



BridgeWave
COMMUNICATIONS

BW64 BW64E

60 GHz Gigabit Ethernet Wireless Backhaul

60 GHz WIRELESS LINKS FOR GIGABIT ETHERNET APPLICATIONS

BridgeWave's BW64 and BW64E combines high-performance, simplicity and flexibility in an all-outdoor 60 GHz backhaul solution. With data rates that support 1000 Mbps full-duplex and AdaptRate™ with AdaptPath™ for interference mitigation, BW64/E provides the highest link budget and flexibility for any network application. BW64/E improves upon BridgeWave's GE60 platform with inclusion of direct -48VDC power and optional POE to ease field installations and reduce cost while also adding gigabit fiber or gigabit 1000BaseT support through a field-pluggable SFP. BW64 includes an integrated 10" (25cm) antenna while the BW64E includes a 24" (60cm) antenna.

BridgeWave is the leading supplier of high capacity and gigabit millimeter wave connectivity solutions. BridgeWave wireless links extend network operator fiber to provide high capacity access and backhaul, as well as extending enterprise LANs between buildings and sites at a fraction of the cost and time to implement fiber between facilities.

FEATURES

- Highest link budget of any 60 GHz GigE solution on the market
- License-free operation in many countries
- Interference-free operation enabling high-density deployments
- Gigabit Ethernet full-duplex transmission
- AdaptRate™ & AdaptPath™ functionality provides mitigation during intense rain
- SFP plug-in for flexibility in choosing between multi-mode or single mode fiber
- Direct DC (-48V), or optional Power over Ethernet

WIRELESS VIRTUAL FIBER SOLUTIONS FOR:



MOBILE BACKHAUL

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



SERVICE PROVIDER

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



EDUCATION

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



ENTERPRISE

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



GOVERNMENT/MUNICIPALITIES

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



HEALTHCARE

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

PERFORMANCE:

- Longest 60 GHz link distances and/or highest link availability
- 1 Gbps full-duplex data rate
- Optional AdaptRate™ operation overcomes intense rain fades
- Zero-footprint, compact, all ODU with low power consumption

EASE-OF-USE:

- Connects directly to standard network equipment
- Embedded web GUI and SNMP based network management
- Rapid & flexible deployment
- Direct DC or PoE power feed

RELIABILITY:

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

SECURITY:

- Highly secure narrow beam width antennas
- Secure web provides HTTPS management access
- RADIUS authentication

AES ENCRYPTION:

- 256-bit key length AES - provides the strongest level available
- Full FE or GE line-rate data protection under all traffic loads
- Ultra-low latency – adds only 2 μSec
- FIPS-197 Certified (NIST Cert #638)
- Cipher Block Chaining (128 bit blocks) conceals patterns in plain text
- Meets "Top Secret" security standards
- Built-in – NO external encryptor required



BW64
with 10"
(25 cm) Antenna



BW64E
with 24"
(60cm) Antenna

Backhaul Evolved®



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BW64 BW64E SPECIFICATIONS

FREQUENCY	Range: 57 – 64 GHz RF Interface: 58.1 / 62.9 GHz full-duplex operation Bandwidth: 1.4 GHz (GE mode), 284 MHz (FE operation in AR mode) BFSK modulated with Reed-Solomon Forward Error Correction	
DATA RATES (FULL-DUPLEX) Base Rate AdaptRate™ Operation	1000 Mbps 1000/100 Mbps AdaptRate™ operation via software upgrade license	
LINK BUDGET 100 Mbps (FE Mode, Typical) 1000 Mbps (GE Mode, Typical)	Integrated 10" (25cm) Antennas 160.9 dB @ 10-6 B.E.R. / 159.5 dB @ 10-12 B.E.R. 149.9 dB @ 10-6 B.E.R. / 148.5 dB @ 10-12 B.E.R.	External 24" (60cm) Antennas 176.9 dB @ 10-6 B.E.R. / 175.5 dB @ 10-12 B.E.R. 165.9 dB @ 10-6 B.E.R. / 164.5 dB @ 10-12 B.E.R.
MINIMUM DISTANCE	65 ft (20m)	330 ft (100m)
ETHERNET INTERFACE	One SFP, 1000Base-X for multi-mode (-SX) fiber; single-mode (-LX) fiber; or copper (-TX) with CAT5e or CAT6 cable 10/100base-TX with RJ-45 connector (with integral surge suppressor) Maximum Ethernet frame length: 1632 bytes Latency: <40 µSec (GE mode); < 220 µSec (FE mode)	
MANAGEMENT	Web-based (HTML) embedded management agent: setup, security, statistics, software update, HTTPS Secure Management Access SNMP Support: MIB-II And BridgeWave enterprise MIB SysLog (RFC 3164, RFC 3195) event support RADIUS Authentication Voltmeter test points: Receive Signal Level and Link Quality	
SECURITY	Inherently secure ultra-narrow beam width antennas for low probability of detection and interception Option: FIPS-197 certified 256-AES Encryption (export controlled)	
POWER	- 48VDC nominal direct DC input, ±37.5 to 60VDC range; 45 watts max power consumption Power over Ethernet Extractor Kit available (up to 328 ft, 100m) with CAT5e/CAT6 cable) Max DC power cable length: 650 ft (200m) with 12AWG; 400 ft (125m) with 14AWG, stranded wires highly recommended (surge suppressor required)	
ANTENNAS	BW64 - Integrated 10" (25cm) cassegrain, linear polarized (H/V), 40 dBi gain, 1.4° beam BW64E - External 24" (60cm) parabolic, linear polarized (V/H), 48 dBi gain, 0.6° beam	
MOUNT	Fine adjust pole-mount: 2" – 4.5" (5 – 11.4 cm), OD – SCH40 or higher Wall mount bracket included with integrated antenna	
SIZE & WEIGHT BW64 BW64E with 24" (60 cm) antenna	12.5 x 12.5 x 6 (in) / 31.8 x 31.8 x 15 (cm); 11.5 lbs (5.2 kg), 22 lbs (10 kg) radio with integrated antenna and mount 24.5 x 24.5 x 16.2 (in) / (62.2 x 62.2 x 41.1 (cm) / 27 lbs (12.3 kg) – with parabolic antenna and mount	
WIND LOADING	Integrated 10" (25cm) Antenna: 50 lbs force @ 100 MPH	24" (60cm) Ext Antenna: 202 lbs force @ 100 MPH
ENVIRONMENTAL	Operating Temperature: -33°C to +55°C (-27°F to +131°F) Humidity: 100% all-weather operation Maximum Altitude: 14764 ft (4,500 m)	
REGULATORY	RF Certifications: U.S. FCC Part 15.255; Industry Canada RSS-210; ETSI EN 302 217-3 Safety: CE Mark; 60950-1; EN 60950-22; meets FCC 1.310 General Population & EN 62311 RF MPE limits EMC/EMI: EN 301 489-4; FCC Part 15 Class B Surge & Immunity: EN 301-489-1	

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