



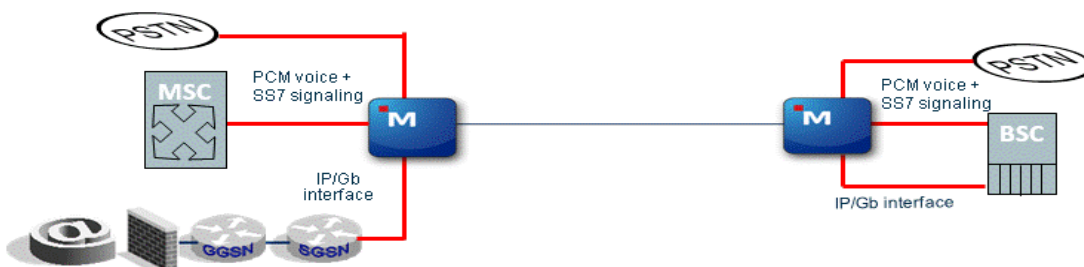
Overview

The CX-UD Series is Memotec's latest Digital Circuit Multiplication Equipment (DCME) offering. The CX-UD is a high capacity static trunk voice compression solution which, when installed across high cost links (typically over satellite or long leased lines), can compress standard TDM voice band traffic (G.711) by a factor of up to 16:1. At a time when telecom operators are struggling to deliver more bandwidth across their networks, employing DCME to shrink the backhaul of standard voice services is an easy way to free up TDM backhaul capacity to be used by other services, or to migrate TDM voice band services to IP infrastructure..

The CX-UD supports the latest DSP technology allowing for high capacity deployment of quality voice compression codecs such as G.723 (6.3 and 5.2 kbps) and Adaptive Multi-Rate (AMR) (12.2, 10.2, 7.95, 7.4, 6.7, 5.9, 5.15, and 4.9 kbps) to deliver the highest voice quality. Coupled with signaling, fax and modem communications, the CX-UD can be deployed in any voice environment. With over 20 yrs experience and thousands of trunks deployed, Memotec proudly stands behind our cost effective designs and the reliability of our products.

The CX-UD platforms, whether supporting 12, 18 or STM1 DCME are all available in a single 1U chassis. The series is available with three formats to support different deployment options. Designed with the utmost reliability in mind, CX-UD supports 1:1 hot standby redundancy options.

Typical Users
<ul style="list-style-type: none"> Telecom Operators Mobile Operators Satellite Service Providers
Common Applications
<ul style="list-style-type: none"> Inter-Telco Switch interconnection Inter-Media Gateway interconnection GSM: A and E Interface Voice Trunking



CX-UD DCME EDGE Gateways:

- CX-UD 1124** is a dedicated DCME platform supporting 24 T1/E1 ports across two VHDCI connectors. Available in 12 and 18 T1/E1 DCME options, with WAN being either single E1, bonded E1s, or IP/Ethernet. The CX-UD 1124 is ideal when redundancy is required and/or when it is preferred to connect the CX-UD 1124 to a patch panel (such as BNC panels, etc)

CX-UD DCME Core Gateways

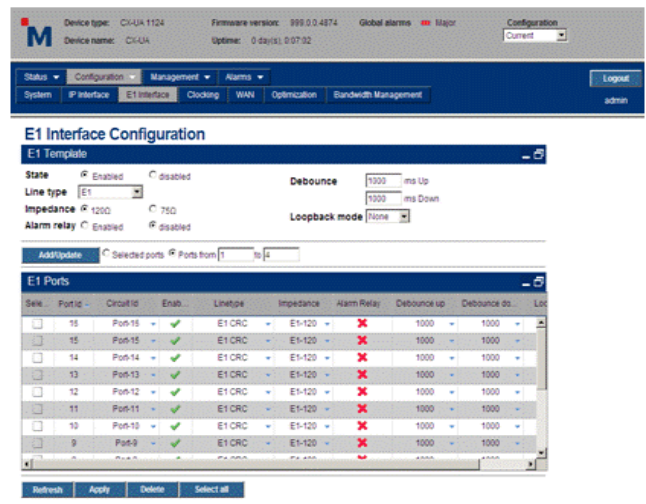
- CX-UD 1348** is a dedicated high capacity DCME concentration unit. Support for up to a full STM1 (63 VC12s) of DCME options, with WAN being either single E1, bonded E1s, or IP/Ethernet (point to point or point to multi-point), all in a single 1U chassis.

Note: Each CX-UA/UD also supports 6 electrical and 2 optical Gigabit Ethernet interfaces provide connectivity options for latest interfaces in the mobile environment.

Benefits	Features
Increased compression ratio up to 16:1 on voice trunks (recommend 12:1 on mobile network originated voice trunks)	Supports G.723.1 and AMR codecs with variable coding rates, coupled with silence suppression and Memotec Quality Assurance bandwidth management to deliver highest quality voice.
Bandwidth efficient support and guaranteed delivery of signaling information ensures highest deliverable CCR.	Signaling transparency for Common Channel Signaling (SS7, ISDN) or Channel Associated Signaling (R1, R2) with impairment protection.
Voice band traffic transparency for modem, fax, and video support.	Provides voice, fax, modem and video call detection and processing. Also, end-to-end continuity tone check, detection and regeneration
High capacity	Support ranging from 12 E1 to STM1 (63 VC12) DCME support.
High availability	Systems designed with high reliability components and duplicate hardware for high failure rate items (such as power supplies and fans). Also, 1:1 hot swap redundancy is available on all platforms.
Intelligent voice routing	Supports point to point and point to multipoint routing of individual voice channels across different type of voice infrastructures (E1, bonded E1s, or IP/Ethernet). Additionally, intelligently detects other Memotec DCME switches and automatically switches into Transcoder Free Operation (TFO) avoiding unnecessary voice decompression/compression cycles.
Transmission infrastructure	Supports either E1 and/or IP backhaul options allowing flexibility of backhaul infrastructure. Can be used across terrestrial TDM, metro Ethernet, microwave TDM/Ethernet, or satellite services.
Element Management	CX products support both Web and CLI scripting for element management.

Element Management & Performance Monitoring

CX-UA offers a graphic user interface (GUI) network element configuration and Network Monitoring Solution (CXWUG) tools.

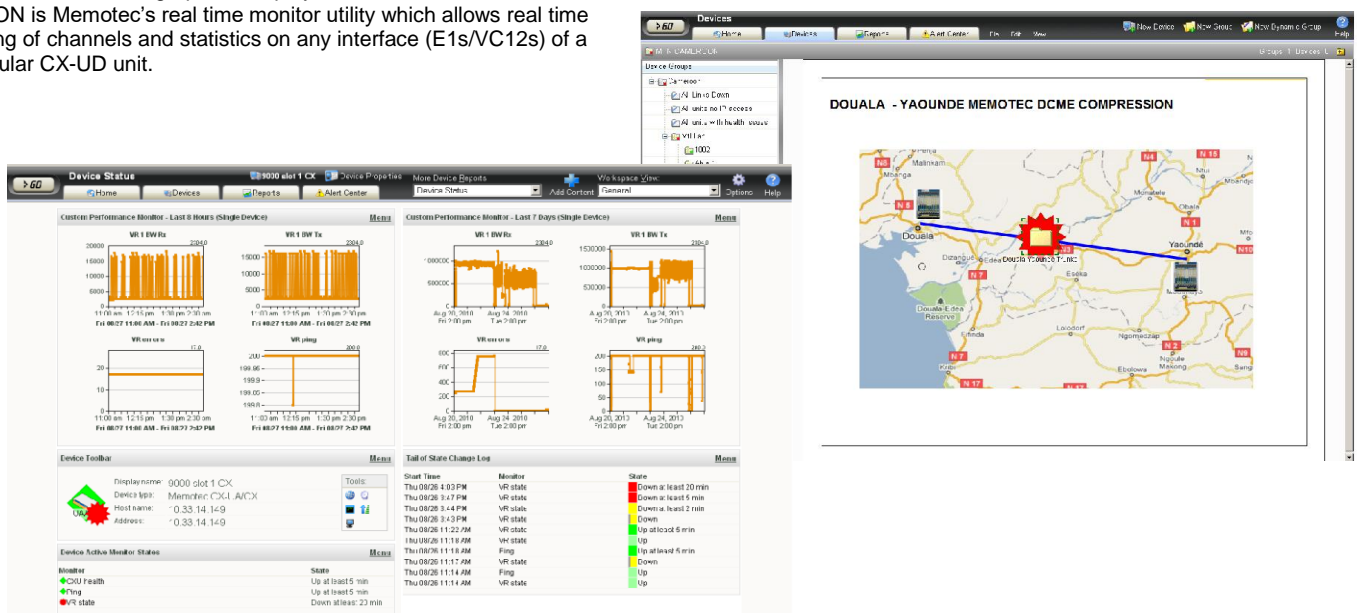


Graphical User Interface (GUI)

- Integral GUI is an intuitive and user friendly configuration tool and accompaniment to standard Command Line Interface (CLI). It allows for complete network configurations to be developed quickly and easily.
- The multi-panel displays all the protocols and features via a single window panel. The guided configuration leads the user through a series of steps viewing only the appropriate ranges of values and prompting to related parameters. High level application templates streamline the configuration process by requiring only key elements to be entered for complex applications such as GSM Abis backhaul or DCME.

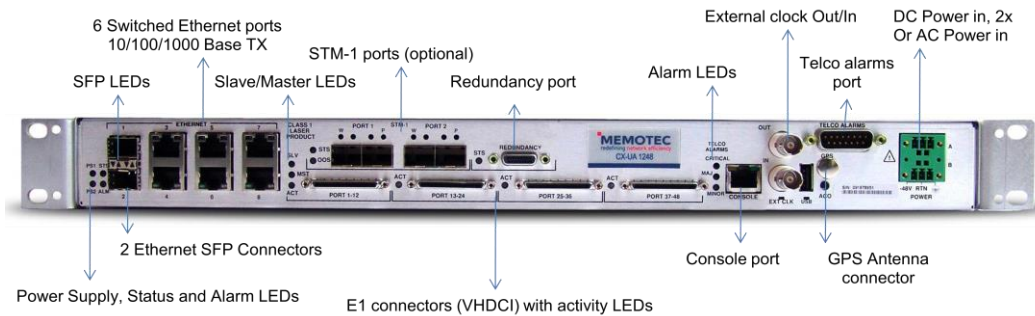
Performance Monitoring (CXWUG and CXMON)

- CXWUG provides a high level interface for monitoring and troubleshooting. It monitors, records, and displays the necessary Key Performance Indicators (KPI) information for each application (Abis/Ater RAN Optimization, DCME voice compression).
- CXWUG provides the key information to effectively monitor, manage and optimize your network of Memotec CX-UD optimization devices in a clear and concise real-time graphical display.
- CXMON is Memotec's real time monitor utility which allows real time viewing of channels and statistics on any interface (E1s/VC12s) of a particular CX-UD unit.



Specifications

Interfaces



- Digital E1: unframed, fractional, channelized, voice, data, TDM
- E1 line type : CEPT (PRI), G.703/G.704 with or without CRC4 & MF
- E1 encoding: HDB3, AMI, NRZ, NRZi, 120 Ohms
- NFAS, AIS and RDI bits/alarm relay
- T1/E1 alarms: red, yellow, near/far end LOS, AIS, LOF, LOMF, test, loop
- STM-1 – SDH channelized VC12 interface (63 VC12s), with APS 1+1 protection, SFP connector
- Ethernet: 10/100/1000 Mbps, RJ-45 (electrical and optical)
- RS-232 serial craft interface

Standards

- T1/E1 Interface: ITU-T G.703, G.704, G.706, G.732, G.733, G.823, G.824
- Echo: ITU-T G.168
- DCME: ITU-T G.768
- Voice: ITU-T G.711, G.723.1, AMR
- IP Interworking: ITU-T G.799.1/Y.1451.1, Y.1452, Y.1453
- Fax and Modem Transparent Relay and compression
- Ethernet interface: IEEE 802.1, 802.3, 802.3u

Capacity

	CX-UA 1024	CX-UD 1124	CX-UD 1348
T1/E1	24	24	48
WAN Bearer	8	8	32
PCM Voice Channels	24	18	64
Ethernet	6+2	6+2	6+2
STM1 support			2 STM 1+1

Synchronization

- ETSI PDH ITU-T G.823/G.824 and ETSI SDH SEC / ITU-T G.823 clock synchronisation compliant
- 8 KHz, 1.544 MHz, 2.048 MHz, 10 MHz (BITS) and 1544 Kbps or 2048 Kbps G.703 clock reference output (BNC 75 Ohm)
- Better than Stratum 3 TCXO local clock reference (250 ppb 24 hours holdover over temperature range)
- Optional external GPS clock reference
- User defined synchronization priority scheme

Physical

- Dimensions: Standard 19" rack 1RU high chassis (height x width x depth) 1.70" x 16.5" x 12.1"
- Weight chassis: 2.2 kg (5.5 lbs)
- Input power: DC -40 to -60 (90-264 VAC power and/or redundant DC power available on option)
- Consumption: <40 W depending on model and configuration
- MTBF > 20 Years

Environmental

- Operating temp: 0° to 50° Celsius
- Storage temp: -40° to +80° Celsius
- Operating humidity: 0 to 95% non-condensing
- Altitude: 4000 m

Approvals

- Safety: CSA/UL 60950-1, IEC/EN 60950-1
- EMC-Emission Class A: FCC Part 15, ICES-003, EN 55022:2010
- EMC – Immunity : EN 55024:2010