

Powerful professional satellite modem supporting open standard DVB-RCS2 (EN 301 545-2-V1.2.1) with SpaceBridge's enhanced return link optimized waveforms. SpaceBridge uses our Dynamic Rate Adaptation (DRA) carriers, 3D TDMA, and advanced WaveSwitch™ Dynamic SCPC, to dynamically enable link optimized and resilient MESH connectivity between remotes. Unparalleled MESH performance with no tradeoffs.



Overview

U7790 is SpaceBridge's high performance networking satellite modem with MESH capability allowing direct remote to remote connectivity without the need to double-hop traffic through the ESTELLA Core HUB.. The U7790 can process IP throughput of 100Mbps from either the HUB or pool of MESH carriers while supporting uplink/MESH capability of 25Mbps..

The U7790 is designed to operate within SpaceBridge's multi-service ESTELLA Core environment as either part of an Overlay MESH and/or FULL MESH environments. In either mode, the ESTELLA Core HUB's capability to support Dynamic Rate Adaption (DRA) carriers, coupled with our 3D TDMA (ability to modify MODCOD and BLOCK sizes of TDMA Timeslots) allow ESTELLA to dynamically establish standard TDMA and WaveSwitch carriers, in addition to MESH carriers all within the same bandwidth pool and optimized to allow MESH sites to connect at highest possible efficiencies.

Features

- DVB-S2X Forward Link. Highest spectral efficiency via highly granular MODCODs, low roll off rates and Adaptive Coding and Modulation (ACM)
- Dynamic return carrier creation to best match needs of TDMA, WaveSwitch and MESH users.
- DVB-RCS2 return channels supporting SS-BPSK to 64QAM and up to 5% rolloffs. Dynamically selects optimal block size, and modcod per timeslot/per carrier, per frame interval (every 26.5msecs) to maximize efficiency and throughput.
- WaveSwitch return link waveform offering highest Dynamic SCPC efficiency from remote to HUB or for remote to remote (MESH) connectivity.
- MESH remote to remote Adaptive Coding and Modulation (ACM) providing high resilience connectivity.
- Operates with most COTS BUC/LNBs or transceivers

U7790 – High-Performance Satellite Modem MESH/Router

Technical Specifications

FORWARD LINK / RX

Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all modulations.
Encapsulation Modes	GSE Encapsulation
Symbol Rate	From 256Ksps to 125Msps
Channel Roll-off/Spacing	5%, 10%, 15%, 20%, 25%
Terminal IF RX Interface	F-type 75 Ohm, L-band freq range: 950~2150MHz satellite/band independent, LNB power - OFF/13/18VDC, 22Khz tone - ON/OFF, 10MHz RX reference - ON/OFF,
Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all modulations.
Encapsulation Modes	GSE Encapsulation

RETURN LINK / TX

Waveform Technology	MF-TDMA and WaveSwitch SS-BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
Encapsulation Modes	RLE Encapsulation
Symbol Rate	From 160KHz to 20MHz (20MHz for QPSK to 16QAM, 11MHz for 32APSK to 64QAM)
Channel Roll-off/Spacing	5%, 10%, 15%, 20%, 25%, 35%
Link Variation Mitigation	<ul style="list-style-type: none"> Terminal 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	-30dBm to 0dBm
Terminal IFL TX Interface	F-type 75 Ohm, L-band freq range: 950~2400MHz satellite /band independent, BUC timing reference - OFF/10MHz/50Mhz reference, BUC Power - OFF/24V DC selectable

MESH LINK (RX)

Form factor/Dimensions (WxLxH)	U7790-60: 19 x 12 x 1.75 inches (482.6 x 153.4 x 44.4 mm)
Weight	<7.5 lbs (3.4kg)
Power	<ul style="list-style-type: none"> U7790-60: 60W AC PS (90-260VAC), 40W to power RF/BUC. U7790-120: 120W AC PS (90-260VAC), 100W to power RF/BUC
Operating Conditions	Indoor rack mount: 32°F-122°F (0°C-50°C) 10% to 90% humidity, non-condensing
Storage Conditions	-40° to +85°C (-40° to +185°F) 5 - 95% non-condensing
Altitude	< 2000 meters
Certifications	CE, FCC, ROHS

QOS

QOS	Up to 8 flows QOS, based on TOS/DSCP, IP addresses, protocol and ports
Application Optimization	DNS Caching accelerates website discovery and download speeds
Security	Optional: IPSec encryption up to AES256 (export controlled)

TRAFFIC PORTS AND PERFORMANCE

Interfaces	U7790-60/SA/ODU: 1 User 1000BaseT/ 1 MGMT 1000BaseT Ethernet U7790-120: 4xUser 1000BaseT/ 1 MGMT 1000BaseT Ethernet
Download speed	Up to 100Mbps
Upload Speed	Up to 25Mbps
Packet Processing	20kpps with full QOS and PEP enabled
Network Services	<ul style="list-style-type: none"> Support Layer-2 and Layer-3 traffic modes at same time Layer 2 VLAN and bridge support Layer 3 NAT, DHCP server/relay, IP Routing

ENVIRONMENTAL AND MECHANICAL

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