Product Brochure

GLT 2000 Ruggedized SDR Modem

Next-Generation Ruggedized Multi-Service Satellite Modem

The GLT 2000 is Gilat's ruggedized next generation SDR satellite modem, built for military and government missions that demand secure, resilient, and high throughput communications. Combining the advanced performance and waveform flexibility of the GLT 1500 with battle proven durability, it ensures reliable on the move and on the pause connectivity across land, sea, and air.

The GLT 2000 is engineered to provide robust and continuous Beyond Line-of-Sight (BLoS) communications, as well as reliable mission-critical data exchange. Its support for multiple waveforms, including DVB-S2X, SkyEdge IV, and ASCM, enables flexible operation across diverse satellite networks. Furthermore, the GLT 2000 is compatible with multi-orbit satellite constellations, ensuring seamless connectivity regardless of the operating environment.

Designed for deployment in harsh and contested settings, the GLT 2000 maintains high performance within a compact, low Size, Weight, and Power (SWaP) enclosure. This tactical-ready design allows for easy integration and operation in scenarios where reliability and resilience are paramount.

Benefits & Capabilities

Software Defined Radio (SDR) Advantage

GLT 2000 leverages advanced Software Defined Radio (SDR) technology to address the growing complexity of modern satellite communications environments. By decoupling hardware from waveforms, the modem enables operational forces to select and adapt the most suitable waveform for each mission profile, network architecture, and operational theater.

This SDR approach allows seamless operation across multiple networks, and satellite constellations. Built on the proven GLT-1500 SDR architecture, GLT 2000 establishes a future-ready platform that consistently outperforms virtual and software-only modem alternatives in power efficiency, latency, and deterministic performance.

SkyEdge IV Network Capabilities

GLT 2000 supports the SkyEdge IV waveform, a field-proven, defense-grade SATCOM network designed to meet the operational requirements of modern military forces. SkyEdge IV enables secure, resilient, and scalable communications across land, maritime, and airborne platforms, supporting both tactical and command-level connectivity.

Benefits

- Ruggedized military-grade SDR modem for harsh operational environments
- GLT-1500-class performance in a field-proven Military Grade enclosure
- Very Low SNR (VLSNR) operation enabling assured connectivity with small antennas
- High throughput supporting real-time ISR, video, and mission-critical data
- Seamless mobility with fast beam, satellite, and orbit switching
- Secure-by-design with AES-256 encryption and TRANSEC support
- Low SWaP optimized for vehicle-mounted and tactical deployments

GLT 2000 Ruggedized SDR Modem

Optimized for on-the-move and on-the-pause operations, GLT 2000 enables continuous beyond-line-of-sight (BLoS) communications, ensuring uninterrupted situational awareness, command and control, and data exchange even under harsh environmental and contested conditions. The SkyEdge IV waveform is designed for seamless operation over Very High Throughput Satellites (VHTS) and next-generation GEO and MEO constellations.

ASCM Waveform – Assured Connectivity

The ASCM (Adaptive Spreading, Coding and Modulation) waveform provides GLT 2000 with highly resilient SCPC connectivity across C, X, Ku, and Ka bands. ASCM dynamically adapts modulation, coding, and spreading factors in real time, enabling reliable operation at very low SNR levels while maintaining efficient spectrum utilization. This capability allows the use of small, low-profile antennas, supports rapid deployment by non-technical personnel, and ensures reliable connectivity in congested, degraded, or contested RF environments.

High Throughput and Multi-Orbit Performance

GLT 2000 delivers very high aggregated throughput with deterministic performance, supporting demanding applications such as real-time ISR feeds, situational awareness systems, and mission-critical data services. The modem supports wideband DVB-S2X carriers with advanced ACM for optimal bandwidth efficiency.

Ruggedized for Tactical Operations

Housed in a battle-proven Military Grade ruggedized enclosure, GLT 2000 is engineered to withstand harsh environmental conditions and demanding tactical deployments. Its low SWaP design and wide DC power input range make it ideally suited for vehicle-mounted and forward-operating scenarios.

Technical Specifications

Waveforms & Air Interface

SCPC Channel

Adaptive Spreading, Coding and Modulation - ASCM

Data rates:
32 kbps – 500 Mbps
Baud rates:
128 ksps – 190 Msps, step=1Ks/s
Modulations:
BPSK, QPSK, 8PSK, 16QAM
Supported coding rates:
1/4, 1/3, 2/5, 1/2, 2/3, 3/4, 5/6, 8/9
Spectral shaping:
Roll-off=0.05, 0.1, 0.2
Spread Spectrum:
Spreading factor: 1 – 12
SNR Range:
–15 to +13dB Coding LDPC
Optimized for small antennas and contested environments

DVB-S2X

Carrier Rate:
5Msps-190Msps
Roll-off:
0.05, 0.1, 0.2
MODCODs:
BPSK-S1/5-256APSK ¾
(seamless MODCOD switching)
SNR Range:
–9.4dB to +21dB FEC: LDPC, BCH

SkyEdge IV

Return Channel

Elastix-Access:
eSCPC (Elastix SCPC), TDMA
Carrier Rate:
0.1 Msps (GEO) 1Msps (MEO) – 190Msps
Roll-off:
0.05, 0.10, 0.2
Modulation:
BPSK, QPSK, 16-Ary
SNR Range:
-15 dB to +15 dB
FEC:
XDC

Forward Channel

Standard:
DVB-S2X ACM
Carrier Rate:
5 Msps-500 Msps
Roll-off:
0.05, 0.10, 0.2
MODCODs:
BPSK-S 1/5 – 256APSK ¾
(seamless MODCOD switching)
SNR Range:
-9.4 dB to +21 dB FEC: LDPC, BCH

Performance

Aggregated Throughput:
>500 Mbps
Packet Processing:
Up to 200 Kpps
- **Very Low SNR (VLSNR) operation for resilient links**
- **Efficient bandwidth utilization with adaptive MODCOD switching**

Enhanced Features

IP Features:
IPv4 / IPv6, DHCP, NAT/PAT, DNS caching, IGMPv2, VLANs, VRFs, Static routing, RIPv2, BGP
QoS:
- Per-VSAT CIR / MIR, CBR
- Priority-based queuing & DiffServ

Embedded Application Acceleration & Protocol Optimization:
TCP acceleration and Header compression

Layer 2 Services

- Standards-based Ethernet services (MEF frameworks)
- E-LINE EVC
- UNI / ENNI (untagged, 802.1q, 802.1ad)

Security

- AES-256 link encryption
- TRANSEC support
- Secure boot and terminal authentication
- X.509 certificates and ACL firewall
- Designed for compliance with FIPS 140-3 Level 3 architectures (with Satellite Crypto Module)

Mobility

- beam, satellite, and orbit switching
- GEO, MEO, and LEO support
- OpenAMIP and OpenBMIP compliant
- Autonomous beam switching and Doppler compensation

Management Interface

- Secured Web-based local management, remote and local software upgrades, NMS remote management, SNMPv2/v3
- Compatible with SkyEdge IV Elastix TotalNMS

Interfaces

Transmit Port

RF Interface: N-Type
Frequency Range:
950 - 2450 MHz
Tx Power:
0 to -30 dBm, 0.1 dB resolution with automatic uplink power control
Reference:
10 MHz, switchable
BUC Power:
24VDC, 72W, switchable

Receive Port

RF Interface: N-Type
Frequency Range:
950 - 2450 MHz
Reference:
10MHz, switchable
LNB Power:
24VDC, switchable
DiSEqC Support:
13/18 VDC, 22KHz

10 Mhz Reference

Internal Reference:
MEMS-TCXO
Frequency Accuracy:
up to 1 PPM, including accuracy, temperature, and 10 years aging

Modem Interfaces

Data Interfaces: 3 × Ethernet 10/100/1000 Base-T
Optional 10Gbps Digital RF

Power

Operating Voltage:
18 – 32 VDC
Typical power consumption:
~25 W Optimized for tactical power budgets

Environmental and Standards

Operating Temperature:
–40°C to +55°C
Storage Temperature:
–40°C to +85°C
Compliant with MIL-STD-810, MIL-STD-461, MIL-STD-1275

Mechanical

Form Factor:
1U ruggedized chassis
Mounting:
Vehicle-mounted or 19″ rack
Operating Temperature:
–40°C to +55°C
Storage temperature:
–40°C to +85°C
Compliant with MIL-STD-810, MIL-STD-461, MIL-STD-1275

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