



U7800 - Standalone / ASAT™ System Dual Waveform Satellite Modem

The U7800 is designed around a System on Chip (SoC) architecture providing the power of Software Defined Radio (SDR) and flexibility of future waveform adaptation and customization. It is a telco-grade VSAT satellite modem for professional-use, multi-service high-throughput trunks and backhaul links.

Features and Benefits

- Freedom and flexibility to deploy as ASAT System hub-spoke remote, or standalone point-to-point SCPC link

WaveSwitch™ multi-waveform Return Link:

- Automatic on-the-fly MF-TDMA / SCPC switching
- SCPC Return-Link dynamic channel adaptation to meet traffic demand while conserving satellite bandwidth.
- Real-time waveform switching provides true savings for applications seeing drastic traffic density changes, such as cellular backhaul and trunks.
- Layer-2, layer-3 switch-router (VLAN support, VLAN-tagging and VRF) supporting various
- Built-in PEP (Performance Enhancing Proxy) enhancing user experience and conserving satellite bandwidth usage
- Cellular backhaul and enterprise traffic optimization
- Traffic encryption option
- OpenAMIP antenna interface support option for SATCOM on the Move (SOTM) applications
- Designed around a System on Chip (SoC) architecture providing the power of Software Defined Radio (SDR) & flexibility of future waveform adaptation and customization.

Applications and uses

- High-speed IP trunks
- 3G, 4G and LTE/5G Cellular Backhaul links
- Mass-population Internet delivery
- Dynamic-throughput high-capacity links
- SATCOM-on-the-Move / Pause applications
- Critical communications satellite-as-backup links



Specifications

Forward Link

Waveform Technology	DVB-S2/S2X ACM, MPE/GSE encapsulation, QPSK up to 256APSK LDPC/BCH TDM Forward Link Based on SoC SDR
Symbol Rate	Up to 125Msps (500 Msps Option)
Channel Spacing	Down to 5% (roll-off factor)
Terminal IFL Input	F-type 75 ohm, 950~2150MHz satellite / band independent, off/10MHz reference, off/13/18VDC off/22KHz selectable matching COTS ODU

Return Link

Waveform Technology, Channel Rate and Spacing	<p>ASAT System hub-spoke remote: WaveSwitch™ multi-waveform BoD Return-Link, on-the-fly automatic waveform switching:</p> <ul style="list-style-type: none"> •MF-TDMA (combined free and demand-as-signed multiple access), QPSK, 8PSK and 16QAM, 128 up to 7450 Ksps, down to 5% channel spacing. •Hub-spoke DVB-S2X SCPC, QPSK up to 256APSK LDPC/BCH, 1Msps up to 125Msps, down to 5% channel spacing <p>Standalone point-to-point SCPC: DVB-S2X SCPC, QPSK up to 256APSK LDPC/BCH, 1Msps up to 125Msps, down to 5% channel spacing Based on SoC SDR</p>
Link Variation Mitigation	Terminal built-in Uplink Power Control (ULPC) and Adaptive Coding and Modulation (ACM) supporting Ka, Ku and C-band
Tx Power	-30dBm to 5dBm
Terminal IFL Output	F-type 75 ohm, 950~2400MHz satellite / band independent, off/10MHz reference, off/24V DC selectable, matching COTS ODU. Supports powering 8W BUC

User-Traffic, PEP and QoS

Interfaces	4 GbE 1000Base-T data ports
Download	738Mbps

User-Traffic, PEP and QoS (cont'd)

Upload	6Mbps baseline, 12.5 / 20 / 50Mbps TX BW upgrade license steps: • Hub-spoke MF-TDMA: Up to 64 Mbps • Hub-spoke SCPC RTN / standalone SCPC: Up to 100Mbps
Packet Processing	100K PPS
Network Services	• Layer-2, layer-3 switch-router (VLAN trunk and access support, VLAN-tagging and VRF) • Layer-3 NAT, DHCP server / relay
Application Optimization	• TCP/IP and HTTP acceleration • Optional: Cellular backhaul layer-2/layer-3 header compression, payload compression and GTP / GRE acceleration
QoS	Up to 8 flows, based on TOS/DSCP, IP addresses, protocol and ports
Real-Time Applications	VoIP, video-over-IP / video-conferencing
Security	Optional: Encryption up to AES256 (export controlled)

Environmental and Mechanical

Form Factor	Indoor, 19" rack mount
Dimensions	17.125 x 1.75 (1RU) x 15 inches W x H x D (435 x 45 x 381 mm)
Weight	10 pounds (lb) (4.5Kg)
Power	• Universal 100~240VAC 50~60Hz IEC 60320 C14 inlet • Consumption: 60W (not including RF equipment / BUC power) • 100W @ 24V DC available for installation and RF equipment
Operating Conditions	32~122°F (0~50°C), 10%~90% humidity non-condensing

Ordering Information

Unit Build Configurations	U7800 professional dual-waveform satellite modem
Optional Licenses	<ul style="list-style-type: none"> • U7800 TX-BW upgrade step license (20 / 50Mbps steps) • U7800 industry standard AES256 encryption license (export controlled) • U7800 SOTM/SOTP license • U7800 1Mbps-TX traffic/CBH optimization license TBD 220 • U7800 6Mbps-TX traffic/CBH optimization license TBD 600 • U7800 20Mbps-TX traffic/CBH optimization license TBD 1400 • U7800 50Mbps-TX traffic/CBH optimization license