

# UHP-1000-OD

## OUTDOOR SATELLITE ROUTER

SCPC

TDM/TDMA

Hubless TDMA

UHP-1000-OD satellite router is a universal component of highly-efficient satellite networks of any operation mode or topology. UHP-1000-OD router can work as a SCPC modem with the satellite carrier fixed or assigned on-demand. It can also be a mini-hub or a remote terminal in TDM/TDMA network or any node (master or slave) in a fully meshed Hubless TDMA network. Inexpensive, highly scalable and very flexible hardware provides the best cost of network ownership.

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 both TDM carrier from the hub and TDMA mesh carrier. Universal modulator can instantaneously switch from TDMA burst mode to SCPC dedicated mode, thus assuring high data throughput and efficiency.



Rugged weatherproof satellite router UHP-1000-OD is designed for outdoor installation, for example, directly on the antenna. IP67 compliant enclosure and innovative system for active heating/cooling guarantees quick start and operating performance over a wide range of temperatures and a harsh environment. Supported power options include DC and Power over Ethernet (PoE).

UHP-1000-OD router is a good fit for transportable and mobile terminals, for enterprise networks and for SCADA and M2M networks as well as for cellular backhaul over satellite and emergency backup and news contribution networks. The router interfaces with mobile antenna systems via OpenAMIP or various proprietary protocols. The outdoor router supports a variety of power options, including Power over Ethernet (PoE) that excludes using coaxial cables to connect with a CPE.

- Rugged, weatherproof, IP67-class design with active heating and cooling system
- Various modes of operation: SCPC, SCPC-DAMA, TDM/TDMA, Hubless TDMA
- Support of any topologies: point-to-point, star, multilevel, full-mesh
- The world's first TDM/TDMA Mini-Hub in outdoor enclosure
- DVB-S2 ACM VSAT technology with bandwidth-efficient LDPC coding in TDMA channel
- Superior productivity up to 60'000 pps and 150 Mbps aggregate throughput and 150 voice calls compressed
- 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
- Web-based Network Management System allows to operate the network from everywhere
- Fast network startup — network is ready for use in less than a minute upon power-up
- Low power consumption allows using satellite terminals with alternative power sources
- Built-in power converter and a reference oscillator for RF equipment





## UHP-1000 OD 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), N type
IF Tx	950-1750 MHz, -30...- 5 dBm, (LO 10 MHz / +5 dBm, BUC DC – 24V / 2A), N type

### MECHANICAL / ENVIRONMENTAL (IDU)

Power	DC IN: 48 VDC (opt. 24 VDC); PoE with injector (48 VDC) and power supply 176-283 VAC
Power consumption	up to 10 W (up to 24W with active heating)
Operating conditions	-40 <sup>0</sup> ...+50 <sup>0</sup> C, active heating and cooling system, ingress protection rating - IP67
Size / Weight	225x280x95 mm / 1.9 kg

### ORDER CODE / MODIFICATIONS

UHP-O2R1-REM	Outdoor router [REM], PoE injector and 48 VDC power supply, DC IN 24VDC, universal mounting kit
UHP-O4R1-REM	Outdoor router [REM], PoE injector and 48 VDC power supply, DC IN 48VDC, universal mounting kit