



USER GUIDE



SD-SDI / HD-SDI / 3G-SDI to HDMI CONVERTER

CONVERTING HIGH DEFINITION VIDEO TO HDMI

MODEL No.

PRO-HD2HDMI



HDMITM
HIGH DEFINITION MULTIMEDIA INTERFACE



MADE IN TAIWAN

Thank You.

Thank you for purchasing your new PESA video processing equipment. We appreciate your confidence in our products. PESA produces quality, state-of-the-art equipment designed to deliver our users the highest degree of performance, dependability and versatility available anywhere. We want you to know that if you ever have a concern or problem with a PESA product, we have a team of engineers, technicians and customer service professionals available 24/7/365 to help resolve the issue.

Our commitment is to continue earning the trust and confidence of our customers throughout the industry by incorporating cutting-edge technology into the highest quality, most cost effective products on the market. And we would like to invite you to tell us how we're doing. If you have any comments or suggestions concerning your PESA equipment, please contact our Customer Service Department.

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IMPORTANT SAFETY INSTRUCTIONS

1. Read, keep, and follow these instructions.
2. Heed all warnings.
3. Installation and servicing should only be done by qualified service personnel and conform to all local codes.

WARNING:

1. To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.
2. This unit is designed for indoor use only and it must not be installed where exposed to rain or moisture.
3. Do not expose this unit to dripping or splashing. Do not place objects filled with liquids, such as vases, on this unit.
4. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
5. Do not install near any heat source.
6. Only use attachments/accessories specified by the manufacturer.
7. Clean only with dry cloth.
8. Do not defeat the safety purpose of the polarized or grounding-type plug.
9. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the unit.

SERVICE INFORMATION (QUALIFIED PERSONNEL ONLY):

1. Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.
2. Only use replacement parts recommended by PESA.
3. After replacement/repair of this unit's electrical components, conduct a resistance measurement between line and exposed parts to verify the exposed parts have not been connected to line circuitry.

LIMITATION OF LIABILITY

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ORDER INFORMATION - HDMI CONVERTER

The **PRO-HD2HDMI SDI/3G-HD-SD to HDMI Converter** provides a cost effective way to convert a 3G/HD/SD-SDI signal to HDMI compliant format. The conversion between SDI and HDMI is pure digital and guarantees no loss transformation for both audio and video. Plus, with up to 8 channels audio support, 7.1 channel or 5.1 channel audio becomes available. The PRO-HD2HDMI also provides a low jitter and re-clocked outputs for daisy chain or multiple monitors.

FEATURES

- Supports 3G-SDI formats(SMPTE 425M, Level A): 1080p @50/59.94/60Hz (4:2:2)
- Supports high-definition (HD-SDI) formats: 1080i @50/59.94/60Hz, 720p @50/59.94/60Hz
- Supports standard-definition (SD-SDI) formats: NTSC @59.94Hz, PAL @50Hz
- Bit Rates for 2.97 Gbps, 2.967Gbps, 1.485 Gbps, 1.4835 Gbps, 270 Mbps
- Auto 3G/HD/SD-SDI detection
- Support for HDMI Deep Color
- Easy installation with wall mounting design
- Supports up to 8 channels of audio, 7.1 or 5.1 optional
- Low jitter
- Re-clocked outputs for looping SD/HD/3G SDI signals

Part number	Description
PRO-HD2HDMI	Conversion module for SD-SDI, HD-SDI, and 3G-SDI to HDMI

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Chapter 1 ABOUT YOUR PRO-HD2HDMI PRODUCT

1.1 DESCRIPTION

PESA's PRO-HD2HDMI is a throw-down style converter module allowing SD-SDI, HD-SDI, or 3G-SDI video signals to be viewed on any HDMI display or monitor supporting 480i, 720p, 1080i and 1080p formats. Each module includes a power pack with a screw-lock connector. The supplied power brick accepts a primary power input of 100-240V, 50/60Hz, and supplies a +5V DC output. Power consumption is less than 3 watts.

Each PRO-HD2HDMI module accepts input signals through a standard 75 Ohm BNC connection. Source devices can be located up to 300m (1000ft) for SD-SDI, up to 150m (500ft) for HD-SDI, and 90m (300ft) for 3G-SDI. Included on each module is a 75 Ohm BNC connector with input looping capabilities to allow local preview of the input source via a SMPTE type monitor or recording device.

The compact package comes with two mounting tabs for easy attachment to wall or under-the-table locations.



FIGURE 1-1: PESA PRO-HD2HDMI Module

1.2 CONNECTING INPUTS

Each PRO-HD2HDMI allows one 75 Ohm input supporting SD/HD/3G inputs. Devices can be connected up to 300m (SD-SDI), 150m (HD-SDI), and 90m (3G-SDI).

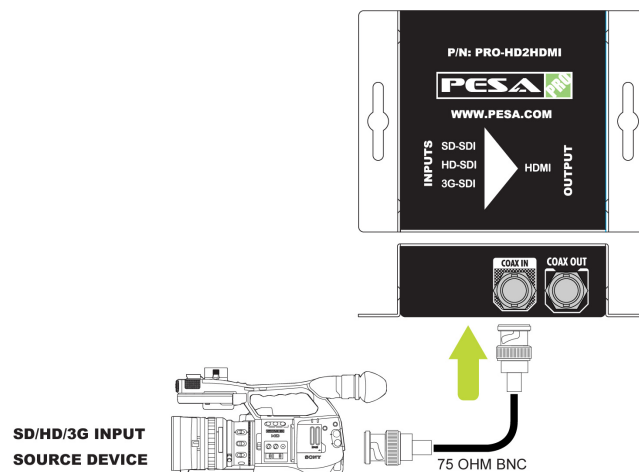


FIGURE 1-2 : PESA PRO-HD2HDMI Input Connections

1.3 CONNECTING LOOPING INPUTS

Each PRO-HD2HDMI allows one 75 Ohm looping connector supporting SD/HD/3G outputs. Devices can be connected to support preview monitoring, distribution to other devices in a chain, or to a matrix switch for alternative source distribution.

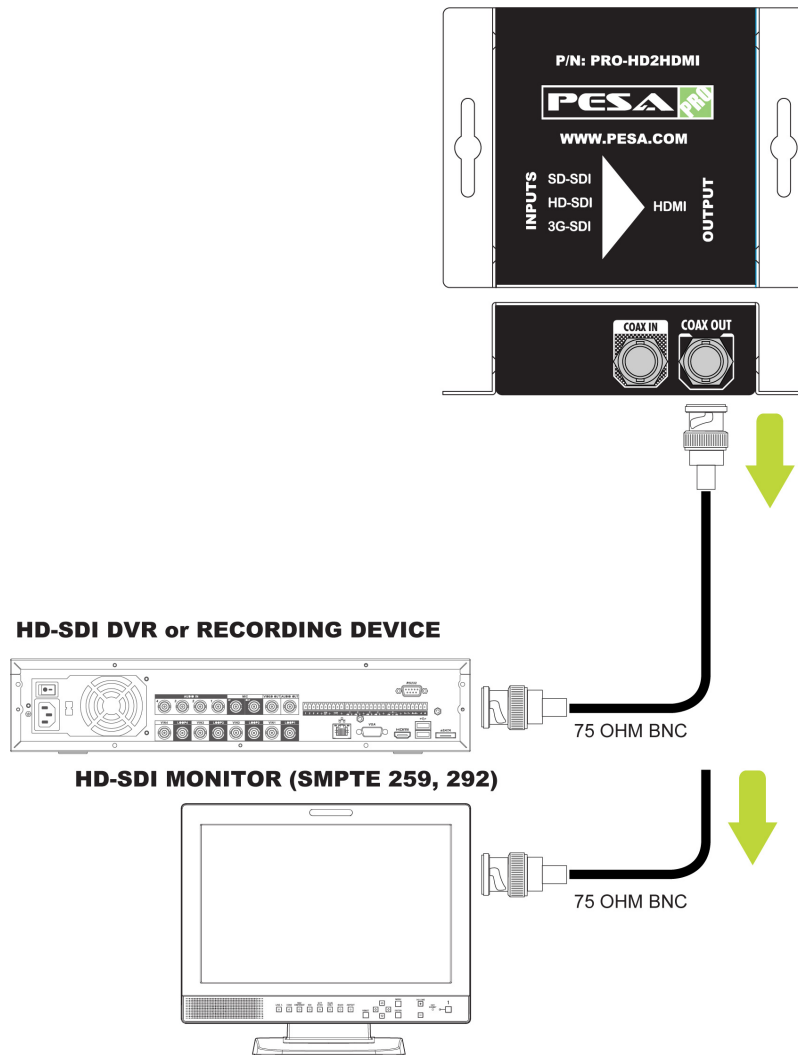


FIGURE 1-3 : PESA PRO-HD2HDMI Looping Connections for Local Display

1.4 CONNECTING THE HDMI OUTPUT

Each PRO-HD2HDMI allows one HDMI output per module. Devices such as HDMI LCD displays or projector can be connected for source monitoring from up to 300m away.

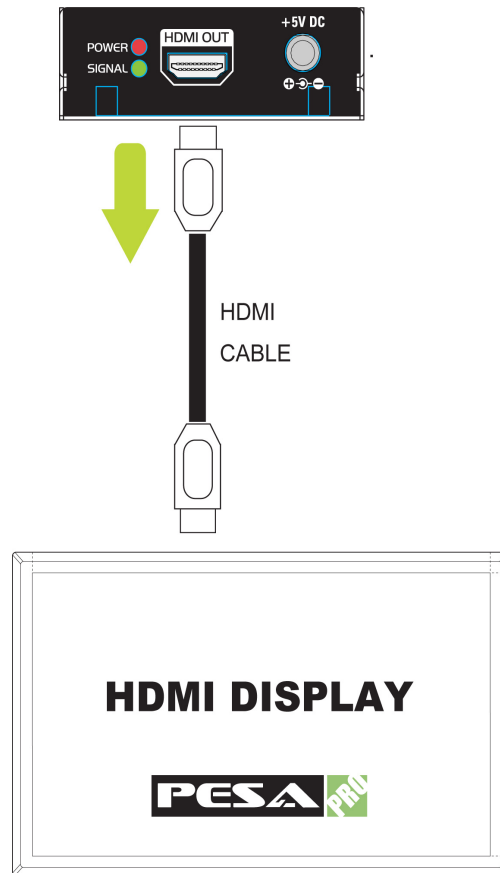


FIGURE 1-4: PESA PRO-HD2HDMI Connection to HDMI Display

1.5 CONNECTING POWER TO THE PRO-HD2HDMI MODULE

Connect the supplied power pack to the +5VDC connection on the module. Hand tighten the screw-lock to get a snug connection. DO NOT OVER TIGHTEN.



FIGURE 1-5: PESA PRO-HD2HDMI Power Supply Connection

Chapter 2 Installing your PRO-HD2HDMI

With all input and output devices and power connected, the following diagram provides a typical full detail of module installation. There are no software or switch settings on this module.

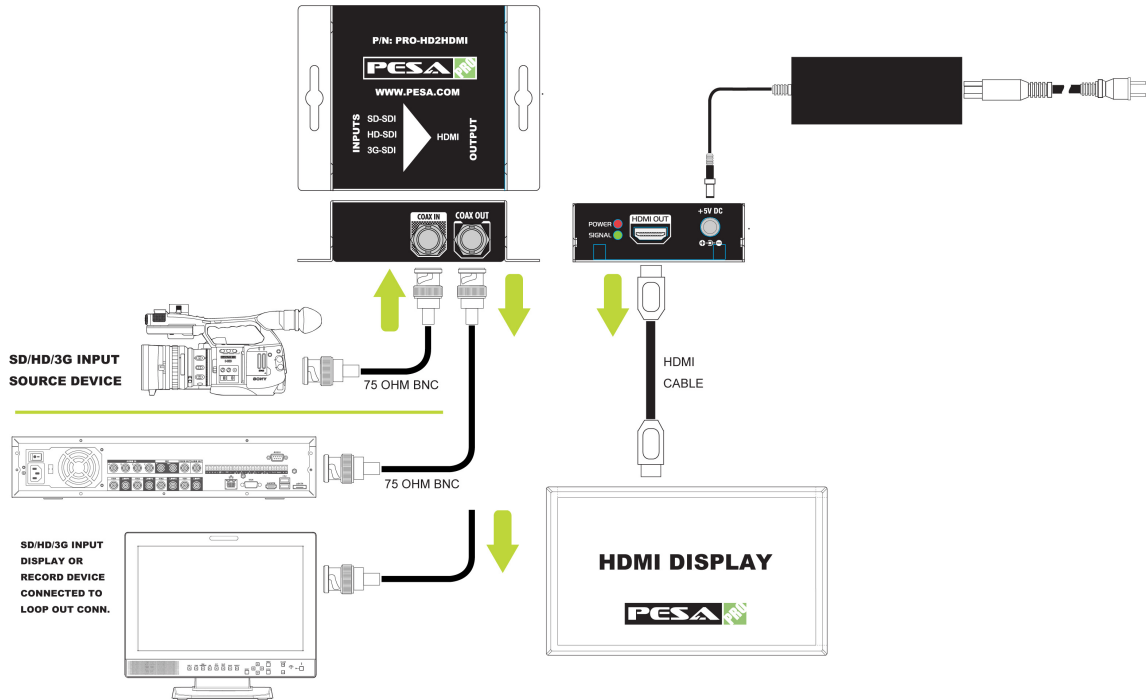


FIGURE 2-1: PESA PRO-HD2HDMI Typical Module Installation

2.1 SUPPORTED RESOLUTIONS

3G-SDI INPUTS	
1080p @ 50 / 59.94 / 60Hz	SMPTE 424 / 425 (4:2:2)
HD-SDI INPUTS	
720p @ 50Hz	SMPTE 296 -3
720p @ 59.94 / 60Hz	SMPTE 296 -1, -2
1080i @ 25Hz	SMPTE 274 -6
1080i @ 29.97 / 30Hz	SMPTE 274 -4, -5
1080p @ 23.98 / 24Hz	SMPTE 274 -10, -11
1080p @ 25Hz	SMPTE 274 -9
1080p @ 29.97 / 30Hz	SMPTE 274 -7, -8
SD-SDI INPUTS	
480i @ 29.97 / 30Hz	NTSC
576i @ 25Hz	PAL B, D, G,H, I

2.2 CABLE LENGTHS – MAXIMUM DISTANCES AND CONNECTION TYPE

Defining the types of signals and connection styles

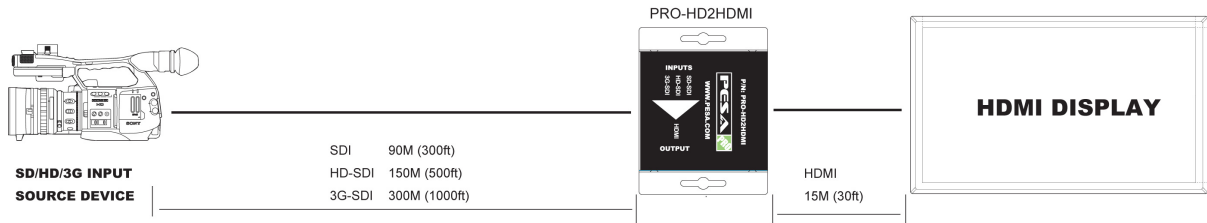


FIGURE 2-2: PESA PRO-HD2HDMI Cable Connections and Maximum Lengths

Chapter 3 Maintenance and Repair

3.1 PERIODIC MAINTENANCE


No periodic maintenance is required.

3.2 PESA CUSTOMER SERVICE

If you are experiencing any difficulty with your PRO-HD2HDMI product, please contact PESA's Customer Service Department. Skilled technicians are available to assist you 24 hours a day, every day of the year.

3.3 REPAIR

Before attempting to repair this equipment, please consult your warranty documents and PESA's Customer Service Department. Unauthorized repairs may void your warranty.

	<p>PC boards in this equipment contain Surface Mount Technology (SMT) components. Special tools and skills are required to replace these components without causing damage to adjacent areas.</p> <p>Failure to consult with Customer Service before attempting to repair these boards may void your warranty.</p>
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3.4 REPLACEMENT PARTS

Only parts of the highest quality are used in the design and manufacture of this equipment. If the inherent stability and reliability are to be maintained, replacement parts must be of the same high quality. Please consult our Customer Service Department before installing any parts not purchased from PESA.

3.5 FACTORY SERVICE

Before returning any equipment to PESA for service or repair, please contact our Customer Service Department for an RMA number.

Chapter 4 Specifications

INPUT	
Number of Inputs	1
Connector Type	BNC, 75 Ohm
Standards	SMPTE 259, 292, 424
Video Bandwidth	2.97 Gbps , 2.970/1.001 Gbps
Auto detect	Yes
Video Support	[3G] 1080p50/59.94/60 – 4:2:2 [HD] 720p50/59.94/60 [HD] 1080i 50/59.94/60 [HD] 1080p24/30 [SD] NTSC @ 59.94 and PAL @ 50Hz
Looping Connector	1
Looping Connector Type	BNC, 75 Ohm
Looping Standard	SMPTE 259, 292, 424
Looping Reclocking	[3G-SDI] up to 90m (300ft) [HD-SDI] up to 150m (500ft) [SD-SDI] up to 300m (1000ft)
Audio Support	Yes, embedded
OUTPUTS	
Number of Outputs	1
Connector Type	HDMI, Type A (19 pin female)
Standards	HDMI 1.4
Cable connection distance	15m
ENVIRONMENTAL	
Housing Dimensions	79mm x 84mm x 27mm 3.1 x 3.3 x 1.2 inches
Weight	250g (8.8 oz)
Operational Temperature	0-40 degree C
Operational Humidity	20-90% RH (non-condensation)
Power Connection	+5VDC (inter-locking power plug)
Power Consumption	3W (max)
AC Power Brick	100-240VAC, 50/60Hz

Chapter 5 Warranty

PESA Switching Systems, Inc., (PESA) warrants this equipment against defective workmanship or materials for a period of one (1) year from date of shipment. The sole warranty responsibility of PESA, shall be to replace or repair product proved to be defective. During the warranty period, defective parts will be replaced at no charge. Labor to repair or replace defective parts covered under the warranty will be performed at no charge at PESA. This warranty covers only products manufactured by PESA, and the components used in their manufacture. The warranty on assembled products sold by PESA., but manufactured by others shall be that of the original manufacturer. This warranty does not include shipping damage or damage caused by abuse, neglect, tampering by unauthorized personnel, damage inadvertently caused by the user, preventative maintenance, or any equipment or part thereof whose serial number has been removed or defaced. Neither the seller nor the manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith. This warranty is effective only at the PESA factory in Huntsville, Alabama, USA. If possible, retain the original packing material for use in the unlikely event that your equipment must be returned to the PESA factory. When shipping your equipment, the shipping charges must be prepaid. The repaired unit will be returned to you, freight prepaid. This warranty is exclusive and in lieu of all other warranties, whether expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose.



PESA