

# MW810

## Mobile Workstation



Fully rugged mobile computer for mission-critical vehicles.  
Optimized for mobility. Optimized for wireless.

The fully rugged Motorola MW810 Mobile Workstation provides reliable, cost-effective wireless connectivity and computing power for mission-critical applications.

Its three-piece design allows flexible installation options, including choice and location of CPU, display, and backlit keyboards. This fixed-mount, high-performance computing platform is optimized for harsh environments and seamless mobility at highway speeds.

The MW810 Mobile Workstation offers a range of integrated radios and GPS options to help the mobile user stay connected to one or more networks. The heated removable hard drive features 3-dimensional shock absorbers ready for high vibration environments.

MW810 also delivers outstanding ergonomics. Our backlit keyboard is easily removed from mounts, offering the convenience of laptop typing. A built-in pointer eliminates the need for a separate mouse.

MW810 displays are full of user-friendly features as well. All of them come with resistive tempered glass touchscreens and have user-programmable function buttons with available custom labeling.

The optional Smart Card Reader available in 12.1" displays helps protect sensitive data with an additional layer of authentication.

An emergency button can work with dispatch and monitoring applications to allow users to call for help without keyboard or radio.

## COMPUTER

MW810 Central Processing Unit offers powerful computing options so you can support more applications and find answers faster.

Processor Options	Intel® Core™2 Duo (Merom) T7400 4 MB L2 2.16 GHz 667 MHz (Option) Intel® Core™2 Duo (Merom) T5500 2 MB L2 1.66 GHz 667 MHz (Standard) Intel® Celeron® M 430 1 MB L2 1.73 GHz 533 MHz (Option)
Chipset	Intel® 945GM
Video Controller	Integrated in Intel 945GM Chipset. Dynamic allocation from 64 MB up to 224 MB RAM
Internal Memory	1 GB Standard, 4 GB Maximum (Total usable memory will be less, depending on configuration)
Mass Storage Options	Heated Removable 80 GB (standard) or 120 GB Hard Drive with 3-dimensional shock absorber. 32 GB or 64 GB Solid State Drive (Option, replaces Hard Drive)
Security and Protection	TPM 1.2 (Trusted Platform Module) integrated in CPU. Optional internal Smart Card Reader available in 12.1" displays.
Operating System	Microsoft® Windows Vista® Business Edition, SP1 (32 bit), with downgrade rights to Windows® XP Professional, SP2

## COMMUNICATIONS AND EXPANSION PORTS

MW810 offers a range of communications modules and expansion ports, supporting both wired and wireless peripherals.

RGB Display Interface	On all MW810 CPUs. MW800 Series displays can also be supported via the RGB port (36-pin)
Display USB 2.0	3x USB 2.0 in 12.1" displays (1 for keyboard, 2 general purpose)
Bluetooth®	Optional Bluetooth module V2.0 plus EDR (Enhanced Data Rate) Available only with 12.1" displays
PC CARD	1 External Type II PCMCIA, on front of CPU
Auxiliary Port	Centronics type 26 pin connector. 4 Programmable General Purpose I/Os can be set to input or output, and 5V or vehicle battery voltage. Ignition sense inputs, vehicle speed and direction inputs (latter two for use with Dead Reckoning GPS). Battery voltage output (1A) and 5V DC output (1A) for relay contact vetting voltage.
Audio	Line out (non-amplified) for external speaker; external microphone in (non-amplified)

## I/O EXPANSION BOARD OPTIONS

MW810 offers multiple expansion board options, so you can add more ports for external modems, video cameras, or other vehicle peripherals as needed. The Comm and Video expansion board option includes the widest range of port additions including a second display port, so two independent displays and keyboards can be supported by one CPU.

	CPU without USB Expansion Board (Option VA00383)	CPU with Comm and Video Expansion Board (Option VA00385)	CPU with Serial and Expansion Board (Option VA00384)
RS232	1	2	4
CPU USB 2.0	2	3	4
Ethernet LAN RJ45	1 GbE (1000 BASE-T)	1 GbE + 2 100 BASE-T (10/100)	1 GbE (1000 BASE-T)
Dual Display Interface	No	Yes - DVI (50-pin) port	No
Video Input	No	1 Standard Composite Video input (CVBS) port (PAL or NTSC)	No

## DISPLAY OPTIONS

MW810 displays feature outstanding touchscreen capabilities, user programmable buttons, emergency button, and setting controls. The MW810 CPU with Comm and Video expansion board option supports the dual display feature.

MW810 12.1" Displays	12.1" Standard Brightness (350 NIT) XGA, with RGB or DVI interfaces. Resistive tempered glass touchscreen. Contrast Ratio (CR) 1:350. Viewing Angles H=120, V=100 at CR ≥10. 8 programmable buttons with backlit insets so you can custom label user functions. Speaker, 1W. 3 USB 2.0 ports (1 keyboard, 2 general use).
	12.1" High Brightness (1200 NIT) XGA, with RGB or DVI interfaces. Resistive tempered glass touchscreen. Contrast Ratio (CR) 1:400. Viewing Angles H=160, V=160 at CR ≥10. 8 programmable buttons with backlit insets so you can custom label user functions. Speaker, 1W. 3 USB 2.0 ports (1 keyboard, 2 general use).
MW810 8.4" Display	8.4" High Brightness (800 NIT) SVGA, with RGB or DVI interfaces. Resistive tempered glass touchscreen. Contrast ratio (CR) 1:450. Viewing Angles H=120, V=100 at CR ≥10. 6 programmable buttons with insets. Speaker, 1W. 2 USB 2.0 ports (1 keyboard, 1 general use).
Smart Card Reader	Optional in 12.1" displays. Integrated FCI Smart Plus B Connector module with OMNIKEY® 3121 Embedded Reader Board USB. FIPS 201 Certified.



## INTERNAL RADIO OPTIONS AND COMMUNICATIONS PROTOCOLS

Two internal PCI Express Mini Card slots allow for a Wireless Local Area Network option, plus any 1 of 3 available wireless Wide Area Network options, so you can stay in touch with remote applications via multiple networks. CPU with any WLAN option ships with two antenna connector ports. One antenna is standard with either WLAN package; additional antenna available as accessory.

WLAN	Intel® PRO/Wireless 3945ABG Network Connection (Tri-mode 802.11a/b/g). Wi-Fi CERTIFIED™ or Intel Wireless WiFi Link 4956AGN (Quad-mode 802.11 a/b/g/n)
WAN	PCI Express Mini Card, for CDMA EV-DO Revision A, Release 0, and 1X networks. PCI Express Mini Card, for HSDPA/UMTS/EDGE/GPRS networks. User accessible SIM card inside PC Card door.
Choose either the internal GPS receiver or internal Dead Reckoning GPS receiver to help pinpoint your vehicle location. Dead Reckoning option provides vehicle location assistance even where GPS reception is hindered.	
GPS	Trimble Lassen iQ GPS Module. Supports NMEA 0183 (National Marine Electronics Association), TSIP (Trimble Standard Interface Protocol), TAIP (Trimble ASCII Interface Protocol), and DGPS (Differential Global Positioning System) protocols.
Dead Reckoning GPS	Sensor-based GPS Receiver, containing the ANTARIS® GPS positioning engine. Position output in NMEA 0183 (National Marine Electronics Association) and UBX (u-blox proprietary binary) protocols. Requires vehicle sensor signals for speed and direction – order the Auxiliary Cable accessory to connect CPU Aux Port to vehicle sensors.

## ELECTRICAL ENVIRONMENT

Fully operating in 12V and 24V car battery systems without converters, so you can install in a wider range of vehicles. Can also be configured to operate using a 9V sustainable power source.

Input Voltages	Wide input voltage range, 11-33VDC, with no loss of functionality	
Electrical Transients	Meets ISO7637-2	
	12V	24V
Power Consumption (CPU)		
	OFF (main switch ON) 2mA	OFF (main switch ON) 2mA
	Suspend Mode 0.14A (fans OFF)	Suspend Mode 0.14A (fans OFF)
	Operation: Typical 3A; Max 6A	Operation: Typical 1.7A; Max 3.5A
Power Consumption (12.1" Displays)		
	OFF (main switch ON) 10mA	OFF (main switch ON) 6mA
	Suspend Mode 0.4A	Suspend Mode 0.25A
Std. Brightness (Heater ON)	Operation: Typical 3.5A; Max 4.5A	Operation: Typical 2A; Max 2.6A
Std. Brightness (Heater OFF)	Operation: Typical 1.5A; Max 2A	Operation: Typical .8A; Max 1.2A
High Brightness	Operation: Typical 1.5A; Max 2.5A	Operation: Typical 1A; Max 1.5A
Power Consumption (8.4" Display)		
	OFF: <10 mA	OFF: <6 mA
	Suspend Mode: < 100 mA	Suspend Mode: < 70mA
	Operation: Typical 1.5A; Max 2.5A	Operation: Typical 1A; Max 1.5A

## GENERAL SPECIFICATIONS

MW810 system components have been designed to be backwards-compatible with most MW800 Series mounts.

Mounting trunnion included with CPU purchase. Check existing display mounts to ensure compatibility with optional Smart Card Reader and USB ports on sides of 12.1" displays.

System Component	CPU	12.1" Displays	8.4" Display	Keyboard*
Physical Size (H x W x D)	2.8" x 7.4" x 9.4"	10.6" x 11.5" x 1.9"	7.1" x 9.1" x 1.7"	1.26" x 12.6" x 8.0"
	7.2 x 18.9 x 24.0 cm	27.0 x 29.2 x 4.9 cm	18.1 cm x 23.0 cm x 4.36 cm	3.2 x 32.0 x 20.3 cm
Weight	8.8 lbs. (4 kg)	Std. Brightness 6.1 lbs. (2.75 kg); High Brightness 6.6 lbs. (3 kg)	3.3 lbs.(1.5 kg)	2.2 lbs. (1.0 kg)

\*USB Backlit 85-Key Full Travel Keyboards (multiple language options)

## ACCESSORIES

Contact your Motorola representative for details on accessories and vehicle mounting options.

CPU-To-Display Cables (various lengths and interfaces); Cable Adapters; Auxiliary Cables (support Ignition Sense feature and more); External Speaker with Amplifier; External Microphone.



## SPECIFICATION SHEET

### ENVIRONMENTAL AND DURABILITY

MW810 is tough enough to thrive in extreme environmental conditions.

<b>Operating Temperature</b>	-22 to +158 degrees F (-30C to +70C). MW810 uses sophisticated thermal and power management techniques to optimize performance at temperatures below -4 degrees F (-20C) and above 122 degrees F (+50C).
<b>Storage Temperature</b>	-40 to +158 degrees F (-40C to +70C)
<b>Humidity</b>	90 to 95% relative humidity at 50 degrees C after 8 hours, per TIA/EIA 603
<b>Sealing</b>	IEC IP-54 Rating. "5" = Dust protected. "4" = Protected against splashing water
<b>Shock</b>	20g peak 1/2 sine wave @ 11ms, 30 impacts per TIA/EIA 603 Paragraph 3.3.5
<b>Vibration</b>	Per TIA/EIA 603 Paragraph 3.3.4 and MIL-STD-810F Method 514.5, Fig. 514.5C-1
<b>Drip</b>	Per MIL-STD-810F Method 506.4 Procedure III
<b>Dust</b>	Blowing 5 hours in dust (140 mesh silica flour) laden atmosphere; dust agitation time is for 2 seconds every 15 minutes
<b>Salt Fog</b>	8 hours, 5% Sodium Chloride at 35 degrees C, per MIL-STD-810F Method 509.4
<b>Flammability</b>	Per UL94
<b>Solar Radiation</b>	7 cycles of 24 hours with no functional degradation per MIL-STD-810F Method 505.4, Procedure I
<b>Shock Crash Hazard</b>	75g, 6 ms per MIL-STD-810F Method 516.5, Procedure V

### WARRANTY

3-Year Commercial Warranty now standard

### REGULATORY ACCEPTANCE NUMBERS AND STANDARDS REFERENCES

MW810 is tested for safety as well as optimal performance with multiple wireless networks. MW810 components are RoHS compliant.

#### FCC Acceptance Numbers

EVDO-Rev. A Radio	FCC ID: N7N-MC5725
HSPDA UMTS Radio	FCC ID: N7NMC8775
WLAN Radio	FCC ID: PD9WM3945ABG

#### United States

Radiated Emission	FCC Part 15, Class B
Radio Acceptance (RF)	FCC Parts 15.247, 90, 22, 24
Safety	UL 60950-1
Carrier Certifications	AT&T Mobility; Verizon Wireless; Sprint Mobile Broadband

#### Canada

Radiated Emission	ICES-003, Class B
Radio Acceptance (RF)	RSS210, RSS119, RSS132, RSS133
Safety	cUL 60950-1
Carrier Certifications	Rogers

#### Europe

R&TTE Directive	1999/5/EC
EMC	ETSI EN 301 489
Radio Acceptance (RF)	ETSI EN 300 328; ETSI 301 511
Safety	EN 60950-1
Automotive Directive	(eMark) 2004/104/EC

#### Australia, New Zealand (C-Tick)

Radiated Emission	AS/NZS CISPR 22
Radio Acceptance (RF)	AS/NZS 4268 & AS/ACIF S042-3
Safety	AS/NZS 60950-1



**MOTOROLA**

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