

# SkyWire™ MDX420 Satellite Network Gateway

Network & Bandwidth Management



## Overview

The revolutionary SkyWire™ MDX420 is one of the most innovative satellite products. The system combines the throughput and robustness of a single channel per carrier (SCPC) system with the bandwidth savings of a time division multiple access (TDMA) system.

The SkyWire MDX420 leverages the benefits of each to provide the ultimate in satellite network performance.

The SkyWire MDX420 is the first TDMA broadband satellite system to eliminate the need for high stability references or an expensive central hub with complicated system software. With its revolutionary single hop bandwidth-on-demand capability, the SkyWire MDX420 minimizes system response time to changes in traffic flow. The small efficient burst sizes and ultra low overhead allow the SkyWire MDX420 to provide unprecedented bandwidth efficiency and increased network throughput.

The SkyWire MDX420 system is easy to configure and the auto-everything 10/100/1000 terrestrial data ports provide instant connectivity for any IP application.

Whether you need a TRUE full mesh, a hub and spoke, or a hybrid combination, the SkyWire MDX420 system provides the most cost-effective, easy to use, bandwidth efficient solution available today. And, the system is packaged in a single, secure, one rack unit box.

## Features

- Most bandwidth-efficient TDMA solution available
- Connect remote sites in a TRUE full mesh, hub and spoke, or hybrid network configuration
- TDMA network throughput capability of over 86 Mbps and 168,000 pps
- Multiple Link / Multiple transponder operation
- Advanced Turbo Product Code FEC
- Dynamic bandwidth allocation with single hop bandwidth-on-demand functionality
- Programmable, multi-queued Quality of Service (QoS)
- Graphical user interface program for monitor and control

## Typical Users

- Oil & Gas
- SNG Operators
- Enterprise
- Government & Military

## Common Applications

- IP-Centric Applications
- Full Mesh Data & Voice
- Bandwidth on-Demand Video, Voice & IP
- Communications on-the-Move / Pause



SkyWire™ MDX420 Back Panel

## Specifications

The published specifications reflect the maximum SkyWire MDX420 performance. Each SkyWire MDX420 can be configured to customer requirements via hardware / software options applied at the factory or in the field.

### SkyWire MDX420 Performance

Acquisition Performance	Modulation & TPC FEC	User Data Rate Range	Network Threshold	Typical BER 1E-8
Enhanced	QPSK .710	328 kbps - 12.7 Mbps	2.9 dB	3.5 dB
Enhanced	QPSK .793	366 kbps - 14.2 Mbps	3.3 dB	3.8 dB
Standard	QPSK .793	378 kbps - 14.7 Mbps	3.4 dB	4.4 dB
Enhanced	8PSK .793	537 kbps - 20.9 Mbps	6.5 dB	7.6 dB
Standard	8PSK .793	555 kbps - 21.6 Mbps	7.8 dB	9.0 dB

### Modulator

Modulation	QPSK (8PSK optional)
L-Band Tuning Range	950 to 1750 MHz in 1 Hz steps
Impedance	50 Ohm
Connector	N-Type (50 Ohm)
Return Loss	10 dB minimum
Output Power	0 to -25 dBm
Output Accuracy	±1.0 dB over frequency and temperature
Spurious	-55 dBc In-band -45 dBc Out-of-band
Harmonics	-45 dBc
On/Off Power Ratio	>60 dB
Symbol Rate Range	.256 to 10 Msps in 1 sps steps
FEC	Turbo Product Code .710, .793
Internal Stability	± 280 ppB ± 50 ppB (optional)
Optional BUC Power:	3.3 Amps @ 24 V maximum 2.8 Amps @ 48 V maximum
BUC Reference	10 MHz, +3 dBm ± 3 dB

### Demodulator

Demodulation	QPSK (8PSK optional)
L-Band Tuning Range	950 to 2050 MHz in 1 Hz steps
Impedance	75 Ohm
Connector	F-Type (75 Ohm) female
Return Loss	10 dB minimum
Input Level	10 x Log (symbol rate) -122 ± 12 dB
Total Input Power	-10 dBm or +40 dBc (the lesser)
Symbol Rate Range	.256 to 10 Msps in 1 sps steps
FEC	Turbo Product Code .710, .793
Carrier Acquisition Range	± 5% of the symbol rate
LNB DC Power	500 mA @ 24 VDC maximum
LNB Reference	10 MHz, +3 dBm ± 3 dB

### Monitor and Control

Ethernet 10/100Base-T (maximum Ethernet packet size 1536 bytes including Ethernet header & CRC)
SNMP V1, V2, and V3
MIB browser
Radyne Network Configuration GUI

### Service Port

Terminal RS-232

### Terrestrial Interface

Ethernet 10/100/1000Base-T (maximum Ethernet packet size 1632 bytes including Ethernet header & CRC)

### Alarms

One Form-C relay  
Five open collector

### Environmental

Prime Power	100 to 240 VAC, 50 to 60 Hz, auto-sensing 40 W max., gateway only 200 W max., BUC & LNB powered
Operating Temperature	0 to 50° C, 95% humidity, non-condensing
Storage Temperature	-20 to 70° C, 99% humidity, non-condensing

### Physical

Dimensions (height x width x depth)	1.75" x 19" x 13" (48.26 x 33.0 x 4.45 cm)
Weight	7 lbs (3.17 kg)



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