



DG TECHNOLOGIES
Vehicle Network Solutions

DPA 5 Family

Installation and User Manual



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Document Revision: 1.0.2
Document Date: October 9, 2019

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The accompanying software, provided for use with the DPA 5 *Family*, is also copyrighted. Permission is granted to copy this software for back-up purposes only.

IMPORTANT

To ensure your success with this product, it is essential that you read this document carefully before using the hardware. Damage caused by misuse of the hardware is not covered under product warranty.

When using this manual, please remember the following:

- ❑ This manual may be changed, in whole or in part, without notice.
- ❑ DG assumes no responsibility for any damage resulting from the use of this hardware and software.
- ❑ Specifications presented herein are provided for illustration purposes only and may not accurately represent the latest revisions of hardware, software or cabling.
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The DPA Product line and the products supporting the DPA have been awarded the following U.S. Patents:

Patent #	Date	Patent Overview
6,772,248	08-03-04	Protocol adapter for in-vehicle networks.
7,152,133	12-19-06	Expanded functionality protocol adapter for in-vehicle networks.
7,337,245	02-26-08	Passing diagnostic messages between a vehicle network and a computer.
7,725,630	05-25-10	Passing diagnostic messages between a vehicle network and a computer using J1939 or J1708.
8,032,668	10-04-11	Passing diagnostic messages between a vehicle network and a computer using J1939 or J1708.
8,152,557	04-10-12	Positive locking mechanism for USB connected devices.
7,984,225	07-19-11	ASCII gateway to in-vehicle networks.
7,660,934	02-09-10	ASCII gateway to in-vehicle networks.

It is essential that the user read this document carefully before using the hardware.

The DPA devices are to be used by those trained in the troubleshooting and diagnostics of light-duty through heavy-duty vehicles. The user is assumed to have a good understanding of the electronic systems contained on the vehicles and the potential hazards related to working in a shop-floor environment.

DG understands that there are numerous safety hazards that cannot be foreseen, so we recommend that the user read and follow all safety messages in this manual, on all your shop equipment, from your vehicle manuals, as well as internal shop documents and operating procedures.

Safety First

- ❑ Always block drive, steer, and trailer wheels both front and back when testing.
- ❑ Use extreme caution when working around electricity. When diagnosing any vehicle, there is the risk of electric shock both from battery-level voltage, vehicle voltages, and from building voltage.
- ❑ Do not smoke or allow sparks or open flames near any part of the vehicle fueling system or vehicle batteries.
- ❑ Always work in an adequately ventilated area, and route vehicle exhaust outdoors.
- ❑ Do not use this product in an environment where fuel, fuel vapor, exhaust fumes, or other potentially hazardous liquids, solids, or gas/vapors could collect and/or possibly ignite, such as in an unventilated area or other confined space, including below-ground areas.



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1 INTRODUCING THE DPA 5 FAMILY

The DPA 5 products are used to connect vehicle networks to personal computers (PCs). This allows programs written for the PC to retrieve pertinent information such as fault codes, component information, as well as perform component level diagnostics, tests, and component reprogramming. The DPA 5 products communicate with the PC using either a USB cable or via Bluetooth (Class I or Class II) and comes standard with the latest Technology and Maintenance Council (TMC) Recommended Practice (RP) RP1210-compliant drivers, as well as Society of Automotive Engineers (SAE) J2534-compliant drivers.

1.1 DPA 5 PRO



DPA 5 PRO Kit should include the following items:

- ✓ DPA 5 PRO Main Unit
- ✓ 9-pin Deutsch Vehicle Cable
- ✓ USB Cable with screw-in ears to secure the cable to the DPA 5 PRO case
- ✓ Quick Start Guide
- ✓ Carrying Case

Please note that DG Technologies provides customizable kits, so what you receive may vary.

1.1.1 Protocol LED Indicators



DPA 5 PRO Protocol LED Indicators

1.2 DPA 5 DUAL CAN



DPA 5 *Dual CAN* Kit should include the following items:

- ✓ DPA 5 *PRO* Main Unit
- ✓ 9-pin Deutsch Vehicle Cable
- ✓ USB Cable with screw-in ears to secure the cable to the DPA 5 *PRO* case
- ✓ Quick Start Guide
- ✓ Carrying Case

Please note that DG Technologies provides customizable kits, so what you receive may vary.

1.2.1 Protocol LED Indicators



DPA 5 Dual CAN Protocol LED Indicators

1.3 COMMUNICATION LED INDICATORS

LED Label	LED Color	Description
Power	Solid RED 	This LED is red when the tool is powered up.
PC	Blinks GREEN 	The PC LED blinking green indicates that the computer is actively communicating with the tool via USB.
PC	Blinks RED 	The PC LED blinking red indicates that the computer is actively communicating with the tool via Bluetooth.
PC	Alternating RED/GREEN 	The PC LED blinking red and green indicates that the unit is in boot loader mode. This occurs during the firmware update process. However, if the firmware update process failed, the unit will remain in boot loader mode until firmware is updated successfully. Reference the Launch the DPA Firmware Updater Program section for information on updating the firmware.
Protocol LED	Blinking RED or GREEN 	Each protocol that the tool supports has its own LED. This allows the user to see which protocols are currently being used. If there is data being sent or received by the tool on a protocol its associated LED is blinked.

1.4 RP1210 OEM AND COMPONENT SOFTWARE COMPATIBILITY

The adapter you have purchased is provided with the latest Technology and Maintenance Council (TMC) RP1210 compliant interface and has been tested with the following OEM and component applications:

- | | |
|--|---|
| <input type="checkbox"/> Allison DOC™ | <input type="checkbox"/> International® NETS |
| <input type="checkbox"/> Bendix® ACOM | <input type="checkbox"/> International® Auto Upgrade (AU) |
| <input type="checkbox"/> Caterpillar® Electronic Technician | <input type="checkbox"/> Isuzu IDSS II |
| <input type="checkbox"/> Cummins® Insite™ | <input type="checkbox"/> Mack and Volvo VCADS/PTT |
| <input type="checkbox"/> Cummins PowerSpec | <input type="checkbox"/> Meritor-WABCO Toolbox |
| <input type="checkbox"/> Dana Diagnostic Tool™ | <input type="checkbox"/> Navistar® Diamond Logic Builder |
| <input type="checkbox"/> Detroit Diesel Diagnostic Link™ | <input type="checkbox"/> Navistar® HeRo |
| <input type="checkbox"/> Detroit Diesel Reprogramming Station™ | <input type="checkbox"/> Navistar® NavKal |
| <input type="checkbox"/> Eaton ServiceRanger | <input type="checkbox"/> Navistar® NED |
| <input type="checkbox"/> Freightliner ServiceLink | <input type="checkbox"/> Navistar® ServiceMaxx |
| <input type="checkbox"/> GM GDS2 | <input type="checkbox"/> Paccar® Davie4 |
| <input type="checkbox"/> International® InTune | <input type="checkbox"/> Vansco VMMS |
| <input type="checkbox"/> International® Master Diagnostics | <input type="checkbox"/> ZF-Meritor TransSoft |

Any application claiming RP1210 compliance should work if the application and adapter both support the same protocol(s) and operating system(s).

2 STANDARDS AND PROTOCOLS SUPPORTED

The adapter you have purchased provides more protocol and standards support than any other commercially available diagnostic adapter.

2.1 RP1210 DEFINED PROTOCOLS SUPPORTED

- ❑ TMC RP1210C, TMC RP1210B, TMC RP1210A
- ❑ J1939
- ❑ CAN (ISO11898)
- ❑ IESCAN - CAN@500k/J2284/GMLAN
- ❑ J2284 – CAN @500k Baud
- ❑ J1708
- ❑ PLC - PLC4TRUCKS Protocol - Using J1708 to PLC Converter
- ❑ J1850 – RP1210A format for J1850 VPW
- ❑ J1850_104K - RP1210B/C format for J1850 VPW
- ❑ J1850_416K - RP1210B/C format for J1850 VPW
- ❑ KWP2000
- ❑ ISO9141
- ❑ ISO15765

2.2 J2534 AND J2534-2 DEFINED PROTOCOLS SUPPORTED

- ❑ SAE J1939
- ❑ SAE J1708
- ❑ SW CAN
- ❑ CAN (Raw CAN)
- ❑ J1850VPW (GM Class II)
- ❑ ISO15765
- ❑ GMLAN (HSCAN, SWCAN)
- ❑ ISO14230 (KWP2000)
- ❑ ISO9141-2

2.3 ADDITIONAL PROTOCOLS SUPPORTED BY NATIVE DRIVERS

- ❑ J2411 (GM SWCAN)
- ❑ ALDL

2.4 DPA 5 PHYSICAL AND ELECTRICAL DETAILS

The following applies to both the DPA 5 Dual CAN and DPA 5 *PRO* hardware.

Feature	Data
Dimensions	6.1 x 2.5 x 1.2 inches
Voltage Requirements	9 – 32 Volts DC
Current Requirements	250mA maximum through voltage range
Operating Temperature Range	-40 to +85C
Wired PC Communications Type	USB Version 1.1 or Higher
Wired Connection	USB Cable (up to 15 feet)
Wireless Connection	Bluetooth (DPA 5 <i>PRO</i> is equipped with Class 1 radio)
Vehicle-Side Connector	DB25 Female
PC-Side Connector	Standard B-Type USB Jack
PC Device Drivers	TMC RP1210C (RP1210B, RP1210A) Compliant Drivers DG Native Drivers – J2534 Drivers

2.5 SYSTEM REQUIREMENTS

We recommend a computer compatible with the latest version of the TMC RP1208 (PC Selection Guidelines for Service Tool Applications).

Item	Requirement
PC	IBM-Compatible
Processor	1GHz or Faster
RAM	4GB
USB Port	USB Version 1.1 or Higher
Operating System	Windows 7 (32-bit or 64-bit) Windows 8 (32-bit or 64-bit) Windows 10 (32-bit or 64-bit)

3 GETTING STARTED WITH THE DPA 5 PRODUCTS

3.1 DRIVER INSTALLATION

Attention!

- ✓ Install the DPA 5 drivers from the website before connecting tool to your PC.
- ✓ To install drivers, you must be logged into the administrator account or have administrator privileges on your PC.
- ✓ If you run into problems installing the drivers, or the DPA, please review the FAQ pages at <https://www.dgtech.com/faqs/>

The latest drivers and firmware are always available at www.dgtech.com/downloads. If you have any questions about the install, please contact our technical support staff or review the FAQ pages at www.dgtech.com/faqs.

If you receive this Windows Security screen, check the **Always trust software from DG Technologies** and press the **Install** button. Otherwise, the driver installation will fail.



3.2 PHYSICAL CONNECTION OF THE DPA TO THE VEHICLE

It is very important to follow the steps in the connection sequence detailed below. **Do not connect the diagnostic cable with the DPA to the vehicle first! This has the potential to blow a fuse on the vehicle!**



WARNING

1. Make sure that you have installed the DPA 5 software and drivers before connecting the tool to the computer www.dgtech.com/downloads.
2. Connect the USB and the diagnostic cables to the DPA. The cables that come with the DPA can be screwed into standoff screws on the DPA 5 frame, greatly reducing the chance of hardware failures.
3. Connect the diagnostic cable to the diagnostic port in the vehicle.
4. For reprogramming you should use a wired connection; connect the USB cable to the computer. A Bluetooth connection should only be used for diagnostic purposes. Do not connect the USB cable to the computer if you plan on using the Bluetooth wireless connection.



Physical Connection Diagram

3.3 CHECK IF THE DPA HAS POWER

The DPA 5 *PRO* may be powered via the USB port or the DB-25 pin connector. The DPA 5 Dual CAN must be powered through the DB-25 connector. An indication of the unit having power is the **Power** LED will light up.

Depending on the vehicle it the key may need to be turned to turn the key to the on position before data link traffic and / or power is supplied through the diagnostic connector.

3.4 SETTING UP YOUR HEAVY-DUTY OEM DIAGNOSTIC APPLICATIONS

The DPA works with all RP1210C, RP1210B, and RP1210A compliant applications that support J1708/J1587, CAN/J1939/ISO15765, J1850 VPW (GM Class II) protocols along with many others. This section shows how to configure the most common RP1210-compliant diagnostic applications to work with the DPA 5.

3.5 CONFIGURING APPLICATIONS TO USE THE DPA 5

The following examples show how to select the DPA 5 tool you will be using. Bluetooth device entries are based on the DPA 5 Bluetooth ID (see Bluetooth manual).

Selecting an RP1210 adapter, commonly referred to as a Vehicle Datalink Adapter (VDA) varies widely from different OEM applications; however, the terminology remains similar. The following table helps to introduce you to the terminology and helps you to make the correct selections the first time.

- You must set up every application (in their own individual way) to use the DPA.
- Not all OEM applications save the adapter configuration! Some make the user selects the adapter to be used every time the application is opened.

If You See These Terms	Select This
Vendor API DLL Manufacturer Adapter Manufacturer	DG Technologies DPA 5 Multi Application DG DPA5MA
Device Name Adapter Name	The description of the tool can vary widely depending upon what part of the vendor ini file that the application is displaying. In general look for the tool name "DPA 5 <i>PRO</i> " or "DPA 5 Dual CAN" that you will be using followed by the connection type you plan on using. Common examples of entries you will see are: <ul style="list-style-type: none"> • DG DPA 5 <i>PRO</i> (MA) USB,USB • DG DPA 5 Dual CAN (MA) USB • DG DPA 5 <i>PRO</i> #0000-128D-6AE6 Bluetooth,Wireless
Device Number DeviceID	1 = DPA Dual-CAN 2 = DPA 5 <i>PRO</i> 160 or higher = Bluetooth Wireless DeviceID

Protocol (Depends on Application)	Most Commonly Encountered: <ul style="list-style-type: none"> • J1708 (J1708/J1587) • J1939 • ISO15765 • CAN
--------------------------------------	--

3.6 ALLISON DOC

NOTE: Steps are for version 2017.4.0. Other versions vary slightly

1. Start program
2. Click **F4 - Connect**
3. Select the Correct Transmission Type
4. Uncheck **Smart Connect**
5. Click **Connect**
6. Set Translator Device to **DPA 5**
7. Select protocol of **J1939, CAN, J1708** or **J1850**
8. Click **Advanced Setup**
9. Select Vendor of **DGDPA5MA** or **DGDPA5SA**
10. Select Protocol of **J1939, CAN, J1708** or **J1850**
11. Select Device Name
12. Device may be grayed-out on some selections
13. Select Channel of Auto, 1, 2, 3, or 4. Channel may not appear with some selections
14. Click **OK**

3.7 BENDIX ACOM DIAGNOSTICS

NOTE: DO NOT RUN Bendix ABS Diagnostics until you have done the following:

1. Start program
2. Click on PC/check mark/Truck icon located bottom, middle-right
3. Select Device Name
4. Select green circle with check mark
5. Highlight ECU (if known) and select **Start with ECU**
6. If ECU not known, select **Detect ECU**
7. Follow on-screen instructions

3.8 CATERPILLAR ELECTRONIC TECHNICIAN (CAT ET)

1. Start Program
2. Click Utilities → Preferences → Modify from the menu bar
3. Click on **Communications** tab (it could already be selected)
4. Select **RP1210 Compliant Device**
5. Click **Advanced**
6. Select Device Name
7. Click **OK**
8. Check **Enable Dual Data Link Service**
9. Click **OK**

CAT ET Notes:

1. Enable Dual Data Link. This checkbox should be **checked** in most cases. However, on some older J1708 (ATA) only vehicles, ET will not work with this checkbox checked. If ET does not connect, try **un-checking**, or **checking** this button.
2. The DPA product line does not support the CAT Data Link (CDL) protocol that is still common among certain CAT off-highway vehicles and industrial stationary equipment. CDL is a **proprietary protocol** and there are no generic adapters on the market that support this protocol.
 - To find out if your vehicle/equipment is CDL or a standard protocol (J1708/ATA, J1939), you should look at the diagnostic connector for that equipment in the service manual.

3.9 CUMMINS INSITE

1. Start Program
2. Go to bottom, middle, select Add New...
3. Click **Next**
4. Click radio button for **RP1210 Adapters** and click **Next**
5. Select correct vendor, device, and protocol:
 - a. **Dearborn Group DPA 5 Multi Application**
 - b. Select Device Name
 - c. **Auto Detect**
 - i. **If you are on an older vehicle and it does not connect, choose J1708**
6. Select Datalink Adapter Connection Test, verify successful screen, click **Next**
7. Verify Connection Name screen appears, select **Next**
8. Screen prompts you to indicate whether you want to make this connection active or set up another connection.
9. Click on ***make this connection active***
10. Click **Finish**
11. Click **Connect**

3.10 CUMMINS POWERSPEC

1. Start Program
2. Click on **Advanced**
3. Click **Settings**
4. Datalink Adapter:
 - a. **DG Technologies DPA 5 Multi Application**
5. **Device List:**
 - a. Select Device Name
6. **Datalink Protocol:**
 - a. Auto Detect (or choose protocol for your engine)
7. Click **Save** selection

PowerSpec Notes:

8. PowerSpec Version 5.5 or newer is required to use the DPA 5. Older versions of PowerSpec were not completely RP1210-compliant.

3.11 DETROIT DIESEL DIAGNOSTIC LINK / DIAGNOSTIC LINK

3.11.1 From Windows Start Menu

1. Start → Programs → Diagnostic Link 8 → SID configure
2. Select Device Name
3. Click **OK**

3.11.2 From Inside DDDL

1. Tools → Options → Connections Tab → SID Configure.
2. Select Device Name
3. Click **OK**

3.11.3 If you have the Detroit Diesel Electronic Tool Suite on your desktop

1. Select Detroit Diesel Electronic Tool Suite icon from desktop.
2. Select Configure
3. Select **DG DPA 5 PRO (MA) USB, USB (or DPA 5 PRO #[Bluetooth ID] Bluetooth)**, select OK button
4. Select Refresh
5. Click on highlighted DDDL 7 or DDDL 6 item

3.11.4 If you have the Diagnostic Link (version 6.50) icon on your desktop

1. Select Diagnostic Link icon from desktop
2. Select Look at active and inactive faults
3. To change the adapter, select Tools | Options | Interface
4. Select Device Name from Local Communication Interface drop-down list.
5. Select **OK**

3.12 DANA DIAGNOSTIC TOOL

1. Start program
2. Under **Adapter Selection**, choose **DG Technologies DPA 5 Multi Application: DG DPA 5 Pro (MA) USB, USB** or **DG Technologies DPA 5 Multi Application: DG DPA 5 Pro (SA) USB, USB** (or **DPA 5 Pro #[Bluetooth ID] Bluetooth**)
3. Select **Connect J1708** or **Connect J1939** or **Connect PLC** as appropriate for your controller

3.13 EATON SERVICERANGER

1. Start Program
2. Click Go To tab
3. Select Settings
4. Under **Communication Adapter** choose **Dearborn Group DPA 5 Multi Application**
5. Under **J1587 Connection** choose **DG DPA 5 Pro (MA) USB, USB; Protocol=J1708; Speed=9600**
6. Under **J1939 Connection** choose **DG DPA 5 Pro (MA) USB, USB; Protocol=J1939; Channel=1; Speed=Auto**
7. If connecting via Bluetooth, Select the **DG DPA 5 Pro #[Bluetooth ID] Bluetooth**) for both the J1708 and J1939 device.
8. Click **Apply**

3.14 FREIGHTLINER SERVICELINK (INCLUDING CASCADIA MODEL – DUAL CAN CHANNELS)

1. Start program
2. From the top menu bar, choose **Admin**
3. Click on **Show All Devices**.
4. Vendor = **DG Technologies DPA 5 Multi Application**
5. J1708 Device = Select Device Name
6. J1939 Device = Select Device Name
7. CAN Device
 - a. Click **Configure**
 - b. Select Device Name
8. Click **Save Settings**

3.15 MERITOR-WABCO TOOLBOX

1. Start Program
2. Select Utilities
3. Select Adapter Selection
4. Select Vendor **DG Technologies DPA 5 Multi Application**
5. Select Protocol J1939 or J1708
6. Select Device Name
7. Select OK, then select X (top right) to close the Utilities Menu.
8. Select **Toolbox**
9. Click **System Setup**; then select **Adapter Selection**
10. Verify selections are correct, select **OK**
11. Click on the Truck icon to start communication

3.16 VOLVO/MACK PREMIUM TECH TOOL (PTT) – VERSION 2.X

1. Start Program
2. Select Settings from the PTT menu
3. Go to the Communication Unit tab:
4. Highlight DG Technologies DPA 5 Single Application USB or DG Technologies DPA 5 Multi Application USB.
5. Verify radio button in default column is selected
6. Select Configuration...
7. Click on Advanced Settings, then select the down arrow on the right side of the text box
8. Highlight and click on 2 – DG DPA 5 Pro (SA) USB or DG DPA 5 Pro (MA) USB
9. Select the OK button
10. Verify DG DPA 5 Pro (SA) USB (or (MA) USB) is listed underneath Device Description:
11. Select the OK button
 - Wait a few minutes to establish connection. If connection doesn't occur, re-boot the PC.
 - Do not select **Connect** immediately after PTT opens. Reading product data.... will appear after a little bit of time while the connection is being established.

3.17 VOLVO/MACK PREMIUM TECH TOOL (PTT) – VERSION 1.X

1. Start Program
2. Select Settings from the PTT menu
3. Go to the Communication Unit configuration tab:
 - a. It is here that you select the settings for each adapter that you may use. For example, if you have an RP1210A adapter, it is here that you select which adapter, port, and protocol.
 - b. NOTE: This identifies the settings for each adapter. It does not select which adapter the PTT application will use to communicate with the vehicle.
4. Go to the Comm unit selection tab:
 - a. It is here that you identify which adapter is to be used by the PTT application to communicate with the vehicle. You may have to change this selection depending upon the vehicle.
 - b. For example, if you typically use an 88890020 adapter in direct mode, when you need to communicate with an older vehicle you will need to change to RP1210A adapter or the 9998555 adapters, depending upon the vehicle.

3.18 VOLVO/MACK VCADS

3.18.1 From Initial VCADS Setup

1. When prompted to configure a Communication Unit select **RP1210A adapter**
2. When prompted for the adapter, select Device Name
3. Select **USB** for the Port
4. Select **J1708** for the protocol
5. When prompted for the Electrical Systems
 - a. Click **Volvo Trucks – VERSION2** and select **RP1210A Adapter**
 - b. Click **Volvo Trucks – Vehicle electronics '98** and select **RP1210A Adapter**
 - c. Click **Mack Trucks – V-MAC I/II/III, ITC** and select **RP1210A Adapter**
 - d. Click **Volvo Trucks – V-MAC IV** and select **RP1210A Adapter**
6. Continue with installation

3.18.2 From Inside VCADS

1. Start Program
2. Click the **Tools** menu and choose **Options**
3. Select the **Comm. Unit Configuration** tab
4. Select **RP1210A Adapter** and then select Device Name
5. Select the correct **Port** (USB or Bluetooth)
6. Select **J1708** for the protocol
7. Go to the **Comm. Unit Selection** tab:
 - a. Click **Volvo Trucks – VERSION2** and select **RP1210A Adapter**

- b. Click **Volvo Trucks – Vehicle electronics '98** and select **RP1210A Adapter**
 - c. Click **Mack Trucks – V-MAC I/II/III, ITC** and select **RP1210A Adapter**
 - d. Click **Volvo Trucks – V-MAC IV** and select **RP1210A Adapter**
7. **Click OK**

3.19 INTERNATIONAL TRUCK AND ENGINE

3.19.1 Master Diagnostics (MD Fleet)

1. Start program
2. Choose File → MD Settings → COM Device → Window with general VDA selection
3. Select *Dearborn Group DPA 5 Multi Application* → Window with specific port select your tools Device Name.

3.19.2 Navistar Hydraulic ABS

1. Start program
2. Choose File → Hydraulic ABS Settings → COM Device → Window with general VDA selection
3. Select *Dearborn Group DPA 5 Multi Application* → Window with specific port select your tools Device Name.

3.19.3 Navistar IPC

1. Start program
2. Choose File → Settings → COM Device → Window with general VDA selection
3. Select *Dearborn Group DPA 5 Multi Application* → Window with specific port select your tools Device Name.

3.19.4 Diamond Logic Builder (DLB)

1. Start program
2. Choose Tools → Select Com Link → Listing of adapters
3. Select *Dearborn Group DPA 5 Multi Application* → Listing of ports select your tools Device Name.

3.19.5 Service Assistant (The new MD Fleet)

1. Start program
2. Press third button from the top along the left side (has an icon that looks like a miniature interface cable.)
 - a. A window comes up that says Communication Device Selection and has two drop down boxes.
 - b. Select *Dearborn Group DPA 5 Multi Application* → Select your tools Device Name.

3.19.6 Navistar NavKal

1. Select NavKal icon from desktop
2. Enter username and password (if required)
3. Select Connection → Select COM Link → DG Technologies DPA 5 Multi Application → select your tools Device Name → select J1708 or J1939 depending on engine type
4. "Searching for Engine" appears
5. Select engine type when prompted and click OK button

3.19.7 Navistar HeRo

1. Select HeRo icon from the desktop
2. Enter username and password (if required)
3. Select Connection → Select COM Link → DG Technologies DPA 5 Multi Application → select your tools Device Name → select J1708 or J1939 depending on engine type
4. Select Connect & Scan button

3.19.8 Navistar Engine Diagnostics

1. Select NED icon from the desktop
2. Enter username and password (if required)
3. Select Connection → Select COM Link → DG Technologies DPA 5 Multi Application → select your tools Device Name → select J1939.
4. Select Activate Com Link if connection has not started

3.19.9 Navistar ServiceMaxx J1939 or ServiceMaxx J1708:

1. Select ServiceMaxx icon from desktop
2. Enter username and password (if required)
3. Select Tools → Select COM Link → DG Technologies DPA 5 Multi Application → select your tools Device Name → select J1939 or J1708 depending on engine type.
4. "Searching for Engine" appears
5. Select engine type when prompted and click OK button

4 SETTING UP YOUR J2534 VEHICLE OEM APPLICATIONS

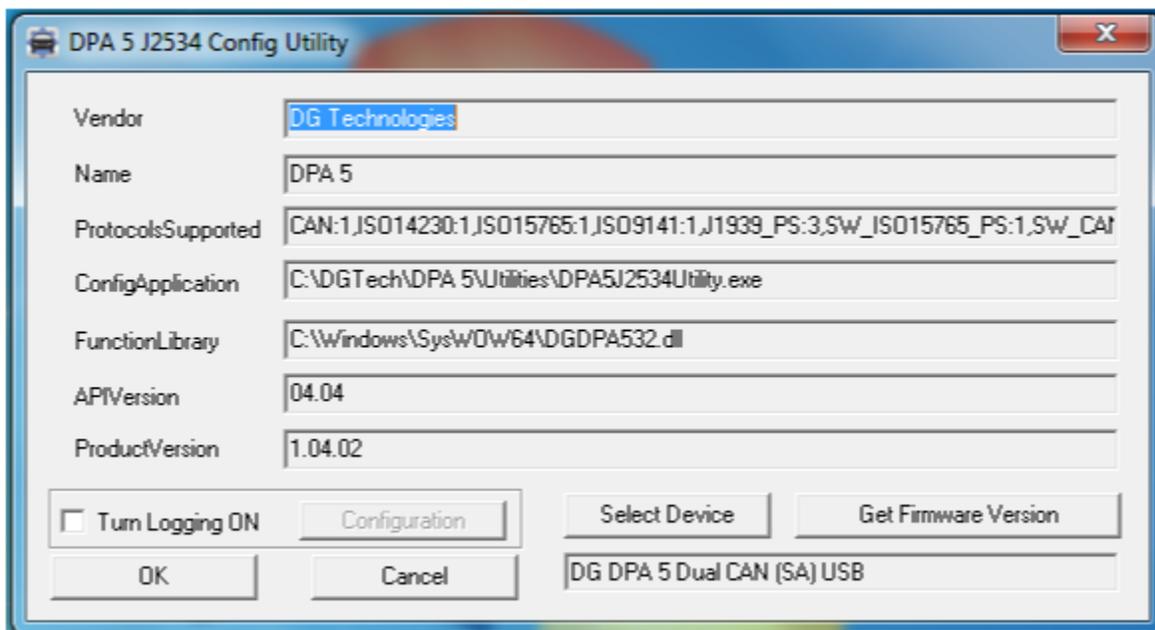
4.1 J2534 CONFIGURATION UTILITY

The DPA 5 Family tools come with support for J2534 0305 and J2534. You must select the correct DPA 5 tool with the DPA 5 J2534 0305 Config Utility before launching the light/medium duty OEM applications. This program will tell you what J2534 protocols, API version, and Product Version is supported. You can also use the J2534 Config Utility to get the current firmware version and specify which DPA 5 tool should be used. Two separate utilities are used. You must run both to configure both versions.

4.1.1 Selecting Which Tool to Use

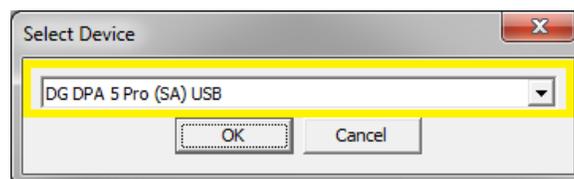
Start → DGTech DPA 5 → DPA 5 J2534 Config Utility

Use the **Select Device** button to see which devices are available.



DPA 5 J2534 Config Utility

The devices will be listed in a new dialog which a drop-down selection. Select the **tool you are going to use**. Then select the **OK** button to confirm the selection.

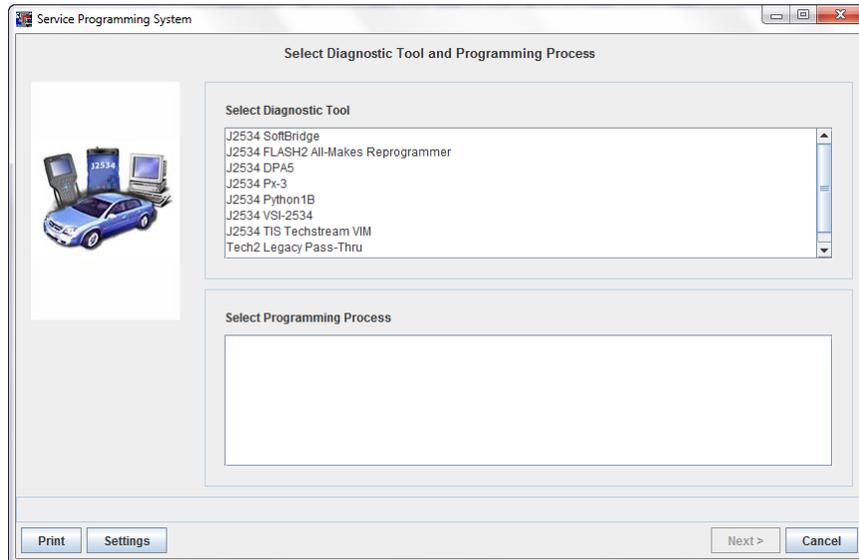


DPA 5 J2534 Config Utility – Select Device

4.2 GENERAL SETUP FOR J2534 OEM APPLICATIONS

Setting up and reflashing of a component using a J2534-compliant OEM is out of the scope of this manual. For more information, select <https://www.dgtech.com/oem-service-websites/>

In general, there will be a screen that will appear at some point that allows a user to select a J2534-compliant **Vendor** and **Device** for the reflashing event. When you see this type of screen, choose **DG Technologies** and/or the **DPA 5**.



The General Motors TIS2Web - J2534 Application VDA selection screen.

5 TROUBLESHOOTING GUIDE

5.1 DETERMINE WHAT THE DPA IS DOING BASED ON LEDs

The LEDs on the DPA are a great way of determining what the tool is doing. Review the [LED Light Meaning](#) section to learn more about what these lights mean.

5.2 DG UPDATE – PROGRAM OVERVIEW

DG Update is an application that is installed with your DPA drivers. It will run (by default) once every 30 days and will keep you up to date with the latest versions of drivers for all your DG Technologies products. With this application running regularly and [Automatic Firmware Update](#) turned on, this will keep your DPAs up-to-date with drivers and firmware. DG recommends our customers keep up to date so that your OEM and component manufacturer diagnostic applications run smoothly.

DO NOT DISCONNECT POWER FROM THE DPA 5 DURING AN UPDATE!!!

The utility will run once every 30 days as a user logs on. This value is configurable, but defaults to 30 days. It can also be invoked manually from the Windows Start Menu:

Start → DGTech Utilities → DG Update

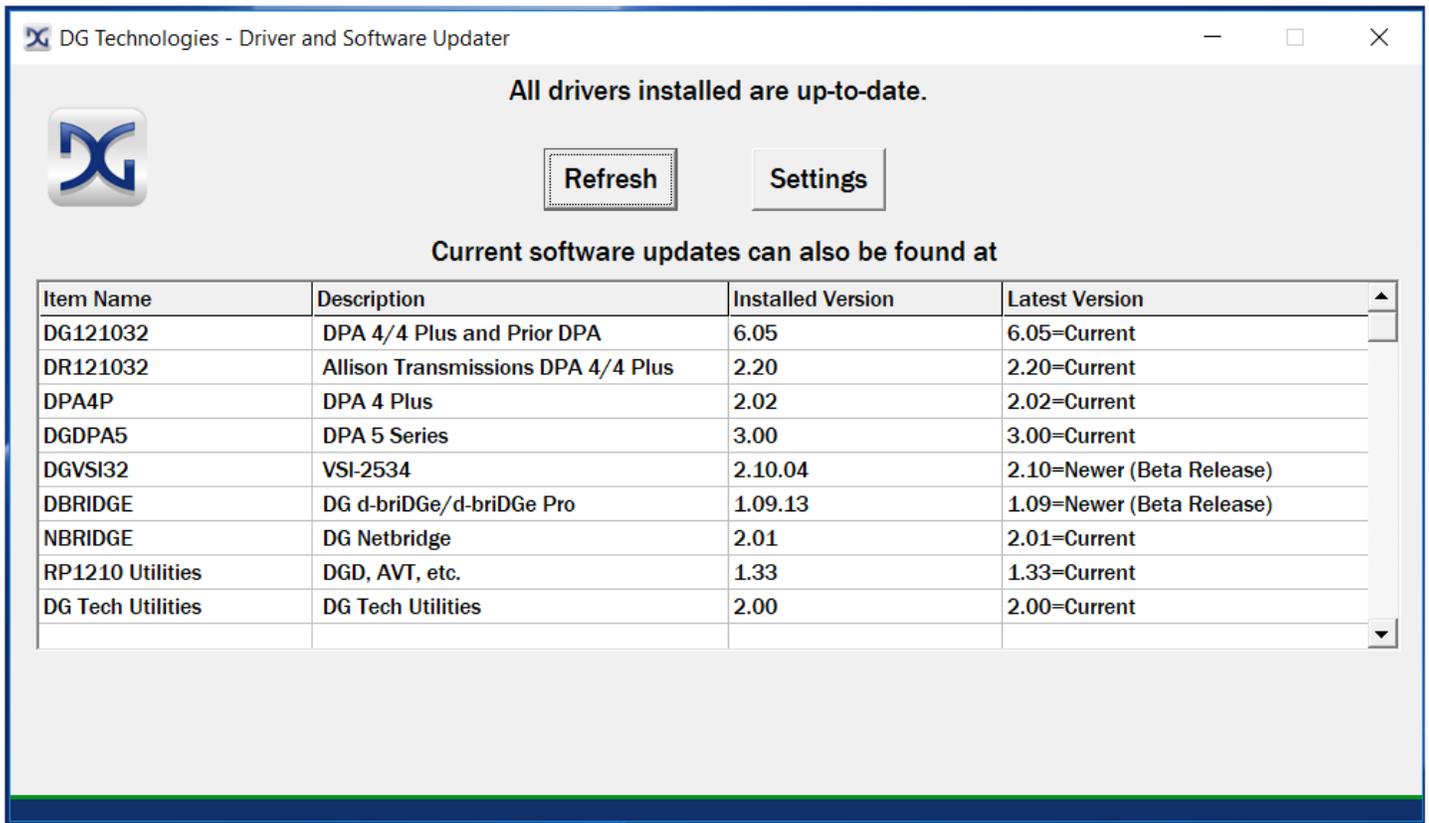
DG Update – Internet Connection Required

The DG Update utility depends on successfully connecting to the Internet (to one of DG's servers) to retrieve the latest version information and to download the latest drivers and applications if necessary.

Many companies install firewalls and virus protection and these may block the DG server queries and responses. If you are connected to the Internet and have issues running DG Update (getting **Unable to connect to the internet to check for updates** messages), ensure that your firewall or virus protection will allow a connection to the Internet.

5.3 DG UPDATE – MAIN UPDATE SCREEN

The main screen appears looking like this. Depending on which products are installed on your PC, the grid will display pertinent information about them. When selecting DG Update from the Windows Start Menu, this is the first screen to appear.

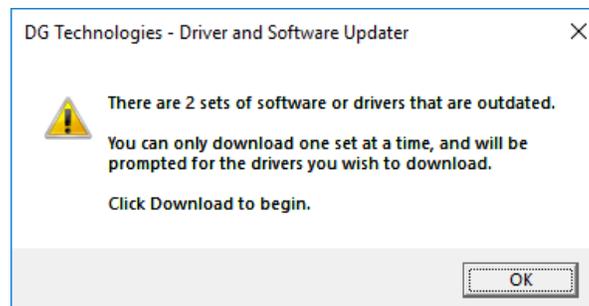


Main screen with all drivers / software up to date

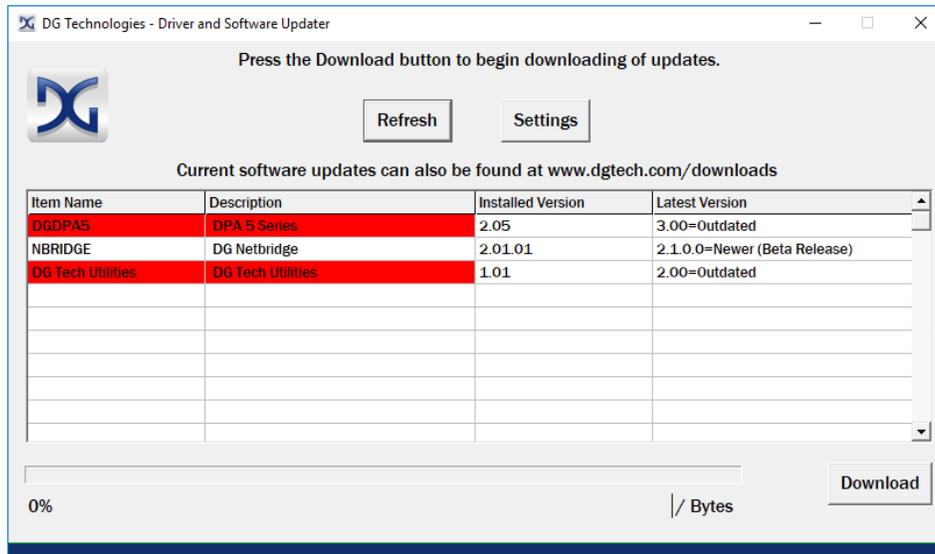
Connect your PC to the Internet and click the **Refresh** button. Due to the nature of TCP/IP communications, errors connecting or sending/receiving of data are slow to appear, however the user will eventually be notified if there was a problem.

If the check for updates was successful, the second column of the grid will display information returned from the DG server showing the most current versions. Should an install be out of date the color of the row will be red.

5.4 SUCCESSFUL CONNECT – UPDATE AVAILABLE



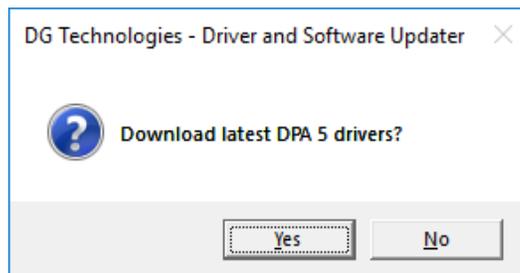
Out of date message box



Progress bar and Download button shown

In this case, the DPA 5 drivers and RP1210 Utilities are out of date (red), the user will be presented with a prompt notifying them that there are updates available. Only if updates are available will the **Download** button and progress bar show up on the screen. The progress bar will keep you informed of the download progress should you choose to download the latest drivers by clicking the **Download** button.

When you click the **Download** button, you will be prompted to confirm starting of the download.



Prompt asking if drivers should be downloaded

Note: The DG Update application can only download and install one item at a time. The user will be prompted for which ever one they want to update first.

After choosing **Yes**, the program will download the drivers and update the progress bar while doing so. Once the drivers have been downloaded, the application will unzip them and start the installation process. The dialog box will go away after the install has been started.

Do not disconnect your DPA or shut down your computer until installation is complete

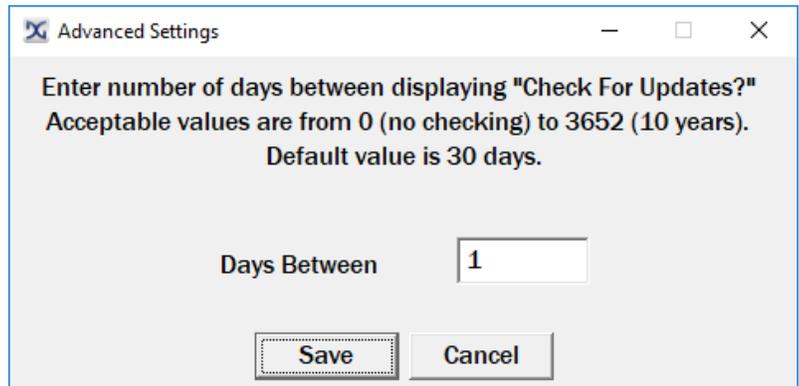
After the drivers have been downloaded (to the Windows temp directory – if you wish to save them for other machines), they will be unzipped and the program will exit right after starting the new driver installation. Follow the installation instructions in the appropriate User Manual.

5.5 ADVANCED SETTINGS – SETTING DEFAULT TIME FOR CHECK FOR UPDATES

If you want to turn off, or alter the timeout period where the user is prompted to check for updates (the dialog below), press the **Settings** button. The advanced settings dialog box will be displayed. To turn off the checking prompt, set the value to 0 (zero). Otherwise, you can set the number of days between checks.



Small dialog box that appears in the system tray



Advanced settings screen

5.6 FIRMWARE UPDATE

Keeping your tools firmware up to date is very important. This gives you access to the latest protocols and updates for your tool. In most cases the drivers installed on your computer come with automatic firmware update enabled. This feature tells the driver to make sure that the firmware in the unit is up to date. If the firmware is old, you will be automatically notified every time the tool is connected with any software. If you are using a USB connection, you will be given the option of starting the upgrade automatically.

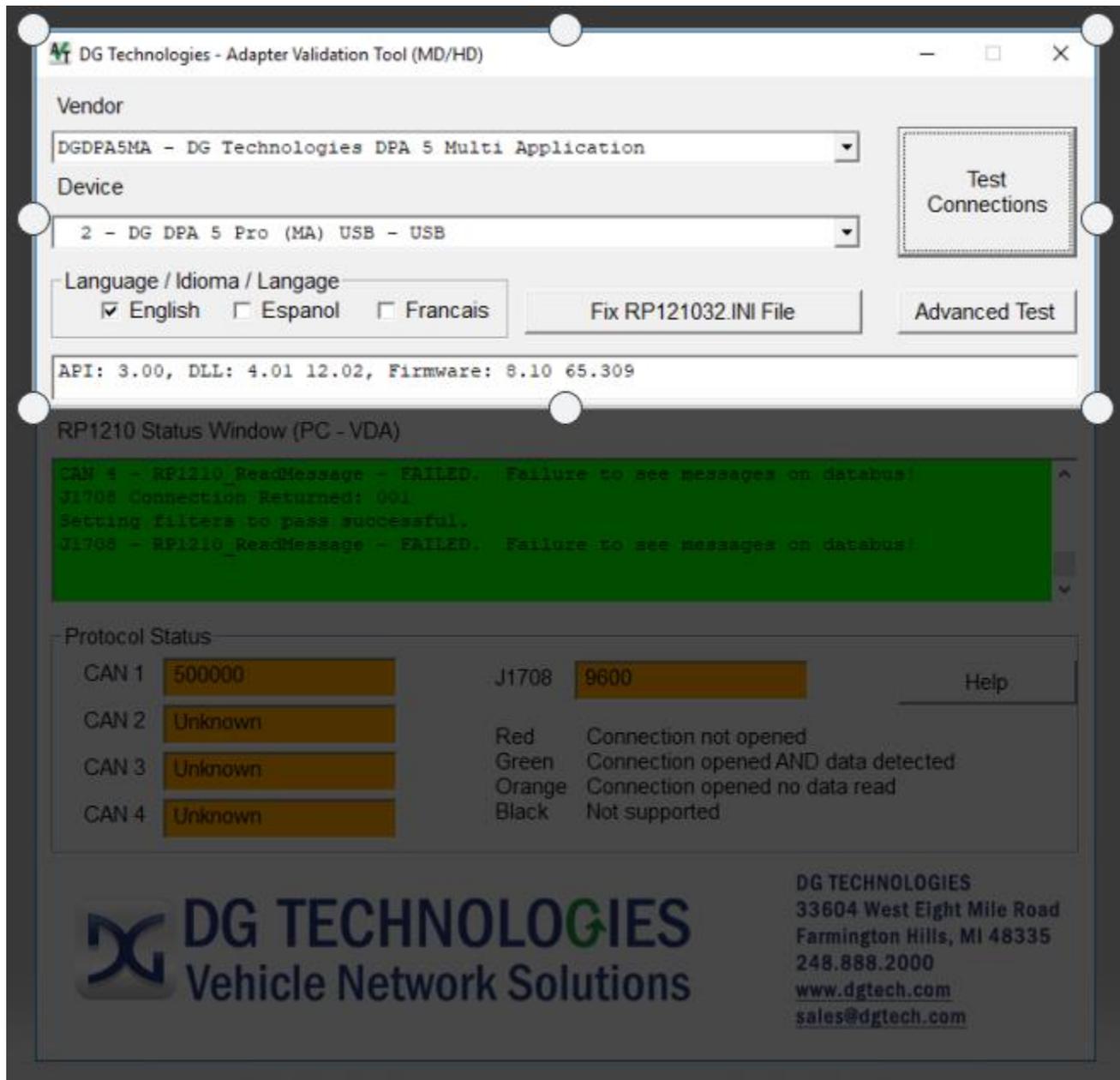
5.6.1 Checking the Firmware Version

The first step in a manual firmware update is to find which version of firmware you have. Even though automatic firmware update comes defaulted to on, there may be a time when you need to update your DPA firmware manually. The first step in a manual firmware update is to find which version of firmware you have. You can use the AVT utility after connecting the DPA to a power source. Select the *MD/HD* button from the AVT utility launcher.

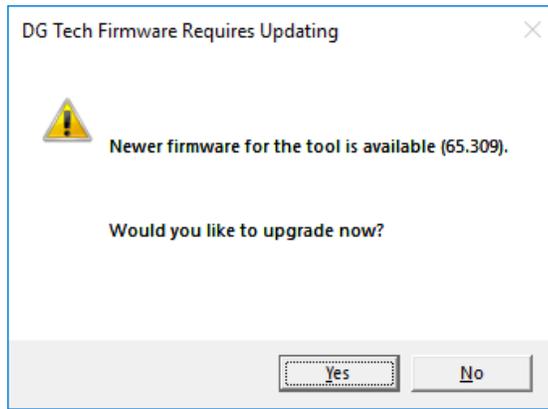
Start → DGTech Utilities → Adapter Validation Tool



Choose the correct *Vendor* and *Device* from the drop-down menus. Then select the *Test Connections* button. The API, DLL, and Firmware information is displayed in the a box.



By default, the auto firmware update setting in the registry should be set so that if new firmware is available you will be notified when a connection to the tool is opened. If new firmware is available for the unit attached, the auto update process will be presented with the following prompt. The auto update process **ONLY** works over a wired connection. If you are using a wireless connection to the tool, you will only be notified of the existence of new firmware. **A USB connection to upgrade the firmware is required.** When one is available you will be able to perform an update at that time.

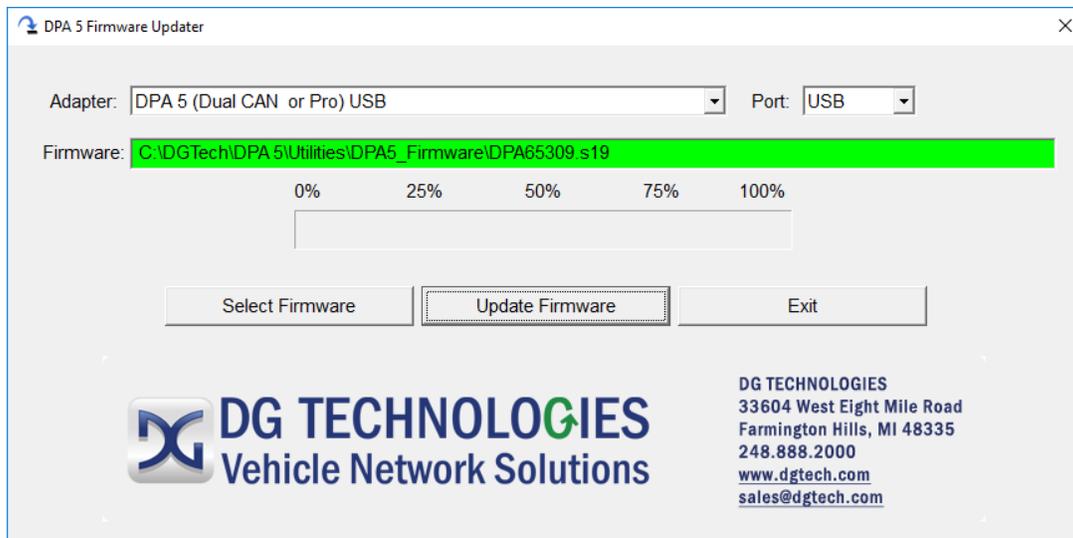


Automatic Firmware Update Dialog Box

5.6.2 Launch the DPA Firmware Updater Program Manually

1. Stop all applications that are using the DPA 5 (if any).
2. Start the DPA Firmware Updater program:

Start → DGTech DPA 5 → DPA Firmware Updater



Firmware Updater GUI

3. Select the correct firmware file (the latest version is already selected by default). If the firmware file exists, the Firmware box will turn **green**.
 - a. NOTE: Firmware files are in separate sub-directories under the Utilities directory where the DPA drivers are installed, typically:
C:\DGTech\DPA 5\Utilities\DPA5_Firmware\
4. Click on the **Update Firmware** button and select **Yes**, if you receive a warning dialog.
5. After the download is finished, disconnect power from the DPA, wait 5 seconds and then reconnect power.

After you have finished installing the Windows device drivers you can begin using your DPA. If the **Automatic Firmware Update** option is on, every time you connect to the DPA the drivers check to see if a newer version of

firmware is available. If a newer version is available, you will be prompted to upgrade to that version. Select **Yes** and the upgrade process begins automatically. After the firmware update, restart your application.

DO NOT DISCONNECT POWER FROM THE DPA 5 DURING A FIRMWARE UPDATE!!! ALLOW THE UPDATE TO FINISH OR YOU WILL HAVE TO MANUALLY UPDATE THE FIRMWARE!

5.7 DG-DPA5-9OBDII-CABLE – FOR VOLVO PTT AND OTHER OBDII APPLICATIONS



The DG-DPA5-9OBDII-CABLE has an OBDII connector that meets the needs of Volvo PTT on this vehicle platform as well as light-duty, medium-duty, and heavy-duty OBDII vehicles using the following protocols:

- ISO15765 (mandated in all 2008 and newer vehicles)
- J1850 VPW (General Motors/Chrysler)
- ISO9141 and ISO14230 (mainly European vehicles)

This cable works with **Volvo PTT, DG Diagnostics (OBDII), Palmer ScanXL, PocketFleet Diagnostics**, and RA Consulting **Silver Scan Tool**. **While connected to 2013 and newer Volvo/Mack vehicles, a user cannot connect to a component application like Allison, Eaton, Meritor-WABCO or Bendix through this cable!!!**

This cable also has a standard J1939 Type II (250k and 500k) connector. This keeps the user from having to switch cables between an OBDII vehicle and a standard Deutsch 9-pin vehicle using J1939 and/or J1708/J1587.

5.8 DG-V13-XOVER-CABLE – FOR COMPONENT APPLICATIONS (I.E. ALLISON, EATON)



The DG-V13-XOVER-CABLE has a special purpose. While connected to 2013 and newer Volvo/Mack vehicles, this special connector cable only works for component applications like Eaton, Allison, Meritor-WABCO, Bendix, etc. **A user cannot connect to PTT with this adapter cable in place!!!**

This cable is used in conjunction with the DG-DPA5-9OBDII-CABLE.

APPENDIX A. TECHNICAL SUPPORT AND RETURN MERCHANDISE AUTHORIZATION (RMA)

TECHNICAL SUPPORT

After reading and following the troubleshooting and validation procedures in this document please check the FAQ page at www.dgtech.com/faqs. If you are still not able to resolve an issue, please feel free to contact DG technical support. For users in the United States, technical support is available from 9 a.m. to 5 p.m. Eastern Time. You may also fax or e-mail your questions to us. For prompt assistance, please include your voice telephone number and the serial number located on the back of your DPA.



DG Technologies Technical Support

Phone: (248) 888-2000
Fax: (248) 888-9977
E-mail: techsupp@dgtech.com
Web site: www.dgtech.com/tech-support

Users not residing in the United States should contact your local DG representative or e-mail techsupp@dgtech.com

RETURN MERCHANDISE AUTHORIZATION (RMA)

If technical support has deemed that there may be a physical problem with your DPA, you will be issued you an RMA number. You would then return the product along with any documentation of ownership you have (proof of purchase/price) to the following address:



Product Service/Repairs
Attn: RMA# xxxxxxx
DG Technologies
33604 West 8 Mile Road
Farmington Hills, MI 48335

APPENDIX B. WARRANTY INFORMATION AND LIMITATION STATEMENTS

WARRANTY INFORMATION

DG Technologies, Inc. DPA is warranted against defects in materials and workmanship for two (2) years following date of shipment. Cables (both USB and vehicle) are warranted for 90 days.

DG Technologies will, at its option, repair or replace, at no cost to the customer, products which prove to be defective during the warranty period, provided the defect or failure is not due to misuse, abuse, or alteration of the product. The customer is responsible for shipment of the defective product to DG. This warranty does not cover damage to any item that DG Technologies, determines has been damaged by the customer's abuse, misuse, negligence, improper assembly, modification, or operation of the product.

A Return Merchandise Authorization (RMA) number must be issued to the customer by our Technical Support Department at (248) 888-2000 and must be included with the product being returned (for more details, see section *Return Merchandise Authorization (RMA)*). A DPA is warranted for 90 days after a warranty repair, or to end of the original factory warranty period, whichever is longer.

LIMITATION STATEMENTS

General Limitation and Risk Assignment

To the maximum extent permitted by applicable law, DG Technologies and its suppliers provide support services on an "as-is" basis and disclaim all other warranties and conditions not specifically stated herein, whether express, implied or statutory, including, but not limited to, any warranties of merchantability or fitness for a particular purpose, lack of viruses, accuracy or completeness of responses, results, lack of negligence or lack of workmanlike effort, and correspondence to description. The user assumes the entire risk arising out of the use or performance of the device, its operating system components, and any support services.

Exclusion of Incidental, Consequential and Certain Other Damages

To the maximum extent permitted by applicable law, in no event shall DG Technologies or its suppliers be liable for any special, incidental, indirect or consequential damages whatsoever, including but not limited to: damages for loss of profit, loss of confidential or other information; business interruption; personal injury; loss of privacy, failure to meet any duty (including good faith or of reasonable care); negligence; and any other pecuniary or other loss related to the use of or the inability to use the device, components or support services or the provision of or failure to provide support services or otherwise in connection with any provision, even if DG Technologies or any supplier has been advised of the possibility of such damages.

Limitation of Liability and Remedies

Notwithstanding any damages that you might incur for any reason whatsoever (including, without limitation, all damages referenced above and all direct or general damages), in no event shall the liability of DG Technologies and any of its suppliers exceed the price paid for the device. The user assumes the entire risk and liability from the use of this device.

Right to Revise or Update without Notice

DG Technologies reserves the right to revise or update its products, software and/or any or all documentation without obligation to notify any individual or entity.

Governance

The user agrees to be governed by the laws of the State of Michigan, USA, and consents to the jurisdiction of the state court of Michigan in all disputes arising out of or relating to the use of this device.

Contact

Please direct all inquiries to:

DG Technologies
33604 West 8 Mile Road
Farmington Hills, MI 48335
Phone (248) 888-2000
Fax (248) 888-9977

APPENDIX C. FCC AND CERTIFICATION INDUSTRY CANADA INFORMATION

The DPA 5 has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules (see the back of the DPA 5 for FCC and IC specific identifications). These limits are designed to provide reasonable protection against harmful interference in a residential installation. The DPA 5 uses and generates radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. If the DPA 5 does cause harmful interference to radio or television reception, which can be determined by turning the affected equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving and/or sending antennas.
- Increase the separation between the DPA 5 and the affected receiving equipment.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

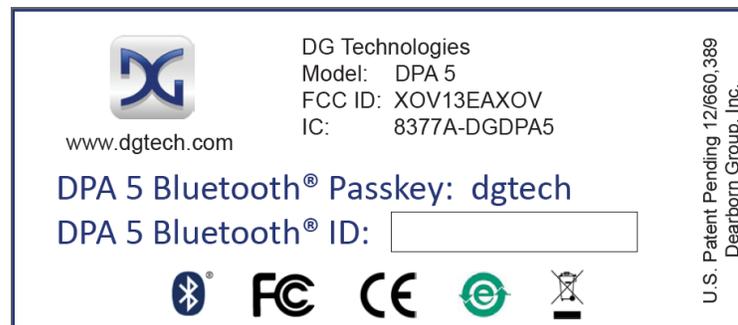
This product complies with FCC OET Bulletin 65 radiation exposure limits set forth for an uncontrolled environment.

INDUSTRY CANADA

Operation of the DPA 5 is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes not expressly approved by DG Technologies, Inc. to the DPA 5 could void the user's authority to operate the DPA 5. The following is a sample rear label from the DPA 5 depicting the FCC and IC identifiers.



The following are the DPA 5 Bluetooth details as required to be published by the FCC.

Operating Frequency	2.4GHz
Power Output Maximum	< 4.4dBi
Contains Transmitter Module FCC ID:	QOQWT11
Transmitter Bluetooth QDID	B012647

APPENDIX D. LIST OF ACRONYMS USED IN THIS DOCUMENT

Various acronyms have been used throughout this document.

Acronym	Description
API	Application Programming Interface
AVT	Adapter Validation Tool
CAN	Controller Area Network
CD	Compact Disk
CD-ROM	Compact Disk - Read Only Memory
DG	DG Technologies
DPA	DG Technologies Protocol Adapter
DTC	Diagnostic Trouble Codes
ID	Identification
ISO	International Standards Organization
LED	Light Emitting Diode
OBD	On Board Diagnostics
OEM	Original Equipment Manufacturer
PC	Personal Computer
RAM	Random Access Memory
RP	Recommended Practice (see TMC)
SAE	Society of Automotive Engineers
TMC	Technology and Maintenance Council
UAC	User Account Control
USB	Universal Serial Bus
VDA	Vehicle Datalink Adapter