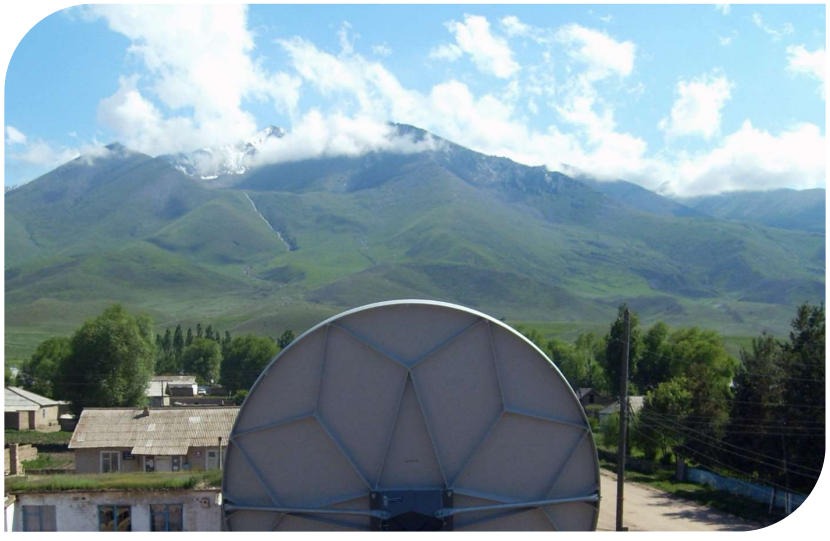
UHP-100 SERIES

Broadband Satellite Router

High-Throughput Satellites (HTS) open unprecedented opportunities for networking over satellite. UHP-100 is a high-performance router designed specifically for largescale deployment in broadband VSAT networks operating over HTS. This product combines the Universal Hardware Platform (UHP) architecture, which was developed in the previous generation of the award-winning UHP product line, with the state-of-the-art semiconductor technology. The result is its unique performance. Not only UHP-100 can process 150 000 IP packets per second, 225 Mbps of traffic and two carriers up to 500 Msps, it can do this in a super-compact size, with low power consumption (less than 8W) and with best utilization of the precious satellite resource, as evidenced by up to 256APSK modulation, 5% spectral roll-off, adaptive modulation and coding, adaptive power control and 96% efficient TDMA protocol.

UHP-100 is equipped with two high-speed DVB-S2/S2X demodulators together with their independent IF inputs and front ends. The router can simultaneously receive two carriers transmitted via two different satellite beams. The built-in advanced beam switching algorithm facilitates seamless roaming of mobile satellite terminals.

The main application for UHP-100 is broadband, SCADA and multimedia connectivity in large VSAT networks using HTS. The terminal interworks with the latest generation of scalable UHP TDM/TDMA Hubs. Small size, low power consumption and low count of active electronic components ensure highest reliability with over 200 000 hours MTBF.

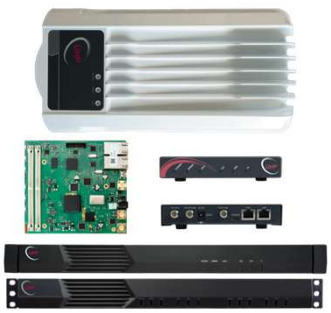


Key Features:

- High-performance Satellite Router for TDM/TDMA networks with aggregate throughput up to 220 Mbps
- Two independent DVB demodulators with separate IF inputs and rate up to 500 Msps
- Efficient DVB-S2/S2X ACM modulations with support for wideband HTS transponders
- MF-TDMA modulator with innovative protocol and proven efficiency of 96% compared to SCPC
- Adaptive coding and modulation and transmission power control in forward and return channels
- Ultra-low latency VSAT system with round-trip delay about 570 ms for TDMA mode of operations
- Superior IP router productivity up to 150 000 PPS, rich set of supported protocols
- Dual-stack IPv6/IPv4 routing architecture and Layer 2 bridging mode
- Support of VLAN, multilevel QoS, codec independent handling of RT traffic, TCP acceleration, AES encryption
- Built-in adaptive hierarchic traffic shaper specially designed for VSAT applications
- Two Ethernet user ports with built-in switch simplifies connection of CPE and maintenance
- Preloaded coverage maps, OpenAMIP and automatic network roaming
- Low power consumption – less than 8 Watt (without RF ODU)

TECHNICAL SPECIFICATIONS: UHP-100 SERIES BROADBAND SATELLITE ROUTER

NETWORK	
Topology	Star, Dual-Gateway
Modes of operation	TDM/TDMA Star terminal, TDM/TDMA Rx-only, SCPC Demodulator, Spectrum Analyzer
Network role	TDM/TDMA Terminal, SCPC Receiver, DAMA Inroute
Frequency bands	C, X, Ku, Ka, including multi-beam HTS satellites
TDM (SCPC) CHANNEL - DEMODULATOR	
Standard	DVB-S2 / DVB-S2X with Adaptive Coding and Modulation
Channels	Two demodulators with selectable IF inputs Rx1 and Rx2
Modulation	QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 128APSK, 256APSK
FEC	All DVB-S2 & DVB-S2X MODCODs
Symbol Rate	300 ksps - 500 Msps
Data Rate	150 kbps - 225 Mbps
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP
TDMA CHANNEL - MODULATOR	
Standard	LDPC TDMA with Adaptive Coding and Modulation
Channels	One MF-TDMA modulator
Modulation	BPSK, QPSK, 8PSK, 16APSK; Roll-off: 5%, 20%
FEC	1/2, 2/3, 3/4, 5/6
Symbol Rate	100 ksps - 11 Msps; step 1 ksps
Data Rate	100 kbps - 35 Mbps
TDMA Protocol	Frame 50 -1000 ms, 14 slot sizes, manageable minimal bandwidth; fast MF-TDMA hopping Spectrum spreading with factors 2 and 4, maximum chip rate 11.7 Mcps
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP
ROUTER	
Performance	Up to 150 000 packets per second
Support	DSCP, multiple IP/VLANs, PAT, proxy ARP, L2 Bridging, TCP Acceleration, Jumbo frames, AES-256, X.509
Protocols	IPv4/IPv6, IGMP, cRTP, SNMP, RIP, SNTP, TFTP, PPP, DHCP, DHCP Relay, OpenAMIP
Management	HTTP interface, SNMP, Telnet, NMS with VNO support
INTERFACES	
User LAN	2 x Fast Ethernet 10/100 Base-T
Maintenance console	miniUSB, B female
IF Rx (both inputs)	950-2150 MHz; Ref. 10 MHz/+5 dBm [RX2]; 13.5/18 VDC 0.75A; F type
IF Tx	950-2150 MHz, -1…-46 dBm; Ref. 10 MHz/+5 dBm; 24V/3A; F type
SPECTRUM ANALYZER	950-2150 MHz, Span 10 kHz - 1200 MHz; Sweep time 1-2 sec; Measurement range 30 dB; Freq accuracy: +/- 0.01% of Freq + 1.8% of span; Absolute Amp-accuracy: +/- 6 dB; Relative Amp-accuracy: +/-0.15 dB



Model	Housing	Dimensions, mm	Weight, kg	Operating voltage	Operating temperature
UHP-100	Compact	147x30x144	0.5	24 VDC or 100-240 VAC, 8W	0…+50 ℃
UHP-110	Board	130x20x140	0.1	24 VDC, 8W	-40…+60 ℃
UHP-120	Outdoor	157x90x318	2.3	24 VDC, 8W	-40…+60 ℃
UHP-130	Rackmount	440x44x170	1.7	100-240 VAC, 8W	0…+50 ℃
UHP-140	Dual	440x44x170	2.0	100-240 VAC , 16W	0…+50 ℃