



SatLink 2900 Mobile

Broadband Mobile VSAT Indoor Unit



The SatLink 2900 Mobile VSAT provides the advanced capabilities required for land, sea, and aerospace deployments, including global roaming with access to 10 different beams for continuous two-way satellite communications. Internet access, Voice over IP, GSM over IP, and video conferencing are common applications of its powerful mobile features.

The SatLink 2900 Mobile VSAT is a member of a family of SatLink products and systems from STM enabling scalable, high-availability DVB-RCS networks optimized for Internet Protocol (IP) communications, including: VSATs, turnkey hub & gateway systems, hub components, and value-added options for advanced data, voice and video networking via satellite. STM is the technology and market leader in DVB-RCS satellite networks delivering superior performance for telecom service providers, ISPs, governments and enterprises around the world. STM also offers integration, installation, 24 x 7 global support, and managed network services.



Features & Benefits

- **High-Capacity with Mesh & SCPC Options**

SatLink 2900 delivers high IP throughput for broadband services using either Bandwidth-on-Demand or SCPC mode. Reception of 8 concurrent bursts eliminates blocking in mesh networks. Excellent for multi-media & multi-cast services with dual Gigabit Ethernet ports.
- **Adapted to Mobile Environment**

The SatLink 2900 Mobile VSAT can store parameters for up to 20 Forward Links, enabling it to move seamlessly between beams. The software is specially adapted for the constant roll and pitch of the seas making it less susceptible to outages, and the unit is equipped with a GPS interface for fast, automatic logon and synchronization. Optional transmit inhibit switch prevents inadvertent transmissions outside of authorized areas. Mesh networking option available for direct communications between mobile installations.
- **Scalable Management & Control**

All management & control processes are engineered for large networks, with automatic software updates via multicast, efficient statistics collection, and fast, easy network-wide reconfigurations, without site visits.
- **Comprehensive IP Networking Features**

SatLink delivers TCP and HTTP acceleration, secure VPNs, NAT, and VLAN options, plus a built-in DHCP server and both unicast and multicast IP routing.
- **AES-256 Encryption Built-in**

Secures all user IP traffic transparently, with support for traffic key per VSAT Group and automatic key updates.
- **Bandwidth Efficiency at Many Levels**

8PSK and 16 QAM on return links with 16-state Turbo FECs, header compression, section packing, burst size optimization & intelligent bandwidth-on-demand algorithms assure efficient broadband applications.
- **ACM on Forward & Return Links**

Adaptive Coding and Modulation (ACM) on both DVB-S2 forward links and DVB-RCS2 return links (per time slot) further increases bandwidth efficiency, total network throughput, and link availability.
- **Traffic Engineering and QoS**

SatLink VSAT Groups allow Virtual Network Operators (VNOs) to set their own traffic engineering and QoS policies for control of bandwidth resources and SLAs. Networks with 100,000's of VSATs and hundreds of VSAT Groups and VNOs are supported. SatLink's advanced QoS features enable data, voice, and video traffic to use bandwidth-on-demand with high-quality, dynamically sharing network bandwidth for maximum efficiency.
- **Power Options and BUC Power**

Can use either AC or 24 VDC power feed. Internal power to drive BUCs up to ~8 Watts. Automatic power control from the hub simplifies installation, and optimizes operation and bandwidth use.
- **Automatic Beam Switching**

Software for automatic beam switching is included for interfacing with leading maritime & land mobile antennas via IP.

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Specifications

Capacity

Throughput: Up to 40 Mbps of IP packets at 1500 byte;
Up to 5,000 packets per second

(varies with IP software features enabled)

MPEG-TS Rx Rate (TDM): 50 Mbps (all PIDs)

MPEG-TS Rx Rate (TDMA Mesh): 10 Mbps

IP QoS and Bandwidth-on-Demand

Traffic Classification: Multi-Field Classifiers using DSCP, Protocol Type, IP Source Address, IP Destination Address, TCP/UDP Source or Destination Port; or 802.1p

Tx Queues: 7 priority queues per link, plus discard group

QoS Treatment: Four QoS Classes for Bandwidth-on-Demand: Voice (VoIP), Video Conferencing (ViC); Critical Data (CD) and Best Effort (BE).

Capacity Requests: Rate-based, Volume-base and Combined modes. (Plus CRA for static assignments)

Encapsulation, Compression & Encryption

IP Encapsulation: (Tx & Rx) DVB-RCS standard MPE with section packing; or efficient DVB-RCS2 option

MPE header: removes 9 bytes on Tx (7 bytes on Rx)

UDP/IP headers: removes 14 bytes

RTP/UDP/IP headers: removes 38 bytes

TRANSEC: AES-256 encryption on Layer 2

IP Routing and IP Stack Support

Routing: Unicast and Multicast IP

Protocols: IPv4, IPv6*, UDP, TCP, ARP, ICMP, IGMPv2, DHCP Server, DNS Cache, Ping, Telnet, SNMPv2c

Advanced Options: TCP Acceleration, HTTP Acceleration, NAT, GRE VPN Tunnels, VLAN Mapping

Management Interfaces

Local: RS-232 CLI

Remote: Telnet, SNMP v2c, Web GUI

Software Upgrade: Local, TFTP or multicast via satellite

Compliance

CE: Fully compliant with R&TTE Directive

DVB-RCS: ETSI EN 301 790

DVB-S2: ETSI EN 300 421 / EN 302 307

International: Country specific certifications

* anticipated for later SW release

TDM Receive (DVB-S2)

Symbol Rates: 1 to 45 Msps

MODCODs: (LDPC + BCH)

◆ QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

◆ 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10

◆ 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

◆ 32APSK: 3/4, 4/5, 5/6 (special order)

FEC Frames: Normal (64 Kbit) and Short (16 Kbit)

Roll-off Factor: 20%, 25%, or 35%

Modes: CCM, ACM

(DVB-S mode also supported for legacy networks)

TDMA Transmit & Receive; SCPC Option

Symbol Rates (RTN): 125 Ksps to 8 Msps

Symbol Rates (Mesh): 200 ksps to 3 Msps

MODCODs: (Turbo Codes FEC 8-state and 16-state)

◆ QPSK: 1/2, 2/3, 3/4, 4/5, 6/7 (DVB-RCS)

◆ QPSK: 1/3, 1/2, 2/3, 3/4, 5/6 (DVB-RCS2)

◆ 8PSK: 2/3, 3/4, 6/7 (DVB-RCS extension)

◆ 8PSK: 2/3, 3/4, 5/6 (DVB-RCS2)

◆ 16QAM: 3/4, 5/6 (DVB-RCS2)

Frequency Hopping: Fast (within 750 MHz band)

Mesh Rx: 8 simultaneous bursts, 44 MHz (RCS QPSK only)

SCPC Burst Mode: Dedicated carrier for Tx with full Constant Rate Access (CRA), no capacity requests required

Physical Interfaces

Serial Port: RS-232, DB-9 (local management)

Ethernets: Two at 10/100/1000 Mbps, RJ-45

Tx (BUC) Interface: F-type 75 Ohm; 24 VDC at up to 4A, plus 10 MHz reference under software control.

◆ **Tx Output:** 950 to 1700 MHz; -35 dBm to +10 dBm

◆ **BUC control:** Extended DiSEqC™ 2.0

Rx (LNB) Interface: F-type 75 Ohm; 13/18 VDC at up to 0.5A

◆ **Rx Input:** 950 to 2150 MHz; -65 dBm to -25 dBm

◆ **LNB Control:** 22 KHz DiSEqC 2.0

Mobile Interface: RJ-45; Tx Inhibit Switch, NMEA-0183 GPS Input, Rx Lock Signal

Front LEDs: Power, Error, Status, Tx, Rx, Ethernet Link

Power: AC or 24VDC (19-36 VDC)

Electrical, Environmental & Physical

Power Supply: 110-240 VAC, 50-60 Hz, internal

Power Consumption: 17 W (IDU only)

Operating Temperature: -20 to 55 °C

Storage Temperature: -35 to 85 °C

Humidity: 20% to 90% non-condensing

Size: 44 x 24.5 x 4.5 cm (1U for standard rack)

Weight: 4 kg

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