

# 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.

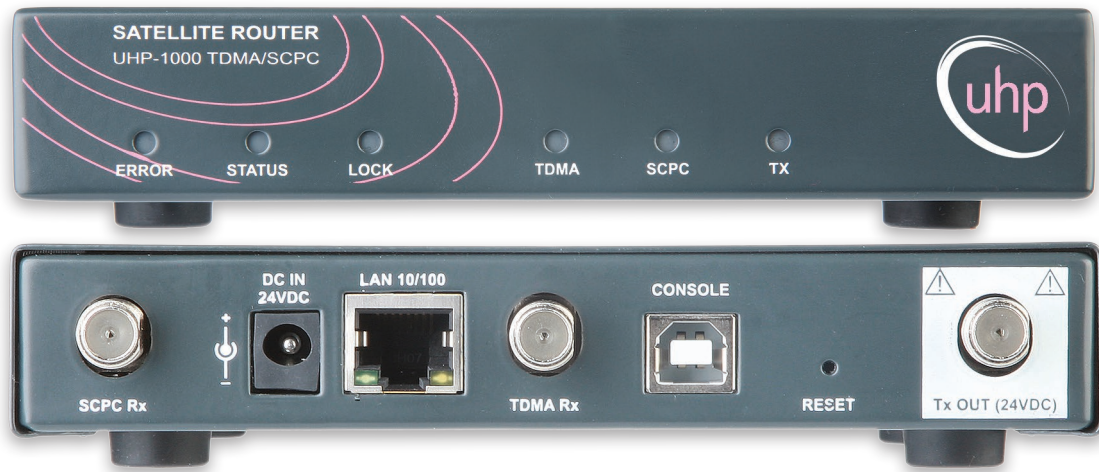


UHP-1000 router is a compact and reliable device and can be installed on a work desk or in an equipment rack or inside a customized enclosure. Low power consumption and uniquely fast start on power-up facilitate use of alternative power sources, such as solar batteries. Integrated high-performance IP 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
- 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
- Capable of receiving carriers from two satellites simultaneously
- 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
- Easy to install hardware and reliable operation with MTBF >200'000 hours





## 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 and 500 000 terminals per network

### SCPC (TDM) CHANNEL

Symbol rate	from 300 kSps (250 kSps DVB-S) up to 32 MSps (34 MSps DVB-S)												
Modulation / Coding	FEC	1/3	2/5	1/2	3/5	2/3	3/4	4/5	5/6	7/8	8/9	9/10	
Demodulator Performance C/N, BER <10 <sup>-8</sup>	DVB-S (QPSK)	-	-	3.4	-	4.9	6.0	-	7.0	7.8	-	-	
	DVB-S2 (QPSK ACM-Long)	-	-	0.9	2.4	3.2	4.1	4.8	5.1	-	6.3	6.5	
	DVB-S2 (8PSK ACM-Long)	-	-	-	5.7	6.9	8.2	-	9.7	-	11.1	11.3	
	DVB-S2 (16APSK ACM-Long)	-	-	-	-	10.0	10.8	11.4	11.9	-	13.3	13.5	
	DVB-S2 (32APSK ACM-Long)	Available with future software release											
	DVB-S2 (QPSK ACM-Short)	-0.9	-0.0	0.9	2.6	3.3	4.2	5.0	5.5	-	6.4	-	
	DVB-S2 (8PSK ACM-Short)	-	-	-	7.6	7.5	8.6	-	9.9	-	11.3	-	
	DVB-S2 (16APSK ACM-Short)	-	-	-	-	10.3	11.0	11.8	12.2	-	13.4	-	
DVB-S2 (32APSK ACM-Short)	Available with future software release												
QoS	3-level prioritization, traffic policies, CIR, hierarchic 680-channel traffic shaper, FAP												

### TDMA CHANNEL

Symbol rate	from 100 kSps up to 4 MSps	
TDMA Protocol	frame 30-1000 ms, 9 slot sizes, manageable minimal bandwidth	
Modulation / Coding	FEC	2/3      5/6
Demodulator Performance, BER <10 <sup>-7</sup>	BPSK (LDPC)	Available with future software release
	QPSK (LDPC)	5.4      6.9
	8PSK (LDPC)	9.6      12.0
QoS	CIR, MIR, group QoS, hierarchic manager of TDMA bandwidth	

### ROUTER

Performance	up to 60'000 packets per second; 150 Mbps aggregate throughput; 150 voice calls compressed (cRTP)
Support	DSCP, multiple IP/VLANs, NAT, proxy ARP, L2 Bridging, TCP Acceleration
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	176-283 VAC, 10 W
Operating temperature	0°...+50°C, humidity up to 90%
Size / Weight	147x144x29 mm / 530 g