UHP-231

Intelligent Satellite Router

The 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. 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 -48 VDC power input, and uniquely fast start on power up facilitate use of alternative power sources, such as solar batteries.

Key Features:

- Two independent DVB demodulators with separate software-switchable IF inputs and rate up to 500 Msps
- 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
- Efficient DVB-S2/S2X ACM modulations with 5% or 20% roll-off and support for wideband HTS transponders
- 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
- Ultra-low latency VSAT system with round-trip delay about 570 ms for TDMA mode of operation
- Various modes of operation and topologies: SCPC, TDM/TDMA, TDM/TDMA Mesh, Hubless TDMA
- HTS-ready 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, multi-level QoS
- Dual-stack IPv6/IPv4 routing architecture and Layer 2 bridging mode
- 1:1 automatic redundancy without external controllers or M:N Smart Redundancy

TECHNICAL SPECIFICATIONS: UHP-231 INTELLIGENT SATELLITE ROUTER

NETWORK		
Topology	Point-to-Point, Star, Mesh, Dual-Gateway, Hubless	
Modes of operation	SCPC, SCPC DAMA, TDM/SCPC, TDM/TDMA Star/Mesh, Hubless TDMA, Spectrum Analyzer	
Network role	SCPC Modem, TDM/TDMA Terminal or Hub, Universal Controller of HTS Hub, Hubless Slave or Master	
TDM (SCPC) CHANNEL	MODULATOR	DEMODULATOR
Standard	DVB-S2 / DVB-S2X with Adaptive Coding and Modulation	
Channels	One universal SCPC/TDMA modulator	Two demodulators with selectable IF inputs
Modulation	QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 128APSK, 256APSK; Roll-off: 5% or 20%	
FEC	Most of DVB-S2 & DVB-S2X MODCODs	All DVB-S2 & DVB-S2X MODCODs
Symbol Rate	300 ksps - 64 Msps; step 1 ksps (51 Msps @32APSK, 43 Msps @64APSK)	300 ksps - 500 Msps
Data Rate	150 kbps - 225 Mbps	
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP	
TDMA CHANNEL	MODULATOR	DEMODULATOR
Standard	LDPC TDMA with Adaptive Coding and Modulation	
Channels	One universal SCPC/TDMA modulator	Eight-channel MF-TDMA demodulator
Modulation	BPSK, QPSK, 8PSK, 16APSK; Roll-off: 5%, 20%	
FEC	1/2, 2/3, 3/4, 5/6	
Symbol Rate	100 ksps - 11 Msps; step 1 ksps	100 ksps - 22 Msps; step 1 ksps
Data Rate	100 kbps - 35 Mbps	100 kbps - 70 Mbps
TDMA Protocol	Frame 50 -1000 ms, 14 slot sizes, manageable minimal bandwidth; 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, PAT, proxy ARP, L2 Bridging, TCP Acceleration, Jumbo frames, AES-256, X.509	
Protocols	IPv4/IPv6, IGMP, cRTP, SNMP, RIP, OSPF, SNTP, TFTP, PPP, DHCP, DHCP Relay, OpenAMIP	
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 (both inputs)	950-2150 MHz; Ref. 10 MHz/+5 dBm [RX1]; 13.5/18 VDC 0.75A; F type	
IF Tx	950-2150 MHz, -1…-46 dBm; Ref. 10 MHz/+5 dBm; 24V/3A; F type	
EMBEDDED COMPUTER		
Performance	Intel Celeron J1900 Quad Core Four Thread 2.0 GHz; Intel HD Graphics; DDR3L	
Interfaces	2 x Gigabit 10/100/1000 Base-T; USB 2.0; VGA	
MECHANICAL / ENVIRONMENTAL		
Power	90-264 VAC; 24 VDC or 48 VDC options; 48 W	
Operating temperature	0…+50 ℃	
Size / Weigh	440x44x170 mm / 2.3 kg	