UHP-240

DUAL UNIVERSAL SATELLITE ROUTER

SCPC	TDM/TDMA	HUBLESS TDMA
SW DEFINABLE	SMART REDUNDANCY	DUAL GATEWAY

UHP-240 is a universal VSAT dual router with Software-Defined Architecture pioneered by UHP Networks. The device packs industry-highest processing capability into a very compact size with two integrated satellite routers. Each built-in router can process up to 450 Mbps of aggregate traffic and comprises two DVB demodulators, four TDMA burst demodulators, two universal TDMA/SCPC modulators and two powerful IP routers capable of processing over 190 000 IP packets per second (PPS). The high processing capability allows implementation of uniquely efficient protocols for network access, resource allocation and data encapsulation as well as support for advanced modulation and coding.

UHP-240 is a truly universal router which can operate as a star or mesh remote or as a SCPC modem, or as a node in a Hubless TDMA network. This unique device can work as a fully-fledged TDM/TDMA Hub with two Outbound TDM and up to 8 Inbound TDMA carriers. Dual UHP-240 router is a good choice for 1:1 redundant Hubs and terminals.

UHP-240 is a building block in HTS Hubs and provides two Universal Controllers (UC). Each controller may act as an Outroute or Inroute controller, as well as a standby UC. The universal controllers work under management of HTS-NMS with Smart Redundancy™ that selects the right number of available UCs and assigns to them functions required in order to achieve a specified network configuration.

UHP-240 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.

- World's fastest VSAT router with aggregate throughput up to 900 Mbps and powerful UHP-RTOS™

- Four DVB demodulators with separate software-switchable IF inputs and rate up to 65 Msps

- Enhanced DVB-S2 QPSK, 8PSK, 16APSK and 32APSK modulations with 5% or 20% roll-off

- Multichannel MF-TDMA demodulator with innovative protocol and proven efficiency of 96% vs. SCPC

- Adaptive coding and modulation (ACM) in forward and return channels, including SCPC and TDMA modes

- Independent modes of operation of each built-in router: SCPC, TDM/TDMA, TDM/TDMA Mesh, Hubless TDMA

- HTS-ready VSAT with support of multiple beams, bands, satellites reception with traffic balancing

- Two IP routers productivity up to 190 000 PPS each and rich set of supported protocols, multi-level QoS

- Layer 3 routing architecture and Layer 2 bridging mode with IPV6 transport

- Two Gigabyte Ethernet user ports with built-in switch simplifies scalability and connection of CPE

- Ultra-low latency VSAT system with round-trip delay about 570 ms for TDMA mode of operations

- Industry's most compact full-scale 1U Hub with redundancy and with scalable MF-TDMA channels

- 1:1 automatic redundancy without external controllers or M:N Smart Redundancy™
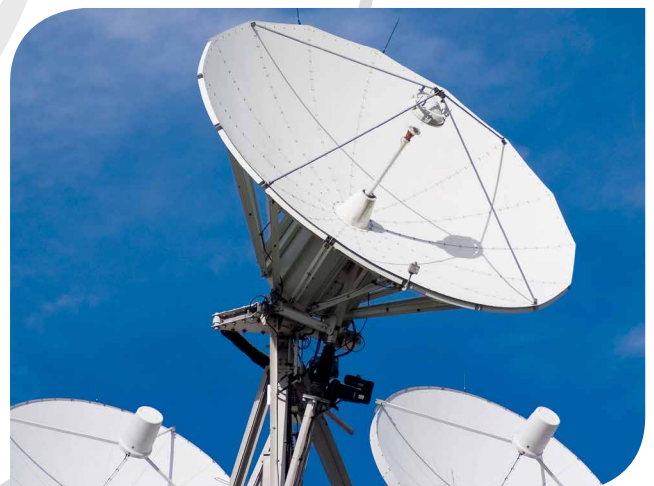
UHP Smart Redundancy™ facilitates self-healing architecture for a single VSAT Hub and also for multiple geographically diverse (redundant) Hubs. Architecture of the Hub with Smart Redundancy is not different from a traditional Hub architecture, but all the controllers are universal and can assume any role. The NMS dynamically assigns specific roles to the universal controllers. Smart Redundancy™ dramatically increases network availability level while only requiring a very modest investment.

UHP Dual Gateway™ provides optimum solution for hierarchical networks and makes it possible to design such networks with single-hop connectivity using low-cost VSAT terminals and affordable Regional Gateways (RGW). The Central Gateway (CGW) has a UHP TDM/TDMA Hub with at least one DVB carrier (TDM) and several TDMA return carriers. The Regional Gateway (RGW) also transmits a DVB (TDM) carrier and is capable of receiving one or more TDMA carriers.

UHP-240 DUAL SATELLITE ROUTER SPECIFICATIONS (applicable for each of two built-in routers)

NETWORK		
Topology	Point-to-Point, Star, Dual-Gateway™, Mesh	
Modes of operation	Software-definable: SCPC, SCPC DAMA, TDM/SCPC, TDM/TDMA Star/Mesh, Hubless MF TDMA	
Network role	SCPC Modem, TDM/TDMA Terminal or Hub, Smart Redundancy™ Controller, Hubless Slave or Master	
Frequency bands	C, X, Ku, Ka, including multi-beam HTS satellites	
TDM (SCPC) CHANNEL	**MODULATOR**	**DEMODULATOR**
Standard	DVB-S2 ACM	DVB-S2 ACM
Channels	One universal SCPC/TDMA modulator	Two demodulators with selectable IF inputs Rx1 and Rx2
Modulation	QPSK, 8PSK, 16APSK, 32APSK; Roll-off: 5% or 20%;	QPSK, 8PSK, 16APSK, 32APSK
FEC	1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9	1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9
Symbol Rate	300 ksps - 65 Msps; max 53.8 Msps for 32APSK; step 1 ksps;	300 ksps - 65 Msps; max 53.8 Msps for 32APSK; In dual-demodulator mode 44.5 Msps (8PSK); 33.7 Msps (16APSK); 27.0 Msps (32APSK) max
Data Rate	200 kbps - 225 Mbps	200 kbps - 225 Mbps (225 Mbps aggregate for two demods)
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP	
TDMA CHANNEL	**MODULATOR**	**DEMODULATOR**
Standard	LDPC TDMA with Adaptive Code and Modulation	
Channels	One universal SCPC/TDMA modulator	Four-channel MF-TDMA demodulator
Modulation	QPSK, 8PSK, 16PSK; Roll-off: 5%, 20%	QPSK, 8PSK, 16PSK
FEC	1/3, 2/3, 3/4, 4/5, 5/6	1/3, 2/3, 3/4, 4/5, 5/6
Symbol Rate	100 ksps - 8 Msps; step 1 ksps	100 ksps - 8 Msps; (8 Msps aggregate for all channels)
Data Rate	67 kbps - 27 Mbps	67 kbps - 27 Mbps
TDMA Protocol	Frame 50 -1000 ms, 14 slot sizes, manageable minimal bandwidth; slot-to-slot fast MF-TDMA hopping	
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP	
ROUTER		
Performance	Up to 190 000 packets per second	
Support	DSCP, multiple IP/VLANs, NAT*, proxy ARP, L2 Bridging, TCP Acceleration, Jumbo frames, AES-256	
Protocols	IPv4/IPv6*, IGMP, cRTP, SNMP, RIP, SNTP, TFTP, PPP, DHCP, DHCP Relay	
Management	HTTP interface, SNMP, Telnet, NMS with VNO support	
INTERFACES		
User LAN	2 x Gigabit 10/100/1000 Base-T	
Maintenance console	miniUSB, B female	
IF Rx (two inputs)	950-2150 MHz (LO 10 MHz/+8 dBm [RX2], 13.5/18 VDC 0.75A), F type	
IF Tx	950-1750 MHz (optionally up to 2150 MHz), - 45…-5 dBm, (LO 10 MHz/+8 dBm, 24V/2A), F type	
MECHANICAL / ENVIRONMENTAL (IDU)		
Power	90-264 VAC; 24 VDC or 48 VDC options; 10 W	
Operating temperature	0^0…+50^0 C, humidity up to 90%	
Size / Weight	440x44x172 mm / 2 kg	

These specifications are subject to change without notice

* Available in a future SW release

ISO 9001 2015 CERTIFIED

REV 3.5 2018