980 Board
Satellite Modem

ST Engineering

ST Engineering iDirect's 9-Series defense aero modems are optimized for airborne communications-on-the-move (COTM) and provide a superior level of IP broadband capability with dual DVB-S2/ACM receivers for make-before-break connectivity and an Adaptive TDMA transmitter. The 9-Series defense aero modems include a FIPS 140-2 Level 3 Certified (#3056) TRANSEC module (E0002268) and feature fast beam switching, spread spectrum returns and skew angle compensation to support defense grade aeronautical operations and antennas on both the Evolution® and Velocity® platforms.

The 980 is a powerful satellite modem board architected specifically for integration into defense and government aircraft for operations in an ultra high-speed COTM environment. The 980 is designed to integrate into a ARINC 600 enclosure or other customized solutions, facilitate compliance with WGS, DO-160G and ARINC 791 standards and is manufactured to strict aerospace AS9100 standard for quality.

The 980 modem board is available as a roll-on/roll-off rackmount unit with the 9800 AR and with an ARINC 600 4MCU enclosure with the 9800 AE.

Markets

Government / Defense

Aero

Main Features:

- DVB-S2 up to 45 Msps
- Adaptive TDMA up to 15 Msps
- Dual demodulators for make-before-break connectivity
- FIPS 140-2 Level 3 Certified (#3056) TRANSEC module (E0002268)
- Extended frequency ranges for WGS constellations

EVOLUTION DEFENSE

VELOCITY

iDirect

Network Configuration*

Network Topology	Rx1 and Rx2	Tx
	DVB-S2/ACM	Adaptive TDMA
Modulation	QPSK, 8PSK, 16APSK	SS-BPSK, BPSK, QPSK, 8PSK
FEC Rates	LDPC 1/4-8/9	2D 16-State 1/2-6/7
Symbol Rates	Up to 45 Msps	Up to 15 Msps
Spread Spectrum		SF: 2, 4, 8; Up to 15 Mcps

Modem Interfaces

Tx Interface

Connector	MCX, 50Ω
Frequency range L-band	950-2050 MHz
Tx level	Composite Power +5 dBm to -30 dBm
BUC reference	10 MHz and 50 MHz

Rx1 and Rx2 Interfaces

Frequency	950-2150 MHz
Connector	MCX 50Ω
LNB pwr supply	+13V to +19V, 0.45A
LNB LO selection	22 kHz on/off

Data Interface

All digital I/O via backplane connector
LAN: Dual 10/100/1000 Mbps Ethernet; Console: RS-232; BUC Management: RS-422
Variety of discrete interfaces for aeronautical integrations – see integration guide for details

Management Interface

RS-232 Console, RS-422 Keyline, RS-422 BUC control, RS-422 Filter select

*Specifications are Evolution only and software dependent

**Applies to Velocity only and is software dependent

Management

Protocols Supported

TCP, UDP, ICMP, IGMP, RIP Ver2,Static Routes, NAT, DHCP, DHCP Helper, Local DNS Caching, OpenAMIP, OpenAMIP, cRTP, and GRE

Security

FIPS 140-2 Level 3 Certified (#3056) TRANSEC module (E0002268), AES Link Encryption (256-bit)**, X.509 Digital Certificates, Automatic Key Management

Mechanical and Environmental

Size	30.63 cm x 17.65 cm x 2.69 cm (12.06 in x 6.95 in x 1.06 in)
Weight	1.36 kg maximum (3.96 lbs)
Temperature:	
Operating	-40° to +70° C (-40° to +158°F) with adequate airflow and thermal integration
Altitude:	
	Up to 16,764 m (55,000 ft.) Not designed for simultaneous maximum temperature at maximum altitude.
Refer to integration guide for thermal design guidelines.	

Power Supply

Input Voltage	+15 to +32 VDC
Power Consumption	35 Watts Maximum