports up to 500 Address Binding Entries per device
  - D-Link Safeguard Engine
  - DHCP Server Screening
  - CPU Interface Filtering
  - ARP Spoofing Prevention
  - BPDU Attack Protection
- AAA**
  - 802.1X
    - Port-based Access Control
    - Host-based Access Control
    - Dynamic VLAN Assignment
  - Web-based Access Control (WAC)
    - Port-based Access Control
    - Host-based Access Control
    - Dynamic VLAN Assignment
  - MAC-based Access Control (MAC)
    - Port-based Access Control
    - Host-based Access Control
    - Dynamic VLAN Assignment
  - Japan Web-based Access Control (JWAC)
    - Host-based Access Control
  - Microsoft® NAP
    - Supports 802.1X NAP
    - Supports DHCP NAP
- Guest VLAN**
  - RADIUS and TACACS+ authentication for switch access
  - 4-Level user account
- Management**
  - Web-based GUI
  - Command Line Interface (CLI)
  - Telnet Server
  - Telnet Client
  - TFTP Client
  - ZModem
  - SNMP v1/v2c/v3
  - SNMP Trap
  - System Log
  - RMON v1
    - Supports 1,2,3,9 Groups
  - RMON v2
    - Supports ProbeConfig Group
  - sFlow
  - LLDP/LLDP-MED
  - BootP/DHCP Client
  - DHCP Auto-Configuration
  - DHCP Relay
    - DHCP Relay Option 60; 61
    - DHCP Relay Option 82
  - DHCP Server
  - Flash File System
  - Multiple Images
  - Multiple Configurations
  - CPU Monitoring
  - Debug Command
  - SNTP
  - ICMPv6
  - DHCPv6 Client
  - DHCPv6 Relay
  - DHCPv6 Server
  - Trusted Host
  - MTU Setting
  - Microsoft® NLB Support
  - UDP helper
- OAM**
  - 802.3ah Ethernet Link OAM
  - 802.3ah D-Link Extension: D-Link Unidirectional Link Detection (DULD)
  - IEEE1588 Precision Time Protocol (PTP)
  - Cable Diagnostics
  - Connectivity Fault Management (CFM)
  - ITU-T Y.1731



### Green

- Power saving by Link Status
- Power saving by Cable Length
- Time-based PoE

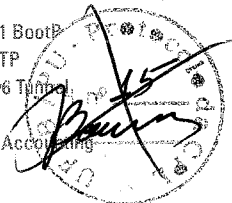
### MIB/IETF Standards

- RFC1213 MIB-II
- RFC1493, 4188 Bridge MIB
- RFC1907 SNMPv2 MIB
- RFC2571-2576 SNMP MIB
- RFC1271, 2819 RMON MIB

- RFC2021 RMON v2 MIB
- RFC1398, 1643, 1650, 2358, 2665 Ether-like MIB
- RFC2668 MAU MIB
- RFC2674, 4363 802.1p MIB
- RFC2233, 2863 IF MIB
- RFC2618 RADIUS Authentication Client MIB
- RFC1724 RIP v2 MIB
- RFC2096 IP Forwarding Table MIB (CIDR)

- RFC2620 RADIUS Accounting Client MIB
- RFC2925 Ping MIB
- RFC2925 Traceroute MIB
- D-Link Private MIB
- RFC768 UDP
- RFC783 TFTP
- RFC791 IP
- RFC793 TCP
- RFC826 ARP
- RFC854 Telnet

- RFC951, 1542, 2131 Bootstrap
- RFC2068, 2618 HTTP
- RFC3056, 5214 IPv6 Tunnel
- RFC2138 RADIUS
- RFC2139 RADIUS Accounting
- RFC1492 TACACS
- RFC3176 sFlow
- RFC2598 DiffServ Expedited Forwarding
- RFC4213 IPv4/IPv6 Dual Stack



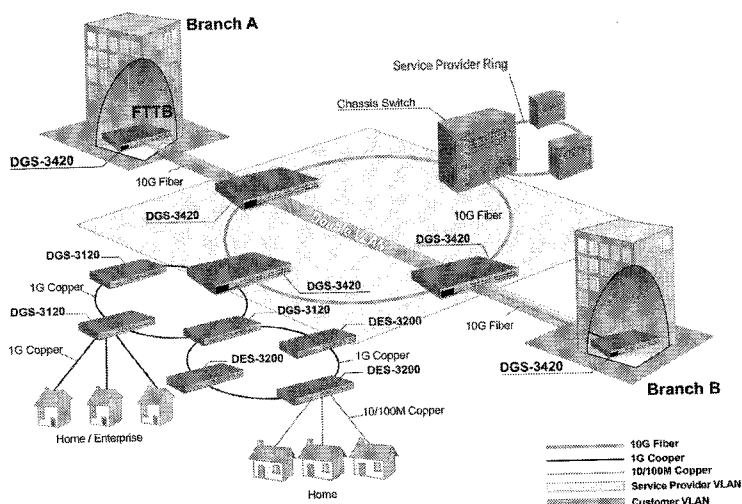
### Ordering Information

DGS-3420-28TC	20 10/100/1000BASE-T and 4 Combo 10/100/1000BASE-T/SFP and 4 SFP+ <sup>1</sup>
DGS-3420-26SC	20 SFP and 4 Combo 10/100/1000BASE-T/SFP and 2 SFP+ <sup>1</sup>
DGS-3420-28SC	20 SFP and 4 Combo 10/100/1000BASE-T/SFP and 4 SFP+ <sup>1</sup>
DGS-3420-28PC	20 10/100/1000BASE-T PoE and 4 Combo 10/100/1000BASE-T PoE/SFP and 4 SFP+ <sup>1</sup>
DGS-3420-52T	48 10/100/1000BASE-T and 4 SFP+ <sup>1</sup>
DGS-3420-52P	48 10/100/1000BASE-T PoE and 4 SFP+ <sup>1</sup>

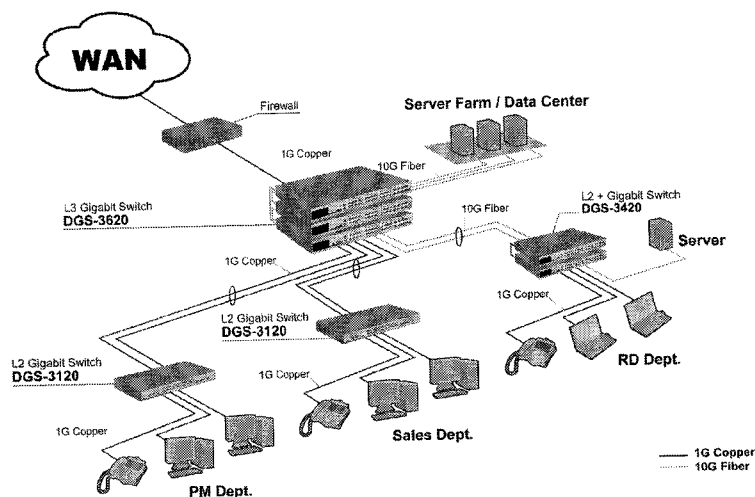
<sup>1</sup> Stacking cable and SD card are not included



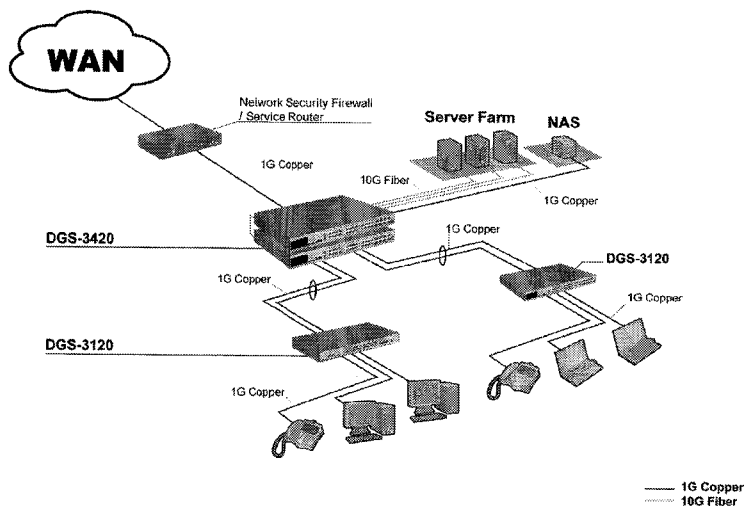
### xStack DGS-3420 Series in Service Provider Networks



### xStack DGS-3420 Series in Large Enterprise Networks



### SMB Network Deployment



### Optional Products

#### Optional Management Software

DV-600S	D-View 6.0 Network Management Software Standard Edition
DV-600P	D-View 6.0 Network Management Software Professional Edition

#### Optional 10 Gbps SFP+ Transceivers

DEM-431XT	10 GBASE-SR SFP+ Transceiver (w/o DDM), 80 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-431XT-DD	10GBASE-SR SFP+ Transceiver (with DDM), 80 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-432XT	10GBASE-LR SFP+ Transceiver (w/o DDM), 10 km
DEM-432XT-DD	10GBASE-LR SFP+ Transceiver (with DDM), 10 km
DEM-433XT	10GBASE-ER SFP+ Transceiver (w/o DDM), 40 km
DEM-433XT-DD	10GBASE-ER SFP+ Transceiver (with DDM), 40 km
DEM-434XT	10GBASE-ZR SFP+ Transceiver (w/o DDM), 80 km
DEM-435XT	10GBASE-LRM SFP+ Transceiver (w/o DDM), 220 m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-435XT-DD	10GBASE-LRM SFP+ Transceiver (with DDM), 220m: OM1 & OM2 MMF, 300 m: OM3 MMF
DEM-436XT-BXU	10GBASE-LR BiDi SFP+ Transceiver (w/o DDM), 20 km, TX: 1270 nm, RX: 1330 nm
DEM-436XT-BXD	10GBASE-LR BiDi SFP+ Transceiver (w/o DDM), 20 km, TX: 1330 nm, RX: 1270 nm

#### Optional 1 Gbps SFP Transceivers

DEM-310GT	SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage
DEM-311GT	SFP transceiver, 1000BASE-SX standard, multi-mode fiber, max. distance 550 m, 3.3 V operating voltage
DEM-312GT2	SFP transceiver 1000BASE-SX standard, multi-mode fiber, max. distance 2 km, 3.3 V operating voltage
DEM-314GT	SFP transceiver, 1000BASE-LHX standard, single-mode fiber, max. distance 50 km, 3.3 V operating voltage
DEM-315GT	SFP transceiver, 1000BASE-ZX standard, single-mode fiber, max. distance 80 km, 3.3 V operating voltage
DEM-330T	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm
DEM-330R	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 10 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-331T	WDM SFP transceiver, 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1550 nm, Rx wavelength 1310 nm

DEM-331R	WDM SFP transceiver 1000BASE-LX standard, single-mode fiber, max. distance 40 km, 3.3 V operating voltage, Tx wavelength 1310 nm, Rx wavelength 1550 nm
DEM-211	SFP transceiver, 100BASE-FX multi-mode fiber, max. distance 2 km, 3.3 V operating voltage
DEM-210	SFP transceiver, 100BASE-FX single-mode fiber, max. distance 15 km, 3.3 V operating voltage
DEM-220T	100Base-BX, Wavelength Tx:1550 nm, Rx:1310 nm, Single-mode, 20 km
DEM-220R	100Base-BX, Wavelength Tx:1310 nm, Rx:1550 nm, Single-mode, 20 km

#### Optional 10 Gbps SFP+ Direct Attach Cables

DEM-CB100S	10-GbE SFP+ 1 m Direct Attach Cable
DEM-CB300S	10-GbE SFP+ 3 m Direct Attach Cable
DEM-CB700S	10-GbE SFP+ 7 m Direct Attach Cable

#### Optional Redundant Power Supplies

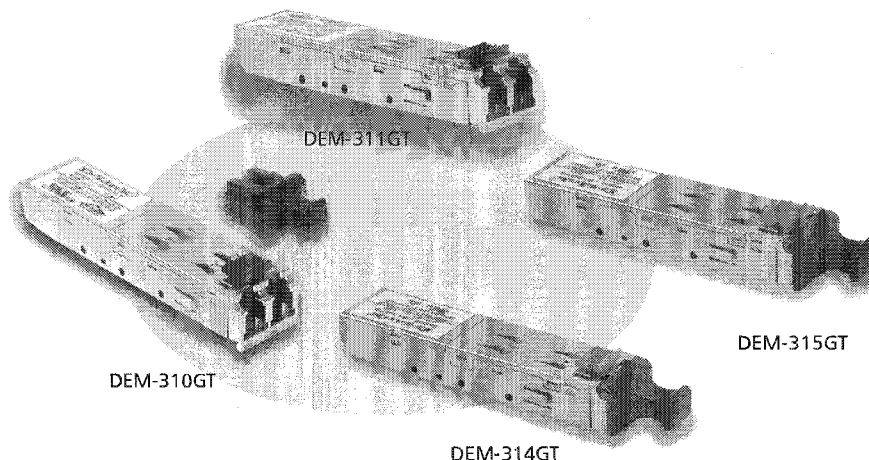
DPS-500	140-watt redundant power supply
DPS-500DC	140-watt DC redundant power supply
DPS-700 <sup>5</sup>	589-watt redundant power supply

<sup>5</sup> Supported in DGS-3420-28PC and DGS-3420-52P only



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Release 03 (August 2012)





## SFP Transceivers

D-Link Gigabit Interface Converters are transceivers that connect Gigabit switches and 10/100Mbps switches with GBIC slots to Gigabit Ethernet networks, providing high-speed connections over the fiber-optic or twisted-pair cable. The fiber-optic transceivers have standard duplex LC connectors for connection compatibility.

### Small Form Pluggable (SFP) Package

These transceivers use the industry-standard Small Form Pluggable (SFP) package. They slide into the mini GBIC slot of the Gigabit device. They provide the necessary signal amplification for data to be transmitted to the network cable from the port, and vice versa, for the port to receive data from the network cable.

### Hot Swappable

All D-Link Mini GBIC transceivers are hot-swappable. You can remove or replace the GBIC transceiver with the system powered on. This permits modules and mini-GBICs to be added or swapped without interrupting the network.

### Applications

Applications of the fiber transceivers include distributed multi-processing, Gigabit switch cascading, high-speed I/O file transfer, bus extension application, and channel extender/data storage.

### Single-mode Fiber Transceiver (10 km)

#### DEM-310GT

- 1000BASE-LX port (IEEE 802.3z standard)
- Duplex LC connector
- Full duplex operation
- 802.3x flow control support
- Fiber type: 9um single-mode fiber up to 10 km
- Wave length: 1310nm
- Power support: 3.3V
- Power budget: 10.5dB
- Hot pluggable
- Class 1 laser product complies with EN 60825-1
- TTL signal detect indicator
- Metal enclosure for lower EMI

### Multi-mode Fiber Transceiver (550 m)

#### DEM-311GT

- 1000BASE-SX port (IEEE 802.3z standard)
- Duplex LC connector
- Full duplex operation
- 802.3x flow control support
- Fiber type: 50um or 62.5um multi-mode fiber up to 550 m
- Wave length: 850nm
- Power support: 3.3V
- Hot pluggable
- Class 1 laser product complies with EN 60825-1
- TTL signal detect indicator
- Metal enclosure for lower EMI

## SFP Transceiver

### Product Description

#### Single-mode Fiber Transceiver (50 km)

##### DEM-314GT

- 1000BASE-LX port (IEEE 802.3z standard)
- Duplex LC connector
- Very low jitter
- Full duplex operation
- 802.3x flow control support
- Fiber type: 9/125um single-mode fiber up to 50 km
- Wave length: 1310nm
- Power supply: 3.3V
- Power budget: 22dB
- Hot pluggable
- Class 1 laser product complies with EN 60825-1
- TTL signal detect indicator
- Metal enclosure for lower EMI

#### Single-mode Fiber Transceiver (80 km)

##### DEM-315GT

- 1000BASE-LX port (IEEE 802.3z standard)
- Duplex LC connector
- Very low jitter
- Full duplex operation
- 802.3x flow control support
- Fiber type: 9/125um single-mode fiber up to 80 km
- Wave length: 1550nm
- Power supply: 3.3V
- Power budget: 22dB
- Low power dissipation <700mW
- Hot pluggable
- Class 1 laser product complies with EN 60825-1
- TTL signal detect indicator
- Metal enclosure for lower EMI

## Transceiver

#### Physical & Environmental

##### Operating Temperature

0° to 50 °C

##### Storage Temperature

-25° to 55 °C

##### Humidity

5% to 95% non-condensing

### Ordering Information

#### SFP Transceiver

DEM-310GT	For 1000BASE-LX, single-mode fiber, 10 km max., 3.3V
DEM-311GT	For 1000BASE-SX, multi-mode fiber, 550 m max., 3.3V
DEM-314GT	For 1000BASE-LX, single-mode fiber, 50 km max., 3.3V
DEM-315GT	For 1000BASE-LX, single-mode fiber, 80 km max., 3.3V

# D-Link®

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#### U.S.A

TEL: 1-800-326-1688

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FAX: 1-905-8295223

#### Europe (U. K.)

TEL: 44-20-8731-5555

FAX: 44-20-8731-5511

#### Germany

TEL: 49-6196-77990

FAX: 49-6196-7799300

#### France

TEL: 33-1-30238688

FAX: 33-1-30238689

#### Netherlands

TEL: 31-10-282-1445

FAX: 31-10-282-1331

#### Belgium

TEL: 32(0)2-517-7111

FAX: 32(0)2-517-6500

#### Italy

TEL: 39-02-2900-0676

FAX: 39-02-2900-1723

#### Sweden

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FAX: 46-(0)8564-61901

#### Denmark

TEL: 45-43-969040

FAX: 45-43-424347

#### Norway

TEL: 47-99-300-100

FAX: 47-22-309580

#### Finland

TEL: 358-9-2707 5080

FAX: 358-9-2707-5081

#### Spain

TEL: 34-93-4090770

FAX: 34-93-4910795

#### Portugal

TEL: 351-21-8688493

FAX: 351-21-8688493

#### Czech Republic

TEL: 420-(603)-276-589

FAX: 41(0)-1-832-11-01

#### Switzerland

TEL: 41-(0)-1-832-11-00

FAX: 30-210-9916902

#### Greece

TEL: 30-210-9914 512

FAX: 32-(0)2-517-6500

#### Luxembourg

TEL: 32-(0)2-517-7111

FAX: 48-(0)-22-583-92-76

#### Poland

TEL: 48-(0)-22-583-92-75

FAX: 36-(0)-1-461-30-09

#### Hungary

TEL: 36-(0)-1-461-30-00

FAX: 65-6774-6322

#### Singapore

TEL: 65-6774-6233

FAX: 61-2-8899-1868

#### Australia

TEL: 61-2-8899-1800

FAX: 91-022-26528914

#### India

TEL: 91-022-26526696

FAX: 971-4-3908881

#### Middle East (Dubai)

TEL: 971-4-3916480

FAX: 90-212-289-76-06

#### Turkey

TEL: 90-212-289-56-59

FAX: 202-415-6704

#### Egypt

TEL: 202-414-4295

FAX: 972-9-9715601

#### Israel

TEL: 972-9-9715700

FAX: 56-2-232-0923

#### Latin America

TEL: 56-2-232-3185

FAX: 55-11-218-59322

#### Brazil

TEL: 55-11-218-59300

FAX: 27-12-665-2165

#### South Africa

TEL: 27-12-665-2165

FAX: 7-095-744-0099

#### Russia

TEL: 86-10-58635800

FAX: 86-10-58635799

#### China

TEL: 886-2-2910-2626

FAX: 886-2-2910-1515

#### Taiwan

TEL: 886-2-2916-1600

FAX: 886-2-2914-6299

#### Headquarters

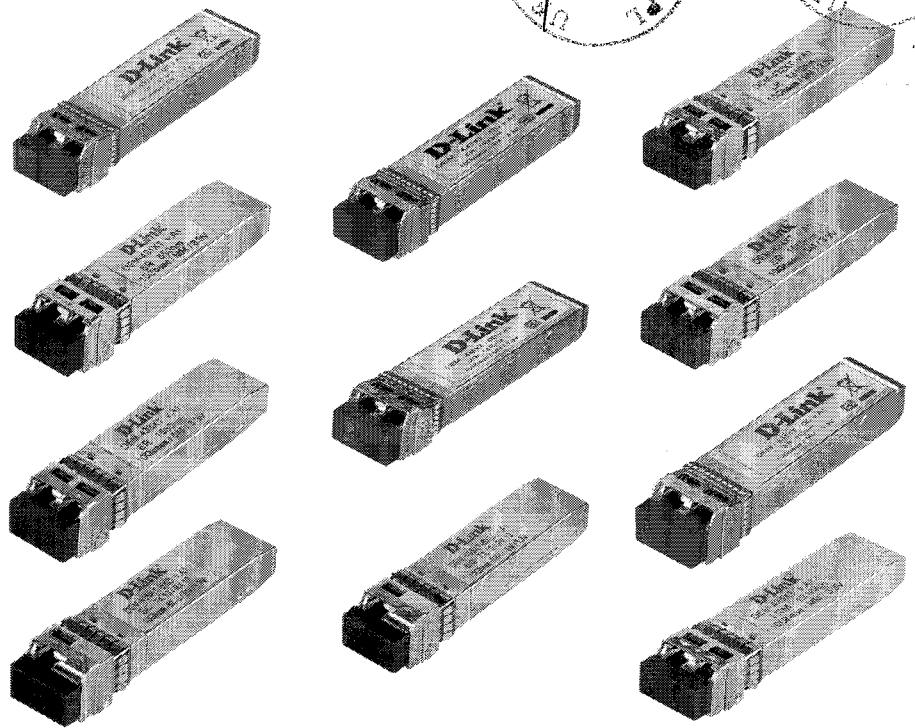
### Feature Highlights

- Enhanced Small Form-Pluggable (SFP+) form factor
- Hot pluggable
- Support 10G Ethernet
- Feature Digital Diagnostics Monitoring (DDM)<sup>1</sup>
- RoHS Compliant
- Compliant with MSA (Multiple Source Agreement)
- Compliant with IEEE802.3ae and 802.3aq standards

<sup>1</sup>DEM-431XT-DD, DEM-432XT-DD, DEM-433XT-DD, and DEM-435XT-DD only.

<sup>2</sup>DEM-436XT-BXD and DEM-436XT-BXU models only.

### 10G SFP+ Modules



D-Link's 10G SFP+ Module series are hot-swappable SFP+ transceivers that plug into SFP+ slots on switches and support 10G Ethernet. The D-Link 10GBASE SFP+ Module Series transceivers offer customers a wide variety of 10G Ethernet connectivity options for data centers, enterprise wiring closets, and service provider transport applications.

#### Enhanced Small Form-factor Pluggable Format

The transceivers use the Enhanced Small Form-factor Pluggable format (SFP+). The SFP+ form factor is smaller than other form factors such as Xenpak, X2, and 10G XFP, ensuring lower costs, lower power disruption, and higher port density. They provide the necessary signal amplification for data to be transmitted to the network cable from the port, and vice versa, for the port to receive data from the network cable.

#### Hot Pluggable

All D-Link transceivers are hot-pluggable. You can connect a transceiver while the system is powered on without causing any problems. This permits modules to be added or removed without interrupting the network.

#### 10G Ethernet speeds

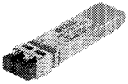
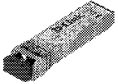
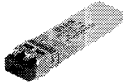
The transceivers all support 10G Ethernet, which results in very fast data transmissions of up to 10 Gbit/s. This is 10 times faster than Gigabit Ethernet and enables the switch to handle faster and higher data transmissions, making it very suitable for business needs.

#### Digital Diagnostics Monitoring (DDM)

Several of the 10G SFP+ Modules<sup>1</sup> feature DDM real-time monitoring of critical parameters, including transmitted and received power, temperature, and voltage. This allows for convenient monitoring of the module's fiber connection and early detection of problems.

#### Bi-directional WDM transmission<sup>2</sup>

Bi-directional WDM transmission allows data to be transmitted simultaneously in both directions on a fiber cable. This helps you save on the cost of deploying extra fiber cables as well as allows for more flexible bandwidth allocation.

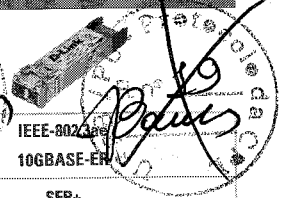
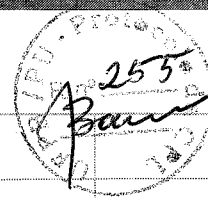
Technical Specifications		DEM-431XT	DEM-431XT-DD	DEM-432XT
				
Standard Compliance	IEEE-802.3ae	IEEE-802.3ae	IEEE-802.3ae	IEEE-802.3ae
	10GBASE-SR	10GBASE-SR	10GBASE-SR	10GBASE-SR
Form Factor Type	SFP+	SFP+	SFP+	SFP+
Fibre Channel FC-PH Standard	1200-Mx-SN-I	1200-Mx-SN-I	1200-Mx-SN-I	1200-SM-LL-L
Fiber Media Support	Multi-Mode	Multi-Mode	Multi-Mode	Single-Mode
Distance Capacity	62.5 µm, 160 MHz-km: 26 m	62.5 µm, 160 MHz-km: 26 m	62.5 µm, 160 MHz-km: 26 m	10 km
	62.5 µm, OM1 200 MHz-km: 33 m	62.5 µm, OM1 200 MHz-km: 33 m	62.5 µm, OM1 200 MHz-km: 33 m	
	50 µm, 400 MHz-km: 66 m	50 µm, 400 MHz-km: 66 m	50 µm, 400 MHz-km: 66 m	
	50 µm, OM2 500 MHz-km: 82 m	50 µm, OM2 500 MHz-km: 82 m	50 µm, OM2 500 MHz-km: 82 m	
	50 µm, OM3 2000 MHz-km: 300 m	50 µm, OM3 2000 MHz-km: 300 m	50 µm, OM3 2000 MHz-km: 300 m	
Features	Hot Pluggable	✓	✓	✓
	MSA Compliant	✓	✓	✓
	RoHS Compliant	✓	✓	✓
Speed	Speed	10 Gbps	10 Gbps	10 Gbps
Interface	Connector	Duplex LC Connector	Duplex LC Connector	Duplex LC Connector
	Single/Bi-Directional	Single Direction		
	Wavelength	850 nm	850 nm	1310 nm
	Output Optical Power (TX Optical Power)	Max.: -1 dBm Min.: -6.5 dBm	Max.: -1 dBm Min.: -5 dBm	Max.: 0.5 dBm Min.: -8.5 dBm
	Input Optical Power (RX Optical Power)	Max.: -1 dBm Min.: -11.1 dBm	Max.: -1 dBm Min.: -5 dBm	Max.: 0.5 dBm Min.: -8.5 dBm
	Sensitivity	-11.1 dBm	-11.1 dBm	-12.6 dBm
	Cable Type	Multi-mode 50/125 um or 62.5/125 um fiber	Multi-mode 50/125 um or 62.5/125 um fiber	Single-mode 9/125 um fiber
	Power	3.3 V	3.3 V	3.3 V
Operating	Maximum Input Current	3.3 V: 300 mA	3.3 V: 250 mA	3.3 V: 300 mA
	Minimum Power Budget	4.6 dB	6.1 dB	4.1 dB
	Maximum Power Budget	10.1 dB	10.1 dB	10.1 dB
	Heat Generated	3.6 kJ/h	2.9 kJ/h	3.6 kJ/h
Reliability	MTBF (Hours)	3,960,000	5,948,000	4,650,000
Function	DDM (Digital Diagnostics Monitoring)	—	✓	—
Physical and Environment	Operating Temperature	0 to 70 °C	0 to 70 °C	0 to 70 °C
	Storage Temperature	-40 to 85 °C	-40 to 85 °C	-40 to 85 °C
	Operating Humidity	5 to 85%	0 to 85%	5 to 85%
	Storage Humidity	5 to 95%	0 to 85%	5 to 95%
	Dimensions (W x D x H)	(0.58 x 2.22 x 0.47 inches) Compliant with SFF8432, 14.8 x 56.5 x 11.85 mm	(0.58 x 2.22 x 0.47 inches) Compliant with SFF8432, 14.8 x 56.5 x 11.85 mm	(0.58 x 2.22 x 0.47 inches) Compliant with SFF8432, 14.8 x 56.5 x 11.85 mm
	Weight	18 g (0.04 lbs)	22 g (0.05 lbs)	19.5 g (0.04 lbs)
	Bail Latch Color	Beige	Beige	Blue
Emission(EMI) and Safety	EMI	CE, FCC, VCCI	CE, FCC, VCCI	CE, FCC, VCCI
	Safety	UL, TUV, CDRH	CSA, TUV, CDRH	UL, TUV, CDRH

### Technical Specifications

#### DEM-432XT-DD

#### DEM-433XT

#### DEM-433XT-DD



Standard	Standard Compliance	IEEE-802.3ae 10GBASE-LR	IEEE-802.3ae 10GBASE-ER	IEEE-802.3ae 10GBASE-ER
	Form Factor Type	SFP+	SFP+	SFP+
	Fibre Channel FC-Pi Standard	1200-SM-LL-L	N/A	N/A
	Fiber Media Support	Single-Mode	Single-Mode	Single-Mode
	Distance Capacity	10 km	40 km	40 km
Features	Hot Pluggable	✓	✓	✓
	MSA Compliant	✓	✓	✓
	RoHS Compliant	✓	✓	✓
Speed	Speed	10 Gbps	10 Gbps	10 Gbps
Interface	Connector	Duplex LC Connector	Duplex LC Connector	Duplex LC Connector
	Single/Bi-Directional	Single Direction		
	Wavelength	1310 nm	1550 nm	1550 nm
	Output Optical Power (TX Optical Power)	Max.: 0.5 dBm Min.: -8.2 dBm	Max.: 3 dBm Min.: -3 dBm	Max.: 4 dBm Min.: -4.7 dBm
	Input Optical Power (RX Optical Power)	Max.: 0.5 dBm Min.: -12.6 dBm	Max.: -1 dBm Min.: -14.1 dBm	Max.: -1 dBm Min.: -14.1 dBm
	Sensitivity	-12.6 dBm	-14.1 dBm	-14.1 dBm
	Cable Type	Single-mode 9/125 um fiber	Single-mode 9/125 um fiber	Single-mode 9/125 um fiber
	Operating	Power	3.3 V	3.3 V
Maximum Input Current		3.3 V: 285 mA	3.3 V: 500 mA	3.3 V: 400 mA
Minimum Power Budget		4.4 dB	11.1 dB	9.4 dB
Maximum Power Budget		17.6 dB	17.1 dB	18.1 dB
Heat Generated		3.3858 kJ/h	5.94 kJ/h	4.752 kJ/h
Reliability	MTBF (Hours)	3,390,000	1,580,000	2,520,000
Function	DDM (Digital Diagnostics Monitoring)	✓	—	✓
Physical and Environment	Operating Temperature	-5 to 70 °C	0 to 70 °C	0 to 70 °C
	Storage Temperature	-40 to 85 °C	-40 to 85 °C	-40 to 85 °C
	Operating Humidity	0 to 85%	5 to 85%	0 to 85%
	Storage Humidity	0 to 85%	5 to 95%	0 to 85%
	Dimensions (W x D x H)	14.8 x 56.5 x 11.85 mm (0.58 x 2.22 x 0.47 inches) Compliant with SFF8432	14.8 x 56.5 x 11.85 mm (0.58 x 2.22 x 0.47 inches) Compliant with SFF8432	14.8 x 56.5 x 11.85 mm (0.58 x 2.22 x 0.47 inches) Compliant with SFF8432
	Weight	22 g (0.05 lbs)	20 g (0.04 lbs)	22 g (0.05 lbs)
	Bail Latch Color	Blue	Red	Red
Emission (EMI) and Safety	EMI	CE, FCC, VCCI	CE, FCC, VCCI	CE, FCC, VCCI
	Safety	UL, TUV, CDRH	CSA, TUV, CDRH	UL, TUV, CDRH

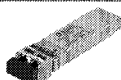


### Technical Specifications

### DEM-434XT

### DEM-435XT

### DEM-435XT-DD



Standard Compliance	IEEE-802.3ae 10GBASE-ZR	IEEE-802.3ae IEEE-802.3aq 10GBASE-LRM	IEEE-802.3ae IEEE-802.3aq 10GBASE-LRM
	SFP+	SFP+	SFP+
	1200-SM-LL-L 10G Fiber Channel	N/A	N/A
	Single-Mode	Multi-Mode	Multi-Mode
	80 km	62.5 um, 160MHz-km: 220 m 62.5 um, OM1, 200MHz-km: 220 m 50 um, 400MHz-km: 100 m 50 um, OM2, 500MHz-km: 220 m 50 um, OM3, 2000MHz-km: 220 m	62.5 um, 160MHz-km: 220 m 62.5 um, OM1, 200MHz-km: 220 m 50 um, 400MHz-km: 100 m 50 um, OM2, 500MHz-km: 220 m 50 um, OM3, 2000MHz-km: 220 m
Features	Hot Pluggable	✓	✓
	MSA Compliant	✓	✓
	RoHS Compliant	✓	✓
Speed	Speed	10 Gbps	10 Gbps
Interface	Connector	Duplex LC Connector	Duplex LC Connector
	Single/Bi-Directional	Single Direction	Duplex LC Connector
	Wavelength	1550 nm	1310 nm
	Output Optical Power (TX Optical Power)	Max.: 4 dBm Min.: 0 dBm	Max.: 0.5 dBm Min.: -8.5 dBm
	Input Optical Power (RX Optical Power)	Max.: -7 dBm Min.: -24 dBm	Max.: 0.5 dBm Min.: -6.5 dBm
	Sensitivity	-24 dBm	-6.5 dBm
	Cable Type	Single-mode 9/125 um fiber	Multi-mode 50/125 um or 62.5/125 um fiber
Operating	Power	3.3 V	3.3 V
	Maximum Input Current	450 mA	3.3 V: 300 mA
	Minimum Power Budget	24 dB	2 dB
	Maximum Power Budget	28 dB	7 dB
	Heat Generated	5.35 kJ/h	3.6 kJ/h
Reliability	MTBF (Hours)	1,584,786	3,590,000
Function	DDM (Digital Diagnostics Monitoring)	—	✓
Physical and Environment	Operating Temperature	0 to 70 °C	0 to 70 °C
	Storage Temperature	-40 to 85 °C	-40 to 85 °C
	Operating Humidity	5 to 85%	5 to 85%
	Storage Humidity	5 to 85%	5 to 95%
	Dimensions (W x D x H)	14.3 x 56.5 x 11.85 mm (0.58 x 2.22 x 0.47 inches) Compliant with SFF8432	14.8 x 56.5 x 11.85 mm (0.58 x 2.22 x 0.47 inches) Compliant with SFF8432
	Weight	20 g (0.04 lbs)	18.5 g (0.04 lbs)
	Bail Latch Color	White	Brown
Emission(EMI) and Safety	EMI	CE, FCC, VCCI	CE, FCC, VCCI
	Safety	UL, TUV	UL, TUV, CDR

### Technical Specifications

#### DEM-436XT-BXD

#### DEM-436XT-BXU

Standard	Standard Compliance	IEEE-802.3ae, 10GBASE-LR	IEEE-802.3ae, 10GBASE-LR
	Form Factor Type	SFP+	SFP+
	Fibre Channel FC-Pi Standard	N/A	N/A
	Fiber Media Support	Multi-Mode	Single-Mode
	Distance Capacity	20 km	20 km
Features	Hot Pluggable	✓	✓
	MSA Compliant	✓	✓
	RoHS Compliant	✓	✓
	Speed	10 Gbps	10 Gbps
Interface	Connector	Simplex LC Connector	Simplex LC Connector
	Single/Bi-Directional	WDM Bi-directional	WDM Bi-directional
	Wavelength	TX: 1330 nm, RX: 1270 nm	TX: 1270 nm, RX: 1330 nm
	Output Optical Power (TX Optical Power)	Max.: 0.5 dBm Min.: -5.2 dBm	Max.: 0.5 dBm Min.: -5.2 dBm
	Input Optical Power (RX Optical Power)	Max.: 0.5 dBm Min.: -12.5 dBm	Max.: 0.5 dBm Min.: -12.5 dBm
	Sensitivity	-12.5 dBm	-12.5 dBm
	Cable Type	Single-mode 9/125 um fiber	Single-mode 9/125 um fiber
	Power	3.3 V	3.3 V
Operating	Maximum Input Current	3.3 V: 300 mA	3.3 V: 300 mA
	Minimum Power Budget	7.3 dB	7.3 dB
	Maximum Power Budget	13 dB	13 dB
	Heat Generated	3.6 kJ/h	3.6 kJ/h
Reliability	MTBF (Hours)	1,920,000	1,920,000
Function	DDM (Digital Diagnostics Monitoring)	—	—
Physical and Environment	Operating Temperature	-40 to 85 °C	-40 to 85 °C
	Storage Temperature	-40 to 85 °C	-40 to 85 °C
	Operating Humidity	5 to 85%	5 to 85%
	Storage Humidity	5 to 95%	5 to 95%
	Dimension (W x D x H)	(0.58 x 2.22 x 0.47 inches) Compliant with SFF8432, 14.8 x 56.5 x 11.85 mm	(0.58 x 2.22 x 0.47 inches) Compliant with SFF8432, 14.8 x 56.5 x 11.85 mm
	Weight	22 g (0.05 lbs)	22 g (0.05 lbs)
	Bail Latch Color	Blue	Blue
Emission (EMI) and Safety	EMI	CE, FCC, VCCI	CE, FCC, VCCI
	Safety	UL, TUV, CDRH	UL, TUV, CDRH



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Release 01 (October 2011)

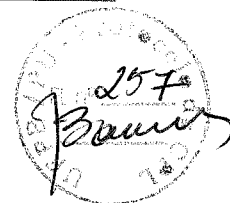


UNIVERSIDADE FEDERAL DA PARAÍBA  
SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E  
CONTRATOS  
EMITIDO EM 16/05/2016 17:20

S.T.I.  
FL: 921

**Processo nº. 23074.028170/2016-66**

**Assunto:** 995 - PEDIDOS, OFERECIMENTOS E INFORMAÇÕES DIVERSAS



## DESPACHO

À Prefeitura Universitária (PU)

Aos cuidados do Srº Jandir de Santana,

Prezado Prefeito,

Ao tempo em que o cumprimentamos, informamos atendimento à sua solicitação conforme folhas à partir da página 22 do processo em tela.

À Disposição,

(Autenticado digitalmente em 16/05/2016 17:17)  
PEDRO JACOME DE MOURA JUNIOR  
SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO (STI) (11.00.51)  
DIRETOR

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UNIVERSIDADE FEDERAL DA PARAÍBA  
SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO

S.T.I.  
FL:



LAUDO TÉCNICO

**Processo nº:** 23074.028170/2016-66

**Interessado:** Comissão Permanente de Licitação (CPL) da Prefeitura Universitária (PU)

**Referência:** Pregão Eletrônico (SRP) PU/UFPB nº 5/2016

1. O pregão eletrônico em tela tem como objeto a “*aquisição de bens e/ou serviços de tecnologia da informação e comunicação (TIC), a fim de promover a ampliação e a modernização dos elementos ativos integrantes da infraestrutura de rede de comunicação de dados da instituição (Rede UFPB)*”.

2. Conforme consta do presente processo, a empresa ADTK Comércio e Serviços de Informática e Telecomunicações Ltda. (Vantage IT) ofertou os seguintes produtos para o Grupo 1 (*Switch de rede e Transceiver*) do citado pregão eletrônico:

- a) *Switch* de rede do tipo 1: **D-Link DGS-1510-28**;
- b) *Switch* de rede do tipo 2: **D-Link DGS-1510-52**;
- c) *Switch* de rede do tipo 3: **D-Link DGS-3420-28TC**;
- d) *Transceiver* do tipo 1: **D-Link DEM-310GT**;
- e) *Transceiver* do tipo 2: **D-Link DEM-432XT**.

3. Acostado também a estes autos consta pedido da CPL/PU para que a STI se manifeste quanto à conformidade dos produtos ofertados pela empresa supracitada com as especificações técnicas constantes do edital do referido pregão.

4. Convém mencionar que, no prazo legal para a realização de pedidos de esclarecimento, houve questionamentos de terceiro(s) sobre características de itens aqui analisados, que foram prontamente respondidos, conforme pode ser visto nos registros do Sistema de Compras Governamentais (<http://www.comprasgovernamentais.gov.br>) relativos ao certame licitatório em questão e em cópia de e-mail anexada a este laudo.

5. Isto posto, a STI realizou o comparativo de características técnicas de cada produto, a seguir apresentado:

- a) *Switch de rede – Tipo 1*

Produto de referência: Cisco SRW2024-K9-BR (Cisco SG300-28)

Produto ofertado: D-Link DGS-1510-28

Características	Cisco SRW2024-K9-BR (fora de linha)	Cisco SG300-28 (substituto)	D-Link DGS-1510-28	Comparação (referência X ofertado)
-----------------	--	--------------------------------	--------------------	--

Suporte à instalação em rack de 19", com altura de 1U	Sim	Sim	Sim	Atende
Gerenciamento através de interface web	Sim	Sim	Sim	Atende
Quantidade de portas RJ-45 10/100/1000 Mbps e portas SFP 1000 Mbps, com negociação automática	24 portas UTP 10/100/1000 Mbps e 2 portas combo SFP (mini-GBIC)	26 portas UTP 10/100/1000 Mbps e 2 portas combo SFP (mini-GBIC)	24 portas UTP 10/100/1000 Mbps, 2 portas Gigabit SFP e 2 portas 10G SFP+	Excede
Autenticação segundo o padrão IEEE 802.1x	Sim	Sim	Sim	Atende
Quantidade de VLANs	256	4.096	4.096	Excede (Atende, em relação ao substituto)
Suporte a IPv6	Sim	Sim	Sim	Atende
Protocolo Spanning Tree	Sim	Sim	Sim	Atende
Capacidade de switching	48 Gbps	56 Gbps	92 Gbps	Excede
Tipo de cabeamento de rede (UTP) suportado	Cat. 5e ou melhor	Cat. 5e ou melhor	UTP Cat. 5, Cat. 5e (100 m max.)	Consultar licitante e/ou fabricante sobre suporte a UTP Cat. 6
Quantidade de grupos suportados para o Internet Group Management Protocol (IGMP)	Informação não disponível	1.024	960	Inconclusiva (Não atende, em relação ao substituto)
Comprimento dos Jumbo frames	Até 10k bytes	Até 9k bytes	Até 9.000 bytes	Não atende



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## b) Switch de rede – Tipo 2

Produto de referência: Cisco SRW2048-K9-NA (Cisco SG300-52)

Produto ofertado: D-Link DGS-1510-52

Características	Cisco SRW2048-K9-NA (fora de linha)	Cisco SG300-52 (substituto)	D-Link DGS-1510-52	Comparação (referência X ofertado)
Suporte à instalação em rack de 19", com altura de 1U	Sim	Sim	Sim	Atende
Gerenciamento através de interface web	Sim	Sim	Sim	Atende
Quantidade de portas RJ-45 10/100/1000 Mbps e portas SFP 1000 Mbps, com negociação automática	48 portas UTP 10/100/1000 Mbps e 4 portas combo SFP (mini-GBIC)	50 portas UTP 10/100/1000 Mbps e 2 portas combo SFP (mini-GBIC)	48 portas UTP 10/100/1000 Mbps, 2 portas Gigabit SFP e 2 portas 10G SFP+	Excede
Autenticação segundo o padrão IEEE 802.1x	Sim	Sim	Sim	Atende
Quantidade de VLANs	256	4.096	4.096	Excede
Suporte a IPv6	Sim	Sim	Sim	Atende
Protocolo Spanning Tree	Sim	Sim	Sim	Atende
Capacidade de switching	96 Gbps	104 Gbps	140 Gbps	Excede
Tipo de cabeamento de rede (UTP) suportado	UTP Cat. 5 ou melhor, para 10BASE-T/100BASE-TX; UTP Cat. 5e ou melhor, para 1000BASE-T	Cat. 5e ou melhor	UTP Cat. 5, Cat. 5e (100 m max.)	Consultar licitante e/ou fabricante sobre suporte a UTP Cat. 6
Quantidade de grupos suportados para o Internet	Informação não disponível	1.024	960	Inconclusiva (Não atende, em relação



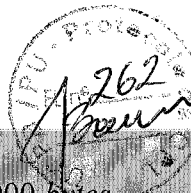

Group Management Protocol (IGMP) snooping				ao substituto)
Comprimento dos Jumbo frames	Até 10k bytes	Até 9k bytes	Até 9.000 bytes	Não atende

## c) Switch de rede – Tipo 3

Produto de referência: Cisco SG500X-24

Produto ofertado: D-Link DGS-3420-28TC

Características	Cisco SG500X-24	D-Link DGS-3420-28TC	Comparação (referência X ofertado)
Suporte à instalação em rack de 19", com altura de 1U	Sim	Sim	Atende
Gerenciamento através de interface web	Sim	Sim	Atende
Quantidade de portas RJ-45 10/100/1000 Mbps e portas SFP 10 Gbps	24 portas UTP 10/100/1000 Mbps e 4 XG SFP+ (2 slots combo 5G SFP)	20 portas UTP 10/100/1000 Mbps, 4 portas combo Gigabit e 4 portas 10G SFP+	Atende
Autenticação segundo o padrão IEEE 802.1x	Sim	Sim	Atende
Quantidade de VLANs	4.096	4.096	Atende
Suporte a IPv6	Sim	Sim	Atende
Protocolo Spanning Tree	Sim	Sim	Atende
Capacidade de switching	128 Gbps	128 Gbps	Atende
Tipo de cabeamento de rede (UTP) suportado	UTP Cat. 5e ou melhor.	Informação não disponível no encarte apresentado pela licitante.	Consultar licitante e/ou fabricante sobre suporte a UTP Cat. 6


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Comprimento dos <i>Jumbo frames</i>	Até 9.216 bytes	Até 13.000 bytes	Excede
Quantidade de grupos suportados para o Internet Group Management Protocol (IGMP)	4.096 (4k)	960	Não atende
Quantidade de entradas (em IPv4) na tabela de roteamento	2.048 (2k)	1.024 (1k)	Não atende
Quantidade de entradas (em IPv6) na tabela de roteamento	2.048 (2k)	512	Não atende
Quantidade de regras ( <i>rules</i> ) da Lista de Controle de Acesso (ACL)	3.072	<ul style="list-style-type: none"> <li>ACL de entrada: suporta até 6 perfis e 256 regras por perfil</li> <li>ACL de saída: suporta até 4 perfis e 128 regras por perfil</li> </ul>	Não atende
		TOTAL = 2.048	

### COMENTÁRIOS SOBRE AS CARACTERÍSTICAS NÃO ATENDIDAS

- A consulta ao licitante e/ou fabricante acerca da característica do cabeamento UTP (*unshielded twisted pair* ou par trançado sem blindagem) suportado pelo equipamento é pertinente, pois, a STI/UFPB passou a recomendar/especificar a utilização do padrão **Cat. 6** para os elementos passivos de rede – cabos, *patch cords*, *patch panels* etc. – nos serviços de infraestrutura a serem executados na Rede UFPB. A título de informação, é sugerida a leitura das especificações técnicas do Termo de Referência integrante do edital do Pregão Eletrônico (SRP) CCEN/UFPB nº 1/2016 (UASG 153068), que tem como objeto a contratação de serviços de instalação e manutenção de cabeamento estruturado. Portanto, é de interesse da UFPB tomar conhecimento se os equipamentos ofertados pela empresa ADTK Comércio e Serviços de Informática e Telecomunicações Ltda. (Vantage IT) estão preparados para tal característica. Importante se faz mencionar que o acima mencionado pregão já foi realizado e sua homologação aconteceu no último dia 04 de abril. Maiores informações podem ser obtidas no Sistema de Compras Governamentais (<http://www.comprasgovernamentais.gov.br>).
- Em rede de computadores, *jumbo frames* são frames Ethernet com mais de 1.500 bytes de carga útil (sem cabeçalho ou metadados). Convencionalmente, *jumbo frames* podem carregar até 9.000 bytes de carga útil, mas variações existem e devem ser utilizadas com moderação. Muitos *switches* e interfaces de rede Gigabit Ethernet podem suportar *jumbo*



*frames*, assim como os similares dispositivos Fast Ethernet. Cada *frame* Ethernet recebido requer que seu processamento seja feito tanto em nível de *hardware* quanto de *software* de rede. Aumentar o tamanho do *frame* permite que uma maior quantidade de dados seja transmitida com menos “esforço”, ou seja, reduzindo a utilização da CPU e elevando o *throughput* – quantidade de unidades de informação um sistema pode processar em um dado intervalo de tempo – em consequência da redução do número total de *frames* e, assim, diminuindo o *overhead* total dos frames enviados. (Fonte: <http://www.networkworld.com/article/2224722/cisco-subnet/jumbo-frames.html> e [https://en.wikipedia.org/wiki/Jumbo\\_frame](https://en.wikipedia.org/wiki/Jumbo_frame) e [https://en.wikipedia.org/wiki/Payload\\_%28computing%29](https://en.wikipedia.org/wiki/Payload_%28computing%29) e <http://searchnetworking.techtarget.com/definition/throughput>). Por meio dessa característica, que deve ser atentamente configurada, é possível obter ganhos de performance na transmissão de dados e, portanto, desejável para a Rede UFPB.

- O IGMP é um protocolo de comunicação usado por *hosts* (servidores, por exemplo) e roteadores adjacentes em redes IPv4, afim de organizar os integrantes de grupos de *multicast*. Além disso, o IGMP é parte integrante do *multicast* IP – método de enviar datagramas IP para um grupo de destinatários interessados, em uma única transmissão – e pode ser utilizado para aplicações de rede um-para-muitos (dispositivos computacionais), por exemplo, em *streaming* de vídeo e *gaming* online, e possibilita o uso mais eficiente dos recursos quando está apoiando essas aplicações (Fonte: [https://en.wikipedia.org/wiki/Internet\\_Group\\_Management\\_Protocol](https://en.wikipedia.org/wiki/Internet_Group_Management_Protocol)). Por sua vez, o IGMP *snooping* é o processo de “escutar” o tráfego de rede IGMP. Esta característica permite ao *switch* de rede “escutar a conversa” entre *hosts* e roteadores, o que proporciona ao *switch* manter um mapeamento acerca de quais enlaces (*links*) necessitam de quais fluxos IP *multicast*. Em outras palavras, a escuta IGMP é projetada para evitar que *hosts* em uma rede local recebam tráfego de grupo *multicast* ao qual esses *hosts* não estejam associados. Tal característica evita uma “inundação” de tráfego *multicast* nas portas do *switch* em um domínio de *broadcast* (ou VLAN equivalente), bem como a desnecessária sobrecarga sobre os *hosts* os quais não consumirão seus recursos para processarem pacotes (*packets*) que não solicitaram. A possibilidade de organizar um maior número de grupos IP *multicast* é uma característica desejada para a Rede UFPB.
- Em redes de computadores, a tabela de roteamento (ou **routing information base (RIB)**) é uma tabela de dados armazenada em um roteador (ou ativo de rede) que relaciona as rotas para determinados destinos de rede e, em alguns casos, as métricas (“distâncias”) associadas àqueles ativos de rede. A tabela de roteamento contém informações sobre a topologia da rede imediatamente adjacente e sua construção é o objetivo principal dos protocolos de roteamento. As tabelas de roteamento são também um recurso-chave de certas operações de segurança, como o *unicast reverse path forwarding*. Nesta técnica, que tem uma série de variantes, o roteador procura na tabela o endereço de origem do pacote de dados e, se não existir rota alguma de retorno à origem do mesmo, o pacote é considerado malformado ou envolvido em um ataque à rede e, assim, descartado (Fonte: [https://en.wikipedia.org/wiki/Routing\\_table](https://en.wikipedia.org/wiki/Routing_table)). Portanto, a oferta de uma quantidade maior de entradas na tabela de roteamento é um diferencial significativo para a Rede UFPB.
- A lista de controle de acesso (ACL) relaciona as permissões associados a um objeto e especifica quais usuários ou processos de sistema são autorizados a acessar esse objeto, assim como quais operações estão permitidas ao mesmo. Cada entrada em uma típica ACL especifica um objeto e uma operação. Em alguns tipos de *hardware* computacional – em particular, roteadores (*routers*) e comutadores (*switches*) –, uma ACL está relacionada a regras que são aplicadas a números de portas ou a endereços IP que estão disponíveis em um *host* ou outro dispositivo de camada 3 (*Layer 3*), cada um com uma

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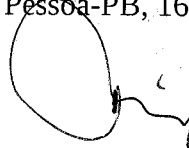
lista de *hosts* e/ou redes autorizadas a acessar determinado serviço ou recurso. Listas de controle de acesso podem geralmente ser configuradas para controlar ambos os tráfegos de entrada e saída e, nesse contexto, são similares a *firewalls* (Fonte: [https://en.wikipedia.org/wiki/Access\\_control\\_list](https://en.wikipedia.org/wiki/Access_control_list)). Logo, a quantidade de regras da ACL se traduz em característica importante para o aperfeiçoamento da gerência sobre a Rede UFPB.

6. Em face dos resultados obtidos com a análise comparativa entre os *switches* de referência e os ofertados, que demonstraram que não houve pleno atendimento às especificações mínimas exigidas por parte dos produtos ofertados, entendemos que não existe razão para seguir com a análise dos *transceivers*, haja vista que estes são dependentes daqueles no presente contexto e, portanto, tal comparativo não mais se justifica.

7. Isto posto, **ATESTO** que os *switches* dos tipos 1, 2 e 3 ofertados pela empresa ADTK Comércio e Serviços de Informática e Telecomunicações Ltda. (Vantage IT) não atendem às condições e especificações técnicas do Termo de Referência do Edital do Pregão Eletrônico (SRP) PU/UFPB nº 5/2016.

8. É o nosso entendimento, salvo melhor juízo.

João Pessoa-PB, 16 de maio de 2016.



Ricardo Costa de Carvalho  
Analista de Tecnologia da Informação  
STI/UFPB  
Mat. SIAPE: 0273779-1

De: "Ricardo Costa de Carvalho" <ricardo@sti.ufpb.br>  
Assunto: Re: Esclarecimentos Pregão Switches (NOVO)  
Data: Seg, Maio 2, 2016 16:37  
Para: cplpu@prefeitura.ufpb.br  
CC: hermes@sti.ufpb.br,superintendencia@sti.ufpb.br

Prezado,

Em relação ao questionamento sobre os switches gerenciáveis de camada 3 dos tipos 1 e 2, temos a seguinte resposta:

Considerar como requisitos mínimos os encontrados nos produtos de referência, a saber, Cisco SRW2024-K9-BR e SRW2048-K9-NA, exceto característica que seja singular e/ou proprietária. Em outras palavras, serão aceitos quaisquer switches que atendam esses requisitos técnicos mínimos e que estejam de acordo com as "CONDIÇÕES GERAIS" (Item I das ESPECIFICAÇÕES TÉCNICAS do Anexo I-A).

Convém salientar que os produtos usados como referência não serão aceitos se ofertados, pois, entre a data de elaboração do Termo de Referência e a data de divulgação do edital, esses foram descontinuados, segundo o informado no website da Cisco ("End-of-Sale and End-of-Life Products", [http://www.cisco.com/c/en/us/products/hw/tsd\\_products\\_support\\_end-of-sale\\_and\\_end-of-life\\_products\\_list.html](http://www.cisco.com/c/en/us/products/hw/tsd_products_support_end-of-sale_and_end-of-life_products_list.html)).

Em relação ao questionamento sobre o switch gerenciável de camada 3 do tipo 3, aplica-se o mesmo raciocínio utilizado acima.

Em relação aos transceivers SFP dos tipos 1 e 2, o entendimento do potencial licitante está incompleto. Esclarecemos que serão aceitos transceivers que se enquadrem nos mesmos pressupostos usados para os switches, que foram anteriormente mencionados. Além disso, o transceiver ofertado tem que ser do mesmo fabricante e compatível com o(s) switch(es) ofertado(s) no Grupo 1, segundo o descrito no Termo de Referência. Em outras palavras, o transceiver SFP do tipo 1 tem que ser do mesmo fabricante e compatível com os switches dos tipos 1 e 2, e o transceiver SFP do tipo 2 tem que ser do mesmo fabricante e compatível com o switch do tipo 3.



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Quaisquer dúvidas, favor entrar em contato.

Atenciosamente,

Ricardo Costa de Carvalho.

Analista de Tecnologia da Informação

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Universidade Federal da Paraíba

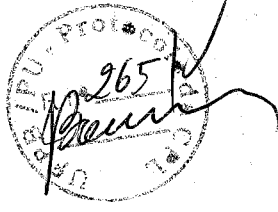
Superintendência de Tecnologia da Informação

Av. Jardim Universitário, s/nº - Castelo Branco

58.051-900 João Pessoa - Paraíba - BRASIL

Tel.: +55(83)3216-7389 Fax: +55(83)3216-7133

[www.sti.ufpb.br](http://www.sti.ufpb.br)



- > Prezados,
- >
- > É comum em licitações que envolvem questões técnicas específicas, pedidos
- > de esclarecimentos, em especial quando falta pouco tempo para o início da
- > operação.
- >
- > Encaminhamos mais um e-mail recebido:
- >
- > \*\*\*\*\*
- > Questionamentos
- >
- > Referência: "1.1. Switch Gerenciável Layer 3 - Tipo 1" e "1.2. Switch
- > Gerenciável Layer 3 - Tipo 2"
- >
- > De acordo com os ITENS "1.1. Switch Gerenciável Layer 3 - Tipo
- > 1" e "1.2. Switch Gerenciável Layer 3 - Tipo 2" nos quais referenciam o
- > modelo "Cisco SRW2024-K9-BR" e norteia o processo para maiores detalhes
- > técnicos. Tendo isto em mente, entendemos que qualquer produto/equipamento
- > deve atender, no mínimo, às seguintes características básicas encontradas
- > no modelo referenciado:
- >
- > o Capacidade mínima de 8.000 endereços MAC e capacidade de criação de
- > 256 VLANs por equipamento;
- > o Característica de agregação de links utilizando o padrão IEEE 802.3ad
- > (LACP) com suporte a, no mínimo, 8 grupos com 4 portas cada para uma maior
- > resiliência e disponibilidade na ligação entre os switches/equipamentos;
- > o Protocolos para interface a gerência por software de gerência de rede

- > (NMS) com SNMP nas versões v1, v2c, v3, RMON;
- > o Interface de Gerenciamento com HTTP/HTTPS/SSH/Telnet;
- > o Protocolos para Controle de acesso, contabilidade e autorização nos
- > padrões RADIUS e TACACS+;
- > o Comandos para diagnósticos diretamente no equipamento como PING,
- > Traceroute e Syslog;
- > o Característica de segurança com ACLs, Mirroring e Privilege VLAN;
- > o Protocolos para inibição de loop na topologia em camada 2 nos padrões
- > IEEE 802.1w e 802.1s, e suporte a IGMP nas versões v1 e v2. E
- > implementação de características amplamente utilizadas em topologias em
- > redes como QoS em IPv4 e IPv6 nos padrões IP Precedence, Type of Service e
- > DiffServ.
- > .
- > Considerando os itens técnicos básicos descritos acima e
- > suportados pelo modelo de referência "Cisco SRW2024-K9-BR" mencionado,
- > devem ser suportados pelos modelos referentes aos itens 1.1 e 1.2
- > requisitados no edital para aderência ao processo. Nosso entendimento está
- > correto?
- > .
- > Referência: "1.3. Switch Gerenciável Layer 3 - Tipo 3"
- > .
- > De acordo com o ITEM acima no qual referencia o modelo
- > "SG500X-24" e norteia o processo para maiores detalhes técnico. Tendo isto
- > em mente, entendemos que qualquer produto/equipamento deve atender, no
- > mínimo, às seguintes características básicas encontradas no modelo
- > referenciado:
- > .
- > o Capacidade mínima de 16.000 endereços MAC e capacidade de criação de
- > 4094 VLANs por equipamento;
- > o Característica de agregação de links utilizando o padrão IEEE 802.3ad
- > (LACP) com suporte a, no mínimo, 16 grupos com 8 portas cada para uma
- > maior resiliência e disponibilidade na ligação entre os
- > switches/equipamentos;
- > o Protocolos para interface a gerência por software de gerência de rede
- > (NMS) com SNMP nas versões v1, v2c, v3, RMON, LLDP;
- > o Interface de Gerenciamento com HTTP/HTTPS/SSH/Telnet;
- > o Protocolos para Controle de acesso, contabilidade e autorização nos
- > padrões RADIUS e TACACS+;
- > o Comandos para diagnósticos diretamente no equipamento como PING,
- > Traceroute e Syslog;

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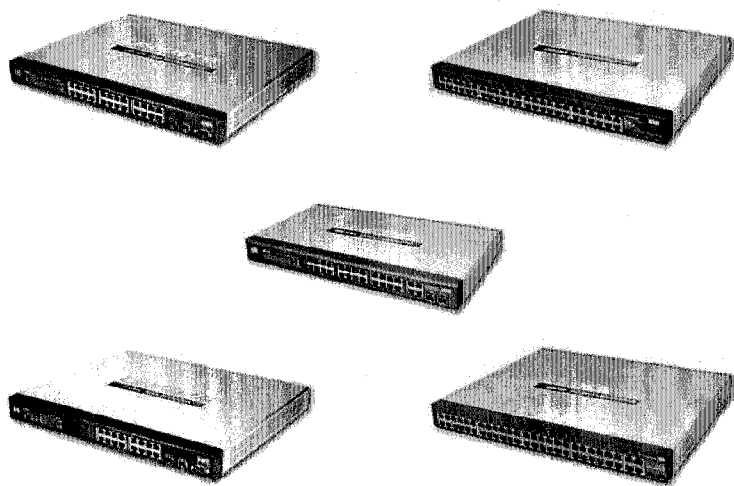
- > o Característica de segurança com ACLs, Mirroring, Privé VLAN;
- > o Proteções para protocolos ARP, DHCP e STP;
- > o Protocolos de roteamento dinâmico com no mínimo RIP;
- > o Protocolos para inibição de loop na topologia em camada 2 nos padrões IEEE 802.1w e 802.1s, e suporte a IGMP nas versões v1 e v2. E
- > implementação de características amplamente utilizadas em topologias em redes como QoS em IPv4 e IPv6 nos padrões IP Precedence, Type of Service e DiffServ.
- > o O switch fornecido deverá suportar empilhamento através de cabo dedicado. A funcionalidade de empilhamento deve possuir pelo menos as seguintes características:
- > § O Equipamento deve ser entregue com interfaces dedicadas para a função de empilhamento;
- > § Deverá ser possível empilhar pelo menos 04 (quatro) switches;
- > § O empilhamento deve ser feito em anel para garantir que, na eventual falha de um link, a pilha continue a funcionar;
- > § Em caso de falha do switch controlador da pilha, um controlador "backup" deve ser selecionado de forma automática, sem que seja necessária intervenção manual;
- > § Deverá implementar uma conexão de pelo menos 20Gbps entre os comutadores membros da pilha;
- > § A pilha deverá ser gerenciada através de um único endereço IP, permitir agregação lógica de links utilizando qualquer porta da pilha além de permitir espelhamento de portas de qualquer porta para qualquer porta da pilha.
- > . Considerando os itens técnicos básicos descritos acima e suportados pelo modelo de referência "SG500X-24" mencionado, devem ser suportados pelo modelo referente ao item 1.3 requisitado no edital para aderência ao processo. Nosso entendimento está correto?
- > Referência: "1.4. Transceiver SFP - Tipo 1" e "1.5. Transceiver SFP - Tipo 2"

- > .
- > Os transceptores que forem contemplados para este processo
- > deverão ser do mesmo fabricante que os switches ofertados acima, e quando
- > ofertados, deverão estar em linha de fabricação e suporte dentro do
- > fabricante. Portanto, não serão aceitos transceptores que se encontram
- > descontinuados e/ou que receberam notificação de final de venda (EOS - End
- > of Sale) no respectivo sítio da Internet do fabricante.
- > Nosso entendimento está correto?
- >
- > \*\*\*\*\*
- >
- > Agradecemos a gentil e tempestiva manifestação de W.Sas.
- >
- > Att.
- > Augusto Oliveira
- > Comissão Permanente de Licitação/PU
- >
- >



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**LINKSYS®**  
A Division of Cisco



# WebView Switches

Model: SRW2048, SRW2024, SRW2016, SRW248G4, SRW224G4

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**USER GUIDE**

**BUSINESS SERIES**

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# Chapter 1

## Introduction

### Chapter 1: Introduction

Thank you for choosing Linksys WebView Switches. This User Guide covers five product models:

- **SRW2048** 48-port 10/100/1000 Gigabit Switch with WebView. Includes 48 10/100/1000 RJ-45 ports and 4 shared SFP (MiniGBIC) slots.
- **SRW2024** 24-Port 10/100/1000 Gigabit Switch with WebView. Includes 24 10/100/1000 RJ-45 ports and 2 shared SFP (MiniGBIC) slots.
- **SRW2016** 16-Port 10/100/1000 Gigabit Switch with WebView. Includes 16 10/100/1000 RJ-45 ports and 2 shared SFP (MiniGBIC) slots.
- **SRW248G4** 48-port 10/100 + 4-Port Gigabit Switch with WebView. Includes 48 10/100 RJ-45 ports and 4 10/100/1000 RJ-45 ports and 2 shared SFP (MiniGBIC) slots.
- **SRW224G4** 24-port 10/100 + 4-Port Gigabit Switch with WebView. Includes 24 10/100 RJ-45 ports and 4 10/100/1000 RJ-45 ports and 2 shared SFP (MiniGBIC) slots.

For the purpose of this manual, whenever a feature applies to all models, the name WebView Switch will be referenced. If a specific model number is mentioned, then the feature is specific to that model.

The Linksys WebView Managed Switch allows you to expand your network securely. Configuration of the switch is secured using SSL for Web access. User control is secured using 802.1x security using a RADIUS authentication mechanism and can also be controlled using MAC-based filtering.

Extensive QoS features makes the solution ideal for real-time applications like Voice and Video. The 4 priority queues together with the Weighted Round Robin and Strict Priority scheduling techniques facilitate efficient coexistence of real-time traffic with data traffic allowing them each to meet their QoS needs.

Individual users or applications can be prioritized above others using various Class of Service options - by port, layer 2 priority (802.1p), and Layer 3 priority (TOS or DSCP). Intelligent Broadcast, and Multicast storm control minimizes and contain the effect of these types of traffic on regular traffic. IGMP Snooping limits bandwidth-intensive video traffic to only the requestors without flooding to all users.

Incoming traffic can be policed and outgoing traffic can be shaped allowing you to control network access and traffic flow.

There are features that allow you to expand and grow your network of switches. Link aggregation allows multiple high-bandwidth trunks between switches to be setup.

This also provides a level of reliability in that the system continues to operate if one of the links break. Spanning Tree (STP), Fast Linkover, Rapid Spanning Tree (RSTP) and Multiple Spanning Tree (MSTP) allows you to build a mesh of switches increasing the availability of the system.

The rich management functionality of the WebView switches includes SNMP, RMON, Telnet, and HTTP Management options, allowing you to flexibly integrate and manage these devices in your network.



## Appendix E: Specifications

### SRW2048

Ports	48 RJ-45 connectors for 10BASE-T, 100BASE-TX and 1000BASE-T with 4 shared SFP (miniGBIC) slots
Cabling Type	UTP CAT 5 or better for 10BASE-T/100BASE-TX, UTP CAT 5e or better for 1000BASE-T
LEDs	Power, Link/Act, Speed
<b>Performance</b>	
Switching Capacity	96 Gbps, non-blocking
MAC table size	8K
Number of VLANs	256 - Static and Dynamic
<b>Management</b>	
Web User Interface	Built-in Web UI for easy browser-based configuration (HTTP/HTTPS)
SNMP	SNMP version v1, v2c, v3 with support for traps
SNMP MIBs	RFC1213 MIB-2, RFC2863 Interface MIB, RFC2665 Ether-like MIB, RFC1493 Bridge MIB, RFC2674 Extended Bridge MIB (P-bridge, Q-bridge), RFC2819 RMON MIB (groups 1, 2, 3, 9 only), RFC2737 Entity MIB, RFC 2618 RADIUS Client MIB
RMON	Embedded Remote Monitoring (RMON) software agent supports four RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
Firmware Upgrade	Web Browser upgrade (HTTP and TFTP), CLI via console or Telnet, TFTP upgrade
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe

### Other Management

RFC854 Telnet (Menu-driven configuration)  
Secure Shell (SSH) and Telnet Management  
Telnet Client  
SSL security for Web UI  
Switch Audit Log  
DHCP Client  
BootP  
SNTP  
Xmodem upgrade  
Cable Diagnostics  
PING  
Traceroute

### Security features

IEEE 802.1x 802.1x - RADIUS Authentication, MD5 Encryption  
Access Control Filtering: MAC-based

### Availability

Link Aggregation Link Aggregation using IEEE 802.3ad LACP  
Up to 8 ports in up to 8 trunks  
Storm Control Broadcast, Multicast, and Unknown Unicast  
Spanning Tree IEEE 802.1d Spanning Tree, IEEE 802.1s Multiple Spanning Tree, IEEE 802.1w Rapid Spanning Tree, Fast Linkover  
IGMP Snooping IGMP (v1/v2) snooping provides for fast client joins and leaves of multicast streams and limits bandwidth-intensive video traffic to only the requestors

# Appendix E

## Specifications

### QoS

Priority levels	4 Hardware queues
Scheduling	Priority Queueing and Weighted Round Robin (WRR) Class of Service Port-based 802.1p VLAN priority based IP TOS/DSCP based IPv4 & IPv6 Traffic Class based COS MAC Address port security VLAN ID MAC Address IP Address Subnet Mask Service Type Protocol TCP/UDP Port
Rate Limiting	Ingress Policer, Egress Shaper

### Layer 2

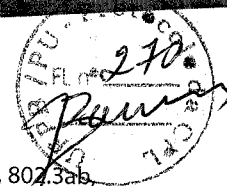
VLAN	Port-based and 802.1q based VLANs Private VLAN Edge (PVE) Management VLAN
HOL Blocking	Head of line blocking prevention
Jumbo frame	Supports frames up to 10K byte frames
Dynamic VLAN	GVRP - Dynamic VLAN Registration
Standards	802.3i 10BASE-T Ethernet, 802.3u 100BASE-TX Fast Ethernet, 802.3ab 1000BASE-T Gigabit Ethernet, 802.3z Gigabit Ethernet, 802.3x Flow Control

### ENVIRONMENTAL

Device Dimensions	430 x 44.45 x 350 mm
Weight	8.60 lb (3.9 kg)
Power	Internal switching power
Certification	FCC Part15 Class A, CE Class A, UL, cUL, CE mark, CB
Operating Temperature	32 to 104°F (0 to 40°C)
Storage Temperature	-4 to 158°F (-20 to 70°C)
Operating Humidity	10% to 90%
Storage Humidity	10% to 95%

### SRW2016/SRW2024

Standards	IEEE 802.3, 802.3u, 802.3ab, 802.3x, 802.1p, 802.1q
Ports	16 or 24 10/100/1000 RJ-45 ports and 2 shared SFP (miniGBIC) slots
Cabling Type	Cat5e or better
LEDs	System, Link/Activity, Gigabit
<b>Performance</b>	
Switching	Capacity 32 or 48 Gbps, non-blocking
MAC table size	8K
Number of VLANs	256 VLANs
<b>Management</b>	
Web User Interface	Built-in Web UI for easy browser-based configuration (HTTP/HTTPS)
SNMP	SNMP version v1, v2c, v3 with support for traps
SNMP MIBs	RFC1213 MIB-2, RFC2863 Interface MIB, RFC2665 Ether-like MIB, RFC1493 Bridge MIB, RFC2674 Extended Bridge MIB (P-bridge, Q-bridge), RFC2819 RMON MIB (groups 1, 2, 3, 9 only), RFC2737 Entity MIB, RFC 2618 RADIUS Client MIB
RMON	Embedded Remote Monitoring (RMON) software agent supports four RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
Firmware Upgrade	Web Browser upgrade (HTTP) TFTP upgrade
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe



## Specifications

<b>Other Management</b>	RFC854 Telnet (Menu-driven configuration) Secure Shell (SSH) and Telnet Management RADIUS TACACS+ Telnet Client SSL security for Web UI Switch Audit Log DHCP Client BootP SNTP Xmodem upgrade Cable Diagnostics PING Traceroute Syslog
<b>Security Features</b>	
IEEE 802.1x	802.1x - RADIUS Authentication, MD5 Encryption
Access Control	MAC based ACL
<b>Availability</b>	
Link Aggregation	Link Aggregation using IEEE 802.3ad LACP Up to 8 ports in up to 8 trunks
Storm Control	Broadcast, Multicast, and Unknown Unicast
Spanning Tree	IEEE 802.1d Spanning Tree, IEEE 802.1s Multiple Spanning Tree, IEEE 802.1w Rapid Spanning Tree, Fast Linkover
IGMP Snooping	IGMP (v1/v2) snooping provides for fast client joins and leaves of multicast streams and limits bandwidth-intensive video traffic to only the requestors.

## QoS

Priority levels	4 Hardware queues
Scheduling	Priority Queueing and Weighted Round Robin (WRR)
Class of Service	Port-based 802.1p VLAN priority based IP TOS/DSCP based IPv4 & IPv6 Traffic Class based COS MAC Address port security* VLAN ID* MAC Address* IP Address* Subnet Mask* Service Type* Protocol* TCP/UDP Port*
Rate Limiting	Ingress Policer, Egress Shaper
<b>Layer 2</b>	
VLAN	Port-based and 802.1q based VLANs Private VLAN Edge (PVE) Management VLAN
HOL Blocking	Head of line blocking prevention
Jumbo frame	Supports frames up to 10K byte frames
Dynamic VLAN	GVRP - Dynamic VLAN Registration
Standards	802.3i 10BASE-T Ethernet, 802.3u 100BASE-TX Fast Ethernet, 802.3ab 1000BASE-T Gigabit Ethernet, 802.3z Gigabit Ethernet, 802.3x Flow Control

## Environmental

Dimensions	430 x 44.5 x 350 mm
Unit Weight	7.3 lb (3.311 kg)
Power	100-240V 0.5A
Certification	FCC Part15 Class A, CE Class A, UL, cUL, CE mark, CB
Operating Temperature	32 to 104°F (0 to 40°C)
Storage Temperature	-4 to 158°F (-20 to 70°C)
Operating Humidity	20% to 95% relative humidity, noncondensing
Storage Humidity	5% to 90% noncondensing

\* Denotes features found in only version 1.2 or later of the hardware



## End-of-Sale and End-of-Life Announcement for the Cisco Small Business Managed Switches with Webview (Select Models)



EOL7235

Cisco announces the end-of-sale and end-of life dates for the Cisco Small Business Managed Switches with Webview (Select Models). The last day to order the affected product(s) is January 9, 2011. Customers will continue to receive phone support from the Cisco Small Business Support Center (SBSC) as shown in Table 1 of the EoL bulletin. Table 1 describes the end-of-life milestones, definitions, and dates for the affected product(s). Table 2 lists the product part numbers affected by this announcement. For customers with active product warranties, support will be available as stated in the product warranty terms and conditions, even if this date exceeds the Last Date of Support shown in Table 1.

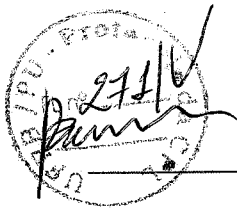
**Table 1.** End-of-Life Milestones and Dates for the Cisco Small Business Managed Switches with Webview (Select Models)

Milestone	Definition	Date
<b>End-of-Life Announcement Date</b>	The date the document that announces the end of sale and end of life of a product is distributed to the general public.	October 10, 2010
<b>End-of-Sale Date</b>	The last date to order the product through Cisco point-of-sale mechanisms. The product is no longer for sale after this date.	January 9, 2011
<b>End of Phone Support: HW</b>	The last date to receive phone support as part of the product warranty. After this date, all phone support services for the product are available with additional charges or support fees. In some cases, support may not be available.	January 9, 2012
<b>Last Ship Date: HW</b>	The last-possible ship date that can be requested of Cisco and/or its contract manufacturers. Actual ship date is dependent on lead time.	April 9, 2011
<b>Last Date of Support: HW</b>	The last expected date to receive service and support for the product as entitled by warranty terms and conditions **. After this date, all support services for the product are unavailable, and the product becomes obsolete. Warranty duration is based on product ship dates; refer to warranty terms and conditions for details.	January 31, 2016

HW = Hardware OS SW = Operating System Software App. SW = Application Software

**Table 2.** Product Part Numbers Affected by This Announcement

End-of-Sale Product Part Number	Product Description	Replacement Product Part Number	Replacement Product Description	Additional Information
SRW2008	8-port 10/100/1000 Gigabit Switch with WebView	SRW2008-K9-NA	SG 300-10 10-port Gigabit Managed Switch	-
SRW2008-AU	8-port 10/100/1000 Gigabit Switch with WebView	SRW2008-K9-AU	SG 300-10 10-port Gigabit Managed Switch	-
SRW2008MP	8-port 10/100/1000 Gigabit Switch WebView Maximum Power PoE	SRW2008MP-K9-NA	SG 300-10MP 10-port Gigabit Max-PoE Managed Switch	-
SRW2008P	8-port 10/100/1000 Gigabit Switch with WebView and PoE	SRW2008P-K9-NA	SG 300-10P 10-port Gigabit PoE Managed Switch	-
SRW2016	16-Port 10/100/1000 Gigabit Switch with WebView	SRW2016-K9-NA	SG 300-20 20-port Gigabit Managed Switch	-
SRW2016-AU	16-Port 10/100/1000 Gigabit Switch with WebView	SRW2016-K9-AU	SG 300-20 20-port Gigabit Managed Switch	-
SRW2024	24-Port 10/100/1000 Gigabit Switch with WebView	SRW2024-K9-NA	SG 300-28 28-port Gigabit Managed Switch	-



End-of-Sale Product Part Number	Product Description	Replacement Product Part Number	Replacement Product Description	Additional Information
SRW2024-AR	24-Port 10/100/1000 Gigabit Switch with WebView	SRW2024-K9-AR	SG 300-28 28-port Gigabit Managed Switch	-
SRW2024-AU	24-Port 10/100/1000 Gigabit Switch with WebView	SRW2024-K9-AU	SG 300-28 28-port Gigabit Managed Switch	-
SRW2024-UK	24-Port 10/100/1000 Gigabit Switch with WebView	SRW2024-K9-UK	SG 300-28 28-port Gigabit Managed Switch	-
SRW2024P	24-port 10/100/1000 Gigabit Switch with WebView and PoE	SRW2024P-K9-NA	SG 300-28P 28-port Gigabit PoE Managed Switch	-
SRW208	8-Port 10/100 Ethernet Switch with WebView	SRW208-K9-NA	SF 300-08 8-port 10/100 Managed Switch	-
SRW208G	8-port 10/100 Ethernet Switch with WebView, Expansion Slots	SRW208G-K9-NA	SF 302-08 8-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4	24-port 10/100 + 4-Port Gigabit Switch with WebView	SRW224G4-K9-NA	SF 300-24 24-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4-AR	24-port 10/100 + 4-Port Gigabit Switch with WebView	SRW224G4-K9-AR	SF 300-24 24-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4-AU	24-port 10/100 + 4-Port Gigabit Switch with WebView	SRW224G4-K9-AU	SF 300-24 24-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4-EU	24-Port 10/100 + 4 Port Gigabit, 2 Combo SFP Switch WebView	SRW224G4-K9-EU	SF 300-24 24-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4-KR	24-Port 10/100 + 4 Port Gigabit, 2 Combo SFP Switch WebView	SRW224G4-K9-EU	SF 300-24 24-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4-UK	24-port 10/100 + 4-Port Gigabit Switch with WebView	SRW224G4-K9-UK	SF 300-24 24-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4P	24-port 10/100 + 4-Port Gigabit Switch WebView and PoE	SRW224G4P-K9-NA	SF 300-24P 24-port 10/100 PoE Managed Switch w/Gig Uplinks	-
SRW224G4P-AR	24-port 10/100 + 4-Port Gigabit Switch WebView and PoE	SRW224G4-K9-AR	SF 300-24 24-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW224G4P-KR	24-port 10/100 + 4-Port Gigabit Switch WebView and PoE	SRW224G4P-K9-EU	SF 300-24P 24-port 10/100 PoE Managed Switch w/Gig Uplinks	-
SRW248G4	48-port 10/100 + 4-Port Gigabit Switch with WebView	SRW248G4-K9-NA	SF 300-48 48-port 10/100 Managed Switch with Gigabit Uplinks	-
SRW248G4-AR	48-port 10/100 + 4-Port Gigabit Switch with WebView	SRW248G4-K9-AR	SF 300-48 48-port 10/100 Managed Switch with Gigabit Uplinks	-

### Product Migration Options

There are limited quantities of the end-of-life products available, hence the timeframe for availability is dictated by the consumption of these supplies. Customers are encouraged to migrate to the Cisco Small Business 300 Series Managed Switches. Information about this product can be found at: <http://www.cisco.com/go/300switches>.

Service prices for Cisco products are subject to change after the product End of Sale date.

The Cisco Takeback and Recycle program helps businesses dispose properly of surplus products that have reached their end of useful life. The program is open to all business users of Cisco equipment and its associated brands and subsidiaries. For more information, go to:

[http://www.cisco.com/web/about/ac227/ac228/ac231/about\\_cisco\\_takeback\\_recycling.html](http://www.cisco.com/web/about/ac227/ac228/ac231/about_cisco_takeback_recycling.html).

### For More Information

For more information about the Cisco Small Business 300 Series Managed Switches, visit <http://www.cisco.com/go/300switches>, or contact your local account representative.

For more information about the Cisco End-of-Life Policy, go to:  
[http://www.cisco.com/en/US/products/products\\_end-of-life\\_policy.html](http://www.cisco.com/en/US/products/products_end-of-life_policy.html).

\*\* For more information about the Cisco Product Warranties, go to:  
[http://www.cisco.com/en/US/products/prod\\_warranties\\_listing.html](http://www.cisco.com/en/US/products/prod_warranties_listing.html).

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Product End-of-Life Notice

## End-of-Sale and End-of-Life Announcement for the Cisco SRW2048 48-Port Gigabit Switch with WebView

EOL7468

Cisco announces the end-of-sale and end-of-life dates for the Cisco® SRW2048 48-Port Gigabit Switch with WebView. The last day to order the affected product(s) is June 30, 2011. Customers will continue to receive phone support from the Cisco Small Business Support Center (SBSC) as shown in Table 1 of the EoL bulletin. Table 1 describes the end-of-life milestones, definitions, and dates for the affected product(s). Table 2 lists the product part numbers affected by this announcement. For customers with active product warranties, support will be available as stated in the product warranty terms and conditions, even if this date exceeds the Last Date of Support shown in Table 1.

**Table 1.** End-of-Life Milestones and Dates for the Cisco SRW2048 48-Port Gigabit Switch with WebView

Milestone	Definition	Date
<b>End-of-Life Announcement Date</b>	The date the document that announces the end-of-sale and end-of-life of a product is distributed to the general public.	March 31, 2011
<b>End-of-Sale Date</b>	The last date to order the product through Cisco point-of-sale mechanisms. The product is no longer for sale after this date.	June 30, 2011
<b>End of Phone Support: HW</b>	The last date to receive phone support as part of the product warranty. After this date, all phone support services for the product are available with additional charges or support fees. In some cases, support may not be available.	June 29, 2012
<b>Last Ship Date: HW</b>	The last-possible ship date that can be requested of Cisco and/or its contract manufacturers. Actual ship date is dependent on lead time.	September 28, 2011
<b>Last Date of Support: HW</b>	The last expected date to receive service and support for the product as entitled by warranty terms and conditions **. After this date, all support services for the product are unavailable, and the product becomes obsolete. Warranty duration is based on product ship dates; refer to warranty terms and conditions for details.	June 30, 2016

HW = Hardware

OS SW = Operating System Software

App. SW = Application Software

**Table 2.** Product Part Numbers Affected by This Announcement

End-of-Sale Product Part Number	Product Description	Replacement Product Part Number	Replacement Product Description	Additional Information
SRW2048-KR	48-Port 10/100/1000 Gigabit Switch with WebView	SRW2048-K9-EU	SG 300-52 52-port Gigabit Managed Switch	-

### Product Migration Options

Customers are encouraged to migrate to the Cisco Small Business 300 Series Managed Switches (product number SG300-52). Information about this product can be found at:

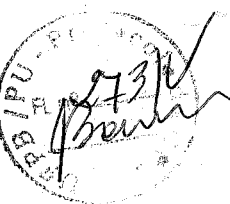
[http://www.cisco.com/cisco/web/solutions/small\\_business/products/routers\\_switches/300\\_series\\_switches/index.html-tab-ForPartners](http://www.cisco.com/cisco/web/solutions/small_business/products/routers_switches/300_series_switches/index.html-tab-ForPartners).

Customers can use the Cisco Small Business Investment Protection to trade in eligible products and receive a rebate when purchasing new eligible Cisco equipment. For more information, go to:

<http://www.ciscoinvestmentprotection.com/>.

Service prices for Cisco products are subject to change after the product End-of-Sale date.





The Cisco Takeback and Recycle program helps businesses dispose properly of surplus products that have reached their end of useful life. The program is open to all business users of Cisco equipment and its associated brands and subsidiaries. For more information, go to:

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### For More Information

For more information about the Cisco Small Business 300 Series Managed Switches, visit

<http://www.cisco.com/en/US/products/ps10898/index.html>, or contact your local account representative.

For more information about the Cisco End-of-Life Policy, go to:

[http://www.cisco.com/en/US/products/products\\_end-of-life\\_policy.html](http://www.cisco.com/en/US/products/products_end-of-life_policy.html).

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- **Cisco Limited Lifetime Hardware Warranty:** Cisco 300 Series Switches offer a limited lifetime hardware warranty with next business day advance replacement (where available, otherwise same day ship) and a limited lifetime warranty for fans and power supplies. In addition, Cisco offers software application updates for bug fixes for the warranty term, and telephone technical support at no charge for the first 12 months following the date of purchase. To download software updates, go to: [www.cisco.com/cisco/web/download/index.html](http://www.cisco.com/cisco/web/download/index.html).

Product warranty terms and other information applicable to Cisco products are available at [www.cisco.com/go/warranty](http://www.cisco.com/go/warranty).

## Product Specifications

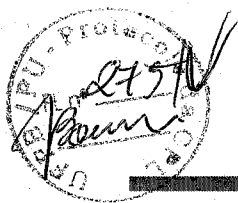
Table 1 gives the product specifications for the Cisco 300 Series Switches.

**Table 1.** Product Specifications

Feature	Description		
Performance			
Switching capacity and forwarding rate All switches are wire-speed and non-blocking		Capacity in Millions of Packets per Second (mpps) (64-byte packets)	Switching Capacity in Gigabits per Second (Gbps)
	Model Name		
	SF300-08	1.19	1.6
	SF302-08	4.17	5.6
	SF302-08P	4.17	5.6
	SF302-08PP	4.17	5.6
	SF302-08MP	4.17	5.6
	SF302-08MPP	4.17	5.6
	SF300-24	9.52	12.8
	SF300-24P	9.52	12.8
	SF300-24PP	9.52	12.8
	SF300-24MP	9.52	12.8
	SF300-48	13.10	17.6
	SF300-48P	13.10	17.6
	SF300-48PP	13.10	17.6
	SG300-10	14.88	20.0
	SG300-10SFP	14.88	20.0
	SG300-10P	14.88	20.0
	SG300-10PP	14.88	20.0
	SG300-10MP	14.88	20.0
	SG300-10MPP	14.88	20.0
	SG300-20	29.76	40.0
	SG300-28	41.67	56.0
	SG300-28P	41.67	56.0
	SG300-28PP	41.67	56.0
	SG300-28MP	41.67	56.0
	SG300-52	77.38	104.0
	SG300-52P	77.38	104.0
	SG300-52MP	77.38	104.0
SG300-28SFP	41.67	56.0	

Feature	Description
<b>Layer 2 Switching</b>	
Spanning Tree Protocol (STP)	Standard 802.1d Spanning Tree support Fast convergence using 802.1w (Rapid Spanning Tree [RSTP]), enabled by default 8 instances are supported Multiple Spanning Tree instances using 802.1s (MSTP)
Port grouping	Support for IEEE 802.3ad Link Aggregation Control Protocol (LACP) <ul style="list-style-type: none"> <li>• Up to 8 groups</li> <li>• Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad link aggregation</li> </ul>
VLAN	Support for up to 4096 VLANs simultaneously Port-based and 802.1Q tag-based VLANs MAC-based VLAN Management VLAN Private VLAN Edge (PVE), also known as protected ports, with multiple uplinks Guest VLAN Unauthenticated VLAN Dynamic VLAN assignment via Radius server along with 802.1x client authentication CPE VLAN
Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of QoS. Auto voice capabilities deliver network-wide zero touch deployment of voice endpoints and call control devices.
Multicast TV VLAN	Multicast TV VLAN allows the single multicast VLAN to be shared in the network while subscribers remain in separate VLANs (Also known as MVR)
Q-in-Q VLAN	VLANs transparently cross a service provider network while isolating traffic among customers
Generic VLAN Registration Protocol (GVRP)/Generic Attribute Registration Protocol (GARP)	Protocols for automatically propagating and configuring VLANs in a bridged domain
Unidirectional Link Detection (UDLD)	UDLD monitors physical connection to detect unidirectional links caused by incorrect wiring or cable/port faults to prevent forwarding loops and blackholing of traffic in switched networks
Dynamic Host Configuration Protocol (DHCP) Relay at Layer 2	Relay of DHCP traffic to DHCP server in different VLAN. Works with DHCP Option 82
Internet Group Management Protocol (IGMP) versions 1, 2, and 3 snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters; supports 1K multicast groups (source-specific multicasting is also supported)
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
Head-of-line (HOL) blocking	HOL blocking prevention
Jumbo Frames	Up to 9K (9216) bytes
<b>Layer 3</b>	
IPv4 routing	Wirespeed routing of IPv4 packets Up to 512 static routes and up to 128 IP interfaces
Classless Inter-Domain Routing (CIDR)	Support for CIDR
Layer 3 Interface	Configuration of layer 3 interface on physical port, LAG, VLAN interface or Loopback interface
DHCP relay at Layer 3	Relay of DHCP traffic across IP domains
User Datagram Protocol (UDP) relay	Relay of broadcast information across Layer 3 domains for application discovery or relaying of BootP/DHCP packets
DHCP Server	Switch functions as an IPv4 DHCP Server serving IP addresses for multiple DHCP pools/scopes Support for DHCP options
<b>Security</b>	
Secure Shell (SSH) Protocol	SSH is a secure replacement for Telnet traffic. SCP also uses SSH. SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL support: Encrypts all HTTPS traffic, allowing highly secure access to the browser-based management GUI in the switch
IEEE 802.1X (Authenticator role)	802.1X: RADIUS authentication and accounting, MD5 hash; guest VLAN; unauthenticated VLAN, single/multiple host mode and single/multiple sessions Supports time-based 802.1X Dynamic VLAN assignment

Feature	Description
Web Based Authentication	Web based authentication provides network admission control through web browser to any host devices and operating systems.
STP Bridge Protocol Data Unit (BPDU) Guard	A security mechanism to protect the network from invalid configurations. A port enabled for BPDU Guard is shut down if a BPDU message is received on that port.
STP Root Guard	This prevents edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.
DHCP snooping	Filters out DHCP messages with unregistered IP addresses and/or from unexpected or untrusted interfaces. This prevents rogue devices from behaving as a DHCP Server.
IP Source Guard (IPSG)	When IP Source Guard is enabled at a port, the switch filters out IP packets received from the port if the source IP addresses of the packets have not been statically configured or dynamically learned from DHCP snooping. This prevents IP Address Spoofing.
Dynamic ARP Inspection (DAI)	The switch discards ARP packets from a port if there is no static or dynamic IP/MAC bindings or if there is a discrepancy between the source or destination address in the ARP packet. This prevents man-in-the-middle attacks.
IP/Mac/Port Binding (IPMB)	The features (DHCP Snooping, IP Source Guard, and Dynamic ARP Inspection) above work together to prevent DOS attacks in the network, thereby increasing network availability.
Secure Core Technology (SCT)	Ensures that the switch will receive and process management and protocol traffic no matter how much traffic is received.
Secure Sensitive Data (SSD)	A mechanism to manage sensitive data (such as passwords, keys, etc) securely on the switch, populating this data to other devices, and secure autoconfig. Access to view the sensitive data as plaintext or encrypted is provided according to the user configured access level and the access method of the user.
Layer 2 isolation Private VLAN Edge (PVE) with community VLAN	PVE (also known as protected ports) provides Layer 2 isolation between devices in the same VLAN, supports multiple uplinks.
Port security	The ability to lock Source MAC addresses to ports, and limits the number of learned MAC addresses.
RADIUS/TACACS+	Supports RADIUS and TACACS authentication. Switch functions as a client.
Storm control	Broadcast, multicast, and unknown unicast
RADIUS accounting	The RADIUS accounting functions allow data to be sent at the start and end of services, indicating the amount of resources (such as time, packets, bytes, and so on) used during the session.
DoS prevention	Denial-of-Service (DOS) attack prevention
ACLs	Support for up to 512 rules Drop or rate limit based on source and destination MAC, VLAN ID or IP address, protocol, port, differentiated services code point (DSCP)/IP precedence, TCP/UDP source and destination ports, 802.1p priority, Ethernet type, Internet Control Message Protocol (ICMP) packets, IGMP packets, TCP flag, Time-based ACLs supported.
<b>Quality of Service</b>	
Priority levels	4 hardware queues
Scheduling	Strict priority and weighted round-robin (WRR) Queue assignment based on DSCP and class of service (802.1p/CoS)
Class of service	Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/type of service (ToS)/DSCP based; Differentiated Services (DiffServ); classification and re-marking ACLs, trusted QoS.
Rate limiting	Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.
Congestion avoidance	A TCP congestion avoidance algorithm is required to minimize and prevent global TCP loss synchronization.
<b>Standards</b>	
Standards	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad LACP, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.1D (STP, GARP, and GVRP), IEEE 802.1Q/p VLAN, IEEE 802.1w RSTP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at, RFC 768, RFC 783, RFC 791, RFC 792, RFC 793, RFC 813, RFC 879, RFC 896, RFC 826, RFC 854, RFC 855, RFC 856, RFC 858, RFC 894, RFC 919, RFC 922, RFC 920, RFC 950, RFC 1042, RFC 1071, RFC 1123, RFC 1141, RFC 1155, RFC 1157, RFC 1350, RFC 1533, RFC 1541, RFC 1624, RFC 1700, RFC 1867, RFC 2030, RFC 2616, RFC 2131, RFC 2132, RFC 3164, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 2576, RFC 4330, RFC 1213, RFC 1215, RFC 1286, RFC 1442, RFC 1451, RFC 1493, RFC 1573, RFC 1643, RFC 1757, RFC 1907, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2618, RFC 2665, RFC 2666, RFC 2674, RFC 2737, RFC 2819, RFC 2863, RFC 1157, RFC 1493, RFC 1215, RFC 3416

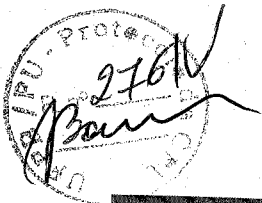


Feature	Description
<b>IPv6</b>	
IPv6	IPv6 host mode IPv6 over Ethernet Dual IPv6/IPv4 stack IPv6 neighbor and router discovery (ND) IPv6 stateless address auto-configuration Path maximum transmission unit (MTU) discovery Duplicate address detection (DAD) ICMP version 6 IPv6 over IPv4 network with Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) support USGv6 and IPv6 Gold Logo certified
IPv6 QoS	Prioritize IPv6 packets in hardware
IPv6 ACL	Drop or rate limit IPv6 packets in hardware
IPv6 First Hop Security	RA guard ND inspection DHCPv6 guard Neighbor binding table (Snooping and static entries) Neighbor binding integrity check
Multicast Listener Discovery (MLD v1/2) snooping	Deliver IPv6 multicast packets only to the required receivers
IPv6 applications	Web/SSL, Telnet server/SSH, ping, traceroute, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol (TFTP), SNMP, RADIUS, syslog, DNS client, Telnet Client, DHCP Client, DHCP Autoconfig, IPv6 DHCP Relay, TACACS
IPv6 RFCs supported	RFC 4443 (which obsoletes RFC2463) – ICMP version 6 RFC 4291 (which obsoletes RFC 3513) – IPv6 address architecture RFC 4291 – IPv6 addressing architecture RFC 2460 – IPv6 specification RFC 4861 (which obsoletes RFC 2461) – Neighbor discovery for IPv6 RFC 4862 (which obsoletes RFC 2462) – IPv6 stateless address auto-configuration RFC 1981 – Path MTU discovery RFC 4007 – IPv6 scoped address architecture RFC 3484 – Default address selection mechanism RFC 5214 (which obsoletes RFC 4214) – ISATAP tunneling RFC 4293 – MIB IPv6: Textual conventions and general group RFC 3595 – Textual conventions for IPv6 flow label
<b>Management</b>	
Web user interface	Built-in switch configuration utility for easy browser-based device configuration (HTTP/HTTPS). Supports configuration, system dashboard, system maintenance, and monitoring.
SNMP	SNMP versions 1, 2c, and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Standard MIBs	<div> draft-ietf-bridge-8021x-MIB  draft-ietf-bridge-rstp-mib-04-MIB  draft-ietf-hubmib-etherif-MIB-v3-00-MIB  draft-ietf-syslog-device-MIB  ianaaddrfamnumbers-MIB  ianaafity-MIB  ianaprot-MIB  inet-address-MIB  ip-forward-MIB  ip-MIB  RFC1155-SMI  RFC1213-MIB </div> <div> rfc2012-MIB  rfc2011-MIB  draft-ietf-entmib-sensor-MIB  lldp-MIB  lldpextdot1-MIB  lldpextdot3-MIB  lldpextmed-MIB  p-bridge-MIB  q-bridge-MIB  rfc1389-MIB  rfc1493-MIB  rfc1611-MIB  rfc1612-MIB  rfc1850-MIB </div>

Feature	Description	
Standard MIBs (continued)	SNMPv2-MIB	rfc1907-MIB
	SNMPv2-SMI	rfc2571-MIB
	SNMPv2-TM	rfc2572-MIB
	RMON-MIB.my	rfc2574-MIB
	dcb-raj-DCBX-MIB-1108-MIB	rfc2576-MIB
	rfc1724-MIB	rfc2613-MIB
	RFC-1212.my_for_MG-Soft	rfc2665-MIB
	rfc1213-MIB	rfc2668-MIB
	rfc1757-MIB	rfc2737-MIB
	RFC-1215.my	rfc2925-MIB
	SNMPv2-CONF.my	rfc3621-MIB
	SNMPv2-TC.my	rfc4668-MIB
	rfc2674-MIB	rfc4670-MIB
	rfc2575-MIB	trunk-MIB
	rfc2573-MIB	tunnel-MIB
	rfc2233-MIB	udp-MIB
	rfc2013-MIB	
Private MIBs	CISCOB-ldp-MIB	CISCOB-ip-MIB
	CISCOB-brgmulticast-MIB	CISCOB-iprouter-MIB
	CISCOB-bridgemibobjects-MIB	CISCOB-ipv6-MIB
	CISCOB-bonjour-MIB	CISCOB-mnginf-MIB
	CISCOB-dhcpcl-MIB	CISCOB-icli-MIB
	CISCOB-MIB	CISCOB-localization-MIB
	CISCOB-wrandomtaildrop-MIB	CISCOB-mcmngr-MIB
	CISCOB-traceroute-MIB	CISCOB-mng-MIB
	CISCOB-telnet-MIB	CISCOB-physdescription-MIB
	CISCOB-stormctrl-MIB	CISCOB-Poe-MIB
	CISCOB-ssh-MIB	CISCOB-protectedport-MIB
	CISCOB-socket-MIB	CISCOB-rmon-MIB
	CISCOB-sntp-MIB	CISCOB-rs232-MIB
	CISCOB-smon-MIB	CISCOB-SecuritySuite-MIB
	CISCOB-phy-MIB	CISCOB-snm-MIB
	CISCOB-multisessionterminal-MIB	CISCOB-specialbpdu-MIB
	CISCOB-mri-MIB	CISCOB-banner-MIB
	CISCOB-jumboframes-MIB	CISCOB-syslog-MIB
	CISCOB-gvrp-MIB	CISCOB-TopSession-MIB
	CISCOB-endofmib-MIB	CISCOB-traps-MIB
	CISCOB-dot1x-MIB	CISCOB-trunk-MIB
	CISCOB-deviceparams-MIB	CISCOB-tuning-MIB
	CISCOB-cli-MIB	CISCOB-tunnel-MIB
	CISCOB-cdb-MIB	CISCOB-udp-MIB
	CISCOB-brgmacswitch-MIB	CISCOB-vlan-MIB
	CISCOB-3sw2swtables-MIB	CISCOB-ipstdacl-MIB
	CISCOB-smartPorts-MIB	CISCO-SMI-MIB
	CISCOB-tbi-MIB	CISCOB-DebugCapabilities-MIB
	CISCOB-macbaseprio-MIB	CISCOB-CDP-MIB
	CISCOB-policy-MIB	CISCOB-vlanVoice-MIB
	CISCOB-env_mib	CISCOB-EVENTS-MIB
	CISCOB-sensor-MIB	CISCOB-sysmng-MIB
	CISCOB-aaa-MIB	CISCOB-sct-MIB
	CISCOB-application-MIB	CISCO-TC-MIB
	CISCOB-bridgesecurity-MIB	CISCO-VTP-MIB
	CISCOB-copy-MIB	CISCO-CDP-MIB
	CISCOB-CpuCounters-MIB	CISCOB-eee-MIB
	CISCOB-Custom1BonjourService-MIB	CISCOB-ssl-MIB



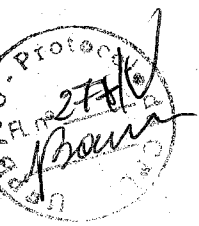




Feature	Description
Private MIBs (continued)	<p>CISCOB-dhcp-MIB</p> <p>CISCOB-dif-MIB</p> <p>CISCOB-dnscl-MIB</p> <p>CISCOB-embweb-MIB</p> <p>CISCOB-fft-MIB</p> <p>CISCOB-file-MIB</p> <p>CISCOB-greeneth-MIB</p> <p>CISCOB-interfaces-MIB</p> <p>CISCOB-interfaces_recovery-MIB</p> <p>CISCOB-qosclimib-MIB</p> <p>CISCOB-digitalkeymanage-MIB</p> <p>CISCOB-tbp-MIB</p> <p>CISCOB-MIB</p> <p>CISCOB-secsd-MIB</p> <p>CISCOB-draft-ietf-entmib-sensor-MIB</p> <p>CISCOB-draft-ietf-syslog-device-MIB</p> <p>CISCOB-rtc2925-MIB</p>
Remote Monitoring (RMON)	Embedded RMON software agent supports 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
IPv4 and IPv6 dual stack	Coexistence of both protocol stacks to ease migration
Firmware upgrade	<ul style="list-style-type: none"> <li>• Web browser upgrade (HTTP/HTTPS) and TFTP and upgrade over SCP running over SSH</li> <li>• Upgrade can be initiated through console port as well</li> <li>• Dual images for resilient firmware upgrades</li> </ul>
Port mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to 8 source ports can be mirrored to one destination port. A single session is supported.
VLAN mirroring	Traffic from a VLAN can be mirrored to a port for analysis with a network analyzer or RMON probe. Up to 8 source VLANs can be mirrored to one destination port. A single session is supported.
DHCP (Options 12, 66, 67, 82, 129, and 150)	DHCP Options facilitate tighter control from a central point (DHCP server) to obtain IP address, auto-configuration (with configuration file download), DHCP relay, and hostname.
Secure Copy (SCP)	Securely transfer files to and from the switch
Autoconfiguration with Secure Copy (SCP) file download	Enables secure mass deployment with protection of sensitive data
Text-editable config files	Config files can be edited with a text editor and downloaded to another switch, facilitating easier mass deployment
Smartports	Simplified configuration of QoS and security capabilities
Auto Smartports	Applies the intelligence delivered through the Smartport roles and applies it automatically to the port based on the devices discovered over CDP or LLDP-MED. This facilitates zero touch deployments.
Textview CLI	Scriptable command-line interface. A full CLI as well as a menu-based CLI is supported. User privilege levels 1, 7, and 15 is supported for the CLI.
Cloud services	Support for Cisco Small Business FindIT Network and Cisco OnPlus
Localization	Localization of GUI and documentation into multiple languages
Other management	Traceroute; single IP management; HTTP/HTTPS; SSH; RADIUS; port mirroring; TFTP upgrade; DHCP client; BOOTP; SNTP; Xmodem upgrade; cable diagnostics; ping; syslog; Telnet client (SSH secure support)
Time-based port operation	Link up or down based on user-defined schedule (when the port is administratively up)
Login banner	Configurable multiple banners for web as well as CLI
<b>Power Efficiency</b>	
EEE Compliant (802.3az)	Supports 802.3az on all copper ports (SG300 models)
Energy Detect	Automatically turns off power off on Gigabit Ethernet and 10/100 RJ-45 port when detecting link down
Cable length detection	Active mode is resumed without loss of any packets when the switch detects the link up
Disable port LEDs	Adjusts the signal strength based on the cable length for Gigabit Ethernet models. Reduces the power consumption for cables shorter than 10m.
	LEDs can be manually turned off to save on Energy
<b>General</b>	
Jumbo frames	Frame sizes up to 9K (9216) bytes supported on 10/100 and Gigabit interfaces
MAC table	Up to 16K (16384) MAC addresses
<b>Discovery</b>	
Bonjour	The switch advertises itself using the Bonjour protocol.
Link Layer Discovery Protocol (LLDP) (802.1ab) with LLDP-MED extensions	LLDP allows the switch to advertise its identification, configuration, and capabilities to neighboring devices that store the data in a MIB. LLDP-MED is an enhancement to LLDP that adds the extensions needed for IP phones.

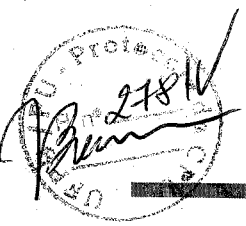


Feature	Description				
Cisco Discovery Protocol (CDP)	The switch advertises itself using the Cisco Discovery Protocol. It also learns the connected device and its characteristics via CDP.				
Power over Ethernet (PoE)	Switches support 802.3af PoE, 802.3at PoE+, and Cisco pre-standard (legacy) PoE. Maximum power of 30.0W to any 10/100 or Gigabit Ethernet port for PoE+ supported devices and 15.4W for PoE supported devices, until the PoE budget for the switch is reached. The total power available for PoE per switch is as follows:				
802.3af PoE and 802.3at PoE+ delivered over any of the RJ-45 ports within the listed power budgets	Model Name	Power Dedicated to PoE		Number of Ports That Support PoE	
	SF302-08P	62W		8	
	SF302-08PP	62W (PoE+ supported)		8	
	SF302-08MP	124W		8	
	SF302-08MPP	124W (PoE+ supported)		8	
	SF300-24P	180W		24	
	SF300-24PP	180W (PoE+ supported)		24	
	SF300-24MP	375W (PoE+ supported)		24	
	SF300-48P	375W		48	
	SF300-48PP	375W (PoE+ supported)		48	
	SG300-10P	62W		8	
	SG300-10PP	62W (PoE+ supported)		8	
	SG300-10MP	124W		8	
	SG300-10MPP	124W (PoE+ supported)		8	
	SG300-28P	180W		24	
	SG300-28PP	180W (PoE+ supported)		24	
	SG300-28MP	375W (PoE+ supported)		24	
	SG300-52P	375W (PoE+ supported)		48	
	SG300-52MP	740W (PoE+ supported)		48	
Power consumption (worst case)	Model Name	Power Savings Mode	System Power Consumption	Power Consumption: Case (with PoE)	Heat Dissipation Worst Case (BTU/hr)
	SF300-08	Energy Detect	110V=6.1W 220V=7.2W	N/A	24.57
	SF302-08	Energy Detect	110V=8.0W 220V=8.6W	N/A	29.34
	SF302-08P	Energy Detect	110V=10.3W 220V=11.5W	110V=81.3W 220V=82.1W	280.13
	SF302-08PP	Energy Detect	110V=9.12W 220V=9.31W	110V=80.68W 220V=79.62W	271.67
	SF302-08MP	Energy Detect	110V=9.5W 220V=10.3W	110V=150.1W 220V=149.9W	512.14
	SF302-08MPP	Energy Detect	110V=9.66W 220V=9.83W	110V=143.89W 220V=142.97W	487.83
	SF300-24	Energy Detect	110V=16.4W 220V=17.1W	N/A	58.35
	SF300-24P	Energy Detect	110V=25.8W 220V=27.3W	110V=223W 220V=217.9W	760.88
	SF300-24PP	Energy Detect	110V=26.7W 220V=27.9W	110V=218.57W 220V=213.35W	727.98
	SF300-24MP	Energy Detect Short Reach	110V=37.7W 220V=38.0W	110V=441W 220V=431W	1504.69



Feature	Description				
	SF300-48	Energy Detect	110V=24W 220V=24.8W	N/A	84.62
	SF300-48P	Energy Detect	110V=46.4W 220V=46.3W	110V=465W 220V=449W	1531.99
	SF300-48PP	Energy Detect	110V=47.7W 220V=48.2W	110V=421.36W 220V=412.43W	1407.23
	SG300-10	Energy Detect Short Reach	110V=10.33W 220V=10.27W	N/A	35.25
	SG300-10SFP	Energy Detect Short Reach	110V=18.10W 220V=17.71W	N/A	61.76
	SG300-10P	Energy Detect Short Reach	110V=13.13W 220V=13.48W	110V=81.44W 220V=81.16W	277.87
	SG300-10PP	Energy Detect Short Reach	110V=13.37W 220V=12.99W	110V=83.47W 220V=81.58W	278.36
	SG300-10MP	Energy Detect Short Reach	110V=12.21W 220V=12.25W	110V=154.36W 220V=152.42W	526.68
	SG300-10MPP	Energy Detect Short Reach	110V=13.41W 220V=13.72W	110V=145.7W 220V=144.5W	493.05
	SG300-20	Energy Detect Short Reach	110V=16.05W 220V=16.26W	N/A	55.48
	SG300-28	Energy Detect Short Reach	110V=19.8W 220V=20.6W	N/A	70.29
	SG300-28P	Energy Detect Short Reach	110V=29.7W 220V=30.7W	110V=214.4W 220V=210W	731.53
	SG300-28PP	Energy Detect Short Reach	110V=31.9W 220V=33.0W	110V=222W 220V=217W	740.43
	SG300-28MP	Energy Detect Short Reach	110V=42.4W 220V=43.1W	110V=445W 220V=436W	1487.63
	SG300-28SFP	Energy Detect/Short Reach	110V=28W 220V=28.2W	N/A	96.2 BTU/hr
	SG300-52	Energy Detect Short Reach	110V=45.9W 220V=45.3W	N/A	156.61
	SG300-52P	Energy Detect Short Reach	110V=61.25W 220V=61.46W	110V=473.62W 220V=461.88W	1617.29
	SG300-52MP	Energy Detect Short Reach	110V=64.24W 220V=68.80W	110V=873.05W 220V=843.57W	2978.85
Ports	<b>Model Name</b>	<b>Total System Ports</b>		<b>RJ-45 Ports</b>	<b>Combo Ports (RJ-45 + SFP)</b>
	SF300-08	8 Fast Ethernet		8 Fast Ethernet	N/A
	SF302-08	8 Fast Ethernet + 2 Gigabit Ethernet		8 Fast Ethernet	2 Gigabit Ethernet combo
	SF302-08P	8 Fast Ethernet + 2 Gigabit Ethernet		8 Fast Ethernet	2 Gigabit Ethernet combo
	SF302-08PP	8 Fast Ethernet + 2 Gigabit Ethernet		8 Fast Ethernet	2 Gigabit Ethernet combo
	SF302-08MP	8 Fast Ethernet + 2 Gigabit Ethernet		8 Fast Ethernet	2 Gigabit Ethernet combo
	SF302-08MPP	8 Fast Ethernet + 2 Gigabit Ethernet		8 Fast Ethernet	2 Gigabit Ethernet combo
	SF300-24	24 Fast Ethernet + 4 Gigabit Ethernet		24 Fast Ethernet 2 Gigabit Ethernet	2 Gigabit Ethernet combo

Feature	Description								
SF300-24P	24 Fast Ethernet + 4 Gigabit Ethernet								
SF300-24PP	24 Fast Ethernet + 4 Gigabit Ethernet								
SF300-24MP	24 Fast Ethernet + 4 Gigabit Ethernet								
SF300-48	48 Fast Ethernet + 4 Gigabit Ethernet								
SF300-48P	48 Fast Ethernet + 4 Gigabit Ethernet								
SF300-48PP	48 Fast Ethernet + 4 Gigabit Ethernet								
SG300-10	10 Gigabit Ethernet								
SG300-10SFP	10 Gigabit Ethernet								
SG300-10P	10 Gigabit Ethernet								
SG300-10PP	10 Gigabit Ethernet								
SG300-10MP	10 Gigabit Ethernet								
SG300-10MPP	10 Gigabit Ethernet								
SG300-20	20 Gigabit Ethernet								
SG300-28	28 Gigabit Ethernet								
SG300-28P	28 Gigabit Ethernet								
SG300-28SFP	28 Gigabit Ethernet								
SG300-28PP	28 Gigabit Ethernet								
SG300-28MP	28 Gigabit Ethernet								
SG300-52	52 Gigabit Ethernet								
SG300-52P	52 Gigabit Ethernet								
SG300-52MP	52 Gigabit Ethernet								
Buttons	Reset button								
Cabling type	Unshielded twisted pair (UTP) Category 5 or better for 10BASE-T/100BASE-TX; UTP Category 5 Ethernet or better for 1000BASE-T								
LEDs	System, Link/Act, PoE, Speed, LED power saving option								
Flash	16 MB								
CPU memory	128 MB								
Packet buffer	All numbers are aggregate across all ports as the buffers are dynamically shared:								
	<table> <tr> <th>Model Name</th><th>Packet Buffer</th></tr> <tr> <td>SF300-08</td><td>8 Mb</td></tr> <tr> <td>SF302-08</td><td>8 Mb</td></tr> <tr> <td>SF302-08P</td><td>8 Mb</td></tr> </table>	Model Name	Packet Buffer	SF300-08	8 Mb	SF302-08	8 Mb	SF302-08P	8 Mb
Model Name	Packet Buffer								
SF300-08	8 Mb								
SF302-08	8 Mb								
SF302-08P	8 Mb								



Feature	Description			
Supported SFP modules	SF302-08PP		8 Mb	
	SF302-08MP		8 Mb	
	SF302-08MPP		8 Mb	
	SF300-24		8 Mb	
	SF300-24P		8 Mb	
	SF300-24PP		8 Mb	
	SF300-24MP		8 Mb	
	SF300-48		8 Mb 2	
	SF300-48P		8 Mb 2	
	SF300-48PP		8 Mb 2	
	SG300-10		8 Mb	
	SG300-10SFP		8 Mb	
	SG300-10P		8 Mb	
	SG300-10PP		8 Mb	
	SG300-10MP		8 Mb	
	SG300-10MPP		8 Mb	
	SG300-20		8 Mb	
	SG300-28		8 Mb	
	SG300-28SFP		8 Mb	
	SG300-28P		8 Mb	
	SG300-28PP		8 Mb	
	SG300-28MP		8 Mb	
	SG300-52		8 Mb 2	
	SG300-52P		8 Mb 2	
	SG300-52MP		8 Mb 2	
	<b>SKU</b>	<b>Media</b>	<b>Speed</b>	<b>Maximum Distance</b>
	MFEX1	Multimode fiber	100 Mbps	2 km
	MFELX1	Single-mode fiber	100 Mbps	10 km
	MFEBX1	Single-mode fiber	100 Mbps	20 km
	MGBBX1	Single-mode fiber	1000 Mbps	40 km
	MGBSX1	Multimode fiber	1000 Mbps	300 m
	MGBLH1	Single-mode fiber	1000 Mbps	40 km
	MGBLX1	Single-mode fiber	1000 Mbps	10 km
	MGBT1	UTP cat 5	1000 Mbps	100 m
<b>Environmental</b>				
Dimensions (W x H x D)	SF300-08, SF302-08, SF302-08P, SF302-08PP, SF302-08MP, SF302-08MPP, SG300-10SFP, SG300-10, SG300-10P, SG300-10PP, SG300-10MP, SG300-10MPP 11 x 1.45 x 6.7 in. (279.4 x 44.45 x 170 mm) SG300-20 17.3 x 1.45 x 7.97 in. (440 x 44.45 x 202.5 mm) SF300-24, SF300-24P, SF300-24PP, SF300-48, SG300-28, SG300-28P, SG300-28PP, SG300-52, SG300-28SFP 17.3 x 1.45 x 10.1 in. (440 x 44.45 x 257 mm) SF300-24MP, SG300-28MP, SF300-48P, SF300-48PP, SG300-52P, SG300-52MP 17.3 x 1.45 x 13.78 in. (440 x 44.45 x 350 mm)			



Feature	Description																																																																
Unit weight	SF300-08: 2.56 lb (1.16 kg) SF302-08: 2.6 lb (1.18 kg) SF302-08P: 2.67 lb (1.21 kg) SF302-08PP: 2.60 lb (1.18 kg) SF302-08MP: 2.67 lb (1.21 kg) SF302-08MPP: 2.60 lb (1.18 kg) SF300-24: 6.81 lb (3.09 kg) SF300-24P: 8.22 lb (3.73 kg) SF300-24PP: 8.25 lb (3.74 kg) SF300-24MP: 11.2 lb (5.08 kg) SF300-48: 7.47 lb (3.39 kg) SF300-48P: 12.94 lb (5.87 kg) SF300-48PP: 11.99 lb (5.44 kg)  SG300-10: 2.56 lb (1.16 kg) SG300-10SFP: 4.68 lb (2.125 kg) SG300-10P: 2.73 lb (1.24 kg) SG300-10PP: 2.73 lb (1.24kg) SG300-10MP: 2.73 lb (1.24 kg) SG300-10MPP: 2.73 lb (1.24kg) SG300-20: 4.78 lb (2.17 kg) SG300-28: 7.23 lb (3.28 kg) SG300-28P: 9.06 lb (4.11 kg) SF300-28SFP: 7.4 lb (3.34 kg) SG300-28PP: 8.71 lb (3.95 kg) SG300-28MP: 11.6 lb (5.26 kg) SG300-52: 8.62 lb (3.91 kg) SG300-52P: 11.68 lb (5.3 kg) SG300-52MP: 11.73 lb (5.32 kg)																																																																
Power	100-240V 47-63 Hz, internal, universal – SF300-24, SF300-24P, SF300-24PP, SG300-20, SG300-28, SG300-28P, SG300-28PP, SG300-52 100-240V 50-60 Hz, internal, universal – SF300-24MP, SF300-48PP, SG300-28MP, SG300-52P, SG300-52MP, SG300-28SFP 100-240V 50-60 Hz, 0.5A, external – SF300-08, SF302-08, SG300-10, SG300-10SFP 100-240V 50-60 Hz, 2A, external – SF302-08P, SF300-08PP, SG300-10P, SG300-10PP 100-240V 50-60 Hz, 2.5A, external – SF302-08MP, SF302-08MPP, SG300-10MP, SG300-10MPP																																																																
Certification	UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A																																																																
Operating temperature	SF300-08, SF302-08, SF302-08P, SF302-08MP, SF300-24, SF300-24P, SF300-48, SF300-48P, SG300-10, SG300-10P, SG300-10MP, SG300-20, SG300-28, SG300-28P, SG300-52 32° to 104°F (0° to 40°C) SF302-08MPP, SF302-08PP, SF300-24PP, SG300-52P, SG300-52MP, SG300-10SFP, SG300-10MPP, SG300-10PP, SG300-28PP 32° to 113°F (0° to 45°C) SF300-24MP, SF300-48PP, SG300-28MP, SG300-28SFP 32° to 122°F (0° to 50°C)																																																																
Storage temperature	-4° to 158°F (-20° to 70°C)																																																																
Operating humidity	10% to 90%, relative, noncondensing																																																																
Storage humidity	10% to 90%, relative, noncondensing																																																																
Acoustic Noise and MTBF	<table><thead><tr><th>Model Name</th><th>FAN (Number)</th><th>Acoustic Noise</th><th>MTBF @40°C (hr)</th></tr></thead><tbody><tr><td>SF300-08</td><td>Fanless</td><td>N/A</td><td>71,006</td></tr><tr><td>SF302-08</td><td>Fanless</td><td>N/A</td><td>69,825</td></tr><tr><td>SF302-08P</td><td>Fanless</td><td>N/A</td><td>65,527</td></tr><tr><td>SF302-08PP</td><td>Fanless</td><td>N/A</td><td>899,905</td></tr><tr><td>SF302-08MP</td><td>Fanless</td><td>N/A</td><td>63,569</td></tr><tr><td>SF302-08MPP</td><td>Fanless</td><td>N/A</td><td>899,905</td></tr><tr><td>SF300-24</td><td>Fanless</td><td>N/A</td><td>282,775.3</td></tr><tr><td>SF300-24P</td><td>2 pcs</td><td>41.0 dB</td><td>241,995.9</td></tr><tr><td>SF300-24PP</td><td>2 pcs</td><td>40.4 dB</td><td>171,504 (at 50°C)</td></tr><tr><td>SF300-24MP</td><td>4 pcs</td><td>41.6 dB at 30°C 53.9dB at 50°C</td><td>135,669.9 (at 50°C)</td></tr><tr><td>SF300-48</td><td>Fanless</td><td>N/A</td><td>199,664.2</td></tr><tr><td>SF300-48P</td><td>3 pcs w/Fan speed control</td><td>43.1 dB at 30°C 54.3 dB at 40°C</td><td>182,540.0</td></tr><tr><td>SF300-48PP</td><td>4 pcs w/Fan speed control</td><td>43.5 dB at 30°C 54.1 dB at 40°C</td><td>113,692 (at 50°C)</td></tr><tr><td>SG300-10</td><td>Fanless</td><td>N/A</td><td>74,294</td></tr><tr><td>SG300-10SFP</td><td>Fanless</td><td>N/A</td><td>132,151 (at 45°C)</td></tr></tbody></table>	Model Name	FAN (Number)	Acoustic Noise	MTBF @40°C (hr)	SF300-08	Fanless	N/A	71,006	SF302-08	Fanless	N/A	69,825	SF302-08P	Fanless	N/A	65,527	SF302-08PP	Fanless	N/A	899,905	SF302-08MP	Fanless	N/A	63,569	SF302-08MPP	Fanless	N/A	899,905	SF300-24	Fanless	N/A	282,775.3	SF300-24P	2 pcs	41.0 dB	241,995.9	SF300-24PP	2 pcs	40.4 dB	171,504 (at 50°C)	SF300-24MP	4 pcs	41.6 dB at 30°C 53.9dB at 50°C	135,669.9 (at 50°C)	SF300-48	Fanless	N/A	199,664.2	SF300-48P	3 pcs w/Fan speed control	43.1 dB at 30°C 54.3 dB at 40°C	182,540.0	SF300-48PP	4 pcs w/Fan speed control	43.5 dB at 30°C 54.1 dB at 40°C	113,692 (at 50°C)	SG300-10	Fanless	N/A	74,294	SG300-10SFP	Fanless	N/A	132,151 (at 45°C)
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Feature	Description			
	SG300-10P	Fanless	N/A	67,009
	SG300-10PP	Fanless	N/A	945,042
	SG300-10MP	Fanless	N/A	67,008
	SG300-10MPP	Fanless	N/A	945,042
	SG300-20	Fanless	N/A	144,237
	SG300-28	Fanless	N/A	179,141.0
	SG300-28SFP	2 pcs	40.9 dB	614,062 (at 50°C)
	SG300-28P	2 pcs	40.6 dB	187,334.9
	SG300-28PP	2 pcs	40.4 dB	310,755 (at 45°C)
	SG300-28MP	4 pcs	41.7dB at 30°C 54dB at 50°C	138,676.92 (at 50°C)
	SG300-52	2 pcs	40.1dB	206,005.6
	SG300-52P	4 pcs	46.9dB	100,262 (at 45°C) 80,562 (at 50°C)
	SG300-52MP	4 pcs	47.4dB	117,130 (at 45°C) 93,132 (at 50°C)
<b>Warranty</b>		Limited lifetime with next business day advance replacement (where available)		

**Package Contents**

- Cisco 300-series Ethernet Switch
- Power Cord (Power Adapter for Desktop SKUs)
- Mounting Kit included in all SKUs, including Desktop models
- Serial Cable
- CD-ROM with user documentation (PDF) included
- Quick Start Guide

**Minimum Requirements**

- Web browser: Mozilla Firefox version 8 or later; Microsoft Internet Explorer version 7 or later, Safari, Chrome
- Category 5 Ethernet network cable
- TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in the network

**Ordering Information**

Table 2 provides ordering information for the Cisco 300 Series Switches.

**Table 2.** Cisco 300 Series Switches Ordering Information

Model Name	Order Product ID Number	Description
<b>Fast Ethernet</b>		
SF300-08	SRW208-K9	• 8 10/100 ports
SF302-08	SRW208G-K9	• 8 10/100 ports
		• 2 combo mini-GBIC ports
SF302-08P	SRW208P-K9	• 8 10/100 PoE ports with 62W power budget
		• 2 combo mini-GBIC ports
SF302-08PP	SF302-08PP-K9	• 8 10/100 PoE+ ports with 62W power budget
		• 2 combo mini-GBIC ports
SF302-08MP	SRW208MP-K9	• 8 10/100 Maximum PoE ports with 124W power budget
		• 2 combo mini-GBIC ports
SF302-08MPP	SF302-08MPP-K9	• 8 10/100 Maximum PoE+ ports with 124W power budget
		• 2 combo mini-GBIC ports

Model Name	Order Product ID Number	Description
SF300-24	SRW224G4-K9	<ul style="list-style-type: none"> <li>• 24 10/100 ports</li> <li>• 2 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SF300-24P	SRW224G4P-K9	<ul style="list-style-type: none"> <li>• 24 10/100 PoE ports with 180W power budget</li> <li>• 2 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SF300-24PP	SF300-24PP-K9	<ul style="list-style-type: none"> <li>• 24 10/100 PoE+ ports with 180W power budget</li> <li>• 2 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SF300-24MP	SF300-24MP-K9	<ul style="list-style-type: none"> <li>• 24 10/100 PoE+ ports with 375W power budget</li> <li>• 2 10/100/1000 ports</li> <li>• 2 combo mini-GBIC</li> </ul>
SF300-48	SRW248G4-K9	<ul style="list-style-type: none"> <li>• 48 10/100 ports</li> <li>• 2 10/100/1000 ports</li> <li>• 2 combo mini-GBIC</li> </ul>
SF300-48P	SRW248G4P-K9	<ul style="list-style-type: none"> <li>• 48 10/100 PoE ports with 375W power budget</li> <li>• 2 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SF300-48PP	SF300-48PP-K9	<ul style="list-style-type: none"> <li>• 48 10/100 PoE+ ports with 375W power budget</li> <li>• 2 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
<b>Gigabit Ethernet</b>		
SG300-10	SRW2008-K9	<ul style="list-style-type: none"> <li>• 8 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-10SFP	SG300-10SFP-K9	<ul style="list-style-type: none"> <li>• 8 10/100/1000 ports (SFP)</li> <li>• 2 Combo mini-GBIC ports</li> </ul>
SG300-10P	SRW2008P-K9	<ul style="list-style-type: none"> <li>• 8 10/100/1000 PoE ports with 62W power budget</li> <li>• 2 Combo mini-GBIC ports</li> </ul>
SG300-10PP	SG300-10PP-K9	<ul style="list-style-type: none"> <li>• 8 10/100/1000 PoE+ ports with 62W power budget</li> <li>• 2 Combo mini-GBIC ports</li> </ul>
SG300-10MP	SRW2008MP-K9	<ul style="list-style-type: none"> <li>• 8 10/100/1000 Maximum PoE ports with 124W power budget</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-10MPP	SG300-10MPP-K9	<ul style="list-style-type: none"> <li>• 8 10/100/1000 Maximum PoE+ ports with 124W power budget</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-20	SRW2016-K9	<ul style="list-style-type: none"> <li>• 18 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-28	SRW2024-K9	<ul style="list-style-type: none"> <li>• 26 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-28SFP	SG300-28SFP-K9	<ul style="list-style-type: none"> <li>• 26 10/100/1000 ports (SFP)</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-28P	SRW2024P-K9	<ul style="list-style-type: none"> <li>• 26 10/100/1000 ports (24 PoE ports with 180W power budget)</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-28PP	SG300-28PP-K9	<ul style="list-style-type: none"> <li>• 26 10/100/1000 ports (24 PoE+ ports with 180W power budget)</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-28MP	SG300-28MP-K9	<ul style="list-style-type: none"> <li>• 26 10/100/1000 ports (24 PoE+ ports with 375W power budget)</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-52	SRW2048-K9	<ul style="list-style-type: none"> <li>• 50 10/100/1000 ports</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-52P	SG300-52P-K9	<ul style="list-style-type: none"> <li>• 50 10/100/1000 ports (48 PoE+ ports with 375W power budget)</li> <li>• 2 combo mini-GBIC ports</li> </ul>
SG300-52MP	SG300-52MP-K9	<ul style="list-style-type: none"> <li>• 50 10/100/1000 ports (48 PoE+ ports with 740W power budget)</li> <li>• 2 combo mini-GBIC ports</li> </ul>

Each combo mini-GBIC port has one 10/100/1000 Ethernet port and one mini-GBIC/SFP Gigabit Ethernet slot, with one port active at a time.



**Table 3.** MFE and MGE Transceiver Ordering Information

<b>MFE Transceivers</b>	
MFEBX1	100BASE-BX-20U SFP transceiver for single-mode fiber, 1310 nm wavelength, support up to 20 km
MFELX1	100BASE-LX SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 10 km
MFEFX1	100BASE-FX SFP transceiver, for multimode fiber, 1310 nm wavelength, support up to 2 km
<b>MGE Transceivers</b>	
MGBBX1	1000BASE-BX-20U SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 40 km
MGBLH1	1000BASE-LH SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 40 km
MGBLX1	1000BASE-LX SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 10 km
MGBSX1	1000BASE-SX SFP transceiver, for multimode fiber, 850 nm wavelength, support up to 550 m

### A Powerful, Affordable Foundation for Your Small Business Network

As you strive to make your employees as productive and effective as possible, your business applications and information – and the network that delivers them – become an ever more vital part of your business. You need a technology foundation that can meet your business's needs today and in the future, and that delivers the right feature set at the right price. The Cisco 300 Series portfolio of managed switches provides the reliability, performance, security, and capabilities you need to power your business.

### For More Information

To find out more about the Cisco 300 Series, visit [www.cisco.com/go/300switches](http://www.cisco.com/go/300switches).



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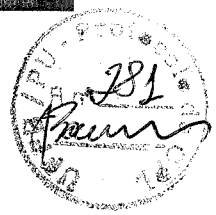
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## Cisco Limited Lifetime Hardware Warranty

Cisco 500 Series switches offer a limited lifetime hardware warranty with NBD advance replacement (where available; otherwise same day ship) and a limited lifetime warranty for fans and power supplies.

In addition, Cisco offers software application updates for bug fixes for the warranty term, and telephone technical support at no charge for the first 12 months following the date of purchase. To download software updates, go to <http://www.cisco.com/cisco/web/download/index.html>.

Product warranty terms and other information applicable to Cisco products are available at <http://www.cisco.com/go/warranty>.

## World-Class Service and Support

Your time is valuable, especially when you have a problem affecting your business. Cisco 500 Series switches are backed by the Cisco Small Business Support Service, which provides affordable peace-of-mind coverage. This subscription-based service helps you protect your investment and derive maximum value from Cisco Small Business products. Delivered by Cisco and backed by your trusted partner, this comprehensive service includes software updates and access to the Cisco Small Business Support Center, and it extends technical service to three years.

Cisco Small Business products are supported by professionals in the Cisco Small Business Support Center, a dedicated resource for small business customers and networks, with locations worldwide that are specifically trained to understand your needs. You also have access to extensive technical and product information through the Cisco Small Business Support Community, an online forum that enables you to collaborate with your peers and reach Cisco technical experts for support information.

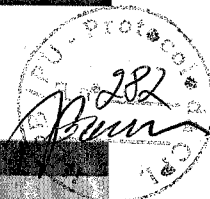
## Product Specifications

Table 1. Product Specifications

Feature	Description		
Performance			
Switching capacity and forwarding rate  All switches are wire-speed and non-blocking.	Product Name	Capacity in mpps (64-byte packets)	Switching Capacity (Gbps)
	SF500-24	9.52	28.8
	SF500-24P	9.52	28.8
	SF500-24MP	9.52	28.8
	SF500-48	13.10	33.6
	SF500-48P	13.10	33.6
	SF500-48MP	13.10	33.6
	SG500-28	41.67	72
	SG500-28P	41.67	72
	SG500-28MPP	41.67	72
	SG500-52	77.38	120
	SG500-52P	77.38	120
	SG500-52MP	77.38	120
	SG500X-24	95.24	128
	SG500X-24P	95.24	128
	SG500X-24MPP	95.24	128



Feature	Description												
	<table><tr><td>SG500X-48</td><td>130.95</td><td>176</td></tr><tr><td>SG500X-48P</td><td>130.95</td><td>176</td></tr><tr><td>SG500X-48MP</td><td>130.95</td><td>176</td></tr><tr><td>SG500XG-8F8T</td><td>238.1</td><td>320</td></tr></table>	SG500X-48	130.95	176	SG500X-48P	130.95	176	SG500X-48MP	130.95	176	SG500XG-8F8T	238.1	320
SG500X-48	130.95	176											
SG500X-48P	130.95	176											
SG500X-48MP	130.95	176											
SG500XG-8F8T	238.1	320											
Layer 2 Switching													
Spanning Tree Protocol	Standard 802.1d Spanning Tree Support Fast convergence using 802.1w (Rapid Spanning Tree [RSTP]), enabled by default Multiple spanning tree instances using 802.1s (MSTP). 16 instances are supported												
Port grouping/link aggregation	Support for IEEE 802.3ad Link Aggregation Control Protocol (LACP) <ul style="list-style-type: none"><li>Up to 32 groups</li><li>Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad LAG</li></ul>												
VLAN	Support for up to 4096 VLANs simultaneously Port-based and 802.1Q tag-based VLANs MAC-based VLAN Management VLAN PVE (Private VLAN Edge), also known as Protected Port, with multiple uplinks Guest VLAN Unauthenticated VLAN Protocol-based VLAN CPE VLAN Dynamic VLAN assignment via Radius server along with 802.1x client authentication												
Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of QoS. Auto voice capabilities deliver network-wide zero touch deployment of voice endpoints and call control devices.												
Multicast TV VLAN	Multicast TV VLAN allows the single multicast VLAN to be shared in the network while subscribers remain in separate VLANs. This feature is also known as Multicast VLAN Registration (MVR).												
Q-in-Q	VLANs transparently cross over a service provider network while isolating traffic among customers.												
GVRP/GARP	Generic VLAN Registration Protocol (GVRP) and Generic Attribute Registration Protocol (GARP) enable automatic propagation and configuration of VLANs in a bridged domain.												
Unidirectional Link Detection (UDLD)	UDLD monitors physical connection to detect unidirectional links caused by incorrect wiring or port faults to prevent forwarding loops and blackholing of traffic in switched networks												
DHCP Relay at Layer 2	Relay of DHCP traffic to DHCP server in a different VLAN. Works with DHCP Option 82.												
IGMP (versions 1, 2, and 3) snooping	Internet Group Management Protocol (IGMP) limits bandwidth-intensive multicast traffic to only the requesters; supports 1K (1024) and 4K (for SG500X in native mode) multicast groups (source-specific multicasting is also supported).												
IGMP querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router.												
HOL blocking	Head-of-line (HOL) blocking.												
Jumbo Frames	Frames up to 9K (9216) bytes in length.												
Layer 3													
IPv4 routing	Wirespeed routing of IPv4 packets Up to 2K (2048) static routes and up to 256 IP interfaces												
Wirespeed IPv6 Static Routing	Up to 2K (2048) static routes and up to 128 IPv6 interfaces												
Layer 3 Interface	Configuration of layer 3 interface on physical port, LAG, VLAN interface or Loopback interface												
CIDR	Support for Classless Inter-Domain Routing												
RIP v2 (on 500X)	Support for Routing Information Protocol version 2, for dynamic routing												
VRPP (on 500X)	Virtual Router Redundancy Protocol (VRPP) delivers improved availability in a Layer 3 network by providing redundancy of the default gateway servicing hosts on the network. VRPP versions 2 and 3 are supported. Up to 255 virtual routers are supported.												
DHCP Server	Switch functions as an IPv4 DHCP Server serving IP addresses for multiple DHCP pools/scopes Support for DHCP options												
DHCP Relay at Layer 3	Relay of DHCP traffic across IP domains.												
User Datagram Protocol (UDP) Relay	Relay of broadcast information across Layer 3 domains for application discovery or relaying of BOOTP/DHCP packets.												

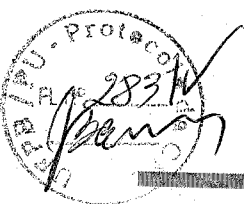


Feature	Description
<b>Stacking</b>	
<b>Hardware stack</b>	Up to 8 units in a stack. Up to 416 ports managed as a single system with hardware failover.
<b>High availability</b>	Fast stack failover delivers minimal traffic loss.
<b>Plug-and-play stacking configuration/management</b>	Master/backup for resilient stack control Auto-numbering Hot swap of units in stack Ring and chain stacking options Auto stacking port speed Flexible stacking port options
<b>High-speed stack interconnects</b>	Cost-effective 5G copper and high-speed 10G Fiber and Copper interfaces.
<b>Hybrid stack</b>	A mix of SF500, SG500, and SG500X in the same stack (10/100, Gigabit, and 10 Gigabit).
<b>Security</b>	
<b>SSH</b>	SSH is a secure replacement for Telnet traffic. SCP also uses SSH. SSH versions 1 and 2 are supported.
<b>SSL</b>	Secure Sockets Layer (SSL) encrypts all HTTPS traffic, allowing secure access to the browser-based management GUI in the switch.
<b>IEEE 802.1X (Authenticator role)</b>	RADIUS authentication and accounting, MD5 hash, guest VLAN, unauthenticated VLAN, single/multiple host mode and single/multiple sessions Supports time-based 802.1X Dynamic VLAN assignment
<b>Web Based Authentication</b>	Web based authentication provides network admission control through web browser to any host devices and operating systems.
<b>STP BPDU Guard</b>	A security mechanism to protect the networks from invalid configurations. A port enabled for Bridge Protocol Data Unit (BPDU) Guard is shut down if a BPDU message is received on that port. This avoids accidental topology loops.
<b>STP Root Guard</b>	This prevents edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.
<b>DHCP snooping</b>	Filters out DHCP messages with unregistered IP addresses and/or from unexpected or untrusted interfaces. This prevents rogue devices from behaving as a DHCP Server.
<b>IP Source Guard (IPSG)</b>	When IP Source Guard is enabled at a port, the switch filters out IP packets received from the port if the source IP addresses of the packets have not been statically configured or dynamically learned from DHCP snooping. This prevents IP Address Spoofing.
<b>Dynamic ARP Inspection (DAI)</b>	The switch discards ARP packets from a port if there are no static or dynamic IP/MAC bindings or if there is a discrepancy between the source or destination address in the ARP packet. This prevents man-in-the-middle attacks.
<b>IP/Mac/Port Binding (IPMB)</b>	The features (DHCP Snooping, IP Source Guard, and Dynamic ARP Inspection) above work together to prevent DoS attacks in the network, thereby increasing network availability
<b>Secure Core Technology (SCT)</b>	Ensures that the switch will receive and process management and protocol traffic no matter how much traffic is received.
<b>Secure Sensitive Data (SSD)</b>	A mechanism to manage sensitive data (such as passwords, keys, etc.) securely on the switch, populating this data to other devices, and secure autoconfig. Access to view the sensitive data as plaintext or encrypted is provided according to the user configured access level and the access method of the user.
<b>Layer 2 isolation (PVE) with community VLAN</b>	Private VLAN Edge provides security and isolation between switch ports, which helps ensure that users cannot snoop on other users' traffic; supports multiple uplinks.
<b>Port security</b>	Ability to lock Source MAC addresses to ports, and limit the number of learned MAC addresses.
<b>RADIUS/TACACS+</b>	Supports RADIUS and TACACS authentication. Switch functions as a client.
<b>RADIUS accounting</b>	The RADIUS accounting functions allow data to be sent at the start and end of services, indicating the amount of resources (such as time, packets, bytes, and so on) used during the session.
<b>Storm control</b>	Broadcast, multicast, and unknown unicast.
<b>DoS prevention</b>	Denial-of-Service (DoS) attack prevention.
<b>Multiple user privilege levels in CLI</b>	Levels 1, 7, and 15 privilege levels.
<b>ACLs</b>	Support for up to 2K (2048) rules on 500 Series and 3K (3072) on 500X series. Drop or rate limit based on source and destination MAC, VLAN ID or IP address, protocol, port, DSCP/IP precedence, TCP/User Datagram Protocol (UDP) source and destination ports, 802.1p priority, Ethernet type, Internet Control Message Protocol (ICMP) packets, Internet Group Management Protocol (IGMP) packets, TCP flag. Time-based ACLs supported.



Feature	Description
<b>Quality of Service</b>	
Priority levels	8 hardware queues
Scheduling	Strict Priority and weighted round-robin (WRR)
Class of service	Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/ToS/DSCP based; DiffServ; classification and re-marking ACLs, Trusted QoS Queue assignment based on differentiated services code point (DSCP) and class of service (802.1p/CoS)
Rate limiting	Ingress policer; egress shaping and ingress rate control; per VLAN, per port, and flow based
Congestion avoidance	A TCP congestion avoidance algorithm is required to minimize and prevent global TCP loss synchronization.
<b>Standards</b>	
Standards	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad Link Aggregation Control Protocol, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.3ad LACP, IEEE 802.1D (STP, GARP and GVRP), IEEE 802.1Q/p VLAN, IEEE 802.1w Rapid STP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at, RFC 768, RFC 783, RFC 791, RFC 792, RFC 793, RFC 813, RFC 879, RFC 896, RFC 826, RFC 854, RFC 855, RFC 856, RFC 858, RFC 894, RFC 919, RFC 922, RFC 920, RFC 950, RFC 951, RFC 1042, RFC 1071, RFC 1123, RFC 1141, RFC 1155, RFC 1157, RFC 1350, RFC 1533, RFC 1541, RFC 1542, RFC 1624, RFC 1700, RFC 1867, RFC 2030, RFC 2616, RFC 2131, RFC 2132, RFC 3164, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 2576, RFC 4330, RFC 1213, RFC 1215, RFC 1286, RFC 1442, RFC 1451, RFC 1493, RFC 1573, RFC 1643, RFC 1757, RFC 1907, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2618, RFC 2665, RFC 2666, RFC 2674, RFC 2737, RFC 2819, RFC 2863, RFC 1157, RFC 1493, RFC 1215, RFC 3416
<b>IPv6</b>	
IPv6	IPv6 Host Mode IPv6 over Ethernet Dual IPv6/IPv4 stack IPv6 Neighbor and Router Discovery (ND) IPv6 Stateless Address Autoconfiguration Path MTU Discovery Duplicate Address Detection (DAD) ICMPv6 IPv6 over IPv4 network with ISATAP tunnel support USGv6 and IPv6 Gold Logo certified
IPv6 QoS	Prioritize IPv6 packets in hardware
IPv6 ACL	Drop or Rate Limit IPv6 packets in hardware
IPv6 First Hop Security	RA guard ND inspection DHCPv6 guard Neighbor binding table (Snooping and static entries) Neighbor binding integrity check
Multicast Listener Discovery (MLD v1/2) snooping	Deliver IPv6 multicast packets only to the required receivers
IPv6 applications	Web/SSL, Telnet Server/SSH, Ping, Traceroute, SNTP, TFTP, SNMP, RADIUS, Syslog, DNS client, DHCP Client, DHCP Autoconfig, IPv6 DHCP Relay, TACACS
IPv6 RFC supported	RFC 4443 (which obsoletes RFC 2463) - ICMPv6 RFC 4291 (which obsoletes RFC 3513) - IPv6 Address Architecture RFC 4291 - IP Version 6 Addressing Architecture RFC 2460 - IPv6 Specification RFC 4861 (which obsoletes RFC 2461) - Neighbor Discovery for IPv6 RFC 4862 (which obsoletes RFC 2462) - IPv6 Stateless Address Auto-configuration RFC 1981 - Path MTU Discovery RFC 4007 - IPv6 Scoped Address Architecture RFC 3484 - Default address selection mechanism RFC 5214 (which obsoletes RFC 4214) - ISATAP tunneling RFC 4293 - MIB IPv6: Textual Conventions and General Group RFC 3595 - Textual Conventions for IPv6 Flow Label
<b>Management</b>	
Web user interface	Built-in switch configuration utility for easy browser-based device configuration (HTTP/HTTPS). Supports configuration, system dashboard, system maintenance and monitoring.
SNMP	SNMP versions 1, 2c, and 3 with support for traps, and SNMP v3 User-based Security Model (USM)
Standard MIBs	lldp-MIB lldpextdot1-MIB lldpextdot3-MIB
	rfc2665-MIB rfc2668-MIB rfc2737-MIB

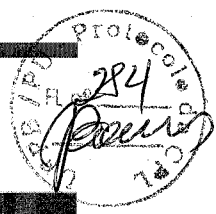
Feature	Description	
	ldpextmed-MIB	rfc3621-MIB
	rfc2674-MIB	rfc4668-MIB
	rfc2575-MIB	rfc4670-MIB
	rfc2573-MIB	trunk-MIB
	rfc2233-MIB	tunnel-MIB
	rfc2013-MIB	udp-MIB
	rfc2012-MIB	draft-ietf-bridge-8021x-MIB
	rfc2011-MIB	draft-ietf-bridge-rstpmib-04-MIB
	RFC-1212	draft-ietf-hubmib-etherif-mib-v3-00-MIB
	RFC-1215	ianaaddrfamnumbers-MIB
Standard MIBs (continued)	SNMPv2-CONF	ianaifity-MIB
	SNMPv2-TC	ianaprot-MIB
	p-bridge-MIB	inet-address-MIB
	q-bridge-MIB	ip-forward-MIB
	rfc1389-MIB	ip-MIB
	rfc1493-MIB	RFC1155-SMI
	rfc1611-MIB	RFC1213-MIB
	rfc1612-MIB	SNMPv2-MIB
	rfc1850-MIB	SNMPv2-SMI
	rfc1907-MIB	SNMPv2-TM
	rfc2571-MIB	RMON-MIB
	rfc2572-MIB	rfc1724-MIB
	rfc2574-MIB	dcb-raj-DCBX-MIB-1108-MIB
	rfc2576-MIB	rfc1213-MIB
	rfc2613-MIB	rfc1757-MIB
Private MIBs	CISCOB-ldp-MIB	CISCOB-iprouter-MIB
	CISCOB-brgmulticast-MIB	CISCOB-ipv6-MIB
	CISCOB-bridgemibobjects-MIB	CISCOB-mnginf-MIB
	CISCOB-bonjour-MIB	CISCOB-icli-MIB
	CISCOB-dhcpcl-MIB	CISCOBlocalization-MIB
	CISCOB-MIB	CISCOB-mcmngr-MIB
	CISCOB-wrantomtaildrop-MIB	CISCOB-mng-MIB
	CISCOB-traceroute-MIB	CISCOB-physdescription-MIB
	CISCOB-telnet-MIB	CISCOB-PoE-MIB
	CISCOB-stormctrl-MIB	CISCOB-protectedport-MIB
	CISCOBssh-MIB	CISCOB-rmon-MIB
	CISCOB-socket-MIB	CISCOB-rs232-MIB
	CISCOB-sntp-MIB	CISCOB-SecuritySuite-MIB
	CISCOB-smon-MIB	CISCOB-snmplib-MIB
	CISCOB-phy-MIB	CISCOB-specialbpd-MIB
	CISCOB-multisessionterminal-MIB	CISCOB-banner-MIB
	CISCOB-mri-MIB	CISCOB-syslog-MIB
	CISCOB-jumboframes-MIB	CISCOB-TcpSession-MIB
	CISCOB-gvrp-MIB	CISCOB-traps-MIB
	CISCOB-endofmib-MIB	CISCOB-trunk-MIB
	CISCOB-dot1x-MIB	CISCOB-tuning-MIB
	CISCOB-deviceparams-MIB	CISCOB-tunnel-MIB
	CISCOB-cli-MIB	CISCOB-udp-MIB
	CISCOB-cdb-MIB	CISCOB-vlan-MIB
	CISCOB-brgmacswitch-MIB	CISCOB-ipstdacl-MIB
	CISCOB-3sw2swtables-MIB	CISCOB-eee-MIB
	CISCOB-smartPorts-MIB	CISCOB-ssl-MIB
	CISCOB-tbi-MIB	CISCOB-digitalkeymanage-MIB
	CISCOB-macbaseprio-MIB	CISCOB-qosclimib-MIB
	CISCOB-env_mib-MIB	CISCOB-vrrp-MIB
	CISCOB-policy-MIB	CISCOB-tbp-MIB



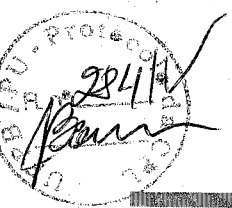
Feature	Description
Private MIBs (continued)	CISCOB-sensor-MIB
	CISCOB-aaa-MIB
	CISCOB-application-MIB
	CISCOB-bridgesecurity-MIB
	CISCOB-copy-MIB
	CISCOB-CpuCounters-MIB
	CISCOB-Custom1BonjourService-MIB
	CISCOB-dhcp-MIB
	CISCOB-dif-MIB
	CISCOB-dnscl-MIB
	CISCOB-embweb-MIB
	CISCOB-fft-MIB
	CISCOB-file-MIB
	CISCOB-greeneth-MIB
CISCOB-stack-MIB	CISCOB-stack-MIB
	CISCOB-MIB
	CISCOB-secsd-MIB
	CISCOB-draft-ietf-entmib-sensor-MIB
	CISCOB-draft-ietf-syslog-device-MIB
	CISCOB-rtc2925-MIB
	CISCOB-vrrpv3-MIB
	CISCO-SMI-MIB
	CISCOB-DebugCapabilities-MIB
	CISCOB-CDP-MIB
	CISCOB-vlanVoice-MIB
	CISCOB-EVENTS-MIB
	CISCOB-sysmg-MIB
	CISCOB-sct-MIB
CISCOB-interfaces-recovery-MIB	CISCOB-interfaces-recovery-MIB
	CISCOB-ip-MIB
	CISCO-TC-MIB
	CISCO-VTP-MIB
	CISCO-CDP-MIB
RMON	Embedded RMON software agent supports 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
IPv4 and IPv6 Dual Stack	Coexistence of both protocol stacks to ease migration
Firmware upgrade	<ul style="list-style-type: none"> <li>• Web browser upgrade (HTTP/HTTPS) and TFTP and SCP</li> <li>• Upgrade can be initiated through console port as well</li> <li>• Dual images for resilient firmware upgrades</li> </ul>
Port mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to 8 source ports can be mirrored to one destination port.
VLAN mirroring	Traffic from a VLAN can be mirrored to a port for analysis with a network analyzer or RMON probe. Up to 8 source VLANs can be mirrored to one destination port.
DHCP (Options 12, 66, 67, 82, 129, and 150)	DHCP options facilitate tighter control from a central point (DHCP Server), to obtain IP address, auto configuration (with configuration file download), DHCP Relay, and host name.
Auto configuration with Secure Copy (SCP) file download	Enables secure mass deployment with protection of sensitive data.
Text-editable configs	Config files can be edited with a text editor and downloaded to another switch, facilitating easier mass deployment.
Smartports	Simplified configuration of QoS and security capabilities.
Auto Smartports	Automatically applies the intelligence delivered through the Smartports roles to the port based on the devices discovered over Cisco Discovery Protocol or LLDP-MED. This facilitates zero touch deployments.
Secure Copy (SCP)	Securely transfer files to and from the switch.
Textview CLI	Scriptable CLI. A full CLI as well as a menu CLI is supported.
Cloud Services	Support for Cisco Small Business and Cisco OnPlus.
Localization	Localization of GUI and documentation into multiple languages.
Login banner	Configurable multiple banners for web as well as CLI.
Time-based port operation	Link up or down based on user-defined schedule (when the port is administratively up).
Other management	Traceroute; single IP management; HTTP/HTTPS; SSH; RADIUS; port mirroring; TFTP upgrade; DHCP client; BOOTP; Simple Network Time Protocol (SNTP); Xmodem upgrade; cable diagnostics; Ping; syslog; Telnet client (SSH secure support); Automatic time settings from Management Station.
Green (Power Efficiency)	
Energy Detect	Automatically turns power off on Gigabit Ethernet RJ-45 port when detecting link down. Active mode is resumed without loss of any packets when the switch detects the link is up.
Cable length detection	Adjusts the signal strength based on the cable length. Reduces the power consumption for cable shorter than 10m. Supported on Gigabit Ethernet models.
EEE compliant (802.3az)	Supports IEEE 802.3az on all Gigabit copper ports.
Disable port LEDs	LEDs can be manually turned off to save on energy.



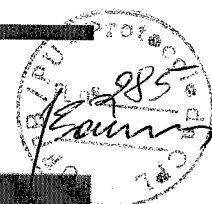
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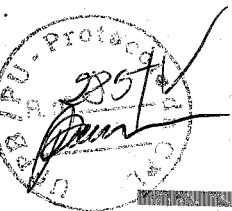
Feature	Description				
General					
Jumbo frames	Frame sizes up to 9K (9216) bytes. Supported on 10/100 and Gigabit Ethernet interfaces. The default MTU is 2K.				
MAC table	16K (16384) MAC addresses.				
Discovery					
Bonjour	The switch advertises itself using the Bonjour protocol.				
LLDP (802.1ab) with LLDP-MED extensions	Link Layer Discovery Protocol (LLDP) allows the switch to advertise its identification, configuration, and capabilities to neighboring devices that store the data in a MIB. LLDP-MED is an enhancement to LLDP that adds the extensions needed for IP phones.				
Cisco Discovery Protocol (CDP)	The switch advertises itself using the Cisco Discovery Protocol (CDP). It also learns the connected device and its characteristics via CDP.				
Product Specifications					
Power over Ethernet (PoE)					
IEEE 802.3af and 802.3at PoE delivered over any of the RJ-45 ports within the listed power budgets	Switches support 802.2af, 802.3at, and Cisco pre-standard (legacy) PoE. Maximum power of 30W to any 10/100 or Gigabit base port until the PoE budget for the switch is reached. The total power available for PoE per switch is:				
	Model Name	Power Dedicated to PoE		Number of Ports That Support PoE	
	SF500-24	N/A		0	
	SF500-24P	180W		24	
	SF500-24MP	375W		24	
	SF500-48	N/A		0	
	SF500-48P	375W		48	
	SF500-48MP	740W		48	
	SG500-28	N/A		0	
	SG500-28P	180W		24	
	SG500-28MPP	740W		24	
	SG500-52	N/A		0	
	SG500-52P	375W		48	
	SG500-52MP	740W		48	
	SG500X-24	N/A		0	
	SG500X-24P	375W		24	
	SG500X-24MPP	740W		24	
	SG500X-48	N/A		0	
	SG500X-48P	375W		48	
	SG500-48MP	740W		48	
SG500XG-8F8T	N/A		0		
Power consumption (worst case)	Model Name	Green Power (mode)	System Power Consumption	Power Consumption (with PoE)	Heat Dissipation (BTU/hr)
	SF500-24	Energy Detect	110V=13.7W 220V=14.8W	N/A	46.5
	SF500-24P	Energy Detect	110V=26.1W 220V=27W	110V=216W 220V=211W	719.96
	SF500-24MP	Energy Detect	110V=39.31W 220V=39.79W	110V=380W 220V=429.67W	1466
	SF500-48	Energy Detect	110V=24.3W 220V=24.8W	N/A	77.9



Feature	Description				
Ports	SF500-48P	Energy Detect	110V=46.8W 220V=47.5W	110V=437W 220V=429.5W	1465.51
	SF500-48MP	Energy Detect	110V=60.48W 220V=60.21W	110V=853.04W 220V=826.62W	2910
	SG500-28	EEE + Short Reach + Energy Detect	110V=23.2W 220V=23.6W	N/A	74.2
	SG500-28P	EEE + Short Reach + Energy Detect	110V=35W 220V=35.9W	110V=227W 220V=221.5W	755.79
	SG500-28MPP	EEE + Short Reach + Energy Detect	110V=40.38W 220V=41.0W	110V=803.6W 220V=808.6W	2729.06
	SG500-52	EEE + Short Reach + Energy Detect	110V=47W 220V=47W	N/A	147.7
	SG500-52P	EEE + Short Reach + Energy Detect	110V=63.7W 220V=64.7W	110V=460.5W 220V=452W	1542.29
	SG500-52MP	EEE + Short Reach + Energy Detect	110V=70.3W 220V=70.5W	110V=873.5W 220V=857.3W	2807.51
	SG500X-24	EEE + Short Reach + Energy Detect	110V=36.5W 220V=36.2W	N/A	114.7
	SG500X-24P	EEE + Short Reach + Energy Detect	110V=57.2W 220V=57.9W	110V=456W 220V=438W	1494.52
	SG500X-24MPP	EEE + Short Reach + Energy Detect	110V=64.75W 220V=65.13W	110V=851.08W 220V=825.91W	2904
	SG500X-48	EEE + Short Reach + Energy Detect	110V=60.3W 220V=60.3W	N/A	189.5
	SG500X-48P	EEE + Short Reach + Energy Detect	110V=74.4W 220V=75W	110V=474W 220V=462W	1576.41
	SG500X-48MP	EEE + Short Reach + Energy Detect	110V=87.33W 220V=85.43W	110V=880.75W 220V=855.13W	3006
	SG500XG-8F8T	EEE + Short Reach + Energy Detect	110V=93.7W 220V=94.33W	N/A	321.87
	<b>Model Name</b>	<b>Total System Ports</b>	<b>RJ-45 Ports</b>	<b>Combo Ports (RJ-45 + SFP)</b>	
	SF500-24	24FE + 4 GE (5G Stacking)	24 FE	2 combo GE + 2 1G/5G SFP	
	SF500-24P	24FE + 4 GE (5G Stacking)	24 FE	2 combo GE + 2 1G/5G SFP	
	SF500-24MP	24FE + 4 GE (5G Stacking)	24 FE	2 combo GE + 2 1G/5G SFP	
	SF500-48	48FE + 4 GE (5G Stacking)	48 FE	2 combo GE + 2 1G/5G SFP	
	SF500-48P	48FE + 4 GE (5G Stacking)	48 FE	2 combo GE + 2 1G/5G SFP	
	SF500-48MP	48FE + 4 GE (5G Stacking)	48 FE	2 combo GE + 2 1G/5G SFP	
	SG500-28	24GE + 4 GE (5G Stacking)	24 GE	2 combo GE + 2 1G/5G SFP	
	SG500-28P	24GE + 4 GE (5G Stacking)	24 GE	2 combo GE + 2 1G/5G SFP	
	SG500-28MPP	24GE + 4 GE (5G Stacking)	24 GE	2 combo GE + 2 1G/5G SFP	
	SG500-52	48GE + 4 GE (5G Stacking)	48 GE	2 combo GE + 2 1G/5G SFP	
	SG500-52P	48GE + 4 GE (5G Stacking)	48 GE	2 combo GE + 2 1G/5G SFP	
	SG500-52MP	48GE + 4 GE (5G Stacking)	48 GE	2 combo GE + 2 1G/5G SFP	
	SG500X-24	24GE + 4 10GE	24 GE	4 XG SFP+ (Two combo 5G SFP slots)	
	SG500X-24P	24GE + 4 10GE	24 GE	4 XG SFP+ (Two combo 5G SFP slots)	



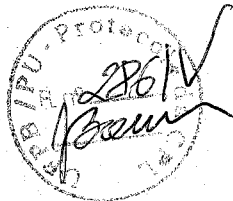
Feature	Description			
	SG500X-24MPP	24GE + 4 10GE	24 GE	4 XG SFP+ (Two combo 5G SFP slots)
	SG500X-48	48GE + 4 10GE	48 GE	4 XG SFP+ (Two combo 5G SFP slots)
	SG500X-48P	48GE + 4 10GE	48 GE	4 XG SFP+ (Two combo 5G SFP slots)
	SG500X-48MP	48GE + 4 10GE	48 GE	4 XG SFP+ (Two combo 5G SFP slots)
	SG500XG-8F8T	8 XG Copper + 8 XG SFP+ plus 1 GE Management	8 XG + 1 GE Mgmt	8 XG SFP+
Buttons	Reset button			
Cabling type	Unshielded twisted pair (UTP) Category 5 or better; Fiber options (SMF and MMF); Coaxial SFP+ for stacking purposes			
LEDs	LED power savings, System, Link/Act, PoE, Speed			
Flash	32 MB			
800 MHz ARM CPU memory	256 MB			
Packet buffer	All numbers are aggregate across all ports, as the buffers are dynamically shared:			
	Model Name		Packet Buffer	
	SF500-24		8Mb	
	SF500-24P		8Mb	
	SF500-24MP		8Mb	
	SF500-48		2 8Mb	
	SF500-48P		2 8Mb	
	SF500-48MP		2 8Mb	
	SG500-28		8Mb	
	SG500-28P		8Mb	
	SG500-28MPP		8Mb	
	SG500-52		2 8Mb	
	SG500-52P		2 8Mb	
	SG500-52MP		2 8Mb	
	SG500X-24		12Mb	
	SG500X-24P		12Mb	
	SG500X-24MPP		12Mb	
	SG500X-48		2 12Mb	
	SG500X-48P		2 12Mb	
	SG500X-48MP		2 12Mb	
	SG500XG-8F8T		16Mb	
Supported SFP/SFP+ Modules	SKU	Media	Speed	Maximum Distance
Note: Gigabit (MGBxxx) and 10-Gigabit (SFP-xxx) modules also work in the SG500XG-8F8T Ten Gigabit switch model.	MFEFX1	Multi-mode fiber	100 Mbps	2 km
	MFELX1	Single-mode fiber	100 Mbps	15 km
	MFEBX1	Single-mode fiber	100 Mbps	20 km
	MGBBX1	Single-mode fiber	1000 Mbps	10 km
	MGBSX1	Multi-mode fiber	1000 Mbps	500 m
	MGBLH1	Single-mode fiber	1000 Mbps	40 km
	MGBLX1	Single-mode fiber	1000 Mbps	10 km



Feature		Description		
	MGBT1	UPT cat 5	1000 Mbps	100 m
	SFP-H10GB-CU1M	Copper coax	5G (Sx500)/10G (SG500X)	1 m
	SFP-H10GB-CU3M	Copper coax	5G (Sx500)/10G (SG500X)	3 m
	SFP-H10GB-CU5M	Copper coax	5G (Sx500)/10G (SG500X)	5 m
	SFP-10G-SR	Multi-mode fiber	10 Gig	400 m
	SFP-10G-LR	Single-mode fiber	10 Gig	10 km
	SFP-10G-LRM	Single-mode/multi-mode fiber	10 Gig	300 m
Stack Connection Options				
	500	500X		
500	5G copper - SFP-H10GB-CUxM 1G fiber or copper - MGBxxx 1G Base-T - embedded RJ45 (S1/S2)		5G copper - SFP-H10GB-CUxM 1G fiber or copper - MGBxxx	
500X	5G copper - SFP-H10GB-CUxM 1G fiber or copper - MGBxxx		10G copper - SFP-H10GB-CUxM 10G Fiber - SFP-10G-xx 1G fiber or copper - MGBxxx	
Environmental				
Unit Dimensions (W x H x D)	Model Name		Unit Dimensions	
	SF500-24		440 x 44 x 257 mm	
	SF500-24P		440 x 44 x 257 mm	
	SF500-24MP		440 x 44 x 257 mm	
	SF500-48		440 x 44 x 257 mm	
	SF500-48P		440 x 44 x 350 mm	
	SF500-48MP		440 x 44 x 350 mm	
	SG500-28		440 x 44 x 257 mm	
	SG500-28P		440 x 44 x 257 mm	
	SG500-28MPP		440 x 44 x 350 mm	
	SG500-52		440 x 44 x 257 mm	
	SG500-52P		440 x 44 x 350 mm	
	SG500-52MP		440 x 44 x 350 mm	
	SG500X-24		440 x 44 x 257 mm	
	SG500X-24P		440 x 44 x 350 mm	
	SG500X-24MPP		440 x 44 x 350 mm	
	SG500X-48		440 x 44 x 257 mm	
	SG500X-48P		440 x 44 x 350 mm	
	SG500X-48MP		440 x 44 x 350 mm	
	SG500XG-8F8T		440 x 44 x 350 mm	
Unit weight	Model Name		Unit Weight	
	SF500-24		3.09 kg	
	SF500-24P		3.73 kg	
	SF500-24MP		4.35 kg	
	SF500-48		3.43 kg	
	SF500-48P		5.61 kg	
	SF500-48MP		5.52 kg	



Feature	Description			
	SG500-28 3.4 kg			
	SG500-28P 3.95 kg			
	SG500-28MPP 5.28 kg			
	SG500-52 3.95 kg			
	SG500-52P 5.61 kg			
	SG500-52MP 5.6 kg			
	SG500X-24 3.45 kg			
	SG500X-24P 5.25 kg			
	SG500X-24MPP 4.61 kg			
	SG500X-48 4.01 kg			
	SG500X-48P 5.74 kg			
	SG500X-48MP 5.43 kg			
	SG500XG-8F8T 5.25 kg			
Power	100-240V 47-63 Hz, internal, universal			
Certification	UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A			
Operating temperature	SF500-24, SF500-24P, SF500-48, SF500-48P, SG500-28, SG500-28P, SG500-52, SG500-52P, SG500X-24, SG500X-24P, SG500X-48, SG500X-48P 32°to 104°F (0°to 40°C) SG500-28MPP, SG500-52MP, SG500XG-8F8T, SF500-24MP, SF500-48MP, SG500X-24MPP, SG500X-48MP 32°to 122°F (0°to 50°C)			
Storage temperature	-4°to 158°F (-20°to 70°C)			
Operating humidity	10% to 90%, relative, noncondensing			
Storage humidity	10% to 90%, relative, noncondensing			
Acoustic noise and mean time between failures (MTBF)	Model Name	Fan (Number)	Acoustic Noise	MTBF @ 40 °C (Hours)
	SF500-24	No fan	N/A	210,801.7
	SF500-24P	2 pcs/6300rpm No fan speed control	41 dB	260,626.2
	SF500-24MP	2pcs	44 dB	514157 (at 50C)
	SF500-48	No fan	N/A	131,127.2
	SF500-48P	3 pcs/9500rpm and fan speed control	30°C=43dB 40°C=54.5dB	147,998.3
	SF500-48MP	3 pcs	46.9 dB	322111 (at 50C)
	SG500-28	No fan	N/A	141,161.0
	SG500-28P	2 pcs/6300rpm No fan speed control	41.2 dB	253,175.1
	SG500-28MPP	2 pcs/6300rpm No fan speed control	41.2 dB	188,722 (at 50C)
	SG500-52	2 pcs/5000rpm No fan speed control	41.3dB	154,250.1
	SG500-52P	4 pcs/9500rpm and fan speed control	30°C=41.1dB 40°C=54.8dB	143,124.8
	SG500-52MP	4 pcs/9500rpm and fan speed control	30°C=41.1dB 40°C=54.8dB	186,968 (at 50C)
	SG500X-24	1 pcs/6300rpm No fan speed control	40.2dB	246,188.2
	SG500X-24P	3 pcs/9500rpm and fan speed control	30°C=40.1dB 40°C=52.2dB	132,225.7



Feature	Description			
	SG500X-24MPP	3pcs	46.4 dB	428,088 (at 50C)
	SG500X-48	2 pcs/5000rpm No fan speed control	41.1dB	166,796.4
	SG500X-48P	4 pcs/9500rpm and fan speed control	30 °C=40.9dB 40 °C=54.2dB	137,246.1
	SG500X-48MP	4 pcs	46.4 dB	307978 (at 50C)
	SG500XG-8F8T	4 pcs/9500rpm and fan speed control	30 °C=41.7dB 40 °C=55.3dB	131,290 (at 50C)
Warranty	Limited lifetime with next-business-day advance replacement (where available, otherwise same day ship)			

Package Contents
<ul style="list-style-type: none"> <li>• Cisco Small Business 500/500X Series Stackable Managed Switch</li> <li>• Power cord</li> <li>• Mounting kit included with all models</li> <li>• Serial cable</li> <li>• CD-ROM with user documentation (PDF) included</li> <li>• Quick Start Guide</li> </ul>
Minimum Requirements
<ul style="list-style-type: none"> <li>• Web browser: Mozilla Firefox version 8 or later; Microsoft Internet Explorer version 7 or later, Safari, Chrome</li> <li>• Category 5 Ethernet network cable</li> <li>• TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed</li> </ul>

## Ordering Information

**Table 2.** Cisco 500 Series Switches Ordering Information

Model Name	Product Order ID Number	Description
<b>Fast Ethernet</b>		
SF500-24	SF500-24-K9	<ul style="list-style-type: none"> <li>• 24 10/100 ports</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SF500-24P	SF500-24P-K9	<ul style="list-style-type: none"> <li>• 24 10/100 PoE+ ports</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SF500-24MP	SF500-24MP-K9	<ul style="list-style-type: none"> <li>• 24 10/100 POE+ ports with 370W power budget</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SF500-48	SF500-48-K9	<ul style="list-style-type: none"> <li>• 48 10/100 ports</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SF500-48P	SF500-48P-K9	<ul style="list-style-type: none"> <li>• 48 10/100 PoE+ ports</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SF500-48MP	SF500-48MP-K9	<ul style="list-style-type: none"> <li>• 48 10/100 POE+ ports with 740W power budget</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
<b>Gigabit Ethernet</b>		
SG500-28	SG500-28-K9	<ul style="list-style-type: none"> <li>• 24 10/100/1000 ports</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SG500-28P	SG500-28P-K9	<ul style="list-style-type: none"> <li>• 24 10/100/1000 PoE+ ports with 180W power budget</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SG500-28MPP	SG500-28MPP-K9	<ul style="list-style-type: none"> <li>• 24 10/100/1000 PoE+ ports with 740W power budget</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>
SG500-52	SG500-52-K9	<ul style="list-style-type: none"> <li>• 48 10/100/1000 ports</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet + 2 1GE/5GE SFP)</li> </ul>



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Model Name	Product Order ID Number	Description
SG500-52P	SG500-52P-K9	<ul style="list-style-type: none"> <li>• 48 10/100/1000 PoE+ ports with 375W power budget</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet+ 2 1GE/5GE SFP)</li> </ul>
SG500-52MP	SG500-52MP-K9	<ul style="list-style-type: none"> <li>• 48 10/100/1000 PoE+ ports with 740W power budget</li> <li>• 4 Gigabit Ethernet (2 combo Gigabit Ethernet+ 2 1GE/5GE SFP)</li> </ul>
<b>Gigabit Ethernet with 10 Gigabit Uplinks</b>		
SG500X-24	SG500X-24-K9	<ul style="list-style-type: none"> <li>• 24 10/100/1000 ports</li> <li>• 4 10 Gigabit Ethernet SFP+ (2 10 GE+ 2 10GE/5GE-Stacking Combo)</li> </ul>
SG500X-24P	SG500X-24P-K9	<ul style="list-style-type: none"> <li>• 24 10/100/1000 PoE+ ports with 375W power budget</li> <li>• 4 10 Gigabit Ethernet SFP+ (2 10 GE+ 2 10GE/5GE-Stacking Combo)</li> </ul>
SG500X-24MPP	SG500X-24MPP-K9	<ul style="list-style-type: none"> <li>• 24 10/100/1000 PoE+ ports with 740W power budget</li> <li>• 4 10 Gigabit Ethernet SFP+ (2 10 GE+ 2 10GE/5GE-Stacking Combo)</li> </ul>
SG500X-48	SG500X-48-K9	<ul style="list-style-type: none"> <li>• 48 10/100/1000 ports</li> <li>• 4 10 Gigabit Ethernet SFP+ (2 10 GE+ 2 10GE/5GE-Stacking Combo)</li> </ul>
SG500X-48P	SG500X-48P-K9	<ul style="list-style-type: none"> <li>• 48 10/100/1000 PoE+ ports with 375W power budget</li> <li>• 4 10 Gigabit Ethernet SFP+ (2 10 GE+ 2 10GE/5GE-Stacking Combo)</li> </ul>
SG500X-48MP	SG500X-48MP-K9	<ul style="list-style-type: none"> <li>• 48 10/100/1000 PoE+ ports with 740W power budget</li> <li>• 4 10 Gigabit Ethernet SFP+ (2 10 GE+ 2 10GE/5GE-Stacking Combo)</li> </ul>
<b>10 Gigabit Ethernet</b>		
SG500XG-8F8T	SG500XG-8F8T-K9	<ul style="list-style-type: none"> <li>• 8 10 Gigabit Ethernet 10GBase-T copper port</li> <li>• 8 10 Gigabit Ethernet SFP+ (dedicated)</li> <li>• 1 Gigabit Ethernet management port</li> </ul>

\* Each combo mini-GBIC port has one 10/100/1000 copper Ethernet port and one mini-GBIC/SFP Gigabit Ethernet slot, with one port active at a time.

## An Advanced Technology Backbone for Growing Businesses

Growth is never a bad thing. But as you gain new customers and a higher profile, you need a business technology platform capable of delivering a higher level of service and reliability. With more users, more devices and applications, and more exposure to security threats, a switching platform designed for a smaller operation simply cannot meet your growing needs. It's time for a network that will support your business as you take it to the next level. Cisco 500 and 500X Series switches provide the advanced feature set, reliability, and investment protection your business needs, today and in the future.

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## For More Information

To find out more about the Cisco 500 Series, visit <http://www.cisco.com/go/500switches>.

To learn about other products and solutions in the Cisco Small Business portfolio, visit <http://www.cisco.com/go/smallbusiness>.






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**UNIVERSIDADE FEDERAL DA PARAÍBA**  
PREFEITURA UNIVERSITÁRIA - PU



PROCESSO 23074.028170/2016-66

JOÃO PESSOA, 30 DE MAIO DE 2016


À: COMISSÃO DE LICITAÇÃO E CONTRATOS - CPL-PU

ENGº AUGUSTO CÉSAR TEMÓTEO DE OLIVEIRA

Senhor Presidente,

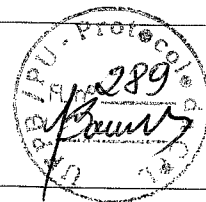
Encaminho o presente processo administrativo para conhecimento do **Laudo Técnico (fls. 22-51)** conforme solicitação à folha 01, e para demais providências legais.

Atenciosamente,

  
JANDIR DE SANTANA  
Prefeito Universitário  
Mat. SIAPE 332469



**UNIVERSIDADE FEDERAL DA PARAÍBA**  
**SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E**  
**CONTRATOS**  
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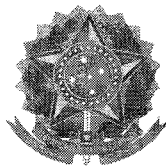
**MINISTÉRIO DA EDUCAÇÃO**  
**UNIVERSIDADE FEDERAL DA PARAÍBA**  
**PU - COMISSÃO PERMANENTE DE LICITAÇÃO**

## **TERMO DE JUNTADA POR APENSAÇÃO**

Em **30/06/2016**, atendendo o despacho do(a) **GERENTE LUIZ FELIPE PESSOA CUNHA (Matrícula: 2100579)**, faço apensar ao presente processo nº **23074.065281/2015-72** o(s) processos(s) nº(s) **23074.032546/2016-37**.

  
Assinatura/Carimbo do Responsável

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# VOLUME 1

**Serviço Público Federal**

**MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DA PARAÍBA  
SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E  
CONTRATOS**



## PROCESSO

**23074.032546/2016-37**

Cadastrado em 01/06/2016



**Processo disponível para recebimento com código de barras/QR Code**

**Nome(s) do Interessado(s):**

AUGUSTO CESAR TEMOTEO DE OLIVEIRA

**E-mail:**

ACTONET@BOL.COM.BR

**Identificador:**

1655398

### Assunto do Processo:

995 - PEDIDOS, OFERECIMENTOS E INFORMAÇÕES DIVERSAS

### Assunto Detalhado:

LICITAÇÕES, PARECER LAUDO TÉCNICO CONCLUSIVO.

**Unidade de Origem:**

PU - COMISSÃO PERMANENTE DE LICITAÇÃO (11.01.12.17)

**Criado Por:**

AUGUSTO CESAR TEMOTEO DE OLIVEIRA

**Observação:**

## MOVIMENTAÇÕES ASSOCIADAS

[illegible]



Universidade Federal da Paraíba  
Prefeitura Universitária  
Comissão Permanente de Licitação



UFPB/PU/CPL/MEMO Nº 040/2016

João Pessoa, 01 de Junho de 2016.

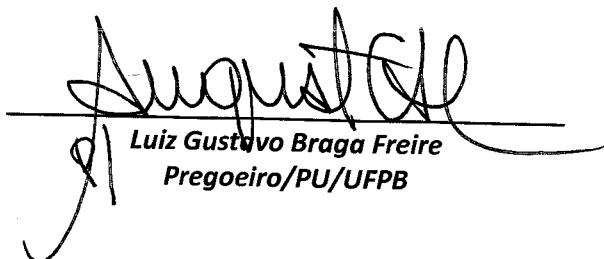
DA: COMISSÃO PERMANENTE DE LICITAÇÃO  
PREGOEIRO LUIZ GUSTAVO BRAGA FREIRE  
AO: ANALISTA DE TECNOLOGIA DA INFORMAÇÃO  
RICARDO COSTA DE CARVALHO

Prezado Senhor,

Encaminhamos a proposta da empresa **ZIVA TECNOLOGIA E SOLUÇÕES LTDA.**, referente ao **Pregão 005/2016**, GRUPO 1, para que seja analisada e que seja emitido um laudo técnico conclusivo, especificando se o(s) produto(s) ofertado(s) pela referida empresa está de acordo com as especificações técnicas descritas no Edital e Termo de Referência deste certame.

Em virtude da exiguidade do tempo, solicitamos seu pronunciamento o mais breve possível, retornando-nos até a próxima segunda-feira, dia **06/06/2016**, para que possamos dar continuidade ao procedimento licitatório.

Atenciosamente,

  
Luiz Gustavo Braga Freire  
Pregoeiro/PU/UFPB





AO  
MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DA PARAÍBA  
PREFEITURA UNIVERSITÁRIA  
COMISSÃO PERMANENTE DE LICITAÇÃO

**PREGÃO ELETRÔNICO SRP UFPB/CPL-PU Nº 005/2016**

**ANEXO VI**  
**CARTA PROPOSTA**

A firma ZIVA TECNOLOGIA E SOLUÇÕES LTDA, inscrita no CNPJ sob o Nº 05.816.526/0001-68, Inscrição Estadual nº 116.671.026.111, com sede à Rua Funchal nº 513 – 1º andar – Vila Olímpia – CEP: 04551-060 – São Paulo – SP através do seu representante legal o Sr. José Cunha Junior, portador da Carteira de Identidade nº 8.950.614 SSP-SP e CPF nº : 073.257.608-33, apresenta a sua proposta para o **PREGÃO ELETRÔNICO SRP UFPB/CPL-PU Nº 005/2016**, que tem por objeto o **Registro de Preços para eventual aquisição de bens e/ou serviços de tecnologia da informação e comunicação (TIC)**, a fim de promover a **ampliação e a modernização dos elementos ativos integrantes da infraestrutura de rede de comunicação de dados da instituição (Rede UFPB)**, conforme condições, quantidades e exigências estabelecidas neste Edital todos os seus anexos, na forma a seguir:

**Licitação do tipo menor preço global anual por grupo (Conforme quadro de Planilha de Formação de Preços constante do Termo de Referência – Anexo I)**



## GRUPO 1

Item	Descrição	Unidade de medida	Qtde.	Valor Unitário (R\$)	Valor Total (R\$)
1	Switch de rede				
1.1	Switch de rede - Tipo 1 – <b>Marca: Huawei</b> – <b>Fabricante: Huawei Enterprise</b> – <b>Modelo/Versão: HUAWEI Enterprise Access Switches S1700-28GFR-4P-AC</b> <b>Descrição:</b> A HUAWEI Enterprise Switch Series compreende switches Ethernet Gigabit que suportam Camada de roteamento estático, serviços diversificados e encaminhamento de IPv6, bem como fornecer densidade de interfaces em 10-Gigabit Ethernet (10GbE). A tecnologia exclusiva na qual cria uma tela virtual, gerenciamento de vários interruptores como um dispositivo lógico, o que aumenta a resistência da rede, desempenho e disponibilidade, enquanto reduz a complexidade operacional. Estes switches fornecem acesso Ethernet Gigabit e pode ser utilizado na extremidade de uma rede ou para ligar clusters de servidor em pequenos centros de dados. Alta disponibilidade, gerenciamento simplificado e políticas de controle de segurança abrangentes estão entre as principais características que distinguem esta série. Essa opção também suporta duas fontes de alimentação modulares. Atendendo as especificações de acordo com o Edital.	Unid.	85	R\$ 1.555,00 (Hum mil, quinhentos e cinquenta e cinco reais)	R\$ 132.175,00 (Cento e trinta e dois mil, cento e setenta e cinco reais)
1.2	Switch de rede - Tipo 2 – <b>Marca: HUAWEI</b> – <b>Fabricante: Huawei Enterprise</b> – <b>Modelo/Versão: HUAWEI Enterprise Access Switches S1700-52GFR-4P-AC</b> <b>Descrição:</b> A HUAWEI Enterprise Switch Series compreende switches Ethernet Gigabit que suportam Camada de roteamento estático, serviços diversificados e encaminhamento de IPv6, bem como fornecer densidade de interfaces em 10-	Unid.	90	R\$ 2.354,00 (Dois mil, trezentos e cinquenta e quatro reais)	R\$ 211.860,00 (Duzentos e onze mil, oitocentos e sessenta reais)

Matriz: Rua Funchal, 513 – 1º andar – Vila Olímpia – São Paulo – SP – Brasil – CEP: 04551-062 – Tel.: (55) 11- 3365-0410.  
Filial I: Av. Pastor Martin Luther King Junior, 126 - Nova América Offices, T 2000 - SL 505 - Del Castilho (55) 21- 3554 -2190.  
Filial II: SCS Quadra 6, 72 Bloco A - sala 420 - Ed. José Severo – Asa. Sul – Brasília – DF – CEP 70326-900 – Tel.: (55) 61- 3321-1880  
Site: [www.ziva.com.br](http://www.ziva.com.br) E-mail: [licitacoes@ziva.com.br](mailto:licitacoes@ziva.com.br)





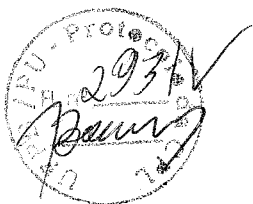
Gigabit Ethernet (10GbE).

A tecnologia exclusiva na qual cria uma tela virtual, gerenciamento de vários interruptores como um dispositivo lógico, o que aumenta a resistência da rede, desempenho e disponibilidade, enquanto reduz a complexidade operacional. Estes switches fornecem acesso Ethernet Gigabit e pode ser utilizado na extremidade de uma rede ou para ligar clusters de servidor em pequenos centros de dados.

Alta disponibilidade, gerenciamento simplificado e políticas de controle de segurança abrangentes estão entre as principais características que distinguem esta série. Essa opção também suporta duas fontes de alimentação modulares. Atendendo as especificações de acordo com o Edital.

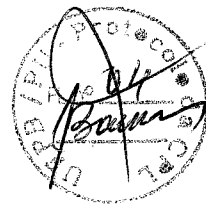
1.3	<p><b>Switch</b> de rede - Tipo 3 - <b>Marca:</b> HUAWEI – <b>Fabricante:</b> Huawei Enterprise – <b>Modelo/Versão:</b> HUAWEI Enterprise Campus Switches S5720-28X-SI-AC – <b>Descrição:</b> A HUAWEI Enterprise Campus Switch Series estabelece um novo marco para o desempenho, confiabilidade e escalabilidade com arquitetura de próxima geração. Projetado para redes de núcleo empresarial do campus, os Switch Series permite uma infra-estrutura conectados à nuvem, rico e eficaz. A série de switches GbE fornece 1/10 densidade de portas e uplinks, baixa latência, e de muito baixo consumo de energia.</p> <p>Com a tecnologia HUAWEI de stacking, a escalabilidade e resiliência da série enterprise campus switches pode ser estendido e virtualizado através até quatro chassis com uma interface de mais plana permitindo uma gestão única, redes mais ágeis. Esta série de switch, junto com a arquitetura HUAWEI, pode ser perfeitamente controlado através do HUAWEI e-Sight, que fornece um um painel de visão única na gestão da infraestrutura. Atendendo as especificações de acordo com o Edital.</p>	Unid.	25	R\$ 7.140,00 (Sete mil, cento e quarenta reais)	R\$ 178.500,00 (Cento e setenta e oito mil e quinhentos reais)
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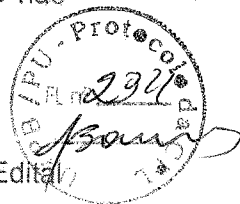


2	Transceiver SFP				
2.1	Transceiver SFP – Tipo 1 – <u>Marca:</u> <u>HUAWEI</u> – <u>Fabricante:</u> Huawei Enterprise – <u>Modelo/Versão:</u> HUAWEI Transceivers – <u>Descrição:</u> HUAWEI transceivers de tecnologia Gigabit Tipo 1000BASE-LX full duplex, conector LC até 10km. Atendendo as especificações de acordo com o Edital.	Unid.	90	R\$ 333,00 (Trezentos e trinta e três reais)	R\$ 29.970,00 (Vinte e nove mil, novecentos e setenta reais)
2.2	Transceiver SFP – Tipo 2 – <u>Marca:</u> <u>HUAWEI</u> – <u>Fabricante:</u> Huawei Enterprise – <u>Modelo/Versão:</u> HUAWEI Transceivers – <u>Descrição:</u> HUAWEI transceivers de tecnologia Gigabit Tipo 1000BASE-LR full duplex, conector LC até 10km. Atendendo as especificações de acordo com o Edital.	Unid.	25	R\$ 2.538,00 (Dois mil, quinhentos e trinta e oito reais)	R\$ 63.450,00 (Sessenta e três mil, quatrocentos e cinquenta reais)
TOTAL				R\$ 615.955,00	

1. Em Algarismos: **R\$ 615.955,00**  
Por Extenso: Seiscentos e quinze mil, novecentos e cinquenta e cinco reais).
2. **Prazo de Validade da Proposta: 60 (sessenta) dias**, contados a partir da data fixada nesta licitação, para a apresentação das propostas.
3. **Prazo para entrega dos bens:** O prazo para entrega do objeto deste PREGÃO será de **30 (trinta) a 120 (cento e vinte) dias**, contados a partir da data do recebimento da Ordem de Serviços emitida pela Prefeitura Universitária, conforme Cronograma Físico-Financeiro apresentado em anexo à presente proposta de preços.
4. Declaramos que serão de nossa responsabilidade todos os encargos trabalhistas, previdenciários, fiscais e comerciais resultantes da execução do objeto da referida licitação. Responsabilizamos-nos integralmente pelos prejuízos e danos



causados à Universidade Federal da Paraíba e/ou a terceiros, decorrentes do não atendimento de tais obrigações.



5. Declaramos que recebemos todos os documentos relativos ao Edital e todos os seus anexos; visitamos os locais onde serão executados os serviços; tomamos conhecimento de todas as informações, dificuldades e demais condições para o cumprimento das obrigações inerentes ao objeto da presente licitação.

6. Declaramos que aceitamos a forma de pagamento estabelecida no presente Edital.

São Paulo, 01 de Junho de 2016.

Representante Legal  
José Cunha Junior.  
RG nº 8.950.614 SSP-SP  
CPF nº. 073.257.608-33  
Ziva Tecnologia e Soluções Ltda.  
CNPJ 05.816.526/0001-68

**REFERÊNCIAS BANCÁRIAS:**

BANCO: BANCO DO BRASIL

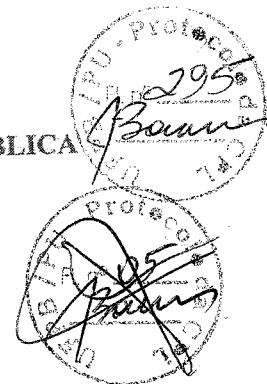
Nº DO BANCO: 001

Nº DA AGÊNCIA: 4215-3

Nº DA CONTA: 55427-8



SECRETARIA DE ESTADO DOS NEGÓCIOS DA SEGURANÇA PÚBLICA  
POLÍCIA MILITAR DO ESTADO DE SÃO PAULO  
CENTRO DE PROCESSAMENTO DE DADOS

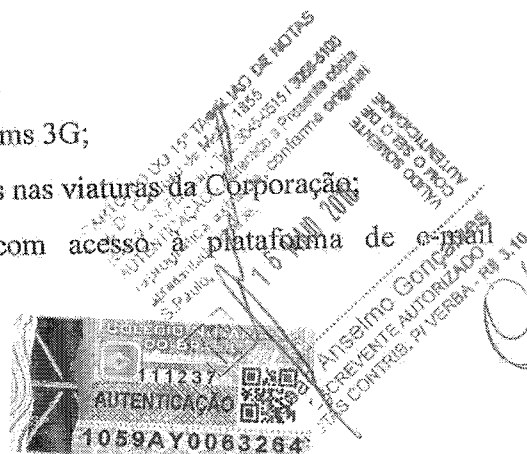


**ATESTADO DE CAPACIDADE TÉCNICA**

A Polícia Militar do Estado de São Paulo, órgão da Secretaria da Segurança Pública do Estado de São Paulo, por meio do Centro de Processamento de Dados (CPD), neste ato representada pelo Cap PM Glaucio Tsuneimatu, Chefe Interino da Divisão Administrativa e Financeira do CPD, sediada à Rua Ribeiro de Lima n.º 140, Bom Retiro, São Paulo - SP, declara que a empresa **ZIVA TECNOLOGIA E SOLUÇÕES LTDA**, CNPJ/MF n.º 05.816526/0001-68, sediada à Rua Funchal, 513 - Vila Olímpia - São Paulo - SP, presta serviços à contratante, conforme segue:

- a) Contrato N° CPD-002/430/12 e Processo N° CPD-001/430/11;
- b) Vigência: 48 (quarenta e oito) meses. Contrato assinado em 27 de fevereiro de 2012;
- c) Objeto: Contratação de Serviços de Gerenciamento da Rede de Comunicação de Dados da Polícia Militar do Estado de São Paulo com Monitoração Remota e Locação de Ativos de Rede e de Segurança Corporativa com Suporte Técnico;
- d) Valor Global: R\$ 29.973.167,11 (vinte e nove milhões, novecentos e setenta e três mil, cento e sessenta e sete reais e onze centavos).
- e) Descrição dos Produtos e Serviços Fornecidos: A solução é composta de uma solução integrada de rede e segurança de dados com gerenciamento, monitoramento e locação de equipamentos, softwares, suporte técnico e serviços para ambiente computacional e de telecomunicações envolvendo os seguintes serviços:

- Conectividade para aproximadamente 100.000 (cem mil) Policiais Militares, distribuídos em todo o Estado de São Paulo;
- Aproximadamente 40.000 (quarenta mil) estações de trabalho, entre desktops, notebooks e netbooks;
- Mais de 5.000 (cinco mil) usuários de VPN;
- Mais de 2.500 (dois mil e quinhentos) modems 3G;
- Mais de 4.000 (quatro mil) GPS distribuídos nas viaturas da Corporação;
- Mais de 200 (duzentos) smartphones, com acesso à plataforma de e-mail corporativa via VPN e APN dedicada;





- Mais de 1.900 (mil e novecentos) enlaces de dados da Rede Intragov;
- Rede própria de dados, composta por enlaces de microondas, com abrangência em todo o Estado;
- Sistema de captura e transmissão de imagens de helicóptero;
- 330 (trezentos e trinta) câmeras de vídeo monitoramento urbano;
- 06 (seis) Centrais de Atendimento de Emergência na Capital e Região Metropolitana;
- Mais de 600 (seiscentas) aplicações hospedadas e disponibilizadas pelo Data Center;
- Serviços de missão crítica relativos à Segurança Pública, em tempo real;
- Mais de 250 (duzentos e cinquenta) servidores em ambiente de Produção, Homologação e Desenvolvimento.

#### **Solução de Rede**

A solução de rede compreende a locação de equipamentos ativos, conforme relação em anexo, com a finalidade de servir de estrutura principal e distribuição (backbone), estrutura do Datacenter e acesso LAN e WAN da rede de comunicação de dados da Polícia Militar.

Esta estrutura é formada por equipamentos em topologia totalmente redundante com disponibilidade próxima de 5 "noves", de forma que a falha individual de qualquer módulo, cartão ou placa de qualquer dispositivo não prejudique o funcionamento e a performance da rede. O projeto considera ainda QoS (Qualidade de Serviço), alta disponibilidade, escalabilidade e segurança.

Os serviços contemplam ainda o Gerenciamento de todos os equipamentos e serviços aqui descritos e também todos os equipamentos já em poder da Polícia Militar do Estado de São Paulo.

#### **Solução de Segurança**

A solução de segurança compreende a locação de equipamentos e de serviços com a finalidade de estabelecer os níveis de confidencialidade exigidos pela Corporação, no acesso as informações trafegadas por intermédio da Rede de Dados da Polícia Militar.

A solução de segurança é composta por equipamentos e softwares que respondem aos sistemas de firewall, solução de IPS (Intrusion Prevention System), autenticação, controle de acesso WEB, correlação de eventos e DNS.



16 MAIO 2016  
O Anselmo Gonçalves  
ESCRIVÃO AUTORIZADO  
FELIS AS CONTR. PVERBA - RA 3.16

## Plataforma de Monitoramento

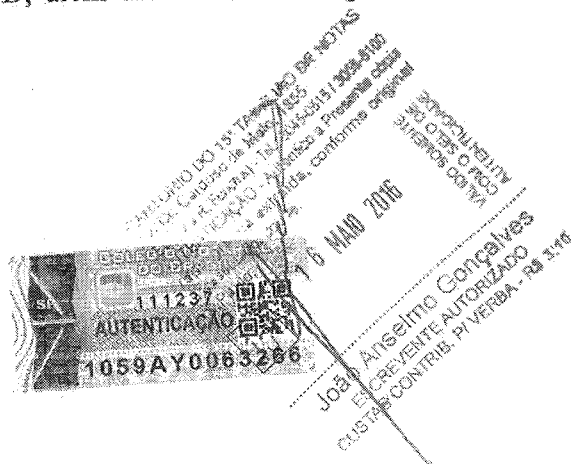
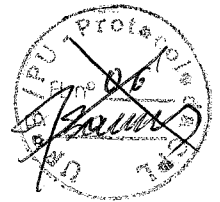
A plataforma de monitoramento permite aferir a disponibilidade dos ativos de rede e segurança, servidores e aplicações na rede de dados.

## Serviços de Recursos Gerenciados

Os serviços de Gerenciamento de Rede e de Segurança compreendem o conjunto de operações e intervenções técnicas de natureza complexa necessárias à operação, uso e administração, dos equipamentos ativos da estrutura principal (backbone) e dos equipamentos ativos da estrutura de segurança da rede de comunicação de dados da Polícia Militar, executados por equipe técnica dividida conforme a seguir:

- Monitoração de ativos: Profissionais responsáveis pelo monitoramento de todos os recursos de TIC (Tecnologia da Informação e Comunicações) da PM composta por 02 posições de atendimento, em funcionamento 24x7;
- Gerenciamento: Profissionais responsáveis pelo desenvolvimento, estudo, avaliação, análise, escrita, controle e armazenamento relativos aos processos, recursos, serviços e toda e qualquer atividade atinente ao edital composta por 01 analista.
- Suporte à rede, segurança e plataforma de gerenciamento: Profissionais responsáveis pelo atendimento e resolução de incidentes, problemas e chamados de segundo nível, composta por 06 (seis) analistas.
- Administração de rede, segurança e plataforma de gerenciamento: Profissionais responsáveis pelo atendimento e resolução de incidentes, problemas e chamados de terceiro nível, composta por 05 (cinco) especialistas.

Todos os profissionais são certificados por entidades reconhecidas e ligadas à solução ofertada, permanecendo alocados no CPD, além disso a metodologia de atendimento é toda baseada em ITIL e COBIT.



**Tabelas de equipamentos**

A seguir a relação de equipamentos.

Switch Núcleo de Rede			
Part Number	Descrição	Fabricante	Qtde.
N7K-C7018	18 Slot Chassis, No Power Supplies, Fans Included	Cisco	2
N7K-C7018-F-BLANK	Nexus 7018 Fabric Module Blank	Cisco	4
N7K-C7018-FAN	Nexus 7000 - 18 Slot Fan	Cisco	4
N7K-MODULE-BLANK	Nexus 7000 - I/O Module Blank Slot Cover	Cisco	26
N7K-SUP-BLANK	Nexus 7000 - Supervisor Blank Slot Cover	Cisco	2
CAB-C19-CBN	Cabinet Jumper Power Cord, 250 VAC 16A, C20-C19 Connectors	Cisco	16
N7K-AC-6.0KW	Nexus 7000 - 6.0KW AC Power Supply Module	Cisco	8
N7K-C7018-FD-MB	Nexus 7018 Front Door Kit	Cisco	2
N7K-C7018-SBUN-P1	Inc LAN,ADV,TRS,EL2,DCNM,DCNMSAN,MPLS,SA N,XL	Cisco	2
N7KS1K9-52	Cisco NX-OS Release 5.2	Cisco	2
CON-OSP-N7KC7018	ONSITE 24X7X4 18 Slot Chassis No Power Supplies Fans	Cisco	8
N7K-C7018-FAB-1	Nexus 7000 - 18 Slot Chassis - 46Gbps/Slot Fabric Module	Cisco	6
N7K-M108X2-12L	Nexus 7000 - 8 Port 10GbE with XL option (req. X2)	Cisco	4
X2-10GB-SR	10GBASE-SR X2 Module	Cisco	32
N7K-M148GT-11L	Nexus 7000 - 48 Port 10/100/1000 Module with XL option	Cisco	2
N7K-SUP1	Nexus 7000 - Supervisor, Includes External 8GB Log Flash	Cisco	2
N7K-SUP1-8GBUPG	Nexus 7000 Supervisor 1 8GB Memory Upgrade Kit	Cisco	2
N7K-CPF-2GB	Nexus Compact Flash Memory 2GB (Expansion Flash - Slot 0)	Cisco	2



CARIMBO DO 15º TRIMESTRE DE NOTAS  
 15.º TRIMESTRE DE NOTAS 1535  
 15.º TRIMESTRE DE NOTAS 1535  
 AUTENTICAÇÃO - Autenticar a Proveniência e a  
 Integridade da informação, conforme original  
 16 MAIO 2016  
 JOÃO ANSELMO GONÇALVES  
 SECRETÁRIO AUTORIZADO  
 CUSTAS CONTRA. PI VERBA - R\$ 4,10


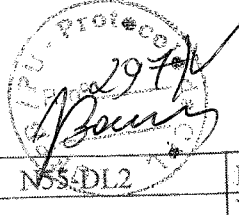
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Núcleo/Agregação do Data Center			
Part Number	Descrição	Fabricante	Qtde.
N7K-C7018	18 Slot Chassis, No Power Supplies, Fans Included	Cisco	2
N7K-C7018-F-BLANK	Nexus 7018 Fabric Module Blank	Cisco	2
N7K-C7018-FAN	Nexus 7000 - 18 Slot Fan	Cisco	4
N7K-MODULE-BLANK	Nexus 7000 - I/O Module Blank Slot Cover	Cisco	26
CAB-C19-CBN	Cabinet Jumper Power Cord, 250 VAC 16A, C20-C19 Connectors	Cisco	16
N7K-AC-6.0KW	Nexus 7000 - 6.0KW AC Power Supply Module	Cisco	8
N7K-C7018-FD-MB	Nexus 7018 Front Door Kit	Cisco	2
CON-OSP-N7KC7018	ONSITE 24X7X4 18 Slot Chassis No Power Supplies Fans	Cisco	8
N7K-C7018-SBUN-P1	Inc LAN,ADV,TRS,EL2,DCNM,DCNMSAN,MPLS,SAN,XL	Cisco	2
N7KS1K9-52	Cisco NX-OS Release 5.2	Cisco	2
N7K-C7018-FAB-1	Nexus 7000 - 18 Slot Chassis - 46Gbps/Slot Fabric Module	Cisco	8
N7K-F132XP-15	Nexus 7000 - 32 Port 1G/10G Ethernet Module, SFP/SFP+	Cisco	2
SFP-10G-SR	10GBASE-SR SFP Module	Cisco	48
X2-10GB-SR	10GBASE-SR X2 Module	Cisco	16
N7K-M108X2-12L	Nexus 7000 - 8 Port 10GbE with XL option (req. X2)	Cisco	2
N7K-M148GT-11L	Nexus 7000 - 48 Port 10/100/1000 Module with XL option	Cisco	2
N7K-SUP-BLANK	Nexus 7000 - Supervisor Blank Slot Cover	Cisco	2
N7K-SUP1	Nexus 7000 - Supervisor, Includes External 8GB Log Flash	Cisco	2
N7K-SUP1-8GBUPG	Nexus 7000 Supervisor 1 8GB Memory Upgrade Kit	Cisco	2
N7K-CPF-2GB	Nexus Compact Flash Memory 2GB (Expansion Flash - Slot 0)	Cisco	2

Acesso do Data Center			
Part Number	Descrição	Fabricante	Qtde.
N5K-C5548UPM-B-S48	N5548UP Storage Solutions Bundle, 48 port storage serv Licen	Cisco	4
CON-SNT-C48MBS48	SMARTNET 8X5XNBD N5548UP Storage Solutions Bundle	Cisco	16
DS-SFP-FC8G-SW	8 Gbps Fibre Channel SW SFP+, LC	Cisco	32
N55-48P-SSK9	Nexus 5500 Storage License, 48 Ports	Cisco	4
N55-M16UP-B	Nexus 5500 Series Module 16p Unified	Cisco	4
N5548-ACC-KIT	Nexus 5548 Chassis Accessory Kit	Cisco	4
CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	Cisco	8



N55-DL2	Nexus 5548 Layer 2 Daughter Card	Cisco	4
N55-PAC-750W	Nexus 5500 PS, 750W, Front to Back Airflow(Port-Side Outlet)	Cisco	8
N5548P-FAN	Nexus 5548P and 5548UP Fan Module, Front to Back Airflow	Cisco	8
N5KUK9-503N2.1	Nexus 5000 Base OS Software Rel 5.0(3)N2(1)	Cisco	4
SFP-10G-SR	10GBASE-SR SFP Module	Cisco	16
SFP-H10GB-CU5M	10GBASE-CU SFP+ Cable 5 Meter	Cisco	128
DCNM-SAN-N5k-k9=	DCNM SAN LIC NEXUS 5000	Cisco	4

Acesso do CQCG			
Part Number	Descrição	Fabricante	Qtde.
WS-C2960S-48TD-L	Catalyst 2960S 48 GigE, 2 x 10G SFP+ LAN Base	Cisco	60
CAB-16AWG-AC	AC power cord, 16AWG	Cisco	60
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B	Cisco	60
CON-SMBS-2960S4TS	SMBS 8X5XNBD Cat 2960S Stk48 GigE,4xSFP LAN Base	Cisco	240
RCKMNT-1RU=	Rack-mount kit for Cisco Catalyst 2960 and 2960-S Series for 19- and 24-inch racks	Cisco	60
GLC-SX-MM	1000BASE-SX SFP (multimode only) Dual LC connector	Cisco	120

Roteador Intranet/Internet			
Part Number	Descrição	Fabricante	Qtde.
CISCO7609-S	Cisco 7609-S Chassis including fans	Cisco	2
7600-SIP-400	Cisco 7600 Series SPA Interface Processor-400	Cisco	2
CON-OSP-7600SIP4	ONSITE 8X5XNBD 7600 Series SPA Interface Processor 400	Cisco	8
7609S-RSP7XL-10G-R	Cisco 7609S Chassis,9-slot,2RSP720-3CXL-10GE,2PS	Cisco	2
RSP720-3CXL-10GE	Cisco 7600 Route Switch Processor 720Gbps, PFC3CXL, 10G	Cisco	4
WS-CAC-6000W	Cat6500 6000W AC Power Supply	Cisco	4
6000W-AC	6000 W AC Power Supply for Cisco 7609/7613	Cisco	4
CAB-AC-2500W-INT	Power Cord, 250Vac 16A, INTL	Cisco	8
CONNECTOR-KIT	Connector Kit	Cisco	2
S764AIK9-15103S	Cisco 7600-RSP720 IOS ADVANCED IP SERVICES SSH	Cisco	2
CON-OSP-CIS7609S	ONSITE 24X7X4 Cisco 7609-S Chassis	Cisco	8
CON-OSP-9S7X10GP	ONSITE 24X7X4 Cisco 7609S Chassis	Cisco	8

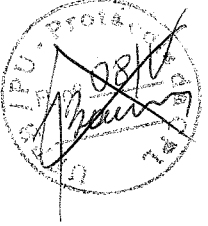
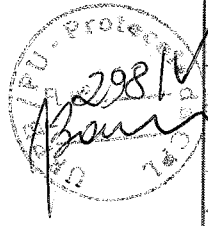


MEM-XCEF720-1GB	Catalyst 6500 1GB DDR, xCEF720 (67xx interface, DFC3BXL)	Cisco	2
X2-10GB-SR	10GBASE-SR X2 Module	Cisco	8
WS-X6724-SFP	Catalyst 6500 24-port GigE Mod: fabric-enabled (Req. SFPs)	Cisco	2
MEM-XCEF720-1GB	Catalyst 6500 1GB DDR, xCEF720 (67xx interface, DFC3BXL)	Cisco	2
GLC-LH-SM	GE SFP, LC connector LX/LH transceiver	Cisco	20
WS-X6748-GE-TX	Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	Cisco	4

Controle de Acesso a WEB			
Part Number	Descrição	Fabricante	Qtde.
S370-BUN-R-NA	Cisco IronPort S370, Standard Configuration Production Unit	Cisco	12
SP-S370-P-3Y	Platinum Support for Cisco IronPort S370, 3 Years	Cisco	12
SP-S370-P-1Y	Platinum Support for Cisco IronPort S370, 1 Year	Cisco	12
WUC-GV-3Y	Cisco IronPort Web Usage Controls 3 Years License Key, XXXX Users	Cisco	10.0000
WUC-GV-1Y	Cisco IronPort Web Usage Controls 1 Year License Key, XXXX Users	Cisco	10.0000
M670-BUN-R-NA	Cisco IronPort M670, Standard Configuration Production Unit	Cisco	1
WBCFG-GV-3Y	Centralized Web Policy and Configuration Management 3 Years License Key, 25,000+ Users	Cisco	10000
WBCFG-GV-1Y	Centralized Web Policy and Configuration Management 1 Year License Key, 25,000+ Users	Cisco	10.000
SP-M670-P-3Y	Platinum Support for Cisco IronPort M670, 3 Years	Cisco	1
SP-M670-P-1Y	Platinum Support for Cisco IronPort M670, 1 Year	Cisco	1

Núcleo/Agregação do CQCG			
Part Number	Descrição	Fabricante	Qtde.
VS-C6509E-S720-10G	Catalyst Chassis+Fan Tray+Sup720-10G; IP Base ONLY incl. VSS	Cisco	2
CON-OSP-V6509E72	ONSITE 24X7X4 VS-C6509E-S720-10G	Cisco	8
BF-S720-64MB-RP	Bootflash for SUP720-64MB-RP	Cisco	2
VS-F6K-MSFC3	Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	Cisco	2
VS-F6K-PFC3C	Catalyst 6500 Sup 720-10G Policy Feature Card 3C	Cisco	2
VS-S720-10G-3C	Cat 6500 Supervisor 720 with 2 ports 10GbE and MSFC3 PFC3C	Cisco	2
WS-C6509-E-FAN	Catalyst 6509-E Chassis Fan Tray	Cisco	2
CAB-C19-CBN	Cabinet Jumper Power Cord, 250 VAC 16A, C20-C19 Connectors	Cisco	8
CF-ADAPTER-SP	SP adapter for SUP720 and SUP720-10G	Cisco	2
MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	Cisco	2
CONNECTOR-KIT	Connector Kit	Cisco	2
SV33ISK9C-12233SXJ	Cisco CAT6000-VSS720 IOS IP SERVICES SSH DEFAULT	Cisco	2



VS-S720-10G-3C	Cat 6500 Supervisor 720 with 2 ports 10GbE and MSFC3 PFC3C	Cisco	2
BF-S720-64MB-RP	Bootflash for SUP720-64MB-RP	Cisco	2
VS-F6K-MSFC3	Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	Cisco	2
VS-F6K-PFC3C	Catalyst 6500 Sup 720-10G Policy Feature Card 3C	Cisco	2
VS-S720-10G	Catalyst 6500 Supervisor 720 with 2 10GbE ports	Cisco	2
CF-ADAPTER-SP	SP adapter for SUP720 and SUP720-10G	Cisco	2
MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	Cisco	2
X2-10GB-CX4	10GBASE-CX4 X2 Module	Cisco	8
WS-CAC-6000W	Cat6500 6000W AC Power Supply	Cisco	4
WS-X6708-10G-3C	C6K 8 port 10 Gigabit Ethernet module with DFC3C (req. X2)	Cisco	2
WS-F6700-DFC3C	Catalyst 6500 Dist Fwd Card for WS-X67xx modules	Cisco	2
WS-X6708-10GE	Cat6500 8 port 10 Gigabit Ethernet module (req. DFC and X2)	Cisco	2
X2-10GB-SR	10GBASE-SR X2 Module	Cisco	16
WS-X6748-SFP	Catalyst 6500 48-port GigE Mod: fabric-enabled (Req. SFPs)	Cisco	4
MEM-XCEF720-256M	Catalyst 6500 256MB DDR, xCEF720 (67xx interface, DFC3A)	Cisco	6
WS-F6700-CFC	Catalyst 6500 Central Fwd Card for WS-X67xx modules	Cisco	6
GLC-SX-MM=	GE SFP, LC connector SX transceiver	Cisco	140
WS-X6748-GE-TX	Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	Cisco	2

Firewall Datacenter			
Part Number	Descrição	Fabricante	Qtde.
ASA5585-S60-2A-K9	ASA 5585-X Chas w/ SSP60,6 GE,4 SFP+,2 GE Mgt,2 AC,3DES/AES	Cisco	2
CON-OSP-A85S62K9	ONSITE 24X7X4 ASA 5585-X Chas w/ SSP40,6 GE,4 SFP+,2 G	Cisco	8
ASA-SSP-60-INC	ASA 5585-X Security Services Processor-60 with 6GE, 4SFP+	Cisco	2
ASA5500-ENCR-K9	ASA 5500 Strong Encryption License (3DES/AES)	Cisco	2
ASA5585-BLANK-F	ASA 5585-X Full Width Blank Slot Cover	Cisco	2
ASA5585-BLANK-HD	ASA 5585-X Hard Drive Blank Slot Cover	Cisco	4
ASA5585-PWR-AC	ASA 5585-X AC Power Supply	Cisco	4
ASA5585-SEC-PL	ASA 5585-X Security Plus License (Enables 10G SFP+ Ports)	Cisco	2



João Anselmo Gonçalves  
 SUPERVISOR AUTORIZADO  
 CONTRIB. P/ VERIFICAÇÃO

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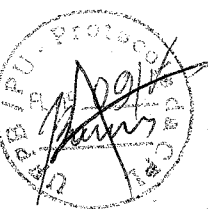
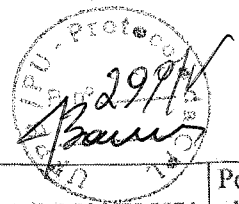
ASA-VPN-CLNT-K9	Cisco VPN Client Software (Windows, Solaris, Linux, Mac)	Cisco	2
ASA5500-SC-20	ASA 5500 20 Security Contexts License	Cisco	2
CAB-AC-2500W-US1	Power Cord, 250Vac 16A, straight blade NEMA 6-20 plug, US	Cisco	4
SF-ASA558X-8.4-K8	Software release ASA 8.4	Cisco	2
SFP-10G-SR	10GBASE-SR SFP Module	Cisco	8

Autenticação			
Part Number	Descrição	Fabricante	Qtde.
CSACS-1121-K9	ACS 1121 Appliance With 5.3 SW And Base license	Cisco	2
CAB-AC	AC Power Cord (North America), C13, NEMA 5-15P, 2.1m	Cisco	2
CSACS-5-ADV-LIC	ACS 5 Security Group Access System License	Cisco	2
CSACS-5-LRG-LIC	ACS 5 Large Deployment Add-on License	Cisco	2
CSACS-5.3-SW-K9	Config Option: ACS 5.3 Software Loaded On 1121	Cisco	2
CON-SNT-SACS1121	SMARTNET 8X5XNBD ACS 1121 Appliance With 5.3 SW And Base license	Cisco	4

Firewall e IPS Intranet e Internet			
Part Number	Descrição	Fabricante	Qtde.
ASA5585-S60P60-K9	ASA 5585-X Chas w/SSP60,IPS SSP60,12GE, 8 SFP+,2 AC,3DES/AES	Cisco	2
CON-SUO3-A85S6P69	IPS SVC, AR ONSITE 24X7X4 ASA 5585-X Chas w/SSP60,IPS SSP60,12GE	Cisco	8
ASA-IPS-60-INC-K9	ASA 5585-X IPS Security Services Processor-60 with 6GE,4SFP+	Cisco	2
ASA-SSP-60-INC	ASA 5585-X Security Services Processor-60 with 6GE, 4SFP+	Cisco	2
ASA5500-ENCR-K9	ASA 5500 Strong Encryption License (3DES/AES)	Cisco	2
ASA5585-BLANK-HD	ASA 5585-X Hard Drive Blank Slot Cover	Cisco	8
ASA5585-PWR-AC	ASA 5585-X AC Power Supply	Cisco	4
ASA5585-SEC-PL	ASA 5585-X Security Plus License (Enables 10G SFP+ Ports)	Cisco	2
SF-ASA-IPS-7.1-K9	ASA 5585-X IPS Software 7.1 for IPS SSP	Cisco	2
ASA-VPN-CLNT-K9	Cisco VPN Client Software (Windows, Solaris, Linux, Mac)	Cisco	2
ASA5500-SC-20	ASA 5500 20 Security Contexts License	Cisco	2





CAB-AC-2500W-US1	Power Cord, 250Vac 16A, straight blade NEMA 6-20 plug, US	Cisco	4
SF-ASA5585-8.2-K8	ASA 5500 Series Software Version 8.2 for ASA 5585-X, DES	Cisco	2
SFP-10G-SR	10GBASE-SR SFP Module	Cisco	16
ASA5520-BUN-K9	ASA 5520 Appliance with SW, HA, 4GE+1FE, 3DES/AES	Cisco	2
CON-SNTP-AS2BUNK9	SMARTNET 24X7X4 ASA5520 w/300 VPN Prs, 4GE+1FE,3DES/AES	Cisco	8
CAB-AC	AC Power Cord (North America), C13, NEMA 5-15P, 2.1m	Cisco	2
L-ASA-SSL-100=	ASA 5500 SSL VPN 100 Premium User License	Cisco	2

Correlação de Eventos			
Part Number	Descrição	Fabricante	Qtde.
ABR-000	ArcSightWeb Console	Arcsight	3
ACN-000	ArcSight Console client	Arcsight	3
AGT-FLX-0100	ArcSight Flex Connector SDK	Arcsight	1
AMC-002-4CORES	ESM Mgr, w/ sw connectors, w/ Oracle db, w/Domains (4 Cores) - Original PN: AMC-002	Arcsight	1
AMC-002-HAC-4CORES	ESM Mgr, w/ sw connectors, w/ Oracle db, w/Domains, in HA config (4 Cores) - Original PN: AMC-002	Arcsight	1
APD-310-CORE	ArcSight Pattern Discovery (Per ESM Manager Core)	Arcsight	4
ASP-PRE-1000	ArcSight Premium Support - Premium provides 24x7 support plus product upgrades.	Arcsight	1
DEV-NSS-000	Monitored Network/Security/Server Devices - Original part number: DEV-NSS-000	Arcsight	50
SIC-SUB-100	System Update	Arcsight	1
SP-CIP-001	ArcSight ESM CIP for IT Governance	Arcsight	1

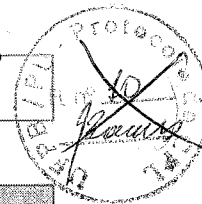
DNS			
Part Number	Descrição	Fabricante	Qtde.
BIND 9.7.4	BIND (Berkeley Internet Name Domain) from Internet Systems Consortium (ISC)	ISC	4

Plataforma de Gerenciamento de Rede			
Part Number	Descrição	Fabricante	Qtde.
LMS-4.1-100-K9	Physical Cisco Prime LAN Management Solution 4.1 software base kit and paper claim certificate with PAK. Includes installation DVDs for Windows, Solaris, and Virtual Appliance for up to 100 Cisco network devices.	Cisco	1
L-LMS-4.1-100-ADD	Cisco Prime LAN Management Solution 4.1 Add-on eDelivery license for 100 more devices.	Cisco	1



CON-SAS-  
LMS41ADD

SW APP SUPP LMS 4.1 ADD-ON LICENSE FOR  
100 devices



**Plataforma de Gerenciamento de Segurança**

Part Number	Descrição	Fabricante	Qtde.
L-CSMST5-4.2-K9	Cisco Security Manager 4.2 Standard-25 Device Limit	Cisco	1
CON-SAS-CSMST254	SW APP SUPP CS Mgr 4.2 Enterprise Standard - 25 Devi	Cisco	4

**Plataforma de Monitoração**

Part Number	Descrição	Fabricante	Qtde.
CAIMGT99000	CA Infrastructure Management	CA	4.000
EDSERV99000	CA eHealth Performance Manager Device Based Suite Servers for IM/IP	CA	6
EDREPO99000	CA eHealth Performance Manager Device Based Suite Remote Pollers for IM/IP	CA	1
SDSERF99000	CA Spectrum Infrastructure Manager Device Based Suite Server for IM/II	CA	4
ITPASL99000	CA Process Automation Manager Standard License	CA	1
VIRASP99000	CA Systems Performance for Infrastructure Managers	CA	100
CAIMGT99000	CA Infrastructure Management (HIGH AVAILABILITY ENVIRONMENT)	CA	4.000
CAIMGT99000	CA Infrastructure Management (TEST/DEVELOPMENT ENVIRONMENT)	CA	100
ARHANQ05900	CA ARCserve High Availability for NetQoS	CA	2
ARCINP05900	CA ARCserve Replication and High Availability for eHealth for CA Infrastructure Performance for Windows	CA	6

São Paulo, 10 de Julho de 2012.

Glaucio Tsuncimatu  
Cap PM



José Cunha Júnior  
Engenheiro Responsável  
CREA-SP 2300021375

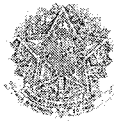
**ZIVA TECNOLOGIA E SOLUÇÕES LTDA**

"Nós Policiais Militares, sob a proteção de Deus, estamos comprometidos com a Defesa da Vida, da Integridade Física e da Dignidade da Pessoa Humana."

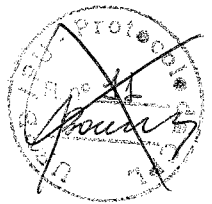


Conselmo Gonçalves  
AUTENTICAÇÃO  
111237  
1058AY0063274





PODER JUDICIÁRIO  
JUSTIÇA FEDERAL  
TRIBUNAL REGIONAL FEDERAL - 2ª REGIÃO



ATESTADO DE CAPACIDADE TÉCNICA Nº TRF2-FOR-2016/00158

Ref. Processo : JFRJ-EOP-2014/01247

A JUSTIÇA FEDERAL DE 1º GRAU DO ESTADO DO RIO DE JANEIRO, estabelecida na Av. Almirante Barroso, 78 - Centro - Rio de Janeiro, inscrita no CNPJ/MF sob o nº 05.424.540/0001-16, ATTESTA, para os devidos fins de direito, que a empresa Ziva Tecnologia e Soluções LTDA, estabelecida na Rua Funchal, nº 513 - 1º andar, Conj. 11e 12, Vila Olímpia, São Paulo/SP CEP 04.551-060, inscrita no CNPJ/MF sob o nº 05816526000168, forneceu os materiais abaixo relacionados:

DADOS DA CONTRATAÇÃO			
Objeto: Switch			
Ata de Registro de preços: 128/2014		Contrato/Nota de Empenho: 74/2014 e 56/2015	
		Vigência: 09/01/2015 a 29/05/2015	
Data do Recebimento Provisório: 29/01/2015		Data do Recebimento Definitivo: 04/02/2015	
		Valor do Contrato: R\$ 579.000,00 (total solicitado)	
DESCRIÇÃO DA CONTRATAÇÃO			
Item	Especificação	Unidade	Qtde
1	Switch HP 5500-48G + Módulo JD368B + Transceiver JD092B	un	30

Rio de Janeiro, 16 de maio de 2016.

CARLOS EDUARDO GUIMARÃES MARTELLET  
Diretor de Subsecretaria  
SUBSECRETARIA DE ENTREGA E SUPORTE DE SERV. DE TI

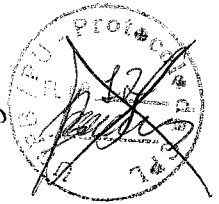


Assinado digitalmente por CARLOS EDUARDO GUIMARAES MARTELLET.  
Documento Nº: 1687334-783 - consulta à autenticidade em <https://siga.jfrj.jus.br/sigaex/autenticar.action>

Classif. documental/ 30.01.02.02



TRF2-FOR201600158A



## ATESTADO DE CAPACIDADE TÉCNICA

Atestamos para fins, que a empresa **ZIVA TECNOLOGIA E SOLUÇÕES LTDA.**, inscrita no CNPJ/MF sob nº. 05.816.526/0001-68, estabelecida à Rua Funchal, nº. 513 – 1º andar – Bairro Vila Olímpia – São Paulo – SP, têm fornecido os produtos e serviços constantes da relação anexa a esta empresa, na área de Tecnologia da Informação, conforme condições contratuais abaixo descritas:

**OBJETO:** Fornecimento de ativos de rede com serviços de configuração, instalação, garantia e suporte técnico.

### CONTRATO E VIGÊNCIA

- ARP Nº 007/ADSP-4/SBKP/2010 e aditivos

Início: 19/10/2010

Término: Vigente

- ARP Nº 22/ADSP/SRSP/2012

Início: 26/04/2012

Término: Vigente

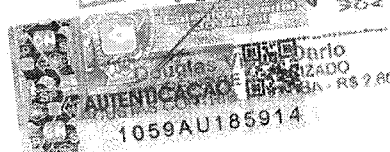
**Valor Global:** R\$ 11.201.046,00 (Onze milhões, duzentos e um mil e quarenta e seis Reais).

**Escopo dos Serviços:** Fornecimento, Instalação, configuração, garantia e suporte técnico on site de equipamentos core de rede (switch chassis), Switches de distribuição e acesso, tranciveres gigabit e 10 gigabit ethernet, controladores wireless, Access point, cabos óticos e cabos óticos.

### Descrição do fornecimento Nº 007/ADSP-4/SBKP/2010

Nº	PN	DISCRIMINAÇÃO	Un.	QT
1	3CS7906E	3Com Switch S7906E Chassis (with fan assembly)	pç	5
2	0231A933	3Com Switch S7900E 384 Gbps Fabric with 2-Port 10GBASE-X (XFP)	pç	10
3	0231A81W	3Com Switch S7900E 1400W AC Power Supply	pç	10
4	0231A978	S75E/S79E 2-port 10GBASE-X (XFP) Extended	pç	8
5	0231A977	S75E/S79E 4-port 10GBASE-X (XFP) Extended	pç	5

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Superintendência Regional de São Paulo  
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6	0231A975	S7900E/S7500E 24-port 100/1000BASE-X Extended (SFP)	pç	10
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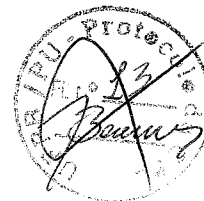
## Descrição do fornecimento Nº 007/ADSP-4/SBKP/2010 - Continuação

7	0231A80H	S75E/S79E 48-Port 10/100/1000BASE-t (RJ45), PoE ready	pç	11
8	0231A832	S7500E VPN FW Module	pç	4
9	3CRS48G-24-91	3Com Switch 4800G 24-Port	pç	43
10	3CRS48G-48-91	3Com Switch 4800G 48-Port	pç	28
11	3CRS48G-48P-91	3Com Switch 4800G PWR 48-Port	pç	25
12	0235A36S	H3C S5800-32C-PWR - 24-port 10/100/1000BASE-T (RJ45) + 4-port 10GBASE-X (SFP+) + 1 media module, PoE	pç	28
13	0213A01S	3Com H3C RPS 1000-A3 Redundant Power System com cabo 0404A053	pç	26
14	3C17767	Switch 4500G/4800G Local Connection Module	pç	77
15	3C17775	Local Connection CX4 Cable 50cm	pç	77
16	3C17766	Switch 4500G/4800G 2-Port 10-Gigabit Module (XFP)	pç	36
17	0231A0AK	H3C SFP+ CR Cable, 0.65m	pç	26
18	0231A0AM	H3C SFP+ CR Cable, 3m	pç	6
19	0231A494	3Com® 10GBASE-LR XFP	pç	55
20	0231A563	Transceiver 1000BASE-LX SFP	pç	180
21	0231A562	Transceiver 1000BASE-SX SFP	pç	60
22	3CR15800	3Com® Intelligent Management Center, Enterprise Edition	pç	3
23	3130A0D0	3Com® Intelligent Management Center (IMC) Network Traffic Analyzer (NTA)	pç	3
24	3130A0D4	WSM - Wireless Services Manager Plug-in for IMC, Includes 50 Access Points	pç	3

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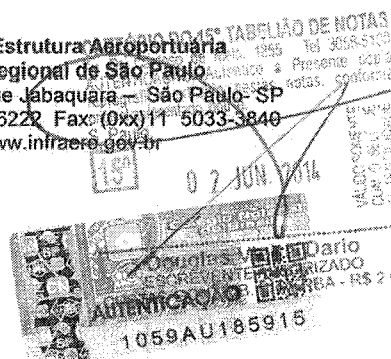


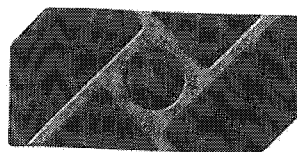
25	3130A0D5	WSM - Wireless Services Manager 50 AP License Upgrade for IMC Plug-in	pc	4
26	0231A81K	Wireless Controller Module	pc	4
27	0235A35J	H3C Wireless LAN Controller WX5004	pc	4
28	0231A66A	H3C 150W AC Power Supply Module	pc	9
29	3130A0E1	H3C Wireless Access Controller License, Additional 32 Managed Aps	pc	8

### Descrição do fornecimento Nº 007/ADSP-4/SBKP/2010 – Continuação

30	9801A0AA	Wireless WA2620-AGN Dual-Radio 11a/b/g/n Access Point	pc	137
31		Cordão ótico duplex Monomodo LC/LC 2.5 metros	pc	350
32		Cordão ótico duplex Monomodo LC/LC 5 metros	pc	140
33		Cordão ótico duplex Monomodo SC/LC 2.5 metros	pc	125
34		Cordão ótico duplex Multimodo SC/LC 2.5 metros	pc	140
35		Distribuidor ótico Monomodo SC 6 vias	pc	15
36		Distribuidor ótico Monomodo SC 24 vias	pc	5
37		Cabo ótico 6 vias externo geleado anti roedor - metros	m	10000
38		Serviços de instalação, configuração, testes e ajustes iniciais - Equipamentos de core	sv	5
39		Serviços de instalação, configuração, testes e ajustes iniciais - Equipamentos de borda	sv	146
40		Serviços de instalação, configuração, testes e ajustes iniciais - Equipamentos módulo de switch core	sv	29

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41	Serviços de instalação, configuração, testes e ajustes iniciais – Equipamentos módulo firewall	sv	4
42	Serviços de instalação, configuração, testes e ajustes iniciais – Equipamentos módulo wireless controller	sv	4
43	Serviços de instalação, configuração, testes e ajustes iniciais – Equipamentos access point	sv	137
44	Serviços de instalação, configuração, testes e ajustes iniciais – Fonte redundante para equipamento de borda	sv	28
45	Serviços de site-survey, automatizado ou com 'walk around', por site.	sv	4

### Descrição do fornecimento Nº 007/ADSP-4/SBKP/2010 - Continuação

46	Serviços de instalação e configuração da plataforma de gerenciamento	sv	3
47	Serviços de instalação de Fibras óticas, por metro, de 6 vias - mínimo de 100 metros, em infra-estrutura existente e totalmente desobstruída	sv	10500
48	Serviços de instalação de DIO com conectorização de 6 fibras – Teste com OTDR ou similar, fornecimento de documentação técnica, informando atenuação ou desvios.	sv	15
49	Serviços de instalação de DIO com conectorização de 24 fibras – Teste com OTDR ou similar, fornecimento de documentação técnica, informando atenuação ou desvios.	sv	5

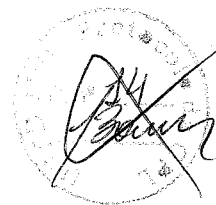
Empresa Brasileira de Infra-Estrutura Aeroportuária  
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**Descrição do fornecimento Nº 22/ADSP/SRSP/2012**

ITEM 1	Switch Tipo 1	Produtos	QTD
Switch Core Chassi modular Tipo 1	HP 10508 Switch Chassis	JC612A	2
	HP 10500 2500W AC Power Supply	JC610A	12
	HP 10508 640Gbps Type A Fabric Module	JC616A	8
	HP 10500 Main Processing Unit	JC614A	4
	HP X130 10G SFP+ LC LR Transceiver	JD094B	60
	HP 10500 16-port 10GbE SFP+ SC Module	JC628A	4
	HP X120 1G SFP LC LX Transceiver	JD119B	80
	HP 10500 24p GbE / 2p 10GbE XFP SE Mod	JC617A	4
	HP 10500 48-port Gig-T SE Module	JC618A	2

ITEM 2	Switch Tipo 2	Produtos	QTD
Switch de distribuição/datacenter - Tipo 2	HP 5800-24G Switch	JC100A	4
	HP X130 10G SFP+ LC LR Transceiver	JD094B	4
	HP X120 1G SFP LC LX Transceiver	JD119B	4
	HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096B	4

**Descrição do fornecimento Nº 22/ADSP/SRSP/2012 - continuação**

ITEM 3	Switch Tipo 3	Produtos	QTD
Switch de acesso 48 portas - Tipo 3	HP 5120-48G-PoE+ EI Switch w/2 Intf SIts	JG237A	10
	HP X120 1G SFP LC LX Transceiver	JD119B	10

ITEM 4	Switch Tipo 4	Produtos	QTD
Switch de acesso 48 portas - Tipo 4	HP 5120-48G-PoE EI Switch with 2 Slots	JE071A	40
	HP 5500 2-port 10GbE Local Connect Module	JD360B	40
	HP X230 Local Connect 100cm CX4 Cable	JD364B	40

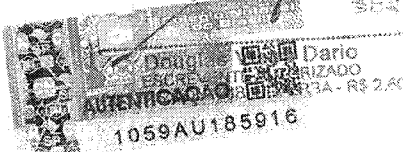
**Empresa Brasileira de Infra-Estrutura Aeroportuária**

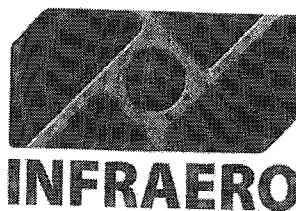
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ITEM 5	Switch Tipo 5	Produtos	QTD
Switch de acesso 24 portas - Tipo 5	HP 5120-24G EI Switch with 2 Slots	JE068A	10
	HP X130 10G SFP+ LC LR Transceiver	JD094B	10
	HP 5500/5120 2-port 10GbE SFP+ Module	JD368B	10
	HP 5500 2-port 10GbE Local Connect Module	JD360B	10
	HP X230 Local Connect 300cm CX4 Cable	JD365A	10

ITEM 6	Controladora Wireless	Produtos	QTD
Controladora Wireless	HP WX5004 Access Controller	JD448B	2
	HP 5500 150WAC Power Supply	JD362A	4

ITEM 7	Access Point	Produtos	QTD
Acess Point	HP WA2620 Dual Radio 802.11n Access Point	JD472A	50

ITEM	Infra - Cordões	Produtos	QTD
	Cordão ótico duplex Monomodo SC/LC Tipo 1		50

ITEM	Infra - Cordões	Produtos	QTD
	Cordão ótico duplex Monomodo SC/SC - Tipo 2		20

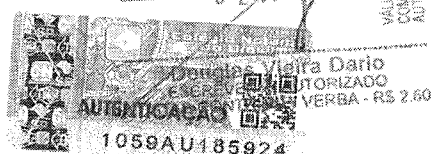
ITEM	Infra - Cordões	Produtos	QTD
	Cordão ótico duplex Monomodo SC/LC - Tipo 3		20

#### Descrição do fornecimento Nº 22/ADSP/SRSP/2012 - continuação

ITEM	Infra - Cordões	Produtos	QTD
	Cordão ótico duplex Monomodo LC/LC - Tipo 4		20

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ITEM	Infra - Cordões	Produtos	QTD
	Cordão ótico duplex Monomodo SC/LC - Tipo 5		10

ITEM	Infra - DIO 6	Produtos	QTD
	Distribuidor ótico Monomodo SC 6 vias - Tipo 1		15

ITEM	Infra - DIO 24	Produtos	QTD
	Distribuidor ótico Monomodo SC 24 vias - Tipo 2		10

ITEM	Cordão Óptico	Produtos	QTD
	Cabo ótico 6 vias externo geleado anti roedor		4000

Declaro que os responsáveis pela execução dos serviços foram o Eng.º José Cunha Junior, Registrado no CREA-SP sob o nº 2300021375 e o Sr. Antonio Donizete Gomes da Silva registrado no CRA-SP sob o nº 75614.

Atesto ainda que os serviços estão sendo executados de modo satisfatório e dentro dos padrões técnicos exigidos pelas normas e recomendações em vigor e nada consta, até a presente data, que possa desaboná-la.

São Paulo, 13 de Julho de 2012.

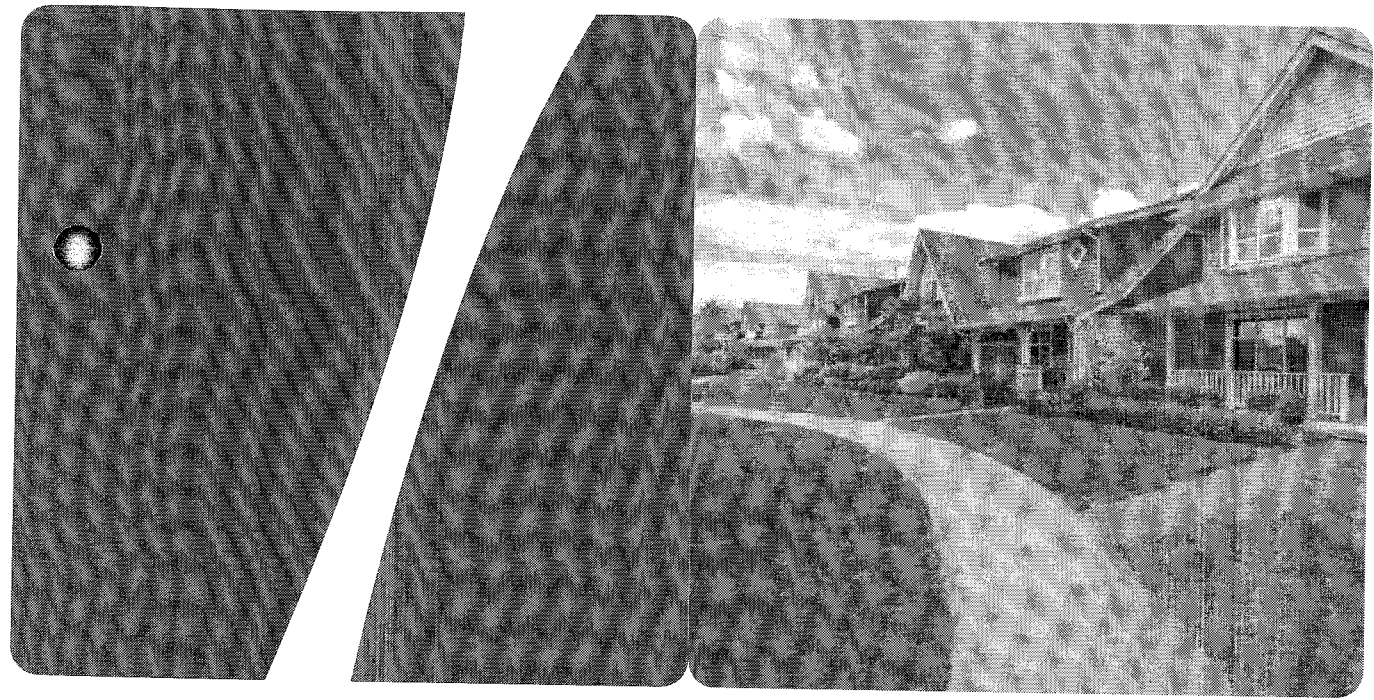
**HERCULES FERREIRA SANTOS**  
Gerente Regional de Tecnologia da Informação em exercício  
(AA N.º 310/SRSP(ADSP-2)/2012)

Empresa Brasileira de Infra-Estrutura Aeroportuária  
Superintendência Regional de São Paulo  
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# S5720-SI Datasheet (Detailed Version)



# S5720-SI Datasheet (Detailed Version)

## 1 Introduction

Huawei S5720 series Ethernet switches are next-generation energy-saving Gigabit Ethernet switches that function as the access devices to deliver high bandwidth or aggregation device for Ethernet multi-service networks. Built on next-generation high-performance processors and Huawei Versatile Routing Platform (VRP), the S5720 is available in four series: LI, SI, EI, and HI.

As a model of SI series, S5720-SI is the standard Gigabit Ethernet switch. This Layer 3 switch delivers flexible gigabit ports for access and cost-effective gigabit and 10-gigabit upstream ports.

The S5720-SI provides enhanced Layer 3 features, simplified operation and maintenance, Intelligent stack (iStack), flexible Ethernet networking, and mature IPv6 features. It will be widely deployed at the access and aggregation layers of enterprise campus networks and the access layers of data center networks.

## 2 Product Overview

### 2.1 Product Appearance

S5720-SI models and description

#### S5720-28P-SI-AC



- 24 Ethernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP ports
- 4 Gig SFP ports
- Double hot swappable AC/DC power supplies, one AC power module is configured by default
- Forwarding performance: 42 Mpps
- Switching capacity: 336 Gbit/s

#### S5720-28X-SI-AC S5720-28X-SI-DC



- 24 Ethernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP ports
- 4 10-Gig SFP+ ports
- Double hot swappable AC/DC power supplies, one AC/DC power module is configured by default
- Forwarding performance: 96 Mpps
- Switching capacity: 336 Gbit/s

#### S5720-52P-SI-AC



- 48 Ethernet 10/100/1000 ports
- 4 Gig SFP ports
- Double hot swappable AC/DC power supplies, one AC power module is configured by default
- Forwarding performance: 78 Mpps
- Switching capacity: 336 Gbit/s



S5720-52X-SI-AC  
S5720-52X-SI-DC



- 48 Ethernet 10/100/1000 ports
- 4 10 Gig SFP+ ports
- Double hot swappable AC/DC power supplies, one AC/DC power module is configured by default
- Forwarding performance: 132 Mpps
- Switching capacity: 336 Gbit/s

S5720-28X-PWR-SI-AC  
S5720-28X-PWR-SI-DC



- 24 Ethernet 10/100/1000 PoE+ ports, 4 of which are dual-purpose 10/100/1000 or SFP ports
- 4 10 Gig SFP+ ports
- PoE+
- Double hot swappable AC/DC power supplies, one 500W AC or 650W DC power module is configured by default
- Forwarding performance: 96 Mpps
- Switching capacity: 336 Gbit/s

S5720-52X-PWR-SI-AC  
S5720-52X-PWR-SI-DC



- 48 Ethernet 10/100/1000 PoE+ ports
- 4 10 Gig SFP+ ports
- PoE+
- Double hot swappable AC/DC power supplies, one 500 W AC or 650 W DC power module is configured by default
- Forwarding performance: 132 Mpps
- Switching capacity: 336 Gbit/s

S5720-52X-PWR-SI-ACF



- 48 Ethernet 10/100/1000 PoE+ ports
- 4 10 Gig SFP+ ports
- Double hot swappable AC power supplies, one 1150 W AC power module is configured by default
- Forwarding performance: 132 Mpps
- Switching capacity: 336 Gbit/s

S5720S-28P-SI-AC

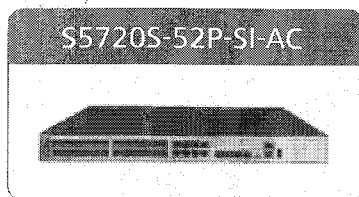
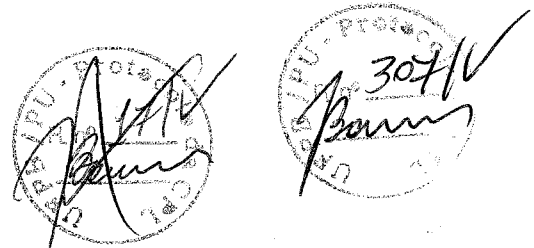


- 24 Ethernet 10/100/1000 ports
- 4 Gig SFP ports
- AC power supply, supporting RPS
- Forwarding performance: 42 Mpps
- Switching capacity: 336 Gbit/s

S5720S-28X-SI-AC  
S5720S-28X-SI-DC

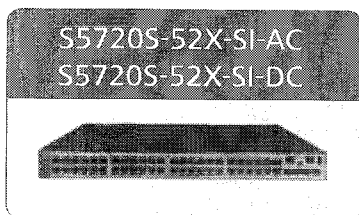


- 24 Ethernet 10/100/1000 ports
- 4 10 Gig SFP+ ports
- AC/DC power supply, supporting RPS
- Forwarding performance: 96 Mpps
- Switching capacity: 336 Gbit/s



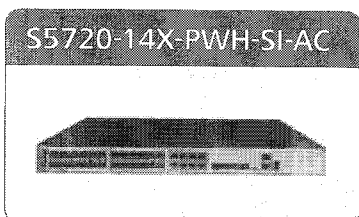
S5720S-52P-SI-AC

- 48 Ethernet 10/100/1000 ports
- 4 Gig SFP ports
- AC power supply, supporting RPS
- Forwarding performance: 78 Mpps
- Switching capacity: 336 Gbit/s



S5720S-52X-SI-AC  
S5720S-52X-SI-DC

- 48 Ethernet 10/100/1000 ports
- 4 10 Gig SFP+ ports
- AC/DC power supply, supporting RPS
- Forwarding performance: 132 Mpps
- Switching capacity: 336 Gbit/s



S5720-14X-PWH-SI-AC

- 8 Ethernet 10/100/1000 ports
- 4 Ethernet 2.5GE/GE ports
- 2 10 Gig SFP+ ports
- AC power supply
- Forwarding performance: 57 Mpps
- Switching capacity: 336 Gbit/s

## 2.2 Subcard Types

The S5720-SI provides four 10GE SFP+ ports (X series) or four 1000BASE-X ports (P series) for upstream connections. No extra upstream subcard is required.

## 2.3 Fan Tray

The S5720-SI has a built-in heat dissipation system. Customers do not need to purchase fan trays.

## 3 Power Supply

Table 3-1 lists the power supplies on the S5720-SI.

Table 3-1 S5720-SI power supplies

Power Model	Name	Applied Switch Model (S5720-SI)
ES0W2PSA0150	150 W AC	S5720-28P-SI-AC, S5720-28X-SI-AC, S5720-52P-SI-AC, S5720-52X-SI-AC
ES0W2PSD0150	150 W DC	S5720-28P-SI-AC, S5720-28X-SI-AC, S5720-52P-SI-AC, S5720-52X-SI-AC
PAC-500WA-BE	500 W AC PoE	S5720-28X-PWR-SI-AC, S5720-52X-PWR-SI-AC
PDC-650WA-BE	650 W DC PoE	S5720-28X-PWR-SI-AC, S5720-52X-PWR-SI-AC
W2PSA1150	1150 W AC PoE	S5720-52X-PWR-SI-ACF
RPS1800	RPS1800	S5720S-28P-SI-AC, S5720S-28X-SI-AC, S5720S-52P-SI-AC, S5720S-52X-SI-AC



The S5720-SI uses built-in power supplies by default. If the switch supports pluggable power supplies, the customer can purchase the power supplies when or after purchasing the switch.

The S5720-SI supports multiple power supply options, including dual-power, PoE, and single-power.

#### Dual-Power (Non-PoE)

The dual-power model (non-PoE) uses pluggable power supplies and provides two power slots. By default, one AC power supply (ES0W2PSA0150) is equipped. When a switch has two power supplies installed, the power supplies work in 1+1 backup mode to power the switch itself. The switch supports dual AC, dual DC, as well as AC and DC mixing.

Table 3-2 lists the power supply options supported by S5720-SI.

Table 3-2 S5720-SI dual-power (non-PoE)

Model	Power 1	Power 2
S5720-28P-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)
S5720-28X-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)
S5720-52P-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)
S5720-52X-SI-AC	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)	ES0W2PSA0150 (150W-AC) or ES0W2PSD0150 (150W-DC)

#### PoE/PoE+

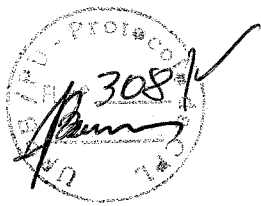
PWR in the model name indicates a PoE-capable switch, which supports IEEE 802.3af-compliant PoE and 802.3at-compliant PoE+. Each port delivers 15.4 W PoE or 30 W PoE+ power capacity.

Each PoE-capable S5720-SI switch has two power slots for pluggable PoE power modules. Table 3-3 lists the power supply options supported by PoE-capable S5720-SI.

Table 3-3 S5720-SI dual-power (PoE)

Model	Power 1	Power 2	PoE Power	Number of PoE Ports
S5720-28X-PWR-SI-AC	PAC-500WA-BE or PDC-650WA-BE	-	40 W	POE (15.4W): 24 POE+ (30W): 12
	PAC-500WA-BE or PDC-650WA-BE	PAC-500WA-BE or PDC-650WA-BE	740 W	POE (15.4W): 24 POE+ (30W): 24
S5720-52X-PWR-SI-AC	PAC-500WA-BE or PDC-650WA-BE	-	40 W	POE (15.4W): 24 POE+ (30W): 12
	PAC-500WA-BE or PDC-650WA-BE	PAC-500WA-BE or PDC-650WA-BE	740 W	POE (15.4W): 48 POE+ (30W): 24





Model	Power 1	Power 2	PoE Power	Number of PoE Ports
S5720-52X-PWR-SI-ACF	W2PSA1150	-	786W	POE (15.4W): 48 POE+ (30W): 26
	W2PSA1150	W2PSA1150	1440 W	POE (15.4W): 48 POE+ (30W): 48

#### NOTE:

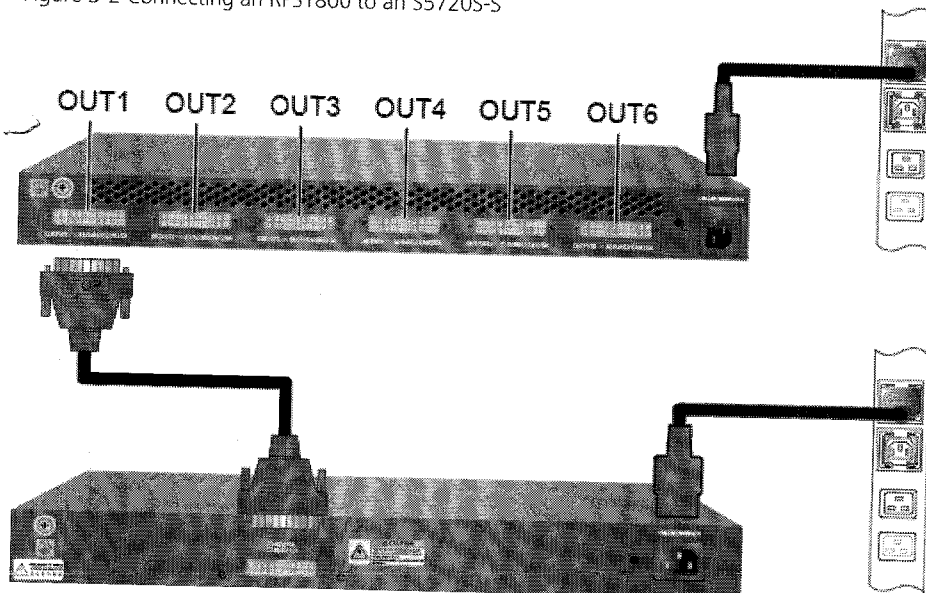
When a switch has two power supplies installed, the two power supplies work in redundancy mode to provide power for the switch itself and in load balancing mode to provide power for powered devices (PDs).

#### Single-Power

The single-power model uses a built-in AC power supply and supports RPS1800. The single-power models include S5720S-28P-SI-AC, S5720S-28X-SI-AC, S5720S-52P-SI-AC, and S5720S-52X-SI-AC.

An RPS1800 is a redundant power supply system that provides power redundancy for the connected switches to ensure uninterrupted services. When the internal power supply of a switch fails, the RPS1800 provides power to the switch immediately, which improves system reliability. Figure 3-2 shows how to

Figure 3-2 Connecting an RPS1800 to an S5720S-S



The RPS1800 provides 1+6 cold backup for the switch:

- The RPS1800 can connect to a maximum of six switches and ensures seamless failover for at most one switch when the internal power supply of the switch fails.
- When the internal power supply of the switch powered by the RPS1800 recovers, the RPS1800 immediately restores to backup state.
- Among the 6 DC output ports, OUT1 has the highest priority, and the other 5 ports have the same priority. When the RPS1800 connects to six switches, the switch connected to OUT1 preferentially receives power from the RPS1800.





## 4 Product Characteristics and Advantages

### Powerful support for services

- The S5720-SI offers higher performance and delivers a switching capacity of up to 336 Gbps. It provides more powerful Layer 3 routing capability such as OSPF/OSPFv3, BGP/BGP4+, ISIS/ISISv6, and provides voice, video and data services, helping enterprises build an integrated full service network with high availability and low latency.
- The S5720-SI supports many Layer 2/Layer 3 multicast protocols such as PIM SM, PIM DM, PIM SSM, MLD, and IGMP snooping, to support multi-terminal high-definition video surveillance and video conferencing services. It supports IGMP v1/v2/v3 snooping, IGMP filter, IGMP fast leave, and IGMP proxy. It also supports wire-speed replication of multicast packets between VLANs, multicast load balancing among member interfaces of a trunk, and controllable multicast, meeting requirements for IPTV and other multicast services.

### Comprehensive reliability mechanisms

- Besides STP, RSTP, and MSTP, the S5720-SI supports enhanced Ethernet reliability technologies such as Smart Link and RRPP (Rapid Ring Protection Protocol), which implement millisecond-level protection switchover and ensure network reliability. It also provides Smart Link multi-instance and RRPP multi-instance to implement load balancing among links, optimizing bandwidth usage.
- The S5720-SI supports the Smart Ethernet Protection (SEP) protocol, a ring network protocol applied to the link layer on an Ethernet network. SEP can be used on open ring networks and can be deployed on upper-layer aggregation devices to provide fast switchover, ensuring non-stop transmission of services. SEP features simplicity, high reliability, fast switchover, easy maintenance, and flexible topology, facilitating network planning and management.
- The S5720-SI supports Ethernet Ring Protection Switching (ERPS), also referred to as G.8032. As the latest ring network protocol, ERPS was developed based on traditional Ethernet MAC and bridging functions and uses mature Ethernet OAM function and a Ring Automatic Protection Switching (R-APS) mechanism to implement millisecond-level protection switching. ERPS supports various services and allows flexible networking, helping customers build a network with lower OPEX and CAPEX.

### Well-designed QoS policies and security mechanisms

- The S5720-SI implements complex traffic classification based on packet information such as the 5-tuple, IP precedence, ToS, DSCP, IP protocol type, ICMP type, TCP/UDP port number, VLAN ID, Ethernet protocol type. ACLs can be applied to inbound or outbound direction on an interface. The S5720-SI supports a flow-based two-rate three-color CAR. Each port supports eight priority queues and multiple queue scheduling algorithms such as WRR, DRR, SP, WRR+SP, and DRR+SP. All of these ensure the quality of voice, video, and data services. The S5720-SI supports 802.1x authentication, MAC address authentication, and combined authentication on a per port basis, as well as Portal authentication on a per VLANIF interface basis.
- The S5720-SI provides multiple security measures to defend against Denial of Service (DoS) attacks, and attacks against networks or users. DoS attack types include SYN Flood attacks, Land attacks, Smurf attacks, and ICMP Flood attacks. Attacks to networks refer to STP BPDU/root attacks. Attacks to users include bogus DHCP server attacks, man-in-the-middle attacks, IP/MAC spoofing attacks, DHCP request flood attacks. DoS attacks that change the CHADDR field in DHCP packets are also attacks against users.
- The S5720-SI supports DHCP snooping, which discards invalid packets that do not match any binding entries, such as ARP spoofing packets and IP spoofing packets. This prevents man-in-the-middle attacks to campus networks that hackers initiate by using ARP packets. The interface connected to a DHCP server can be configured as a trusted interface to protect the system against bogus DHCP server attacks.
- The S5720-SI supports strict ARP learning, which prevents ARP spoofing attacks that will exhaust ARP entries. It also provides IP source check to prevent DoS attacks caused by MAC address spoofing, IP address spoofing, and MAC/IP spoofing.
- The S5720-SI supports centralized MAC address authentication, 802.1x authentication, and NAC. It authenticates users based on statically or dynamically bound user information such as the user name,



IP address, MAC address, VLAN ID, access interface, and flag indicating whether antivirus software is installed. VLANs, QoS policies, and ACLs can be applied to users dynamically.

- The S5720-SI can limit the number of MAC addresses learned on an interface to prevent attackers from exhausting MAC address entries by using bogus source MAC addresses. This function minimizes packet flooding that occurs when MAC addresses of users cannot be found in the MAC address table.

#### Easy deployment and maintenance free

- The S5720-SI supports Super Virtual Fabric (SVF), which virtualizes the network architecture consisting of "core/aggregation switches + access switches + APs" into one device for management. SVF provides the industry's simplest network management solution, which simplifies device management and enables access switches and wireless APs to be plug-and-play. SVF Supports profile-based service configuration and automatic delivery of the configuration on core devices to access devices, implementing centralized device management and control, easy service configuration, and flexible configuration adjustment. The S5720-SI functions as a client switch.
- The S5720-SI supports Zero Touch Provisioning (ZTP), topology planning-based deployment, automatic topology discovery and collection, intelligent error correction and plug-and-play, deployment using a USB flash drive, and batch remote upgrade. These capabilities simplify device management and maintenance and reduce maintenance costs. The S5720-SI supports SNMP v1/v2c/v3 and provides flexible methods for managing devices. Users can manage the S5720-SI using the CLI and Web NMS. The NQA function helps users with network planning and upgrading. In addition, the S5720-SI supports NTP, SSH v2, HWTACACS+, RMON, log hosts, and port-based traffic statistics.
- The S5720-SI supports GARP VLAN Registration Protocol (GVRP), which dynamically distributes, registers, and propagates VLAN attributes to reduce manual configuration workloads of network administrators and to ensure correct VLAN configuration. In a complex network topology, GVRP simplifies VLAN configuration and reduces network communication faults caused by incorrect VLAN configuration.
- The S5720-SI supports MUX VLAN. MUX VLAN isolates Layer 2 traffic between interfaces in a VLAN. Interfaces in a subordinate separate VLAN can communicate with ports in the principal VLAN but cannot communicate with each other. MUX VLAN is usually used on an enterprise intranet to isolate user interfaces from each other but allow them to communicate with server interfaces. This function prevents communication between network devices connected to certain interfaces or interface groups but allows the devices to communicate with the default gateway.
- The S5720-SI supports the Sampled Flow (sFlow) function, which uses a sampling mechanism to obtain statistics about traffic forwarded on a network and sends the statistics to the Collector in real time. The Collector analyzes traffic statistics to help customers manage network traffic efficiently. The S5720-SI integrates the sFlow Agent module and uses hardware for traffic monitoring. Unlike traffic monitoring through port mirroring, sFlow does not degrade network performance during traffic monitoring.

#### PoE function

- The S5720-SI PWR can use PoE power supplies with different power levels to provide -48V DC power for Powered Devices (PDs) such as IP phones, WLAN APs, and Bluetooth APs. In its role as Power Sourcing Equipment (PSE), the S5720-SI PWR complies with IEEE 802.3af and 802.3at (PoE+) and can work with PDs that are incompatible with 802.3af or 802.3at. Each port provides a maximum of 30 W power, complying with IEEE 802.3at. The PoE+ function increases the maximum power of each port and implements intelligent power management for high-power consumption applications. This facilitates the use of PDs. PoE ports can work in power-saving mode. The S5720-SI PWR provides improved PoE solutions. Users can configure whether and when a PoE port supplies power.

#### High

- The S5720-SI supports intelligent stacking (iStack). Multiple S5720-SI can be connected with stack cables to set up a stack, which functions as a virtual switch. After a stack is set up, up to 9 physical switches can be virtualized into one logical device. Downlink electrical ports support iStack. A stack consists of a master switch, a backup switch, and several slave switches. The backup switch takes over services when the master switch fails, reducing service interruption time. Stacks support intelligent upgrade so that users do not need to change the software version of a switch when adding it to a stack. The iStack function allows users to connect multiple switches with stack cables to expand system capacity. These switches can be managed using a single IP address, which greatly reduces the costs of system expansion,



operation, and maintenance. Compared with traditional networking technologies, iStack has advantages in scalability, reliability, and system architecture.

#### Various IPv6 features

- The S5720-SI supports IPv4/IPv6 dual stack and can migrate from an IPv4 network to an IPv6 network. S5720-SI hardware supports IPv4/IPv6 dual stack, IPv6 over IPv4 tunnels (including manual tunnels, 6to4 tunnels, and ISATAP tunnels), and Layer 3 line-speed forwarding. The S5700 can be deployed on IPv4 networks, IPv6 networks, or networks that run both IPv4 and IPv6. This makes networking flexible and enables easy migration from IPv4 to IPv6.

#### UPOE+ ultra-large power supply

- The S5720-SI provides a UPOE+ model, which supports 2.5GE/GE UPOE+ Ethernet electrical ports that are compatible with GE cables. The UPOE+ model provides an up to 90 W PoE power supply per port, accommodating the requirements of scenarios in which a large power supply is required, such as enterprise office desktop systems, smart lighting, and Wi-Fi/LTE Pico co-site.

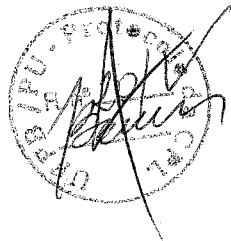
## 5 Product Specifications

### 5.1 Functions and Features

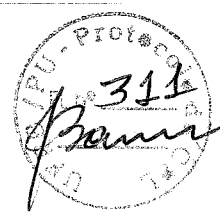
Table 5-1 lists the functions and features available on the S5720-SI.

Table 5-1 Functions and features available on the S5720-SI

Feature	Description
MAC address table	In compliance with IEEE 802.1d 16 K MAC address entries MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses
VLAN	4K VLANs Guest VLAN and voice VLAN GVRP Selective QinQ MUX VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports 1:1 and N:1 VLAN mapping
Jumbo frame	10K
Reliability	RRPP ring topology and RRPP multi-instance SmartLink tree topology and SmartLink multi-instance, providing millisecond-level protection switchover Smart Ethernet Protection (SEP) STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s) G.8032 Ethernet Ring Protection Switching (ERPS) BPDU protection, root protection, and loop protection
IP routing	Static route, RIPv1/2, RIPv6, OSPF, OSPFv3, ECMP, IS-IS, IS-ISv6, BGP, BGP4+, VRRP, and VRRP6
IPv6	Neighbor Discovery (ND) Path maximum transmission unit (PMTU) IPv6 Ping, IPv6 Tracert, and IPv6 Telnet 6 to 4 tunnel, ISATAP tunnel, and manually configured tunnel ACLs based on source IPv6 addresses, destination IPv6 addresses, Layer 4 ports, or protocol types Multicast Listener Discovery (MLD) v1/v2 snooping



Feature	Description
Multicast	PIM-DM, PIM-SM, and PIM-SSM IGMP v1/v2/v3 snooping and IGMP fast leave Multicast forwarding in a VLAN and multicast replication between VLANs Multicast load splitting among trunk member ports Controllable multicast Port-based multicast traffic statistics collection
QoS/ACL	Inbound and outbound traffic rate limiting on a port Packet redirection Port-based traffic policing and two-rate and three-color CAR Eight queues per port WRR, DRR, SP, WRR+SP, and DRR+SP queue scheduling algorithms Remarking of the 802.1p priority and DSCP value of packets Packet filtering based on Layer 2 to Layer 4 information, including source MAC addresses, destination MAC addresses, source IP addresses, destination IP addresses, TCP/UDP source/destination ports, protocol types, and VLAN IDs Queue-based rate limitation and shaping on ports
Security	User privilege management and password protection DoS attack defense, ARP attack defense, and ICMP attack defense Binding of the IP address, MAC address, interface, and VLAN Port isolation, port security, and sticky MAC Blackhole MAC address entries MAC Forced Forwarding (MFF) Limit on the number of learned MAC addresses 802.1x authentication and limit on the number of users on an interface AAA authentication, RADIUS authentication, HWTACACS+ authentication, and NAC SSH v2.0 Hypertext Transfer Protocol Secure (HTTPS) CPU defense Blacklist and whitelist 802.1x authentication, MAC address authentication, and combined authentication on a per port basis Portal authentication on a per VLANIF interface basis MACSec(hardware ready)
SVF	SVF client, zero-touch deployment Automatic software and patch loading on client One-key service deployment Independent running of client
OAM	Software OAM: EFM OAM CFM OAM Y.1731 performance test
Management and maintenance	iStack Virtual cable test (VCT) SNMPv1/v2c/v3 Remote Network Monitoring (RMON) Web-based network management system System logs and multi-level alarms sFlow LLDP/LLDP-MED
Interoperability	VLAN-based Spanning Tree (working with PVST/PVST+/RPVST) Link-type Negotiation Protocol (LNP), similar to the Dynamic Trunking Protocol (DTP) VLAN Central Management Protocol (VCMP), similar to the VLAN Trunk Protocol (VTP)



## 5.2 Hardware Specifications

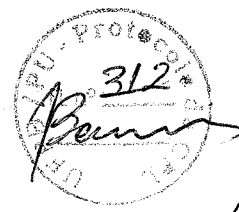
Table 5-2 lists the S5720-SI hardware specifications.

Table 5-2 S5720-SI hardware specifications

Item		Specification
Cabinet		Standard 19-inch cabinet/rack, such as N66E and N68E
Memory (RAM)		512 MB
Flash memory		240 MB
Mean Time Between Failures (MTBF), years		S5720-28P-SI-AC: 85.48 S5720-52P-SI-AC: 75.66 S5720-28X-SI-AC: 82.4 S5720-28X-SI-DC: 82.4 S5720-52X-SI-AC: 73.23 S5720-52X-SI-DC: 73.23 S5720-28X-PWR-SI-AC: 66.78 S5720-28X-PWR-SI-DC: 66.78 S5720-52X-PWR-SI-AC: 50.86 S5720-52X-PWR-SI-DC: 50.86 S5720-52X-PWR-SI-ACF: 50.86 S5720-14X-PWH-SI-AC: 86.55 S5720S-28P-SI-AC: 104.92 S5720S-52P-SI-AC: 90.07 S5720S-28X-SI-AC: 100.31 S5720S-52X-SI-AC: 86.64
Mean Time To Repair (MTTR), hours		2
Availability		> 0.99999
Surge protection	Service port protection	± 6kV in common mode
	Power supply port protection	<ul style="list-style-type: none"> <li>Non-PoE switches:                DC: ± 1 kV in differential mode; ± 2 kV in common mode                AC: ± 6kV in differential mode; ± 6kV in common mode</li> <li>PoE switches:                S5720-28X-PWR-SI-AC (using 500 W AC power modules): ± 6 kV in differential mode; ± 6 kV in common mode                S5720-28X-PWR-SI-AC (using 650 W DC power modules): ± 2 kV in differential mode; ± 4 kV in common mode                S5720-28X-PWR-SI-DC (using 500 W AC power modules): ± 6 kV in differential mode; ± 6 kV in common mode                S5720-28X-PWR-SI-DC (using 650 W DC power modules): ± 2 kV in differential mode; ± 4 kV in common mode                S5720-52X-PWR-SI-AC (using 500 W AC power modules): ± 6 kV in differential mode; ± 6 kV in common mode                S5720-52X-PWR-SI-AC (using 650 W DC power modules): ± 2 kV in differential mode; ± 4 kV in common mode                S5720-52X-PWR-SI-DC (using 500 W AC power modules): ± 6 kV in differential mode; ± 6 kV in common mode                S5720-52X-PWR-SI-DC (using 650 W DC power modules): ± 2 kV in differential mode; ± 4 kV in common mode                S5720-52X-PWR-SI-ACF (using 1150 W AC power modules): ± 2 kV in differential mode; ± 4 kV in common mode                S5720-14X-PWH-SI-AC: ± 6 kV in differential mode; ± 6 kV in common mode             </li> </ul>

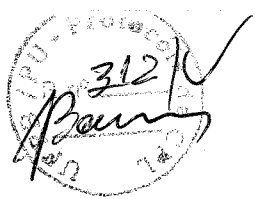


Item		Specification
Dimensions (W x D x H)	S5720-28P-SI-AC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-52P-SI-AC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-28X-SI-AC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-28X-SI-DC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-52X-SI-AC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-52X-SI-DC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-28X-PWR-SI-AC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-28X-PWR-SI-DC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-52X-PWR-SI-AC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-52X-PWR-SI-DC: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.)	
	S5720-52X-PWR-SI-ACF: 442.0 mm x 420.0 mm x 44.4 mm (17.4 in. x 16.5 in. x 1.74 in.) (When a 1150 W power module is used, it extrudes out from the chassis, increasing the chassis depth to 507.3 mm or 19.97 in.)	
	S5720-14X-PWH-SI-AC: 442.0 mm x 310.0 mm x 43.6 mm (17.4 in. x 12.2 in. x 1.72 in.)	
	S5720S-28P-SI-AC: 442.0mm x 220.0mm x 43.6mm	
	S5720S-52P-SI-AC: 442.0mm x 220.0mm x 43.6mm	
	S5720S-28X-SI-AC: 442.0mm x 220.0mm x 43.6mm	
	S5720S-52X-SI-AC: 442.0mm x 220.0mm x 43.6mm	
Weight	Fully loaded	≤ 12 kg (26.46 lb)
	Empty chassis	≤ 8 kg (17.64 lb)
Stack port		S5720-P-SI: GE electrical ports and GE SFP optical ports on the front panel, except the combo ports S5720-X-SI (except the S5720-14X-PWH-SI-AC): GE electrical ports and 10GE SFP+ optical ports on the front panel, except the combo ports S5720-14X-PWH-SI-AC: first eight GE electrical ports
RPS		Not supported by S5720-SI, and supported by S5720S-SI
PoE		Supported by PWR series and PWH series
DC input voltage	Rated voltage range	-48V DC to -60V DC
	Maximum voltage range	-36V DC to -72V DC



Item		Specification
AC input voltage	Rated voltage range	100V AC to 240V AC; 50/60 Hz
	Maximum voltage range	90V AC to 264V AC; 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)		S5720-28P-SI-AC: 34.6 W S5720-52P-SI-AC: 53.6 W S5720-28X-SI-AC: 37.5 W S5720-28X-SI-DC: 36.9 W S5720-52X-SI-AC: 56.8 W S5720-52X-SI-DC: 57.9 W S5720-28X-PWR-SI-AC: - Without PoE: 56.1 W - 100% PoE loads: 913 W (system power consumption: 173 W, PoE: 740 W) S5720-28X-PWR-SI-DC: - Without PoE: 56.3 W - 100% PoE loads: 887 W (system power consumption: 147 W, PoE: 740 W) S5720-52X-PWR-SI-AC: - Without PoE: 93.1 W - 100% PoE loads: 943.2 W (system power consumption: 203.2 W, PoE: 740 W) S5720-52X-PWR-SI-DC: - Without PoE: 79.7 W - 100% PoE loads: 907 W (system power consumption: 167 W, PoE: 740 W) S5720-52X-PWR-SI-ACF: - Without PoE: 94.8 W - 100% PoE loads: 1631.5 W (system power consumption: 191.5 W, PoE: 1440 W) S5720-14X-PWH-SI-AC: - Without PoE: 52 W - 100% PoE loads: 422 W (system power consumption: 52 W, PoE: 370 W) S5720S-28P-SI-AC: 29.1 W S5720S-52P-SI-AC: 51.5 W S5720S-28X-SI-AC: 32 W S5720S-52X-SI-AC: 54.7 W
Temperature	Operating temperature	0°C to 45°C (0 m-1800 m altitude) Note: When the altitude is between 1800 m and 5000 m, the operating temperature reduces by 1°C every time the altitude increases by 220 m.
	Storage temperature	-40°C to +70°C





Item	Specification
Noise under normal temperature (sound power)	S5720-28P-SI-AC: less than 52 dBA S5720-52P-SI-AC: less than 52 dBA S5720-28X-SI-AC: less than 52 dBA S5720-28X-SI-DC: less than 52 dBA S5720-52X-SI-AC: less than 52 dBA S5720-52X-SI-DC: less than 52 dBA S5720-28X-PWR-SI-AC: less than 56.5 dBA S5720-28X-PWR-SI-DC: less than 56.5 dBA S5720-52X-PWR-SI-AC: less than 56.5 dBA S5720-52X-PWR-SI-DC: less than 56.5 dBA S5720-52X-PWR-SI-ACF: less than 56.5 dBA S5720-14X-PWH-SI-AC: less than 52.8 dBA S5720S-28P-SI-AC: < 52 dBA S5720S-52P-SI-AC: < 52 dBA S5720S-28X-SI-AC: < 52 dBA S5720S-52X-SI-AC: < 52 dBA
Relative humidity	5%RH to 95%RH, noncondensing
Operating altitude	Non-PoE: - DC power equipped: 0 m to 2000 m - AC power equipped: 0 m to 5000 m PoE: 0 m to 5000 m

NOTE:

Switching capacity: also called switching bandwidth. It refers to the maximum volume of bidirectional traffic that can be transferred between the switching chip and data bus. This index indicates the data transferring capability of a switch.

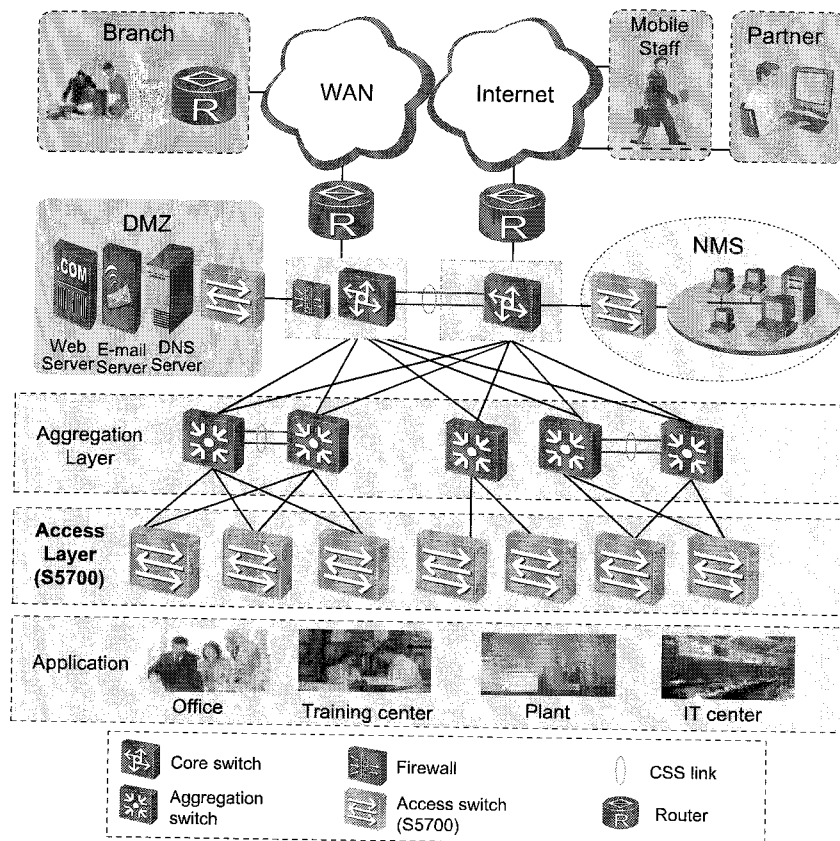
Forwarding performance: This index indicates the wire-speed forwarding capability of a switch when the switch processes 64-byte packets (plus an 8-byte preamble and a 12-byte IFG). It represents the packet header processing capability.

## 6 Networking and Applications

### 6.1 Large-Sized Enterprise Campus Network

As shown in Figure 6-1, the S5720-SI switches are located at the access layer to build a high-performance, reliable enterprise campus network.

Figure 6-1 Position of the S5720-SI on a large-sized enterprise campus network



The S5720-SI provides various terminal security management features, and supports functions such as PoE, voice VLAN, and QoS. The switch can be used for desktop access and provides gigabit access speed.

The S5720-SI provides various security features including ARP security, IP security, IP source guard, and user access control policies such as NAC and ACLs, to control access of user terminals.

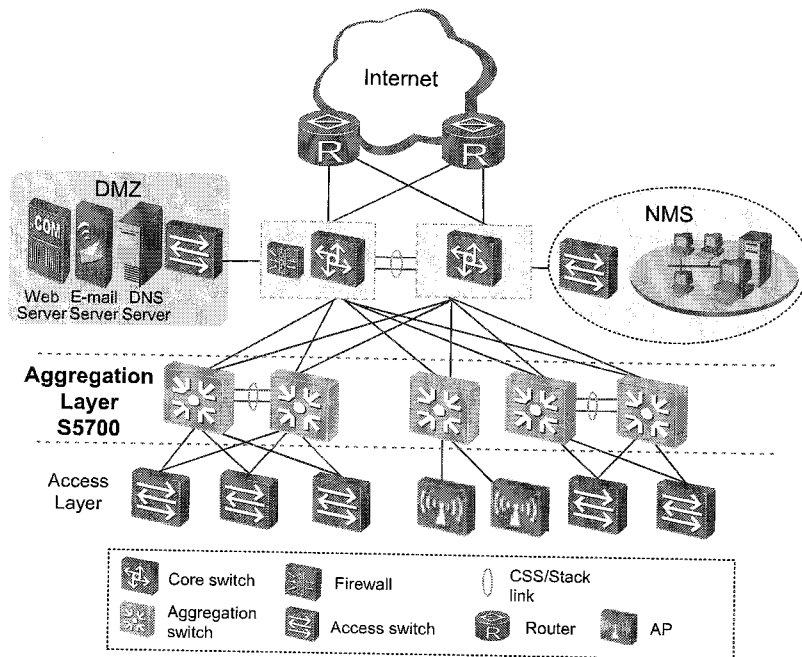
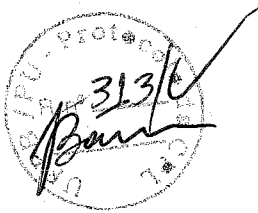
In addition, the switch supports the Link Aggregation Control Protocol (LACP) to provide multi-link access for servers, improving link bandwidth and reliability.

In terms of device management, the S5720-SI provides EasyOperation and USB-based deployment, which facilitates device deployment and management.

## 6.2 Small- and Middle-Sized Enterprise Campus Network

As shown in Figure 6-2, the S5720-SI switches are located at the aggregation layer to build a high-performance, reliable enterprise campus network.

Figure 6-2 Position of the S5720-SI on a small- and middle-sized enterprise campus network



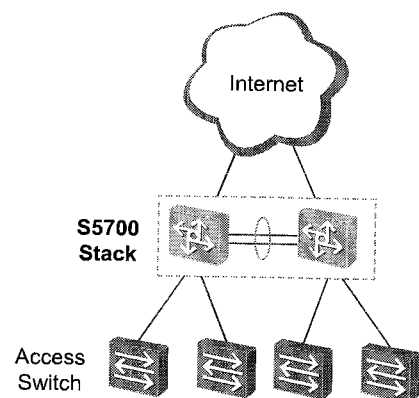
On an enterprise network or campus network, the S5720-SI switches connect to access switches through gigabit or 10 gigabit interfaces, provide high performance and large switching capacity, and connect to core switches through 10 gigabit optical interfaces. The network provides 10 Gbit/s rate for the backbone layer and 100 Mbit/s access rate for terminals, meeting requirements for high bandwidth and multi-service.

The S5720-SI provides SEP and RRPP to implement millisecond-level protection switchover. The switches form a stack system by using iStack technology to implement the distributed forwarding structure and fast fault recovery. The stack system increases the number of user interfaces and improves packet processing capability. The member switches can be managed in a uniform manner to facilitate network management

### 6.3 Small-Sized Enterprise Campus Network

As shown in Figure 6-3, the S5720-SI switches are the core switches of a small-sized enterprise campus network, which have powerful aggregation and routing capabilities. The S5720-SI switches use iStack to ensure high reliability. The switches provide various access control policies to achieve centralized user management and simplify configuration.

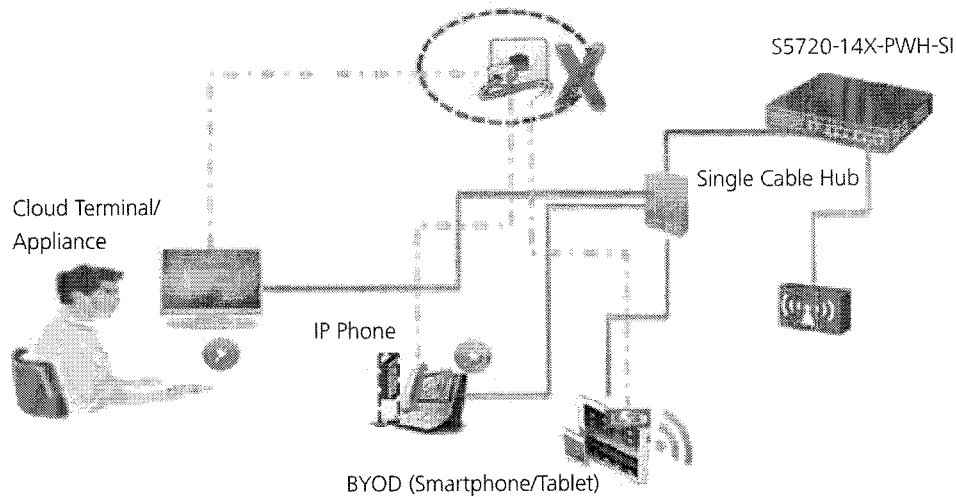
Figure 6-3 Position of the S5720-SI on a small-sized enterprise campus network



## 6.4 Enterprise office desktop systems

Figure 6-4 Position of the S5720-SI on a enterprise office desktop network

Huawei S5720-14X-PWH-SI UPOE+ switch that provides an ultra-large PoE power supply per port builds a Single Cable Solution for office desktop systems, enabling both power supply and network access for office desktop terminals through a single cable.



## 7 Product Accessories

### 7.1 Optical Modules and Fibers

The S5720-SI supports the following GE and 10GE optical modules:

- GE: 100 m electrical, 500 m optical multimode, 10/40/80/100 km optical single-mode, two pairs of bidirectional optical modules (10/40 km)
- 10GE: 100/220/300 m SFP+ multi-mode, 1.4/10/40/80 km optical SFP+

Optical fibers fall into single-mode and multimode fibers. Single-mode optical modules use single-mode fibers, and multi-mode optical modules use multi-mode fibers. For a non-BIDI optical module, each optical interface must be configured with a Tx optical fiber and an Rx optical fiber of the same type. For a BIDI optical module, only one optical fiber needs to be configured.

The fibers and optical modules supported by Huawei switches are updating. For the latest information, visit <http://e.huawei.com> or contact your local Huawei sales office.

### 7.2 Stack Cables

The S5720-SI switches support service port stacking. The applicable stack cables are as follows:

- AOC cable

An active optical network (AOC) cable integrates an optical module and fiber. The AOC cables are available in SFP-10G-AOC3M and SFP-10G-AOC10M.



- SFP+ high-speed cable

The SFP+ high-speed cable also integrates an optical module and cable. The SFP+ high-speed cables are available in SFP-10G-CU1M, SFP-10G-CU3M, SFP-10G-CU5M, and SFP-10G-CU10M.

Table 7-1 lists the stack cable types and connectors.

Table 7-1 Stack cables and connectors

Stack Cable	Model	Description
AOC	SFP-10G-AOC3M	Cable length: 3 m; connector: SFP+
	SFP-10G-AOC10M	Cable length: 5 m; connector: SFP+
SFP+ high-speed	SFP-10G-CU1M	Cable length: 1 m; connector: SFP+
	SFP-10G-CU3M	Cable length: 3 m; connector: SFP+
	SFP-10G-CU5M	Cable length: 5 m; connector: SFP+
	SFP-10G-CU10M	Cable length: 10 m; connector: SFP+

## 8 Safety and Regulatory Compliance

Table 8-1 lists the safety and regulatory compliance of S5720-SI.

Table 8-1 S5720-SI safety and regulatory compliance

Certification Category	Description
Safety	IEC 60950-1
	EN 60950-1/A11/A12
	UL 60950-1
	CSA C22.2 No 60950-1
	AS/NZS 60950.1
Electromagnetic Compatibility (EMC)	CISPR22 Class A
	CISPR24
	EN55022 Class A
	EN55024
	ETSI EN 300 386 Class A
	CFR 47 FCC Part 15 Class A
	ICES 003 Class A
	AS/NZS CISPR22 Class A
Environment	RoHS
	REACH
	WEEE



NOTE:

- EMC: electromagnetic compatibility
- CISPR: International Special Committee on Radio Interference
- EN: European Standard
- ETSI: European Telecommunications Standards Institute
- CFR: Code of Federal Regulations
- FCC: Federal Communication Commission
- IEC: International Electrotechnical Commission
- AS/NZS: Australian/New Zealand Standard
- VCCI: Voluntary Control Council for Interference
- UL: Underwriters Laboratories
- CSA: Canadian Standards Association
- IEEE: Institute of Electrical and Electronics Engineers
- RoHS: restriction of the use of certain hazardous substances
- REACH: Registration Evaluation Authorization and Restriction of Chemicals
- WEEE: Waste Electrical and Electronic Equipment

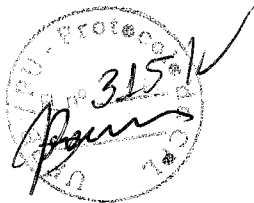
## 9 MIB and Standards Compliance

### 9.1 Supported MIBs

Table 9-1 lists the MIBs supported by S5720-SI.

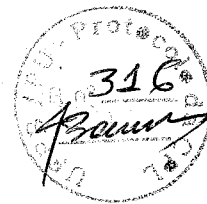
Table 9-1 S5720-SI MIBs

Category	MIB
Public MIB	BRIDGE-MIB
	DISMAN-NSLOOKUP-MIB
	DISMAN-PING-MIB
	DISMAN-TRACEROUTE-MIB
	ENTITY-MIB
	EtherLike-MIB
	IF-MIB
	IP-FORWARD-MIB
	IPv6-MIB
	LAG-MIB
	LLDP-EXT-DOT1-MIB
	LLDP-EXT-DOT3-MIB
	LLDP-MIB
	NOTIFICATION-LOG-MIB
	NQA-MIB
	OSPF-TRAP-MIB
	P-BRIDGE-MIB
	Q-BRIDGE-MIB
	RFC1213-MIB
	RIPv2-MIB
	RMON2-MIB
	RMON-MIB
	SAVI-MIB
	SNMP-FRAMEWORK-MIB
	SNMP-MPD-MIB
	SNMP-NOTIFICATION-MIB
	SNMP-TARGET-MIB
	SNMP-USER-BASED-SM-MIB
	SNMPv2-MIB
	TCP-MIB
	UDP-MIB



Category	MIB	
Huawei-proprietary MIB	HUAWEI-AAA-MIB	HUAWEI-IF-EXT-MIB
	HUAWEI-ACL-MIB	HUAWEI-INFOCENTER-MIB
	HUAWEI-ALARM-MIB	HUAWEI-IPPOOL-MIB
	HUAWEI-ALARM-RELIABILITY-MIB	HUAWEI-IPV6-MIB
	HUAWEI-BASE-TRAP-MIB	HUAWEI-ISOLATE-MIB
	HUAWEI-BRAS-RADIUS-MIB	HUAWEI-L2IF-MIB
	HUAWEI-BRAS-SRVCFG-EAP-MIB	HUAWEI-L2MAM-MIB
	HUAWEI-BRAS-SRVCFG-STATICUSER-MIB	HUAWEI-L2VLAN-MIB
	HUAWEI-CBQOS-MIB	HUAWEI_LDT-MIB
	HUAWEI-CDP-COMPLIANCE-MIB	HUAWEI-LLDP-MIB
	HUAWEI-CONFIG-MAN-MIB	HUAWEI-MAC-AUTHEN-MIB
	HUAWEI-CPU-MIB	HUAWEI-MEMORY-MIB
	HUAWEI-DAD-TRAP-MIB	HUAWEI-MFF-MIB
	HUAWEI-DC-MIB	HUAWEI-MFLP-MIB
	HUAWEI-DATASYNC-MIB	HUAWEI-MSTP-MIB
	HUAWEI-DEVICE-MIB	HUAWEI-MULTICAST-MIB
	HUAWEI-DHCPR-MIB	HUAWEI-NAP-MIB
	HUAWEI-DHCPS-MIB	HUAWEI-NTPV3-MIB
	HUAWEI-DHCP-SNOOPING-MIB	HUAWEI-PERFORMANCE-MIB
	HUAWEI-DIE-MIB	HUAWEI-PORT-MIB
	HUAWEI-DNS-MIB	HUAWEI-PORTAL-MIB
	HUAWEI-DLDP-MIB	HUAWEI-QINQ-MIB
	HUAWEI-ELMI-MIB	HUAWEI-RIPv2-EXT-MIB
	HUAWEI-ERPS-MIB	HUAWEI-RM-EXT-MIB
	HUAWEI-ERRORDOWN-MIB	HUAWEI-RRPP-MIB
	HUAWEI-ENERGYMNGT-MIB	HUAWEI-SECURITY-MIB
	HUAWEI-EASY-OPERATION-MIB	HUAWEI-SEP-MIB
	HUAWEI-ENTITY-EXTENT-MIB	HUAWEI-SNMP-EXT-MIB
	HUAWEI-ENTITY-TRAP-MIB	HUAWEI-SSH-MIB
	HUAWEI-ETHARP-MIB	HUAWEI-STACK-MIB
	HUAWEI-ETHOAM-MIB	HUAWEI-SWITCH-L2MAM-EXT-MIB
	HUAWEI-FLASH-MAN-MIB	HUAWEI-SWITCH-SRV-TRAP-MIB
	HUAWEI-FWD-RES-TRAP-MIB	HUAWEI-SYS-MAN-MIB
	HUAWEI-GARP-APP-MIB	HUAWEI-TCP-MIB
	HUAWEI-GTSM-MIB	HUAWEI-TFTPC-MIB
	HUAWEI-HGMP-MIB	HUAWEI-TRNG-MIB
	HUAWEI-HWTACACS-MIB	HUAWEI-XQOS-MIB



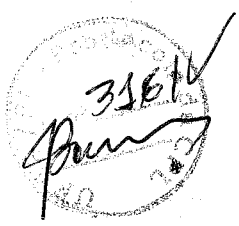



## 9.2 Standard Compliance

Table 9-2 lists the standards the S5720-SI complies with.

Table 9-2 S5720-SI standards compliance

Standard Organization	Standard or Protocol
IETF	RFC 768 User Datagram Protocol (UDP)
	RFC 792 Internet Control Message Protocol (ICMP)
	RFC 793 Transmission Control Protocol (TCP)
	RFC 826 Ethernet Address Resolution Protocol (ARP)
	RFC 854 Telnet Protocol Specification
	RFC 951 Bootstrap Protocol (BOOTP)
	RFC 959 File Transfer Protocol (FTP)
	RFC 1058 Routing Information Protocol (RIP)
	RFC 1115 A Simple Network Management Protocol (SNMP)
	RFC 1256 ICMP Router Discovery
	RFC 1305 Network Time Protocol Version 3 (NTP)
	RFC 1349 Internet Protocol (IP)
	RFC 1493 Definitions of Managed Objects for Bridges
	RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
	RFC 1643 Ethernet Interface MIB
	RFC 1757 Remote Network Monitoring (RMON)
	RFC 1901 Introduction to Community-based SNMPv2
	RFC 1902-1907 SNMP v2
	RFC 1981 Path MTU Discovery for IP version 6
	RFC 2131 Dynamic Host Configuration Protocol (DHCP)
	RFC 2328 OSPF Version 2
	RFC 2453 RIP Version 2
	RFC 2460 Internet Protocol, Version 6 Specification (IPv6)
	RFC 2461 Neighbor Discovery for IP Version 6 (IPv6)
	RFC 2462 IPv6 Stateless Address Auto configuration
	RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6)
	RFC 2474 Differentiated Services Field (DS Field)
	RFC 2863 The Interfaces Group MIB
	RFC 2597 Assured Forwarding PHB Group
	RFC 2598 An Expedited Forwarding PHB
	RFC 2571 SNMP Management Frameworks
	RFC 2865 Remote Authentication Dial In User Service (RADIUS)
	RFC 3046 DHCP Option82
	RFC 3376 Internet Group Management Protocol, Version 3 (IGMPv3)
	RFC 3513 IP Version 6 Addressing Architecture
	RFC 3579 RADIUS Support For EAP
	RFC 4271 A Border Gateway Protocol 4 (BGP-4)
	RFC 4760 Multiprotocol Extensions for BGP-4
	draft-grant-tacacs-02 TACACS+

Standard Organization	Standard or Protocol
IEEE	IEEE 802.1D Media Access Control (MAC) Bridges IEEE 802.1p Virtual Bridged Local Area Networks IEEE 802.1Q Virtual Bridged Local Area Networks IEEE 802.1ad Provider Bridges IEEE 802.2 Logical Link Control IEEE Std 802.3 CSMA/CD IEEE Std 802.3ab 1000BASE-T specification IEEE Std 802.3ad Aggregation of Multiple Link Segments IEEE Std 802.3ae 10GE WEN/LAN Standard IEEE Std 802.3x Full Duplex and flow control IEEE Std 802.3z Gigabit Ethernet Standard IEEE802.1ax/IEEE802.3ad Link Aggregation IEEE 802.3ah Ethernet in the First Mile. IEEE 802.1ag Connectivity Fault Management IEEE 802.1ab Link Layer Discovery Protocol IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE802.1x Port based network access control protocol IEEE802.3af DTE Power via MIDI IEEE802.3at DTE Power via the MDI Enhancements
ITU	ITU SG13 Y.17ethoam ITU SG13 QoS control Ethernet-Based IP Access ITU-T Y.1731 ETH OAM performance monitor
ISO	ISO 10589 IS-IS Routing Protocol
MEF	MEF 2 Requirements and Framework for Ethernet Service Protection MEF 9 Abstract Test Suite for Ethernet Services at the UNI MEF 10.2 Ethernet Services Attributes Phase 2 MEF 11 UNI Requirements and Framework MEF 13 UNI Type 1 Implementation Agreement MEF 15 Requirements for Management of Metro Ethernet Phase 1 Network Elements MEF 17 Service OAM Framework and Requirements MEF 20 UNI Type 2 Implementation Agreement MEF 23 Class of Service Phase 1 Implementation Agreement Xmodem XMODEM/YMODEM Protocol Reference

NOTE:

The listed standards and protocols are fully or partially supported by Huawei switches. For details, visit <http://e.huawei.com> or contact your local Huawei sales office.



## 10 Ordering Information

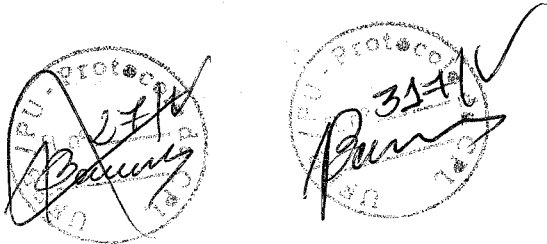
Table 10-1 Ordering list of S5720-SI series Ethernet switches

Product Description
S5720-28P-SI Bundle(24 Ethernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP,4 Gig SFP,with 150W AC power supply)
S5720-28X-SI Bundle(24 Ethernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP,4 10 Gig SFP+,with 150W AC power supply)
S5720-52P-SI Bundle(48 Ethernet 10/100/1000 ports,4 Gig SFP,with 150W AC power supply)
S5720-52X-SI Bundle(48 Ethernet 10/100/1000 ports,4 10 Gig SFP+,with 150W AC power supply)
S5720-28X-PWR-SI Bundle(24 Ethernet 10/100/1000 PoE+ ports,4 of which are dual-purpose 10/100/1000 or SFP,4 10 Gig SFP+,with 500W AC power)
S5720-52X-PWR-SI Bundle(48 Ethernet 10/100/1000 PoE+ ports,4 10 Gig SFP+,with 500W AC power)
S5720-52X-PWR-SI Bundle(48 Ethernet 10/100/1000 PoE+ ports,4 10 Gig SFP+,with 1150W AC power supply)
S5720S-28P-SI-AC(24 Ethernet 10/100/1000 ports,4 Gig SFP,AC 110/220V)
S5720S-28X-SI-AC(24 Ethernet 10/100/1000 ports,4 10 Gig SFP+,AC 110/220V)
S5720S-52P-SI-AC(48 Ethernet 10/100/1000 ports,4 Gig SFP,AC 110/220V)
S5720S-52X-SI-AC(48 Ethernet 10/100/1000 ports,4 10 Gig SFP+,AC 110/220V)
S5720-14X-PWH-SI-AC(8 Ethernet 10/100/1000 ports,4 Ethernet 2.5GE/GE ports, 2 10 Gig SFP+,AC)
150W AC power supply
150W DC power supply
500W AC PoE power supply
650W DC PoE power supply
1150W AC PoE power supply
RPS1800

For more information, visit <http://e.huawei.com> or contact your local Huawei sales office.

## 11 Others



The latest version of S5720-SI is V2R9.



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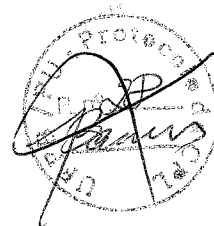
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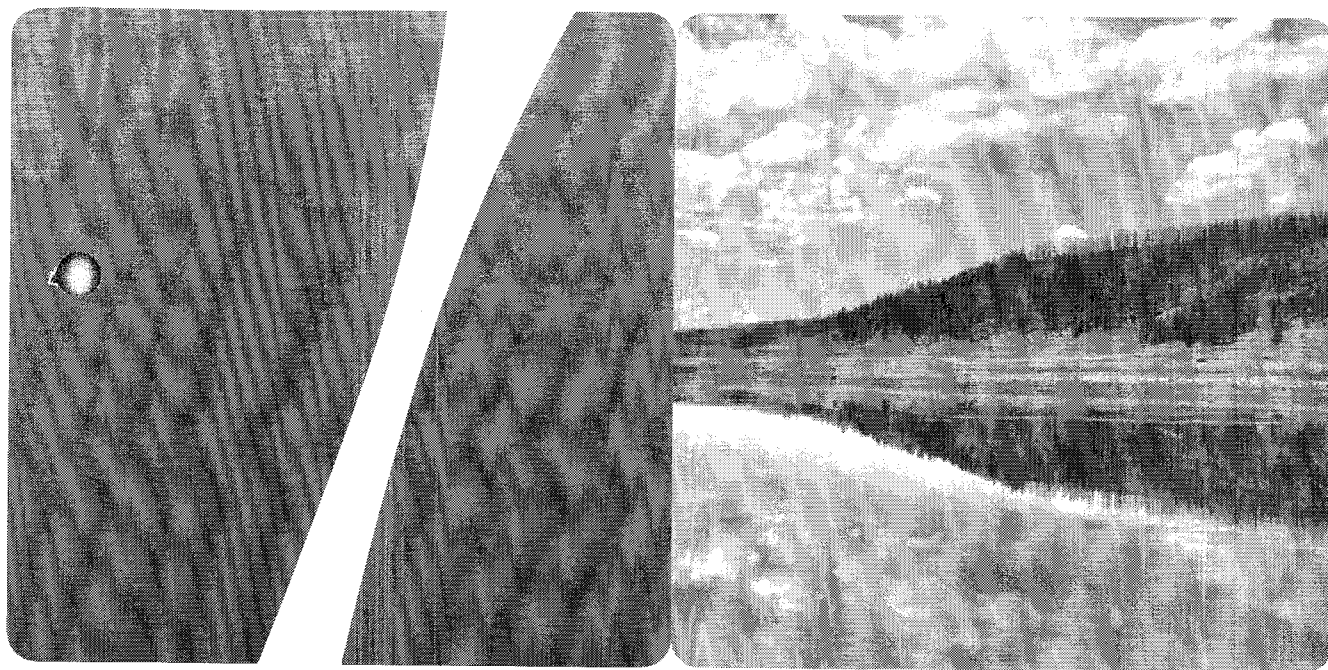
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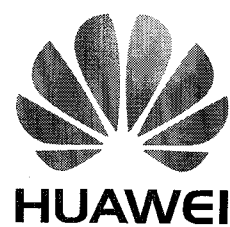
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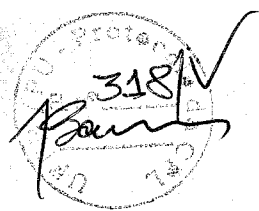


## S1700 Series Enterprise Switches



HUAWEI TECHNOLOGIES CO., LTD.







# S1700 Series Enterprise Switches

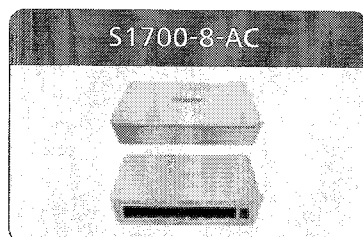
## Product Overview

The S1700 series enterprise switches (S1700s) are next-generation energy-saving Ethernet access switches. The S1700 uses high-performance hardware, which offers a wide array of features to help customers build secure, reliable, high-performance networks. The S1700 is easy to install and maintain, and is ideal for small-size and medium-size enterprises, Internet cafes, hotels, and schools.

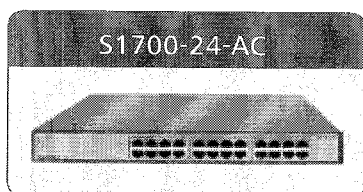
The S1700 consists of unmanaged switches, SNMP-based switches, and a web-managed switch.

- Unmanaged switches include the S1700-8-AC, S1700-24-AC, S1700-52R-2T2P-AC, S1700-8-AC, S1724G and S1700-24GR.
- SNMP-based switches include the S1700-28FR-2T2P-AC, S1700-28GFR-4P-AC, S1700-52FR-2T2P-AC, S1700-52GFR-4P-AC, S1720-20GFR-4TP and S1720-28GFR-4TP.
- The web-managed switch is the S1728GWR-4P.

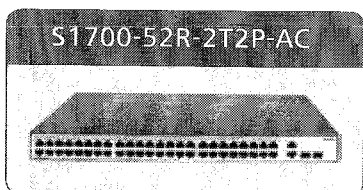
## Product Appearance



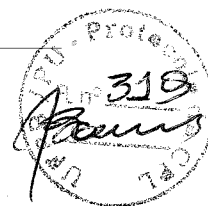
- 8 Ethernet 10/100 ports
- AC power supply
- Packet forwarding rate: 1.2 Mpps



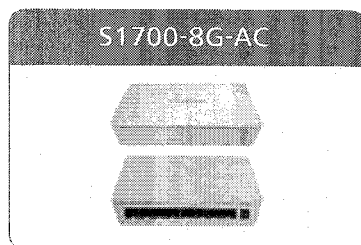
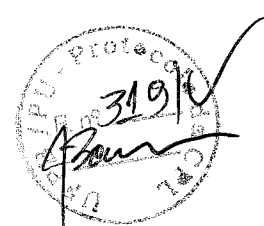
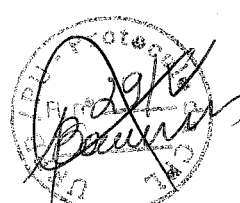
- 24 Ethernet 10/100 ports
- AC power supply
- Packet forwarding rate: 3.6 Mpps



- 48 Ethernet 10/100 ports, 2 Ethernet 10/100/1000 ports and 2 Gig SFP
- AC power supply
- Packet forwarding rate: 13.2 Mpps

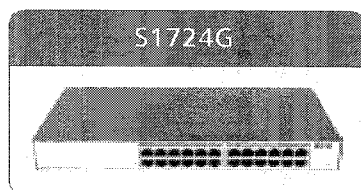






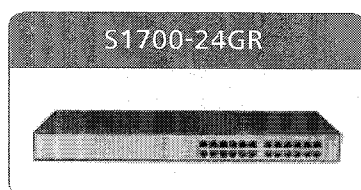
S1700-8G-AC

- 8 Ethernet 10/100/1000 ports
- AC power supply
- Packet forwarding rate: 12 Mpps



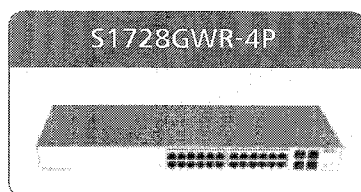
S1724G

- 24 Ethernet 10/100/1000 ports
- AC power supply
- Packet forwarding rate: 36 Mpps



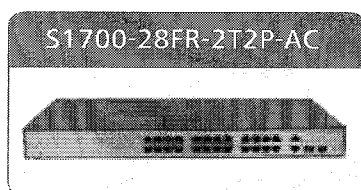
S1700-24GR

- 24 Ethernet 10/100/1000 ports
- AC power supply
- Packet forwarding rate: 36 Mpps



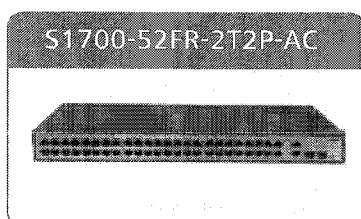
S1728GWR-4P

- 24 Ethernet 10/100/1000 ports, 4 Gig SFP
- AC power supply
- Packet forwarding rate: 42 Mpps



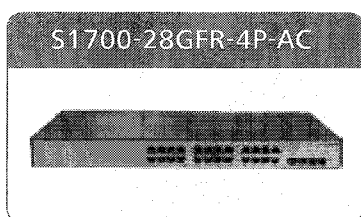
S1700-28FR-2T2P-AC

- 24 Ethernet 10/100 ports, 2 Ethernet 10/100/1000 ports and 2 Gig SFP
- AC power supply
- Packet forwarding rate: 9.6Mpps



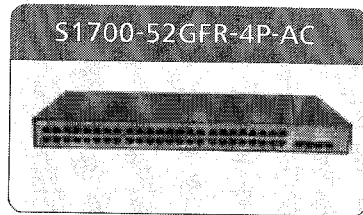
S1700-52FR-2T2P-AC

- 48 Ethernet 10/100 ports, 2 Ethernet 10/100/1000 ports and 2 Gig SFP
- AC power supply
- Packet forwarding rate: 13.2Mpps

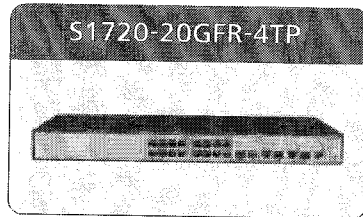


S1700-28GFR-4P-AC

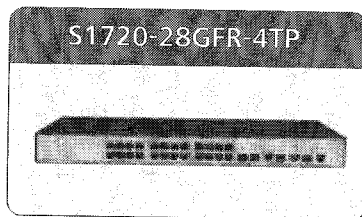
- 24 Ethernet 10/100/1000 ports, 4 Gig SFP
- AC power supply
- Packet forwarding rate: 42 Mpps



- 48 Ethernet 10/100/1000 ports, 4 Gig SFP
- AC power supply
- Packet forwarding rate: 78 Mpps



- 16 Ethernet 10/100/1000 ports, 2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP
- AC power supply
- Packet forwarding rate: 42 Mpps



- 24 Ethernet 10/100/1000 ports, 2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP
- AC power supply
- Packet forwarding rate: 42 Mpps

## Product Features

### **Innovative energy-saving design**

- All S1700 series switches are based on a fan-free design, which reduces power consumption and noise.
- The S1700 supports Energy Efficient Ethernet (EEE), which enables the switch to enter a power-saving mode when traffic is light.
- The S1700 can adjust the power output for transmissions based on the cable length. It can also set any ports that are not transmitting traffic to sleep mode.

### **Non-blocking and high-speed forwarding**

- All S1700 ports provide Layer 2 wire-speed forwarding capabilities to ensure non-blocking packet forwarding. S1700 models provide optical and electrical GE uplink ports, which facilitate user access and are cost-effective.
- The S1700 MAC address table supports up to 8 K of MAC addresses, making it easy to expand networks and deploy new services. The S1700 support layer 3 static routing-forwarding which include IPv4 and IPv6 protocols.

### **Convenient management and maintenance**

- The S1700 is easy to manage and maintain, being equipped with a one-key operation button on the front panel.
- Web-managed S1700 models come with a web network management system, making it easy to configure switches.



- SNMP-based S1700 models allow for the use of an SNMP-based NMS for centralized configuration and management.
- SNMP-based S1720 models can support CLI and console port configuration.

#### Powerful security performance

- The S1700 provides a range of security features, including 802.1x, RADIUS, Portal and NAC. The S1700 also supports packet filtering based on MAC addresses or ports in order to defend against hackers and virus attacks.

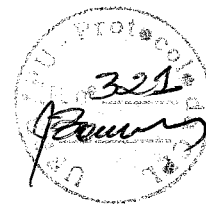
#### Great networking and bandwidth extensibility

- The S1700 provides LACP, STP, RSTP, and MSTP functions to implement link aggregation and backup. SNMP-based switches support up to eight MSTP instances for flexible networking.

### Product Specifications

#### S1700 hardware specifications

Type	Unmanaged Switch					
Model	S1700-8-AC	S1700-24-AC	S1700-52R-2T2P-AC	S1700-8G-AC	S1724G	S1724GR
Downlink port	8 Ethernet 10/100 ports	24 Ethernet 10/100 ports	48 Ethernet 10/100 ports	8 Ethernet 10/100/1000 ports	24 Ethernet 10/100/1000 ports	24 Ethernet 10/100/1000 ports
Uplink port	Shared with downlink ports	Shared with downlink ports	2 Ethernet 10/100/1000 ports and 2 Gig SFP	Shared with downlink ports	Shared with downlink ports	Shared with downlink ports
MAC address table	8 K MAC					
Dimensions mm (W*D*H)	160*134*30	320*208*43.6	442*220*43.6	160*134*30	330*208*43.6	442*220*43.6
Input voltage	100 V to 240 V AC,50/60 Hz					
EEE	NA					
Power consumption	<5W	<15W	<25W	<10W	<15W	<20W
Operating temperature	0°C to 45°C					
Humidity (non-condensing)	10%~90%				5%~90%	
Heat dissipation	Fan-free natural heat dissipation					



Type	Web-managed Switch	SNMP-based Switch			
Model	S1728GWR-4P	S1700-28FR-2T2P-AC	S1700-52FR-2T2P-AC	S1700-28GFR-4P-AC	S1700-52GFR-4P-AC
Downlink port	24 Ethernet 10/100/1000 ports	24 Ethernet 10/100 ports	48 Ethernet 10/100 ports	24 Ethernet 10/100/1000 ports	48 Ethernet 10/100/1000 ports
Uplink port	4 Gig SFP	2 Ethernet 10/100/1000 ports and 2 Gig SFP	2 Ethernet 10/100/1000 ports and 2 Gig SFP	4 Gig SFP	4 Gig SFP
MAC address table	8 K MAC				
Dimensions mm (W*D *H)	442*220*43.6 mm				
Input voltage	100 V to 240 V AC, 50/60 Hz				
EEE	Support	NA	NA	Support	Support
Power consumption	<15W	<25W	<35W	<30W	<55W
Operating temperature	0°C to 45°C				
Humidity (non-condensing)	5%~90%	10% to 90%			
Heat dissipation	Fan-free natural heat dissipation				Heat dissipation using fans supporting intelligent speed adjustment

Type	SNMP-based Switch	
Model	S1720-20GFR-4TP	S1720-28GFR-4TP
Downlink port	16 Ethernet 10/100/1000 ports	24 Ethernet 10/100/1000 ports
Uplink port	2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP	2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP
MAC address table	16 K MAC	
Routing Feature	IPv4 and IPv6 static routing	
Dimensions mm (W*D *H)	442*220*43.6	
Input voltage	100 V to 240 V AC, 50/60 Hz	
EEE	support	
Power consumption	<20.7W	<24.3W
Operating temperature	0-1800m: 0-50°C 1800-4000m: decrease 1° C when the altitude increases every 220 m	
Humidity (non-condensing)	5%~95%	
Heat dissipation	Fan-free natural heat dissipation	

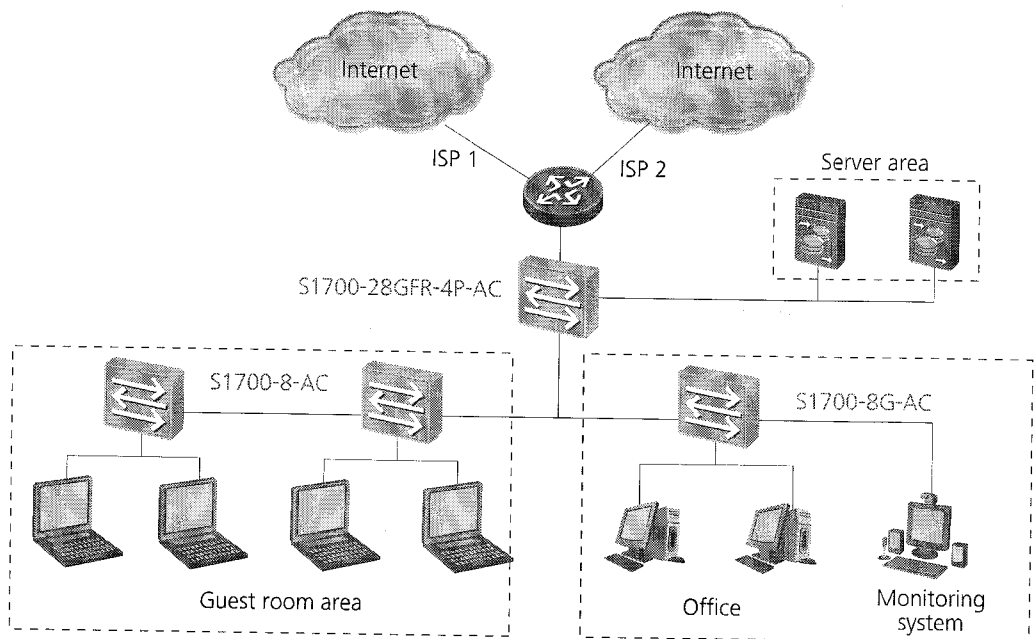
## Service Features

Item	Web-managed Switch	SNMP-based Switch
Security features	Packet filtering based on MAC addresses Port-based 802.1x authentication RADIUS authentication Port isolation	Hardware ACL Packet filtering based on MAC addresses MAC address authentication Port-based 802.1x authentication. RADIUS authentication Portal authentication Port isolation Storm suppression Attack defense, which prevents broadcast traffic, ARP attacks, ICMP attacks, TCP attacks, worm viruses, and DoS attacks DHCP snooping
VLANs	256 VLANs Access port Trunk port Hybrid port Management VLAN Voice VLAN	4 K VLANs Access port Trunk port Hybrid port Management VLAN Voice VLAN
QoS	PQ and WRR Four queues on each port Queue scheduling based on 802.1p or DSCP priorities	PQ and WRR Eight queues on each port Queue scheduling based on 802.1p or DSCP priorities
STP	STP(IEEE 802.1d), RSTP(IEEE 802.1w)	STP(IEEE 802.1d), RSTP(IEEE 802.1w), and MSTP(IEEE 802.1s)
Multicast	IGMP snooping and a maximum of 256 multicast groups	IGMP snooping and a maximum of 256 multicast groups Fast leave
Routing feature	NA	IPv4 and IPv6 static routing
Link aggregation	12 link aggregation groups (LAGs) with a maximum of eight ports in each LAG Static LACP	12 link aggregation groups (LAGs) with a maximum of eight ports in each LAG 64 link aggregation groups(S1720 series) Static LACP
Port mirroring	Port-based bidirectional flow mirroring	Port-based bidirectional flow mirroring Configuring a trunk as a mirrored interface
Bandwidth control	Rate limiting for incoming and outgoing packets, with a granularity of 64 kbps	Rate limiting for incoming and outgoing packets, with a granularity of 8 kbps
Broadcast storm suppression	Broadcast storm suppression based on the interface rate Alarm sending when the traffic rate reaches the upper limit	Broadcast storm suppression based on the interface rate Alarm sending when the traffic rate reaches the upper limit
Device management	Web system network management DHCP client One-key restoration	SNMP Web system network management (HTTPS) DHCP client User password protection One-key restoration CLI configuration Console port
Device maintenance	System log Ping Virtual Cable Test (VCT) Link Layer Discovery Protocol (LLDP)	Remote Network Monitoring (RMON) System log Ping and traceroute Virtual Cable Test (VCT) Link Layer Discovery Protocol (LLDP)

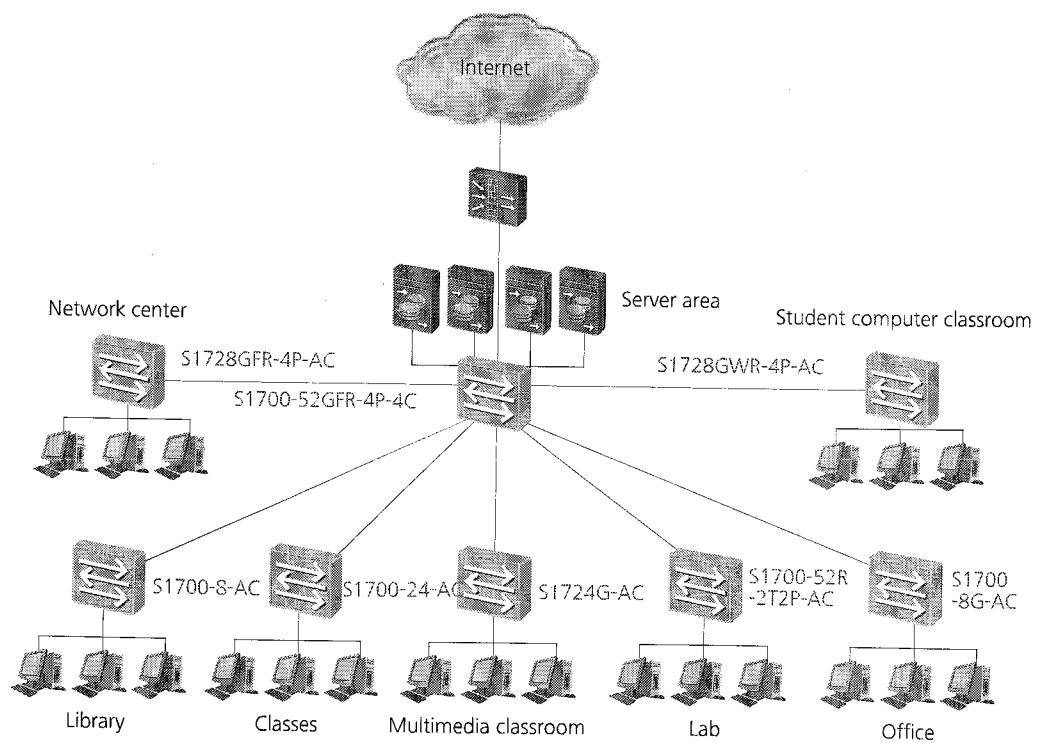


## Applications

### Hotels



### Schools



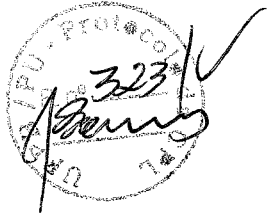
## Product List

### S1700 switch models

Product Description
S1700-8-AC (8 Ethernet 10/100 ports, AC 110/220V, China Power Adapter)
S1700-8-AC (8 Ethernet 10/100 ports, AC 110/220V, North America Power Adapter)
S1700-8-AC (8 Ethernet 10/100 ports, AC 110/220V, Europe Power Adapter)
S1700-8-AC (8 Ethernet 10/100 ports, AC 110/220V, Switzerland Power Adapter)
S1700-8-AC (8 Ethernet 10/100 ports, AC 110/220V, Italy Power Adapter)
S1700-8-AC (8 Ethernet 10/100 ports, AC 110/220V, UK/Singapore/HK Power Adapter)
S1700-8G-AC (8 Ethernet 10/100/1000 ports, AC 110/220V, China Power Adapter)
S1700-8G-AC (8 Ethernet 10/100/1000 ports, AC 110/220V, AC 110/220V, Australia Power Adapter)
S1700-8G-AC (8 Ethernet 10/100/1000 ports, AC 110/220V, North America Power Adapter)
S1700-8G-AC (8 Ethernet 10/100/1000 ports, AC 110/220V, Europe Power Adapter)
S1700-8G-AC (8 Ethernet 10/100/1000 ports, AC 110/220V, Switzerland Power Adapter)
S1700-8G-AC (8 Ethernet 10/100/1000 ports, AC 110/220V, Italy Power Adapter)
S1700-8G-AC (8 Ethernet 10/100/1000 ports, AC 110/220V, UK/Singapore/Hongkong Power Adapter)
S1700-24-AC (24 Ethernet 10/100 ports, AC 110/220V)
S1724G (24 Ethernet 10/100/1000 ports, AC 110/220V)
S1700-24GR (24 Ethernet 10/100/1000 ports, AC 110/220V)
S1728GWR-4P (24 Ethernet 10/100/1000 ports, 4 Gig SFP, AC 110/220V)
S1700-28FR-2T2P-AC (24 Ethernet 10/100 ports, 2 Ethernet 10/100/1000 ports and 2 Gig SFP, AC 110/220V)
S1700-28GFR-4P-AC (24 Ethernet 10/100 ports, 4 Gig SFP, AC 110/220V)
S1700-52R-2T2P-AC (48 Ethernet 10/100 ports, 2 Ethernet 10/100/1000 ports and 2 Gig SFP, AC 110/220V)
S1700-52FR-2T2P-AC (48 Ethernet 10/100 ports, 2 Ethernet 10/100/1000 ports and 2 Gig SFP, AC 110/220V)
S1700-52GFR-4P-AC (48 Ethernet 10/100/1000 ports, 4 Gig SFP, AC 110/220V)
S1720-20GFR-4TP (16 Ethernet 10/100/1000 ports, 2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP, AC 110/220V)
S1720-28GFR-4TP (24 Ethernet 10/100/1000 ports, 2 Gig SFP and 2 dual-purpose 10/100/1000 or SFP, AC 110/220V)

For more information, visit <http://enterprise.huawei.com> or contact the Huawei local sales office.







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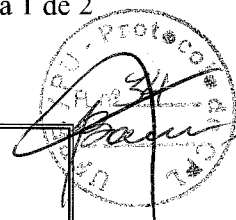
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[www.huawei.com](http://www.huawei.com)





REPÚBLICA FEDERATIVA DO BRASIL  
AGÊNCIA NACIONAL DE TELECOMUNICAÇÕES.

**Certificado de Homologação**  
(Intransferível)

Nº 0358-16-3257

Validade: Indeterminada

Emissão: 15/03/2016

Solicitante:

HUAWEI DO BRASIL TELECOMUNICAÇÕES LTDA,  
RUA VERBO DIVINO 1400 CHÁCARA SANTO ANTÔNIO (ZONA  
SUL)  
4719002 SAO PAULO SP

Fabricante:

HUAWEI TECHNOLOGIES CO. LTD  
HUAWEI INDUSTRIAL PARK BANTIAN LONGGANG DISTRICT  
SHENZHEN

Este documento homologa, nos termos do Regulamento para Certificação e Homologação de Produtos para Telecomunicações, aprovado pela Resolução Anatel nº 242, de 30 de novembro de 2000, o Certificado de Conformidade nº NCC 13026/16, emitido pelo **OCD - Associação NCC Certificações do Brasil**. Esta homologação é expedida em nome do solicitante aqui identificado e é válida somente para o produto a seguir discriminado, cuja utilização deve observar as condições estabelecidas na regulamentação do(s) serviço(s) ou aplicação(ões) a que se destina.

Tipo:

**Equipamento de Rede de Dados - Categoria III**

Modelo(s):

**S5720-28X-SI**

Serviço/Aplicação:

**Redes de Dados**

Características técnicas básicas:

Equipamento utilizado em redes Ethernet.

Observações:

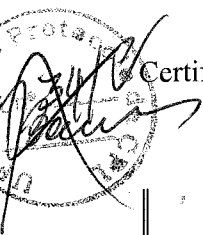
**Este produto destina-se ao uso profissional, manuseado por pessoal devidamente qualificado, não sendo destinado ao uso do público em geral para acesso a serviços de telecomunicações de interesse coletivo.**

**Demais módulos de interface e protocolos sinalizados passíveis de homologação, especificados em documentos técnicos do produto, não estão cobertos por este certificado, sendo obrigatória sua certificação e homologação, caso venham a ser fornecidos ou utilizados.**

Constitui obrigação do fabricante do produto no Brasil providenciar a identificação do produto homologado, nos termos do art. 39 do Regulamento anexo à Resolução Anatel nº 242, em todas as unidades comercializadas, antes de sua efetiva distribuição ao mercado, assim como observar e manter as características técnicas que fundamentaram a certificação original.

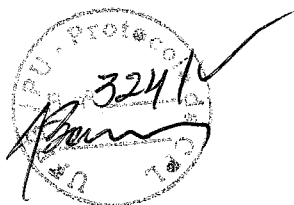
**As informações constantes deste certificado de homologação podem ser confirmadas no SGCH - Sistema de Gestão de Certificação e Homologação, disponível no portal da Anatel. ([www.anatel.gov.br](http://www.anatel.gov.br)).**

Marcos de Souza Oliveira  
Gerente de Certificação e Numeração



Certificado de Homologação

Página 2 de 2



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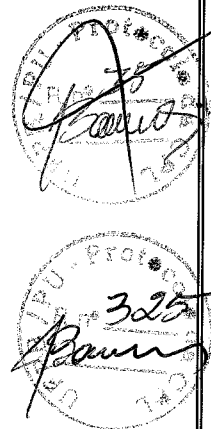
REPÚBLICA FEDERATIVA DO BRASIL  
AGÊNCIA NACIONAL DE TELECOMUNICAÇÕES.

**Certificado de Homologação**  
(Intransferível)

Nº **3599-12-3257**

Validade: Indeterminada

Emissão: **18/03/2013**



Solicitante:

**HUAWEI DO BRASIL TELECOMUNICAÇÕES LTDA,  
PRAÇA PROFESSOR JOSE LANNES 40 12º ANDAR CIDADE  
MONÇÕES  
4571100 SAO PAULO SP**

Fabricante:

**HUAWEI TECHNOLOGIES CO. LTD  
HUAWEI INDUSTRIAL PARK BANTIAN LONGGANG DISTRICT  
SHENZHEN**

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Tipo:

**Equipamento de Rede de Dados - Categoria III**

Modelo(s):

**S1700-28GFR-4P-AC  
S1700-52GFR-4P-AC**

Serviço/Aplicação:

**Redes de Dados**

Características técnicas básicas:

Equipamento utilizado em redes Ethernet.

Observações:

**Módulos de interface e protocolos de finalização, especificados em documentos técnicos do produto, não estão cobertos por este certificado, sendo obrigatória a certificação e homologação, caso venham a ser fornecidos ou utilizados.**

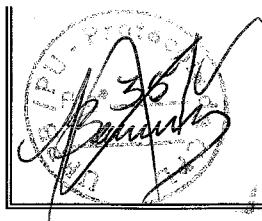
Constitui obrigação do fabricante do produto no Brasil providenciar a identificação do produto homologado, nos termos do art. 39 do Regulamento anexo à Resolução Anatel nº 242, em todas as unidades comercializadas, antes de sua efetiva distribuição ao mercado, assim como observar e manter as características técnicas que fundamentaram a certificação original.

**As informações constantes deste certificado de homologação podem ser confirmadas no SGCH - Sistema de Gestão de Certificação e Homologação, disponível no portal da Anatel. ([www.anatel.gov.br](http://www.anatel.gov.br)).**

Marcos de Souza Oliveira  
Agente de Certificação e Numeração

01/06/2016

Certificado de Homologação



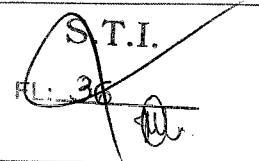
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UNIVERSIDADE FEDERAL DA PARAÍBA  
SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E  
CONTRATOS  
EMITIDO EM 14/06/2016 09:06



**Processo nº. 23074.032546/2016-37**

**Assunto:** 995 - PEDIDOS, OFERECIMENTOS E INFORMAÇÕES DIVERSAS

## DESPACHO

À Prefeitura Universitária- Comissão Permanente de Licitação

Aos cuidados do Sr. Augusto Cesar Temoteo de Oliveira

Prezado Senhor,

Ao tempo em que o cumprimentamos, informamos atendimento à sua solicitação conforme páginas 37 a 40.

À disposição,

(Autenticado digitalmente em 13/06/2016 15:19)  
PEDRO JACOME DE MOURA JUNIOR  
SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO (STI) (11.00.51)  
DIRETOR

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UNIVERSIDADE FEDERAL DA PARAÍBA  
SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO

S.T.I.  
EL: 04



LAUDO TÉCNICO

Processo nº: 23074.032546/2016-37

Interessado: Comissão Permanente de Licitação (CPL) da Prefeitura Universitária (PU)

Referência: Pregão Eletrônico (SRP) PU/UFPB nº 5/2016

1. O pregão eletrônico em tela tem como objeto a “*aquisição de bens e/ou serviços de tecnologia da informação e comunicação (TIC), a fim de promover a ampliação e a modernização dos elementos ativos integrantes da infraestrutura de rede de comunicação de dados da instituição (Rede UFPB)*”.
2. Conforme consta do presente processo, a empresa ZIVA Tecnologia e Soluções Ltda. ofertou os seguintes produtos para o Grupo 1 (*Switch de rede e Transceiver*) do citado pregão eletrônico:
  - a) *Switch de rede do tipo 1: Huawei S1700-28GFR-4P-AC;*
  - b) *Switch de rede do tipo 2: Huawei S1700-52GFR-4P-AC;*
  - c) *Switch de rede do tipo 3: Huawei S5720-28X-SI-AC;*
  - d) *Transceiver do tipo 1: Huawei Transceiver Gigabit 1000Base-LX full duplex, conector LC, até 10 km, conforme edital;*
  - e) *Transceiver do tipo 2: Huawei Transceiver Gigabit 1000Base-LR full duplex, conector LC, até 10 km, conforme edital.*
3. Acostado também a estes autos consta pedido da CPL/PU para que a STI se manifeste quanto à conformidade dos produtos ofertados pela empresa supracitada com as especificações técnicas constantes do edital do referido pregão.
4. Isto posto, a STI realizou o comparativo de características técnicas de cada produto, a seguir apresentado:
  - a) Switch de rede – Tipo 1  
Produto de referência: Cisco SRW2024-K9-BR (Cisco SG300-28)  
Produto ofertado: Huawei S1700-28GFR-4P-AC

Características	Cisco SRW2024-K9-BR (fora de linha)	Cisco SG300-28 (substituto)	Huawei S1700-28GFR-4P-AC	Comparação (referência X ofertado)
Suporte à	Sim	Sim	Sim	Atende



instalação em rack de 19", com altura de 1U				
Gerenciamento através de interface web	Sim	Sim	Sim	Atende
Quantidade de portas RJ-45 10/100/1000 Mbps e portas SFP 1000 Mbps, com negociação automática	24 portas UTP 10/100/1000 Mbps e 2 portas combo SFP (mini-GBIC)	26 portas UTP 10/100/1000 Mbps e 2 portas combo SFP (mini-GBIC)	24 portas UTP 10/100/1000 Mbps, 4 portas Gigabit SFP	Excede
Autenticação segundo o padrão IEEE 802.1x	Sim	Sim	Sim	Atende
Quantidade de VLANs	256	4.096	4.096	Excede (Atende, em relação ao substituto)
Suporte a IPv6	Sim	Sim	Sim	Atende
Protocolo Spanning Tree	Sim	Sim	Sim	Atende
Capacidade de switching	48 Gbps	56 Gbps	56 Gbps	Excede (Atende, em relação ao substituto)
Tipo de cabeamento de rede (UTP) suportado	Cat. 5e ou melhor	Cat. 5e ou melhor	Informação não disponível no encarte apresentado pela licitante.	Consultar licitante sobre suporte a UTP Cat. 6
Quantidade de grupos multicast suportados para o Internet Group Management Protocol (IGMP)	Informação não disponível	1.024	256	Inconclusiva (Não atende, em relação ao substituto)



Comprimento dos Jumbo frames	Até 10k bytes	Até 9k bytes	Até 10k bytes	Atende (Excede, em relação ao substituto)
Tamanho da tabela de endereços MAC	8k bytes	16k bytes	8k bytes	Atende (Não atende, em relação ao substituto)
Número de VLANs	256	4.096	4.096	Excede (Atende, em relação ao substituto)
Espelhamento de Portas (Port Mirroring)	Sim	Sim	Sim	Atende
Qualidade de Serviço (QoS): Níveis de prioridade	4 hardware queues	4 hardware queues	8 hardware queues	Excede
Suporte à Lista de Controle de Acesso (ACL – access control list)	Sim	Sim	Sim	Atende
Suporte a Link Aggregation Control Protocol (LACP)	Sim, até 8 grupos	Sim, até 8 grupos	Sim, até 12 grupos	Excede

b) Switch de rede – Tipo 2

Produto de referência: Cisco SRW2048-K9-NA (Cisco SG300-52)

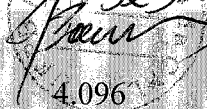
Produto ofertado: Huawei S1700-52GFR-4P-AC

Características	Cisco SRW2048-K9-NA (fora de linha)	Cisco SG300-52 (substituto)	Huawei S1700-52GFR-4P-AC	Comparação (referência X ofertado)
Suporte à instalação em rack de 19", com altura de 1U	Sim	Sim	Sim	Atende
Gerenciamento através de interface web	Sim	Sim	Sim	Atende





Quantidade de portas RJ-45 10/100/1000 Mbps e portas SFP 1000 Mbps, com negociação automática	48 portas UTP 10/100/1000 Mbps e 4 portas combo SFP (mini-GBIC)	50 portas UTP 10/100/1000 Mbps e 2 portas combo SFP (mini-GBIC)	48 portas UTP 10/100/1000 Mbps, 4 portas Gigabit SFP	<b>Excede</b>
Autenticação segundo o padrão IEEE 802.1x	Sim	Sim	Sim	<b>Atende</b>
Quantidade de VLANs	256	4.096	4.096	<b>Excede</b> (Atende, em relação ao substituto)
Suporte a IPv6	Sim	Sim	Sim	<b>Atende</b>
Protocolo Spanning Tree	Sim	Sim	Sim	<b>Atende</b>
Capacidade de switching	96 Gbps	104 Gbps	104 Gbps	<b>Excede</b> (Atende, em relação ao substituto)
Tipo de cabeamento de rede (UTP) suportado	Cat. 5e ou melhor	Cat. 5e ou melhor	Informação não disponível no encarte apresentado pela licitante.	<b>Consultar licitante sobre suporte a UTP Cat. 6</b>
Quantidade de grupos multicast suportados para o Internet Group Management Protocol (IGMP)	Informação não disponível	1.024	256	<b>Inconclusiva</b> (Não atende, em relação ao substituto)
Comprimento dos Jumbo frames	Até 10k bytes	Até 9k bytes	Até 10k bytes	<b>Atende</b> (Excede, em relação ao substituto)
Tamanho da tabela de endereços MAC	8k bytes	16k bytes	8k bytes	<b>Atende</b> (Não atende, em relação ao substituto)



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Número de VLANs	256	4.096	4.096	Excede (Atende, em relação ao substituto)
Espelhamento de Portas ( <i>Port Mirroring</i> )	Sim	Sim	Sim	Atende
Qualidade de Serviço (QoS) Níveis de prioridade	4 <i>hardware queues</i>	4 <i>hardware queues</i>	8 <i>hardware queues</i>	Excede
Suporte à Lista de Controle de Acesso (ACL – <i>access control list</i> )	Sim	Sim	Sim	Atende
Suporte à <i>Link Aggregation Control Protocol</i> (LACP)	Sim, até 8 grupos	Sim, até 8 grupos	Sim, até 12 grupos	Excede

c) Switch de rede – Tipo 3

Produto de referência: Cisco SG500X-24

Produto ofertado: Huawei S5720-28X-SI-AC

Características	Cisco SG500X-24	Huawei S5720-28X-SI-AC	Comparação (referência X ofertado)
Suporte à instalação em <i>rack</i> de 19", com altura de 1U	Sim	Sim	Atende
Gerenciamento através de interface <i>web</i>	Sim	Sim	Atende
Quantidade de portas RJ-45 10/100/1000 Mbps e portas SFP 10 Gbps	24 portas UTP 10/100/1000 Mbps e 4 XG SFP+ (2 slots combo 5G SFP)	20 portas UTP 10/100/1000 Mbps, 4 portas combo Gigabit (UTP ou SFP) e 4 portas 10G SFP+	Atende
Autenticação segundo o	Sim	Sim	Atende



Padrão IEEE 802.1x			
Quantidade de VLANs	4.096	4.096	Atende
Suporte a IPv6	Sim	Sim	Atende
Protocolo Spanning Tree	Sim	Sim	Atende
Capacidade de switching	128 Gbps	336 Gbps	Excede
Tipo de cabeamento de rede (UTP) suportado	UTP Cat. 5e ou melhor.	Informação não disponível no encarte apresentado pela licitante.	Consultar licitante sobre suporte a UTP Cat. 6
Comprimento dos Jumbo frames	Até 9k bytes	Até 10k bytes	Excede
Quantidade de grupos suportados para o Internet Group Management Protocol (IGMP)	4.096 (4k)	Informação não disponível no encarte apresentado pela licitante.	Consultar licitante sobre a característica IGMP
Quantidade de entradas (em IPv4) na tabela de roteamento	2.048 (2k)	8.192 (8k)	Excede
Quantidade de entradas (em IPv6) na tabela de roteamento	2.048 (2k)	2.048 (2k)	Atende
Qualidade de Serviço (QoS) Níveis de prioridade	8 hardware queues	8 hardware queues	Atende
Quantidade de regras (rules) da Lista de Controle de Acesso (ACL)	3.072	Informação não disponível no encarte apresentado pela licitante.	Consultar licitante sobre a característica ACL
Empilhamento (stacking)	Até 8 unidades	Até 9 unidades	Excede
Prevenção	Sim	Sim	Atende

contra ataques de negação de serviço ( <i>Denial of Service</i> (DoS))			
Memória (RAM)	256 MB	512 MB	Excede

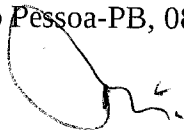
5. Devido à ausência de dados sobre algumas das características acima elencadas para os *switches* ofertados, tanto nos encartes ou *datasheets* acostados aos autos quanto em inúmeras consultas à Internet (principalmente ao *website* do fabricante dos produtos), a STI solicita os valiosos préstimos dessa CPL/PU no sentido de instar a empresa licitante a manifestar-se sobre as referidas características.

6. Ademais, constata-se que não foram indicados os modelos dos *transceivers* na Carta Proposta apresentada pela empresa (fls. 02 a 35), mas tão somente uma menção resumida de suas características, tampouco foram anexados encartes ou *datasheets* sobre aqueles produtos. Portanto, não foi possível a esperada verificação de conformidade com as especificações técnicas exigidas. Novamente, a STI solicita os préstimos dessa CPL/PU no sentido de convocar a empresa em tela a manifestar-se sobre os referidos *transceivers*.

7. Isto posto, a STI aguarda os resultados das consultas acima solicitadas para que adequadamente possa emitir laudo sobre a verificação de conformidade dos produtos ofertados pela ZIVA Tecnologia e Soluções Ltda. com o Termo de Referência do Edital do Pregão Eletrônico (SRP) PU/UFPB nº 5/2016.

8. É o nosso entendimento, salvo melhor juízo.

João Pessoa-PB, 08 de junho de 2016.



Ricardo Costa de Carvalho  
Analista de Tecnologia da Informação  
STI/UFPB  
Mat. SIAPE: 0273779-1





Universidade Federal da Paraíba  
Prefeitura Universitária  
Comissão Permanente de Licitação



UFPB/PU/CPL/MEMO Nº 050/2016

João Pessoa, 28 de Junho de 2016.

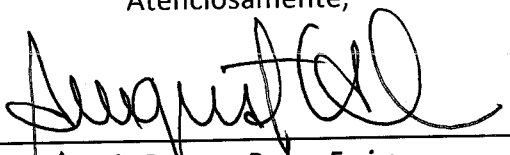
DA: COMISSÃO PERMANENTE DE LICITAÇÃO  
PREGOEIRO LUIZ GUSTAVO BRAGA FREIRE  
AO: ANALISTA DE TECNOLOGIA DA INFORMAÇÃO (STI-UFPB)  
RICARDO COSTA DE CARVALHO  
REF. PROCESSO 23074.032546/2016-37

Prezado Senhor,

Em atendimento ao questionamento formulado por V.Sa. às Fls. 40 do Processo em tela, encaminhamos os esclarecimentos formulados pela empresa **ZIVA TECNOLOGIA E SOLUÇÕES LTDA.**, referente ao **Pregão 005/2016**, GRUPO 1, para que seja analisada e que seja emitido um laudo técnico conclusivo.

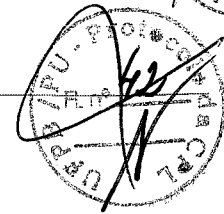
Em virtude da exiguidade do tempo, solicitamos seu pronunciamento o mais breve possível, retornando-nos até a próxima quinta-feira, **dia 30/06/2016**, para que possamos dar continuidade ao procedimento licitatório.

Atenciosamente,

  
Luiz Gustavo Braga Freire  
Pregoeiro/PU/UFPB



De: "CPL/PU" <cplpu@prefeitura.ufpb.br>  
 Assunto: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)  
 Data: Qua, Junho 22, 2016 5:22 pm  
 Para: licitacoes@ziva.com.br



À  
 ZIVA TECNOLOGIA E SOLUÇÕES LTDA.  
 SÃO PAULO, SP

REF. PREGÃO ELETRÔNICO SRP CPL-PU/Nº 005/2016  
 DILIGÊNCIA (Art. 43, § 3 da Lei de Licitações).

Prezados Senhores,

A análise técnica do material encaminhado por V.Sa. restou incompleta e inconclusiva para alguns detalhes de desempenho comparativo ao equipamento de referência (CISCO).

Tal conclusão deve-se à falta de informações complementares, supostamente não localizadas pela equipe da Superintendência de Tecnologia da Informação da UFPB, na leitura dos prospectos recebidos.

Assim sendo, cumpre-nos solicitar de V.Sa, informações adicionais detalhadas no que tange a:

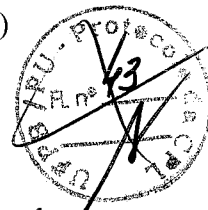
1. Switch de Rede Tipo 1 (Huawei S1700-28GFR-4P-AC)
  - 1.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?
2. Switch de Rede Tipo 2 (Huawei S1700-52GFR-4P-AC)
  - 2.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?
3. Switch de Rede Tipo 3 (Huawei S5720-28X-SI-AC)
  - 3.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?
  - 3.2. Qual é a Quantidade de Grupos suportados para o Internet Group Management Protocol (IGMP)?
  - 3.3. Qual é a Quantidade de Regras (rules) da Lista de Controle de Acesso (ACL)?

Solicitamos a máxima brevidade no atendimento das questões acima elencadas, acompanhado de material técnico (escaneado e anexado) que comprove as informações prestadas, para que possamos dar continuidade ao procedimento licitatório.

Atenciosamente,  
 CPL-PU

Comissão Permanente de Licitação/PU

De: LICITAÇÕES\_ZIVA <licitacoes@ziva.com.br>  
Assunto: RES: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)  
Data: Sex, Junho 24, 2016 11:14 am  
Para: "cplpu@prefeitura.ufpb.br" <cplpu@prefeitura.ufpb.br>  
CC: LICITAÇÕES\_ZIVA <licitacoes@ziva.com.br>, "Jose Cunha" <jose.cunha@ziva.com.br>, "Douglas Jefferson Abrantes" <douglas.jefferson@ziva.com.br>, "Nelson Suzart Gaia" <nelson.gaia@ziva.com.br>



AO  
MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DA PARAÍBA  
PREFEITURA UNIVERSITÁRIA  
COMISSÃO PERMANENTE DE LICITAÇÃO



PREGÃO ELETRÔNICO SRP UFPB/CPL-PU N° 005/2016

Prezados membros desta Respeitada Comissão, boa tarde.

A ZIVA TECNOLOGIA E SOLUÇÕES LTDA inscrita no CNPJ nº 05.816.526/0001-68, vem por meio deste apresentar sua planilha ponto-a-ponto, onde esclarece claramente os pontos questionados por esta comissão.

Caso se faça necessária mais alguma informação complementar, por gentileza, nos comunique que responderemos o mais breve possível.

Atenciosamente,  
[Descrição: Ziva]

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[Descrição: <http://www.ziva.com.br/gerar-assinatura/email.png>]

[natalia.figueiredo@ziva.com.br](mailto:natalia.figueiredo@ziva.com.br)<<mailto:natalia.figueiredo@ziva.com.br>>

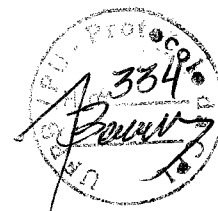
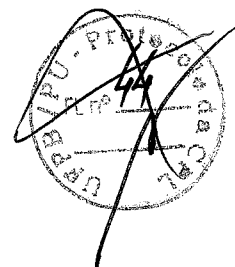
Natalia Figueiredo  
Analista de Licitações

[Descrição: <http://www.ziva.com.br/gerar-assinatura/site.png>]

[www.ziva.com.br](http://www.ziva.com.br)<<http://www.ziva.com.br>>

[Descrição: <http://www.ziva.com.br/gerar-assinatura/endereco.png>]

Rua Funchal, 513 - 1º andar  
Vila Olímpia - São Paulo-SP  
CEP: 04551 060  
(11) 3365-0410



-----Mensagem original-----

De: CPL/PU [mailto:cplpu@prefeitura.ufpb.br]

Enviada em: quarta-feira, 22 de junho de 2016 17:23

Para: LICITAÇÕES\_ZIVA

Assunto: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)

À

ZIVA TECNOLOGIA E SOLUÇÕES LTDA.

SÃO PAULO, SP

REF. PREGÃO ELETRÔNICO SRP CPL-PU/Nº 005/2016 DILIGÊNCIA (Art. 43, § 3 da Lei de Licitações).

Prezados Senhores,

A análise técnica do material encaminhado por V.Sa. restou incompleta e inconclusiva para alguns detalhes de desempenho comparativo ao equipamento de referência (CISCO).

Tal conclusão deve-se à falta de informações complementares, supostamente não localizadas pela equipe da Superintendência de Tecnologia da Informação da UFPB, na leitura dos prospectos recebidos.

Assim sendo, cumpre-nos solicitar de V.Sa, informações adicionais detalhadas no que tange a:

1. Switch de Rede Tipo 1 (Huawei S1700-28GFR-4P-AC) 1.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?

2. Switch de Rede Tipo 2 (Huawei S1700-52GFR-4P-AC) 2.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?

3. Switch de Rede Tipo 3 (Huawei S5720-28X-SI-AC) 3.1. Qual o Tipo de Cabeamento de

Rede (UTP) suportado (categoria)?

3.2. Qual é a Quantidade de Grupos suportados para o Internet Group Management Protocol (IGMP)?

3.3. Qual é a Quantidade de Regras (rules) da Lista de Controle de Acesso (ACL)?

Solicitamos a máxima brevidade no atendimento das questões acima elencadas, acompanhado de material técnico (escaneado e anexado) que comprove as informações prestadas, para que possamos dar continuidade ao procedimento licitatório.

Atenciosamente,

CPL-PU

Comissão Permanente de Licitação/PU

#### Attachments:

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**image001.jpg**

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Info: image001.jpg

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Size: 6.9 k

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**image004.png**

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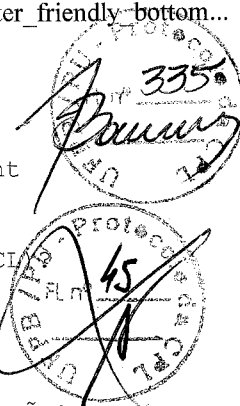
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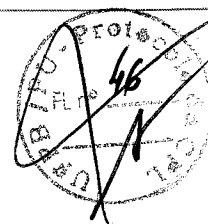
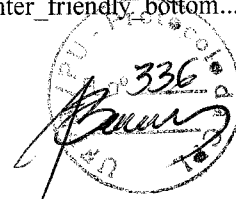
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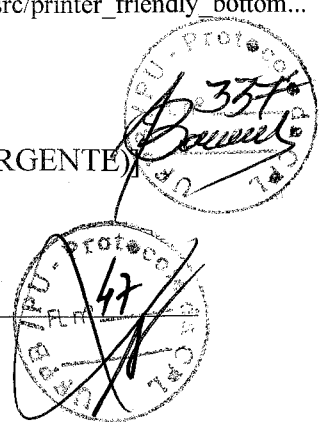
**UFPB\_Resposta Pto a Pto\_Questionamento.xlsx**



Size:	2.9 M
Type:	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet
Info:	UFPB_Resposta Pto a Pto_Questionamento.xlsx



De: "CPL/PU" <cplpu@prefeitura.ufpb.br>  
Assunto: [Fwd: RES: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)]  
Data: Dom, Junho 26, 2016 8:07 pm  
Para: ricardo@sti.ufpb.br  
CC: hermes@sti.ufpb.br,superintendencia@sti.ufpb.br



Prezados,

Encaminhamos resposta da ZIVA TECNOLOGIA E SOLUÇÕES LTDA. a respeito dos esclarecimentos solicitados por V.Sas em relatório técnico recentemente elaborado para atendimento ao PE-005/2016:

Att.  
Augusto Oliveira  
Coordenador CPL-PU

----- Mensagem Original -----  
Assunto: RES: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)  
De: LICITAÇÕES\_ZIVA <licitacoes@ziva.com.br>  
Data: Sex, Junho 24, 2016 11:14 am  
Para: "cplpu@prefeitura.ufpb.br" <cplpu@prefeitura.ufpb.br>  
CC: LICITAÇÕES\_ZIVA <licitacoes@ziva.com.br>  
"Jose Cunha" <jose.cunha@ziva.com.br>  
"Douglas Jefferson Abrantes" <douglas.jefferson@ziva.com.br>  
"Nelson Suzart Gaia" <nelson.gaia@ziva.com.br>

AO  
MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DA PARAÍBA  
PREFEITURA UNIVERSITÁRIA  
COMISSÃO PERMANENTE DE LICITAÇÃO

PREGÃO ELETRÔNICO SRP UFPB/CPL-PU N° 005/2016

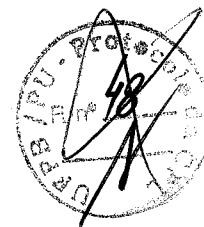
Prezados membros desta Respeitada Comissão,  
boa tarde.

A ZIVA TECNOLOGIA E SOLUÇÕES LTDA inscrita no CNPJ nº 05.816.526/0001-68, vem por meio deste apresentar sua planilha ponto-a-ponto, onde esclarece claramente os pontos questionados por esta comissão.

Caso se faça necessária mais alguma informação complementar, por gentileza, nos comunique que responderemos o mais breve possível.



Atenciosamente,  
[Descrição: Ziva]



[Descrição: <http://www.ziva.com.br/gerar-assinatura/cel.png>]

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[Descrição: <http://www.ziva.com.br/gerar-assinatura/email.png>]

[natalia.figueiredo@ziva.com.br](mailto:natalia.figueiredo@ziva.com.br)<<mailto:natalia.figueiredo@ziva.com.br>>

Natalia Figueiredo  
Analista de Licitações



[Descrição: <http://www.ziva.com.br/gerar-assinatura/site.png>]

[www.ziva.com.br](http://www.ziva.com.br)<<http://www.ziva.com.br>>

[Descrição: <http://www.ziva.com.br/gerar-assinatura/endereco.png>]

Rua Funchal, 513 - 1º andar  
Vila Olímpia - São Paulo-SP  
CEP: 04551 060  
(11) 3365-0410

-----Mensagem original-----

De: CPL/PU [<mailto:cplpu@prefeitura.ufpb.br>]

Enviada em: quarta-feira, 22 de junho de 2016 17:23

Para: LICITAÇÕES\_ZIVA

Assunto: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)

À

ZIVA TECNOLOGIA E SOLUÇÕES LTDA.

SÃO PAULO, SP

REF. PREGÃO ELETRÔNICO SRP CPL-PU/Nº 005/2016 DILIGÊNCIA (Art. 43, § 3 da Lei de Licitações).

Prezados Senhores,

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Tal conclusão deve-se à falta de informações complementares, supostamente não localizadas pela equipe da Superintendência de Tecnologia da Informação da UFPB, na leitura dos prospectos recebidos.

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3. Switch de Rede Tipo 3 (Huawei S5720-28X-SI-AC) 3.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?

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3.3. Qual é a Quantidade de Regras (rules) da Lista de Controle de Acesso (ACL)?

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Atenciosamente,

CPL-PU

Comissão Permanente de Licitação/PU

Comissão Permanente de Licitação/PU

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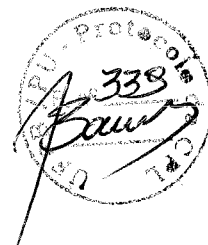
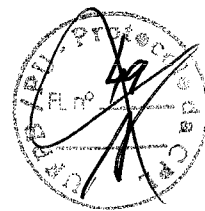
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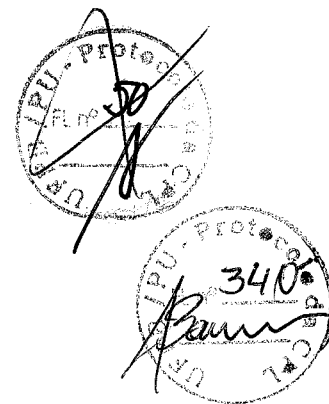
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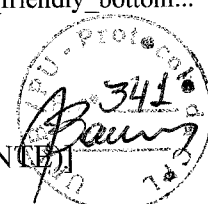


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Type:	image/png



<b>UFPB_Resposta Pto a Pto_Questionamento.xlsx</b>	
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De: "Ricardo Costa de Carvalho" <ricardo@sti.ufpb.br>  
Assunto: Re: [Fwd: RES: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)]  
Data: Seg, Junho 27, 2016 7:02 pm  
Para: cplpu@prefeitura.ufpb.br  
CC: hermes@sti.ufpb.br,superintendencia@sti.ufpb.br



Prezado Pregoeiro,

O processo administrativo referente ao assunto em tela será encaminhado à STI?  
Salvo melhor juízo, entendemos que isso se faz necessário para que possamos registrar a nossa opinião nos autos.

Atenciosamente,  
Ricardo Costa de Carvalho.  
Analista de Tecnologia da Informação

--  
Universidade Federal da Paraíba  
Superintendência de Tecnologia da Informação  
Av. Jardim Universitário, s/nº - Castelo Branco  
58.051-900 João Pessoa - Paraíba - BRASIL  
Tel.:+55 83 3216-7389 Fax.:+55 83 3216-7133  
www.sti.ufpb.br

----- Mensagem original -----

De: "CPL/PU" <cplpu@prefeitura.ufpb.br>  
Para: ricardo@sti.ufpb.br  
Cc: hermes@sti.ufpb.br, superintendencia@sti.ufpb.br  
Enviadas: Domingo, 26 de junho de 2016 20:07:07  
Assunto: [Fwd: RES: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)]

Prezados,

Encaminhamos resposta da ZIVA TECNOLOGIA E SOLUÇÕES LTDA. a respeito dos esclarecimentos solicitados por V.Sas em relatório técnico recentemente elaborado para atendimento ao PE-005/2016:

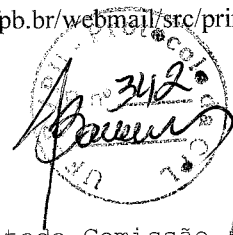
Att.  
Augusto Oliveira  
Coordenador CPL-PU

----- Mensagem Original -----  
Assunto: RES: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)  
De: LICITAÇÕES\_ZIVA <licitacoes@ziva.com.br>  
Data: Sex, Junho 24, 2016 11:14 am  
Para: "cplpu@prefeitura.ufpb.br" <cplpu@prefeitura.ufpb.br>  
CC: LICITAÇÕES\_ZIVA <licitacoes@ziva.com.br>  
"Jose Cunha" <jose.cunha@ziva.com.br>  
"Douglas Jefferson Abrantes" <douglas.jefferson@ziva.com.br>  
"Nelson Suzart Gaia" <nelson.gaia@ziva.com.br>

AO  
MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DA PARAÍBA  
PREFEITURA UNIVERSITÁRIA  
COMISSÃO PERMANENTE DE LICITAÇÃO

PREGÃO ELETRÔNICO SRP UFPB/CPL-PU Nº 005/2016

28/06/2016 11:54



Prezados membros desta Respeitada Comissão,

boa tarde.

A ZIVA TECNOLOGIA E SOLUÇÕES LTDA inscrita no CNPJ nº 05.816.526/0001-68, vem por meio deste apresentar sua planilha ponto-a-ponto, onde esclarece claramente os pontos questionados por esta comissão.

Caso se faça necessária mais alguma informação complementar, por gentileza, nos comunique que responderemos o mais breve possível.

Atenciosamente,  
[Descrição: Ziva]

[Descrição: <http://www.ziva.com.br/gerar-assinatura/cel.png>]

55 11 99654-1355

[Descrição: <http://www.ziva.com.br/gerar-assinatura/email.png>]

[natalia.figueiredo@ziva.com.br](mailto:natalia.figueiredo@ziva.com.br)<<mailto:natalia.figueiredo@ziva.com.br>>

Natalia Figueiredo  
Analista de Licitações

[Descrição: <http://www.ziva.com.br/gerar-assinatura/site.png>]

[www.ziva.com.br](http://www.ziva.com.br)<<http://www.ziva.com.br>>

[Descrição: <http://www.ziva.com.br/gerar-assinatura/endereco.png>]

Rua Funchal, 513 - 1º andar  
Vila Olímpia - São Paulo-SP  
CEP: 04551 060  
(11) 3365-0410

-----Mensagem original-----

De: CPL/PU [<mailto:cplpu@prefeitura.ufpb.br>]

Enviada em: quarta-feira, 22 de junho de 2016 17:23

Para: LICITAÇÕES\_ZIVA

Assunto: Esclarecimentos Técnicos Pregão 005/2016 CPL-PU UFPB (URGENTE)

À

ZIVA TECNOLOGIA E SOLUÇÕES LTDA.

SÃO PAULO, SP



REF. PREGÃO ELETRÔNICO SRP CPL-PU/Nº 005/2016 DILIGÊNCIA (Art. 43, § 3 da Lei de Licitações).

Prezados Senhores,

A análise técnica do material encaminhado por V.Sa. restou incompleta e inconclusiva para alguns detalhes de desempenho comparativo ao equipamento de referência (CISCO).

Tal conclusão deve-se à falta de informações complementares, supostamente não localizadas pela equipe da Superintendência de Tecnologia da Informação da UFPB, na leitura dos prospectos recebidos.

Assim sendo, cumpre-nos solicitar de V.Sa, informações adicionais detalhadas no que tange a:

1. Switch de Rede Tipo 1 (Huawei S1700-28GFR-4P-AC) 1.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?

2. Switch de Rede Tipo 2 (Huawei S1700-52GFR-4P-AC) 2.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?

3. Switch de Rede Tipo 3 (Huawei S5720-28X-SI-AC 3.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?

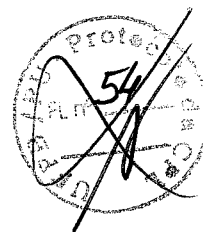
3.2. Qual é a Quantidade de Grupos suportados para o Internet Group Management Protocol (IGMP)?

3.3. Qual é a Quantidade de Regras (rules) da Lista de Controle de Acesso (ACL)?

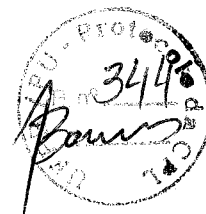
Solicitamos a máxima brevidade no atendimento das questões acima elencadas, acompanhado de material técnico (escaneado e anexado) que comprove as informações prestadas, para que possamos dar continuidade ao procedimento licitatório.

Atenciosamente,

CPL-PU



Comissão Permanente de Licitação/PU



Comissão Permanente de Licitação/PU

---



# 1. Switch de Rede Tipo 1 (Huawei S1700-28GFR-4P-AC)

1.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)? Categorias: CAT5 e 5e (100BASE-TX e 1000BASE-T), CAT6 (10/100/1000BASE-T)

## Links

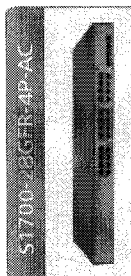
[https://pt.wikipedia.org/wiki/Cabo\\_de\\_par\\_tran%C3%A7ado](https://pt.wikipedia.org/wiki/Cabo_de_par_tran%C3%A7ado)  
[https://en.wikipedia.org/wiki/Gigabit\\_Ethernet#1000BASE-T](https://en.wikipedia.org/wiki/Gigabit_Ethernet#1000BASE-T)  
[https://en.wikipedia.org/wiki/Category\\_6\\_cable#Category\\_6A](https://en.wikipedia.org/wiki/Category_6_cable#Category_6A)

Alguns padrões suportados e referenciados no documento "S1700-DS"

24 portas Ethernet nos padrões 10/100/1000

## Comprovações

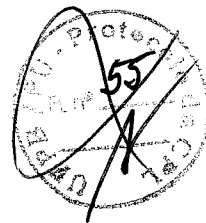
IEEE Std 802.3 CSMA/CD (10BASE-T)  
 IEEE Std 802.3ab 1000BASE-T specification  
 IEEE Std 802.3ad Aggregation of Multiple Link Segments  
 IEEE Std 802.3x Full Duplex and flow control  
 IEEE Std 802.3z Gigabit Ethernet Standard

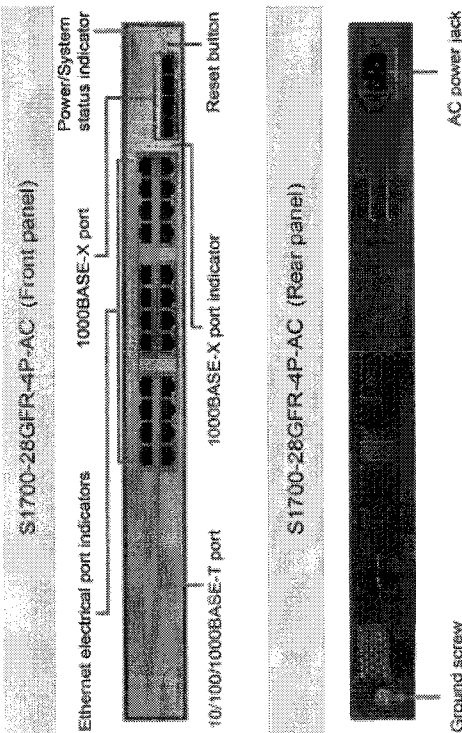


- 24 Ethernet 10/100/1000 ports, 4 Gig SFP
- AC power supply

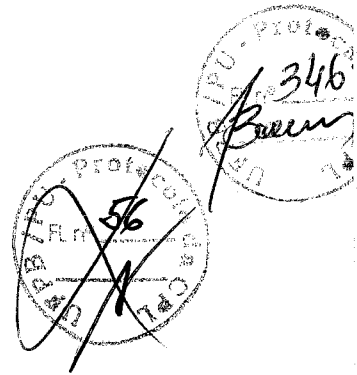
## COMPOSIÇÃO DO ITEM

DESCRIÇÃO	PART NUMBER	QTD TOTAL DE FORNECIMENTO (pc ou un.)
Acesso a Central de Documentos Huawei		
Acesse o link "http://support.huawei.com/enterprise/" e no campo de pesquisa digite o código global referente a série do equipamento, neste caso "S1700" para o PN "S1700-28GFR-4P-AC".		
LINK	DOCUMENTO	NOME DO DOCUMENTO
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC100008979&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC100008979&amp;i</a>	S1700-PD	Huawei S1700 Product Documentation (chm)
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC100006966&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC100006966&amp;i</a>	S1700-PUP	Huawei S1700 Product Use Precautions
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069520&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069520&amp;i</a>	S1700-TCG	Huawei S1700 Typical Configuration Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063014&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063014&amp;i</a>	S1700-WUM	Huawei S1700 Web User Manual
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000057410&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000057410&amp;i</a>	S1700-COG	Huawei S1700 Common Operation Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063013&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063013&amp;i</a>	S1700-SFAQ	Huawei S1700 Switches FAQ
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063015&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063015&amp;i</a>	S1700-Pde	Huawei S1700 Product Description
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000091883&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000091883&amp;i</a>	S1700-MG	Huawei S1700 Maintenance Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063023&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063023&amp;i</a>	S1700-IQS	Huawei S1700 Installation Quick Start
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC100006966&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC100006966&amp;i</a>	S1700-TP	Huawei S1700 Troubleshooting Preliminary
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000003431&amp;i">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000003431&amp;i</a>	S1700-AR	Huawei S1700 Alarm Reference
<a href="http://e.huawei.com/en/marketing-material/onlineView?MaterialID=76617CAE-9373-">http://e.huawei.com/en/marketing-material/onlineView?MaterialID=76617CAE-9373-</a>	S1700-DS	HUAWEI S1700 Switch Datasheet (Detailed Version)



ITEM	DOCUMENTO	PÁGINA	SEÇÃO
	S1700-DS	16	Standard Organization (IEEE)
			<p>IEEE Std 802.3 CSMA/CD</p> <p>IEEE Std 802.3ab 1000BASE-T specification</p> <p>IEEE Std 802.3ad Aggregation of Multiple Link Segments</p> <p>IEEE Std 802.3ae 10GE WEN/LAN Standard</p> <p>IEEE Std 802.3x Full Duplex and flow control</p> <p>IEEE Std 802.3z Gigabit Ethernet Standard</p>
	S1700-Pde	11	<p>S1700 Managed Switch Product Description</p> <p>3 Hardware Structure</p> 

1.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)



## 2. Switch de Rede Tipo 2 (Huawei S1700-52GFR-4P-AC)

2.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)? Categorias: CAT5 e 5e (100BASE-TX e 1000BASE-T), CAT6 (10/100/1000BASE-T)

### Links

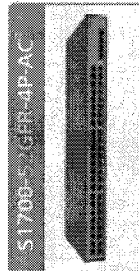
[https://pt.wikipedia.org/wiki/Cabo\\_de\\_par\\_tran%C3%A7ado](https://pt.wikipedia.org/wiki/Cabo_de_par_tran%C3%A7ado)  
[https://en.wikipedia.org/wiki/Gigabit\\_Ethernet#1000BASE-T](https://en.wikipedia.org/wiki/Gigabit_Ethernet#1000BASE-T)  
[https://en.wikipedia.org/wiki/Category\\_6\\_cable#Category\\_6A](https://en.wikipedia.org/wiki/Category_6_cable#Category_6A)

Alguns padrões suportados e referenciados no documento "S1700-DS"

24 portas Ethernet nos padrões 10/100/1000

### Comprovações

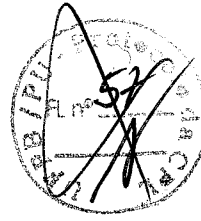
IEEE Std 802.3 CSMA/CD (10BASE-T)  
IEEE Std 802.3ab 1000BASE-T specification  
IEEE Std 802.3ad Aggregation of Multiple Link Segments  
IEEE Std 802.3x Full Duplex and flow control  
IEEE Std 802.3z Gigabit Ethernet Standard

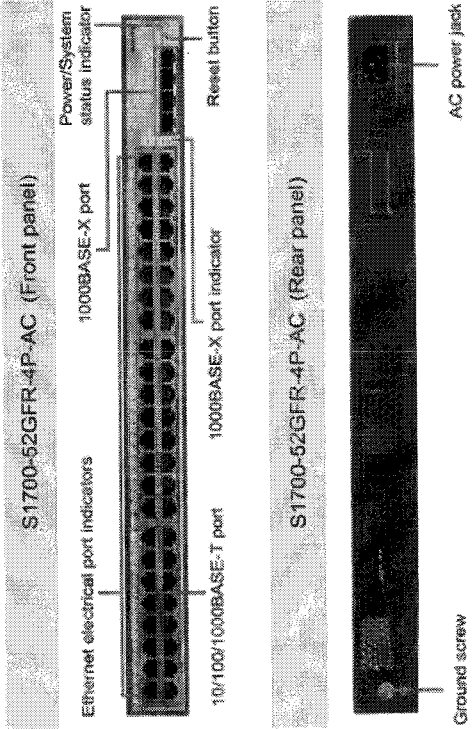


- 48 Ethernet 10/100/1000 ports, 4 Gig SFP
- AC power supply

### COMPOSIÇÃO DO ITEM

DESCRIÇÃO	PART NUMBER	QTD TOTAL DE FORNECIMENTO (p5 ou un.)
Acesso a Central de Documentos Huawei		
Acesse o link "http://support.huawei.com/enterprise/" e no campo de pesquisa digite o código global referente a série do equipamento, neste caso "S1700" para o PN "S1700-52GFR-4P-AC".		
LINK	DOCUMENTO	NOME DO DOCUMENTO
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000089279&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000089279&amp;id</a>	S1700-PD	Huawei S1700 Product Documentation (chm)
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069665&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069665&amp;id</a>	S1700-PUP	Huawei S1700 Product Use Precautions
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069520&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069520&amp;id</a>	S1700-TCG	Huawei S1700 Typical Configuration Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063014&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063014&amp;id</a>	S1700-WUM	Huawei S1700 Web User Manual
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC10000057410&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC10000057410&amp;id</a>	S1700-COG	Huawei S1700 Common Operation Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063013&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063013&amp;id</a>	S1700-SFAQ	Huawei S1700 Switches FAQ
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063015&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063015&amp;id</a>	S1700-Pde	Huawei S1700 Product Description
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000091883&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000091883&amp;id</a>	S1700-MG	Huawei S1700 Maintenance Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063023&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000063023&amp;id</a>	S1700-IOS	Huawei S1700 Installation Quick Start
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069666&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069666&amp;id</a>	S1700-TP	Huawei S1700 Troubleshooting Preliminary
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000003431&amp;id">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000003431&amp;id</a>	S1700-AR	Huawei S1700 Alarm Reference
<a href="http://e.huawei.com/en/marketing-material/onlineView?MaterialID=126617CAE-9373-">http://e.huawei.com/en/marketing-material/onlineView?MaterialID=126617CAE-9373-</a>	S1700-DS	HUAWEI S1700 Switch Datasheet (Detailed Version)



ITEM		DOCUMENTO	PÁGINA	SEÇÃO
2.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)	S1700-DS		16	<p>Standard Organization (IEEE)</p> <p>IEEE Std 802.3 CSM/ACD</p> <p>IEEE Std 802.3ab 1000BASE-T specification</p> <p>IEEE Std 802.3ad Aggregation of Multiple Link Segments</p> <p>IEEE Std 802.3ae 10GE WEN/LAN Standard</p> <p>IEEE Std 802.3x Full Duplex and flow control</p> <p>IEEE Std 802.3z Gigabit Ethernet Standard</p>
	S1700-Pde		11	<p><b>3.4 S1700-52GFR-4P-AC</b></p> <p><b>Appearance</b></p> <p>The following figure shows appearance of an S1700-52GFR-4P-AC.</p> 



3. Switch de Rede Tipo 3 (Huawei S5720-28X-SI-AC)

3.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)? Categorias: CAT5 e 5e (100BASE-TX e 1000BASE-T), CAT6 (10/100/1000BASE-T)

3.2. Qual é a Quantidade de Grupos suportados para o Internet Group Management Protocol (IGMP)? 1K.

3.3. Qual é a Quantidade de Regras (rules) da Lista de Controle de Acesso (ACL)? 1K (IPv4) e 1K (IPv6).

Links

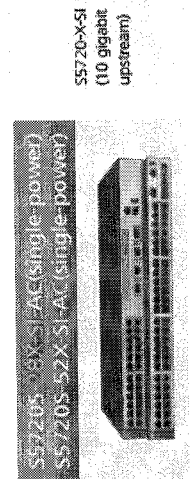
[https://pt.wikipedia.org/wiki/Cabo\\_de\\_par\\_tran%C3%A7ado](https://pt.wikipedia.org/wiki/Cabo_de_par_tran%C3%A7ado)  
[https://en.wikipedia.org/wiki/Gigabit\\_Ethernet#1000BASE-T](https://en.wikipedia.org/wiki/Gigabit_Ethernet#1000BASE-T)  
[https://en.wikipedia.org/wiki/Category\\_6\\_cable#Category\\_6A](https://en.wikipedia.org/wiki/Category_6_cable#Category_6A)

Alguns padrões suportados e referenciados no documento "S5720-DS"

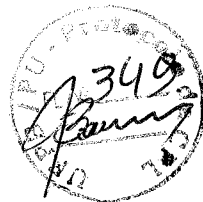
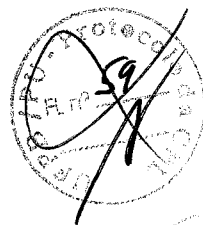
24 portas Ethernet nos padrões 10/100/1000

Comprovações

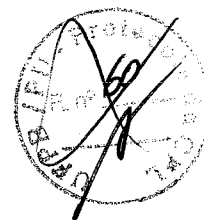
IEEE Std 802.3 CSMA/CD (10BASE-T)  
IEEE Std 802.3ab 1000BASE-T specification  
IEEE Std 802.3ad Aggregation of Multiple Link Segments  
IEEE Std 802.3ae 10GE WEN/LAN Standard  
IEEE Std 802.3x Full Duplex and flow control  
IEEE Std 802.3z Gigabit Ethernet Standard  
IEEE802.1ax/IEEE802.3ad Link Aggregation  
IEEE 802.3ah Ethernet in the First Mile.



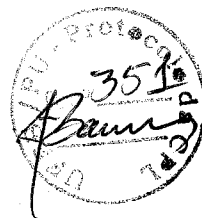
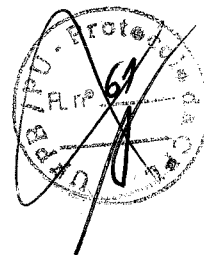
S5720-28X-SI-AC	<ul style="list-style-type: none"><li>Twenty-four 10/100/1000Base-T Ethernet ports (four combo 1000Base-X SFP ports) and four 1000Base-X SFP+ ports</li><li>Dual pluggable AC or DC power supplies, one 150 W AC power supply equipped by default</li></ul>
S5720-52X-SI-AC	<ul style="list-style-type: none"><li>Forty-eight 10/100/1000Base-T Ethernet ports and four 10 gigabit SFP+ ports</li><li>Dual pluggable AC or DC power supplies, one 150 W AC power supply equipped by default</li></ul>



COMPOSIÇÃO DO ITEM		QTD TOTAL DE FORNECIMENTO (por unidade)
DESCRIÇÃO	PART NUMBER	
Acesso a Central de Documentos Huawei		
Acesse o link "http://support.huawei.com/enterprise/" e no campo de pesquisa digite o código global referente a série do equipamento, neste caso "S5720" para o PN "S5720-28X-SI-AC".		
LINK	DOCUMENTO	NOME DO DOCUMENTO
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000089279&amp;id=DOC1000089279">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000089279&amp;id=DOC1000089279</a>	S5720-PD	Huawei S5720 Product Documentation (chm)
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000093689&amp;id=DOC1000093689">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000093689&amp;id=DOC1000093689</a>	S5720-PIG	Huawei S5720 Patch Installation Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069666&amp;id=DOC1000069666">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069666&amp;id=DOC1000069666</a>	S5720-TP	Huawei S5720 Troubleshooting Preliminary
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000091883&amp;id=DOC1000091883">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000091883&amp;id=DOC1000091883</a>	S5720-MG	Huawei S5720 Maintenance Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000057412&amp;id=DOC1000057412">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000057412&amp;id=DOC1000057412</a>	S5720-QC	Huawei S5720 Quick Configuration
<a href="http://e.huawei.com/en/marketing-material/onlineView?MaterialID=7C78B088-83D6-7C78B088-83D6">http://e.huawei.com/en/marketing-material/onlineView?MaterialID=7C78B088-83D6-7C78B088-83D6</a>	S5720-DS	Huawei S5720 Datasheet Detailed Version
<a href="http://support.huawei.com/enterprise/DocNewOfferingAction?getInitDocListTable.action?i=7C78B088-83D6-7C78B088-83D6">http://support.huawei.com/enterprise/DocNewOfferingAction?getInitDocListTable.action?i=7C78B088-83D6-7C78B088-83D6</a>	S5720-CG	Huawei S5720 Configuration Guides (Basic, Ethernet, IP Services, Routing etc)
<a href="http://support.huawei.com/enterprise/DocNewOfferingAction?getInitDocListTable.action?i=7C78B088-83D6-7C78B088-83D6">http://support.huawei.com/enterprise/DocNewOfferingAction?getInitDocListTable.action?i=7C78B088-83D6-7C78B088-83D6</a>	S5720-UG	Huawei S5720 Upgrade Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088764&amp;id=DOC1000088764">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088764&amp;id=DOC1000088764</a>	S5720-FCG	Huawei S5720 Top Feature Configuration Guide
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088743&amp;id=DOC1000088743">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088743&amp;id=DOC1000088743</a>	S5720-CR	Huawei S5720 Command Reference (Basic, Ethernet, IP Services, Routing etc)
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069667&amp;id=DOC1000069667">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069667&amp;id=DOC1000069667</a>	S5720-AH	Huawei S5720 Alarm Handling
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069684&amp;id=DOC1000069684">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000069684&amp;id=DOC1000069684</a>	S5720-LR	Huawei S5720 Log Reference
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088756&amp;id=DOC1000088756">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088756&amp;id=DOC1000088756</a>	S5720-CG-SEC	Huawei S5720 Configuration Guide Security
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088746&amp;id=DOC1000088746">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088746&amp;id=DOC1000088746</a>	S5720-CG-ES	Huawei S5720 Configuration Guide Ethernet Switching
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088752&amp;id=DOC1000088752">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088752&amp;id=DOC1000088752</a>	S5720-CG-MC	Huawei S5720 Configuration Guide Multicast
<a href="http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088743&amp;id=DOC1000088743">http://support.huawei.com/enterprise/docinforeader.action?contentid=DOC1000088743&amp;id=DOC1000088743</a>	S5720-CR-MC	Huawei S5720 Command Reference Multicast



ITEM	DOCUMENTO	PÁGINA	SEÇÃO
3.1. Qual o Tipo de Cabeamento de Rede (UTP) suportado (categoria)?	S5720-DS	21	Standard Organization (IEEE)
	S5720-CG-ES	4-6	<p><b>Introduction to Ethernet Cable Standards</b></p> <p>Currently, mature Ethernet physical layer standards are:</p> <ul style="list-style-type: none"> <li>• 10BASE-2</li> <li>• 10BASE-5</li> <li>• 10BASE-T</li> <li>• 10BASE-F</li> <li>• 100BASE-T4</li> <li>• 100BASE-TX</li> <li>• 100BASE-FX</li> <li>• 100BASE-SX</li> <li>• 1000BASE-LX</li> <li>• 1000BASE-TX</li> <li>• 10GBASE-T</li> <li>• 10GBASE-LR</li> <li>• 10GBASE-SR</li> </ul> <p>In the preceding standards, 10, 100, 1000 and 10G stand for transmission rates, and BASE represents baseband.</p> <ul style="list-style-type: none"> <li>• 10M Ethernet cable standards</li> </ul> <p>Table 1-1 lists the 10M Ethernet cable standards defined in IEEE 802.3.</p>





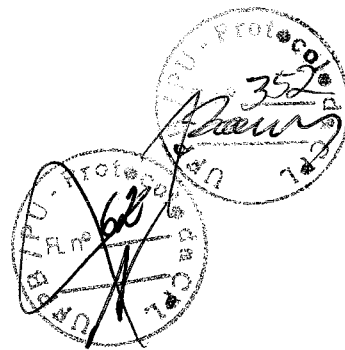
## IP Multicast Features Supported by the Switches

[illegible]

### 3.3.2. Qual é a Quantidade de Grupos suportados para o Internet Group Management Protocol (IGMP)?

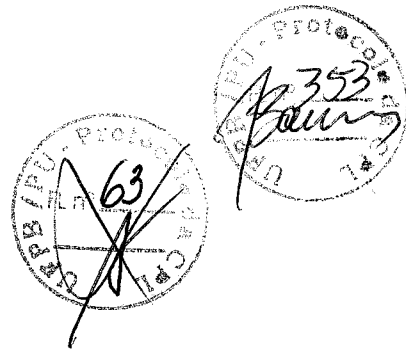
2009-05-25 16:00:00

Feature	Configuration
VLANs	4K
MAC Address Entry	16K
ARP Entry	4K
ND Entry	2K
FIB Entry (IPv4)	8K
FIB Entry (IPv6)	2K
SNMP Entry	1K
MLD Entry	1K
Multicast Entry (IPv4)	1K
Multicast Entry (IPv6)	1K



<p><b>igmp global limit</b></p> <p><b>Function</b></p> <p>The <b>igmp global limit</b> command sets the maximum number of IGMP entries that can be created on the switch.</p> <p>The <b>undo igmp global limit</b> command deletes the configured maximum number of IGMP entries.</p> <p>By default, a maximum number of 1024 IGMP entries can be created on S5720-SI and S5720S-SI, a maximum number of 4096 IGMP entries can be created on S5720S-EI and S5720EI, and a maximum number of 2048 IGMP entries can be created on other switches.</p> <p><b>Format</b></p> <p>igmp global limit <i>number</i></p> <p>undo igmp global limit</p> <p><b>Parameters</b></p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Description</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td><i>number</i></td> <td>Specifies the maximum number of IGMP entries that can be created on the switch.</td> <td>The value is an integer that ranges from 1 to 1024 on S5720-SI and S5720S-SI, from 1 to 4096 on S5720S-EI and S5720EI, and from 1 to 2048 on other switches.</td> </tr> </tbody> </table> <p><b>NOTE:</b></p> <p>The value range of S5720HI is expanded after the high specification mode is configured for multicast forwarding using the <b>set multicast forwarding-table super-mode</b> command. The actual value range depends on the specification of the device.</p>	Parameter	Description	Value	<i>number</i>	Specifies the maximum number of IGMP entries that can be created on the switch.	The value is an integer that ranges from 1 to 1024 on S5720-SI and S5720S-SI, from 1 to 4096 on S5720S-EI and S5720EI, and from 1 to 2048 on other switches.	<p><b>S5720-CR-MC</b></p> <p><b>3570</b></p>	<p><b>S5720-CG-SEC</b></p> <p><b>7</b></p>
Parameter	Description	Value						
<i>number</i>	Specifies the maximum number of IGMP entries that can be created on the switch.	The value is an integer that ranges from 1 to 1024 on S5720-SI and S5720S-SI, from 1 to 4096 on S5720S-EI and S5720EI, and from 1 to 2048 on other switches.						
<p><b>S5720-CG</b></p>	<p><b>9</b></p>	<p><b>S5720-CG</b></p> <p><b>9</b></p>						

3.3. Qual é a Quantidade de Regras (rules) da Lista de Controle de Acesso (ACL)?



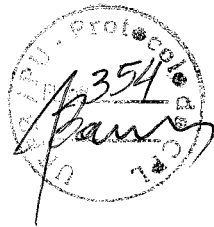


UNIVERSIDADE FEDERAL DA PARAÍBA  
SISTEMA INTEGRADO DE PATRIMÔNIO, ADMINISTRAÇÃO E  
CONTRATOS  
EMITIDO EM 30/06/2016 15:23

S.T.I.  
FL. 04

**Processo nº. 23074.032546/2016-37**

**Assunto: 995 - PEDIDOS, OFERECIMENTOS E INFORMAÇÕES DIVERSAS**



**DESPACHO**

À Prefeitura Universitária- Comissão Permanente de Licitação

Aos cuidados do Srº Augusto Cesar Temoteo de Oliveira

Prezado Senhor,

Ao tempo em que o cumprimentamos, informamos atentimento à sua solicitação conforme páginas 65 e 66.

À Disposição,

(Autenticado digitalmente em 30/06/2016 15:21)  
HERMES PESSOA FILHO  
SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO (STI) (11.00.51)  
COORDENADOR

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UNIVERSIDADE FEDERAL DA PARAÍBA  
SUPERINTENDÊNCIA DE TECNOLOGIA DA INFORMAÇÃO

S.T.I.  
FL: 05



LAUDO TÉCNICO

**Processo nº:** 23074.032546/2016-37

**Interessado:** Comissão Permanente de Licitação (CPL) da Prefeitura Universitária (PU)

**Referência:** Pregão Eletrônico (SRP) PU/UFPB nº 5/2016

1. Conforme o laudo técnico elaborado pela Superintendência de Tecnologia da Informação (STI) em 08 de junho último (fls. 37 a 40), foi constatada a ausência de dados sobre certas características dos produtos ofertados pela empresa ZIVA Tecnologia e Soluções Ltda. para o Pregão Eletrônico (SRP) PU/UFPB nº 5/2016, nos encartes ou *datasheets* acostados aos autos. Assim sendo, a STI solicitou à CPL/PU que instasse a referida licitante a suprir os tais dados para que, somente dessa forma, pudesse adequadamente verificar a conformidade daqueles produtos com o disposto no Termo de Referência do Edital do pregão eletrônico em tela.

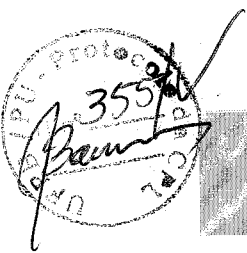
2. Mister se faz relatar que somente foram fornecidos dados adicionais sobre os *switches*, restando o fornecimento daqueles relativos aos *transceivers*. De qualquer sorte, com o material até então recebido, a STI retomou inicialmente a verificação de conformidade dos *switches*, a saber:

a) Switch de rede – Tipo 1

Produto de referência: Cisco SRW2024-K9-BR (Cisco SG300-28)

Produto ofertado: Huawei S1700-28GFR-4P-AC

Características	Cisco SRW2024-K9-BR (fora de linha)	Cisco SG300-28 (substituto)	Huawei S1700-28GFR-4P-AC	Comparação (referência X ofertado)
Tipo de cabeamento de rede (UTP) suportado	Cat. 5e ou melhor	Cat. 5e ou melhor	IEEE Std 802.3ae  ( Informação disponível na página 16 do documento encontrado em <a href="http://e.huawei.com/en/marketing-material/onLineView?MaterialID={2661">http://e.huawei.com/en/marketing-material/onLineView?MaterialID={2661</a>	Atende



7CAE-9373-47C2-  
9012-  
6767B716BCC7} )

b) Switch de rede – Tipo 2

Produto de referência: Cisco SRW2048-K9-NA (Cisco SG300-52)

Produto ofertado: Huawei S1700-52GFR-4P-AC

Características	Cisco SRW2048-K9-NA (fora de linha)	Cisco SG300-52 (substituto)	Huawei S1700-52GFR-4P-AC	Comparação (referência X ofertado)
Tipo de cabramento de rede (UTP) suportado	Cat. 5e ou melhor	Cat. 5e ou melhor	IEEE Std 802.3ae  ( Informação disponível na página 16 do documento encontrado em <a href="http://e.huawei.com/en/marketing-material/onLineView?MaterialID={26617CAE-9373-47C2-9012-6767B716BCC7}">http://e.huawei.com/en/marketing-material/onLineView?</a> MaterialID={26617CAE-9373-47C2-9012-6767B716BCC7} )	Atende

c) Switch de rede – Tipo 3

Produto de referência: Cisco SG500X-24

Produto ofertado: Huawei S5720-28X-SI-AC

Características	Cisco SG500X-24	Huawei S5720-28X-SI-AC	Comparação (referência X ofertado)
Tipo de cabramento de rede (UTP) suportado	UTP Cat. 5e ou melhor	IEEE Std 802.3ae  ( Informação disponível na página 21 do documento encontrado em <a href="http://e.huawei.com/en/marketing-material/onLineView?MaterialID={7C78B088-83D6-4022-8990-8334E85285F4}">http://e.huawei.com/en/marketing-material/onLineView?</a> MaterialID={7C78B088-83D6-4022-8990-8334E85285F4} )	Atende
Quantidade de grupos suportados para o Internet	4.096 (4k)	1.024 (1k)  ( Informação disponível na página 3.570 do documento	Não atende

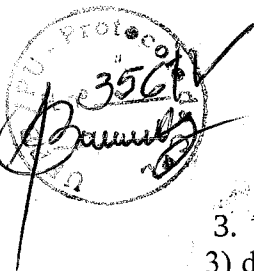


S.T.I.  
66

Group Management Protocol (IGMP)		encontrado em <a href="http://support.huawei.com/enterprise/docinforeader.action?contentId=DOC1000088743&amp;idPath=7919710 9856733 7923144 6691579">http://support.huawei.com/enterprise/docinforeader.action?contentId=DOC1000088743&amp;idPath=7919710 9856733 7923144 6691579</a>	
Quantidade de regras ( <i>rules</i> ) da Lista de Controle de Acesso (ACL)	3.072	1.280 (1,25k) ( Informação disponível na página 9 do documento encontrado em <a href="http://e.huawei.com/jp/market/ing-material/global/products/enterprise_network/switches/s5700/20151016101343">http://e.huawei.com/jp/market/ing-material/global/products/enterprise_network/switches/s5700/20151016101343</a> )	Não atende

### COMENTÁRIOS SOBRE AS CARACTERÍSTICAS NÃO ATENDIDAS

- O IGMP é um protocolo de comunicação usado por *hosts* (servidores, por exemplo) e roteadores adjacentes em redes IPv4, afim de organizar os integrantes de grupos de *multicast*. Além disso, o IGMP é parte integrante do *multicast* IP – método de enviar datagramas IP para um grupo de destinatários interessados, em uma única transmissão – e pode ser utilizado para aplicações de rede um-para-muitos (dispositivos computacionais), por exemplo, em *streaming* de video e *gaming* online, e possibilita o uso mais eficiente dos recursos quando está apoiando essas aplicações (Fonte: [https://en.wikipedia.org/wiki/Internet\\_Group\\_Management\\_Protocol](https://en.wikipedia.org/wiki/Internet_Group_Management_Protocol)). Por sua vez, o IGMP *snooping* é o processo de “escutar” o tráfego de rede IGMP. Esta característica permite ao *switch* de rede “escutar a conversa” entre *hosts* e roteadores, o que proporciona ao *switch* manter um mapeamento acerca de quais enlaces (*links*) necessitam de quais fluxos IP *multicast*. Em outras palavras, a escuta IGMP é projetada para evitar que *hosts* em uma rede local recebam tráfego de grupo *multicast* ao qual esses *hosts* não estejam associados. Tal característica evita uma “inundação” de tráfego *multicast* nas portas do *switch* em um domínio de *broadcast* (ou VLAN equivalente), bem como a desnecessária sobrecarga sobre os *hosts* os quais não consumirão seus recursos para processarem pacotes (*packets*) que não solicitaram. A possibilidade de organizar um maior número de grupos IP *multicast* é uma característica desejada para a Rede UFPB.
- A lista de controle de acesso (ACL) relaciona as permissões associados a um objeto e especifica quais usuários ou processos de sistema são autorizados a acessar esse objeto, assim como quais operações estão permitidas ao mesmo. Cada entrada em uma típica ACL especifica um objeto e uma operação. Em alguns tipos de *hardware* computacional – em particular, roteadores (*routers*) e comutadores (*switches*) –, uma ACL está relacionada a regras que são aplicadas a números de portas ou a endereços IP que estão disponíveis em um *host* ou outro dispositivo de camada 3 (*Layer 3*), cada um com uma lista de *hosts* e/ou redes autorizadas a acessar determinado serviço ou recurso. Listas de controle de acesso podem geralmente ser configuradas para controlar ambos os tráfegos de entrada e saída e, nesse contexto, são similares a *firewalls* (Fonte:



[https://en.wikipedia.org/wiki/Access\\_control\\_list](https://en.wikipedia.org/wiki/Access_control_list)). Logo, a quantidade de regras da AC, se traduz em característica importante para o aperfeiçoamento da gerência sobre a Rede UFPB.

3. Em face dos resultados obtidos com a análise comparativa entre o *switch* (do tipo 3) de referência e o ofertado, a STI entende que não houve pleno atendimento às especificações mínimas exigidas por parte do produto ofertado. Logo, não mais se justifica seguir adiante com a análise do respectivo *transceiver* (do tipo 2), haja vista sua relação de dependência com aquele *switch*.

4. Isto posto, **ATESTAMOS** que o *switch* do tipo 3 ofertado pela empresa ZIVA Tecnologia e Soluções Ltda. não atende às especificações técnicas mínimas do Termo de Referência do Edital do Pregão Eletrônico (SRP) PU/UFPB nº 5/2016.

5. Este é o nosso entendimento, salvo melhor juízo.

João Pessoa-PB, 29 de junho de 2016.

Ricardo Costa de Carvalho  
Analista de Tecnologia da Informação  
STI/UFPB  
Mat. SIAPE: 0273779-1