

Evolution eM1D1 Line Card



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 iNFINITI TDM or DVB-S2/ACM mode. 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. The eM1D1 supports IP data rates of up to 138 Mbps on the outbound and easily fits in any new or existing universal hub chassis, making network expansion easy.

Network Configuration

Modem	One Modulator (Transmit one downstream carrier) One Demodulator (Receive one upstream carrier)		
Modulation	<u>Downstream (iNFINITI TDM)</u>	<u>Downstream (DVB-S2/ACM)</u>	<u>Upstream (D-TDMA)</u>
FEC	BPSK, QPSK, 8PSK	QPSK, 8PSK, 16APSK	BPSK, QPSK, 8PSK
Maximum Carrier Rates	Turbo, 0.495–0.879	LDPC, 1/4–8/9	Turbo, 0.431–0.793 2D 16-State, 1/2 - 6/7
	Symbol Rate	15 Msps	45 Msps
	Info Rate	21 Mbps ¹	150 Mbps ²
	IP Data Rate	20 Mbps ¹	138 Mbps ²
	Notes:	¹ QPSK, .879 FEC	² 16APSK 8/9 FEC
Spread Spectrum	Chip Rate	Up to 15 Mcps	Up to 7.5 Mcps
	Spreading Factor	2, 4, 8	2, 4, 8, and 16
Interoperability	Compatible with Series 12000 Universal Hub (4-slot) and Series 15000 Universal Hub chassis		

Interfaces

SatCom Interfaces	TxIF: Type-F, 950–2000 MHz, +5dBm/-35dBm RxIF: Type-F, 950–2000 MHz, -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) USB port
Security	TRANSEC with FIPS 140-2 certification (iNFINITI TDM and D-TDMA)
10 MHz Reference	10 MHz reference to BUC

Mechanical/Environmental

Redundancy	Software Controlled, Hot-Swappable, and Auto-Failover
Weight	~1.2 lbs (0.6 Kg)
Operating Temperature	-30° to +60°C (-22° to +140°F), tested in accordance with MIL-STD 810F
Radio Standards (System Level)	EN 301-428 v1.3.1 — Ku-Band System Level Specification EN 301-443 v1.3.1 — C-Band System Level Specification
Safety Standard (System Level)	Complies with IEC 60950, EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1-03
Emission Standard (System Level)	Complies with EN 55022 Class A, FCC Part 15 Class A, CISPR 22 Class A, EN 61000-3-2, EN 61000-3-3
EMC/Immunity Standard (System Level)	Complies with EN 55024, EN 301-489-1, EN 301-489-12, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
Certification	FCC, CE, and RoHS Compliant

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