Laptop Connect to AIM

> *NOTE* This product bulletin applies to AIM2, AIM2HD, AIM2.4, and AIM2.4HD.
>
> Hyperterminal is not an accessory provided on PCs/laptops with the newest operating systems. And Procomm Plus has to be purchased. PuTTY is a free program which may be downloaded and used to make a PC/laptop connection to FuelMaster®. A description of PuTTY and how to get and use it may be found under Using PuTTY.

Several programming and troubleshooting options are possible by direct connecting a laptop to AIM. Once the connection is made, select the communications software to be used, and set it up according to the direction provided under Communicate with Hyperterminal, Communicate with Procomm Plus, or Communicate with PuTTY. Each communication method will include a capture procedure preceded with (Capture). If desired to capture screen text into a file, perform this procedure.

A direct connect serial cable (see Figure 1) may be purchased from Syntech by ordering part number 941B0423. In the February 2012 price list, the MSRP for the cable was $49.96. It is not cost effective to manufacture your own cable. There are three connectors and over twenty feet of two types of cable.

If the laptop has a USB port and no DB9 serial port, a USB/serial adapter will be needed. If a USB/serial adapter is used, ensure the drivers are installed from the accompanying CD or the cable will not function properly.

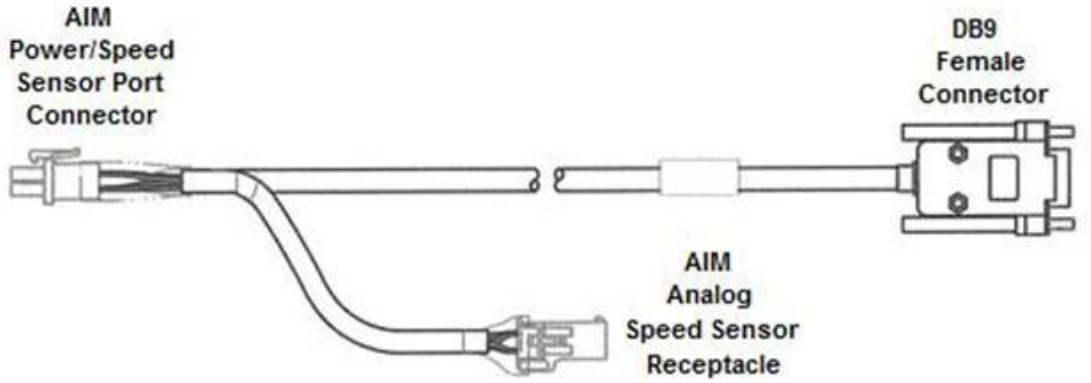

Figure 1. 941B0423 AIM Direct Connect Cable

Connection to Non-HD AIM Modules

> *NOTE* See Connection to HD AIM Modules, below, for connection to HD modules.

The AIM module must be powered to communicate with it through a laptop connection. If the AIM module is installed in a vehicle, the module will be powered through the vehicle connections. If a connection is being made outside a vehicle, power will have to be supplied through other means. An AIM Analog Speed Sensor Cable may be used to power the module. Connect the red wire to 12VDC and the black wire to ground. If the module goes to “sleep” due to inactivity, it may be wakened by disconnecting and reconnecting the (OBD) OBD cable, or (Analog) the AIM Analog Speed Sensor Cable.

Perform the following to connect to a non-HD AIM module:

1. Connect the direct connect cable DB9 Female Connector to the laptop DB9 serial connector (or USB/serial adapter).
2. (Analog) Disconnect the AIM Analog Speed Sensor Cable from the module Power/Speed Sensor Port.
3. Connect the direct connect cable AIM Power/Speed Sensor Port Connector to the AIM module Power/Speed Sensor Port.
4. (Analog) Connect the AIM Analog Speed Sensor Cable to the direct connect cable AIM Analog Speed Sensor Receptacle.

Connection to HD AIM Modules

Connections to AIM2HD and AIM2.4HD are different. See below for connection to AIM2HD. When laptop connecting to an AIM2.4HD module, a 941B0616 Direct Connect Adapter Cable must be used. The 8-pin connector on the 941B0616 attaches to the AIM Power/Speed Sensor Port Connector on the 941B0423 AIM Direct Connect Cable, and the 4-pin connector attaches to the 4-pin connector of the AIM HD “octopus” cable. Where AIM2HD requires an external radio connection through the 4-pin connector, AIM2.4HD has an integral 2.4GHz radio and does not need the external radio connection.

To troubleshoot AIM2HD, the AIM2HD module must be enumerated to the FMU, and a laptop connection must be made to the FMU using the 941C0105 direct connect cable in accordance with PB-111. When the laptop connection is made to the FMU, an RF pass-through command (BC) must be issued to log in to the AIM2HD module. Then you can use the AIM commands (samples on page 6). This connection method may also be used with AIM2, AIM2.4, and AIM2.4HD.

Communicate with Hyperterminal

> ***NOTE*** Hyperterminal is a free accessory provided on PCs with operating systems prior to Windows Vista. A free copy for personal use may be downloaded from the internet, or another similar program (i.e., Procomm Plus, PuTTY) may be used.

To set up Hyperterminal, perform the following:

1. Open the Hyperterminal program on your laptop.
2. When the Connection Description window appears, enter a file name and select an icon for the new connection, then click OK.
3. In the Connect To window, change Connect using: to one of the COM ports listed (i.e., COM1), then click OK.
4. In the COM1 Properties window, change the Port Settings to:
    a. Bits per second: 19200,
    b. Data bits: 8,
    c. Parity: None,
    d. Stop bits: 1, and
    e. Flow control: Xon/Xoff
5. Click Apply, then OK. A blank window will be displayed with the cursor flashing in the upper left corner. Save the file just created so the settings will be available the next time Hyperterminal is used.
6. (Capture) If desired to capture and save any of the screen text displayed with a Hyperterminal connection, perform the following:
    a. From the menu choices shown over the icons on the blank Hyperterminal window, click on Transfer. A popup menu will appear.
    b. In the popup menu, click on Capture Text... A Capture Text window will open.
    c. In the Capture Text window, click on the Browse... button to change the drive, folder, and file name, as desired, then click on the Start button near the bottom of the window.
    d. The Capture Text window will close. Screen text displayed in the Hyperterminal window will be captured.
    e. After completing the desired actions in step 7, below, click on Transfer, again. The popup menu will reappear.
    f. Click on Capture Text... An option to Stop will appear.
    g. Click on Stop. The Capture will stop and the screen text will be available in the file named in step c, above.

7. Simultaneously depress Ctrl and D to log on to the AIM module. A display (see Figure 2) similar to the following will appear. From this point, commands may be entered at the cursor location to view or program information into the AIM module. Commands used to view or program information into AIM modules are subject to change with each new firmware update. Use the question mark (?) to see a listing of commands applicable to the module you are logged into. Some sample commands are shown on page 6.

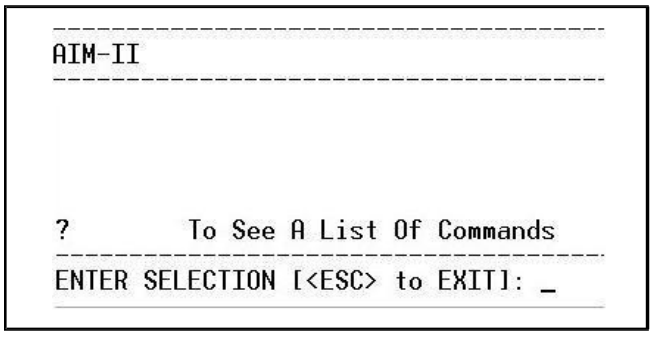

Figure 2. AIM Module Logon Screen

8. When desired, enter ESC to disconnect from the AIM module, and click on X at the top of the window to exit Hyperterminal.
9. As necessary, disconnect from the AIM module as follows:
   a. (Analog) Disconnect the AIM Analog Speed Sensor Cable from the direct connect cable AIM Analog Speed Sensor Receptacle.
   b. Disconnect the direct connect cable AIM Power/Speed Sensor Port Connector from the AIM module Power/Speed Sensor Port.
   c. (Analog) Reconnect the AIM Analog Speed Sensor Cable to the module Power/Speed Sensor Port.
   d. Disconnect the direct connect cable DB9 Female Connector from the laptop DB9 serial connector (or USB/serial adapter).

Communicate with Procomm Plus

To set up Procomm Plus, perform the following:

1. Open Procomm Plus on your laptop.
2. In the pulldown menu under Rapid Connect: select Data.
3. In the pulldown menu under Script File: select STARTUP.
4. Click on Options from the upper menu bar. A pulldown menu will open.
5. Click on System Options from the pulldown menu. Another pulldown menu will open.
6. Click on Modem Connection... from this pulldown menu. A Setup window will open.

7. Click on the System tab. Beside Current Modem/Connection: select a direct connect-Com port. If no other device is using a serial port, direct connect-Com1 should work.
8. Click on the Modem/Connection Properties… button. A Modem/Connection Properties window will open. Make the following settings:
   a. Baud rate: 19200,
   b. Parity: None,
   c. Data bits: 8,
   d. Stop bits: 1
   e. Use hardware flow control: uncheck,
   f. Use software flow control: uncheck,
   g. Drop DTR to hang up: uncheck,
   h. Click OK to save and exit the Modem/Connection Properties window.
9. Back in the Setup window, check the box next to Make this connection available to Procomm Plus, then click on OK to save and exit the Setup window.

NOTE There are other methods to capture text with Procomm Plus, but they have limitations. The method described in step 10, below, will capture all generated screen text.

10. (Capture) If desired to capture and save the screen text displayed during the Procomm Plus connection, perform the following:
    a. Before logging on to the AIM module, click on the File Capture icon (see Figure 3) at the top of the Procomm Plus Terminal window. A notification for a Capture File Opened – pw .cap file will be posted at the bottom left side of the window (example: pw11.cap includes the sequence number 11).

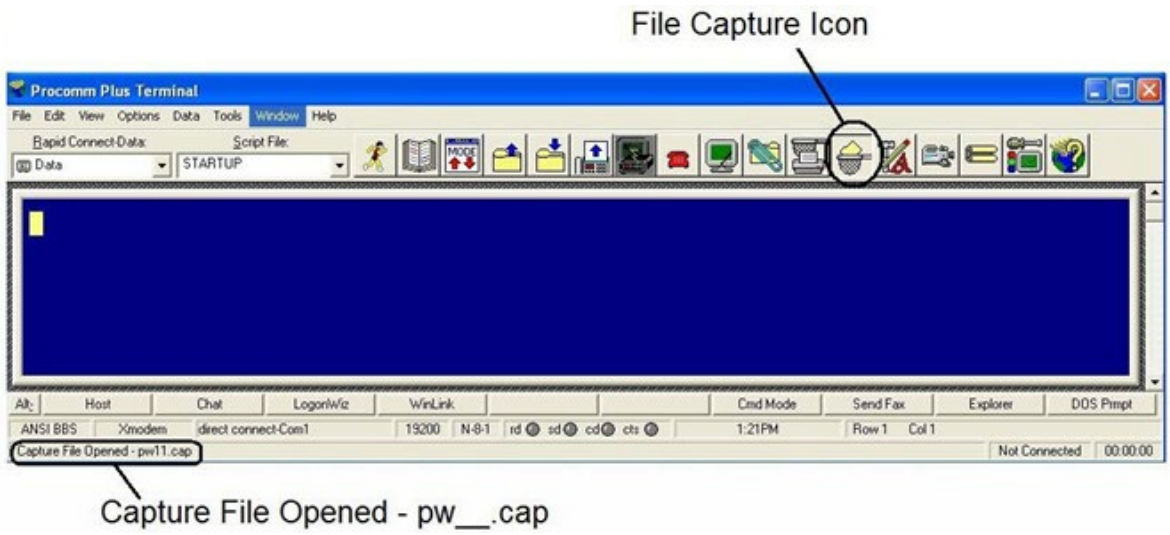

Figure 3. Procomm Plus Terminal

b. Proceed to step 11 and view or program information into the AIM module. When complete, and before exiting Procomm Plus, click on the File Capture icon again. The Capture File Opened notification will change to Capture File Closed.

c. The pw .cap file is saved in a folder where the Procomm Plus files are located. If installed to a default location, Procomm Plus will be in a subfolder under Symantec. The pw .cap file will be in a Capture subfolder under Procomm Plus (example: C:\Program Files\Symantec\Procomm Plus\Capture\pw01.cap). The pw01.cap file may not be recognized as being associated with Notepad, WordPad, or Word, but should open for viewing or printing with any of these programs.

11. Simultaneously depress Ctrl and D to log on to the AIM module. A display similar to Figure 2 will appear. From this point, commands may be entered at the cursor location to view or program information into the AIM module. Commands used to view or program information into AIM modules are subject to change with each new firmware update. Use the question mark (?) to see a listing of commands applicable to the module you are logged into. Some sample commands are shown on page 5.

12. When desired, enter ESC to disconnect from the AIM module, and click on X at the top of the window to exit Procomm Plus.

13. As necessary, disconnect from the AIM module as follows:

    a. (Analog) Disconnect the AIM Analog Speed Sensor Cable from the direct connect cable AIM Analog Speed Sensor Receptacle.

    b. Disconnect the direct connect cable AIM Power/Speed Sensor Port Connector from the AIM module Power/Speed Sensor Port.

    c. (Analog) Reconnect the AIM Analog Speed Sensor Cable to the module Power/Speed Sensor Port.

    d. Disconnect the direct connect cable DB9 Female Connector from the laptop DB9 serial connector (or USB/serial adapter).

Communicate with PuTTY

PuTTY is a free SSH (secure shell) client downloadable from http://putty.managedownloads.com/. Some newer operating systems do not have a free accessory program like Hyperterminal which may be used to connect to a remote FMU. And Procomm Plus must be purchased before it may be used. PuTTY has been tested by our Customer Satisfaction Center and found to be practical for this application. The putty.exe file is the only file needed to run PuTTY. To set up PuTTY, perform the following:

1. Open Putty on your laptop. A PuTTY Configuration window will open.

2. On the right under “Basic options for your PuTTY session”, and Connection type: click on Serial. The Host Name (or IP address) and Port boxes will change to Serial line and Speed boxes.

3. In the Serial line box enter the Com port being used.

4. In the Speed box, enter 19200.
5. (Capture) If desired to capture screen text, perform the following before logging into the AIM module:
    a. In the PuTTY Configuration window, on the left under Category: click on Logging under Session. On the right, a menu for Options controlling session logging will open.
    b. Under Session logging: click on Printable output.
    c. Under Log file name: click on the Browse button to find the drive and folder to place the log file in, then enter a Log file name in the box. The remainder of the settings may be left as default.
    d. Click on the Open button at the bottom of the window. A COM1 – PuTTY window will open.
    e. Simultaneously depress Ctrl and D to log on to the AIM module. A display similar to Figure 2 will appear. From this point, commands may be entered at the cursor location to view or program information into the AIM module. All the screen text displayed after logging into the AIM module will appear in the log file located and named in step c, above.
6. If the Capture option was not used, click on Open at the bottom of the window. A COM1 – PuTTY window will open. Simultaneously depress Ctrl and D to log on to the AIM module. A display similar to Figure 2 will appear. From this point, commands may be entered at the cursor location to view or program information into the AIM module. Commands used to view or program information into AIM modules are subject to change with each new firmware update. Use the question mark (?) to see a listing of commands applicable to the module you are logged into. Some sample commands are shown on page 5.
7. When desired, enter ESC to disconnect from the AIM module, and click on X at the top of the window to exit PuTTY.
8. As necessary, disconnect from the AIM module as follows:
    a. (Analog) Disconnect the AIM Analog Speed Sensor Cable from the direct connect cable AIM Analog Speed Sensor Receptacle.
    b. Disconnect the direct connect cable AIM Power/Speed Sensor Port Connector from the AIM module Power/Speed Sensor Port.
    c. (Analog) Reconnect the AIM Analog Speed Sensor Cable to the module Power/Speed Sensor Port.
    d. Disconnect the direct connect cable DB9 Female Connector from the laptop DB9 serial connector (or USB/serial adapter).

View/Program AIM Module Information

> *NOTE* Command summaries will not be the same for different firmware versions. Use the commands in the command summary of the firmware in use to view or program information into the AIM module.

Sample Command Summary from AIM2 Firmware v1.25

AOPT	Configure advanced options
CHRON	View real-time chronometer data
CLEANAIM	Erase all AIM memory (includes record)
ERR	Display logged errors
ERRCLEAR	Erase all logged errors
FLASH	RF firmware update options
FMU	Display FMUs in radio range
INT	View/Configure vehicle interface
OBD	OBD Menu
OBDOTR	Display OTR data in real time
OBDP	Display supported OBD parameters
ODE	Display OBD data extensions data
ODEMIN	Display min/max ext data
OCRESET	Clears stored odom calib data
OCV	View odometer calibration data
ODOM	View/Configure real-time odometer
ODRESET	Reset OBD data extensions data
OO	[Test only] View OBD debug messages
OPT	View/Configure AIM record options
PL	[Test only] Simulate power loss
PROTO	View/Configure OBD protocol settings
PV	View RF data packets
RADIO	View/Configure current radio channel
RECORD	View/Configure AIM record
RFID	View inserted hose tags
RFIDX	View hose tags (don't force lumps on)
ROMID	Display AIM serial number
SLEEP	[Test only] Enter sleep debug mode
STATE	View AIMs current state
TIMEOUT	Configure timeouts
UPDATE	Burns newly received firmware image
VER	Display current firmware version
VS	Display vehicle interface state
?	Use to obtain a command listing

TIP	If any questions arise, contact Syntech Systems, Inc.'s Customer Satisfaction Center (CSC) at 1-800-888-9136, ext. 2, or email support@myfuelmaster.com.

Change Log

Date	Description
12/10/2010	Original
1/21/2013	Revision Added PuTTY application
4/8/2013	Revision Added options for HD modules, added print features for all communications option
12/23/2020	Reformatted/rebranded