



COMTECH™



Comtech ELEVATE CEL-800 Series

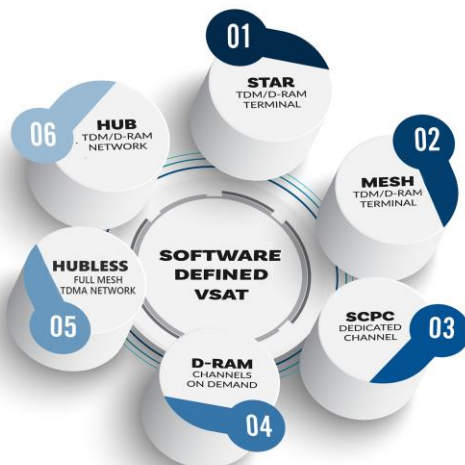
Multi-Carrier Universal Satellite Router

Comtech ELEVATE-800 is a powerful universal VSAT router with Software-Defined Architecture. The device packs industry-highest processing capability into a very compact size with low power consumption. It can process up to 500 Msps of aggregate traffic. CEL-800 comprises up to eight DVB demodulators, multichannel TDMA burst demodulators, and up to eight universal wideband TDMA/SCPC modulator and a powerful IP router. The high processing capability allows implementation of uniquely efficient protocols for network access, resource allocation and data encapsulation as well as support for advanced MODCODs.

Comtech ELEVATE-800 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. Multiple demodulators allow simultaneous reception of two DVB (TDM or SCPC) carriers and a group of MF-TDMA carriers.

Comtech TDM/TDMA Hub has a high-availability modular design, based on principles of distributed computing. The Hub is composed of Universal Controllers (UC), interconnected with Gigabit Ethernet links on the data side and with IF splitter/ combiner on the IF side. Each UC is implemented with a single CEL-200

CEL-800. Depending on the software license activated, a specific UC can operate as Outroute Controller (OC) generating a single Outroute TDM (DVB) carrier, Multi-Carrier (MCD) Inroute Controller (IC) capable of receiving multiple TDMA carriers, SCPC DAMA transmitter or receiver. UC may have no specific license installed; in this case it serves as a standby resource in the Comtech Smart Redundancy scheme.



Key Features:

- World's fastest VSAT router with aggregate throughput up to 500 Msps and powerful Comtech ELEVATE Universal Satellite Router
- Up to 8 x 64 Msps wideband modulators over single IF TX output
- Up to eight independent DVB demodulators over single IF inputs and rate up to 176Msps
- 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 97% 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,
- HTS-ready VSAT with support of multiple beams, bands, satellites reception with traffic balancing
- Superior IP router productivity up to 190 000 PPS per carrier and rich set of supported protocols, multi-level QoS
- Layer 3 IPv4/IPv6 routing architecture and Layer 2 bridging mode
- 1:1 automatic redundancy without external controllers or Local/Geo M:N Smart Redundancy
- Does not require external IF combiners/dividers
- H-DNA (High – efficiency Dynamic SCPC Network Access)

Specifications

Network

Topology	P2P, Star, Mesh, Dual-Gateway
Modes of operation	SCPC, TDM/TDMA, TDM/DRAM, Hubless TDMA, Universal Hub Controller, Spectrum Analyzer
Network role	TDM/D-RAM Hub, Universal Controller of HTS Hub
Frequency bands	C, X, Ku, Ka, including multi-beam HTS satellites GEO/MEO/LEO

Demodulators Options

16 x DVB Demodulator

Standard	DVB-S2 / DVB-S2X ACM
Channels	2 with selectable IF inputs
MODCODs	QPSK to 256APSK
Symbol Rate	300 ksps - 500 Msps
Roll-Off	5%, 20%

8 x MF-TDMA Demodulator

Channels	Up to 8 MF-TDMA demodulators
MODCODs	BPSK to 16APSK
Symbol Rate	100 ksps – 22 Msps
Multi-frequency	Fast MF hopping
Roll-Off	5%, 20%

Universal D-RAM Modulator Options

8 x TDMA Modulator

MODCODs	BPSK, QPSK, 8PSK, 16APSK / LDPC
Symbol Rate	100 ksps to 11 Msps. MF Hopping
Multi-frequency	Fast MF hopping
Roll-Off	5%, 20%
Spreading	Factors 2 and 4, max. 11.7 Mcps

8 x HDNA Modulator

MODCODs	BPSK to QPSK 32ARY
Symbol Rate	40 ksps to 45 Msps.
Roll-off	5%, 10%, 20%

8 x DVB (SCPC) Modulator

Standard	DVB-S2 / DVB-S2X ACM
MODCODs	QPSK to 256APSK
Symbol Rate	300 ksps to 64 Msps, step 1 ksps
Roll-Off	5%, 20%

Mechanical/ Main Power Operating Temperature	Housing	Dimensions, mm	Weight, kg	Operating voltage	Op-Temp	Humidity, non-condensing
Elevate-800	Rackmount	440x44x596	12	100-240 VAC, 150W	0...+50 °C	Up to 95%

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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.

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Rev. EL-2.0 02/02/2023

Routing & QoS

Protocols	IPv4/IPv6, IGMP, cRTP, SNMP, RIP, 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
Performance	Up to 190 000 packets per second
Management	HTTP interface, SNMP, Telnet, NMS

Spectrum Analyzer (Optional)

Bandwidth	950-2150 MHz; accuracy: ±0.01%
Sweep time	1-2 sec
Span	Span 10 kHz - 1200 MHz; accuracy: ±1.8%
Measurement range	30 dB; Accuracy: ±6 dB; Relative: ±0.15 dB

Interfaces

User LAN	2 x SFP+ ports
Maintenance	RS-232 console
IF Rx (Timing)	1 x Internal Splitter with 8 ports; 950-2150 MHz; Ref. 10 MHz/+5 dBm RX2; 13.5/18 VDC 0.75A; F type

Interfaces (ST)

IF Rx (LNB)	8 x 950-2150 MHz; Ref. 10 MHz/+5 dBm RX1; 13.5/18 VDC 0.75A; F type
IF Tx	8 x 950-2150 MHz, -1...-46 dBm; Ref. 10 MHz/+5 dBm; 24V/3A; F type

Interfaces (IS)

IF Rx (LNB)	1 x Internal Splitter with 8 ports; 950-2150 MHz; Ref. 10 MHz/+5 dBm RX1; 13.5/18 VDC 0.75A; F type
IF Tx	1 x Internal Combiner with 8 ports; 950-2150 MHz, -1...-46 dBm; Ref. 10 MHz/+5 dBm; 24V/3A; 8 x F type

Interfaces (WB)

IF Rx (LNB)	4 x 950-2150 MHz; Ref. 10 MHz/+5 dBm RX1; 13.5/18 VDC 0.75A; F type
IF Tx	4 x 950-2150 MHz, -1...-46 dBm; Ref. 10 MHz/+5 dBm; 24V/3A; F type
Wideband Modulator	DVB-S2 / DVB-S2X ACM; QPSK to 256APSK; 300 ksps to 200 Msps, step 1 ksps
Roll-Off	5%, 20%