

## VDA-108-3GS

1x8 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-108-3GS 1x8 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-108-3GS** 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.

## 1. Introduction

The **VDA-108-3GS** receives one SDI input, perfectly duplicates it, and re-transmits eight SDI outputs for real time multi-viewing. It is a reliable video device splitting a SDI, HD-SDI, or 3G-SDI video source to eight 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
- Eight 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]\* >120m (400ft)
  - » [HD] >200m (667ft)
  - » [SD] >300m (1000ft)
- 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-108-3GS
- 1x 5V power adapter
- 1x User Manual

## 4. Specifications

| Model Name                       |  | VDA-108-3GS   |
|----------------------------------|--|---|
| <b>Technical</b>                 |  |   |
| 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                 | 75 Ω   |   |
| 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                    | 75 Ω inter-locked socket   |   |
| Eye pattern characteristics [HD] | Amplitude: Within 800mV ±3% (<10%)<br>Rise overshoot: Less than 2% (<10%)<br>Fall overshoot: Less than 2% (<10%) | Long time jitter: 0.195 UI (<1.0 UI)<br>Timing jitter: 0.195 UI (<1.0 UI)<br>Alignment jitter: 0.127 UI (<0.2 UI) |
| <b>Mechanical</b>                |  |   |
| Housing                          | Metal enclosure  |   |
| Dimensions [L x W x H]           | Model  | 120.5 x 41.4 x 24.2mm [4.7" x 1.6" x 1"]  |
|                                  | Package  | 175 x 128 x 134mm [6.9" x 5" x 5.3"]  |
|                                  | Carton   | 662 x 366 x 290mm [2'2" x 1'2" x 1']  |
| Weight                           | Model  | 259g [0.6 lbs]  |
|                                  | Package  | 525g [1.2 lbs]  |
| Fixedness                        | Inter-locked power supply  |   |
| Power supply                     | 5V 2A DC   |   |
| Power consumption                | 1.3 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. 3G/HD/SD-SDI Output
- 4. 3G/HD/SD-SDI Output
- 5. 5V DC power jack

Rear Panel



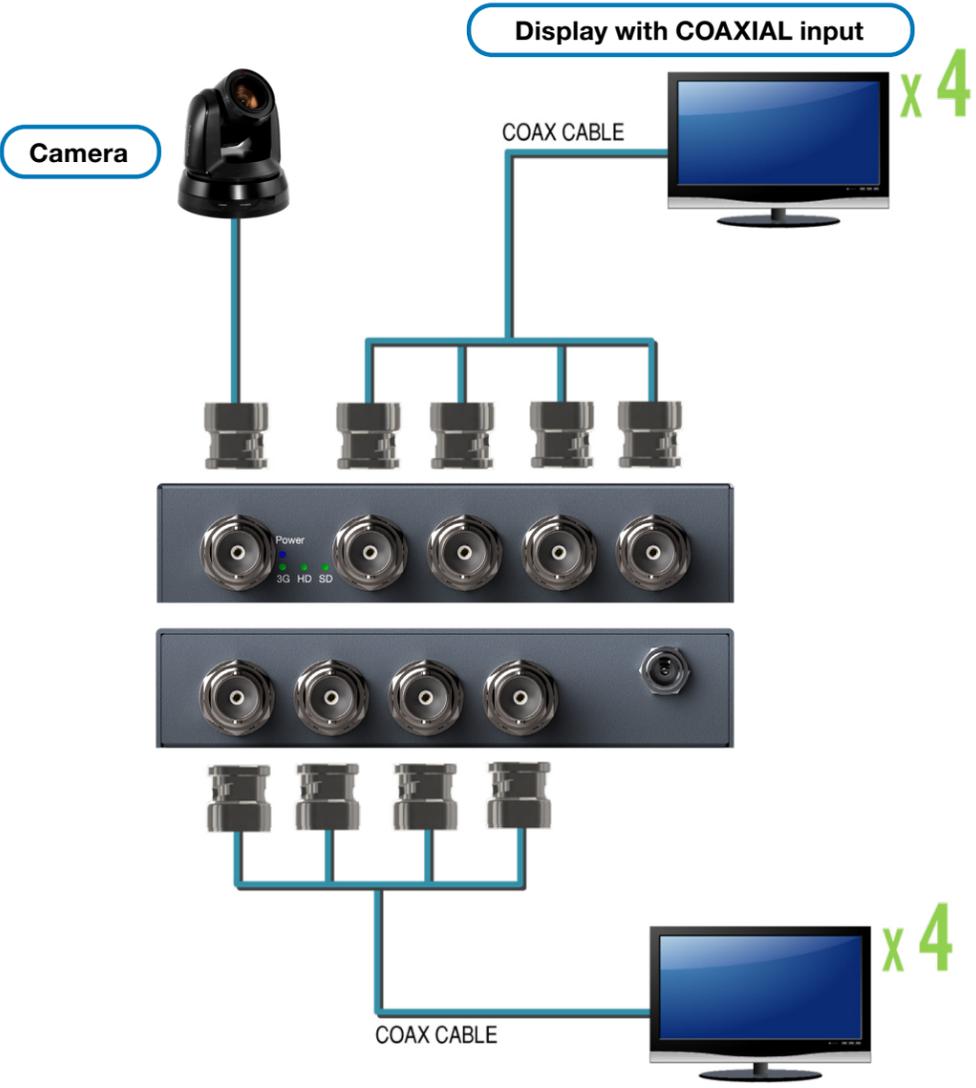
- 6. Power LED indicator
- 7. 3G/HD/SD-SDI Input
- 8. 3G Signal LED indicator
- 9. HD Signal LED indicator
- 10. SD Signal LED indicator
- 11. 3G/HD/SD-SDI Output
- 12. 3G/HD/SD-SDI Output
- 13. 3G/HD/SD-SDI Output
- 14. 3G/HD/SD-SDI Output

6. Hardware Installation

1. Connect a camera or other devices equipped with 3G/HD/SD-SDI outputs to VDA-108-3GS 3G/HD/SD-SDI input.
2. Connect devices equipped with 3G/HD/SD-SDI inputs (e.g. monitors or video processors) to VDA-108-3GS 3G/HD/SD-SDI outputs.
3. Plug power adapter cable into 5V DC power jack.

7. Connection Diagram

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## Warranty

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For Warranty information please refer to Marshall website page:

<https://marshall-usa.com/company/warranty.php>

# Marshall

20608 Madrona Avenue, Torrance, CA 90503

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

**[www.marshall-usa.com](http://www.marshall-usa.com)**

[support@marshall-usa.com](mailto:support@marshall-usa.com)