Evolution X3 Satellite Router

High-speed, High-efficiency IP Broadband Connectivity for Enterprise Networks

Evolution X3 features a highly efficient implementation of the DVB-S2 standard. With Adaptive Coding and Modulation (ACM) on the outbound carrier and iDirect's patented, deterministic TDMA or SCPC Return channel, Evolution X3 maximizes efficiency of satellite capacity to enable new opportunities for star topology networking.

Evolution X3 is ideally suited for broadband requirements such as Internet and VPN access to enterprise networks, as well as real-time VoIP and videoconferencing.

Superior Quality of Service and Network Performance

iDirect's sophisticated Group QoS advanced traffic prioritization dynamically balances the demands of different applications according to their needs and bandwidth availability, across multiple sites and user sub-networks.

Features such as TCP and HTTP acceleration, in addition to local DNS caching, increase performance and maximize user experience.

Seamless Terrestrial Integration

An integrated satellite modem and router with Ethernet interface, combined with a native IP architecture, ensuring easy integration of satellite-delivered connectivity into almost any data network.

Support for a rich set of IP protocols and features such as TCP, UDP, multicasting, NAT and DHCP guarantee compatibility with a wide range of applications and user needs, including corporate network extension, point of sale, SCADA, telemetry, multimedia and Internet cafés.

Flexibility to Meet Changing Requirements

Over-the-air software licensing features can add strong data encryption or extend the remote's capabilities allowing operators to customize Evolution X3 to meet technical and budget requirements.

Simple, Intuitive Network Management

The Evolution router is easily configured, monitored, and controlled through the iVantage™ network management system, a complete suite of software-based tools for configuring, monitoring and controlling satellite networks from one location.

Features

- Star topology
- DVB-S2/ACM outbound for greater efficiency and enhanced network availability
- Deterministic MF-TDMA or SCPC Return channel
- Efficient 2D 16-State inbound coding
- Automatic end-to-end Uplink Power Control
- Built-in TCP acceleration
- Advanced QoS and traffic prioritization
- Optional AES 256-bit encryption

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Advancing a Connected World

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Evolution X3
Satellite Router

NETWORK CONFIGURATION

Network Topology	Star (DVB-S2/ACM Outbound + Multi Frequency D-TDMA or SCPC Return*)		
	Downstream DVB-S2	*Upstream* TDMA	*Upstream* SCPC Return
Modulation	QPSK, 8PSK, 16APSK	BPSK, QPSK, 8PSK	BPSK, QPSK, 8PSK
FEC	LDPC, 1/4 - 8/9	TPC, 0.431 - 0.793**; 2D 16-State, 1/2 - 6/7	2D 16-State, 1/3 - 6/7
Max. Symbol Rate	45 Msps	7.5 Msps	15 Msps
Max. Info Rate	150 Mbps[1]	12.8 Mbps	24 Mbps
Max. Line Card IP Data Rate	149 Mbps[1]	11.1 Mbps[2]	18.2 Mbps[3]
Max. Remote IP Data Rate	29 Mbps[1]	7.8 Mbps[2]	11.8 Mbps[3]
	[1]16APSK 8/9 FEC	*[2]QPSK 6/7 FEC*	*[3]QPSK 4/5 FEC*

Maximum downstream and upstream data rates cannot be achieved simultaneously

Maximum rates are achieved with optimal configurations

INTERFACES

Satcom Interfaces	TxIF: Type-F, 950–1700MHz, +7dBm / -35dBm RxIF: Type-F, 950–2150MHz, -5dBm (max) composite/ -125+10*log(Fsym)dBm (min) single carrier Software controllable 10 MHz reference on TX Out and RX In ports
BUC IFL Interface	+24V, max. 70W, (120W PSU) (please refer to X3 Installation Manual for full list of supported BUCs)
LNB IFL Interface	+19V (Nominal), 500mA max DiSEqC (Voltage 14V/19V + 22KHz tone)
Data Interfaces	LAN: 10/100 Ethernet, 802.1q VLAN RS-232: RJ45 (Console connection)
Protocols Supported	TCP, UDP, ACL, ICMP, IGMP, RIP Ver2, Static Routes, NAT, DHCP, DHCP Helper, Local DNS Caching, cRTP and GRE
Traffic Engineering	Group QoS, QoS (Priority Queuing and CBWFQ), Strict Priority Queuing, Application Based QoS, Minimum CIR, CIR (Static and Dynamic), Rate Limiting
Other Features	Built-in Automatic Uplink Power, Frequency and Timing Control, Authentication, AES-256 encryption***, Antenna Control Interface (OpenAMIP)

MECHANICAL/ENVIRONMENTAL

Size	W 11.5 in (29.2 cm) x D 9.9 in (D25.1 cm) x H 2 in (5.1cm)
Weight	4.3 lbs (1.95 Kg)
Operating Temperature	0˚ to +50˚C (32˚ to +122˚F) at Sea Level with temperature gradient of 0.5˚C per 1 min 0˚ to +45˚C (32˚ to +113˚F) at 10,000 Feet with temperature gradient of 0.5˚C per 1 min For ODU power consumption <70W (please refer to X3 Installation Manual for details)
Humidity Max	90% non-condensing humidity
Input Voltage	100–240 VAC Single Phase, 50–60 Hz, 2A max at 90 VAC, 1A max at 240 VAC
Radio Standards	EN 301-428 v1.3.1 — Ku-Band System Level Specification EN 301-443 v1.3.1 — C-Band System Level Specification
Safety Standards	Complies with IEC 60950, EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1-03
Emission Standard	Complies with EN 55022 Class B, FCC Part 15 Class B, CISPR 22 Class B, EN 61000-3-2, EN 61000-3-3
EMC/Immunity Standard	Complies with EN 55024, EN 301-489-1, EN 301-489-12, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
Certification	FCC, CE, and RoHS Compliant

*Available with iDX 3.0 or above   **Not supported for use with DVB-S2 outbound in iDX 3.0 or above   ***Optional