Mesh Receiver Satellite Modem

ST Engineering

The ST Engineering iDirect Multi-Carrier Mesh solution is supported on the iDirect Evolution® platform, which is engineered to deliver the highest quality connectivity wherever and whenever it's needed. Evolution is open, efficient and easily scalable from small networks with just a few terminals to networks with up to 5,000 terminals. It also has the best-in-class Group Quality of Service, a full featured network management system, and waveform advancements such as higher MODCODs and reduced roll-off.

The multi-carrier mesh solution consists of a Mesh Receiver and an iQ Series, 9 Series, or X7 modem allowing the modem to participate as a node in a mesh topology network. The Mesh Receiver supports simultaneous multi-carrier reception allowing the device to function as a regional hub. The Mesh Receiver demodulates up to 16 channels with an aggregate symbol rate up to 29 Msps. This allows for much higher receive and network capacity without using massive carriers, which reduces both the size and cost of the terminal BUC and antenna, lowering the overall total cost of ownership (TOC).

The highly flexible mesh solution can be implemented as a dedicated mesh network, star and mesh bandwidth sharing, or star-in-star topology for real-time or critical communication applications requiring low latency or high site-to-site traffic.

Markets

Government / Defense
Oil & Gas
Telco
Utilities

Main Features:
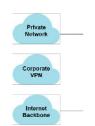
- Feature rich Evolution platform
- DVB-S2/DVB-S2X
- Receives up to 16 TDMA channels simultaneously
- Up to 15 Msps per channel (iQ Series) and 29 Msps aggregate
- Frequency hopping on mesh transmit
- Bandwidth sharing between star and mesh remote sites
- TCP acceleration over mesh
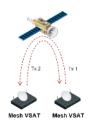- Ideal for star-in-star topology

EVOLUTION

iDirect

Network Configuration

Modem	Demodulates up to 16 TDMA carriers simultaneously
Modulation	BPSK, QPSK, 8PSK
FEC Rates	2D 16-State 1/2-6/7
TDMA Symbol Rates	Per carrier: 0.468 to 15 Msps (iQ Series); Aggregate: Up to 29 Msps
Information Rate	60 Mbps composite (8PSK max)
Interoperability	Compatible with Series 15100 Universal Hub (5IF/20 Slot) Requires iQ Series, 9 Series, or X7 Modems Requires Evolution iDX 4.1 software or above (X7), Evolution 4.1.5 and above (iQ Series, 9 Series)
Other Features	TCP Acceleration, Hop-and-a-Half mode

Modem Interfaces

SatCom Interfaces

RxIF In: Type-F, 950–2000 MHz, -5 dBm (max) composite, -125 + 10*log(sym rate)dBm (min) single carrier
RxIF Out: Type-F (Monitor)

Data Interfaces

LAN1: GigE over RJ-45; LAN2: GigE over RJ-45; LAN3: GigE over RJ-45; Compute Console: RS232 over RJ-45; Demod Console: RS232 over RJ-45

Input Phase Noise Mask*

SBB Phase Noise:		
	100 Hz	up to -60 dBc/Hz maximum
	1 KHz	up to -73 dBc/Hz maximum
	10 KHz	up to -81 dBc/Hz maximum
	100 KHz	up to -95dBc/Hz maximum
	1 MHz	up to -105 dBc/Hz maximum
	10 MHz	up to -112 dBc/Hz maximum

LNB LO Stability Requirement*

≤ 5 ppm

LNB IFL Interface

Pass-through-power from IF TO REMOTE port to IF IN port 13-19 VDC, 500 mA (max) + 22 kHz tone

Timing Interface

10 MHz: BNC**, PPS: BNC**

Mechanical and Environmental

Size	44.5 cm W x 45.7 cm D x 4.4 cm H (17.5" x 18" x 1.75")
Weight	6.8 kg (15 lbs)
Operating Temperature	0° to +45°C (+32° to +113°F)
Relative Humidity	Operational: 90% (non-condensing); Storage: 5 to 93%
Power Input	100-240 VAC Universal Input, 50-60 Hz, 1.75 A (max)

 * Additional requirements are defined in the BUC and LNB

   Specifications Guide for Mesh Networks.

** Feature availability is release dependent.

ST Engineering iDirect | www.idirect.net

D0000975 RevC