## 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.

### 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

## 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



**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 |
| Alpha (Rolloff) | 35% |
| 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) |