Overview
The Advanced VSAT Solutions portfolio provides high-performance satellite-based communication solutions for a diverse range of applications, including mobile backhaul with RAN optimization, IP trunking and backhaul, maritime and offshore networks, corporate and enterprise networks, emergency and disaster recovery. Incorporating advanced technologies developed by Comtech EF Data, AHA Products Group, Memotec and Stampede, the solutions provide unmatched performance, industry-leading bandwidth efficiencies and network optimization – while minimizing Total Cost of Ownership.

The CXU-810 RAN Optimizer is a modular mobile backhaul platform that delivers 2G/3G Radio Access Network (RAN) aggregation and traffic optimization. Designed to interoperate with the CDM-840 Remote Router with integrated RAN optimization, the CXU-810 can be deployed at the BSC/RNC locations and other aggregation points across the RAN. The Advanced VSAT Solutions enable mobile operators to optimize and aggregate traffic, and free up capacity for quick deployment of new services over their existing networks at lower costs.

The CXU-810 is available in four models:
- CXU-810-16E Up to 16 E1
- CXU-810-32E Up to 32 E1
- CXU-810-32S Up to 32 E1, STM-1 Interface
- CXU-810-63S Up to 63 E1, STM-1 Interface

Features
- E1 aggregation
- Abis optimization
- TDM compression
- Transparent Pseudowire (cPWE) Compression
- Wide range of redundancy options

Typical Users
- Mobile Operators
- Satellite Service Providers

Common Applications
- Mobile Backhaul with RAN Optimization
- 2G/3G aggregation
- Congestion management to safeguard signaling and critical mobile applications
- Transparent Compressed Pseudowire (cPWE) over satellite backhaul
- Disaster recovery over satellite
**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>E1 Ports</th>
<th>STM-1</th>
<th>E1 Licenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXU-810-16E</td>
<td>16</td>
<td>-</td>
<td>Up to 16</td>
</tr>
<tr>
<td>CXU-810-32E</td>
<td>32</td>
<td>-</td>
<td>Up to 32</td>
</tr>
<tr>
<td>CXU-810-63S</td>
<td>-</td>
<td>2+2</td>
<td>Up to 63</td>
</tr>
</tbody>
</table>

**Interfaces**

- **Digital E1**
  - Fractional, channelized TDM
  - HDB3, AMI, NRZ or NRZi Encoding
  - E1 Balanced 120 Ohms or unbalanced 75 Ohms with adaptation cables (VHDCI connector)
  - AIS Relay

- **Synchronous Ethernet**
  - 10/100/1000Base-T Ethernet (RJ-45) or SFP plug-in module

- **STM-1**
  - STM-1 SDH channelized VC12 interface with APS 1+1 protection

**IP/Ethernet**

- Electrical and optical Synchronous Ethernet
- IP Static Routing
- DSCP marking for different streams

**Multi-service Compressed Pseudowire (cPWE)**

- ATM E1/VC12 pseudowire (with support for IMA)
- HDLC pseudowire
- VLAN pseudowire
- TDM compressed pseudowire (proprietary CESoP)

**Abis**

- Supports GSM FR, EFR, HR and AMR codecs
- Transparent GSM codec speech frame forwarding
- IDLE and silence suppression
- HDLC signaling frame extraction and forwarding
- Dynamic Abis map interface auto-configuration
- TRX channels usage real-time monitoring
- Signaling/Voice/Data traffic prioritization

**TDM**

- Non-blocking VC12 drop and insert support between E1 and STM-1 interfaces
- APS 1+1 on STM-1 SDH interfaces
- E1 alarms: red, yellow, near/far end LOS, LOF, AIS, RDI
- E1 interface test loop (L1, L2, L3)

**Management**

- Operator GUI Node Manager (EMS), with configuration, alarm status and real time performance monitoring
- CLI interface with ASCII script file generation
- Open standard SNMP NMS platform, including:
  - SNMP alarms trap forwarding (Northbound interface)
  - Network map status display
  - Alarm management
  - 24 hours /15mn bucket performance monitoring graphical display with up to 30 days history
  - Abis and Bearer interfaces detailed alarms and dedicated performance monitoring KPIs
  - Secured in-band node management (IP-based)
  - Secured remote software upgrade with fallback mode

**Synchronization**

- N×8 KHz, 10 MHz, 2.048 MHz, and 2.048 Mbps G.703 external clock reference input
- 8 KHz, 2.048 MHz, and 2.048 Mbps G.703 clock reference output
- Line synchronization (STM-1 or E1 interface and Ethernet SynchE), multiple input choice with automatic protection and up to 3 clock domains (model dependant)
Connectors
CXU-810-16E
2 x VHDCI | E1 (Abis or lub)
6 x RJ-45 | 10/100/1000Base-T Ethernet
2 x SFP | Gigabit Ethernet (optical)
1 x RJ-45 | EIA-232 console port
2 x BNC | External clock in/out
1 x DB-15 | Alarms port

CXU-810-32E
3 x VHDCI | E1 (Abis or lub)
6 x RJ-45 | 10/100/1000Base-T Ethernet
2 x SFP | Gigabit Ethernet (optical)
1 x RJ-45 | EIA-232 console port
2 x BNC | External clock in/out
1 x DB-15 | Alarms port

CXU-810-63S
2 x STM-1 | Optical STM-1
6 x RJ-45 | 10/100/1000Base-T Ethernet
2 x SFP | Gigabit Ethernet (optical)
1 x RJ-45 | EIA-232 console port
2 x BNC | External clock in/out
1 x DB-15 | Alarms port

CXU-810-32S
2 x STM-1 | Optical STM-1
6 x RJ-45 | 10/100/1000Base-T Ethernet
2 x SFP | Gigabit Ethernet (optical)
1 x RJ-45 | EIA-232 console port
2 x BNC | External clock in/out
1 x DB-15 | Alarms port

Available Options
Option | Type
--- | ---
E1 license | FAST
-48 VDC, Single Power Supply, Dual Feed | Hardware
-48 VDC, Redundant Power Supply, Dual Feed | Hardware
Gigabit Ethernet Multi Mode SFP | Hardware
Gigabit Ethernet Single Mode SFP | Hardware

Physical, Power & Environmental
- Dimensions (1RU) | 1.7” x 17.0” x 12.1” (4.32 x 43.2 x 30.7 cm) approximate
- Power Supply | 90-264 VAC, 47-63 Hz
- Operating Temperature | -40°C to 60°C (HW option)
- Storage temperature | -40°C to 80°C
- Humidity | 95% maximum, non-condensing

Power Consumption

<table>
<thead>
<tr>
<th>Model</th>
<th>Typical</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXU-810-16E</td>
<td>34 W</td>
<td>46 W</td>
</tr>
<tr>
<td>CXU-810-32E</td>
<td>38 W</td>
<td>50 W</td>
</tr>
<tr>
<td>CXU-810-32S</td>
<td>42 W</td>
<td>50 W</td>
</tr>
<tr>
<td>CXU-810-63S</td>
<td>42 W</td>
<td>50 W</td>
</tr>
</tbody>
</table>

Accessories
- 1:1 Redundancy Kits
- AC and DC Accessory Kits
- Adapter Cables

Regulatory
- Safety | EN60950-1 (2006) and A11
- EMC | ENS5022 (2006) and A1, A2
| ENS5024 (1998) and A1, A2