



## AR60, AR60X, GE60, GE60X, FE60 & FE60X 60GHz Wireless Links

### 60GHZ WIRELESS LINKS FOR HIGH-BANDWIDTH DATA APPLICATIONS

BridgeWave is the leading supplier of gigabit RF connectivity solutions for service provider, government, military and enterprise applications. BridgeWave Gigabit and Fast Ethernet links extend LAN backbones between buildings and sites, as well as extending the reach of network operator fiber.

### FEATURES

#### PERFORMANCE:

- ❖ License-free operation in the U.S. and Canada
- ❖ Highly secure, narrow antenna beamwidths
- ❖ Interference-free operation, enabling high-density deployments
- ❖ Full rate, full duplex, Gigabit or Fast Ethernet
- ❖ AdaptRate™ switching overcomes rain fades
- ❖ Low latency for fiber-equivalent performance
- ❖ Forward Error Correction yields maximum link range

#### RELIABILITY:

- ❖ Rigorous HALT/HASS testing
- ❖ Up to 99.999% availability; 28-Year MTBF

#### 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



**AR60X & FE60X** Up to 1.5 Miles  
(2,380m)  
**GE60X** Up to 1 Mile  
(1,820 m)



**AR60 & FE60** Up to .75 Mile  
(1,470 m)  
**GE60** Up to .5 Mile  
(990 m)

#### WIRELESS "VIRTUAL FIBER" SOLUTIONS FOR SERVICE PROVIDER, GOVERNMENT/MILITARY, AND ENTERPRISE APPLICATIONS

##### LAN EXTENSION

Extends LAN backbones between buildings

##### FIRST/LAST MILE

Supports high-speed access services

##### METRO AREA NETWORK (MAN)

Complements/extends metro fiber

##### SERVER CONSOLIDATION

Enables centralization of IT facilities

##### SPATIAL DIVERSITY

Creates redundant paths for mission-critical applications

##### FAST AND FLEXIBLE

Provides temporary and disaster-recovery connectivity

##### FIBER ALTERNATIVE

Offers fiber-equivalent performance, security and reliability

#### CONFIGURATIONS:

- Point-to-point
- Hot standby
- Multi-hop/repeater
- Hub-and-spoke
- Ring
- Mesh

## SPECIFICATIONS

	AR60 AdaptRate™ Gigabit Ethernet	AR60X AdaptRate Extended-Range Gigabit Ethernet		
Operating Mode	Normal mode: operates as GE60 (see below)	Normal mode: operates as GE60X (see below)		
	Path fade mode: operates as FE60	Path fade mode: operates as FE60X		
Mode Switching	Mode switching time: < 50 milliseconds			
	Software configurable: full-time 1000 Mbps, full-time 100 Mbps, or AdaptRate			
	GE60 Gigabit Ethernet	FE60 Fast Ethernet	GE60X Extended-Range Gigabit Ethernet	FE60X Extended-Range Fast Ethernet
Data Rate	1000 Mbps full-duplex	100 Mbps full-duplex	1000 Mbps full-duplex	100 Mbps full-duplex
Latency	< 50 microseconds	< 150 microseconds	< 50 microseconds	< 150 microseconds
Link Budget	143.5dB @ 10 <sup>-12</sup> BER	154.5dB @ 10 <sup>-12</sup> BER	162dB @ 10 <sup>-12</sup> BER	173dB @ 10 <sup>-12</sup> BER
RF Interface	58.1GHz/62.9GHz (FDD), digitally modulated (BFSK) with forward error correction (RS 204,188)			
	1.4GHz bandwidth	140MHz bandwidth	1.4GHz bandwidth	140MHz bandwidth
	Min. link distance: 20 m (65 ft)		Min. link distance: 100 m (330 ft)	
Antenna	Integrated 25 cm (1') directional cassegrain		External 62 cm (2') directional cassegrain	
	Linear polarized (V/H), 40dBi gain, 1.4° beam		Linear polarized (V/H), 46dBi gain, 0.6° beam	
Ethernet Interfaces	1000Base-SX with LC connectors—up to 270 meters 62.5/125µm MMF, or 500 meters 50/125µm MMF			
	10/100Base-TX with RJ-45 connector—up to 100 meters Cat 5 cable (two Ethernet surge suppressors required)			
	Up to 1518-byte standard Ethernet frames (1522 bytes with 802.1q VLAN tag)			
Management	Web-based (HTML) embedded management agent: setup, security, status, statistics, software update			
	SNMP support: MIB-II and BridgeWave enterprise MIB			
	Voltmeter test points: Receive Signal Level and Link Quality			
Power	100-240 VAC input / +24 VDC output indoor power supply — 45 watts max. consumption			
	Max. cable length: 200 m. (650') with 12AWG; 125 m. (400') with 14AWG (24VDC surge suppressor required)			
Mount	Pole mount: 5-11 cm (2-4.5 in.) OD		Fine-adjust pole mount: 6-11 cm (3.5-4.5 in.) OD	
	Wall mount bracket			
Size	Radio/antenna unit: 30w * 30h * 12d (cm)		Radio with antenna/mount: 62w * 62h * 50d (cm)	
Weight	Radio: 5.4 kg (11.9 lbs)		Radio: 5.2 kg (11.5 lbs)	
	Mount: 3.0 kg (6.6 lbs)		Mount: 3.6 kg (8 lbs)	
			Antenna: 8.5 kg (19 lbs)	
Environmental	Operating temperature: -30 to +50 °C (-22 to 122 °F)			
	Operating altitude: 4,500 m (14,764 ft) maximum			
Wind Loading	50 lbs. force @ 100MPH		120 lbs. force @ 100 MPH	
Regulatory	Safety: UL Listed, CE Mark, meets FCC 1.1310 general population RF MPE limits			
	RF Certifications: U.S. FCC Part 15.255; Industry Canada RSS-210			
Install Kit	Voltmeter test cable, power connectors, visual alignment tool		Voltmeter test cable, power connectors	



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