

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 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 to Orckit-Corrigent's end-to-end solution that includes the CM-4000 Packet Transport Network (PTN) 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 multiple 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, BITS, E1/T1 loopback, SSM

CM-11 product configurations

CM-11-4	8 x 10/100 4 x E1/DS1	2 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



Pushing technology to the edge

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Orckit facilitates telecommunication providers' delivery of high capacity broadband residential, business and mobile services over wireline or wireless networks with its Orckit-Corrigent family of products. With 20 years of field experience with Tier-1 customers located around the world and sound leadership, Orckit has a firm foothold in the ever-developing world of telecommunication.

Orckit-Corrigent's product portfolio includes Packet Transport Network (PTN) switches - an MPLS and MPLS-TP dual stack based portfolio enabling advanced packet as well as legacy services over packet networks with a wide set of transport features.

Orckit-Corrigent markets its products directly and indirectly through strategic alliances, as well as distribution and reseller partners worldwide.

Orckit was founded in 1990 and went public in 1996. Orckit is dually listed on NasdaqGM (ORCT) and the Tel Aviv Stock Exchange and is headquartered in Tel-Aviv, Israel. For more information, please visit www.orckit.com.



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 Part 15B 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);