Product Brochure

Taurus-M

Lightweight, Ruggedized Modem for Military Applications

Ultra-High-Performance Military-Grade Mobility Modem

Gilat's Taurus-M is a fast-to-deploy, lightweight and easy-to-operate military modem that meets the most rugged military specifications. Setting a new standard for mission flexibility, the Taurus-M delivers highly available high-speed satellite communications for on-the-move (SOTM) and stationary operations. It is the smallest modem on the market today which offers these capabilities.

The compact Taurus-M tactical modem enables government agents and warfighters to accomplish their critical missions, offering rapid connectivity to data, voice and video, even under the harshest conditions. The Taurus-M operates on both the SkyEdge II-c and SkyEdge IV platforms.

Taurus-M meets the satellite communication needs for both HTS, VHTS (Very High Throughput Satellites) and wide-beam satellites on a global network. It manages the mobility SATCOM system, including encrypted Internet, VoIP and provides connectivity for mobile systems in land and sea.

Whether carried in a backpack or mounted on a vehicle, the Taurus-M satellite modem delivers superior performance, high availability, security and bandwidth efficiency when it is needed most.

The Tactical Warfighter's Modem

The Taurus-M provides secure, highly reliable satellite communications that ensure battlefield information superiority for warfighters. It'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, it provides a single integrated platform for data, voice and video applications over multiple network topologies.

The Taurus-M VSAT 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 standards, it delivers effortless operation anytime, anywhere. The Taurus-M provides secure, seamless connectivity across land and sea on C, Ku and Ka bands. Spread spectrum support, with a spreading factor of up to 12, makes it easy to support very small antennas and operation

Benefits

- Ruggedized, lightweight, fast-to-deploy
- Manages encrypted Internet, VoIP and provides connectivity for mobile systems in land and sea.
- Compatible with Manpack and Flyway terminals
- Accelerated FWD speed of up to 200Mbps
- Fully adaptive RTN transmission
- Allows satellite resource optimization on Military networks
- Automatic beam-switchover based on real-time utilization
- Highest spectral efficiency – DVB-S2X FWD and LDPC RTN
- Supports RTN Spread Spectrum for increased resilience to interference and for low SNR links



Taurus M

at a high bit rate. In addition, it requires minimal setup by non-technical personnel for fast satellite communications warfighters can count on.

Complete Feature Set

Taurus-M is a full featured, multi-purpose IP VSAT supporting advanced application based QoS, VLANs and IPv6 networking. It provides the full feature set for mobility services, incorporating advanced mobility features such as high-speed Doppler compensation, transmit power control with link adaptation and antenna skew compensation with dynamic spread spectrum. Taurus-M also incorporates true seamless beam switchover, ensuring service continuity. The unique distributed X-Architecture of SkyEdge II-c and the Elastix-Architecture of SkyEdge IV are ideal platforms for switchover between beams, satellites and gateways, while maintaining user application sessions.

In addition, Taurus-M provides the highest level of transmission security, supporting X509 terminal authentication and AES-256-bit link layer encryption with dynamic key rotation to protect all user traffic. It delivers acceleration and packet-per-second performance that supports hundreds of users per VSAT with 200Mbps throughput.

Due to Taurus-M's low power consumption, it enjoys long hours of battery operation. It also supports reliable data, voice and video transmissions, with high availability in secure mode and excellent performance in low SNR.

Taurus-M supports data rates of up to 200Mbps with modulation, FEC and selectable frame size, minimizing highspeed overhead and low speed delay. It provides significant bandwidth savings along with QoS capabilities in graceful degradation conditions.

Taurus-M is part of the SkyEdge II-c and SkyEdge IV VSAT ground systems that include TotalNMS and Elastix-TotalNMS, Gilat's advanced Network Management Systems.

Portable, Reliable, Capable

Defense organizations need quick-to-deploy, highly available, ruggedized on-the-move solutions that can be carried in a backpack or mounted on fighting vehicles, with a single switch for power and dark mode. Gilat's Taurus-M is a fully integrated, compact VSAT system that ensures seamless connectivity for SOTM and SOTP missions and supports voice and data communications, military C4I and border patrol activities with full interoperability among land and sea forces.

Technical Specifications

Forward Channel

Standard:
DVB-S2X Adaptive Coding and Modulation (ACM)
Carrier rate:
1.5Msps (SEIIc)
5Msps (SEIV)- 500Msps
Modulation:
QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 256APSK
Coding:
LDPC, BCH
FEC:
All FECs supported by standard

Return Channel SkyEdge IIc

Access Scheme:
MF-TDMA, Dynamic Channels
Inbound Rates:
Symbol rate-128Ksps – 30Msps
Modulation:
BPSK, QPSK, 16QAM
Coding:
LDPC
FEC:
1/4, 1/3, 2/5, 1/2, 2/3, 3/4, 5/6, 8/9
Spread Spectrum:
BPSK 1/4, 1/3 with factor 2,3,4,6,8,12

Return Channel SkyEdge IV

Access Scheme:
Elastix-SCPC and MF-TDMA
Inbound Rates:
Symbol rate - 128Ksps-30Msps
Modulation:
BPSK, QPSK, 16QAM, 64QAM
Coding:
XDC
Dynamic Range:
- 15dB to +15dB

Modem Interfaces:

RF Input/Output/:
RF in frequency- 950-2150MHz
RF out frequency- 950-2400MHZ
Tx port:
N-type, 50Ω
Rx port:
N-type, 50Ω
DISEqC:
22kHz tone, 13V/18V
Data Interfaces:
LAN 1 10/100/1000 BaseT (13 pin)
LAN 2 10/100 BaseT (6 pin)

Reference Signal:

Reference Clock Source:
Internal
Ref. Clock Frequency [MHz]:
10
Ref. Clock Aging [PPM/10Y]:
1
Ref. Clock Output Power [dBm]:
-5 dBm to 5dBm

Enhanced Features:

IP Features:
IPv4/IPv6, TCP, UDP, ICMP, DHCP, NAT/PAT, DNS Caching, cRTP, IGMPv2, SIP, VLANs, RIPv2, Static Routes
Mobility - Antenna Interface:
OpenAMIP
Layer 2:
Ethernet frame forwarding, 802.1p QoS, 802.1ad, VLAN re-tagging, P2P, P2MP

QoS:
Per VSAT and Per Managed Group, CIR, MIR, CBR, DiffServ and priority-based queuing, application-based priority
Security:
AES-256-bit encryption, IPSEC Client, ACL Firewall, X.509 Terminal Authentication, TRANSEC
Application Acceleration and Protocol Optimization:
TCP acceleration, HTTP web pre-fetch acceleration and compression, GTP cellular data acceleration.

Mechanical:

Dimensions (L x W x H) [mm]:
165 x 190 x 33
Weight [Kg]:
1.1
Front panel:
On/Off Switch
5 LEDs
Light Switch (for inhibiting the LEDs)
Rear panel:
DC power
4 pin
1 Grounding screw

Electrical:

Operating Voltage [VDC]:
12 – 30
Max. Power Consumption [W]:
Modem Only: 15
Modem + ODU: 100
Max. Current @ Power Off [µA]:
100

Environmental:

Operating Temperature [°C]:
-40C to +60C
Max. Relative Humidity [%]:
95
Impenetrability:
IP67
Vibration:
MIL-STD-810F
Shock:
MIL-STD-810F

Additional Specifications:

DC Power out to BUC
Max DC Power to BUC [V/A]:
24 / 3
DC Power Out to LNB
13V/18V, or 20.5V, or no DC
Up to 1A (software controlled)
High Temperature Protection:
DC power disconnection @ approx. 85°C (internal temperature)
Safety:
EN 62368-1:2020+A11:2020
IEC 62368-1:2018 (Ed.3)
AS/NZS 62368:1:2022
EMC:
EN 55032
IP67:
IEC/EN 60950-22, with covered connectors

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