



# **QUANTUM 28000** SECURITY GATEWAY



Check Point Quantum 28000 Next Generation Firewalls enables enterprises to deploy the industry's leading threat prevention capabilities at all points of their infrastructure, scaling security according to their changing business needs. This enables enterprises to prevent and block even the most advanced attacks, before they can disrupt business — greatly increasing the efficiency of their security operations.



Always Protected against Gen V Attacks

Highest caliber prevention with unified security



Security at Hyperscale

On-demand expansion with hyperscalability



Efficient Operations

Cut operation management time by up to 80%

### PERFORMANCE HIGHLIGHTS

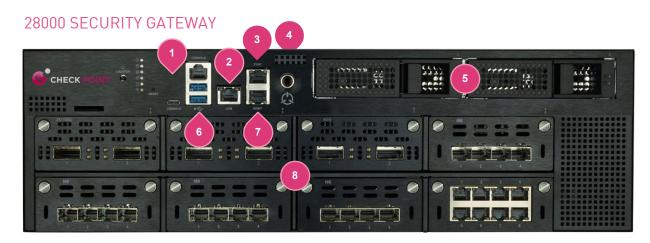
Gen II Security	Gen III Security	Gen V Security
Firewall	NGFW <sup>1</sup>	Advanced Threat Prevention <sup>2</sup>
145 Gbps	51.5 Gbps	30 Gbps

Performance measured with enterprise testing conditions. Additional performance details on page 3. 1: Includes Firewall, Application Control, and IPS. 2: Includes Firewall, Application Control, URL Filtering, IPS, Antivirus, Anti-Bot and SandBlast Zero-Day Protection.



# Quantum Security Gateway

#### **SPOTLIGHT**



- 1. RJ45 and USB Type-C console ports
- 2. Lights-out Management port
- 3. Sync 10/100/1000 Base-T port
- 4. ESD ground point
- 5. 2x 480GB SSD RAID1

- 6. 2x USB 3.0 ports
- 7. Management 10/100/1000 Base-T port
- 8. Eight network card expansion slots3x redundant power supplies (back view not shown)4x field replaceable fans (back view not shown)

#### Prevent Known and Zero-day Threats

Check Point SandBlast Threat
Emulation is an evasion-resistant
sandbox that provides zero-day
protection from advanced and unknown
threats. SandBlast Threat Extraction
(CDR) ensures quick delivery of safe
email and web content to users.

	NGFW	NGTP	SNBT
Firewall, VPN, Mobile Access	~	~	<b>~</b>
Content Awareness	~	~	<b>~</b>
Application Control	~	~	<b>~</b>
Intrusion Prevention System	~	~	<b>~</b>
URL Filtering		~	~
Antivirus and Anti-Bot		~	<b>~</b>
DNS Security		~	<b>✓</b>
Threat Emulation (sandboxing)			<b>~</b>
Threat Extraction (CDR)			<b>~</b>
Zero Phishing			~

Next Generation Firewall, Next Generation Threat Prevention and SandBlast packages

#### IoT Security

Quantum IoT Protect now provides autonomous threat prevention.
Quantum Firewalls discover IoT assets, feed those to the IoT Cloud Service to automatically map IoT devices to profiles and then apply a zero-trust policy on the firewalls to prevent IoT threats in 5 minutes.

#### 100, 40 and 25 GbE Connectivity

If you're ready to move from 10 to 25, 40 or 100 GbE, so is the 28000 Next Generation Security Gateway. The 28000 Security Gateway lets you connect your 10 GbE server uplinks to your core network.

#### Integrated SD-WAN

Security protects you when you're connected. SD-WAN ensures you're always connected, and the connection offers the best user experience for the lowest cost. Quantum SD-WAN in Quantum firewalls keeps you secure and connected.

#### **Remote Management and Monitoring**

A Lights-Out-Management (LOM) card provides out-of-band management to remotely diagnose, start, restart, and manage the appliance from a remote location.

#### DATA CENTER GRADE PLATFORM

	1 GbE copper	1 GbE fiber	10 GbE	100/40/25* GbE	Memory	Redundant Power	Redundant Storage	LOM
Base model	2	0	4	0	64 GB		0	0
Plus model	10	0	12	2	96 GB			
Max capacity	66	32	32	8	128 GB			

O optional accessory



# Quantum Security Gateway

#### SPECIFICATIONS

#### **Performance**

Enterprise Test Conditions		
Threat Prevention'(Gbps)	30	
NGFW²(Gbps)	51.5	
IPS (Gbps)	52.2	
Firewall (Gbps)	145	

#### RFC 3511, 2544, 2647, 1242 Performance (Lab)

Firewall 1518B UDP (Gbps)	316.5
VPN AES-128 (Gbps)	49
Connections/sec	615,000
Concurrent connections <sup>3</sup>	10/20/32M <sup>3</sup>

Includes Firewall, Application Control, URL Filtering, IPS, Antivirus, Anti-Bot and SandBlast Zero-Day Protection
with logging enabled.
 Includes Firewall, Application Control and IPS with logging enabled.
 Performance
measured with Base/Plus/maximum memory.

#### **Additional Features**

#### Highlights

- 2x CPUs, 36 physical cores, 72 virtual cores (total)
- 1x 480GB SSD, (2x in Plus package)
- 3x AC power supplies (DC option)
- 64, 96 and 128 GB memory options
- Lights-Out-Management card (optional in Base package)
- Virtual Systems (base/PLUS/max mem): 125/250/250

#### Network Expansion Slot Options (7 of 8 slots open)

- 8x 10/100/1000Base-T RJ45 port card, up to 66 ports
- 4x 1000Base-F SFP port card, up to 32 ports
- 4x 10GBase-F SFP+ port card, up to 32 ports
- 2x 100/40/25G QSFP28 port double-slot-width card, up to 8 ports

#### Content Security

#### First Time Prevention Capabilities

- CPU-level, OS-level and static file analysis
- File disarm and reconstruction via Threat Extraction
- Average emulation time for unknown files that require full sandbox evaluation is under 100 seconds
- Maximal file size for Emulation is 100 MB
- Emulation OS Support: Windows XP, 7, 8.1, 10

#### **Applications**

- Use 10,000+ pre-defined or customize your own applications
- · Accept, prevent, schedule, and apply traffic-shaping

#### **Data Loss Prevention**

- Classify 700+ pre-defined data types
- End user and data owner incident handling

#### Content Security (continued)

#### Dynamic User-based Policy

- Integrates with Microsoft AD, LDAP, RADIUS, Cisco pxGrid, Terminal Servers and with 3<sup>rd</sup> parties via a Web API
- Enforce consistent policy for local and remote users on Windows, macOS, Linux, Android and Apple iOS platforms

#### Network

#### **Network Connectivity**

- Integrated SD-WAN network optimization and resilience
- Total physical and virtual (VLAN) interfaces per appliance: 1024/4096 (single gateway/with virtual systems)
- 802.3ad passive and active link aggregation
- Layer 2 (transparent) and Layer 3 (routing) mode

#### **High Availability**

- Active/Active L2, Active/Passive L2 and L3
- Session failover for routing change, device and link failure
- ClusterXL or VRRP

#### IPv6

- NAT66, NAT64, NAT46
- CoreXL, SecureXL, HA with VRRPv3

#### Unicast and Multicast Routing (see SK98226)

- OSPFv2 and v3, BGP, RIP
- Static routes, Multicast routes
- Policy-based routing
- PIM-SM, PIM-SSM, PIM-DM, IGMP v2, and v3

#### **Physical**

#### **Power Requirements**

- Single Power Supply rating AC: 850W, DC: 1300W
- Power input: 100 to 240V (47-63Hz), 40~-72VDC
- Power consumption avg/max: 472/826W
- Maximum thermal output AC: 2818.4 BTU/hr.

#### **Dimensions**

- Enclosure: 3RU
- Dimensions (WxDxH): 17.4 x 24 x 5.2 in. (442 x 610 x 132mm)
- Weight: 46.3 lbs. (21 kg)

#### **Environmental Conditions**

- Operating: 0° to 40°C, humidity 5% to 95%
- Storage: -20° to 70°C, humidity 5% to 95% at 60°C

#### Certifications

- Safety: UL, CB, CE, TUV GS
- Emissions: FCC, CE, VCCI, RCM/C-Tick
- Environmental: RoHS, WEEE, REACH', ISO14001'





# ORDERING QUANTUM 28000 SECURITY GATEWAYS

SECURITY APPLIANCE <sup>1</sup>	SKU
28000 Base configuration: 2x 1GbE copper ports, 4x 10GbE SFP+ ports, 4x SR transceivers, 64 GB RAM, 1x SSD, 3x AC PSUs, telescopic rails, SandBlast (SNBT) Security Subscription Package for 1 Year	CPAP-SG28000-SNBT
28000 Plus configuration: 10x 1GbE copper ports, 12x 10GbE SFP+ ports, 12x SR transceivers, 2x 100GbE QSFP28 ports, 2x 40G SR transceivers, 96 GB RAM, 2x 480GB SSD, 3x AC PSUs, Lights-Out Management (LOM), telescopic rails, 5 Virtual Systems, SandBlast (SNBT) Security Subscription Package for 1 Year	CPAP-SG28000-PLUS-SNBT
Quantum IoT Network Protection for 1 year for 28000 appliances	CPSB-I0TP-28000-1Y
Quantum IoT Network Protection for 1 year for 28000 PLUS appliances	CPSB-IOTP-28000-PLUS-1Y
Quantum SD-WAN subscription for 1 year for 28000 appliances	CPSB-SDWAN-28000-1Y
Quantum SD-WAN subscription for 1 year for 28000 PLUS appliances	CPSB-SDWAN-28000-PLUS-1Y

The Base package includes 2 trial virtual systems (VS). These are not additive or counted when adding additional VS licenses. Plus includes 5 VS licenses which are additive when adding additional VS licenses. <sup>1</sup> Renewal NGFW, NGTP and SandBlast (SNBT) packages are available in the online product catalog.

# Accessories

A Port 1000Base-F SFP interface card; requires additional 1000Base SFP transceivers  SFP transceiver module for 10 fiber ports - long range (1000Base-LX)  SFP transceiver module for 10 fiber ports - short range (1000Base-SX)  SFP transceiver to 1000 Base-T R J45 (Copper)  4 Port 100Base-F SFP+ interface card  SFP+ transceiver to 1000 Base-T R J45 (Copper)  4 Port 100Base-F SFP+ interface card  SFP+ transceiver module for 106 fiber ports - for links up to 40km (100BASE-ER)  SFP+ transceiver module for 106 fiber ports - long range up to 10km (100BASE-ER)  SFP+ transceiver module for 106 fiber ports - short range (100Base-SR)  SFP+ transceiver module for 106 fiber ports - short range (100Base-SR)  SFP+ transceiver module for 106 fiber ports - short range (100Base-SR)  SFP+ transceiver module for 100B fiber ports - short range (100Base-SR)  SFP+ transceiver module for 100B fiber ports - short range (100Base-SR4)  SFP+ transceiver module for 100B fiber ports - short range (100Base-SR4)  QSFP28 transceiver module for 100B fiber ports - short range (100Base-SR4)  QSFP28 transceiver module for 100B fiber ports - short range (100Base-SR4)  QSFP28 transceiver module for 100B fiber ports - short range (100Base-LR4)  100B SWDM4, LC connector, 75m/OM3 fiber  QPAC-TR-100SWDM4  QSFP28 transceiver module for 40B fiber ports - short range (40Base-SR)  QSFP28 transceiver module for 40B fiber ports - short range (40Base-SR)  QSFP28 transceiver module for 40B fiber ports - short range (40Base-SR-BD)  QSFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (25Base-SR)  QPAC-TR-40SR-QSFP-BIDI  QSFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (25Base-SR)  CPAC-TR-25R-ADP  SFP28 transceiver module for 10G fiber with QSFP28 adaptor - short range (25Base-SR)  CPAC-TR-10CR-ADP  SFP2 transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10CR-ADP  SFP4 transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10CR-ADP  S	INTERFACE CARDS AND TRANSCEIVERS	
SFP transceiver module for 16 fiber ports - long range [1000Base-LX]  SFP transceiver module for 10 fiber ports - short range [1000Base-SX]  SFP transceiver to 1000 Base-T RJ45 [Copper]  CPAC-TR-1T-C  4 Port 106Base-F SFP+ interface card  SFP+ transceiver module for 106 fiber ports - for links up to 40km [106BASE-ER]  SFP+ transceiver module for 106 fiber ports - for links up to 10km [106Base-LR]  SFP+ transceiver module for 106 fiber ports - short range [106Base-SR]  SFP+ transceiver module for 106 fiber ports - short range [106Base-SR]  SFP+ transceiver module for 106 fiber ports - short range [106Base-SR]  SFP+ transceiver module for 106 fiber ports - short range [106Base-SR]  SFP+ transceiver module for 1006 fiber ports - short range [106Base-SR]  SFP+ transceiver module for 1006 fiber ports - short range [1006Base-SR4]  CPAC-TR-10T-C  106 Direct Attach Copper [DAC] Cable, [10BASE-CU] 3 meters  CPAC-2-40/100F-C  OSFP28 transceiver module for 1006 fiber ports - short range [1006Base-SR4]  CPAC-TR-100SR  OSFP28 transceiver module for 1006 fiber ports - long range [1006Base-LR4]  CPAC-TR-100SR  OSPP28 transceiver module for 1006 fiber ports - short range [406Base-SR]  CPAC-TR-100SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100SWDM4  OSPP- transceiver module for 406 fiber ports - short range [406Base-SR]  CPAC-TR-40SFP-300m  OSPP- transceiver module for 406 fiber ports - short range [406Base-SR]  CPAC-TR-40SFP-30FP-30FP-30FP-30FP-30FP-30FP-30FP-30	8 Port 10/100/1000 Base-T RJ45 interface card	CPAC-8-1C-C
SFP transceiver module for 16 fiber ports - short range [1000Base-SX]  SFP transceiver to 1000 Base-T RJ45 [Copper]  CPAC-TR-15X-C  CPAC-4-10F-C  SFP+ transceiver module for 106 fiber ports - for links up to 40km [100BASE-ER]  SFP+ transceiver module for 106 fiber ports - long range up to 10km [100Base-LR]  SFP+ transceiver module for 106 fiber ports - short range [100Base-SR]  SFP+ transceiver module for 106 fiber ports - short range [100Base-SR]  SFP+ transceiver nodule for 106 fiber ports - short range [100Base-SR]  SFP+ transceiver 100BASE-T RJ45 [Copper] - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-C  106 Direct Attach Copper [DAC] Cable, [10BASE-CU] 3 meters  CPAC-DAC-106-3M  2 Port 10/25/40/1006 QSFP28 Dual Width interface card *  CPAC-2-40/100F-C  QSFP28 transceiver module for 1006 fiber ports - short range [100GBase-SR4]  CPAC-TR-100SR  QSFP28 transceiver module for 1006 fiber ports - long range [100GBase-LR4]  1006 SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100CWDM4  1006 CWDM4, LC connector, 2Km/ single mode fiber  QSFP2 transceiver module for 406 fiber ports - short range [40GBase-SR]  QSFP2 transceiver module for 406 fiber ports - short range [40GBase-SR]  QSFP2 transceiver module for 406 fiber ports - short range [40GBase-SR-BD]  QSFP2 transceiver module for 56 fiber ports - short range [40GBase-SR-BD]  QSFP2 transceiver module for 56 fiber ports - short range [40GBase-SR-BD]  QSFP2 transceiver module for 56 fiber ports - short range [40GBase-SR-BD]  QSFP2 transceiver module for 56 fiber ports with QSFP28 adaptor - short range [25GBase-SR]  CPAC-TR-40SR-QSFP-BIDI  QSFP28 transceiver module for 106 fiber with QSFP28 adaptor - long range [25GBase-SR]  CPAC-TR-25LR-ADP  SFP28 transceiver module for 106 fiber with QSFP28 adaptor - long range up to 10km [10GBase-LR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - long range up to 10km [10GBase-LR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - long range up to 10km [10GBase-LR]  CPAC	4 Port 1000Base-F SFP interface card; requires additional 1000Base SFP transceivers	CPAC-4-1F-C
SFP transceiver to 1000 Base-T RJ45 [Copper]  QPAC-TR-1T-C  4 Port 10GBase-F SFP+ interface card  CPAC-4-10F-C  SFP+ transceiver module for 106 fiber ports - for links up to 40km [10GBASE-ER]  CPAC-TR-10ER-C  SFP+ transceiver module for 106 fiber ports - long range up to 10km [10GBASE-ER]  CPAC-TR-10ER-C  SFP+ transceiver module for 106 fiber ports - short range [10GBASE-SR]  CPAC-TR-10ER-C  SFP+ transceiver 10GBASE-T RJ45 [Copper] - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-C  10G Direct Attach Copper [DAC] Cable, 110BASE-CU] 3 meters  CPAC-DAC-10G-3M  CPAC-2-40/100F-C  OSFP28 transceiver module for 1006 fiber ports - short range [100GBase-SR4]  OSFP28 transceiver module for 1006 fiber ports - short range [100GBase-LR4]  100G SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-10DLR  100G CWDM4, LC connector, 2Km/ single mode fiber  OSFP28 transceiver module for 40G fiber ports - short range [40GBase-SR]  OSFP28 transceiver module for 40G fiber ports - short range [40GBase-SR]  OSFP28 transceiver module for 40G fiber ports - short range [40GBase-SR-BD]  OSFP28 transceiver module for 40G fiber ports - short range [40GBase-SR-BD]  OSFP28 transceiver module for 25G fiber ports - short range [40GBase-SR-BD]  OSFP28 transceiver module for 25G fiber ports with OSFP28 adaptor - short range [25GBase-SR]  CPAC-TR-40SR-0SFP28-SFP28  SFP28 transceiver module for 25G fiber ports with OSFP28 adaptor - long range [25GBase-SR]  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with OSFP28 adaptor - long range up to 10Km [10GBaSe-LR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with OSFP28 adaptor - short range [10GBaSe-SR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with OSFP28 adaptor - short range [10GBaSe-SR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with OSFP28 adaptor - short range [10GBaSe-SR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with OSFP28 adaptor - short range [10GBaSe-SR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with OSFP28 adaptor - s	SFP transceiver module for 1G fiber ports - long range (1000Base-LX)	CPAC-TR-1LX-C
A Port 106Base-F SFP+ interface card  SFP+ transceiver module for 106 fiber ports - for links up to 40km (106Base-LR)  SFP+ transceiver module for 106 fiber ports - long range up to 10km (106Base-LR)  SFP+ transceiver module for 106 fiber ports - short range (106Base-SR)  SFP+ transceiver 106BASE-T RJAS (Copper) - for links up to 30m over CAT6a/CAT7  (PAC-TR-10T-C)  106 Direct Attach Copper (DAC) Cable, (108ASE-CU) 3 meters  CPAC-DAC-106-3M  2 Port 10/25/A0/1006 QSFP28 Dual Width interface card *  CPAC-2-40/100F-C  QSFP28 transceiver module for 1006 fiber ports - short range (1006Base-SR4)  CSFP28 transceiver module for 1006 fiber ports - long range (1006Base-LR4)  1006 SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-10DLR  1006 CWDM4, LC connector, 25m/ single mode fiber  QSFP28 transceiver module for 406 fiber ports - short range (406Base-SR)  QSFP28 transceiver module for 406 fiber ports - short range (406Base-SR)  QSFP28 transceiver module for 406 fiber ports - short range (406Base-SR-BD)  QSFP28 transceiver module for 406 fiber ports - short range (406Base-SR-BD)  QSFP28 transceiver module for 406 fiber ports - short range (406Base-SR-BD)  QSFP28 transceiver module for 256 fiber ports - short range (256Base-SR-BD)  QSFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (256Base-SR)  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (256Base-SR)  CPAC-TR-255R-ADP  SFP4 transceiver module for 106 fiber with QSFP28 adaptor - for links up to 40km (106BaSe-LR)  SFP4 transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-LR)  SFP4 transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-LR)  SFP4 transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-LR)  SFP4 transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-LR)  SFP4 transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-LR)  SFP4 transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base	SFP transceiver module for 1G fiber ports - short range (1000Base-SX)	CPAC-TR-1SX-C
SFP+ transceiver module for 10G fiber ports - for links up to 40km (10GBASE-ER)  SFP+ transceiver module for 10G fiber ports - long range up to 10km (10GBase-LR)  CPAC-TR-10LR-C  SFP+ transceiver module for 10G fiber ports - short range (10GBase-SR)  CPAC-TR-10SR-C  SFP+ transceiver 10GBASE-T RJ45 (Copper) - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-C  10G Direct Attach Copper (DAC) Cable, (10BASE-CU) 3 meters  CPAC-DAC-10G-3M  2 Port 10/25/40/1006 QSFP28 Dual Width interface card *  CPAC-2-40/100F-C  QSFP28 transceiver module for 1006 fiber ports - short range (100GBase-SR4)  CPAC-TR-100SR  QSFP28 transceiver module for 1006 fiber ports - long range (100GBase-LR4)  CPAC-TR-100LR  1006 SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100CWDM4  1006 CWDM4, LC connector, 2Km/ single mode fiber  CPAC-TR-100CWDM4  QSFP+ transceiver module for 406 fiber ports - short range (40GBase-LR)  CPAC-TR-40SR-QSFP-300m  QSFP28 transceiver module for 406 fiber ports - short range (40GBase-LR)  Bi-directional QSFP transceiver for 406 fiber ports - short range (40GBase-SR-BD)  CPAC-TR-40SR-QSFP-8IDI  QSFP28 to SFP28 Adapter - 106/256 fiber adaptor  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (25GBase-SR)  CPAC-TR-25LR-ADP  SFP28 transceiver module for 10G fiber with QSFP28 adaptor - long range (25GBase-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 10G fiber with QSF	SFP transceiver to 1000 Base-T RJ45 (Copper)	CPAC-TR-1T-C
SFP+ transceiver module for 106 fiber ports - long range up to 10km [106Base-LR]  SFP+ transceiver module for 106 fiber ports - short range [106Base-SR]  SFP+ transceiver 106BASE-T RJ45 [Copper] - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-C  106 Direct Attach Copper [DAC] Cable, [10BASE-CU] 3 meters  CPAC-DAC-10G-3M  2 Port 10/25/40/1006 QSFP28 Dual Width interface card *  CPAC-2-40/100F-C  QSFP28 transceiver module for 1006 fiber ports - short range [1006Base-SR4]  QSFP28 transceiver module for 1006 fiber ports - long range [1006Base-LR4]  CPAC-TR-10DLR  1006 SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100SWDM4  1006 CWDM4, LC connector, 2Km/ single mode fiber  CPAC-TR-100CWDM4  QSFP+ transceiver module for 406 fiber ports - short range [406Base-SR]  QSFP28 transceiver module for 406 fiber ports - short range [406Base-SR]  CPAC-TR-40SR-QSFP-300m  QSFP+ transceiver module for 406 fiber ports - short range [406Base-SR-BD]  CPAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 Adapter - 106/256 fiber adaptor  CPAC-TR-40SR-QSFP-BIDI  QSFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range [256Base-SR]  CPAC-TR-25SR-ADP  SFP28 transceiver module for 106 fiber with QSFP28 adaptor - long range [256Base-LR]  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - long range up to 10km [106Base-LR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 ad	4 Port 10GBase-F SFP+ interface card	CPAC-4-10F-C
SFP+ transceiver module for 106 fiber ports - short range [106Base-SR]  SFP+ transceiver 106BASE-T RJ45 [Copper] - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-C  106 Direct Attach Copper [DAC] Cable, [10BASE-CU] 3 meters  CPAC-DAC-106-3M  Port 10/25/40/1006 QSFP28 Dual Width interface card *  CPAC-2-40/100F-C  QSFP28 transceiver module for 1006 fiber ports - short range [1006Base-SR4]  QSFP28 transceiver module for 1006 fiber ports - long range [1006Base-LR4]  CPAC-TR-100SR  QSFP28 transceiver module for 1006 fiber ports - long range [1006Base-LR4]  CPAC-TR-100LR  1006 SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100SWDM4  QSFP+ transceiver module for 406 fiber ports - short range [406Base-SR]  CPAC-TR-100CWDM4  QSFP+ transceiver module for 406 fiber ports - short range [406Base-SR]  CPAC-TR-40SR-QSFP-300m  QSFP+ transceiver module for 406 fiber ports - short range [406Base-LR]  CPAC-TR-40LR-QSFP-10Km  Bi-directional QSFP transceiver for 406 fiber ports - short range [406Base-SR-BD]  CPAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 Adapter - 106/256 fiber adaptor  CPAC-TR-40F-QSFP-BIDI  QSFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range [256Base-SR]  CPAC-TR-25SR-ADP  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - long range [256Base-LR]  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - long range up to 10km [106Base-LR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-LR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-LR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-LR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-LR]  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-	SFP+ transceiver module for 10G fiber ports - for links up to 40km (10GBASE-ER)	CPAC-TR-10ER-C
SFP+ transceiver 10GBASE-T RJ45 [Copper] - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-C  10G Direct Attach Copper [DAC) Cable, [10BASE-CU] 3 meters  CPAC-DAC-10G-3M  2 Port 10/25/40/100G OSFP28 Dual Width interface card *  CPAC-2-40/100F-C  OSFP28 transceiver module for 100G fiber ports - short range [100GBase-SR4]  CPAC-TR-100SR  OSFP28 transceiver module for 100G fiber ports - long range [100GBase-LR4]  CPAC-TR-100LR  100G SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100SWDM4  100G CWDM4, LC connector, 2Km/ single mode fiber  OSFP+ transceiver module for 40G fiber ports - short range [40GBase-SR]  CPAC-TR-100CWDM4  QSFP+ transceiver module for 40G fiber ports - short range [40GBase-LR]  CPAC-TR-40SR-QSFP-300m  QSFP+ transceiver module for 40G fiber ports - short range [40GBase-SR-BD]  CPAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 Adapter - 10G/25G fiber adaptor  CPAC-TR-25GR-ADP  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range [25GBase-SR]  CPAC-TR-25SR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km [10GBase-LR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  CPAC-TR-10LR-ADP	SFP+ transceiver module for 10G fiber ports - long range up to 10km (10GBase-LR)	CPAC-TR-10LR-C
106 Direct Attach Copper [DAC] Cable, [10BASE-CU] 3 meters  2 Port 10/25/40/100G QSFP28 Dual Width interface card *  2 Port 10/25/40/100G QSFP28 Dual Width interface card *  2 Port 10/25/40/100G QSFP28 Dual Width interface card *  2 Port 10/25/40/100G QSFP28 transceiver module for 100G fiber ports - short range [100GBase-SR4]  2 QFP28 transceiver module for 100G fiber ports - long range [100GBase-LR4]  2 CPAC-TR-100LR  2 CPAC-TR-100LR  2 CPAC-TR-100LR  2 CPAC-TR-100SWDM4  4 COPAC-TR-100SWDM4  4 COPAC-TR-100SWDM4  4 QSFP+ transceiver module for 40G fiber ports - short range [40GBase-SR]  2 CPAC-TR-40SR-QSFP-300m  4 QSFP+ transceiver module for 40G fiber ports - long range [40GBase-SR]  3 CPAC-TR-40SR-QSFP-10Km  5 Bi-directional QSFP transceiver for 40G fiber ports - short range [40GBase-SR-BD]  4 CPAC-TR-40SR-QSFP-BIDI  4 QSFP28 to SFP28 Adapter - 10G/25G fiber adaptor  5 CPAC-TR-40SR-QSFP-BIDI  5 CPAC-TR-25SR-ADP  5 SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range [25GBase-SR]  5 CPAC-TR-25SR-ADP  5 SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km [10GBase-LR]  5 CPAC-TR-10ER-ADP  5 SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km [10GBase-LR]  5 CPAC-TR-10ER-ADP  5 SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  5 CPAC-TR-10ER-ADP  5 SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  5 CPAC-TR-10ER-ADP  5 SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range [10GBase-SR]  5 CPAC-TR-10ER-ADP  5 SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  5 CPAC-TR-10ER-ADP  5 SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  5 CPAC-TR-10ER-ADP  5 CPAC	SFP+ transceiver module for 10G fiber ports - short range (10GBase-SR)	CPAC-TR-10SR-C
2 Port 10/25/40/100G QSFP28 Dual Width interface card *  QSFP28 transceiver module for 100G fiber ports - short range (100GBase-SR4)  QSFP28 transceiver module for 100G fiber ports - long range (100GBase-LR4)  100G SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100LR  100G CWDM4, LC connector, 2Km/ single mode fiber  QSFP28 transceiver module for 40G fiber ports - short range (40GBase-SR)  QSFP+ transceiver module for 40G fiber ports - short range (40GBase-SR)  QSFP+ transceiver module for 40G fiber ports - short range (40GBase-LR)  Bi-directional QSFP transceiver for 40G fiber ports - short range (40GBase-SR-BD)  QSFP28 to SFP28 Adapter - 10G/25G fiber adaptor  CPAC-TR-40SR-QSFP-BIDI  QSFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range (25GBase-SR)  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - long range (25GBase-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range (25GBase-LR)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBASE-ER)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10LR-AD	SFP+ transceiver 10GBASE-T RJ45 (Copper) - for links up to 30m over CAT6a/CAT7	CPAC-TR-10T-C
QSFP28 transceiver module for 1006 fiber ports - short range (1006Base-SR4)  QSFP28 transceiver module for 1006 fiber ports - long range (1006Base-LR4)  CPAC-TR-100SR  CPAC-TR-100LR  CPAC-TR-100SWDM4  CPAC-TR-100SWDM4  CPAC-TR-100SWDM4  CPAC-TR-100SWDM4  CPAC-TR-100SWDM4  CPAC-TR-100SWDM4  CPAC-TR-100SWDM4  QSFP+ transceiver module for 406 fiber ports - short range (406Base-SR)  CPAC-TR-40SR-QSFP-300m  QSFP+ transceiver module for 406 fiber ports - long range (406Base-LR)  Bi-directional QSFP transceiver for 406 fiber ports - short range (406Base-SR-BD)  CPAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 dadapter - 106/256 fiber adaptor  CPAC-TR-20SFP28-SFP28  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (256Base-LR)  CPAC-TR-25SR-ADP  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - long range (256Base-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 40km (106Base-LR)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10SR-ADP  SFP+ transceiver 106BASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10SR-ADP  CPAC-TR-10T-ADP  1006 Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M	10G Direct Attach Copper (DAC) Cable, (10BASE-CU) 3 meters	CPAC-DAC-10G-3M
QSFP28 transceiver module for 1006 fiber ports - long range (1006Base-LR4)  1006 SWDM4, LC connector, 75m/OM3 fiber  CPAC-TR-100SWDM4  1006 CWDM4, LC connector, 2Km/ single mode fiber  CPAC-TR-100SWDM4  QSFP+ transceiver module for 406 fiber ports - short range (406Base-SR)  CPAC-TR-40SR-QSFP-300m  QSFP+ transceiver module for 406 fiber ports - long range (406Base-LR)  Bi-directional QSFP transceiver for 406 fiber ports - short range (406Base-SR-BD)  CPAC-TR-40SR-QSFP-10Km  Bi-directional QSFP transceiver for 406 fiber ports - short range (406Base-SR-BD)  CPAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 Adapter - 106/256 fiber adaptor  CPAC-TR-25FP-28-SFP28  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (256Base-SR)  CPAC-TR-25SR-ADP  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - long range (256Base-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 40km (106Base-LR)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  1006 Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-1006-3M	2 Port 10/25/40/100G QSFP28 Dual Width interface card *	CPAC-2-40/100F-C
1006 SWDM4, LC connector, 75m/OM3 fiber  1006 CWDM4, LC connector, 2Km/ single mode fiber  CPAC-TR-100CWDM4  QSFP+ transceiver module for 406 fiber ports - short range [406Base-SR]  CPAC-TR-40SR-QSFP-300m  QSFP+ transceiver module for 406 fiber ports - long range [406Base-LR]  CPAC-TR-40LR-QSFP-10Km  Bi-directional QSFP transceiver for 406 fiber ports - short range [406Base-SR-BD]  CPAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 Adapter - 106/256 fiber adaptor  CPAC-TR-40SR-QSFP-BIDI  QSFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range [256Base-SR]  CPAC-TR-25SR-ADP  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - long range [256Base-LR]  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 40km (106Base-LR)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-LR]  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range [106Base-SR]  CPAC-TR-10SR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  CPAC-TR-10T-ADP  CPAC-DAC-1006-3M  406 Direct Attach Copper cable [QSFP28], 3 meters  CPAC-DAC-406-3M	QSFP28 transceiver module for 100G fiber ports - short range (100GBase-SR4)	CPAC-TR-100SR
1006 CWDM4, LC connector, 2Km/ single mode fiber  QSFP+ transceiver module for 406 fiber ports - short range (406Base-SR)  QSFP+ transceiver module for 406 fiber ports - long range (406Base-LR)  Bi-directional QSFP transceiver for 406 fiber ports - short range (406Base-SR-BD)  QSFP28 to SFP28 Adapter - 106/256 fiber adaptor  CPAC-TR-40SR-QSFP-BIDI  QSFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (256Base-SR)  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - long range (256Base-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 40km (106Base-LR)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - long range up to 10km (106Base-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver 106BASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  1006 Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-40G-3M  CPAC-DAC-40G-3M	QSFP28 transceiver module for 100G fiber ports - long range (100GBase-LR4)	CPAC-TR-100LR
QSFP+ transceiver module for 406 fiber ports - short range (406Base-SR)  QSFP+ transceiver module for 406 fiber ports - long range (406Base-LR)  Bi-directional QSFP transceiver for 406 fiber ports - short range (406Base-SR-BD)  QFAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 Adapter - 10G/256 fiber adaptor  CPAC-TR-0SFP28-SFP28  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - short range (256Base-SR)  CPAC-TR-25SR-ADP  SFP28 transceiver module for 256 fiber ports with QSFP28 adaptor - long range (256Base-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 40km (106Base-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - short range (106Base-SR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 106 fiber with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10SR-ADP  1006 Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	100G SWDM4, LC connector, 75m/OM3 fiber	CPAC-TR-100SWDM4
QSFP+ transceiver module for 40G fiber ports - long range (40GBase-LR)  Bi-directional QSFP transceiver for 40G fiber ports - short range (40GBase-SR-BD)  CPAC-TR-40SR-QSFP-BIDI  QSFP28 to SFP28 Adapter - 10G/25G fiber adaptor  CPAC-TR-25FP28-SFP28  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range (25GBase-SR)  CPAC-TR-25SR-ADP  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - long range (25GBase-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km (10GBASE-ER)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	100G CWDM4, LC connector, 2Km/ single mode fiber	CPAC-TR-100CWDM4
Bi-directional QSFP transceiver for 40G fiber ports - short range (40GBase-SR-BD)  QSFP28 to SFP28 Adapter - 10G/25G fiber adaptor  CPAC-TR-QSFP28-SFP28  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range (25GBase-SR)  CPAC-TR-25SR-ADP  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - long range (25GBase-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km (10GBASE-ER)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	QSFP+ transceiver module for 40G fiber ports - short range (40GBase-SR)	CPAC-TR-40SR-QSFP-300m
QSFP28 to SFP28 Adapter - 10G/25G fiber adaptor  CPAC-TR-QSFP28-SFP28  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range (25GBase-SR)  CPAC-TR-25SR-ADP  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - long range (25GBase-LR)  CPAC-TR-25LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km (10GBASE-ER)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	QSFP+ transceiver module for 40G fiber ports - long range (40GBase-LR)	CPAC-TR-40LR-QSFP-10Km
SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range (25GBase-SR)  SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - long range (25GBase-LR)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km (10GBASE-ER)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  40G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-40G-3M	Bi-directional QSFP transceiver for 40G fiber ports - short range (40GBase-SR-BD)	CPAC-TR-40SR-QSFP-BIDI
SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - long range (25GBase-LR)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km (10GBASE-ER)  CPAC-TR-10ER-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  CPAC-TR-10LR-ADP  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  40G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-40G-3M	QSFP28 to SFP28 Adapter - 10G/25G fiber adaptor	CPAC-TR-QSFP28-SFP28
SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km (10GBASE-ER)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - short range (25GBase-SR)	CPAC-TR-25SR-ADP
SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)  SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  CPAC-TR-10SR-ADP  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  40G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-40G-3M	SFP28 transceiver module for 25G fiber ports with QSFP28 adaptor - long range (25GBase-LR)	CPAC-TR-25LR-ADP
SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)  SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	SFP+ transceiver module for 10G fiber with QSFP28 adaptor - for links up to 40km (10GBASE-ER)	CPAC-TR-10ER-ADP
SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7  CPAC-TR-10T-ADP  1006 Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	SFP+ transceiver module for 10G fiber with QSFP28 adaptor - long range up to 10km (10GBase-LR)	CPAC-TR-10LR-ADP
100G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-100G-3M  CPAC-DAC-40G-3M	SFP+ transceiver module for 10G fiber with QSFP28 adaptor - short range (10GBase-SR)	CPAC-TR-10SR-ADP
40G Direct Attach Copper cable (QSFP28), 3 meters  CPAC-DAC-40G-3M	SFP+ transceiver 10GBASE-T RJ45 (Copper) with QSFP28 adaptor - for links up to 30m over CAT6a/CAT7	CPAC-TR-10T-ADP
	100G Direct Attach Copper cable (QSFP28), 3 meters	CPAC-DAC-100G-3M
250 51 - 141 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	40G Direct Attach Copper cable (QSFP28), 3 meters	CPAC-DAC-40G-3M
25G Direct Attach Copper cable (QSFP28), 3 meters CPAC-25G-3M	25G Direct Attach Copper cable (QSFP28), 3 meters	CPAC-DAC-25G-3M
10G Direct Attach Copper cable, (10BASE-CU) 3 meters CPAC-DAC-10G-3M	10G Direct Attach Copper cable, (10BASE-CU) 3 meters	CPAC-DAC-10G-3M

<sup>\*</sup> CPAC-2-40/100F-C  $\overline{\text{256}}$  transceivers will be supported in a future Jumbo Hot Fix





# ORDERING QUANTUM 28000 SECURITY GATEWAYS (continued)

FAIL-OPEN NETWORK INTERFACE CARDS			
4 Port 1GE copper Bypass (Fail-Open) Network interface card (10/100/1000 Base-T)	CPAC-4-1C-BP-C		
2 Port 10GE Short-range Fiber Bypass (Fail-Open) Network interface card (10GBase-SR)	CPAC-2-10FSR-BP-C		

MEMORY	SKU
Memory upgrade kit from 64GB to 96G or 96GB to 128GB for 28000 Security Gateways	CPAC-RAM32GB-28000
Memory upgrade kit from 64GB to 128GB for 28000 Security Gateways	CPAC-RAM64GB-28000

SPARES AND MISCELLANEOUS	SKU
480GB SSD for 16000/28000 Security Gateways	CPAC-SSD-480G-C
AC power supply for 16600HS, 26000, 28000, 28600HS Security Gateways	CPAC-PSU-AC-26000/28000
Dual DC power supplies for 16000, 26000 and 28000 Security Gateways	CPAC-PSU-DC-Dual-16000/26000/28000
DC power supply for 16000 and 28000 Security Gateways	CPAC-PSU-DC-16000/28000
Replacement Lights-Out Management Module	CPAC-NLOM-C
Replacement Fan	CPAC-FAN-26000/28000
Slide rails for 28000 Security Gateways (22" - 32")	CPAC-RAIL-L
Telescopic slide rails for 28000 Security Gateways (24" - 36")	CPAC-RAIL-EXT-L

All-inclusive Security

	NGFW	NGTP	SNBT (SandBlast)
	Basic access control	Prevent known threats	Prevent known and zero-
	plus IPS		day attacks
Firewall	✓	✓	<b>√</b>
VPN (IPsec)	✓	✓	✓
Mobile Access	✓	$\checkmark$	✓
Identity Awareness	✓	$\checkmark$	$\checkmark$
Application Control	✓	$\checkmark$	✓
Content Awareness	✓	$\checkmark$	✓
IPS	✓	$\checkmark$	✓
URL Filtering		$\checkmark$	✓
Anti-Bot		$\checkmark$	✓
Anti-Virus		✓	✓
Anti-Spam		$\checkmark$	✓
DNS Security		✓	✓
SandBlast Threat Emulation			✓
SandBlast Threat Extraction			✓
Zero Phishing			✓
IoT Network Protection	optional	optional	optional
SD-WAN Network Optimization	optional	optional	optional

The first-year purchase includes the SNBT package. Security subscription renewals, NGFW, NGTP and SNBT are available for subsequent years. Optional security capabilities can be ordered a-la-carte or separately.