romantis
Satellite communications

UHP-9000

DUAL SATELLITE ROUTER

SCPC | TDM/TDMA | Hubless TDMA

UHP-9000 dual satellite router is a universal component of highly-efficient satellite networks of any operation mode or topology. UHP-9000 consists of two independent routers with UHP-1000 functionality. Its primary application is in large Hub stations, where multiple UHP routers are cascaded.

UHP-9000 dual router is also a good fit for redundancy solutions with hot standby. Additionally, it can be used in complex remote terminals, where each of the two routers housed in UHP-9000 can operate in its own distinct mode. For example, one of the routers can support SCPC high-speed channel for video or high-speed data application, while the other one can be used for managing the SCPC channel or transporting voice and medium-speed data via TDMA carrier under control from the central station.

Each of the two integrated routers has a separate IF interface and can work in any of the supported operation modes.

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. Universal modulator can instantaneously switch from TDMA burst mode to SCPC mode, thus assuring high data throughout and efficiency.

UHP-9000 router is supplied in a compact 1U chassis for installation in a standard 19 inch rack. Universal mount brackets allow two installation options: with either the indicator panel or the connector panel facing forward. Built-in AC power supply with high power rating and 10 MHz frequency reference ensure reliable operation of the router itself and of the Outdoor RF equipment from multiple vendors. Integrated Ethernet switch simplifies daisy-chaining of multiple routers and interfacing with external devices.

- Various modes of operation and topologies: SCPC, TDM/TDMA, TDM/TDMA Mesh, Hubless TDMA
- Four demodulators with separate IF inputs and two universal SCPC/TDMA modulators
- 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
- Easy to install hardware and reliable operations with MTBF >200'000 hours
- Built-in Ethernet switch simplifies scalability and connection of CPE

UHP-9000 SATELLITE ROUTER SPECIFICATIONS

(applicable for each of two built-in routers)

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 $<10^{-8}$	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									
	BPSK (LDPC)	Available with future software release										
Demodulator Performance, BER $<10^{-7}$	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, built-in 5 ports Ethernet Switch											
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, 20 W											
Operating temperature	0^0…+50^0C, humidity up to 90%											
Size / Weight	440x44x142 mm / 1.7 kg											

romantis
Satellite communications
www.romantis.com | uhp@romantis.com

Europe, Middle East & Africa
ROMANTIS GmbH
Lilienthalstraße 5d,
12529, Berlin-Schönefeld, Germany
T: +49-30-565-90-4812
F: +49-30-565-90-4885

Americas and Asia
ROMANTIS Inc.
6600 Trans-Canada Highway, Suite 725, Pointe-Claire (Montreal), Quebec, Canada H9R 4S2
T: +1-514-695-VSAT (8728)
F: +1-514-697-0186