

**Evolution eM1D1
Line Card
Models eM1D1, eM1D1-FIPSL2**



eM1D1 shown

The Evolution eM1D1 line card is suited for supporting secure voice, data, and video communication links for mission-critical military and COTM broadband applications operating in either DVB-S2/ACM or iNFINITI TDM mode on the outbound. It supports TDMA or SCPC Return* with optional Spread Spectrum and extremely efficient FEC with 2D 16-State coding on the inbound. The line card features one modulator and one demodulator and is designed to meet the guidelines of MIL-STD 810F for operation in harsh environments.

Network Configuration

Modem	One Modulator (Transmit one downstream carrier) One Demodulator (Receive one upstream carrier)		
	Downstream	Upstream	
	<u>DVB-S2/ACM or (iNFINITI TDM)</u>	<u>D-TDMA or (SCPC Return*)</u>	
Modulation	QPSK, 8PSK, 16APSK (BPSK, QPSK, 8PSK)	BPSK, QPSK, 8PSK (BPSK, QPSK, 8PSK)	
FEC	LDPC, 1/4–8/9; (TPC, 0.495 - 0.879)	TPC**, 0.431–0.793 2D 16-State, 1/2-6/7 (2D 16-State 1/3- 6/7)	
Maximum Carrier Rates	Symbol Rate	45 Msps ¹ (15 Msps)	7.5 Msps (15 Msps)
	Info Rate	150 Mbps ¹ (21 Mbps ²)	12.8 Mbps ³ (24 Mbps ⁴)
	IP Data Rate	149 Mbps ¹ (20 Mbps ²)	11.1 Mbps ³ (20 Mbps ⁴)
	Notes:	¹ 16APSK, 8/9 FEC ² QPSK, .793 FEC ³ QPSK, 6/7 FEC ⁴ QPSK, 4/5 FEC Maximum downstream and upstream data rates cannot be achieved simultaneously Maximum rates are achieved under optimal conditions	
Spread Spectrum	Chip Rate	(TDM: Up to 15 Mcps)	Up to 7.5 Mcps (SCPC Return: 15 Mcps)
	Spreading Factor	(TDM: 2, 4, 8)	2, 4, 8, and 16 (SCPC Return: 2, 4, and 8)
Interoperability	Compatible with Series 15100 Universal Hub (5IF/20 Slot) chassis Requires iDX 1.1 software or above		

Interfaces

SatCom Interfaces	TxIF: Type-F, 950–2000 MHz (WGS), +5dBm/-35dBm RxIF: Type-F, 950–2000 MHz (WGS), -5dBm composite/ -130+10*log(Fsym)dBm (min) single carrier
Data Interfaces	LAN: RJ-45 Two 100/1000Base-T, one 10/100Base-T RS-232: RJ-45 (console connection)
Security	TRANSEC with FIPS 140-2 Level 2 Compliant

Mechanical/Environmental

Redundancy	Software Controlled, Hot-Swappable, and Auto-Failover
Weight	Model eM1D1: 1.2 lbs (0.6 kg) Model eM1D1-FIPSL2: 1.5 lbs (0.7 kg)
Operating Temperature	-22° to +140°F (-30° to +60°C), tested in accordance with MIL-STD 810F
Certification	FCC, CE, and RoHS Compliant

* Linecard operates in Receive Only mode when using SCPC Return
** TPC not supported for use with DVB-S2 outbound in iDX 3.0 and above