

# AirMux-200



## Broadband Wireless Multiplexer



### FEATURES

- Carrier-class solution
- TDM transmission complies with all relevant telecom requirements
- Data rate of up to 48 Mbps
- Transmission range of up to 80 km (50 miles)
- High reliability and availability based on robust air interface
- Integrated solution for E1/T1 and Ethernet interfaces
- Compliant with FCC, CAN/CSA, and Chinese regulations

### DESCRIPTION

- AirMux-200 is a carrier-class, 48 Mbps capacity, cost effective point-to-point broadband wireless transmission system. It combines legacy TDM and Ethernet services for transmission over 5.x GHz unlicensed bands. It is suitable for deployment in FCC regulated countries.
- Short time to service period:
  - License-exempt spectrum removes regulatory delays
  - Wireless connectivity instead of private line leasing from service providers
  - Compact integrated system, easy to install and operate.
- AirMux-200 provides high performance and reliability. The interface ensures low BER, as well as low latency, and full compliance with E1/T1 interface jitter and wander requirements.
- Transmission range of up to 80 km (50 miles) with an external antenna.

- The AirMux multiplexers consist of an outdoor unit (ODU) and an indoor unit (IDU).
- The outdoor unit is suitable for mast or wall installation. Mounting brackets are supplied with the unit.

### POSSIBLE APPLICATIONS

- Broadband Access  
AirMux-200 provides broadband access services, such broadband Ethernet and leased lines, to Small and Medium Enterprises (SME).
- Cellular Backhauling  
AirMux-200 connects between cellular base stations and cellular base station controllers. This solution meets the requirements of cellular backhauling applications by providing up to two E1/T1 interfaces and Ethernet traffic for maintenance and control.
- Hot-Spot Backhauling  
AirMux-200 provides a robust and more cost-effective alternative to the last mile connection between the WLAN access point and the data network, compared with the often used expensive E1/T1 leased lines.
- Wireless ISP Backhaul  
Wireless Internet Service Providers (WISP) use backhaul to connect their Point of Presence (POP) to their network operation center. With AirMux-200, WISPs have a higher capacity with a range of up to 80 km (50 miles), bundled connectivity in a cost-effective package.
- Remote Sites Connectivity  
AirMux-200 is offered to enterprises with multiple sites that require a cost-effective and transparent connection of LAN and PBX systems across their various campuses.

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### SPECIFICATIONS

#### RADIO

- **Frequency**  
5.725–5.850 GHz
- **Data Rate**  
Up to 48 Mbps, user-configurable
- **Channel Bandwidth**  
20 MHz
- **Duplex Technique**  
TDD
- **Modulation**  
OFDM - BPSK, QPSK, 16QAM, 64QAM
- **Transmit Power**  
FCC: 18 dBm (max)
- **EIRP**  
19 dBm/MHz
- **RF Dynamic range**  
More than 50 dB

#### LAN INTERFACE

- **Number of ports**  
1
- **Type**  
10/100BaseT, autonegotiation
- **Framing/Coding**  
IEEE 802.3/U
- **Bridging**  
Self-learning, up to 2000 MAC addresses
- **Traffic Handling**  
MAC layer bridging, self-learning
- **Latency**  
3 msec (typical)
- **Line Impedance**  
100Ω
- **VLAN Support**  
Transparent
- **Connector**  
RJ-45

#### E1/T1 INTERFACE

- **Number of Ports**  
1 or 2
- **Framing**  
Unframed
- **Timing**  
Plesynchronous (independent Tx and Rx timing)
- **Latency**  
8 msec
- **Line Impedance**  
E1: 120Ω, balanced  
T1: 100Ω, balanced
- **Connector**  
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- **Jitter and Wander Compliance**  
As per G.823, G.824 requirements

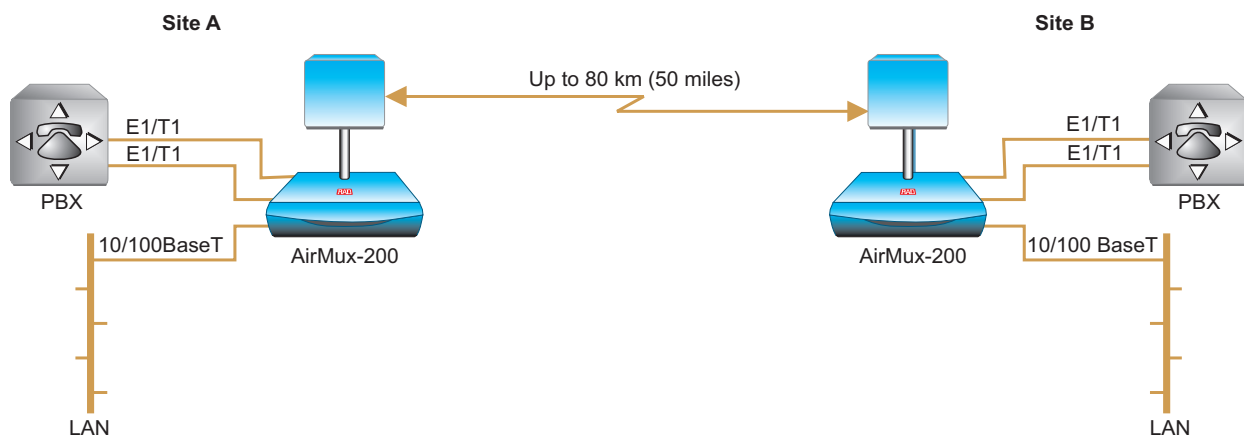
#### ANTENNA

- **Characteristics**  
See *Table 1*

Table 1. AirMux-200 Antenna Options

	Type	Gain [dBi]	Max Range		Beam [degrees]	Dimensions		Weight		Connector	Lightning Protection
			[km]	[miles]		[mm]	[in]	[kg]	[lb]		
Integrated	Flat panel	22	40	25	9.0	305×305×58	12×12×2.3	0.5	1.1	NR	Yes
External	Flat panel	28	80	50	4.5	600×600×51	23.6×23.6×2	5.0	11.0	N-type	No

### APPLICATION



### MANAGEMENT

- **Protocol**  
SNMP-based
- **Network Management**  
SNMPc-based
- **Management Interface**  
10/100BaseT
- **Connector**  
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- **Upgrade Capabilities**  
Local and over-the-air software download

### REGULATORY COMPLIANCE

- **Radio**  
FCC 47CFR Part 15, 15.247, and subpart C  
RSS-210  
China MIW[2002]277
- **Safety**  
TUV according to UL 60950, EN 60950-1, EN 60529
- **EMC**  
FCC 47CFR Parts 15, 15.247, and subpart B  
CAN/CSA-CEI/IEC CISPR 22-02
- **Environmental**  
IEC 60721-3-4 Class 4M5  
IP 67

### GENERAL

- **Diagnostics**  
Local and remote loopbacks
- **IDU-to-ODU Connection**  
Outdoor Cat.5 cable,  
100m (328 ft) maximum length
- **Power**  
100–240 VAC using external AC/DC converter
- **Power Consumption**  
20W max (indoor and outdoor units)

- **Indicators**

PWR (green) – Power status  
IDU (green) – IDU status  
ODU (green/red) – ODU-to-IDU link status  
AIR I/F (green/red) – Air Interface status  
SERVICE (green/red) – E1/T1 signal status

- **Physical**

Outdoor unit (with integrated antenna):

Height:	305	mm	/	12	in
Width:	305	mm	/	12	in
Depth:	58	mm	/	2.3	in
Weight	1.5	kg	/	3.3	lb

Indoor unit:

Height:	44	mm	/	1.7	in
Width:	237	mm	/	9.3	in
Depth:	165	mm	/	6.5	in
Weight	0.5	kg	/	1.1	lb

- **Environment**

Outdoor unit and external antenna:  
Enclosure: all-weather case  
Temperature: -35–60°C/-31–140°F

Indoor unit:

Temperature: -5–45°C/23–113°F  
Humidity: Up to 90%,  
non-condensing



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### ORDERING

#### **AirMux-200/IDU/AC/UTP/\***

Indoor unit with 10/100BaseT port and external AC/DC converter

#### **AirMux-200/ODU/#/^**

Outdoor unit with 10/100BaseT port

#### **AirMux-200/#/AC/UTP/\*/%/KIT/!**

Complete system for 10/100BaseT link, comprising two indoor units (AirMux-200/IDU), two outdoor units (AirMux-200/ODU) with integrated antennas and two cables at specified length

**Note:** If kit is required without cables, omit the % option.

# Specify frequency band:  
**f58** for 5.725–5.850 GHz

\* Specify TDM interface type:  
**E1** for E1 interface  
**T1** for T1 interface  
**2E1** for two E1 interfaces  
**2T1** for two T1 interfaces

^ Specify **EXT** for outdoor unit with dedicated connector for external antenna connection  
**Note:** If EXT is not specified, AirMux-200 is supplied with integrated antenna.

% Specify cable length:  
**50** for 50m (164 ft) cable  
**100** for 100m (328 ft) cable

! Country Specific  
**C** for China

#### **CBL-Airmux-UTP/@**

Assembled cable for permanent connection between indoor and outdoor units

@ Specify cable length:  
**25** for 25m (82 ft) cable  
**50** for 50m (164 ft) cable  
**75** for 75m (246 ft) cable  
**100** for 100m (328 ft) cable

#### **Airmux-ANT/\$**

External flat panel antenna

\$ Specify external antenna type:  
**28 dB** for 28 dBi external antenna

#### **RM-33**

Hardware kit for mounting one indoor unit in a 19-inch rack.



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● **International Headquarters**  
24 Raoul Wallenberg Street  
Tel Aviv 69719, Israel  
Tel: (972) 3-6458181  
Fax: (972) 3-6498250, 6474436  
Email: [market@rad.com](mailto:market@rad.com)

● **U.S. Headquarters**  
900 Corporate Drive  
Mahwah, NJ 07430  
Tel: (201) 529-1100  
Toll free: 1-800-444-7234  
Fax: (201) 529-5777  
Email: [market@radusa.com](mailto:market@radusa.com)

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