

SERIES II NDL - NETWORK DIGITAL LINK

Radio Spec Sheet



The Mimomax Network Digital Link (NDL) is an ultra spectrally efficient very low latency long haul fixed linking and SCADA solution for Critical Network Infrastructure. The NDL links conventional and trunked, IP and analogue radio sites over distances of up to 100 kms per link.

KEY FEATURES

- ▶ *Very high data throughput*
 - *Up to 320 kb/s raw data rate in a 25 kHz channel*
 - *Up to 160 kb/s raw data rate in a 12.5 kHz channel*
- ▶ *Very low latency*
- ▶ *Low jitter*
- ▶ *Point-to-Point*
- ▶ *UHF licensed spectrum*
- ▶ *Multipurpose solution*
 - *Fixed long haul (up to 100 kms) IP & Analogue linking*
 - *SCADA solution*
- ▶ *Ethernet, Serial & Audio interfaces*
- ▶ *IP Data Encryption & Firewall security*
- ▶ *Advanced software features*
- ▶ *User settable frequency & programmable power*
- ▶ *Rack, pole & wall mountable*
- ▶ *Supports open network standards in trunked and conventional configurations*
 - *MPT 1327*
 - *P25*
 - *DMR*
 - *TETRA*
 - *QS Simulcast*

SERIES II NDL - NETWORK DIGITAL LINK SPECIFICATIONS

RF General		
RF Bands	400 MHz	900 MHz
RF Frequency Range	369 to 470MHz(1)	806 to 960MHz(1)
RF Frequency Band Splits	369-390 MHz 400-425 MHz 420-430 MHz 440-450 MHz 450-470 MHz	806-869 MHz 852-933 MHz 896-960 MHz
Configuration	2 x 2 MIMO	2 x 2 MIMO
Supply Voltage	(Non-Isolated) 10.5V DC to 32V DC	
Nominal Channel Bandwidth	12.5 kHz & 25 kHz	
Modulation Options (Software Configurable)	QPSK/16/64/256 QAM	
Gross Data Rates	25 kHz 12.5 kHz	80/160/240/320 kb/s 40/80/120/160 kb/s
Maximum Power Consumption	92 W Max (at 13.8V) 72 W Typical	
Standby Power Consumption (2)	8 W Typical	
Ambient Temp Range	-25°C to +60°C	
Symbol Rate	2 x 20k symbols / second	
Mounting	2U high Rack Mount Pole Mount Unit Wall Mount Unit	
Dimensions (W x H x D)	Rack mount option	440 x 84.5 x 382 mm box size 481 x 86 x 392 mm incl. protrusions
	Wall/pole mount option	262 x 393 x 86.5 mm radio unit only, excl. mounting

Transmitter		
Modulation	QPSK/16/64/256 QAM	
RF Power Output	2 x +30 dBm (1 Watt) Average	
RF Power Control Range	>20 dB	
Frequency Step Size	5 kHz & 6.25 kHz Adjustable	
Frequency Accuracy and Stability	≤1.5 ppm	

Receiver / Diversity Receiver		
Modulation	QPSK/16/64/256 QAM	
Typical RF Sensitivity for 10-4 BER	25 kHz	<-109/-103/-97/-92 dBm
	12.5 kHz	<-112/-106/-100/-93 dBm
Typical RF Sensitivity for 10-7 BER	25 kHz	<-108/-101/-95/-89 dBm
	12.5 kHz	<-110/-104/-98/-91 dBm
Frequency Step Size	5 kHz & 6.25 kHz Adjustable	
Frequency Accuracy and Stability	≤1.5 ppm	

Duplexer (Internal)		
RF Bands	400 MHz	900 MHz
Bandwidth	>500 kHz (Stop Band)	>4 MHz (Pass Band)
Tx / Rx Split	5 MHz minimum	24-76 MHz
Stop Band Attenuation	>70dB	

Internal Digital Interfaces (Data & Analogue)		
ETHERNET		
Format	Dual 10/100BaseT	
Connector	RJ45	
Supported Bit Rates	Up to 280 kb/s(3)	
FIBRE		
Format	C37.94	
Connector	ST	
ASYNCHRONOUS SERIAL		
Format	Single & Dual(4) RS232	
Connector	RJ45	
Baud Rate	300 - 115,200 baud	
SYNCHRONOUS SERIAL		
Format	RS422. V.35, X.21, HSSI, V.11 OR G.703	
Connector	RJ45	
Baud Rate	64,000/128,000/192,000 & 256,000 baud	

External Network Interfaces via Interface Hardware		
FOUR WIRE AUDIO		
Format	6 x 4 wire 600 Ω ports incl. E & M Signalling	
Coding	32 kbps ADPCM(5)	
Connector	RJ45	
Signalling	Via RS232 serial port 9600 Baud Rate	
SUB MUX		
Format	2 x RS422, V.35, X.21 4 x V.24 (RS232) 1 x C37.94	

Compliances		
RF Bands	400 MHz	900 MHz(6)
Radio Performance	ACMA AS/NZS 4768 & AS/NZS 4295-2004 FCC 47CFR part 90 FCC: XMK-MMXRUDHB002 RSS-Gen RSS-119 IC Canada 8587A-RUBFDHB2 EN 302 217 EN302 217-2-2 V1.2.3 & EN302 326-2 V1.2.2 EN 302-113 EN 300-113-2 V1.4.1	ACMA AS/NZS 4768 & EN 300 113 FCC 47CFR part 101 RSS-Gen RSS-119
EMC	AS/NZS/CISPR22 EN 301 489 EN 301 489-1 V1.8.1 & EN301 489-4 V1.3.1 FCC 47CFR part 15 ICES-003	
Environmental	EN 300 019 Sections 3.3 & 4.2H	
Safety	EN 60950 (2006)	

Important: Specifications are subject to change without prior notice

- (1) Other frequencies available on request
- (2) NDL configured with MIMOMax Power-on-Demand (M-PoD) software
- (3) Total aggregate Data Rate is 70, 140, 210, 280 kbp/s depending on configuration and path signal
- (4) The Dual RS232 does not include hardware flow control
- (5) Other CODECS also available on request
- (6) Designed to be compliant with listed standards