

Cool solutions to thermal problems.

Rocky  
Research

COMMERCIAL | INDUSTRIAL | DEFENSE

MMD2043

### Key Features

- **20.1" UXGA LCD**
- **1600 x 1200 Resolution**
- **0.255mm Pixel Pitch**
- **16.7 Million Display Colors**
- **300 cd/m<sup>2</sup> Brightness**
- **800:1 Contrast Ratio**
- **Touch Screen**
- **Sealed Chassis**
- **Water Proof Connectors**
- **0°C to 65°C Operating Temp**
- **ICE™ Technology**

## Rocky Research Multi-Mount Display



Rocky Research's Multi-Mount Display (MMD) is designed for use in the harshest environments encountered aboard Navy ships. The MMD is designed to meet severe shock and vibration requirements without the aid of isolation systems, and is also designed for NEMA 4 operation, featuring mil-standard grade connectors for power, Ethernet, and USB. The VGA and Serial ports are also waterproof.

Many high-end, rugged displays, including "air breathing" systems, struggle to operate effectively in extremely hot environments. Rocky Research's sealed MMD system, with ICE™ thermal technology, is designed for continuous operation in environments with ambient temperatures reaching 65°C.

Utilizing state-of-the-art, commercial-off-the-shelf components providing the latest in commercial display capabilities, the **MMD2043** offers a 20.1" touchscreen LCD along with 1600 x 1200 resolution, 160°(H)/160°(V) viewing angle, 5ms response time, 300cd/m<sup>2</sup> brightness, 800:1 contrast ratio, and 0.255 pixel pitch.

The MMD design allows installation orientation flexibility for bulkhead mounting to accommodate human/machine interface, connectivity, other equipment/obstacles, and cooling. The unit can also be mounted to the front of the Rocky Research Multi-Mount Computer.

## System Specifications

Display Size:	20.1" Diagonal (51cm)
Display Type:	UXGA
Viewing Angle:	160° (H) / 160° (V)
Pixel Pitch:	0.255mm (H) x 0.255mm (V)
Resolution:	1600 x 1200 @ 60 Hz
Display Colors:	16.7M Colors
Brightness:	300 cd/m <sup>2</sup>
Contrast Ratio:	800:1
Response Time:	5ms
Horizontal Refresh Rate:	31-81 kHz
Vertical Refresh Rate:	50-75 kHz
Input Video Compatibility:	Analog RGB
Video Connection:	D-Sub VGA
Power Consumption:	75 Watts (max)
Speakers:	3 Watts x 2 each (waterproof)
Touch Screen:	5-Wire Resistive: Response Time – 21ms, Resolution – 4096 x 4096, Light Transmission 80% at 550 nm wavelength, Expected Life – 35 Million touches at one point
I/O Ports:	(3) USB 2.0 – Open (1) USB B – Connects to Computer for Touchscreen, USB, Audio VGA Power

## Physical Specifications

Form Factor:	Wall-Mount in Multiple Orientations
Dimensions:	19.3" (W) X 15.3" (H) X 6.5" (D)
Weight:	30 lbs

## Environmental Specifications – Designed to Meet

Shock:	MIL-STD-901D, Grade A, Class I, Type A
Vibration:	MIL-STD-167-1A
EMI:	MIL-STD-461E
Temperature:	0° to 65° C
Humidity:	5% to 95% non-condensing
Enclosure Protection:	NEMA 4