

iQ 800 Board Satellite Modem



The iQ 800 Aero Modem Board is part of ST Engineering iDirect's DVB-S2/S2X modem series featuring powerful architecture for maximum flexibility and expansion. The iQ Series provides performance, efficiency and security in a variety of form factors for reliable IP-based satellite communications.

The iQ 800 Aero Integrated Board is the DVB-S2/DVB-S2X-enabled modem module architected specifically for operation on commercial aircraft and business jets. The iQ 800 board is designed to integrate directly into a ARINC 600 enclosure, facilitate compliance with DO-160G and ARINC 791 standards and is manufactured to strict aerospace AS9100 standard for quality. It supports operations in a high-speed COTM environment and is configurable for three independent RF chains. The iQ 800 hardware is designed to support wideband operations of up to 475MSPs on the forward channel and up to 30MSPs* ATDMA or higher rate SCPC on the return channel with future waveform improvements.

The iQ 800 board supports multi-band, fast beam switching, spread spectrum returns and skew angle compensation to support aeronautical operations and antennas on Velocity™.

The iQ 800 is designed for multi-personality support. Future software releases will enable the modem board on our next generation VSAT platform as well as continue robust Velocity support.

Markets

Commercial Aero
Business Jets

Main Features:

- OpenAMIP support
- Real time Skew/PSD
- Satellite Blockage mitigation
- Quick Outage Recovery
- Fast Beam switching
- 10/50MHz BUC Support
- 10/50MHz LNB Reference Support
- Multi-personality Support

VELOCITY



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Network Configuration

Network Topology	Rx	Tx	
	DVB-S2X*/ACM	DVB-S2/ACM	Adaptive TDMA
Modulation	QPSK, 8PSK, 16APSK, 32APSK, 64APSK	QPSK, 8PSK, 16APSK	SS-BPSK, BPSK, QPSK, 8PSK,
FEC	Refer to the LBA guide	LDPC 1/4 - 8/9	2D 16-State 1/2 - 6/7
Symbol Rates	5 Msps to 475 Msps	5 Msps to 45 Msps	
Spread Spectrum			

Modem Interfaces

Tx Interface

Connector	MCX 50 Ohm
Frequency range L-band	950 - 2050 MHz
TX level	+5 dBm to -30dBm
BUC reference	10/50 MHz configurable

Rx Interface

Connector	MCX 50 Ohm
Frequency	950-2150 MHz
LNB reference	10/50 MHz configurable
Rx level	-5 dBm (max) -130+10*Log10(Fsym) dBm (min) single carrier

Data Interface

All digital I/O via backplane connector
LAN: Dual 10/100/1000 Mbps Ethernet
<i>Variety of discrete interfaces for aeronautical integrations</i>

Security

256-bit AES Link Encryption (optional), X.509 certificate authentication, Automatic Key Management
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Details on interfaces, mechanical and environmental sections are available in the integration guide

*feature is release / platform dependent

Management

Protocols Supported

TCP, UDP, ICMP, DHCP, NAT/PAT, DNS, IGMPv2, IGMPv3, ICMP, IPv4, OpenAMIP, OpenBMIP, BGP

Mechanical and Environmental

Size	W 17.65 cm x D 30.68 cm x H 2.43cm (W 6.95 in x D 12.08 in x H 0.96 in)
Weight	1.22 kg (2.7 lbs)
Temperature:	
Operating	-40° to +70°C (-40° to +158°F)
Survival	-40° to +85°C (-40° to +185°F)
Altitude	Up to 55,000 ft
Certifications	

The integrator is responsible for certifications at the terminal level. For more information, please visit <http://www.idirect.net/doc>.

Power Supply

Input Voltage	+15 to +32VDC
Power Consumption	32W typical



D0001074 RevA