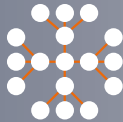


Star



Full Mesh



Multi-Star



Hybrid

# ND SATCOM

## SKYWAN IDU 7000

The IDU 7000 is an MF-TDMA modem with built-in IP routing, frame relay switching and support for multicast transmissions. It includes the most comprehensive feature set of the SKYWAN remote product family and with the addition of a Frame Plan Generator (FPG), the station can also function in either Master Hub or Backup-Master Hub mode. Each IDU 7000 includes one Ethernet/Fast Ethernet port and up to four serial or Frame Relay ports thus providing a full range of standard IP and legacy interfaces with support for protocols such as V.24, HDLC, X.25 plus analog and digital voice channel capability.

SKYWAN IDU 7000 offers military-grade features and options to meet the growing governmental demand for highly secure and reliable communications. The embedded cryptographic module is compliant to the Federal Information Processing Standard (FIPS) 140-2 Level 3 providing certified encryption algorithms (AES 256) and tamper-evident physical security mechanisms. The SKYWAN IDU 7000 modem is compliant to the Wideband Global SATCOM (WGS) system delivering high signal quality over WGS and commercial satellites. SKYWAN combined with the Ranger antenna builds a lightweight, easy deployable terminal configurable for C, X, Ku or Ka-Band whereas the X-Band configuration is XTAR, DCSC & WGS compatible.

SKYWAN FAD – Designed to provide maximum network performance and reliability in low-bandwidth environments, this universal access device reduces network infrastructure costs and simplifies WAN connectivity for mission-critical applications. The voice and data compression technology, prioritization and multiplexing capabilities and the ability to route all traffic over a highly efficient cell-relay based protocol, make it the product of choice for converged voice and data applications over satellite. The SKYWAN FAD provides a safe migration path from legacy TDM or Frame Relay networks to IP-centric networks. It includes support for the latest VoIP (SIP) standards and robust IP/Ethernet QoS.

### Key Features Government & Military

- FIPS 140-2 Level 3 validated Link Encryption
- WGS compliant terminal: SKYWAN with Ranger antenna

### Key Features

- Turbo-Φ Channel Coding
- 8PSK, QPSK and BPSK modulation with wide range of code rates and symbol rates
- High performance with modem data rates up to 10 Mbit/s
- Integrated IP Router with priority forwarding based on QoS, robust header compression
- Integrated Frame Relay Switch with 4 serial interfaces
- Geographical redundancy with seamless switchover
- COTM support with Doppler Shift compensation and COTM antenna interface
- Proven solution for
  - Tetra / Tetrapol
  - aMaDEUS Booking System
  - Satcom on the Move
  - ATC environments
  - News Contribution Networks
  - True single hop mesh / hybrid / star
  - Rooftop to Rooftop
  - Supports single channel star network

# TECHNICAL SPECIFICATIONS – SKYWAN IDU 7000

## CONFIGURATION

Network Topology	True full mesh / star / hybrid / multi-star
Encoding	Turbo-Φ
Modulation & FEC Code Rates	QPSK: 1/3 / 2/5 / 4/9 / 1/2 / 2/3 / 3/4 / 4/5 / 5/6 / 6/7 8PSK: 2/3 / 3/4 / 4/5 / 5/6 / 6/7 BPSK: 1/3 / 2/5 / 4/9 / 1/2 / 2/3
Eb / No	2.6 dB at FEC 1/2 with BER 10 <sup>-7</sup>
Channel Spacing / Roll-off	1.2 , 1.4 / 0.2 , 0.4
Modem Symbol Rate	100 Kbaud – 6 Mbaud, variable in 1 Kbaud increments
User Data Rate	64 Kbit/s – 10 Mbit/s
Satellite Channel Access Type	MF-TDMA / datarate hopping / multiple carrier hopping / transponder hopping / cross-strapping / Doppler Shift compensation / optional WGS compliant modem <sup>(1)</sup>
Access Scheme	Bandwidth-on-Demand / real-time / non-real-time / guaranteed throughput / QoS classes
Security	Optional FIPS 140-2 Level 3 validated <sup>(2)</sup> LINK ENCRYPTION with AES 256 Encryption and internal Key Management

## INTERFACES

Serial Interfaces	4 serial ports, each with individual clock & up to 6144 Kbit/s X.21 / RS-449 / RS-232C and V.35 on each port selectable
Protocol	UNI/NNI / Isochronous / Transparent
LAN Interface	One 10/100 Base-T Ethernet RJ-45 port
Protocol	Dynamic Routing / OSPF / Static Routing / Multicast / Load Balancing / TCP / TCP-Acceleration / UDP / IGMP / VoIP / QoS / Diffserv / Robust Header Compression / Platinum Dynamic QoS for VoIP and Live Video
Modulator	L-Band 950 – 1750 MHz / 0... - 30 dBm / SMA female connector, 50ohm
Demodulator	L-Band 950 – 1750 MHz / -35...-75 dBm / SMA female connector, 50ohm
10 MHz reference signal	Configurable on Tx / Rx / reference clock output, SMA female connector, 50ohm

## SKYWAN FAD \*

Type / System Overview	Universal access device combining the functionality of a data router, a multiplexer and a voice gateway in a single device, enabling users to create converged networks and transport any type of traffic over satellite or terrestrial links.
Interfaces	Analog & Digital with standard protocols, allows interconnection to any PABX or PSTN. Serial: X25, Frame Relay, HDLC PTT: support for analog & digital VHF systems, signaling either in-band / V24 / E&M

## RADIOS \*

RFT 5000	C-Band 20 / 40 / 60 W	Ku-Band 10 / 20 / 35 W	Extended Ku-Band 20 / 30 W
Others	Radios with L-Band interface, LNBs with external clock reference from SKYWAN		

## NETWORK MANAGEMENT \*

NMS Platform	SKYWAN NMS
NMS Architecture	Central station, additional stations may be used for monitoring
IDU Management Interfaces	Remote access with in-band management (from central NMS station over satellite) via SNMP Remote access with dial-in (via public telephone network with attached modem) Local access via integrated console port EIA-232
Lineup Manager	Easy tool to commission remote SKYWAN station via local console port or Ethernet port
Security NMS & Station	Authentication of NMS station / dedicated IP Network for management / authentication of remote station

## MECHANICAL / ENVIRONMENTAL

Dimensions (H x W x D)	174 mm (4 RU) x 483 mm (19") x 470 mm	
Weight	11.2 kg (fully equipped with 5 cards)	
Input Power / Power Consumption	90 – 264 VAC , 50 / 60 Hz , 160 VA nominal (fully equipped with 5 cards)	
Operating Temperature / Humidity	+5 °C to +40 °C, 5% - 85 % non-condensing	
Altitude	Up to 3000 m above sea level, optional up to 5000 m	
Compliance	Fully CE compliant with RoHS and REACH	
Radio Standards	EN 301 428 Ku-Band VSAT	EN 301 443 C-Band VSAT
Safety	EN 60950 Safety IT Equipment	
Emission Standards	EN 61000-6-3 Generic Emission Standard EN 61000-3-2 Harmonics	EN 55022 Emission IT Class A EN 61000-3-3 Flicker
Immunity Standard	EN 61000-6-1 Generic Immunity Standard	EN 55024 Immunity IT

<sup>(1)</sup>JSEC testing completed, ARSTRAT/DISA certification pending; <sup>(2)</sup> NIST certificate 2277 (year 2014); \* separate Datasheets available

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