



### Features

- MIL-STD-188-165A COMPLIANT
- Software Defined Radio
- Data Rates 4kbps – 155Mbps in 1bps steps
- DVB-S / DVB-DSNG / DVB-S2 with ACM
- Intelsat Viterbi, Reed Solomon, Turbo, or LDPC Coding
- Intelsat and OM-73 (V)/G scrambling
- Built in BERT
- Clock recovery from input data
- IP Data Interface
- GSE encapsulation
- Excellent spurious performance
- Meets 40dBc ACI requirement
- L-Band 950 to 2050 MHz
- 70/140 MHz IF options
- Compliant with IESS 308/309/310
- AES 128/256 encryption
- Direct Sequence Spread Spectrum (DSSS) spreading

### Applications

The AMT-83L modem series continues the line of the first worldwide satellite modem (AMT-73L), to be certified with MIL-STD-188-165A by DISA. The AMT-73L was designed to fulfil two way satellite communication requirements in Defence Satellite Communications Systems (DSCS). Several thousands of these modems were deployed in the field on tactical terminals.

### Overview

Based on the Advantech Wireless “Software Defined Radio” architecture, the AMT-83L satellite modem series adds a number of advanced features to the DISA certified AMT-73L series modems. Among these new features there are:

- DVB-S2 with LDPC Coding and Adaptive Coding and Modulation (ACM)
- IP data interface
- GSE encapsulation
- Direct Sequence Spread Spectrum (DSSS) spreading
- AES 128/256 Encryption

All these new features transform the AMT-83L series modem into a powerful satellite communication tool. The modem can now address the new advanced and efficient DVB-S2 modulation and error corrections codes, via full-fledged IP traffic, with built in router, and GSE encapsulation, as well as the SATCOM-on-the-move (SOTM) mobility applications due to the DSSS spreading features.

With built in AES 128/256 Encryption, the modem allows for secure communication links, unhindered by eavesdropping.

The standard data interface is the IP Gateway, with optional EIA530/499, HSSI, ASI.

The IP Gateway data interface is a miniaturized fully fledged IP router designed to give ease of use, support for a wide range of protocols, security and QoS.

1:1 Redundancy switching is built into the unit as an optional feature. With the addition of an interconnecting control cable between the modems and the switch unit for IF and data interfaces complete redundancy is achieved.

Monitoring and Control is performed via Ethernet using HTTP, Telnet or SNMP.

DESCRIPTION	SPECIFICATION
<b>PERFORMANCE SPECIFICATIONS</b>	
Data Rate	4kbps to 155 Mbps
Data Interfaces	IP Gateway RJ45 Traffic Interface Full 10/100BaseT interface with Router/Bridge capability
	Optional EIA/TIA530/422 or EIA/TIA449, HSSI, ASI
Scrambling, Descrambling	IDR/IBS (IESS-308; IESS-309; IESS-310), OM-73 (V)/G (and no scrambling for BPSK, QPSK and OQPSK)
Data Connector, IP Gateway	RJ45
<b>MODULATOR SPECIFICATIONS</b>	
Data Rates	4kbps to 155 Mbps
Modulator Roll-Off Factor	As defined by MIL-STD-188-165A (in addition, optional from 5% to 25%)
Forward Error Correction (FEC) Codes	Viterbi with Reed Solomon, eTPC, LDPC Coding
IF Output Connector	Type TNC (f) 50 Ohms for L-band, optional BNC (f) 50 Ohms for 70/140MHz
Return Loss:	>10 dB
RF Output Frequency	L Band: 950-2050MHz; optional 70 +/-18MHz or 140 +/-36MHz, variable in 1kHz steps
RF Output Power	Range: 0 to -25dBm, adjustable in 0.25dB continuous increments Accuracy: +0.5dB; Temp Stability: +0.2dB
<b>DEMODULATOR SPECIFICATIONS</b>	
IF Input Frequency	L band 950-2050MHz, variable in 100Hz steps
Nominal Input Level	-20dBm
AGC Range	+40dB
Maximum Input Signal Level	+20dBm
IF Input Impedance and Return Loss	Impedance: 50 Ohms; Return Loss: > 10dB; Connector: TNC (f)
Noise Figure	9dB typical, 12dB at maximum AGC gain
Symbol Rate Acquisition Range	+100ppm
Synchronization and Acquisition Time	Depends on data rate, frequency uncertainty, and operating Eb/No. Following is a sample: Average Acquisition Time: <25.0 sec, 64kbps @ +/-30kHz sweep range
<b>INTERFACE SPECIFICATIONS</b>	
Monitoring and Control (M&C) Interface	External M&C Interface: 10/100BaseT for SNMP, Web Server, Telnet or HTTP Configuration Parameter Storage: NVRAM
<b>PHYSICAL AND POWER SPECIFICATIONS</b>	
Dimensions	Standalone or rack-mountable 1U Rack or 1U EIA chassis Height: 4.4 cm (1.75") Width: 48.26 with mounting ears or 43.2 cm without (19" or 17") Depth: 50.8 cm (20") Weight: 13.5 lb (6.2 kg) maximum
Power, AC	90 – 264 VAC, 50/60Hz Power Consumption: 65 Watts typical
Power, DC (Option)	DC Power: -48 VDC (32 to 72 VDC) Power Consumption: 62 Watts typical
<b>ENVIRONMENTAL SPECIFICATIONS</b>	
Environmental	Operating Temperature: 0 Deg C to 50 Deg C (32 Deg F to 122 Deg F) Storage Temperature: -25 Deg C to 85 Deg C (-13 Deg F to 185 Deg F) Relative Humidity: Operating: Up to 90% non-condensing Non-Operating: Up to 95% non-condensing Altitude: Operating: Up to 10,000' (3,045 M) During Transit: Up to 40,000' (12,180 M)

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