CY490 SPG and Test Pattern Generator

The CY490 is the ultimate sync and test pattern generator designed to satisfy all needs of broadcast serial digital (Standard and High Definition) and mixed digital/analogue, post-production, OB and other operational environments. It provides all the timing and test signals, including LTC and VITC, needed to satisfy any application in PAL, NTSC, HD and mixed standard installations.

Future Proof

If your current requirements are not extensive, it can be supplied as a basic analogue only device. Then, as your needs change with time, it can be upgraded with options, to include configurable multistandard references, standard and high definition test patterns and black, AES tone, wordclock, embedded tone and more.

The CY490 is designed for use either as a master or, when genlocked, as a slave SPG. Where it is critical to have a backup SPG, the CY435 auto changeover unit complements the CY490. This can be user configured to monitor and changeover analogue video, digital video, timecode and AES/EBU digital audio signals.

FEATURES

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

Options available:

- Multiple user configurable and independently adjustable reference outputs (NTSC colour black, PAL Colour Black & Tri-level Sync)
- 10Mhz reference input
- SD colour black and 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

SPECIFICATION

Conforms to relevant EBU, CCIR or SMPTE specifications.

Video input
75Ω Looping reference

Video Outputs
Analogue colour black 4 (CY490S)
8 (CY490A)
Timeable multistandard 3 (option)
output (PAL or NTSC Colour Black, Tri-level Sync)
Composite video 2
Component video 1
SD serial digital pattern 2 (option)
SD serial digital colour black 2 (option)
HD serial digital pattern 2 (option)
HD serial digital colour black 2 (option)
Subcarrier 1
P1, P2, P3, P4

The 4 pulse outputs are programmable and can include mixed sync, mixed blanking, line drive, field drive, PAL ident, F1 line 7, and wordclock. These outputs can also be individually set to be Longitudinal Time Code (LTC) or a 6Hz pulse.

Audio outputs
Analogue stereo tone (EBU & Glitz)
Digital (option) 4 AES channels
WordClock (48kHz & 44.1 kHz)

Timecode outputs
LTC 4 (user select) LTC 1 is at system rate. LTC2,3,4 can be system or 24Hz
VITC (user select)

Test patterns
The following can be selected directly from the front panel:

Colour bars (100%, 95%, 75%, EBU, SMPTE, split red), flat fields (white, black), 50Hz square, chequer board, cross hatch, pluge, grey scale, APL (87.5%, 12.5%), multi-test, bow tie, multi-burst, pulse and bar, sweep, pathological, legal ramp and 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: 4.43361875MHz after warm up (PAL)
Stability: ±1Hz over temperature range
Amplitude: 1Vp-p
Return loss: >35dB to 5 Mhz

Colour black outputs
Fsc stability: ±1 Hz over temperature
SCH phase: 0 degrees ±5 degrees
Return loss: >35dB to 5 MHZ

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

Genlock
H range: ±4 fields (PAL). Moves all timing relative to the reference input
Subcarrier: 0 to 360 degrees
Resolution: <0.5 degrees of subcarrier

Configuarable Multistandard Outputs
This option provides 3 additional outputs, each of which can be configured to be PAL Colour Black, NTSC Colour Black or HD Tri-level sync (user selectable variant). Each output can be timed with respect to the main colour black and pattern outputs by ±4 fields (PAL), ±4 fields (NTSC).

Mechanical
Height: 44mm (1U)
Width: 19" rack mounting
Depth: 380 mm (overall)
Weight: 7 kg packed

Ordering information

Code	Description
CY490S	PAL/NTSC SPG, composite patterns, analogue stereo audio
CY490A	PAL/NTSC SPG, composite, component patterns, analogue stereo audio
Option 02	Timeable Reference 3 channel (User config: PAL/NTSC/HD)
Option 04	AES audio, word clock
Option 06	10 Mhz reference input
Option 08	HD/SD Pattern & Colour Black Generator
Option 11	SDI output option
Option 21	10Base-T Interface

Courtyard Electronics Ltd. reserves the right to alter the specifications without prior notice.

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