

UHP-100

BROADBAND SATELLITE ROUTER

TDM/TDMA

SCPC Rx-only

DUAL INPUT

DUAL GATEWAY

BEAM SWITCHING

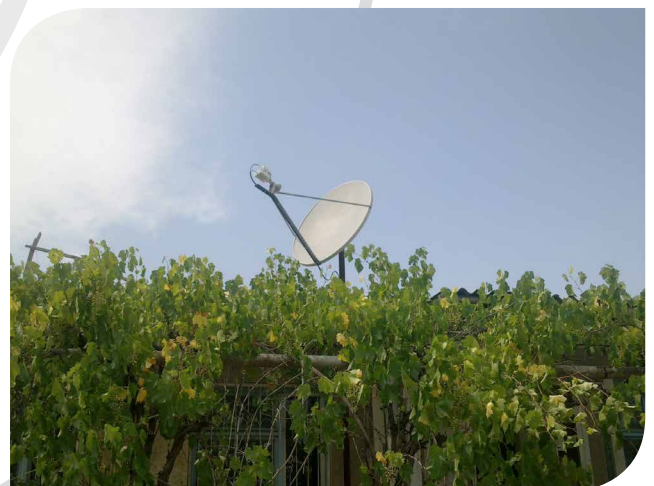
High-Throughput Satellites (HTS) open unprecedented opportunities for networking over satellite. UHP-100 is a high-performance router designed specifically for large-scale deployment in broadband VSAT networks operating over HTS. This product combines the Universal Hardware Platform (UHP) architecture, 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, 220 Mbps of traffic and two 65 Msps carriers, it can do this in a super-compact size, with low power consumption (less than 10W) and with best utilization of the precious satellite resource, as evidenced by up to 32APSK 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 demodulators together with their independent IF inputs and front ends. The router can simultaneously receive two carriers transmitted via two different satellite beams, which can even be in different frequency bands. The dual demodulator in conjunction with a built-in advanced beam switching algorithm facilitates seamless roaming of mobile satellite terminals between distinct beams of HTS satellites.

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.

- 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 65 Msps
- Enhanced DVB-S2 QPSK, 8PSK, 16APSK and 32APSK modulations with 5% or 20% roll-off
- 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
- Dual satellite or dual band operations with dynamic traffic balancing and automatic beam switching
- Superior IP router productivity up to 150 000 PPS, rich set of supported protocols
- Layer 3 routing architecture and Layer 2 bridging mode with IPv6 transport
- 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
- Ultra-low latency VSAT system with round-trip delay about 570 ms for TDMA mode of operations
- Low power consumption – less than 10 Watt (without RF ODU)





UHP Dual Gateway™ provides optimum solution for hierarchical networks and makes it possible to design such networks with single-hop connectivity using low-cost VSAT terminals and affordable Regional Gateways (RGW). The Central Gateway (CGW) has a UHP TDM/TDMA Hub with at least one DVB carrier (TDM) and several TDMA return carriers. The Regional Gateway (RGW) also transmits a DVB (TDM) carrier and is capable of receiving one or more TDMA carriers.

UHP-100 BROADBAND SATELLITE ROUTER SPECIFICATIONS

NETWORK

Topology	Point-to-Point, Star, Dual-Gateway™
Modes of operation	SCPC Rx-only, TDM/TDMA Star
Network role	SCPC Receiver, TDM/TDMA Terminal
Frequency bands	C, X, Ku, Ka, including multi-beam HTS satellites

TDM CHANNEL

Standard	DVB-S2 ACM
Channels	Two demodulators with selectable IF inputs Rx1 and Rx2
Modulation	QPSK, 8PSK, 16APSK, 32APSK
FEC	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; In dual-demodulator mode 44.5 Msps (8PSK); 33.7 Msps (16APSK); 27.0 Msps (32APSK) max
Data Rate	200 kbps - 225 Mbps (225 Mbps aggregate for two demodulators)
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP

TDMA CHANNEL

Standard	LDPC TDMA with Adaptive Code and Modulation
Channels	One TDMA modulator
Modulation	QPSK, 8PSK, 16PSK; Roll-off: 5%, 20%
FEC	1/3, 2/3, 3/4, 4/5, 5/6
Symbol Rate	100 ksps - 8 Msps; step 1 ksps
Data Rate	67 kbps - 27 Mbps
TDMA Protocol	Frame 50 -1000 ms, 14 slot sizes, manageable minimal bandwidth; slot-to-slot fast MF-TDMA hopping
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, 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 Fast Ethernet 10/100 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), F type
IF Tx	950-1750 MHz (optionally up to 2150 MHz), - 45...-5 dBm, (LO 10 MHz/+8 dBm, 24V/2A), F type

MECHANICAL / ENVIRONMENTAL (IDU)

Power	24 VDC or 100-240 VAC (external adaptor); 10 W
Operating temperature	0°...+50° C, humidity up to 90%
Size / Weight	145x29x144 mm / 485 g

These specifications are subject to change without notice

* Available in a future SW release



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