

## Satellite Modem

UHP is a universal, high-throughput IP satellite modem that can be used to deploy point-to-point, simplex or duplex SCPC (Single Channel Per Carrier) channels or broadcast point-to-multipoint MCPC (Multiple Channel Per Carrier) networks.

### DVB-S2/S2X ACM

UHP modem uses advanced modulation and coding DVBS2/S2X technologies, providing high bandwidth efficiency. Adaptive Modulation and Coding (ACM) feature ensures the maximum throughput of SCPC channel by utilizing the most efficient coding and modulation scheme depending on weather conditions at the receiving side. Interactive, two-way SCPC ACM technology optimizes the link performance and allows saving up to 30% of satellite capacity.

### Transmission level control

Automatic transmission level control (TLC) adjusts local transmission level based on information about reception quality at the remote site. The TLC feature may work with ACM simultaneously to compensate increased propagation loss due to weather conditions and to ensure superior reliability of the communication channel.

### L2 Bridge and IP router

UHP modem can operate in a "transparent" L2 Bridge mode or serve as an advanced, high-performance IP router (up to 190 000 PPS). The IP router supports a wide range of protocols, VLAN, TCP acceleration, VoIP headers compression, bandwidth management, etc.

### Redundancy

Pair of standard UHP modems may work in 1:1 automatic redundancy mode and requiring no external redundancy controller.



**Satellite Backhaul**



**Media broadcasting**



**Satellite News Gathering**



**Backup & Resilience**

### Key Features:

- High throughput from 150 kbps and up to 225 Mbps duplex in basic configuration
- Efficient DVB-S2/S2X ACM modulations with 5% or 20% roll-off and support for wideband HTS transponders
- Adaptive modulation and coding for both directions with all range of supported MODCODs
- Automatic transmission level control based on information from the remote site
- Two independent DVB demodulators with separate IF inputs and rate up to 500 Msps
- Support of SCPC-DAMA mode for dedicated channels on demand
- L2 Bridge and advanced IP router with traffic acceleration and throughput up to 190 000 packets per second
- Built-in adaptive hierarchic traffic shaper and traffic policy manager
- Fast network startup — network is ready for use in less than a minute upon power-up
- Compact size, low power consumption and optional automatic 1:1 redundancy
- Various hardware models, including compact, integrated, rack-mountable and outdoor versions
- Compatible with majority of C, Ku and Ka-band RF Systems, supplies power and reference signals
- Compatibility with different mobile antenna systems via OpenAMIP or various proprietary protocols

# TECHNICAL SPECIFICATIONS: UHP-200 SERIES SCPC MODEM

NETWORK		
<b>Topology</b>	Point-to-Point, Star, Mesh, Dual-Gateway	
<b>Modes of operation</b>	Software-defined router: SCPC, SCPC DAMA, TDM/SCPC	
<b>Network role</b>	SCPC Modem, SCPC Receiver, MCPC/SCPC Gateway	
<b>Options (SW)</b>	<b>UHP-2XX-SC:</b> up to 16APSK and 20% RO; <b>UHP-2XX-SA:</b> up to 64APSK and 20%/5% RO	
TDM (SCPC) CHANNEL		
	MODULATOR	DEMODULATOR
<b>Standard</b>	DVB-S2 / DVB-S2X with Adaptive Coding and Modulation	
<b>Channels</b>	One universal SCPC/TDMA modulator	Two demodulators with selectable IF inputs
<b>Modulation</b>	QPSK, 8PSK, 16APSK, 32APSK, 64APSK; Roll-off: 5% or 20%	QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 128APSK, 256APSK; Roll-off: 5% or 20%;
<b>FEC</b>	1/4, 14/45, 1/3, 2/5, 9/20, 7/15, 1/2, 8/15, 11/20, 26/45, 3/5, 23/36, 2/3, 25/36, 32/45, 13/18, 3/4, 7/9, 4/5, 5/6, 77/90, 8/9, 13/45	All DVB-S2 & DVB-S2X MODCODs
<b>Symbol Rate</b>	300 ksps - 64 Msps; step 1 ksps (51 Msps @32APSK, 43 Msps @64APSK)	300 ksps - 500 Msps
<b>Data Rate</b>	150 kbps - 225 Mbps	
<b>QoS</b>	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP	
ROUTER		
<b>Performance</b>	Up to 190 000 packets per second	
<b>Support</b>	DSCP, multiple IP/VLANs, PAT, proxy ARP, L2 Bridging, TCP Acceleration, Jumbo frames, AES-256	
<b>Protocols</b>	IPv4/IPv6, IGMP, cRTP, SNMP, RIP, SNTP, TFTP, PPP, DHCP, DHCP Relay, OpenAMIP	
<b>Management</b>	HTTP interface, SNMP, Telnet, NMS with VNO support	

High-speed UHP SCPC modems allow creating dedicated channels of any purpose and throughput. It could be classic “point-to-point” SCPC channels of any asymmetry or “point-to-multipoint” MCPC broadcasting or even multi-site network based on combination of MCPC and SCPC channels.

Universal UHP technology also supports Dynamically Allocated Multiple Access mode (DAMA) that allows using SCPC channels in-between any locations on demand. In such DAMA network a common pool of bandwidth is dynamically used to organize SCPC or MCPC connections between any network stations when it is required. After the end of the session such

bandwidth is released and available for the new sessions. DAMA network is managed by one of the network stations that communicates with other stations via narrowband control channel.

High-speed DVB-S2/S2X ACM modem in conjunction with integrated, powerful IP router opens great opportunities for the applications like cellular backhaul, primary and secondary connectivity to terrestrial backbones, broadcasting and news gathering, mission-critical communications, etc. Ability to activate any other functionality of universal UHP VSAT just by software provides great opportunities for the further development of UHP-based networks and ensures the best cost of ownership.

