

Spectrum-DMR IP – Complete Outdoor Radio DMR IP Radio

High Capacity Microwave Radio Links

(5.8, 6, 7/8, 11, 13, 15, 18, 23, 26, 38GHz)

DMR IP Microwave System provides high capacity transmission, flexibility, reliability, rich features and convenience for wireless communications networks.

DMR IP digital point-to-point radio series represents a new microwave radio product line that is designed to address universal applications for high capacity Ethernet and SDH. This advanced technology platform is designed to provide high flexibility to customers currently and in the future.

DMR IP digital radio series enables network operators (mobile and private), government and access service providers to offer a portfolio of secure and scalable wireless applications for data, video, and voice services in Ethernet.

DMR IP digital radio includes integrated OAM&P (Operations, Administration, Maintenance, and Provisioning) functionality and design features that enable simple commissioning when the radio network is initially set up in the field.

Applications

- Wideband wireless access, wireless local loop (WLL) and access market
- Mobile cellular network, which require higher capacity due to an increase in subscriber, cell sites and data application
- Back up network for fiber optic trunk links
- Private and Enterprises network such as educational institutions, financial institution and utility companies providing voice ATM & IP private networks

Product features

- Frequency: 5.8~40GHz
- Single ODU, transmission capacity up to 160Mbps (28MHz)/ 320Mbps (56MHz*)
- Data rate up to 640Mbps (28MHz)/ 1.2Gbps (56MHz*) with XPIC
- All outdoor design, low cost, low latency, low power consumption, wide DC power input range and high reliability
- Adaptive Modulation Control (AMC*) and bandwidth capacity controlled by software
- N:1, N+0, N+N, multi-direction, ring protection and Mesh technology.
- Built-in FEC, ATPC, RF, analog and digital loopback functions
- Ethernet GE、STM-1 or E1 interfaces and compatible with STM-1 interface of ADM equipment
- Large package, UDP/IP package encapsulation format, cache absorption function, RSTP, Layer-2 switching, and VLAN, 802.3x, 802.1p protocols
- SNMP, Web Server NMS and software/hardware online update
- Transparency transmission of IP, STM-1 and TDM over IP; native IP & SDH/PDH; support new generation IP-based Mesh network and NGN

Available in Following Configurations

- DMR-IP STM1: 1×STM1; STM-1 S1.1 optical interface
- DMR-IP 160Mbps (28MHz)or 320Mbps (56MHz*); 2×GE interfaces
- Ethmux16 Extension Unit: 16×E1 and 5×GE interfaces



Technical Specifications

Frequency	5.8GHz	6GHz	7/8GHz	11 GHz	13 GHz	15 GHz	18 GHz	23 GHz	26 GHz	38 GHz		
Standard	ETSI/ITU/FCC											
RF Output Power (dBm)	128QAM	0+20	0+20	0+20	0+16	0+17	0+16	0+15	0+15	0+14	0+11	
	64QAM	0+21	0+21	0+21	0+17	0+19	0+17	0+16	0+16	0+15	0+12	
	32QAM	0+22	0+22	0+22	0+19	0+20	0+18	0+17	0+17	0+16	0+13	
	16QAM	0+23	0+23	0+23	0+20	0+21	0+20	0+18	0+18	0+17	0+14	
	QPSK	0+27	0+27	0+27	0+24	0+25	0+23	0+22	0+22	0+21	0+18	
Accuracy (dB)	+/-2											
Tuning Increment (dB)	1											
RX at BER=10⁻⁶ (dBm)	56MHz / 40MHz	128QAM	-66	-66	-66	-65	-65	-65	-64	-64	-64	-63
		64QAM	-69	-69	-69	-68	-68	-68	-67	-67	-67	-66
		32QAM	-72	-72	-72	-71	-71	-71	-70	-70	-70	-69
		16QAM	-75	-75	-75	-74	-74	-74	-73	-73	-73	-72
		QPSK	-78	-78	-78	-77	-77	-77	-76	-76	-76	-75
	28MHz / 20MHz	128QAM	-69	-69	-69	-68	-68	-68	-67	-67	-67	-66
		64QAM	-72	-72	-72	-71	-71	-71	-70	-70	-70	-69
		32QAM	-75	-75	-75	-74	-74	-74	-73	-73	-73	-72
		16QAM	-78	-78	-78	-77	-77	-77	-76	-76	-76	-75
	14MHz / 10MHz	128QAM	-72	-72	-72	-71	-71	-71	-70	-70	-70	-69
		64QAM	-75	-75	-75	-74	-74	-74	-73	-73	-73	-72
		32QAM	-78	-78	-78	-77	-77	-77	-76	-76	-76	-75
		16QAM	-81	-81	-81	-80	-80	-80	-79	-79	-79	-78
	QPSK	-84	-84	-84	-83	-83	-83	-82	-82	-82	-81	
	Flange	N-type	N-type	UBR84	UBR100	UBR140	UBR140	UBR220	UBR220	UBR220	UBR320	
	Frequency Stability	±5ppm		RSSI	Output voltage vs. RSL : 0 to 3V vs. -70-25dBm				RSL Accuracy	±2 dB		
System capacity single ODU /Mbps	14MHz/10MHz			28MHz/20MHz			56MHz/40MHz					
	128QAM			160			320					
	64QAM			130			260					
	32QAM			100			210					
	16QAM			80			160					
	QPSK			40			80					
STM-1 Interface	Optical, single mode 1310nm				Ethernet Interface			Full duplex GE				
Power Supply	-48V±20% POE				NMS Interface			Ethernet RJ45×2 (in-band or out-band)				
RSSI	Output voltage vs. RSL : 0 3V vs. -70 -20dBm				Frequency Stability			±5ppm				
RSL Accuracy	±2 dB				Max Input Level Without Damage			0dBm				
Ambient Temperature	-35~ +55°C				Frequency Source			Synthesizer				
Weight & Dimension (kg/mm³)	4/225×225×90				Elevation			15,000ft / 4572 meters				
Interface Extension Unit – EthMux V16	5×GE Electrical, 1×GE Optical & 16×E1				NMS Interface			Ethernet RJ45 (in-band)				
IP Interface Standard	IEEE 802.3,802.1Q,802.1P, Auto-negotiation				Input Power Module			Dual plug-in module, support AC+DC, 2 AC or 2 DC				
E1 Interface Standard	G.703, 120Ω or 75Ω				Input Power Voltage / Consumption			-38V-72VDC & 100240VAC / ≤15W				
Ambient Temperature	050°C				Humidity			≤90% (non condensation)				
Weight(kg) & Dimension(mm)³:	3/440×44×231				Elevation			15,000ft / 4572 meters				

- 56MHz BW and AMC will be available in the 2nd half of 2009.
- All Specifications are typical values and subject to change without prior notice