

UHP - UNIVERSAL VSAT PLATFORM

PRODUCT OVERVIEW



UHP-1000 Satellite Router



- Universal solution for geographically distributed telecommunication networks that works regardless of its location and development of local infrastructure
- Modern, reliable and easy to deploy VSAT platform
- Highly scalable network infrastructure with efficient utilization of satellite bandwidth
- UHP is all-in-one, all-sufficient solution for corporations, operators of fixed and mobile communications

UHP VSAT Platform overview

- Various modes of operation: SCPC, TDM/SCPC, TDM/TDMA, TDMA Full Mesh
- All topologies: “Point-to-Point”, “Star”, “Hybrid”, “Full Mesh”
- High-speed communications with throughput up to 86 Mbps per terminal
- DVB-S2 VSAT technology with bandwidth-efficient LDPC coding in TDMA channel
- Innovative TDMA protocol with proven efficiency of 96%
- Built-in adaptive 500-channel traffic manager specially designed for VSAT
- 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
- Web-based Network Management System
- Low power consumption allows using terminals with various power sources

Competitive Advantages

- Single device for any level of network hierarchy
- All-IP VSAT technology without any excess encapsulations
- Industry the best efficiency of bandwidth utilization
- Any topologies and modes of operation
- High-performance, adoptive TDMA algorithm
- Multilevel, adaptive QoS mechanism
- High throughput and routing performance
- Easy to install and operate hardware
- User-friendly software configuration
- Industry lowest cost of ownership
- Fast network startup

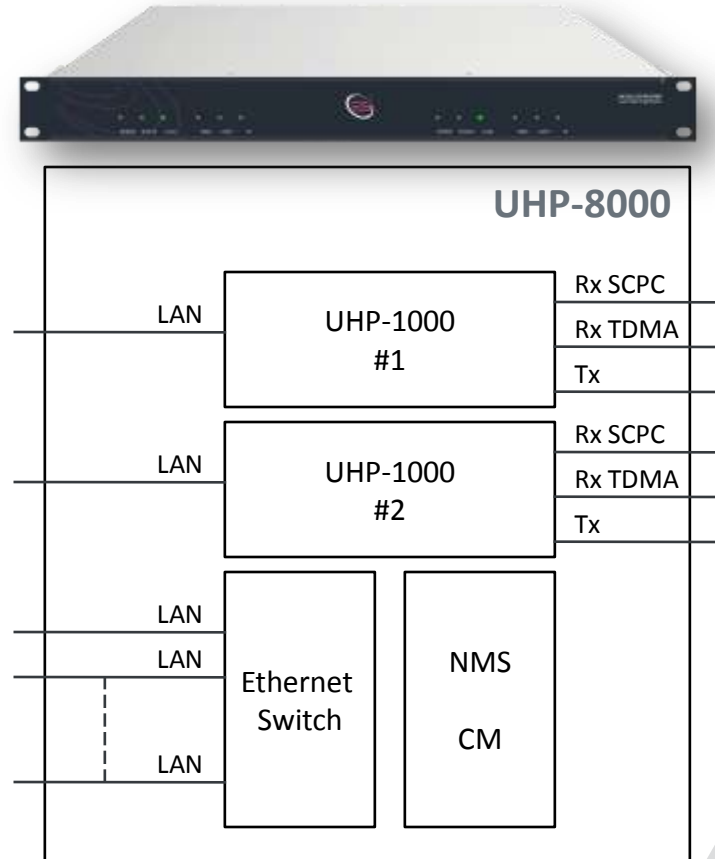
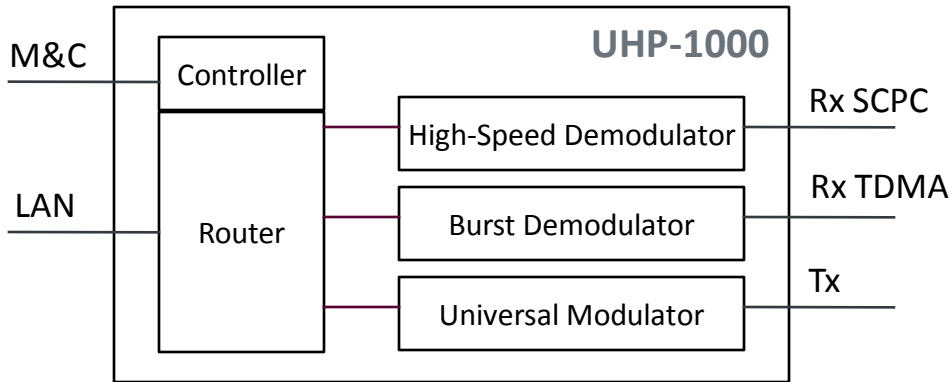


Modes of operation

UHP Satellite Router is “all-in-one” technology with architecture based on single, universal hardware platform supporting various functionality. All supported modes of operation are software selectable without need in hardware replacement or on site visits:

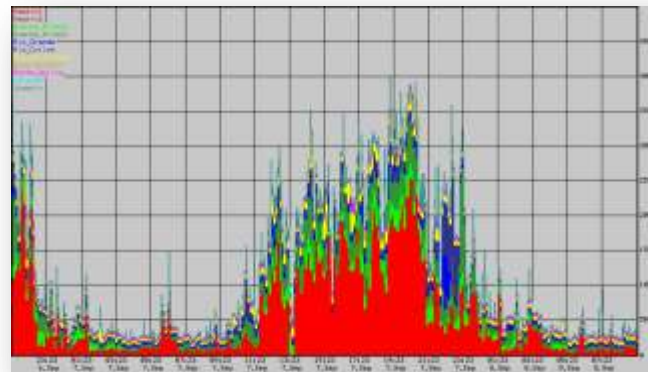
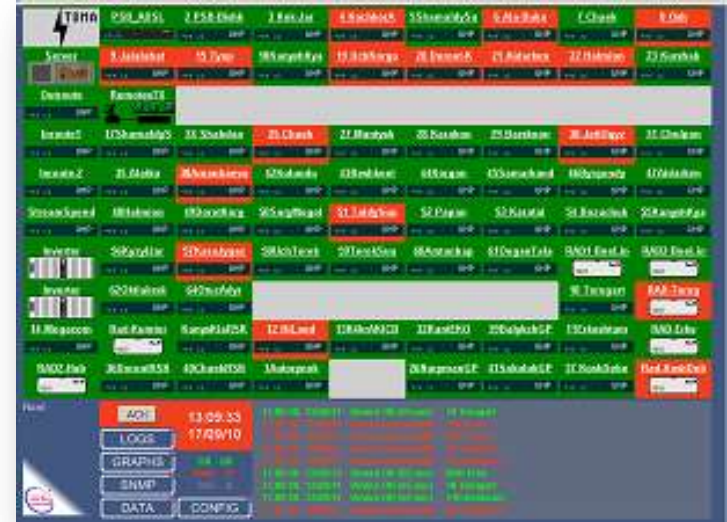
- **TDM/TDMA STAR Terminal** acts as a remote earth station of TDM/TDMA network, communicating with network Hub with “Star” topology
- **TDM/TDMA MESH Terminal** is remote station of TDM/TDMA networks that supports “Mesh” topology with another terminals
- **TDM/TDMA Hub** performs network management and gateway functionality for TDM/TDMA and TDM/TDMA Mesh terminals
- **TDM/TDMA Inroute** is additional Inroute (TDMA) channels for TDM/TDMA Hubs allowing to increase network bandwidth and number of supported terminals
- **SCPC Station** used to implement dedicated SCPC channels of any asymmetry or can be a part of TDM/SCPC multisite network
- **Hub-less Station** allows deploying autonomous networks where each earth station communicates with any other via common TDMA carrier both on transmit and receive path

UHP Router Architecture



Network Management System

- Based on Linux mini-server
- Operating from the flash memory
- Power-interruptions stable
- Access and management with HTTP
- Multi-user access
- Customized graphs
- Traffic statistics
- Network configuration and control
- Routing and QoS configuration



Specifications



NETWORK	Topology	«point-to-point», «star», «half mesh», «full mesh»
	Carrier modes	SCPC, TDM, TDMA
	Scalability	Up to 31 Inroutes per network, up to 7812 terminals per network
TDM CHANNEL	Data Rate	from 250 kbps (250kSps QPSK 1/2) up to 86 Mbps (32MSps 8PSK 9/10)
	Modulation / Coding	QPSK, 8PSK, RSV / LDPC&BCH
	QoS	3-level traffic prioritization, adaptive 500-channels-Traffic Shaper
TDMA CHANNEL	Data Rate	from 133 kbps to 6,5 Mbps
	Modulation / Coding	QPSK, LDPC
	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
	S&M console	USB, B female
	IF Rx	950-2050 MHz (LNB DC - 13.5V/18V 0.75A), F type
	IF Tx	950-1550 MHz, -30...- 5 dBm, (10MHz/+5 dBm, DC 24V/2A), F type

		BER=10 ⁻⁷	FEC	Eb/No
TDM (SCPC)	DVB-S QPSK	1/2		3,7
		2/3		4,0
		3/4		4,6
		5/6		5,1
		7/8		5,8
	DVB-S2 QPSK	1/4		0,7
		1/3		0,6
		2/5		0,7
		1/2		1,0
		3/5		1,5
		2/3		1,9
		3/4		2,3
		4/5		2,7
		5/6		3,0
		8/9		3,7
9/10		3,9		
DVB-S2 8PSK	3/5		3,0	
	2/3		3,7	
	3/4		4,4	
	5/6		5,4	
	8/9		6,5	
TDMA	QPSK	2/3		4,2
		5/6		4,8

Dedicated Channels

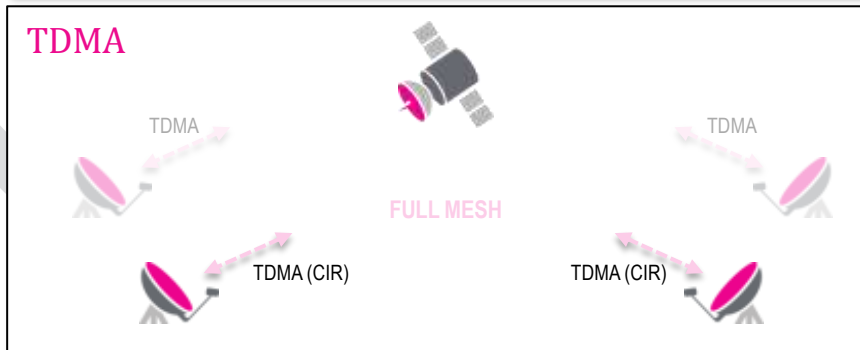
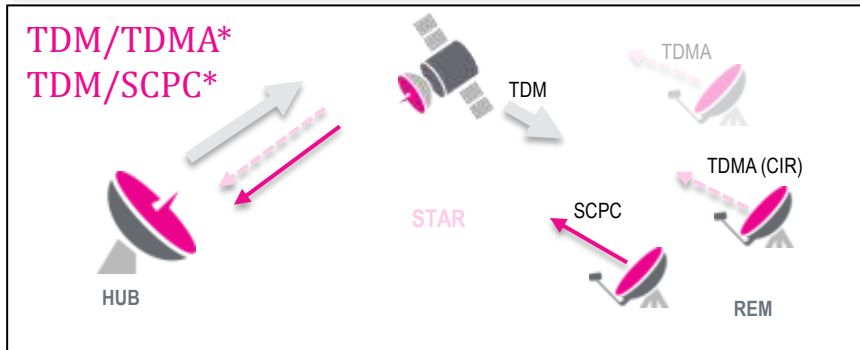
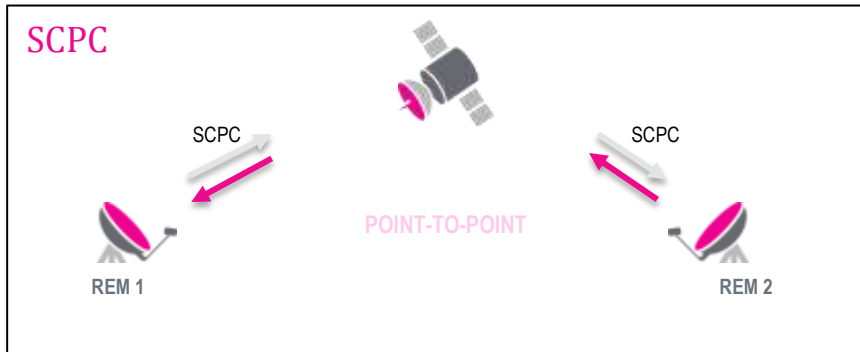
- Multi-purpose trunk channels
- Transmission of real-time traffic
- GSM Backhaul
- Connection of remote offices
- Content/data delivery

UHP Advantages:

- High-speed transmission
- Low latency and jitter
- Minimal CAPEX and OPEX



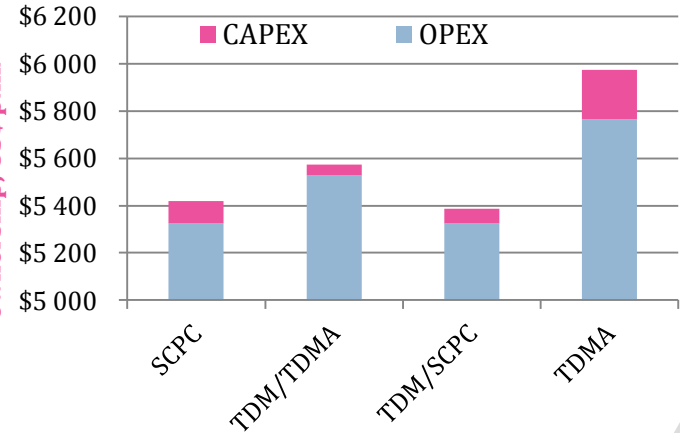
Dedicated Channels - realization



128 kbps channel - cost of ownership, US\$ p.m.



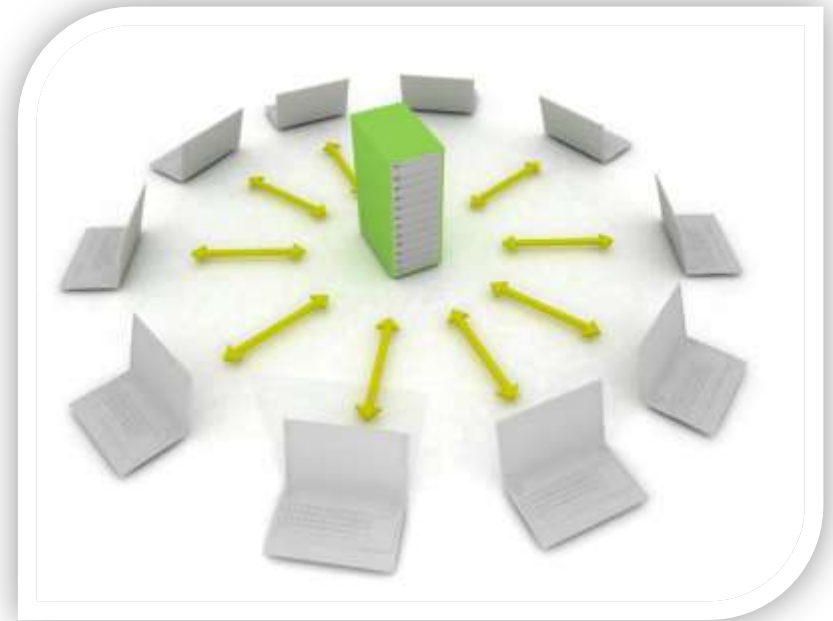
1024 kbps channel - cost of ownership, US\$ p.m.



* Within the network of 50 remotes

Star-topology networks

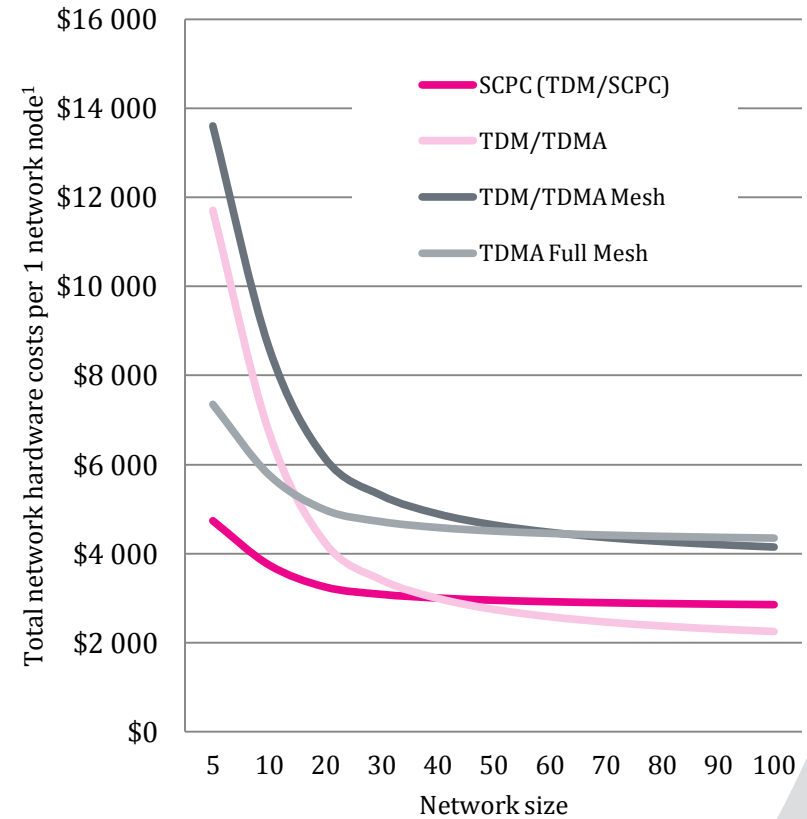
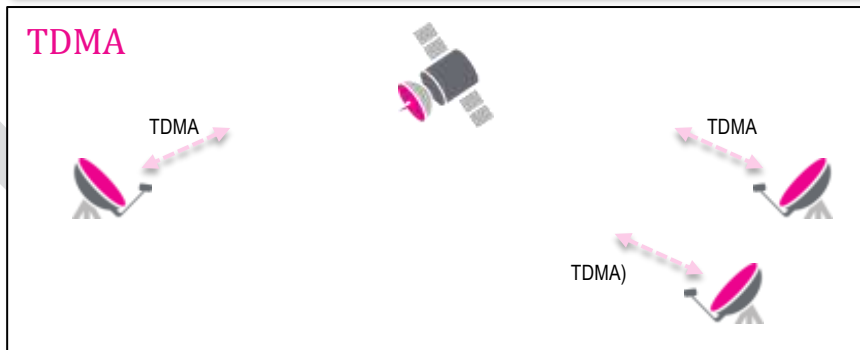
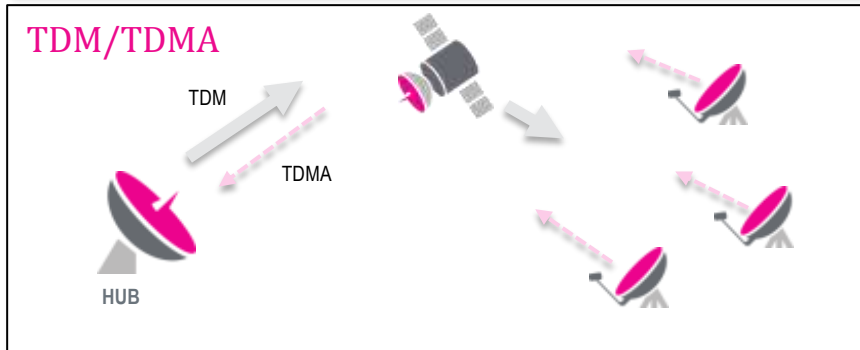
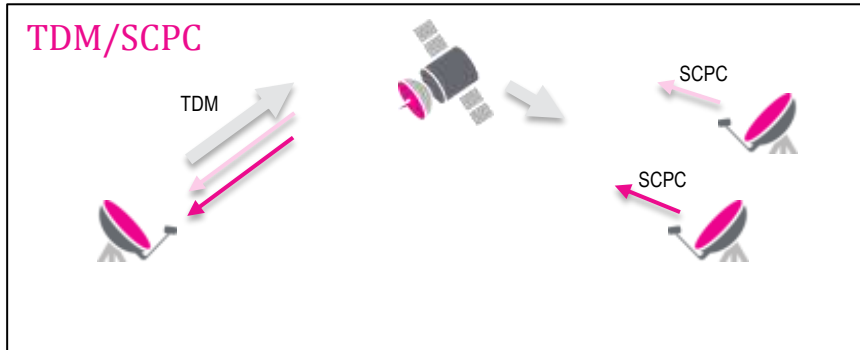
- Corporate Networks
- Broadband Access, UTS
- Redundancy Networks
- GSM Backhaul
- SCADA, M2M



UHP Advantages:

- Efficient capacity utilization
- Industry lowest CAPEX and fast deployment
- Full flexibility of network topology and mode of operation

Star-Topology Networks - Realization



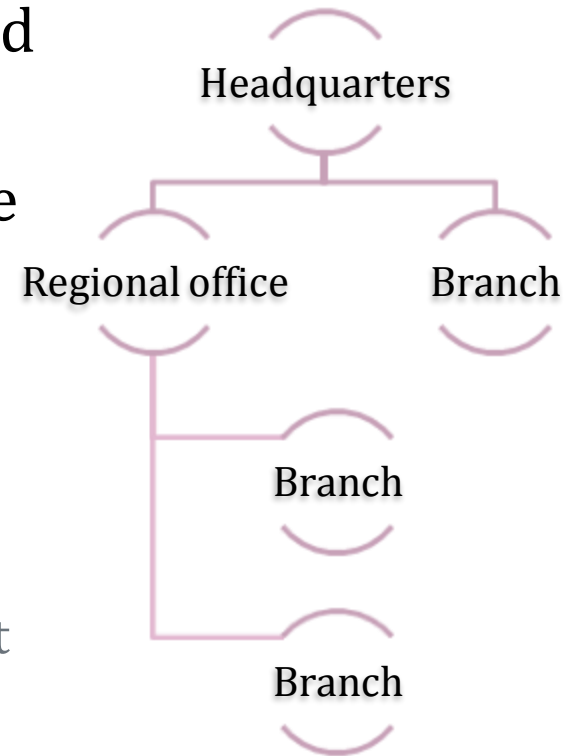
¹⁾ Including Hub with ODU (2.4m/8W) and remote terminals (1.2m/2W) with satellite routers

Multi-level topology networks

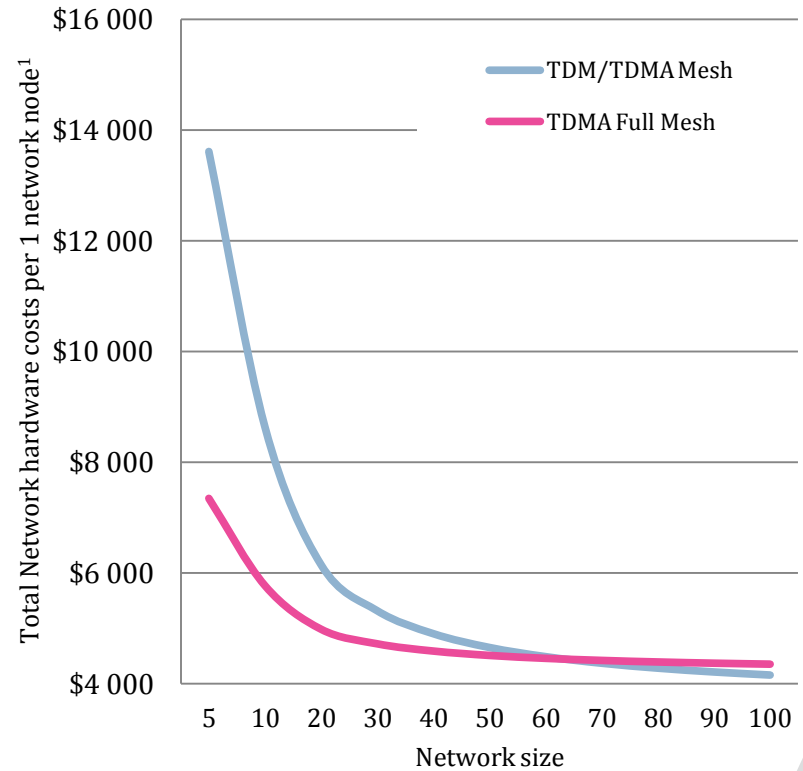
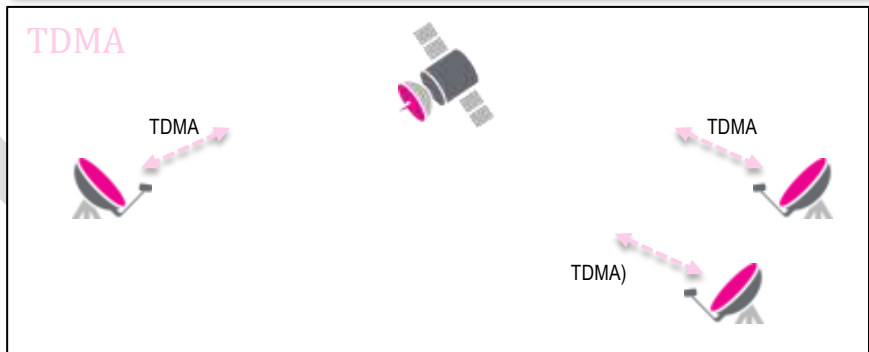
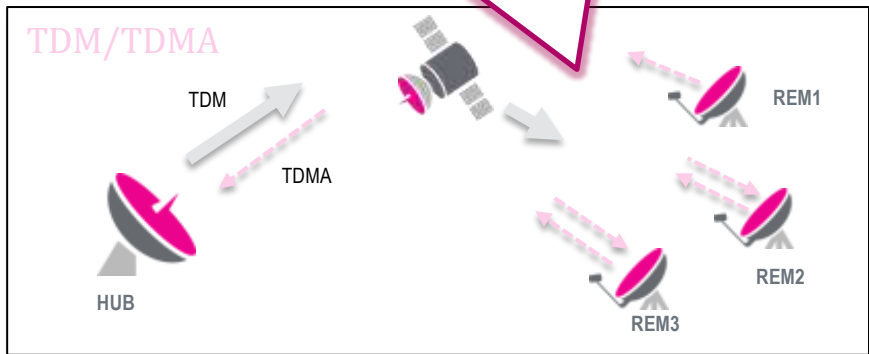
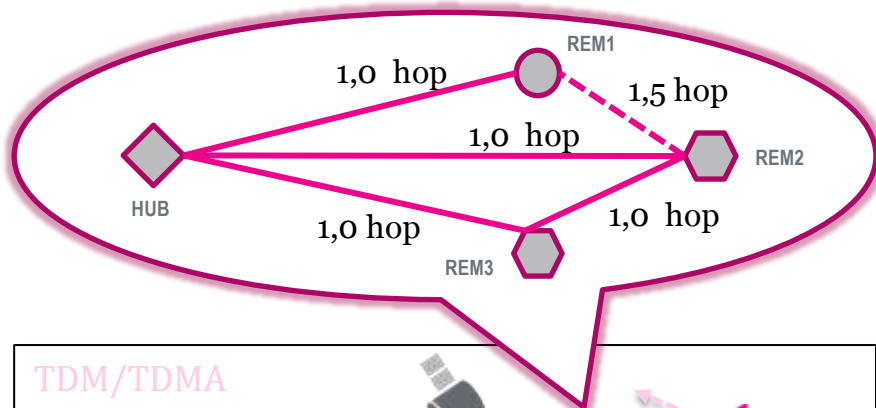
- Corporate Networks with advanced regional hierarchy
- Telephony Networks with multiple gateways
- Multi-level Videoconferencing

UHP Advantages:

- Any topology without HW replacement
- Efficient capacity utilization
- High scalability



Multi-level topology networks - Realization



¹⁾ Including HUB with ODU (2.4m/8W) and remote terminals (1.2m/2W) with satellite routers

Communications on the move

- Mobile, interactive, self-pointing, fast-deployable systems
- New-generation, IP-based Satellite News Gathering Systems
- Broadband, two-way communications on the move

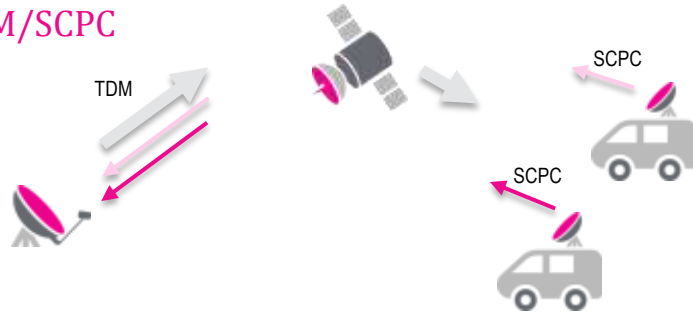
UHP Advantages:

- Minimal CAPEX with wide scalability
- Light-weight, compact size
- High reliability and efficiency

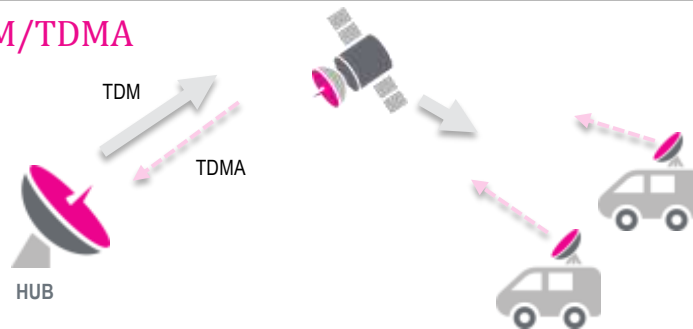


Mobile Satellite Communications - Realization

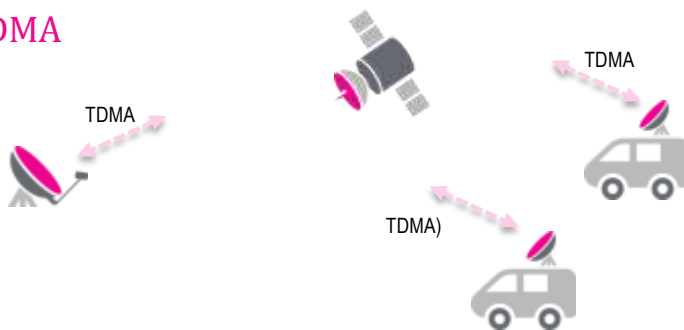
TDM/SCPC



TDM/TDMA



TDMA



Compatible antenna systems:

