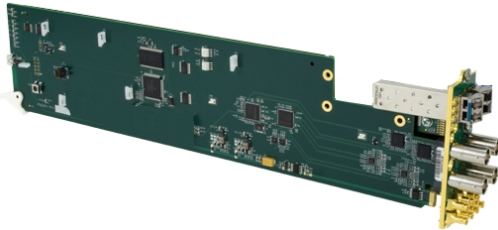


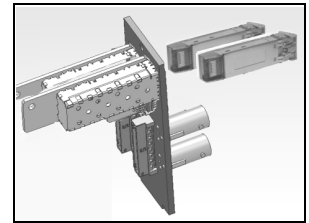
9415DA-SFP • 3G/HD/SD-SDI / ASI / MADI Reconfigurable Video SFP Transceiver/Distribution Amplifier with Full-Flexibility Crosspoint and Externally-Accessible SFP Module



The Cobalt® **9415DA-SFP 3G/HD/SD-SDI / ASI / MADI Reconfigurable Video SFP Transceiver/Distribution Amplifier** with Full-Flexibility Crosspoint and Externally-Accessible SFP Module provides a card-based solution for high-density conversions between coax SDI/ASI, fiber, HDMI, and MADI. With an externally-accessible SFP cage on the card rear module, SFP modules can be easily hot-swapped for maintenance or card repurposing. Because all connections are direct to the card rear module and external SFPs, all cabling remains undisturbed for card removal/installation.

A crosspoint (which is user-configurable via DashBoard™ remote control) allows the card to apply any of the card inputs to various coax DA outputs as well as up to 2 Rx and Tx paths through the external SFP. Up to 10 coaxial DA outputs are available per each card. Using a high-density split rear module, up to 20 cards can be installed in a frame, providing 40 channels of distribution.

The card accepts non-MSA video SFP modules, with single and dual-channel Tx and Rx modules available, supporting an extensive range of electrical/coax and fiber conversions. Excellent receive performance allows coaxial receive EQ for up to 110m 3G, 180m HD, and 360m SD cable length (1694A). Full user DashBoard™ or Remote Control Panel remote control allows full status and control access locally or across a standard Ethernet network.



Externally-accessible SFP cages on the card Rear Module allow easy maintenance or repurposing of the card by simply swapping SFP modules as desired.

FEATURES

Externally-accessible SFP cages allow easy card repurposing. Wide array of industry-standard SFP modules available, including fiber I/O, and HDMI.

Fully-flexible coaxial crosspoint/DA provides up to 10 copies per card. Crosspoint can select from any card input.

Full support of 3G/HD/SD-SDI and ASI/DVB

Excellent coax receive performance – EQ allows 1694A cable lengths up to 110m (3G) / 180m (HD) / 360m (SD)

All outputs are non-inverting – ASI can be outputted on any output

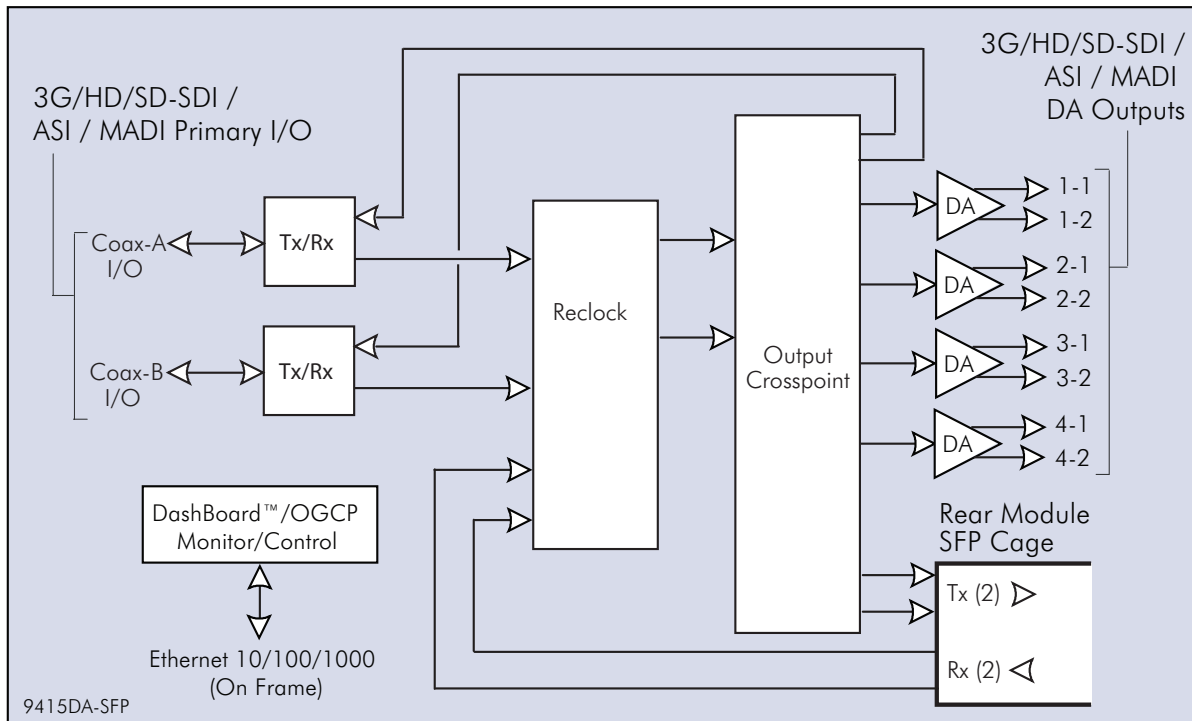
Automatic reclocking for all SDI data rates (auto-bypass for non-SDI data rates)

SFP-based converters provide state-of-the-art fiber performance, power consumption, and compactness.

DashBoard™ status and full remote control

Hot-swappable

Five year warranty



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OPTIONS

The following SFP **hardware** (hardware-defined) options are available for this card model:

- | | |
|---|--|
| -SFP-0E SFP Optical Single Receiver | -SFP-H-T0-S SFP HDMI-to-HD/SD-SDI Receiver |
| -SFP-20E SFP Optical Dual Receiver | -SFP-S-T0-H SFP HD/SD-SDI-to-HDMI Transmitter |
| -SFP-E0 SFP Optical Single Transmitter | -SFP-E0-CWDM SFP Optical Single CWDM Transmitter (see Ordering Info for wavelengths and corresponding ordering codes) |
| -SFP-2E0 SFP Optical Dual Transmitter | -SFP-2E0-CWDM SFP Optical Dual CWDM Transmitter (see Ordering Info for wavelengths and corresponding ordering codes) |
| -SFP-E00E SFP Optical Transceiver | |

The following I/O configuration **software** (software-defined) options are available for cards using SFP type **-SPF-IP-SWD** (Software-Defined EmSFP 2110 or 2022-6 Encap/De-Encap):

- | | |
|--|--|
| +ADD-SFP-2SDI-TO-IP-2022-6 SFP Software License; Dual-Channel Encapsulator 2SDI-to-IP-2022-6 | +ADD-SFP-IP-TO-SDI-2022-6 SFP Software License; Single-Channel De-Encapsulator IP-2022-6-to-SDI |
| +ADD-SFP-2SDI-TO-IP-2110 SFP Software License; Dual-Channel Encapsulator 2SDI-to-IP-2110 | +ADD-SFP-IP-TO-SDI-2110 SFP Software License; Single-Channel De-Encapsulator IP-2110-to-SDI |
| +ADD-SFP-IP-TO-2SDI-2022-6 SFP Software License; Dual-Channel De-Encapsulator IP-2022-6-to-2SDI | +ADD-SFP-SDI-TO-IP-2022-6 SFP Software License; Single-Channel Encapsulator SDI-to-IP-2022-6 |
| +ADD-SFP-IP-TO-2SDI-2110 SFP Software License; Dual-Channel De-Encapsulator IP-2110-to-2SDI | +ADD-SFP-SDI-TO-IP-2110 SFP Software License; Single-Channel Encapsulator SDI-to-IP-2110 |

SPECIFICATIONS

Note: Inputs/outputs are a function of rear I/O module used. Fiber specifications are typical, and only applicable for card fitted with Tx or Rx (as applicable) fiber SFP module. Specifications subject to change.

Power

< 10 Watts

3G/HD/SD-SDI / ASI / MADI Inputs/Outputs (Coaxial Primary)

(2) 75Ω BNC input/outputs max (I/O-A and I/O-B)
SDI Formats Supported: SMPTE 259M, SMPTE 292M, SMPTE 424M

Coaxial Receive Performance (Cable Length; Belden 1694A)

SDI Receive Cable Length (1694A): 110m/180m/360m (3G/HD/SD)

Fiber Transmit Output (typ. with fiber Tx SFP)

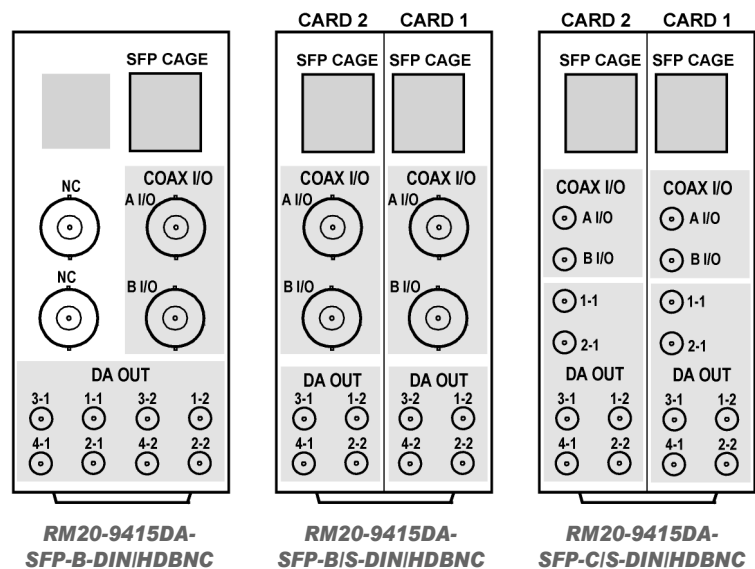
LC connector
Fiber Wavelength, Tx: 1310 nm
Tx Power: -5.0 dBm (min)

Fiber Receive Input (typ. with fiber Rx SFP)

LC connector
Receive Sensitivity: -23 dBm; 1260 to 1620 nm (with internal power meter status display)

3G/HD/SD-SDI / ASI / MADI Outputs (DA Outputs)

Four, 1x2 75Ω BNC outputs (8 total, max). Each DA pair can receive any primary or opposite-channel DA signal.
Signal Level: 800 mV nominal
Alignment Jitter: 3G/HD/SD: < 0.3/0.2/0.2 UI
Timing Jitter: 3G/HD/SD: < 2.0/1.0/0.2 UI



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ORDERING INFORMATION

9415DA-SFP 3G/HD/SD-SDI / ASI / MADI Reconfigurable Video SFP Transceiver/Distribution Amplifier with Full-Flexibility Crosspoint and Externally-Accessible SFP Module

Options:

Note: Options denoted as "+" are software-based options which can be uploaded on new product when ordered or typically field-installed as a software upload upgrade. Options or ordering line items denoted as "-" are hardware orderable items (such as SFP modules).

-SFP-E0 3G/HD/SD-SDI/ASI/MADI Video SFP Optical, Single Transmitter, Medium Haul, 1310nm; type LC connector

-SFP-2E0 3G/HD/SD-SDI/ASI/MADI Video SFP Optical, Dual Transmitter, Medium Haul, 1310nm; type LC connectors

-SFP-0E 3G/HD/SD-SDI/ASI/MADI Video SFP Optical, Single Receiver, Medium Haul; type LC connector

-SFP-20E 3G/HD/SD-SDI/ASI/MADI Video SFP Optical, Dual Receiver, Medium Haul; type LC connectors

-SFP-E00E 3G/HD/SD-SDI/ASI/MADI Video SFP Optical, Transceiver, Medium Haul, 1310nm; type LC connectors

-SFP-E0-CWDM-WX 3G/HD/SD-SDI/ASI/MADI Video SFP Optical, Single Transmitter, Long Haul; type LC connector.

-SFP-2E0-CWDM-WX 3G/HD/SD-SDI/ASI/MADI Dual CWDM Transmitter SFP Module; type LC connectors

Use fiber wavelength codes below for CWDM SFPs when ordering. Available wavelengths (in nm) are as follows: 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610. In "WX" places in part number, substitute code for wavelengths in each place as listed below:

-27: 1270nm	-29: 1290nm	-31: 1310nm
-33: 1330nm	-35: 1350nm	-37: 1370nm
-39: 1390nm	-41: 1410nm	-43: 1430nm
-45: 1450nm	-47: 1470nm	-49: 1490nm
-51: 1510nm	-53: 1530nm	-55: 1550nm
-57: 1570nm	-59: 1590nm	-61: 1610nm

(Example: -SFP-E0-CWDM-27 has 1270 nm Tx wavelength)

-SFP-H-TO-S HDMI/DVI To SDI Video SFP Converter, Single Receiver, Type D with retention clip
(**Note:** The H-to-S SFP module used here supports **8-bit input only**.)

-SFP-S-TO-H SDI To HDMI/DVI Video SFP Converter, Single Transmitter, Type D with retention clip

-SFP-IP-SWD Software-Defined EmSFP 2110 or 2022-6 Encap/De-Encap 10GigE Multi-Mode Optical Interface with Female LC Duplex Connectors. The following I/O purposing software options are available for cards using SFP type **-SPF-IP-SWD**:

+ADD-SFP-2SDI-TO-IP-2022-6 SFP Software License; Dual-Channel Encapsulator 2SDI-to-IP-2022-6

+ADD-SFP-2SDI-TO-IP-2110 SFP Software License; Dual-Channel Encapsulator 2SDI-to-IP-2110

+ADD-SFP-IP-TO-2SDI-2022-6 SFP Software License; Dual-Channel De-Encapsulator IP-2022-6-to-2SDI

+ADD-SFP-IP-TO-2SDI-2110 SFP Software License; Dual-Channel De-Encapsulator IP-2110-to-2SDI

+ADD-SFP-IP-TO-SDI-2022-6 SFP Software License; Single-Channel De-Encapsulator IP-2022-6-to-SDI

+ADD-SFP-IP-TO-SDI-2110 SFP Software License; Single-Channel De-Encapsulator IP-2110-to-SDI

+ADD-SFP-SDI-TO-IP-2022-6 SFP Software License; Single-Channel Encapsulator SDI-to-IP-2022-6

+ADD-SFP-SDI-TO-IP-2110 SFP Software License; Single-Channel Encapsulator SDI-to-IP-2110

9415DA-SFP • 3G/HD/SD-SDI / ASI / MADI Reconfigurable Video SFP Transceiver/Distribution Amplifier with Full-Flexibility Crosspoint and Externally-Accessible SFP Module**ORDERING INFORMATION - cont.****Rear I/O Modules:**

RM20-9415DA-SFP-B-DIN 20-Slot Frame Rear I/O Module. (2) 3G/HD/SD-SDI / ASI / MADI input/output BNCs, (1) SFP cage receptacle, (8) DA coaxial outputs (DA output connectors are DIN1.0/2.3) (**Note:** Mates to card in **odd** frame slot.)

RM20-9415DA-SFP-B-HDBNC 20-Slot Frame Rear I/O Module. (2) 3G/HD/SD-SDI / ASI / MADI input/output BNCs, (1) SFP cage receptacle, (8) DA coaxial outputs (DA output connectors are HD-BNC) (**Note:** Mates to card in **odd** frame slot.)

RM20-9415DA-SFP-B/S-DIN 20-Slot Frame Rear I/O Module (Split; supports 2 cards). (2) 3G/HD/SD-SDI / ASI / MADI input/output BNCs, (1) SFP cage receptacle, (4) DA coaxial outputs (connections are per card; DA output connectors are DIN1.0/2.3)

RM20-9415DA-SFP-B/S-HDBNC 20-Slot Frame Rear I/O Module (Split; supports 2 cards). (2) 3G/HD/SD-SDI / ASI / MADI input/output BNCs, (1) SFP cage receptacle, (4) DA coaxial outputs (connections are per card; DA output connectors are HD-BNC)

RM20-9415DA-SFP-C/S-DIN 20-Slot Frame Rear I/O Module (Split; supports 2 cards). (2) 3G/HD/SD-SDI / ASI / MADI input/outputs, (1) SFP cage receptacle, (6) DA coaxial outputs (connections are per card; coaxial connectors are DIN1.0/2.3)

RM20-9415DA-SFP-C/S-HDBNC 20-Slot Frame Rear I/O Module (Split; supports 2 cards). (2) 3G/HD/SD-SDI / ASI / MADI input/outputs, (1) SFP cage receptacle, (6) DA coaxial outputs (connections are per card; coaxial connectors are HD-BNC)
