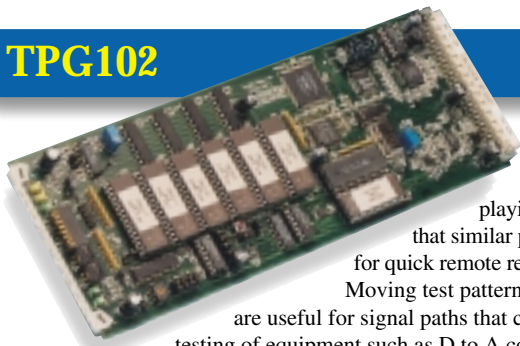


# Crystal Vision

## TEST PATTERN GENERATORS

Crystal Vision offers the choice of four test pattern generators which provide a source of signals designed to test the performance of studio signal paths. Created to meet the differing needs of engineers, the four TPGs offer a variety of features and cost options. All provide digital outputs that can be either free running or locked to an analogue timing reference.

### TPG102



The TPG102 is a fully-featured 10 bit serial digital test pattern generator. It provides 32 SDI patterns to enable the broadcast engineer to check equipment is recording, playing back or monitoring to specifications. The test patterns are split into pattern banks so that similar patterns are grouped together for easy retrieval. Ten user memories can be programmed for quick remote recall of specific patterns. Patterns can be forced to be luminance or chrominance only. Moving test patterns are also available and can be created by rotating a strip of the static patterns. These are useful for signal paths that contain synchronisers or other modules incorporating a framestore, and also allow the testing of equipment such as D to A converters and monitors.

The output timing is fully adjustable in relation to the analogue reference, with flexible adjustment of both horizontal and vertical picture position. EDH can be turned off if required. The TPG102 can be controlled remotely from the active frame front panel or a remote panel, or manually from board edge. The pattern bank can be selected by GPI. The TPG102's wide test pattern choice is especially useful for the broadcaster or larger facility.

### GEN102

The GEN102 is a 10 bit serial digital test pattern generator which is ideal for the smaller or budget-conscious facility, and also as a source of a fixed pattern for distribution. It provides a small selection - eight - of the most commonly used static test patterns. Manually controllable from board edge, it has a limited range of timing adjustments relative to the analogue source.



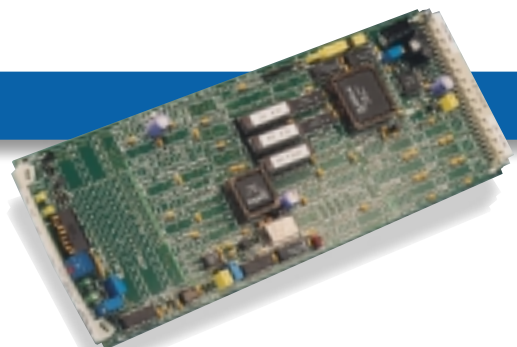
### BLACK102

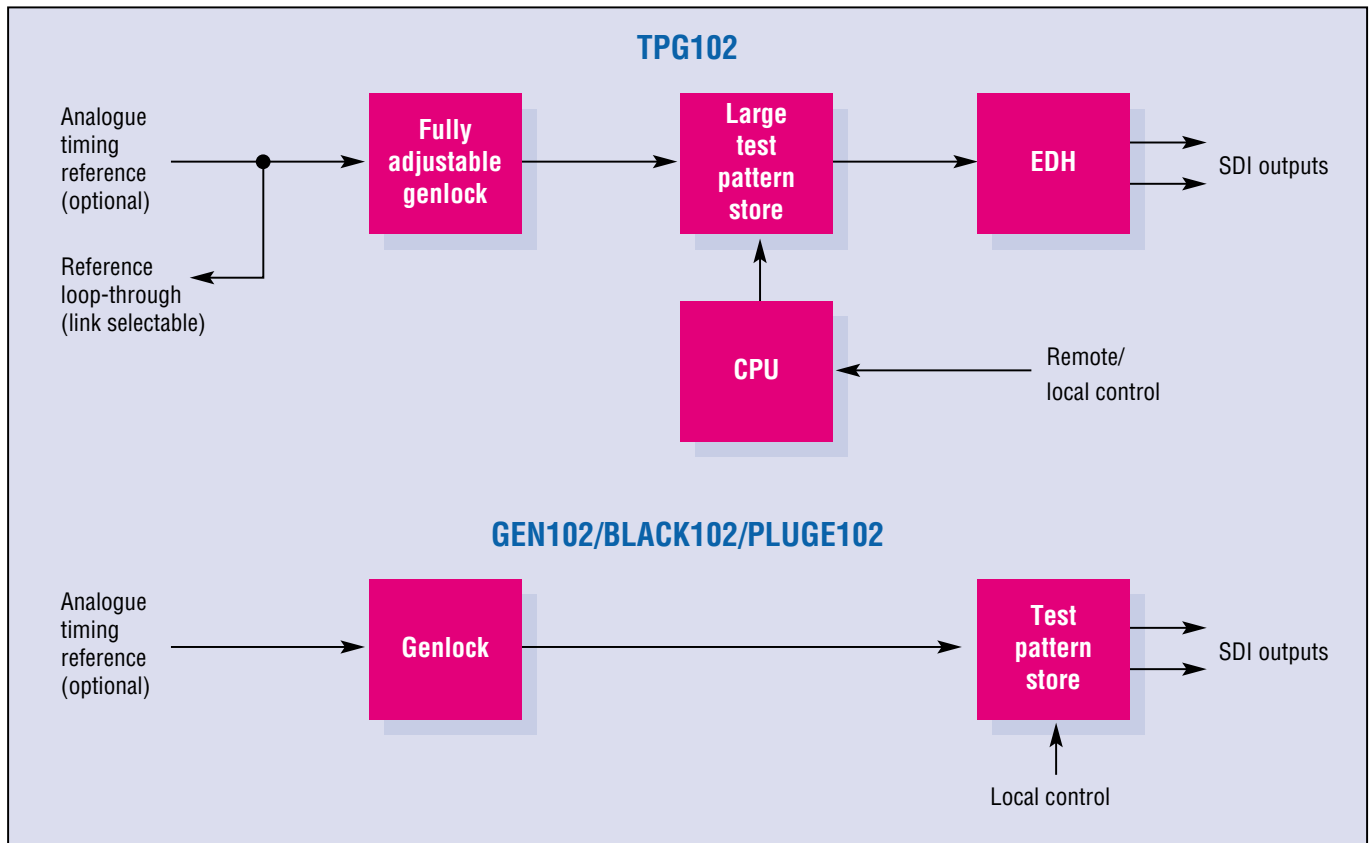


The BLACK102 is a 10 bit serial digital test pattern generator. Manually controllable from board edge, it provides a low cost single test pattern source by generating only SDI Black and has a limited range of timing adjustments relative to the analogue source. It is particularly useful for post production applications where a black source is needed to black tapes ready for an edit, or if black is required to be inserted into a programme.

### PLUGE102

The PLUGE102 is a 10 bit serial digital test pattern generator. Like the BLACK102, it provides a low cost, manually controlled single test pattern source and generates Pluge. It has a limited range of timing adjustments relative to the analogue source. It is primarily used to set up all monitors to the same settings.





## S P E C I F I C A T I O N

### TPG102

#### MECHANICAL

Standard Crystal Vision module 266mm x 100mm  
Weight: 270 g  
Power consumption: 6.25 Watts

#### ANALOGUE INPUT

Digital output may be timed to an external analogue reference or free run with no reference  
Mixed syncs input 300mV to 2 volt or 300mV Black and Burst into 75ohm  
Auto or manual 625/525 line selection  
Reference loop-through available  
Free-run frequency + or - 15 ppm

#### OUTPUTS

2 outputs SDI 270Mbit to EBU 3267-E and SMPTE 259M

#### ADJUSTMENTS

0 to 1 line adjustment of horizontal picture position from syncs in 74ns steps. 0 to 624 lines adjustment of vertical picture position in 1 line steps for PAL. 0 to 524 lines adjustment of vertical picture position in 1 line steps for NTSC

#### BLANKING

To 601 specification vertically. 1 test pattern is available with signals on vertical lines 7 to 22 and 320 to 335 in PAL and 10 to 20 and 273 to 282 in NTSC

#### TEST PATTERNS

32 digital test patterns plus a full frame logo, divided into seven pattern banks:

- ▶ 100% Colour Bars, EBU Colour Bars, 95% Colour Bars, Split Bars

- ▶ Peak White, Black, Hard Grey, Red, Field 1 Only, Field 2 Only
- ▶ Luma Only Ramp, Valid Ramp, Limit Ramp, 10 Bit Blue Ramp, Shallow Ramps, Steps, Modulated Ramp
- ▶ Luma Only Multi-frequency Burst, Multi-frequency Burst, Luma Only Frequency Sweep, Frequency Sweep, Bow Tie
- ▶ Mixed Selection of Patterns, SDI Test, Pulse and Bar, Edge of Frame Markers, Cross Hatch
- ▶ PLUGE, SPLUGE, Co-site, 50Hz Rectangle, Safe Area
- ▶ Crystal Vision Logo

A section of each test pattern can be made to rotate to create a moving pattern

#### GPI INPUTS

Pattern bank selection

#### LED INDICATION OF:

Power supply present, PAL/NTSC standard, board configured and ready for use, valid reference syncs input detected

#### LOCAL CONTROL

Rotary switch selection of pattern banks, static patterns and rotating patterns

Piano switch selection of line standards (when no reference syncs), EDH transmission, Y only or C only, horizontal and vertical delay adjustments

#### REMOTE CONTROL

RS422/485 and RS232  
19200 baud 8 bits, 1 stop no parity  
Remote control of pattern selection, 10 non-volatile user memory locations, Y only or C only, pattern rotation, horizontal and vertical delay adjustments

### GEN102 / BLACK102 / PLUGE102

#### MECHANICAL

Standard Crystal Vision modules 266mm x 100mm  
Weight: 180 g  
Power consumption: 5 Watts

#### ANALOGUE INPUT

Digital output may be timed to an external analogue reference or free run with no reference  
Mixed syncs input 300mV to 2 volt or 300mV Black and Burst into 75ohm  
Auto or manual 625/525 line selection  
+/- 2µs adjustment of horizontal picture position from syncs

#### OUTPUTS

2 outputs SDI 270Mbit to EBU 3267-E and SMPTE 259M

#### TEST PATTERNS

GEN102 has 8 digital test patterns: SDI Test, EBU Colour Bars, 100% Colour Bars, Multi-frequency Burst, Grey, Frequency Sweep, Edge of Line Markers, Ramps  
BLACK102 has single fixed test pattern: SDI Black  
PLUGE102 has single fixed test pattern: SDI Pluge

#### LED INDICATION OF:

Power supply present, PAL/NTSC standard, valid sync input detected

#### LOCAL CONTROL

Rotary switch selection of test patterns on GEN102 and PLUGE102

Pot adjustment of horizontal timing

Piano switch selection of user or calibrated horizontal delay adjustments

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## ORDERING INFORMATION

TPG102	10 bit SDI test pattern generator with 32 patterns and remote control
GEN102	10 bit SDI test pattern generator with eight patterns
BLACK102	10 bit SDI test pattern generator with single Black pattern
PLUGE102	10 bit SDI test pattern generator with single Pluge pattern
FRxxx	Any Crystal Vision interface frame (some require rear modules)
FP2-LF	Active control panel for 2U frame. Allows control of all TPG102 modules in frame
FP1-L	Active control panel for 1U frame. Allows control of all TPG102 modules in frame
REM1U	1U remote control panel. Can be used instead of active front panel on frames
REM1US	Narrow 1U remote control panel