

# GMP919-901D

MIL-STD-901D-Compliant

Rack Mount / Panel Mount / Standalone LCD Monitors

This product is designed and tested to satisfy MIL-Std-901D grade A

Unique among its peers, iTechLCD 19.0" GMP919-901D LCD monitors have been designed to satisfy the demanding needs of most military COTS (Commercial-Off-The-Shelf) applications.

iTechLCD engineers have skilfully designed the packaging of the GMP919-901D Series to satisfy many military performance specifications, while simultaneously giving consideration to often overlooked installation, maintenance and support issues. The all-metal enclosures feature 0.59" (15mm) thick aluminium rack mount and panel mount bezels with easy to operate captive hardware that facilitates both installation and maintenance of the monitors. Louvered ventilation holes on the rear enclosures allow the monitors to satisfy a 45° drip test. iTechLCD has also integrated a military grade connector for power input. The power supply assemblies are mounted to the rear of the main enclosure to minimize the impact of heat dissipation upon the other electronics and also to serve as an LRU (Lowest Replaceable Unit). And, perhaps most importantly, these rugged monitors are compliant with MIL-STD-901D, Grade A and Class II Lightweight Shock requirements.

The internal display electronics of both models feature iTechLCD incomparable chassis monitor. The benefits to this design approach are numerous and distinctive. The chassis monitor serves as a fully functional subassembly and a logical LRU. The chassis monitor can be purchased in advance as a spare to facilitate field service or to expedite depot service. It can also be purchased directly from iTechLCD as needed. Since the chassis monitor is a high volume, standard product offering that is used on many of iTechLCD other monitor designs, it is often available from stock. Service and support issues for the GMP919-901D Series are simplified since the core electronics are built upon a standard product platform.

The LCDs provided within these monitors incorporate the latest in technological advances (ASV), offering super-wide viewing angles with greatly reduced color shifting and contrast loss when viewed at acute viewing angles. The internal LCD video controllers will support virtually any video source and afford many basic and advanced features. In addition, the controllers can be optionally configured to support NTSC, SECAM, PAL and RS-170, all using picture-in-picture window capability.

The power supply assemblies feature military-grade AC input modules and DC-DC converters that provide high operating temperatures, inrush current limiting and input transient protection.

The GMP919-901D Series can be configured with a variety of display overlays including vandal shields, optical filters or touch screens. Additionally, iTechLCD offers the services of its Optical Bonding Laboratories™ to bond the display overlays directly to the LCD for improved optical and environmental (shock, vibration, moisture) performance. As always, iTechLCD offers its experienced engineering services to all of its customers to further customize our enclosures or electronics.

## **SPECIAL FEATURES**

### **ENCLOSURE**

- » Military Grade, Compliant with MIL-STD-901D, Grade A and Class II Lightweight Shock Requirements
- » Designed with the Intent to Meet:
  - MIL-STD-108E
  - MIL-STD-167-1
  - MIL-STD-461E
  - MIL-STD-740-1
  - MIL-STD-740-2
  - MIL-STD-810F
  - MIL-STD-901D
- » Louvered Ventilation Holes
- » Robust 19" Rack Mount Bezel
- » Military-Grade AC Power Connector
- » Rugged, All-Metal Construction

### **DISPLAY**

- » 19.0"/20.1" Diagonal Active Matrix TFT LCD Display
- » SXGA/UXGA (1280 x 1024/1600 x 1200 pixels) Resolution
- » Wide Viewing Angles (Horizontal & Vertical)
- » High Brightness and Contrast Enhance Display Quality

### **VIDEO CONTROLLER**

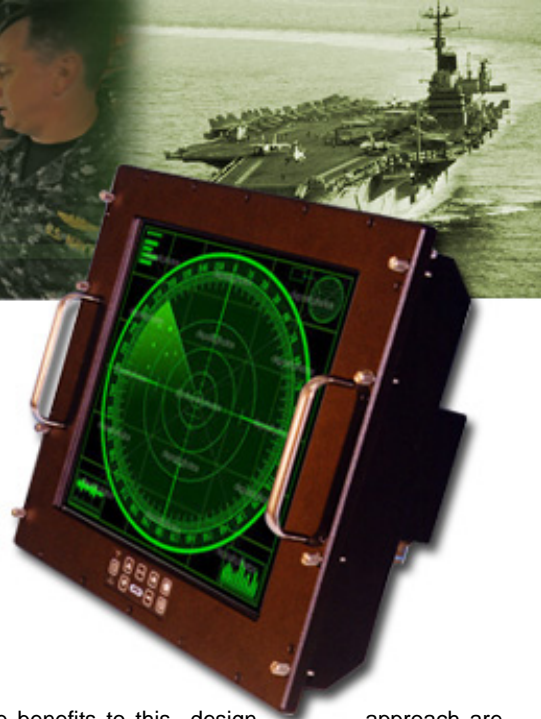
- » Support for Interlaced and Non-Interlaced Video Sources
- » Support for Analog, Separate, Composite & Sync-on-Green, Digital Video Interface (DVI-D), Serial Digital Interface (SDI) Standards
- » Support for NTSC, SECAM, PAL, RS-170 Video Input
- » Resolutions to 1920 x 1200 @ 60 Hz (Scaled); Sub-resolutions to 85 Hz
- » Intuitive On-screen Menus for Display Calibration and User's Control
- » Easy Access Programming Port to Implement Firmware Upgrades

### **POWER**

- » 115 VAC Operation
- » MIL-STD-704A Input Transient Protection
- » Inrush Current Limiting
- » Low Power Consumption (<75 Watts)

### **OPTIONS**

- » Protective Glass Display Overlay
- » Capacitive and Resistive Touch Screens
- » Support for DVI-D Video, HDMI Video, NTSC Video (Composite)
- » Enclosure/Connector Customization
- » Optical Bonding



Display										
Size (Diagonal)	Viewing Area (W x H)	Resolution (Pixels)	Number of Colors	Luminance (0° Max.)	Contrast	Response Time (Rise/Decay)	Horizontal Viewing Angle	Vertical Viewing Angle	Shock <sub>1</sub>	Vibration <sub>1</sub>
19.0"	14.81" x 11.85"	1280 x 1024	16.7 Million	250 Nits	600:1	13/7 ms	±85°	±85°	50 G, 11 ms Sine Wave	1.5 G (10–300 Hz)

Video Controller										
Display Supported	640 x 480 VGA	800 x 600 SVGA	1024 x 768 XGA	1366 x 768 WXGA	1280 x 024 SXGA	1600 x 1200 UXGA	1920 x 1200 WUXGA	Scaling	NTSC / SECAM / PAL / RS-170	Video Supported
10.4"–24.0"	60,72,75Hz	56,60,72,75Hz	60,70,75Hz	60Hz	60,75Hz	60Hz	60Hz	On/Off	Digital Processor, Picture-in-Picture	Separate, Composite, Sync-on-Green, DVI-D
10.4"–24.0"	60,72,75Hz	56,60,72,75Hz	60,70,75Hz	60Hz	60,75Hz	60Hz	60Hz	On/Off	-	Separate, Composite, Sync-on-Green
10.4"–24.0"	60,72,75Hz	56,60,72,75Hz	60,70,75Hz	60Hz	60,75Hz	60Hz	60Hz	On/Off	Digital Processor, Picture-in-Picture	Separate, Composite, Sync-on-Green
10.4"–24.0"	60,72,75Hz	56,60,72,75Hz	60,70,75Hz	60Hz	60,75Hz	60Hz	60Hz	On/Off	Digital Processor, Picture-in-Picture	DVI-D
10.4"–24.0"	60,72,75Hz	56,60,72,75Hz	60,70,75Hz	60Hz	60,75Hz	60Hz	60Hz	On/Off	-	Separate, Composite, Sync-on-Green, DVI-D

Video Standards Supported (all models)				
Analog Computer Video	Digital Computer Video	Composite (Live) Video	HD Video	Others
VGA, SVGA, ARGB, RGB, Separate Sync, Composite Sync, Sync-on-Green, DVI-A, STANAG 3350 A / B / C	DVI-D, DVI-I, SD-SDI, HD-SDI	NTSC, PAL, SECAM, RS-170, S-Video, CCTV	HD-SDI, HDMI	CGI, CCIR, EGA, RS-343A, EIA-343A, Custom Sync

MTBF			
Display	Backlights <sub>5</sub>	Inverter	Power Supply (Optional)
>50,000 Hours (Minimum)	>50,000 Hours (Typical)	182,000 Hours	Depends on Supply Selected

Environmental					
Temperature, Operating	Temperature, Storage	Humidity, Operating	Humidity, Storage	Altitude, Operating	Altitude, Storage
0° C to 50° C	-20° C to 60° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	40,000 Feet

Mechanical				
Dimensions Bezel/Enclosure (H x W x D)	Construction	Finish	Weight, Operating	Weight, Shipping
Currently In Redesign	5052-H32 Aluminum	Black Matte Powder Coat	30 Pounds	40 Pounds
Currently In Redesign	5052-H32 Aluminum	Black Matte Powder Coat	33 Pounds	43 Pounds
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Currently In Redesign	5052-H32 Aluminum	Black Matte Powder Coat	33 Pounds	43 Pounds
15.50" x 19.00" x 0.59"/14.25" x 17.00" x 4.80"	5052-H32 Aluminum	Black Matte Powder Coat	30 Pounds	40 Pounds
15.72" (9U) x 19.00" x 0.59"/14.68" x 17.50" x 5.16"	5052-H32 Aluminum	Black Matte Powder Coat	33 Pounds	43 Pounds

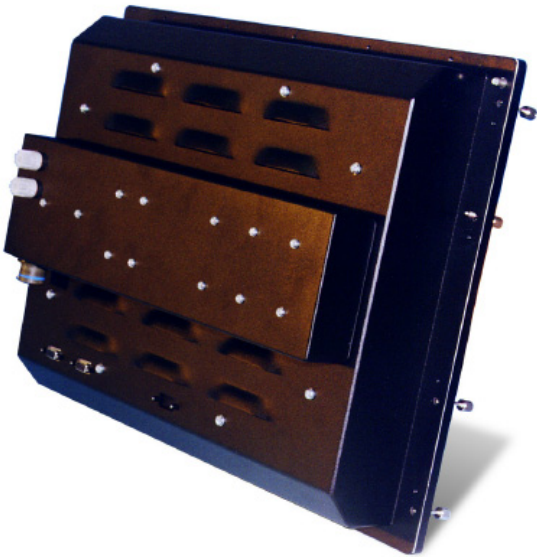
I/O Connections					
Power (DC)	Analog Video	On/Standby (DC)	S-Video (Optional)	Composite Video (Optional)	Touch Screen (Optional)
3-pin Circular	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	BNC Socket	DE-9, Socket

Calibration		
Interface	Backlights	Inverter
On-screen Displays Navigated by 8-button Membrane Pad	Volume, Brightness, Contrast, Saturation, Hue, Sharpness, Backlight Brightness, Input Signal, Aspect Size (Scaling), Image Position (Horizontal & Vertical)	Picture-In-Picture (PIP), PIP Size, PIP Position, PIP Transparency, Picture-by-Picture (PBP), Auto Picture Setup, Auto Color Gain, Wide Screen Mode Detection, Manual Clock/Phase, Auto Source Seek, Auto Power Off, Video Standard, Gamma, OSD (Position, Timeout, Language [English, Spanish, French, German, Chinese], Transparency, Display Input), Image Freeze, Image Zoom & Pan, Color Temperature, Hot Keys, Monochrome Mode, Backlight Setup

Power Supply				
Input Voltage Range	Output	Frequency Range	Line Entry Module/Filter	Power Factor
85–140 VAC	75 W /+12 VDC	47–440 Hz	Yes (Includes FHN-20G Dual Fuse Holder)	No

7 Includes 6'7" AC Power Cable.

Options	
DISPLAY OVERLAY	INDUSTRIAL ENCLOSURE
Clear Float Glass, Antiglare Etch Two Sides	Military-Grade Enclosure, Aluminum, Black Powder Coat Finish ( <i>Default Selection for 19" Models</i> )
Clear Float Glass, Antireflective Coating Two Sides	
Vandal Shield, Polycarbonate or Acrylic	
Vandal Shield, Clear Float Glass, Antiglare Etch Two Sides, 2 Panes Bonded (Laminated) Together (Not Bonded to LCD)	
Vandal Shield, Soda Lime Glass, Chemically Strengthened (Tempered), Antireflective Coating Two Sides	
Capacitive Touch Screen, Ideal Etch	
Resistive Touch Screen	
OTHER	
Optical Enhancements	Bonding of Filter and Display Using Indice-Matched Optical Materials; Brightness and Contrast Enhancing Films and Laminations
Power Supplies	AC and DC Supplies; Various Input Ranges, Input Frequencies; Separate or Attached; Power Factor Correction; AC and DC Power Cables
Video Accessories	Video Cables, Signal Extenders, NTSC/PAL/SECAM/RS-170/S-Video/DVI-D/HD-SDI/ SD-SDI/HDMI/HD Component Support, Picture-in-Picture, Picture-by-Picture
Remote Control	IR or Serial Calibration/Control Interface
Customization	Custom Mechanical and Electrical Modifications; Custom Finishing; Custom Software and Performance Modifications; Private Labeling



## MECHANICAL DRAWING

