

FE80U & FE80XU

80 GHz Fast Ethernet Upgradeable Wireless Links

80 GHz WIRELESS LINKS FOR HIGH-BANDWIDTH APPLICATIONS

BridgeWave is the leading supplier of gigabit RF connectivity solutions for service provider, government, military and enterprise applications. BridgeWave Gigabit Ethernet links extend network operator fiber to provide high-capacity access and backhaul, as well as extending enterprise LANs between buildings and sites.

FEATURES

PERFORMANCE:

- Full rate, full duplex, Fast Ethernet upgradeable to Gigabit Ethernet
- Field upgradeable to full Gigabit Ethernet AR80 product using software key (please refer to AR80 data sheet for upgrade product specifications)
- Interference-free operation enabling high-density deployments
- Simple, fast path licensing
- Low latency for fiber-equivalent performance
- Forward Error Correction provides maximum link range





WIRELESS VIRTUAL FIBER SOLUTIONS FOR:



Enterprise

Server centralization, remote data storage and backup, leased line replacement.



Healthcare

Secure, HIPAA-compliant connectivity, medical office, lab network access, real-time imaging & records, application connectivity.



Education

High-performance campus connectivity, Wi-Fi and security camera backbone.



Government/Municipalities

Video surveillance systems, traffic control and monitoring, Wi-Fi/4.9GHz backhaul.



Service Provider

High-capacity business services, fiber extensions, cellular/Wi-Fi/WiMAX backhaul, redundant fiber overlays, mesh.



Mobile Backhaul

Future-proof full-rate gigabit backhaul for next generation 4G/LTE/WiMAX backhaul.

SECURITY:

- Highly secure narrow beamwidth antennas
- Secure Management software option provides HTTPS management access and RADIUS authentication (see Advanced Security datasheet)

RELIABILITY:

- Rigorous HALT/HASS testing; 28-Year MTBF
- Up to 99.999%, carrier-grade availability

EASE-OF-USE:

- Connects directly to standard network equipment
- All-outdoor, compact design
- Low voltage power cabling
- Rapid & flexible deployment
- Embedded web and SNMP based network management agent

CONNECTIVITY RANGES

FE80U Up to 5 Miles (8 km)

FE80XU

Up to 7 Miles (11.5 km)



Specifications

Data Rate 100 Mbps full-duplex 120 Uses 220 Uses 220 Uses 183 d8 © 10-2 BER 185 d8 © 10-3 BER 185 d8 © 10-3 BER 185 d8 © 10-4 BER 185 d8 © 10-4 BER 185 d8 © 10-8 BER RF Interface 25 GHz/82.5 GHz (FDD), digitally modulated (BFSK) with forward error correction RS(204,188) 285 MHz bandwidth © 100 Mbps* 285 MHz bandwidth © 100 Mbps* Min. link distance 328 ft (100 m) Antenna External 12 in (31 cm) directional cassegrain Linear polarized (H/N), 44 dBl gain, 0.9° beam Linear polarized (H/N), 44 dBl gain, 0.9° beam Linear polarized (H/N), 44 dBl gain, 0.9° beam Divided Provided Provided Provided Cassegrain Linear polarized (H/N), 44 dBl gain, 0.9° beam Uses polarized (H/N), 51 dBl gain, 0.4° beam Linear polarized (H/N), 51 dBl gain, 0.4° beam Waximum Ethernet frame length: 1632 bytes Waximum Ethernet frame length: 1632 bytes Web-based (HTML) embedded management agent: setup, security, status, statistics, software update Secure Management Access (see Advanced Security datasheet for details) SNMP support: MIB-II and BridgeWave enterprise MIB Voltmeter test points: Receive Signal Level and Link Quality RADIUS Authentication, Syst.og support Power Supplied 100 – 240 VAC input, +24 VDC output, indoor rated power supply (0°C to +40°C). 45 watts max. consumption Max. cable length: 650 ft (200m) with 12AWG 400 ft (125m) with 14AWG, stranded wires highly recommended (surge suppressor required) Mount Fine-adjust pole mount: 3.5-4.5 in (8.9-11.4 cm) 00 – SCH40 or higher Size Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d (in/ / 50 w* 36h* 25 d (cm) Radio/antenna unit: 20 w* 14 h* 10 d		FE80U <u>Fast Ethernet</u> / Gigabit <u>U</u> pgradeable	FE80XU <u>F</u> ast <u>E</u> thernet <u>Ex</u> tended / Gigabit <u>U</u> pgradeable
Link Budget 183 dB @ 10-12 BER 185 dB @ 10-6 BER 187 lnterface 285 MHz bandwidth @ 100 Mbps* 285 MHz bandwidth @ 100 Mbps* Min. link distance 328 ft (100 m) Antenna External 12 in (31 cm) directional cassegrain Linear polarized (HVI), 44 dBi gain, 0.9° beam Linear polarized (HVI), 51 dBi gain, 0.4° beam Interfaces Interfaces Web-based (HTML) embedded management agent: setup, security, status, statistics, software update Secure Management Aberded Herst and Linear polarized (HVI). Secure Management Aberded Herst and Linear polarized (HVI). Web-based (HTML) embedded management agent: setup, security, status, statistics, software update Secure Management Aberded Herst and Link Quality RADIUS Authentication, Systog support Power Supplied 100 – 240 VAC input, +24 VDC output, indoor rated power supply (0°C to +40°C). 45 watts max. consumption Max. cable length: 650 ft (200m) with 12AWG 400 ft (125m) with 14AWG, stranded wires highly recommended (surge suppressor required) Mount Fine-adjust pole mount: 3.5-4.5 in (8.9-11.4 cm) 00 - SCH40 or higher Radio/antenna unit: 20 w * 14 h * 10 d (in) / 50 w * 36 h * 25 d (cm) Radio/antenna unit: 24 w * 24 h * 20 d (in) / 62 w * 62 h * 50 d (cm) Radio with antenna and mount: 22 bs (10 kg) Radio with antenna and mount: 23 bs (10 kg) Regulatory Vind Loading 46 lbs. force @ 125 MPH Regulatory Recrifications: U.S. FCC Part 15.255, EN302217 (2008-11)	Data Rate	100 Mbps full-duplex	100 Mbps full-duplex
185 dB @ 10 ° BER RF Interface 275. GHz/R2.5 GHz (FDD), digitally modulated (BFSK) with forward error correction RS(204,188) 285 MHz bandwidth @ 100 Mbps* 285 MHz bandwidth @ 100 Mbps* Min. link distance 328 ft (100 m) Min. link distance 1,312 ft (400 m) Antenna External 12 in (31 cm) directional cassegrain Linear polarized (H/V), 44 dBi gain, 0.9° beam Linear polarized (H/V), 51 dBi gain, 0.4° beam Ethernet Interfaces 1000base-SX with LC connectors - up to 270 m 62.5/125µm MMF, or 500 m 50/125µm MMF 10/100base-TX with RJ-45 connector (with integral surge suppressor) - up to 100 m CAT5 cable Maximum Ethernet frame length: 1632 bytes Web-based (HTML) embedded management agent: setup, security, status, statistics, software update Secure Management Access (see Advanced Security datasheet for details) SNMP support: MBI-II and BridgeWave enterprise MIB Voltmeter test points: Receive Signal Level and Link Quality RADIUS Authentication, Systog support Power Supplied 100 – 240 VAC input, +24 VDC output, indoor rated power supply (0°C to +40°C). 45 watts max. consumption 48 VDC input option with user supplied power supply, 45 watts max. consumption Max. cable length: 650 ft (200m) with 12AWG 400 ft (125m) with 14AWG, stranded wires highly recommended (surge suppressor required) Mount Fine-adjust pole mount: 3.5-4.5 in (8.9-11.4 cm) 00 SCH40 or higher Size Radio/antenna unit: 20 w *14 h *10 d (in) /50 w *36h *25 d (cm) Radio with antenna and mount: 28 bs (10 kg) Radio with antenna and mount: 38.5 lbs (17.5 kg) Environmental Operating emperature: -33° to +55°C (-27°F to 131°F) Operating altitude: 14,764 ft maximum (4,500 m) Wind Loading 46 lbs. force @ 125 MPH 202 lbs. force @ 125 MPH Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	Latency	< 220u Sec	< 220u Sec
RF Interface T2.5 GHz/82.5 GHz (FDD), digitally modulated (BFSK) with forward error correction RS(204,188) 285 MHz bandwidth @ 100 Mbps* 285 MHz bandwidth @ 100 Mbps** 285 MHz bandwidth @ 100 Mhz bandwidth @ 100 Mhz bandwidth @ 100 Mhz bandwidth @ 100 Mhz	Link Budget	183 dB @ 10 ⁻¹² BER	197 dB @ 10 ⁻¹² BER
285 MHz bandwidth @ 100 Mbps* 285 MHz bandwidth @ 100 Mbps** Min. link distance 328 ft (100 m) Min. link distance 1,312 ft (400 m) Antenna External 12 in (31 cm) directional cassegrain External 24 in (62 cm) directional cassegrain Linear polarized (H/V), 44 dBi gain, 0.9° beam Linear polarized (H/V), 51 dBi gain, 0.4° beam Ethernet Interfaces 1000base-SX with LC connectors - up to 270 m 62.5/125µm MMF, or 500 m 50/125µm MMF 10/100base-TX with RJ-45 connector (with integral surge suppressor) - up to 100 m CAT5 cable Maximum Ethernet frame length: 1632 bytes Web-based (HTML) embedded management agent: setup, security, status, statistics, software update Secure Management Access (see Advanced Security datasheet for details) SNMP support: MIB-II and BridgeWave enterprise MIB Voltmeter test points: Receive Signal Level and Link Quality RADIUS Authentication, SysLog support Power Supplied 100 – 240 VAC input, +24 VDC output, indoor rated power supply (0°C to +40°C). 45 watts max. consumption Max. cable length: 650 ft (200m) with 12AWG 400 ft (125m) with 14AWG, stranded wires highly recommended (surge suppressor required) Mount Fine-adjust pole mount: 3.5-4.5 in (8.9-11.4 cm) 00 SCH40 or higher Size Radio/antenna unit: 20 w *14 h * 10 d (in) / 50 w * 36h * 25 d (cm) Radio/antenna unit: 24 w * 24 h * 20 d (in) / 62 w * 62 h * 50 d (cm) Weight Radio with antenna and mount: 22 bs (10 kg) Radio with antenna and mount: 38.5 lbs (17.5 kg) Environmental Operating attitude: 14,764 ft maximum (4,500 m) Wind Loading 46 lbs. force @ 125 MPH 202 lbs. force @ 125 MPH Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)		185 dB @ 10 ⁻⁶ BER	199 dB @ 10 ⁻⁶ BER
Min. link distance 328 ft (100 m) Min. link distance 1,312 ft (400 m) Antenna External 12 in (31 cm) directional cassegrain Linear polarized (H/V), 44 dBi gain, 0.9° beam Ethernet Interfaces 1000base-SX with LC connectors - up to 270 m 62.5/125µm MMF, or 500 m 50/125µm MMF 10/100base-TX with RJ-45 connector (with integral surge suppressor) - up to 100 m CAT5 cable Maximum Ethernet frame length: 1632 bytes Management Web-based (HTML) embedded management agent: setup, security, status, statistics, software update Secure Management Access (see Advanced Security datasheet for details) SNMP support: MIB-II and BridgeWave enterprise MIB Voltmeter test points: Receive Signal Level and Link Quality RADIUS Authentication, SysLog support Supplied 100 – 240 VAC input, +24 VDC output, indoor rated power supply (0°C to +40°C), 45 watts max. consumption 48 VDC input option with user supplied power supply, 45 watts max. consumption Max. cable length: 650 ft (200m) with 12AWG 400 ft (125m) with 14AWG, stranded wires highly recommended (surge suppressor required) Mount Fine-adjust pole mount: 3.5-4.5 in (8.9-11.4 cm) 00 SCH40 or higher Size Radio/antenna unit: 20 w * 14 h * 10 d (in) / 50 w * 36h * 25 d (cm) Radio with antenna and mount: 22 lbs (10 kg) Radio with antenna and mount: 22 lbs (10 kg) Radio with antenna and mount: 38.5 lbs (17.5 kg) Environmental Operating attitude: 14,764 ft maximum (4,500 m) Wind Loading 46 lbs. force @ 125 MPH Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	RF Interface	72.5 GHz/82.5 GHz (FDD), digitally modulated (BFSK) with forward error correction RS(204,188)	
Antenna External 12 in (31 cm) directional cassegrain		285 MHz bandwidth @ 100 Mbps*	285 MHz bandwidth @ 100 Mbps**
Linear polarized (H/V), 44 dBi gain, 0.9° beam Linear polarized (H/V), 51 dBi gain, 0.4° beam Linear polarized (H/V), 5		Min. link distance 328 ft (100 m)	Min. link distance 1,312 ft (400 m)
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Size Radio/antenna unit: 20 w * 14 h * 10 d (in) / 50 w * 36h * 25 d (cm) Radio/antenna unit: 24 w * 24 h * 20 d (in) / 62 w * 62 h * 50 d (cm) Weight Radio with antenna and mount: 22 lbs (10 kg) Radio with antenna and mount: 38.5 lbs (17.5 kg) Environmental Operating temperature: -33°C to +55°C (-27°F to 131°F) Operating altitude: 14,764 ft maximum (4,500 m) Wind Loading 46 lbs. force @ 125 MPH 202 lbs. force @ 125 MPH Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)		Max. cable length: 650 ft (200m) with 12AWG 400 ft (125m) with 14AWG, stranded wires highly recommended (surge suppressor required)	
Weight Radio with antenna and mount: 22 lbs (10 kg) Environmental Operating temperature: -33°C to +55°C (-27°F to 131°F) Operating altitude: 14,764 ft maximum (4,500 m) Wind Loading 46 lbs. force @ 125 MPH 202 lbs. force @ 125 MPH Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	Mount	Fine-adjust pole mount: 3.5-4.5 in (8.9-11.4 cm) OD SCH40 or higher	
Environmental Operating temperature: -33°C to +55°C (-27°F to 131°F) Operating altitude: 14,764 ft maximum (4,500 m) Wind Loading 46 lbs. force @ 125 MPH 202 lbs. force @ 125 MPH Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	Size	Radio/antenna unit: 20 w * 14 h * 10 d (in) / 50 w * 36h * 25 d (cm)	Radio/antenna unit: 24 w * 24 h * 20 d (in) / 62 w * 62 h * 50 d (cm)
Operating altitude: 14,764 ft maximum (4,500 m) Wind Loading 46 lbs. force @ 125 MPH 202 lbs. force @ 125 MPH Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	Weight	Radio with antenna and mount: 22 lbs (10 kg)	Radio with antenna and mount: 38.5 lbs (17.5 kg)
Wind Loading 46 lbs. force @ 125 MPH 202 lbs. force @ 125 MPH Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	Environmental	Operating temperature: -33°C to +55°C (-27°F to 131°F)	
Regulatory Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)		Operating altitude: 14,764 ft maximum (4,500 m)	
RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	Wind Loading	46 lbs. force @ 125 MPH	202 lbs. force @ 125 MPH
	Regulatory	Safety: UL Listed, CE Mark, EN60950, meets FCC 1.1310 general population RF MPE limits	
Install Kit Voltmeter test cable, power connectors		RF Certifications: U.S. FCC Part 15.255, EN302217 (2008-11)	
	Install Kit	Voltmeter test cable, power connectors	

- * = Refer to AR80 datasheet for upgradeable features
- ** = Refer to AR80X datasheet for upgradeable features



