

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.

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 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 kbps - 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 kbps - 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 kbps 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 kbps 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 kbps to 64 Msps, step 1 kbps
Roll-Off	5%, 20%

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: $\pm 0.01\%$
Sweep time	1-2 sec
Span	Span 10 kHz - 1200 MHz; accuracy: $\pm 1.8\%$
Measurement range	30 dB; Accuracy: $\pm 6$ dB; Relative: $\pm 0.15$ 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 kbps to 200 Msps, step 1 kbps
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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Rev. EL-1.6 © 2022 Comtech 10/26/2022

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