

New breed of all-indoor  
5 GHz radio

Spectrum efficient

Highest IP and TDM  
capacity

Carrier-class

Resilient transmission

Lowest cost per  
megabit-mile

#### Tri-band 5GHz:

- 5250 to 5350 MHz
- 5470 to 5725 MHz
- 5725 to 5850 MHz

#### • 4xT1/E1 + 10/100BaseT Ethernet

#### • Over 200Mbps user capacity

#### • 54 non-overlapping channels (4xT1/E1)

#### • 1MHz tuning resolution

#### • 1RU rack-mount

#### • >30 miles @ 99.999%\*

#### • 2-year standard warranty\*\*

\*Distance based on FCC regulations, average climate & terrain, 6' dish antennas, 3dB transmission system losses at each end with ~100Mbps throughput. Longer or shorter distances will apply for alternative antennas, country regulations, transmission system losses, path topologies and radio configurations.

\*\*Terms and conditions apply. See your Exalt Communications representative for details.

- ✓ **Eliminate** leased line expenses
- ✓ **Connect** locations in days, not weeks
- ✓ **Upgrade** capacity of existing systems
- ✓ **Carry** voice and Ethernet simultaneously
- ✓ **Avoid** interference
- ✓ **Improve** manageability
- ✓ **Reduce** installation and maintenance
- ✓ **Secure** wireless backhaul links
- ✓ **Collocate** systems and re-use spectrum

#### Telecommunications Carriers

- Extend networks
- Expand capacity
- Add Ethernet connectivity
- Provide management capability
- Improve interference avoidance flexibility

#### Education, Medical & Business Users

- Connect campus locations securely
- Eliminate leased line costs
- Install your connections instantly
- Carry voice and data connections seamlessly
- Provide high IP traffic bandwidth

#### Government Agencies

- Create secure inter-building networks, rapidly
- Backhaul video monitoring systems
- Implement backbones for private/public access networks

#### Energy & Utility

- Create high-speed inter-facility connections
- Backhaul high-capacity video monitoring systems along with telemetry data
- Connect oil drilling platforms, power stations, utility centers



As the only tri-band 5 GHz backhaul system on the market, the EX-5i extends and combines the advantages of all available license-exempt 5GHz bands to provide maximum functionality for demanding backhaul applications.

Using very efficient proprietary modulation techniques, resulting in a very narrow occupied RF bandwidth, and utilizing all three unlicensed bands from 5250 to 5850 MHz, the EX-5i uniquely provides up to **54 non-overlapping frequency channels**. It also provides **fine-tuning capability across all of the frequency bands**, resulting in up to **415 center frequencies of operation** with no hardware changes required for retuning. These features result in unprecedented system densities and interference avoidance capability compared to all other carrier-class systems in this band. Furthermore, the unique synchronization capabilities of the EX-5i allow for system collocation and frequency re-use, maximizing performance while reducing installation costs and complexity.

The EX-5i was developed specifically to meet the demanding and changing requirements of the carrier-class user, providing excellent system performance and unique features that result in the **lowest cost per megabit-mile in its class**. For current users in any 5GHz band, the EX-5i provides a **smooth upgrade path to higher T1/E1 capacity and Ethernet services** without replacing the existing transmission system.

## System

Frequency Bands <sup>1</sup>	5250-5350MHz 5470-5725MHz 5725-5850MHz
Tuning Resolution	1MHz
Output Power (at full power)	
5725-5850MHz band	+24dBm, Mode 1 +21dBm, Mode 2
5250-5350MHz band	+13dBm
5470-5725MHz band	+13dBm
Output Power (at min power)	Full power minus 20dB
Power Control Step Size	0.5dB
Receiver Threshold (BER=10 <sup>-6</sup> )	<b>Mode 1</b> <b>Mode 2</b>
8MHz channel	-86dBm      -78dBm
16MHz channel	-83dBm      -75dBm
32MHz channel	-80dBm      -72dBm
64MHz channel <sup>2</sup>	-77dBm      -69dBm
Maximum RSL (Mode 1)	-25 dBm error-free 0 dBm no damage
Non-overlapping channels	<b>5.3GHz</b> <b>5.4GHz</b> <b>5.8GHz</b>
8MHz channel	10      29      15
16MHz channel	5      14      7
32MHz channel	2      7      3
64MHz channel <sup>2</sup>	1      3      1
Aggregate User Capacity <sup>3</sup>	<b>Mode 1</b> <b>Mode 2</b>
8MHz channel	13Mbps      27Mbps
16MHz channel	27Mbps      54Mbps
32MHz channel	55Mbps      110Mbps
64MHz channel <sup>2</sup>	110Mbps      216Mbps
Error Floor	10 <sup>-12</sup>
Latency (T1/E1)	1ms, typical
Link Security	96-bit Security Key AES encryption <sup>2</sup>
VLAN Management	802.1Q HTTP GUI CLI/Telnet SNMPv3
Regulatory Compliance	FCC 15.247 FCC 15.407 IC RSS-210

## Physical

Physical Configuration	Single-piece Indoor Unit (IDU)
Dimensions (H x W x D)	1RU 1.75 x 17 x 14 inches 4.5 x 43.2 x 35.6 cm
Operating Temperature	-40 to +65 degrees C -40 to +149 degrees F
Full Spec Temperature	-25 to +60 degrees C -13 to +140 degrees F

<sup>1</sup> Not all frequency bands are authorized or available for use in all countries. Consult your Exalt Communications representative for details.

<sup>2</sup> Firmware option required.

<sup>3</sup> The figure listed is the actual aggregate user throughput, maximum, as measured at layer 2. T1 or E1 circuits may be enabled one at a time, as needed, and subtract 3.1Mbps (1.544Mbps full-duplex) or 4.1Mbps (2.048Mbps full-duplex), respectively, from the aggregate user throughput. Some combinations of frame size, link distance, T1/E1 enabling, bandwidth, mode and desired latency will result in reduced maximum aggregate throughput. See your Exalt Communications representative for details.

Specifications subject to change without notice.

## Physical (continued)

Weight	11.3 pounds; 5.1 kg
Environmental	GR-1089-CORE intra-building 15,000 feet; 4.6 km 95% non-condensing
Altitude	
Humidity	

## Interfaces

RF	N-type (F) 50 ohms
T1/E1 (x4)	RJ48C/RJ45 (F) 100 ohms, balanced AMI, B8ZS, selectable per channel
T1 Impedance	100 ohms, balanced
T1 Line Codes	AMI, B8ZS, selectable per channel
T1 Clocking Speed	1.544Mbps
T1 Compliance	ANSI T1.102-1987 ITU-T; G.823; GR-499-CORE
E1 Impedance	120 ohms, balanced
E1 Line Codes	HDB3
E1 Clocking Speed	2.048Mbps
E1 Compliance	CEPT-1; G.703; ITU-T-G.703
Loopback Modes	Remote Internal Remote External Local Line
Ethernet (x2)	RJ45 (F), auto-MDIX
Interface Speed	10/100BaseT
Duplex	Half, Full, Auto
Compliance	802.3
Console (Serial)	9-pin Sub-D (F)
Interface Speed	9600 bps
Compliance	EIA-574 (RS-232)
Alarm	9-pin Sub-D (F)
Inputs	(2) TTL/Closure
Outputs	(2) Relay (Form C)
Sync (In and Out)	RJ45 (F)
Signaling	1pps (GPS) <sup>4</sup>
DC Power	6-pin barrier strip
Input Voltage	±20-60VDC
Consumption	<38.5W (48V:<0.8A, 24V:<1.6A)
AC Power Adapter	EIC-to-NEMA 5-15
Input	100-240VAC, 1.5A
Output	48VDC, 1.5A, 72W

## System Components

Complete link	Two terminals, each with AC adapter & accessory kit
Single terminal	One terminal with AC adapter & accessory kit
Accessory kit	DC power connector, rack and grounding hardware (spare)
AC adapter	AC adapter (spare)

<sup>4</sup> Firmware upgrade required



GPS sync kit<sup>2</sup>

GPS antenna and  
mounting bracket  
(option)

## EX-5i Specifications

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[www.exaltcom.com](http://www.exaltcom.com)

DS-EX-5i-02132007  
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