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, Gigabit or Fast Ethernet
- AdaptRate switching overcomes rain downpours
- AdaptPath provides secondary path switching for maximum service availability
- 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)
- AES Encryption hardware option provides the ultimate level of full line-rate data protection (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

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
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<tbody>
<tr>
<td>AR80</td>
<td>Up to 5 Miles</td>
</tr>
<tr>
<td>AR80X</td>
<td>Up to 7 Miles</td>
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</tbody>
</table>

DATASHEET
## Specifications

<table>
<thead>
<tr>
<th>AR800</th>
<th>AR80X</th>
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<tbody>
<tr>
<td><strong>AdaptRate™ Gigabit Ethernet</strong></td>
<td><strong>AdaptRate™ Extended Range</strong></td>
</tr>
<tr>
<td>1000 Mbps full-duplex, 100 Mbps full-duplex, 1000/100 Mbps AdaptRate</td>
<td></td>
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<tr>
<td><strong>AdaptRate and AdaptPath Switching</strong></td>
<td></td>
</tr>
<tr>
<td>Normal operation: 1000 Mbps / Path fade mode: 100 Mbps / Secondary link: Dependant of user supplied product capability</td>
<td></td>
</tr>
<tr>
<td>Switching time: &lt; 50 milliseconds</td>
<td></td>
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<tr>
<td>AdaptRate switch point: -57 dBm / -59 dBm</td>
<td></td>
</tr>
<tr>
<td>AdaptPath switch point: Configurable</td>
<td></td>
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</tbody>
</table>

### Operating Mode
- 1000 Mbps full-duplex, 100 Mbps full-duplex, 1000/100 Mbps AdaptRate

### Data Rate
- **1000 Mbps**
  - Normal operation: 1000 Mbps
  - Path fade mode: 100 Mbps
  - Secondary link: Dependant of user supplied product capability
- **100 Mbps**
  - Normal operation: 1000 Mbps
  - Path fade mode: 100 Mbps
  - Secondary link: Dependant of user supplied product capability

### Latency
- **1000 Mbps**: < 40 uSec
- **100 Mbps**: < 220 uSec

### Link Budget
- **1000 Mbps**
  - Min. link distance: 328 ft (100 m)
  - Min. link distance: 1,312 ft (400 m)
- **100 Mbps**
  - Min. link distance: 328 ft (100 m)
  - Min. link distance: 1,312 ft (400 m)

### RF Interface
- **72.5 GHz/82.5 GHz (FDD)**, digitally modulated (BFSK) with forward error correction RS(204,188)
  - 1.4 GHz bandwidth
  - 285 MHz bandwidth
- **1.4 GHz bandwidth**
  - 285 MHz bandwidth
- **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
- **External 24 in (62 cm) directional cassegrain**
  - 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

### 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 (200 m) with 12AWG 400 ft (125 m) with 14AWG, stranded wires highly recommended (surge suppressor required)

### Mount
- **Fine-adjust pole mount**: 3.5-4.5 in (8.9-11.4 cm) OD — SCH40 or higher
- **Fine-adjust pole mount**: 3.5-4.5 in (8.9-11.4 cm) OD — SCH40 or higher

### Weight
- **Radio/antenna unit**: 20 w * 14 h * 10 d (in) / 50 w * 36 h * 25 d (cm)
- **Radio with antenna and mount**: 24 w * 24 h * 20 d (in) / 62 w * 62 h * 50 d (cm)

### Environmental
- Operating temperature: -33 to +55 °C (-27 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

### Install Kit
- Voltmeter test cable, power connectors

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BridgeWave strongly recommends that a link analysis be performed to ensure the system meets the individual application requirements. Please contact BridgeWave Sales.

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