

# 1.2 METER MOTORIZED FLYAWAY VSAT TERMINAL ENGAGE™ CLASS

## Engage™ Class – Advanced 1.2m VSAT FlyAway Motorized Terminal

Intelligent Antenna Controller  
A-SAT-IITM Bandwidth efficient triple access modem technology  
Second generation GaN SSPB  
Intelligent Antenna Controller

### Overview

The New Engage™ Class Advantech Wireless High Performance, 1.2m Flyaway VSAT Terminal Solution includes the most advanced SATCOM technology available today.

The terminal is based on a high efficiency, ruggedized tri band ready 1.2 Meter Motorized Antenna, which can cover X-band, Ku-Band, or Ka-Band, by replacing the feed only. The antenna is fully motorized and has integrated satellite finding controller. The terminal has been built in a Comtech SLM5650A.

### The RF section includes the award winning Second Generation GaN based technology SSPA/SSPBs.

X band from 10W to 100 W  
Ku-band from 8W to 100W  
Ka-band from 10W to 40W

### The entire terminal is fully compliant with:

MIL-STD-188-164a  
MIL-STD-810F  
NATO STANAG 4484  
IP65



### Features

- ▶ Flexible and Mobile Solution
- ▶ Fully integrated system for easy deployment and use
- ▶ High Performance Motorization Package
- ▶ Integrated Control System for 1 Button Auto Acquire
- ▶ Quick one-person installation
- ▶ Comtech SLM5650A
- ▶ Multi Band Frequency X, Ku or Ka-Band operation
- ▶ Compact ruggedized packaging, IP65 compliant
- ▶ World leading Second Generation GaN based Solid State Power Amplifier
- ▶ Excellent Reliability
- ▶ Minimal Maintenance

### Optional

- ▶ Router
- ▶ Location finding tool set  
( Compass, GPS, Clinometer)
- ▶ Hand held spectrum analyser
- ▶ UPS with Battery set
- ▶ IP Phone
- ▶ Ruggedized laptop

# Product Features & Specifications

## Technical Specifications

Specifications	
<b>Operating Frequency Range</b>	52 to 88 MHz, 104 to 176 MHz, 950 to 2000 MHz in 100 Hz steps
<b>Modulation Types</b>	BPSK, QPSK, OQPSK, 8PSK, 8-QAM, 16-QAM
<b>Spreading Factors</b>	Integer factors 2-128, plus 256 and 512; BPSK
<b>Digital Data Rate</b>	EIA-530: 64 kbps to 20 Mbps, 1 bps steps EIA-613: 64 kbps to 51.84 Mbps, 1 bps steps Gigabit Ethernet: 8 kbps to 155.52 Mbps
<b>Symbol Rate</b>	32 ksp/s to 64 Msp/s
<b>External Reference Input</b>	TNC connector, 1, 5, or 10 MHz, selectable
<b>INT REF Stability</b>	1 x 10 <sup>-7</sup>
<b>Scrambling</b>	V.35, OM-73 and synchronous
<b>IDR/IBS Framing Compatibility</b>	Support for IDR and IBS framing. Allows basic IDR/IBS open network compatible operation
<b>Built-in Test (BIT)</b>	Fault and status reporting, BER performance monitoring, IF loopback, programmable test modes, built in Fireberd emulation
<b>Summary Faults</b>	Reported via front panel LEDs, 15-pin D sub, FORM C relay contacts for TX, RX, common equipment faults, and TX and RX alarms
<b>Unit Management</b>	EIA-485, EIA-232, 10/100Base-T Ethernet with HTTP, Telnet and SNMP
Modulation	
<b>Output Power</b>	+10 to -40 dBm, adjustable in 0.1 dB steps
<b>Output Return Loss</b>	14 dB (70/140 MHz) 9 dB (L-Band)
<b>Output Impedance</b>	50 Ω
<b>Spurious</b>	From Carrier + symbol rate to 500 MHz -51 dBc
<b>Harmonics</b>	From carrier (CW) to 4000 MHz -60 dBc
<b>TX Clock Source</b>	INT, TX terrestrial, and data source sync, RX satellite
<b>Output Connectors</b>	TNC for 52 to 88 MHz, 104 to 176 MHz Type "N" for 950 to 2000 MHz
Demodulation	
<b>Input Carrier Power</b>	70/140MHz bands: +10 to -55dBm L-Band: +10 to -55 dBm carrier (SR > 3.2 Msp/s) +10 to [-55 - 10log10(3.2/SR)], (SR ≤ 3.2 Msp/s)
<b>Maximum Composite Power</b>	+20 dBm or +40 dBc
<b>Input Impedance</b>	50 Ω
<b>Input Connectors</b>	TNC for 52 to 88 MHz, 104 to 176 MHz Type "N" for 950 to 2000 MHz
<b>Carrier Acquisition Range</b>	± 30 kHz, selectable
<b>Input Return Loss</b>	14 dB (70/140 MHz) 9 dB (L-Band)
<b>Buffer Clock</b>	INT, TX terrestrial, RX satellite
<b>Doppler Buffer</b>	32 to 16,777,216 bits, selectable

Coding options		
Uncoded	Standard	1/1
Viterbi	Standard	K=7,1/2, 3/4, and 7/8 rates
Viterbi & Reed-Solomon	Standard	Closed network, per IESS-308 and IESS-309
Trellis	Standard	Per IESS-310
Trellis and Reed-Solomon	Standard	Per IESS-310
Triple Viterbi	Optional	1/2 and 3/4 Legacy SDM-9000 compatibility
Sequential	Optional	1/2, 3/4, and 7/8 rates
Turbo Product Code (TPC)	Optional	5/16, 21/44, 3/4, and 7/8 TPC per IESS-315
Low Density Parity Check (LDPC)	Optional	1/2, 2/3, 3/4, and 7/8 HP, LL, and ULL modes

Available options	
How Enabled	Option
FAST	Data rates to 5, 10, 20, 52 or 155 Mbps
FAST	8PSK/8-QAM and 16-QAM
FAST	TPC to 5, 10, 20, 52 or 155 Mbps
FAST/Hardware	TPC and LDPC to 5, 10, 20, 52 Mbps
FAST	Vipersat Management System
FAST	Diff-Serv QoS
FAST	Secure Network Management (SSL/SSH/SNMPv3)
FAST	ASYNCRS-485/232 overhead channel /AUPC
FAST	Sequential FEC
FAST	DoubleTalk Carrier-in-Carrier
FAST	Asymmetric TX/RX data rate levels
FAST	Bridged point- to-multipoint
FAST	SDM-9000 compatibility ( including Triple Viterbi)
FAST	Spread Spectrum
Hardware	G.703 data interface
Hardware	LVDS data interface
Hardware	TRANSEC module
Hardware	Gigabit Ethernet Network Processor
Hardware	Extended Operational Temperature
Hardware	24 VDC power supply

Environmental And Physical	
<b>Prime Power</b>	90 to 264 VAC, 47 to 63 Hz 130 W (max), 90 W typical 24 VDC optional
<b>Mounting</b>	1RU
<b>Dimensions (height x width x depth)</b>	1.71" x 19" x 19" (4.3 x 48 x 48 cm)
<b>Weight</b>	≤ 12 lbs (5.5 kg)
<b>Temperature, Operating Extended Temp Option:</b>	0 to 50°C (32 to 122°F) -32° to 50°C (-25 to 122°F)
<b>Temperature, Storage (Non-operational)</b>	-40 to +70°C (-40 to 158°F)
<b>Humidity</b>	0 to 95%, non-condensing

RF Performance			
	10W to 100W X-Band	8W to 125 Ku Band	10W to 40W Ka Band
	TX	TX	TX
<b>Frequency (GHz)</b>	7.900 – 8.400	13.75-14.5	30.0 – 31.0
<b>EIRP</b>	45 dBW to 55 dBW	50 dBW to 63 dBW	58 dBW to 64 dBW



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