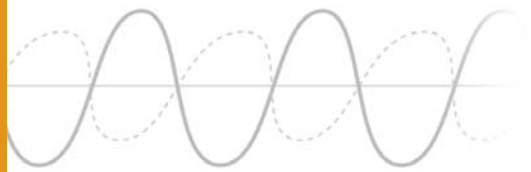


Radio Comms



7-38GHz
HighReach
HDR5 digital radios



This advanced software defined radio follows on from the highly successful HDR4 Series and brings flexible features to the user including multi-rate indoor unit capacity, bandwidth selection and interface definition.

This series has a built-in SNMP agent for ease of integration into managed networks.

FEATURES

- ▶ Software configurable bandwidth occupancy with 4QAM, 16QAM and 49QPR modulation schemes.
- ▶ Software configurable interface selection allows mix of multiple E1s and Ethernet IP traffic. This also allows the option to have a full IP-based radio with no E1 tributaries.
- ▶ Wayside channel is Ethernet – allowing for external voice, video and alarm monitoring over IP.
- ▶ SNMP Management Interface.
- ▶ High System Gain.
- ▶ Software download for Indoor and Outdoor Unit.

BANDWIDTH SELECTION

Table of maximum throughput per occupied channel at different modulation levels:

Bandwidth (MHz)	4QAM (Mbps)	16QAM (Mbps)	49QPR (Mbps)
3.5	N/A	8.5	12.5
7	8.5	17	25.5
14	17	34	51
28	34	68	N/A

This data rate can be allocated to multiple E1 tributaries (maximum 16) and the balance routed to the Ethernet traffic interface.



SPECIFICATIONS

PDH DIGITAL INTERFACES

Type	G.703 compliant E1 (2.048 Mbit/s)
Framing	G.704
Digital Line Code	HDB3
Digital I/O Connector Options	75 Ohm, unbalanced (BNC) 120 Ohm, balanced (25-pin D-type)

ETHERNET DIGITAL INTERFACES (For Traffic and Wayside channels)

Type	IEEE 802.3 10/100BaseT autoselect
Mode	Full/Half duplex

MANAGEMENT CAPABILITY

Loopbacks	Near & far end baseband, IDU IF and ODU
Signal Strength	Analogue test points (ODU)
Diagnostics	Local/remote visual display Craft Terminal and NMS
Performance Monitoring	G.826 at radio frame level
Network Management	SNMP

POWER SUPPLY

Standard Input	21 to 57 VDC, floating earth
Power Consumption (per station)	45 W (1+0)

STANDARD SERVICE CHANNELS

Wayside Channel	RJ-45 10/100BaseT Interface
Craft Terminal	USB Serial
NMS User Interfaces	RJ-45

ENVIRONMENTAL

ODU Temperature Range	-30 °C to +55 °C
IDU Temperature Range	0 °C to +50 °C
EMC	EN 55022 (Class B)

MECHANICAL

IDU Dimensions	ETSI/19" rack, 1RU (Approx. 482x45x300/380 mm) Front or Rear mounting options
ODU Dimensions	Approx. 410x350x110 mm
IDU Weight	6 kg (1+0)
ODU Weight	9 kg (excluding antenna)

IDU TO ODU INTERFACE

Impedance and Type	50 Ohm, N - Type, single coax
Maximum Cable Length	300 m ($\frac{1}{2}$ " Heliax or Cellflex)

ANTENNAS*

Integral Mount Antenna Gain (high end) in dBi:					
	7 / 8 GHz	11 / 13 GHz	15 GHz	18 / 23 GHz	38 GHz
0.3 m	NA	NA	31.1	34.8	39.5
0.6 m	30.8	35.3	36.5	40.1	44.3
1.2 m	37.1	41.4	42.5	46.1	NA
1.8 m	40.3	45.0	46.0	49.4	NA

*Full antenna specifications available on request.

Note: Specifications subject to change without notice.



TECHNICAL SPECIFICATIONS

RF PARAMETERS

Frequency Band	7 / 8 GHz	11 / 13 GHz	15 GHz	18 / 23 GHz	38 GHz
Operating Frequency Range	7.110 to 7.443 GHz 7.443 to 7.751 GHz 8.275 to 8.5 GHz	10.7 to 11.7 GHz 12.75 to 13.25 GHz	14.4 to 15.35 GHz	17.7 to 19.7 GHz 21.2 to 23.6 GHz	37.0 to 39.5 GHz
Applicable Standards Electronic Tuning Range (w/o filter change) Frequency Source Modulation Types	ITU-R 385; 386; 1055 60 MHz Synthesizer 4QAM / 16QAM / 49QPR	ITU-R 387; 497 220 / 125 MHz Synthesizer 4QAM / 16QAM / 49QPR	ITU-R 636 250 MHz Synthesizer 4QAM	ITU-R 595; 637 600 MHz Synthesizer 4QAM	ITU-R 749 600 MHz Synthesizer 4QAM
Transmitter Power Output 4QAM Standard / High Power Power Output 16QAM Standard / High Power Frequency Stability Attenuation Range	27 dBm / 30 dBm 24 dBm / 27 dBm <10 ppm (0.001%) >15 dB or muted	22 dBm 19 dBm <10 ppm (0.001%) >15 dB or muted	22 dBm NA <10 ppm (0.001%) >15 dB or muted	20dBm - 18 GHz 18 dBm - 23 GHz NA <10 ppm (0.001%) >15 dB or muted	20 dBm NA <10 ppm (0.001%) >15 dB or muted
Receiver Receiver Type Background BER Receiver Upper Limit	Double conversion <10-11 -20 dBm	Double conversion <10-11 -20 dBm	Double conversion <10-11 -20 dBm	Double conversion <10-11 -20 dBm	Double conversion <10-11 -20 dBm
Receiver Sensitivity (10⁻⁶ BER) 4QAM 4E1 8E1 16E1	Sensitivity (dBm) -89.0 -86.0 -83.0	Sensitivity (dBm) -88.0 -85.0 -82.0	Sensitivity (dBm) -87.5 -84.5 -81.5	Sensitivity (dBm) -87.0 -84.0 -81.0	Sensitivity (dBm) -85.0 -82.0 -79.0
System Gain (10 ⁻⁶ BER) for Standard Power and 4QAM Modulation 4E1 8E1 16E1	System Gain (dB) 116.0 113.0 110.0	System Gain (dB) 110.0 107.0 104.0	System Gain (dB) 109.5 106.5 103.5	System Gain (dB) 18 GHz 23 GHz 107.0 105.0 104.0 102.0 101.0 99.0	System Gain (dB) 105.0 102.0 99.0
Receiver Sensitivity (10⁻⁶ BER) 16QAM 4E1 8E1 16E1	Sensitivity (dBm) -86.0 -83.0 -80.0	Sensitivity (dBm) -85.0 -82.0 -79.0	Sensitivity (dBm) NA NA NA	Sensitivity (dBm) NA NA NA	Sensitivity (dBm) NA NA NA
Receiver Sensitivity (10⁻⁶ BER) 49QPR 4E1 8E1 16E1	Sensitivity (dBm) -82.0 -79.0 -76.0	Sensitivity (dBm) -81.0 -78.0 -75.0	Sensitivity (dBm) NA NA NA	Sensitivity (dBm) NA NA NA	Sensitivity (dBm) NA NA NA

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