

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.

The MW810 supports a variety of optional I/O expansion boards, including the new ALPR Expansion Board which provides native support

for up to four digital ALPR cameras, dual display capability, plus extra USB and Ethernet ports.

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 T9400, 2.53 GHz 1066 MHz FSB, 6 MB L2 Cache (Option) Intel® Core™2 Duo P8400, 2.26 GHz 1066 MHz FSB, 3 MB L2 Cache (Standard) Intel® Celeron® M575, 2 GHz 667 MHz FSB, 1M L2 Cache (Option)
Chipset and Video Controller	Intel® GM45 Express
Internal Memory	2 GB DDR3 DRAM 1066MHz (Standard), 4 GB Optional. Expandable to 8 GB (with use of 64-bit Windows 7 OS) (Total usable memory may be less, depending on configuration)
Mass Storage Options	Heated removable 250 GB Hard Drive with 3-dimensional shock absorbers (Standard) 64 GB or 80 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	Windows 7 Professional Edition (32 bit and 64-bit versions available), with downgrade rights to Windows XP Professional, SP3. Windows Virtual PC and Windows XP Mode fully supported in OS via download from Microsoft.

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, working at 5V or vehicle battery voltage. Ignition sense input, plus 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 wetting 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 Expansion Board (Option VA00383)	CPU with ALPR Expansion Board (Option VA00497)	CPU with Comm and Video Expansion Board (Option VA00385)	CPU with Serial and USB Expansion Board (Option VA00384)	CPU with Comm and 3X3 WLAN Expansion Board (Option VA00673)
RS232	1	1	2	4	2
CPU USB 2.0	2	3	3	4	3
Ethernet LAN RJ45	1 GbE (1000 BASE-T)	2 GbE + 1 100 BASE-T (10/100)	1 GbE + 2 100 BASE-T (10/100)	1 GbE (1000 BASE-T)	1 GbE + 2 100 BASE-T (10/100)
Dual Display Interface	No	Yes - DVI (36-pin) port	Yes - DVI (50-pin) port	No	Yes - DVI (50-pin) port
Video Input	No	1 high-density MDR-compatible port that supports connectivity with up to four (4) PIPS Slate™ ALPR digital cameras	1 Standard Composite Video input (CVBS) port (PAL or NTSC)	No	No
WLAN Antenna Connectors*	3	3	2	3	3

* if WLAN option is ordered

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 (400 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® Ultimate N WiFi Link 5300 (Quad-mode 802.11 a/b/g/n). WiFi Certified. 2 or 3 antenna ports available, depending on I/O expansion configuration selected.
WAN	Gobi 2000 module from Sierra Wireless. Supports either of the following based on firmware load: CDMA EV-DO Revision A, Release 0, and 1X networks; or HSPA/HSDPA/UMTS/EDGE/GPRS. Two antenna ports. Gobi 2000 driver includes NMEA 0183 output for use with location applications.

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® 4 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 an 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
Current Consumption (CPU)		
	OFF (main switch ON) 2mA	OFF (main switch ON) 2mA
	Standby Mode 0.14A (fans OFF)	Standby Mode 0.1A (fans OFF)
	Operation: Typical 3A; Max 6A	Operation: Typical 1.7A; Max 3.5A
Current Consumption (CPU + ALPR board with four imaging units)		
	Operation: Max 9A	Operation: Max 5.5A
Current Consumption (12.1" Displays)		
	OFF (main switch ON) 10mA	OFF (main switch ON) 6mA
	Standby Mode 0.4A	Standby 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 0.8A; Max 1.2A
High Brightness	Operation: Typical 1.5A; Max 2.5A	Operation: Typical 1A; Max 1.5A
Current Consumption (8.4" Display)		
	OFF: <10 mA	OFF: <6 mA
	Standby Mode: < 100 mA	Standby 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.

WARRANTY

3-Year Commercial Warranty now standard



SPECIFICATION SHEET

ENVIRONMENTAL AND DURABILITY

MW810 is tough enough to thrive in extreme environmental conditions. MW810 R1.2 MIL-STD-810G and ASTM Vibration tests were conducted and certified by independent external labs; summary report available upon request. In addition, Motorola conducts extensive in-house tests to a variety of relevant industry standards as well as Motorola's own proprietary test methods (12M).

Altitude: Storage	MIL-STD-810G Method 500.5 Procedure I, Non-Operating
Altitude: Operation	MIL-STD-810G Method 500.5 Procedure II, Operating
High Temperature: Storage	MIL-STD-810G Method 501.5 Procedure I, Climatic Category A1 - Hot Dry (Table 501.5-III), induced (Storage and Transit) conditions, cyclic exposure from 33°C (91.4°F) to 72°C (161.6°F), Non-Operating. Also to 85°C (185°F) per Motorola 12M.
High Temperature: Operation	MIL-STD-810G Method 501.5 Procedure II, Climatic Category A1 - Hot Dry (Table 501.5-III), cyclic exposure from 33°C (91.4°F) to 72°C (161.6°F), Operating
Low Temperature: Storage	MIL-STD-810G Method 502.5 Procedure I, constant exposure at -52°C (-61.6°F), Non-Operating
Low Temperature: Operation	MIL-STD-810G Method 502.5 Procedure II, constant exposure at -30°C (-22°F), Operating
Temperature Shock	MIL-STD-810G Method 503.5 Procedure I-C, multi-cycle shocks from constant extreme temperature, 3 cycles of Figure 503.5-3, from -52°C (-61.6°F) to 94°C (201.2°F), Non-Operating
Solar Radiation (Sunshine)	MIL-STD-810G Method 505.5 Procedure I, Non-Operating
Rain: Blowing	MIL-STD-810G Method 506.5 Procedure I, Operating
Rain: Drip	MIL-STD-810G Method 506.5, Procedure III, Operating
Humidity	MIL-STD-810G Method 507.5 Procedure II, Aggravated, Periodic Operation per Method. Also per TIA/EIA 603 Para.3.3.3
Salt Fog	MIL-STD-810G Method 509.5, Non-Operating
Sand	MIL-STD-810G Method 510.5 Procedure II, Non-Operating
Dust	MIL-STD-810G Method 510.5 Procedure I, Non-Operating
Vibration: Secured Cargo	MIL-STD-810G Method 514.6 Procedure I Category 4: 10-500 Hz, 1 hour per axis, Operating
Vibration: Loose Cargo	MIL-STD-810G Method 514.6 Procedure II Category 5: 5Hz/300RPM, in package, Non-Operating
Vibration	MIL-STD-810G Method 514.6 Procedure I Category 24: 20-2000 Hz, 7.7 Grms, 1 hour per axis, Non-Operating
Shock: Functional	MIL-STD-810G Method 516.6 Procedure I, Operating. Also per TIA/EIA 603 Para. 3.3.5
Freeze/Thaw	MIL-STD-810G Method 524 Procedure III, Rapid Temperature Change, Operating
ASTM Vibration	ASTM D4169-04 Schedule E, Truck Assurance Level II, Operating
Sealing	IEC IP-54 Rating. "5" = Dust protected. "4" = Protected against splashing water
Flammability	UL94
ESD	IEC EN61000-4-2. Motorola tests to 8KV contact and 15 KV air, which is above required levels of 4KV contact and 8KV air.

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

Gobi 2000 (from Sierra Wireless):	FCC ID: N7NGOBI2
WLAN Radio:	FCC ID: PD9533ANM

United States

Radiated Emission	FCC Part 15, Class B
Radio Acceptance (RF)	FCC 47 CFR Part 15 Subpart B/C/E, Part 22 and Part 24
Safety	UL 60950-1 2nd Edition
Carrier Certifications	AT&T Mobility, Verizon Wireless, and Sprint Mobile Broadband

Canada

Radiated Emission	ICES-003, Class B
Radio Acceptance (RF)	Gobi 2000: IC: 2417C-GOBI2 WLAN: IC: 1000M-533ANM RSS-210, RSS-132 and RSS-133
Safety	cUL 60950-1 2nd Edition

Europe

R&TTE Directive	1999/5/EC
EMC	ETSI EN 301 489
Radio Acceptance (RF)	WLAN: ETSI EN 300 328 (2.4 GHz), EN 301 893 (5 GHz), and EN 302 502 (5.8 GHz). WWAN: EN 301 511 (GSM) and EN 301 908 (UMTS)
Safety	EN 60950-1 2nd Edition
Automotive Directive	(eMark) 2004/104/EC

Australia, New Zealand (C-Tick)

Radiated Emission	AS/NZS CISPR, Class B
Radio Acceptance (RF)	AS/NZS 4268 & AS/ACIF S042-3
Safety	AS/NZS 60950-1 2nd Edition



MOTOROLA

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