

XP4

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XP4 2x/4x/8x E1 Microwave Radios



XP4 ODU & IDU

- Point-to-point digital microwave radio designed for medium-distance digital interconnection
- Software selectable data rates of 2x/4x E1 or 4x/8x E1 from 7 GHz to 38 GHz
- Embedded software allows simple front panel control of all link operating parameters
- Reduced operating costs, simplified provisioning and faster network rollout
- Independent indoor unit (IDU) and outdoor unit (ODU) are connected via a single cable, reducing cost and increasing reliability
- Available options include SNMP Network Management, 1+1 Protection, Orderwire and Automatic Transmit Power Control (ATPC)

XP4 2x/4x/8x E1 Specifications

System Parameters

Operating Frequency	7 to 38 GHz
Digital Line Code	HDB3

Interface Parameters (ITU-T)

Digital Line Rate	E1
Bit Rate	2.048 Mbps

System	7 GHz	13 GHz	15 GHz	18 GHz	23 GHz	26 GHz	38 GHz
Frequency Range	7.1-8.5 GHz	12.75-13.25 GHz	14.4-15.35 GHz	17.7-19.7 GHz	21.2-23.6 GHz	24.25-26.5 GHz	37.0-39.5 GHz
System Gain at 10 ⁻⁶ BER (2/4/8)	109/107/104 dB	102/100/97 dB	102/100/97 dB	100/98/95 dB	97/94/91 dB	99/96/93 dB	93/91/88 dB
Tuning Range	See Note A	up to 112 MHz ^A	up to 230 MHz ^A	up to 300 MHz ^A	300 MHz	300 MHz	300 MHz
Link ID Codes	255	255	255	255	255	255	255
T-R Spacing	ITU-T.385-6	266	315, 420, 490, 728	340, 1010	1008, 1200, 1232	1008	1260
^A Tuning range is dependent on T-R spacing and channel plan required. Contact your local rep. for further details.							
Transmitter							
Transmitter Source	Synthesized VCO						
Frequency Stability	±10 ppm	±10 ppm	±10 ppm	±10 ppm	±10 ppm	±10 ppm	±10 ppm
Modulation Type	4 FSK	4 FSK	4 FSK	4 FSK	4 FSK	4 FSK	4 FSK
Emission BW (2/4/8)	3.5/7/14 MHz	3.5/7/14 MHz	3.5/7/14 MHz	3.5/7/14 MHz	3.5/7/14 MHz	3.5/7/14 MHz	3.5/7/14 MHz
Power Output	Guaranteed +25 dBm	+19 dBm	+19 dBm	+18 dBm	+17 dBm	+17 dBm	+16 dBm
Standard	+28 dBm	+21 dBm	+21 dBm	+19 dBm	+20 dBm	+19 dBm	+18 dBm
Power Control Range	Max to -8 dBm	Max to -8 dBm	Max to -8 dBm	Max to -8 dBm	Max to -8 dBm	Max to -8 dBm	Max to -8 dBm
Transmitter Mute Level	<-30 dBm	<-30 dBm	<-30 dBm	<-30 dBm	<-30 dBm	<-30 dBm	<-30 dBm
Channel Selection	Digital Synth.	Digital Synth.	Digital Synth.	Digital Synth.	Digital Synth.	Digital Synth.	Digital Synth.
Synthesizer Resolution	0.25 MHz	0.25 MHz	0.25 MHz	0.25 MHz	0.25 MHz	0.25 MHz	0.25 MHz
Receiver							
Receiver Source	Synthesized VCO						
Frequency Stability	±10 ppm	±10 ppm	±10 ppm	±10 ppm	±10 ppm	±10 ppm	±10 ppm
Threshold at							
10 ⁻³ BER (2/4/8) dBm ^B	-87/-85/-82	-86/-84/-81	-86/-84/-81	-85/-83/-80	-85/-82/-79	-87/-84/-81	-82/-80/-76
10 ⁻⁶ BER (2/4/8) dBm ^B	-84/-82/-79	-83/-81/-78	-83/-81/-78	-82/-80/-77	-80/-77/-74	-82/-79/-76	-77/-75/-72
Residual Bit Error Rate	RBER < 10 ⁻¹⁰ when RSL is between 15 and 40 dB above BER 10 ⁻³ threshold with FEC enabled						

^B Receive performance stated herein is guaranteed over temperature and frequency range. Receive threshold performance is typically 2 to 3 dB better than guaranteed.

Data Interfaces

Traffic	Electrical	Physical	Line Code
2x/4x/8x Bal (120 Ω)	ITU-R G.703	DB25 Female	HDB3
2x/4x/8x Unbal (75 Ω)	ITU-R G.703	DB25 Female	HDB3
AGC Monitor	0 to 5 Vdc	BNC on ODU	

Aux Data Channel	Electrical	Physical	Data Rate
Unbal. Data Port #1	EIA RS232 ^C	DB9 Female	72 Kbps synchronous
Bal. Data Port #2	EIA RS422 ^C	DB9 Female	72 Kbps synchronous
Computer Interface	EIA RS232 ^C	DB9 Female	9600 bps

^C Data and clock only; flow control not supported

Operating Environment

Altitude	15,000 ft (4,500 meters)
Ambient Temperature	IDU -10° to +55° C ODU -33° to +55° C
Reliability	Terminal MTBF 10 years
EMC (ODU & IDU)	ETS 300 385, EN50082-2
Operation (ODU)	ETS 300 019 Class 4.1 (IEC Class 4M3)
Operation (IDU)	ETS 300 019 Class 3.2
Storage (ODU & IDU)	ETS 300 019 Class 1.2
Transport (ODU & IDU)	ETS 300 019 Class 2.3

Electrical

Input Voltage	±21.6 to 72 Vdc
Polarity (DC)	Positive or Negative Ground
Power Consumption	IDU without SNMP Option 11W IDU with SNMP Option 14W 1+1 Protection Switch 8W ODU 34W
Protection Circuit	3.15A Slow-Blow Fuse
IDU-ODU Cable Impedance	50 Ω

Specifications subject to change without notice.

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SNMP Option

	Electrical	Physical
VT100 Config. Port	EIA RS232 ^D	RJ-45
SNMP Serial Port 1	EIA RS232/422 ^D	RJ-45
SNMP Serial Port 2	EIA RS232/422 ^D	RJ-45
Coaxial Ethernet Port	Ethernet	BNC (Rear Access)
Thinwire Ethernet Port	Ethernet	RJ-45

^D Data and clock only; flow control not supported

Alarms

	Electrical	Physical
Relay Alarm Outputs (5)	Floating Form 'C'	DB15 Female
External Alarm Input (1)	TTL 0V Detector	DB15 Female

Mechanical

	Width	Depth	Height	Weight
IDU	480 mm (19 in.)	250 mm (9.8 in.)	45 mm (1.75 in.)	3.4 kg (7.4 lb)
1+1 Protection Switch	480 mm (19 in.)	145 mm (5.7 in.)	45 mm (1.75 in.)	2.0 kg (4.5 lb)
	Diameter	Depth	Weight	
ODU	230 mm (8.9 in.)	158mm (6.2 in.)	3.4 kg (7.4 lb)	
13 GHz		176 mm (6.9 in.)		

Antenna Port

XP-type interface

Standard waveguide flange options available

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