

11GHz Split-Mount Licensed Wireless Backhaul

- Split-mount
- Spectrum efficient
- IP and TDM applications
- Carrier-class
- FCC and ETSI
- Resilient transmission
- Lowest cost per megabit-mile

- ✓ **Own and control** your spectrum
- ✓ **Connect** locations in days, not weeks
- ✓ **Carry** voice and Ethernet simultaneously
- ✓ **Improve** manageability with SNMPv3
- ✓ **Reduce** installation and maintenance
- ✓ **Secure** licensed wireless backhaul links
- ✓ **Future-proof** licensed backhaul connections

- 10/100BaseT + 4xT1/E1
- Over 200 Mbps user capacity
- AES 256 and 128 encryption (option)
- SNMPv3*
- 1RU design
- Monitored Hot Standby Protection
- ±20-60 VDC power supply
- 2-year standard warranty**

Education, Medical & Enterprise

- Connect campus locations securely
- Install connections instantly
- Interconnect PBX trunk lines
- Eliminate leased line costs
- Provide management capability and security with SNMPv3 and AES encryption
- Carry voice and data on dedicated spectrum

Government Agencies

- Create secure inter-building networks
- Backhaul video monitoring systems
- Secure public safety networks
- Combine with unlicensed or 4.9GHz
- Interconnect PBX trunk lines
- Carry voice and data on dedicated spectrum

Industrial

- Connect oil drilling platforms, power stations and utility centers
- Carry AMR/AMI, SCADA, relay control, and IP data on dedicated spectrum
- Deploy voice/data substation connections
- Backhaul high-capacity video monitoring systems along with telemetry data

Telecommunications Carriers

- Add Ethernet connectivity
- Combine with unlicensed backhaul
- Migrate TDM to IP services
- Provide management capability and security with SNMPv3 and AES encryption
- Carry voice and data on dedicated spectrum



The EX-11s split-mount microwave radios from Exalt Communications are carrier-class, software configurable systems designed with the same strict carrier-class requirements as the all-indoor EX-i and the all-outdoor EX-r series platforms. The highly flexible split-mount EX-11s is available in convenient 1RU-IDU/ODU configurations for the FCC 11GHz band, featuring native TDM and native IP transport with over 200Mbps aggregate user throughput and sub-500µs latency.

With future-proof upgradeability and configuration control for channel bandwidth, modulation, and TDM/IP capacity via software, there is no need for field replaceable plug-ins or downtime to upgrade capacity or migrate TDM traffic to emerging IP-based network services.



The EX-11s series 4-100F IDU provides two 10/100BaseT Ethernet ports and 4xT1/E1 ports. And, only Exalt delivers market-leading security with AES encryption and secure SNMPv3 management. Configurable in standalone 1+0 or monitored hot-standby 1+1 protection mode, the EX-s series also features enhanced fault-management and diagnostic features.

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

System

Frequency Band	10700-11700 MHz		
Output Power (at full power)	+24.5dBm Mode 1 +20dBm Mode 2 +17dBm Mode 3		
Power Control Step Size	0.5dB		
Maximum RSL (Mode 1)	up to -20dBm error-free 0 dBm no damage		
Receiver Threshold (guaranteed over temperature @BER=10 ⁻⁶)			
FCC (IDU 4-100F)	<u>Mode1</u>	<u>Mode2</u>	<u>Mode3</u>
5 MHz channel	-90dBm	-84dBm	-77dBm
10MHz channel	-87dBm	-81dBm	-74dBm
20MHz channel	-84dBm	-77dBm	-70dBm
30MHz channel	-82dBm	-75dBm	-68dBm
User Capacity (Aggregate ¹ /Full Duplex ²)			
FCC (IDU 16-100F)	<u>Mode1</u>	<u>Mode2</u>	<u>Mode3</u>
5MHz channel	14/7 Mbps	30/15 Mbps	46/23 Mbps
10MHz channel	30/15 Mbps	62/31 Mbps	92/46 Mbps
20MHz channel	62/31 Mbps	124/62 Mbps	188/94 Mbps
30MHz channel	94/47 Mbps	188/94 Mbps	284/142 Mbps
Error Floor	10 ⁻¹²		
Maximum packet size	1916 bytes		
Latency (T1/E1)	<500µs typical		
Link Security	96-bit proprietary 128 and 256 AES encryption ³		
Management	HTTP GUI CLI/Telnet SNMPv2, SNMPv3		
Compliance			
RF	FCC Part 101 ETSI EN 302 217-2-2		
EMI	FCC Part 15 ETSI EN 301 489		

Physical

Physical Configuration	Split-mount Indoor Unit (IDU) and Outdoor Unit (ODU)
Dimensions (H x W x D)	1RU
IDU	1.75 x 17 x 14 inches (1RU) 4.5 x 43.2 x 35.6 cm (1RU)
ODU	Diameter 10.5in/26.7cm Depth 3.5in/8.9cm
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
Weight	IDU: 11 pounds; 5.1 kg ODU: <10 pounds; 4.6 kg
Environmental	GR-1089-CORE intra-building NEMA 4/IP56, EN 301 126-1
Altitude	15,000 feet; 4.6 km
Humidity	IDU: 95% non-condensing ODU: 100% condensing
Safety	IEC 60950-1, EN 60950-1

¹ 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. See your Exalt representative for details.

² Bidirectional capacity, or half of the aggregate capacity of the system. Base model configuration is 15Mbps+0xT1/E1.

³ Firmware option

Interfaces

IF	IDU/ODU: N-type (F); 50 ohms
RF	ODU: WR-42
T1/E1 (x4)	RJ48C/RJ45 (F)
T1 Impedance	100 ohms, balanced
T1 Line Codes	AMI, B8ZS, selectable per channel
T1 Clocking Speed	1.544Mbps
T1 Compliance	ANSI T1.102-1987; GR-499-CORE
E1 Impedance	120 ohms, balanced
E1 Line Codes	HDB3
E1 Clocking Speed	2.048Mbps
E1 Compliance	CEPT-1; G.823, ITU-T-G703
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	Internal Sync, 1pps (GPS)
DC Power	6-pin barrier strip
Input Voltage	±20-60VDC
Consumption	<70W (48V :<1.5A, 24V:<3.0A)
AC Power Adapter	EIC-to-NEMA 5-15
Input	100-240VAC, 1.5A
Output	48VDC, 2A, 100W

System Components

Complete link ⁴	Two terminals (IDU+ODU) each with AC adapter & accessory kit
Single terminal	One terminal (IDU+ODU) with AC adapter & accessory kit
Accessory kit	DC power connector, rack and grounding hardware (spare)
AC adapter	AC adapter (spare)
Monitored Hot Standby Kit	Optional accessory kit

⁴ Two complete links (4 terminals: 4xIDU+4xODU) are required for monitored hot standby (MHS) protection along with protection kit and MHS firmware support.