

# UHP-140

## DUAL BROADBAND SATELLITE ROUTER

SCPC

TDM/TDMA

Hubless TDMA

High-Throughput Satellites (HTS) open unprecedented opportunities for networking over satellite. UHP-140 is a high-performance dual router designed specifically for large-scale deployment in broadband VSAT networks operating over HTS and traditional satellites. This product combines the Universal Hardware Platform (UHP) architecture, which was developed in the previous generation of the award-winning UHP product line.

Each of two integrated routers can process 200,000 IP packets per second, 200 Mbps of traffic and two 65 Msp carriers, it can do this with best utilization of the precious satellite resource, as evidenced by up to 32APSK modulation, 5% spectral roll-off, adaptive modulation and coding, adaptive power control and 96% efficient TDMA protocol. This satellite router is a good fit for complex 1:1 redundant TDM/TDMA terminals or can be used as a multi-channel SCPC receiver / concentrator.



Multiple demodulators with separate IF interfaces allow simultaneous reception of four TDM and/or SCPC carriers from few distinct satellite beams or from several antennas. Two TDMA modulators may transmit simultaneously using separate IF outputs.

UHP-140 dual satellite router is supplied in a compact 1U chassis for installation in a standard 19 inch rack. Each built-in router has independent interfaces and own power supply ensuring reliable operations of the router itself and of the outdoor RF equipment from multiple vendors. Low power consumption, optional DC power input, and uniquely fast start on power-up facilitate use of alternative power sources, such as solar batteries.

- High-performance Satellite Router for TDM/TDMA networks with aggregate throughput up to 400 Mbps
- Four independent DVB demodulators with separate IF inputs and rate up to 65 Msp
- Enhanced DVB-S2 QPSK, 8PSK, 16APSK and 32APSK modulations with 5% or 20% roll-off
- Two MF-TDMA modulators with innovative protocol and proven efficiency of 96% compared to SCPC
- Adaptive coding and modulation and transmission power control in forward and return channels
- Dual satellite or dual band operations with dynamic traffic balancing and automatic beam switching
- Superior IP router productivity up to 200'000 pps and reach set of supported protocols, including L2 bridging
- Support of Layer 3 routing architecture and Layer 2 bridging mode with IPv6 transport
- Support of VLAN, multilevel QoS, codec independent handling of RT traffic, TCP acceleration, AES encryption
- Built-in adaptive hierarchic traffic shaper specially designed for VSAT applications
- Two Ethernet user's ports with built-in switch simplifies connection of CPE and maintenance
- Ultra-low latency VSAT system with round-trip delay about 570 ms for TDMA mode of operations
- Support of 1:1 or 1:N automatic redundancy schemes without use of external controllers





## UHP-140 DUAL BROADBAND SATELLITE ROUTER SPECIFICATIONS

(applicable for each of two built-in routers)

NETWORK										
Modes of operation	TDM/TDMA, Rx-only SCPC									
Network role	TDM/TDMA terminal, SCPC receiver									
Frequency bands	C, X, Ku, Ka, including multi-beam HTS satellites									
Compatibility	UHP-200 or UHP-1000 based TDM/TDMA Hubs									
TDM (SCPC) CHANNEL - Two demodulators with selectable IF inputs										
Modulation	DVB S2 ACM: QPSK, 8PSK, 16APSK, 32APSK; TLC; roll-off 5% or 20%									
Symbol rate	300 kbps - 65 Msps with 1 kbps step; max. 53.8 Msps for 32APSK									
Data rate	200 kbps - 225 Mbps (225 Mbps of aggregate rate for two demodulators)									
C/N threshold levels, dB BER < 10 <sup>-7</sup> 20% roll-off (+0.1 dB for 5% RO)	FEC	1/3	2/5	1/2	3/5	2/3	3/4	4/5	5/6	8/9
	QPSK	-0.9	-0.0	1.1	2.7	3.6	4.4	5.0	5.5	6.5
	8PSK	-	-	-	6.1	7.1	8.4	-	9.7	11.3
	16APSK	-	-	-	-	9.4	10.8	11.5	12.2	13.4
	32APSK	-	-	-	-	-	14.6	15.8	16.9	18.4
QoS	3-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP									
TDMA CHANNEL (Tx-only)										
Modulation	BPSK, QPSK, 8PSK; ACM; TLC; roll-off 5%* or 20%									
Symbol rate	100 kbps - 5 Msps (8 Msps*); 1 kbps 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 <sup>-7</sup> 20% roll-off	FEC	2/3		5/6						
	QPSK	5.4		6.9						
	8PSK	9.6		12.0						
QoS	CIR, MIR, group QoS, FAP, RT traffic support, day/night, hierarchic manager of TDMA bandwidth									
ROUTER										
Performance	Up to 200'000 packets per second									
Support	DSCP, multiple IP/VLANs, NAT, proxy ARP, L2 Bridging, TCP Acceleration, AES-256 encryption									
Protocols	DHCP, IGMP, SNMP, RIP, SNTP, TFTP, cRTP									
Management	HTTP interface, SNMP, Telnet, NMS with VNO support									
INTERFACES										
User LAN	2 x Fast Ethernet, RJ-45									
Maintenance console	MiniUSB, B female									
IF Rx	950-2150 MHz (LO 10 MHz / +5 dBm, LNB DC - 13.5V/18V 0.75 A), F type									
IF Tx	950-1750 MHz (optionally up to 2150 MHz), -45... - 5 dBm, (LO 10 MHz/+5 dBm, 24V/2A), F type									
MECHANICAL / ENVIRONMENTAL (IDU)										
Power	90-264 VAC, 10 W; optional 24 VDC or 48 VDC									
Operating temperature	0°... +50° C, humidity up to 90%									
Size / Weight	440x44x172 mm / 1.7 kg									



\* Available with future SW releases



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