

## Evolution X1 Outdoor Satellite Router



Cost-effective remote bundle ideal for large-scale networks for SCADA, femtocells and pipeline monitoring. The remote features DVB-S2/ACM and Adaptive TDMA, routing, VLAN functionality, QoS, optional AES encryption and is embedded in a IP67 weatherproof enclosure enabling an extended temperature range, passive cooling and multiple power options, including DC.

### Network Configuration

<b>Network Topology</b>	Star (DVB-S2/ACM downstream + ATDMA upstream)		
<b>Modulation</b>	Downstream: QPSK, 8PSK, 16APSK ; Upstream: BPSK, QPSK, 8PSK		
<b>Maximum Rates Supported</b>	<u>Rate</u>	<u>Downstream (DVB-S2)</u>	<u>Upstream (ATDMA)</u>
	Symbol rate	1 - 45 Msps	128 ksps – 4 Msps*
	Info rate	Up to 150 Mbps	Up to 10 Mbps*
	Line Card IP rate	Up to 149 Mbps	Up to 8.5 Mbps <sup>1</sup>
	Remote IP data rate	Up to 76.3 Mbps	Up to 8.5 Mbps*
	Max rates are achieved under optimal conditions.		
	<sup>1</sup> Max line card data rate with 4 Msps upstream on the X1.		
<b>FEC</b>	Downstream: LDPC, 1/4 - 8/9 Upstream: 2D 16-State, 1/2 - 6/7		
<b>E<sub>b</sub>/N<sub>0</sub></b>	For full list, please refer to the latest iDirect Link Budget Analysis Guide		

### Interfaces

<b>SatCom Interfaces</b>	TxF: Type-F, 950 - 1700 MHz, Composite Power 0dBm / -30dBm RxF: Type-F, 950 - 2150MHz, Composite Power -5dBm / -65dBm
<b>Available BUC Power (IFL)</b>	+24V, 25W max. supporting BUCs up to 3W (65W external PSU)
<b>Available LNB Power (IFL)</b>	+24VDC, 22KHz DiSEqC tone
<b>Data Interfaces</b>	LAN: 10/100 Ethernet Web-based configuration via Ethernet port
<b>Protocols Supported</b>	TCP, UDP, ICMP, NAT/PAT*, DHCP, Local DNS Caching, cRTP*
<b>Security</b>	AES-256 Link Encryption* (optional)
<b>Traffic Engineering</b>	QoS (Priority Queuing, Strict Priority Queuing, WFQ); Application-based QoS; Configurable Packet Classifier; CIR (Static and Dynamic), Minimum CIR, Idle/Dormant Min IR
<b>Other Features</b>	Built-in Automatic Uplink Power Control, Frequency and Timing Control, Authentication

### Mechanical/ Environmental

<b>Size</b>	10.25" x 3" x 10"
<b>Weight</b>	5.0 lbs (2.27 kg)
<b>Operating Temperature</b>	-40° to 60°C (-40° to 140°F) at Sea Level
<b>Humidity</b>	100% condensing humidity
<b>Immersion</b>	IP67/NEMA 6
<b>Input Voltage</b>	100-240 VAC to 24 VDC; 12-36 VDC to 24 VDC; ±36-76 VDC (±48 VDC nominal) to 24 VDC
<b>Radio Standards</b>	EN 301-428v1.3.1 – Ku-Band System Level Specifications EN 301-443v1.3.1 – C-Band System Level Specifications
<b>Safety Standards</b>	Complies with IEC 60950-1, EN 60950-1, UL 60950-1, CSA C22.2 No. 60950-1 IEC 60950-22, EN 60950-22, UL 60950-22, CSA C22.2 No. 60950-22
<b>Emission Standard</b>	Complies with EN 55022 Class B, FCC Part 15 Class B, EN 61000-3-2, EN 61000-3-3
<b>EMC/Immunity Standard</b>	Complies with EN55024, EN301-489-1, EN301-489-12, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN 61000-4-6, EN61000-4-11
<b>Certification</b>	FCC, CE and RoHS compliant * iDX 3.3.0 and above