

1139 MC9x Smartcard Reader User Guide



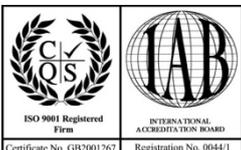
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History

Version	Date	Modifications
0.1	9 th February 2012	Pre-release version for UL only
0.2	14 th March 2012	UL Only. Update to charger input ratings
1.0	20 th July 2012	First release before Hazloc certification

1 Introduction

Technology Solutions' 1139 Smartcard reader is intended for use with the Motorola MC9090 and MC9190 series of Mobile Computers. It provides the Mobile Computer with the ability to read contact smartcards including the Common Access Card (CAC).

The 1139 Smartcard reader is powered by the host Mobile Computer. Connectors on the bottom of the 1139 Smartcard reader allow USB and charging connections to the host Mobile Computer without removing the 1139 Smartcard reader.

2 Parts of the 1139 Smartcard reader

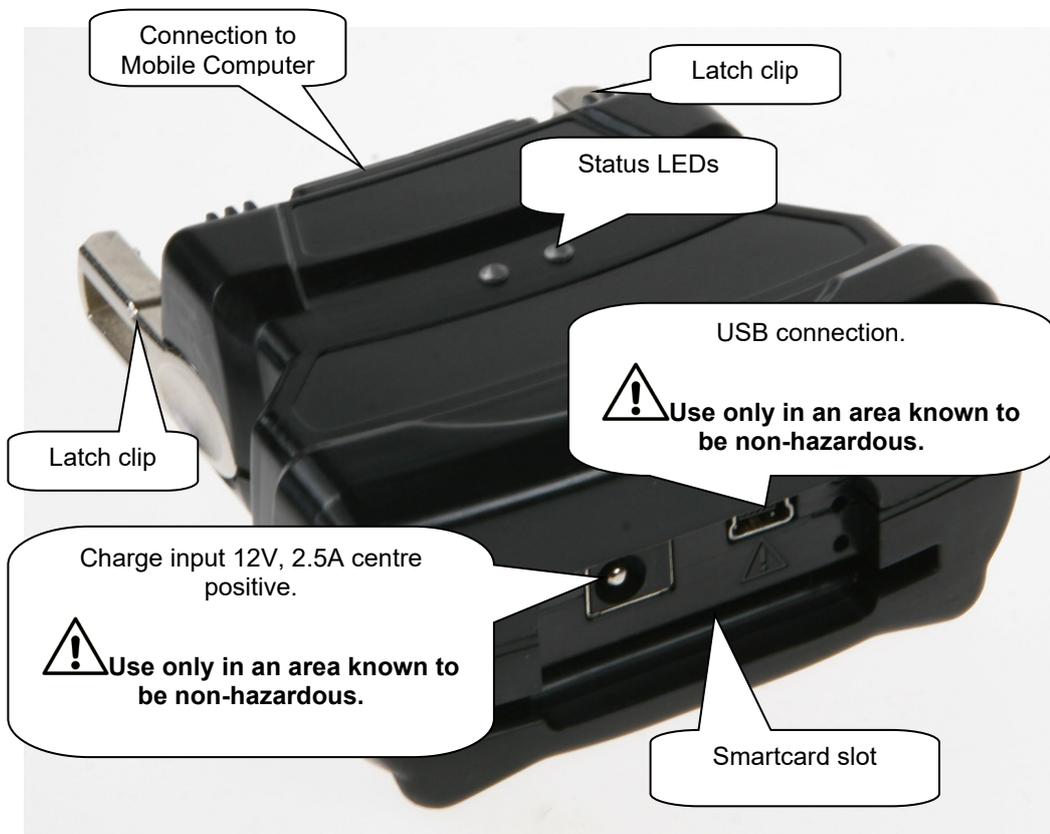


Figure 1: Parts of the 1139 Smartcard reader

3 Attaching to a Mobile Computer

<p>1</p>		<p>Line the latch clips on the 1139 Smartcard reader up with the slots in the side of the Mobile Computer.</p>
<p>2</p>		<p>Push the 1139 Smartcard reader onto the Mobile computer until the latch clips click and the 1139 Smartcard reader is secured on both sides.</p>

Figure 2: Attaching to a Mobile Computer

4 Detaching from a Mobile Computer

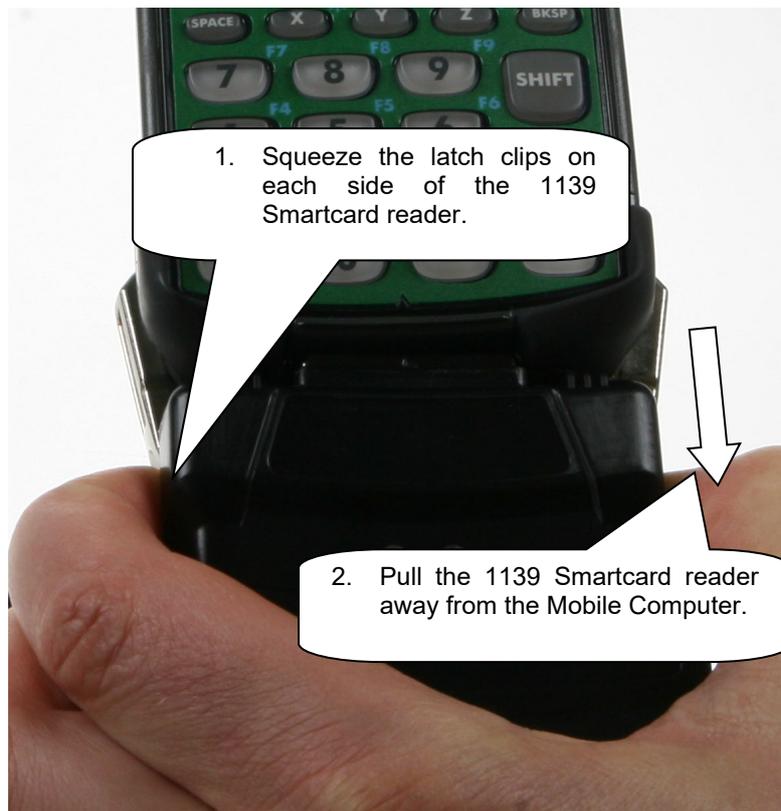


Figure 3: Detaching from a Mobile Computer

5 Status LEDs



Figure 4: Status LEDs

The 1139 Smartcard reader has two LEDs that indicate the operating status of the 1139 Smartcard reader. The Green LED lights when the driver is correctly loaded and the Mobile Computer is powered up. The Orange LED lights whenever there is communication with a smartcard.

6 USB and Charge connections



The USB and Charge connections must only be used in areas known to be non-hazardous.

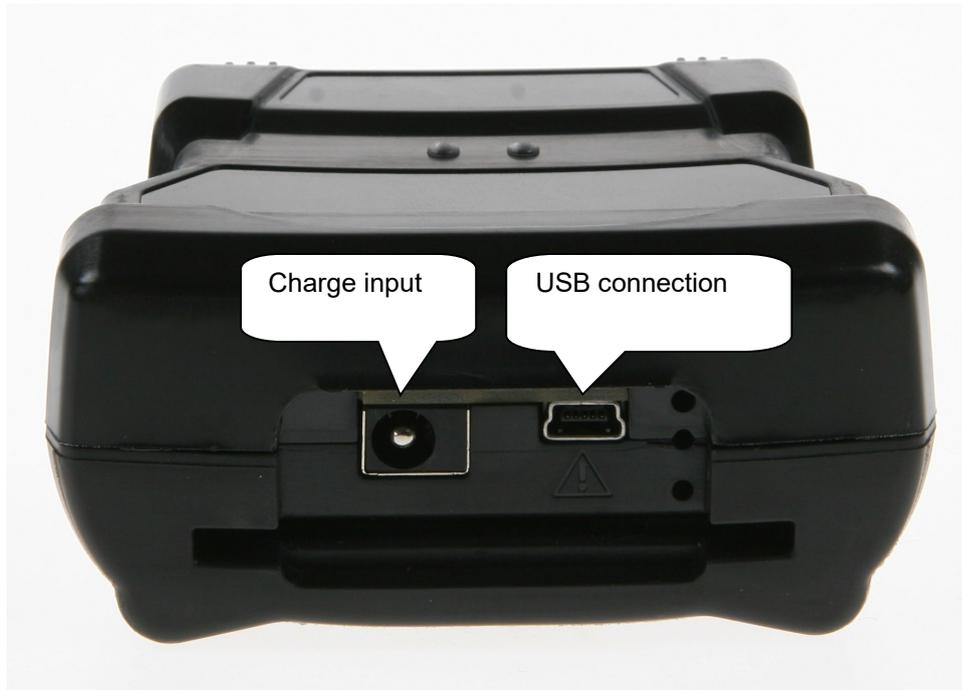


Figure 5: USB and Charge connections

The Charge input and USB connection are connected through the 1139 Smartcard reader directly to the Mobile Computer.

The Charge input of the Mobile Computer is rated at 11-16V DC, 2A maximum. The connector is a 2.5mm pin, centre positive and is intended for use with the Motorola 50-14000-148R or equivalent power supply.

The USB connection is a standard mini-USB connector. The USB connection can act as USB slave (for ActiveSync connection) or USB host (for example for a printer) where the host Mobile Computer can support USB hosting.

7 Inserting a Smartcard



Figure 6: Inserting a Smartcard

The Smartcard must be inserted with the contacts facing upwards, as shown in Figure 6. Push the card in until it reaches the end stop.

8 Software

8.1 Driver installation

The driver required for the 1139 Smartcard reader can be deployed as part of any application written for use with the 1139 Smartcard reader. If the application does not deploy the driver then it must be installed manually.

To install the driver:

1. Copy 1139 Smartcard Driver.cab to the Mobile Computer.
2. Run 1139 Smartcard Driver.cab, accepting the default location for installation.
3. Attach the 1139 Smartcard reader to the Mobile Computer.
4. Warm boot the Mobile Computer with the 1139 Smartcard reader attached. A warm boot is performed by pressing and holding the power button on the Mobile Computer. After approximately five seconds the screen will go blank and the Mobile Computer will start to reboot. As the Mobile Computer boots the green LED will light.

8.2 Motorola Hotfix installation

On MC9190 Mobile Computers running Operating System versions 1.34.08 and 2.41.003 a Motorola Hotfix is required to ensure correct operation of the serial port. This is available as SPR21697 on the Motorola Support website and is also provided for convenience along with the Smartcard reader driver.cab file. This hotfix is only required for the MC9190 operating systems listed above and should be deployed before installing the Smartcard reader driver.cab. Install the hotfix by copying the file (LowBaudrate.cab) to the Application folder on the Mobile computer and running it.

8.3 Software support

To make full use of the functionality of the 1139 Smartcard reader a customised software application will be required. The driver that is provided integrates with the Microsoft Smartcard Resource Manager that is part of the Windows Mobile operating system. This allows the generic Microsoft API to be used to communicate with a smartcard inserted into the 1139 Smartcard reader. The Microsoft documentation for this API can be found here:

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/wcesecurity5/html/wce50conSmartCardResourceManager.asp>

The 1139 Smartcard reader name is "OMNIKEY CardMan 3111 0". This will be returned when using list readers to enumerate available readers or can be passed as a constant for the reader name parameter in the API functions.

This API can also be used from managed code using P/Invoke. There are numerous examples on the web and commercial solutions such as the Smartcard API (Windows CE) from CardWerk (<http://smartcard-api.com/index.shtml>).

8.4 Configuration for use with Apriva Guard

The driver package includes a file 'AprivaFor1139.cab'. This is provided as a convenient way to configure AprivaGuard to use the 1139 Smartcard reader by creating the necessary registry keys. Run this file to create the registry keys.

9 Troubleshooting and Maintenance

9.1 Maintenance

For trouble-free service treat the 1139 Smartcard reader in the same way as you would the Mobile Computer and observe the following tips when using the 1139 Smartcard reader:

- + Although the 1139 Smartcard reader is water and dust resistant, do not expose it to rain or moisture for an extended period of time.
- + Protect the 1139 Smartcard reader from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.
- + Do not store or use the 1139 Smartcard reader in any location that is extremely dusty, damp or wet.

9.2 Troubleshooting

Symptoms	Possible Cause	Action
The software application on the Mobile Computer cannot communicate with the 1139 Smartcard reader or with a card inserted in the reader. The green LED is not lit.	The 1139 Smartcard reader is not firmly connected to the Mobile Computer.	Detach and reattach the 1139 Smartcard reader from the Mobile Computer.
	The driver has been unloaded. This happens if the Mobile Computer is warm booted without the 1139 Smartcard reader attached.	Make sure the 1139 Smartcard reader is attached and warm boot the terminal by pressing and holding the power button.
	The driver has not loaded correctly.	Make sure the 1139 Smartcard reader is attached and warm boot the terminal by pressing and holding the power button. If the green LED flashes briefly whilst the Mobile Computer boots but does not stay lit then the Hotfix (Section 8.2) may not have been installed.
The software application on the Mobile Computer cannot communicate with the 1139 Smartcard reader or with a card inserted in the reader. The green LED is lit.	Another application has opened the serial port (COM1).	Check that no other application which uses the serial port is running. Examples are Keyboard Wedge applications and GPS applications.
	The software application has not been configured to use the 1139 Smartcard reader.	Check with the software vendor.

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Symptoms	Possible Cause	Action
The software application on the Mobile Computer cannot communicate with a card inserted in the 1139 Smartcard reader. The green LED is lit.	The card has not been inserted correctly.	Check that the card has been inserted fully, and that the gold contacts are facing upwards.
	The card contacts are dirty or damaged.	Check and clean the contacts.
The Mobile Computer can be suspended by pressing the power button, but when left to automatically suspend it immediately resumes.	When the Mobile Computer suspends it turns off power to the 1139 Smartcard reader. Power removal has the same effect as removing the Mobile Computer from a cradle. The Mobile Computer may be configured to wake up on removal from cradle.	Go to the Power Management screen (Start > Settings > System > Power usually). Select the 'Wakeup' tab. Scroll down the list of WakeupDevices and make sure that 'Cradle Remove' and 'Cradle Insert' are set to 'No' for PwrKey and Other. Tap 'Apply'.

10 Regulatory information

10.1 Information to the user - FCC

- 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, and
 - (2) This device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

10.2 Information to the user – Industry Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

11 Health and Safety Recommendations

Ergonomic Recommendations

Caution: In order to avoid or minimize the potential risk of ergonomic injury, follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

- + Reduce or eliminate repetitive motion
- + Maintain a natural position
- + Reduce or eliminate excessive force
- + Keep objects that are used frequently within easy reach
- + Perform tasks at correct heights
- + Reduce or eliminate vibration
- + Reduce or eliminate direct pressure
- + Provide adjustable workstations
- + Provide adequate clearance
- + Provide a suitable working environment
- + Improve work procedures.

For vehicle installation and use

An air bag inflates with great force. DO NOT place objects, including either installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles (including safety systems). Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

Power Supply

Use only Motorola-approved cradles, chargers and power supplies with the 1139 Smartcard reader. Use of an alternative power supply will invalidate any approval given to this device, void the warranty for the product and may be dangerous.

12 Waste Electrical and Electronic Equipment (WEEE)

For EU Customers: All products at the end of their life must be returned to TSL for recycling. For information on how to return product please contact TSL.

13 Warranty

(A) Warranty TSL's hardware Products are warranted against defects in workmanship and materials for a period of twelve (12) months from the date of shipment, unless otherwise provided by TSL in writing, provided the Product remains unmodified and is operated under normal and proper conditions. Warranty provisions and durations on software, integrated installed systems, Product modified or designed to meet specific customer specifications ("Custom Products"), remanufactured products, and reconditioned or upgraded products, shall be as provided in the applicable Product specification in effect at the time of purchase or in the accompanying software license.

(B) Spare Parts Spare parts (i.e. parts, components, or subassemblies sold by TSL for use in the service and maintenance of Products) are warranted against defects in workmanship and materials for a period of thirty (30) days from the date of shipment. Spare parts may be new or originate from returned units under the conditions set forth in subsection D below.

(C) Repair of TSL branded hardware For repairs on TSL branded hardware Products under this Agreement, including repairs covered by warranty, the repair services provided are warranted against defects in workmanship and materials on the repaired component of the Product for a period of thirty (30) days from the shipment date of the repaired Product, or until the end of the original warranty period, whichever is longer. Any such defects shall be notified to TSL in writing within 7 days of the same becoming apparent.

(D) Product Service Products may be serviced or manufactured with parts, components, or subassemblies that originate from returned products and that have been tested as meeting applicable specifications for equivalent new material and Products. The sole obligation of TSL for defective hardware Products is limited to repair or replacement (at TSL's option) on a "return to base (RTB)" basis with prior TSL authorisation.

Customer is responsible for prompt shipment to TSL and assumes all costs and risks associated with this transportation; return shipment to the Customer will be at TSL's expense. Customer shall be responsible for return shipment charges for product returned where TSL determines there is no defect ("No Defect Found"), or for product returned that TSL determines is not eligible for warranty repair. No charge will be made to Buyer for replacement parts for warranty repairs. TSL is not responsible for any damage to or loss of any software programs, data or removable data storage media, or the restoration or reinstallation of any software programs or data other than the software, if any, installed by TSL during manufacture of the Product.

(E) Original Warranty Period Except for the warranty applying solely to the repaired component arising from a repair service as provided in Section C above, the aforementioned provisions do not extend the original warranty period of any Product that had either been repaired or replaced by TSL.

(F) Warranty Provisions The above warranty provisions shall not apply to any Product

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(iii) which has been subjected to unusual physical or electrical stress, abuse, or accident, or forces or exposure beyond normal use within the specified operational and environmental

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Technology Solutions UK Ltd (TSL[®]), part of HID Global, is a leading manufacturer of high performance mobile RFID readers used to identify and track products, assets, data or personnel.

For over two decades, TSL[®] has delivered innovative data capture solutions to Fortune 500 companies around the world using a global network of distributors and system integrators. Specialist in-house teams design all aspects of the finished products and software ecosystems, including electronics, firmware, application development tools, RF design and injection mould tooling.

TSL[®] is an ISO 9001:2015 certified company.



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