

VDA-104-3GS-2

1x4 3G/HD/SD-SDI Re-clocking
Distribution Amplifier



User Manual

Table of Contents

- Safety Instructions 01
- 1. Introduction 02
- 2. Features 02
- 3. Package Contents 02
- 4. Specifications 03
- 5. Panel Descriptions 04
- 6. Hardware Installation 05
- 7. Connection Diagram 05

Safety Instructions

The **VDA-104-3GS-2 1x4 3G/HD/SD-SDI Re-clocking Distribution Amplifier** has been tested for conformance to safety regulations and requirements and has been certified for international use. However, like all electronic equipment, the **VDA-104-3GS-2** 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, 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.

1. Introduction

The **VDA-104-3GS-2** receives one SDI input, perfectly duplicates it, and re-transmits four SDI outputs for real time multi-viewing. It is a reliable video device splitting a SDI, HD-SDI, or 3G-SDI video source to four SDI compliant displays at the same time. Besides, built-in re-clocking & equalization features provide the best performance for SDI distribution amplifier.

2. Features

- 3G/HD/SD triple-rate distribution
- Four separately buffered and re-clocked outputs
- Supported SDI format
 - » 3G-SDI (SMPTE 424M, 425M level A,B up to 2.97 Gbps)
 - » HD-SDI (SMPTE 292M, 296M up to 1.485 Gbps)
 - » SD-SDI (SMPTE 259M, up to 270 Mbps)
- Cable equalization (Belden 1694A) and signal retiming
- Video bandwidth: 2.97Gbps, 2.97/1.001Gbps
- Automatic detection of 3G/HD/SD-SDI signals
- Dual color LED indication of input lock and rate
- Passes all ancillary data
- Provides automatic cable equalization
 - » [3G-SDI]* >120m (394ft)
 - » [HD-SDI] >200m (656ft)
 - » [SD-SDI] >300m (984ft)
- Re-clocks SDI signals for cascading and thus longer transmission
- Inter-locked power supply for better fixedness

Note: The cable length depends on the characteristics and quality of the cables.

3. Package Contents

- 1x VDA-104-3GS-2
- 1x 5V power adapter
- 1x Marshall Thank you Card

4. Specifications

Model Name		VDA-104-3GS-2
Technical		
SDI standards	SD/HD/3G-SDI	
Auto 3G/HD/SD detection	Yes	
Supported protocols	SMPTE 259M, SMPTE 292M, SMPTE 424M, SMPTE425M	
Video bandwidth	[2.97Gbps & 2.97/1.001Gbps]	
Data rates	270 / 1483 / 1485 / 2970 Mbps	
Output impedance	75Ω	
Re-clocking function	Yes	
Cable equalization	[3G-SDI] >120m (394ft) / [HD-SDI] >200m (656ft) / [SD-SDI] >300m (984ft)	
Audio support	Yes	
RP-198 pathological patterns	Immune	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	1x BNC [SDI]	
Output	4x BNC [SDI]	
BNC connector	75Ω inter-locked socket	
Eye pattern characteristics [HD]	Amplitude: Within 800mV ±3% (<10%) Rise overshoot: Less than 2% (<10%) Fall overshoot: Less than 2% (<10%)	Long time jitter: 0.195 UI (<1.0 UI) Timing jitter: 0.195 UI (<1.0 UI) Alignment jitter: 0.127 UI (<0.2 UI)
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	80.5 x 41.4 x 24.2mm [3.2" x 1.6" x 1"]
	Package	175 x 128 x 134mm [6.9" x5" x5.3"]
	Carton	662 x 366 x 290mm [2'2" x 1'2" x 1']
Weight	Model	174g [0.4 lbs]
	Package	440g [0.9 lbs]
Fixedness	Inter-locked power supply	
Power supply	5V 2A DC	
Power consumption	0.85 Watts [max]	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	

Note: The measurement results are from Tektronix WFM-7120 with SDI through 1m (3.3ft) long Belden 1694A

5. Panel Descriptions

Front Panel



- 1. 3G/HD/SD-SDI Output
- 2. 3G/HD/SD-SDI Output
- 3. 5V DC power jack

Rear Panel



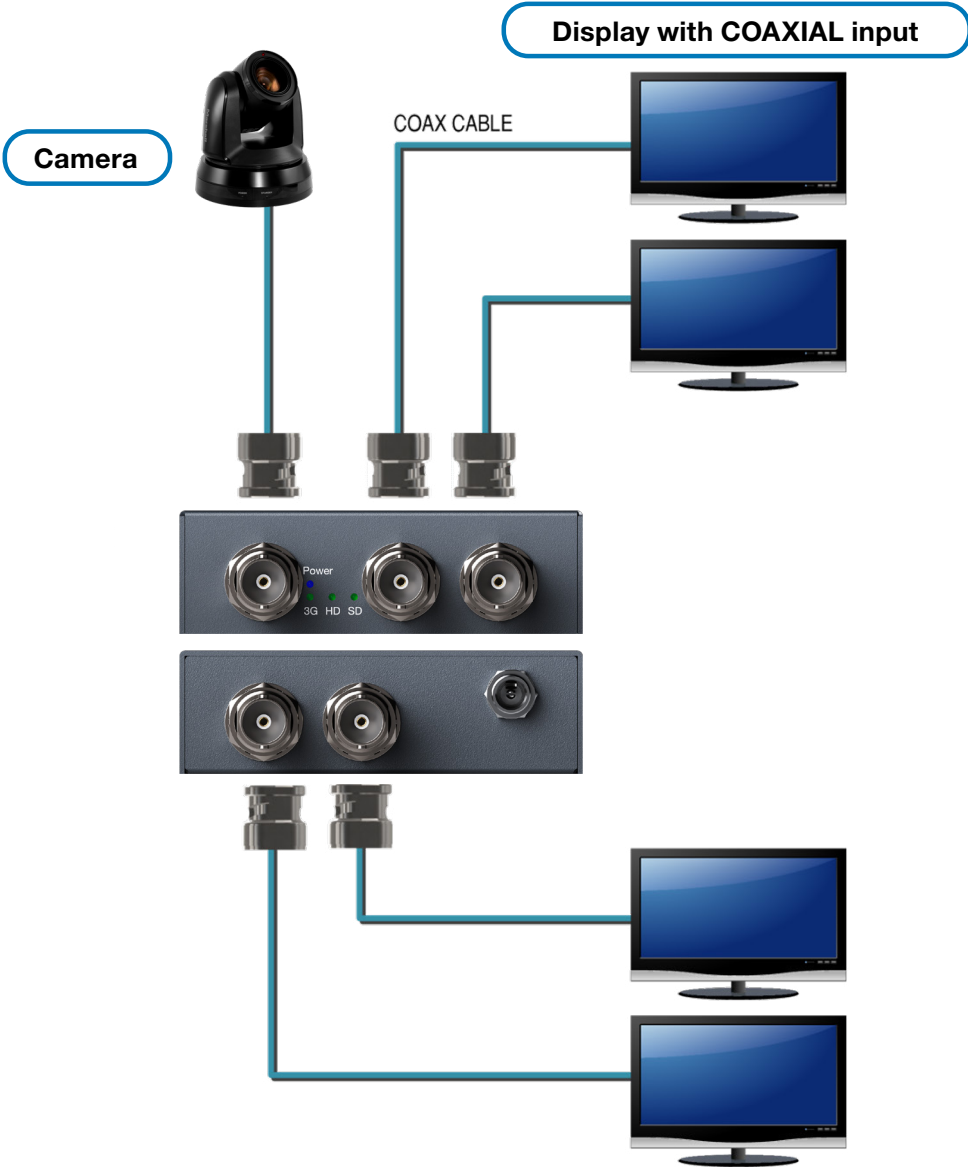
- 4. Power LED indicator
- 5. 3G/HD/SD-SDI Input
- 6. 3G Signal LED indicator
- 7. HD Signal LED indicator
- 8. SD Signal LED indicator
- 9. 3G/HD/SD-SDI Output
- 10. 3G/HD/SD-SDI Output

6. Hardware Installation

1. Connect a camera or other devices equipped with 3G/HD/SD-SDI outputs to VDA-104-3GS-2 3G/HD/SD-SDI input.
2. Connect devices equipped with 3G/HD/SD-SDI inputs (e.g. monitors or video processors) to VDA-104-3GS-2 3G/HD/SD-SDI outputs.
3. Plug power adapter cable into 5V DC power jack.

7. Connection Diagram

→ COAXIAL



Warranty

Marshall Electronics warrants to the first consumer that this device will, under normal use, be free from defects in workmanship and materials, when received in its original container, for a period of two years from the purchase date. This warranty is extended to the first consumer only, and proof of purchase is necessary to honor the warranty. If there is no proof of purchase provided with a warranty claim, Marshall Electronics reserves the right not to honor the warranty set forth above. Therefore, labor and parts may be charged to the consumer. This warranty does not apply to the product exterior or cosmetics. Misuse, abnormal handling, alterations or modifications in design or construction void this warranty. No sales personnel of the seller or any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties on behalf of Marshall Electronics, beyond the time period described above.

Due to constant effort to improve products and product features, specifications may change without notice.

Marshall

20608 Madrona Avenue, Torrance, CA 90503

Tel: (800) 800-6608 / (310) 333-0606 • Fax: 310-333-0688

www.marshall-usa.com

support@marshall-usa.com