

This powerful cost-effective satellite modem/bridge/router for high-speed internet follows the DVB-RCS2 (EN 301 545-2-V1.2.1) open standard, incorporates proprietary SRC3 Return Link Waveforms for Broadband Internet Access and packed with lots of advanced features, provides L2/L3 network connectivity, high spectral efficiency for High Throughput Satellites (HTS) on ASAT-II and UHTS/Software Defined Satellites (SDS) on Estella VSAT Platforms



Applications and Uses

- Mass market Satellite Broadband Internet Access
- Small Office Home Office (SOHO) or Small and Medium Enterprises (SME)
- Rural internet access and community hotspots
- Cellular Backhaul for thin routes applications
- IIoT, USO, OTT IPTV

Options

- Convenient and attractive desktop enclosure with noiseless fan to keep low temperature inside and hence the high MTBF
- DVB-S2X Forward Link, Supports all MODCODEs and roll-offs as per ETSI EN 302 307-2 V1.2.1
- DVB-RCS2 and proprietary SRC-3 return channels supporting BPSK-64QAM (QPSK to 16QAM on ASAT-II Platform), up to 5% roll-offs and carriers/channels spacing on all MODCODs
- Forward Link Adaptive Coding and Modulation (ACM)
- Return Link ULPC and ACM/DRPA (Dynamic Rate and Power Assignment)
Highest spectral efficiency via highly granular MODCODs in both directions
- Operates with most COTS RF BUCs/LNBs or transceivers
- Internet-traffic optimization (Performance Enhancement Proxy) and QoS, enhancing user experience and conserving satellite bandwidth
- Supports both L2 and L3 networks connectivity
- Designed around a System on Chip (SoC) architecture providing the power of Software Defined Radio (SDR) and flexibility of future waveform adaptation and customization
- Optional: IPsec mode 256AES encryption

U7700 is a powerful, yet compact broadband internet modem/bridge/router supporting IP download/ upload speeds of 120Mbps/20Mbps respectively. With integrated TCP acceleration and Performance Enhancement Proxy (PEP) and compression internet surfing is quick and seamless, resulting in high level of User Experience and customer satisfaction. Simultaneously operates in both TDMA for oversubscribed and BM-FDMA for dedicated traffic with lowest signal thresholds and highest bandwidth utilization.

C7700 – Broadband Satellite Modem for use on ASAT-II or Estella VSAT Platforms

Technical Specifications

FORWARD LINK	
Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all modulations, coding and roll-off rates
Encapsulation Modes	GSE or MPE Encapsulation
FEC	LDPC/BCH, Normal and Short block sizes
Symbol Rate	From 128Ksps to 125Msps (optional 250Msps or 500Msps)
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%, 35%
Terminal IF RX Interface	F-type 75Ohm, 950MHz to 2150MHz satellite/band independent
LNB DC Power Feed	Off/13VDC/18VDC
LNB DiSeqC Feed	Off/22KHz

RETURN LINK	
Modulation Technology	ASAT-II: MF-TDMA, QPSK, 8PSK, 16QAM ESTELLA: BM-FDMA or MF-TDMA: BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
Encapsulation Modes	ASAT-II: 53/106/188/212 MPE, RLE ESTELLA: variable length RLE
Waveforms/FEC	Up to 140, Turbo-Phi
Symbol Rate	ESTELLA: 0.128-15Msps
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%, 35% for all MODCODs
Link Variation Mitigation	Built-in Uplink Power Control (ULPC) and Return Link ACM/DRPA, power/symbol rate optimization (Power/Bandwidth ratio =1)
Tx Output Power Level	-30dBm to 0dBm
Terminal IFL TX Interface	F-type 75 Ohm, 950-2400MHz satellite/band independent, reference: off/10MHz/50MHz, Power: off/24VDC, matching COTS ODU. Provides up to 45W power to the BUC (i.e. 24VDC @1.875A

TRAFFIC PORTS AND PERFORMANCE	
Interfaces	User ports: 1x1000BaseT Ethernet MGMT ports: 1x1000BaseT Ethernet, could be used as optional second VLAN port
Download speed	Up to 120Mbps
Upload Speed	Up to 20Mbps
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 the same time Layer 2 VLAN tagging and bridging Layer 3 NAT, DHCP server/relay, IP Routing

TRAFFIC ENHANCEMENT AND QOS AND PEP	
QoS	Up to 256 flows QoS, based on ToS/DSCP, IP addresses, protocol and ports
Application Optimization	SpaceBridge proprietary L3 Performance Enhancement Protocol (PEP) which accelerates IP TCP flows, compresses streams and significantly reduces return link TCP ACK (improves return link utilization and saves up to >80% return link ACK related bandwidth)
VoIP/Multimedia	ASAT-II: Programmable VoIP, Video-over-IP /video-conferencing detection and guaranteed QoS behavior Estella: Carriers assignment on-a-fly within available bandwidth either as dedicated quasi-SCPC carriers (BM-FDMA), or pulled MF-TDMA carriers, reassigned every 26.5msec to 848msec
Security	Optional: Encryption up to AES256

ENVIRONMENTAL AND MECHANICAL	
Form factor	Plastic indoor desktop enclosure
Dimensions (WxHxD)	2" x 7.25" x 5" (51 x 182 x 127 mm)
Weight	0.89 lbs (0.34kg)
Power	<ul style="list-style-type: none"> External universal power supply, 95-240VAC, 47Hz to 63Hz, 65W C6 (Mickey Mouse) inlet Consumption: 12W (not including RF equipment / BUC power) 45W available for ODU equipment at maximum room temperature
Operating Conditions	32°F to 122°F (0°C to 50°C)
Certifications	10% to 90% humidity, non-condensing CEmarking, FCC
Product Compliance	RoHS
Form factor	Plastic indoor desktop enclosure