BZB GEAR®
Solutions to Amplify Your World™

BG-DA-12GS1X4

1x4 12G/6G/3G/HD/SD-SDI Distribution Amplifier with Reclocking

User Manual

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Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precaution

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- Do not dismantle the housing or modify the module.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Do not put any heavy items on the extension cable in case of extrusion.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Unplug this device during lightning storms.
- Do not use liquid or aerosol cleaners to clean this unit. Clean only with a soft dry microfiber cloth.
- Always unplug the power to the device before cleaning.
- If an object or liquid falls or spills on to the housing, unplug the module immediately.
- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
- Do not use the product beyond the specified temperature, humidity, or power supply specifications.
- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGEAR is not covered under the warranty policy.
- Installation and use of this product must strictly comply with local electrical safety standards.
- Product specifications may be subject to technical upgrades without further notice.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Introduction

The BG-DA-12GS1X4 is a 12G/6G/3G/HD/SD-SDI distribution amplifier with reclocking that receives one SDI input, duplicates it, and re-transmits four SDI outputs for real time multi-viewing. It reliably splits a SDI video source to four SDI compliant displays at the same time.

Features

- 12G/6G/3G/HD/SD-SDI distribution
- Four separately buffered and reclocked outputs*
- Cable equalization and signal retiming
- LED indication of signal lock and video rate
- Passes ancillary data and embedded audio
- Provides automatic input cable equalization (Belden 1694A) up to 180m (594ft)@3G, 100m (330ft)@6G and 70m(230ft) @12G
- Reclocking SDI signals for cascading and extending transmission distance
- Inter-locked power supply for a more secure connection

*** Note**: Due to the high frequency and low jitter requirement for 12G SDI signals, for best performance it is strongly recommended to use one 75 ohm terminator if the paired SDI is not in use.

Please see the following table for 12G SDI output pairing.

Packing List

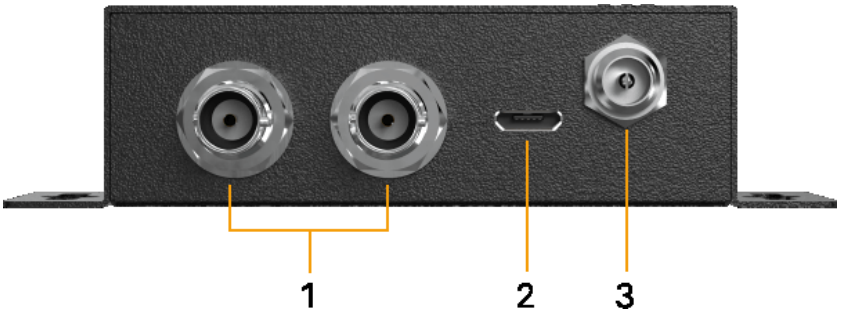
- 1x BG-DA-12GS1X4
- 1x 5V power adapter
- 1x BNC 75 ohm terminator
- 1x User Manual
- 1x Quick Start Guide

Specifications

Technical	
SDI standard	SD/HD/3G/6G/12G-SDI
Multi-Rate Support	Auto detection of SD, HD, 3G, 6G or 12G Signals
SDI Compliance	SMPTE 424M, SMPTE 292M, SMPTE 344M, SMPTE 259M, DVB-ASI, ST-2081(6G), ST2082(12G)
SDI Data rates	1.485 / 2.97 / 5.94 / 11.88Gbps
Video bandwidth	[11.88Gpbs & 11.88/1.001Gbps]
Output impedance	75Ω
Reclocking	Yes
Cable equalization	[12G] up to 70m (230ft) [6G] up to 100m (330ft) [3G] up to 180m (594ft)
Audio support	Yes
RP-198 pathological patterns	Immune
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 75Ω]
Input	1x BNC [SDI]
Output	4x BNC [SDI]
BNC connector	75Ω inter-locked socket
Eye pattern characteristics[12G]	Amplitude: Within 800mV (<10%) Rise/Fall time: Less than 35ps Timing jitter: <1.0 UI (10Hz to 1188MHz) Alignment jitter: <0.3 (100KHz to 1188MHz)
Mechanical	
Housing	Metal enclosure
Dimensions [L x W x H]	Model: 3.6" x 1.7" x 1.1" [92 x 42 x 28 mm] Package: 7.8" x 5.4" x 2.9" [198 x 137 x 74 mm] Carton: 1'4"x 1'3" x 11.8" [420 x 400 x 300 mm]
Weight	Model: 4.2 oz [119g] Package: 0.7 lbs [346g]
Fixedness	Wall-mounting case
Power supply	5V 2A DC
Power consumption	2.5 Watts [max]
Operation temperature	32~104°F / 0~40°C
Storage temperature	-4~140°F / -20~60°C
Relative humidity	20~90% RH [no condensation]

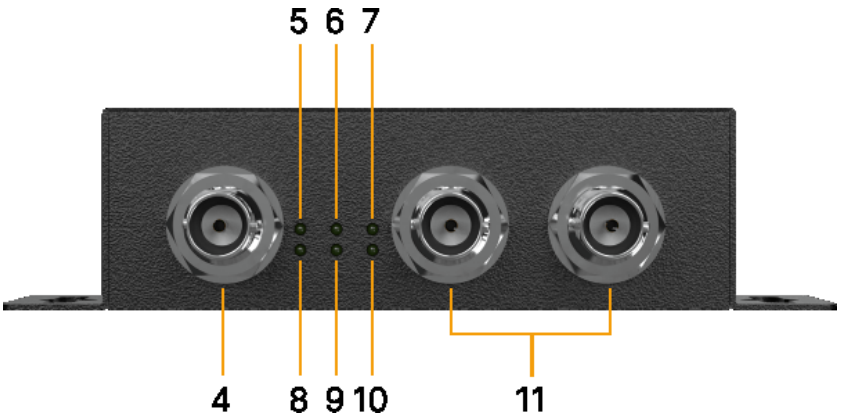
Operation Controls and Functions

Front Panel



1. **12G/6G/3G/HD/SD-SDI Output 3-4**: Connect to an SDI display.
2. **Micro-USB**: For updating firmware.
3. **5V DC power jack**: Connect to provided power supply.

Rear Panel

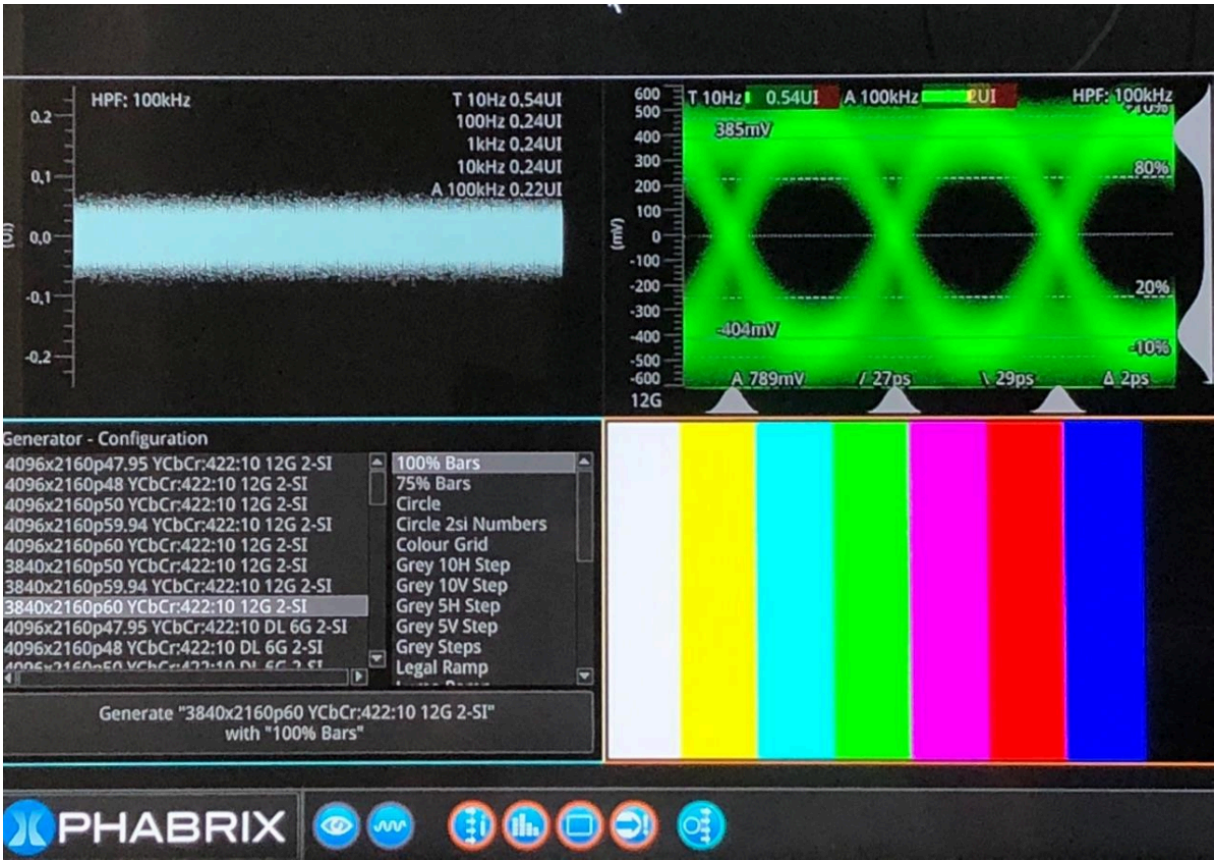


4. **12G/6G/3G/HD/SD-SDI input**: Connect to an SDI source.
5. **Power LED indicator**: Illuminates when connected to power.
6. **12G Signal LED indicator**: Illuminates when connected to a 12G source.
7. **6G Signal LED indicator**: Illuminates when connected to a 6G source.
8. **3G Signal LED indicator**: Illuminates when connected to a 3G source.
9. **HD Signal LED indicator**: Illuminates when connected to a HD source.
10. **SD Signal LED indicator**: Illuminates when connected to a SD source.
11. **12G/6G/3G/HD/SD-SDI Output 1-2**: Connect to an SDI display.

Hardware Installation

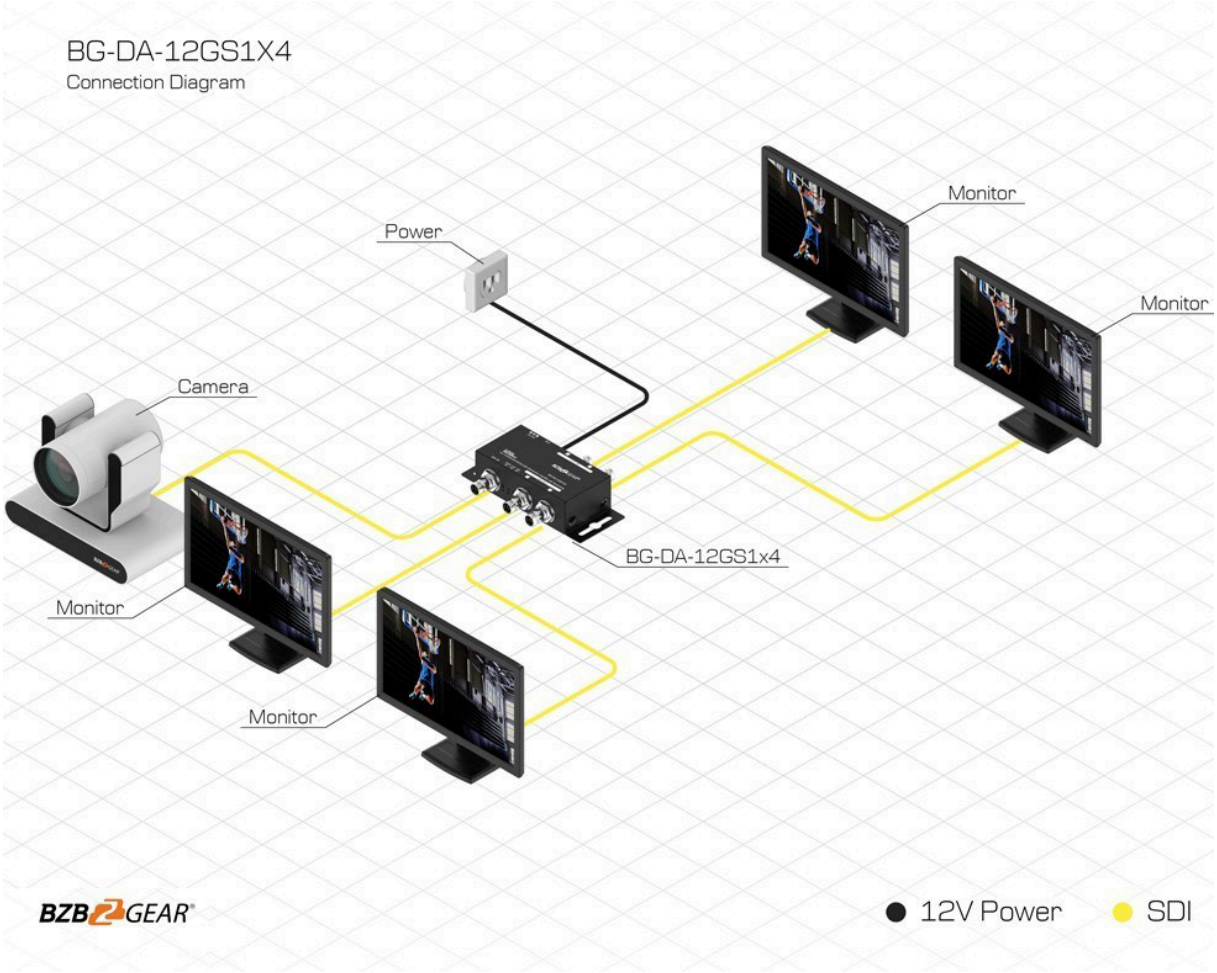
1. Connect a camera or other device equipped with 12G/6G/3G/HD/SD-SDI outputs to BG-DA-12GS1X4 12G/6G/3G/HD/SD-SDI input.
2. Connect devices equipped with 12G/6G/3G/HD/SD-SDI inputs (e.g. monitors or video processors) to BG-DA-12GS1X4 12G/6G/3G/HD/SD-SDI outputs.
3. Plug power adapter cable into 5V DC power jack.

Signal Measurement



Application Example

The following diagram illustrates the typical input and output connection of the splitter:



Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGEAR's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (bzbgear.com/knowledge-base) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (youtube.com/c/BZBTVchannel), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

Phone	**Email**	**Live Chat**
1.888.499.9906	support@bzbgear.com	bzbgear.com

Limited Product Warranty Terms

Pro Line: 5-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Essential Line: 3-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Cables: Lifetime Limited Product Warranty.

For complete warranty information, please visit bzbgear.com/warranty.

For questions, please call 1.888.499.9906 or email support@bzbgear.com.

Mission Statement

BZBGEAR is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGEAR delivers quality products designed with users in mind.

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