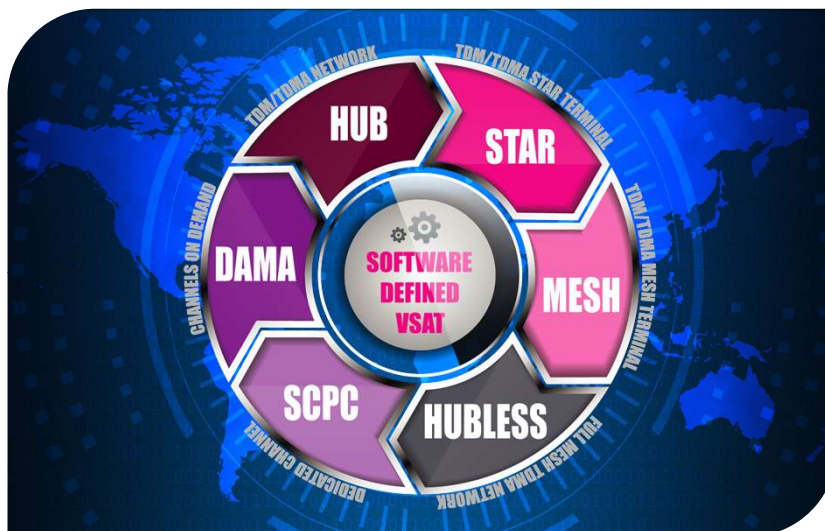# UHP-200 SERIES

COMTECH

Universal Satellite Router

UHP-200 is a universal VSAT router with Software-Defined Architecture pioneered by UHP Networks. The device packs industry-highest processing capability into a very compact size with power consumption under 12W. It can process up to 450 Mbps of aggregate traffic. UHP-200 comprises two DVB demodulators, four TDMA burst demodulators, a universal TDMA/SCPC modulator and a powerful IP router 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-200 is a truly universal router which can operate as a star or mesh TDM/TDMA remote or as a Tx/Rx SCPC IP modem, or as a node in a Hubless TDMA (full mesh) network, or as a building block (universal controller) in a large TDM/TDMA Hub. This unique device can even implement multiple access protocols and sophisticated QoS, so that it can work as a fully-fledged TDM/TDMA Hub with one Outroute TDM and up to 8 Inroute TDMA carriers. UHP-200 can switch on-the-fly between the modes, using any of the 8 configuration profiles stored in the device.

Multiple demodulators allow simultaneous reception of two DVB (TDM or SCPC) carriers and a group of MF-TDMA carriers.

Small size, low power consumption and low count of active electronic components ensure highest reliability with over 200 000 hours MTBF.

Key Features:

o World's fastest VSAT router with aggregate throughput up to 450 Mbps and powerful UHP-RTOS

o Two independent DVB demodulators with separate software-switchable IF inputs and rate up to 500 Msps

o Efficient DVB-S2/S2X ACM modulations with 5% or 20% roll-off and support for wideband HTS transponders

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

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

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

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

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

o Superior IP router productivity up to 190 000 PPS and rich set of supported protocols, multi-level QoS

o Dual-stack IPv6/IPv4 routing architecture and Layer 2 bridging mode

o Industry's most compact full-scale Hub with multiple MF-TDMA channels and up to 2000 terminals

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

TECHNICAL SPECIFICATIONS: UHP-200 SERIES UNIVERSAL 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 Spectrum spreading with factors 2 and 4, maximum chip rate 11.7 Mcps	
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, 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
SPECTRUM ANALYZER	950-2150 MHz, Span 10 kHz - 1200 MHz; Sweep time 1-2 sec; Measurement range 30 dB; Freq accuracy: +/- 0.01% of Freq + 1.8% of span; Absolute Amp-accuracy: +/- 6 dB; Relative Amp-accuracy: +/-0.15 dB

Model	Housing	Dimensions, mm	Weight, kg	Operating voltage	Operating temperature
UHP-200	Compact	147x30x144	0.5	24 VDC or 100-240 VAC, 12W	0...+50 ℃
UHP-210	Board	130x20x140	0.1	24 VDC, 12W	-40...+60 ℃
UHP-220	Outdoor	157x90x318	2.3	24 VDC, 12W	-40...+60 ℃
UHP-230	Rackmount	440x44x170	1.7	100-240 VAC, 12W	0...+50 ℃
UHP-240	Dual	440x44x170	2.0	100-240 VAC , 24W	0...+50 ℃

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