

## **Exhibit 8**

### **User Manual**

#### **User Manual MW 800 Display**

28 PDF pages total, 22 numbered pages

Please find the information required by Part 15.19, 15.21 & 15.105 on page 4 of this PDF file.

**Note:** The Item above follow this cover page

*Owner's Manual*

# MW 800 Display

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## MW-800 Display Owner's Manual

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The FCC requires that manuals pertaining to Class A and Class B computing devices must contain warnings about possible interference with local residential radio and TV reception. This warning reads as follows:

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**Caution:** Changes or modifications made in the radio terminal, not expressly approved by Motorola, will void the user's authority to operate the equipment.

### SAFE USAGE

**For product safety of the MW 800 Display installed in vehicles, refer to safety leaflet, Motorola publication Number 68P029xxCxx.**

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# Contents

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<b>Using this Manual .....</b>	<b>3</b>
Who Should Use this Manual .....	3
What is in this Manual .....	3
Safe Handling Instructions.....	3
Notational Conventions .....	3
Operational Warnings .....	4
<b>Display Unit Overview.....</b>	<b>7</b>
Display Features .....	7
Display Buttons.....	8
Display Indicators .....	9
Speakers .....	10
Touchscreen .....	10
Display Connections .....	11
Standard Display Cable Adaptor .....	12
MW 800 Display Installation.....	12
<b>Operating the MW 800 Display .....</b>	<b>13</b>
Powering On .....	13
Powering Off.....	13
Adjusting the LCD Display .....	14
Powering On in Extreme Temperature Conditions.....	14
XGA Display Option .....	14
SVGA Display Option .....	15
Operating in Extreme Temperature Conditions.....	15
XGA Display Option .....	15
SVGA Display Option .....	16

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Operating with a Discharged Vehicle Battery .....	16
XGA Display Option .....	16
SVGA Display Option .....	16
<b>Screen Calibration .....</b>	<b>16</b>
<b>Maintenance .....</b>	<b>17</b>
Cleaning the MW 800 Display .....	17
.....	17
Cleaning the Display .....	17
<b>Tips for Using the MW 800 Display .....</b>	<b>17</b>
<b>Appendix A: Approved Accessories .....</b>	<b>20</b>
<b>INDEX.....</b>	<b>21</b>

# Using this Manual

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## Who Should Use this Manual

This manual is intended for staff who operate the MW 800 Display MW 800 Display in a vehicle.

## What is in this Manual

This manual lists the features of the MW 800 Display vehicle and provide description of the MW 800 Display hardware components and operating instructions. The manual also provide user level maintenance and troubleshooting directions.

## Safe Handling Instructions

### Notational Conventions

Throughout this publication, you will notice the use of warnings, cautions, and notes. These notations are used to emphasize that safety hazards exist, and care must be taken.

Do not proceed beyond WARNING or CAUTION until the indicated conditions are fully understood and met.

#### WARNING



**Warning**

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

#### CAUTION



**Caution**

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices and property-damage-only accident hazards.

**NOTE**



**Note**

An operational procedure, practice, condition, etc., which it is essential to emphasize.

**Operational Warnings**

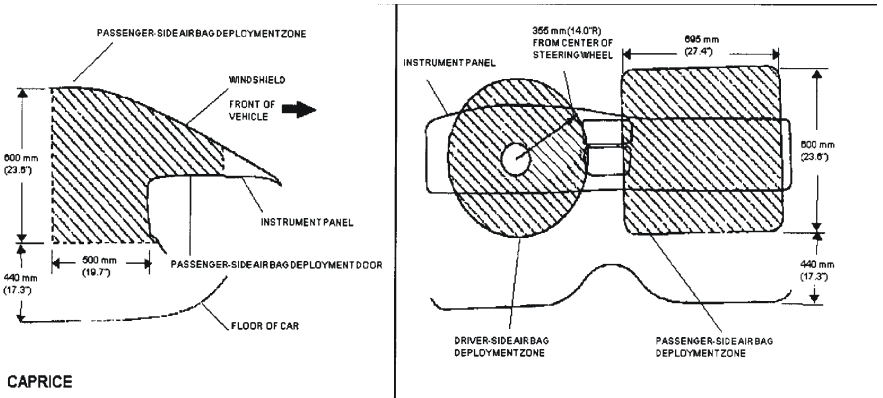


**Warning**

**For Vehicles With an Air Bag**

**Do not place a portable radio in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a portable radio terminal is placed in the air bag deployment area and the air bag inflates, the radio terminal may be propelled with great force and cause serious injury to occupants of the vehicle.**

Provided for your reference are several air bag deployment zone template from an automobile used in public safety roles (Figure 1 Please obtain the official documents for the automobile in which you are installing the MW 800 Display to ensure the safety of the operator.



**Figure 1**  
Air Bag Deployment Zones - Caprice





# Display Unit Overview

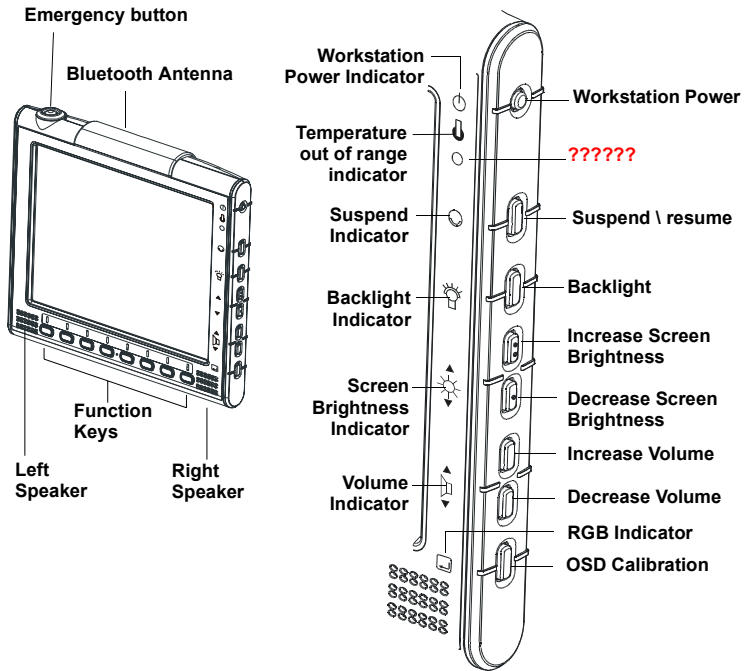
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## Display Features

Standard hardware features include:

- 12.1", 1024 × 768, XGA color, high brightness (1200 nit) LCD or 12.1", 800 × 600, SVGA color, standard brightness (350 nit) LCD
- Touch Screen with anti reflection and better transitivity
- Two USB Connectors used for keyboard and general purpose (Note that all full-speed USB devices must be connected directly to the USB port on the workstation)
- Brightness is manually adjustable, sunlight visible at high level and night light dim at low level
- Smart thermal management in extreme high or low temperatures
- A backlight heater for low temperatures
- Bluetooth radio connection option
- Eight software controlled function keys
- Volume control
- Workstation On/Off button
- On Screen Display (OSD) calibration
- Emergency button

The following figure shows the front view of the display unit.



**Figure 4**  
Color Display Unit

## Display Buttons

The display unit comprises the following buttons:

Button	Description
Workstation Power	To turn the MW 800 Display Workstation on or off
Suspend/ Resume	To toggle the MW 800 Display between Suspend and Resume modes. When in Suspend mode, the display and computer sections are turned off. The workstation enters a power saving mode. When the MW 800 Display resumes, it returns to the state it was prior to suspend (previous display, LED indications, etc.)

Button	Description
Backlight	To toggle between backlight on and off. Set the desired backlight brightness, using the Brightness button
Brightness	Tap the upper arrow to increase or the lower arrow to decrease the on-screen light level. You may tap up to 32 continuous linear brightness levels. You can control the brightness only if the backlight is turned on (Backlight LED is off)
Volume	Tap the upper arrow to increase or the lower arrow to decrease the speaker's volume level. You may tap up to 64 continuous linear volume levels
User-defined	To carry out specific functions, depending on specific user application
Emergency	To send an emergency message to the RF host computer. The Emergency button will be functional as soon as you power the workstation. (This key functionality depends on the definition given by each user system and the active application)

## Display Indicators

The indicator LEDs located on the display unit show the MW 800 Display status, as described in the following table:

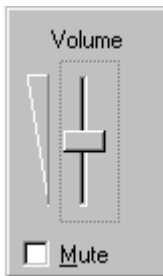
LED	Description
Power (green)	On: System is on. Blinking: The vehicle battery is discharged. Off: System is off, or the terminal is in Suspend mode
Temperature (red)	Blinking: CPU or display unit temperature is out of range. For more information, refer to "Powering On in Extreme Temperature Conditions", on page 14  Off: Normal operation



LED	Description	
Suspend/ Resume (green)	On:	System is in Suspend mode
	Off:	Normal operation
Backlight (green)	On:	LCD backlight is off
	Blinking:	Ignore this information
	Off:	LCD backlight is on
RGB (green)	On:	Valid RGB signal from CPU
	Off:	NO valid RGB signal from CPU

## Speakers

The speakers are used for user audio (Mono/Stereo) and alert signaling. Adjust the speaker volume with the Volume button. To set the audio level, open the speaker volume bar by pressing the speaker icon on the lower Tool Bar. The volume bar appears on the screen.



**Figure 5**  
Volume Bar

The new volume setting is saved in the memory.

## Touchscreen

The resistive touchscreen is sealed against moisture and dirt and can be operated with gloved hands. For detailed information on the

touchscreen calibration, see “Calibrating the Touchscreen”, on page 48.



**Note**

A screen saver should be used.

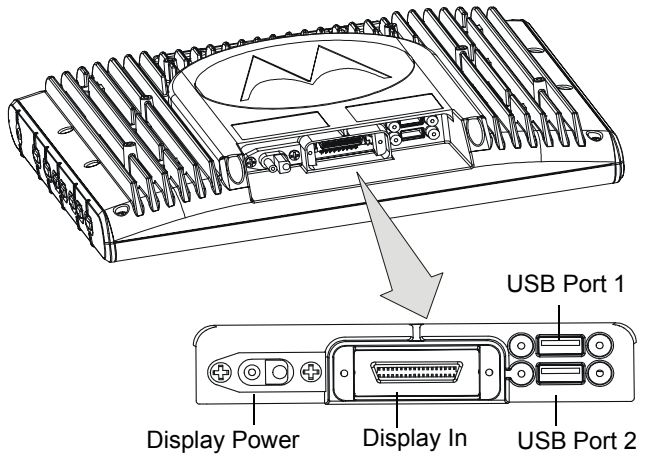


**Caution**

Do not display a single image on screen for an extended period of time.

## Display Connections

The rear panel of the display shows the following connectors:



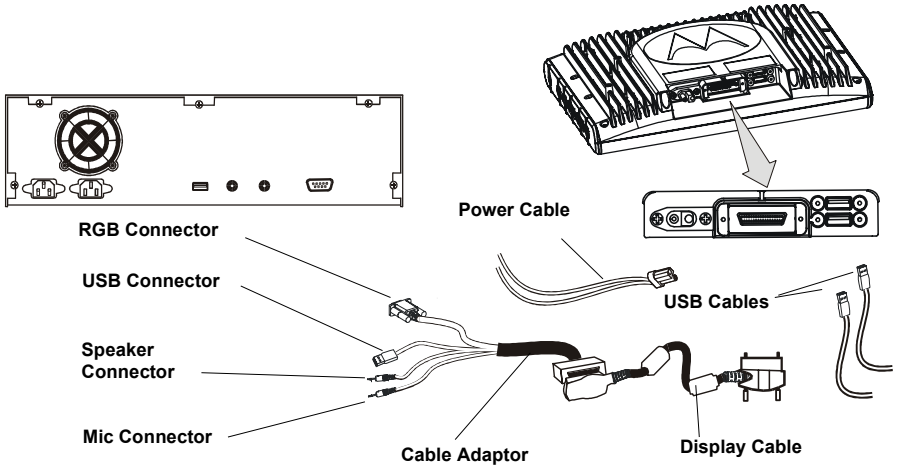
**Figure 6**  
Display - Connectors

Connector	Description
Display Power	DC connector for vehicle. Requires a standard Motorola power cable with 15 A fuse
Display In	RGB, USB and Sound from workstation
USB 1 & USB 2 Ports	USB 1 to Keyboard and USB 2 to any peripheral device. (Note that all full-speed USB devices must be connected directly to the USB port, on the workstation)

## Standard Display Cable Adaptor

The standard display cable adaptor enables to interface any standard screen to the workstation. The adaptor connects to the Display-CPU cable.

The standard display cable adaptor is shown in the figure below



**Figure 7**  
Standard Display Cable Adaptor

## MW 800 Display Installation

The MW 800 display is attached to any display mount by Phillips screws, supplied in the display shipping carton. The display cable from the workstation is routed through the mount and connected to the lower back side of the display. Use caution when assembling the cable to the display to prevent damage to the display or the cable.

All display options have an additional power cable that must be used to supply power to the display. The display Power cable must be protected by 15A fuse.

# Operating the MW 800 Display

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## Powering On

Before powering the MW 800 Display:

- Verify that the Display to PC cable is connected on both sides.
- Verify that the keyboard USB wire is connected to the display.
- Verify that the vehicle power system can supply at least 15 A.
- Check that the power cables are plugged into the DC connectors of the display.



### Note

The main power switch of the PC must be in OFF position when the system is connected to a power supply.

- Switch on the PC power switch .

If the MW 800 Display is ignition-sensitive, insert the car key into the ignition switch and rotate it to ACC position, or start the engine, before powering on.

To power the workstation, press the Power button on the front panel of the CPU box, or press the Workstation Power button on the display. Upon power up, the display power and OSD indicators are lit, indicating that the system is on and the display is properly connected to the CPU box.

## Powering Off

To turn the workstation, press the CPU box Power button momentarily, the workstation will shut-down. Remember to save important information before turning off the MW 800 Display.

The MW 800 Display automatically turns off as a result of:

- Extreme temperatures.
- Discharged vehicle battery.
- Pressing the Power button on the display for more than 3 seconds.

In critical conditions, the workstation may be powered off by turning Off the main power switch on the CPU box back panel.



Turning off the main power switch or disconnecting the power cable when the MW 800 Display is running may seriously damage your operating system or your hard disk.

If the MW 800 Display is *ignition-sensitive*, it turns off automatically when the engine is switched off. However, you can return the car key to ACC position and resume working, if required.

## Adjusting the LCD Display

The MW 800 Display incorporates a transmissive color Thin Film Transistor (TFT). The screen provides the best possible readability in the lighting conditions typically found in the vehicle environment.

The MW 800 Display is shipped with color palette settings that have been optimized for operation in the vehicle. The appearance of the screen can be changed by pressing the On Screen Display (OSD) button, on the display, and using the OSD application.

The brightness of the display is affected by the settings of the brightness control of the color palette.

Adjustment of the color palette in Windows XP can be made in the Control Panel under the Appearance tab of the "Display" section. Best results are obtained using the "OSD" application scheme.

## Powering On in Extreme Temperature Conditions

### XGA Display Option

The MW 800 Display operating temperature range is -4 to +131°F (-20°C - +50°C).



To enable the full operating temperature range, the BIOS setup *Idle Mode* parameter must be set to its default value.

When powering on below the operating temperature range, the temperature LED blinks. The workstation will automatically power up once the operating temperature range is reached (the internal

heater will raise the MW 800 Display temperature to within its operating range). You may also turn the workstation off and try again at a later stage.

In extreme temperatures above +122°F (50°C), the workstation will not power up.

## **SVGA Display Option**

If the ambient temperature is in the +122 to +167°F (+50°C - +75°C) range, the temperature LED will blink and the MW 800 Display will power up, but the display brightness level will be approximately one third of the maximum level. If the temperature drops to the operating range the display brightness will be restored.

If the ambient temperature is in the -4 to +32°F (-20°C - 0°C) range, the temperature LED will blink and the backlight heater will start operating. When the CCFL (Cold Cathode Fluorescent Lamps) temperature reaches +32°F (0°C) (after approximately 2 minutes) the MW-800 will automatically turn on.

If the ambient temperature is in the +30 to +68°F (0°C - +20°C) range, the backlight heater will operate and the MW 800 Display will turn on at once. The heater turns off when the CCFL temperature reaches 122°F (50°C).

## **Operating in Extreme Temperature Conditions**

### **XGA Display Option**

If, during normal operation, the ambient temperature deviates from the normal operating range, the temperature LED will blink. When the temperature returns to within the operating temperature range, the LED will be turned off.

A special temperature management mechanism prevents the MW-800 from reaching extreme hot or cold temperatures. This is achieved using a clock throttling technique and an internal heater.

## SVGA Display Option

If during normal operation, the ambient temperature is higher than the normal operating range the temperature LED will blink, the display brightness level will be approximately one third of the maximum level, and a warning message will be displayed on the screen. When the LCD temperature sensor approaches +167°F (+75°C), the MW 800 Display will automatically power off after 3 minutes.

If the ambient temperature drops to the normal operating range, the display brightness will be automatically restored.

## Operating with a Discharged Vehicle Battery

### XGA Display Option

If, during normal operation, the vehicle battery voltage drops to 10.2V, the power status LED will blink and a warning message will be displayed on the screen. If the voltage continues to drop, the MW-800 will automatically power off at 8.5V.

### SVGA Display Option

During power cranking, the display backlight is automatically turned off at 8V to save power. The backlight will be restored once the vehicle battery voltage is a stable 10.4V for at least 4 seconds.

## Screen Calibration

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To calibrate the screen, do the following:

1. Press the OSD calibration button, located on the lower right hand side of the display. The OSD application dialog box is displayed.
2. Use the calibration buttons and follow the instructions on the screen.

# Maintenance

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## Cleaning the MW 800 Display

The MW 800 Display is designed to operate well in typical field conditions. Simple routine maintenance can extend the life of the unit, ensuring continued dependability.

### Cleaning the Display

The LCD has a polarized surface and can be damaged easily. To prevent damage:

- Do not get liquids on the screen.
- Do not use water, window cleaner, acetone, aromatic solvent or dry, rough towels to clean the screen.

To clean the LCD, use a soft cloth with ethyl or rubbing (isopropyl) alcohol. Wipe the screen lightly.

Turn your equipment off if you accidentally:

- Expose the LCD to liquid.
- Drop, jar or damage the LCD.

Call a service technician if either of these instances occur.

## Tips for Using the MW 800 Display

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This information will help you avoid potential problems when you use the MW 800 Display.

- Follow all the instructions and cautions in your MW 800 Display user documentation.
- Do not disassemble the MW 800 Display. Opening the display voids your warranty.
- The MW 800 Display automatically shuts off when the system temperature rises above 140°F (60°C). General Specifications



LCD	XGA	SVGA
Size	12.1"	12.1"
Resolution:	800 x 600	1024 x 768
Colors:	256,000 colors	256,000 colors
Type:	5 wire resistive	5 wire resistive
Brightness:	Standard 350 nit	High-bright 1200 nit
<b>Communications/Expansion</b>		
USB	2 internal and 2 external ports	
Display Keys:	8 illuminated function keys	
Control Keys:	8 control keys	
<b>Radio Communications</b>		
Bluetooth Radio	Class 2, 2.402-2.480 GHz ISM band	
<b>Housing</b>		
Display Size:	12.1 x 12 x 2 (26.7 x 30.5 x 5.1 cm)	
<b>Environmental</b>		
Operating Temperature	-20° to +50°C	
Storage Temperature	-40° to +70°C	
Humidity	90% to 95% non condensing @ 50°C	
Vibration	Per MIL STD 810E	

*Specifications subject to change without notice.*



## Appendix A: Approved Accessories

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**Table 1**

MW-800 Display Approved Accessories

<b>Accessory</b>	<b>Part No.</b>	<b>Remarks</b>
DISPLAY-CPU Cable 4.5FT (1.5M)	FKN8068	
DISPLAY-CPU Cable 9.6FT (3.2M)	FKN8069	
DISPLAY-CPU Cable 17FT (5.6M)	FKN8070	
Display DC Cable	FKN4711	
DISPLAY Y CABLE	FKN8090	Standard display cable adapter

# INDEX

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- A
  - approved accessories 20
- B
- Backlight
  - button 9
  - LED 10
- BIOS 17
- Brightness button 9
- C
- color display 8
- E
- Emergency button 9
- extreme temperature conditions 14
- I
- ignition-sensitive 14
- indicators 9
- L
- LCD
  - brightness 14
  - contrast 14
- O
- operating system 14
- operating temperature range 14
- P
- Power button 8
- Power LED 9
- S
- speaker 10
- Suspend/Resume
  - button 8
  - LED 10
- System BIOS 17
- T
- Temperature LED 9
- touchscreen 10

U

updating the System BIOS 17

user-defined button 9

V

Volume button 9