

The U7920 is a professional satellite modem designed for hybrid operation across GEO, MEO, and LEO satellite constellations, seamlessly integrating with the ESTELLA VSAT platform to deliver high-performance connectivity over High Throughput Satellite (HTS) networks.

Fully compliant with the DVB-RCS2 open standard, the U7920 modem incorporates SpaceBridge's innovative WaveSwitch™ technology, enabling error-free dynamic switching between TDMA and SCPC return-link waveforms to maximize spectral efficiency and optimize network performance under varying traffic conditions. With support for both Layer 2 and Layer 3 networking, the U7920 provides exceptional deployment flexibility for a wide range of mission-critical and commercial applications, including broadband Internet access, IoT connectivity, homeland security, defense, Enterprise and government communications

The U7920 is a high-performance satellite modem/router designed to deliver reliable broadband connectivity with IP throughput of up to 300 Mbps on the forward link and 20 Mbps on the return link. Supporting the industry-standard OpenAMIP protocol, the U7920 seamlessly integrates with stabilized maritime and mobility antenna systems. Combined with SpaceBridge's advanced multi-beam mobility and beam-switching technology, compliant with DVB-RCS2 Annex M, the U7920 enables seamless satellite beam transitions while maintaining uninterrupted service. The result is a highly efficient, robust, and secure broadband communications solution for maritime, land-mobile, and other mobility applications operating across HTS and multi-orbit satellite networks.

Key Features & Benefits

- 500MHz DVB-S2X Forward Link. Highest spectral efficiency via highly granular MODCOD, low roll off rates and Adaptive Coding and Modulation (ACM)
- EN 301 545-2 V1.2.1 compliant DVB-RCS2 return channels supporting from QPSK to 16QAM and up to 5% roll offs/spacing
- Supports WaveSwitch™, Dynamic Rate/Waveform Assignment (DRA). Automatically generates the return carrier waveform every frame to optimally match user traffic (payload) with either 3D-TDMA or dynamic SCPC while also adjusting block size and MODCOD for maximum spectral efficiency and Hitless (error-free) and dynamic switching between TDMA and dSCPC services every 26.5 msec, conserving satellite bandwidth and power
- Internet-traffic optimization and QoS, enhancing user experience
- OpenAMIP support with major antenna manufacturers
- Operates with most COTS BUC/LNBs or transceivers



U7920

FORWARD LINK (Rx)

Instantaneous Bandwidth	Up to 500 MHz
Frequency Range	950-2150 MHz
Waveforms	DVB-S2/S2X: QPSK to 256 APSK, all Code Rates
FEC	LDPC/BCH, Short and Normal Frames
Symbol Rate	From 100 Ksps to 476 Msps
Encapsulation Modes	GSE and GSE-Lite (Optional for DVB-NIP)
Link Variation Mitigation	Adaptive Coding Modulation and AULPC
Channel Roll-off/ Spacing	5%, 10%, 15%, 20%, 25%
Terminal IF RX Interface	F-type 75 Ohm, satellite/band independent, DiSEqC; LNB power OFF/13VDC/18VDC, 22KHz tone ON/OFF

RETURN LINK DVB-RCS2 MF-TDMA (Tx)

Waveform Technology	DVB-RCS2, all MODCOD
FEC	16-State (2D)-TurboPhi
MODCOD	QPSK, 8PSK, 16QAM, all Coding Rates
Synchronization	NCR/PCR integrated
Encapsulation Modes	RLE Encapsulation
Symbol Rate	From 156 Ksps to 20 Msps
Channel Roll-off/ Spacing	5%, 10%, 15%, 20%, 25%, 35%
Link Variation Mitigation Dynamic Rate Assignment (DRA)	<ul style="list-style-type: none"> Built-in Uplink Power Control (ULPC) Adaptive return carrier sizing every 26.5msecs Adaptive block size and MODCOD per timeslot/per carrier, every 26.5msec
Tx Power	-30 dBm to 0 dBm
Terminal IFL TX Interface	F-type 75 Ohm, 950~2400 MHz satellite /band independent, BUC timing reference - OFF/10MHz/50MHz reference, BUC Power - OFF/24VDC selectable

Return Link WaveSwitch™ (Tx)

WaveSwitch™	<ul style="list-style-type: none"> SpaceBridge high efficiency proprietary TDMA block mode concatenation (i.e. eliminates TDMA overhead) to provide equivalent to SCPC grade service, sizing carrier symbol rate every frame WaveSwitch carrier size and MODCOD selection every 26.5 msec. Hitless (error-free) switching from 3D-TDMA to dSCPC and back
Symbol Rate	From 156 Ksps to 20 Msps

QoS and PEP

QoS	Up to 8 flows QoS, based on ToS/DSCP, IP addresses, protocol and ports
Application Optimization	SpaceBridge proprietary L3 Performance Enhancement Protocol (PEP), compresses streams and significantly reduces return link TCP ACK (improves return link utilization and saves up to 50% return link ACK related bandwidth)
AAA (Authentication, Authorization, and Accounting)	X.509 Certificate-based Authentication
Security	Optional: IPsec encryption up to AES256

Traffic ports and performance

Interfaces	4xUser 10/100/1000BaseT auto-negotiated and 1 MGMT 1000BaseT Ethernet
Download speed	Up to 300 Mbps
Upload Speed	Up to 20 Mbps
Packet Processing	20 kpps with full QoS and PEP enabled
Network Services	<ul style="list-style-type: none"> Layer 2 VLAN and bridge support Layer 3 NAT, DHCP server/relay, Access List, DNS, NAT
Supported Protocols	<ul style="list-style-type: none"> IPv4/IPv6, IGMP, 802.1q

Environmental and Mechanical

Dimensions (WxLxH)	17.125 x 12 x 1.75 inches (435 x 306.8 x 44.4 mm)
Weight	<7.5 lbs (3.4kg)
Power	40 W; 100W to BUC/LNB
Operating Conditions	32°F-122°F (0°C to +50°C)
Storage Conditions	-40° to +85°C (-40° to +185°F) 5 - 95% non-condensing
Altitude	< 3,000 meters/10,000 feet, diabatical deratting 5°C/1000m
Humidity	10% to 90%, non-condensing