DXR 700

- Point-to-point digital microwave radio platform ideal for long-haul, medium capacity applications
- Fees are reduced and frequency planning simplified by use of spectrally efficient, high order QAM modulation
- Equipment and path availability are maximized through errorless protection and diversity options
- Powerful standards-based network management solutions deliver exceptional flexibility

DXR®

DXR 700: Exceptional Performance For Wireless Connection

ANSI: 6 - 11 GHz

General

A revolutionary point-to-point digital microwave radio providing medium capacity transmission for the world's most demanding applications. Digital signal processing techniques and high order QAM modulation make this radio platform one of the most advanced available today.

Advanced Performance

Reed-Solomon forward error correction, combined with interleaving, extends the performance of the receiver, providing fibre-like transmission quality and improving interference immunity.

The 20-tap transversal adaptive equalizer greatly reduces the effect of multi-path fading giving DXR 700 an excellent dispersive fade margin.

Provided as standard, these features are essential for reliable, long-distance linking.

Low Through-life Cost

DXR 700 provides low cost of ownership through superior reliability, ease of installation and simple maintenance.

The split indoor-outdoor (IDU/ODU) configuration eliminates the high cost of waveguide and associated dehydrator equipment. System gain is maximized by mounting the ODU next to the antenna.

An all-indoor configuration is also available.

Easily Maintained

DXR NET configuration and management software provides local/remote setup and performance monitoring. Optional engineering orderwire simplifies installation and maintenance.

Services Management Adaptor

The optional services management adaptor (SMA) has the ability to manage multiple radios, concentrate alarm and NMS functionality and carry service channels.

DXR NET management software combined with the SMA enables adjustment and monitoring of all network elements from a central site.

DXR 700 ANSI Specifications

General RF

Frequency Ranges	*DXR 762 5.9 - 6.4 GHz*	*DXR 785 7.7 - 8.5 GHz*	Antenna/IDU-ODU Connection		*N-type female 1*
	DXR 768 6.4 - 7.1 GHz	*DXR 710 10.5 - 10.7 GHz*	Performance	ANSI:	*FCC Part 101 Specifications*
	DXR 770 7.1 - 7.75 GHz	*DXR 711 10.7 - 11.7 GHz*		Industry Canada:	*SRSP - 306.4, SRSP - 307.1, SRSP - 307.7, SRSP - 310.5*
Frequency Stability	*±3 ppm (over temp)*				
Frequency Selection	*Synthesized, set via NMS*				

System Performance

		4xDS1	8xDS1	8xDS1	16xDS1	1xDS3 + 1xDS1
Modulation		*16 QAM*	*16 QAM*	*64 QAM*	*64 QAM*	*64 QAM*
System Gain	10^{-6} BER	*113 dB*	*110 dB*	*106 dB*	*103 dB*	*100 dB*
Channel Spacing		*2.5 MHz*	*5 MHz*	*3.75 MHz*	*7.5 MHz*	*10 MHz*
Minimum Bandwidth		*2.1 MHz*	*4.2 MHz*	*2.8 MHz*	*5.9 MHz*	*9.8 MHz*
Receiver Sensitivity	10^{-3} BER	*-87 dBm*	*-84 dBm*	*-82 dBm*	*-79 dBm*	*-76 dBm*
	10^{-6} BER	*-85 dBm*	*-82 dBm*	*-80 dBm*	*-77 dBm*	*-74 dBm*
Dispersive Fade Margin		*> 90 dB*	*> 75 dB*	*> 72 dB*	*> 60 dB*	*> 60 dB*

Specifications shown at antenna port.

General Digital

DS1 Interface	*1.544 Mbps, 110 ohm balanced (DB-25) B8ZS or AMI (selectable via NMS)*
DS3 Interface	*44.736 Mbps, 75 ohm unbalanced (BNC)*
Error Correction	*8 symbol Reed-Solomon forward error correction*
Equalizer	*20-tap FFE/DFE transversal adaptive equalizer*
Residual BER	*< 10^{-11}*

Protected Option

Rx Switching	*Errorless*
Tx Switching	*50 ms*
Power Splitter Loss	*Equal 3.5/3.5 dB*[2] *Unequal 1.5/7.5 dB*[2]
Alternate Configurations	*Space diversity Frequency diversity*

Transmitter

Power Output (at antenna port)	*+28 dBm (16 QAM) +26 dBm (64 QAM)*
Power Control	*+15 dBm to max. (via NMS)*

Receiver

Max. Input Level	*-20 dBm (10^{-3} BER)*
Noise Figure	*3 dB (at Rx Port)*

T/I Ratio[3]	*8xDS1 16Q*	*1xDS3 64Q*
Co-channel	*+23 dB*	*+34.4 dB*
1st Adj. Channel	*-21 dB*	*-8.6 dB*

Services Management Adaptor

NMS Interface	*V.24/RS-232 or Ethernet 10 Base-T*
Orderwire	*All station calling omnibus with 4 wire PTT handset*
Alarms	*6 inputs, 6 outputs*
Data Channels	*Two V.11, V.24 or 64 kbps co-directional*
Size/Weight	*19" rack mounting, 1U high, 280 mm (11") deep, 3.8 kg*
Power Supply	*18-72 VDC, < 30 Watts*

Power Supply

Input Range	*24 V (±19 – 32 VDC) 48 V (±38 – 63 VDC)*
Protection	*Reverse polarity, surge*
Power Consumption	*(typical)*
Unprotected	*120 W*
Protected	*170 W*

Environmental

IDU Operating	*+14° F to +122° F*
Storage	*-4° F to +140° F*
Humidity	*Max. 95% non-condensing*
ODU Operating	*-22° F to +131° F*
Storage	*-40° F to +140° F*
Humidity	*100% all weather*
Altitude	*up to 5000 m (16 500')*

Mechanical

IDU Unprotected	*2U x 19" RMU 280mm (11") deep weight 9.2 kg*
IDU Protected	*3U x 19" RMU 280mm (11") deep weight 14.6 kg*
ODU Unprotected	*440 x 305 x 140 mm (17.3" x 12" x 5.5") weight 13.8 kg*
ODU Protected	*Two standard ODUs*

1 *Waveguide flange standard for 10/11 GHz.*
2 *Power splitter/combiner used for single antenna protected operation. Figures shown are A/B side losses for each Tx and Rx path. Dual antenna configurations have no added protection losses.*
3 *T/I figures are shown for 1 dB degradationat 10^{-6} BER.*

Specifications are typical and subject to change without notice.

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