UHP-231

INTELLIGENT SATELLITE ROUTER

SCPC	TDM/TDMA	HUBLESS TDMA
EMBEDDED SBC	3G/LTE OPTIMIZATION	DUAL GATEWAY

UHP is the established leader for the high-performance satellite networks. Our new UHP-231 router with additional processing power allows to reduce the bandwidth consumption and improve the user experience with help of intelligent optimization and acceleration value-added software. UHP-231 is based on a new advanced hardware platform and is backward compatible with the previous generations of UHP routers. It comprises multichannel DVB and MF TDMA demodulators, a universal SCPC/TDMA modulator, a powerful IP router and a multipurpose embedded computer. The primary application of UHP-231 router is in 2G/3G/LTE Cellular Backhaul. This satellite router is also a good fit for M2M networks, where the embedded computer can perform additional tasks to collect and process data using a customized software.

The UHP-231 single-box intelligent router supports various network topologies, including SCPC links, TDM/SCPC, TDM/TDMA Star, TDM/TDMA Mesh and Hubless TDMA networks.

Multiple demodulators allow simultaneous reception of two TDM or SCPC carriers and group of TDMA mesh carriers 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-231 router is supplied in a compact 1U chassis for installation in a standard 19 inch rack. 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. 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 450 Mbps and powerful UHP-RTOS™

- Two independent 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

- Various modes of operation and topologies: SCPC, TDM/TDMA, TDM/TDMA Mesh, Hubless TDMA

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

- Superior IP router productivity up to 190 000 PPS and rich set of supported protocols

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

- Embedded computer for advanced data processing, including backhaul optimization and traffic acceleration

- Optional 2G/3G/LTE backhaul optimization, GTP decoding, TCP acceleration and payload compression

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

- 1:1 automatic redundancy without external controllers or M:N Smart Redundancy™

Mobile Backhaul Optimization is leading the market through best-in-class IP base Abis, 3G Iub/Iuh and LTE S1 interface optimization techniques, including network aware Intelligent Optimization features. Don't settle for simple transport optimization solutions but rather intelligent, service aware solutions focused on improving optimization, increasing network reliability, and enhancing the user experience - supporting 2G, 3G, and LTE. The solution is based on the latest Sevis' optimization algorithms able to perform GTP decoding and use deep packet inspection to apply mobile-aware intelligent optimization and acceleration techniques. It also uses proprietary lossless compression algorithms, specifically designed for signaling, voice, and packet service.

UHP-231 INTELLIGENT SATELLITE ROUTER SPECIFICATIONS

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

EMBEDDED COMPUTER	
Performance	Intel Celeron J1900 Quad Core Four Thread 2.0GHz; Intel HD Graphics; DDR3L
Interfaces	2 x Gigabit 10/100/1000 Base-T; USB 2.0; VGA

MECHANICAL / ENVIRONMENTAL (IDU)	
Power	90-264 VAC; 24 VDC or 48 VDC options; 20 W
Operating temperature	0^0…+50^0 C, humidity up to 90%
Size / Weight	440x44x172 mm / 2.3 kg

These specifications are subject to change without notice

* Available in a future SW release