



SDM-SDI12G-TX

**12G SDI Output Module Card, 4K@60 12G SDI
with Dual SDI Outputs**

/// OPERATION MANUAL



The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. CYP (UK) Ltd assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

CYP (UK) Ltd assumes no responsibility for any inaccuracies that may be contained in this document. CYP (UK) Ltd also makes no commitment to update or to keep current the information contained in this document.

CYP (UK) Ltd reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means—electronic, mechanical, magnetic, optical, chemical, manual, or otherwise—without express written permission and consent from CYP (UK) Ltd.

© Copyright 2025 by CYP (UK) Ltd.

All Rights Reserved.

Version 1.1

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.



SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.
- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
v1.00	02/08/2024	Initial Release
v1.01	25/02/2025	1. Added 6 supported timings in 8.2 Video Specifications 2. Modified the supported audio sampling rate in 8.3.1 Digital Audio

CONTENTS

1. Introduction	1
2. Applications	1
3. Package Contents	1
4. System Requirements	1
5. Features	2
6. Operation Controls and Functions	3
6.1 Front Panel	3
6.2 Card Installation	4
6.3 Card Removal	5
6.4 WebGUI Control	6
6.4.1 CYP Module Platform	6
6.4.2 Module Tab	6
7. Connection Diagram	7
8. Specifications	8
8.1 Technical Specifications	8
8.2 Video Specifications	9
8.3 Audio Specifications	11
8.3.1 Digital Audio	11
8.4 Cable Specifications	11
9. Acronyms	13

1. INTRODUCTION

The SDM-SDI12G-TX is a 12G SDI transmitter module card from CYP's SDM range.

It is able to convert 12G, 6G, 3G, HD or SD SDI signals from the core module products, like the OR-PIP42SDMO. To be integrated with SDI devices like medical equipment, SDI displays or any wider SDI system.

This module offers customers great flexibility in different scenarios. Also, this module card can be used with other SDI product from CYP and can extend the distance of SDI signals up to 70 metres via an appropriate SDI cable (12G SDI signal source with a Belden 1694A SDI cable).

2. APPLICATIONS

- /// Consumer HDMI to broadcast SDI video signal conversion
- /// Display HDMI video signals on professional SDI displays
- /// Medical training environment or operation rooms

3. PACKAGE CONTENTS

- /// 1× 4K60 HDMI to 12G-SDI Transmitter Module Card
- /// 1× Mounting Screws (Set of 2)
- /// 1× Operation Manual

4. SYSTEM REQUIREMENTS

- /// Must be installed into a product with an available compatible CYP Module Slot

Note: Despite appearances, this card is NOT designed for installation into a PC's PCIe card slot and should only be installed in officially compatible products.

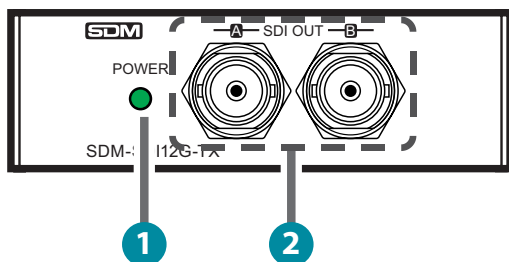
- /// Non-HDCP HDMI source equipment such as media players, video game consoles, or set-top boxes.
- /// SDI receiving equipment such as editing/recording decks, professional studio monitors, or video broadcast equipment.

5. FEATURES

- /// Signal conversion to SDI signals from HDMI signals when integration with one of CYP's core SDM products
- /// Module has dual SDI outputs
- /// Supports 12G, 6G, 3G, HD and SD SDI video formats
- /// Supports output resolution up to 4K@60 4:2:2
- /// Extension of SDI signals up to 70m (12G SDI), 100m (6G SDI), 200m (3G SDI) or 260m (HD SDI)

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel

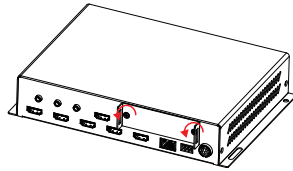


- ❶ **POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.
- ❷ **SDI OUT A ~ B Ports:** Connect to SDI receiving equipment such as editing/recording decks, professional studio monitors, medical equipment, or video broadcast equipment.

6.2 Card Installation

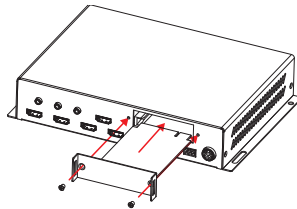
To install this module card into your unit, it must have at least one available CYP Module Slot. Ensure that the anti-static procedure is completed before handling the module card.

- (1) Prior to the installation, power off the unit completely.

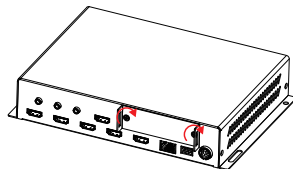


- (2) Remove the dummy faceplate that is covering the card module slot by unscrewing both screws.

Note: Be sure to store the dummy faceplate and its screws in somewhere safe, in case you need to use them again later.



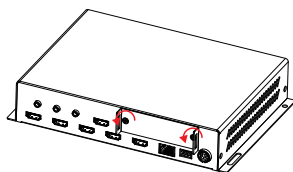
- (3) Align the card with the guiderails to each side of the module slot, gently slide the module card into the slot until its faceplate is flush with the back of the unit.



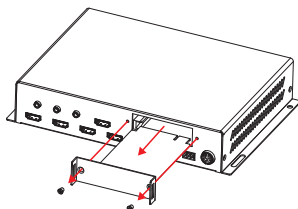
- (4) Secure the module card to the unit by using the supplied screws.
- (5) The unit may now be powered on. The card's power LED will light up to indicate while it's receiving power. In most cases, the card will be automatically detected by the unit and be available to use.

6.3 Card Removal

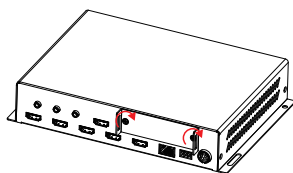
- (1) Prior to removal, power off the unit completely.



- (2) Completely unscrew both screws.



- (3) Gently pull the card straight out of the module slot using the provided handles.



- (4) Cover the module slot with a dummy faceplate and tighten both screws.
- (5) The unit may now be powered back on.

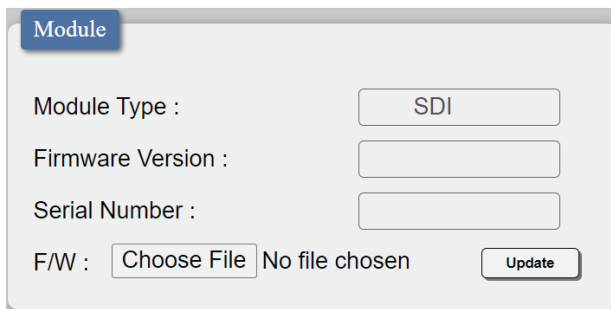
6.4 WebGUI Control

6.4.1 CYP Module Platform

The SDM branded module card(s) can be installed in the compatible module platform. It provides a user-friendly access of some additional functions for the module card within its own WebGUI, improving unit integration.

6.4.2 Module Tab

This tab displays the module's module type, current firmware version and serial number, as well as provides a way to update firmware.

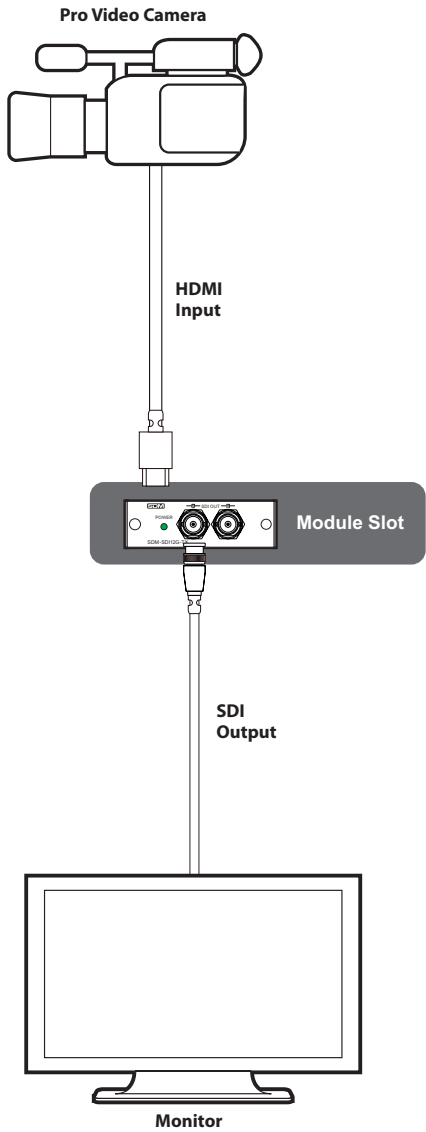


The screenshot shows a web interface titled "Module" in a blue header. Below the header, there are four rows of information: "Module Type" with a button labeled "SDI", "Firmware Version" with an empty text box, "Serial Number" with an empty text box, and "F/W" with a "Choose File" button, the text "No file chosen", and an "Update" button.

Note: The WebGUI design might be vary from the compatible platform.

- 1) **Module Type:** Displays the module's module type.
- 2) **Firmware Version:** Displays the module's firmware version.
- 3) **Serial Number:** Displays the module's serial number.
- 4) **Firmware Upgrade:** To update the module's firmware, click the "Choose File" button to open the file selection window and then select the firmware update file (*.bin format) located on your local PC. After selecting the file, click the "Upgrade" button to begin the firmware update process. After the upgrade is complete, the unit will reboot automatically.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Bandwidth	18Gbps
SDI Bandwidth	12Gbps
SMPTE Standard Support	ST 292-1 Level A ST 425-1 ST 2081-10 ST 2082-10
Card Slot Format	1× CYP Module (Edge Connector)
Output Ports	2×12G-SDI (BNC)
ESD Protection (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)
Dimensions (W×H×D)	128mm×25mm×75mm [Case Only] 128mm×25mm×75mm [All Inclusive]
Weight	92g
Chassis Material	Metal (Steel)
Chassis Color	Black
Operating Temperature	0°C – 40°C/32°F – 104°F
Storage Temperature	-20°C – 60°C/-4°F – 140°F
Relative Humidity	20 – 90% RH (Non-condensing)

8.2 Video Specifications

SUPPORTED RESOLUTIONS (HZ)	INPUT	OUTPUT
	CARD SLOT	SDI
720×400p@70/85	×	×
640×480p@60/72/75/85	×	×
720×480i@60	×	×
720×480p@60	×	×
720×576i@50	×	×
720×576p@50	×	×
800×600p@56/60/72/75/85	×	×
848×480p@60	×	×
1024×768p@60/70/75/85	×	×
1152×864p@75	×	×
1280×720p@50/60	✓	✓
1280×768p@60/75/85	60/75	×
1280×800p@60/75/85	60/60(RB)	×
1280×960p@60/85	✓	×
1280×1024p@60/75/85	✓	×
1360×768p@60	✓	×
1366×768p@60	✓	×
1400×1050p@60	✓	×
1440×900p@60/75	✓	×
1600×900p@60RB	✓	×
1600×1200p@60	✓	×

SUPPORTED RESOLUTIONS (HZ)	INPUT	OUTPUT
	CARD SLOT	SDI
1680×1050p@60	✓	✗
1920×1080i@50/60	✓	✓
1920×1080p@24/25/30	✓	✓
1920×1080p@50/60	✓	✓
1920×1200p@60RB	✓	✗
2560×1440p@60RB	✗	✗
2560×1600p@60RB	✓	✗
2048×1080p@24/25/30	✓	✓
2048×1080p@50/60	✓	✓
3840×2160p@24/25/30	✓	✓
3840×2160p@50/60 (4:2:0)	✓	✓
3840×2160p@24, HDR10	✗	✗
3840×2160p@50/60 (4:2:0),HDR10	✗	✗
3840×2160p@50/60	✓	✓
4096×2160p@24/25/30	✓	✓
4096×2160p@50/60 (4:2:0)	✓	✓
4096×2160p@24, HDR10	✗	✗
4096×2160p@50/60 (4:2:0),HDR10	✗	✗
4096×2160p@50/60	✓	✓

8.3 Audio Specifications

8.3.1 Digital Audio

CARD SLOT INPUT / SDI OUTPUT	
LPCM	
Max Channels	8 Channels
Sampling Rate (kHz)	48, 96
BITSTREAM	
Supported Formats	Standard & High-Definition

8.4 Cable Specifications

CABLE LENGTH	HD	FHD	4K UHD	4K UHD ⁺	8K UHD
COAXIAL SDI CABLE (BELDEN 1694A 6GHZ CABLE)					
SDI Output	260m	200m	100m	70m	×

Note: SDI cable distance measurements are based on Belden 1694A 6GHz cable. Operating distance may vary if different quality cables are used. Bandwidth category headings are representative examples only, and do not indicate this product's support for any specific resolution or color bit depth.

Bandwidth Category Examples:

- **HD Video**
 - 720p@60Hz
 - HDMI transmission rates lower than 3Gbps
 - HD-SDI (SMPTE 292M, 1.485Gbps)
- **FHD Video**
 - 1080p@60Hz
 - HDMI transmission rates between 3Gbps and 5.3Gbps
 - 3G-SDI (SMPTE 424M, 2.970Gbps)

- **4K UHD Video**

- 4K@24/25/30Hz (8-bit color) & 4K@50/60Hz (4:2:0, 8-bit color)
- HDMI transmission rates between 5.3Gbps and 10.2Gbps
- 6G-SDI (SMPTE ST 2081, 6Gbps)

- **4K UHD⁺ Video**

- 1080p@120Hz (10/12-bit HDR)
- 4K@50/60Hz (4:4:4, 8-bit) & 4K@50/60Hz (4:2:0, 10/12-bit HDR)
- HDMI transmission rates between 10.2Gbps and 18Gbps
- 12G-SDI (SMPTE ST 2082, 12Gbps)

- **8K UHD Video**

- 4K@120Hz (10/12-bit HDR)
- 8K@24/25/30Hz (10/12-bit HDR) & 8K@50/60Hz (4:2:0, 8-bit color)
- HDMI transmission rates between 18Gbps and 48Gbps
- 24G-SDI (SMPTE ST 2083, 24Gbps)

9. ACRONYMS

ACRONYM	COMPLETE TERM
4K UHD	4K Ultra-High-Definition (10.2Gbps max)
4K UHD⁺	4K Ultra-High-Definition (18Gbps max)
COAX	Coaxial
DHCP	Dynamic Host Configuration Protocol
EDID	Extended Display Identification Data
Gbps	Gigabits per second
GUI	Graphical User Interface
HD	High-Definition
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDR	High Dynamic Range
kHz	Kilohertz
LAN	Local Area Network
LED	Light-Emitting Diode
LPCM	Linear Pulse-Code Modulation
MAC	Media Access Control
MHz	Megahertz
SDI	Serial Digital Interface
TMDS	Transition-Minimized Differential Signaling
UHDTV	Ultra-High-Definition Television
VGA	Video Graphics Array
WUXGA (RB)	Widescreen Ultra Extended Graphics Array (Reduced Blanking)
XGA	Extended Graphics Array
Ω	Ohm



CYP (UK) Ltd., Unit 7, Shepperton Business Park, Govett Avenue,
Shepperton, Middlesex, TW17 8BA

Tel: +44 (0) 20 3137 9180 | Fax: +44 (0) 20 3137 6279

Email: sales@cypeurope.com

www.cypeurope.com

v1.01