SCPC

SATELLITE MODEM

SCPC	MCPC/SCPC	MCPC
TWO-WAY ACM	DUAL GATEWAY	IP ROUTER

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 ACM

UHP modem uses advanced modulation and coding DVB-S2 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 required no external redundancy controller.

Management

Both local and remote UHP modems can be managed with the help of user-friendly web-interface, via SNMP protocol or by specialized UHP Network Management System. UHP modem can provide digital and analog signals representing current quality of signal that can be used by various antenna controllers to track a satellite.

Extended Functionality

UHP is a universal hardware platform with software definable functionality that can be changed remotely and without any need in hardware replacement. Along with SCPC, UHP modem can operate in SCPC-DAMA, TDM/TDMA or Hubless TDMA modes.

APPLICATIONS

Satellite backhaul channels

IP broadcasting of data and media

Satellite News Gathering

Backup for terrestrial infrastructure

- High throughput from 300 kbps and up to 225 Mbps duplex in basic configuration

- Efficient modulations: QPSK, 8PSK, 16APSK and 32APSK with efficient DVB-S2 coding and 20% or 5% roll-off

- Adaptive modulation and coding for both directions with all range of supported MODCODs

- Automatic transmission level control based on information from the remote site

- Support of SCPC-DAMA mode for dedicated channels on demand which is powered by UHP NMS Scheduler

- Ultra-low latency VSAT system with round-trip delay about 570 ms in a router mode

- 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

DEDICATED SCPC CHANNEL

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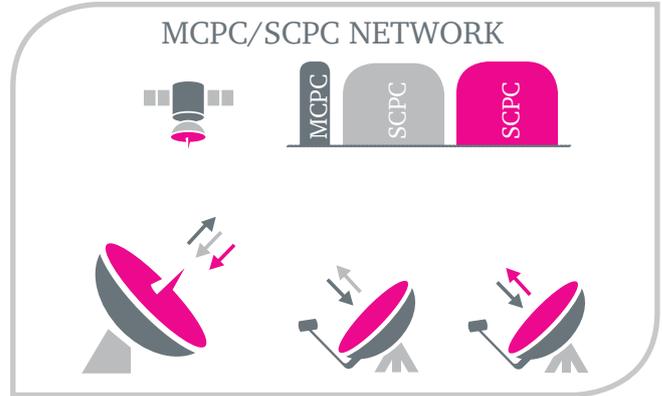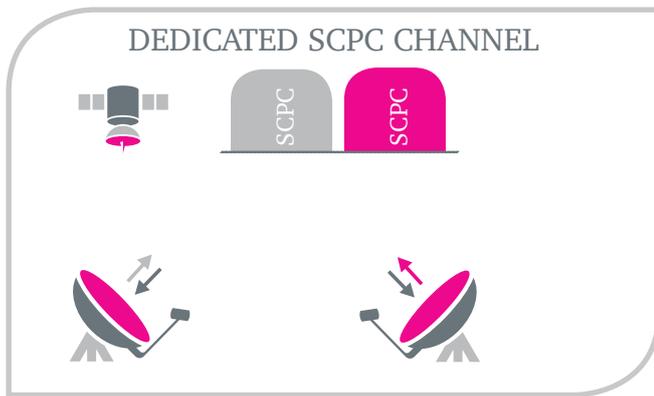
High-speed UHP SCPC modems allow creating dedicated channels of any purpose and throughput. It could be classic "point-to-point" SCPC channels of any asymmetry or "point-to-multipoint" MCPC broadcasting or even multi-site network based on combination of MCPC and SCPC channels.

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. A basic functionality of SCPC DAMA network can be extended further with use of UHP Network Management System (NMS) and Dynamic Network Layout module, providing a convenient interface for scheduling and managing of SCPC DAMA transmissions.

High-speed DVB S2 ACM modem in conjunction with integrated, powerful IP router opens up 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 and investment efficiency.

UHP-2XX SCPC SATELLITE MODEM SPECIFICATIONS

NETWORK		
Topology	Point-to-Point, Star, Dual-Gateway™	
Modes of operation	SCPC, SCPC DAMA, TDM/SCPC; optionally: TDM/TDMA Star/Mesh, Hubless MF TDMA	
Frequency bands	C, X, Ku, Ka, including multi-beam HTS satellites	
TDM (SCPC) CHANNEL	**MODULATOR**	**DEMODULATOR**
Standard	DVB-S2 ACM	DVB-S2 ACM
Channels	One universal SCPC/TDMA modulator	Two demodulators with selectable IF inputs Rx1 and Rx2
Modulation	QPSK, 8PSK, 16APSK, 32APSK; Roll-off: 5% or 20%;	QPSK, 8PSK, 16APSK, 32APSK
FEC	1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9	1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9
Symbol Rate	300 ksps - 65 Msps; max 53.8 Msps for 32APSK; step 1 ksps;	300 ksps - 65 Msps; max 53.8 Msps for 32APSK; In dual-demodulator mode 44.5 Msps (8PSK); 33.7 Msps (16APSK); 27.0 Msps (32APSK) max
Data Rate	200 kbps - 225 Mbps	200 kbps - 225 Mbps (225 Mbps aggregate for two demods)
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP	
ROUTER		
Performance	Up to 190 000 packets per second	
Support	DSCP, multiple IP/VLANs, NAT*, proxy ARP, L2 Bridging, TCP Acceleration, Jumbo frames, AES-256	
Protocols	IPv4/IPv6*, IGMP, cRTP, SNMP, RIP, SNTP, TFTP, PPP, DHCP, DHCP Relay	
Management	HTTP interface, SNMP, Telnet, NMS with VNO support	
INTERFACES		
User LAN	2 x Gigabit 10/100/1000 Base-T	
Maintenance console	miniUSB, B female	
IF Rx (two inputs)	950-2150 MHz (LO 10 MHz/+8 dBm [RX2], 13.5/18 VDC 0.75A)	
IF Tx	950-1750 MHz (optionally up to 2150 MHz), - 45…-5 dBm, (LO 10 MHz/+8 dBm, 24V/2A)	

These specifications are subject to change without notice

* Available in a future SW release

REV 3.5 2018

ISO 9001 2015 CERTIFIED