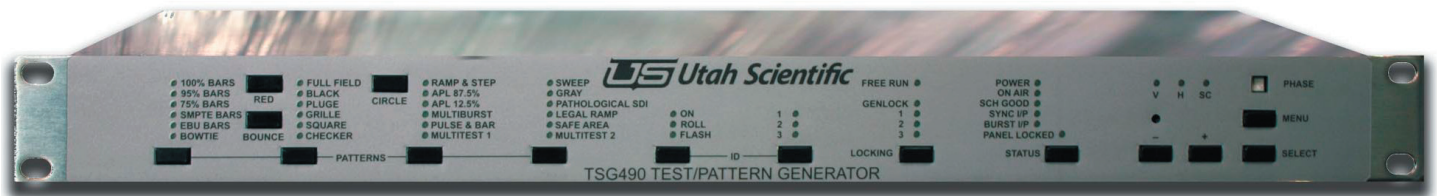


# TSG-490

## SYNC/PATTERN GENERATOR

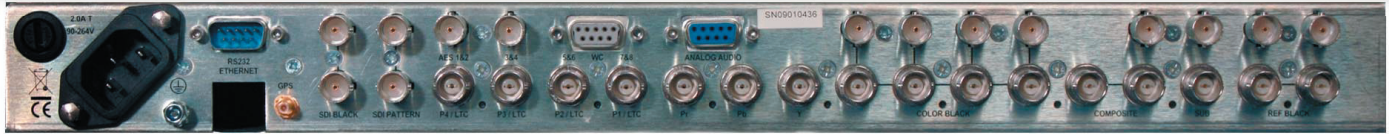


The TSG490 is the ultimate sync and test pattern generator designed to satisfy the requirements of analog, digital (Standard and High Definition) and mixed environments in production, broadcast and other operational applications. It provides all the timing and test signals, including Linear and Vertical Interval Timecode, that may be needed in any NTSC, PAL, HD, or mixed-standard installations.

The TSG490 can be configured to meet the requirements of levels of video applications. It can be initially supplied as a basic analog-only device. Then, as needs change with time, it can be upgraded provide configurable multi-standard reference signals, standard definition and high definition test patterns and black, AES tone, wordclock, embedded tone and more.

### 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
- $\pm 2$  field (NTSC)/ $\pm 4$  field (PAL) timing range
- Multiple configurable reference outputs (NTSC/ PAL/Tri- Level Sync in all HD formats)



TSG-490 SPECIFICATIONS:

OUTPUTS	Analog blackburst	8
	Timeable Multi-standard output	3 (option)
	Composite video	2
	Component video	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	4

The 4 pulse outputs are programmable and can include:

- mixed sync • PAL
- mixed blanking • ID
- line drive • F 1 line
- field drive • wordclock

These outputs can also be individually set to be LTC or a 6Hz pulse.

AUDIO OUTPUTS	Analog stereo tone	
	AES Digital channels	4 (option)
	Wordclock (48kHz & 44.1 kHz)	1 (option)

TIMECODE OUTPUTS	LTC (user selectable rate)	4
	LTC 1 is at system rate. The others are system/24Hz VITC (selectable)	

BLACKBURST OUTPUTS	fsc stability:	±1Hz over temp. range
	SCH phase:	0 degrees ±5 degrees
	Return loss:	>35dB to 5 MHz

SUBCARRIER OUTPUT	Frequency: (PAL)	4.43361875MHz
	Stability:	±1Hz over temp. range
	Amplitude:	1Vp-p
	Return loss:	>35dB to 5 MHz
GENLOCK	H range:	4 fields (PAL).
	Subcarrier:	360 deg
	Resolution:	<0.5 degrees of subcarrier

PULSE AND PATTERN OUTPUTS Signals: meet or exceed relevant SMPTE, CCIR and EBU specifications

TEST PATTERNS Selected directly from the front panel:

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

Further test patterns are available via an on-screen menu system.

VIDEO INPUT	75Ω Looping reference
REMOTE CONTROL	D9 RS232 10Base-T Interface

CONFIGURABLE MULTI-STANDARD OUTPUT OPTION  
This option provides 3 additional outputs, each of which can be configured to be NTSC Blackburst, PAL Blackburst or HD Tri-level sync. 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.

POWER REQUIREMENTS  
100-240VAC, 50-60Hz, 18 W (max)

ORDERING INFORMATION  
TSG490 PAL/NTSC SPG  
OPTIONS

- HD402 Multi-Standard Output option
- HD408 HD/ SD Pattern & Black Generator
- SD411 SDI output option
- GP201 GPS reference input
- OM404 AES Output Option
- NT421 10Base-T Interface

CO-490 AUTOMATIC SPG CHANGEOVER UNIT

ADDITIONAL FEATURES

- 4 LTC (standard & offset) or pulse outputs (User programmable)
- VITC on all outputs (User Select)
- Analog stereo tone output with programmable interrupt
- User programmable text ID (3)
- Animated text ID
- Embedded audio