

# Cisco DCM Series D9902 Digital Content Manager

Today's digital systems demand powerful, flexible, and compact solutions that allow content providers and service providers to support new network architectures. The Cisco® DCM Series D9902 Digital Content Manager is a compact and versatile 2RU platform that supports various applications from content contribution, content production, primary distribution, and secondary distribution.

The DCM Series D9902 Digital Content Manager includes the following:

- Broadcast quality and high density transrating and transcoding of MPEG-2 and H.264 compressed video and audio services.
- Multiple feed receptions of DVB®-S/S2, multi-decryption and processing of MPEG-2 services.
- Flexible and versatile remultiplexing, grooming, and scrambling of DVB and ATSC services.
- Highly reliable and efficient transport of SDI video, AES Audio, and ASI transport stream signals

**Figure 1.** Cisco DCM Series D9902 Digital Content Manager chassis



## Physical Configuration

The DCM Series D9902 comes in a compact 2RU chassis with hot-swappable and redundant power supplies. The unit has four individual slots. These four slots can contain any combination of the following cards:

- GbE I/O Card
- ASI I/O Card & ASI SFN Card
- Dense Receiver Decrypter Card
- Transcoder and Logo Insertion card (MPEG-2 to AVC)
- Multi Format Processor (MFP) Card – in a Dual Layer or a Single Layer variant
- IP Video Gateway Cards

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## Redundancy and Reliability

The DCM Series D9902 chassis has been designed to help operators configure highly reliable networks. It supports hot-swappable and redundant power supplies and hot-swappable cooling fans, and the chassis can be configured in a hot 1:1 configuration to support maximum up-time, with minimum switch-over interruption.

To maximize service availability, the DCM Series D9902 also offers port, stream, and service redundancy.

## Security Functions

Today's IP attack profiles cover operating systems, networks, applications, and protocols. These attacks can cause hours or days of downtime, affecting availability of resources and creating serious breaches in data confidentiality and integrity. Depending on the level of the attack and the type of information compromised, the consequences vary in degree, from mildly inconvenient to completely debilitating, and the cost of troubleshooting and recovery can be considerable. To cope with the increased complex and open nature of the IP network environment, the DCM Series D9902 is designed with robust and comprehensive security features.

## User Interface and Management

The DCM Series D9902 chassis is controlled via an easy and intuitive GUI. To keep things simple, there is no software to load on the user's computer. The GUI of the DCM Series D9902 is a HTML-based user interface that can be opened using Microsoft Internet Explorer or Firefox. The GUI supports simple program provisioning through drag-and-drop functionality. The interface provides detailed information to the user, displaying the DCM Series D9902 configuration, input and output bit rate measurements, packet loss statistics, SDI video bit errors, transport stream alarms, and other information. For easy access to content details, sorting of program information can be performed on various program criteria, including input and output ports, bit rates, and program names.

For integrated network monitoring and control, the DCM Series D9902 is integrated with ROSA<sup>®</sup> Network Management and Control (NMC) system. All functionality available via the HTML interface is available with the ROSA control system.

## Features and Benefits

### System

- 60 Gbps internal processing throughput, with a potential future I/O capability of up to 40 Gbps
- User hot-swappable power supplies and fans
- Redundant load-sharing power supplies, supports both AC and DC power supplies

### Management

- SNMP traps
- ROSA management
- Easy control using web browser
- Ethernet interface for communication with management system and web browser
- IPsec
- General-purpose inputs

## Product Specifications

**Table 1.** Product Specifications

| Category                     | Specification   |
|------------------------------|---|
| <b>Physical and Power</b>    |   |
| Physical Specifications      | Height: 2RU 3.48 in. / 88 mm<br>Width: 19 in. / 483 mm<br>Depth: 21.8 in. / 554 mm<br>Weight: <ul style="list-style-type: none"> <li>• 14.5 kg (unloaded)</li> <li>• 17 kg (fully loaded with GbE &amp; 3 ASI cards)</li> <li>• 21 kg (fully loaded with Gateway cards)</li> </ul>  |
| Power Consumption            | Empty chassis: 100W   |
| Input Voltage                | Worldwide ranging AC <ul style="list-style-type: none"> <li>• Nominal 100 – 240 VAC</li> <li>• Normal service voltage range 90 – 254 VAC</li> <li>• Frequency 47 – 63 Hz</li> <li>• Maximum current 10 A</li> </ul> Worldwide ranging DC <ul style="list-style-type: none"> <li>• Nominal -48 to -60 VDC</li> <li>• Normal service voltage range -40 to -72 VDC</li> <li>• Maximum current, 29 A</li> </ul>     |
| Cooling                      | Front to rear, forced air, units are stackable, fan speed is ambient temperature controlled   |
| <b>Environmental</b>         |   |
| Operating Temperature        | 32 to 122°F (0 to 50°C)   |
| Storage Temperature          | -40 to 158°F (-40 to 70°C)  |
| Relative Operating Humidity  | 5% to 85% (gradation < 10% per hour)  |
| Relative Storage Humidity    | 5% to 95%   |
| Operating Altitude           | -61 to 3048m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)   |
| <b>Regulatory Compliance</b> |   |
| ETSI Standards               | EN 300 386: Telecommunications Network Equipment (EMC)  |
| EMC Standards                | <ul style="list-style-type: none"> <li>• FCC 47 CFR Part 15 Class A</li> <li>• ICES- 003 Class A</li> <li>• AS/NZS 3548 Class A</li> <li>• CISPR 22 / EN55022 Class A</li> <li>• CISPR 24 / EN55024</li> <li>• VCCI Class A</li> <li>• KN 22</li> <li>• IEC/EN 61000-3-2: Power Line Harmonics</li> </ul>   |
| Immunity                     | <ul style="list-style-type: none"> <li>• IEC/EN-61000-4-2: Electrostatic Discharge Immunity</li> <li>• IEC/EN-61000-4-3: Radiated RF Immunity</li> <li>• IEC/EN-61000-4-4: Electrical Fast Transient Immunity</li> <li>• IEC/EN-61000-4-5: Surge Immunity</li> <li>• IEC/EN-61000-4-6 : Conducted RF Immunity</li> <li>• IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions and Voltage Variations</li> </ul> |
| Safety                       | <ul style="list-style-type: none"> <li>• UL/CSA/IEC/EN 60950-1 2nd edition</li> <li>• IEC/EN 60825 Laser Safety</li> <li>• ACA TS001</li> <li>• AS/NZS 60950</li> <li>• FDA: Code of Federal Regulations Laser Safety</li> </ul>  |

|                                      |  |
|--------------------------------------|--|
| <b>Management and monitoring</b>     |  |
| Number of ports on chassis           | 3 (1 on front, and 2 on the rear)                        |
| Connector type                       | RJ-45  |
| Interface type                       | 10/100/1000 BT   |
| Protocols                            | HTTP, SNMP, IIOIP  |
| User interface                       | Embedded HTML user interface                             |
| Local RS-232 communication interface | Mini USB type B, to initially configure management ports |
| General Purpose Inputs               | 25 pin connector (to be supported in the future)         |

**Figure 2.** Cisco DCM Series D9902 Rear Panel with AC and DC power supplies, GbE card, ASI card, DRD card, and MFP card



## Ordering Information

**Table 2.** Ordering Information – Cisco DCM Series D9902

| Features   | Part Number        |
|--|--------------------|
| <b>Chassis</b>   |                    |
| D9902 DCM Chassis, 2RU   | DCM-MK2-2RU        |
| D9902 DCM Chassis, No PSU, SPARE                                     | DCM-MK2-2RU=       |
| <b>Power Supplies</b>  |                    |
| D9902 DCM 2RU PSU, AC (AC power cord needs to be ordered separately) | PWR-850-AC-2RU     |
| D9902 DCM 2RU PSU, AC (Spare)  | PWR-850-AC-2RU=    |
| D9902 DCM 2RU PSU, DC  | PWR-850-DC-2RU     |
| D9902 DCM 2RU PSU, DC (Spare)  | PWR-850-DC-2RU=    |
| <b>AC Power cords</b>  |                    |
| Argentina  | CAB-PWR-DMN-ARG    |
| Australia  | CAB-PWR-DMN-AUS    |
| China  | CAB-PWR-DMN-CHN    |
| Europe   | CAB-PWR-DMN-EU     |
| Italy  | CAB-PWR-DMN-IT     |
| Japan  | CAB-PWR-DMN-JPN    |
| UK   | CAB-PWR-DMN-UK     |
| <b>DC Power cords</b>  |                    |
| D9902 DCM DC Power Cable   | DCM-D9902-CAB-DC   |
| D9902 DCM DC Power Cable (Spare)                                     | DCM-D9902-CAB-DC=  |
| <b>Mounting kit - Optional</b>                                       |                    |
| D9902 DCM MID-MOUNT BRACKETS   | DCM-D9902-MID-BRK= |

|  |                    |
|--|--------------------|
| <b>Accessories</b>   |                    |
| D9902 DCM MINI-USB-B - USB   | DCM-D9902-MINIUSB= |
| <b>Licenses</b>  |                    |
| Software license CD-ROM (Add licenses in Cisco's Dynamic Configuration Tool) | DCM-LIC-UPGR       |

**Table 3.** Ordering Information – SFP Plug-ins (See Notes 1 and 2 for additional information on SFP plug-ins)

| Features  | Part Number      |
|---|------------------|
| <b>SFP Plug-ins – WDM types</b>                 |                  |
| GbE SFP module 850 nm (LC, up to 500 m)         | SFP-WDM-850-0500 |
| GbE SFP module 1310 nm (LC, up to 5 km)         | SFP-WDM-1310-5   |
| <b>GbE SFP module 1310 nm (LC, up to 40 km)</b> | SFP-WDM-1310-40  |
| <b>SFP Plug-ins – CWDM types</b>                |                  |
| GbE SFP module 1470 nm (LC, up to 40 km)        | SFP-CWDM-1470-40 |
| GbE SFP module 1490 nm (LC, up to 40 km)        | SFP-CWDM-1490-40 |
| GbE SFP module 1510 nm (LC, up to 40 km)        | SFP-CWDM-1510-40 |
| GbE SFP module 1530 nm (LC, up to 40 km)        | SFP-CWDM-1530-40 |
| GbE SFP module 1550 nm (LC, up to 40 km)        | SFP-CWDM-1550-40 |
| GbE SFP module 1570 nm (LC, up to 40 km)        | SFP-CWDM-1570-40 |
| GbE SFP module 1590 nm (LC, up to 40 km)        | SFP-CWDM-1590-40 |
| GbE SFP module 1610 nm (LC, up to 40 km)        | SFP-CWDM-1610-40 |
| GbE SFP module 1470 nm (LC, up to 70 km)        | SFP-CWDM-1470-70 |
| GbE SFP module 1490 nm (LC, up to 70 km)        | SFP-CWDM-1490-70 |
| GbE SFP module 1510 nm (LC, up to 70 km)        | SFP-CWDM-1510-70 |
| GbE SFP module 1530 nm (LC, up to 70 km)        | SFP-CWDM-1530-70 |
| GbE SFP module 1550 nm (LC, up to 70 km)        | SFP-CWDM-1550-70 |
| GbE SFP module 1570 nm (LC, up to 70 km)        | SFP-CWDM-1570-70 |
| GbE SFP module 1590 nm (LC, up to 70 km)        | SFP-CWDM-1590-70 |
| GbE SFP module 1610 nm (LC, up to 70 km)        | SFP-CWDM-1610-70 |
| <b>SFP Plug-ins – 1000 BT copper</b>            |                  |
| GbE SFP module 1000 BT copper                   | SFP-CU-RJ45      |
| <b>SFP+ Optical Plug-ins (Note 2)</b>           |                  |
| 10GBASE-SR 850 nm MMF                           | SFP-10G-SR       |
| 10GBASE-LR 1310 nm SMF                          | SFP-10G-LR       |
| 10GBASE-ER 1550 nm SMF                          | SFP-10G-ER       |
| <b>SFP+ Electrical Plug-ins (Note 2)</b>        |                  |
| Twinax cable, passive, 1 meter                  | SFP-H10GB-CU1M   |
| <b>Twinax cable, passive, 3 meter</b>           | SFP-H10GB-CU3M   |
| Twinax cable, passive, 5 meter                  | SFP-H10GB-CU5M   |
| <b>Twinax cable, passive, 7 meter</b>           | SFP-H10GB-ACU7M  |
| Twinax cable, passive, 10 meter                 | SFP-H10GB-ACU10M |
| <b>Video SFP Plug-ins</b>                       |                  |
| Video SFP 1310nm – Tx                           | VSFP-TX-1310-10  |
| <b>Video SFP 1310nm – Rx</b>                    | VSFP-RX-1310-10  |

1. All Class 1 SFP plug-ins according to IEC 60825-1 (1997) Amendment 2 (2001).
2. For more information, refer to Cisco data sheets for the 10 Gigabit BASE SFP+ modules.

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## For More Information

To learn more about this product, contact your local account representative.

To read more about distribution oriented features, go to [Cisco DCM Series](#).

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