

2U Military Grade RACKMOUNT

20.1" Wide Industrial-/Military-Grade, 2U Rack Mount, Standard/High Brightness, Flip-up LCD Monitor/Keyboard/Trackball

MODEL: Gmil-220 Series



ENCLOSURE

- Rugged, All-Metal Construction Designed to Satisfy Industrial or MIL-STD-810-F Requirements
- User-Adjustable LCD Display Friction Hinge for High Shock/Vibration Environments
- Compact Enclosure Ideal for Desktop, Transportable or Rack Mount Applications
- Optional 19" Rack Adaptor Kit
 - Occupies Only 2U (3.5") Vertical Rack Space
 - Adjustable Mounting Brackets for Racks from 18" to 30"
 - Unique Locking Mechanism to Secure Display Head
 - Bezel Hinges at Base Improve Safety
 - Conserves Operator Space by Extending 16.75" to 18.0" when Deployed

DISPLAY

- 15"/17"/19"/20" Diagonal Active Matrix TFT LCD Display
- XGA (1024 x 768 pixels) to WUXGA (1920 x 1080 pixels) Resolution
- Wide Viewing Angle (Horizontal & Vertical)
- High Brightness & Contrast Enhances Display Quality
- Fast Response Time Ideal for Real-Time and Video Applications

VIDEO CONTROLLERS

- Support for Interlaced and Non-Interlaced Video Sources
- Support for Separate, Composite, Sync-On-Green and DVI-D Standards
- Support for NTSC, SECAM, PAL, RS-170 Video with Input Format of Composite Video, S-Video and Component Video (YCrCb) [Optional]
- Resolutions to 1920 x 1200 @ 60 Hz; Sub-resolutions to 75 Hz
- Intuitive On-screen Menus for Display Calibration and User's Control
- Advanced Imaging Features
 - Auto Adjust, Brightness/Contrast/Color Adjustments, Image Expansion, Image Zoom, Foreign Languages, PIP, PBP, More

KEYBOARD / POINTING DEVICE

- Commercial-, Industrial- and Military-Grade Keyboards
- Many Sealed Keyboards Available that Meet MIL-STD-810 and MIL-STD-901 Shock and Vibration Requirements
- 1-3/8" Diameter Sealed Trackball

POWER

- +12 VDC Operation
- Low Power Consumption (<50 Watts)

OPTIONS

- NVIS-Compatible Displays Compliant with MIL-STD-3009
- Sunlight Readable Displays and Other Optical Enhancements
- Separate 1U Power Supply Mounts to Rear of Rack in Same Vertical Rack Space
- Separate Rack Mountable Keyboards (Commercial-, Industrial- and Military-Grade)
- Support for DVI-D Video, HDMI Video, NTSC Video (Composite)
- Protective Glass Display Overlay for SL2-15X
- Integrated 4-Port KVM Switch
- Integrated CAC (Common Access Card) Smart Card Reader

SPECIFICATIONS

DISPLAY											
	Size (Diagonal)	Viewing Area (W x H)	Resolution (Pixels)	Number of Colors	Luminance (0° Max.)	Contrast (Max.)	Response Time (Rise/Decay)	Horizontal Viewing Angle	Vertical Viewing Angle	Shock [1]	Vibration [1]
Gmil-215	15.0"	11.97" x 8.98"	1024 x 768	16.7 Million	400 Nits	600:1	3/5 ms	±80°	±80°	30 G, 11 ms ½ Sine Wave	1.0 G (5–100 Hz)
Gmil-215-A	15.0"	11.97" x 8.98"	1024 x 768	16.2 Million	400 Nits	700:1	5.7/2.3 ms	±80°	+60°, -80°	50 G, 20 ms ½ Sine Wave	1.5 G (10–200 Hz)
Gmil-217	17.0"	13.30" x 10.64"	1280 x 1024	16.7 Million	350 Nits	1000:1	3.5/1.5 ms	±85°	±85°	50 G, 20 ms ½ Sine Wave	1.5 G (10–200 Hz)
Gmil-2W17	17.3"	15.03" x 8.46"	1920 x 1080	16.7 Million	400 Nits	600:1	37/3 ms	±80°	+60°, -80°	50 G, 20 ms ½ Sine Wave	1.5 G (10–200 Hz)
Gmil-219	19.0"	14.81" x 11.85"	1280 x 1024	16.7 Million	350 Nits	1000:1	3.6/1.4 ms	±85°	±80°	50 G, 20 ms ½ Sine Wave	1.5 G (10–200 Hz)
Gmil-219-A	19.0"	14.82" x 11.85"	1280 x 1024	16.7 Million	350 Nits	1000:1	3.6/1.4 ms	±85°	±80°	50 G, 20 ms ½ Sine Wave	1.5 G (10–200 Hz)
Gmil-220	20.1"	16.06" x 12.05"	1600 x 1200	16.7 Million	260 Nits	1000:1	30 ms	±85°	±85°	50 G, 6 ms ½ Sine Wave	1.0 G (58–500 Hz)

MTBF				
	Display	LED Backlight [2]	LED Controller	Power Supply (Optional)
Gmil-215	50,000 Hours (Minimum)	>50,000 Hours (Typical)	182,000 Hours (Minimum)	Depends on Supply Selected
Gmil-215-A	50,000 Hours (Minimum)	50,000 Hours (Minimum)	182,000 Hours (Minimum)	Depends on Supply Selected
Gmil-217	50,000 Hours (Minimum)	50,000 Hours (Minimum)	182,000 Hours (Minimum)	Depends on Supply Selected
Gmil-2W17	50,000 Hours (Minimum)	50,000 Hours (Minimum)	182,000 Hours (Minimum)	Depends on Supply Selected
Gmil-219	50,000 Hours (Minimum)	50,000 Hours (Minimum)	182,000 Hours (Minimum)	Depends on Supply Selected
Gmil-219-A	50,000 Hours (Minimum)	50,000 Hours (Minimum)	182,000 Hours (Minimum)	Depends on Supply Selected
Gmil-220	>50,000 Hours (Typical)	50,000 Hours (Minimum)	182,000 Hours (Minimum)	Depends on Supply Selected

ENVIRONMENTAL						
	Temperature, Operating	Temperature, Storage	Humidity, Operating	Humidity, Storage	Altitude, Operating	Altitude, Storage
Gmil-215	-20° C to 70° C	-30° C to 85° C	8% to 90% RH Non-condensing	8% to 90% RH Non-condensing	10,000 Feet	30,000 Feet
Gmil-215-A	-30° C to 85° C	-30° C to 85° C	8% to 90% RH Non-condensing	8% to 90% RH Non-condensing	10,000 Feet	30,000 Feet
Gmil-217	-30° C to 85° C	-30° C to 85° C	8% to 90% RH Non-condensing	8% to 90% RH Non-condensing	10,000 Feet	30,000 Feet
Gmil-2W17	0° C to 70° C	-20° C to 70° C	5% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	40,000 Feet
Gmil-219	0° C to 50° C	-20° C to 60° C	5% to 90% RH Non-condensing	5% to 90% RH Non-condensing	10,000 Feet	30,000 Feet
Gmil-219-A	0° C to 50° C	-20° C to 60° C	5% to 90% RH Non-condensing	5% to 90% RH Non-condensing	10,000 Feet	30,000 Feet
Gmil-220	0° C to 50° C	-25° C to 60° C	8% to 95% RH Non-condensing	8% to 95% RH Non-condensing	10,000 Feet	40,000 Feet

MECHANICAL					
	Dimensions (H x W x D)	Construction	Finish	Weight, Operating [3]	Weight, Shipping [3]
Gmil-215	2.88" x 16.00" x 14.00"	5052-H32 Aluminum/Steel	Black Matte Powder Coat & Clear Iridite	17 Pounds	26 Pounds
Gmil-215-A	2.88" x 16.00" x 14.00"	5052-H32 Aluminum/Steel	Black Matte Powder Coat & Clear Iridite	17 Pounds	26 Pounds
Gmil-217	2.88" x 16.00" x 17.00"	5052-H32 Aluminum/Steel	Black Matte Powder Coat & Clear Iridite	19 Pounds	28 Pounds
Gmil-2W17	2.88" x 16.00" x 17.00"	5052-H32 Aluminum/Steel	Black Matte Powder Coat & Clear Iridite	19 Pounds	28 Pounds
Gmil-219	2.88" x 16.00" x 17.00"	5052-H32 Aluminum/Steel	Black Matte Powder Coat & Clear Iridite	19 Pounds	28 Pounds
Gmil-219-A	2.88" x 16.00" x 17.00"	5052-H32 Aluminum/Steel	Black Matte Powder Coat & Clear Iridite	19 Pounds	28 Pounds
Gmil-220	2.88" x 16.00" x 17.00"	5052-H32 Aluminum/Steel	Black Matte Powder Coat & Clear Iridite	21 Pounds	30 Pounds



Rear view of 19" showing power supply and interface connectors

VIDEO CONTROLLER									
Display Supported	640 x 480 VGA	800 x 600 SVGA	1024 x 768 XGA	1280 x 1024 SXGA	1600 x 1200 UXGA	1920 x 1200 WUXGA	Scaling	NTSC / SECAM / PAL / RS-170	Video Supported
All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60, 75 Hz	60 Hz	60 Hz	On/Off	-	Separate, Composite, Sync-On-Green, DVI-D
All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60, 75 Hz	-	60 Hz	On/Off	-	Separate, Composite, Sync-On-Green, DVI-D
All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60, 75 Hz	-	60 Hz	On/Off	Digital Processor, Picture-In-Picture	Separate, Composite, Sync-On-Green, DVI-D

1 Most common video inputs listed. See below for a comprehensive list of supported video standards. Speak with a Sales Engineer for more information.

2 Most common video modes listed. Other video modes supported. Speak with a Sales Engineer for more information.

3 Supports advanced features such as Live Video, Picture-In-Picture (multiple user-selectable sizes), and Picture-By-Picture.

4 Video controller 115 is obsolete and shown for reference only.

VIDEO STANDARDS SUPPORTED				
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

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

I/O CONNECTIONS						
Power (DC)	Analog Video	Keyboard/Pointing Device	On/Standby (DC)	S-Video (Optional)	Composite Video (Optional)	Audio (Optional)
6-pin Circular,	High Density 15-pin	6-pin Mini DIN	Membrane Pad	4-pin Mini DIN	BNC Socket	3.5 mm Headphone Jack

Signal for the Keyboard/Pointing Device (DE-9 Socket on enclosure) provided separately via external cable.

OPTIONS

KEYBOARD						
Grade	Keyboard Enclosure	Keyboard			Pointing Device	
		No. of Keys	Compatibility	Special Features	Type	Compatibility
Heavy-Duty Industrial	Metal	82	PS/2	-	1-3/8" Trackball/ 3 Mouse Buttons	PS/2
Heavy-Duty Industrial	Metal	82	PS/2	Backlit Keys	1-3/8" Trackball/ 3 Mouse Buttons	PS/2
Heavy-Duty Industrial	Metal	82	Sun® Type 5 (8-pin Mini DIN)	-	1-3/8" Trackball/ 3 Mouse Buttons	Sun® Type 5 (8-pin Mini DIN)
Heavy-Duty Industrial	Metal	82	Sun® Type 5 (8-pin Mini DIN)	Backlit Keys	1-3/8" Trackball/ 3 Mouse Buttons	Sun® Type 5 (8-pin Mini DIN)
Military [7]	Metal	82	PS/2	Backlit Keys	1-3/8" Trackball/ 3 Mouse Buttons	PS/2
Military [7]	Metal	82	Sun® Type 6 (USB)	Backlit Keys	1-3/8" Trackball/ 3 Mouse Buttons	Sun® Type 6 (USB)
Military [7]	Metal	82	PC USB	Backlit Keys	1-3/8" Trackball/ 3 Mouse Buttons	PC USB
Military [7]	Metal	82	Sun® Type 5 (8-pin Mini DIN)	Backlit Keys	1-3/8" Trackball/ 3 Mouse Buttons	Sun® Type 5 (8-pin Mini DIN)
Military [7]	Metal	121	Sun® Type 6 (USB)	Backlit Keys	1-3/8" Trackball/ 3 Mouse Buttons	Sun® Type 6 (USB)



POWER SUPPLY						
	Mounting Style	Input Voltage	Input Frequency	Output Voltage	Power (Maximum)	Power Factor Correction
	1U Rack Mount	85-264 VAC (Auto-Sensing)	47-63 Hz	+12 VDC	75 Watt	0.95
	Standalone/Rack Mount Bracket	90-264 VAC	50-60 Hz	+12 VDC	100 Watt	Yes
	Standalone/Rack Mount Bracket	90-264 VAC	50-60 Hz	+12 VDC	66 Watt	-
Free-Standing Power Supplies	Consult with a Sales Engineer to select from a multitude of AC switching or DC-DC supplies that can be mounted within the customer's rack. We can assist in specifying a commercial, industrial or military power supply that will meet your specific requirements.					

19" RACK ADAPTOR						
Model Supported	Dimensions (H x W x D)	Rear Mounting Brackets	Construction	Finish		
15"	3.50" (2U) x 19.00" x 17.00"	18"-28" (adjustable)	0.125" / 0.090" Aluminum	Black Matte Powder Coat & Clear Iridite		
15"	3.50" (2U) x 19.00" x 17.00"	28"-34" (adjustable)	0.125" / 0.090" Aluminum	Black Matte Powder Coat & Clear Iridite		
17" / 17.3" / 19" / 20.1"	3.50" (2U) x 19.00" x 19.00"	20"-30" (adjustable)	0.125" / 0.090" Aluminum	Black Matte Powder Coat & Clear Iridite		
17" / 17.3" / 19" / 20.1"	3.50" (2U) x 19.00" x 19.00"	30"-36" (adjustable)	0.125" / 0.090" Aluminum	Black Matte Powder Coat & Clear Iridite		

OTHER	
NVIS Compatibility	Night Vision Displays Compliant to MIL-STD-3009
Sunlight Readable LCDs	High Brightness Displays to 1000+ Nits
Optical Enhancements	Bonding of Filter and Display Using Indice-Matched Optical Materials; Brightness and Contrast Enhancing Films and Laminations
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; 4-Port KVM Switch; CAC Smart Card Reader



Side Mount Gmil-219 is designed for space-constrained environments



Rearview of Gmil-215 in storage position showing optional 4-port KVM switch and power supply