



7090-2 CEM Packet Transport Platform

Intelligent MPLS-TP and Carrier Ethernet Platform for Next-Generation Networks

MAXIMIZING NETWORK CONNECTIVITY WITH PACKET TRANSPORT INNOVATION

The significant growth in bandwidth demand creates a challenge for network operators. The Coriant® 7090-2 CEM Packet Transport Platform offers an MEF CE 2.0 certified MPLS-TP transport solution that delivers a robust set of industry-leading features. In a high-capacity and ultra-compact form factor, the 7090-2 CEM ensures simplified deployment and operations while efficiently and cost effectively supporting broadband services for business, residential, and mobile applications. The 7090-2 CEM provides connectivity close to the customer premises equipment while enhancing the overall Coriant® 7090 MPLS-TP Series that offers end-to-end network solutions from access to metro.

TARGETING PACKET AND TDM APPLICATIONS WITH INTEGRATED FEATURES

The 7090-2 CEM architecture supports a fixed interface configuration ideal for all targeted applications and designed for different environmental conditions like AC/DC powering and non-climate temperature. The system supports 16G of switching capacity with 14 x GbE (optical SFP/electrical RJ45) and 2 x STM-1 interfaces. The STM-1 interfaces provide circuit emulation over MPLS-TP. Supporting a wide range of traffic management, Quality of Service (QoS), OAM, and protection features for both Carrier Ethernet and MPLS-TP environments, the 7090-2 CEM can be easily integrated into virtually any packet network.

With support for numerous Carrier Ethernet and MPLS-TP OAM functionalities, including Y.1731, G.8113.1/8113.2, 802.3ah, 802.3ag, and ITU-T Y.1731 end-to-end OAM, the 7090-2 CEM provides reliable and operationally simplified transport that ensures Service Level Agreement (SLA) performance. In addition, the 7090-2 CEM offers a comprehensive set of standards-based protection mechanisms, including LSP 1:1 linear protection, LSP ring protection, and LAG protection.

For networks with specific synchronization requirements (such as LTE-A networks and SONET/SDH applications), the entire 7090 M Series, including the 7090-2 CEM, supports the complete range of timing features. In addition to various options for external timing sources, such as 2MHz, 2Mbps, and 1PPS, the 7090 M Series supports ITU-T G.8262 Synchronous Ethernet and IEEE 1588v2, including Boundary Clock (BC), Transparent Clock (TC), and Ordinary Clock (OC), all of which are required to provide the necessary timing accuracy to drive today's networks and support future requirements.

BENEFITS OF THE CORIANT® 7090-2 CEM

- **Improve** network efficiency with flexible packet-based transport
- **Support** numerous network applications with a scalable system architecture
- **Ease** migration from TDM to packet-centric services while building an optimized, future-proof infrastructure
- **Ensure** highly reliable services with the end-to-end OAM capability and the network protection attributes of circuit transport technologies
- **Optimize** end-to-end service delivery with a single, unified transport platform – reducing OpEx via simplified operations, fewer spares, and reduced training needs
- **Simplify** provisioning and troubleshooting with MPLS-TP OAM and fully MEF certified OAM capabilities



MIGRATING EXISTING INFRASTRUCTURES SMOOTHLY AND EFFICIENTLY

The 7090-2 CEM supports integrated pseudowire (PWE3) functionality and physical STM-1 interfaces enabling the transport of legacy circuit-based services over a packet-based infrastructure. With support for SONET/SDH interfaces, the 7090-2 CEM, together with the other products of the 7090 M Series, provides the ideal solution for a smooth migration from legacy to a more efficient and flexible packet-based architecture while simplifying network operations and ensuring a constant increase in network performance.

LEVERAGING AN END-TO-END SOLUTIONS PORTFOLIO

The 7090-2 CEM is an integral component of the Coriant product portfolio and works seamlessly with the Coriant® 7100 Packet Optical Transport Solutions, Coriant® mTera® Universal Transport Platform, and Coriant® hiT 7300 Multi-Haul Transport Platform. With end-to-end management via the Coriant® Transport Network Management System (TNMS), the Coriant portfolio provides flexible and reliable transport solutions that meet a wide variety of service needs through access to metro/regional to the core.

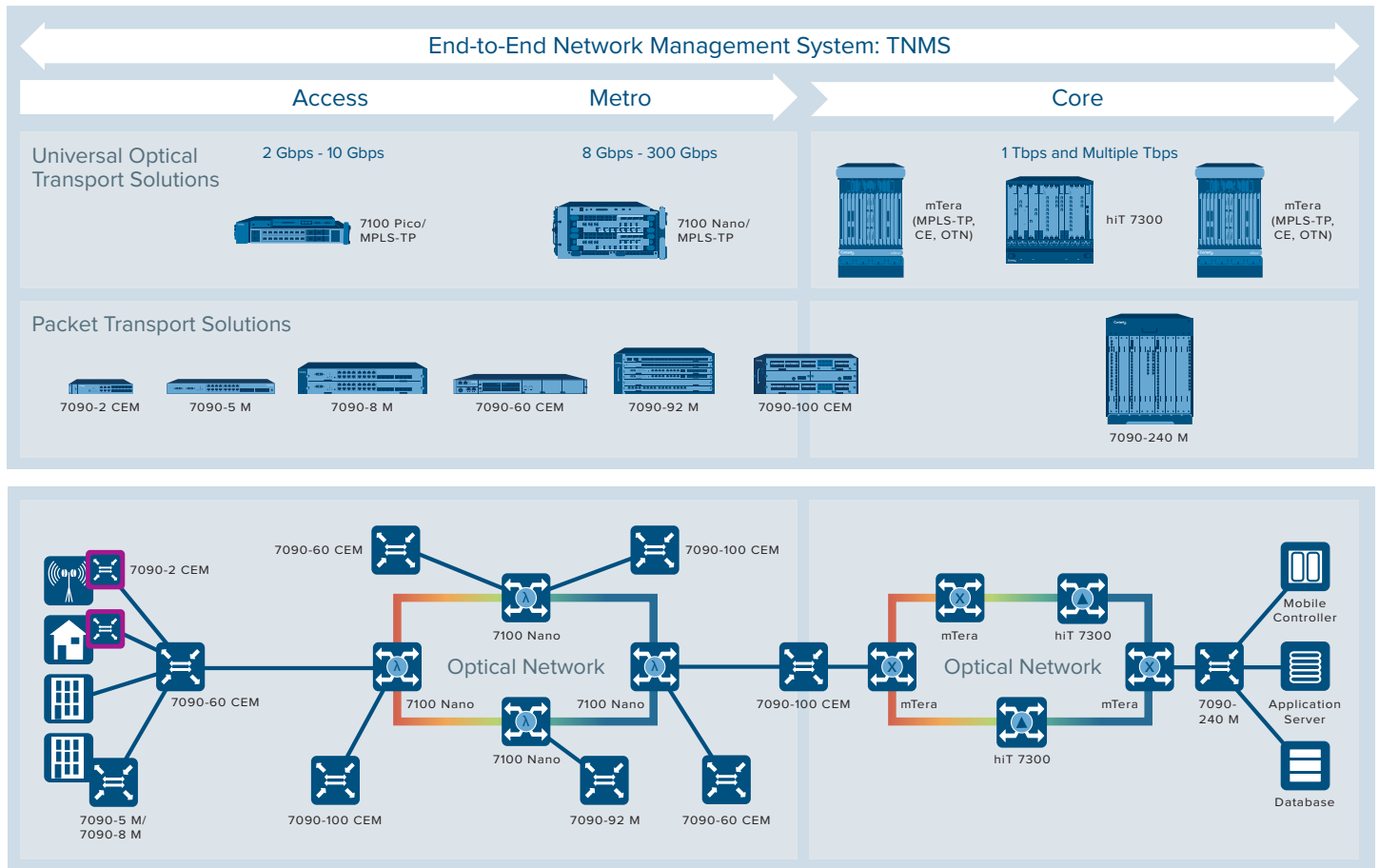


Figure 1: Coriant® 7090 Packet Transport Solutions Portfolio

TECHNICAL SPECIFICATIONS

Dimensions

- 1 RU, 260 mm W x 210 mm D x 44.5 mm H

Interface Types

- Fixed configuration
 - 10 x FX/GbE (optical SFP)
 - 10 x FE/GbE (electrical SFP)
 - 5 x STM-1/STM-4/DS3 (Smart SFP)
 - 2 x STM-1
 - 4 x FE/GbE (RJ45)
 - 10 x E1/T1 Smart SFP on GbE/IF

Power

- AC/DC
- Power consumption: 35W

TDM CES Interface

- STM-1 (embedded)
- Smart SFP DS3
- Smart SFP STM-1/OC-3 (optional)
- Smart SFP STM-4/OC-12 (optional)

MPLS-TP Functions

- LSP and PW
- OAM
- Protection
- Call Admission Control (CAC)
- Monitoring and statistics
- Ethernet and TDM encapsulation

OAM

- Ethernet service OAM (ITU-T Y.1731, IEEE 802.1ag)

- Ethernet link OAM (IEEE 802.3ah)
- MPLS-TP OAM (G.8113.1/G.8113.2)
- ITU-T Y.1731 End-to-End Performance Monitoring and AIS
- Hardware-based delay and loopback measurement with nanosecond resolution

Ethernet Functions

- E-Line, E-LAN, E-Tree
- MEF CE 2.0
- VLAN (IEEE 802.1Q)
- Q-in-Q (IEEE 802.1ad)
- COS (IEEE 802.1P/IEEE 802.1Q)
- 9600 bytes jumbo frame
- VLAN manipulation: stack/switch/strip
- Link aggregation (IEEE 802.3ad)
- Flow control (IEEE 802.3x)
- IGMP snooping (V1/V2/V3)
- RSTP (IEEE 802.1w)
- LPT (Link Pass-Through)

Quality of Service (QoS) Classification

Parameters

- L2: VLAN, PRI, MAC address, TPID
- L3: IP address, DSCP, port number, TOS
- CIR/EIR/CBS/EBS
- WRED
- 8 QoS classes
- Class-based queuing
- SP, DWRR, SP+DWRR
- Color aware and color blind mode

Protection

- LSP 1:1 linear protection
- LSP ring protection
- UNI/NNI LAG 1:1 and load sharing
- MSP 1:1 protection

Synchronization

- Synchronization Ethernet (G.8261, G.8262)
- Packet synchronization according to IEEE 1588v2

DCN

- In-band and out-band DCN
- OSPF Layer 3 DCN

Management

- Transport Network Management System (TNMS)
- 7090 NetManager
- 7090 LCT NE Management System

Environment and Climate

- ETSI 300 019
- Operation temperature:
 - -5° C to +65° C
- Humidity: 5%-90%
- ETSI EN 300 386 V1.6.1/EN 55022(2010)
- EN 60950-1: 2006+A11: 2009+A1:2010+A12:2011

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