romantis
Satellite communications

HUBLESS NETWORK

UHP-1000 SATELLITE ROUTER

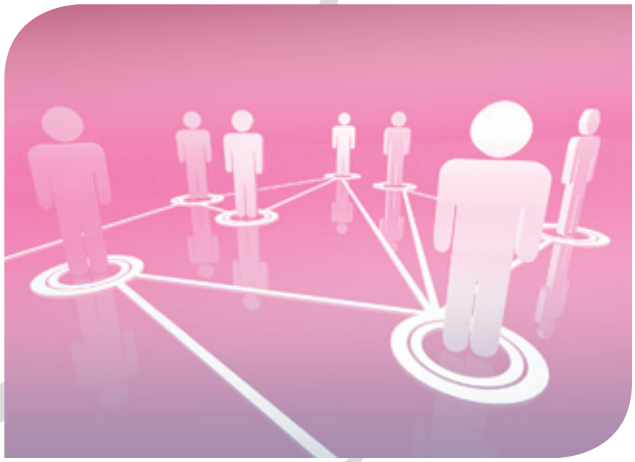
SCPC | TDM/TDMA | Hubless TDMA

HUBLESS VSAT PLATFORM

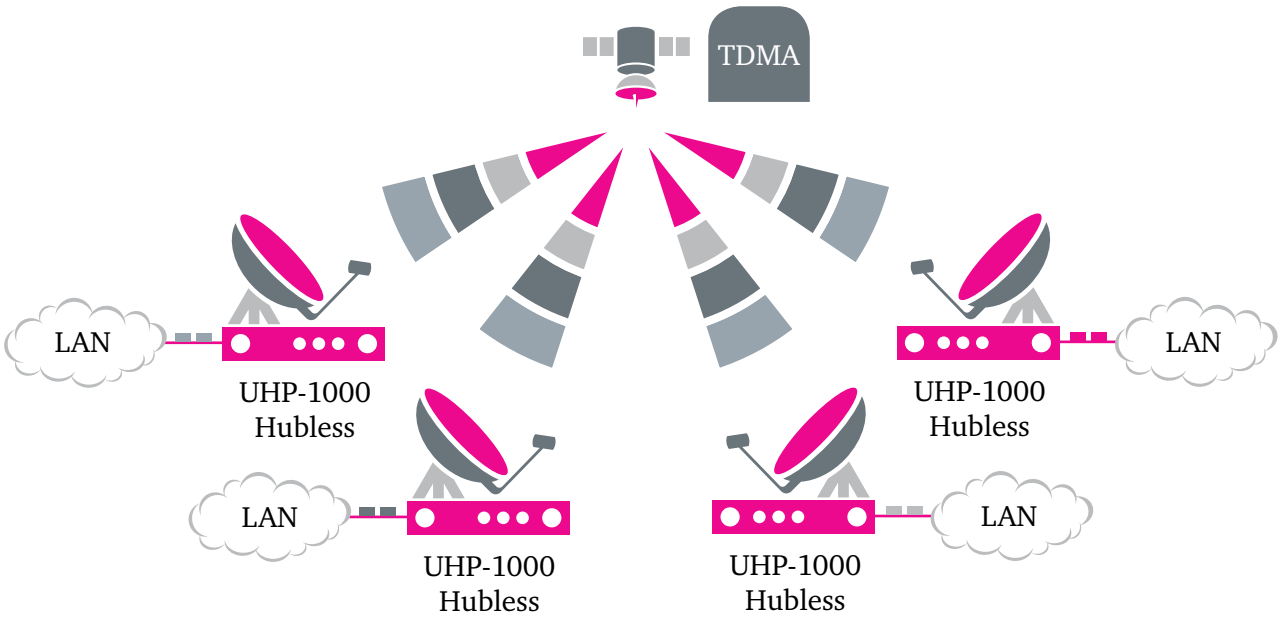
UHP Hubless is a VSAT technology providing single hop connectivity between all the sites. Hubless network comprises terminals interacting via a shared TDMA channel. The Station makes use of the TDMA channel to receive and transmit information ensuring dynamic resource distribution among both the stations and transmission routes. Hubless network ensures the best bandwidth on demand distribution, using the same satellite capacity for all the terminals and all the directions of transmission. UHP Hubless Network supports any topologies and seamlessly connects all the sites using IP protocol and built-in IP router. It is the most powerful product on the market in terms of throughput, flexibility and efficiency.
The minimal network can be deployed just in 120 kHz of satellite capacity with ability for further expansion up to 6.5 Mbps per carrier.

- First TDMA Full Mesh technology with bandwidth-efficient LDPC coding
- Innovative TDMA protocol with proven efficiency of 96% in comparison with SCPC channels
- Ultra-low latency VSAT system with round-trip delay about 570 ms.
- Support of VLAN, multi-level QoS, codec-independent handling of real-time traffic, TCP Acceleration
- Built-in adaptive 500-channel traffic manager specially designed for VSAT applications
- Satellite router is capable of receiving signals from two satellites simultaneously
- Web-based Network Management System allowing operating the network from everywhere
- Fast network startup — network is ready for use in less than a minute upon power-up
- Automatic Transmission Level Control compensates link fading caused by local weather conditions
- Low power consumption allows using satellite terminals with alternative power sources
- Compatible with majority of C, Ku and Ka-band RF Systems, supplies power and reference signals
- Easy to install and operate hardware, user-friendly software configuration
- Upgradable by just a software key to support other modes of operations: SCPC, TDM/SCPC, TDM/TDMA

Hubless UHP-1000 terminal includes an integrated DVB-S2 demodulator which can be used to receive some additional broadband carrier from the same or another satellite, boosting some star-topology heavy-traffic applications like Internet access, IPTV streaming etc.
With its low cost hardware and effective utilization of satellite capacity UHP Hubless technology is optimal solution for small-size networks of any topology and is above of any competition in networks with complicated topologies requiring Mesh connectivity. UHP Hubless is also a very efficient replacement for traditional SCPC networks, allowing to combine number of links within a single TDMA throughput with a proper QoS.



Typical Network Diagram of Hubless TDMA Network



UHP-1000 HUBLESS SATELLITE ROUTER SPECIFICATIONS

NETWORK			
Topology	«point-to-point», «star», «full mesh»		
Carrier mode	TDMA Full Mesh		
Scalability	Up to 252 terminals per carrier		
TDMA CHANNEL			
Data Rate	From 133 kbps (100 ksps @ QPSK 2/3) up to 6,5 Mbps (4 Msps @ QPSK 5/6)		
Modulation / Coding	QPSK, LDPC		
Demodulator Performance Eb/No, BER $<10^{-7}$	FEC	2/3	5/6
	E_b/N_0	4.2	4.8
QoS	3-level traffic prioritization, Committed Information Rate (CIR)		
ROUTER			
Performance	96 Mbps or 28000 pps		
Support	DSCP, end-to-end VLAN, RIP, L2 Bridging, CRTP, IGMP, TCP Acceleration		
Management	WWW, Telnet, SNMP, NMS Configuration Manager		
INTERFACES			
User LAN port	Ethernet 10/100Base-T, RJ-45		
Maintenance console	USB, B female		
IF Rx	950-2050 MHz (LNB DC – 13.5V/18V 0.75A, LO 10 MHz / +5 dBm), F type		
IF Tx	950-1550 MHz, –30…- 5 dBm, (LO 10 MHz / +5 dBm, BUC DC – 24V / 2A), F type		
MECHANICAL / ENVIRONMENTAL (IDU)			
Power	176-283 VAC, 10 W		
Operating temperature	0^0…+40^0C, humidity up to 90%		
Size / Weight	147x144x29 mm / 530 g		

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