

# Penpal -HSD

HD and SD Test Signal Generator



## Portable Test Pattern Signal Generator

To verify and fault find system integrity and the performance of SD & HD television SDI signal paths in studios, OB vehicles, distribution & routing networks, transmission systems and general television equipment.

*Penpal* -HSD will produce 32 video test patterns in HD and SD standards each of which can be combined with three different audio tone settings.

A full specification broadcast quality TSG ideal for checking signal path integrity or to determine system performance and calibration.

This level of integration and performance has been achieved utilizing video processing and miniaturisation techniques optimised for reduced power consumption. 10 bit all digital processing and high stability crystals eliminate all noise and distortion. The long lasting battery life is a result of the latest power supply technology.

- World's smallest
- Truly portable
- Battery powered
- Fits in a shirt pocket
- Never be without it!

Features: HD and SD formats.

32 video test patterns  
Including pathologic test

4 stereo pairs of AES  
embedded audio

Operates from battery or  
mains power

### TEST PATTERNS:

100% COLOUR BARS  
100% COLOUR BARS & RED  
75% COLOUR BARS  
SMPTE HD (SD-compatible) bars

SDI CHECK FIELD-MATRIX  
ARC/APM 4:3 & 16:9  
HD/Y PULSE & BAR /  
SD/2T+MODULATED P&BAR  
HD/UV PULSE & BAR /  
SD/FULL-FIELD LINE 17ITS

5 STEP Y STAIRCASE  
HD/5 STEP UV STAIRCASE /  
SD/ 5-STEP MODULATED  
LIMITED YUV RAMP  
SHALLOW Y RAMP

STATIONARY Y ZONE PLATE  
**MOVING Y ZONE PLATE**  
MOVING Y VERTICAL BAR  
MOVING Y DIAGONAL BAR

60% Y SWEEP (30MHZ) WITH MARKERS  
60% UV SWEEP (15MHZ) WITH MARKERS  
Y MULTIBURST  
UV MULTIBURST

PLUGE ON BLACK  
CONVERGENCE  
TARTAN BARS  
1 FIELD IN 8 WHITE BAR

WHITE FIELD  
BLACK FIELD  
RED FIELD  
YELLOW FIELD

GREEN FIELD  
BLUE FIELD  
MAGENTA FIELD  
CYAN FIELD

# Penpal -HSD

HD and SD Test Signal Generator



The world's smallest, portable, professional broadcast HD and SD SDI test signal generator.

## SPECIFICATIONS

Video standards supported according to the SMPTE 292M and 259M using YCbCr colour encoding.

### Video

Bit depth	10 bits
Interface	SMPTE 274M, 296M, 260M, 259M
Bit rate	1.485 Gbit/s and 270 Mbits/s
Output impedance	75 Ohm
Video Connector	BNC female
Return Loss	better than 15dB
Amplitude	800mV +/- 10%
Wideband Jitter	< 0.2UI

### AES Embedded Audio

Transport	Audio embedded according to SMPTE 299M & 272
Precision	20 bits
Sampling Frequency	48kHz locked to video
Tones	1kHz (nominal) 444Hz (nominal) locked to sampling frequency
Level	-20dBFS (59.94Hz) -18dBFS (50Hz)
Channels	4 x stereo pairs (8 x channels)

### Battery Life

3 hours continuous

### Power Requirements

3 Volt Lithium Ion battery	Type DL/CR123
Optional 3v AC power adaptor	110/240 (+/- 10%) 50/60Hz

### Mechanical

Length	172mm
Diameter	22mm
Weight	175g (without battery)

### Environmental

Temperature	0 to 40 degrees C.
EMI/RFI	Complies with FCC & EU EMC Directive

## Penpal -HSD/50

### Video Format    Audio Level

1080i / 60    - 20dB  
1080i / 50    - 18dB

1080p / 30    - 20dB  
1080p / 25    - 18dB  
1080p / 24    - 20dB

1080sF / 30    - 20dB  
1080sF / 25    - 18dB  
1080sF / 24    - 20dB

1035i / 60    - 20dB

720p / 60    - 20dB  
720p / 50    - 18dB

SD: 625/50Hz  
576i / 50    - 18dB

SD: 525/59.94Hz  
480i / 59.94    - 20dB

## Penpal -HSD/59.94

### Video Format    Audio Level

1080i / 59.94    - 20dB

1080p / 29.97    - 20dB  
1080p / 23.98    - 20dB

1080sF / 29.97    - 20dB  
1080sF / 23.98    - 20dB

1035i / 59.94    - 20dB

720p / 59.94    - 20dB

SD: 625/50Hz  
576i / 50    - 18dB

SD: 525/59.94Hz  
480i / 59.94    - 20dB

Penpal-HSD is a registered trademark of Electronic Visuals Limited

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