Key Specifications for Palo Alto Networks Interfaces and Transceivers

The data interfaces implemented by Palo Alto Networks are based on industry standards and implementation agreements primarily authored by the Institute of Electrical and Electronics Engineers (IEEE) 802.3 committee and the Small Form Factor Committee (SFF). Each interface definition is supported by specifications and agreements defining the electromechanical coupling, electrical and optical signals, and management properties of compliant implementations.

Palo Alto Networks Next-Generation Firewalls utilize Ethernet interfaces in a mix of fixed form factor and pluggable formats, including 10 Mb/100 Mb/1 Gb tri-rate copper; 100 Mb/1 Gb/10 Gb tri-rate copper; 1 Gb SFP; 10 Gb SFP+; 40 Gb QSFP+; and 100 Gb QSFP28.

Fiber optic transceiver implementations are based on either multimode fiber (MMF) or single-mode fiber (SMF). It is critical to use a transceiver matched to the fiber deployed in the facility. Multimode transceivers must be used with MMF, and single-mode transceivers must be used with SMF. You can find educational material regarding fiber optics from multiple online sources, such as the Fiber Optic Association.

MMF is a low-cost, high-speed option for interconnections within a data center or building with distance limits measured in hundreds of meters. SMF supports distances measured in kilometers.

Platform Interfaces

The number of dataplane interfaces supported by each of the Palo Alto Networks products is shown in table 1. Management plus high availability-related interfaces are shown in square brackets. The vertical bar separator represents an exclusive OR condition—for example, "8|4" indicates either eight (8) or four (4). On platforms allowing dual rate SFP/SFP+ or QSFP+/QSFP28, ranges (e.g., 0–16) indicate the mix of port speeds supported depending on the specific transceivers used.

Table 1: IEEE 802.3 and SFF Standardized Interfaces								
Product	10 Mb/ 100 Mb/ 1 Gb Cu	100 Mb/ 1 Gb/ 10 Gb Cu	100 Mb FX/ 1 Gb SFP	1 Gb SFP	10 Gb SF P+	25 Gb SFP28	40 Gb QSFP+	100 Gb QSFP28
PA-200*	4 [1]							
PA-220, PA-500*	8 [1]							
PA-220R	6 [1]		2					
PA-415, PA-445	1@1G only, [1] ←→			1				
PA-820	4 [3]			8				
PA-850	4 [3]			8|4	0|4			
PA-1410				10, 6@1G only [1] ←→	4 [1]			
PA-1420				10, 2@1G only [1] ←→	8 [1]			
PA-3020,* PA-3050*	12 [3]			8				
PA-3060*	8 [3]			8	2			
PA-3220	12 [3]			8|4	0|4 [1]			
PA-3250	12 [3]			8|0	0|8 [1]			
PA-3260	12 [3]			8|0	0|8 [1]		4	
PA-3410, PA-3420	12 [3]			15 ←→	15 ←→	4		
PA-3430, PA-3440	12 [3]			15 ←→	15 ←→	4	2 ←→	2
PA-5020*	12 [3]			8				
PA-5050,* PA-5060*	12 [3]			8	4			
PA-5220	[3]	4		0–16	0–16 [2]		4 [1]	
PA-5250, PA-5260, PA-5280	[3]	4		0–16 ←→	0–16 [2]		0–4 [0|1] ←→	0–4 [0|1]
PA-5410, PA-5420, PA-5430				12 [3] ←→	12 [3] ←→	4	4 [1] ←→	4
PAN-PA-5400-NPC-A			4	[0–12] ←→	[0–12]		[0–2]	[0–2]
PAN-PA-5400-MPC-A				[0–6] ←→	[0–6]		[0–2]	[0–2]
PA-7050-SMC,* PA-7080-SMC*	[3]						[2]	
PA-7050-SMC-B, PA-7080-SMC-B		[0–4] ←→		[0–4]	[0–4]		[0–2] ←→	[0–2]
PA-7000-LFC-A					[0|4|8] ←→		[0–2]	
PA-7000-100G-NPC-A							0–4 ←→	0–4
PA-7000-20G-NPC,* PA-7000-20GXM-NPC	12			8	4			
PA-7000-20GQ-NPC,* PA-7000-20GQXM-NPC				12 ←→	12		2	
M-100,* GP-100,* WF-500	3 [1]							
M-500*	3 [1]				2			
M-200	4							
M-600	4				2			
ION 5200				[0–4] ←→	[0–4]			
ION 7000				[0–6] ←→	[0–6]			
ION 9000				[0–4] ←→	[0–4], 4			
ION 9200				[0–10] ←→	[0–10]			

Note: Systems may also include RS-232 serial ports and USB ports for management and administrative tasks. Please refer to each system's respective Hardware Reference Guide for information on these interfaces.

* This product is no longer commercially available. Please see the End-of-Sale Announcement and Hardware End-of-Life Dates pages on the Palo Alto Networks website for more information.

Pluggable Transceiver and Cable Assembly Specifications

Customers deploying 1-, 10-, 40-, or 100-gigabit fiber interfaces will need to decide between short haul (SX), long haul (LX), and extremely long haul (ZX) for 1-gigabit connections, or short reach (SR), long reach (LR), and extended reach (ER) for 10-, 40-, and 100-gigabit connections using the technical specifications shown in table 2. All Palo Alto Networks fiber transceivers utilize either a duplex LC type connector or 12-strand ribbon fiber MPO type connector.

In table 2, MMF is nominally 50/125 µm in either OM3 or OM4 grade, and SMF as specified by ITU-T G.652 is nominally 9/125 µm. G.652 allows for 8.6−9.5/125 µm. A multimode transceiver should only be used with MMF optic cable, and a single-mode transceiver should only be used with SMF optic cable.

Note: The LC style connector is used on both multimode and single-mode transceivers.

The MPO fiber optic cable connector on 40-gigabit QSFP+ and 100-gigabit QSFP28 -SR4 transceivers contains guide pins for alignment inside the transceiver per standards. PAN-QSFP-40GBASE-SR4, PAN-T-Q-40GBASE-SR4, PAN-QSFP-100GBASE-SR4, and PAN-T-Q28-100GBASE-SR4 are examples of this. These transceivers require a cable with guide pin holes for connector alignment. For direct connection between a pair of QSFP+ or QSFP28 transceivers, an 8-strand or 12-strand MPO-terminated ribbon fiber crossover cable without guide pins is required. This cable is commonly referred to as type-B crossover cable. For breakout applications of 4x10G or 4X25G, PAN-CBL-QSFP-QSFP28-BO-2M is a suitable cable two meters in length. Alternatively, for a longer breakout cable, an internet search for the phrase "Ethernet MPO patch cable" should provide multiple sources of various lengths. Palo Alto Networks does not have a preferred cable supplier and recommends customers work with their preferred networking partner, supplier, or integrator.

Table 2: Palo Alto Networks Transceiver and Cable Assembly Specifications									
Palo Alto Networks Part Name (SKU)	Ethernet Data Rate (Gbps)	Media xConnector	Media Type	Maximum Distance (m or km)	Wavelength Center/Range (λ nm)	Power Max (W)	Operating Temp (°C)	Storage Temp (°C)	Relative Humidity (%)
PAN-QSFP28-100GBASE-BIDI	100	LC	MMF	70 m OM3 100 m OM4	850 900	<3.5	0−70	−40−85	5−85
PAN-QSFP28-100GBASE-LR4	100	LC	SMF	10 km	1295.56, 1300.05 1304.58 1309.14	<4	0−70	−40−85	0−85
PAN-T-Q28-100GBASE-LR4	100	LC	SMF	10 km	1295.56 1300.05 1304.58 1309.14	<4	0−70	−40−85	0−85
PAN-QSFP28-100GBASE-SR4	100	MPO	MMF	70 m OM3 100 m OM4	850	<3.5	0−70	−40−85	0−85
PAN-T-Q28-100GBASE-SR4	100	MPO	MMF	70 m OM3 100 m OM4	850	<3.5	0−70	−40−85	0−85
PAN-QSFP28-100GBASE-CWDM4	100	LC	SMF	2 km	1264.5−1277.5 1284.5−1297.5 1304.5−1317.5 1324.5−1337.5	<3.5	0−70	−40−85	0−85
PAN-QSFP28-100GBASE-ER4	100	LC	SMF	25 km	1295.56 1300.05 1304.58 1309.14	<4.5	0−70	−40−85	0−85
PAN-QSFP28-DAC-5M	100	n/a	n/a	5 km	n/a	<1.2	−40−85	−40−85	—
PAN-QSFP28-AOC-10M	100	n/a	n/a	10 m	n/a	<3.5	0−70	−40−85	0−85
PAN-SFP28-25GBASE-SR	25	LC	MMF	70 m OM3 100 m OM4	850	1	0−70	−40−84	5−85
PAN-SFP28-25GBASE-LR	25	LC	SMF	10 km	1310	<1.5	0−70	−40−85	5−85
PAN-T-S28-25GBASE-SR	25	LC	MMF	70 m OM3 100 m OM4	850	1	0−70	−40−86	5−85
PAN-T-S28-25GBASE-LR	25	LC	SMF	10 km	1310	<1.5	0−70	−40−85	5−85

Table 2: Palo Alto Networks Transceiver and Cable Assembly Specifications (continued)									
Palo Alto Networks Part Name (SKU)	Ethernet Data Rate (Gbps)	Media xConnector	Media Type	Maximum Distance (m or km)	Wavelength Center/Range (λ nm)	Power Max (W)	Operating Temp (°C)	Storage Temp (°C)	Relative Humidity (%)
PAN-QSFP-40GBASE-ER4	40	LC	SMF	40 km	1271 1291 1311 1331	<3.5	0−70	−40−85	0−85
PAN-QSFP-40GBASE-LR4	40	LC	SMF	10 km	1271 1291 1311 1331	<3.5	0−70	−40−85	0−85
PAN-T-Q-40GBASE-SR4	40	MPO	MMF	100 m OM3 150 m OM4	850	<1.5	0−70	−40−85	0−85
PAN-QSFP-40GBASE-SR4	40	MPO	MMF	100 m OM3 150 m OM4	850	<1.5	0−70	−40−85	0−85
PAN-T-Q-40GBASE-LR4	40	LC	SMF	10 km	1271 1291 1311 1331	<3.5	0−70	−40−85	0−85
PAN-T-Q-40GBASE-SR4	40	MPO	MMF	100 m OM3 150 m OM4	850	<1.5	0−70	−40−85	0−85
PAN-QSFP-40GBASE-LM4	40	LC	MMF or SMF	140 m OM3 160 m OM4 1 km SMF	1264.5−1277.5 1284.5−1297.5 1304.5−1317.5 1324.5−1337.5	<2.5	0−70	−40−85	0−85
PAN-QSFP-40GBASE-BIDI	40	LC	MMF	100 m OM3 150 m OM4	832−868 882−18	<3.5	10−70	−40−85	5−95
PAN-QSFP-AOC-10M	40	n/a	n/a	10 m	n/a	<1.5	0−70	−40−85	0−85
PAN-SFP-CG	1	RJ-45	Cat 5>	100 m	n/a	<1.2	−40−85	−40−85	—
PAN-T-S-CG	1	RJ-45	Cat 5>	100 m	n/a	<1.2	0−70	−40−85	—
PAN-SFP-LX	1	LC	SMF	10 km	1310	<1.9	−40−85	−40−85	—
PAN-T-S-LX	1	LC	SMF	10 km	1310	<1.9	0−70	−40−85	5−95
PAN-T-S-SX	1	LC	MMF	550 m	850	<0.5	0−70	−40−85	5−95
PAN-SFP-PLUS-10GBASE-T	10	RJ-45	Cat 6a	30 m	n/a	<2.5	−5−65	−50−150	0−85
PAN-SFP-PLUS-CU-5M	10	SFP+	Cu	5 m	n/a	passive	—	—	—
PAN-SFP-PLUS-ER	10	LC	SMF	40 km	1550	<1.5	−5−70	−40−85	0−85
PAN-SFP-PLUS-LR	10	LC	SMF	10 km	1310	<1	−5−70	−40−85	0−85
PAN-T-S-PLUS-LR	10	LC	SMF	10 km	1310	<1	−5−70	−40−85	0−85
PAN-SFP-PLUS-SR	10	LC	MMF	300 m OM3 450 m OM4	850	<1	−5−70	−40−85	0−85
PAN-T-S-PLUS-SR	10	LC	MMF	300 m OM3 450 m OM4	850	<1	−5−70	−40−85	0−85
PAN-SFP-SX	1	LC	MMF	550 m	850	<0.5	−10−85	−40−85	0−85
PAN-T-S-SX	1	LC	MMF	550 m	850	<0.5	0−70	−40−85	5−95
PAN-SFP-ZX	1	LC	SMF	80 km	1550	<1.1	0−70	−40−85	5−95

Note: Minimum link distance for all connections is two meters. Palo Alto Networks policy regarding the use of third-party transceivers is posted on our Third-Party Components Support page.

Table 3: Transceiver and Cable Assembly Descriptions and Applicability

Palo Alto Networks Part Name (SKU)	Description	Platform Applicability
PAN-QSFP28-100GBASE-SR4	QSFP28 form factor, 100 Gb SR4 optical transceiver, short reach 100 m OM4 (70 m OM3), 8/12 strand MPO, MMF, IEEE 802.3ba 100GBASE-SR4 compliant	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-T-Q28-100GBASE-SR4	TAA compliant QSFP28 form factor, 100 Gb SR4 optical transceiver, short reach 100 m OM4 (70 m OM3), 8/12 strand MPO, MMF, IEEE 802.3ba 100GBASE-SR4 compliant	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-QSFP28-100GBASE-LR4	QSFP28 form factor, 100 Gb LR4 optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ba 100GBASE-LR4 compliant	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-T-Q28-100GBASE-LR4	TAA compliant QSFP28 form factor, 100 Gb LR4 optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ba 100GBASE-LR4 compliant	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-QSFP28-100GBASE-BIDI	QSFP+ form factor, 100 Gb bidirectional optical transceiver, 70 m reach over OM3 MMF, 100 m over OM4 MMF, duplex LC	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-QSFP28-100GBASE-CWDM4	QSFP28 form factor, 100 Gb CWDM4 optical transceiver, 2 km, SMF, duplex LC	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-QSFP28-100GBASE-ER4	QSFP28 form factor, 100 Gb ER4 optical transceiver, extended reach 25 km, SMF, duplex LC, IEEE 802.3ba 100GBASE-ER4 compliant	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-QSFP28-DAC-5M	QSFP28 form factor, 100 Gb direct attach passive cable with 2 transceiver ends and 5 m of cable permanently bonded as an assembly, IEEE 802.3bj 100GBASE-CR4 compliant	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-QSFP28-AOC-10M	QSFP28 form factor, 100 Gb active optical cable with 2 transceivers and 10 m of cable permanently bonded as an assembly	PA-7000 Series, PA-5400 Series, PA-5250, PA-5260, PA-5280, PA-3430, PA-3440
PAN-QSFP40G-BASE-ER4	QSFP+ form factor, 40 Gb ER4 optical transceiver, extended reach 40 km, SMF, duplex LC, IEEE 802.3ba 40GBASE-ER4 compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-QSFP40G-BASE-LR4	QSFP+ form factor, 40 Gb LR4 optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ba 40GBASE-LR4 compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-T-Q40GBASE-SR4	TAA compliant QSFP+ form factor, 40 Gb SR4 optical transceiver, short reach 100 m OM3, 8/12 strand MPO connector, IEEE 802.3ba 40GBASE-SR4 compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-QSFP40G-BASE-SR4	QSFP+ form factor, 40 Gb SR4 optical transceiver, short reach 100 m OM3, 8/12 strand MPO connector, IEEE 802.3ba 40GBASE-SR4 compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-T-Q40GBASE-LR4	TAA compliant QSFP+ form factor, 40 Gb LR4 optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ba 40GBASE-LR4 compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-QSFP40G-BASE-LM4	QSFP+ form factor, 40 Gb LM4 optical transceiver, long reach 140 m, OM3 MMF, duplex LC, IEEE 802.3ba 40GBASE-LR4 adaptation referred to as 40GBASE-LM4	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-QSFP40G-BASE-BIDI	QSFP+ form factor, 40 Gb bidirectional optical transceiver, 100 m reach over OM3 MMF, 150 m over OM4 MMF, duplex LC	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-QSFP-AOC-10M	QSFP+ form factor, 40 Gb active optical cable with 2 transceivers and 10 m of cable permanently bonded as an assembly	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3430, PA-3440, PA-3260
PAN-SFP28-25GBASE-SR	SFP28 form factor, SR 25 Gb optical transceiver, short reach 100 m, MMF, duplex LC, IEEE 802.3ae 25GBASE-SR compliant	PA-5410, PA-5420, PA-5430, PA-3400 Series
PAN-T-S28-25GBASE-SR	TAA Compliant SFP28 form factor, SR 25 Gb optical transceiver, short reach 100 m, MMF, duplex LC, IEEE 802.3ae 25GBASE-SR compliant	PA-5410, PA-5420, PA-5430, PA-3400 Series
PAN-SFP28-25GBASE-LR	SFP28 form factor, LR 25 Gb optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ca 25GBASE-LR compliant	PA-5410, PA-5420, PA-5430, PA-3400 Series
PAN-T-S28-25GBASE-LR	TAA Compliant SFP28 form factor, LR 25 Gb optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ca 25GBASE-LR compliant	PA-5410, PA-5420, PA-5430, PA-3400 Series
PAN-SFP-PLUS-10GBASE-T	SFP+ form factor, 10 Gb copper transceiver, 30 m over Cat6a RJ-45, IEEE 802.3an 10GBASE-T compliant	PA-7000 Series, PA-5450 NC only, PA-5440, PA-5430, PA-5420, PA-5410, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3060, PA-1400 Series, PA-850, ION 9200, ION 5200
PAN-SFP-PLUS-CU-5M	SFP+ form factor, 10 Gb direct attach twin-ax passive cable with 2 transceiver ends and 5 m of cable permanently bonded as an assembly, IEEE 802.3ae 10GBASE-CR compliant	PA-7000 Series, PA-5450 NC only, PA-5440, PA-5430, PA-5420, PA-5410, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3060, PA-1400 Series, PA-850, ION 9000, ION 7000

Table 3: Transceiver and Cable Assembly Descriptions and Applicability (continued)		
Palo Alto Networks Part Name (SKU)	**Description**	**Platform Applicability**
PAN-SFP-PLUS-ER	SFP+ form factor, ER 10 Gb optical transceiver, extended reach 40 km, SMF, duplex LC, IEEE 802.3ae 10GBASE-ER compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3060, PA-1400 Series, PA-850
PAN-SFP-PLUS-LR	SFP+ form factor, LR 10 Gb optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ae 10GBASE-LR compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3060, PA-1400 Series, PA-850, ION 9200, ION 9000, ION 7000, ION 5200
PAN-T-S-PLUS-LR	TAA compliant SFP+ form factor, LR 10 Gb optical transceiver, long reach 10 km, SMF, duplex LC, IEEE 802.3ae 10GBASE-LR compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3060, PA-850, ION 9200, ION 5200
PAN-SFP-PLUS-SR	SFP+ form factor, SR 10 Gb optical transceiver, short reach 300 m, OM3 MMF, duplex LC, IEEE	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3060, PA-1400 Series, PA-850, ION 9000, ION 9200, ION 5200
PAN-T-S-PLUS-SR	TAA compliant SFP+ form factor, SR 10 Gb optical transceiver, short reach 300 m, OM3 MMF, duplex LC, IEEE 802.3ae 10GBASE-SR compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3060, PA-1400 Series, PA-850, ION 9000, ION 9200, ION 5200
PAN-SFP-CG	SFP form factor, 1 Gb copper transceiver, 100 m over Cat5 RJ-45, IEEE 802.3ab 1000BASE-T compliant	PA-7000 Series, PA-5410, PA-5420, PA-5430, PA-5450 except for MPC log ports, PA-5000 Series, PA-5200 Series, PA-3400 Series, PA-3200 Series, PA-3000 Series, PA-1400 Series, PA-800 Series, PA-220R
PAN-T-S-CG	TAA compliant SFP form factor, 1 Gb copper transceiver, 100 m over Cat5, RJ-45, IEEE 802.3ab 1000BASE-T compliant	PA-7000 Series, PA-5410, PA-5420, PA-5430, PA-5400 Series except for MPC, log ports on PA-5450, PA-5000 Series, PA-5200 Series, PA-3400 Series, PA-3200 Series, PA-3000 Series, PA-1400 Series, PA-800 Series, PA-220R
PAN-SFP-LX	SFP form factor, LX 1 Gb optical transceiver, 10 km reach, SMF, duplex LC, IEEE 802.3ab 1000BASE-LX compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3000 Series, PA-1400 Series, PA-800 Series, PA-445, PA-415, PA-220R, ION 9200, ION 9000, ION 7000, ION 5200, ION 3200, ION 1200-S
PAN-T-S-LX	TAA compliant SFP form factor, LX 1 Gb optical transceiver, 10 km reach, SMF, duplex LC, IEEE 802.3ab 1000BASE-LX compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3000 Series, PA-1400 Series, PA-800 Series, PA-445, PA-415, PA-220R, ION 9200, ION 5200, ION 3200, ION 1200-S
PAN-SFP-SX	SFP form factor, SX 1 Gb optical transceiver, 550 m reach on OM2 MMF, duplex LC, IEEE 802.3z 1000BASE-SX compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3000 Series, PA-1400 Series, PA-800 Series, PA-445, PA-415, PA-220R, ION 9200, ION 9000, ION 7000, ION 5200, ION 3200, ION 1200-S
PAN-T-S-SX	TAA compliant SFP form factor, SX 1 Gb optical transceiver, 550 m reach on OM2 MMF, duplex LC, IEEE 802.3z 1000BASE-SX compliant	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3000 Series, PA-1400 Series, PA-800 Series, PA-445, PA-415, PA-220R, ION 9200, ION 5200, ION 3200, ION 1200-S
PAN-SFP-ZX	SFP form factor, ZX 1 Gb optical transceiver, 80 km reach, SMF, duplex LC	PA-7000 Series, PA-5400 Series, PA-5200 Series, PA-5000 Series, PA-3400 Series, PA-3200 Series, PA-3000 Series, PA-1400 Series, PA-800 Series, PA-445, PA-415, PA-220R, ION 9200, ION 5200, ION 3200, ION 1200-S

Note: Only models or series cited are supported. Unlisted models or series are not supported.

Refer to the SFF-8024 Specification for SFF Cross Reference to Industry Products for a list of applicable SFF documents. SFF specifications are available at http://www.snia.org/sff/specifications or ftp://ftp.seagate.com/sff.

Through the IEEE Standards Association as well as industry and government support, select IEEE standards are available for download at no charge. You can also purchase the IEEE Standard for Ethernet.