

# Hamlet® MicroFlex®

## Multiformat Hand Held, Waveform, Vector and Audio Monitor and Generator\*



The Hamlet MicroFlex is the world's smallest multi-format multi-standard handheld waveform, vector, audio, and picture monitor.

Using a built-in 3.5" diagonal high quality VGA (640 x 480) TFT display shows the picture in 4:3 or 16:9 formats. Also shows conventional waveform, vector and audio displays together with data analysis. Easy to plug-in option modules allow operation in all current formats and enables future

standards to be accommodated and allows easy upgrade for the user at any time.

The MicroFlex unit is capable of analysis, measurement and monitoring 3G HD, SD and composite video signals and audio in its embedded, or AES/EBU formats and generating HD SDI and SD SDI video and audio signals dependant on the installed modules.

Waveform, Vector, EYE pattern Audio and Picture can be monitored and measured. Coloured traces, Line Select, stuck bit detect (no activity on one data line). There is a headphone socket and a speaker on the base so the decoded audio can be monitored. Computer downloads and data uploads are via USB. Using the WFM/GEN module, video and audio generation is available simultaneously with the monitoring and measurement allowing a closed loop testing environment to be set up with the device/system under test It is ergonomically designed machined aluminium case, operating for over 2 hours on 6 x AA batteries or from the supplied 12V power adaptor. Patented proprietary 10 bit processing of all signals

*This product contains proprietary patented designs.*

*US 6,493,024B1 GB2329294*

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### Features and Functions

#### Hand Held Unit

- World's smallest hand held HD SDI, SD SDI & composite capable measuring and monitoring and generation instrument\*
- Data and gamut analysis, time code logging of assigned errors
- Easy access to full functionality: Parade (YCrCb), 2H, H, Hmag, 2V, V, Vmag, Full field line select, Bow tie, Ext - ref, HFT™ - (Hands Free Timing™), Filtering
- Coloured displays of waveforms, vectors audio bar graphs and phase display
- Select audio source, bar graph type, peak hold, de-emphasis
- Picture display in 4:3 or 16:9
- Built-in monitoring speaker, output jack
- Operator and factory store and recall presets
- Patented proprietary 10 bit processing of all signals
- Computer remote control, up/downloads data via the USB port or connection via new RJ45\* option
- Internal battery or 12 VDC powered, mains adaptor included

#### **FlexiScope Module Options Available Description**

- HD, SD Video and Audio input module
- SD, Composite Video and Audio input module
- HD, SD Video and Audio input module with Test Signal Generation
- HD, SD Video and Audio input module with EYE pattern included
- 3G, HD, SD Video and Audio input module
- 3G, HD, SD Video and Audio input module with EYE pattern included

#### **Other Options:**

- Soft carry Case, including strap and additional option pouch.
- Option pouch

See our website for applications

[www.hamlet.co.uk](http://www.hamlet.co.uk)

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## TECHNICAL SPECIFICATION

**HD/SD digital input.** BNC connector. Input impedance 75 ohms. Max d.c. +/- 10V. SMPTE 259M serial digital at 800mV p/p. SMPTE 292M high definition serial digital at 800mV p/p. Auto equalised up to 350 metres of cable at 270mb/s. Auto equalised up to 140 metres of cable at 1.485Gb/s.

**HD/SD digital output.** BNC connector. Output impedance 75 ohms. Equalised version of the serial digital input.

**Ext-ref / AES input.** BNC connector. Input impedance 75 ohms. Max dc +/- 3 volts. Video 0.5 to 2.0V p/p. Digital Audio min 150mV p/p, max 3V p/p conforming to S/PDIF, AES3, IEC60958 or EIAJ CP1201.

### **INPUTS WITH SD-CST MODULE option 02**

#### **INPUT**

**BNC connector.** Input impedance 75 ohms. Max d.c. +/- 10V. SMPTE 259M serial digital at 800mV p/p. Auto equalised up to 350 metres of cable at 270mb/s. PAL or NTSC composite video 0.5 to 2.0V p/p.

**SDI output.** BNC connector. Output impedance 75 ohms. Equalised version of the serial digital input.

**Ext-ref / AES input.** BNC connector. Input impedance 75 ohms. Max dc +/- 3 volts. Video 0.5 to 2.0V p/p. Digital Audio min 150mV p/p, max 3V p/p conforming to S/PDIF, AES3, IEC60958 or EIAJ CP1201.

### **INPUTS WITH HD-SD MODULE option 03**

**HD/SD digital input.** BNC connector. Input impedance 75 ohms. Max d.c. +/- 10V. SMPTE 259M serial digital at 800mV p/p. SMPTE 292M high definition serial digital at 800mV p/p. Auto equalised up to 350 metres of cable at 270mb/s. Auto equalised up to 140 metres of cable at 1.485Gb/s.

**HD/SD digital output.** BNC connector. Output impedance 75 ohms. Equalised version of the serial digital input.

**Ext-ref / AES input.** BNC connector. Input impedance 75 ohms. Max dc +/- 3 volts. Video 0.5 to 2.0V p/p. Digital Audio min 150mV p/p, max 3V p/p conforming to S/PDIF, AES3, IEC60958 or EIAJ CP1201.

#### **OUTPUTS**

**SDI Output Serial digital BNC connector.** Output impedance 75 ohms. SMPTE 292, serial component. 800mV pp. Full 10 bit pattern generation. Embedded audio tone is a 1KHz asynchronous sine wave at a level of -18dBFS. SD Output Serial digital BNC connector. Output impedance 75 ohms. SMPTE 259M, ITU-R

BT.601/656 serial component. 800mV pp Full 10 bit pattern generation. Addition of CRC checksum word. Addition of embedded tone at -18db

#### **WAVEFORM MONITOR**

Built-in 3.5" diagonal high quality VGA (640 x 480) TFT display Response Flat is +/- 0.5% 50Hz to 5.5MHz.

Low Pass is -3db @ 1.5MHz, -60db @ 6.75MHz.

Timebase H, 2H and Hmag (x5). V, 2V and Vmag.

Line select is any line from the frame.

Parade is a 3H display of input or filter parade.

#### **VECTOR MONITOR**

Video Traditional component or composite display.

Component accuracy 0.2%. Bandwidth 3.375MHz.

Composite accuracy 1%. Bandwidth 1.3MHz.

#### **AUDIO MONITOR**

Audio Stereo phase display of left or right audio pair.

Phase accuracy 2 deg. Accuracy Better than 0.1db over full scale range. Characteristics BBC, EBU, Digital, DIN, Nordic and VU.

#### **AUDIO MONITORING OUTPUT**

3.5mm stereo jack.

#### **OUTPUTS**

Audio output jack and USB

#### **ENVIRONMENT**

Indoor and Out door use, 5 to 45 deg.C. Ambient to 2,000m.

Max humidity 80% to 31 deg.C decreasing to 50% at 40 deg.C.

Overvoltage category 2. Pollution degree

#### **PHYSICAL**

**DIMENSIONS :** - h 165mm x w 95mm x d 36mm.

**WEIGHT:** - 650g

**WARRANTY:** - Upon registration - 4 years from purchase date.

By using the AbsoluteCare registration area of our web site, otherwise 1 year.

<http://www.hamlet.co.uk/support/warranty/>

#### **ORDERING INFORMATION**

##### **MicroFlex**

Multiformat hand held, waveform, vector and audio Monitor.

**At least one input module required**

\* Features available as options (see options list below)\*

#### **OPTIONS FlexiScope Option Modules**

<b>OPTIONS</b>	<b>FlexiScope Option Modules</b>
<b>MF-HD/SD</b>	HD and SD input module
<b>MF-SD/CST</b>	SD and Composite input module
<b>MF-WFM/GEN</b>	HD and SD input module with video and audio test signal generator included
<b>MF-HD/SD+EYE</b>	HD and SD input with EYE display for front line maintenance.
<b>MF-3G/HD/SD</b>	3G, HD and SD input module
<b>MF-3G/HD/SD+EYE</b>	3G, HD and SD input module with EYE pattern display for front line maintenance
<b>MF-SCC</b>	MicroFlex soft carry case with strap and Option module bag
<b>MF- SCCP</b>	MicroFlex additional Option module bag

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**Hamlet products are Manufactured to ISO9001.2000 and ISO14001 specification.**

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