

DATA SHEET

Fortinet Transceivers

Available in:



Appliance

Transceiver Modules for Fortinet Products

Take the Guesswork Out of Selecting Transceivers

Common connectivity problems in enterprise and data center networks are often traced back to low-quality and incompatible transceiver modules, rather than a fault in the network appliances themselves. Fortinet's transceivers have been purpose-built and tested to work with Fortinet equipment, ensuring that your network is as stable and robust as possible, and taking the guesswork out of selecting compatible transceivers.

Wide Range for Maximum Flexibility

Supporting various form factors, media types, and throughput, Fortinet transceivers provide connectivity options to meet many different network architectures and deployment scenarios. Whether your network demands high-speed 100 GE inside the data center, or long-range 1 GE to connect data centers in different cities, Fortinet has a transceiver to meet your needs.



Highlights

- Copper and optical options
- Supports
 - SFP
 - SFP+
 - SFP28
 - QSFP+
 - DAC
 - CFP2
 - QSFP28
- Performance from 1 Gbps to 100 Gbps
- Tested for compatibility with Fortinet appliances

Key Features and Benefits

Various Interface Options

Fortinet transceivers support various interfaces including: SFP, SFP+, DAC, and newer high-speed standards including SFP28, QSFP+, CFP2, and QSFP28.

Tested for Compatibility

You can rest assured that your Fortinet transceivers have been tested for compatibility on Fortinet products, taking the guesswork out of selecting transceivers for your environment.

Maximize Network Uptime

Eliminate connectivity problems to maximize network uptime by using quality transceivers, designed to work with Fortinet products.

Cost Effective

Transceiver modules can be expensive, especially those with sensitive high-speed optics. Fortinet delivers high-quality transceivers, while keeping cost to a minimum.

QUICK REFERENCE MATRIX

	SFP (100MBPS)	SFP (GE)	SFP+ (10 GE)	SFP28 (25 GE)	QSFP+ (40 GE)	CFP2 (100 GE)	QSFP28 (100 GE)
Maximum Transmission Distance							
10 Meter			SP-CABLE-ADASFP+				
30 Meter			FN-TRAN-SFP+GC				
100 Meter		FN-TRAN-GC FS-TRAN-GC		FN-TRAN-SFP28-SR	FN-TRAN-QSFP+SR & FG-TRAN-QSFP+SR-BIDI (on OM3 MMF)	FG-TRAN-CFP2-SR10	FN-TRAN-QSFP28-SR
150 Meter					FN-TRAN-QSFP+SR & FG-TRAN-QSFP+SR-BIDI (on OM4 MMF)		
220 Meter		FN-TRAN-SX (62.5/125 μm) FR-TRAN-SX (62.5/125 μm)					
300 Meter			FN-TRAN-SFP+SR				
500 Meter		FN-TRAN-SX (50/125 μm) FR-TRAN-SX (50/125 μm)					FN-TRAN-QSFP28-DR
2 Kilometer	FS-TRAN-FX						FN-TRAN-QSFP28- CWDM4
10 Kilometer		FN-TRAN-LX	FN-TRAN-SFP+LR	FG-TRAN-SFP28-LR	FN-TRAN-QSFP+LR	FG-TRAN-CFP2-LR4	FN-TRAN-QSFP28-LR
20 Kilometer							FN-TRAN-QSFP28-ER
40 Kilometer			FN-TRAN-SFP+ER		FN-TRAN-QSFP+ER		
80 Kilometer			FN-TRAN-SFP+ZR				
90 Kilometer		FR-TRAN-ZX					

Transceivers

HARDWARE	FS-TRAN-FX	FN-TRAN-GC / FS-TRAN-GC	FN-TRAN-SX	FR-TRAN-SX	FN-TRAN-LX	FR-TRAN-ZX
Protocol Standard	100Base-FX	1000Base-T	1000Base-SX	1000Base-SX	1000Base-LX	1000Base-LX
IEEE Standard	802.3u	802.3ab	802.3z	802.3z	802.3z	802.3z
Module Type	SFP	SFP	SFP	SFP	SFP	SFP
Data Link Rate for Ethernet	100Mbps	1.25 Gbps	1.25 Gbps	1.25 Gbps	1.25 Gbps	1.25 Gbps
Transmission Range	2km	100m	220m / 500m	500m	10km	90km
Media	MM	Copper interface	MM	MM	SM	SM
Wavelength (nm)	1310		850	850	1310	1550
Connector Type	Duplex LC	RJ-45	Duplex LC	Duplex LC	Duplex LC	Duplex LC
Power Dissipation	<1.1W	1.05W	< 800mW	< 500mW	< 830mW	< 700mW
Operating Temperature	-40°C to 85°C	0°–85°C	0°–70°C	-40°–85°C	-40°–85°C	-40°–85°C
Hot Plug	Yes	Yes	Yes	Yes	Yes	Yes
Serial ID PROM	Yes	Yes	Yes	Yes	Yes	Yes
Digital Monitoring	Yes	No	Yes	Yes	Yes	Yes
Auto Negotiation	Yes	Yes	Yes	Yes	Yes	Yes
Link Status	Yes	Yes	Yes	Yes	Yes	Yes

HARDWARE	FN-TRAN-SFP+GC	FN-TRAN-SFP+SR	FN-TRAN-SFP+LR	FN-TRAN-SFP+ER	FN-TRAN-SFP+ZR
Protocol Standard	10GBASE-T	10GBase-SR	10GBase-LR	10GBASE-ER	10G-Base-ZR
IEEE Standard	802.3an	802.3ae	802.3ae	802.3ae	802.3ae
Module Type	SFP+	SFP+	SFP+	SFP+	SFP+
Data Link Rate for Ethernet	10 Gbps	10 Gbps	10 Gbps	11.3 Gbps	11.3 Gbps
Transmission Range	30m (Cat6A or better)	300m	10km	40km	80km
Media	Copper interface	MM	SM	SM	SM
Wavelength (nm)	—	850	1310	1550	1550
Connector Type	RJ-45	Duplex LC	Duplex LC	Duplex LC	Duplex LC
Power Dissipation	2.5W	600mW	850mW	1.5W	< 1.5W
Operating Temperature	-5°–85°C	0°–70°C	0°–85°C	-5°–70°C	-5°–70°C
Hot Plug	Yes	Yes	Yes	Yes	Yes
Serial ID PROM	Yes	Yes	Yes	Yes	Yes
Digital Monitoring	No	Yes	Yes	Yes	Yes
Auto Negotiation	Yes	Yes	Yes	Yes	Yes
Link Status	Yes	Yes	Yes	Yes	Yes



SPECIFICATIONS

Transceivers

HARDWARE	FN-TRAN-SFP28-SR	FG-TRAN-SFP28-LR	FN-TRAN-QSFP+SR	FN-TRAN-QSFP+LR	FN-TRAN-QSFP+ER	FG-TRAN-QSFP+SR BiDi
Protocol Standard	25GBase-SR, 10GBase-SR	25GBase-LR	40GBase-SR4	40GBase-LR4	40G-Base-ER4	40GBase-SR-BiDi
IEEE Standard	802.3by, 802.3ae	802.3cc	802.3ba	802.3ba	802.3bm	802.3ba
Module Type	SFP28	SFP28	QSFP+	QSFP+	QSFP+	QSFP+
Data Link Rate for Ethernet	25.78 / 10.3 Gbps	25.78 Gbps	1.06 Gbps–41.2 Gbps	41.2 Gbps	41.3 Gbps	41.2 Gbps
Transmission Range	100m	10km	100m (OM3)–150m (OM4)	10km	40km	100m (OM3)–150m (OM4)
Media	MM	SM	MM	SM	SM	MM
Wavelength (nm)	850	1310	750–980	1264.5 - 1277.5 1284.5 - 1297.5 1304.5 - 1317.5 1324.5 - 1337.5	1264.5 - 1277.5 1284.5 - 1297.5 1304.5 - 1317.5 1324.5 - 1337.5	850–900
Connector Type	Duplex LC	Duplex LC	Single 1×12 MPO	Duplex LC	Duplex LC	Duplex LC
Power Dissipation	1.2W	1.5W	< 1.5W	< 3.5W	< 3.5W	< 3.5W
Operating Temperature	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C
Hot Plug	Yes	Yes	Yes	Yes	Yes	Yes
Serial ID PROM	Yes	Yes	Yes	Yes	Yes	Yes
Digital Monitoring	Yes	Yes	Yes	Yes	Yes	Yes
Auto Negotiation	No	No	Yes	Yes	Yes	Yes
Link Status	Yes	Yes	Yes	Yes	Yes	Yes

HARDWARE	FG-TRAN-CFP2-SR10	FG-TRAN-CFP2-LR4	FN-TRAN-QSFP28-SR	FN-TRAN-QSFP28-LR	FN-TRAN-QSFP28-ER	FN-TRAN-QSFP28-DR	FN-TRAN-QSFP28-CWDM4
Protocol Standard	100GBase-SR10	100GBase-LR4	100GBase-SR4	100GBase-LR4	100G-Base-LR4	100G-Base-DR	100GBase-CWDM4
IEEE Standard	802.3ba	802.3ba	802.3bm	802.3ba	802.3ba/bm	802.3bm/cd/cu	802.3bm
Module Type	CFP2	CFP2	QSFP28	QSFP28	QSFP28	QSFP28	QSFP28
Data Link Rate for Ethernet	103.12 Gbps	103.1 Gbps	103.1 Gbps	103.1 Gbps	103.1 Gbps	103.1 Gbps	103.1 Gbps
Transmission Range	100m (OM3)–150m (OM4)	10km	100m (OM4)	10km (SMF)	20km	500m	2km
Media	MM	SM	MM	SM	SM	SM	SM
Wavelength (nm)	850	1310	850	1310	1294.53 - 1296.59 1299.02 - 1301.09 1303.54 - 1305.63 1308.09 - 1310.19	1304.5 - 1317.5	1264.5 - 1277.5 1284.5 - 1297.5 1304.5 - 1317.5 1324.5 - 1337.5
Connector Type	24 fiber MPO	Duplex LC	MPO12	Duplex LC	Duplex LC	Duplex LC	Duplex LC
Power Dissipation		< 8W	< 3.5W	< 3.5W	< 3.5W	< 4.5W	< 3.5W
Operating Temperature	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C
Hot Plug	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serial ID PROM	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Digital Monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auto Negotiation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Link Status	Yes	Yes	Yes	Yes	Yes	Yes	Yes



SPECIFICATIONS

BREAKOUT CABLES	FG-TRAN-QSFP-4XSFP	FG-TRAN-QSFP-4SFP-5	FG-CABLE-SR10-SFP+	FG-CABLE-SR10-SFP+5
Hardware				
Connector A	1× 40 GE QSFP+	1× 40 GE QSFP+	1× 100 GE SR10 CFP2	1× 100 GE SR10 CFP2
Connector A Type	MPO	MPO	MPO	MPO
Connector B	4× 10 GE SFP+	4× 10 GE SFP+	10× 10 GE SFP+	10× 10 GE SFP+
Connector B Type	LC duplex	LC duplex	LC duplex	LC duplex
Cable Length	1m	5m	1m	5m
Cable Type	OM3 MMF	OM3 MMF	OM3 MMF	OM3 MMF
Transceiver	Not included	Not included	Not included	Not included

Fortinet Breakout Cables — Qualified on Fortinet Products (on applicable interfaces)

DIRECT ATTACH CABLES	SP-CABLE-FS-SFP+1	SP-CABLE-FS-SFP+3	SP-CABLE-FS-SFP+5	SP-CABLE-FS-SFP+7	SP-CABLE-ADASFP+
Hardware					
Protocol Standard	SFP+ MSA	SFP+ MSA	SFP+ MSA	SFP+ MSA	SFP+ MSA
Data Link Rate for Ethernet	up to 10 Gbps	up to 10 Gbps	up to 10 Gbps	up to 10 Gbps	1 Gbps to 10 Gbps
Module Type	SFP+	SFP+	SFP+	SFP+	SFP+
Power Dissipation	< 0.5W	< 0.5W	< 0.5W	< 0.5W	< 0.5W
Operating Temperature	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C
Hot Plug	Yes	Yes	Yes	Yes	Yes
Cable Length	1m	3m	5m	7m	10m
Cable Type	Twinax Copper Passive	Twinax Copper Passive	Twinax Copper Passive	Twinax Copper Passive	Twinax Copper Active
Transceiver	Included	Included	Included	Included	Included
Compliance	RoHS	RoHS	RoHS	RoHS	RoHS
Bend Radius	25mm (30AWG)	25mm (30AWG)	25mm (30AWG)	25mm (30AWG)	25mm (30AWG)
Cable Diameter	4.5mm	4.5mm	4.5mm	4.5mm	4.5mm
Digital Monitoring	N/A	N/A	N/A	N/A	Yes

DIRECT ATTACH CABLES	SP-CABLE-FS-QSFP+1	SP-CABLE-FS-QSFP+3	SP-CABLE-FS-QSFP+5	FN-CABLE-QSFP28-1	FN-CABLE-QSFP28-2	FN-CABLE-QSFP28-3
Hardware						
Protocol Standard	QSFP+ SFF8436	QSFP+ SFF8436	QSFP+ SFF8436	QSFP28 SFF-8665/ SFF-8636	QSFP28 SFF-8665/ SFF-8636	QSFP28 SFF-8665/ SFF-8636
Data Link Rate for Ethernet	40 Gbps	40 Gbps	40 Gbps	100 Gbps	100 Gbps	100 Gbps
Module Type	QSFP+	QSFP+	QSFP+	QSFP28	QSFP28	QSFP28
Power Dissipation	< 0.5W	< 0.5W	< 0.5W	< 0.1W	< 0.1W	< 0.1W
Operating Temperature	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C	0°–70°C
Hot Plug	Yes	Yes	Yes	Yes	Yes	Yes
Cable Length	1m	3m	5m	1m	2m	3m
Cable Type	Twinax Copper Passive	Twinax Copper Passive	Twinax Copper Passive	Twinax Copper Passive	Twinax Copper Passive	Twinax Copper Passive
Transceiver	Included	Included	Included	Included	Included	Included
Compliance	RoHS	RoHS	RoHS	RoHS	RoHS	RoHS
Bend Radius	25mm (30AWG)	25mm (30AWG)	25mm (30AWG)	25mm (30AWG)	25mm (30AWG)	25mm (30AWG)
Cable Diameter	6.4mm	6.4mm	6.4mm	6.4mm	6.4mm	6.4mm
Digital Monitoring	N/A	N/A	N/A	N/A	N/A	N/A



ORDER INFORMATION

Product	SKU	Description
1 GE SFP LX transceiver module, long range	FN-TRAN-LX	1 GE SFP LX transceiver module, 10km range, -40°C to 85°C, over SMF, for systems with SFP and SFP/SFP+ slots.
1 GE SFP RJ45 transceiver module	FN-TRAN-GC	1 GE SFP RJ45 transceiver module for systems with SFP and SFP/SFP+ slots.
1 GE SFP RJ45 transceiver module	FS-TRAN-GC	1 GE SFP RJ45 transceiver module for FortiSwitch with SFP and SFP/SFP+ slots.
1 GE SFP SX transceiver module, short range	FN-TRAN-SX	1 GE SFP SX transceiver module for systems with SFP and SFP/SFP+ slots.
10 GE SFP+ transceiver module, short range	FN-TRAN-SFP+SR	10 GE SFP+ transceiver module, short range for systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ transceiver module, long range	FN-TRAN-SFP+LR	10 GE SFP+ transceiver module, 10km range for systems with SFP+ and SFP/SFP+ slots.
25 GE SFP28 transceiver module, long range	FG-TRAN-SFP28-LR	25 GE SFP28 transceiver module, 10km range for systems with SFP28 slots.
25 GE/10 GE dual rate SFP28 transceiver module, short range	FN-TRAN-SFP28-SR	25 GE/10 GE dual rate SFP28 transceiver module, short range for systems with SFP28/SFP+ slots.
40 GE QSFP+ transceiver module, short range	FN-TRAN-QSFP+SR	40 GE QSFP+ transceiver module, short range for systems with QSFP+ slots.
40 GE QSFP+ transceiver module, extended range	FN-TRAN-QSFP+ER	40 GE QSFP+ transceiver module, 40km range for systems with QSFP+ slots.
40 GE QSFP+ transceiver module, short range, BiDi	FG-TRAN-QSFP+SR-BIDI	40 GE QSFP+ transceiver module, short range BiDi for systems with QSFP+ slots.
40 GE QSFP+ transceiver module, long range	FN-TRAN-QSFP+LR	40 GE QSFP+ transceiver module, 10km range for systems with QSFP+ slots.
10 GE SFP+ active direct attach cable, 10m/32.8 ft	SP-CABLE-ADASFP+	10 GE SFP+ active direct attach cable, 10m / 32.8ft for systems with SFP+ and SFP/SFP+ slots.
100 GE CFP2 transceiver module, long range	FG-TRAN-CFP2-LR4	100 GE CFP2 transceiver module, 10km range, over single mode fiber, for systems with CFP2 slots.
100 GE CFP2 transceiver module, short range	FG-TRAN-CFP2-SR10	100 GE CFP2 transceiver module, 10 channel parallel fiber, short range for systems with CFP2 slots.
100 GE QSFP28 transceiver module, short range	FN-TRAN-QSFP28-SR	100 GE QSFP28 transceiver module, 4 channel parallel fiber, short range for systems with QSFP28 slots.
100 GE QSFP28 transceiver module, long range	FN-TRAN-QSFP28-LR	100 GE QSFP28 transceiver module, 10km range for systems with QSFP28 slots.
100 GE QSFP28 transceiver module, extended range	FN-TRAN-QSFP28-ER	100 GE QSFP28 transceiver module, 20km range, for systems with QSFP28 slots.
100 GE QSFP28 transceiver module, short range	FN-TRAN-QSFP28-DR	100GE QSFP28 transceiver module, single channel single-mode fiber, 100GBase-DR for systems with QSFP28 slots.
100 GE QSFP28 transceiver module, CWDM	FN-TRAN-QSFP28-CWDM4	100GE QSFP28 transceiver module, CWDM, LC connectors, 2km range, for systems with QSFP28 slots.
10 GE SFP+ transceiver module, extended range	FN-TRAN-SFP+ER	10 GE SFP+ transceiver module, 40km range for systems with SFP+ slots.
10 GE SFP+ transceiver module, extended range	FN-TRAN-SFP+ZR	10 GE SFP+ transceiver module, 80km range, for systems with SFP+ slots.
1 GE SFP SX transceiver module, MMF, -40°~85°C operation	FR-TRAN-SX	1 GE SFP SX transceiver module, -40°~85°C, over MMF, for systems with SFP and SFP/SFP+ slots.
1 GE SFP transceiver module, 90 km range, -40°~85°C operation	FR-TRAN-ZX	1 GE SFP transceiver module, -40°~85°C operation, 90km range for systems with SFP slots.
10 GE copper SFP+ RJ45 transceiver module, 30m range	FN-TRAN-SFP+GC	10 GE copper SFP+ RJ45 Fortinet transceiver module (30m range) for systems with SFP+ slots.
100Mb SFP transceiver module, short range	FS-TRAN-FX	100Mb multimode SFP transceiver module, -40° to 85°C, 2km range for systems with SFP Slots and capable of 10/100Mb mode selection
40 GE QSFP+ to 4× 10 GE SFP+ optical breakout, 1m	FG-TRAN-QSFP-4XSFP	40 GE QSFP+ parallel breakout MPO to 4x LC connectors, 1m reach, transceiver module not included.
40 GE QSFP+ to 4× 10 GE SFP+ optical breakout, 5m	FG-TRAN-QSFP-4SFP-5	40 GE QSFP+ parallel breakout MPO to 4x LC connectors, 5m reach, transceiver module not included.
100 GE SR10 to 10× 10 GE fan out cable, 1m	FG-CABLE-SR10-SFP+	100 GE CFP2/QSFP28 parallel breakout MPO to 10x LC connectors, 1m reach, transceiver module not included.
100 GE SR10 to 10× 10 GE fan out cable, 5m	FG-CABLE-SR10-SFP+5	100 GE CFP2/QSFP28 parallel breakout MPO to 10x LC connectors, 5m reach, transceiver module not included.
100 GE passive direct attach cable 1m	FN-CABLE-QSFP28-1	100 GE QSFP28 passive direct attach cable 1m for systems with QSFP28 slots.
100 GE passive direct attach cable 2m	FN-CABLE-QSFP28-2	100 GE QSFP28 passive direct attach cable 2m for systems with QSFP28 slots.
100 GE passive direct attach cable 3m	FN-CABLE-QSFP28-3	100 GE QSFP28 passive direct attach cable 3m for systems with QSFP28 slots.
10 GE SFP+ passive direct attach cable 1m	SP-CABLE-FS-SFP+1	10 GE SFP+ passive direct attach cable, 1m for systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ passive direct attach cable 3m	SP-CABLE-FS-SFP+3	10 GE SFP+ passive direct attach cable, 3m for systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ passive direct attach cable 5m	SP-CABLE-FS-SFP+5	10 GE SFP+ passive direct attach cable, 5m for systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ passive direct attach cable 7m	SP-CABLE-FS-SFP+7	10 GE SFP+ passive direct attach cable, 7m for systems with SFP+ and SFP/SFP+ slots.
40 GE QSFP+ passive direct attach cable 1m	SP-CABLE-FS-QSFP+1	40 GE QSFP+ passive direct attach cable, 1m for systems with QSFP+ slots.
40 GE QSFP+ passive direct attach cable 3m	SP-CABLE-FS-QSFP+3	40 GE QSFP+ passive direct attach cable, 3m for systems with QSFP+ slots.
40 GE QSFP+ passive direct attach cable 5m	SP-CABLE-FS-QSFP+5	40 GE QSFP+ passive direct attach cable, 5m for systems with QSFP+ slots.


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