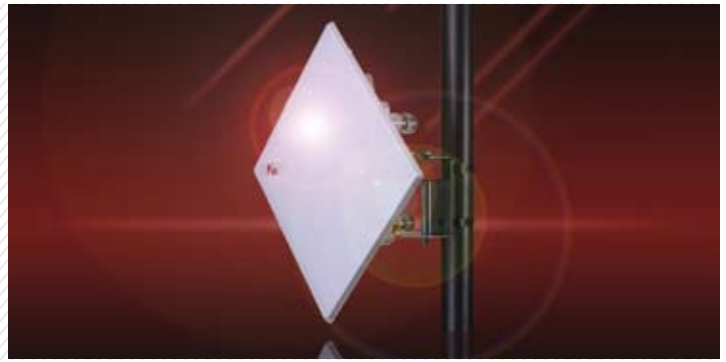




ExtendAir r4900 Series



High Performance Microwave Systems for Mission Critical Emergency Response, Public Safety and Government Applications

ExtendAir is a first-of-its-kind line of entry-level high performance radio system designed to deliver guaranteed Ethernet throughput and toll-quality voice over long ranges. The ExtendAir r4900 series radios are rugged, all-outdoor systems operating in the licensed 4.9 GHz band delivering a best-in-class 162 Mbps aggregate throughput and optional native 4xT1/E1. The ExtendAir r4900 series is designed to meet the mission-critical performance and flexibility requirements of government and public safety organizations.

Management and data security. The ExtendAir r4900 series radios deliver the highest data and management security available with optional FIPS 197-compliant 128-bit and 256-bit AES encryption and secure SNMP v3 management, together with enhanced fault management and diagnostic features. The 802.1Q VLAN option provides built-in network administration and security flexibility.

Throughput symmetry control. ExtendAir r4900 radios can allocate Ethernet throughput evenly or asymmetrically up to 80:20 between the two link directions, maximizing capacity for applications such as video surveillance, GIS data transfer and remote dispatch.

Unparalleled dependability. Exalt's unique high performance point-to-point technology allows the ExtendAir r4900 series to deliver sustained throughput over long distances in high interference environments. As compared to competing systems that reduce throughput in the presence of interference just to maintain a connection, with ExtendAir, you always know what capacity you're going to get.

Toll-quality voice. ExtendAir r4900 series radios support native Ethernet and, optionally, native TDM traffic, with 1 ms typical latency for both. So whether it's TDM voice or VoIP, ExtendAir won't get in the way of a good user experience.

Pay as you grow. The future is hard to predict. With ExtendAir systems, you don't have to. All capacity enhancements and optional features are remotely upgradeable using a software license key.

Best-in-class data networking. ExtendAir was designed to support complex IT environments, with support for Ethernet rate limiting, VLAN tagging (802.1Q) and QoS (802.1p) with four traffic classes and multiple filters. And ExtendAir offers the ultimate security with optional FIPS 197-compliant 128-bit and 256-bit AES.



Primary Specifications

	ExtendAir r4900 / r4905 rc4900 / rc4905	ExtendAir r4910 / rc4910
Maximum Ethernet (Aggregate) Capacity	162 Mbps	
TDM	-	4xT1/E1
Frequency (GHz)	4.940–4.990	

Specifications

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System

Outdoor Unit (ODU) Models	1x10/100BaseT 1x10/100BaseT PoE + 2x10/100BaseT 1x10/100BaseT PoE + 4xT1/E1		
Frequency Bands (GHz)	4.940–4.990		
Tuning Resolution	5 MHz		
Output Power (full power) ¹			
QPSK	+22 dBm		
16QAM	+18 dBm		
64QAM	+16 dBm		
Output Power (min power)	0 dBm		
Power Control Step Size	0.5 dB		
Aggregate Throughput (Mbps) ²	10 MHz channel	20 MHz channel	40 MHz ³ channel
QPSK	13	27	55
16QAM	26	55	109
64QAM	38	81	162
Receiver Threshold (BER=10 ⁻⁶) over temperature (dBm)			
QPSK	-86	-83	-80
16QAM	-79	-76	-73
64QAM	-73	-70	-67
System Gain (dB)			
QPSK	108	105	102
16QAM	97	94	91
64QAM	89	86	83
Range ⁴ (99.99% availability)	up to 15 mi / 24 km at 162 Mbps sustained user throughput		
Maximum RSL	0 dBm no damage		
QPSK	-25 dBm error-free		
64QAM	-30 dBm error-free		
Throughput Symmetry Control	5 modes: 20/80, 80/20, 35/65, 65/35, 50/50		
Error Floor	10 ⁻¹²		
FEC	T=8		
Latency (T1/E1)	1ms, typical		
Data Security (encryption)	NIST FIPS 197-compliant 128-bit AES and 256-bit AES ⁵ or 96-bit proprietary encryption		
Spectrum Analyzer	Embedded		
Management	In-band management Out-of-band management (4905 models only)		
Security	SSL/SSH and secure, encrypted SNMPv3		
HTTP	Embedded web server GUI (Internet Explorer, Firefox, Chrome, Safari)		
CLI/Telnet	via 10/100BaseT		
SNMP	v1, v2c, and secure v3		
MIB Support	MIB I, MIB II, Exalt MIB		
Installation and Management Manual	Embedded in radio, accessible via HTTP GUI		
Compliance	FCC Part 90 EN 60950-1, 301-489 IC RSS-111		

¹ Output power is specified per modulation to accurately show the corresponding system gain and throughput.

² Systems are 27 Mbps with upgrade options of 55, 80 and 162 Mbps.

³ Not available in the U.S. and other countries. Consult your Exalt representative or product documentation for regulatory information.

⁴ FCC rules, 4.9 GHz band, average climate & terrain, connectorized rc version with 6' dish antennas, 3 dB transmission losses, and 99.99% availability. Longer or shorter distances can be achieved for alternate antennas, country regulations, transmission system losses, path topologies, availability requirements and radio configurations. Refer to Exalt Link Budget Calculator and Path Profiler tools.

⁵ Software license key option.



Specifications (Cont.)

ExtendAir r4900 Series

System Components

Complete Link	Two terminals, each with mounting kit, & accessory kit	
Single Terminal	One terminal with mounting kit & accessory kit	
Accessory Kit	Grounding hardware, water-proofing tape (spare)	
Power Supply Kits	AC Power Kit or DC Power Kit (ordered separately)	
Mounting Kits	Available for r and rc models (spare)	
ExaltSync GPS Sync Kit	GPS receiver and mounting bracket (optional)	

Physical	Integrated antenna	Connectorized
Physical Configuration	Outdoor Unit (ODU)	
Dimensions (H x W x D)	13.3" x 13.3" x 4.5"	9.4" x 9.4" x 5.25"
	33.8 cm x 33.8 cm x 11.4 cm	23.9 cm x 23.9 cm x 13.3 cm
Antenna	Integrated	Type N Connector
Integrated Antenna		
Gain/3 dB Beamwidth	21.5 dBi / 10 degrees	
Operating Temperature	-40 to +65°C; -40 to +149°F	
Full Spec Temperature	-40 to +60°C; -40 to +140°F	
Weight	Connectorized rc: 6 lbs. / 2.72 kg	
	Integrated antenna r: 7 lbs. / 3.18 kg	
Environmental	NEMA 4 / IP66	
Altitude	15,000 ft. / 4600 m	
Humidity	100% condensing	

Interfaces		
RF	Connectorized rc, type: N-type Female	
Ethernet	RJ48C/RJ45 Female (x1 or x3) ⁶	
Interface Speed	10/100BaseT (PoE or PoE +ETH1 +ETH2)	
Duplex	Half, Full, Auto-MDIX	
Compliance	802.3	
VLAN	802.1q, transparent, trunk and management only; 64 VLANs with 4094 VLAN IDs	
QoS	4 QoS traffic classes; filters on: port, IEEE802.1p, IPv4 TOS or DiffServ, IPv6 traffic class, 802.1Q VLAN ID, SA/DA MAC	
Ethernet Rate Limiting	Configurable per port via software, 1 Kbps resolution	
Maximum Packet Size	2048 bytes	
T1/E1 ⁶	T1 (x4)	E1 (x4)
	RJ48C/RJ45 Female (x2)	
Impedance	100 ohms, balanced	120 ohms, balanced
Line Code	AMI, B8ZS, selectable per channel	HDB3
Data Rate	1.544 Mbps	2.048 Mbps
Compliance	ANSI T1.102-1987; ITU-T; G.823; GR-499-CORE	CEPT-1; G.703; ITU-T-G.703
Loopback Modes	Remote internal; remote external; local line	
ExaltSync Synchronization	RJ45 Female (x1)	
Input	1pps (GPS)	
Output	Sync out	
DC Power	<25W	
AC/PoE Power Adapter		
Input	100-240VAC, 0.5A	
Output	40W, 56VDC	

Warranty	Two years ⁷
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⁶ TDM models include a single PoE 10/100BaseT port. IP/Ethernet-only model includes one PoE 10/100BaseT port and two additional 10/100BaseT ports.

⁷ Terms and conditions apply. Consult your Exalt sales representative for details.

