

**10.4" Mil-Spec, COTS Rugged LCD Display  
 MRD-1810 Panel Mount Series**

Our **Military Rugged Displays (MRD)** are designed with shock and vibration safeguards, provisions for extreme temperature operation, high moisture safeguards, as well as Electromagnetic Environmental Interference protection for use in extreme harsh weather conditions found in many Military Applications.

The MRD1810 is a 10.4" **High Brite Monitor** and cost effective **COTS Military Display**, packaged in a rugged panel mount enclosure. This monitor is designed for use in demanding applications that require graphics, video, and other RGB data on a single, rugged display. **COTS Military Displays** typically requires specific configuration customization that is tailored for that specific application, the **MRD-1810 Panel Mount Series** was designed from the ground up to be extremely flexible to accommodate all **COTS Military LCD Display** requirements.



Target application platforms for the MRD-1810 Series **COTS Military LCD Display** include: Aircraft Simulator Displays, Ground Vehicles and Mobile Shelters, Military & Aerospace Displays, Surface Ships, US Navy Aircraft Traffic, **US Navy AN-UYQ-70 Tactical Workstation**.

*Though rugged enough for most Land based and Shipboard Applications, the MRD-1810 10.4" rugged LCD is versatile, as well. With provisions for Color or Monochrome factory setup Inputs and RS170 / RS343 Video Operation, the MRD-1810 COTS LCD Monitors allow for easy insertion into legacy technologies and reduces obsolescence risks.*

**Features:**

- 10.4" High Bright Active Matrix TFT Display with LED Backlight
- High Bright - 1500 Nits Typical
- High Contrast – 700:1 Typical
- 15.75 to 100 KHz - Specially designed for Slow Scan Signals
- RS-170 (525 Line) & RS-343 (875-Line) Interlace Formats.
- 90-264VAC Auto Ranging Internal AC Power Supply
- Aspect Ratio: 1:1 or 4:3 (OSD Selection)
- Convenient Front Controls
- Image Size & Position Adjustment
- Front Manual Full Range Brightness (Dimming) and Contrast Control
- Full-Range Dimming to Black
- Extended Operating Temperature Rating: -30°C to +85°C
- Anti-Reflective LCD Bonding for Superior Optical Performance and Better Protection on Extreme Environments

- Custom Designs Available; Including Spec, Color, Finish and Format
- Designed, Engineered and Built to comply with Military Standards
- Panel Mount Military Grade NEMA 4 (IP65)
- Heavy Duty Aluminum Front Bezel
- Heavy Duty Cold Roll Steel Chassis
- Conformal Coating of Internal Assemblies for Enhance Ruggedization
- Internal Ruggedized Construction

**Options:**

- Custom Designs based on Customer's Exact Needs
- Color or Monochrome Operation Factory Setup
- Wireless Remote Control
- 12V, 24V, 28 and 48V DC Input Voltage Options
- Touch Systems: SAW, Resistive and Capacitive
- NVIS Class A & B
- CGA, EGA, MDA Input Video

## 10.4" Mil Spec, COTS Rugged LCD Display

Specifications:	
LCD Size & Technology:	10.4" SVGA Color TFT-LCD (LM-104SV-XL)
Viewing Area:	211.2 mm x 158.4 mm (8.31" x 6.23")
Pixel Pitch:	0.264 mm x 0.264 mm
LED Life Time (min):	100, 000 Hours minimum
Viewing Angle (H/V, Typ.):	80° (Left), 80° (Right) / 80° (Up), 80° (Down) @ CR = 10
Contrast Ratio (Typ.):	700:1
Brightness (Typ.):	1500 Cd/m <sup>2</sup>
Response Time (Typ. On/Off):	30 ms
Display Colors:	16.2M Colors
Supported Video Formats:	800 x 600 @ 60 and 75 Hz - Optimal Native Resolution Legacy Timing: 15KHz to 68KHz @ 50 to 85Hz.
Input Video Signals:	Video: 0.7 Vpp @ 75 Ohms Sync on Green (SOG)
Input Video Interface:	Triax BJ89 Series
External Connectors:	Analog Video (Video 1 and Video 2), Input Power
Display Controls	OSD (On Screen Display) – Full functions Video Input Selection – Front Panel

Temperature:	Operating: -30°C to 60°C, MIL-STD-810G, Method 501/502 Procedure II Storage: -30°C to 85°C, MIL-STD-810G, Method 501/502, Procedure I
Cold Start-Up:	Start-up @ -30°C 10min usable picture. 20 min. full spec.
Humidity:	Operating/Storage: 5 to 95% RH @ 40°C Non-Condensing. MIL-STD-810G, Method 507, Procedure I
Altitude:	Operating: 0 to 10,000 ft. above sea level Storage: 0 to 15,000 ft. above sea level, MIL-STD-810G, Method 500, Procedure I
Shock:	Operational/Storage: 15 G, 11ms, ½ Sine, MIL-STD-810G, Method 516
Vibration:	Operational/Storage: MIL-STD-810G, Method 514, Category 4 - Restrained Cargo, Category 5 - Loose Cargo (1 Hour/Axis)
Drip Proof:	Operational/Storage: MIL-STD-810G, Method 506 Procedure III. Front Panel Only
EMI:	MIL-STD-461E Ground Army
Sand Dust:	MIL-STD-810G, Method 510 Procedure I – Front Panel Only
Power Requirements:	Power Supply: 100-240 VAC Auto Ranging 50-60 Hz (Option+12VDC @ 3A or 28VDC @ 1.5A. Power Dissipation: 40 Watts Option: 12VDC or 28VDC Option: 115VAC, Single Phase, 400Hz (MIL-STD-704 Aircraft Power Requirements)
Power Connector:	MS3450W14S-7P Option: IEC320 Power Cord
Dimensions & Weight:	8.890" (H) x 12.00" (W) x 4.680" (D) / Weight: 9.2 Lb.
Mechanical Configuration:	Modular Mount
Bezel Finish:	Aluminum - Black Epoxy Powder Paint with Wrinkle Finish
Construction:	Metal Ruggedized for Severe Environments
Warranty:	Two Year Limited Warranty

