# PacketWave® Radios and Antennas

## For Base Stations

*2.5 GHz, 3.3 GHz, 3.5 GHz, 5.3 GHz, 5.8 GHz*

### Features

**Wide frequency range gives providers numerous coverage and capacity options**

**Polarization diversity maximizes performance in difficult environments**

**Burst-by-burst radio power control minimizes interference**

**Versatile radios eliminate the need for a large inventory**

Aperto® Networks PacketWave® base station radios and antennas work with PacketWave base stations, and subscriber units to provide a complete broadband wireless solution. With PacketWave radios, the system is equipped to deliver optimal performance and flexibility. Aperto offers radios for the following frequencies: 2.5, 3.3, 3.5, 5.3, and 5.8 GHz. This wide range of frequency options lets providers scale coverage and capacity to meet the unique requirements of subscribers and to accommodate specific areas of operation.

### Link Optimization

The Aperto PacketWave system employs innovative OptimaLink® wireless link adaptation technology that optimizes bandwidth, robustness, and overall performance for each subscriber. The base station radios and antennas support two key OptimaLink features: polarization diversity and radio power control.

By rapidly adjusting polarization on a burst-by-burst basis, the PacketWave system ensures high performance on each link and maximizes coverage in challenging high-density and non-line-of-sight environments. The radio controls power for each burst, an important advantage in cellular deployments because it minimizes interference in adjacent cells. In addition, the radio transmits only when data is available, in contrast to inefficient conventional systems that transmit continuously in the downstream direction.

### Radio Flexibility

The wide frequency ranges offered by PacketWave radios give service providers the flexibility to change channel plans easily. They also eliminate the need for providers to keep multiple radio types in inventory.

PacketWave antennas provide several beamwidth options: omnidirectional (360°), 120°, 90°, and 60° sectorizations.

# Base Station Radio Specifications

## Radio-Specific Parameters

**2.5 GHz Base Station Radio**

Frequency Range: 2.5–2.7 GHz
Maximum Transmit Power: 23 dBm
Standard Range: Up to 11.6 miles/18.7 km
Extended Range*: Up to 26 miles/42 km
Certifications: FCC, Industry Canada

**3.3 GHz Base Station Radio**

Frequency Range: 3.3–3.4 GHz
Maximum Transmit Power: 20 dBm
Standard Range: Up to 11 miles/17.7 km
Extended Range*: Up to 25 miles/40.2 km

**3.5 GHz Base Station Radio**

Frequency Range: 3.4–3.7 GHz
Maximum Transmit Power: 20 dBm
Standard Range: Up to 10.5 miles/16.9 km
Extended Range*: Up to 23 miles/37 km
Certifications: ETSI, Industry Canada

**5.3 GHz Base Station Radio**

Frequency Range: 5.15–5.35 GHz
Maximum Transmit Power: 20 dBm
Standard Range: Up to 8.9 miles/14.3 km
Extended Range*: Up to 14 miles/22.5 km

**5.8 GHz Base Station Radio**

Frequency Range: 5.725–5.925 GHz
Maximum Transmit Power: 20 dBm
Standard Range: Up to 8.2 miles/13.2 km
Extended Range*: Up to 13 miles/20.8 km
Certifications: FCC, Industry Canada

*Using external subscriber antennas

## Overall Parameters

Modulation and Receive Sensitivity:

QPSK –88 dBm

16QAM –82 dBm

Duplexing: TDD

Channel Widths: 2–6 MHz in 1 MHz steps (all radios), 1.75, 3.5 and 7.0 MHz (3.5 GHz Radio)

RF Ports: 2 N-type female for polarization diversity

## IF Port

Connector: F-type female

Impedance: 75 ohm

IF Signal: 44 MHz

Maximum Coax Cable Length: Up to 825 feet (250 meters) using recommended cable

## IF Control Port

Connector: RJ-45

Maximum CAT5e Cable Length: Up to 825 feet (250 meters) using recommended cable

## Environmental Specifications

Operating Temperature: -31° to 140° F (-35° to 60° C)

Storage Temperature: -40° to 257° F (-40° to 125° C)

Relative Humidity: 0% to 100%

## Ordering Information

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|---|---|
| PWR2500 | PacketWave 2.5 GHz Base Station Radio |
| PWR3300 | PacketWave 3.3 GHz Base Station Radio |
| PWR3500 | PacketWave 3.5 GHz Base Station Radio |
| PWR5300 | PacketWave 5.3 GHz Base Station Radio |
| PWR5800 | PacketWave 5.8 GHz Base Station Radio |

1637 South Main Street • Milpitas, CA 95035
Phone 408.719.9977 • Fax 408.719.9970 • www.apertonet.com

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