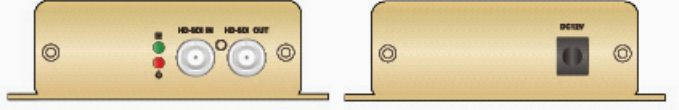


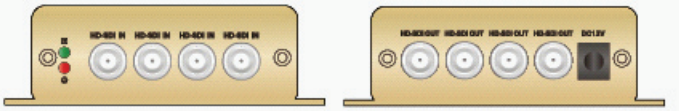


HD-SDI Video Signal Accessories

User's Manual

HD-SDI Video Signal Accessories

<p>HD-001 (1 In / 1 Out Repeater)</p>	
<p>HD-002 (HD-SDI to HDMI Converter)</p>	
<p>HD-003 (HDMI to HD-SDI Converter)</p>	
<p>HD-104S (1 In 4 Out Distributor)</p>	

HD-SDI Video Signal Accessories

1. HD-001

1.1 Introduction

- HD-001 is HD SDI repeater to extend signal transmission distance between HD-SDI devices. The transmission distance is easily extended up to 450ft and if it requires to extend longer than 450ft, it needs to connect another repeater to extend the signal transmission and it will be extended up to another 450ft.

1.2 Features

- 1 in / 1 Out HD-SDI Repeater
- HD-SDI SMPTE 292 M support (1080, 1080i or 720p)
- 450ft Extension of transmission distance
- Vertical Frequency Auto-Track (60, 60/1.001)
- Low Power Consumption: Free voltage 12VDC, 1A
- Compact Size & Light Weight
- Input / Output return loss : > -15dB at 1.5GBPS
- Input / Output Impedance: 75Ohms +/- 1%

1.3 Technical Specification

Moel	HD001
Input / Output Signal	10bit HD Serial Digital Signal, SMPTE 292M, 1/4ch
Video Format	1080p 24/25/30
	1080i 50/60
	720p 24/25/50/60
Input Return Loss(BNC)	> 15 DB 270Mb-3Gb
Output Return Loss(BNC)	> 15 DB 270Mb-3Gb
Input Impedance(BNC)	75 ohms +/- 1%
Output Impedance(BNC)	75 ohms +/- 1%
Power Consumption	Free Voltage 12VDC, 1A
Dimension (WxHxD)	3.35inch x 1.27 inch x 3.48 inch
HD-SDI Connector	BNC Female

HD-SDI Video Signal Accessories

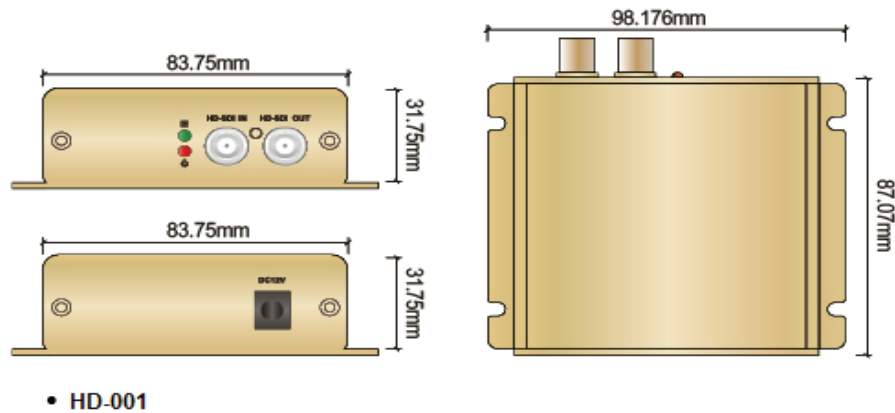
1.4 Unpacking

- The equipment is an electronic appliance, so it should be handled with special care.

1.5 Service

- If there is any problem in the product, please refer servicing to a supplier or a distributor with qualified service personnel.

1.6 System Dimension Diagram



1.7 Connector Wiring



- 1 In / 1 Out HD-SDI Repeater

1.8 1 In / 1 out HD-SDI Connections HD-SDI repeater channel

- Connect a HD-SDI device (e.g. Camera) to "HD-SDI IN" of HD-SDI repeater.
- Connect the HD-SDI device (e.g. DVR) to HD-SDI OUT" of HD-SDI repeater.

1.9 Power Supply Connections

- Plug the power supply adapter (DC 12V, 3.33A) which is included in this product to 'DC12V' connector and plug another side to power source and Input voltage is a free volt (100 VAC - 240VAC).

1.10 Cable



- 75 ohm coaxial cable

(NOTE)

The cable above is not included in the package.

HD-SDI Video Signal Accessories

1.11 Display LED

KEYS O	operating mode
Power LED (Red) 	<ul style="list-style-type: none">• Light off: Repeater off• Light on: Repeater on
Connection LED (Green) 	<ul style="list-style-type: none">• Light off: Not connected• Light on: Connected

HD-SDI Video Signal Accessories

2. HD-002

2.1 Introduction

- HD-002 is HD signal converter which converts video signal between HD-SDI and HDMI. It converts the HD-SDI video to HDMI signal.

2.2 Features

- Convert HD-SDI to HDMI
- Equalized HDMI input supports long HDMI cables up to 30m, 24 gauge
- HDMI v1.3 standard
- HD-SDI SMPTE 292M support(1080p, 1080i or 720p)
- Free voltage 12VDC, 1A
- Compact Size & Light weight

2.3 Technical Specification

Moel	HD002
Input	HD-SDI SMPTE 292M
Input Formats	1080p 24/25/30
	1080i 50/60
	720p 50/60
Output	HDMI
	HD-SDI Loop Output
Output Formats	1024 x 768
	720p 60
	1080p 30/60
Power Consumption	Free Voltage 12VDC, 1A
Dimension	3.35in x 1.27in x 3.48in
HDMI Connector	HDMI Female
HD-SDI Connector	BNC Female

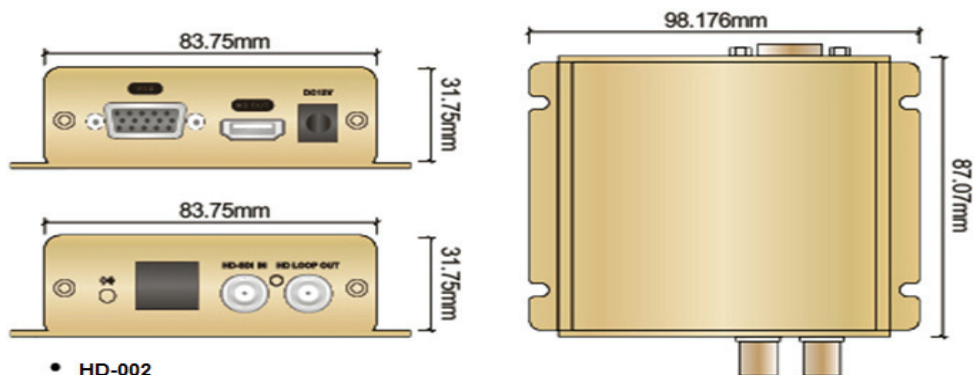
2.4 Unpacking

- This equipment is an electronic appliance, so it should be handled with special care.

2.5 Service

- If there is any problem in the product, please refer servicing to a supplier or a distributor with qualified service personnel.

2.6 System Dimension Diagram



HD-SDI Video Signal Accessories

2.7 HD-SDI In/Out and HDMI In/Out Connections

- Connect a 'HD-SDI OUT' of HD-SDI device to 'HD-SDI IN' of HD-002 using by 75ohm coaxial cable
- Connect a 'HDMI OUT' of HD-002 to 'HDMI IN' of device with HDMI output using by HDMI cable'

2.8 Video Component Input

- If users wish to link video componet input (e.g. Divx, etc), assure that video component input and "**COMPONENT IN**" Connections are connected properly with same colors.

2.9 Power Supply Connections

- Plug the power supply adapter (**DC 13V, 3.33A**) which is included in this product to "**DC12V**" connector and plug another side to power source and Input voltage is a free volt (**100 VAC -240 VAC**).

2.10 Cable

- 75 ohm coaxial cable
- HDMI cable
- VGA cable

(NOTE)

The cable above is not included in the package.

2.11 Operation Key and Screen Display Information

Operation Button (No. of pushing times)	First Digit No.	Output resolution
2	1	OUT_1024x768
3	2	OUT_1280x720p_60Hz
4	3	OUT_1920x1080_30Hz
Initial Status	4	OUT_1920x1080_60Hz, (default)
1	5	OUT_1920x1080_60Hz_RB

(NOTE)

Operation button: When operation button is pressed, output resolution is changed. Please note that the number shown in the operation button is the time that users need to press the button.

Second Digit No.	Input resolution
-	No input detected
1	IN_1280x720p (max. 60 frames)
2	IN_1920x1080i(50 or 60 field)
3	IN_1920x1080p(30 frame only, doesn't support 60 frame)

(NOTE)

Input resolution depends on the input signal

(NOTE)

Please note that this device has the same function as HD-SDI repeater that extends the signal transmission distance up to 150m.

HD-SDI Video Signal Accessories

3. HD-003

3.1 Introduction

- HD-003 is HD signal convertre which converts video between HDMI and HD-SDI. It converts the high resolution of HDMI sources to SMPTE 292M, standared HD-SDI signal.

3.2 Features

- Convert HDMI to HD-SDI
- Convert HDMI and componet input to HD-SDI SMPTE 292M
- Full HDMI Support Including Embedded Audio
- Equalized HDMI Input Supports Long HDMI Cables Up to 30m, 24 gauge
- HDMI v1.3 Standard
- HD-SDI SMPTE 292M Support(1080p, 1080i or 720p)
- Low Power Consumption: Free Voltage 12VDC, 1A
- Compact Size & Light Weight

3.3 Technical Specification

Moel	HD003
Input	HDMI
	Componet Input
Input Formats	1080p 24/25/30
	1080i 50/60
	720p 50/60
Output	HD-SDI SMPTE 292M
Output Formats	1080p 24/25/30
	1080i 50/60
	720p 50/60
Power Consumption	Free Voltage 12VDC, 1A
Dimension	3.35in x 1.27in x 3.48in
HDMI Connector	HDMI Female
HD-SDI Connector	BNC Female

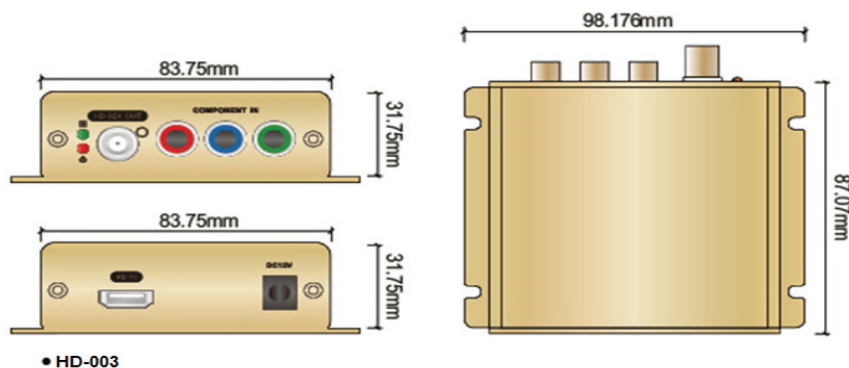
3.4 Unpacking

- This equipment is an electronic appliance, so it should be handled with special care.

3.5 Service

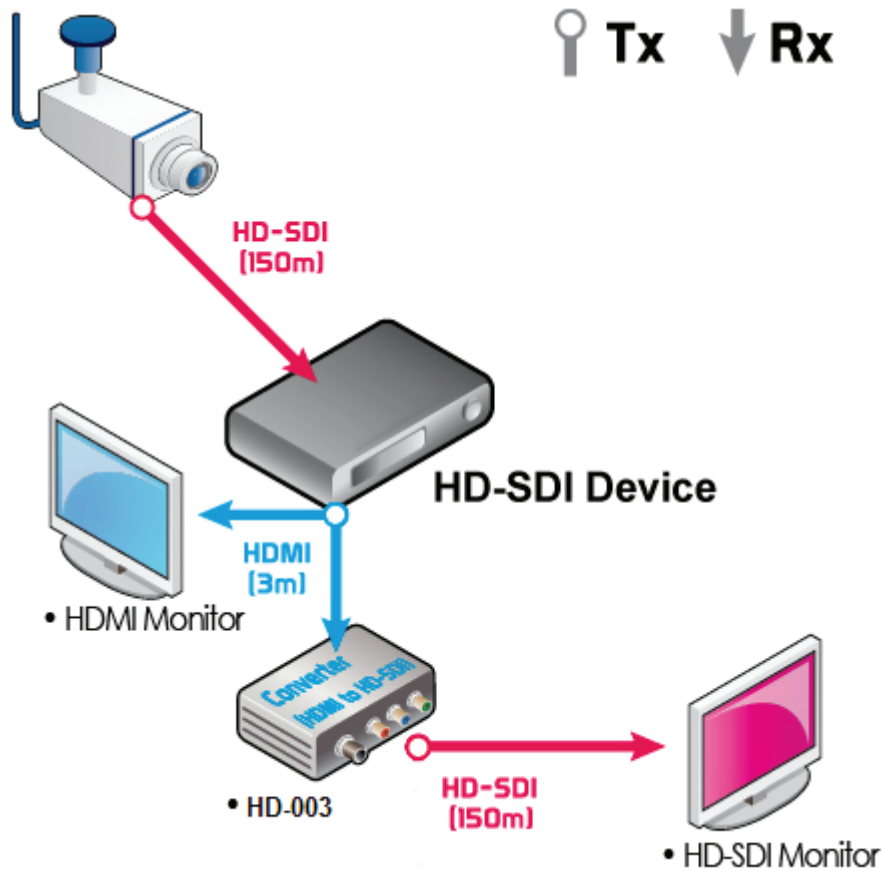
- If there is any problem in the product, please refer to the supplier or the distributor with qualified service personnel.

3.6 System Dimension Diagram



HD-SDI Video Signal Accessories

3.7 System Connection Diagram



3.8 HDMI In/Out and HD-SDI In/Out Connections

- Connect a 'HDMI OUT' from the device to 'HDMI IN' of HD-003 using by HDMI cable.
- Connect a 'HD-SDI OUT' from HD-003 to 'HD-SDI IN' of HD-SDI device using by 75 ohm coaxial cable.

3.9 Video Component Input

- If users wish to link video component input (e.g. Divx, etc), assure that video component input and "COMPONENT IN" Connections are connected properly with same colors.

3.10 Power Supply Connections

- Plug the power supply adapter (DC 12V, 3.33A) which is included in this product to "DC12V" connector and plug another side to power source and Input voltage is a free volt (100 VAC - 240 VAC).

3.11 Cable



- 75 ohm coaxial cable
- HDMI cable
- Component cable

NOTE

The cables above are not included in the package.

HD-SDI Video Signal Accessories

3.12 Display LEDs

KEYS O	perating mode
<p>Power LED (Red)</p> 	<ul style="list-style-type: none">• Light off: Converter off• Light on: Converter on
<p>Connection LED (Green)</p> 	<ul style="list-style-type: none">• Light off: Not connected• Light on: Connected

HD-SDI Video Signal Accessories

4. HD-004

4.1 Introduction

- This device is HD-SDI Video distribution amplifier which has 4 separately buffered HD-SDI outputs. This model is specially designed for 75 ohm HD Digital video distribution.

4.2 Features

- Compact HD-SDI Video Distribution Amplifier
- 1 HD-SDI Video Input(SMPTE 292M)
- 4 Separately Buffered HD-SDI Outputs(SMPTE 292M)
- Auto Equalization
- Auto Re-clock/ Bypass Any Rate from 10KBPS through 2.97GBPS
- Low Power Consumption: Free Voltage 12VDC, 1A
- Compact Size & Light Weight
- Input / Output Return Loss : >-15 dB

4.3 Technical Specification

Moel	HD004
Format	1080p, 1080i or 720p Manual Selection
video Inputs	1 HD-SDI Input(SMPTE 292M)
Input Formats	1080p 24/25/30
	1080i 50/60
	720p 24/25/30/50/60
Video Output	4 HD-SDI output (SMPTE 292M)
Output Formats	1080p 24/25/30
	1080i 50/60
	720p 24/25/30/50/60
Input / Output Return Loss (BNC)	>15dB, 270Mb-3Gb
Input / Output Impedance	750 Ohms +/-1%
Power Consumption	Free Voltage 12VDC, 1A
Dimension(Wx H x D)	3.29in x 1.27in x 3.42in

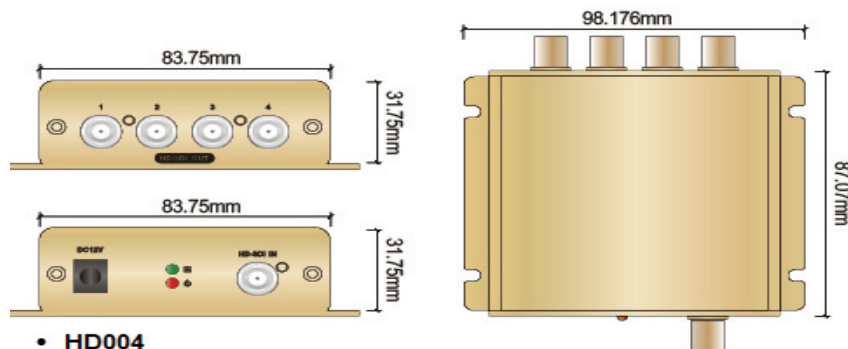
4.4 Unpacking

- This equipment is an electronic appliance, so it should be handled with special care.

4.5 Service

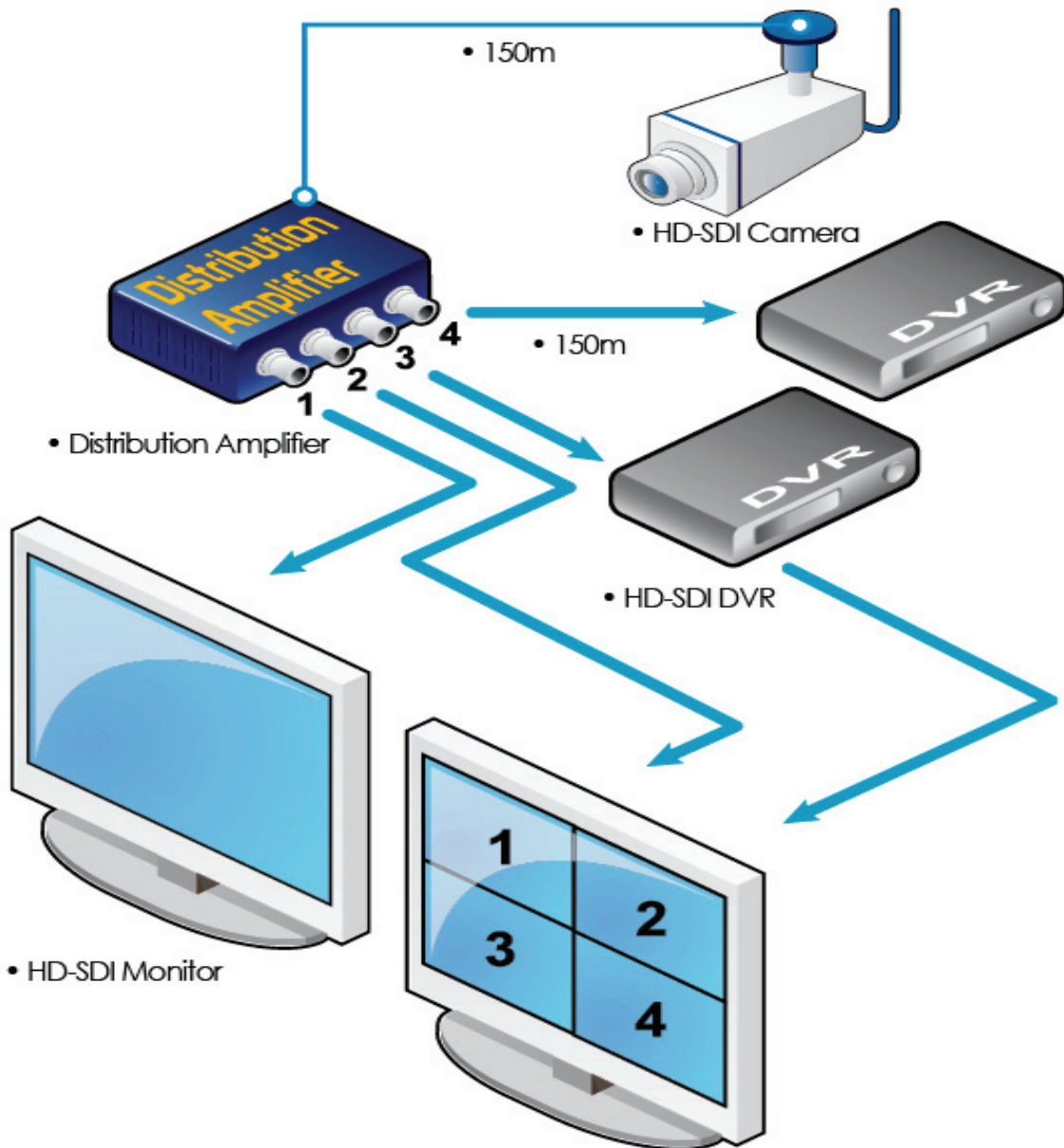
- If there is any problem in the product, please refer to the supplier or the distributor with qualified service personnel.

4.6 System Dimension Diagram



HD-SDI Video Signal Accessories

4.7 Connector Wiring



4.8 Distribution-In/Out Connections

- Connect a 'HD-SDI OUT' of HD-SDI device (e.g. Camera) to 'HD-SDI IN' of HD-004 using by 75 ohm coaxial cable
- Connect 4 'HD-SDI OUT' of HD-004 to each 'HD-SDI IN' of HD-SDI devices (e.g. DVR).

4.9 Power Supply Connections

- Plug the power supply adapter (DC 12V, 3.33A) which is included in this product to 'DC12V' connector and plug another side to power source and Input voltage is a free volt (100VAC - 240VAC).

4.10 Cable



- 75 ohm coaxial cable

NOTE

The calbe above is not included in the package.

HD-SDI Video Signal Accessories

4.11 Display LEDs

KEYS O	operating mode
Power LED (Red) 	<ul style="list-style-type: none">• Light off: Converter off• Light on: Converter on
Connection LED (Green) 	<ul style="list-style-type: none">• Light off: Not connected• Light on: Connected

NOTE

Please note that this device has the same function as HD-SDI repeater that extends the signal transmission distance up to 450ft.