

CM-11

Multi-service Access Switch

Orckit-Corrigent CM-11 is a flexible multi-service access switch with E1/T1, FE/GE interfaces that enables the delivery of voice, video and data services.

The CM-11 ideally fits in 2G/3G/4G mobile networks as Cell Site Gateway (CSG), and at enterprise offices as CLE/CPE demarcation device. For mobile service and providers, the CM-11 offers synchronization technologies and PDH services, and for fixed-line service providers the CM-11 offers Ethernet functionality and phased migration from legacy TDM service to packet-based services.

The CM-11 is fully integrated and an integral part of Orckit-Corrigent's end-to-end solution that includes the CM-4000 Carrier Ethernet + Transport (CE+T) portfolio and the CM-View management system.

The CM-11 is an interoperable product. It utilizes a wide range of TDM and Ethernet pseudowire (PW) emulation standards including CESoPSN, SAToP and Ethernet-PW over dry-martini and QinQ tunneling techniques.

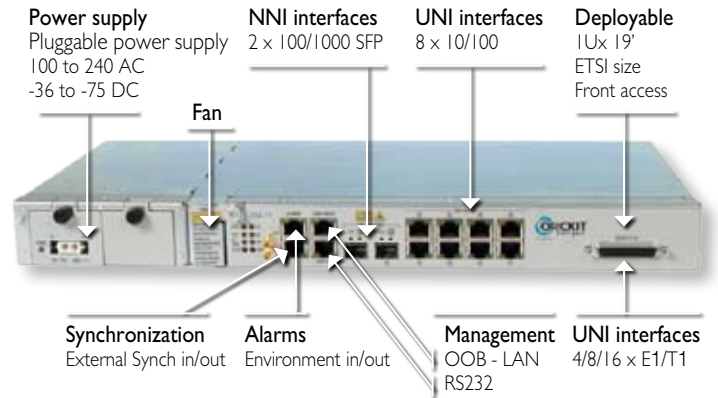
As a multiservice access switch, the CM-11 offers a wide set of features for OAM, QoS and protection, including:

- End-to-end OAM interworking between TDM and packet networks based on IEEE 802.1ag
- Hard QoS based on powerful traffic management. This includes a large number of bandwidth profiles, flow management, CoS per port, priority mapping, packet classification, rate limiting and policing, queuing and scheduling

In addition, the CM-11 is equipped with a High Quality Timing Module (HQTM) that complies with the most stringent Jitter/Wander requirements (G.823/G.824 compliant). The HQTM manages up to 8 independent timing domains and allocates a dedicated clock for each timing domain using a wide range of timing/synchronization options including:

- BITS In and Out
- E1/T1 loopback timing
- IEEE 1588v2
- Synchronous Ethernet
- SSM support
- Adaptive clock recovery over PSN

The CM-11 offers a complete Ethernet and TDM SLA verification functionality including the ability of remote software upgrades. This enables a reliable, scalable and future proof solution.



CM-11 product highlights

Mobile backhauling	Cell Site Gateway (CSG) <ul style="list-style-type: none"> • 2G: SAToP, CESoP • 3G: SAToP, ETHoP • 4G: ETHoP, EPL, EVPL
Enterprise services	CLE/CPE demarcation device TDM and Ethernet services <ul style="list-style-type: none"> • PDH E1 services • FE and GE services
Enables migration from SONET/SDH to packet	Flexible E1/T1 circuit emulation over Ethernet and MPLS network
Part of an end-to-end solution	<ul style="list-style-type: none"> • Access switch • Standard and interoperable • Fully integrated with CM-View EMS/NMS
Key features	<ul style="list-style-type: none"> • OAM: TDM + Ethernet, IEEE 802.1ag • QoS: bandwidth profiles, classification, policing, queuing and scheduling • Protection: LAG, ITU-T G.8032 • Synchronization: SyncE, IEEE 1588v2, ACR

CM-11 product configurations

CM-11-4	8 x 10/100 4 x E1/DS1 1xGE	1 x GE
CM-11-8	8x 10/100 8x E1/DS1	2 x GE
CM-11-16	8x 10/100 16x E1/DS1	2 x GE

Technical Specifications

Network Interfaces

- 100/1000 SFP
- Craft Access RS232c, RJ-45
- OOB Mgt 10/100BaseT RJ-45
- Alarm relay dry-contacts RJ-45
- External clock sync I/O RJ45 unbalanced

User Interfaces

- 10/100BaseT RJ-45
- 100/1000 SFP
- T1/E1 (ANSI T1.403/ITU-T G.704)

Carrier Ethernet + Transport

- VLAN per IEEE 802.1p/q
- Provider Bridge per 802.1ad
- Carrier Ethernet Services Attributes per MEF6, MEF8, MEF10
- MEF9, MEF14 and MEF18 certified

Class of Service (CoS) Support

- Committed and Excess Information Rate (CIR/CBS and EIR/EBS)
- Bandwidth limiter per Port/flow/CoS
- Policing-TriTCM (Two rate Three Color Marker) per RFC2698
- 8 x CoS per port/EVC
- Service Priority per 802.1p & q, DSCP/TOS
- Service Priority mapping to PSN
- SP and/or WRR and/or DWRR with
- Configurable weights WRED queue

Protocol Support

- SAToP (RFC4553)
- CESoPSN (RFC 5086)
- ETHoP PWE (RFC4448)
- CES over Ethernet per MEF8
- PWE3 Control Word (RFC 4385)
- Dry-Martini Support

Timing & Synchronization

- Synchronous Ethernet/SSM (G.8262/64)
- IEEE 1588v2-2008 precision time protocol
- Adaptive Clock Recovery (ACR), multi time domain
- BITS timing I/O
- E1/T1 Line Derived timing
- Jitter performance per ITU-T G.8261, G.823, G.824
- ST3/ST3e

Ethernet Protection Switching

- G.8032 Ethernet Ring Protection
- 802.1AX Link Aggregation (formerly known as 802.3ad)

Network Management

- Fully integrated with CM-View
- In-band, out-of-band management (Telnet)
- SNMP v2support

Monitoring and OAM

- 802.1ag Connectivity Fault Management (CFM)
- Y.1731 Performance Monitoring
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- PSN Alarm propagation

Security

- Radius client, Secure Shell Support (SSH)
- In-band/OOB ports lock
- User management access profiles
- ACL rules - address data theft, Hacking, DoS attacks

Power Specs

- 25W max. power consumption
- 100 – 240 VAC 50-60Hz
- -48 VDC nominal
- ± 24 to ± 60VDC
- 1 + 1 Hot swap and pluggable

Conformance

- Safety - UL 60950-1 (2000); CSA C22.2 No. 60950-1; IEC 60950-1 CB/2001 CE Marking; EN60950-1: 2000+A11: 2004
- Laser Safety - FCC 21 CFR subpart (J); Europe: EN60825-1:1994 +A11:1996+A2:2001
- Emissions - FCC 47CFR Part15B CLASS A; ICES-003 Class A; EN55022: 1998 CLASS A; CISPR22: 1997; ETSI/EN 300 386 V1.3.2
- Environmental - RoHS DIRECTIVE 2002/95/EC; WEEE 2002/96 EC
- NEBS L3 Compliant Design

Environmental Characteristics

- Standard Operating Temperature: 0° C to +50°C (+32° F to +122°F)
- Hardened Operating Temperature: -40°C to +65°C (-40°F to +149°F)
- Storage Temperature: -40°C to +70°C (-40°F to +158°F)
- Relative Humidity: 5% to 90% non-condensing

Physical Characteristics

- Dimensions: 1.73" (H) x 17.4" (W) x 8.6" (D); 44 mm (H) x 440 mm (W) x 220 mm (D)
- ETSI, 19" or 23" rack-mountable
- Weight: 4 kg (8.8 lbs);



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