

# BG-SDITPG

**12G/6G/3G/HD/SD-SDI Video Test Pattern  
Generator/Tester/Analyzer**

## User Manual







## TABLE OF CONTENTS

|                                  |    |
|----------------------------------|----|
| Statement                        | 4  |
| Safety Precaution                | 4  |
| Introduction                     | 5  |
| Features                         | 5  |
| Packing List                     | 5  |
| Technical Specifications         | 6  |
| Operation Controls and Functions | 7  |
| Connection Diagram               | 9  |
| Appendix                         | 10 |
| Tech Support                     | 12 |
| Limited Product Warranty Terms   | 12 |
| Mission Statement                | 12 |
| Copyright                        | 12 |



## Statement

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

## Safety Precaution

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- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Do not expose the product to rain or moisture.
- 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.



## Introduction

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The BG-SDITPG 12G/6G/3G/HD/SD-SDI Pattern Generator is an advanced SDI pattern generator with multi-format (12G/6G/3G/HD/SD) and multi-pattern support. With still and moving video test patterns, other features such as audio (SMPTE-291M) are also provided. BG-SDITPG can support up to 8 channel AES compliant audio with a 48KHz sample rate. It is equipped with four buttons and an LCM screen for ease of use. The BG-SDITPG provides a cost-effective way to calibrate and test SDI enabled video devices and displays.

## Features

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- Output resolutions: NTSC 525@60, PAL 625@50, 720p@23.98, 720p@50, 720p@59.94, 720p@60, 1080i@50, 1080i@59.94, 1080i@60, 1080p@23.97, 1080p@24, 1080p@25, 1080p@29.97, 1080p@30, 1080p@50, 1080p@59.94, 1080p@60, 4K2K@23.97, 4K2K @24, 4K2K @25, 4K2K @29.97, 4K2K @30, 4K2K @50, 4K2K @59.94, 4K2K @60
- Bit Rate: 2.97 Gbps, 2.967 Gbps, 1.485 Gbps, 1.4835 Gbps, 5.94Gbps, 5.934Gbps, 11.88Gbps, 11.868Gbps, 270 Mbps
- Resolution: 10bit
- Video Patterns: 100% Color Bars, Borderline, Random Noise, Check Field, Black, Vertical Lines, Black / White alternate fields, Full Grey / Full White, Black to White Gradient, Random Generator for all still patterns, moving squares White noise, Inverse effect with still pattern, Scrolling Title (see Appendix for illustrations)
- Save Settings to Memory Option
- ANC Data: EDH (RP-165), SMPTE 352M, SMPTE 291M
- Control: By LCM & panel buttons
- Video Output: SDI output (SDI, HD-SDI, 3G-SDI, 6G-SDI, 12G-SDI)

## Packing List

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- |                            |                        |
|----------------------------|------------------------|
| • 1x BG-SDITPG             | • 1x User Manual       |
| • 1x 12V power supply unit | • 1x Quick Start Guide |



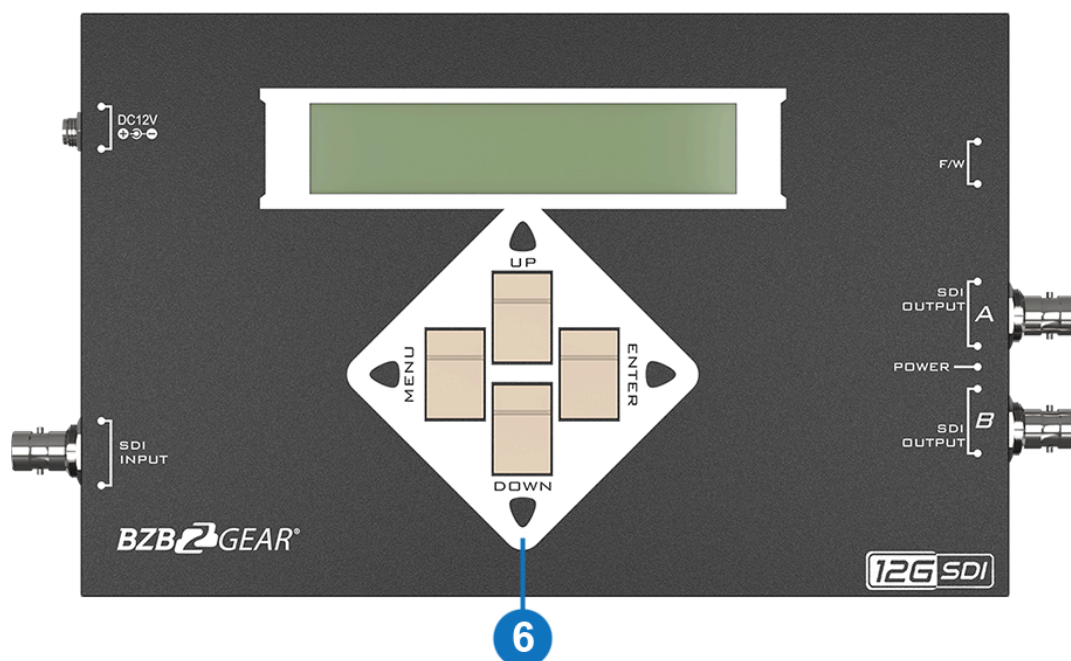
## Technical Specifications

| Role of usage                                    |         | Pattern generator   |
|--|---------|---|
| <b>Technical</b>                                 |         |   |
| SDI standards                                    |         | 12G/6G/3G/HD/SD-SDI   |
| Auto SDI rate detection                          |         | Yes   |
| Supported protocols                              |         | SMPTE 259M (270 Mbps / 360 Mbps)<br>SMPTE 292M / HDTV (1.485 & 1.485/1.001Gbps)<br>SMPTE 424/425M (2.97 & 2.97/1.001Gbps)<br>SMPTE ST-2081 (5.94&5.94/1.001Gbps)<br>SMPTE ST-2082 (11.88&11.88/1.001Gbps) |
| Video bandwidth                                  |         | 11.88Gpbs   |
| Data rates                                       |         | 143 / 270 / 1483 / 1485 / 2967 / 2970 / 5934 / 5940 / 11868 / 11880 Mbps  |
| Video support                                    |         | [12G] 4K2K@50/59.94/60<br>[6G] 4K2K@23.97/24, 25, 30<br>[3G] 1080p@50/59.94/60 (4:2:2)<br>[HD] 720p@50/59.94/60, 1080p@24/30, 1035i@50/59.94/60, 1080i@50/59.94/60<br>[SD] NTSC@59.94Hz, PAL@50Hz         |
| SDI signal type                                  |         | SMPTE-292M / 259M / 424M / ST-2081 / ST-2082  |
| Output impedance                                 |         | 75W   |
| Cable (Belden 1694A) equalization / transmission |         | [12G-SDI] up to 50m (165ft) / [6G-SDI] up to 100m (330ft) / [3G-SDI] up to 200m (660ft)   |
| Audio support                                    |         | Yes   |
| PCB Stack-up                                     |         | 6-layer board [impedance control — differential 100W; single 75W]   |
| Output   |         | 2x BNC [SDI]  |
| BNC connector                                    |         | 75W interlocking socket   |
| [HD] Eye pattern characteristics                 |         | Amplitude: Within 800mV <10%Long time jitter <1.0 UI<br>Rise overshoot: Less than 2% Timing jitter <1.0 UI<br>Fall overshoot: Less than 2% Alignment jitter <0.2 UI                                       |
| <b>Mechanical</b>                                |         |   |
| Housing  |         | Metal enclosure   |
| Dimensions [L x W x H]                           | Model   | 5.9" x 7.5" x 1.3" [150 x 190 x 32mm]   |
|  | Package | 10.3" x 6.7" x 3.8" [263 x 170 x 97mm]  |
|  | Carton  | 1'7" x 1.2' x 11.3" [512 x 364 x 288mm]   |
| Weight   | Model   | 1.5 lbs [660g]  |
|  | Package | 2.8 lbs [1260g]   |
| Fixedness  |         | Interlocking power supply   |
| Power supply                                     |         | 12V 2A DC   |
| Power consumption                                |         | 8 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



1. **POWER LED:** Power LED indicator
2. **SDI OUTPUT:** Connect to an SDI device for SDI signal output either from the chosen pattern or the SDI source signal
3. **Mini-USB:** F/W update
4. **+12V DC:** Connect to a 12V DC power supply unit
5. **SDI INPUT:** Connect to an SDI source

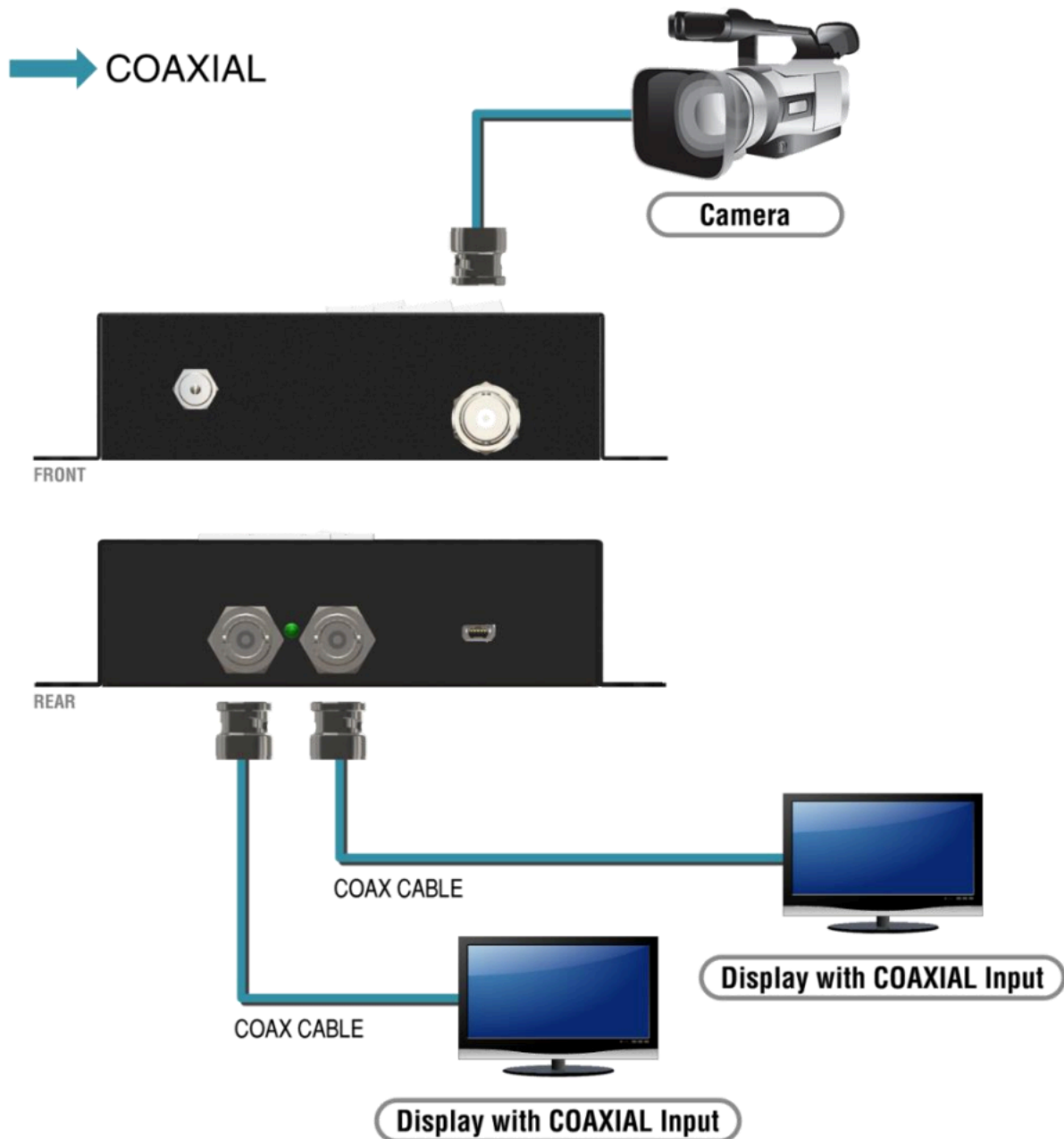


## 6. PUSH BUTTONS:

- **[Menu]** - Trigger the menu operation
- **[Enter]** - Enter the menu item
- **[Up]** - Choose the last menu item
- **[Down]** - Choose the next menu item



## Connection Diagram



### Notice:

1. In HDMI bypass mode, users must be aware that jitters coming from HDMI sources such as DVD players may be much higher than normal requirements according to SMPTE requests on HD-SDI signals. This will result in SDI output with high jitters or even no SDI outputs!
2. Due to the high frequency bandwidth and low jitter requirement of 3G-SDI signals, it is strongly recommended to use just one SDI OUTPUT with one 75 ohm cable.
3. Features including timings and patterns may change without notice after the firmware is updated!



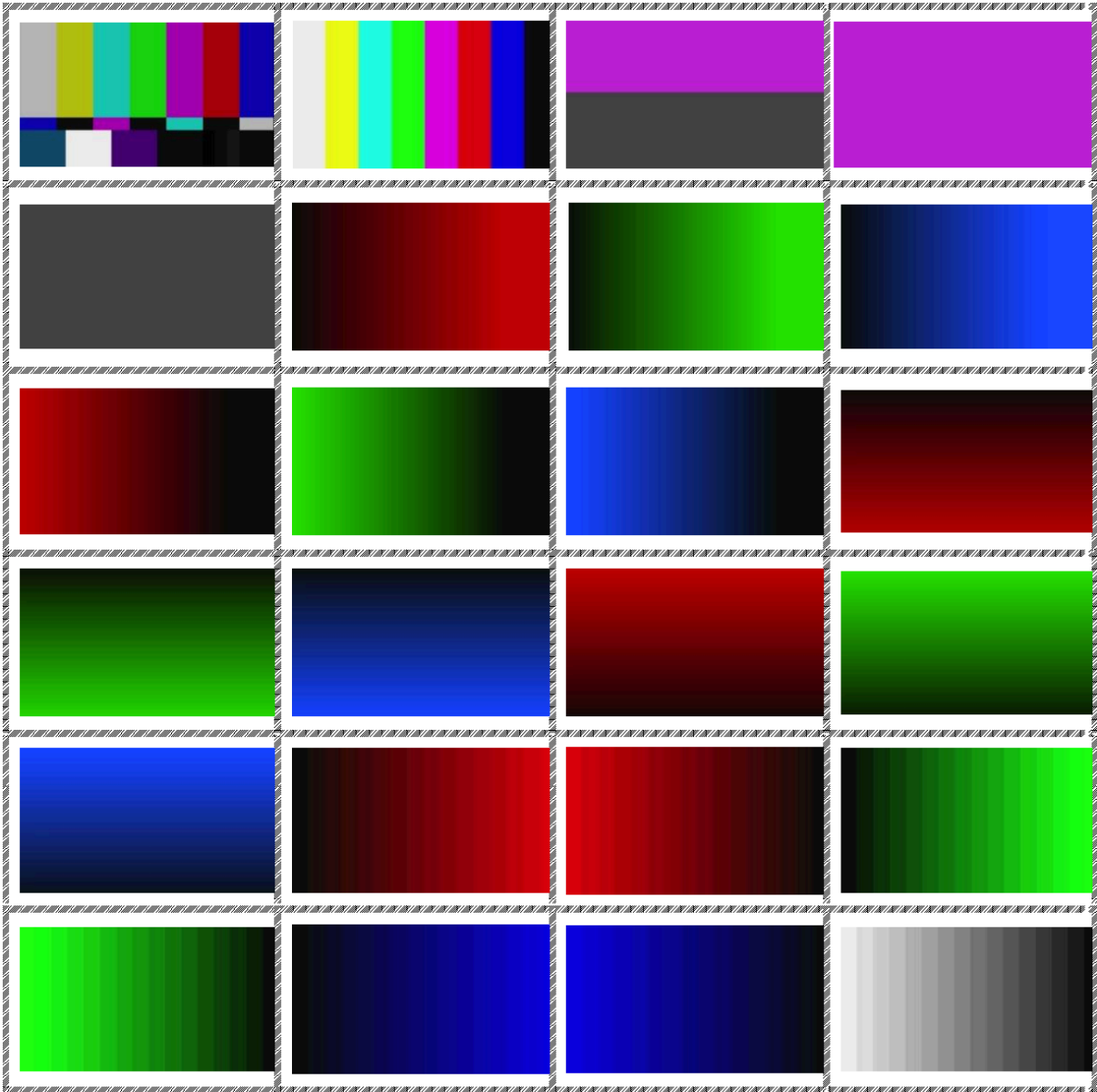
## Appendix

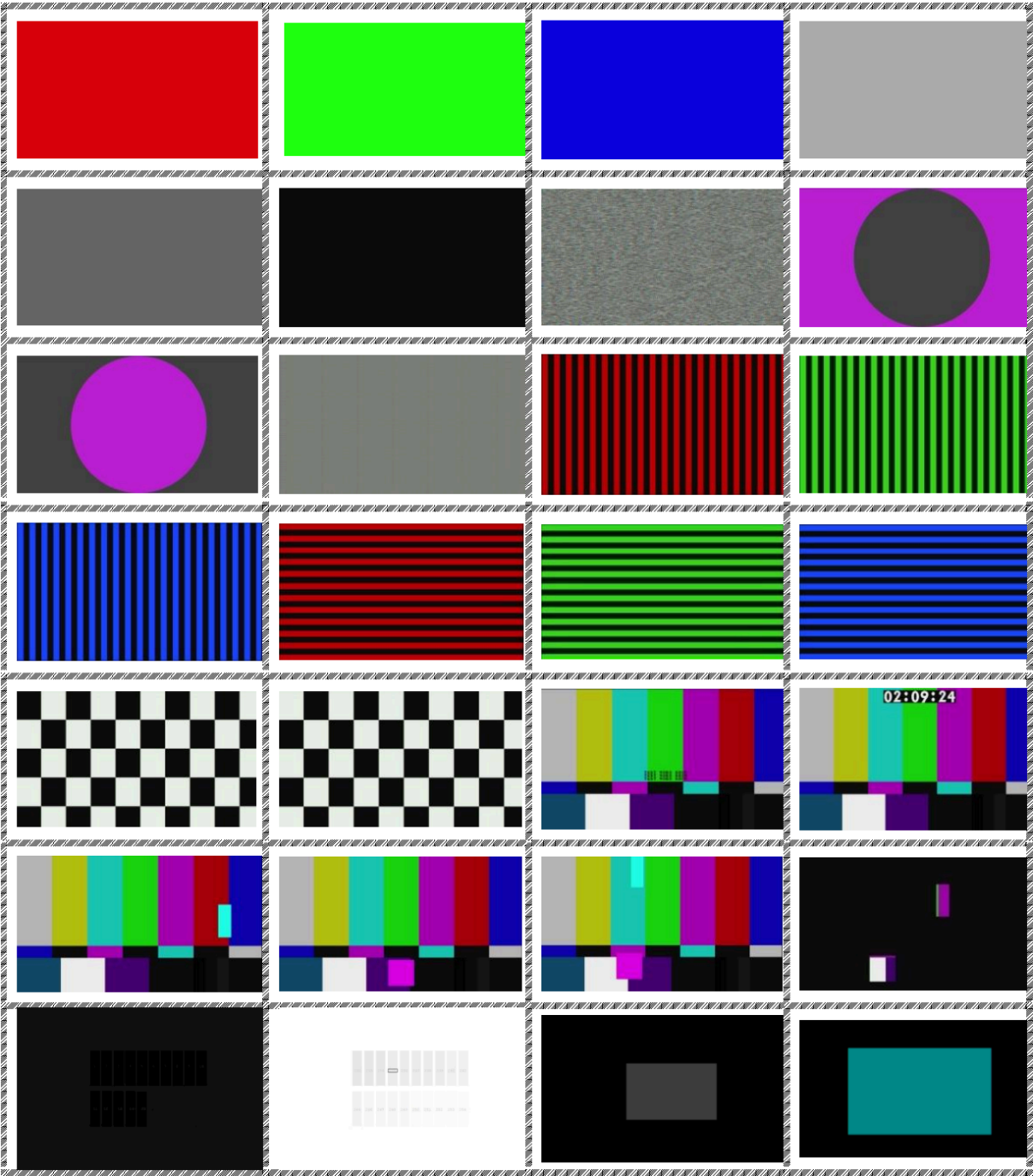
- Data Identification Word of Ancillary Data Packet

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

\* Data Type 1(SMPTE-291M)

- Built-in Video Pattern







## Tech Support

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Have technical questions? We may have answered them already!

Please visit BZBGear's support page ([bzbgear.com/support](https://bzbgear.com/support)) for helpful information and tips regarding our products. Here you will find our Knowledge Base ([bzbgear.com/knowledge-base](https://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](https://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:

| <u>Phone</u>   | <u>Email</u>   | <u>Live Chat</u>                              |
|----------------|--|---|
| 1.888.499.9906 | <a href="mailto:support@bzbgear.com">support@bzbgear.com</a> | <a href="https://bzbgear.com">bzbgear.com</a> |

## Limited Product Warranty Terms

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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](https://bzbgear.com/warranty).

For questions, please call 1.888.499.9906 or email [support@bzbgear.com](mailto:support@bzbgear.com).

## Mission Statement

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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.

## Copyright

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