romantis
Satellite communications

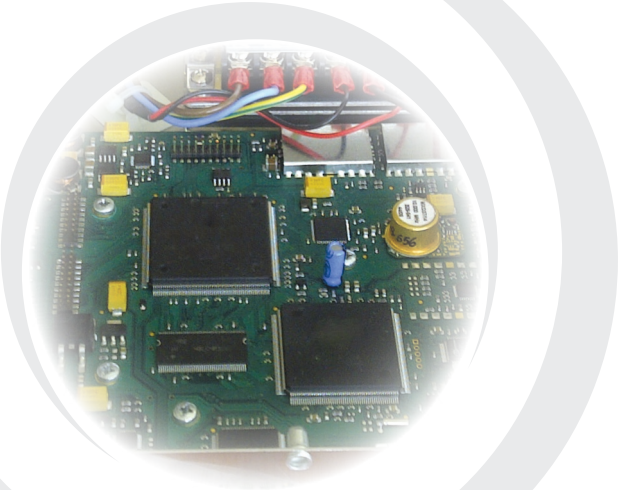
UHP-1000-CM

INTEGRATED SATELLITE ROUTER

SCPC | TDM/TDMA | Hubless TDMA

UHP-1000-CM satellite router is a universal component of highly-efficient satellite networks of any operation mode or topology. UHP-1000-CM router 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.

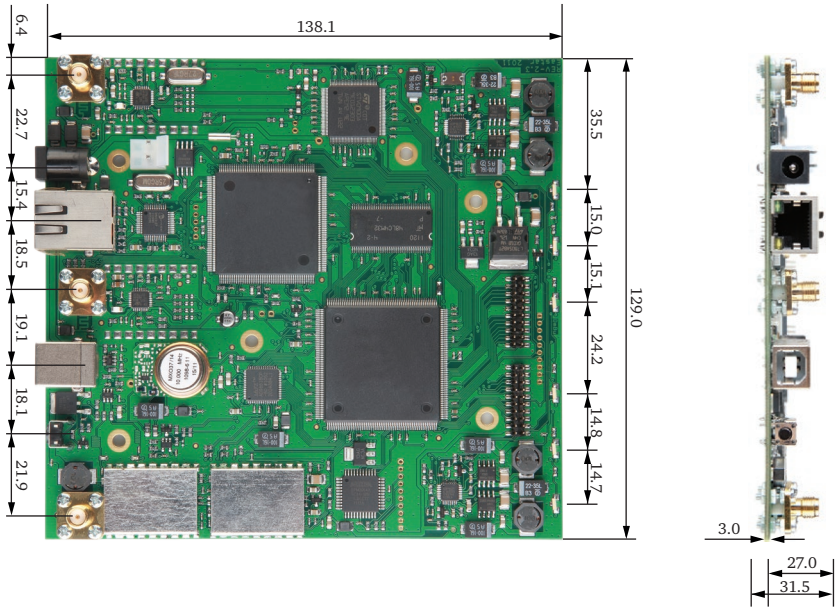
Innovative algorithms for network access, resource allocation and data encapsulation as well as advanced modulation and coding, implemented in the UHP routers, ensure efficient utilization of satellite resource. Two built-in demodulators allow simultaneous reception of both TDM carrier from the hub and 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 throughout and efficiency.



UHP-1000-CM is implemented as a compact single card ideal for integration into third-party OEM products. It is fully compatible with any other satellite routers of the UHP series. The router card has LED indicators, SMA or F type IF connectors and user LAN interface. Optionally, the router card can be equipped with the asynchronous LVTTL data port. Low power consumption and uniquely fast start upon power-up facilitate use of alternative power sources, such as solar batteries.

UHP-1000-CM 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-1000CM 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 Demodulator Performance C/N, BER $<10^{-8}$	FEC	1/3	2/5	1/2	3/5	2/3	3/4	4/5	5/6	7/8	8/9	9/10
	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 Demodulator Performance, BER $<10^{-7}$	FEC	2/3	5/6									
	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, RS-232 console, 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 or SMA type											
IF Tx	950-1750 MHz, –30…- 5 dBm, (LO 10 MHz / +5 dBm, BUC DC – 24V / 2A), F or SMA type											
Power	24 VDC, 10 Watt, PWL-2c connector with 3.96 mm step											

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