Comtech ELEVATE HUB

TDM/DRAM Network

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Comtech ELEVATE is a scalable, reliable, software- defined solution that brings together the best of Comtech's popular Heights and MF-TDMA VSAT platforms in a first-of-its-kind leading-edge architecture featuring D-RAM (Dynamic Return Access Modes) that allows dynamic seamless shifting between MF-TDMA and H-DNA waveforms.

Comtech's software-defined technology allows the creation of private VSAT Networks of any size and topology with unlimited potential for development.

Comtech ELEVATE is a proven solution that would empower seamless integration of hybrid multi-provider and multi-layered satellite bandwidth resources. It is powered through an ultra-intelligent VSAT platform that can fast-track your transformation. By using virtualization, cloud computing, and Software-Defined architecture, you can accomplish your mission.

Comtech ELEVATE addresses the real need for an intelligent VSAT solution capable of serving low traffic SCADA-like applications and high-performance gigabit networks driving an array of bandwidth-hungry applications from cellular backhaul to mobile assets over a single VSAT platform.

Key Features:

- Expand – Software-defined network that can support over 500,000 remote sites per service area (hub outbound carrier)

- High Outbound throughput – Each service area (hub outbound carrier) can support ~2.5Gbps outbound

- Highest Return Speed in Industry – Remote VSAT terminals can scale from a 2Kbps to over 200Mbps using a single hardware platform

- H-DNA (High – efficiency Dynamic SCPC Network Access)

- Fastest User Data Response – 30ms bandwidth allocation algorithm, 0.1ms minimum allocation duration

- Lowest Power Consumption in Industry – Typically, <12W per remote VSAT IDU

- Automatic and Dynamic Selection of Return Waveform – D-RAM simultaneously supporting TDMA, H-DNA, SCPC

- Smarter For Multiple Bandwidth Applications - from IoT applications in connected agriculture to ATM banking networks, while concurrently allowing more megabit-hungry services, like cellular backhaul, gaming, and video, using the same solution

- Best of all - it integrates multi-orbit, multi-band, multi-operator, And Multi-provider connectivity for Maritime, Aerospace, and Land mobility platforms

- Software-Defined Redundancy Options – Hub Element Redundancy from 1:1 to 1:250, Remote Redundancy, Geographic Redundancy

- NMS (M&C) Scale – Supports >500,000 remote VSAT terminals per NMS install

- NMS APIs – Offers multiple northbound APIs to support manager of managers OSS/BSS orchestration

- NMS Data Collection – Supports multiple ways to perform logging, trending, export, and access through APIs of historical and current data
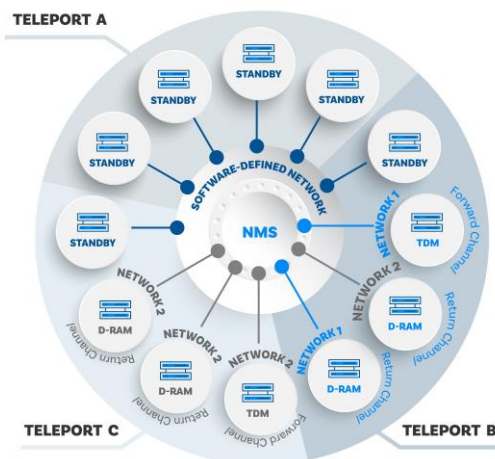
Specifications

Network

Topology	Star, Mesh, Dual-Gateway
Network size	Up to 500 000 remotes
Redundancy	M:N Local-/Geo- Redundancy
Frequency bands	C, X, Ku, Ka, including multi-beam HTS satellites GEO/MEO/LEO

Forward Channel

Standard	DVB-S2/S2X ACM
Channels	Up to 256 Time Slices
MODCODs	QPSK to 256APSK
Symbol Rate	Up to 500 Msps, step 1 ksps
Roll-off	5%, 20%

D-RAM Return Channel

Waveforms	MF-TDMA, H-DNA, SCPC
Demodulators	Up to 250 per each Slice

MF-TDMA Demodulator

Hardware	1U CEL-240 Dual Universal Controller
Channels	Up to 16 MF-TDMA per 1 demod
MODCODs	BPSK, QPSK, 8PSK, 16APSK / LDPC
Symbol Rate	0.1-11 Msps per carrier, step 1 ksps
Roll-off	5%, 20%
TDMA Protocol	Frame 50 -1000 ms, 14 slot sizes
MF hopping	Fast by modulator and demodulator
BW allocation	Deterministic and Slotted Aloha
Spreading	Factors 2 and 4, max. 11.7 Mcps

H-DNA Demodulator

Hardware	1U HRX-16 H-DNA demodulator
Channels	Up to 24 carriers
MODCODs	BPSK to 32-ARY
Symbol Rate	0.1-15 Msps per carrier
Roll-off	5%, 20%

SCPC Demodulator

Hardware	1U CEL-240 Dual Universal Controller
Standard	DVB-S2/S2X ACM
Channels	2 Demodulators per controller
MODCODs	QPSK to 256APSK
Symbol Rate	Up to 500 Msps, step 1 ksps
Roll-off	5%, 20%

Routing & QoS

Protocols	IPv4/IPv6, IGMP, cRTP, SNMP, RIPV2, SNTP, TFTP, PPP, DHCP, DHCP Relay, OpenAMIP
Support	DSCP, multiple IP/VLANs, PAT, proxy ARP, L2 Bridging, TCP & GTP Acceleration, Jumbo frames (2KB MTU), AES-256, X.509
QoS	8-level prioritization, traffic policies, CIR, MIR, group QoS, hierarchic traffic shaper, FAP

Network Management System (CEL-HTS-NMS)

Hardware	1U server, Intel Xeon E3 3.0 GHz, 8GB RAM DDR4, 1TB/SATA, OS Linux
Redundancy	1+N Local-/Geo- redundancy (CEL-NMS-RED)
Networks	Up to 64 networks per NMS
VNOs	Up to 25 VNOs per each hierarchy level
Statistics	Gathering interval: from 5 sec.; Disc use: 30 Mbytes/year/terminal
Optional Features	Mobility (roaming, footprints, tracking), HTS, Smart Geo-Redundancy
Monitoring	Map view, weather, graphs, logs, real-time monitor, alerts, notifications
Configuration	Basic settings, IP protocols, routing, notifications, GXT service footprints, roaming, Basic and RF settings, IP protocols, routing, services
Maintenance	Profile, Tx level and TLC, password, set SNMP, set DTTS source, blind commands and messages, SW update, HTTP and Telnet access, redundancy management

Comtech ELEVATE NMS

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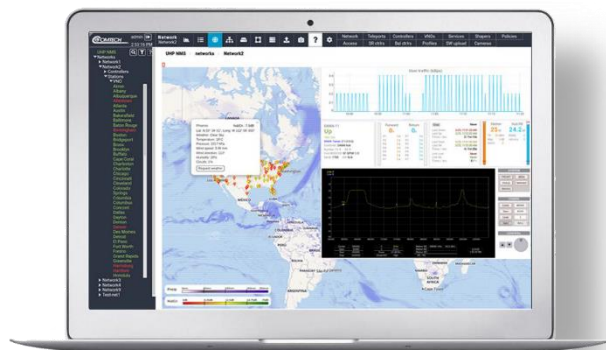
About Us

Comtech Telecommunications Corp. is a leading global technology company providing terrestrial and wireless network solutions, next-generation 9-1-1 emergency services, satellite and space communications technologies, and cloud native solutions to commercial and government customers around the world. Our unique culture of innovation and employee empowerment unleashes a relentless passion for customer success. With multiple facilities located in technology corridors throughout the United States and the world, Comtech leverages its global presence, technology leadership and decades of experience to create the world's most innovative communications solutions.