



FibeAir[®] 4800 Family

Fast Ethernet & nxT1/E1 License Exempt Radio



**Broadband Wireless
Network Solutions**



System Overview

FibeAir® 4800 product family is a carrier-class, high capacity, low cost point-to-point wireless broadband system. It operates in the license-exempt 2.4 - 5.x GHz bands and is suitable for service providers and enterprises that require immediate deployment and quick return on investment.

FibeAir® 4800 product family carries Fast Ethernet and TDM services over license-exempt bands, effectively connecting voice and data over a single link. The system ensures low BER, as well as low latency and full compliance with E1/T1 interface jitter and wander requirements.

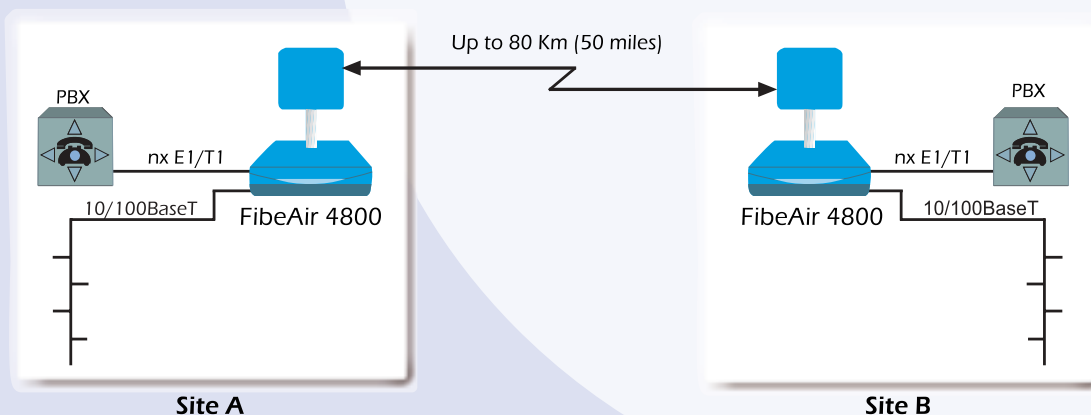
FibeAir® 4800 enables direct connection of existing equipment, such as LANs and PBX systems, thus eliminating the need for additional external equipment. FibeAir® 4800 product family is a split-mount system consisting of an IDU, ODU and antenna on each side of the link.

Two types of IDUs are available: IDU-E with 1 x 10/100BT and 1,2 x E1/T1, or IDU-C (Carrier Class) with 2 x 10/100BT and 1, 2, 4, 6 x E1/T1, power redundancy, and optional 1+1 protection.

Two types of ODUs are available: ODU with integrated 1 ft antenna, or ODU with N-type connector for external antenna.

Features

- High data rate up to 48 Mbps
- License-exempt radio operation at:
 - 2.400-2.4835 GHz
 - 4.940-4.990 GHz
 - 5.250-5.350 GHz
 - 5.470-5.725 GHz
 - 5.725-5.850 GHz
- Configurable modulation schemes: QPSK, 16 QAM, 64 QAM
- Integrated Fast Ethernet and nx E1/T1 interfaces
- Operational range of up to 50 miles (80 km)
- Carrier-class grade
- Excellent performance and reliability
- Complete SNMP-based local and remote management
- Complies with ETSI, FCC, IC, ITU-T and IEEE standards and frequency plans, for operation worldwide
- Cost-effective Ethernet link



private networks mobile backbone telecom infrastructure

Applications

Campus Connectivity: Transparent connection of enterprise LAN and PBX systems across campuses, which reduces communication costs, operating expenses, and maintenance requirements.

Wireless ISP Backhaul: Wireless Internet Service Providers (WISPs) use backhaul to connect their Point of Presence (POP) to their network operation centers. Using FibeAir 4800, WISPs have a higher capacity, with a range of up to 80 km, and bundled connectivity, within the same cost-effective package.

Wi-Fi and WiMax Backhauling: Provides a robust and cost-effective wireless alternative to leased lines, for the last mile connection between the Wi-Fi/WiMax access point and the data network.



Technical Specifications

Configuration

Architecture:

Indoor Unit (IDU-E or IDU-C) and Outdoor Unit (ODU)

IDU to ODU Interface

Outdoor CAT-5 cable;
Maximum length of 100 m

Radio

Frequency:

2.400-2.4835 GHz
4.940-4.990 GHz
5.250-5.350 GHz
5.470-5.725 GHz
5.725-5.850 GHz

Data Rate: Configurable up to 48 Mbps

Channel BW: 20 MHz

Channel Setting Resolution: 5 MHz

Duplex Technique: TDD

Modulation: OFDM - BPSK, QPSK, 16 QAM, 64 QAM

Transmit Power: Up to 18 dBm
(configurable in 1dB steps)

The max value will be limited in accordance with standard regional regulations.

Received Dynamic range: > 60 dB

Error Correction: FEC k=1/2, 2/3, 3/4

Encryption: AES 128

LAN Interface

Type: 10/100BaseT interface auto-negotiation.

Number of ports: 1, 2

Framing Coding: IEEE 802.3/U

Bridging: Self-learning up to 2047 MAC addresses IEEE 802.1

Traffic Handling: MAC layer bridging, self-learning

Data Latency: 3 msec typical

Line Impedance: 100W'

VLAN Support: Transparent

Connector: RJ-45

E1/T1 Interface

Framing: Unframed (Transparent)

Number of ports: 1, 2, 4, 6

Compliance to standards: G.703,G.826.

Timing: Plesiochronous (independent Tx and Rx timing)

Line Code: E1: HDB3; T1: AMI /B8ZS

Latency: 8 msec

Impedance: E1: 120W', balanced

T1: 100W', balanced

Connector: RJ-45

Jitter & Wander: ITU-T G.823, G.824

Management

Protocol: SNMP based protocol

Network Management: SNMPc based

Upgrade Capabilities: Local and remote software download

Diagnostics: Local and remote loopbacks

Management interface: 10/100 BaseT

Connector: RJ-45

Mechanical

ODU Dimensions:

24.5 cm (H) x 13.5 cm (W) x 4.0 cm (D)
Weight: 1.0kg/2.2 lb

IDU-E Dimensions:

16.5 cm (H) x 23.6 cm (W) x 4.5 cm (D)
Weight: 0.5kg/1.1lb

IDU-C Dimensions:

43 cm (H) x 29 cm (W) x 4.5 cm (D)
Weight: 1.5Kg/3.3lb

General

Power Feeding:

110/220 VAC, -48 VDC, 50/60 Hz,

Power Consumption:

FibeAir 4800 with IDU-E: 10W Max

FibeAir 4800 with IDU-C: 14W Max

Mounting: Pole or wall mounting

Environmental

Outdoor Unit Enclosure: All-weather cases

ODU Temperatures: -35°C - 60°C / -31°F - 140°F

IDU Temperatures: -5°C - 45°C / 23°F - 113°F

Humidity: Up to 90% non-condensing

Antenna Characteristics

	FibeAir 4824	FibeAir 4849	FibeAir 4853	FibeAir 4854	FibeAir 4858
Frequency Band	2.400-2.4835 GHz	4.940-4.990 GHz	5.250-5.350 GHz	5.470-5.725 GHz	5.725-5.850 GHz
Integrated Antenna 1 ft					
Gain	17dBi	21dBi	22dBi	22dBi	22dBi
Beam Width	20°	9°	9°	9°	9°
Polarization	Linear	Linear	Linear	Linear	Linear
External Antenna 2 ft					
Gain	24dBi	28dBi	28dBi	28dBi	28dBi
Beam Width	10°H/14°V	4.5°	4.5°	4.5°	4.5°
Polarization	Linear	Linear	Linear	Linear	Linear

* Higher gain antennas are available upon request

Standards & Regulations

	FibeAir 4824	FibeAir 4849	FibeAir 4853	FibeAir 4854	FibeAir 4858
Frequency Band	2.400-2.483 GHz	4.940-4.990 GHz	5.250-5.350 GHz	5.470-5.725 GHz	5.725-5.85 GHz
Radio					
FCC 47CFR Part 15	Sub-part C	Sub-part C	Sub-part E	Sub-part E	Sub-part C
IC	RSS-210		RSS-210		RSS-210
ETSI	EN 300 328			EN300 216 V1.2.1 EN 301 893 V1.2.2	EN300 440 V1.3.1
Dynamic Frequency Selection and Transmission Power Control (DFS/TPC)					
Safety					
TUV	60950, according to UL 60950				
CAN-CSA	C22.2 No.60950				
EMC					
FCC	47CFR Part 15, Sub-part B				
ETSI	EN 301 489-1				
Environment					
ETSI	IEC 60721-3-4 Class 4M5 IP67				

About Ceragon Networks Ltd.

Ceragon Networks Ltd. (NASDAQ: CRNT), a pacesetter in broadband wireless networking systems, enables rapid and cost-effective high-capacity network connectivity for mobile cellular infrastructure, fixed networks, private networks and enterprises. Ceragon's modular FibeAir® product family operates across multiple frequencies, supports integrated high-capacity services over SONET/SDH, ATM and IP networks, and offers innovative built-in add/drop multiplexing and encryption functionality to meet the growing demand for value-added broadband services. Ceragon's FibeAir® product family complies with North American and international standards and is installed with over 150 customers in more than 60 countries. More information is available at www.ceragon.com.

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