CONNECTED. POWERFUL. RUGGED.

MW810 MOBILE WORKSTATION R2.0

A police officer receives dispatch information, with audible directions and the incident location clearly marked on a map. An incident commander keeps track of firefighter locations and vitals as they search a burning apartment building. An EMS crew submits a report without leaving their vehicle. Detectives watch streaming video of gang members loitering, while parked discreetly two blocks away. A deputy scans the plates of 300 parked cars in minutes – without slowing down.

More and more first responders and field personnel are using their vehicle as an office. Aided by wireless broadband and motivated by the need to keep up with information and their workload, they perform more tasks in the vehicle, from report writing to video surveillance. This requires more than fast wireless broadband and the latest software – they also need a connected, powerful, rugged and ergonomic workstation that is designed for the challenges of their work day and the rigors of their environment.

The fully rugged Motorola MW810 Mobile Workstation R2.0 provides reliable, cost-effective wireless connectivity and computing power for mission critical applications.

SPECIFICATIONS

COMPUTER

MW810 R2.0 Central Processing Unit offers powerful computing options so you can support more applications and find answers faster.

	Intel 3rd Generation Core i7-3610QE, Quad Core, 2.3GHz, 6M Cache (Option) Intel 3rd Generation Core i5-3610ME, Dual Core, 2.7GHz, 3M Cache (Standard) Intel Celeron B810, Dual Core, 1.6GHz, 2M Cache (Option)
Chipset and Video Controller	Intel® Panther Point PCH QM77 with integrated video controller
Internal Memory	4GB DDR3 DRAM 1600MTs Single Slot (Standard). Expandable to 8 GB Dual Slot (Total usable memory may be less, depending on configuration)
Mass Storage Options	Heated removable 500GB Hard Drive with 3-dimensional shock absorbers (Standard) 256GB Solid State Drive (Option, instead of Hard Drive) Also: 64GB internal SSD (mSATA) on main board (Option in addition to, or instead of, removable HD or SSD)
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® 7 Professional, Service Pack 1 (32 bit and 64-bit versions available)

COMMUNICATION AND EXPANSION PORTS

MW810 R2.0 offers a range of communications modules and expansion ports, supporting both wired and wireless peripherals.

Display Interface	Primary port supports DVI or RGB, Secondary port support DVI/HDMI. Both with ports via 60 pin connector
USB Ports	Up to 2 x USB3.0 (Depends on Expansion type) and up to 4 X USB2.0 (Depends on Expansion type)
Bluetooth®	Optional Bluetooth module V2.1 plus EDR (Enhanced Data Rate). Available only with 12.1" displays.
ExpressCard	1 ExpressCard slot, on front of CPU
Auxiliary Port	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). Configurable Output voltage (Battery voltage output to 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 R2.0 offers multiple expansion board options, so you can add more ports for external modems, video cameras, or other vehicle peripherals as needed.

R2.0 Expansion Board Options	CPU without Expansion Board	CPU with ALPR Expansion Board	CPU with Comm and Video Expansion Board	CPU with Serial and USB Expansion Board
Video Out (60 pins; also includes audio, USB 2.0, remote on/off)	1st port DVI/RGB 2nd port - none	1st port DVI/RGB 2nd port – DVI/HDMI	1st port DVI/RGB 2nd port – DVI/HDMI	1st port DVI/RGB None
RS232	1	1	2	3
CPU USB 3.0	2	2	2	2
CPU USB 2.0	0	1	1	2
Ethernet LAN RJ45 1GbE	1	3	3	1
eSATAp	0	0	0	1
Dual Display Interface	No	Yes	Yes	No
Video Input	No	Up to four (4) PIPS Slate™ ALPR digital Cameras	1 Standard Composite Video input	No
WLAN Antenna Conn.	3	3	3	3

DISPLAY OPTIONS

MW810 R2.0 displays feature outstanding touchscreen capabilities, user programmable buttons, emergency button, and setting controls. The MW810 R2.0 CPU with Comm and Video or ALPR expansion board options support the dual display feature.

MW810 R2.0 12.1" Displays	12.1" Standard Brightness (500 NIT) XGA, with RGB or DVI interfaces. Resistive tempered glass touchscreen. Contrast Ratio (CR) 1: 700. 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). 12.1" High Brightness (1500 NIT) XGA, with RGB or DVI interfaces. Resistive tempered glass touchscreen. Contrast Ratio (CR) 1: 600. Viewing Angles H=160, V=140 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

One internal PCI Express Mini Card slot allows for a Wireless Local Area Network option, plus two available wireless Wide Area Network slots, so you can stay in touch with remote applications via multiple networks. Our CPU with any WLAN option ships with three antenna connector ports. Antennae are sold separately, so customers may reuse existing MW antennae with proper connectors.

WLAN Option	Intel® Ultimate N WiFi Link 6300 (Quad-mode 802.11 a/b/g/n). Wi-Fi CERTIFIED®. 3 antenna ports available.
WAN 1 Slot Options	MC7750 LTE Band 13/3G module from Sierra Wireless. Supports either of the following based on firmware load: LTE Band 13, or CDMA IS-856 (1xEV-DO Revision A) and CDMA IS-2000 networks. Two antenna ports available. Additional WAN options will be available, and will vary by country; contact your local Motorola Solutions representative for details.
WAN 2 Slot Options	CPUs support dual-WAN radio board plus internal modem option supporting Band 14 (Public Safety) LTE. Two antenna ports available. Availability of factory option as well as field upgrade kit will vary by country; contact your local Motorola Solutions representative for details.

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 Options	SiRF IV Module option: supports NMEA 0183 (National Marine Electronics Association) protocol. Or Trimble Lassen iQ GPS Module option: supports NMEA 0183, TSIP (Trimble Standard Interface Protocol), TAIP (Trimble ASCII Interface Protocol), and DGPS (Differential Global Positioning System) protocols.
Dead Reckoning GPS Option	Sensor-based GPS Receiver, containing the U-Blox LEA 6R 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. Low voltage cranking support. Graceful shutdown at low voltage thresholds.

	12V	24V
Input Voltages	Wide input voltage range, 11-33VDC, with no loss of functionality	
Electrical Transients	Meets ISO7637-2	
Current Consumption (CPU)	OFF (main switch ON) 2mA Standby Mode 0.3A (fans OFF) Operation: Typical 3A; Max 7A	OFF (main switch ON) 2mA Standby Mode 0.2A (fans OFF) Operation: Typical 1.7A; Max4.5A
Current Consumption (CPU + ALPR board with four imaging units)	Operation: Max 9.5A	Operation: Max 6A
Current Consumption (12.1" Displays)	OFF (main switch ON) 10mA 6mA Standby Mode 0.4A	OFF (main switch ON) Standby Mode 0.25A
Std. Brightness	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 Standby Mode: < 100 mA Operation: Typical 1.5A; Max 2.5A	OFF: <6 mA Standby Mode: < 70mA Operation: Typical 1A; Max 1.5A

GENERAL SPECIFICATIONS

MW810 R2.0 system components have been designed to be backwards-compatible with MW810 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 in Displays	8.4 in Display	Keyboard*
Physical Size (H x W x D)	2.8 x 7.4 x 9.4 in 7.2 x 18.9 x 24.0 cm	10.6 x 11.5 x 1.9 in 27.0 x 29.2 x 4.9 cm	7.1 x 9.1 x 1.7 in 18.1 x 23.0 x 4.36 cm	1.26 x 12.6 x 8.0 in 3.2 x 32.0 x 20.3 cm
Weight	8.8 lbs (4.0 kg)	Std. Brightness 6.1 lbs (2.8 kg) (2.75 kg) High Brightness 6.6 lbs (3.0 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 Solutions representative for details on accessories and vehicle mounting options.

WARRANTY

3-Year Warranty is Standard; see User Guide for details. Additional coverage options are available. Contact your local Motorola Solutions representative for details.

ENVIRONMENTAL AND DURABILITY

MW810 R2.0 is tough enough to thrive in extreme environmental conditions. MW810 meets the most robust set of standards of any product in its class, including tests shown below as well as other Motorola-proprietary test methods; summary test reports available upon request.

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.
Low Temperature: Storage	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: 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

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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 G_{rms}, 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 8 kV contact and 15 kV air, which is above required levels of 4 kV contact and 8 kV air.

REGULATORY ACCEPTANCE NUMBERS AND STANDARDS REFERENCES

MW810 R2.0 is tested for safety as well as optimal performance with multiple wireless networks. MW810 R2.0 components are RoHS compliant.

FCC Acceptance Numbers

MC7750 (from Sierra Wireless)	FCC ID: N7NMC7750
WLAN Radio	FCC ID: PD9633ANH
Bluetooth	FCC ID:QDS-BRCM1043

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	Pending

Canada

Radiated Emission	ICES-003, Class B
Radio Acceptance (RF)	Bluetooth: IC 4324A-BRCM1043, WLAN: IC 1000M-633ANH 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 non immunity related) 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

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