



PESA



PRO-HDMI2HD

HDMI to SDI/3G-HD-SD Converter

User Manual



HDMI™ **HDCP™**
HIGH-DEFINITION MULTIMEDIA INTERFACE HIGH-DEFINITION CONTENT PROTECTION



Made in Taiwan rev.1008



Safety and Notice

The **PRO-HDMI2HD HDMI to SDI/3G-HD-SD Converter** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the PRO-HDMI2HD should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



Warranty Information

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.

INTRODUCTION

The **PRO-HDMI2HD HDMI to SDI/3G-HD-SD Converter** provides a professional way to convert HDMI to 3G/HD/SD SDI in real time. 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-HDMI2HD also provides 2 low jitter SDI outputs for daisy chain or multiple monitors. With the use of PRO-HDMI2HD, the most popular uncompressed video interface in the consumer world is readily available for professional SDI equipments

Features

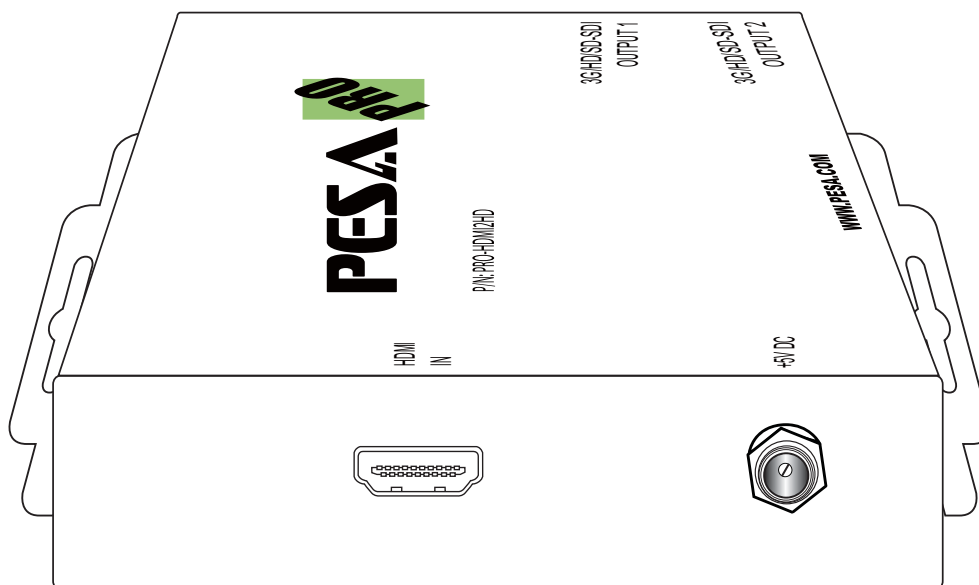
- Supported formats
NTSC 525@59.94Hz, PAL 625@50Hz,
720p@23.98/24/25/29.94/30/50/59.94/60Hz,
1080i@50/59.94/60Hz
1080p@23.97/24/25/29.97/30/50/59.94/60Hz
Bit Rate: 2.97Gbps, 2.967Gbps, 1.485Gbps, 1.4835Gbps, 270 Mbps
- Auto 3G/HD/SD-SDI detection
- HDMI founder Silicon Image chipsets embedded for superior compatibility and reliability
- Two SDI compliant outputs
- Easy installation with wall mounting design
- External DIP switch configuration

Specifications & Package Contents

Model Name		PRO-HDMI2HD
Technical		
Role of usage		Format converter
SDI standards		3G-SDI, HD-SDI & SD-SDI
Auto 3G/HD/SD-SDI detection		Yes
Video bandwidth		2.970 Gbps & 2.970/1.001 Gbps
Video support		[3G] – 1080p50/59.94/60 (4:2:2) [HD] – 720p @50/59.94/60Hz, 1035i @50/59.94/60Hz, 1080i @50/59.94/60Hz, 1080p @24/30Hz [SD] – NTSC @59.94Hz, PAL @50Hz
Input signal		HDMI
Output signal		SDI - [SD] SMPTE 259M; [HD] SMPTE 292M & 296M; [3G] SMPTE 424M & 425M)
Output impedance		75Ω
Synchronization mode		Internal synchronization or external synchronization
Eye pattern characteristics		Extra low alignment jitter 0.05UI at HD
Cable equalization		[3G] up to 200ft; [HD] up to 500ft; [SD] up to 1000ft
Audio support		Yes
PCB stack-up		4-layer board (impedance control – differential 100Ω; single 50Ω)
Input		1x HDMI
Output		2x SDI
HDMI connector		Type A (19-pin female)
BNC connector		3G 75Ω inter-locked socket
DIP switch		4-pin mode selection
Mechanical		
Housing		Metal enclosure
Dimensions LxWxH	Model	6.9"x4.7"x1" / 175 x 120 x 25mm
	Package	6.9"x10.4"x3" / 174 x 264 x 77mm
Weight	Model	1.1 lbs / 515g
Fixedness		Wall mounting and latch-locking power jacks
Power supply		5V 2A DC
Power consumption		1 Watt (max)
Operation temperature		32-104°F / 0-40°C
Storage temperature		-4-140°F / -20-60°C
Relative humidity		20-90% RH (no condensation)
Package Contents		1x PRO-HDMI2HD 1x 5V power supply unit 1x User manual

PANEL DESCRIPTION

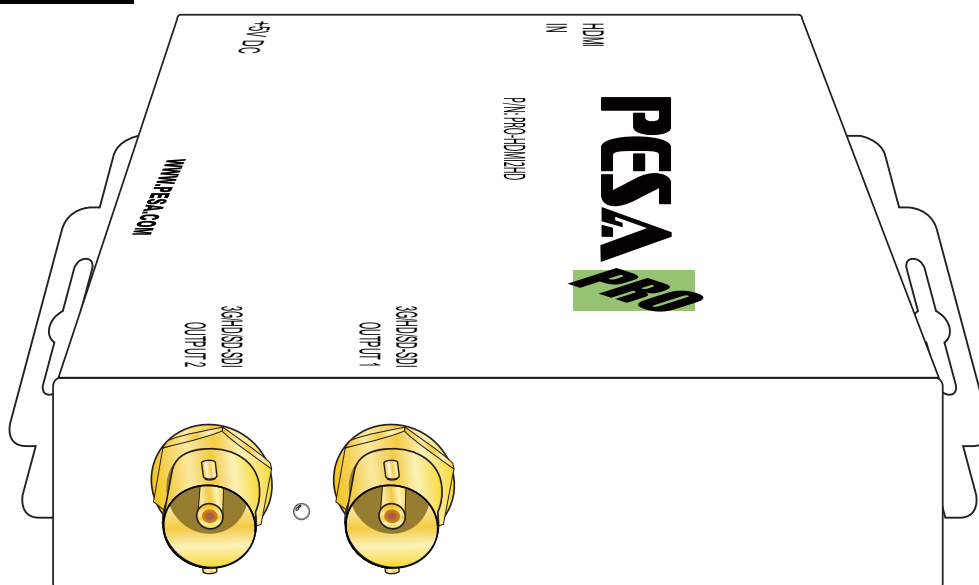
Input Panel



HDMI IN: Connect a HDMI male-male cable to be linked to one HDMI source device.

+5V DC: Connect to a 5V DC latch-locking power supply unit.

Output Panel



3G/HD/SD-SDI OUTPUT 1: Plug in a coaxial cable to be linked to one SDI device.

Signal LED: Indication of the existence of audio/video signal

3G/HD/SD-SDI OUTPUT 2: Plug in a coaxial cable to be linked to the other SDI device

Bottom Panel



A 4-pin DIP switch is used for user interface, and users can access this switch from the bottom of the unit.

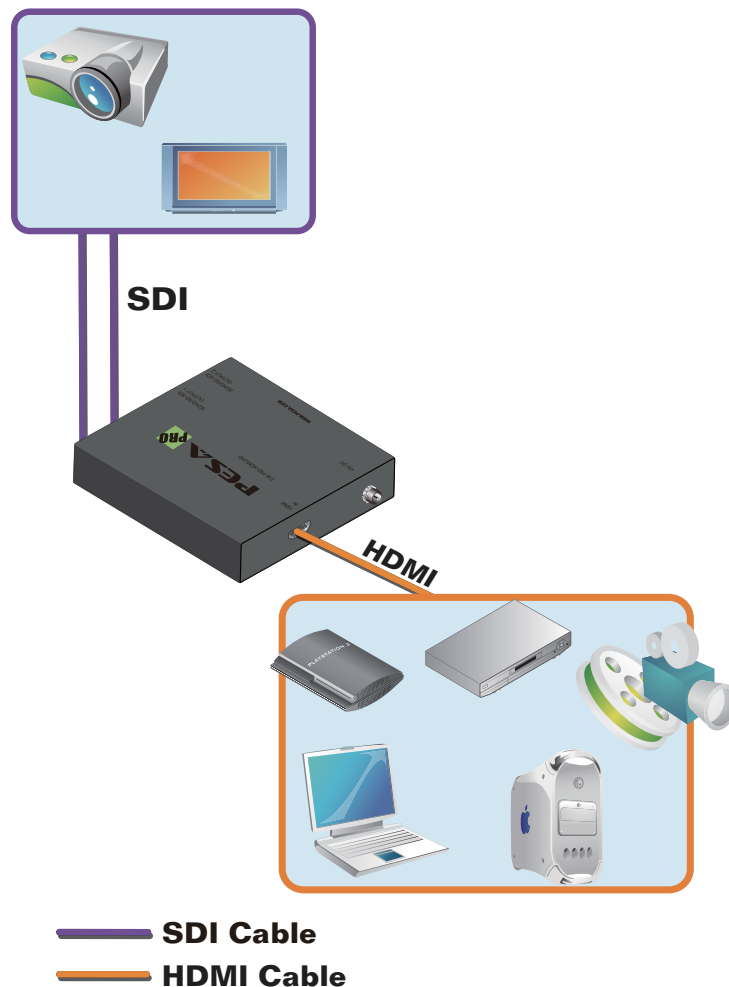
Pin No.	1	2	3	4
ON (↑)	Used for SMPTE 352M	3G level B	Audio group 3&4	Learn EDID
OFF (↓)		3G level A	Audio group 1&2	Default EDID 1080p & stereo

Notice

1. Factory default for 4-pin DIP: OFF-OFF-OFF-OFF (↓↓↓↓).
2. The PRO-HDMI2HD supports only audio sample frequency at 48kHz.

INSTALLATION

Connection Diagram



SUPPORTED RESOLUTIONS

3G-SDI INPUT	
1080p @ 50 / 59.94 / 60Hz	SMPTE 424M / 425M (4:2:2)
HD-SDI INPUT	
525p @ 59.94Hz	SMPTE 293M, ITU-BT.1358
625p @ 50Hz	ITU-BT.1358
720p @ 50Hz	SMPTE 296M -3
720p @ 59.94 / 60Hz	SMPTE 296M -1, -2
1080i @ 25Hz	SMPTE 274M -6
1080i @ 29.97 / 30Hz	SMPTE 274M -4, -5
1080p @ 23.98 / 24Hz	SMPTE 274M -10, -11
1080p @ 25Hz	SMPTE 274M -9
1080p @ 29.97 / 30Hz	SMPTE 274M -7, -8
SD-SDI INPUT	
NTSC	PAL B, D, G, H, I

EDID LEARNING

EDID learning function is used for the users have trouble getting normal audio/video output from the HDMI source device. The sequence is

1. Turn off all devices. Dial the pin no.4 of the DIP switch at the bottom of the PRO-HDMI2HD to ON (↑) position.
2. Connect the HDMI display you want to learn its EDID profile to **HDMI IN** port of PRO-HDMI2HD.
3. Turn on the HDMI display and the PRO-HDMI2HD.
4. Wait for 15 seconds to finish the EDID learning process.
5. Disconnect the HDMI display and resume installation.



PRO-HDMI2HD

HDMI to SDI/3G-HD-SD Converter

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