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## 8600 Smart Router Control and DC Power Feed Card 2 (CDC2)

*High Performance Control and DC Power Feed Card with Control Plane Protection*

The Control and DC Power Card (CDC) is an essential building block of the Coriant 8660 and 8630 Smart Router family. It contains a CPU subsystem which manages the entire subrack and performs some of the routing protocol functions.

### ENHANCED SCALABILITY FOR NETWORK GROWTH

The CDC2 is a second generation control and DC unit for 8660 and 8630 Smart Routers. It provides a high performance four-core CPU and more memory than the CDC1 to support network growth and new element software releases.

Higher power supply capability enables the support of additional ELC1 cards in an 8660 Smart Router chassis. The CDC2 provides 48 VDC battery voltage feed and power entry to the 8660 and 8630 Smart Router subracks. It also controls and adjusts the fans of the network element to ensure that the network element is properly cooled.

### MANAGEMENT AND ALARM INTERFACE PORTS

The CDC2 has physical ports for the management and external alarm interfaces. An asynchronous console port may be used for local CLI configurations and an Ethernet port for connectivity to the management system or CLI. The external alarm ports can be used for monitoring other network elements or objects to support site security.

### FUNCTIONALITY FOR LTE, LTE-ADVANCED AND FIXED-MOBILE CONVERGENCE

The CDC2 locks into an external timing reference and, using an internal reference clock that exceeds Stratum-3E performance, distributes a stable node clock for all synchronous interfaces. Combining all these functions into one compact card saves space in the network element, leaving more slots for the user selectable interface cards. The CDC2 can be deployed as a pair for redundancy purposes.

The CDC2 is hot-swappable, meaning that the card can be replaced in the field without powering down the system. Furthermore, as the CDC2 is protected this enables in-service software upgrades.

Together with the Ethernet Line Card (ELC1), the CDC2 card also enables IEEE1588v2 Boundary Clock functionality in 8660 and 8630 Smart Routers for providing accurate phase synchronization. This is mandatory for new RAN technologies such as Coordinated Multipoint (CoMP) enabled by LTE-A.

### COMPATABILITY WITH CDC1

CDC2 software features are backwards compatible with CDC1 features. The CDC2 cards are compatible with all 8600 Smart Router line cards (i.e., IFC1, IFC2 and ELC1), as well as all variants of the 8660 and 8630 Smart Router subracks.

### BENEFITS OF CORIANT'S 8600 SMART ROUTER CDC2

- **Improve functionality of 8660 and 8630 Smart Routers**
- **Manage an entire subrack through the CPU system**, deliver 48 VDC battery feed and power entry to subracks, and control and adjust network element fans
- **Enhance scalability for network growth** with four-core CPU and more memory (additional ELC1 cards can also be supported in the 8660 Smart Router chassis)
- **Support LTE, LTE-A and FMC networks**
- **Support phase synchronization** required by LTE networks
- **Replace card in the field** if required without powering down the system



## The Smart Router Series

The Smart Router series offers versatile and scalable solutions for mobile backhaul from small aggregation sites to controller and gateway sites. In addition, Smart Routers serve fixed and mobile convergence and cloud computing networking needs. These solutions are designed to meet the ever-growing requirements of data hungry mobile and enterprise users.

All of the Smart Routers are LTE-ready and provide an extensive Ethernet and IP/MPLS feature set. Simultaneous support for multiservice applications in access and aggregation networks protects earlier network investments. The Smart Router product family is supported by the 8000 Intelligent Network Manager, which is an easy to use end-to-end network management solution. The 8000 Intelligent Network Manager minimizes operational and maintenance costs and scales up to tens of thousands of network elements.

When the working CDC is CDC2, the protecting CDC also needs to be CDC2. An upgrade tool is provided that enables a smooth and non-service affecting upgrade of existing CDC1 cards to CDC2s.

## CDC USE WITH POWER INPUT MODULE IN 8660 SMART ROUTER

The 8660 Smart Router R2 sub-rack can be powered with the Power Input Modules (PIM) located under the line cards and fans. The use of PIMs is recommended in ELC1 configurations in order to enable a full twelve ELC1 configuration in the 8660 Smart Router. When PIMs are used, the power cabling is routed to the PIMs instead of the CDC. Naturally, the CDC is still required as it performs the control plane, timing and management roles of the network element.

## TECHNICAL SPECIFICATIONS

### Physical Dimensions

- 40 x 372 x 290 mm / 1.57 x 14.65 x 11.42 in (W x H x D)

### Input Voltage and Power Consumption

- Maximum 140 W
- Typical 82 W
- Maximum input power 1920 W to feed CDC2s, line cards and fans
- -48 VDC power feed

### Sub-rack Configuration

- Max two CDC2 cards per 8630 and 8660 subrack
- Interoperable with all IFC1, IFC2 and ELC1 line cards

### Physical Ports

- 1 x 10/100/1000BASE-T port for management
- RS-232 local console port
- RJ-48c for station clock input and output
- PPS and ToD input and output with RJ-45 connector
- RJ-45 alarm input and output

### Disabled and unused ports:

- 5 x 10/100/1000BASE-T
- 2 x 100/1000BASE-X SFP
- USB port

### Resiliency

- 1+1 control and management plane protection with duplicated CDC2s
- Configuration backup and storage in element
- Automatic configuration restoration after card replacement
- Hot-swappable

### IP Routing and MPLS Label Distribution

#### Protocols

- OSPF-TE, ISIS-TE, BGP and MP-BGP
- LDP, RSVP-TE

#### Synchronization

- ITU-T [G.813] option 1 and [G.8262]
- Telcordia [GR-1244] Stratum-3
- Station Clock Input and Output ports
- E1/T1, SDH/SONET line synchronization
- Synchronous Ethernet
- SSM over Ethernet [G.8264]

- IEEE1588v2 Boundary Clock for phase sync

### Standards

- Safety:
  - EN 60950-1:2006
  - IEC 60950-1:2005
- Electromagnetic Compatibility
  - EN300386:2008
  - FCC CFR 47 Part 15 Subpart B Class A
  - RTTE Directive 1995/5/EC

### Environmental Conditions

- Storage: ETSI EN 300 019-1-1, Class 1.1
  - Temperature: -5°C to +45°C / 23°F to 113°F
- Transportation: ETSI EN 300 019-1-2 V2.1.4 (2003-04) Class 2.3
  - Temperature: -40°C to +70°C / -40°F to 158°F
- Operation: ETS 300 019-1-3:2004-07 Class 3.2 (non-condensing)
  - Temperature: -5°C to +45°C / +23°F to +113°F
  - Relative humidity: 5%...95%

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