Ruckus Ethernet Optics

High Quality Transceivers for Ruckus Switches and APs

DATA SHEET

BENEFITS

GUARANTEED COMPATIBILITY AND COMPLIANCE

- We guarantee compatibility with Ruckus switches and APs and full compliance with industry standards. That's something you don't get from generic transceivers.
- Standards-based—802.3z, 802.3ah, 802.3u, 802.3ae, 802.3ak, and 802.3ba—and compliant as required
- Compliant with Restrictions on Hazardous Substances (RoHS), meeting RoHS 6 EU standards

FACTORY TESTED

- Every batch of Ruckus transceivers is factory tested, so you're assured that they function properly and reliably

EASY TO DEPLOY AND UPGRADE

- Hot-swappable flexibility in the field for greater ease and lower total cost of ownership

HIGHLY RELIABLE, RUCKUS-QUALIFIED OPTICS

Ruckus offers a unique set of high-performance, reliable, and cost-effective optical transceivers to help enterprises and service providers meet the challenges of diverse network topologies. To ensure maximum quality, Ruckus selects and tests the most reliable, highest-performing optical transceivers on the market, and then warrants their availability, capacity, and performance in Ruckus® product.

Extensive performance and reliability testing reflects an ongoing commitment to quality. Ruckus tests transceivers using the industry's most advanced tools and instruments to help ensure that they provide the right mix of functionality and performance when used in conjunction with Ruckus products. The speed, capacity, reliability, and low cost of ownership that Ruckus is known for is also provided in all optical components.

By using Ruckus-qualified components, organizations can be assured that their quality, warranty and service requirements will be met and that their Ruckus products will continually provide the uptime, performance, and reliability required by today's leading enterprise service providers.

RUCKUS GLOBAL SERVICES

Ruckus Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 20 years of expertise in storage, networking, and virtualization, Ruckus Global Services delivers world-class professional services, technical support, network monitoring services, and education, enabling organizations to maximize their Ruckus investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

MAXIMIZING INVESTMENTS

To help optimize technology investments, Ruckus and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Ruckus sales partner or visit www.ruckuswireless.com.

ETHERNET OPTICS FAMILY FEATURES

The Ruckus Ethernet optics family includes several offerings designed to meet the performance and scalability requirements of service provider and enterprise environments.

100 MBE OPTICS	
• 100 Megabit Ethernet (MbE) transceivers support link lengths from 2Km to 40Km • Both SMF and MMF fiber types	• RoHS 5 and 6 compliant • Enterprise switching and routing
1 GBE OPTICS	
• 1GbE transceivers support link lengths from 300m to 100Km • Both SMF and MMF fiber types • Coarse Wavelength Division Multiplexing (CWDM) support for distances of 80Km to 100Km	• RoHS 5 and 6 compliant • For core routers and security applications
10 GBE OPTICS	
• 10GbE transceivers support link lengths of 26m to 80Km • Protocol-independent • Less than one-third the power and size of MSA optic • Hot-swappable • Digital Optical Monitoring (DOM) support	• RoHS 5 and 6 compliant • Application delivery and acceleration • High-Performance Computing (HPC) interconnects • Service provider traffic management
40 GBE QSFP+ OPTICS	
• 40GbE transceivers support link lengths from 100 m to 40Km • Hot-pluggable • Industry-standard QSFP+	• Digital Optical Monitoring (DOM) support • High-density 40GbE connectivity options for data center, enterprise, and service provider applications
100 GBE QSFP+ OPTICS	
• 100GbE transceivers support link lengths up to 40Km • Hot-pluggable • Industry-standard QSFP+	• Digital Optical Monitoring (DOM) support • Carrier, service provider, and cloud services • Enterprise campus core routing • RoHS 6 compliant

Specifications subject to change.

PRODUCT SUPPORT FOR FAST ETHERNET

	ICX 7000 Series					ICX 6000 Series		
FAST ETHERNET OPTICS	**ICX 7150**	**ICX 7250**	**ICX 7450**	**ICX 7650**	**ICX 7750**	**ICX 6430**	**ICX 6450**	**ICX 6610**
E1MG-100FX-OM			●	●		●	●	●[1]
E1MG-100FX-A			●	●				
E1MG-100FX-IR-OM			●	●				●[1]
E1MG-100FX-LR-OM			●	●				●[1]

[1] Available only with Ruckus ICX 6610-24F.

PRODUCT SUPPORT FOR 1 GIGABIT ETHERNET

	ICX 7000 Series					ICX 6000 Series			Wi-Fi Access Points	
1 GBE FIBER OPTICS	**ICX 7150**	**ICX 7250**	**ICX 7450**	**ICX 7650**	**ICX 7750**	**ICX 6430**	**ICX 6450**	**ICX 6610**	**T710**	**T811cm**
E1MG-SX-OM	●	●	●	●	●	⊙[1]	●	●	●	●
E1MG-SX-OM-T	●	●	●	●	●	⊙[1]	●	●	●	●
E1MG-SX-A	●	●	●	●	●	⊙[1]	●	●	●	●
E1MG-LX-OM	●	●	●	●	●	●	●	●	●	●
E1MG-LX-OM-T	●	●	●	●	●	⊙[1]	●	●	●	●
E1MG-LX-A	●	●	●	●	●				●	●
E1MG-LHA-OM						●	●	●	●	●
E1MG-LHA-OM-T	●	●	●	●	●				●	●
E1MG-BXD	●	●	●	●	●[2]	●	●	●	●	●
E1MG-BXU	●	●	●	●	●[2]	●	●	●	●	●
E1MG-TX	●	●	●	●	●	⊙[1]	●	●		
E1MG-TX-A	●	●	●	●	●	⊙[1]	●	●		
E1MG-CWDM80-XXXX								●		
1G-SFP-TWX-XXXX	●	●	●	●		⊙[1]	●			

⊙ Optics supported for both stacking links and Ethernet data links.
● Optics supported for Ethernet data links only (i.e. not for stacking).
[1] Stacking is not supported on the Ruckus ICX 6430 12-port compact switch.
[2] Requires FI software 8.0.30b or later.

Specifications subject to change.

PRODUCT SUPPORT FOR 10 GIGABIT ETHERNET

	ICX 7000 Series					ICX 6000 Series		
10 GBE FIBER OPTICS	**ICX 7150**	**ICX 7250**	**ICX 7450**	**ICX 7650**	**ICX 7750**	**ICX 6430**	**ICX 6450**	**ICX 6610**
10G-SFPP-USR	⊙	⊙	⊙	●	●		⊙[2]	●
10G-SFPP-USR-SA	⊙	⊙	⊙	●	●			
10G-SFPP-SR	⊙	⊙	⊙	●	●		⊙[1]	●
10G-SFPP-SR-SA	⊙	⊙	⊙	●	●			
10G-SFPP-SR-S	⊙	⊙	⊙	●	●			
10G-SFPP-LR	⊙	⊙	⊙	●	●		●	●
10G-SFPP-LR-SA	⊙	⊙	⊙	●	●			
10G-SFPP-LR-S	⊙	⊙	⊙	●	●			
10G-SFPP-ER	●	●	●	●	●		●	●
10G-SFPP-ZR	●	●	●	●	●			
10G-SFPP-LRM			●	●			⊙[1]	●
10G-SFPP-LRM-X-ADP	●[2]	●[2]			●[2]			
10G-SFPP-BXD-S	⊙	⊙	⊙	●	●			
10G-SFPP-BXU-S	⊙	⊙	⊙	●	●			
10G-SFPP-TWX-XXXX	⊙	⊙	⊙	●	●		●	⊙
10G-SFPP-TWX-P-XXXX	⊙[3]	⊙	⊙	●	●			
10GE-SFPP-AOC-XXXX	●	●	⊙	●	●			

⊙ Optics supported for both stacking links and Ethernet data links.
● Optics supported for Ethernet data links only (i.e. not for stacking).
[1] Stacking is not supported on the Ruckus ICX 6430 12-port compact switch.
[2] Requires FI software 8.0.61 or later.
[3] Stacking not supported with the 5-meter passive cable on the 7150.

Specifications subject to change.

PRODUCT SUPPORT FOR 40 GIGABIT ETHERNET

	ICX 7000 Series					ICX 6000 Series		
40 GBE FIBER OPTICS	**ICX 7150**	**ICX 7250**	**ICX 7450**	**ICX 7650**	**ICX 7750**	**ICX 6430**	**ICX 6450**	**ICX 6610**
E40G-QSFP-SR4			⊙	⊙	⊙			
E40G-QSFP-SR4-INT				●	●			
E40G-QSFP-ESR4			●	●	⊙			
E40G-QSFP-LR4			⊙	⊙	⊙			
E40G-QSFP-LR4-INT				●	●			
E40G-QSFP-LM4			●	⊙	⊙			
E40G-QSFP-ER4			●	⊙	⊙			
E40G-QSFP-SR-BIDI			●	⊙	⊙			
E40G-QSFP-4SFP-C-XXXX					●			
E40G-QSFP-4SFP-AOC-XXXX					●			
E40G-QSFP-QSFP-C-XXXX			⊙	⊙	⊙			
E40G-QSFP-C-XXXXX			⊙[1]	⊙[1]	⊙[1]			○
40G-QSFP-C-005XX			⊙	⊙	⊙			○
E40G-QSFP-QSFP-P-XXXX			⊙	⊙	⊙			○
E40G-QSFP-QSFP-AOC-XXXX			●	⊙	⊙			

⊙ Optics supported for both stacking links and Ethernet data links.
● Optics supported for Ethernet data links only (i.e. not for stacking).
○ 40 GbE ports on the Ruckus ICX 6610 are supported for stacking only.
[1] Stacking not supported with the 5-meter passive cable.

PRODUCT SUPPORT FOR 100 GIGABIT ETHERNET

	ICX 7000 Series					ICX 6000 Series		
100 GBE FIBER OPTICS	**ICX 7150**	**ICX 7250**	**ICX 7450**	**ICX 7650**	**ICX 7750**	**ICX 6430**	**ICX 6450**	**ICX 6610**
E100G-QSFP28-SR4				⊙				
E100G-QSFP-ESR4				⊙				
E100G-QSFP28-LR4L-2KM				⊙				
E100G-QSFP28-LR4-10KM				⊙				
E100G-QSFP28-LR4-LP-10KM				⊙				
E100G-QSFP28-CWDM4-2KM				●				
E100G-QSFP-QSFP-AOC-XXXX				⊙				
E100G-QSFP-QSFP-P-XXXX				⊙				

⊙ Optics supported for both stacking links and Ethernet data links.
● Optics supported for Ethernet data links only (i.e. not for stacking).

Specifications subject to change.

KEY STANDARDS AND FEATURES

PART NUMBER	IEEE Standards	Domestic Safety Standards	International Safety Standards	Wavelength (nm)	Fiber Type	Maximum Cable Distance	Digital Optical Monitoring
FAST ETHERNET							
E1MG-100FX-OM E1MG-100FX-A	802.3u	FDA 21CFR 1040.10 Class 1, CSA 60950-1-03/ UL 60950-1	EN 60825-1, EN 60950-1	1,310	MMF	2Km	Yes
E1MG-100FX-IR-OM	802.3			1,310	SMF	15Km	Yes
E1MG-100FX-LR-OM	802.3			1,310	SMF	40Km	Yes
1 GBE FIBER							
E1MG-SX-OM/ E1MG-SX-OM-T E1MG-SX-A	802.3z	FDA 21CFR 1040.10 Class 1, CSA 60950-1-03/ UL 60950-1	EN 60825-1, EN 60950-1	850	MMF	220m to 550m	Yes
E1MG-LX-OM/ E1MG-LX-OM-T E1MG-LX-A	802.3z			1,310	MMF/SMF	550m to 10Km	Yes
E1MG-LHA-OM/ E1MG-LHA-OM-T	802.3z			1,550	SMF	70Km	Yes
E1MG-BXD	802.3ah			TX: 1,490 RX: 1,310		10Km	No
E1MG-BXU	802.3ah			TX: 1,310 RX: 1,490		10Km	No
E1MG-CWDM80-XXXX	802.3z			1,470 to 1,610		80Km	No
1000BASE-T COPPER							
E1MG-TX	802.3ab	CSA 60950-1-03/ UL	EN 60950-1	N/A	Cat5	100m	N/A
1G-SFP-TWX-0x01	802.3z	Direct Attach SFP copper cables				1m, 5m	No
10 GBE FIBER							
10G-SFPP-USR	N/A	FDA 21CFR 1040.10 Class 1, CSA 60950-1-03/ UL 60950-1	EN 60825-1, EN 60950-1	850	MMF	100m	Yes
10G-SFPP-SR	802.3ae			850	MMF	26m to 300m	
10G-SFPP-LR	802.3ae			1,310	SMF	10Km	
10G-SFPP-ER	802.3ae			1,550	SMF	40Km	
10G-SFPP-ZR	802.3ae			1,550	SMF	80Km	
10G-SFPP-BXD-S	802.3ae			1330-TX/ 1270-RX	SMF	10Km	
10G-SFPP-BXU-S	802.3ae			1270-TX/ 1330-RX	SMF	10Km	
10G-SFPP-LRM	802.3ae			1,310	OM3 MMF OM4 MMF	220m 300m	

Specifications subject to change.

KEY STANDARDS AND FEATURES

	IEEE Standards	Domestic Safety Standards	International Safety Standards	Wavelength (nm)	Fiber Type	Maximum Cable Distance	Digital Optical Monitoring
PART NUMBER	**10GBASE CABLE**						
10G-SFPP-TWX-XXXX	802.3ak	Direct Attach SFP+ Twinax active copper cables				1m, 3m, 5m	No
10G-SFPP-AOC-XXXX	N/A	Direct Attach SFP+ active optical cables				7m, 10m	Yes
10G-SFPP-TWX-P-XXXX	802.3ak	Direct Attach SFP+ Twinax passive copper cables				1m, 3m, 5m	No
PART NUMBER	**40 GBE FIBER**						
E40G-QSFP-SR4	802.3ba	FDA 21CFR 1040.10 Class 1, CSA 60950-1-03/ UL 60950-1	EN 60825-1, EN 60950-1	850	OM3 MMF OM4 MMF	100m 150m	Yes
E40G-QSFP-SR4-INT (compatible with 10GBASE-SR)	802.3ba				OM3 MMF OM4 MMF	100m 150m	Yes
E40G-QSFP-LR4	802.3ba			1264.5 to 1337.5	SMF	10Km	Yes
E40G-QSFP-LR4-INT	802.3ba			1310	SMF	10Km	Yes
E40G-QSFP-ER4	802.3ba			1310	SMF	40Km	Yes
E40G-QSFP-ESR4	802.3ba			850	OM3 MMF OM4 MMF	300m 400m	Yes
E40G-QSFP-LM4	802.3ba			1264.5 to 1337.5	OM3/OM4 MMF	160m	Yes
E40G-QSFP-SR-BIDI	802.3ba			850 to 900	OM3/OM4 MMF	100m	Yes
PART NUMBER	**40 GBE COPPER**						
E40G-QSFP-4SFP-C-XXXX	N/A	Direct Attach QSFP+ to 4 SFP+ active copper breakout cables				1m, 3m, 5m	No
E40G-QSFP-QSFP-C-XXXX	N/A	Direct Attach QSFP+ to QSFP+ active copper cables				1m, 3m, 5m	No
40G-QSFP-C-005XX E40G-QSFP-C-XXXX E40G-QSFP-QSFP-P-XXXX	N/A	Direct Attach QSFP+ to QSFP+ passive copper cables				0.5m, 1m, 3m, 5m	No
E40G-QSFP-QSFP-AOC-XXXX	N/A	Direct Attach QSFP+ to QSFP+ active optical cables				10m	No
E40G-QSFP-4SFP-AOC-XXXX	N/A	Direct Attach QSFP+ to 4 SFP+ active optical breakout cables				10m	No

Specifications subject to change.

KEY STANDARDS AND FEATURES

	IEEE Standards	Domestic Safety Standards	International Safety Standards	Wavelength (nm)	Fiber Type	Maximum Cable Distance	Digital Optical Monitoring
PART NUMBER	**100 GBE QSFP28 FIBER**						
E100G-QSFP28-SR4	802.3bm	North America: UL/CSA 60950, CDRH Class 1	European Union: EN 60950, EB 60825 Class 1	850	MMF	100m	Yes
E100G-QSFP28-LR4	802.3bm			1295, 1300, 1305, 1310	SMF	10Km	
E100G-QSFP28-LR4-LP	802.3ba				SMF	10Km	
E100G-QSFP28-LR4L	802.3ba			1295, 1300, 1305, 1310	SMF	2Km	
E100G-QSFP28-CWDM4	802.3am			1310	SMF	2Km	

PART NUMBER	**100 GBE QSFP FIBER**					
E100G-QSFP-ESR4	802.3bm	North America: UL/CSA 60950, CDRH Class 1 European Union: EN 60950, EB 60825 Class 1	850	MMF	300m	Yes
E100G-QSFP-QSFP- AOC-1001	802.3bm		N/A	MMF	10m	Yes
E100G-QSFP-QSFP-P-XXXX	N/A	Direct Attach QSFP + to QSFP + copper cables			1m, 3m, 5m	N/A

Specifications subject to change.

RUCKUS ETHERNET OPTICS ORDERING INFORMATION

PART NUMBER	100 MBE SFP TRANSCEIVERS
E1MG-100FX-A	100BASE-FX SFP optic MMF, LC connector, optical monitoring capable, TAA compliant
E1MG-100FX-A8	100BASE-FX SFP optic MMF, LC connector, optical monitoring capable, TAA compliant, 8-pack
E1MG-100FX-IR-OM	100BASE-FX IR SFP optic for SMF with LC connector, optical monitoring capable. For distances up to 15Km
E1MG-100FX-LR-OM	100BASE-FX LR SFP optic for SMF with LC connector, optical monitoring capable. For distances up to 40Km
E1MG-100FX-OM	100BASE-FX SFP optic MMF, LC connector, optical monitoring capable
E1MG-100FX-OM-8	100BASE-FX SFP optic MMF, LC connector, optical monitoring capable, 8-pack

PART NUMBER	1 GBE SFP
E1MG-BXD	1000BASE-BXD SFP optic SMF, transmits at 1490nm and receives at 1310nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXU at the far end.
E1MG-BXU	1000BASE-BXU SFP optic SMF, transmits at 1310nm and receives at 1490nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXD at the far end.
E1MG-CWDM80-1470	1GbE CWDM SFP optic, 80Km, 1470nm, LC connector
E1MG-CWDM80-1490	1GbE CWDM SFP optic, 80Km, 1490nm, LC connector
E1MG-CWDM80-1510	1GbE CWDM SFP optic, 80Km, 1510nm, LC connector
E1MG-CWDM80-1530	1GbE CWDM SFP optic, 80Km, 1530nm, LC connector
E1MG-CWDM80-1550	1GbE CWDM SFP optic, 80Km, 1550nm, LC connector
E1MG-CWDM80-1570	1GbE CWDM SFP optic, 80Km, 1570nm, LC connector
E1MG-CWDM80-1590	1GbE CWDM SFP optic, 80Km, 1590nm, LC connector
E1MG-CWDM80-1610	1GbE CWDM SFP optic, 80Km, 1610nm, LC connector
E1MG-LHA-OM	1000BASE-LHA SFP optic, SMF, LC connector, optical monitoring capable
E1MG-LHA-OM-T	1000BASE-LHA SFP optic, SMF, LC connector, optical monitoring capable, industrial temperature (-40°C to 85°C)
E1MG-LX-A	1000BASE-LX SFP Optic, SMF, LC connector, TAA compliant
E1MG-LX-A8	1000BASE-LX SFP Optic, SMF, LC connector, TAA compliant, 8-pack
E1MG-LX-OM	1000BASE-LX SFP optic, SMF, LC connector, optical monitoring capable
E1MG-LX-OM-8	1000BASE-LX SFP optic, SMF, LC connector, optical monitoring capable, 8-pack
E1MG-LX-OM-T	1000BASE-LX SFP optic, SMF, LC connector, optical monitoring capable, industrial temperature (-40°C to 85°C)
E1MG-SX-A	1000BASE-SX SFP Optic, MMF, (LC), TAA compliant
E1MG-SX-A8	1000BASE-SX SFP Optic, MMF, (LC), TAA compliant, 8-pack
E1MG-SX-OM	1000BASE-SX SFP optic, MMF, LC connector, optical monitoring capable
E1MG-SX-OM-8	1000BASE-SX SFP optic, MMF, LC connector, optical monitoring capable, 8-pack
E1MG-SX-OM-T	1000BASE-SX SFP optic, MMF, LC connector, optical monitoring capable, industrial temperature (-40°C to 85°C)
E1MG-TX	1000BASE-TX SFP Copper, RJ-45 connector
E1MG-TX-A	1000BASE-TX SFP Copper, RJ-45, TAA compliant
E1MG-TX-A8	1000BASE-TX SFP Copper, RJ-45, TAA compliant, 8-pack
1G-SFP-TWX-0101	1GbE Direct Attach SFP to SFP active copper cable, 1m
1G-SFP-TWX-0501	1GbE Direct Attach SFP to SFP active copper cable, 5m

Specifications subject to change.

RUCKUS ETHERNET OPTICS ORDERING INFORMATION

PART NUMBER	10 GBE SFP+
10G-SFPP-BXD-S	10GBASE-LR SFP+ Optic (LC) bidirectional downstream, standard temperature (0°C to 70°C)
10G-SFPP-BXU-S	10GBASE-LR SFP+ Optic (LC) bidirectional upstream, standard temperature (0°C to 70°C)
10G-SFPP-ER	10GBASE-ER SFP+ optic (LC), for up to 40Km over SMF
10G-SFPP-ER-2	10GBASE-ER SFP+ optic (LC), for up to 40Km over SMF, 2-pack
10G-SFPP-LR	10GBASE-LR, SFP+ optic (LC), for up to 10Km over SMF
10G-SFPP-LR-8	10GBASE-LR, SFPP SMF (LC), for up to 10Km over SMF, 8-pack
10G-SFPP-LR-S	10GBASE-LR, SFPP SMF (LC), for up to 10Km over SMF, standard temperature (0°C to 70°C)
10G-SFPP-LR-S8	10GBASE-LR, SFPP SMF (LC), for up to 10Km over SMF, standard temperature (0°C to 70°C), 8-pack
10G-SFPP-LR-SA	10GBASE-LR, SFP+ optic (LC), for up to 10Km over SMF, standard temperature (0°C to 70°C), TAA compliant
10G-SFPP-LR-SA8	10GBASE-LR, SFP+ optic (LC), for up to 10Km over SMF, standard temperature (0°C to 70°C), TAA compliant, 8-pack
10G-SFPP-LRM	10GBASE-LRM SFP+ optic (LC), for up to 220m over MMF
10G-SFPP-LRM-1-ADP	10GBASE-LRM SFP+ optic (LC), for up to 220m over MMF, w/ 1-LRM Optic, 1-Dual Port Adapter, & L-Bracket Mount for ICX7150, ICX7250 and ICX7750 (Optional 8 unit rack-mount shelf available)
10G-SFPP-LRM-2-ADP	10GBASE-LRM SFP+ Optic (LC), for up to 220m over MMF, w/ 1-LRM Optic, 1-Dual Port Adapter, & L-Bracket Mount for ICX7150, ICX7250 and ICX7750 (Optional 8 unit rack-mount shelf available)
10G-SFPP-LRM-8	10GBASE-LRM SFP+ optic (LC), for up to 220m over MMF, 8-pack
10G-SFPP-SR	10GBASE-SR, SFP+ optic (LC), target range 300m over MMF
10G-SFPP-SR-8	10GBASE-SR, SFPP MMF LC connector, 8-pack
10G-SFPP-SR-S	10GBASE-SR, SFPP MMF LC connector, standard temperature (0°C to 70°C)
10G-SFPP-SR-S8	10GBASE-SR, S FPP MMF LC connector, standard temperature (0°C to 70°C), 8-pack
10G-SFPP-SR-SA	10GBASE-SR, SFP+ optic (LC), target range 300m over MMF, standard temperature (0°C to 70°C), TAA compliant
10G-SFPP-SR-SA8	10GBASE-SR, SFP+ optic (LC), target range 300m over MMF, standard temperature (0°C to 70°C), TAA compliant, 8-pack
10G-SFPP-TWX-0101	10GbE Direct Attach SFP+ to SFP+ Active copper cable, 1m
10G-SFPP-TWX-0108	10GbE Direct Attach SFP+ to SFP+ Active copper cable, 1m, 8-pack
10G-SFPP-TWX-0301	10GbE Direct Attach SFP+ to SFP+ Active copper cable, 3m
10G-SFPP-TWX-0308	10GbE Direct Attach SFP+ to SFP+ Active copper cable, 3m, 8-pack
10G-SFPP-TWX-0501	10GbE Direct Attach SFP+ to SFP+ Active copper cable, 5m
10G-SFPP-TWX-0508	10GbE Direct Attach SFP+ to SFP+ Active copper cable, 5m, 8-pack
10G-SFPP-TWX-P-0101	10GbE Direct Attach SFP+ to SFP+ Passive copper cable, 1m
10G-SFPP-TWX-P-0108	10GbE Direct Attach SFP+ to SFP+ Passive copper cable, 1m, 8-pack
10G-SFPP-TWX-P-0301	10GbE Direct Attach SFP+ to SFP+ Passive copper cable, 3m
10G-SFPP-TWX-P-0308	10GbE Direct Attach SFP+ to SFP+ Passive copper cable, 3m, 8-pack
10G-SFPP-TWX-P-0501	10GbE Direct Attach SFP+ to SFP+ Passive copper cable, 5m
10G-SFPP-TWX-P-0508	10GbE Direct Attach SFP+ to SFP+ Passive copper cable, 5m, 8-pack
10G-SFPP-USR	10GBASE-USR, SFP+ optic (LC), target range 100m over MMF
10G-SFPP-USR-8	10GBASE-USR, SFP+ optic (LC), target range 100m over MMF, 8-pack
10G-SFPP-USR-SA	10GBASE-USR, SFP+ Optic (LC), Range 100m MMF, standard temperature (0°C to 70°C), TAA compliant

Specifications subject to change.

RUCKUS ETHERNET OPTICS ORDERING INFORMATION

10G-SFPP-USR-SA8	10GBASE-USR, SFP+ Optic (LC), Range 100m MMF, standard temperature (0°C to 70°C), TAA compliant, 8-pack
10G-SFPP-ZR	10GBASE-ZR SFP+ optic (LC), for up to 80Km over SMF
10G-SFPP-ZR-2	10GBASE-ZR SFP+ Optic (LC), for up to 80Km over SMF, 2-pack
10GE-SFPP-AOC-0701	10GbE Direct Attach SFP+ to SFP+ Active Optical Cable, 7m
10GE-SFPP-AOC-1001	10GbE Direct Attach SFP+ to SFP+ Active Optical Cable, 10m

PART NUMBER	40 GBE QSFP+
E40G-QSFP-SR4	40GBASE-SR4 QSFP+ optic (MTP 1×8 or 1×12), 100m over MMF OM3. 150m over MMF OM4
E40G-QSFP-SR4-8	40GBASE-SR4 QSFP+ optic (MTP 1×8 or 1×12), 100m over MMF OM3. 150m over MMF OM4, 8-pack
E40G-QSFP-SR4-INT	40GBASE-SR4 QSFP+ optic (MTP 1x8 or 1x12), 100m over MMF, compatible with 10GBASE-SR, 10G breakout-capable
E40G-QSFP-ESR4	40GBASE-ESR4 QSFP+ optic (MTP 1x8 or 1x12), 300m over MMF
E40G-QSFP-ESR4-8	40GBASE-ESR4 QSFP+ optic (MTP 1x8 or 1x12), 300m over MMF, 8-pack
E40G-QSFP-ER4	40GBASE-ER4 QSFP+ optic (LC), for up to 40Km over SMF
E40G-QSFP-SR4-INT	40GBASE-SR4 QSFP+ optic (MTP 1×8 or 1×12), 100m over MMF (10GBASE-SR compatible, breakout-capable)
E40G-QSFP-LR4	40GBASE-LR4 QSFP+ optic (LC), for up to 10Km over SMF
E40G-QSFP-LR4-8	40GBASE-LR4 QSFP+ optic (LC), for up to 10Km over SMF, 8-pack
E40G-QSFP-LR4-INT	40GBASE-LR4 QSFP+ to 4 SFP+ optic (LC), for up to 10Km over SMF
E40G-QSFP-LM4	40GBASE-LM4 QSFP+, 1310nm, 160m over duplex LC OM4 MMF
E40G-QSFP-SR-BIDI	40GbE SR QSFP+ optic (LC), bidirectional, 100m over OM3 MMF
E40G-QSFP-4SFP-AOC-1001	4x10GbE Direct Attach QSFP+ to 4 SFP+ Active Optical Breakout Cable, 10m
E40G-QSFP-4SFP-C-0101	4x10GbE Direct Attach QSFP+ to 4 SFP+ Active Copper Breakout Cable, 1m
E40G-QSFP-4SFP-C-0301	4x10GbE Direct Attach QSFP+ to 4 SFP+ Active Copper Breakout Cable, 3m
E40G-QSFP-4SFP-C-0501	4x10GbE Direct Attach QSFP+ to 4 SFP+ Active Copper Breakout Cable, 5m
E40G-QSFP-QSFP-AOC-1001	40GbE Direct Attach QSFP+ to QSFP+ Active Optical Cable, 10m
E40G-QSFP-QSFP-C-0101	40GbE Direct Attach QSFP+ to QSFP+ Active Copper cable, 1m
E40G-QSFP-QSFP-C-0301	40GbE Direct Attach QSFP+ to QSFP+ Active Copper cable, 3m
E40G-QSFP-QSFP-C-0501	40GbE Direct Attach QSFP+ to QSFP+ Active Copper cable, 5m
40G-QSFP-C-00501	40GbE Direct Attach QSFP+ to QSFP+ Passive Copper Cable, 0.5m
40G-QSFP-C-00508	40GbE Direct Attach QSFP+ to QSFP+ Passive Copper Cable, 0.5m, 8-pack
E40G-QSFP-C-0101	40GbE Direct Attach QSFP+ to QSFP+ Passive Copper Cable, 1m
E40G-QSFP-QSFP-P-0101	40GbE Direct Attach QSFP+ to QSFP+ Passive Copper Cable, 1m
E40G-QSFP-QSFP-P-0301	40GbE Direct Attach QSFP+ to QSFP+ Passive Copper Cable, 3m
E40G-QSFP-C-0501	40GbE Direct Attach QSFP+ to QSFP+ Passive Copper Cable, 5m

Specifications subject to change.

Ruckus Ethernet Optics

High Quality Transceivers for Ruckus Switches and APs

DATA SHEET

RUCKUS ETHERNET OPTICS ORDERING INFORMATION

PART NUMBER	100 GBE QSFP28
E100G-QSFP28-SR4	100GBASE-SR4 QSFP28 optic (MTP 1x12), for up to 100m over MMF
E100G-QSFP-ESR4	100GBASE-ESR4 QSFP+ optic (MTP 1x8 or 1x12), for up to 300m over MMF
E100G-QSFP28-LR4-L-2KM	100GBASE-LR4 Lite QSFP28 transceiver 2Km over SMF
E100G-QSFP28-LR4-10KM	100GBASE-LR4 QSFP28 optic (LC), for distances up to 10Km over SMF
E100G-QSFP28-LR4-LP-10KM	100GBASE-LR4 Low Power, QSFP28 optic (LC), for distances up to 10Km over SMF
E100G-QSFP28-CWDM4-2KM	100GBASE-CWDM4 QSFP28 optic (LC), for distances up to 2Km over SMF
E100G-QSFP-QSFP-P-0101	100GbE QSFP28 to QSFP28 Direct Attach, Passive Copper Cable, 1m
E100G-QSFP-QSFP-P-0301	100GbE QSFP28 to QSFP28 Direct Attach, Passive Copper Cable, 3m
E100G-QSFP-QSFP-P-0501	100GbE QSFP28 to QSFP28 Direct Attach, Passive Copper Cable, 5m
E100G-QSFP-QSFP-AOC-1001	100GbE QSFP28 to QSFP28 Direct Attach, Active Optical Cable, 10m

Specifications subject to change.

UNDERSTANDING PART NUMBER DESCRIPTIONS

Operating Temperature Ranges: When no temperature range is mentioned in the description, the transceiver temperature range is 0°C to 85°C. "standard temperature" in the description means 0°C to 70°C. "industrial temperature" means -40°C to 85°C.

Multi-Unit Bundles: 8-pack means the SKU is a bundle of 8 units. 2-pack, a bundle of 2 units.

TAA Compliance: TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581). TAA requires that the U.S. Government may acquire only "U.S. made or designated country end products". This act requires that contractors must certify that each end product meets the applicable requirements. End products are 'those articles, materials and supplies to be acquired for public use'." This includes items which have been "substantially transformed" in the United States.

Active vs Passive Copper Cables: Direct attach passive copper cables have transceiver shaped connectors directly soldered to the cable without any active component in the system. Passive copper cables offer the shortest distances and they are the most affordable. Ruckus recommends the use of passive copper cables for links between Ruckus switches up to 3 meters. These cables should be the default choice for stacking Ruckus switches together within a rack or across nearby racks.

Active copper cables include active components in the transceivers on each end of the cable. This enables Active copper cables to deliver a stronger signal and to support longer distances. However, they do cost more than their passive counterparts.

LEGAL DISCLAIMER

Product features, functionality and specifications may change or be discontinued without notice. Nothing in this document shall be deemed to create a warranty of any kind, either express or implied, statutory or otherwise, including but not limited to, any implied warranties of merchantability, fitness for a particular purpose, non-infringement of third-party rights or availability with respect to any products and services.

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