

COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE

SERVICE TOOLS

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MPI-2 DIAGNOSTIC CABLE.....	710 000 851	3
MPI-2 INTERFACE CARD.....	529 036 018	3

SERVICE TOOLS – OTHER SUPPLIER

Description	Part Number	Page
MALE-FEMALE EXTENSION SERIAL CABLE.....	DB9	3

GENERAL

Refer to *PROCEDURES* in this subsection for instructions on using the communication tools.

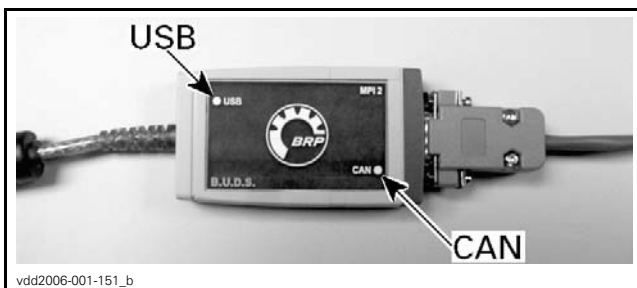
If communication problems occur, refer to *TROUBLESHOOTING* in this subsection.

TROUBLESHOOTING

DIAGNOSTIC TIPS

MPI-2 Connection Troubleshooting

The MPI-2 includes 2 status lights to indicate the connection condition: USB and CAN. **Both lights must be GREEN** for the MPI-2 to function properly. Otherwise, refer to the following charts.



Prerequisite for USB Communication:

- PC Computer turned on.
- MPI-2 connected to PC computer.

COMMUNICATION PROBLEM (USB)	
status	what to do
Light is OFF	<ul style="list-style-type: none"> – Check USB connection between MPI-2 and PC computer. – Check USB operation on PC computer (hardware or Windows drivers).

Prerequisite for CAN Communication:

1. MPI-2 connected to the vehicle communication connector.
2. Ignition key turned on.
3. B.U.D.S. started and logged.

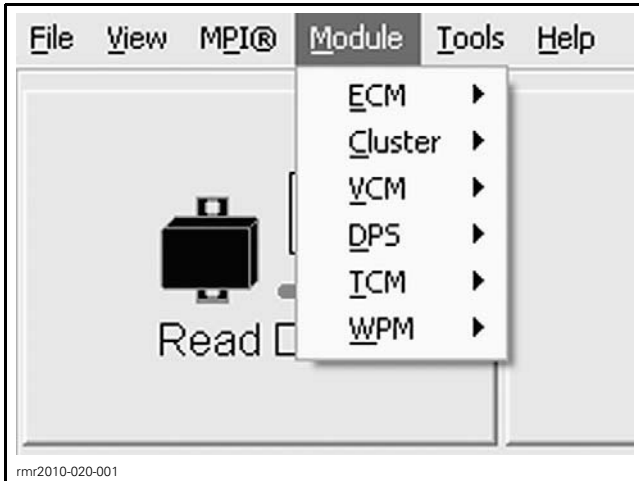
COMMUNICATION PROBLEM (CAN)	
status	what to do
Light is OFF	<ul style="list-style-type: none"> – Check connection between MPI-2 and diagnostic cable connector. – Check connection between diagnostic cable connector and vehicle communication connector.
Light is RED	<ul style="list-style-type: none"> – Check CAN wires/connectors on vehicle.

Communication Problems when using B.U.D.S.

Missing Module

If one or more "ECU" is (are) not communicating with the MPI, the module(s) may not be powered or may be defective.

1. To see which module is missing using B.U.D.S.; first select the **Read Data** button at the top of the B.U.D.S. page.
2. Then click on **Module** in the menu bar to expand its submenu.
3. Look at the list of modules in the submenu. If a module is not visible in the submenu list, then it is not communicating with the MPI.



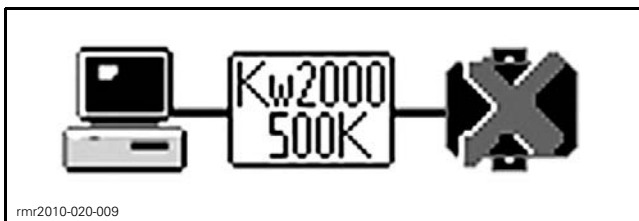
TYPICAL - MODULE SUBMENU LIST SE5 MODELS

NOTE: The TCM listed in the **Module** submenu illustrated is **ONLY AVAILABLE** with the **SE5** model.

4. Ensure the missing module is properly connected.
5. If the module is connected, remove the connector from the module and test for the following:
 - Proper input voltage to the module
 - Ground circuit continuity
 - CAN bus continuity.
 Refer to the *WIRING DIAGRAM* or appropriate subsection for details.

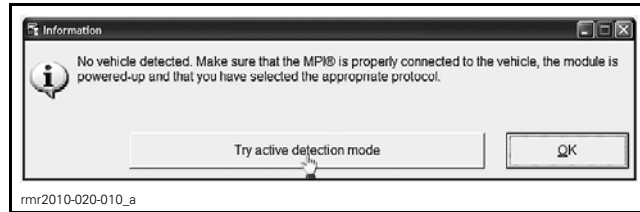
No Vehicle is Detected

If an "X" is shown in the status bar and the protocol indication is blinking between Kw2000 500K and KW2000, it means that no "ECU" is communicating with the MPI.



- Check the following:
- Connections between the PC computer and the vehicle
 - The vehicle is powered up.

If B.U.D.S. is trapped in a loop that continually displays the following message box, press on the **Try active detection mode** button in the message box. This will test if there is communication with the vehicle.



PROCEDURES

MULTI-PURPOSE INTERFACE-2 (MPI-2)

The MPI-2 (Multi-Purpose Interface-2) in conjunction with the MPI-2 diagnostic cable is used with the B.U.D.S. software to communicate with the Electronic Control Units (ECU).

MPI-2 Power

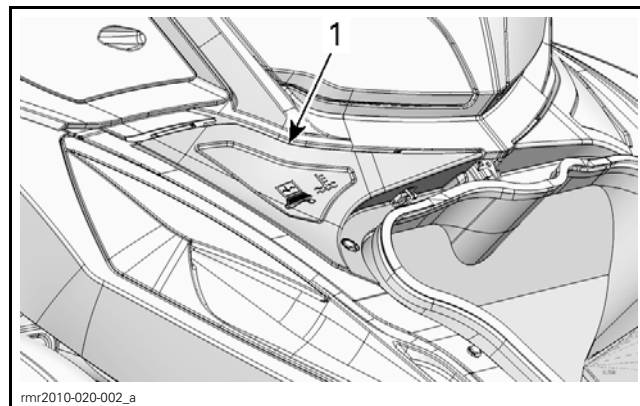
The MPI-2 interface card uses the power from the PC computer's USB port.

Connecting the PC to the Vehicle

WARNING

If the computer you are using is connected to a power outlet, there is a potential risk of electrocution when working in contact with water. Be careful not to touch water while working with the computer.

1. Open front storage compartment cover.
2. Remove the RH service cover.



1. Service cover

3. Locate the vehicle communication connector.



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TYPICAL
1. Vehicle communication connector location

Remove the communication connector from its holder (protective cap).

Connect one end of the MPI-2 DIAGNOSTIC CABLE (P/N 710 000 851) to the vehicle communication connector.



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TYPICAL - MPI-2 CONNECTION TO VEHICLE COMMUNICATION CONNECTOR

Connect the other end of the diagnostic cable to the MPI-2 INTERFACE CARD (P/N 529 036 018) connector.



529036018



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Connect the MPI-2 USB connector to the USB port on the PC (personal computer).

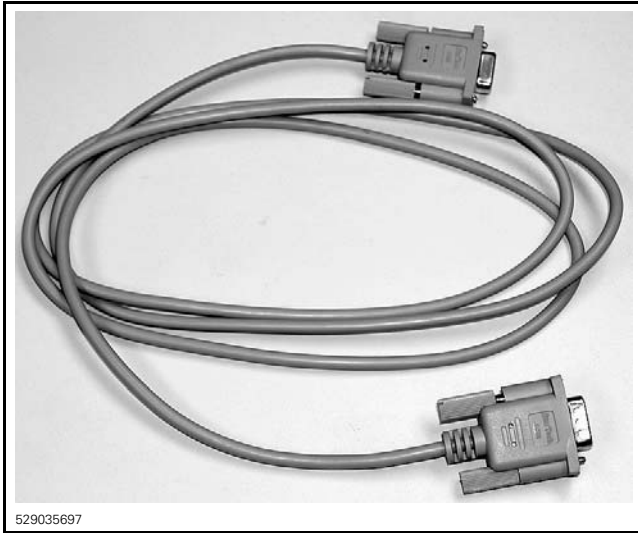


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Use B.U.D.S. software as described further in *B.U.D.S. SOFTWARE*.

NOTE: An optional MALE-FEMALE EXTENSION SERIAL CABLE (P/N DB9) available at electronic retail outlets can be used between diagnostic cable and MPI-2 interface. Do not exceed 7.6 m (25 ft) or communication between the vehicle and the PC computer may be lost.

Subsection XX (COMMUNICATION TOOLS AND B.U.D.S. SOFTWARE)



OPTIONAL MALE-FEMALE EXTENSION SERIAL CABLE

B.U.D.S. SOFTWARE

B.U.D.S. (BRP Utility and Diagnostic Software) is designed to allow electrical and electronic component monitoring, activation of certain components for testing and diagnostic purposes, and to carry out setting changes

Always use the latest applicable B.U.D.S. software version available on BOSSWeb.

For more information pertaining to the use of the B.U.D.S. software, use its **Help** menu which contains detailed information on its various functions.

Reading the Electronic Control Units using the B.U.D.S. Software

IMPORTANT: Ensure all connections are made **before starting B.U.D.S.** to allow proper operation. Refer to *CONNECTING THE PC TO THE VEHICLE* in this subsection.

1. Turn ignition key to ON.
2. Start the B.U.D.S. software.

NOTE: B.U.D.S. will automatically choose the appropriate MPI 2 protocol.

SM5 Model

3. Ensure the status bar shows the Kw2000 (500k) and the number 5 to its right.



CONNECTION SUCCESSFUL — ALL "ECU" ARE CONNECTED

NOTE: Number 5 means that 5 "ECU" (Electronic Control Unit) are connected (ECM, VCM, DPS, WPM and multifunction gauge).

If a number less than 5 is indicated, refer to *TROUBLESHOOTING* in this subsection.

SE5 Model

4. Ensure the status bar shows the Kw2000 (500k) and the number 6 to its right..



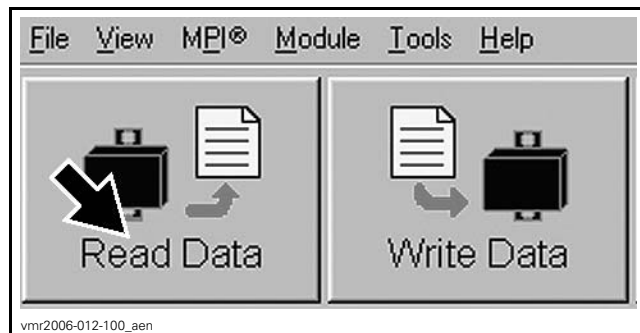
CONNECTION SUCCESSFUL — ALL "ECU" ARE CONNECTED

NOTE: Number 6 signifies that 6 "ECU" are connected (ECM, VCM, TCM, DPS, WPM and multifunction gauge (cluster)).

If a number less than 6 is indicated, refer to *TROUBLESHOOTING* in this subsection.

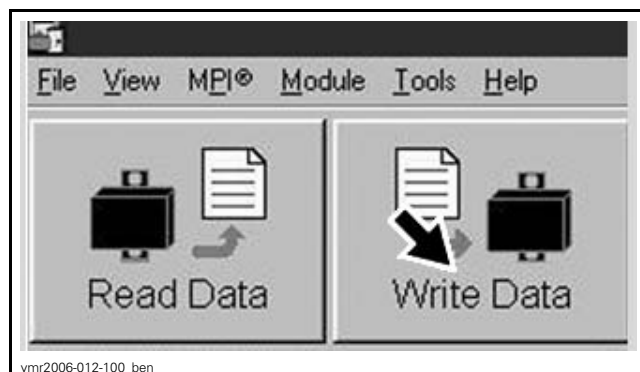
SM5 and SE5 Model

5. Read the ECUs by clicking the **Read Data** button.

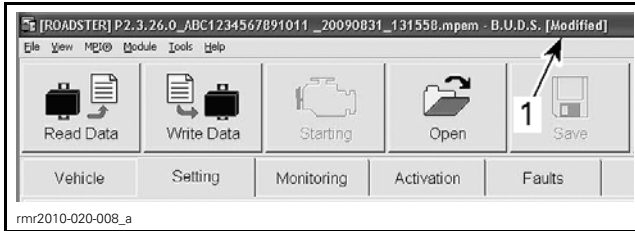


Writing Changes in an ECU

When making a data or setting change in an ECU using B.U.D.S., save the new data (or setting) in the ECU by clicking the **Write Data** button.



NOTE: If the word **Modified** appears in the vehicle file identification number at the top of the B.U.D.S. page, then a change has been made that requires selecting the **Write Data** for the change to be saved.

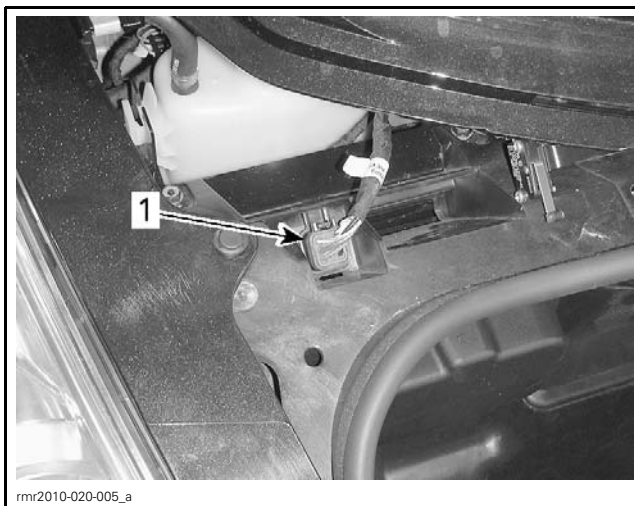


When a change is made in the ECM using B.U.D.S., an ECM Tracking box that will say "Remove key from the vehicle..." may appear on the computer monitor.



When this occurs, turn the ignition key OFF and wait until the message disappears (approximately 20 seconds after key removal).

Disconnect the MPI connections and store the communication connector in its protective cap.

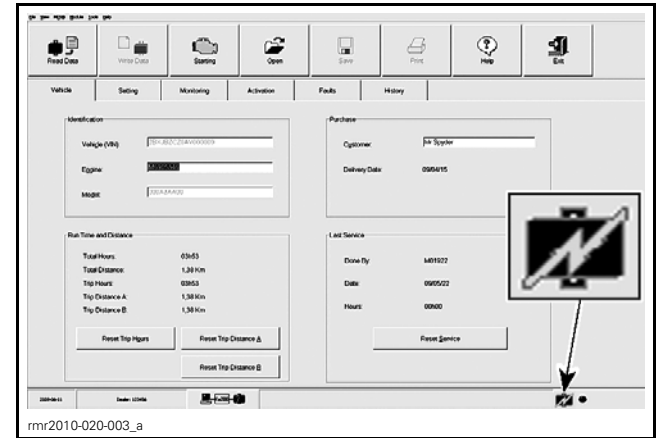


1. Communication connector stored in protective cap

NOTICE Failure to secure the diagnostic connector in its protective cap may result in corrosion or other damage to the terminals.

Electronic Modules ("ECU") Update

Whenever B.U.D.S. is first connected to a vehicle, check for an update icon in the B.U.D.S. status bar at the bottom of the **Vehicle** page.

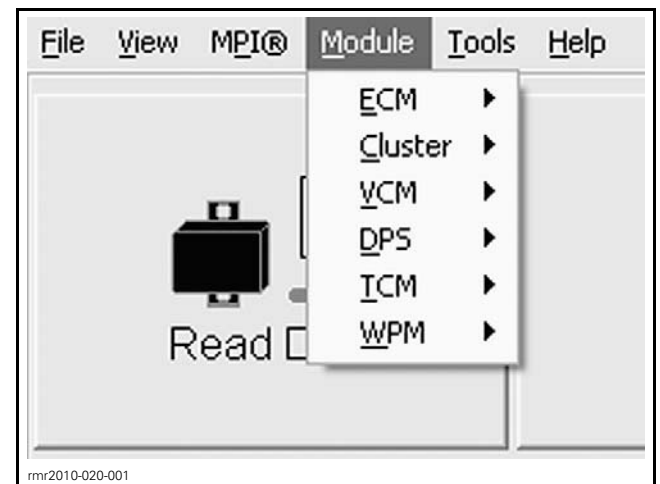


TYPICAL - UPDATE ICON

If the update icon is visible, B.U.D.S. indicates that a file is available to update at least one of the electronic modules.

NOTE: If an update file is available on BOSSWeb but the B.U.D.S. software being used is not up to date, the update icon will not appear. Refer to the service bulletins to see if there is an update available.

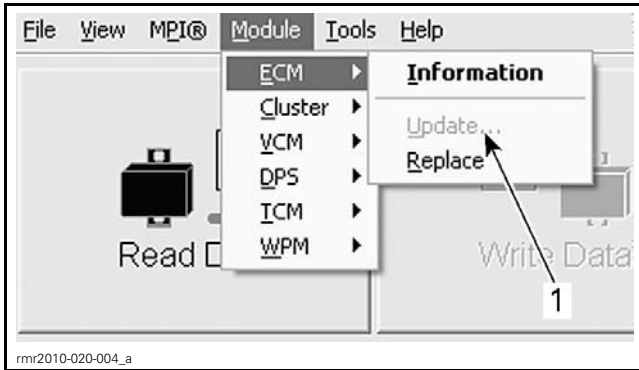
Use the **Module** submenu and check all modules one at a time to see which module(s) can be updated.



TYPICAL - MODULE SUBMENU LIST, SE5 MODEL ILLUSTRATED

1. If the **Update** option is **greyed out**, no update file is available for this module.
2. If the **Update** option is **black**, an update file is available for this module. Select the update option and load the proper file.

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1. Greyed out: No update to perform
Black: Update file available