

## Point-to-Point DS3/Ethernet Combo Digital Microwave Radios

### KEY PRODUCT FEATURES

- Two license-free versions available: 5.8GHz ISM Band or 5.3GHz UNII Band
- 45 Mb/s Full Duplex, Frequency Division Duplexing (FDD) operation for low latency and symmetrical backhaul
- User Software Selectable for DS3 or 10/100BaseT Ethernet modes
- Three distinct software selectable channel pairs for industry leading frequency coordination
- Advanced security settings allow three levels of user access
- Single weatherproof unit for outdoor applications (providing minimal RF cable loss). Extended temperature range: -30°C to +65°C
- Integral Antenna or optional connection for external flat or parabolic directional antennas
- 16 QAM modulation allowing up to 12 co-located radios without interference
- SNMP, FTP, Telnet, and Web Interface provided for ease of management, configuration, installation, and operation of the radio
- Low part count contributing to a High Mean Time Between Failure Rate (MTBF) > 7 years
- 99.999% uptime Carrier Class reliability meets or exceeds wireline standards
- Built-in BERT tester for local and far end loopback testing
- 5 Year Product Warranty and advance replacement service options
- Specifications are guaranteed over the full temperature range and for the life of the product

### WHAT IS THE WAVELINK 4500 FAMILY OF RADIOS?

The WaveLink 4500 family is a line of high capacity, point-to-point microwave radios. Each radio delivers 45 Mb/s bandwidth, full-duplex, with Telco grade performance.

The WaveLink 4500 family of radios operate in the license-free band, and operators can select a version offering transmission in the 5.3 GHz UNII band or a version supporting the 5.8 GHz ISM band. Each radio can be ordered with either an integral antenna, or a connector for an external antenna. All WaveLink 4500 radios include both DS3 and 10/100BaseT interfaces, which are user software selectable.

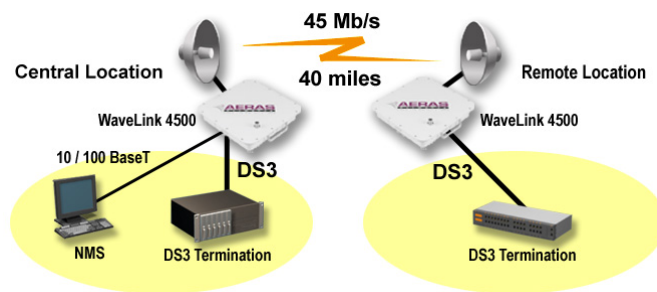
WaveLink radios are easy to deploy, with a unique quick release install bracket for handy pole mounted installations. WaveLink radios are optimized for Ethernet backhaul or traditional telecommunication converging voice and data services.

### WHY AERAS WIRELESS BROADBAND?

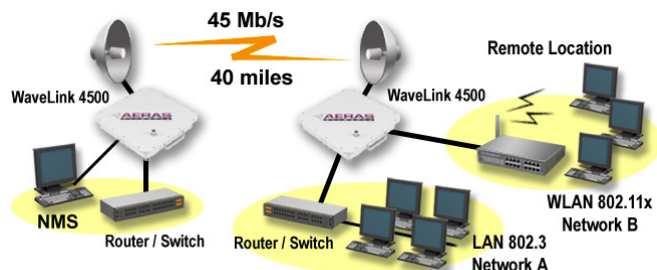
Aeras Networks' WaveLink 4500 family of wireless solutions delivers 45 Mb/s full duplex backhaul bandwidth with powerful Forward Error Correction (FEC). The UNII versions reach up to 7 miles, while the ISM versions carry up to 40 miles. By combining superior ease of installation, next-generation license-free wireless technology with sophisticated remote management capabilities, Aeras delivers a powerful alternative to expensive traditional DS3 leased lines and even other older wireless broadband systems.

Aeras Networks offers wireless customers:

- Faster return on investment
- Next day deployment (no limitations or delays)
- Carrier Class reliability 'Five Nines'
- Easy installation and maintenance with high MTBF rate
- Internal BERT and Loopback Tests
- Field proven design



DS3 Backhaul Application



Ethernet Backhaul Application

**GENERAL PRODUCT INFO**

FREQUENCY BAND	Full Duplex Operation in either the UNII or ISM Bands, depending on the model
SPECTRUM OPTIONS	5.250-5.350 GHz or 5.725-5.825 GHz
CAPACITY OPTIONS	1xDS3 Payload or 2x10/100BaseT Ethernet switched ports
CHANNEL BANDWIDTH	16 MHz

**DIGITAL INTERFACES**

1) <u>DS3</u>	
TYPE	1xDS3 per GR-499
LINE RATE	44.736 Mb/s
LINE CODE	B3ZS
INTERFACE	75 Ω Unbalanced Coax
CONNECTORS	TNC (75Ω)
2) <u>10/100BASET</u>	
TYPE	2x10/100BaseT per IEEE802.3
ETHERNET MODE THROUGHPUT	45 Mb/s
MAX DISTANCE (CPE to WaveLink)	300 feet

**TRANSMITTER**

FREQUENCY RANGE (Frequency Agile)	5.250-5.350 GHz or 5.725-5.825 GHz
OUTPUT POWER AT FREQUENCY (Adjustable)	<u>5.3GHZ</u> <u>5.8GHZ</u> +10dBm max    +16 dBm max
TRANSMIT ATTENUATION	1-30dB adjustable below max power
FREQUENCY STABILITY MODULATION MODULATION	±5 ppm 16 QAM with built in Equalization

**RECEIVER**

TYPE	Double Heterodyne
SENSITIVITY, BER 10 <sup>-6</sup>	-78 dBm or better, including Forward Error Correction (FEC)
MAX RF INPUT LEVEL	-35 dBm
FREQUENCY STABILITY	±5 ppm
ADJACENT CHANNEL REJECTION	≥40 dB (RF bandwidth of ≤16 MHz)

**NETWORK MANAGEMENT**

SNMP	MIB II and private WaveLink functions
NMS/EMS	Standard SNMP based NMS, or Web Browser Interface
CRAFT INTERFACE	RS232, 9600bps, CLI
REMOTE ACCESS	HTTP, FTP and Telnet

**STATUS INDICATORS/DIAGNOSTICS**

EXTERNAL LEDs	Power, Local Alarm, RF Link, 1xDS3 Input, 2xEthernet links
ALARMS	DS3 LOS, AIS, Radio TX, Radio RX, BER Threshold
STATUS	NMS IP addresses, BER, TX Power, RX Signal Level, Loopback Test Status, DS3 Input, Ethernet Input
CONFIGURATION COMMANDS	NMS IP addresses, TX Power, TX Mute, Frequency, RSL, BER Alarm, Loopback Tests, BER Tests
DIAGNOSTIC TEST FEATURES	BER, Local/Remote/RF Loopbacks
PERFORMANCE MONITORING	Receive Signal Strength Indicator (RSSI), Ethernet Statistics

**POWER**

INPUT POWER RANGE	±21 to 60 VDC
POWER CONSUMPTION	36 Watts max

**MECHANICAL**

DIMENSIONS (HxWxD)	12"x12"x4"
WEIGHT	11 lbs (5Kg)

**ENVIRONMENTAL**

TEMP. RANGE	-30°C to +65°C
ALTITUDE	15,000 feet
HUMIDITY	Outdoor/weatherproof

**ANTENNAS****FORWARD GAIN****FRONT/BACK RATIO**

INTEGRAL	21 dBi	40 dB
EXTERNAL PARABOLIC:		
-2 feet (.61m)	28.1dBi	38 dB
-4 feet (1.22m)	34 dBi	46 dB

**FCC INFO (US ONLY)**

<u>5.3 GHZ OPTION</u>	<u>5.8 GHZ OPTION</u>
RVMWL-DS3-53G	RVMWL-DS3-58G
Certified to FCC Part 15.407	Certified to FCC Part 15.247
Subpart E	Subpart C
UNII Certified	ISM Certified

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