

Modular Vehicle Communication Interface (MVCI)

User Guide



Safety Definitions

Follow all DANGER, WARNING, IMPORTANT, and NOTE messages in this User Guide. These safety messages are defined and formatted as follows:

⚠ DANGER **DANGER or WARNING:** Means you risk bodily harm and/or possible loss of life.

IMPORTANT: Means the information demands special attention, or that you risk damage to the vehicle or the tool.

NOTE: *Provides clarity and helpful tips.*

The safety messages cover situations BOSCH is aware of. BOSCH cannot know, evaluate, or advise you as to all of the possible hazards. You must be certain that any conditions or service procedures encountered do not jeopardize your personal safety.

Consult the User Guide whenever the DANGER or WARNING symbol (⚠) appears on the MVCI. It is important to follow the actions detailed in the User Guide.

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Disclaimer

All information, illustrations, and specifications contained in this User Guide are based on the latest information available at the time of publication. The right is reserved to make changes at any time without obligation to notify any person or organization of such revisions or changes. Further, BOSCH shall not be liable for errors contained herein or for incidental or consequential damages (including lost profits) in connection with the furnishing, performance, or use of this material. Screens shown in this manual may vary in appearance due to the product software version at the time of shipment.

US and Canada Regulatory and Compliance Information

This device complies with part 15 of the FCC Rules. Operation is subject to these 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.

NOTE: *This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.*

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

In accordance with part 15 of the FCC rules, the user is cautioned that any changes or modifications not expressly approved by BOSCH Automotive Service Solutions LLC could void the user's authority to operate the equipment.

Canadian EMC Class A

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

Cet appareillage de la classe A est conforme à ICES-003 Canadien.

CE Mark EMC Directive

This MVCI has been marked with the CE mark. This mark indicates compliance with EEC Directives EN61326-1: 2006.

ANATEL Regulatory and Compliance Information

This equipment operates on a secondary basis and, consequently, must accept harmful interference, including from stations of the same kind, and may not cause harmful interference to systems operating on a primary basis.

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Safety Precautions

⚠ DANGER

When an engine is running, keep the service area WELL VENTILATED, or attach a building exhaust removal system to the engine exhaust system. Engines produce carbon monoxide, an odorless, poisonous gas that causes slower reaction time and can lead to serious personal injury or loss of life.

⚠ WARNING

- Wear an American National Standards Institute (ANSI) approved eye shield when testing or repairing vehicles.
- Set the parking brake and block the wheels before testing or repairing a vehicle. It is especially important to block the wheels on front-wheel drive vehicles because the parking brake does not hold the drive wheels.
- Do not drive the vehicle and operate the tool at the same time. Any distractions may cause an accident. Have one person operate the tool as another person drives the vehicle.
- Maintain adequate clearance around moving components or belts during testing. Moving components and belts can catch loose clothing, body parts, or test equipment, and cause serious damage or personal injury.
- Refer to the service manual for the vehicle being serviced. Adhere to all diagnostic procedures and precautions. Failure to do so could result in personal injury or otherwise unneeded repairs.
- The MVCI vehicle I/O connector is to be connected to the vehicle Data Link Connector (DLC) only. Signals on these lines are limited to 32V DC (UL 61010-1 Category I), and are never to be connected to AC voltage (UL 61010-1 Category II, III, and IV).
- Replace with rechargeable 2000mAh minimum AA Nickel-Metal Hydride (NiMH) batteries only.

IMPORTANT:

- To avoid damaging the tool or generating false data, make sure the vehicle battery is fully charged and the connection to the vehicle DLC is clean and secure.
- Do not place the tool or communication cable near the vehicle's ignition coils. Strong electromagnetic interference can damage the tool.
- Never disconnect or reconnect any electrical connector while the ignition is on. Control unit damage may result.
- The MVCI unit is designed to operate within -4°F to 140°F (-20°C to 60°C) ambient temperature range. The surface of the MVCI could appear warm after extended periods of use - this is normal. Users should be careful when holding a unit that has been exposed to very high ambient temperatures, over 104°F (40°C) for example.

General Information

The BOSCH Modular Vehicle Communications Interface (MVCI) is an interface box used to connect to a vehicle's data link connector (DLC). The MVCI is used to read information from a vehicle's electronic control units, and send this information to a PC application. The MVCI communicates with the PC through a USB, Ethernet, or an SD wireless card. The PC application software sends commands to the MVCI to read diagnostic trouble codes, read data from the vehicle's ECUs, or do special device control tests on the vehicle.

The MVCI is typically used in an automotive service garage. It is used in and around the vehicle, including the passenger compartment and/or the engine compartment. Read and understand the Safety Precautions section of this User Guide before using the MVCI on a vehicle.

Connect the MVCI to the PC through one of the methods presented above. See the MVCI Software Installation section of this User Guide to determine the best connection method.

Connect the MVCI to the DLC to communicate with the vehicle. See Connecting to the Vehicle section of this User Guide for additional information. The MVCI requires power from the vehicle to operate properly.

The MVCI contains two (2) rechargeable NiMH AA batteries. These batteries are charged whenever power is applied to the MVCI through the vehicle DLC. The internal batteries may also be recharged by supplying power to the MVCI from the Power Adapter Port. Use the supplied AC Power Adapter (BOSCH replacement P/N H547571) only. If the batteries need to be replaced, replace them with 2000mAh NiMH AA batteries (BOSCH replacement P/N H550175). See the MVCI Component Descriptions section of this User Guide for battery location information. Make sure the batteries are oriented properly when installing.

Failure to operate the MVCI as stated in this User Guide may impair the protection mechanisms designed into the MVCI.

MVCI Maintenance and General Care

If you need to clean your MVCI, you can clean the unit by wiping it with a soft cloth. The soft cloth can be slightly damp with water or water and diluted mild detergent. Be sure to firmly wring excess water from the cloth. Do not use harsh chemical cleaners (benzene, thinner, rubbing alcohol, household cleaners, cosmetics, etc.) as these may damage the surface (for example, discoloration). Do not directly spray or add water to the surfaces of the MVCI. If liquid enters the MVCI, it may damage the unit.

If you spill any liquids on the MVCI, wipe them off immediately with a soft cloth.

Cables and Cable Connections

To avoid damaging the MVCI, the cards, or the cables, use the following information to help when attaching cables or connectors to the MVCI, or plugging in the SD wireless or the SD memory cards:

NOTE: Do not remove the SD card unless a problem has occurred (see SD Card Removal/Installation for more information).

- Use only parts supplied or recommended for use with your MVCI.
- Make sure the connector is properly oriented to make sure the terminals fit properly.
- Do not try to force a connector. If it doesn't connect properly, check the condition and the orientation of the connector. Also check the alignment of the terminals to make sure they are not bent or broken. If they are, replace the applicable cable or tool.
- If a connector has screws for locking the connection, fasten the screws firmly.
- Do not carry the MVCI by attached cables or forcefully pull on the cables.

Battery Installation and Replacement

The MVCI contains two (2) rechargeable NiMH AA batteries. The MVCI is not designed to operate on these batteries.

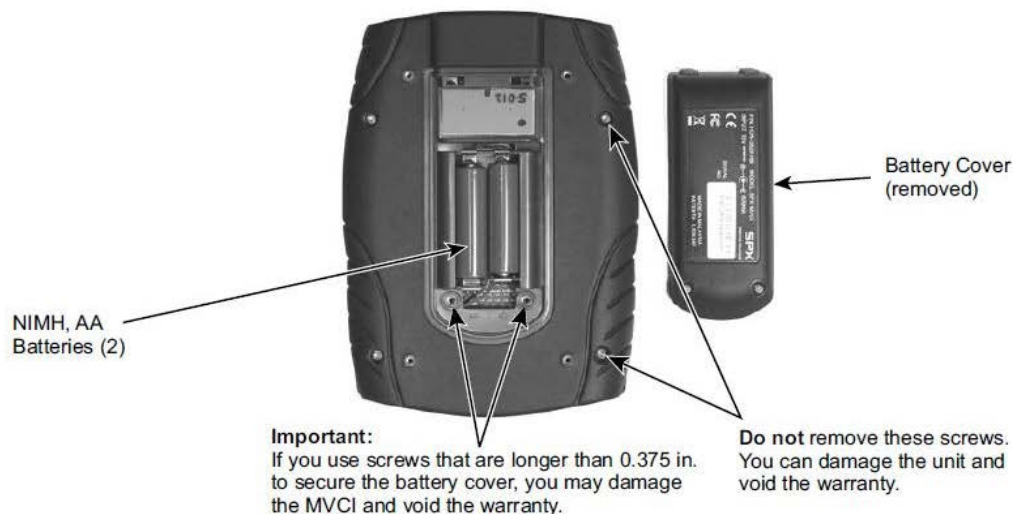
They are a back-up power source when the MVCI is disconnected from the vehicle DLC or its external power adapter.

These batteries are charged whenever the MVCI is connected to a vehicle and receiving power from the vehicle or plugged in using the AC power adapter. Use the supplied AC Power Adapter (BOSCH replacement P/N H547571) only. If the batteries need replacing, use 2000mAh NiMH AA batteries (BOSCH replacement P/N H550175).

NOTE: The batteries do not come installed in the MVCI.

To install or replace the batteries:

1. With a Phillips screwdriver, remove the battery cover.



2. Insert the batteries, making sure they are properly oriented.
3. Reinstall the battery cover.

SD Card Removal/Installation

NOTE: Do not remove the SD memory card or the SD wireless card unless a problem has occurred.

If you need to remove the SD card or the SD wireless card, do this:

1. Lift the top port cover.



2. Push the SD card inward and release. The SD card releases and partially ejects.

NOTE: The SD wireless card has a retainer clip. To remove it, have the MVCI keypad facing you, then slide the retainer clip to the right.



3. Remove the SD card.

MVCI Component Descriptions

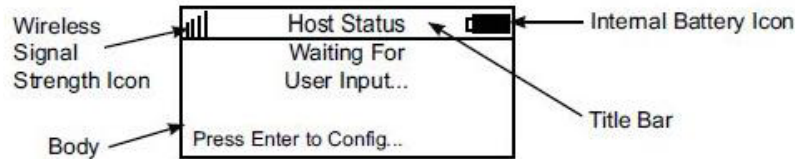




MVCI Screen Icon Descriptions

NOTE: Screens shown in this manual may vary in appearance due to the product software version at the time of shipment.

The LCD screen is divided into two parts: the title bar, and the body.



The title bar is divided into three parts:

- Wireless signal strength (left side)
- Current screen being viewed (center)
- Vehicle or internal battery condition (right side)


The wireless icon appears when a wireless profile is detected.


Battery Icon Descriptions


When the MVCI is powered by an external power source, the battery icon displays as an internal charging symbol.

NOTE: The MVCI battery charger employs a temperature-controlled charging algorithm. It is normal to display battery charging animation when the MVCI is powered by an external power source, even if the batteries are fully charged.

 **Battery Charging Animation**
The MVCI is charging the batteries.

 **Charged Battery Icon**
The charge cycle is completed.

 **Battery Idle Symbol**
Appears when the MVCI is powered by the external adapter or the vehicle's power, and the MVCI battery charger is turned off because the internal temperature of the MVCI is above 140°F (60°C).

 **No Internal Battery Symbol**
If the MVCI is plugged into a vehicle or using the external adapter, but does not have internal batteries installed, the battery icon has an 'X' on it. Refer to the Frequently Asked Questions section of this User Guide for more details.

MVCI LED Descriptions



MVCI Software Installation

MVCI Application Installation

Install the Honda Diagnostic System (HDS) software according to the *Installation Instructions for Honda Diagnostic System (HDS) PC Software* found on ISIS under General Publications > Tool Information.

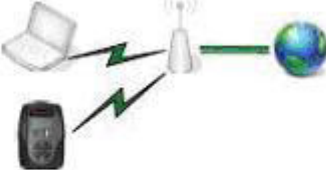



NOTE:

- The MVCI does not come with a CD. The software and updates are included in the HDS software image.
- The MVCI software components are installed to your PC with the HDS software. You will be prompted to update your MVCI when you use it with the HDS software on your PC.

Network Connections Overview

There are three possible network connections: Ethernet, Wireless, and USB. Additionally, the MVCI can act as a DHCP server for any of these connections.

- **Ethernet Connection** – The Ethernet driver automatically communicates with the MVCI if the MVCI's external power source is plugged in and the MVCI is connected to the PC with an Ethernet cable. Typically, you do not need to set up the MVCI when you use an Ethernet connection. If you need more help setting up the MVCI using an Ethernet cable, refer to the Ethernet setup.
- **Wireless Connection** – If you choose a wireless connection, refer to the Wireless Network setup for instructions. Make sure the MVCI communicates with the PC using the Ethernet or USB cable before using a connection.
- **USB Connection** – The USB driver automatically recognizes the MVCI if the MVCI's external power source is plugged in and the MVCI is connected to the PC with the USB cable. Typically, you do not need to set up the MVCI when you use a USB connection. If you need more help setting up the MVCI using a USB cable, refer to the USB Device setup.
- **DHCP Server** – The DHCP server setting allows the MVCI to act as a DHCP server for wireless (peer to peer only), Ethernet and USB operation. For most installations, the factory default settings should be used. If you need more help setting up the MVCI using a DHCP server, refer to DHCP Server setup.

| Connection Options Overview | | | |
|---|---|--|---|
| Connection Methods | Connection Topology | Advantages & Disadvantages | Connection Image |
| WiFi Access Point (Infrastructure) Mode | <ul style="list-style-type: none"> • The PC accesses the internet through the dealer's wireless network. • The MVCI and PC communicate to each other through the dealer's wireless network. | <p>Advantages</p> <ul style="list-style-type: none"> • Provides greatest MVCI and PC mobility <p>Disadvantages</p> <ul style="list-style-type: none"> • Most complex to configure and setup • You cannot use this setup on vehicle test drives • WPA encryption is not supported |  |
| Ethernet + WiFi | <ul style="list-style-type: none"> • The PC accesses the internet through the dealer's wireless network. • The MVCI and PC communicate to each other through an Ethernet cable. | <p>Advantages</p> <ul style="list-style-type: none"> • Works with 64bit OS without additional drivers. • Provides good PC mobility <p>Disadvantages</p> <ul style="list-style-type: none"> • Some loss of MVCI mobility • You may need to moderately reconfigure your PC |  |
| USB + WiFi | <ul style="list-style-type: none"> • The PC accesses the internet through the dealer's wireless network. • The MVCI and PC communicate to each other through a USB cable. | <p>Advantages</p> <ul style="list-style-type: none"> • Provides good PC mobility • Requires minimum PC configuration <p>Disadvantages</p> <ul style="list-style-type: none"> • Some loss of MVCI mobility • MVCI may be susceptible to electrostatic damage under some shop conditions |  |
| WiFi Ad-Hoc Mode (Peer-to-Peer) | <ul style="list-style-type: none"> • The PC accesses the internet through the dealer's hardwired network. (Wireless access to the internet / ISIS is not available.) • The MVCI and PC communicate to each other through the wireless connection. | <p>Advantages</p> <ul style="list-style-type: none"> • Works with 64bit OS without additional drivers. <p>Disadvantages</p> <ul style="list-style-type: none"> • PC cannot access internet / ISIS wirelessly • You need to reconfigure your HDS PC Ethernet settings to work with the MVCI |  |

Honda Diagnostic System (HDS) Setup

1. Double-click the HDS shortcut icon on the PC desktop to start the HDS.



2. On the HDS Welcome screen, click the F12 tab.



NOTE: Make sure the latest version of HDS software is installed. Check the latest version by logging into in.honda.com and selecting **SERVICE>Service Bay>Diagnostic Tools Software Version**.

3. On the Set-up Details screen, check for HDS software version.

A screenshot of the 'Set-up Details' window in the Honda Diagnostic System. The window has a blue header bar with 'Set-up' on the left and 'F12' on the right. The main area is titled 'Set-up Details' and contains a list of configuration items. The 'Software Version' is '3.009.016.USE.WIN7', which is circled in red. Other items include 'Interface Device Software' (Not available), 'Database Version' (23-May-2013), 'OS Version' (Windows 7), 'Dealer Location' (XXX), 'Country' (UNITED STATES), 'License Days Remaining' (4 Days), 'Dealer Number' (XXXXXX), 'Market' (USA), 'DTC Display' (SAE), 'Service Information Search Server URL' (http://localhost:8501/HExt/), 'Default DTC Information' (Service Information), and 'MVCI Wireless Connection Manager AutoRun' (OFF). The right side of the window has a vertical toolbar with icons for print, save, and other functions.

| Set-up Details | |
|--|-----------------------------|
| Software Version: | 3.009.016.USE.WIN7 |
| Interface Device Software: | Not available |
| Database Version: | 23-May-2013 |
| OS Version: | Windows 7 |
| Dealer Location: | XXX |
| Country: | UNITED STATES |
| License Days Remaining: | 4 Days |
| Dealer Number: | XXXXXX |
| Market: | USA |
| DTC Display: | SAE |
| Service Information Search Server URL: | http://localhost:8501/HExt/ |
| Default DTC Information: | Service Information |
| MVCI Wireless Connection Manager AutoRun : | OFF |

HDS MVCI Firmware Update

The MVCI software can be updated automatically or manually. If the MVCI does not have the latest software installed, the HDS automatically takes you to the MVCI reprogramming screen. For more information about automatic updating of the MVCI firmware, see Automatic Firmware Updates.

To manually start the MVCI reprogramming, click the Program the MVCI button on the HDS Welcome screen, and see Manual Firmware Updates.

IMPORTANT: Do NOT unplug the external power plug or disconnect the communication cable while the MVCI is being reprogrammed. Do not interrupt the reprogramming procedure as you may damage the MVCI. The firmware update process takes about 7 minutes.

Automatic and Manual Firmware Updates

NOTE: Make sure the MVCI is powered through the vehicle DLC or the external power source. Connect the MVCI to the PC using the communication cable. *Update can complete using wireless but takes much longer.

1. For **Automatic** updating, start a new vehicle diagnostic session by clicking the **Select a new vehicle** button.

The following screen appears on the HDS when the MVCI needs its firmware updated. Click the green check mark to start the update. If the MVCI has the latest software installed, this screen won't appear.



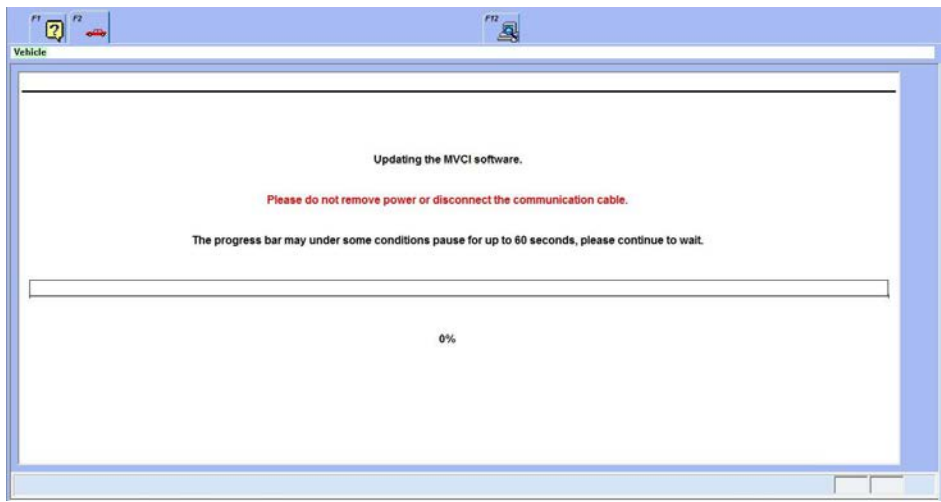
2. For **Manual** update, when on the HDS Welcome screen, click the Program the MVCI button.

The following screen appears. Click YES to continue, or click NO to close the dialog box and return to the HDS welcome screen.

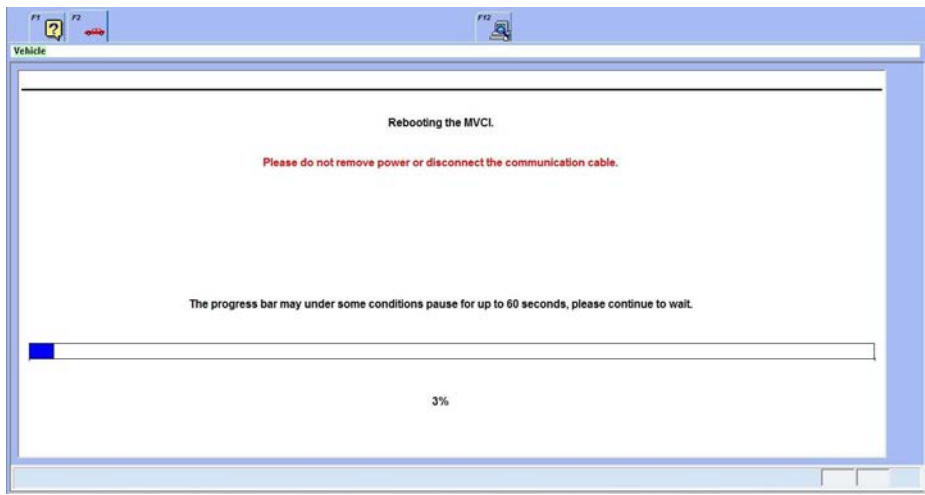


NOTE: Automatic and Manual Firmware Updates go through the same update process after initial update prompt.

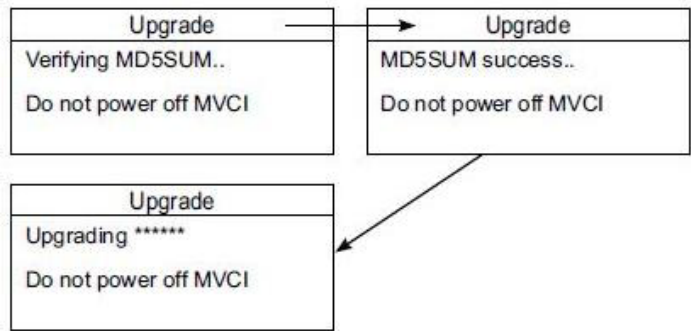
3. Wait for the MVCI firmware update to start.



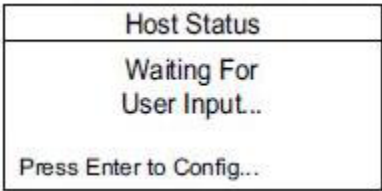
4. The MVCI automatically reboots. Follow the directions on the HDS screen. Do not disconnect the external power source or disconnect the MVCI from the PC.



After the MVCI reboots, it displays the following messages to indicate which files are being updated:



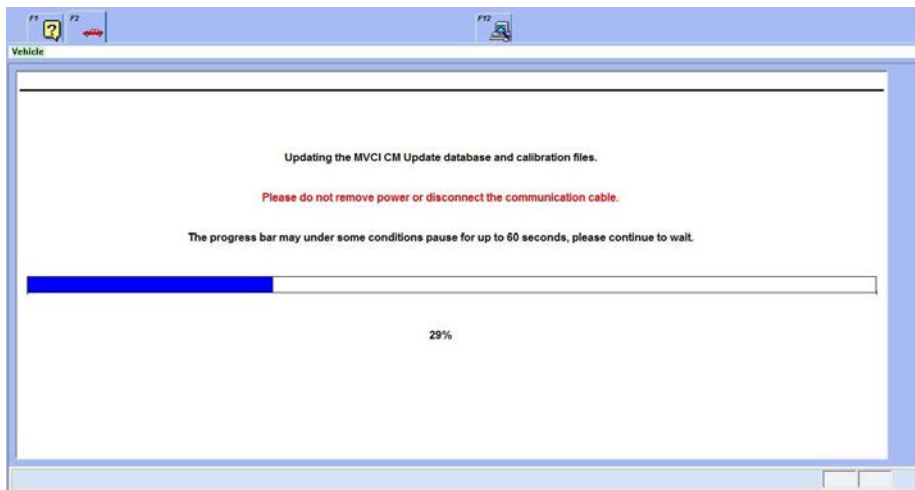
After the MVCI updates its firmware, the MVCI restarts and goes through its normal boot-up sequence.



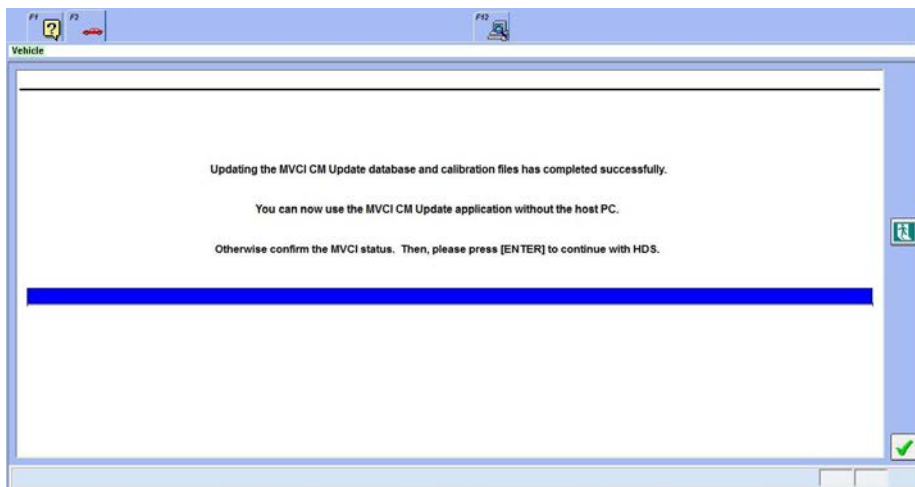
5. When the MVCI firmware update is done, the screen below is displayed on the HDS. Press Enter on your keyboard or click the green check mark in the lower right corner to start the CM Update.



The following update screen displays.



MVCI and CM updates are complete!



NOTE: The update sequence varies by the software content.

Connecting the MVCI to the Vehicle

1. Connect the data link connector (DLC) cable to the MVCI and to the DLC on the vehicle.
2. When you plug the MVCI into the vehicle's DLC and turn the ignition switch to ON (II), the MVCI automatically boots up.

NOTE: If the MVCI does not power up when connected to the DLC, see *Troubleshooting*.

3. To turn off the MVCI, disconnect it from the DLC, then press and hold the **ESC** button for about 5 seconds. The MVCI also turns off after being disconnected from an external power source for 30 seconds.

NOTE: To reboot the MVCI while it is connected to a power source, press and hold the **ESC** button for about 5 seconds.



User Config – Explanations, Set-up, and Customizing Settings

Anytime the MVCI receives power and boots up, the message on the Host Status screen is **Waiting for User Input...**

Press Enter to Config. Under the **User Config** menu, you find the following choices. Refer to the applicable page for more detailed information explaining the functions, proper tool setup, and user customization:

Switch Wireless (pg. 19)

DLC Voltage (pg. 19)

MVCI Setup (pg. 20)

User Customize (pg. 23)

CM Update Mode (pg. 25)

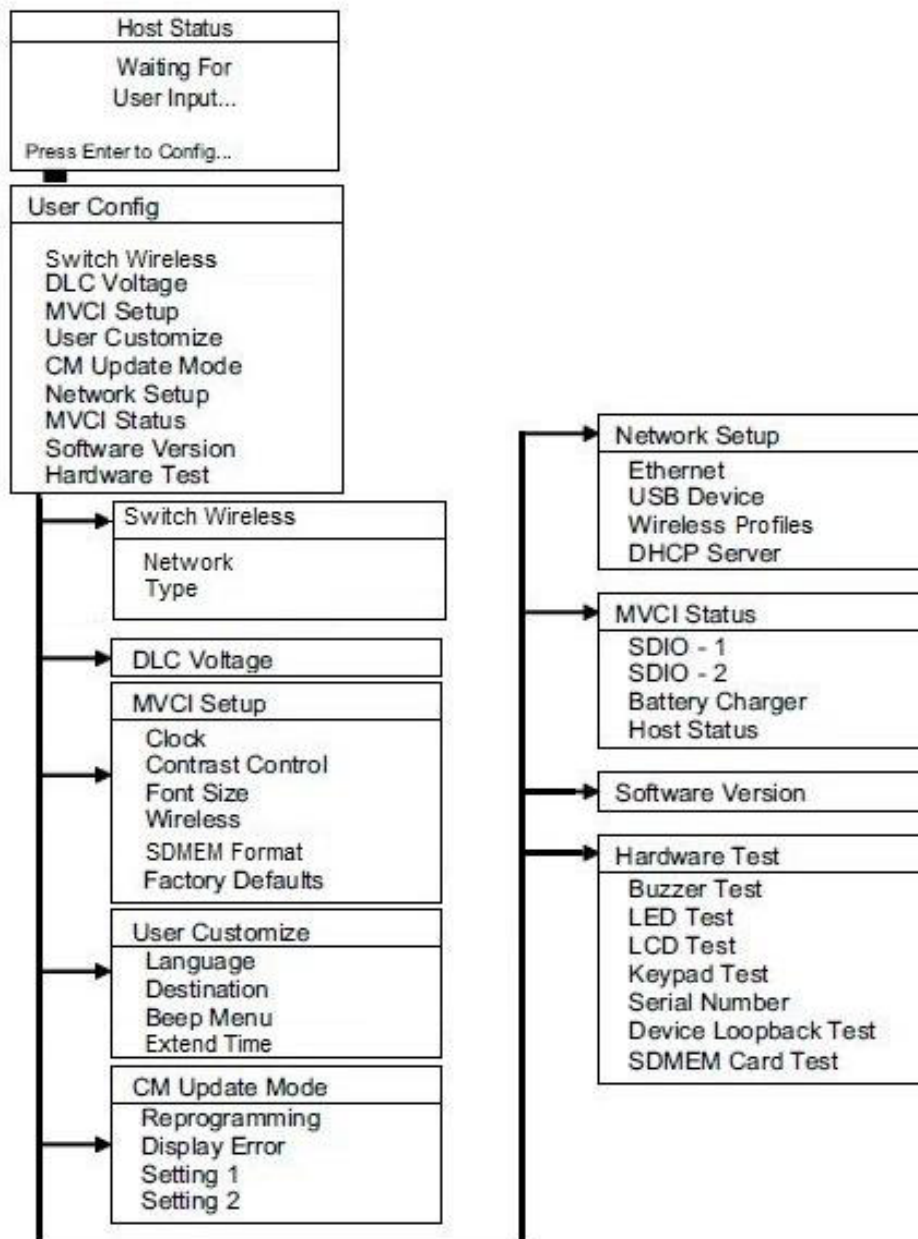
Network Setup (pg. 27)

Wireless Network Setup (pg. 30)

MVCI Status (pg. 34)

Software Version (pg. 36)

Hardware Test (pg. 36)



Switch Wireless

From the User Config menu, select Switch Wireless, then press **ENTER**.

The network SSID and profile type are displayed. Press ENTER to toggle between the adhoc and infrastructure profiles.

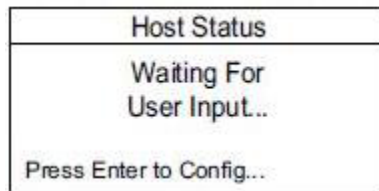
NOTE: For more information on wireless setup, see pg. 30.

DLC Voltage

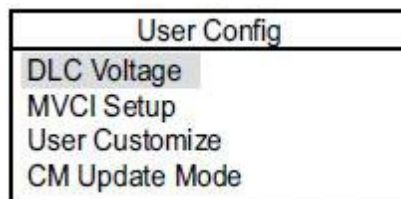
The DLC Voltage screen checks the vehicle's 12V battery voltage. To do this:

1. Power up the MVCI by connecting it to the vehicle diagnostic link connector (DLC) and turning the ignition switch to ON (II). After the MVCI boots up, press **ENTER** to access the User Config screen.

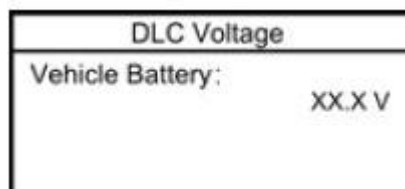
NOTE: Make sure the vehicle's 12V battery is fully charged. If the battery has a low state-of-charge, this may affect communication with the MVCI.



2. Select **DLC Voltage**.



3. Wait for the MVCI to display the vehicle's battery voltage. If the vehicle battery is below 12.1V, check the vehicle's battery using a Honda-approved battery diagnostic tool like the ED-18 or the GR8.



NOTE: The voltage shown is not accurate if the MVCI is plugged into the external power adapter.

MVCI System Setup

From the User Config menu, select MVCI Setup, then press **ENTER**.

These options are available:

- Clock
- Contrast Control
- Font Size
- Wireless
- SDMEM Format
- Factory Defaults

Clock

If you want to change the time, date and date format of the MVCI, select **View and Set**, then press **ENTER**.

To change the Calendar Data format, highlight **Format**, then press **ENTER**. Use the up/down buttons to change the Calendar Data format. Press **ENTER** to save the changes, or press **ESC** to cancel.

| Clock Setup | → | Format |
|-------------------------|---|--------------|
| Format: (mm.dd.yyyy) | | (mm.dd.yyyy) |
| Date: mm.dd.yyyy | | (dd.mm.yyyy) |
| 06.08.2009 | | (yyyy.mm.dd) |

To change the date, highlight the date, and press **ENTER**. Use the up/down buttons to change the number and the left/right buttons to move between the month, the day, and the year fields. Press **ENTER** to save the changes, or press **ESC** to cancel.

| Clock Setup |
|-------------------------|
| Format: (mm.dd.yyyy) |
| Date: mm.dd.yyyy |
| 06.08.2009 |

To change the time, highlight the time, then press **ENTER**. Use the up/down buttons to change the number and the left/right buttons to move between the hours, the minutes, and the seconds fields. Press **ENTER** to save the changes, or press **ESC** to cancel.

NOTE: The time is in 24 hour format.

Contrast Control

To change the MVCI screen contrast (brightness), select **View & Set** under Contrast Control, then press **ENTER**.

| MVCI Setup | |
|-------------------|------------|
| Clock: | View & Set |
| Contrast Control: | View & Set |

Use the left/right buttons to change the contrast percentage. Press **ENTER** to save the changes or press **ESC** to cancel.

| Contrast | |
|-------------------|-----|
| Contrast Control: | |
| ----- | 46% |

Font Size

The MVCI can display a large font or a small font.

To change the font size, select **Small Font** under Font Size, then press **ENTER**.

- NOTE:**
- The factory default is **Small Font**.
 - Large font is not available on all screens.

| MVCI Setup | |
|-------------------|------------|
| Contrast Control: | View & Set |
| Font Size: | Small Font |

Highlight the desired option, then press **ENTER** to save the changes, or press **ESC** to cancel.

| Font Size | Font Size |
|--------------------------|--------------|
| Small Font Large Font | Saving . . . |

- You can also use the keypad buttons to change the font size:
- To display large font, hold the right arrow for at least one second. The MVCI changes to large font.
 - To display small font, hold the left arrow for at least one second. The MVCI changes back to small font.

Wireless

This option allows you to enable or disable the wireless feature.

NOTE: For U.S. users, keep the MVCI factory default setting **Enable**.

To change the wireless option, select **Enable** under Wireless, then press **ENTER**.

| MVCI Setup | |
|------------|---------------|
| Font Size: | Small Font |
| Wireless: | Enable |

Highlight the desired option, then press **ENTER** to save the changes, or press **ESC** to cancel.

| Wireless |
|---------------|
| Enable |
| Disable |

SDMEM Format

This feature allows you to erase and reformat the SD memory card installed to the MVCI.

Factory Defaults

This option restores all the factory defaults:

- Clock format is reset to USA/Philippines.
- Language is reset to English.
- Beep menu is reset to Enable.
- Contrast is reset to 46%.

All network configurations are also reset:

- Ethernet IP: 172.19.250.11
- USB Device IP: 172.19.251.11
- Wireless IP: 172.19.253.11
- DHCP Server: Enable

To restore the MVCI to the factory default settings, select **Restore** under Factory Defaults, then press **ENTER**.

| MVCI Setup |
|---------------------------------|
| Font Size: Small Font |
| Factory Defaults Restore |

| Defaults |
|-------------------------------------|
| All Current Settings will be Erased |
| <Enter> to Continue |

| Defaults |
|-----------------|
| Restoring . . . |

A confirmation message appears: All Current Settings will be erased. Press **ENTER** to restore the defaults, or press **ESC** to cancel.

User Customize

From the User Config menu, select User Customize, then press **ENTER**.

The following options are available:

- Language
- Destination
- Beep Menu

Language

The MVCI supports several languages. U.S. users should use only American English (default) because if you have a problem during updating and need to call the tools help line, English is currently the only supported language.

NOTE: You can also change the language under **CM Update Mode > Setting 1 > Language**.

To change the language setting, select **Language** under User Customize, then press **ENTER**.

| User Customize |
|--------------------|
| Language |
| Destination |
| Beep Menu |
| Extend Time |

Select the applicable language from the list, then press **ENTER** to save, or press **ESC** to cancel.

Destination


The MVCI is designed to work in several markets. For the U.S., the default setting is USA.

NOTE: You can also change the destination under **CM Update Mode > Setting 1 > Destination**.

If you need to change the destination, select Destination, then press **ENTER**.

Select the desired destination, then press **ENTER** to save the setting.

| User Destination |
|------------------|
| USA |
| Japan |
| Europe |
| Canada |
| LAC |
| General |



Select the applicable destination from the list, then press **ENTER** to save, or press **ESC** to cancel.

Beep Menu

There are three types of audio notifications (beeps) that you can configure in the Beep Menu. When you are using the MVCI CM Update, keep these beep notifications enabled:

- Key Beep – The MVCI beeps when a button is pressed.
- CMU Notice – The MVCI indicates when the CM reprogramming is complete.
- Low Voltage – The MVCI beeps when it has been disconnected from an external power source or when the vehicle battery voltage is low.

To change the beep settings, select Beep Menu under User Customize.

Select **Beep Menu** on the **User Customize** screen, then press **ENTER**.

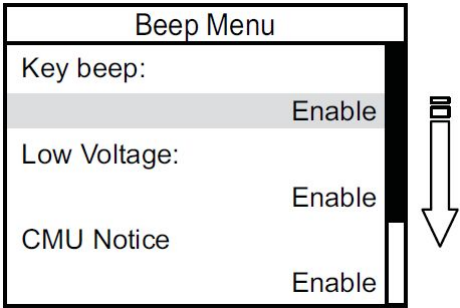
Highlight **Key Beep**, then press **ENTER** to change the setting.



Enable is the default setting for each beep type.

- Press **ENTER** under a selected menu to change the settings as desired.

NOTE: Change only the Key beep under the Beep Menu.



Select the applicable setting from the list, then press **ENTER** to save, or **ESC** to cancel.

Extend Time

This setting defines the keep-alive time after external power has been removed from the MVCI.

CM Update Mode

The MVCI is designed to update reprogrammable control modules. Before you begin reprogramming, make sure the MVCI is properly set up. After the MVCI is set up, you do not have to change the settings.

These options are available:

- Reprogramming – Refer to Updating Control Modules/Units for instructions.
- Display Error – Refer to Troubleshooting for instructions.
- Setting 1
- Setting 2

NOTE: Before reprogramming, please test the vehicle battery and proceed only if the result is good. Make sure the vehicle is connected to a battery booster while reprogramming the control module.

Setting 1

Under Setting 1, you can change the **Destination** and the **Language**. Refer to the User Customize section for instructions on changing these settings.

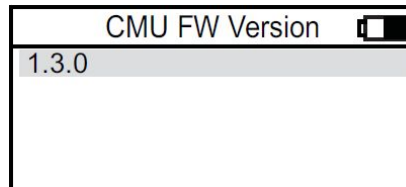
Setting 2

Do not change these settings from their default modes because changing settings may create problems during updating. If the default settings are accidentally changed, go to User Customization, and restore the factory defaults.

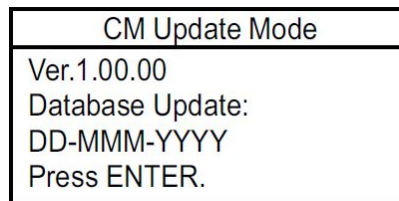
Check Version

There are three software versions associated with CM Update Mode on the MVCI:

- The firmware version that is loaded onto the MVCI and operates it.



- The CM update mode application version number and database update date are shown on the screen after selecting CM Update Mode > Reprogramming.



If there is a problem with the MVCI, you may be asked what CM Update Mode application version and firmware version is loaded on your unit.

To check the CMU firmware version, do this:

- 1. From the **CM Update Mode** menu, select **Setting 2**, then press **ENTER**.

| CM Update Mode |
|----------------|
| Reprogramming |
| Display Error |
| Setting 1 |
| Setting 2 |

- 2. Select **Check Version**, then press **ENTER**.

| Setting 2 |
|---------------|
| Auto Detect |
| Check Version |
| |

- 3. Record the MVCI CM firmware version that appears on the display. Press **ESC** to exit.

| CMU FW Version |
|----------------|
| x.x.x |
| |

Network Setup

Many of these options are used to set up a wireless network for your MVCI. Refer to Wireless Network Setup on page 30 for instructions on setting up your MVCI

For most installations, the factory default settings should be used. The following setup information is included if you need a unique setup because of your PC configuration:

- Ethernet
- USB Device
- Wireless
- DHCP Server

Ethernet

You can connect the MVCI to your HDS PC with an Ethernet cable (The MVCI supports both Crossover and Straight Through Ethernet cables). It is recommended that you use the MVCI's default settings; the default IP address is 172.19.250.11 and the MVCI DHCP Server is enabled.

NOTE:

- For an MVCI with the default settings to communicate with the HDS PC using the Ethernet connection, make sure the HDS PC is set to automatically obtain an IP address.
- Some laptops have a feature that automatically disables its wireless connection whenever an Ethernet connection is detected. Disable this feature before connecting the MVCI to the HDS PC.

1. To change the Ethernet network settings, select Ethernet under **Network Setup**, then press **ENTER**.

| Network Setup |
|-------------------|
| Ethernet |
| USB Device |
| Wireless Profiles |
| DHCP Server |

2. To change the IP address, highlight the IP address, then press **ENTER**. Use the up/down buttons to change the number and the left/right buttons to move between the components of the IP address.

Press **ENTER** to accept the changes, then press **ESC** to return to the previous menu. To return to the previous menu without accepting the changes, press **ESC**.

| USB Config | IP Address |
|---------------------------|-----------------------------|
| IP Address: 172.19.250.11 | IP Address: 172.019.250.011 |
| Subnet Mask 255.255.255.0 | |

3. To change the subnet mask, highlight the Subnet Mask, then press **ENTER**. Use the up/down buttons to change the number and the left/right buttons to move between the components of the Subnet Mask. Press **ENTER** to accept the changes, then press **ESC** to return to the previous menu. To return to the previous menu without accepting the changes, press **ESC**.

| USB Config | Subnet Mask |
|---------------------------|-----------------------------|
| IP Address: 172.19.250.11 | Subnet Mask 255.255.255.000 |
| Subnet Mask 255.255.255.0 | |

4. To save your changes, scroll down to the Network Service option, then press **ENTER**.

| LAN Setup |
|------------------------------------|
| Subnet Mask: 255.255.255.0 |
| Network Service: Save & Restart |

USB Device

1. To change the USB device network settings, select USB Device under **Network Setup**, then press **ENTER**.

| Network Setup |
|-------------------|
| Ethernet |
| USB Device |
| Wireless Profiles |
| DHCP Server |

2. To change the IP address, highlight the IP address, then press **ENTER**. Use the up/down buttons to change the number and the left/right buttons to move between the components of the IP address.

Press **ENTER** to accept the changes, then press **ESC** to return to the previous menu. To return to the previous menu without accepting the changes, press **ESC**.

| USB Config | IP Address |
|------------------------------|--------------------------------|
| IP Address: 172.19.250.11 | IP Address: 172.019.250.011 |
| Subnet Mask 255.255.255.0 | |

3. To change the subnet mask, highlight the Subnet Mask, then press **ENTER**. Use the up/down buttons to change the number and the left/right buttons to move between the components of the Subnet Mask.

Press **ENTER** to accept the changes, then press **ESC** to return to the previous menu. To return to the previous menu without accepting the changes, press **ESC**.

| USB Config | Subnet Mask |
|------------------------------|--------------------------------|
| IP Address: 172.19.250.11 | Subnet Mask 255.255.255.000 |
| Subnet Mask 255.255.255.0 | |

4. To save your changes, scroll down to the Network Service option, then press **ENTER**.

| LAN Setup |
|------------------------------------|
| Subnet Mask: 255.255.255.0 |
| Network Service: Save & Restart |

DHCP Server

The DHCP server setting controls whether the MVCI will act as a DHCP server for Ethernet, USB and wireless connections.

1. To change the DHCP server setting, select **DHCP Server**, then press **ENTER**.

| |
|-------------------|
| Network Setup |
| Ethernet |
| USB Device |
| Wireless Profiles |
| DHCP Server |

2. The display shows the current setting of the DHCP server. To enable/disable the DHCP server, highlight the current status, then press **ENTER**.

| |
|---------------------|
| DHCP Server |
| DHCP Server: Enable |

3. Select **Enable** or **Disable**, then press **ENTER** to save the change.

| |
|-------------|
| DHCP Server |
| Enable |
| Disable |

4. After enabling DHCP server, go to Network Setup, select the communication interface being used and select **Save & Restart**.

Wireless Network Setup

Introduction

There are two ways to connect an HDS PC to the MVCI wirelessly: Infrastructure mode and adhoc (peer-to-peer) mode.

When using Infrastructure mode, both the HDS PC and MVCI connect to a common wireless network that has access to the Internet. This has the advantage of allowing the PC to access Interactive Network (iN) service information while communicating with the MVCI and is the preferred configuration for the shop environment. The disadvantage is that this setup is more involved, and may need to be done by a network administrator.

In adhoc (peer-to-peer) mode, the PC and MVCI communicate directly with one another. A good example use case is during a road test where the dealer's shop network is not available. Setup is straightforward, but you will generally not be able to access the Internet (including ISIS) wirelessly at the same time as the MVCI. It is recommended that the priority be given to wireless access to ISIS for the most efficient work bay environment.

NOTE: *The MVCI wireless applications require the usage of Windows' built-in Wireless Manager. Third party wireless management application may not work correctly. Check with your IT support provider before making any changes.*

There are four steps:

- Prepare the MVCI (configure infrastructure and/or ad-hoc wireless on the MVCI)
- Select the wireless network type on the MVCI
- Connecting your HDS PC wirelessly
- Connect to the PC to the MVCI

1. Configure a Wireless Profile

Setup the MVCI for connection wirelessly.

- Connect the USB or Ethernet cable between the MVCI and HDS PC.
- Double-click the **MVCI WiFi Setup Wizard** located on the desktop.
- Select either **Wizard Assisted Setup** or **Advanced Setup**, depending on the level of detail you want to include in your setup. Enter the requested information.
- A confirmation pop-up will appear on the PC. The MVCI will briefly display the **Configuring Wireless** screen.
- The network profile will be stored in the **Existing profiles** drop-down menu.

The MVCI is now communicating via the selected default wireless network.

NOTE: *Information on wireless setup in general is beyond the scope of this document. Please contact your network administrator.*

2. Select the Wireless Network Type

NOTE: *This step is only necessary if you want to use the other network type (infrastructure or adhoc) than the default network selected above.*

- From the **Waiting For user input** screen on the MVCI, press the **ENTER** button twice.
- Press the down arrow once to highlight the **TYPE** (infrastructure or adhoc).
- Press **ENTER** to switch to the other type than is shown.

Connecting your HDS PC Wirelessly

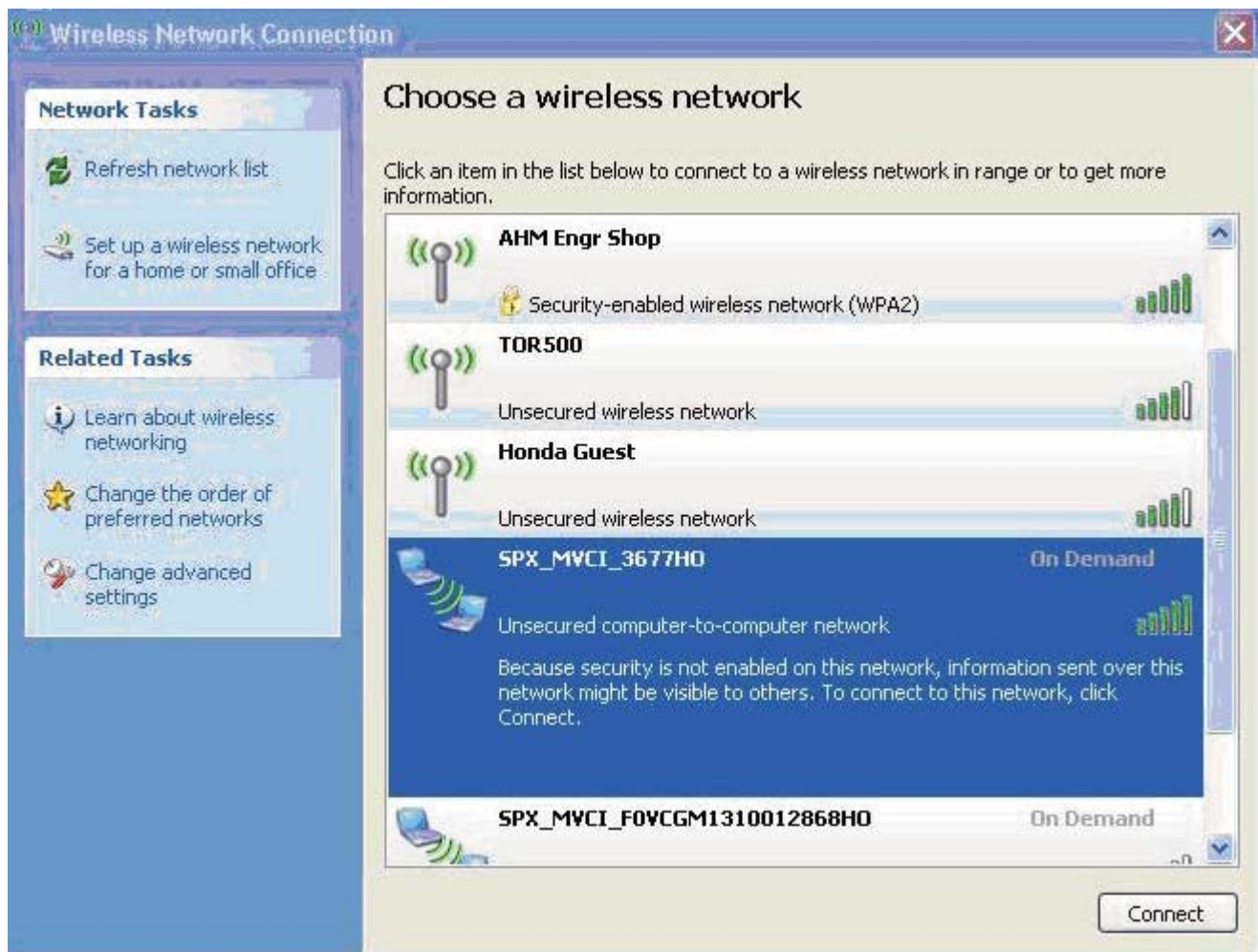
Select your operating system below: Windows XP (1), Windows Vista (2) or Windows 7 (3)

1. Windows XP

- a. Right-click on the **Wireless Network Connection** icon or open the WiFi connection utility located in the taskbar and select **View Available Wireless Networks**.



- b. Find and select the network that the MVCI was just configured for. Then click **Connect**.



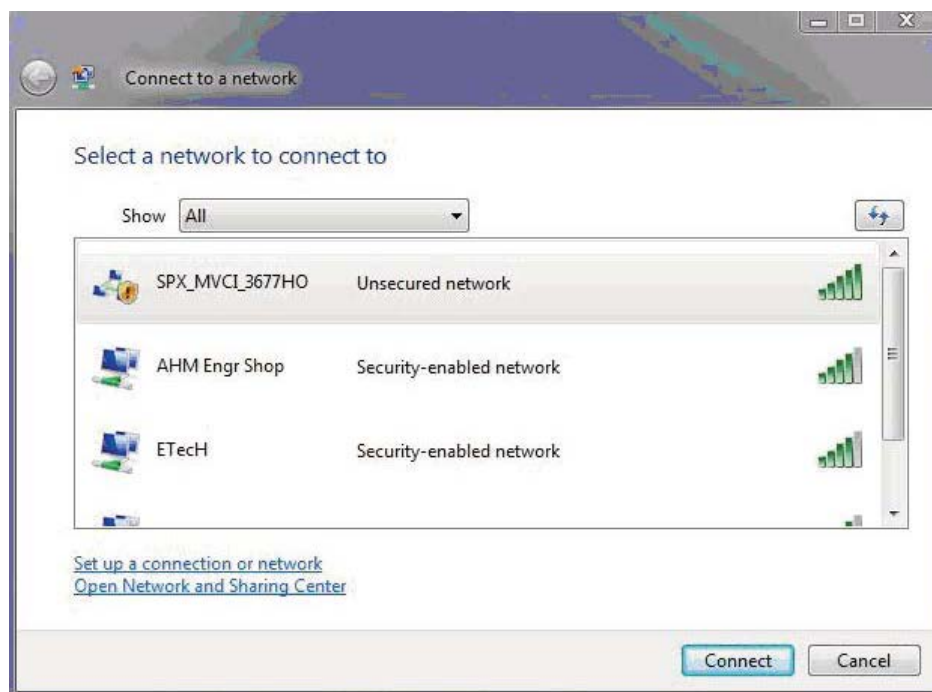
- c. Reply as needed to any prompts.
- d. When **Connected** is displayed, the **Wireless Network Connection** or WiFi utility window can be closed.

2. Windows Vista

- a. Right-click the WiFi icon in the taskbar and select **Connect to a network**.



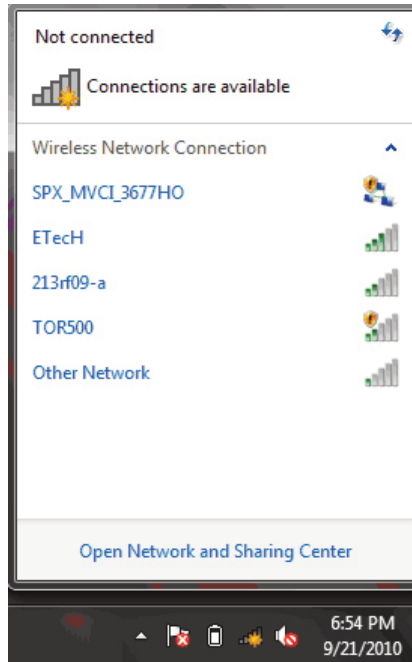
- b. Find and select the network that the MVCI was just configured for. Then click **Connect**.



- c. Once connected, the **Connect to a network** window can be closed.

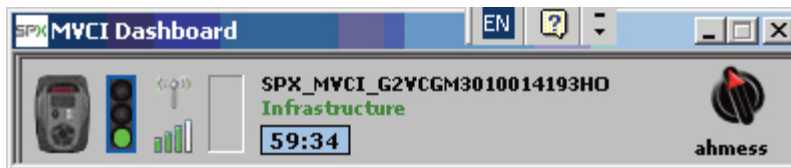
3. Windows 7

Click on the **WiFi** icon located in the taskbar and select the network that was just configured on the MVCI. Then click **Connect**.



Connect to the Desired MVCI

- Double-click on the **MVCI Wireless Connection Manager** icon located on the desktop.
- Select the MVCI whose serial number matches the MVCI you wish to connect to. Then click **Connect**.
- Once **Connected** is displayed beneath the selected MVCI, HDS can communicate with the vehicle.
- Once connected to an MVCI a new window labeled MVCI Dashboard is displayed, showing the status of your connection.



- The PC can be switch between infrastructure and adhoc configuration by clicking on the “knob” on the right side of the MVCI Dashboard.

NOTE:

- *Your PC must have internal wireless capability or an active external wireless card.*
- *The wireless radio must be enabled on your PC. Many laptop PCs have a software or hardware switch to enable or disable the wireless radio so that laptops can be used in a radio sensitive environment like an airplane. If your wireless adapter cannot detect or connect with any other wireless device in your shop, refer to the PC's User Guide for more information.*
- *This procedure will NOT work if the PC uses a non-windows program to configure wireless networks.*

MVCI Status

From the User Config menu, select MVCI Status, then press **ENTER**.

These status options are available:

- SDIO-1
- SDIO-2
- Battery Charger
- Host Status

SDIO-1

The SDIO-1 slot has the SD memory card inserted. It holds all the calibration files needed for updating control modules/units.

NOTE: Do not remove the SD card unless a problem has occurred.

To view the status of SDIO-1 slot, select **View Status**, then press **ENTER**.

| MVCI Status | |
|-------------|-------------|
| SDIO-1: | View Status |
| SDIO-2: | View Status |

The status screens appear. Scroll down to see all status items.

| SDIO-1 | SDIO-1 |
|--------------|------------------|
| Power: | Write Protected: |
| On | Off |
| Card Status: | Over Current: |
| Inserted | No |

These screens are for information only. You cannot change the settings on these screens. Press **ESC** to return to the previous menu.

SDIO-2

The SDIO-2 slot has the MVCI wireless card inserted. It allows the MVCI to communicate on a wireless network.

NOTE: Do not remove the MVCI wireless card unless a problem has occurred.

To view the status of the SDIO-2 slot, select **View Status**, then press **ENTER**.

| MVCI Status | |
|-------------|-------------|
| SDIO-1: | View Status |
| SDIO-2: | View Status |

The status screens appear. Scroll down to see all status items.

| SDIO-2 | SDIO-2 |
|------------------------------------|-----------------------------------|
| Power: On | Write Protected: Off |
| Card Status: Inserted | Over Current: No |

These screens are for information only. You cannot change the settings on these screens. Press **ESC** to return to the previous menu.

Battery Charger

This screen indicates if the MVCI batteries are being charged. You cannot change this setting.

NOTE: To extend the battery life, the MVCI stops charging the batteries when the MVCI's internal temperature is 140° F (60° C) or more. Battery charging continues after the MVCI is rebooted and the temperature is below 140° F (60° C).

| MVCI Status | |
|-----------------|-----------------|
| SDIO-2: | View Status |
| Battery Charger | On |

Host Status

This item displays the IP address of the PC that is communicating with the MVCI. If the PC is not actively communicating with the MVCI, the status appears **Inactive**.

Software Version

From the User Config menu, select **Software Version**, then press **ENTER**.

| User Config |
|------------------|
| CM Update Mode |
| Network Setup |
| MVCI Status |
| Software Version |

The MVCI displays the software versions.

NOTE: These screens are examples only. Actual data will vary.

| Version | Version |
|----------------|------------------|
| BootLoader:1.0 | Kernel:1.0 |
| Kernel(A):1.0 | RFS(A):1.1 |
| Kernel:1.0 | RFS:1.1 |
| RFS(A):1.1 | Drivers&Apps:2.5 |

Hardware Test

The MVCI includes several hardware tests that can check to make sure your MVCI is operating properly.

From the User Config menu, select **Hardware Test**, then press **ENTER**.

| User Config |
|------------------|
| Network Setup |
| MVCI Status |
| Software Version |
| Hardware Test |

These options are available:

- Beep Test
- LED Test
- LCD Test
- Keypad Test
- Serial Number
- Device Loopback Test
- SDMEM Card Test

Beep Test

This test turns on the beep (buzzer) for 3 seconds.

Select **Beep Test**, then press **ENTER**.

| Hardware Test |
|---------------|
| Beep Test |
| LED Test |
| LCD Test |
| Keypad Test |

LED Test

Select **LED Test**, then press **ENTER**. This test turns on the three LEDs for 3 seconds.

LCD Test

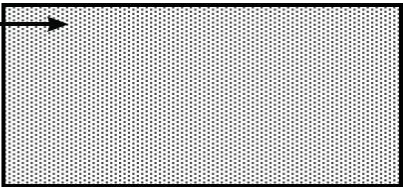
This test checks the LCD function by turning on all the pixels, showing two patterns, then turning off all the pixels. You can exit the LCD Test by pressing **ESC**.

1. Select **LCD Test**, then press **ENTER**.

| Hardware Test |
|---------------|
| Buzzer Test |
| LED Test |
| LCD Test |
| Keypad Test |

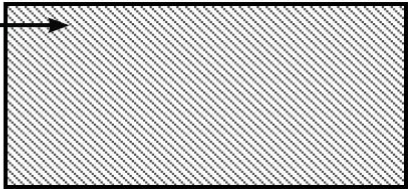
2. Press ENTER to turn on all the pixels.

LCD Test
Press Enter to Turn
On Pixels for 5 Secs



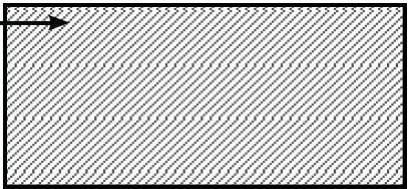
3. After 5 seconds, press **ENTER** to see the first test pattern.

LCD Test
Press Enter to Show
Pattern1 for 5 Secs



4. After 5 seconds, press **ENTER** to see the second test pattern.

LCD Test
Press Enter to Show
Pattern 2 for 5 Secs



5. After 5 seconds, press **ENTER** to turn off all the pixels.

Keypad Test

This test checks the up, down, left, right, and ENTER buttons. It does not check the ESC button, which is needed to exit the test.

Select **Keypad Test**, then press **ENTER**.

| Hardware Test |
|---------------|
| Buzzer Test |
| LED Test |
| LCD Test |
| Keypad Test |

Check the five buttons. When you press each button, the applicable LCD should briefly light on the screen.

| Keypad Test |
|-------------------|
| (O) |
| (O) (O) (O) |
| (O) |

Serial Number

The serial number is printed on the back of the battery cover. However, if you can't read it, or if your battery covers were accidentally exchanged, you can get the MVCI's serial number electronically.

Select **Serial Number**, then press **ENTER**.

| Hardware Test | Serial Number |
|---------------|------------------|
| LCD Test | Serial Number |
| Keypad Test | A1BCGM3208001031 |
| Scroll Test | |
| Serial Number | |

Device Loopback Test

This test checks the MVCI’s communication lines and analog circuits.

1. Make sure the MVCI is not connected to a vehicle. Select **Device Loopback Test**, then press **ENTER**.

| |
|----------------------|
| Hardware Test |
| Keypad Test |
| Scroll Test |
| Serial Number |
| Device Loopback Test |

2. A warning screen directing you to remove the DLC cable from the MVCI appears. Remove the cable, then press **ENTER** to start the test, or press **ESC** to exit.

NOTE: Do not run the test with the MVCI connected to a vehicle. You can damage a control unit or the MVCI.

| |
|---|
| Device Test |
| Remove the vehicle cable from MVCI and then perform the test <Enter> to Continue |

| |
|------------------------------|
| Device Test |
| Test is in progress . . . |
| Do not connect to Vehicle |

When the test is complete, a results screen appears indicating **Test Passed** or **Test Failed**. You can view the log file by pressing **ENTER**, or press **ESC** to exit.

| | | |
|---------------|---|---------------|
| Device Test | → | Device Test |
| Test Passed | | Test Failed |
| View Log File | | View Log File |

SDMEM Card Test

This test checks the SD card inserted in the SDIO-1 slot.

NOTE: Do not remove the SD card unless it is faulty and needs to be replaced.

Select the **SDMEM Card Test**, then press **ENTER**.

| |
|----------------------|
| Hardware Test |
| Scroll Test |
| Serial Number |
| Device loopback test |
| SDMEM Card Test |

| |
|---|
| SDMEM Test |
| SDMemory Card Test in Progress . . . |

When the test is complete, a results screen appears, indicating if the SD card passed, or if there is an error.

Auxiliary PC Applications

These two additional auxiliary PC applications are included in the HDS software image:

- MVCI Wireless Connection Manager
- MVCI WiFi Setup Wizard

MVCI Wireless Connection Manager

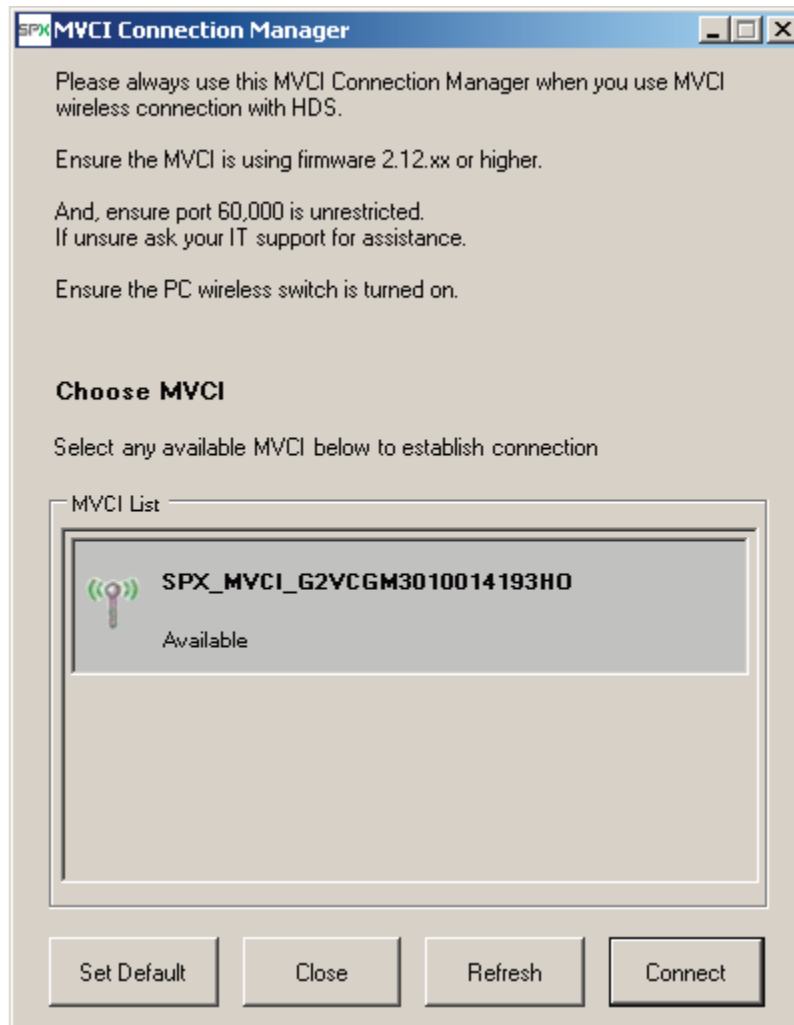
Use this application to select the MVCI you want to connect to wirelessly. For more information, refer to the Wireless Network Setup section.

Launch the application in one of two ways:

- Double click the MVCI Wireless Connection Manager desktop icon.

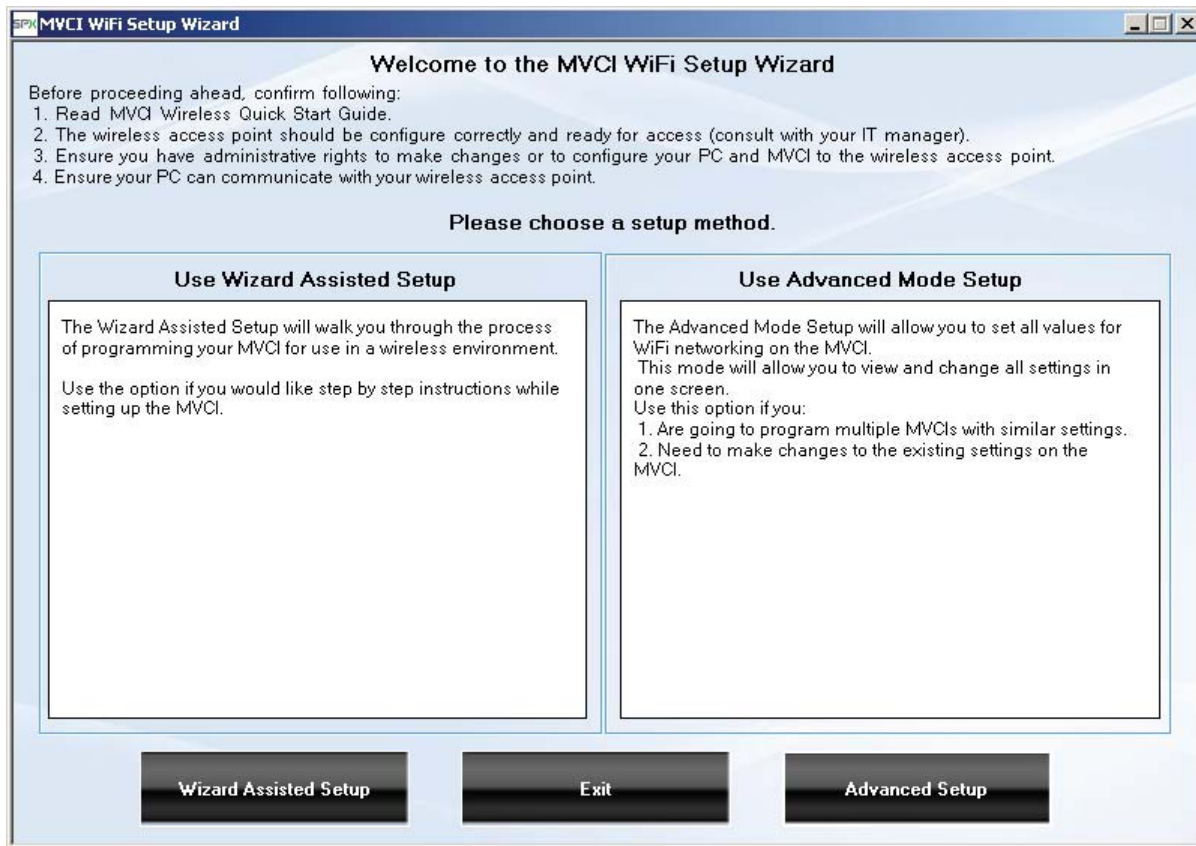


- Click **All Programs > BOSCH>MVCI ver x.x > MVCI Wireless Connection Manager**



MVCI WiFi Setup Wizard

Use this application to setup wireless profiles for the MVCI. Both adhoc and infrastructure profiles can be set up. Profiles are saved within the application for future use.



NOTE: Information on wireless setup in general is beyond the scope of this document. Please contact your network administrator.

Updating Control Modules/Units

Introduction

The MVCI is a standalone tool for control module updates. It stores all the calibration files needed for updating on the SD card. In addition to eliminating the need to continuously update your tool, the MVCI can update identical vehicles (same model, same trim, same powertrain, etc.) in sequence without having to go through all the update steps.

You must update your MVCI every time you update your HDS software. This ensures you have the latest software for updating control modules. You will be prompted to update the MVCI when you use it with HDS.

Control modules are updated under these conditions:

- When directed by an official Honda service communication (service bulletin, product update, etc.)
- When replacing a control module/unit.

MVCI and Vehicle Updating Precautions

To avoid damaging the MVCI or the vehicle during updates, always check the vehicle's 12V battery state-of-charge. If the battery is low, charge it before updating the control module. Connect the vehicle to a battery booster during the update to keep the battery charged.

NOTE: *If you try to update the control module when the vehicle's battery has a low state-of-charge, the update progress takes longer or it may fail.*

To avoid damaging the vehicle's control module, do not do any of the following during an update:

- Turn the vehicle ignition switch to LOCK (0).
- Turn off the MVCI.
- Disconnect the MVCI from the vehicle's data link connector (DLC)

If you accidentally turned the ignition switch to LOCK (0), turned off the MVCI, or disconnected the DLC during the update, you can try to recover the update using this procedure:

1. Leave the ignition switch in the ON (II) position unless it was already turned to LOCK (0). If so, turn the ignition switch back to ON (II).
2. Disconnect the MVCI from the DLC connector, then turn the MVCI off.
3. Reconnect the MVCI to the vehicle's DLC.
4. Turn on the MVCI, select **CM Update** mode, and select **Reprogramming**.

If the updating process continues, the control module is OK. If the updating process does not continue, the control module is damaged, and need to be replaced.

The SD card contains all the calibration files for reprogramming vehicles. Do not remove the SD card unless a problem has occurred.

For general tool and safety precautions, refer to Safety Precautions.

Setting Up the MVCI for Updating

Refer to the User Config – Explanations, Set-up, and Customizing Settings to properly set up your MVCI. Make sure you use the recommended settings under CM Update Mode to avoid problems updating control modules.

Instructions for Updating Control Modules/Units

- 1. Connect the MVCI to the vehicle's DLC, and turn the ignition switch to ON (II).
- 2. Wait for the MVCI to boot up. When the Host Status screen appears, press **ENTER**.

| Host Status |
|------------------------------|
| Waiting For User Input... |
| Press Enter to Config... |

- 3. From the **User Config** menu, select **CM Update Mode**.

| User Config |
|----------------|
| DLC Voltage |
| MVCI Setup |
| User Customize |
| CM Update Mode |

- 4. From the **CM Update Mode** menu, select Reprogramming, then press **ENTER**.

| CM Update Mode |
|----------------|
| Reprogramming |
| Display Error |
| Setting 1 |
| Setting 2 |

- 5. The CM Update software information is displayed. Press **ENTER** to continue.

| CM Update Mode |
|-----------------|
| Ver. XXXXXX |
| Database Update |
| DD-MM-YYYY |
| Press ENTER |

- 6. Wait for the MVCI to search for reprogrammable systems. This takes about 90 seconds.

| CM Update Mode |
|---|
| Checking the Reprogrammable Vehicle system |
| <div><div></div><div></div><div></div><div></div></div> |


7. After the MVCI finishes its search, a list of reprogrammable systems appears on the **System Selection** screen. Select the system to reprogram. Press **ENTER** to continue, or press **ESC** to exit.

| System Selection |
|------------------|
| PGM-FI |
| AT (CVT) |
| IMA Motor |
| IMA Battery |

8. The MVCI displays the **Current Program ID**, the **System**, and the latest **Program ID**. Press **ENTER** to continue or press **ESC** to exit.


NOTE: The Current Program ID displays the calibration that is currently installed on the control unit. Available Update displays the calibration that is available to replace the currently installed calibration.

| CM Update Mode |
|---|
| Current Program ID XXXXXX |
| Available Update |
| System XXXXXXXXXX |
| Program ID XXXXXX |
| Model XXXXXXXXXX |
| Update Description XXXXXXXXXX |
| If YES, Press Enter. If NO, Press ESC. |



9. Wait a few seconds for the MVCI to copy the data stored on the SD card to its internal memory.

- NOTE:**
- Do not remove the SD card from the MVCI.
 - Do not turn off the MVCI while the data is being copied from the SD card.

| CM Update Mode |
|---|
| Copying... |
|  |

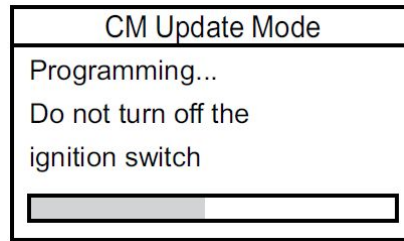
10. An update confirmation screen appears. Press **ENTER** to update the control module/unit, or press **ESC** to exit.

| CM Update Mode |
|--|
| Press the "Enter" Button to begin the Control module Program update |

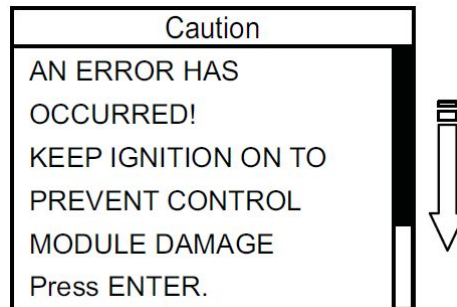
11. The MVCI updates the selected system.

NOTE:

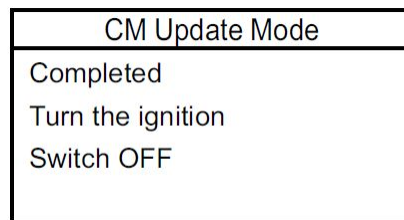
- Make sure the ignition is **ON**
- Do not turn the MVCI off.
- Do not disconnect the MVCI from the vehicle's DLC.



12. If an error occurs during updating, leave the ignition **ON**, and go to *Troubleshooting (Updating Errors)*. Press **ENTER** to display the error code.

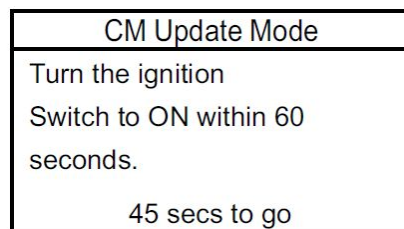


13. When the update is done, the MVCI beeps, and prompts you to turn the ignition switch to **OFF**



14. Turn the ignition back **ON** within 60 seconds to complete the updating process. The MVCI displays a countdown timer that goes away after you turn the ignition **ON**.

NOTE: If you do not cycle the ignition switch, an error code sets.



15. When the update is done, the MVCI gives you the option to repeat this system update on another vehicle. Press **Enter** to repeat the same system update on another vehicle, or press **ESC** to exit. See Updating with the Repeated Mode for more information.

16. Make sure there are no fault indicators displayed.

Updating with the Repeated Mode

If you need to update the same model vehicle, you can save time by selecting **Repeated** mode at the end of the update. This allows you to repeat the same system update on several vehicles without having to redo the setup.


To update multiple vehicles, do this:

1. Update the first vehicle as outlined in Instructions for Updating Control Modules/Units.

| CM Update Mode |
|----------------|
| Reprogramming |
| Display Error |
| Setting 1 |
| Setting 2 |

2. When the update is done, the MVCI gives you the option to repeat this system update on another vehicle. Press **ENTER** to repeat the same system programming on another vehicle with the same model and trim.

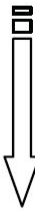
| CM Update Mode |
|--|
| The Control Module Update is complete. Do you want to repeat this system update on another vehicle? If YES, Press ENTER If NO, Press ESC. After update is complete, check/diagnose any DTCs in each applicable system. Use the Check All DTC function. |



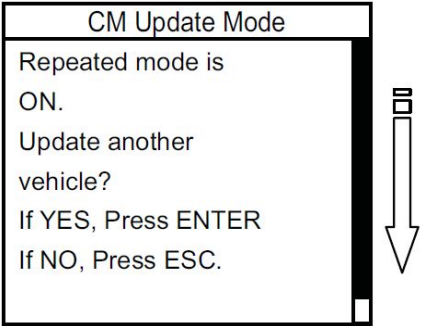
3. Disconnect the DLC cable from the current vehicle. Go to the next vehicle, and turn the ignition switch to ON (II). Then connect the DLC cable (OBD2 cable) to the vehicle, and press **ENTER**.

NOTE: The MVCI may turn off before you reconnect to the next vehicle. Once you reconnect the DLC, you can continue the reprogramming procedure.

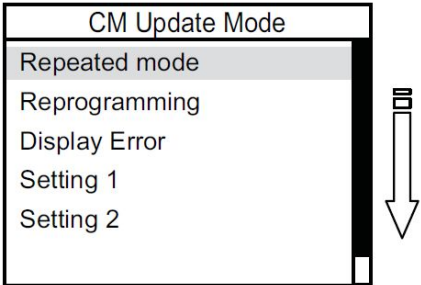
| CM Update Mode |
|---|
| Disconnect the DLC (OBD2 cable) from the current vehicle. Turn the ignition switch ON (II) and connect the DLC (OBD2 cable) to the next vehicle. Press ENTER. |



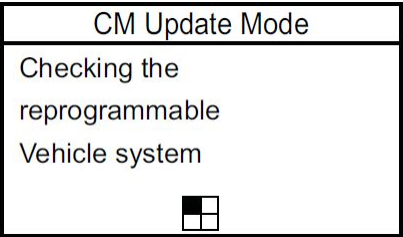
4. After you connect the DLC to the next vehicle, the following screen appears, telling you that the **Repeated mode** is turned on. Press **ENTER** to continue or press **ESC** to exit the repeated mode.
- NOTE:** If the screen below appears when you turn on the MVCI, the previous user turned on the **Repeated** mode. Make sure you press **ESC** and start the reprogramming procedure again.



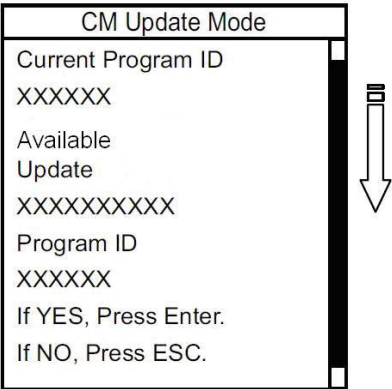
5. Select **Repeated mode**, then press **ENTER**.
6. Wait for the MVCI to search for reprogrammable systems. This takes about 90 seconds.



7. After the MVCI finishes its search, a list of reprogrammable systems appears on the **System Selections** screen. Select the system to reprogram. Press **ENTER** to continue, or press **ESC** to exit.



8. The MVCI displays the **Current Program ID**, the **System**, and the latest **Program ID**. Press **ENTER** to continue, or press **ESC** to exit.
- NOTE:** The *Current Program ID* displays the calibration that is currently installed on the control unit. Available Update displays the calibration that is available to replace the currently installed calibration.



9. The MVCI updates the selected systems one at a time.

NOTE:

- Make sure the ignition is **ON**
- Do not turn the MVCI off.
- Do not disconnect the MVCI from the vehicle's DLC.

| CM Update Mode |
|--|
| Programming... |
| Do not turn off the ignition switch |
| <div><div></div></div> |

12. If an error occurs during updating, leave the ignition **ON**, and go to *Troubleshooting (Updating Errors)*. Press **ENTER** to display the error code.

13. When the updating is done, the MVCI beeps, and prompts you to turn the ignition switch **OFF**.

| CM Update Mode |
|---------------------------------|
| Completed |
| Turn the ignition Switch OFF |

14. Turn the ignition back ON within 60 seconds to complete the update. The MVCI displays a countdown timer that goes away after you turn the ignition **ON**.

NOTE: If you do not cycle the ignition switch, an error code sets.

| CM Update Mode |
|---|
| Turn the ignition Switch to ON within 60 seconds. |
| 45 secs to go |

15. When the update is done, the MVCI gives you the option to repeat this system update on another identical vehicle. Press **Enter** to repeat the same system update on another vehicle, or press **ESC** to exit. See Updating with the Repeated Mode for more information.

16. Make sure there are no fault indicators displayed.

CM Update Troubleshooting

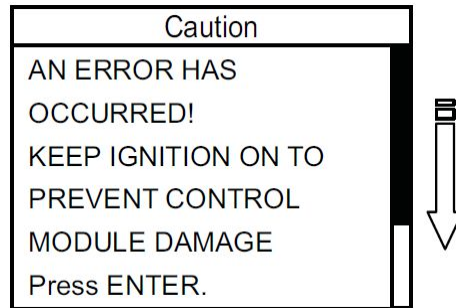
Updating Errors

Whenever the MVCI detects an error with the vehicle's control module/unit update, a caution message appears on the MVCI. This is often followed by an error code to help you troubleshoot the problem.

1. If you see a caution message on the MVCI, leave the ignition **ON**. Press **ENTER** to show the error code.

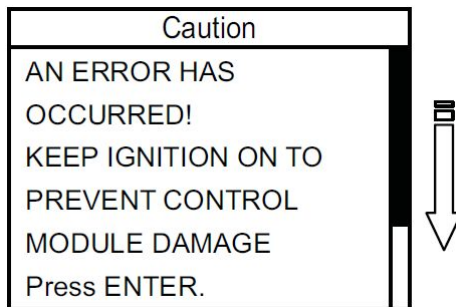
NOTE:

- If you do nothing, the error screen appears after about 10 seconds.
- Make sure the ignition is **ON**.
- Do not turn the MVCI off.
- Do not disconnect the MVCI from the vehicle's DLC.

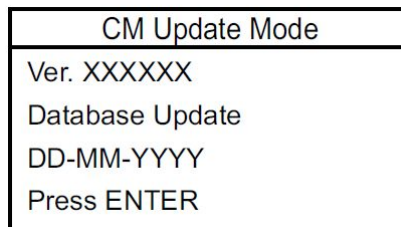


2. The MVCI usually lists the error code and a brief description of the problem.

- If an error code is listed, refer to **Error Code Table** for a list of error codes, the error code description, and the possible solutions. After you note the error code, press **ENTER**.
- If no error code is listed, but there is a screen message, refer to **Error Messages** for a list of error messages and the possible solutions. After you note the error message, press **ENTER**.



- The MVCI returns to the CM Update Mode software information screen. Press **ESC** to exit the update.



Display Error


The MVCI saves the last error code that it sets. You can view the error and confirm it by using the Display Error menu.

- 1. From the **CM Update Mode** menu, select **Display Error**, then press **ENTER**.

| CM Update Mode |
|----------------|
| Reprogramming |
| Display Error |
| Setting 1 |
| Setting 2 |

- 2. The MVCI usually lists the error code and a brief description of the problem.
 - If an error code is listed, refer to **Error Code** table for a list of error codes, the error code description, and the possible solutions. After you note the error code, press **ENTER**.
 - If no error code is listed, but there is a screen message, refer to **Error Messages** for a list of error messages, and the possible solutions. After you note the error message, press **ENTER**.

| Error |
|--------------|
| Error Code |
| XXXXXXXXXXXX |
| XXXXXXXXXXXX |
| XXXXXXXXXXXX |
| Press ENTER |



- 3. Press **ENTER** to exit the Display Error screen.

| CM Update Mode |
|-----------------|
| Ver. XXXXXX |
| Database Update |
| DD-MM-YYYY |
| Press ENTER |

Error Code Table

Below is a list of error codes that can be displayed on the MVCI. Refer to the applicable code, and its description and possible solutions, for help.

| Error Code [HEX] | Screen Messages | Description and Possible Cause(s) |
|------------------|---|---|
| (No Code) | There were no Programming Errors | No error code was found. |
| 01 | CM ERROR Check the MVCI first. If no problems are found, replace the CM. | The MVCI could not finish the update within the allowed amount of time (retried but failed again). Reboot the MVCI and try again. - CM internal failure |
| 0D | CM ERROR Replace the CM and try the programming procedure again. | CM program could not be erased or written (retried but failed again). - CM internal failure |
| 10 | TIME-OUT ERROR Turn the ignition switch to LOCK (0), then back to ON (II), and try the programming procedure again. If the same error occurs, replace the CM. | Ignition key check of immobilizer system could not finish within a set time. Turn the ignition switch to LOCK (0), then back to ON (II) and try again. - Error in CM transaction program to communicate with immobilizer unit |
| 11 | PROGRAM ENABLE ERROR Check for an open or short in the vehicle's WEN line (located in the DLC). Repair the circuit, then try the programming procedure again. | WEN line signal failure. - WEN line failure - DLC cable failure - MVCI failure |
| 15 | CM ERROR Check the MVCI first. If no problems are found, replace the CM. | Rewrite process could not finish within a set time (retried but failed again). - CM internal failure - MVCI failure |
| 16 | CM ERROR Check the MVCI after the ignition switch is turned to LOCK (0). If no problems are found, replace the CM. | CM does not accept reset command because of High WEN signal. - CM internal failure - MVCI failure (WEN signal High failure) |
| 1E | CM ERROR Check the MVCI first. If no problems are found, replace the CM. | Contradiction for Control Module response was detected during rewrite process (retried but failed again). Although the ECU is in rewrite state, the data in the internal MVCI is not being recovered properly. - Control Module internal failure - MVCI failure |
| 1F | PROCEDURE ERROR Turn the vehicle ignition switch to LOCK (0), and try the programming procedure again. If the same error occurs, replace the CM. | Improper <change to mode 'R'> procedure is done. The MVCI may not sending the correct commands. Check the MVCI, turn the ignition switch to LOCK (0), then back to ON (II), and retry. - CM internal failure - MVCI failure |

| | | |
|----|---|---|
| 50 | DATA LINK COMMUNICATION ERROR Make sure that the ignition switch is in the ON (II) position, and try the programming procedure again. | The MVCI cannot communicate with the CM. - Ignition switch in LOCK (0) - K-line failure - CAN line failure - CM internal failure - MVCI failure |
| 51 | PROGRAMMING ERROR Reinstall the MVCI software, the CM Update database, and the Calibration files. Then try the programming procedure again. If the same error occurs, replace the CM. | Improper update file was requested by the CM (retried but failed again). - Corrupted data file - MVCI failure |
| 52 | VEHICLE ERROR The vehicle is not equipped with a programmable CM. | No reprogrammable system found. - Wrong vehicle |
| 53 | VEHICLE ERROR The vehicle is not equipped with a programmable CM. | CM to be rewritten is not installed or not reprogrammable. - Wrong vehicle - Wrong Control Module program |
| 54 | COMPATIBLE ERROR The calibration file is not compatible with the vehicle. | The MVCI file is the incorrect update for the vehicle. - Wrong vehicle - Wrong CM file - Repeated mode left on when trying to update a different vehicle |
| 55 | LOW BATTERY VOLTAGE The vehicle's battery charge is too low for programming the CM. Charge the battery, then try the programming procedure again. | Vehicle 12V battery voltage is too low. |
| 56 | THE SYSTEM IS IN OPERATION NOW Turn the ignition switch to LOCK (0), and check whether the radiator fan is running. If the radiator fan is running, wait until the fan stops (MAX. 60 seconds), and try the programming procedure again. If the same error occurs, replace the CM. | The vehicle system is running. You cannot update the vehicle under these conditions: - Engine is running (PGM-FI, Diesel) - Idle stop (IMA)- IMA motor is running (IMA) - Radiator fan is running (PGM-FI, Diesel) - Air pump is running (FCX) - CM internal failure |
| 57 | COPY ERROR There is a problem with the calibration file. Check the SD card. | There are corrupt or out-dated files stored in the MVCIS |
| 58 | PROGRAMMING ERROR Try the programming procedure again. If the same error occurs, replace the CM. | The program ID stored in the CM and the vehicle (Vehicle Interface) does not match. - Update failure |

| | | |
|----|--|--|
| 5A | PROCEDURE ERROR Try the programming procedure again. If the same error occurs, replace the CM. | An update system error was detected. - CM failure |
| 5B | WRONG OPERATION Turn the vehicle ignition switch to LOCK (0), then back to ON (II). Check that there are no DTCs stored, and verify the program ID number has been successfully updated in the vehicle. | Too much time passed before the ignition switch was turned to ON (II). |
| 5C | PROCEDURE ERROR Disconnect the DLC, turn off the MVCI, then reconnect the DLC. After the MVCI starts, try the programming procedure again. If the same error occurs, replace the CM. | CM program ID was lost, and the security cannot be canceled. - MVCI failure |
| 5D | CM ERROR Turn the vehicle ignition switch to LOCK (0), then try the programming procedure again. If error code 5D returns, replace the CM. If another error code is stored, follow that code's instructions. | No communication with the updated CM - CM internal failure |
| F0 | PROGRAMMING ERROR Reinstall the MVCI software, the CM Update database, and the Calibration files. Try the programming procedure again. If the same error occurs, replace the CM. | Communication with the CM was rejected because the MVCI is using the wrong protocol procedure (retried but failed again). - CM internal failure - MVCI program failure - Installed data failure |
| F1 | SECURITY ERROR Reinstall the MVCI software, the CM Update database, and the Calibration files. Try the reprogramming procedure again. If the same error occurs, replace the CM. | Access to the CM was rejected because the security code does not match. - CM internal failure - MVCI program failure - Installed data failure |
| F8 | A Failure that prohibits reprogramming has been detected. Refer to the service manual to repair the vehicle, then try the reprogramming procedure again. If the same error occurs, replace the CM. | CM is prohibited from updating. - A failure that prohibits updating detected. |
| F9 | AIRBAGS HAVE BEEN DEPLOYED Once the airbags have deployed, the SRS Unit can not be reprogrammed. Replace the SRS Unit. | Crash History has been set by the airbags deploying. |
| FA | CM ERROR Replace the CM and try the programming procedure again. | CM internal failure (memory problem) |

| | | |
|----|---|--|
| FB | CM ERROR Replace the CM. | CM internal failure (memory problem) |
| FE | IMMOBILIZER ERROR Verify that you can start the engine. If the engine does not start, diagnose and repair the immobilizer system. Then try the reprogramming procedure again. | Access to CM was rejected. - Wrong ignition key - Immobilizer failure |
| FF | PROGAMMING ERROR Turn the vehicle ignition switch to LOCK (0), then back ON (II), and try the reprogramming procedure again. If the same error occurs, replace the CM. | Access to CM was rejected because the MVCI did not access the CM with the correct procedure. - CM internal failure (memory problem) - MVCI failure - Intermittent communication problem |

Error Messages

Below is a list of error messages that can be displayed on the MVCI. Refer to the applicable message, and its description and possible solutions, for help.

| Screen Title | Screen Messages | Description and Possible Cause(s) |
|----------------------|--|--|
| Error | SD card is not found. Check whether SD card is inserted. Press ENTER. | The MVCI could not find the SD memory card: <ul style="list-style-type: none"> - No SD memory card installed - The SD memory card is improperly installed - Disabled SDIO - The SD memory card is defective |
| Error | SD card is write protected. Check protect lock of SD card side. Press ENTER. | The MVCI cannot access the SD memory card because the "write protect" setting is locked. <ul style="list-style-type: none"> - Slide the write protect switch to unlocked. - The write protect switch on the SD card is broken |
| Error | The selected Control Module program file may be corrupted. Press ENTER. | The MVCI detected a corrupted program file. <ul style="list-style-type: none"> - Installation failure - Invalid program file |
| Error | The selected Control Module program file is not found in the MVCI memory. Press ENTER. | The MVCI could not find a specified program file in the SD memory card. <ul style="list-style-type: none"> - Installation failure - Distribution error |
| Program ID not Found | This Control Module Program ID was not found in the database. Verify that you have the latest update loaded. If you have the latest database loaded, then this Control Module does not need an update at this time. Press ENTER. | The MVCI could not find a specified program file in the database. <ul style="list-style-type: none"> - Installation failure - Distribution error |
| Program ID Error | PROGRAM ID: XXXXXXXXXXXXX This Control Module Program ID was not found in the database. Verify that you have the latest update loaded. If you have the latest database loaded, then this Control Module does not need an update at this time. Press ENTER. | The MVCI could not find a specified program file in the database. <ul style="list-style-type: none"> - Installation failure - Distribution error |
| Program ID Error | Program ID is not stored in the MVCI. Retry the programming procedures. Press ENTER. | The MVCI could not communicate with the CM. <ul style="list-style-type: none"> - The CM is not reprogrammable - Wrong vehicle |

| | | |
|---------------------------|--|--|
| Program ID Info | <p>PROGRAM ID: XXXXXXXXXXXXXX</p> <p>The current Program ID indicates that it has the latest available update, so it does not need to be updated. Press ENTER.</p> | <p>The CM program matched the latest program ID.</p> <ul style="list-style-type: none"> - The vehicle has already been updated - Wrong vehicle |
| CM Update Mode | <p>This vehicle does not need an update at this time. Press ENTER.</p> | <p>All Control Module programs matched the latest program IDs.</p> <ul style="list-style-type: none"> - The vehicle has already been updated - Wrong vehicle |
| Stop | <p>Due to high temperature, reprogramming has been cancelled. Turn the ignition Switch OFF. Open the hood and let the engine cool down for "XXX" minutes or more, then retry. Press ENTER.</p> | <p>The CM is too hot, and it stopped the reprogramming procedure.</p> |
| Caution | <p>Temperature sensor failure. Replace the Control Module. Then, retry updating the Control Module. Press ENTER.</p> | <p>The CM temperature sensor failed and stopped the update.</p> |
| Airbag deployed | <p>The airbags have been deployed. The SRS Unit can not be reprogrammed. Replace the SRS Unit. Press ENTER.</p> | <p>When the airbags have been deployed, the SRS unit cannot update. It must be replaced.</p> |
| MVCI Busy with HDS | <p>MVCI is busy with HDS communication. Please shut down HDS. Press ENTER.</p> | <p>The MVCI was communicating with the HDS PC when the user tried to use CM Update Mode.</p> |

Battery Warning Messages

The MVCI is not designed to run on its internal batteries. The batteries act as a backup power source in case the MVCI is accidentally disconnected or loses power. If it does, there are three possible warning messages:

| Attention |
|--|
| Please connect to vehicle or power supply now if you don't want to turn off the MVCI. MVCI will turn off automatically. |



A: When the MVCI is disconnected from either power source (the DLC or the external power supply), and it is not able to complete an important function, an error message is displayed on the screen. The MVCI will try to complete the function using its internal battery, but will turn off after 30 seconds. If you want to keep power on, reconnect the DLC or the external power supply.

| Attention |
|--|
| Please connect to vehicle or power supply now if you don't want to turn off the MVCI. If MVCI battery will be dead, current executing function will be avoided. |



B: When the MVCI is disconnected from either power source (the DLC or the external power supply), and the MVCI is not able to complete an important function, an error message is displayed on the screen. The MVCI will try to complete the function using its internal battery, but will turn off after 3 minutes. If you want to keep the power on, reconnect the DLC or the external power supply.

| Attention |
|--|
| Vehicle battery is LOW Please charge vehicle battery first. |

C: When the MVCI detects a low vehicle battery charge, an error message is displayed on the screen. Charge the vehicle battery before diagnosing the problem.

MVCI Power Management Function

The MVCI has a built-in power management function. When the MVCI is connected to the vehicle's DLC, the MVCI uses the vehicle's battery to power itself. It also shows the vehicle battery's state-of-charge, although, this information is for reference only. To check the vehicle's battery, use a Honda-approved battery diagnostic tool like the ED-18 or the GR8.

If the MVCI does not boot up when connected to the vehicle with a good 12V battery, see *Frequently Asked Questions* for more information.

Frequently Asked Questions

Is it possible to use the MVCI with the PC CM Update application, as with the HIM or GNA600?

No. The MVCI is not compatible with the PC CM Update application. The MVCI can be used as a standalone device to reprogram control modules. Refer to *Updating Control Modules/Units*.

Do I need to use HDS to update the MVCI even if I only need to update the CM?

You should always update the MVCI using the HDS.

The screen message is hard to see. What can I do to make it easier to read?

You can make the font larger by pressing and holding the MVCI's right key for 3 seconds.

Why doesn't the MVCI power on?

Make sure that the MVCI is connected to the vehicle with the DLC cable or connected to the external power adapter. If the MVCI is connected to a vehicle and the MVCI doesn't turn on, make sure the vehicle's 12V battery has a good state-of-charge. If the battery is good, make sure the DLC has 12 volts between terminal number 16 and terminal 4 or 5 (they are grounds). If the DLC lacks power or ground, use the external power supply to power the MVCI.

Why doesn't the MVCI power off?

To turn off the MVCI, disconnect it from all power sources, then press and hold the **ESC** button until the screen goes blank (5 seconds). The MVCI powers off 30 seconds after being disconnected from a vehicle or the external power.

Why does the MVCI power off if I didn't press the ESC button?

The MVCI must be connected to a vehicle or an external power source. The MVCI powers off after 30 seconds without external power.

Why does the MVCI reboot when the vehicle is started?

The MVCI batteries are discharged. Connect the external power adapter, and allow the batteries to charge for 4 hours.

Why does the MVCI beep every time a button is pressed?

This is normal. The beep can be disabled. Refer to the Beep Menu for information about enabling and disabling the beep.

When using the menu functions, why does my MVCI return to the Host Status display?

The MVCI always returns to the Host Status display after 20 seconds without user interaction.

When changing the wireless settings, why do the settings go back to the previous value before they are saved?

The MVCI always returns to the Host Status display after 20 seconds of no user interaction. If this happens, all wireless changes made are lost. All changes must be saved before the MVCI returns to the Host Status display.

Why does the battery icon on the Host Status screen have an 'X' in it?

The batteries in the MVCI are not installed or they are installed incorrectly, or they are defective.

Why does the battery icon on the Host Status screen have a 'ZZ' in it?

Battery charging stops when the MVCI's internal temperature rises above 140°F (60°C). Battery charging resumes after the MVCI power is cycled (turned off and on) and the temperature is below 140°F (60°C). Refer to *System Status (Battery Charger)*.

What should I do if the Wireless SDIO card loses connectivity?

Remove and reinstall the SDIO card:

- Remove the SD card retainer.
- Remove the SDIO card.
- Insert the SDIO card into the SD card slot without seating the card.
- Reinstall the SD card retainer.
- Push down on the SDIO card to seat it in the slot.

Specifications

| | |
|---------------|--|
| Electrical | 32.739kHz Real Time Clock 400Mhz CPU (Software determined) |
| Display | 65 x 128 pixel LCD Graphic Display Backlight Supports a maximum of 4 lines of text |
| Status Lights | Vehicle Communication Indicator Wireless Connection Indicator Battery Discharging Indicator |
| Keypad | Escape/Off Button Enter Button Scroll (Up/Down/Left/Right) |
| Interface | SDIO/SD Memory Card Slots (2) Vehicle I/O Connector USB Device Port Ethernet Port USB On-The-Go Port |
| Battery | AA Rechargeable NiMH - 2000mAh SPX P/N H550175 |
| AC Adapter | Input: 100 - 240V AC 50/60Hz Output: 15V DC, 1.2A SPX P/N H547571 |
| Vehicle I/O | 26 pin Connector The MVCI is capable of taking voltage measurements on the vehicle diagnostic link I/O lines. These lines are limited to measurements between 0 - 32V DC, therefore, are considered in Measurement Category I (UL 61010-1). |
| Power Input | Power Adapter Port Vehicle I/O Port 8 - 32V DC |
| Environment | Operation of MVCI (readable LCD): 32°F to 140°F (0°C to 60°C) Operation of MVCI (non-readable LCD): -4°F to 140°F (-20°C to 60°C) Storage of MVCI: -4°F to 160°F (-20°C to 70°C) Operation Humidity: 20% to 85% RH at 100°F (38°C) |
| Physical | Approximate Size: 6.25" x 5" x 2" Approximate Weight: 1.5 lbs. |

BOSCH Service Solutions LLC Limited Warranty

Honda and Acura Dealerships

This Warranty is expressly limited to original retail buyers ("User") of the BOSCH MVCI Tool ("Units").

| Product | Warranty period |
|---|---|
| (i) The Honda MVCI, including wireless card | 61 months from invoice date |
| (ii) Memory Card, USB Cable, OBDII Cable and AC Adapter | 13 months from invoice date |
| (iii) "AA" NiMH off the shelf Batteries | Manufacturers Standard Warranty applies |

Limited Warranty

BOSCH Automotive Service Solutions and its authorized Repair Center(s) (referred to as "BOSCH") will repair this product with new or rebuilt parts, in the event of a defect in materials or workmanship.

This warranty only covers failures due to defects in materials or workmanship that occur during normal use for the applicable Service Agreement Period listed below.

BOSCH MAKES NO REPRESENTATION OR WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCTS, INCLUDING, WITHOUT BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF SATISFACTORY QUALITY, MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT. IN NO EVENT SHALL BOSCH BE LIABLE TO PURCHASER FOR ANY LOSS OF DATA, LOST PROFITS OR FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.

Limits and Exclusions

This warranty does not cover and shall be void for:

- Damage that is attributable to fire, theft or acts of God.
- Damage caused by environmental influences (electrical storms, magnetic fields etc.).
- Damage which has not been caused during normal operation
- Repair of damage that is cosmetic only or does not affect product functionality such as wear and tear, scratches and dents.
- Failures caused by products not supplied by BOSCH.
- Failures resulting from alteration, accidental damage, casualty, misuse, abuse or neglect.
- Introduction of liquid or other foreign matter into the unit.
- Improper installation, operation or maintenance.
- Improper connections with peripherals.
- Maladjustment of consumer controls such as function settings.
- Modification or service by anyone other than BOSCH or its approved Service Providers.
- Products whose serial number has been removed making the unit warranty condition impossible to clearly determine.

BOSCH shall not be liable for loss of data or other incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty. All express and implied warranties, including the warranties of satisfactory quality and fitness for a particular purpose are limited to the applicable warranty period set forth above.

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This limited warranty gives BOSCH specific legal rights, and BOSCH may have other rights that vary from country to country. BOSCH must consult the applicable country laws for a full determination of BOSCH's rights. This limited warranty is in addition to, and does not affect any rights arising out of any contract of sale or by statute. In the event that any product (or part thereof) is replaced, BOSCH shall transfer ownership of the replacement product (or part) to the customer and the customer shall transfer ownership of the replaced product (or part) to BOSCH.

Software

Unit software is proprietary, confidential information of BOSCH and protected under copyright law. Users have no right in or title to Unit software other than a limited right of use revocable by BOSCH. Users shall not (a) transfer or disclose the Software without the prior written consent of BOSCH, (b) disassemble, decompile, reverse engineer or otherwise attempt to derive the source code of the Unit software, or (c) remove or destroy any proprietary markings, confidential legends or any trademarks or trade names of the Unit software. Unit software may not be copied except in ordinary backup procedures. Unit software when correctly installed, will execute its programmed instructions. BOSCH does not warrant that software will operate uninterrupted or error-free.

Advance Replacement Procedure

Upon the discovery of a possible defect, contact the Support Center as set forth below. The User will be shipped an Advance Replacement Unit if such Unit is found to be defective under the terms of this warranty. In the event there are malfunctions or defects of the Product, BOSCH shall send an Advance Replacement unit to replace said malfunction or defective unit. Dealer/Distributor shall receive an Advance Replacement unit at no charge. Dealer/Distributor shall then return the malfunctioning or defective unit back to the BOSCH Support Center using the prepaid shipment instructions included with the Advance Replacement unit. If such Unit is found to be not covered under the warranty, after initial inspection at the BOSCH repair facility such User may be charged for the repair of the Unit.

| Markets | Support Center | Phone Number |
|-------------------------------------|--------------------------------------|-----------------|
| USA | American Honda Special Tools Hotline | 1-800-346-6327 |
| Mexico, Caribbean, Latin America | SPX Mexico | 52-55-2595-1630 |
| Guam, Puerto Rico | SPX USA | 1-586-753-3326 |

Disclaimer

THIS LIMITED WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall BOSCH be liable for any indirect, special, incidental or consequential damages (including lost profit) whether based on warranty, contract, tort or any other legal theory. No one is authorized to make any statement or representation altering the terms of this warranty. Certain exceptions to BOSCH's limited warranty may apply based on applicable laws and regulations.

Warranty and Service for Honda MVCI (P/N HON-3828-HR-AFT)

Independent Repair Facilities

Except as otherwise provided in this warranty; BOSCH Service Solutions Products are warranted against defects in materials and workmanship for three (3) years (36 months) from the date of shipment. BOSCH Service Solutions manufactured cables are warranted against defects in materials and workmanship for twelve (12) months from the date of shipment.

| Product | Warranty period |
|---|---|
| (i) The Honda MVCI (PRODUCT), including wireless card | 36 months from SPX's invoice date |
| (ii) Memory Card, USB Cable, OBDII Cable and AC Adapter | 12 months from SPX's invoice date |
| (iii) "AA" NiMH off the shelf Batteries | Manufacturers Standard Warranty applies |

For Technical Support, please call the BOSCH Hotline at 1-800-533-6127.

Limited Warranty

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This limited warranty gives BOSCH specific legal rights, and BOSCH may have other rights that vary from country to country. BOSCH must consult the applicable country laws for a full determination of BOSCH's rights. This limited warranty is in addition to, and does not affect any rights arising out of any contract of sale or by statute. In the event that any product (or part thereof) is replaced, BOSCH shall transfer ownership of the replacement product (or part) to the customer and the customer shall transfer ownership of the replaced product (or part) to BOSCH.

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