

Powerful VSAT satellite modem for advanced enterprise connectivity and cellular backhaul, with a focus on advanced L2 and L3 support.

U7780 is a high performance L2/L3 networking satellite modem/router capable of supporting download speeds of download and upload up to 40Mbps. With integrated L2/L3 optimization, the U7780 is ideal solution for supporting VSAT connected cellular sites (supports cellular traffic header/payload compression and 4G/LTE/5G acceleration) and/or enterprise L2 networks (IP traffic within VLAN/L2 tunnels can be accelerated across satellite).



Key Features

- DVB-S2X forward link. Highest spectral efficiency via highly granular MODCODs, low roll off rates and Adaptive Coding and Modulation (ACM)
- DVB-RCS2 TDMA return channels supporting QPSK-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.
- SpaceBridge WaveSwitch return link waveform offering equivalent to SCPC efficiency and performance.
- Hitless and dynamic switching between TDMA and WaveSwitch services every 26.5msecs
- Traffic optimization (Performance Enhancement Proxy) and QoS, enhancing user experience and conserving satellite bandwidth
- Layer-3 / layer-2 traffic and CBH optimization for easy integration with MNOs
- Cellular backhaul and enterprise traffic optimization - ideal for rural 2.5G/3G/4G
- Optional : Cellular traffic decryption/encryption

Application and Uses

- True broadband capabilities for L2 applications ranging from SMB office productivity to rural communities connectivity
- Enterprise and retail connectivity
- 2G,3G, 4G and LTE/5G rural Cellular Backhaul links
- Critical communications satellite-as-backup links

Specifications

Forward Link

Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all coding and roll off rates
Encapsulation Modes	GSE Encapsulation
Symbol Rate	From 1Msps to 125Msps
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%
Terminal IF RX Interface	F-type 75 Ohm, 950~2150MHz satellite/band independent, off/13/18VDC off/22KHz selectable matching COTS ODU and wideband LNBs

Return Link (TDMA)

Waveform Technology	TDMA and WaveSwitch SS-BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
Encapsulation Modes	RLE Encapsulation
Symbol Rate	From 160Ksps to 20Msps (20Msps for QPSK to 16QAM, 11Msps for 32APSK to 64QAM)
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%, 35%
Link Variation Mitigation	- 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, 950~2400MHz satellite /band independent, BUC timing reference - OFF/10MHz/50Mhz reference, BUC Power - OFF/24V DC selectable

Traffic ports and performance

WaveSwitch	- SpaceBridge high efficiency proprietary TDMA block mode concatenation (i.e. eliminates TDMA overhead) to provide equivalent to SCPC grade service. - Waveswitch carrier size and modcod selection every 26.5msec. - Hitless switching from regular TDMA to WaveSwitch and back.
Upload Speed	Up to 25Mbps

Traffic ports and performance

Interfaces	User ports: 4x1000BaseT Ethernet MGMT ports: 1x1000BaseT Ethernet
Download speed	Up to 120Mbps
Upload Speed	Up to 25Mbps
Packet Processing	35kpps with full QOS and PEP enabled
Network Services	- Support Layer-2 and layer-3 traffic modes at same time - Layer 2 VLAN and bridging - Layer 3 NAT, DHCP server/relay, IP Routing
Optional Licenses	- CBH Optimization license - OpenAMIP Mobility license - AES256 IPVPN (export restricted)
QOS	Up to 8 flows QOS, based on TOS/DSCP, IP addresses, protocol and ports
Application Optimization	- Advanced Layer 2/Layer 3 header compression and small packet coalescing to reduce 2G/3G overhead 4G/5G header compression to reduce overhead of cascaded IP addresses - Acceleration of 4G/5G GTP tunnel to maximize performance and mitigate effect of satellite delay on throughput

Environmental and Mechanical

Form factor	Indoor 1U rack mount
Dimensions (WxHxD)	17.125 x 1.75 (1 RU) x 10.7 inches 435 x 45 x 272 mm
Weight	7.5 lbs (3.4kg)
Power	24VDC input: Dual fuse protection supporting 30W to U7780 modem and LNB and up to 100W to the BUC. - Option: DIN Rail mounted 100-240VAC to 24VDC 120W/240W power supply - Option: DIN Rail mounted 48VDC to 24VDC 120W/240W power supply
Operating Conditions	-4°F to 140°F (0°C to 60°C) 10% to 90% humidity, non-condensing
Certifications	FCC, ROHS