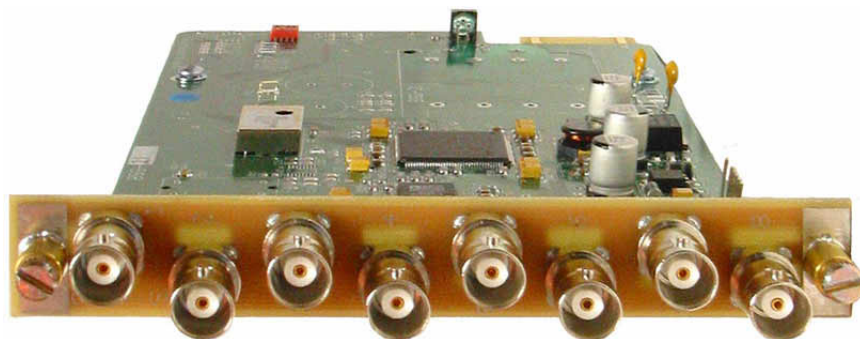


BSG-21AN / BSG21AP

NTSC STANDARD / PAL STANDARD

REFERENCE COMPOSITE BLACK SIGNAL GENERATOR
With OPTIONAL SDI OUTPUT

INSTRUCTION MANUAL



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SIGMA ELECTRONICS, INC.

BSG-21A SERIES

GENERAL:

The BSG-21AN and BSG-21AP are Black Signal Generator Modules which provide six (8) blackburst signal outputs or with the addition of the Optional SDI Output Accessory, two of the eight outputs are converted to SDI Digital signals. The outputs are driven from the same internal source to ensure system synchronization. The design of the units provides suitable operation for applications from complex total system timing to laying black on tape. The blackburst signal is digitally derived from a temperature compensated oscillator. These units provide a stable output and do not require any adjustments during operation. The outputs are present when power is applied.

The BSG-21AN, NTSC version, provides outputs per RS-170A / SMPTE 170M standards. The BSG-21AP, PAL version, provides outputs per CCIR 624-4 standards. Specifications are provided in the SPECIFICATIONS section.

POWER:

The BSG-21A Series operates from bus voltages of unregulated +20VDC and -20VDC. These voltages are supplied by the Sigma frame/power supply.

FRAMES:

The BSG-21A Series modules can reside in any of five (5) different frames provided by Sigma Electronics, Inc. If this module is purchased as a component of a system, please refer to the SERIES 2100 FRAMES Instruction Manual. If the module was purchased separately, a pre-existing frame must be present for proper operation. Sigma would like to emphasize the fact that any combination of Series 2100 modules can be installed within the Series 2100 frames.

When required in a Stand-Alone Box, the BSG-21A Series can be purchased in two different configurations. A dedicated desktop model is available via model number BSG-26A Series. This is a separate product configuration with six (6) outputs and a wide range operating voltage which meets North American and International power standards. Refer to product manual on BSG-26A Series for more information.

?? Also available is the SSB-21 single card slot desktop frame which holds one BSG-21A Series module. This combination provides eight outputs. This combination is not as cost effective and can be ordered in either 120 VAC or 230 VAC version.

?? The SS-2100-2 frame is also designed for desk-top applications. This frame provides two (2) slots for dual module configurations. An optional tray (RMT-2100-2A) is available for rack installations.

?? The SS-2100-6 frame is designed for 19 inch EIA rack installations. It provides six (6) slots for modules in 1 RU.

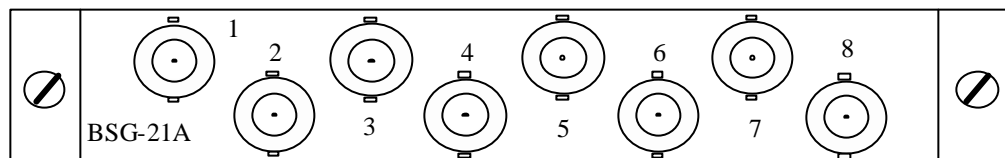
?? The SS-2100-12 frame provides a redundant power supply in a 3 RU frame for 19 inch EIA rack installations. This frame has twelve (12) slot positions for modules.

?? The SS-2100-16+ frame is also available for installations in a 19 inch EIA rack. This frame provides seventeen (17) slots for modules within 3 RU.

Additional information on the various frames is available. Please refer to the special section on frames if this was purchased as a complete system. For more information or assistance contact Sigma Electronics.

CONNECTIONS:

Wiring to the module is performed via the connectors located on the rear panel. BNC connectors are used for the eight outputs. When the Optional SDI OUT kit is installed, Outputs 1 and 2 change to SDI signals. Each of the outputs are designed to drive a 75 Ω load. The outputs must be terminated by a single, end of line 75 Ω termination to ensure proper signal level. Unused Analog outputs do not require a 75 Ω terminating resistor however Unused Digital outputs are best when terminated.



REAR PANEL CONNECTIONS

Figure 1

BSG-21A SERIES

SWITCH SETTINGS:

The following switch settings are located on the PCB inside the enclosure. They are provided for custom configuration of the BSG-21AN and BSG-21AP. The modules should not require any adjustments for normal Black Signal operation.

- S2-1 Output format selection. Open – PAL Closed - NTSC
- S2-2 Switch must be set to closed position.
- S2-3 Setup selection. Open – Setup ON Closed – Setup OFF.
- S2-4 Switch must be set to closed position.

ADJUSTMENTS:

The following adjustments and jumpers are located on the PCB. They are provided for custom configuration of the BSG-21AN and BSG-21AP. The modules should not require any adjustments for normal Black Signal operation.

- R45 Gain adjust.
- R46 DC Offset adjust

SPECIFICATIONS:

OUTPUTS:

- BSG-21AN: (8) Blackburst, per RS-170A (NTSC), SMPTE 170M
- BSG-21AP: (8) Blackburst, per CCIR 624-4 (PAL)
- LEVELS: In accordance with standards specified.
- SCH PHASE: 0? ?5?
- SCH ? JITTER: ? 2?p-p
- SETUP: Switch Selectable, +7.5, 0 IRE
- MASTER CRYSTAL STABILITY: .. 27.000000 MHz TCXO, NTSC, PAL
 - Initial 1 PPM
 - vs. Time 1 PPM/Year
 - vs. Temperature ... 1 PPM, 0?C to +50?C
- OPTIONAL SDI OUT Conforms to ANSI/SMPTE 259M for Component Digital Signals

GENERAL:

- OPERATIONAL TEMPERATURE: 0? to +50? C (+32? to +122? F)
- POWER CONSUMPTION: 6 Watts nominal
- CONNECTOR: BNC

MECHANICAL:

- DIMENSIONS: 1 card slot, requires one card slot position within a Sigma frame.
- SHIPPING WEIGHT: 2 lb. (0.91 kg)

WARRANTY:

Sigma Electronics, Inc. warrants that its products are free from defective material and workmanship at the time of shipment from Sigma Electronics. The products will possess the electrical characteristics as set forth in the specifications for a warranty period of five years. This warranty does not include any Sigma Electronics product, or part thereof, that has been subjected to misuse, neglect, improper installation, use in violation of instructions furnished, or accident. It does not extend to products that have been modified from original design outside the factory. Nor does it extend to units from which the serial number has been removed, defaced, or changed. Nor does it extend to accessories not of Sigma Electronics, Inc. manufacture.

All specifications, drawings, dimensions, weights and other details are subject to change without notification. Information is intended to give a general performance and operation guideline of the product.

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