

Release 2.0



MW810 MOBILE WORKSTATION MODEL F5218 USER GUIDE



August 2012

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This warranty applies within the fifty (50) United States, the District of Columbia and Canada, and is effective for MW810 Mobile Workstation shipments as of June 1, 2008.

If any affected product is being purchased in response to a Motorola Solutions proposal containing a different communication products warranty, the warranty contained in that proposal will apply to such affected product. Otherwise, the following warranty applies.

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- A) Defects or damage resulting from use of the Product in other than its normal and customary manner.
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- C) Defects or damage from improper testing, operation, maintenance, installation, alteration, modification, or adjustment.
- D) Breakage or damage to antennas unless caused directly by defects in material workmanship.
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- G) Batteries (they carry their own separate limited warranty).
- H) Freight costs to the repair depot.
- I) A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with Motorola Solutions published specifications or with the FCC type acceptance labeling in effect for the Product at the time the Product was initially distributed from Motorola Solutions.
- J) Scratches or other cosmetic damage to Product surfaces that does not affect the operation of the Product.
- K) That the software in the Product will meet the purchaser's requirements or that the operation of the software will be uninterrupted or error-free.
- L) Normal and customary wear and tear.
- M) Non-Motorola Solutions manufactured equipment unless bearing a Motorola Solutions Part Number in the form of an alphanumeric number (i.e., TDE6030B).
- N) Lift trucks if required for installation, removal, replacement or repair of the Motorola Solutions-supplied products.
- O) Dispatch to remote site locations.
- P) Loading of software upgrades or fixes into the devices.

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Motorola Solutions will defend, at its own expense, any suit brought against the end user purchaser to the extent that it is based on a claim that the Product or its parts infringe a United States patent, and Motorola Solutions will pay those costs and damages finally awarded against the end user purchaser in any such suit which are attributable to any such claim, but such defense and payments are conditioned on the following:

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- B) that Motorola Solutions will have sole control of the defense of such suit and all negotiations for its settlement or compromise; and
- C) should the Product or its parts become, or in Motorola Solutions opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit

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VII. FOR AUSTRALIA ONLY:

This warranty is given by Motorola Solutions Australia Pty Limited (ABN 16 004 742 312) of Tally Ho Business Park, 10 Wesley Court, Burwood East, Victoria.

Our goods come with guarantees that cannot be excluded under the Australia Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Motorola Solutions Australia's limited warranty above is in addition to any rights and remedies you may have under the Australian Consumer Law.

If you have any queries, please call Motorola Solutions Australia at 1800 457 439. You may also visit our website: http://www.motorola.com/Business/XA-EN/Pages/Contact_Us for the most updated warranty terms.

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Post-warranty Service

Repair Service Advantage (RSA) programs are available at additional cost, with options of 1-year RSA (covering year 4) and 2-year RSA (covering years 4 and 5).

All other warranty terms and conditions remain the same.

How to identify the workstation release number

This manual relates to MW810 Mobile Workstation Release 2.0. The Release Number reflects the type of hardware and software installed inside the MW810 Mobile Workstation.

When receiving the MW810 Mobile Workstation, the Release Number is included with the documentation attached to the shipping package.

To identify Release 2.0 on MW810 Mobile Workstation units, refer to Figure 1.

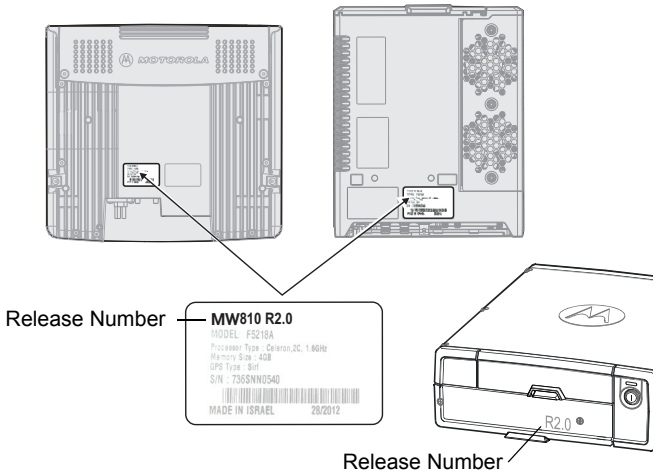


Figure 1. Release Number on MW810 Mobile Workstation Units.

To identify Release 2.0 after installing the workstation, perform the following:

Click **Start In** and in the search box enter msinfo32. The CPU type will appear in the processor description.

The CPU type will appear in the processor description:

- Intel® Core™ i7-3610QE 2.3 GHz Quad core processor
- Intel® Core™ i5-3610ME 2.7 GHz Dual core processor
- Intel® Core™ B810 1.6 GHz Celeron processor

Using this Manual

Before using this manual and the products it describe, be sure to read the Safety instructions, Warranty information and the FCC information that follows.

Who Should Use this Guide

This guide is intended for staff that operates the MW810 Mobile Workstation in vehicles. This guide assumes that reader is familiar with basic Microsoft® Windows® 7 Professional operations. When this is not the case, be sure to read the documentation applicable to your version of Windows.

Related Documentation

This guide describes the MW810 Mobile Workstation and provides basic knowledge about the device.

Please note that although this guide refers to hardware and software components supplied with the MW810 Mobile Workstation, it does not provide full component descriptions. For additional information refer to the following publications:

Publication Number	Description
6802983C01	Motorola MW810 Mobile Workstation, Product Safety and RF Exposure for mobile workstation with two-way radios installed in vehicles leaflet (multilingual)
6802988C56	Motorola MW810 Mobile Workstation, R2.0, Vehicle Installation Manual
6802988C40	Motorola MW810 Mobile Workstation, R2.0, Quick Reference Guide (multilingual)
6802988C41	Motorola MW810 Mobile Workstation, R2.0, Software Development Kit
6802988C42	Motorola MW810 Mobile Workstation, R2.0, Administrator Guide

For the latest version of this guide and other MW810 Mobile Workstation manuals logon to: www.motorola.com/enterprisemobility/manuals or www.motorola.com/MW810

This guide is designed to supplement the online or context-sensitive help provided with each software application. Please review this information to ensure proper use of the product. For software and operation system issues, refer to Microsoft® Windows® 7 Professional documentation.

Notational Conventions

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

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.

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

FCC Information

FCC Interference

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.

For detailed product safety and RF exposure, refer to Safety and General Information leaflet, Motorola publication number 6802983C01.



Caution

Changes or modifications made in the CPU Box or Display, not expressly approved by Motorola, will void the user's authority to operate the equipment.

FCC Grant of Equipment Authorization For MW810 Release 2.0

MW810 Mobile Workstation Option No	Radio Type	Frequency Range MHz	FCC Grant ID	Power Output Watt
VA00806AA (802.11a/b/g/n)	WLAN	2412.0- 2462.0 5180.0 - 5240.0 5260.0 - 5320.0 5500.0 - 5700.0 5745.0 - 5825.0	PD9633ANH	0.048 0.049 0.049 0.05 0.05
VA00804AA (Verizon)	MC7750	LTE B13: 779.5 - 784.5 BC0: 824.7 - 848.31 BC1: 1850.25 - 1908.75	N7NMC7750	0.227 0.34 0.337
VA00801AA	MC8795V	WCDMA B1: 1920 - 1980 WCDMA B2: 1850 - 1910 WCDMA B5: 824 - 849 WCDMA B6: 830 - 840 WCDMA B8: 880 - 915 GSM 850: 824 - 849 EGSM 900: 880 - 915 DCS 1800: 1710 - 1785 PCS 1900: 1850 - 1910	N7NMC8795	0.251 0.251 0.251 0.251 0.251 2 2 1 1
VA00017AB	Bluetooth Radio Module - Spread Spectrum Transmitter	2402.0 - 2480.0	QDS-BRCM1043	0.00267

Workstation Radio Combinations


The MW810 Mobile Workstation can be configured for simultaneous transmission by the following radio combinations:

MW810 Mobile Workstation Option Number.	Radio Type
VA00804AA	WWAN-MC7750 Verizon
VA00806AA	WLAN - Intel Centrino Ultimate - N 6300

MW810 Mobile Workstation Option Number.	Radio Type
VA00801AA	WWAN-MC8795V
VA00806AA	WLAN - Intel Centrino Ultimate - N 6300

European Union Notification

This Motorola product can be sold, or put into service for the first time, anywhere in the European community.

 The CE mark is the official marking required by the European Community for all Electric and Electronic equipment that will be sold, or put into service for the first time, anywhere in the European community.

Conformity for RoHS Compliance

This Motorola product is in compliance with the essential requirements and other relevant provisions of Directive 2002/95/EC, Restriction of the use of certain Hazardous Substances (RoHS) in electrical and electronic equipment.



Equipment Disposal

Please do not dispose of Electronic and Electric Equipment or Electronic and Electric Accessories with your household waste. In some countries or regions, collection systems have been set up to handle waste of electrical and electronic equipment. In European Union countries, please contact your local equipment supplier representative or service center for information about the waste collection system in your country.

Performance & Reliability of the Global Positioning System

Underwriters Laboratories Inc. (UL) has not tested the performance or reliability of the Global Positioning System (GPS) hardware, operating software or other aspects of this product. UL has only tested for fire, shock or casualties as outlined in UL's Standard(s) for Safety for Information Technology Equipment, UL60950-1. UL Certification does not cover the performance or reliability of the GPS hardware and GPS operating software. UL MAKES NO REPRESENTATIONS, WARRANTIES OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY GPS RELATED FUNCTIONS OF THIS PRODUCT.

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Safety Instructions



Reduce the risk of fire or electric shock by following basic safety instructions:

- Use of the product during driving should be coordinated with the government-mandated driving rules for specific users (such as policemen, firemen, etc.).
- Do not connect or disconnect cables while your MW810 Mobile Workstation is turned on.

- Protect your MW810 Mobile Workstation from liquids. Keep your MW810 Mobile Workstation away from water.
- Be sure that all power cord connections are securely plugged into receptacles.

Avoid damage to the MW810 Mobile Workstation by following basic safety instructions:

- Your MW810 Mobile Workstation generates heat when turned on. Ensure that the CPU Box is always mounted in the CPU Box mounting trunnion provided with each system, to ensure proper airflow for CPU Box fans.
- The MW810 Mobile Workstation is very sensitive to uncontrolled shut down. Never turn off the MW810 Mobile Workstation by turning off the power supply or by disconnection of the power cable.
- Hard disk drive performance and lifetime could be shortened if your MW810 Mobile Workstation is not used for long periods. Do not leave the MW810 Mobile Workstation unused for more than 3 months.
- Your MW810 Mobile Workstation automatically shuts down when the internal temperature exceeds the upper limit of the valid range.
- Forcing SIM or Express cards into computer slots at an angle may damage slot connectors.
- If the MW810 Mobile Workstation stops responding, you can turn it off by holding the Power button of the CPU Box or Display pressed for more than 6 seconds. Be aware that this method of shutdown may damage your Hard Disk Drive.
- Do not insert or remove cards when the MW810 Mobile Workstation is in Sleep state. Before you insert or remove a card, make sure that you exit all software applications that access the card.

What is the MW810 Mobile Workstation?

The MW810 Mobile Workstation series is one of Motorola Solutions highest-performing and most rugged data communication and computing solutions. It is specifically designed for the harsh conditions of the mobile environment, which is not suitable for conventional notebook or desktop computers.

The MW810 Mobile Workstation is a versatile three-piece design with separate display (12.1" or 8.4"), Central Processing Unit (CPU) Box and a keyboard. A choice of configurations enables fitting the workstation to a variety of vehicle types and customizing installations to meet specific owner needs and specifications.

The MW810 Mobile Workstation is a multipurpose mobile computer with capability to provide seamless mobility. The workstation supports multiple internal radios, providing reliable connectivity across a number of dissimilar public and private data networks. Among its many communication interfaces, the workstation incorporates video (option) and audio inputs, as well as an internal GPS or Dead Reckoning GPS module options, ensuring reliable and accurate vehicle location notification.

An optional Automatic License Plate Recognition (ALPR) system enables to capture license plate images from up to four imaging sources installed in a vehicle. The plate numbers are compared against database or hot list.

The workstation is powered by a family of high-tier processors with extensive memory.

In addition to the basic multiple port connections option (the "No I/O Expansion Board, R2.X" option), the MW810 Mobile Workstation is available with three optional expansion boards:

1. The "Comm & Video I/O Expansion Board, R2.X"
2. The "ALPR I/O Expansion Board, R2.X"
3. The "Serial & USB I/O Expansion Board, R2.X"

The CPU Box

The CPU Box is a high-performance computing platform for mission-critical applications with numerous computing, data storage and communication capabilities. It is designed to be permanently mounted and serve as a hub to the computing and communications network in the vehicle.

Key features of the CPU Box:

- Windows 7 Professional 32b or 64b Operating System (OS).
- Intel® Core™ i7-3610QE 2.3 GHz quad 6 MB cash processor or Intel® Core™ i5-3610ME 2.7 GHz Dual Core 3 MB cash processor or Intel® Core™ B810 1.6 GHz Dual Core 2 MB cash processor.
- Extendable system memory – 2 slots for DDR3 SODIMM modules, 4GB each.
- Removable 500GB Hard Disk Drive or 256GB removable Solid State Disk (optional).
- 64GB mSATA card (optional).
- External Serial Advanced Technology Attachment + power (eSATAp) port for fast data transfer to/from an external storage device. eSATA is only available with the “Serial & USB I/O Expansion Board, R2.X”.
- A wide range of internal/external interfaces available, such as: USB 3.0 and 2.0 ports, Ethernet 1GB ports, RS-232 ports, audio and analog video input.
- Optional Wireless LAN (WLAN) connection using Intel® Wireless WiFi adapter IEEE 802.11a/b/g/n.
- Optional Wireless Wide-Area Network (WWAN) modules offering wireless data solutions over 3G and 4G LTE networks, subject to governmental and carrier certifications as well as network availability in your area.
- Built-in High Speed Packet Access (HSPA) receivers.
- Optional built-in GPS receivers, including choices of protocols supported and optional dead reckoning intelligence when satellite data is missing.
- Compliance with Trusted Platform Module (TPM) 1.2 specification requirements (module contained inside the CPU Box).

- Vehicle ignition sense for using the vehicle key to turn the workstation On/Off.
- Programmable general purpose inputs/outputs.
- Simultaneous use by two independent users, each using a separate display and keyboard.
- Custom-designed cables/adaptors for connection to DVI/RGB 3rd party Display.
- Fully-Rugged mechanical design.
- Smart Card reader (optional).
- Express Card slot.

The Display

The MW810 Mobile Workstation offers three optional rugged displays:

- 12.1" XGA high brightness display: TFT-technology display with 1500 NIT (1500 cd/m²) LED backlighting to ensure viewing under bright light conditions.
- 12.1" XGA standard brightness display: TFT-technology display with 500 NIT (500 cd/m²) LED backlighting.
- 8.4" SVGA high brightness display: TFT-technology display with 800 NIT (800 cd/m²) LED backlighting.

The displays offer the following features:

- Screen made of tempered glass, with a protective film to prevent glass shattering in the event of breakage.
- Resistive Touchscreen can be activated even with a gloved finger or a stylus pen.
- Integrated Smart Card Reader compartment (optional, only on 12.1" displays). Integrated Smart Card reader slot allows a smart card to be completely IP-54 sealed. Note that the Smart Card reader option does not include a user application.
- Sealing against moisture.
- Optional built-in Bluetooth radio (only 12.1" Display) to provide wireless connection to personal area peripherals such as headset, mouse, printer etc.
- Three USB 2.0 ports on 12.1" displays and two on 8.4" Display for connectivity to external USB devices.

Getting the MW810 Mobile Workstation Running

This section guides you through procedures to get the MW810 Mobile Workstation ready for operation.

Unpacking

Unpack your shipment and check the contents to ensure that you have received all the specified items. Save the packing carton and anti-static plastic bag for future storage and shipping. Both the shipping carton and the anti-static bags protect the MW810 Mobile Workstation components from physical and electrostatic damage.

After unpacking the shipping carton, the following items should be found if ordered as part of the system:

- CPU Box
- Display
- Keyboard
- Power Cords
- CPU-to-Display(s) cable(s)
- This User Guide - 6802988C57
- Motorola MW810 Mobile Workstation Quick Reference Guide (multilingual) - 6802988C40
- RF Safety and General Information booklet - 6802983C01
- Accessory cables and/or antenna(s) (may ship in one or more separate boxes from main system)
- DVD with Windows 7 Professional OS
- Recovery DVD

Inspect all the items. If any item is missing or damaged, notify your Motorola Solutions Customer Service representative immediately.

Starting the Computer

Your computer OS is already installed on the Hard Disk Drive (HDD) or solid State Disk Drive (SDD) or mSATA memory unit (optional).

After ensuring proper installation of the MW810 Mobile Workstation, perform the following steps to turn on the MW810 Mobile Workstation:

1. Press the power button on the front panel of the CPU Box or Display- both buttons perform identical function.
2. Wait for the boot process to start and for Windows desktop to appear.

NOTE: The MW810 Mobile Workstation can be configured to start by pressing the:

- Vehicle ignition switch
- CPU power button
- Display power button

The workstation can also start using a combined operations of the items described above with selectable time-delay. For more information, refer to Motorola Solutions MW810 Mobile Workstation, R2.0, Administrator Guide P/N 6802988C42.

Shutting Down the Computer

When you finish a working session, you can stop the computer by turning off the power or leaving the computer in Sleep or Hibernation mode.

Turning Off

Use the Windows OS Shut Down dialog box to turn off the MW810 Mobile Workstation.

NOTE: The MW810 Mobile Workstation can be configured so that the vehicle ignition switch, the power button located on the CPU front panel, or the Display power button can turn it off.



Caution

Remember to save important information before turning off your workstation.

Be aware, that rapid turning off and on can damage your Hard Disk Drive. If you need to turn the MW810 Mobile Workstation on immediately after turning it off, always wait for the shut down process to complete.

For more on turning Off, see “Power Off” on page 29.

Taking a Look at the MW810 Mobile Workstation

CPU Box - Front Panel Components

Figure 2 shows the front panel components of the CPU Box.

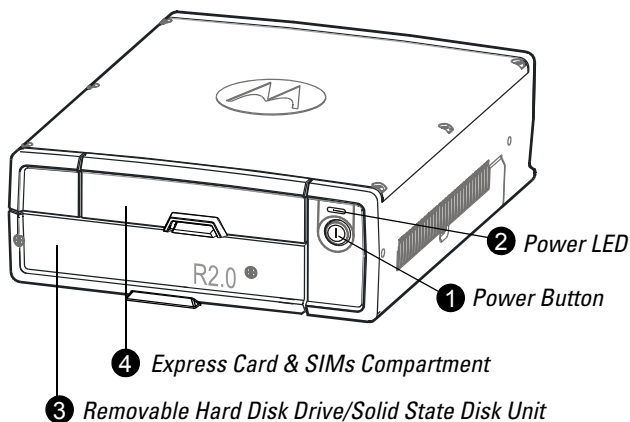


Figure 2. CPU Box - Front Panel Components

1 Power Button

The Power Button turns the MW810 Mobile Workstation power on and off (CPU Box & display). The button may also be configured for entering Sleep or Hibernation modes. Note that the MW810 Mobile Workstation may also be configured to be turned on/off depending on the state of the vehicle ignition switch. Before powering on the CPU, ensure that the On/Off power switch on the backpanel of the CPU Box is in ON position (see Figure 3).

2 Power LED

The Power LED indicates the following status:

- Green - Power on.
- Amber - Sleep state. In Sleep state, the workstation switches to low-power consumption. When starting to use the MW810, it restores exactly to the last used screen position.

NOTE: Amber my also show when Active Management Technology (AMT) mode is initiated when the MW810 is powered off. In AMT mode, the MW810 is remotely managed by IT grope of the agency.

③ Removable Hard Disk Drive/Solid State Disk Unit

The Hard Disk Drive (HDD)/Solid State Disk (SSD) is installed inside a removable unit. The unit is secured to the CPU Box by two screws.

When a mSATA is used as a mass memory storage device instead of HDD or SSD, a cover panel is placed to seal the CPU Box. In such case, do not open this compartment.

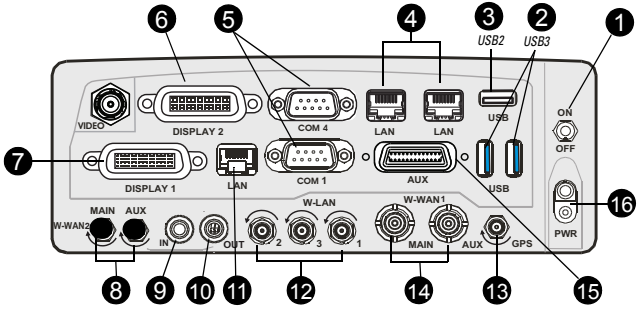
For more information refer to “Hard Disk Drive/Solid State Disk Compartment” on page 12.

④ Express Card & SIMs Compartment

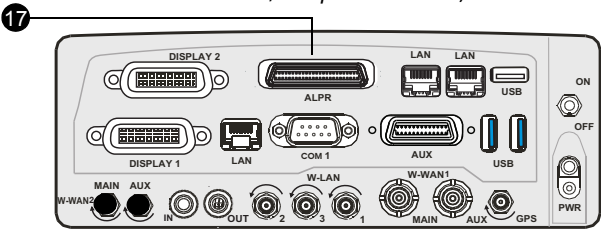
The compartment contains Express card slot (size 34 or 54mm) for memory devices and SIM cards that are required to activate the internal W-WAN radios. The compartment is completely sealed when the cover is closed and locked. Do not open this compartment unless service is required.

CPU Box - Backpanel Components

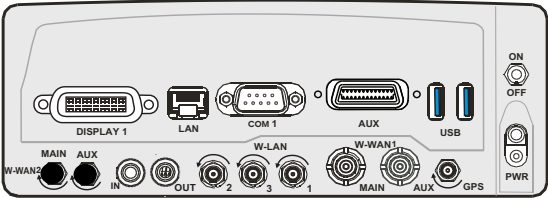
Figure 3 show the backpanel options of the CPU Box (for connection details, refer to MW810 Mobile Workstation, Vehicle Installation Manual P/N 6802988C56).



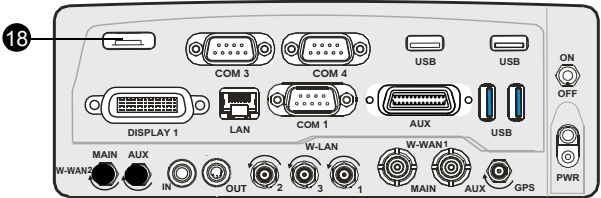
Comm & Video I/O Expansion Board, R2.X



ALPR I/O Expansion Board, R2.X



No I/O Expansion Board Option



Serial & USB I/O Expansion Board, R2.X

Figure 3. CPU Box - backpanel Components

① On/Off Power Switch

Maintenance power switch. Use this switch to turn off the workstation during maintenance operations. In normal operation, the switch should be kept in the ON position.



Do not switch off before shutting down the OS. Verify that the Power LED (see Figure 2) on the front of CPU Box is turned off before moving this switch to OFF position.

② USB 3.0 Ports

USB 3.0 ports for connection of external USB devices, with up to 500mA load per port. USB 3.0 ports can be identified by the blue plastic tab shown inside the connector and the USB 2.0 port by the white tab.

NOTE: Be aware, USB devices connected to the USB ports should be compliant with the Windows 7 OS. Otherwise, the device will not operate properly.

③ USB 2.0 Port(s)

USB 2.0 port for connection of external USB devices, with up to 500mA load per port.

NOTE: Although this port has USB 3.0-ready hardware (blue connector type), it is currently configured to USB 2.0 in the BIOS implementation.

④ LAN Ports

1Gb-Base-T Ethernet LAN port. The port includes Link and Active indicators:

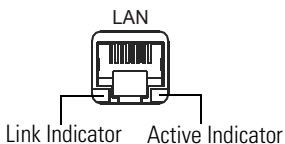


Figure 4. LAN Port Indicators

- Link LED Indicator - Steady green when the system has an available connection to LAN.
- Active LED Indicator - Blinks green when the system is accessing the LAN.

⑤ COM Ports

Standard RS232 serial port. Connects to standard RS232 serial devices such as Motorola VRM modem, printer, etc.

The connection requires a COTS (Commercial Off-The-Shelf) cable (not included).

6 Display 2

Connection port to secondary display. The port includes DVI, control and audio signals to the display.

7 Display 1

Connection port to primary display. The port includes DVI, control and audio signals to the display.

8 W-WAN2

W-WAN2 antenna ports reserved for future support of internal Band Class 14 LTE modems.

9 Mic In

Input jack (2.5mm type) for microphone connection.

10 Audio Out

Output jack (2.5mm type) for stereo headphones connection. This output is also used for connecting external speakers, through a power amplifier.

11 LAN Port

1Gb-Base-T Ethernet LAN port. The port includes a Link and Active indicators.

12 W-LAN

WLAN 802.11a/b/g/n radio ports supporting up to three roof-mount WLAN antenna leads. When a single WLAN antenna is installed, connect the antenna cable to the WLAN connector marked "1". To optimize the quality and reliability of a WLAN link, use a 3x3 MIMO antenna.

Important: The type of the W-LAN connector is reverse polarity, reverse thread SMA. To secure the connector, turn counterclockwise. To release the connector, turn clockwise.

13 GPS

SMA connector to GPS antenna when an optional GPS module is installed inside the CPU Box.

14 W-WAN1

Mini-UHF Main connector for WWAN RF MIMO antenna(s).

Important: The type of the W-LAN connectors are reverse polarity SMA. To secure the connector, turn counterclockwise. To release the connector, turn clockwise.

15 AUX

Connection to vehicle ignition switch, general purpose I/Os (digital Inputs and Outputs), programmable 5 to 27 VDC output Voltage, vehicle speed and direction inputs from the vehicle to optional dead reckoning GPS receiver.

Important: Interface to the AUX port requires the MW810 auxiliary cable.

16 PWR

Power cord inlet coming from the battery system of the vehicle or an Uninterruptible Power Supply (UPS).

17 ALPR

ALPR connector interface to up to four Slate digital cameras from PIPS Technology; each contains one infrared camera and one color camera.

Important: The ALPR interface connector is available only when the ALPR Expansion Board is installed (see Figure 3). The ALPR system requires camera(s), software, camera cables.

18 eSATAp

The External Serial Advanced Technology Attachment + power (eSATAp) is a combination connection for external storage devices. A single mSATA, eSATA or USB 2.0 device can be plugged into an eSATAp port.

CPU Box - Bottom Side View

Figure 5 shows a bottom side view of the CPU Box.

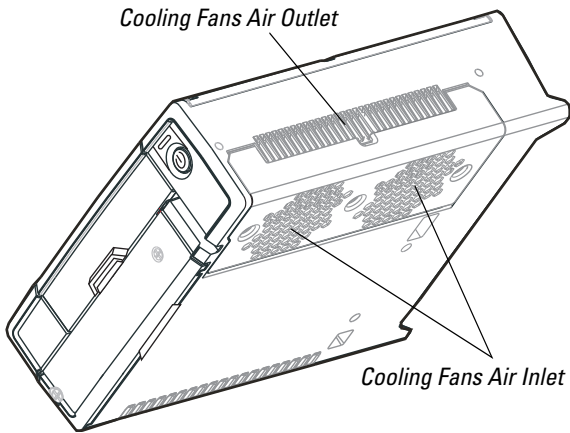


Figure 5. CPU Box - Bottom Side View



Never cover or block the air inlet or outlet of the cooling fans.

Caution The cooling fans air inlet and outlet ensure proper air circulation to prevent overheating of the CPU Box.

NOTE: The airflow does not enter the interior space of the CPU Box. The space inside the CPU is sealed to protect the components within.

Hard Disk Drive/Solid State Disk Compartment

When your CPU Box is supplied with a removable Hard Disk Drive (HDD) or Solid State Disk (SSD), it is configured as drive C. The HDD is equipped with a built-in heater that automatically turns on at low temperatures. When the temperature drops below 41°F (5°C), a built-in heater starts operating to maintain the HDD in working conditions. If HDD temperature is below 41°F (5°C) during boot-up, a message is issued indicating that the heater is starting to operate and slightly delaying start-up due to time-out of HDD heater function.

NOTE: The SSD does not require/include a heater to operate at low temperatures.

To remove the HDD/SSD unit:

1. Shut down the MW810 Mobile Workstation.
2. Switch off the On/Off power switch located at the back-panel of the CPU Box (see Figure 3).
3. Loosen the two screws securing the HDD/SSD Unit to the CPU Box (see Figure 6).
4. Pull out the HDD/SSD Unit from the HDD/SSD Unit Compartment in the CPU Box.

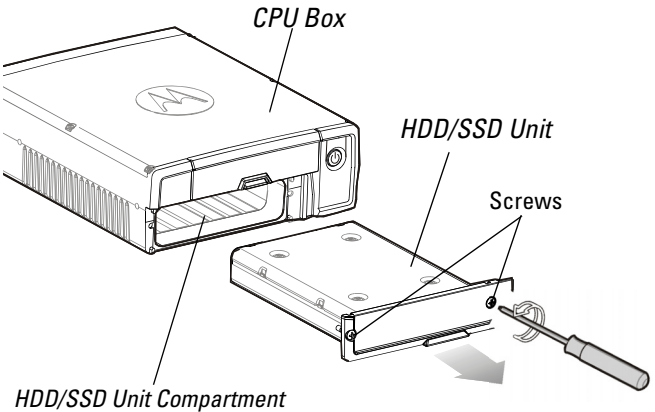


Figure 6. CPU Box - Removal of Hard Disk Drive/Solid State Disk Unit



Caution

1. Never try to remove the HDD/SSD unit before shutting down the workstation and switching off the On/Off power switch on the backpanel of the CPU Box. Doing so can result in loss of data, and can damage the workstation and the sensitive circuitry of the HDD.
2. Make regular backups of data from your HDD to an external flash disk or other storage media.
3. Once the HDD/SSD Unit is removed from the HDD/SSD Unit Compartment, the CPU Box is not sealed. In such condition, do not expose the CPU Box or HDD/SSD Unit to sand, dust, liquid or extreme humidity.

12.1" Display Front-right Components

Figure 7 shows the front-right side components of the 12.1" Display.

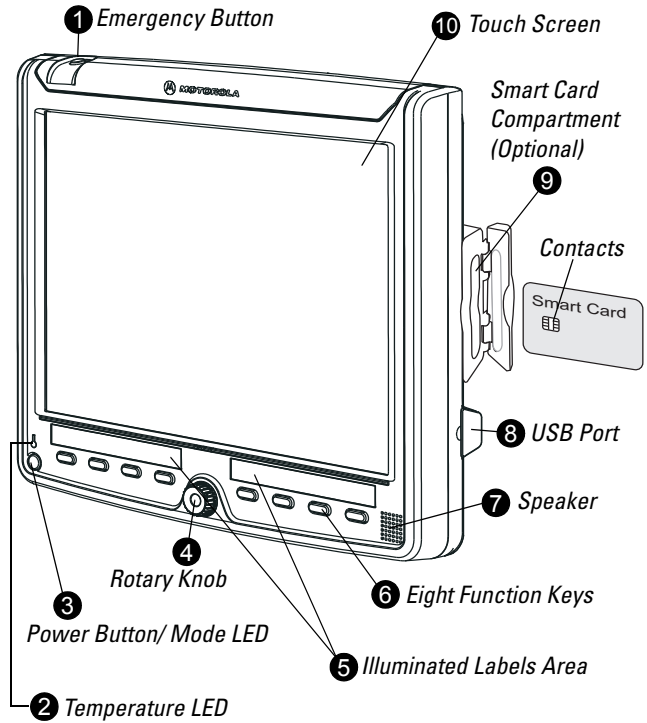


Figure 7. 12.1" Display - Front-Right Side Components

1 Emergency Button

Press this illuminated Emergency button to signal an emergency event to a dispatcher. The Emergency button can be used as soon as the MW810 Mobile Workstation OS starts to boot up.



Caution

In order for this feature to be operational, your system administrator must pre-program a subscriber software application to listen and act upon this emergency signal.

NOTE: The Emergency Button can be set to perform other operation. The functionality of this button is set by the MW810 Manager configuration utility, installed in the MW810 Mobile Workstation.

② Temperature LED

The Temperature LED shows the temperature status of the display.

The Temperature LED indicates the following status:

- Off: Normal operation.
- Steady Red: Display temperature is high or low- save your work and shut down. Resume operation only after the display cools down.

③ Power Button/Mode LED

Power Button

The Power Button is used to turn on/shut down, set Sleep state, set Hibernate state, or do nothing to the workstation (CPU Box and Display). The Power Button behaves identically to the Power Button on the front panel of the CPU Box.

NOTE: Before using the Power Button, verify that the On/Off power switch on the backpanel of the CPU Box is in On position.

The the behavior of the Power Button depends on the power configuration scheme of Windows 7 and can be changed by your System Administrator via the MW810 Manager configuration utility.

If the Power Button is set to perform forced shutdown, holding the Power Button pressed for more than six seconds turns off the workstation. Turning the workstation off in this way may damage your Windows 7 OS or hard disk drive.

Mode LED

The Mode LED inside the Power Button indicates the following status:

- Steady Green: Normal operation, the display is receiving proper video signals.
- Steady Yellow: The display is not receiving proper video signals (check cable connections between the CPU Box and the display).

NOTE: When the video cable between the display and the CPU Box is absent, or not properly connected, a **No Cable** message pops-up on the screen for three seconds and then disappears.

4 Rotary Knob

The Rotary Knob is used for controlling the brightness and other display settings via the On Screen Display (OSD) functions.

To adjust brightness:

Scroll the Rotary Knob.

To access the OSD:

Press the Rotary Knob to access the OSD menu and adjust brightness, contrast, color, volume and other features of the display (refer to "12.1" Display On-Screen-Display (OSD) Menu" on page 32).

NOTE: Access to certain OSD functions may be restrict by your System administration.

5 Illuminated Labels Area

Use this illuminated area for attaching description labels for the function keys. Contact your Motorola Solutions representative for assistance ordering custom-made labels as needed.

6 Eight Function Keys

The eight Function Keys facilitate specific operations. The function of each key can be set by the MW810 Manager configuration utility. (See Motorola Solutions MW810, R2.0 Administrator Guide P/N 6802988C42).

The Function Keys can be set to:

- Operate like a standard keyboard hot-key (such as: F1, Ctrl + X, etc.)
- Launch Windows applications (such as: web browser or calculator) or your own applications.
- Turn the display backlight On/Off
- Perform shutdown
- Enter Sleep (Suspend) state (see page 29)
- Enter Hibernate state (see page 30)
- Mute display speaker

- Volume Up
- Volume Down
- Display blackout mode (see page 30)
- Night mode (see page 30)

7 Speaker

Sound and alert speaker. The speaker volume is adjusted by using the Rotary Knob (via OSD) on the display or any Windows application. The last volume setting is saved and restored after Windows restart.

8 USB Port 1

See “12.1” Display - Backpanel Components” on page 18

9 Smart Card Compartment

Environmentally sealed Smart Card Compartment.

To install the Smart Card:

1. Open the door of the Smart Card Compartment.
2. Insert the Smart Card into the Smart Card Compartment (For contacts orientation, see Figure 7.)
3. Gently press the Smart Card into the Smart Card Compartment until a “click” is heard ensuring the Smart Card is fully engaged and locked inside the Smart Card Compartment.
4. Close the door of the Smart Card Compartment.

To remove the Smart Card:

1. Open the door of the Smart Card Compartment.
2. Gently press the Smart Card into the Smart Card Compartment until a “click” is heard ensuring the Smart Card unlocked.
3. Remove the Smart Card.
4. Close the door of the Smart Card Compartment.

NOTE: Smart Card application and authentication software is not provided with the MW810 Smart Card option.

10 Touch Screen

The touch screen is a touch-sensitive device that allows you to communicate with the workstation by tapping or dragging objects on the screen with a finger or a stylus pen.



Do not use a sharp objects such as a ballpoint pen or pencil on the touch screen. Doing so may damage the touch screen surface.

Important: Re-calibration of the touch screen is required whenever a display is paired with a new CPU Box. Calibration may also be required in case of discrepancy between the touched and displayed positions on the screen.

To calibrate the touch screen, tap *Start > All programs > Motorola > Touch Panel Utility*.

12.1" Display - Backpanel Components

Figure 8 shows the backpanel components of the 12.1" Display. (For installation instructions, refer to MW810 Mobile Workstation, Vehicle Installation Manual P/N 6802988C56).

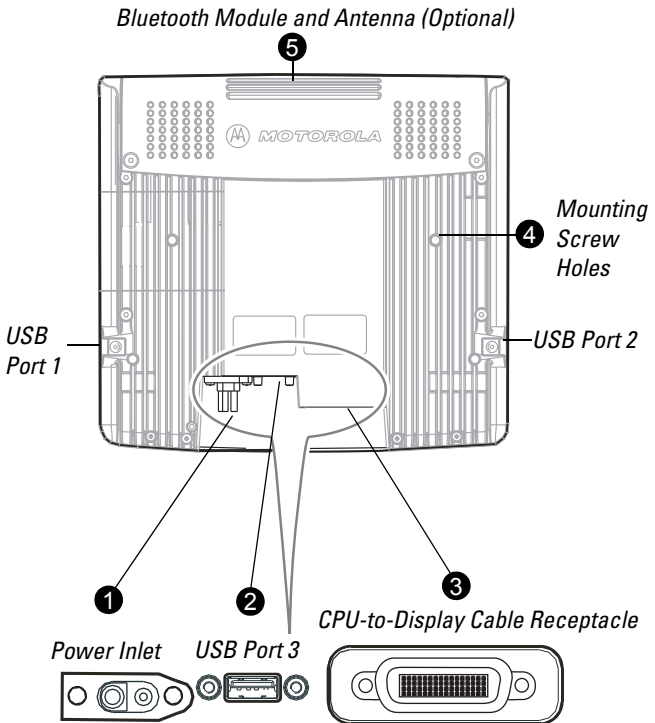


Figure 8. 12.1" Display - Backpanel Components

① Power Inlet

12V/24V power inlet from the vehicle battery system.

② USB Ports

Three USB 2.0 ports with up to 500mA load per port.



Caution

To avoid injury when driving, remove all unsecured USB devices from the USB ports of the display.

To secure connection to USB devices, use USB Extender Cable (FKN8800A).

USB ports 1 and 2 are used for connection of external USB devices.

USB port 3 is normally used to connect the MW810 Mobile Workstation keyboard. The port receptacle has two threaded bosses for securing the USB connector.

NOTE: Be aware that USB devices connected to the USB port should be compliant with the operating system. Otherwise the system does not operate properly.

Keep unused USB ports of the display unit sealed by using the rubber plugs attached to the display.

③ CPU-to-Display Cable Receptacle

Signal cable 60 pin receptacle for connecting the display to the CPU Box.

The cable connector is secured to the display by two screws.

④ Mounting Screw Holes

Four M4 threaded screw holes for securing the display to a mount.

⑤ Bluetooth Antenna

Bluetooth V2.1 plus Enhanced Data Rate (EDR) Module and antenna, mounted under the top cover of the display (optional).

8.4" Display Front-right Components

Figure 9 shows the front-right components of the 8.4" Display.

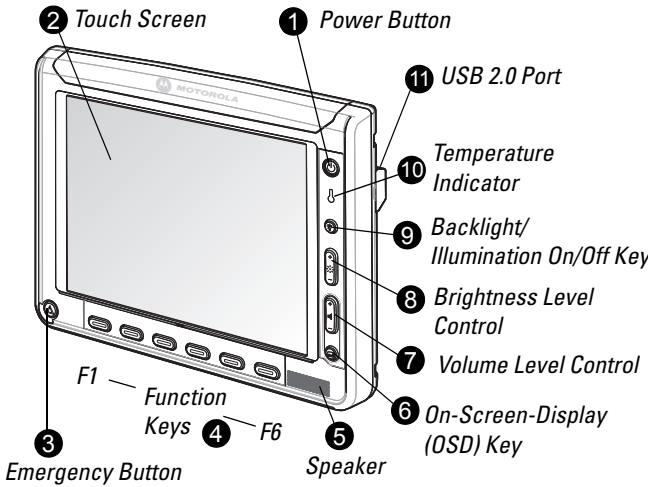


Figure 9. 8.4" Display - Front-Right Side Components

1 Power Button

The Power Button is used to turn on/shut down, set Sleep state, set Hibernate state, or do nothing to the workstation (CPU Box and Display). The Power Button behaves identically to the Power Button on the front panel of the CPU Box.

NOTE: Before using the Power Button, verify that the On/Off power switch on the backpanel of the CPU Box is in On position.

The behavior of the Power Button depends on the power configuration scheme of Windows 7 and can be changed by your System Administrator via the MW810 Manager configuration utility.

If the Power Button is set to perform forced shutdown, holding the Power Button pressed for more than six seconds turns off the workstation. Turning the workstation off in this way may damage your Windows 7 OS or hard disk drive.

Mode LED

The Mode LED inside the Power Button indicates the following status:

- Steady green: Workstation is on, vehicle power is ok and video signals are received from CPU Box.
- Steady yellow: Workstation is in Sleep state or no input video signals are received from the CPU Box.

NOTE: During Sleep state, the workstation enters a power-saving mode, the display back-light turns off and the workstation speed slows down. The workstation radios remain powered on.

To resume from Sleep state, press any control button, touch screen, keyboard or touchpad. The workstation returns to the initial state that existed prior to the Sleep state (previous screen display, indications, etc.)

② Touch Screen

SVGA, 800x600 pixels touch screen with analog RGB or DVI video input. The screen is illuminated by 800 NIT (800 cd/m² typical) high brightness LED backlighting.

The touch screen (8 wire resistive), can be accurately activated with either a bare or glove-clad finger or a stylus pen. The screen is made of tempered glass and is covered by a protective film to contain shattered glass in the event of breakage.

③ Emergency Button

Press the illuminated amber Emergency button to send an emergency message to a dispatcher or any host computer via the user's 2-way radio system. The Emergency button is functional as soon as the OS starts to boot up. The button illumination dims during Sleep state.



Caution

In order for this feature to be operational, your system administrator must pre-program a subscriber software application to listen and act upon this emergency signal.

4 Function Keys

The six Function keys are used to carry out specific functions. Note that the functionality of the keys is set by the Motorola Extrakey configuration utility provided with the MW810 Mobile Workstation CPU Box.

5 Speaker

The speaker is used for voice and alert sounds. The speaker volume is adjusted by using the volume level control on the display or any Windows application. The last volume setting is saved and restored after Windows restart.

6 On-Screen-Display (OSD)

The OSD menu key is used to pop-up the OSD menu and adjust the display appearance and performance.

To pop-up the OSD panel on the screen, press once on the OSD key. Use the Volume level control keys to scroll between the OSD menu items. Press once on the OSD key to select a specific menu item (See "8.4" Display On-Screen-Display (OSD) Menu" on page 33).

7 Volume Level Control

Tap or press and hold the up/down keys to set volume level.

Note that the up/down keys can also be used for the On-Screen-Display (OSD) operation.

8 Brightness Level Control

Tap or press and hold the up/down keys to set screen Backlight/illumination level.

9 Backlight/Illumination On/Off key

The Backlight/illumination On/Off key turns on/off the back-light of the screen and the illumination of the control keys. The illumination of the Workstation Power Button and Emergency button are unchanged.

The LED inside the Backlight/Illumination On/Off key indicates the following status:

- Steady blue: Screen backlight and key illumination are off.

NOTE: The blue backlight/illumination on/off indicator may not lit at low brightness level.

- Steady Yellow: Screen backlight and key illumination are on.

10 Temperature Indicator

The Temperature Indicator shows the following status:

- Off: Normal operation.
- Steady red: Display temperature is high or low.

11 USB Port

USB (2.0) port to support USB devices with up to 500mA current load.

NOTE: Be aware, USB devices connected to the USB port should be compliant with the operating system. Otherwise the system does not operate properly.

8.4" Display - Backpanel Components

Figure 10 shows the backpanel components of the 8.4" Display. (for installation instructions, refer to MW810 Mobile Workstation, Vehicle Installation Manual P/N 6802988C56).

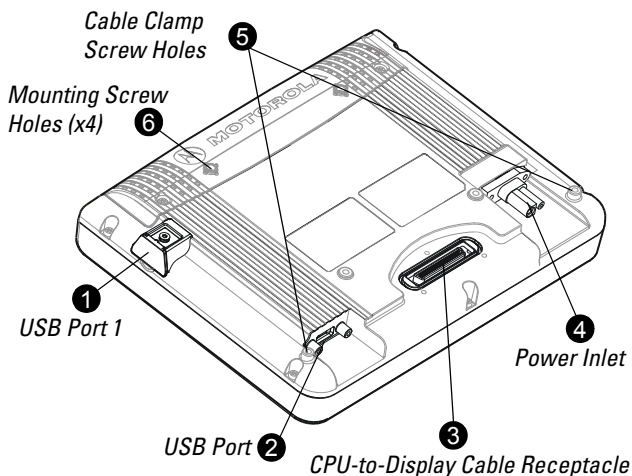


Figure 10. 8.4" Display - Backpanel Components

1 USB Port

USB 2.0 port for temporary connection of external USB devices with up to 500mA current load.



Caution

Do not use USB for permanent connections. Always remove USB accessories from these ports when driving. Propelled device can cause serious injury.

Keep the USB ports of the display unit sealed by using the rubber plugs attached to the display.

3 Keyboard USB Port

USB 2.0 port used to connect the MW810 Mobile Workstation keyboard with up to 500mA current load. The Keyboard USB Port has two threaded bosses for securing the USB connector of the keyboard to the display.

3 CPU-to-Display Cable Receptacle

Signal cable 50 pin receptacle for connecting the display to the CPU Box.

The cable connector is secured to the display by three screws.

4 Power Inlet

Power supply inlet from the vehicle battery system.

5 Cable Clamp Screw Holes

Cable clamp screw holes for left or right hand CPU-to-Display cable exit.

6 Mounting Screw Holes

Four M4 threaded screw holes for securing the display to a mount. Left and right hand CPU-to-Display cables are available, corresponding to right- or left-side driving, respectively.

Software Tools

The operation of the Display is controlled by the OS, the MW810 Manager configuration utility and the Extrakey configuration utility installed on your CPU Box.

For more information about the MW810 Manager and Extrakey configuration utilities, refer to the Motorola MW810 R2.0 Administrator guide P/N 6802988C42.

When the Display is shipped as stand-alone, software utilities are provided with the package and should be installed on your computer.

Working with Two Display Units

The MW810 Mobile Workstation is designed and equipped to support two displays (MW810 Mobile Workstation or any standard display), functioning simultaneously, using Windows modes of operation called Extended Mode and Clone Mode. For setting Extended or Clone Mode, refer to Microsoft Windows documentation.

In **Extended Mode**, the CPU Box can support a single task shared by two users, each using a separate display and keyboard.

In **Clone Mode**, the CPU Box can support the simultaneous work of two independent users, each using a separate display and keyboard.

In Clone Mode, Display 1 serves as primary display and Display 2 as secondary. Unlike the Extended Mode, where the same Windows desktop is shown on both displays, the Windows desktop of the Clone Mode extends to two separate desktops.

The separate desktops enable two users to work independently with two different displays, sharing the same CPU Box.

When working with two display units, the following issues should be considered:

- Setting screen resolution

In Extended and Clone modes, both displays should be set to the same resolution. When different displays are used, the resolution should be set to the lower of the two displays. Setting different resolutions may cause one screen to show the resolution of the other screen.

- Using the touch screen

In Clone Mode, only the touch screen of the primary display should be used. Note that the touch screen of the secondary display should be disabled in the Device Manager under Mouse folders -> HID mouse.

- Using USB data storage devices for workstation boot

A USB storage device can be used to boot the workstation. When this method is used, only one display (primary or secondary) should be connected.

The Keyboard

The MW810 Mobile Workstation has an 85-key USB 1.1 keyboard, which can be connected directly to either the CPU Box or display. The keyboard functions as a full size desktop keyboard. A touch pad with two side-buttons provides standard left and right mouse functionality.

Keyboard Illumination

Illumination level

To change illumination level of the keyboard backlight, press the Fn key and tap on the left or right arrow keys.



The level of illumination changes repeatedly from off to maximum in seven steps. The current illumination level is memorized when CPU is turned off.

The keyboard incorporates a power saving feature that automatically turns off the keyboard backlighting after a keyboard illumination time-out has expired. Striking any key restores backlighting.

Duration of the keyboard illumination

To set duration of the keyboard illumination, press the Fn key and tap on the arrow up or down keys. The up and down arrow keys repeatedly increases/decreases the period of illumination in seven steps of 10 minutes (maximum of 70 minutes).

Special Characters

Special characters such as "€" are displayed by pressing simultaneously CTRL + ALT + special character key.

Keypad mode

A 15-key numeric keypad is embedded on the typewriter keys as shown in the following example (English):

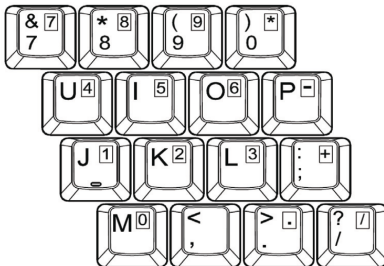


Figure 11. 15-key Numeric Keypad

Touch Pad

The touch pad uses the standard Microsoft mouse driver. The user can adjust the pointer speed in the "Basics" dialog box of the "Mouse Properties" section of "Control Panel" to his/her personal preference. Tapping with your finger simulates a left mouse button "click". Two taps simulates a "double click". Use the buttons on each side of the touch pad the same way you use standard mouse buttons.

To use the touch pad:

- Place your finger on the pad and move your finger in the direction you want the cursor to move. The faster you move your finger, the faster the cursor moves across the screen.
- Roll your finger from side to side to move the cursor short distances.
- Quickly tap your finger on the touch pad to click on an item.
- Tap your finger twice to double-click on an item.
- Tap and hold to drag, draw, and highlight.

MW810 Mobile Workstation Basic Operations

Power On

The MW810 Mobile Workstation can be turned on either from the vehicle ignition switch or by pressing the power button on the front panel of the CPU Box or display. The OS automatically loads.

Important: When the ambient temperature inside the vehicle is beyond the operational range, the workstation indicates an operational failure and does not power on. Do not try to turn on the workstation until it cools down.

The MW810 Mobile Workstation does not power up when the voltage level of the car 12/24V battery is below the Low Battery threshold. If battery voltage falls below the Battery Cranking Threshold for 20 seconds or more, the MW810 Mobile Workstation executes critical shut down and power itself off.

Power Off

The MW810 Mobile Workstation can be turned off either from the vehicle ignition switch or by pressing the power button on the front panel of the CPU Box or the display.



Caution

- Remember to save important information before turning off your workstation.
- If your workstation fails to respond, shut your workstation down by holding the Power Button on the front panel of the CPU Box or display pressed for at least six seconds. Beware, this uncontrolled hardware power off may damage the CPU hard disk drive.

Sleep State

If you plan to be away from your computer, place your computer in Sleep state.

In Sleep state the MW810 Mobile Workstation switches to a low-power mode where devices use less power.

The CPU can initiate the Sleep manually or automatically after a period of inactivity. Inactivity means not making any entry on your computer during a pre-defined time period. In the Sleep state the memory is saved, while internal components are turned off.

Note: When the CPU Box is in Sleep or Hibernation state, do not connect or disconnect any external devices to the workstation.

In Sleep state, the display LED indications and screen illumination, function as follows:

- Screen backlight - turns Off
- Yellow Mode LED - dimmed
- Emergency button illumination - dimmed
- Function Keys illumination - turns Off
- Label illumination - turns Off

Hibernation State

Place your computer in Hibernation state when you are away from the MW810 Mobile Workstation for an extended time or overnight. When you restart the computer, your workstation is restored to the prior state before Hibernation.

Hibernate state saves everything in memory on disk and then turns off your computer. When you restart your computer, your desktop is restored exactly as you left it. It takes longer to bring your computer out of Hibernation than out of Sleep.

To find more on how to use Hibernation mode, refer to Microsoft Windows help.

Display Blackout Mode

In Display Blackout mode, the screen, key lights and Emergency Button are off. The illumination level of the Power button is set to minimum.

Night Mode

In Night Mode, the screen colors invert to allow better visibility at darkness. The brightness level does not change.

Entering Sleep State Manually

Manual methods to enter Sleep state are one of the following:

- Select Sleep in the Shutdown Window of the OS. Note that the default setting of the OS does not enable Sleep using the power button.
- Press the Power button on the display or CPU Box (depends on configuration)
- Turn the ignition switch off (depends on configuration)

Wake Up from Sleep State

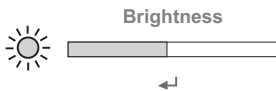
The MW810 Mobile Workstation wakes upon occurrence of one of following events:

- Pressing the Power button on the display or CPU Box (when configured). Note that the default setting of the OS disable this operation
- Turning the ignition switch off (optional configuration)
- Wake up event from a USB device such as keyboard
- Wake up event from an Ethernet device connected to the CPU Box
- Ring indication from the RS-232 port
- Wake up event from WLAN or WWAN radio

Brightness Control

Scroll the Rotary Knob to adjust brightness.

Scrolling right/left to increases/decreases the brightness level.



12.1" Display On-Screen-Display (OSD) Menu

On-Screen Display (OSD) is a control panel, shown on the 12.1" Display screen.

To pop-up the panel on the screen, press once on the rotary knob and scroll the knob to select the OSD menu item.

The OSD enables to adjust the following:

- Brightness
- Contrast
- Color
- Night/Day View
- Volume

When RGB display is connected, the following menu items are available:

- Auto Adjustment
- Stretch (horizontal and vertical adjustment)

To pop-up the OSD menu on the screen, press once on the rotary knob. To select an item, scroll to an item and press on the knob.

OSD Main Menu



OSD Sub Items

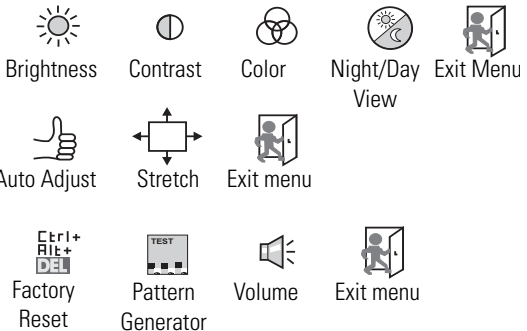


Figure 12. On Screen Display (OSD)

8.4" Display On-Screen-Display (OSD) Menu

On-Screen Display (OSD) is a control panel shown on the 8.4" Display screen. The OSD enables the adjustment of the contrast, horizontal and vertical positioning and other screen features.

To pop-up the panel on the screen, press once on the rotary knob and scroll the knob to select the OSD menu item.

NOTE: When using DVI interface, options shown in gray color are not functional.

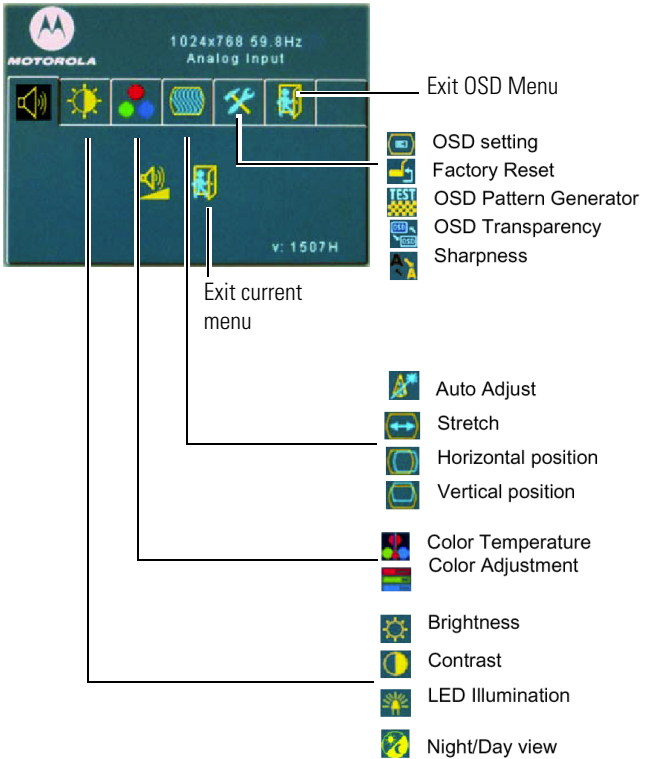


Figure 13. On Screen Display (OSD) Menu

Troubleshooting

Many problems can be solved without outside assistance by following the troubleshooting procedures provided via the on-line help or in the device documents, OS and software applications. Most software applications contain troubleshooting procedures and explanation of error information. If you suspect a software issue, refer to the OS or application troubleshooting guides.

NOTE: This manual does not cover OS issues. For OS issues, refer to Microsoft Windows 7 documentation.

Table 1 describes MW810 Mobile Workstation failures which have no user notification.

Table 1: MW810 Mobile Workstation failures without user notification

Problem	Do the following
Cannot turn the workstation off, the system does not respond	Turn off the workstation by pressing and holding the power button for 6 seconds or more. Use either CPU or display power buttons. If the workstation is still not responding, turn off and on the On/Off power switch on the backpanel of the CPU Box.

Table 2 describes MW810 Mobile Workstation error messages that warn you about conditions that might prevent normal operation.

Table 2: MW810 Mobile Workstation Error Messages

Message	Do the following
<p>“Warning! Low battery power. The workstation will shut down in three minutes if power remains low. Save important information now.”</p>	<p>The vehicle battery voltage is below the lower operational limit. Save your work before shutdown.</p>
<p>“Warning! Temperature of CPU unit is high. The workstation will shut down in three minutes if ambient temperature remains high. Save important information now.”</p>	<p>The internal temperature of the CPU Box is higher than the valid limit. Save your work before shutdown. Do not turn on the MW810 Mobile Workstation until it cools down to normal operating temperature.</p>
<p>“MW810 Mobile Workstation CPU temperature is low. The system will shutdown in 3 minutes”.</p>	<p>The internal temperature is below the valid limit. Please save your work before shutdown. Never turn on the MW810 Mobile Workstation until it heats up to normal operating temperature.</p>
<p>MW810 Mobile Workstation hard disk drive heater is malfunctioning.</p>	<p>Heater over-current was detected. Please, contact your system administrator.</p>

Maintenance

Cleaning Materials

Use the following materials for cleaning of plastic and glass surfaces:

1. Film-Free glass cleaner (Unisource Worldwide, Inc) <http://www.unisourcelink.com>.
2. Plasti-Kleen (Hess Advanced Technologies, Inc) spray cleaner.

Cleaning Directions

1. Remove dust and fibers with compressed air/nitrogen or commercial gas duster (Dust-Off®, Memorex®, etc.).
2. Soak wipe with a cleaning solution (if not pre-wetted) and gently clean the surface or contact.



Caution

Avoid spraying cleaner directly on the keyboard; always ensure that no liquid drips on the keyboard.

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

Getting Assistance From Motorola

To get assistance from Motorola, logon to Motorola Solutions Support Center at:

<http://www.motorolasolutions.com/support>.

The Support Center provides our customers with a wealth of information and online assistance including software downloads and product manuals.

To better meet the customer support service, the following items can be downloaded from <http://www.motorola.com/MW810>:

- Recent software / application updates
- Updated embedded firmware for your computer
- The latest MW810 Mobile Workstation drivers
- Manuals
- White papers
- Spec sheets
- Solution briefs

If you are in North America and require further technical support, you may call the Motorola Solutions System Support Center (SSC) at 1-800 221-7144 and choose the options for Technical Support on Data products.

For Europe, the Middle East and Africa, call +420 533 336 123.

Please be prepared to provide your unit model and serial number or Factory Order number for warranty entitlement verification purposes.

For your convenience, the Motorola Solutions website provides up-to-date information about the MW810.

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<http://www.motorola.com/MW810>

For MW810 manuals logon to:
www.motorola.com/enterprisemobility/manuals



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