

UHP-1000

UNIVERSAL SATELLITE ROUTER

SCPC

TDM/TDMA

Hubless TDMA

UHP-1000 satellite router is a universal software-defined component of highly-efficient satellite networks of any operation mode or topology. UHP-1000 can work as an SCPC modem with the satellite carrier fixed or assigned on-demand. It can also be a mini-hub or a remote station in TDM/TDMA network or any node (master or slave) in a fully meshed Hubless TDMA network.

Innovative algorithms for network access, resource allocation and data encapsulation as well as advanced modulation and coding, implemented in the UHP routers, ensure efficient utilization of satellite resource. Two built-in demodulators allow simultaneous reception of either TDM carrier from the hub and TDMA mesh carrier from two distinct satellite beams or from two antennas. Universal modulator can instantaneously switch from TDMA burst mode to SCPC mode, thus assuring high data throughput and efficiency.



UHP-1000 router is a compact and reliable device and can be installed on a work desk or in an equipment rack or inside a customized enclosure. Low power consumption and uniquely fast start on power-up facilitate use of alternative power sources, such as solar batteries. Integrated high-performance IP router supports different protocols and has expanded means for provision of Quality of Service (QoS).

UHP-1000 is a high-performance satellite router for a wide range of applications, such as enterprise networking, videoconferencing, distribution and contribution of video, voice and data trunking, cellular backhaul, and broadband Internet access.

- Various modes of operation and topologies: SCPC, TDM/TDMA, TDM/TDMA Mesh, Hubless TDMA
- Two demodulators with separate IF inputs and universal SCPC/TDMA modulator
- Adaptive coding and modulation (ACM) in forward and return channels, including SCPC mode
- Superior productivity up to 60'000 pps and 150 Mbps aggregate throughput and 150 voice calls compressed
- Innovative TDMA protocol with LDPC coding and proven efficiency of 96% vs SCPC
- Ultra-low latency VSAT system with round-trip delay about 570 ms for TDMA mode of operations
- Support of VLAN, multi-level QoS, codec-independent handling of real-time traffic, TCP acceleration
- Built-in adaptive hierarchic traffic shaper specially designed for VSAT applications
- Built-in web-based management interface, user-friendly software configuration
- Fast network startup — network is ready for use in less than a minute upon power-up
- Low power consumption – less than 10 Watt (without RF ODU)
- Compatible with majority of C, Ku and Ka-band RF Systems, supplies power and reference signals
- Support of 1:1 or 1:N automatic redundancy schemes without use of external controllers





UHP-1000 SATELLITE ROUTER SPECIFICATIONS

NETWORK										
Topology	'point-to-point', 'hub and spoke', 'multilevel tree', 'mesh'									
Modes of operation	SCPC, SCPC DAMA, TDM/SCPC, TDM/TDMA, TDM/TDMA Mesh, Hubless TDMA									
Network size	up to 254 TDMA Inroute channels or MF groups and 500 000 terminals per network									
SCPC (TDM) CHANNEL										
Modulation	DVB-S2 ACM: QPSK, 8PSK, 16APSK, 32APSK (Rx-only); TLC; roll-off 20%									
Symbol rate	300 kSps - 32 MSps with 1 kSps step									
C/N threshold levels, dB BER < 10 ⁻⁸	FEC	1/3	2/5	1/2	3/5	2/3	3/4	4/5	5/6	8/9
	QPSK	-0.9	-0.0	0.6	2.4	3.4	4.3	4.9	5.4	6.6
	8PSK	-	-	-	6.0	7.2	8.2	-	9.7	11.1
	16APSK	-	-	-	-	9.4	10.7	11.3	12.3	13.2
	32APSK	-	-	-	-	-	14.4	15.6	16.6	17.9
QoS	4-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP									
TDMA CHANNEL										
Modulation	QPSK, 8PSK; LDPC; ACM; TLC; roll-off 20%									
Symbol rate	100 kSps - 4 MSps with 1 kSps step									
TDMA Protocol	frame 50-1000 ms, 8 slot sizes, manageable minimal bandwidth; slot-to-slot fast MF-TDMA hopping									
C/N threshold levels, dB BER < 10 ⁻⁷	FEC	2/3			5/6					
	QPSK (LDPC ACM)	5.4			6.9					
	8PSK (LDPC ACM)	9.6			12.0					
QoS	CIR, MIR, group QoS, FAP, RT traffic support, day/night, hierarchic manager of TDMA bandwidth									
ROUTER										
Performance	up to 60'000 packets per second; 150 Mbps aggregate throughput									
Support	DSCP, multiple IP/VLANs, NAT, proxy ARP, L2 Bridging, TCP Acceleration and header compression									
Protocols	DHCP, IGMP, SNMP, RIP, Sntp, TFTP, cRTP									
Management	HTTP interface, SNMP, Telnet, NMS with VNO support									
INTERFACES										
User LAN port	Ethernet 10/100Base-T, RJ-45									
Maintenance console	USB, B female									
IF Rx	950-2050 MHz (LNB DC – 13.5V/18V 0.75A), F type									
IF Tx	950-1750 MHz, -30...- 5 dBm, (LO 10 MHz / +5 dBm, BUC DC – 24V / 2A), F type									
MECHANICAL / ENVIRONMENTAL (IDU)										
Power	90-264 VAC or 24 VDC, 10 W									
Operating temperature	0°...+50°C, humidity up to 90%									
Size / Weight	147x144x29 mm / 530 g									