

TSG490 SPG AND TEST PATTERN GENERATOR

The TSG490 is the ultimate sync and test pattern generator designed to satisfy all needs of broadcast serial digital (Standard and HD) and mixed digital/analog, post-production, outdoor broadcast and other operational environments. It provides all the timing and test signals, including LTC and VITC, needed to satisfy any application in NTSC, PAL, HD and mixed-standard installations.

Future Proof

The TSG490 is configured to meet the needs of video professionals at all levels of technical sophistication. It can be initially supplied as a basic analog-only device. Then, as needs change with time, it can be upgraded, with options, to include configurable multi-standard references, standard and high definition test patterns and black, AES tone, wordclock, embedded tone and more.



The TSG490 is designed for use either as a master or a slave SPG, when genlocked. Where it is critical to have a backup SPG, the Sigma CO490 auto changeover unit complements the TSG490. This can be user configured to monitor and changeover analog video, digital video, timecode and AES/EBU digital audio signals.

FEATURES

- Outstanding performance, stability and reliability
- NTSC / PAL / 625 / 525 switchable
- Comprehensive range of test patterns for all analog and digital applications
- Fully compliant with SMPTE 318M
- ± 2 field (NTSC)/ ± 4 field (PAL) timing range
- Multiple & configurable reference outputs (NTSC/PAL/Tri-Level Sync in all HD formats)
- 4 LTC (standard & offset) or pulse outputs (User programmable)
- VITC on all outputs (User Select)
- Analog stereo tone output with programmable interrupt
- Embedded audio
- User programmable text ID (3)
- Animated text ID
- Text ID in any language (bitmap import)
- Full color logo over test pattern output (bitmap import)

OPTIONS AVAILABLE

- Multiple user-configurable and independently adjustable reference outputs (NTSC blackburst, PAL blackburst & Tri-level Sync)
- 10MHz reference input
- SD blackburst and/or test (with embedded tone/silence)
- HD/SD black and test patterns (with embedded tone/silence)
- AES digital tone, Silence, Wordclock
- Remote control via RS232
- Remote control over IP
- Locking to GPS reference
- Standard switch-select or alternate display-select front panel available

Prices and specifications are subject to change without notice

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SPECIFICATIONS

VIDEO INPUT

75 Ω Looping reference

VIDEO OUTPUTS

Analog blackburst	8 (TSG490Y)
Timeable Multi-standard output (PAL or NTSC Blackburst, Tri-level Sync)	3 (option)
Composite video	2
Component video (TSG490Y)	1
SD serial digital pattern	2 (option)
SD serial digital blackburst	2 (option)
HD/SD serial digital pattern	2 (option)
HD/SD serial digital blackburst	2 (option)
Subcarrier	1

Pulse (P1, P2, P3, P4) - The 4 pulse outputs are programmable and can include:

- mixed sync
- mixed blanking
- line drive
- field drive
- PAL
- ID
- F1 line
- wordclock

These outputs can also be individually set to be Longitudinal Time Code (LTC) or a 6Hz pulse.

AUDIO OUTPUTS

Analog stereo tone	
AES Digital channels	4 (option)
Wordclock (48kHz & 44.1 kHz)	(option)

TIMECODE OUTPUTS

LTC (user selectable rate)	4
LTC 1 is at system rate.	
LTC 2,3,4 can be system or 24Hz	

VITC (user select)

TEST PATTERNS

The following can be selected directly from the front panel:

- Color bars (100%, 95%, 75%, EBU, SMPTE, split red)
- 50Hz square
- grey scale
- multi-test
- multi-burst
- sweep
- legal ramp
- flat fields (white, black)
- cross-hatch
- checkerboard
- pluge
- APL (87.5%, 12.5%)
- bow tie
- pulse and bar
- pathological
- circle

Further test patterns are available via an on-screen menu system. These include UK and International VITS.

REMOTE CONTROL

D9 RS232

10Base-T Interface

SYNC PULSE GENERATOR

Subcarrier output	
Frequency: (PAL)	4.43361875MHz
Stability:	± 1 Hz over temp. range
Amplitude:	1Vp-p
Return loss:	>35dB to 5 MHz

BLACKBURST OUTPUTS

f_{sc} stability:	± 1 Hz over temp. range
SCH phase:	0 degrees ± 5 degrees
Return loss:	>35dB to 5 MHz

PULSE AND PATTERN OUTPUTS

Signals: meet or exceed relevant SMPTE, CCIR and EBU specifications

GENLOCK

H range: ± 4 fields (PAL). All timing relative to Subcarrier: 0 to 360 degrees

Resolution: <0.5 degrees of subcarrier

CONFIGURABLE MULTI-STANDARD OPTIONS

This option provides 3 additional outputs, each of which can be configured to be

- NTSC Blackburst,
- PAL Blackburst or
- HD Tri-level sync (user selectable).

Each output can be timed with respect to the main blackburst and pattern outputs to ± 4 fields (NTSC or PAL).

MECHANICAL

Height: 1.7" (1U)
Width: 19" rack mounting
Depth: 15" (overall)
Weight: 15.4lbs. shipping wt.

ORDERING INFORMATION

MODEL NUMBERS

TSG490Y	PAL/NTSC SPG, composite, component, analog stereo audio
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OPTIONS

GP201	GPS reference input
HD402	Timeable Reference, 3 channels (User config: NTSC / PAL / HD)
OM404	AES audio, word clock
SR406	10 MHz reference input
HD408	HD/ SD Pattern & Black Generator
SD411	SDI output option
NT421	10Base-T Interface

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