

PassThru Pro 2 User Manual

PassThru Pro 2 Contents

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Getting to Know PassThru Pro 2

The PassThru Pro 2 supports all modern vehicle reprogramming protocols including: J1850VPW, J1850PWM, CAN, ISO 15765, ISO 9141, ISO 14230/KWP2000, and Chrysler SCI

Your package includes: the PassThru Pro 2 hardware, a MVCI-J1962 vehicle interface cable, a USB cable, and a CD including drivers and support tools.

Because J2534-1 is a widely accepted standard, the PassThru Pro 2 will work with a variety of ECM reprogramming applications. The EPA-Published regulation has led to publicly available reprogramming applications from almost every major automaker. These applications will allow independent repair shops to update the calibrations on newer automobiles.

Connectors and Status Indicators

Front Panel

There are 6 status lights on the front panel of the PassThru Pro 2. These status lights are useful for troubleshooting the PassThru Pro 2's connection to a PC.



Figure 1: PassThru Pro 2 front plate

The yellow warning light indicates that PassThru Pro 2 is communicating with the vehicle. Do not disconnect while this is illuminated! If you interrupt a reflash while the vehicle's ECU is blank or only partially programmed, the module may be unrecoverable. Refer to Table 1 for a description of the other status lights.

Table 1: Status lights on the front panel of PassThru Pro 2

#	Light	Description
	Power	Power (Solid Green)
1	Ethernet	Green indicates a good connection directly to a PC or to an existing Ethernet network.
2	USB	Green indicates a good USB connection. The PC has identified and configured PassThru Pro 2 properly.
3	Wireless	Green indicates a good connection directly to a PC or to an existing wireless access point.
4	Vehicle	Yellow warns that PassThru Pro 2 is talking to a vehicle. Blinks to indicate activity on the vehicle's network.
5	Fault	Red indicates a momentary network fault or a serious hardware failure. Please call technical support for assistance.

Rear Panel

Connections to the vehicle, Ethernet, analog inputs, and external programming voltage are available on the rear panel.

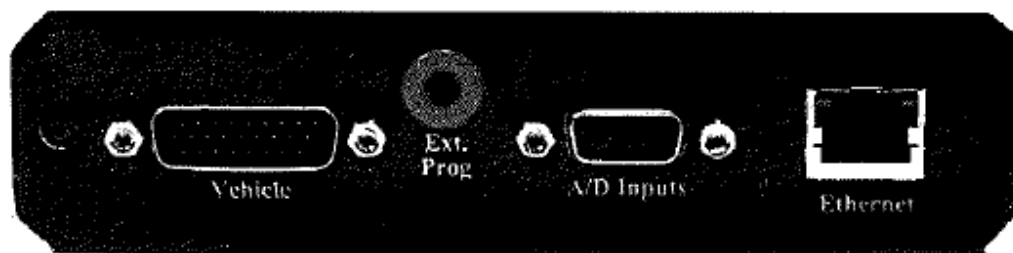


Figure 2: Rear panel with vehicle, analog, and Ethernet sockets

The external programming socket provides the user with access to the 5-20V programming voltage. This is used for Mitsubishi, Subaru or any other vehicle that needs voltage on an additional connector.

Vehicle Connector

The mating connector is a standard MVI, High Density DB-26.

Pin #	Function
1	CAN2 Single Wire
2	J1850PWM+ J1850VPW
3	CAN2+
4	Case Ground
5	Signal Ground
6	CAN+ (CAN-C only) SCI A Engine 5v-20v out
7	ISO-9141 K-line SCI A Engine SCI A Trans SCI B Engine
8	No Connect
9	SCI B Trans 5v-20v out or short-to-ground
10	J1850PWM-
11	CAN2- 5v-20v out
12	SCI B Engine 5v-20v out or short-to-ground
13	5v-20v out
14	CAN- (CAN-C only) SCI A Trans 5v-20v out
15	ISO L Line SCI B Trans Short-to-ground
16	Battery In (150mA @ 12 VDC)
17	Cable ID 2
18	Cable ID 1
23	+5 output (50mA fused)
26	Ground

Ethernet Lights

Use the standard Ethernet cable (black) to connect to an existing network, or use the crossover cable (blue with red ends) to connect directly to a laptop.

	Color	Description
Left	Green	Ethernet Activity
Right	Green	Ethernet Link Light

Analog Connector

The 12-bit analog inputs are setup for an input range of 0 to 27.5VDC and are electrically protected against reverse voltage and over voltage conditions. The Mating connector is a High Density DB-15

Pin #	Function	Direction
2	Channel 6	In
4	Channel 3	In
6	Battery Voltage	Out (200mA max)
8	Channel 4	In
10	Channel 1	In
12	Channel 5	In
14	Channel 2	In
1, 3, 5, 7, 9, 11, 13, 15	Ground	

Setting up the PassThru Pro 2

Powering PassThru Pro 2

First, determine how the PassThru Pro 2 will receive power:

- a) Vehicle power: The optional MVCI to OBD-II cable provides power to the PassThru Pro 2 from a vehicle. Most vehicles built after 1996 have an OBD-II port somewhere under the dash on the driver's side, as specified in SAE J1962.
- b) Bench top power supply: When using the PassThru Pro 2 on a bench, put power on pin 16 (VBATT) and ground on pin 5 (Signal Ground).

When PassThru Pro 2 is first powered-on, the lights will cycle through a self-test procedure. Remember that the PassThru Pro 2 does not receive power from your PC's Ethernet or USB ports.

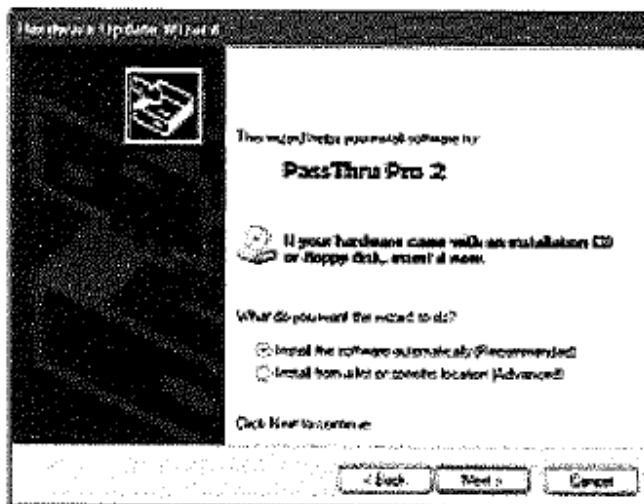
Connecting and Configuring PassThru Pro 2

Second, connect the PassThru Pro 2 to your PC:

Using USB

The PassThru Pro 2 is powered from the vehicle connector, so it will have to be connected to a vehicle or powered from an external power supply to use USB. Once powered, connect your PC to the PassThru Pro 2 thru USB to install the drivers.

1) Once connected, you will be prompted from windows with new hardware found.



2) Select Install from a list or specific location. Click browse and point to the CD drive, under the Drivers-USB folder. If your CD-ROM is Drive letter E, the path would be e:\Drivers-USB.

3) Follow the process, it will install the USB drivers.

Using Ethernet

We strongly recommend configuring PassThru Pro 2's default network settings to Client then Server mode, because no configuration changes would be required when moving the PassThru Pro 2 between LAN and in-vehicle use.

To a Laptop Directly

Connect a cross-over type Ethernet cable between a PC and the PassThru Pro 2.

To an Existing LAN

Connect a standard Ethernet cable. On most LANs, PassThru Pro 2 can obtain its IP address automatically using DHCP. Ask your network administrator if this service is available on your network.

PassThru Pro 2 Checker Program

The PassThru Pro 2 Checker Program is a handy tool for collecting current state information of your PassThru Pro 2. The program allows you to change Ethernet configurations, update the firmware, find the current IP address, and firmware revision.

To run the PassThru Pro 2 Checker Program, insert the CD that came with your PassThru Pro 2 into your PC. Using My Computer, double click on the CD Rom drive. Next, double click on the "PTPCheckerProject" file.

Updating Firmware with the PassThru Pro 2 Checker Program

The PassThru Pro 2 Checker Program can update the Firmware of your PassThru Pro 2 either over the Ethernet connection or over USB.

To begin, make sure your PassThru Pro 2 is connected to your PC. Run the PassThru Pro 2 Checker Program. Your PassThru Pro 2 will automatically be found. If you have more than one PassThru Pro 2 attached to your local network, you have the option to pick a specific unit from the drop down at the top. Once your PassThru Pro 2 has been selected, click on "Update Firmware." Browse to the location of the PassThru Pro 2 firmware file, select the file, and click "Open." Your PassThru Pro 2 will now be updated. This process can take up to 10 minutes. **DO NOT UNPLUG YOUR PASSTHRU PRO 2 UNTIL THE PROGRAM HAS FINISHED.**

Install Check Program

The Install Check program allows users to view information on the status of drivers currently installed on a PC. To make sure your PassThru Pro 2 drivers are installed correctly, run "Install_Check.exe" from the CD included with your PassThru Pro 2. If your drivers are installed correctly the program will show:

"PassThru Pro USB Installed"

If you do not see either of these entries then your PassThru Pro 2 drivers are not installed.

Vehicle Check Program

The Vehicle Check program is a handy utility that allows a user to find what communication protocol a vehicle uses and the VIN number associated with that vehicle. To use the Vehicle Check program first make sure that your PassThru Pro 2 is connected to a vehicle and to your PC, and also have the vehicle's key in the ON position. Run the "Vehicle_Check.exe" program from the CD. Make sure your PassThru Pro 2 is selected from the drop down box and click "Check Connection." Each OBD protocol will be checked for a vehicle connection and VIN. The results will be displayed in the appropriate column.

Debug Check Program

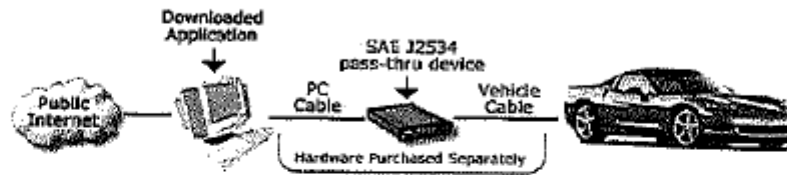
The Debug Check Program is a tool that our customers can use when they are having trouble with J2534 communications. The program enable debugging for the PassThru Pro 2 and gives Tech Support good insight into a problem.

To turn debugging on, run the "Debug_Check.exe" from the CD that came with your PassThru Pro 2. Once the program is running, make sure there is a check mark next to "PassThru Pro 2" in the upper left corner. Next Click "Enable Debug." Now when you run your J2534 application a file is made that allows us to see what messages get sent through the PassThru Pro 2. This file is saved in the C:\Documents and Settings\USERNAME\Local Settings\Temp directory for XP and the C:\Users\USERNAME\AppData\Local\Temp directoy for Vista.

To send support a debug file, run "Debug_Check.exe" from the CD and click on "Read Debug file." You will have to pick the debug file from the window. They are saved as a text file and look similar to this: "DebugPlus_1216221943_6936.txt" Once you have the file selected click "Open." Now copy all of the text in the screen and E-mail it to support.

Reprogramming with J2534

If you want to reprogram vehicles using OEM software, you can find a list below of websites that offer subscription software.



Automaker	Website
BMW	http://www.bmwtechinfo.com/
Mini	http://www.minitechinfo.com/
Porsche	http://techinfo.porsche.com/
Chrysler, Jeep, Dodge	http://www.techauthority.com/
Ford, Lincoln, Mercury,	http://www.motorcraft.com/
Land Rover	http://www.landrovertechinfo.com/
Volvo	http://www.volvotechinfo.com/
Cadillac, Chevrolet, Daewoo, GM, GEO, Pontiac, Buick, Saturn, SAAB	http://www.gmtechinfo.com/
Acura, Honda	http://www.serviceexpress.honda.com/
Isuzu	http://www.isuzutechinfo.com/
Mazda	http://www.mazdatechinfo.com/
Mercedes	http://www.startekinfo.com/
Mitsubishi	http://www.mitsubishitechinfo.com/
Nissan	http://www.nissan-techinfo.com
Toyota, Lexus, Scion	http://techinfo.toyota.com/
Volkswagen	http://www.erwin.volkswagen.de/erWinVW
Audi	http://erwin.audi.de/erWinAudi

When reprogramming, always be sure the vehicle battery is fully charged and in good working condition. We recommend connecting an external battery charger to ensure a successful operation.

More information on how to use J2534 reprogramming can be found at www.passthru.pro.snapon.com

Specifications

PassThru Pro 2 Specifications:

Name	Value
Input Voltage Range	6VDC to 26VDC
Supply Current	320mA @ 6VDC 200mA @12VDC 170mA @15VDC
Operating Temperature	+0C to +60C ambient
Storage Temperature	-65C to +100C ambient
Size	1.25"H x 7.5"D x 5.25"W

Bus Protocols

- Primary CAN / ISO15765 / GMLAN
- Secondary CAN / ISO15765 / GMLAN (Dual or Single Wire)
- Ford SCP (J1850PWM)
- GM Class2 (J1850VPW)
- KWP2000 (ISO9141/14230)
- Chrysler SCI (J2610)

Other

- Compliant to SAE J2534 (Feb 2002) and SAE J2534-1 (Dec 2004)
- Compliant to ISO 22900-1 MVCI physical layer
- Programming voltage on J1962 pin 6, 9, 11, 12, 13, 14 or Aux
- Ground pins 9, 12, or 15

Note: Drawing current in excess of 200ma on a line configured for FEPS programming voltage may damage the PassThru Pro 2 hardware. Avoid grounding any output pin configured for programming voltage! Battery Voltage is fused (auto reset) at 200mA.

Troubleshooting and Support

If you cannot communicate with PassThru Pro 2

Ask the following questions:

- Does PassThru Pro 2 have power, and is the green power LED illuminated?
- Is the battery or power supply voltage between 6VDC and 15VDC, with correct polarity?
- Could any firewall software be interfering with the Ethernet port?
- Are you using the correct Ethernet cable: a cross-over cable if connected directly to a computer or a standard patch cable if connected to a hub or switch?
- Is the green status light illuminated for Ethernet, USB, or wireless?

If these issues have been addressed, verified, and you are still having trouble, please contact Snap-On.

If you need to recover from incorrect settings (Ethernet Only)

If you are using Ethernet and would like to reset configuration to default, go to <http://PassThruPro/>, select "Boot Options" and click the "Load Factory Default Settings" button. Use the default username **root** and password **powerful** when requested.

If all else fails and you cannot reach the PassThru Pro 2 webpage, hold down the black button on the front of the PassThru Pro 2 while powering on PassThru Pro 2 to enter recovery mode. This resets PassThru Pro 2 to "Client Then Server" mode; it is useful when PassThru Pro 2 is configured for an unknown static IP address or invalid boot options.

If you need to generate a logfile for debugging

Please see previous section: PassThru Pro 2 Debug Check Program

If you need to update drivers or firmware

Your PassThru Pro 2 contains field-upgradeable firmware. Updates are regularly released which: include new features, improve performance, and correct problems. Please visit Snap-on's download page at:

<http://www.passthru.pro.snapon.com>

To update the PassThru Pro 2 firmware: Apply power to PassThru Pro 2. Load the configuration webpage in a web browser, and follow the instructions for selecting and uploading a new firmware file.

To update the PC driver: click on the Installer link like a new installation.

Verify the network is configured correctly

- 1) Try to connect to the PassThru Pro 2 web page. Consult the networking section above for details.

If that does not work, try:

- Turning off any firewall/antivirus software.
- Picking a different connection method. For example, try the fixed IP addressing mode.
- Using recovery mode to make sure the PassThru Pro 2 is configured correctly. Recovery mode is entered by holding down the front button during power-on.

If the PassThru Pro 2 web page works, but applications don't work:

- The DLL may not be installed. Install the DLL using the instructions on page 5 of this quick start guide.
- The network settings may be incorrect. Specifically, verify that the PassThru Pro 2 netmask setting is the same as the PC/laptop's netmask setting.
- The application may be looking for the wrong J2534 device. Make sure "PassThru Pro 2" is selected.

If applications work, but not the PassThru Pro 2 web page:

- Verify that your web browser is not using a proxy. (Under **Tools >> Options >> Local Area Network Settings**)
- If your PC/Laptop is running firewall software, try turning it off to see if that is the problem.
- In DHCP Client mode, the IP address of the PassThru Pro 2 can change. Enter <http://PASSTHRUPRO/> in your browser, but only after waiting a few minutes for the PassThru Pro 2 to register itself on the network. Alternately, look at the logs for your network DHCP server.
- Use recovery mode to verify the PassThru Pro 2 has the correct settings.

If all else fails...

Please contact Snap-on for technical support at [REDACTED] or [REDACTED]. If technical support finds it necessary for the unit to be returned for repair, you will be asked for your contact information and then provided with a Return Merchandise Authorization number (RMA#) that will be used to track the unit through the repair department back to you. Please write this number on the outside of your shipping box so it can be routed to the correct department. If the necessary repair is not covered by the warranty, you will be contacted for payment arrangements.