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Mini SD/HD/3G Pattern Generator Tester
with Serial Control

HD-PG-RS232

This product is an advance SDI pattern generator with multi-format (3G/HD/SD) and multi-pattern support. It offers the most common patterns, SMPTE color bars and checkfield, for SDI testing thru front panel buttons.

HD-PG-RS232 also includes other features such as audio (SMPTE-291M). It can support up to 8 channel AES compliant audio with 48KHz sample rate. This device provides a cost effective way to calibrate and test SDI enable video devices and displays.

Features   ..

- Triple SDI output (SDI, HD-SDI, 3G-SDI)
- Supported Output Resolution up to 1080p@60
- Bit Rate up to 2.97 Gbps
- 100% Color Bars & Check Field Video Patterns through RS-232
- Save Settings to Memory Option
- ANC Data: Thru RS-232 EDH (RP-165), SMPTE 352M, SMPTE291M
- Front panel buttons & RS-232 serial command control
- 5V DC

SD-3

⚠️ **Please read the _Manual_ before attempting to use this product.**

Specifications and appearance are subject to change without notice.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN!

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

⚠️ Caution ..

The **HD-PG-RS232** has been tested for conformance to safety regulations and requirements. However, like all electronic equipment, the **HD-PG-RS232** 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.

1. Handle this product with care
   Avoid any shock or bumping of the product. Improper handling could damage the product. Do not handle the unit with wet hands. Provide proper ventilation and air circulation and do not use near water.

2. Requires a proper operating environment
   This product is not waterproof and is designed for indoor use. The allowable temperature range for operation of this product is between 32°F~104°F / -0°C~40°C.

3. Check the power source voltage
   The power source voltage should be within the specified range. (Product must meet the specifications).

4. Objects and liquid entry

Never push objects of any kind into this product as this may touch dangerous voltage points of short out parts that could result in a fire or electric shock. Never spill any kind of liquid on the product.

5. Cleaning

Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
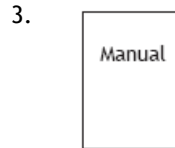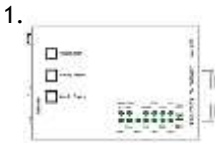
6. Servicing

Do not attempt to service this product by yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all service to qualified servicing personnel.

Package Contents ..

1. One (1) Mini Pattern Generator Tester
2. One (1) 5V DC, 4Amp Power Adapter
3. One (1) User Manual

For any returns, please include all components listed above with original packaging in **Resalable Condition**. **Absolutely No Returns** will be accepted if any component is missing/damaged.
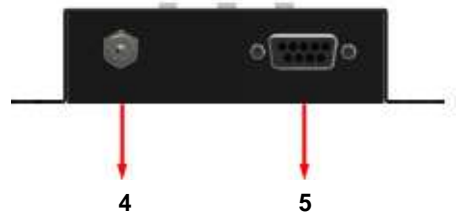
Parts & Functions ..
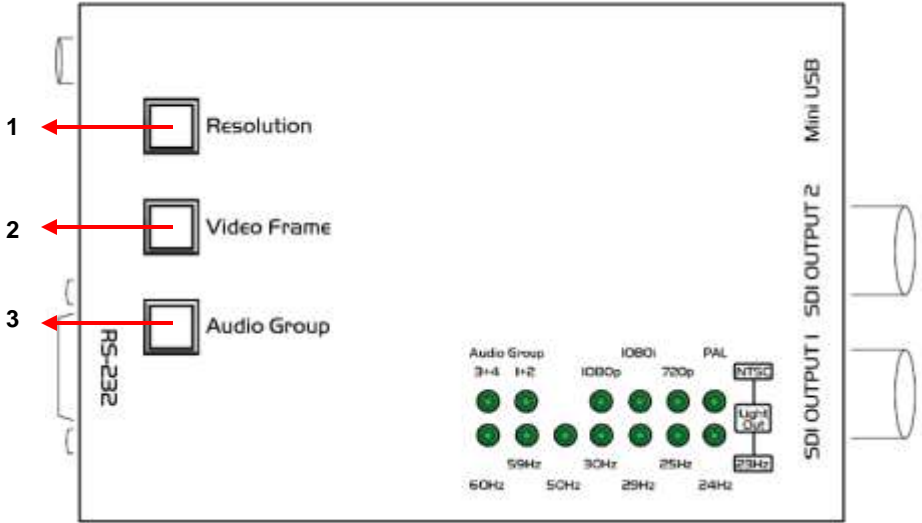
Right Side View: Left Side View:

1. **SDI OUTPUT A:** Connect to a SDI device for SDI, HD-SDI, or 3G-SDI signal output either from the chosen pattern or the converted HDMI source signal
2. **SDI OUTPUT B:** Connect to a SDI device for SDI, HD-SDI, or 3G-SDI signal output either from the chosen pattern or the converted HDMI source signal
3. **Mini-USB**: Connect to a Mini-USB for Firmware Update
4. **5V DC:** Connect to a 5V 4A DC power adapter
5. **RS-232**: RS-232 port for control via PC software

Top View:

1. **Button Resolution**
   Button Resolution is used to select different resolution for SDI outputs. The LEDs from PAL to 1080p will indicate the selected video resolution. The output resolution is NTSC when all 4 lights out.

   When pushing Button Resolution and holding for 2 seconds, LED 3+4 will blink once to indicate the current resolution is saved into the embedded flash.

2. **Button Video Frame**
   Button Video Frame is used to select different frame rates for SDI outputs. The LEDs from 24Hz to 60Hz will indicate the selected video frame rate. When all 7 lights out, the output rate is 23.98Hz.

   When pushing Button Video Frame and holding for 2 seconds, LED 3+4 will blink once to indicate the SMPTE color bar pattern is chosen and saved into the embedded flash.

3. **Button Audio Group**
   Button Audio Group is used to setup SDI audio output. The LED 1+2 and 3+4 indicate the selected audio group.

   When pushing Button Audio Group and holding for 2 seconds, LED 3+4 will blink once to indicate the Check Field pattern is chosen and saved into the embedded flash.
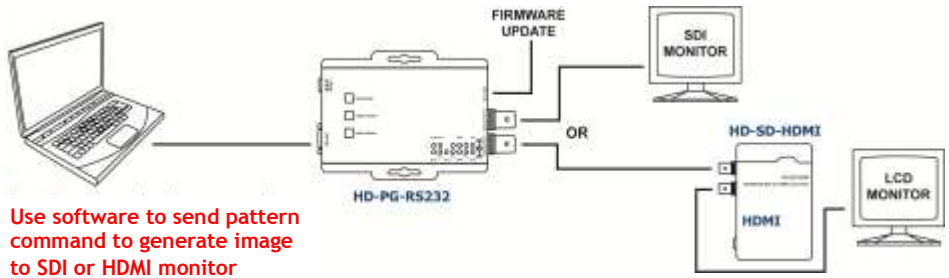
   Note: *This device can support tens of video pattern and other features such as moving picture or audio level control etc! Users must be able to access those plus functions by RS-232 serial connection.*

Application Diagram ..

Use software to send pattern command to generate image to SDI or HDMI monitor

Software Panel Description ..

Button	Function
Return	Trigger the menu operation
Enter	Enter the menu item
Up	Choose the last menu item
Down	Choose the next menu item

Menu	Items	
01 Format	Resolution	NTSC
		PAL
		720p
		1080p
		1080i
	Frequency	60
		59, 94
		50
		30
		29, 97
		25
		24
		23, 98
	Output	YCbCr 422
02 Video	Patterns	SMPTE Bar
		100% Bar
		Check Field 1
		Check Field 2
		Check Field 3
		Gradient R1
		Gradient G1
		Gradient B1
		Gradient R2
		Gradient G2
		Gradient B2
		Gradient R3
		Gradient G3
		Gradient B3
		Gradient R4
		Gradient G4
		Gradient B4
		Red Level 1
		Red Level 2
		Green Level 1
		Green Level 2
		Blue Level 1
		Blue Level 2
		100% Red
		100% Green

		100% Blue
		100% White
		70% Gray
		40% Gray
		Black
		Noise
		Circle 1
		Circle 2
		Moire
		H Stripe R
		H Stripe G
		H Stripe B
		V Stripe R
		V Stripe G
		V Stripe B
		Chess 1
		Chess 2
		Multi-Burst
		Sequence
	Text	Off
		On-White
		On-Black
	Timer	Off
		On-W/B
		On-B/W
03 Audio	Mode	Off
		On
	Group	1+2
		3+4
	Level	-6dB
		-12dB
		-18dB
		-24dB
		-30dB
		-36dB
		-42dB
		Silence
		Random
	Mask	Off
		CH 1234
		CH 1
		CH 2

		CH 3
		CH 4
		CH 1+2
		CH 3+4
04 Motion	Motion	No Motion
		Square 1
		Square 2
		2 Squares
		Square Inv
	Data Speed	1
		2
		3
		4
		5
		6
		7
05 ANC Data	SMPTE 352M	Off
		On
	EDH	On
		Off
06 System	Status	No Change
		Factory
		Now Save
	Version	V1.00

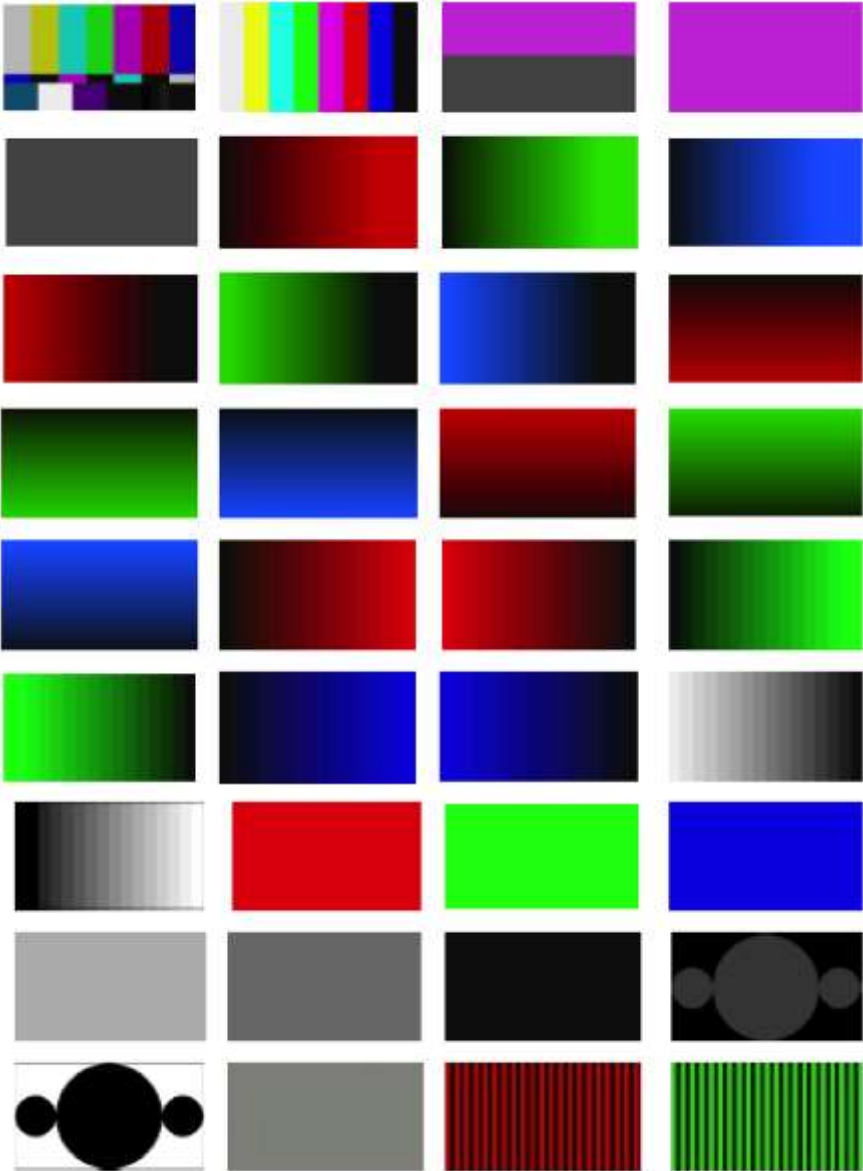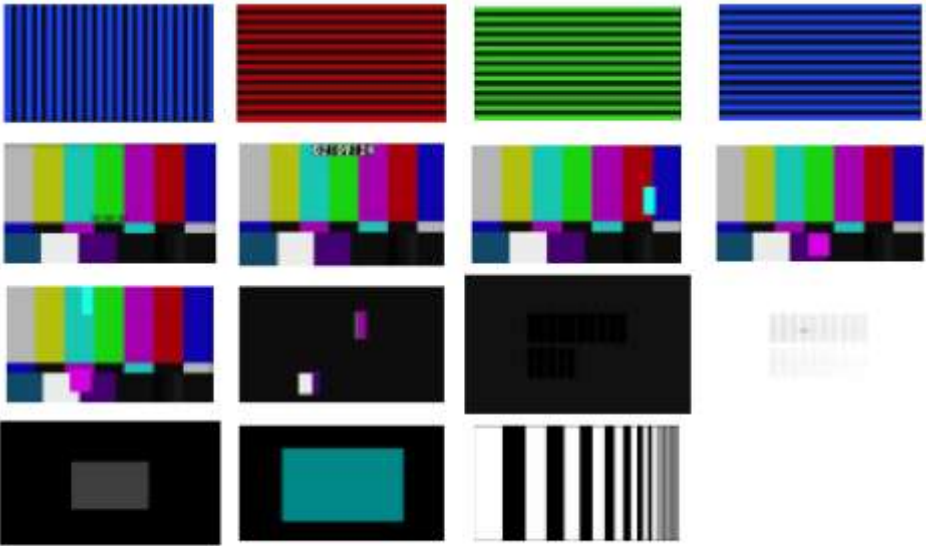| Model	HD-PG-RS232
Role of Usage	Pattern generator
SDI Standards	3G/HD/SD-SDI
HD/SD-SDI Detection	
Auto SDI Rate Detection	Yes
Supported Protocols	SMPTE 259M (270Mbps / 360Mpbs) SMPTE 292M / HDTV (1.485 & 1.485/1.001Gbps) SMPTE 424M/425M (2.97 & 2.97/1.001Gbps)
Video Bandwidth	2.97Gpbs
Data Rates	143 / 270 / 1483 / 1485 / 2967 / 2970Mbps
Video Support	[HD] 720p50/59.94/60, 1035i50/59.94/60, 1080i50/59.94/60, 1080p24/30 [SD] NTSC@59.94Hz, PAL@50Hz
SDI Signal Type	SMPTE-292M / 259M / 424M
HDMI Bypass	NO
Output Impedance	75 ohms
Cable (Belden 1694A) Equalization / Transmission	[3G-SDI] up to 60m (190ft) / [HD-SDI] up to 150m (500ft) / [SD-SDI] up to 300m (1000ft)
Audio Support	Yes
PCB Stack-up	4-layer board [impedance control -- differential 100 ohms; single 50 ohms]
Input	RS-232 & USB
Output	2x BNC [SDI]
BNC Connector	75 ohms inter-locked socket
HDMI Connector	Type A [19-pin female]
USB Connector	mini
[HD] Eye Pattern Characteristics	Amplitude: Within 800mV <10% Rise overshoot: Less than 2% Fall overshoot: Less than 2% Long time jitter: <1.0 UI Timing jitter: <1.0 UI Alignment jitter: <0.2 UI
Fixedness	Inter-locked power supply
Power Adapter	5V 4A DC
Power Consumption	8W (max)
Operating Temperature	32°F ~ 104°F / 0°C ~ 40°C
Storage Temperature	-4°F ~ 140°F / -20°C ~ 60°C
Relative Humidity	20~90% RH (no condensation)
Housing Material	Metal Enclosure
Dimension	6" x 3.5" x 1" / 154 x 89 x 26mm
Weight	1 lb / 450 g

*Specifications are subject to change without notice

Data Identification Word of Ancillary Data Packet

ANC Data	DID	SDID/DBN
352M	0x41	0x01
RP-165-EDHP	0xF4	0x00

* Data type 1 (SMPTE 291M)

Video Patterns:

Limited Warranty

LIMITED ONE (1) YEAR WARRANTY AND EXCLUSIONS

Manufacturer warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Manufacturer is free of defects in materials and workmanship under normal and proper use for one (1) year from the purchase date. Manufacturer's only obligation is to correct such defects by repair or replacement, at its option, if within such one (1) year period the product is returned prepaid, with proof of purchase date, and a description of the problem. This warrant excludes and there is disclaimed liability for labor for removal of this product or reinstallation. **This warranty is voided if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. There are no other implied warranties of any kind, including merchantability and fitness or a particular purpose**, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warrant, including merchantability and fitness of or a particular purpose, is limited to one (1) year. **Manufacturer is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, loss sales or profits or delay or failure to perform this warranty obligation.** The remedies, provided therein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

**SD/HD3G-SDI 1x2 Distribution Amplifier & Extender
HD-SDE-122**

This Economical device is a reliable video device splitting a SDI
or HD-SDI video source to four HD-SDI or SD-SDI display at the
same time. Receives one SDI input, perfectly duplicates it, then
it re-transmits, for real time multi-viewing.

**SD/HD3G-SDI 1x2 Repeater & Distribution Amplifier
with Re-clocking Function
HD-SDE-122R**

This device is the same as the Economical type but It takes one
input then re-clocks and equalizes the signal and distributes it to
two identical outputs.

**3G/HD/SD-SDI Pattern Generator Tester with HDMI Input
HD-PG-HDMI**

This device is an advance SDI pattern generator with
multi-format (3G/HD/SD) and multi-pattern support. It
offers the most common patterns, SMPTE color bars and
checkfield, for SDI testing thru front panel buttons.

**3G/HD/SD-SDI 5.7" LCD Monitor Tester with HDMI Output
HD-LCD57-HDMI**

This device offers the highest compatibility among SDI,
including 3G/HD/SD formats. For 3G-SDI can display up to 8
channel audio bars to indicate the embedded digital audio
channel in SDI stream.

FC CE **RoHS**   **MADE IN TAIWAN**

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