



HE-1600

Harsh Environment LCD Controller

Digital View is the leading supplier of LCD interface solutions for application specific OEM display products. The HE range of COTS controllers are designed to aid in compliance of the strict standards required for Harsh Environment applications. Featuring wide-tolerance power supplies ($\pm 25\%$), low mass tantalum capacitors for maximum vibration and shock tolerance, conformal coating, laboratory certified*** operating temperature range from -40°C to $+80^{\circ}\text{C}$, plus calculated MTBF in excess of 150K hours.

The HE-1600 is a fully buffered, multi-sync interface controller providing direct analog and digital connection to a wide range of TFT LCD panels up to UXGA resolution. Key features include a flexible port architecture that provides inputs for DVI, dual VGA channels, Composite, S-Video and Component Video across both 4:3 and 16:9 format panels. The HE-1600 supports the Digital View serial protocol allowing all controller functions and parameters to be controlled via the built-in serial port.

Panel Connectivity

| | | | |
|-------------|------------|-----------|----------|
| TFT: | •1600x1200 | •1280x800 | •800x600 |
| | •1366x768 | •1280x768 | •640x480 |
| | •1280x1024 | •1024x768 | |

Input

- Analog RGB:**
- 60Hz at UXGA
 - 75Hz at SXGA, WXGA, XGA, SVGA, VGA
 - 1152 x 900 @66Hz
 - 1152 x 900 @76Hz
 - 1280 x 1024 @76Hz

With auto detect of Digital Separate Sync, Sync-On-Green & Composite Sync. Auto detects VGA-UXGA, interlaced & non-interlaced.

- DVI-I:**
- 60Hz at UXGA
 - 75Hz at SXGA, WXGA, XGA, SVGA, VGA

- Video:**
- NTSC/PAL/SECAM (Interlaced)
 - Composite Video • S-video • RGB Video
 - Component Video (YCbCr)

Reliability

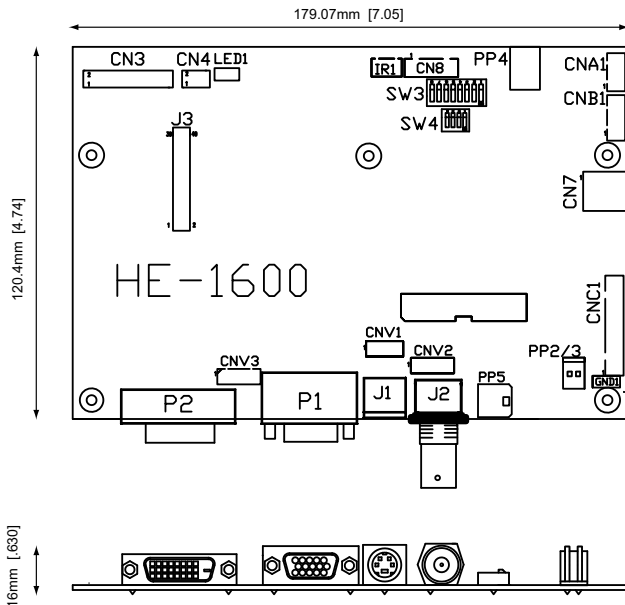
Calculated Mean Time Between Failures - In excess of 150,000 hours. Warranty - 3 years.

Features

- Colors:** Up to 8 bit per color, ie 16.7 million colors.
- Functions:** On Screen Display (OSD) menu.
- Function Controls:** External buttons, Infra-Red controls, Serial Port control.
- Image Scaling:** Up/Down scaling to fit input to panel resolution.
- Image Control:** Auto configuration, Brightness, Contrast, Clock, Phase, Color temperature, Image position, Saturation, Hue, Gamma.
- Other Features:** Auto picture setup, Auto color gain, Auto power, OSD timeout position and transparency, Programmable hot keys.
- Dimensions:** 179mm x 120.4mm (7" x 4.74")
- Form Factor:** DV standard & mounting holes.
- Power Requirements:** +12VDC $\pm 25\%$, 10W (controller only)
- Panel Power:** Supports 3.3V, 5V & 12V panels.
- Panel Signal:** TTL (Single pixel) & LVDS.
- Inverter Support:** DPMS, Analog or PWM brightness control, serial port controller brightness
- Plug & Play:** DDC 1,2/b compatible
- Status Indicator:** Dual color LED support.
- Operating Temperature:** -40°C to $+80^{\circ}\text{C}$ **
- Storage Temperature:** -40°C to 85°C
- Coating:** Silicone resin conformal coating. (MOD) DEF-STAN 59/47 Issue 4 & UL QMJU2 compliant

Options

2W per channel stereo amplifier, Infra-Red controller.



Connector Definitions

| | |
|-------|--------------------------------|
| CN3 | TTL panel signal |
| CN4 | TTL panel signal |
| CN7 | Audio board connector |
| CN8 | RS-232 serial control |
| CNA1 | Auxiliary power output |
| CNB1 | Backlight inverter |
| CNC1 | OSD controls |
| CNV1 | Alternate video in |
| CNV2 | Component video in |
| CNV3 | ARGB 2 input |
| J1 | S-video in |
| J2 | Composite video in |
| J3 | Panel signal for LVDS panel |
| IR1 | Infra-Red sensor connector |
| LED1 | Dual color LED connector |
| P1 | VGA analog input |
| P2 | DVI-I input |
| PP4 | External panel power input |
| PP5 | Main power input ^{##} |
| PP2/3 | Power input (alternative) |

Accessories*

| | |
|-------------|---------------------------------|
| Kit 60110-3 | OSD Digital Button Board Kit |
| Kit 60121-3 | OSD Vertical Membrane Kit |
| Kit 60125-3 | OSD Horizontal Membrane Kit |
| 416940020-3 | Audio Amplifier |
| 416040010-3 | Inverter Interface board |
| 426013800-3 | Power-Input Cable ^{##} |
| 426090200-3 | RS-232 Cable |
| 559000104-3 | IR Remote Control |

Available Documentation

Instruction Manual
 Revision control documentation
 Schematic diagrams (Subject to NDA)
 Mechanical Drawings
 Serial Port Programming Manual**
 Firmware Upgrade Manual**
 MTBF Analysis**

* See accessories page on website for details.

** Available upon request

*** Laboratory certification report available at http://www.digitalview.com/support/downloads/HE-1600_report.pdf. Overall suitability for use in critical applications must be independently tested and verified by the user.

Customer Engineering Services

Digital View offers a wide range of customization for OEM customers. Services range from unique part number and configuration control, custom layouts and features.

Digital View offers managed product lifecycles with extended product lifetime options and EOL planning. US manufacturing is available on all Digital View products.

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