

# 9800 AE+ Satellite Modem



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 9800 AE+ features an ARINC 600 4MCU enclosure for fixed integration on defense and government aircraft for operations in an ultra high-speed COTM environment. The 9800 AE+ is operational up to 50,000 feet and meets the rigorous environmental test standards for MIL-STD 810G, MIL-STD 461F, MIL-STD 704F, and DO-160G.

The 9-Series defense aero modems are also available as a board-level product, 980 Modem Board, and as a rackmount, 9800 AR Modem, for roll-on/roll-off applications.

## Markets

Government / Defense  
Aero

### Main Features:

- DVB-S2 up to 45MSPS
- 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





## Network Configuration\*

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

## Modem Interfaces

### Primary Interface

ARINC 600 Size 2 – per ARINC 791, Part 1

### SATCOM Interfaces

Tx: Size 8 Coax, 950-2050 MHz, Composite Power 0 dBm to -30 dBm

Rx: Size 8 Coax, 950-2150MHz, -5 dBm (max) composite to -130+10\*Log10(Sym rate) dBm (min) single carrier

Software Controllable 10/50 MHz Reference on Tx

### Data Interfaces

LAN: Three Gigabit Ethernet; 1-front (RJ45), 2-back (Size 8 Quadrax)

Three 10/100 Mbps Ethernet - rear (Size 8 Quadrax)

Console: RS-232

### Discrete Inputs/Outputs

Remote Power Reset, Weight on Wheels, TX Mute In, TX Mute Out, TX Control In, Operator Ground Enable, Maintenance Ground Enable

### CPU Interfaces

USB – front panel

KVM – rear panel

Serial Com 1 – (RS-232) – rear panel

Serial Com 2 – (RS-485) – rear panel

\*Specifications are Evolution only and software dependent

\*\*Applies to Velocity only and is software dependent

## Management

### Protocols Supported

TCP, UDP, ICMP, IGMP, RIPv2, Static Routes, NAT, DHCP, DHCP Helper, Local DNS Caching, OpenAMIP, cRTP, GRE

### Security

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

### Traffic Engineering

Group QoS, QoS (Priority Queuing and CBWFQ), Strict Priority Queuing, Application Based QoS,

### Other Features

Built-in Automatic Uplink Power, Frequency and Timing Control, Authentication, Ultra High-Speed COTM

## Mechanical and Environmental

Size	4MCU per ARINC 600 W 12.40cm x D 38.18cm x H 19.35cm (W 4.88 in x D 15.03 in x H 7.62 in)
Weight	7.71 kg (17 lbs)
Operating Temperature	-20° to +70°C (-4° to +158°F)
Operating Altitude	Up to 15,240m (50,000 ft.)
Relative Humidity	Max 95% non-condensing humidity (operational)

## Power Supply

Input Voltage	18-36VDC; nominal 28VDC
Power Consumption	DC: 7.0A maximum at 28VDC