



Eon Product Data Sheet – Rugged Monitor Family

(07/06/2018)

10.4" diagonal: HDM – 104

12.1" diagonal: HDM – 121

15.6" diagonal: HDM – 156

17.0" diagonal: HDM – 170

Standard Features

- Up To 3Ghz Video Input
- 1920x1200 Pixel Resolution
- Frame Rate 30/60fps
- 600 nit Brightness LCD
- Front Bezel Programmable Controls
- Video Input SDI/HDMI/DVI/DisplayPort
- MilStd-810 Environmental Qual tests
- MilStd-901D Impact Qual test
- DO-160 HIRF/Lightening test
- MilStd-461EMI Qual tests
 - EMI Screen Shield
- MilStd 704/1275D Power (18 - 36VDC) tests



Optional Features

- 1000+ nit Brightness LCDs**
- Resistive Touchscreen/NVIS**
- Analog Video/Multiple Inputs**

Description:

Eon Instrumentation has developed Rugged Standalone High Definition Digital Displays as another component in its **Digital Video Architecture**. The HDM-series compliment the digital video cameras, distribution amplifiers, and data recorders available from Eon Instrumentation. The displays use a Liquid Crystal Display (LCD) with vibrant colors, a high pixel density and horizontal viewing angle of 85deg left/right of center. A bonded shield is standard to support emitted EMI and impact resistance. An optional sunlight readable LCD, resistive touchscreen, and NVIS overlay are available. VGA, composite video and multiple inputs are available for split screen operations. Power input of 18–36vdc is received through a MilS D38999/20WA98PN connector. All signal inputs are through MilS D38999/26WC35SN circular connectors or BNC. Connectors are located on the bottom side of a doghouse built into the back of the monitor. This allows cables to be attached vertically to save depth needed for display mounting. Pushbutton controls are located in a removable module on the bottom right bezel. This module includes a microcontroller that is programmed to interface between the sealed buttons

and the display controller. Standard functions allow for adjustment of brightness, contrast, sharpness, and color as well as menu display and selection. On the left side of the control module are two LEDs that show power and video feedback. Other adjustment control options such as potentiometers can be integrated.

Additional Characteristics:

Digital Video Inputs Available

SDI: 3Ghz

HDMI: HDTV resolutions up to 1920p60, as defined by the HDMI 1.4a standard

DVI-D, HDMI in RGB mode: PC resolutions up to WUXGA (1920x1200) @ 60Hz

DisplayPort: Version 1.2 (1024 X 768 to 1920x1200 at 60hz)

Analog Video Inputs Available: VGA, RS170, NTSC, RS343 Component

Scaling (behavior when different ratio input): Black bars on the sides to maintain aspect ratio

Input Lag Time: 19ms

Response Time (black to white): 16.7ms

Mechanical Specifications (HDM-121) – 12.1” diagonal display

Weight: 11.1lbs

Dimensions: 14.6”w x 11.0”h x 3.5”d (including doghouse)

Rear mounting holes on top/bottom and/or side brackets for rack installation

Maximum power consumption (HDM-121): 60W @18 – 36VDC

Reliability: MTBF 20,000 op hours

Environmental Specifications: See Tables 1, 2

TABLE 1 –STANDARD DISPLAY EMI QUALIFICATION SPECIFICATIONS

EMI	Method	Level
Conducted Emissions	MIL-STD-461F	CE101, CE102, CS106, CS114, CS115, CS116
Radiated Emissions	MIL-STD-461F	RE101, RE102, RS103
HIRF and Lightning	Per RTCA/ DO-160D	Compliant
18 -36vdc power tests	MIL-STD-704/1275E	Compliant

TABLE 2- STANDARD DISPLAY ENVIRONMENTAL QUALIFICATION SPECIFICATIONS

Environment	Method	Level
Low Temperature (Cold Start)	MIL-STD-810F, 502.4, Proc II	Temp Range, [°C]: -20
Low Temperature (Operation on ground)	MIL-STD-810F, 502.4, Proc II	Temp Range, [°C]: -20
High Temperature (Operation)	MIL-STD-810F, 501.4, Proc II	Temp Range [°C] : +55
High Temperature (Storage)	MIL-STD-810F, 501.4, Proc I	Temp Range, [°C] : +70
Low Temperature (Storage)	MIL-STD-810F, 502.4, Proc I	Temp Range, °C : -40
Altitude (Storage)	MIL-STD-810F, 500.4, Proc I	Altitude [Kft]: 0 to 40
Humidity	MIL-STD-810G, 507.5	Temp [°C]:35-60 Humidity [%RH]: 5 – 95
Salt Spray	RTCA/DO-160D	Solution pH: 6.5-7.2 Temp [°C]: 35 Caterory X
Rain Waterproofness	MIL-STD-810F, 506.4, RTCA/DO-160D	Proc III Fallen Rate [mm/Hr]: 280 Caterory X
Sand and Dust	MIL-STD-810F, Method 510.4 Proc. I (Internal LRU)	Temp [°C]: 23-60 Air Velocity: 300-1750 ft/mn Duration: 12 hours
Vibration (operating)	MilStd 167-1A; MilStd 810F, 514.5, Pr I, Cat. 13	Type I – 25 hz; func 1hr/end 3hr
Shock, Functional	MIL-STD-810F, 516.5, Proc. I MIL-STD-901D	Pulse shape: Saw tooth Duration [msec]: 11 Amplitude [g]: 20 Total Impacts: 18 Grade A
Shock, Pitch/Roll/Yaw	DoD STD-1399	301A SeaState 8
Temperature Change	MIL-STD-810G, 503.5	+/- 20 deg C per minute