

# guarDSMan™

## High-Rate Modem for DVB-S2 Satellite Communications



Digital Architecture for Pooled Resource Management

Eliminates Dependence on Custom Hardware

Industry Standard Interfaces (REST API & GEMS)

Flexible Deployment Options

Cost Effective COTS Hardware

### Overview

guarDSMan™ is the latest generation, SW-defined modem, supporting full-duplex space-ground communications at data rates up to 2 Gbps. Our flexible SW implementation is field-upgradeable to extend a wide range of waveforms (in addition to DVB-S2, including modulation and coding) and can be hosted on on-premise COTS x86 server technology, or alternatively, in a remote cloud hosting environment. Signal interface is compliant with Digital IF industry-standard VITA-49 transport protocol. A typical installation includes Commercial-Off-the-Shelf (COTS) digital to analog (D/A) and analog to digital (A/D) conversion (instantaneous bandwidth up to 1.6 GHz) located proximate to the ground station antenna aperture, which streams digital signal via commodity networks to/from the SW modem host environment.

### Key Features

- Bi-directional communications up to 750 Msym/sec
- Baseband data rates up to 2 Gbps
- QPSK, 8PSK, 16APSK, 32APSK modulation formats
- Configurable RRC Matched Filter
- Generic Stream Encapsulation (GSE)
- Deploys flexibly on COTS server or in a cloud environment
- Internal BERT for fault isolation and performance testing
- Limited 1 year warranty
- Extended warranty available at additional cost



## Improved Performance

Based on the proven digital architecture that General Dynamics Mission Systems has used to field software modems at ground stations across the globe, the guarDSMan™ modem improves upon that baseline to deliver the highest performance software-defined modem in the industry.

## Modular and Extensible

Additional high-rate guarDSMan™ modems can be added to the resource pool without the long lead time that accompanies custom hardware.

## Easy to Use, Deploy and Manage

Software defined modem allows new waveforms to be easily added and remotely installed to meet ever evolving technological advancements. Designing the guarDSMan™ modem to run on COTS hardware improves interoperability, system maintainability, and fast tracks cloud migration. Built-in test functions streamline troubleshooting and fault isolation.

## Technical Specifications

- Standards Compliance
  - DVB-S2 – ETSI EN 302 307-1
  - SDA NEBULA Standard
  - SDA Ka-Band Modem GSE Specification
- Warranty
  - GDMS offers a 1 year limited warranty, extended warranty are available at additional cost.
- DVB-S2 MODCODs
  - Up to 750 Msym/sec (bi-directional)
  - Up to 2 Gbps data rate (bi-directional)
  - QPSK, 8PSK, 16APSK, 32APSK modulation
  - LDPC 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
- DVB-S2 Options
  - Normal FEC Frame Size (64k)
  - Constant Coding and Modulation (CCM)
  - Pilot Frames
  - Generic Continuous Stream
  - RRC Matched Filter (roll-off factor: 0 to 1)
- Two-Way Time Transfer
  - Accuracy: 3 ns rms
- Storage
  - 1 TB (sample storage for troubleshooting)
- Networking Features & Protocols
  - 1 GbE M&C, 10 GbE (baseband)
  - GSE over Ethernet
- Ordering
  - Available for order through General Dynamics
  - Email: [guarDSMan@gd-ms.com](mailto:guarDSMan@gd-ms.com)
  - U.S. & Canada: 1-877-449-0600 International: Country Code + 877-466-9467 DSN: 312-282-1048
- Lead Time
  - Current lead time is 18 months. General Dynamics reserves the right to update lead times or cancel an order at any time.

