# MLT1000

## Military Satellite Modem

## C4I SATELLITE COMMUNICATIONS

Wavestream's MLT-1000 is a fast-to-deploy, easy-to-operate military modem that meets the most rugged specifications. Setting a new standard for mission flexibility, MLT-1000 delivers high-speed satellite communications for on-the-move, stationary, point-to-point (SCPC), and point-to-multipoint (managed MCPC) operations.

## BATTLE PROVEN CONNECTIVITY

MLT-1000 provides secure, highly-reliable broadband C4I satellite communications that ensure battlefield information superiority for warfighters. MLT-1000's advanced VSAT technologies maximize link availability, optimize bandwidth usage, and enable high throughput in the most challenging field and weather conditions. With embedded QoS and transparent acceleration technologies, MLT-1000 provides a single integrated platform for data, voice, and video applications over multiple network topologies.

## THE TACTICAL WARFIGHTER'S MODEM

MLT-1000 enables military personnel to run the full range of mission-critical applications, protocols and tasks simultaneously on the same modem. Built to the toughest military specifications, MLT-1000 delivers effortless operation anytime, anywhere. In addition, MLT-1000 requires minimal setup by non-technical personnel for fast satellite communications warfighters can count on.

For cost efficient, secure, seamless connectivity across land, sea, and air on C, X, Ku, and Ka bands, MLT-1000 always accomplishes the mission.

## BENEFITS

- **High sensitivity enables use of small antennas and BUCs, higher MODCODs and reduce space segment**

- **Adaptive Spreading, Coding and Modulation (ASCM) improves availability - essential factor for SOTM**

- **Integrated Transmission Security (optional)**

- **Simple deployment shortens time-to-operation**

- **Variety of applications, protocols, tasks and expansion slot creates a compact 'system in a box'**

- **Military specifications for tough conditions**

- **Multiple topologies - mesh, star (hub spoke), or hybrid**

# TECHNICAL SPECIFICATIONS

**Adaptive Spreading, Code, and Modulation - ASCM (Patent pending)**

**Data rates:**
64 Kb/s - 80 Mb/s

**Baud rates:**
128 Ks/s - 30 Ms/s, step=1Ks/s

**Modulations:**
BPSK, QPSK, 8PSK, 16QAM (optional)

**Spectral shaping:**
SRRC, roll-off=0.2

**Spread Spectrum:**
spreading factor 1-16

**SNR support:** -13 to +13 dB

**Coding:** 27 LDPC codes

**Supported rates:**
1/4, 1/3, 2/5, 1/2, 2/3, 3/4, 5/6, 8/9

**Block length:**
4032, 6048, 8064, 12096 bits

**Built in transport layer encryption - TRANSEC (optional)**

## BER PERFORMANCE

**Typical Eb/N0 for BER =10-8:**
0.8dB
(BPSK 1/3 LDPC 12K block length)

## DATA COMMUNICATIONS

**Dynamic routing mode or bridge mode**
**TCP acceleration**
**VLAN support**
**QoS**
**Encryption - AES 256 (optional)**

## TRANSMIT PORT

**Frequency range:**
950 - 2150 MHz

**Tuning step:** 1kHz

**Impedance:** 50 W

**Connector type:** N-Type

**Return loss:** better than -10 dB

**Tx power:**
0 to -30 dBm, 0.1 dB resolution

**Automatic uplink power control**

**Reference:** 10 MHz, switchable

**Communication:** FSK

**BUC Power:**
24VDC, 70W, switchable (optional)

## RECEIVE PORT

**Frequency range:**
950 - 2150 MHz

**Tuning step:** 1 kHz

**Impedance:** 50 W

**Connector type:** N-Type

**Return loss:** better than -10 dB

**Max input level:** -10 dBm

**Input noise level:**
-145 dBm\Hz to -115 dBm\Hz

**Noise figure (at maximal gain):**
8 dB

**Reference:** 10MHz, switchable

**Communication:** FSK

**LNB Power:**
13/14, 18/19, 24VDC, switchable

## 10 MHZ REFERENCE

**Internal reference:** OCXO

**Frequency accuracy:**
up to 2 PPM (1 PPM optional), including accuracy, temperature and 10 years aging

**Warm up time:**
up to 60 seconds

**Phase noise:**
- 10 Hz: -100 dBc/Hz
- 100 Hz: -130 dBc/Hz
- 1K Hz: -140 dBc/Hz
- 10K Hz: -145 dBc/Hz

## MONITOR AND CONTROL

**Built-in web management**
**Remote or local software upgrade**
**SNMP-based management**

## INTERFACES

**Ethernet 10/100/1000 Base-T**
**Dual RS232 serial interface auxiliary port x2**
**USB 2.0 Host**

## POWER

**Operating voltage:**
10 to 32VDC

**Power:**
25W

## ENVIRONMENTAL AND STANDARDS

**Operating temperature:**
-40˚C to + 60˚C

**Vehicle mounted or rack mounted enclosure**

**MIL-STD-810G:**
environmental requirements

**MIL-STD-461F:**
electromagnetic requirements

**MIL-STD-1275:**
DC characteristics

## MECHANICAL

**Dimensions:**
1.17H x 13.4W x 11.6D
(4.36 x 34 x 29.6 cm),
1 rack unit

**Weight:** 5.6 kg (12.3 lbs)

## ABOUT WAVESTREAM

Wavestream sets the standard in the design and manufacture of next generation high power solid state amplifiers. Wavestream's Family of Ka, Ku and X-band Solid State Power Amplifiers (SSPAs), Block Upconverters (BUCs) and transceivers provide systems integrators with field-proven, high performance solutions designed for ground mobile and fixed, gateway and airborne satellite communication systems worldwide.

These items are subject to the Export Administration Regulations (EAR), 15 C.F.R. Parts 730-774, and may not be exported or transferred to any non-U.S. person, except as authorized by the U. S. Department of Commerce.

## CONTACT US

545 West Terrace Drive

San Dimas, California 91773
USA

T.  +1 909 599 9080

F.  +1 909 599 9082

**www.wavestream.com**

**sales@wavestream.com**

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