

Cisco Digital Content Manager Series Multi-Format Processor Card

Product Overview

The Cisco® Digital Content Manager (DCM) Series Multi-Format Processor Card adds high-density, high-quality advanced processing of MPEG-2 and H.264 advanced video coding (AVC), high definition (HD) and standard definition (SD) video, and audio to the Cisco DCM platform. These capabilities address all screens.

Figure 1. Cisco DCM Series Multi Format Processor Card - Single Layer



Today's consumer channel lineup requirements are growing rapidly, affected by increased SD and HD channels and a need for reduced cost of ownership.

The Cisco DCM Series MFP Card (Figure 1 and Figure 2) adds high-density MPEG-2 and H.264 video and audio processing capabilities to the Cisco DCM Series, while providing low power usage.

The Cisco DCM Series MFP Card with Cisco AnyRes technology provides support for multiple screen transcoding and is a truly converged processing solution to address all screens.

Adding to the track record of the Cisco DCM, the Cisco DCM Series MFP plug-in card promote high reliability and excellent video quality for the next generation of IP-based headend deployments, large and small.

With the flexibility of Asynchronous Serial Interface (ASI), IP, satellite, or Advanced Television Systems Committee (ATSC) off-air inputs, along with ASI or IP outputs, the Cisco DCM can be placed at multiple points in the content acquisition subsystem, processing up to 144 SD or 48 HD channels in a 2RU appliance.

Figure 2. Cisco DCM Series Multi Format Processor Card - Dual Layer



Main Features and Benefits

Any-to-Any Processing

- Transcoding and rate-changing of MPEG-2 and H.264, HD, and SD services in single-program and multiprogram transport streams
- Transcoding any input to multiple H.264 adaptive bit rate (ABR) resolutions
- Insertion of Encoder Boundary Points (EBP) according to Cablelabs OpenCable™ specification
- Transcoding of audio services between MPEG-1 layer II, Dolby Digital (AC-3), Dolby Digital Plus (EAC-3), and Advanced Audio Coding (AAC) formats
- Statistical remultiplexing of mixed MPEG-2, H.264, HD, and SD video on a single card
- Transcoding of HD services to SD video, regardless of the codec
- Combined MPEG-2, H.264, HD, SD and ABR processing on a single card for investment enhancement

High-Density Processing

- Adds transcoding for up to 72 SD or 24 HD programs to the DCM Series D9900 and D9901 chassis
- Adds transcoding for up to 144 SD or 48 HD programs to the DCM Series D9902 chassis
- Allows up to 300 ABR output profiles to be added per 2RU chassis
- Ad insertion for any screen

Flexible Modular Design

- The Cisco DCM MFP card fits into any application slot of a Cisco DCM Series 1RU or 2RU chassis
- Combined with existing application cards and I/O cards, such as ASI, Gigabit Ethernet, satellite, and terrestrial, the Cisco DCM MFP Card supports truly converged applications
- Functionality is software enabled by a flexible electronic licensing program

Adaptability

- Flexible use in both the 1RU and 2RU Cisco DCM Series chassis
- Built-in support for all application cards built to date

Fast, Easy Setup and Configuration

- The Cisco DCM Series MFP card is fully integrated in an easy-to-use HTML-only web user interface, allowing drag-and-drop service configuration

Product Specifications

Table 1 provides product specifications for the Cisco DCM Series Multi Format Processor Card.

Table 1. Product Specifications

Feature	Description
Physical and Power	
Physical specifications	<p>Single-layer MFP card (DCM-MFP-S) that occupies 1 slot in the DCM D9901 1RU or DCM D9902 2RU chassis or the Cisco DCM D9902 2RU chassis: → Mk1 and Mk2 are first and second generation] chassis. I have updated to the model number</p> <ul style="list-style-type: none"> • Height: 39.5 mm/1.54 in • Width: 145 mm/5.70 in • Depth: 365 mm/14.37 in • Weight: 1.120 kg/2.47 lbm <p>Dual-layer MFP card (DCM-MFP) that occupies 1 slot in the Cisco DCM D9902 2RU chassis:</p> <ul style="list-style-type: none"> • Height: 39.5 mm/1.54 in • Width: 145 mm/5.70 in • Depth: 365 mm/14.37 in • Weight: 1.120 kg/3.46 lbm
Power consumption	<p>DCM-MFP-S: 75W maximum</p> <p>DCM-MFP: 150W maximum</p>
Environmental Specifications	
Operating temperature	32 - 122°F (0 to 50°C)
Storage temperature	-40 - 158°F (-40 to 70°C)
Relative operating humidity	<p>5 to 90%</p> <p>Note: Not to exceed 0.024 kg water or dry air</p>
Relative storage humidity	<p>5 to 95%</p> <p>Note: Not to exceed 0.024 kg water or dry air</p>
Operating altitude	-61 to 3048m (up to 2000m conforms to IEC/EN/UL/CSA 60950 requirements)
Compliance	
Network Equipment Building Standards (NEBS)	<p>Designed for SR-3580: NEBS Criteria Levels (Level 3)</p> <p>GR-1089-CORE: NEBS EMC and Safety</p> <p>GR-63-CORE: NEBS Physical Protection</p>
ETSI Standards	<ul style="list-style-type: none"> • EN300 386: Telecommunications Network Equipment (EMC)
EMC Standards	<ul style="list-style-type: none"> • FCC 47 CFR Part 15 Class A • ICES- 003 Class A • AS/NZS 3548 Class A • CISPR 22/EN55022 Class A • CISPR 24/EN55024 • VCCI Class A • KN 22 • IEC/EN 61000-3-2: Power Line Harmonics
Immunity	<ul style="list-style-type: none"> • IEC/EN-61000-4-2: Electrostatic Discharge Immunity • IEC/EN-61000-4-3: Radiated Immunity • IEC/EN-61000-4-4: Electrical Fast Transient Immunity • IEC/EN-61000-4-5: Surge • IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions, and Voltage Variations
Safety	<ul style="list-style-type: none"> • UL/CSA/IEC/EN 60950-1 2nd edition • IEC/EN 60825 Laser Safety • ACA TS001 • AS/NZS 60950 • FDA: Code of Federal Regulations Laser Safety

Feature	Description
Video Decoding	
HD bit rates	<ul style="list-style-type: none"> • MPEG-2: MP@HL up to 30 Mbps • H.264: HP@ L4.0-L4.1 up to 25 Mbps
HD resolutions	<ul style="list-style-type: none"> • 1080i x 1920/1280 @ 25 fps • 1080i x 1920/1280 @ 29.97 fps • 720p x 1280/960 @ 50 fps • 720p x 1280/960 @ 59.94 fps
SD bit rates	<ul style="list-style-type: none"> • MPEG-2: MP @ML up to 15 Mbps • H.264: MP@L3-L4.1 up to 12 Mbps
SD resolutions	<ul style="list-style-type: none"> • PAL: 576i x 720/704/640/544/528/480/352 @25 fps • NTSC: 480i x 720/704/640/544/528/480/352 @29.97 fps
Video Encoding	
HD bit rates	<ul style="list-style-type: none"> • MPEG-2: HP@ HL 0.5 to 30 Mbps • H.264: MP@ L4.0 1 to 20 Mbps • H.264: HP@ L4.0 1 to 25 Mbps • H.264: MP@ L4.1 1 to 30 Mbps
HD resolutions	<ul style="list-style-type: none"> • 1080i x 1920/1280 @ 25 fps • 1080i x 1920/1280 @ 29.97 fps • 720p x 1280/960 @ 50 fps • 720p x 1280/960 @ 59.94 fps • ABR: between 128 x 160 and 1920 x 1080p @ 25/30 fps Flexible support for any resolution that is multiple of 2 px
SD dit rates	<ul style="list-style-type: none"> • MPEG-2: MP@ ML 0.5 to 10 Mbps • H.264: MP@ L3.0 0.5 to 10 Mbps • H.264: HP@ L3.0 0.5 to 12.5 Mbps
SD resolutions	<ul style="list-style-type: none"> • PAL: 576i x 720/704/640/544/528/480/352 @ 25 fps • NTSC: 480i x 720/704/640/544/528/480/352 @ 29.97 fps • ABR: between 128 x 160 and 1920 x 1080p @ 25 or 30 fps Flexible support for any resolution that is multiple of 2 px
Inverse telecine	<ul style="list-style-type: none"> • 3:2 pulldown inversion
Video Processing	
Number of services	<p>DCM-MFP-S</p> <ul style="list-style-type: none"> • SD: up to 24 services per card • HD: up to 8 services per card • HD to SD downconversion: up to 8 services per card • ABR: up to 8 services per card • Seamless ad insertion: up to 16 services per card <p>DCM-MFP</p> <ul style="list-style-type: none"> • SD: up to 48 services per card • HD: up to 16 services per card • HD to SD downconversion: up to 16 services per card • ABR: up to 16 services per card • Seamless ad insertion: up to 32 services per card
Statistical multiplexing	<ul style="list-style-type: none"> • Mixed AVC, MPEG-2 HD and SD • 64 services per statistical multiplexing group
GOP control	<ul style="list-style-type: none"> • Static, Hierarchical and dynamic GOP
Encoder Boundary Point (EPB) insertion	<ul style="list-style-type: none"> • EBP according OpenCable™ OC-SP-EBP-I01-130118
Ad Insertion	<ul style="list-style-type: none"> • Seamless ad insertion using SCTE-35 cueing message and SCTE-30 interface with ad servers • Ad marker insertion in adaptive bit rate services for targeted advertising

Feature	Description
Audio Decoding	
MPEG-1 and MPEG-2 Layer II audio	<ul style="list-style-type: none"> • Mono, stereo, and multichannel • Bit rate: 32 to 384 kbps
AAC	<ul style="list-style-type: none"> • Low complexity, high efficiency • Mono, stereo, and multichannel • Bit rate: 32 to 640 kbps, depending on the encoding mode • ADTS, LATM, and LOAS
Dolby Digital (AC-3) Dolby Digital Plus (E-AC-3)	<ul style="list-style-type: none"> • Mono, stereo, and multichannel • Bit rate: 56 to 640 kbps
Audio Encoding	
MPEG-1 and MPEG-2 Layer II audio	<ul style="list-style-type: none"> • Mono, stereo, and multichannel • Bit rate: 32 to 384 kbps
AAC	<ul style="list-style-type: none"> • Low complexity, high efficiency • Mono, stereo, and multichannel • Bit rate: 32 to 640 kbps, depending on the encoding mode • ADTS, LATM and LOAS
Dolby Digital (AC-3) Dolby Digital Plus (E-AC-3)	<ul style="list-style-type: none"> • Mono, stereo, and multichannel • Bit rate: 56 to 640 kbps
Number of audio services	<ul style="list-style-type: none"> • DCM-MFP-S: Up to 24 audio services per card • DCM-MFP: Up to 48 audio services per card
VBI and Ancillary Data	
Closed captions	<ul style="list-style-type: none"> • CEA-608 and CEA-708 conversion
VBI formats	<ul style="list-style-type: none"> • WST, DVB-WST, Inverted WST, WSS, VPS, transparent lines, VII, and OP-47

Ordering Information

To place an order, visit the [Cisco Ordering Homepage](#). Table 2 provides ordering information for the Cisco DCM Series Multi Format Processor Card.

Table 2. Ordering Information

Description	Part Number
Hardware	
D9900/01/02 DCM Multi Format Processor Board, Single Layer (req. SW, DCM, V10.00.05 or later)	DCM-MFP-S
D9900/01/02 DCM Multi Format Processor Board, Single Layer, Spare (req. SW, DCM, V10.00.05 or later)	DCM-MFP-S=
D9902 DCM Multi Format Processor Board, Double Layer (req. SW, DCM, V10.00.05 or later)	DCM-MFP
D9902 DCM Multi Format Processor Board, Double Layer, Spare (req. SW, DCM, V10.00.05 or later)	DCM-MFP=
Licenses	
Software license CD-ROM (Add licenses in Cisco's Dynamic Configuration Tool)	DCM-LIC-UPGR
Main DCM Device Licenses	
D9900/01/02 MPEG-2 SD Transcoding Lic (1/prg; req MFP)	LDCM-MP2SDTC
D9900/01/02 MPEG-2 HD Transcoding Lic (1/prg; req MFP)	LDCM-MP2HDTC
D9900/01/02 AVC SD Transcoding Lic (1/prg; req MFP)	LDCM-AVCSDTC
D9900/01/02 AVC HD Transcoding Lic (1/prg; req MFP)	LDCM-AVCHDTC
D9900/01/02 ABR Transcoding Lic 16 credits (req MFP)	LDCM-ABRTC
D9900/01/02 ABR Profile Lic 1080p25/30 (8 credits; req MFP)	LDCM-ABR-1080PTC
D9900/01/02 ABR Profile Lic 720p25/30 (4 credits; req MFP)	LDCM-ABR-720PTC
D9900/01/02 ABR Profile Lic 576p/480p (2 credits; req MFP)	LDCM-ABR-SDTC

Description	Part Number
D9900/01/02 ABR Profile Lic 352x576p/480p (1 credit;req MFP)	LDCM-ABR-HALFSDTC
D9900/01/02 MFP Statmux (1/prg; req. MFP)	LDCM-SMX
D9900/01/02 MPEG-1 LII Transcode Lic (1/stereo; req MFP)	LDCM-MP1LII-TC
D9900/01/02 Dolby AC-3 Transcoding Lic (1/stereo; req MFP)	LDCM-DLBYAC3-TC
D9900/01/02 Dolby Digital Plus Transcode Lic (1/stereo; req MFP)	LDCM-DDP-TC
D9900/01/02 AAC Audio Transcode Lic (1/stereo; req MFP)	LDCM-AAC-TC
D9900/01/02 MFP SD DPI Upgr Lic (1/prg; req MFP)	LDCM-SDDPIU
D9900/01/02 MFP HD DPI Upgr Lic (1/prg; req MFP)	LDCM-HDDPIU
Backup DCM Device Licenses	
D9900/01/02 BU MPEG-2 SD Transcoding Lic (1/prg; req MFP)	BDCM-MP2SDTC
D9900/01/02 BU MPEG-2 HD Transcoding Lic (1/prg; req MFP)	BDCM-MP2HDTTC
D9900/01/02 BU AVC SD Transcoding Lic (1/prg; req MFP)	BDCM-AVCSDTC
D9900/01/02 BU AVC HD Transcoding Lic (1/prg; req MFP)	BDCM-AVCHDTC
D9900/01/02 BU ABR Transcoding Lic 16 credits (req MFP)	BDCM-ABRTC
D9900/01/02 BU ABR Profile Lic 1080p25/30 (8 credits; req MFP)	BDCM-ABR-1080PTC
D9900/01/02 BU ABR Profile Lic 720p25/30 (4 credits; req MFP)	BDCM-ABR-720PTC
D9900/01/02 BU ABR Profile Lic 576p/480p (2 credits; req MFP)	BDCM-ABR-SDTC
D9900/01/02 BU ABR Profile Lic 352x576p/480p (1 credit;req MFP)	BDCM-ABR-HALFSDTC
D9900/01/02 BU MFP Statmux (1/prg; req. MFP)	BDCM-SMX
D9900/01/02 BU MPEG-1 LII Transcode Lic (1/stereo; req MFP)	BDCM-MP1LII-TC
D9900/01/02 BU Dolby AC-3 Transcode Lic (1/stereo; req MFP)	BDCM-DLBYAC3-TC
D9900/01/02 BU Dolby Digital Plus Transcode Lic (1/stereo; req MFP)	BDCM-DDP-TC
D9900/01/02 BU AAC Audio Transcode Lic (1/stereo; req MFP)	BDCM-AAC-TC
D9900/01/02 BU MFP SD DPI Upgr Lic (1/prg; req MFP)	BDCM-SDDPIU
D9900/01/02 BU MFP HD DPI Upgr Lic (1/prg; req MFP)	BDCM-HDDPIU
Software	
SW, DCM, V12.00.00	DCM-SW-120000-K9

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed by technology and by network complexity to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

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

To subscribe to receive end-of-life and end-of-sale information, go to <http://www.cisco.com/cisco/support/notifications.html>.

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