

VSI NxGen PLUS

User Manual



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CYBERGUARD

DG Technologies
33604 West Eight Mile Road
Farmington Hills, MI 48335
Phone (248) 888-2000
Fax (248) 888-9977
<https://www.dgtech.com>

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This document describes the DG Technologies VSI NxGen PLUS. Per the SAE J2534 standard the VSI NxGen PLUS is a compliant diagnostic and programming (Pass-Thru) device. SAE J2534 describes this device as a pc-based, software-driven solution with the purpose being to connect to the vehicle network and provide OEM, dealer-level ECU (Electronic Control Unit) programming, diagnostic functionality and access to security features, such as key programming, airbag module programming and others.

The VSI NxGen PLUS has a very robust set of features, capabilities and functions including cybersecurity enhancements by CyberTech from DG Technologies and is protected by CyberGuard inside. It is also useful for vehicle ECU development, general design, hardware-in-the-loop simulation and anywhere bi-directional communications with a vehicle network are required.

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The DG Diagnostics OBDII and other DG Technologies software, provided for use with the VSI NxGen PLUS, is also copyrighted.

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 or software.
- Specifications presented herein are provided for illustration purposes only and may not accurately represent the latest revisions of hardware, software or cabling.
- No license is granted, by implication or otherwise, for any patents or other rights of DG or of any third party.

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2 Introduction

How it works: A PC is connected to the VSI NxGen PLUS using the USB Cable and the vehicle network through the OBD II J1962 16 pin connector (DG-295-10196). The VSI NxGen PLUS provides the translation interface between the PC and the vehicle electronic network.

The user software application on the PC sends and receives data from the vehicle using the DG Technologies VSI NxGen PLUS.

Provides support for: the latest SAE J2534-compliant vehicle standard interface. Includes Diagnostics over Internet Protocol (DoIP) and Diagnostics Protocol Data Unit (D-PDU) API support.

Any application claiming J2534 compliance should work if the application and adapter both support the same protocol(s) and operating system(s).

2.1 Standards, Protocols Supported, and Features

VSI NxGen PLUS provides more protocol and standards support than any other commercially available diagnostic adapter in the automotive industry.

- | | |
|--|----------------------------------|
| ❑ SAE J2534 API (v04.04 & v05.00) | ❑ J1850 VPW (GM Class II) |
| ❑ D-PDU API (ISO 22900-2) | ❑ J1850 PWM |
| ❑ DoIP (ISO13400) | ❑ ISO9141 |
| ❑ 4 Independent CAN Channels | ❑ ISO9141-2 |
| ❑ 1 Channel FT CAN | ❑ ISO14230 |
| ❑ 2 Channel CAN FD | ❑ GMLAN (HSCAN, SWCAN) |
| ❑ IESCAN - CAN@500k/J2284/GMLAN | ❑ GMUART (SAE J2740) |
| ❑ Embedded Hardware Security Module | ❑ Built in the USA |
| ❑ 2-Year Warranty | ❑ Patented Secure USB Connection |
| ❑ US-based Technical Support Team | ❑ DG Data Recorder |
| ❑ Advanced Cybersecurity with CyberGuard | ❑ DG Software Updates |

2.2 VSI NxGen PLUS Hardware Specifications

Feature	Data
Dimensions	6.625 x 4.375 x 1.312 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)
Vehicle-Side Connector	DB25 Female
Power Jack	12 Volt DC
PC-Side Connector	Standard B-Type USB Jack
PC Device Drivers	SAE J2534 and SAE J2534-2 Passthru Drivers

2.3 System Requirements (minimum)

Item	Requirement
PC	IBM-Compatible
Processor	1GHz or faster
RAM	4GB
USB Port	USB Version 1.1 or Higher
Operating System	Windows 10 & 11 (32-bit or 64-bit)

2.4 Power Connector

The VSI NxGen has 3 possible sources of power:

- Power jack (12V DC) *
- DB-25 connector powered by vehicle. Vehicle cable 16 PIN J1962 OBDII cable attached to the vehicle
- USB connection to host PC

*There are limited uses for the 12V DC power jack.

WARNING

The VSI NxGen PLUS SHOULD NOT be powered via the 12V DC power jack and the supplied OBD II cable simultaneously.

Connecting to multiple power sources may cause damage to the hardware.

2.4.1 Powering the Hardware

Once a power source has been connected, the POWER LED should be green. Vehicle ignition key ON.

2.4.2 Vehicle Network Connection

The vehicle network connection can be made by using the supplied vehicle cable or by a custom cable to the hardware's DB-25 (female) connector.

3 Hardware Details

The following figure shows the external features of the VSI NxGen PLUS:

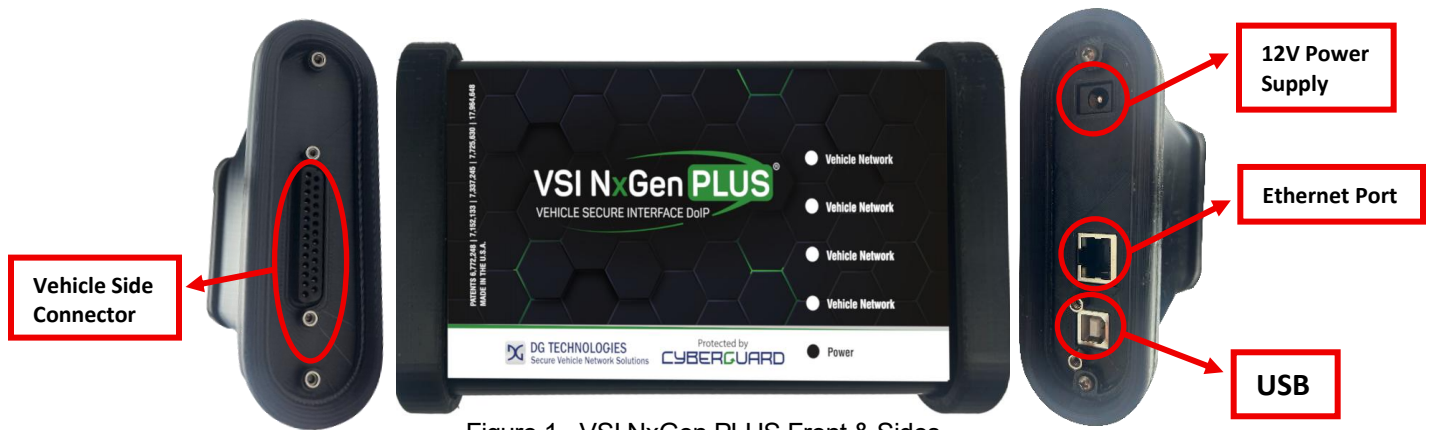


Figure 1 - VSI NxGen PLUS Front & Sides

3.1 External Connections

3.1.1 DB-25 Vehicle Side Connector

This is the connector where the OBDII cable connects and powers the VSI NxGen PLUS from the vehicle connection.

3.1.2 USB

USB cable connection. Allows connection of the VSI NxGen PLUS to the PC.

3.1.3 Ethernet Port

Ethernet connection.

3.1.4 12V Power Supply

Allows for connection to an external 12-volt Power Connector.

3.2 Status Indicators

The VSI NxGen PLUS has five status LEDs that indicate activity of the following functions:

- **Four Vehicle Network Connections** – Indicates that various vehicle network connections are established / active.

- **Power** – Indicates that the VSI NxGen PLUS is connected to a power supply plug, through a vehicle connection or by the USB cable connection. This LED supplies information on whether the unit is operating properly.

LED Name	LED State	Description
Power	Off	No power supplied to the VSI NxGen PLUS unit.
	On (Solid Color – see information below)	Unit is powered either via the vehicle connector or the external power jack.
	On (Flash Yellow)	Battery low level 1.
	On (Flash Orange)	Battery low level 2.
	On (Solid Green)	Unit is operating properly.
	On (Solid Red)	Unit is powered either via the vehicle connector or the external power jack. Unit is not operating properly. Contact Technical Support.
Vehicle Network 1	LED Off: PC not connected LED solid on: connected LED blink: activity	PC connected to vehicle network. Color depends upon network type.
Vehicle Network 2	LED Off: PC not connected LED solid on: connected LED blink: activity	PC connected to vehicle network. Color depends upon network type.
Vehicle Network 3	LED Off: PC not connected LED solid on: connected LED blink: activity	PC connected to vehicle network. Color depends upon network type.
Vehicle Network 4	LED Off: PC not connected LED solid on: connected LED blink: activity	PC connected to vehicle network. Color depends upon network type.
Bootloader Missing	All LEDs Off	If unit is properly powered up to a known, good power supply and all LEDs are off, the unit must be serviced. Contact Technical Support.
Bootloader	All LEDs Blue	The Reflash Utility is needed. Contact Technical Support.
Bootloader Reflash in Progress	All LEDs Blink	The Reflash Utility is running.
Bootloader Manual Reboot Needed	All LEDs Green	The user must power cycle the unit. This should not happen normally.

4 Software Installation

Only the Windows 10 & 11 operating system is supported by the VSI NxGen PLUS.

The installation for the VSI NxGen PLUS includes files that are specific to this tool (found at <https://www.dgtech.com/downloads/>). Most of the utility programs that DG distributes can be used by multiple DG tools and all utilities are included with the VSI NxGen PLUS software installation.

4.1 Installing With the DG Diagnostics Software (DGD)

1. Make sure that you are connected to a vehicle and that the DG Diagnostic software (DGD) is installed on your computer and displayed on your desktop. Select the DGD icon:

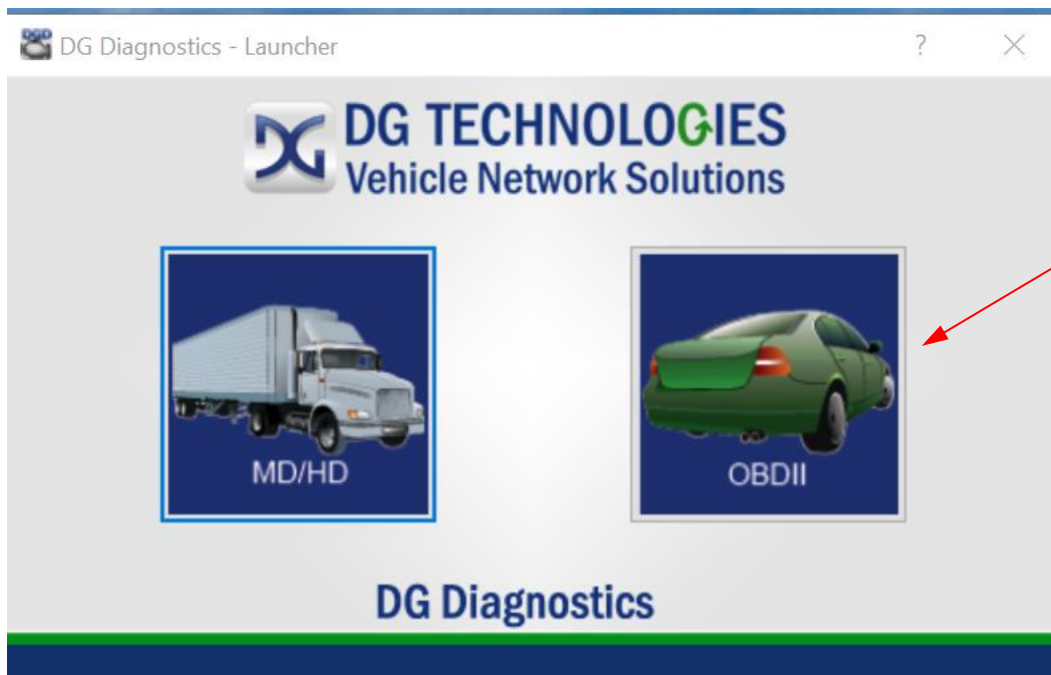


Figure 2 - AVT Startup OBDII Selection

2. Select the OBDII icon.

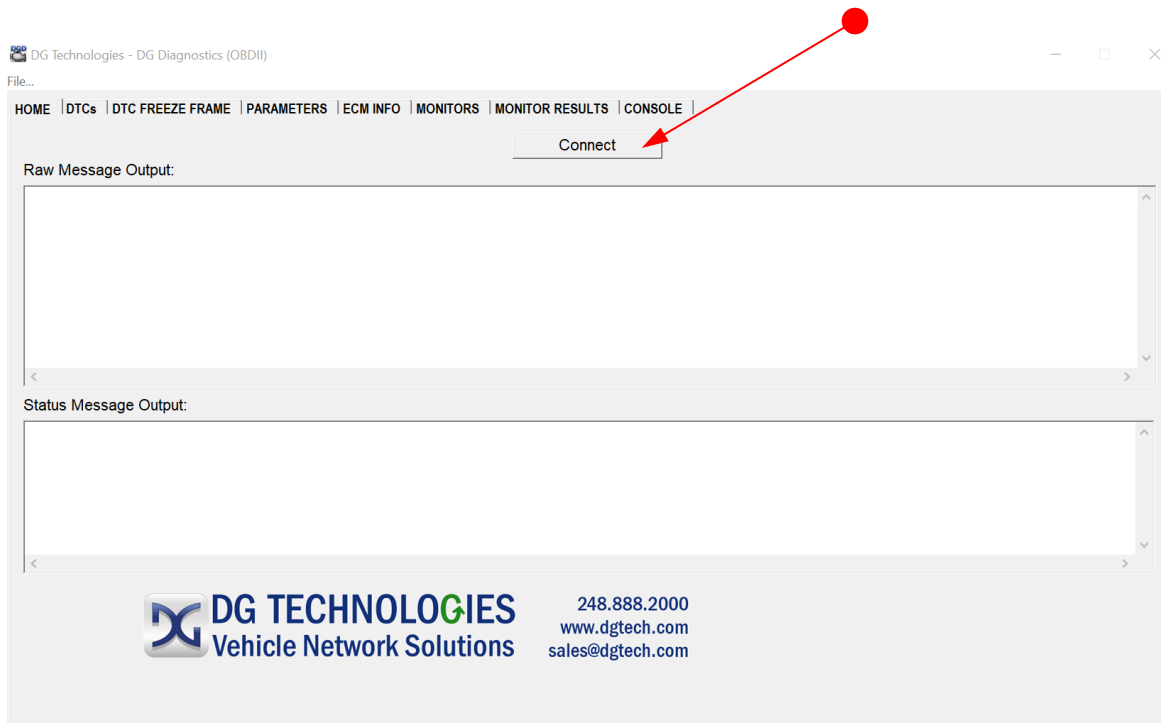


Figure 3 – VSI NxGen PLUS Connection Screen

3. Select **[Connect]**.

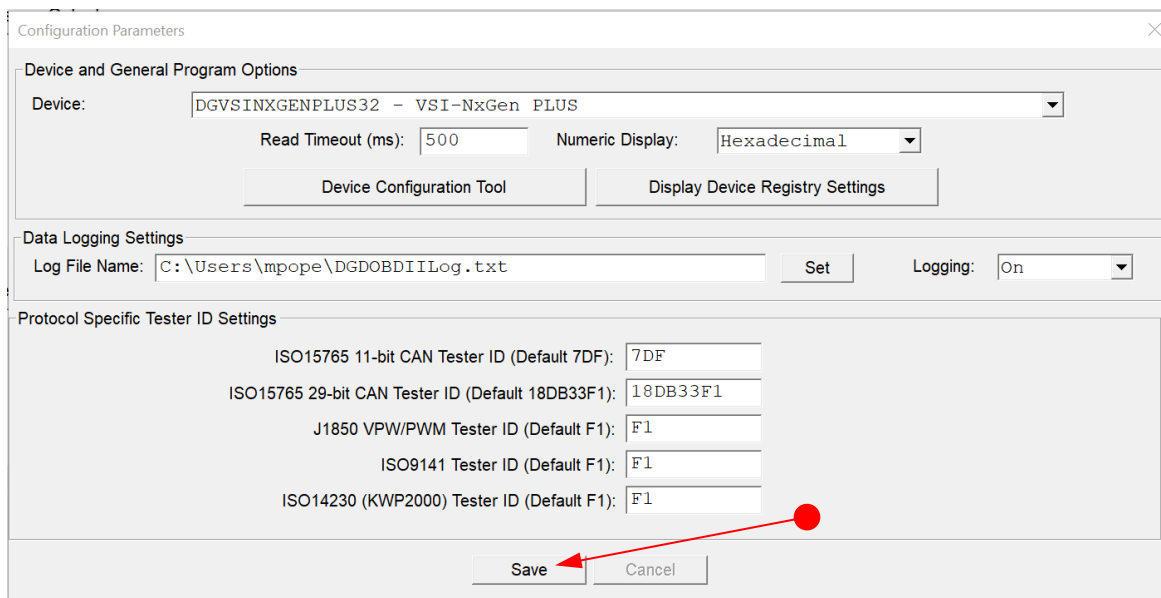


Figure 4 – Confirmation Parameters Screen

4. A Configuration Parameters screen will appear with the VSI NxGen PLUS as one of the selections. Select VSI NxGen PLUS from the list and **[Save]** to save the VSI NxGen PLUS parameters.

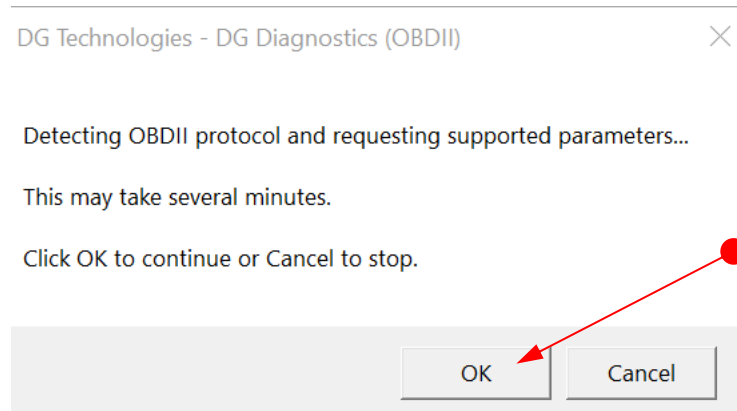


Figure 5 - OBDII Protocol Screen

5. Select **[OK]** to save OBD protocol and supported parameters. This process may take several minutes. You are now ready for the next step.

4.2 Installing the VSI NxGen PLUS Software

1. Updating software drivers (**already have been previously installed**). Go to:
Start → DGTech Utilities → DG Update

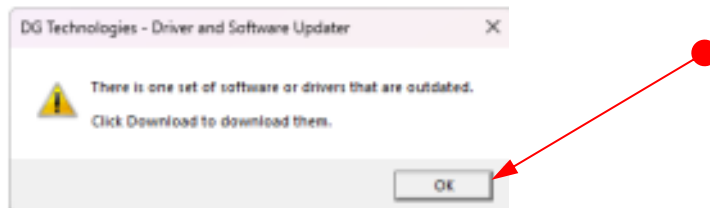


Figure 6 – Software or Drivers Are Outdated

Select **[OK]**.

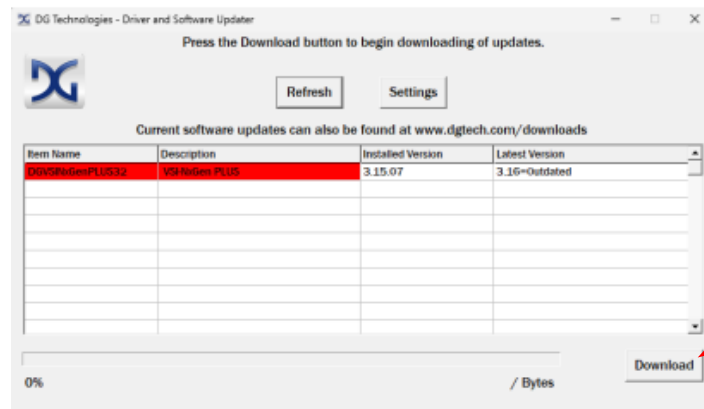


Figure 7 – Downloading of Software Updates Screen

Select **[Download]**.



Figure 8 – Downloading of Driver and Software Update Verification

Select **[Yes]** and you will go through the normal software download procedure.

4.3 Installing the VSI NxGen PLUS Software

- Updating software drivers (**already have been previously installed**). Go to:
Start → DGTech Utilities → DG Update

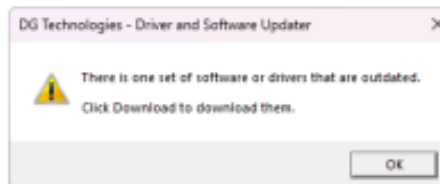


Figure 9 – Software or Drivers Are Outdated

Select **[OK]**.

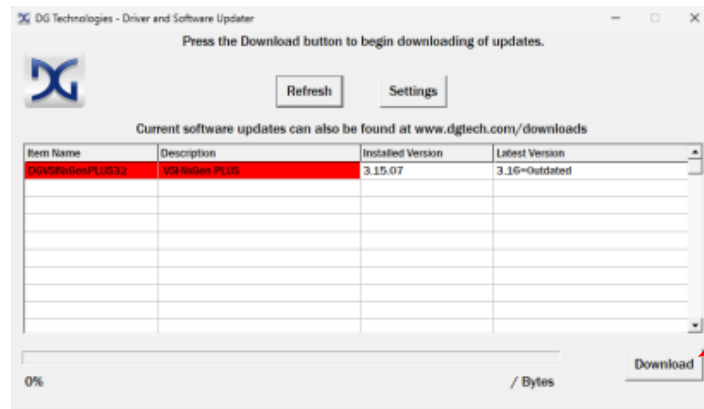


Figure 10 – Downloading of Software Updates Screen

Select **[Download]**.

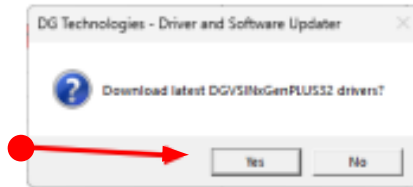


Figure 11 – Downloading of Driver and Software Update Verification

Select **[Yes]** and you will go through the normal software download procedure.

4.3.1 Installing New Software Drivers

Previous drivers have NOT been installed.

1. Go to DG Downloads website <https://www.dgtech.com/downloads/>. Select **[Automotive Products]**. Locate and select the **[VSI NxGen PLUS Download]** selection, shown below;

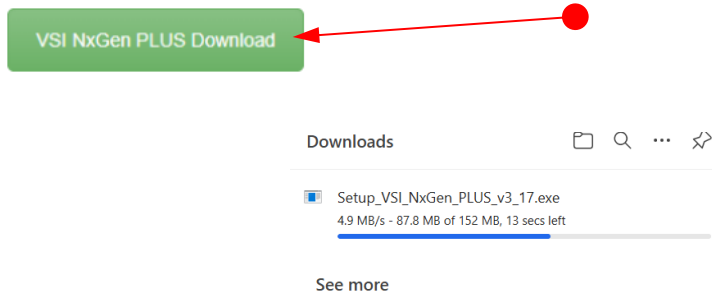


Figure 12 – VSI NxGen PLUS Download Progress

2. Once downloaded, OPEN the file to install.

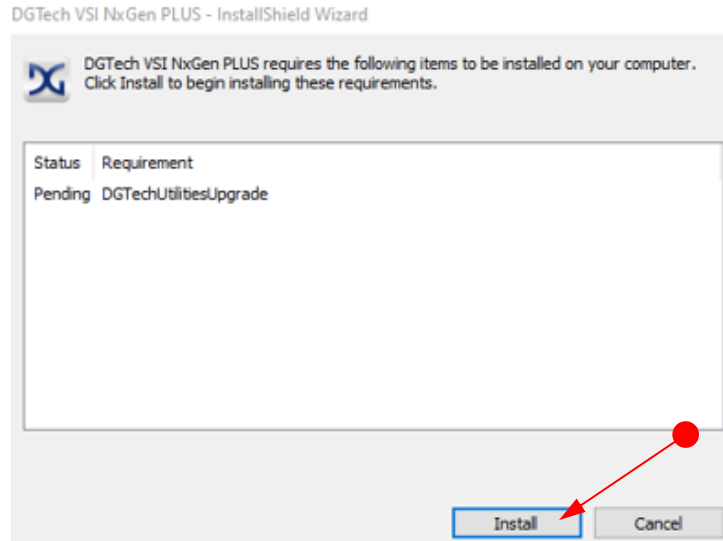


Figure 13 – Install Software Selection

3. Select **[Install]**. Note: The installation process is 2-fold. First, DG Utilities will install, then the VSI NxGen PLUS will install.

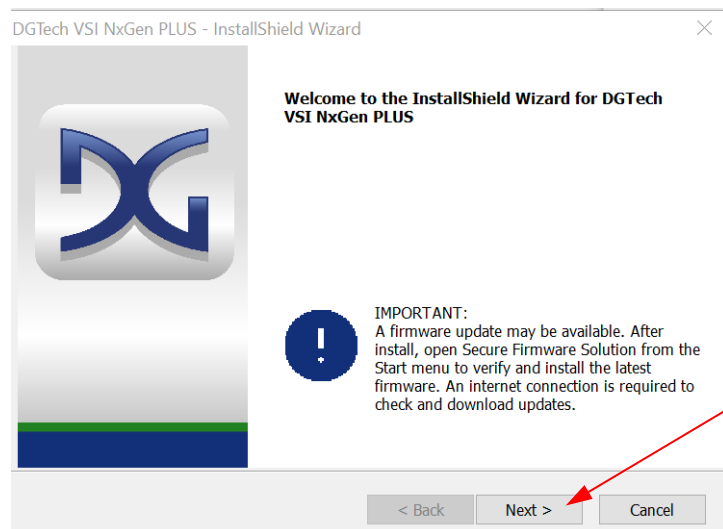


Figure 14 - Installation Welcome

4. After all the software requirements have been met, the InstallShield Wizard for DGTech VSI NxGen PLUS will now be displayed. If a firmware update is available, follow screen directions to complete it. Click **[Next]** to continue. Click **[Cancel]** to stop the installation.

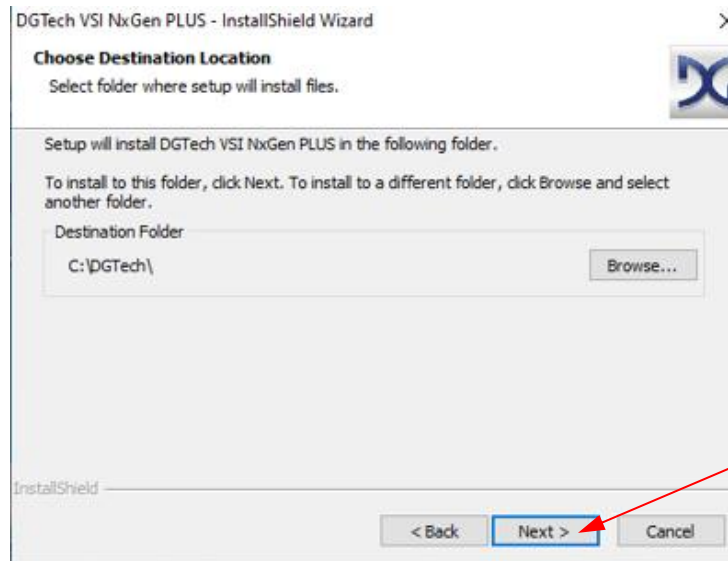


Figure 15 - Installation Select Destination Folder

5. The suggested destination location is C:\DGTech\. Click [**Next**] to continue.

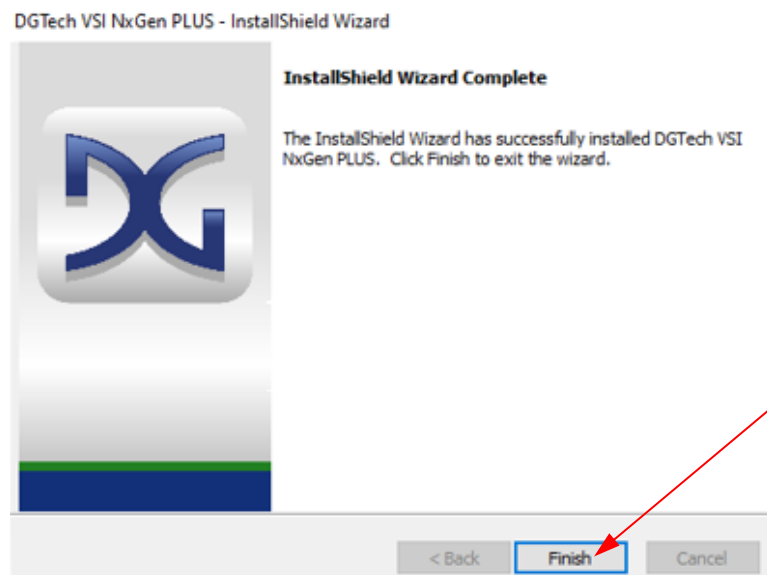


Figure 16 - DG Tech Utilities Select Finish

6. Select [**Finish**] when the installation of DG Tech Utilities is complete.

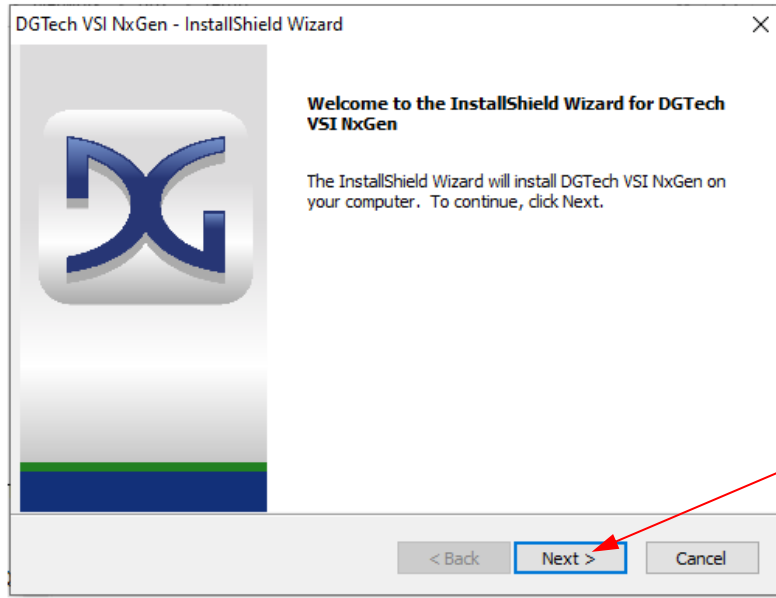


Figure 17 - DGTech VSI NxGen PLUS Installation Select **[Next >]**

7. Select **[Next >]** to install DG Tech VSI NxGen PLUS.

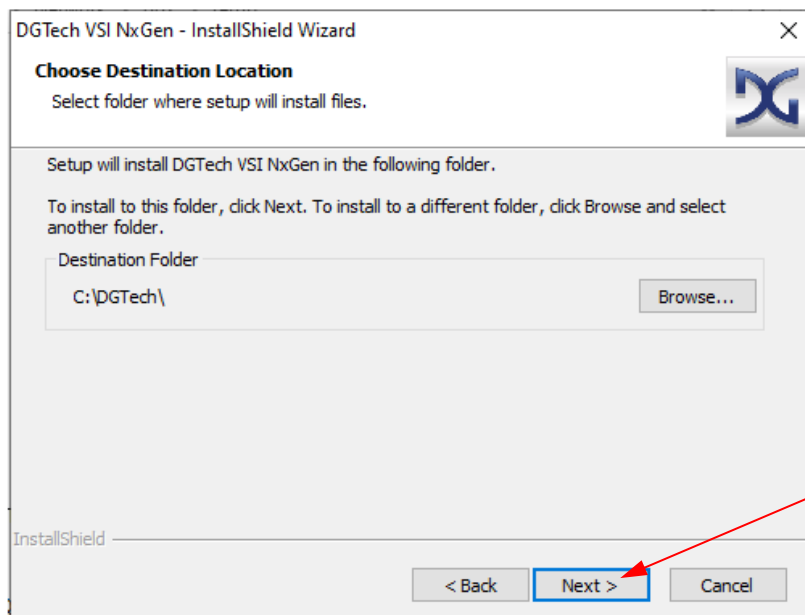


Figure 18 - DGTech VSI NxGen PLUS Installation Select Folder

8. Select **[Next >]** if you want to install VSI NxGen PLUS into the recommended destination folder. If you want to install the software into another folder, select **[Browse]** and choose the folder you want to use.

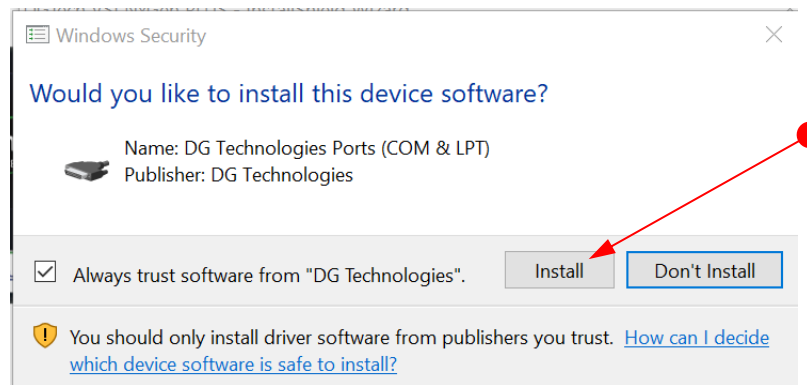


Figure 19 – Windows Security Screen

9. A Windows Security Screen may appear. If it does, select **[Install]** if you want to install VSI NxGen PLUS.

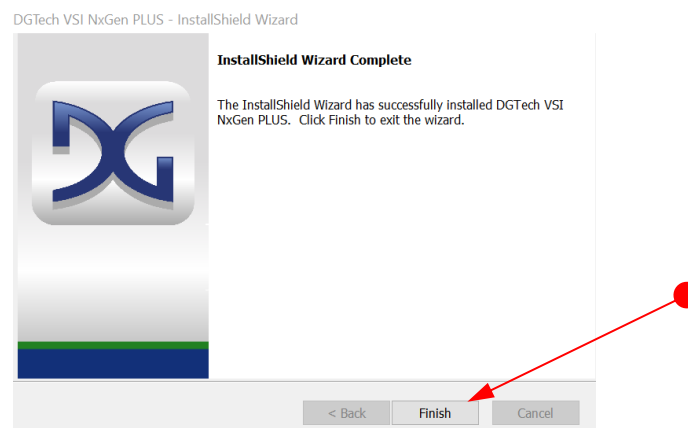


Figure 20 - DG Tech VSI NxGen PLUS Finish Selection

10. Select **[Finish]**, when the installation of VSI NxGen PLUS is successful.

4.4 VSI NxGen PLUS Ethernet NDIS Application

Scope: Connecting to DoIP vehicles for **Mercedes** and **Nissan Consult4** with the VSI NxGen Plus.

Defined: The following procedures must be followed to properly configure and connect to vehicles noted. Failure to do so will result in errors.

4.4.1 Mercedes

Connect VSI NxGen Plus to laptop and vehicle.

Start → DGTech VSI NxGen Plus → Ethernet NDIS App.

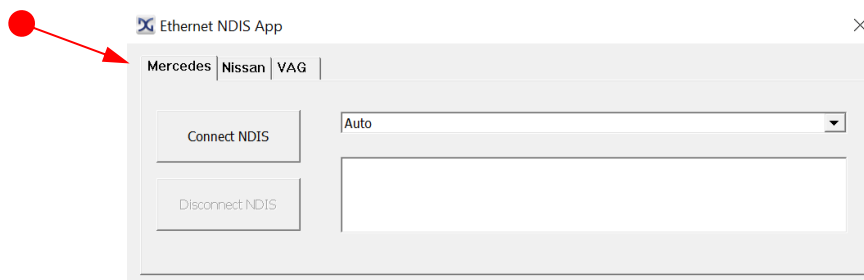


Figure 21 – Mercedes Selection

1. Application opens to Mercedes “tab” (default). Select [**Connect NDIS**]. “Auto” is the default and applicable pin-switching is automatically detected.
 - Note: in the unlikely event that “Auto” does not work, the dropdown menu may be selected manually.



Figure 22 – Mercedes Option Selections

[**Option 1**] (A)” is typically for North American vehicles. [**Option 2**] (B)” is typically for European vehicles

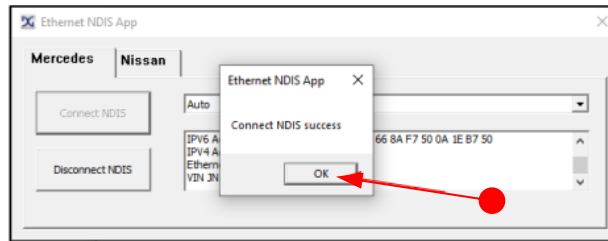


Figure 23 – NDIS Connection Successful

2. If the NDIS connection is successful. Select **[OK]**.

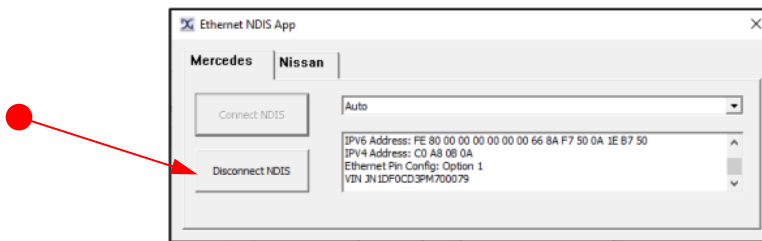


Figure 24 – NDIS Connection Screen

IMPORTANT: Leave Ethernet NDIS App OPEN! Proceed to opening Xentry and performing the required task. Upon completion of the required task, close Xentry and return to this dialog box.

3. When procedure is completed, select **[Disconnect NDIS]**.

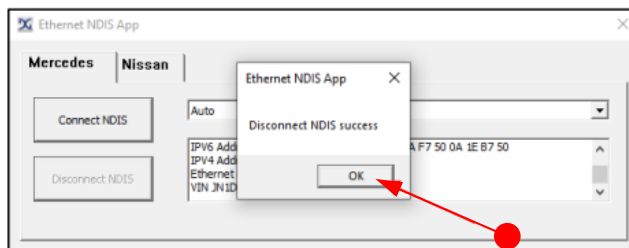


Figure 25 – NDIS Disconnected Screen

4. When NDIS is disconnected, select **[OK]**.

4.4.2 Nissan (Consult 4)

1. Connect VSI NxGen Plus to laptop and vehicle.

Start → DGTech VSI NxGen Plus → Ethernet NDIS App.

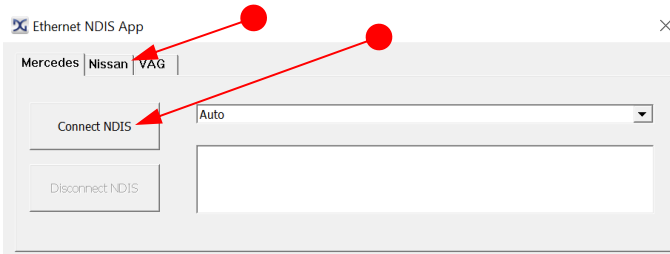


Figure 26 – Nissan Selection

2. Application opens to Nissan “tab” (default). Select [**Connect NDIS**]. “Auto” is the default and applicable pin-switching is automatically detected.
 - Note: in the unlikely event that “Auto” does not work, the dropdown menu may be selected manually.
3. Select [**Nissan**] tab.

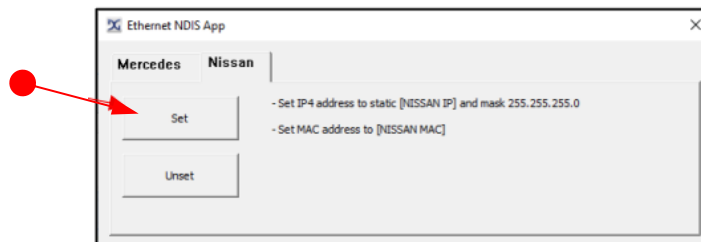


Figure 27 – Select [Set]

4. Select [**Set**].

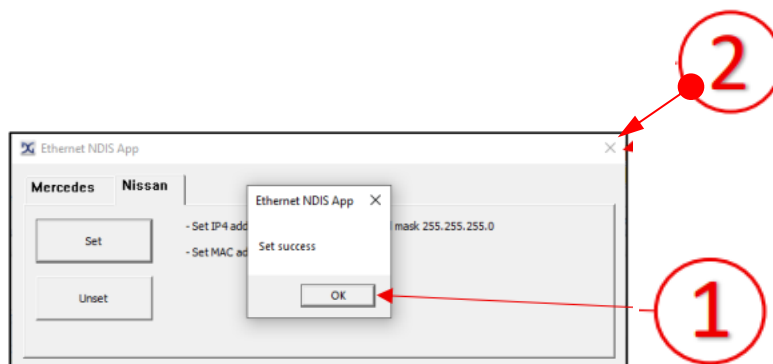


Figure 28 – Successful Connection

5. If successful, select [**OK - 1**]. **IMPORTANT: You need to close the Ethernet Application!** Select the [**X - 2**] in the upper, righthand corner.

IMPORTANT: Need to now re-open the Ethernet NDIS Application!

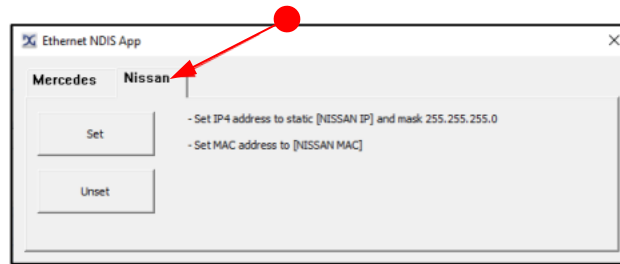


Figure 29 – Re-open the Ethernet NDIS Application

6. Open the “Ethernet NDIS application” and select **[Nissan]** tab.

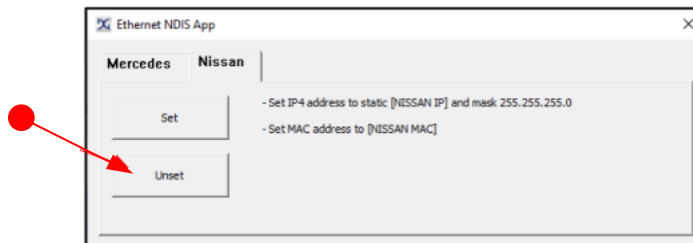


Figure 30 – Select [Unset]

7. Select **[Unset]**.

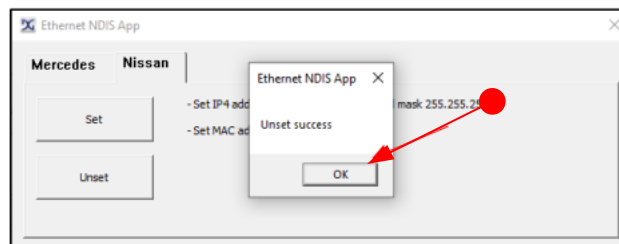


Figure 31 – Unset Successful Screen

8. Select **[OK]**.

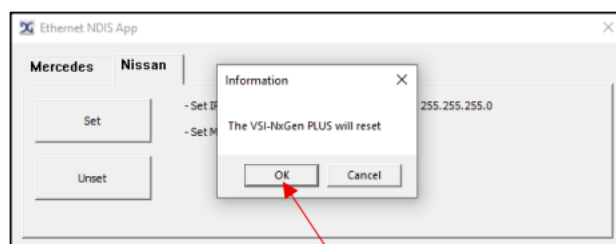
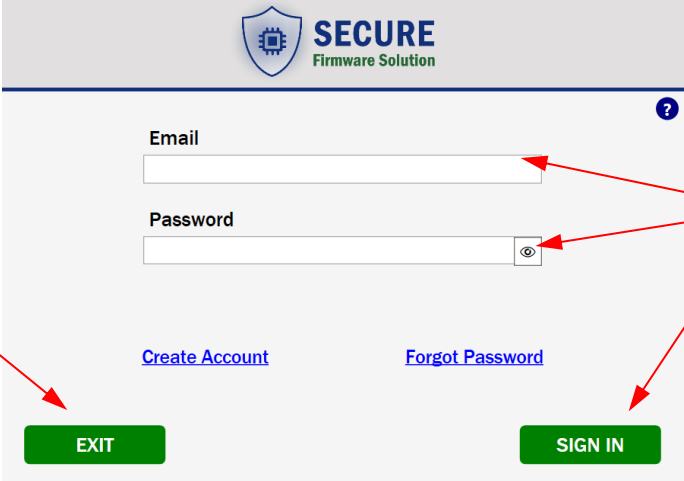


Figure 32 – Select [OK]

9. Select **[OK]** to end and reset.

4.5 Upgrading the Firmware on VSI NxGen PLUS



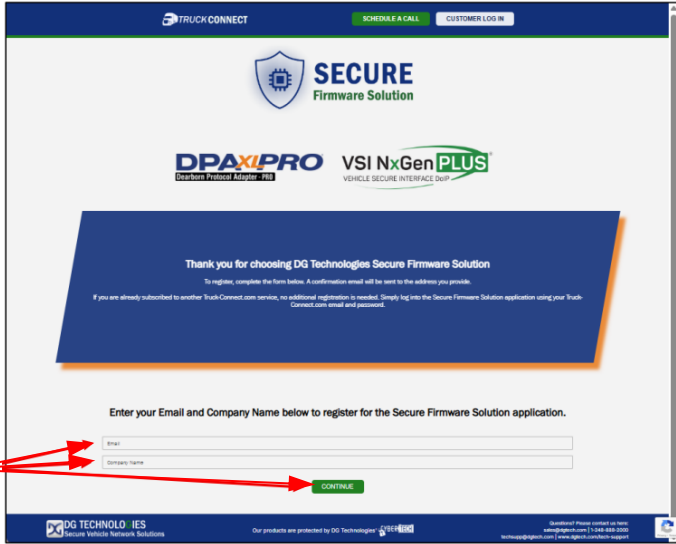
The image shows the 'Secure Firmware Solution' entry screen. At the top is a header with a shield icon and the text 'SECURE Firmware Solution'. Below this is a login form with fields for 'Email' and 'Password'. To the right of the password field is an eye icon for toggling visibility. Below the form are two links: 'Create Account' and 'Forgot Password'. At the bottom are two green buttons: 'EXIT' and 'SIGN IN'. Red arrows point from a central point to the 'Email' field, the 'Password' field, the 'Create Account' link, and the 'SIGN IN' button.

Figure 33 – Secure Firmware Solution Entry Screen

Using the Secure Firmware Solution application

Go to: Start → DGTech VSI NxGen Plus → Secure Firmware Solution

1. A Truck-Connect account is required to update the VSI NxGen PLUS device. If you already have a Truck-Connect account, enter that email and password, select 'Sign In'. then skip to step 9. To create a Truck-Connect account, select 'Create Account' link and proceed below:



The image shows the 'Secure Firmware Solution' registration page. At the top is a header with the 'TRUCK CONNECT' logo and buttons for 'SCHEDULE A CALL' and 'CUSTOMER LOG IN'. Below this is a section with the 'SECURE Firmware Solution' logo and the 'DPAXI PRO' logo. A large blue box contains a thank you message and instructions for registration. Below this is a form with fields for 'Email' and 'Company Name', and a green 'CONTINUE' button. Red arrows point from a central point to the 'Email' field, the 'Company Name' field, and the 'CONTINUE' button.

Figure 34 – Secure Firmware Solution Registration Page

2. On the register page, enter your 'Email' and 'Company Name', or the name associated with the email, and select **[CONTINUE]**.

TRUCK CONNECT SCHEDULE A CALL CUSTOMER LOG IN

SECURE
Firmware Solution

DPAXI PRO VSI NxGen PLUS
Dealership Protocol Adapter - PRO VEHICLE SECURE INTERFACE Device

Thank you for choosing DG Technologies Secure Firmware Solution

To register, complete the form below. A confirmation email will be sent to the address you provide.

If you are already subscribed to another TruckConnect.com service, no additional registration is needed. Simply log into the Secure Firmware Solution application using your TruckConnect.com email and password.

First Name Last Name
Username
Password
Email
Company
State / Province
Phone Number

REGISTER

DG TECHNOLOGIES IES
Secure Vehicle Network Solutions

Our products are protected by DG Technologies' CYBERSEC

Questions? Please contact us here:
sales@dgtech.com | 1-248-488-2000
techsupport@dgtech.com | www.dgtech.com/tech-support

Figure 35 –Select **[Register]** to Continue

3. Enter the required information on the next page and select **[REGISTER]**.

TRUCK CONNECT SCHEDULE A CALL CUSTOMER LOG IN

SECURE
Firmware Solution

DPAXI PRO VSI NxGen PLUS
Dealership Protocol Adapter - PRO VEHICLE SECURE INTERFACE Device

Thank you for choosing DG Technologies Secure Firmware Solution

Your registration was successful. Look for an email with next steps and additional information about the application and your account.

DG TECHNOLOGIES IES
Secure Vehicle Network Solutions

Our products are protected by DG Technologies' CYBERSEC

Questions? Please contact us here:
sales@dgtech.com | 1-248-488-2000
techsupport@dgtech.com | www.dgtech.com/tech-support

Figure 36 –Successful Registration Screen

4. Registration is successful! Go to the email address provided.

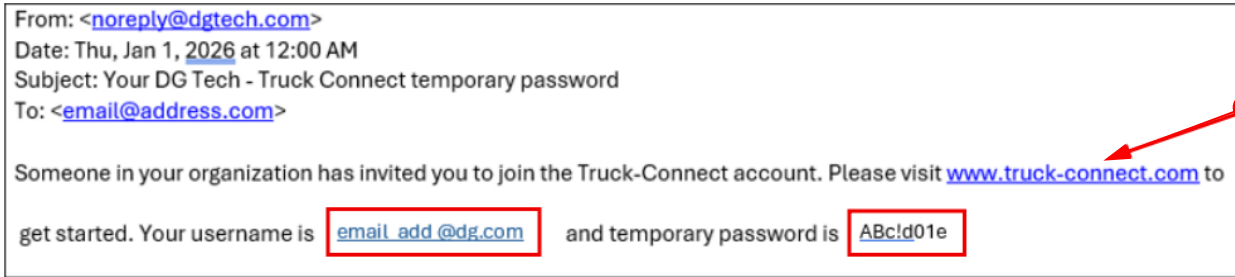


Figure 37 –Example of an Email Sent after a Successful Registration

5. An email will be received with username and temporary password. Go to: www.truck-connect.com

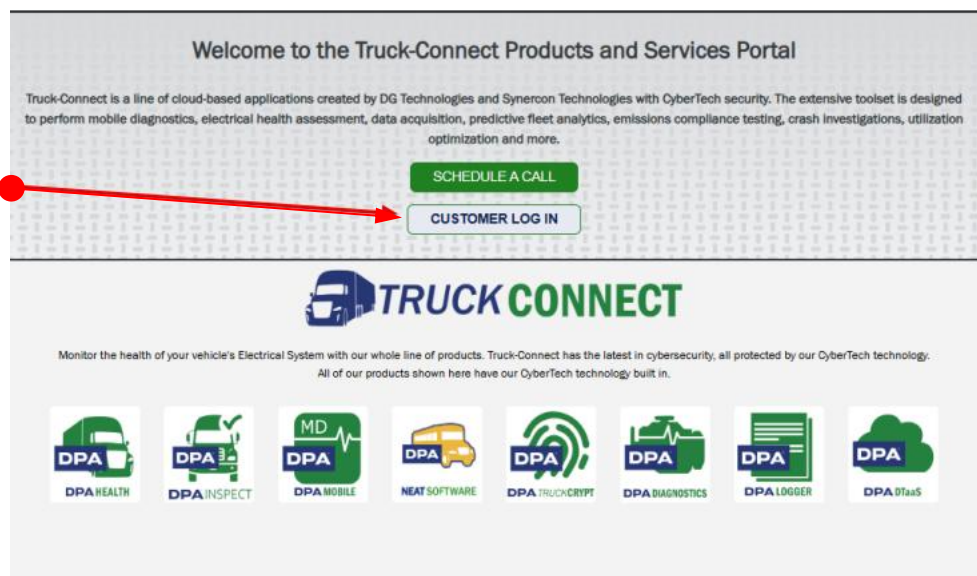


Figure 38 –Example of a Customer Log-in Screen

6. Select **[CUSTOMER LOG IN]**.

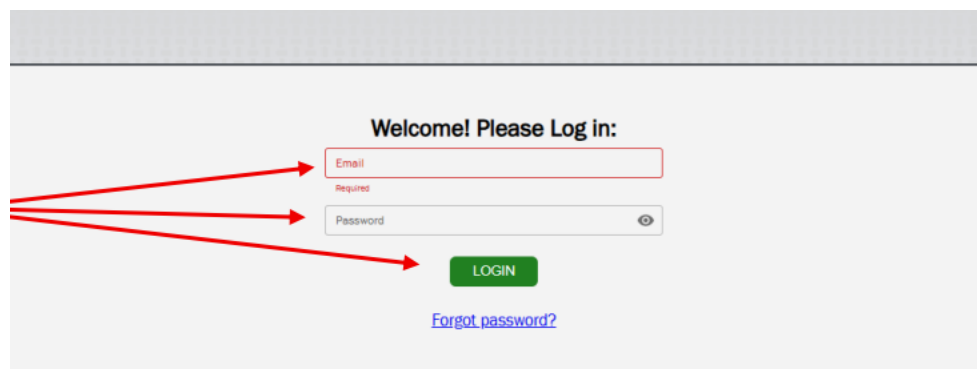


Figure 39 –Enter Customer Log-In Information

7. Enter Email address and temporary password from email. Select **[LOGIN]**.

Welcome to Truck-Connect!

Please set a new password and add your name and mobile number.

Mobile number is used for multi-factor authentication purposes only.

Must be at least 8 characters long.
Must contain a lowercase, an uppercase, a number, and a special character.

New Password

Required

Confirm New Password

First Name

Last Name

Phone Number

SUBMIT

Figure 40 – Customer Log-In Information Entry

8. Enter applicable information and select **[SUBMIT]**.

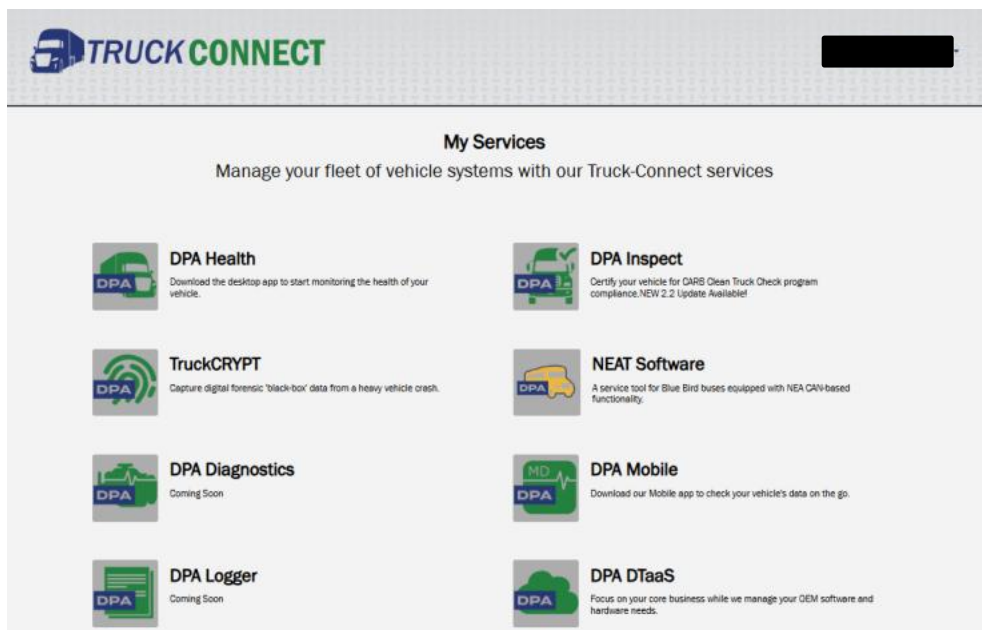


Figure 41 – Account Created Window

9. Account created. Close Window.

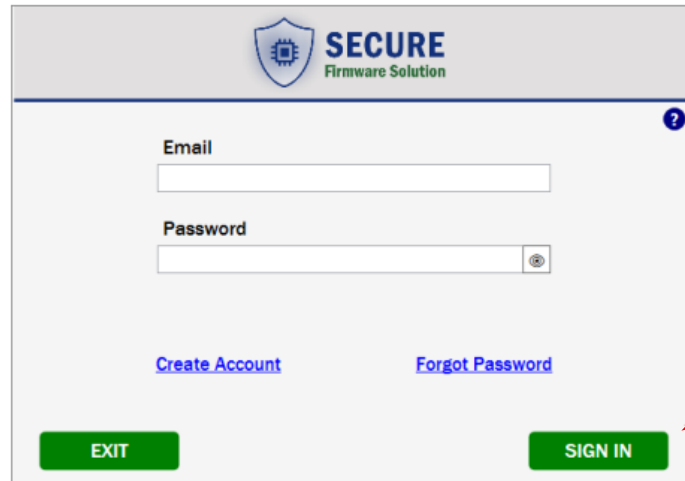
The image shows the 'Secure Firmware Solution' entry screen. At the top, there is a header with a shield icon and the text 'SECURE Firmware Solution'. Below the header, there are two input fields: 'Email' and 'Password'. The 'Password' field has a small icon on the right side. Below the input fields, there are two links: 'Create Account' and 'Forgot Password'. At the bottom, there are two green buttons: 'EXIT' on the left and 'SIGN IN' on the right. A red arrow points to the 'SIGN IN' button. There is also a small question mark icon in the top right corner of the main content area.

Figure 42 – Secure Firmware Solution Entry Screen

10. Return to this screen (may still be open on desktop...look for shield in taskbar). Enter Truck-Connect Email, Password and select **[SIGN IN]**.

The image shows the 'Secure Firmware Solution' update screen. At the top, there is a header with a shield icon and the text 'SECURE Firmware Solution'. Below the header, there is a section titled 'Please follow these steps before updating:' followed by four bullet points: 'Ensure your DG device is powered on and only one is connected to the PC.', 'Click UPDATE to begin.', 'LEDs may turn off and blink, this is normal.', and 'Wait for a popup, the update takes about 1 minute, depending on file size.' At the bottom, there are two green buttons: 'EXIT' on the left and 'UPDATE' on the right. A red arrow points to the 'UPDATE' button. There is also a small question mark icon in the top right corner of the main content area.

Figure 43 – Secure Firmware Solution Update Screen

11. Read and follow instructions on screen, then select **[UPDATE]**.

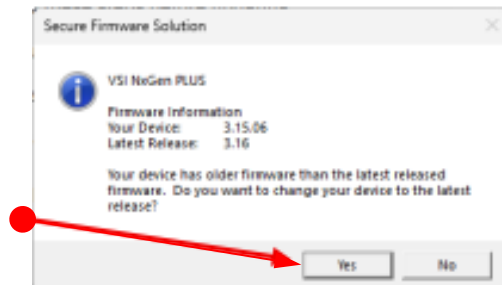


Figure 44 – Secure Firmware Update Screen

12. Select **[Yes]**.

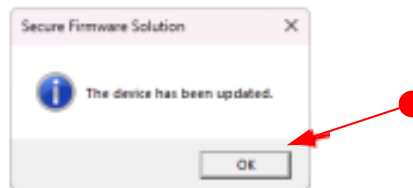


Figure 45 – Firmware has Been Updated Screen

13. Select **[OK]**, Firmware has been updated.

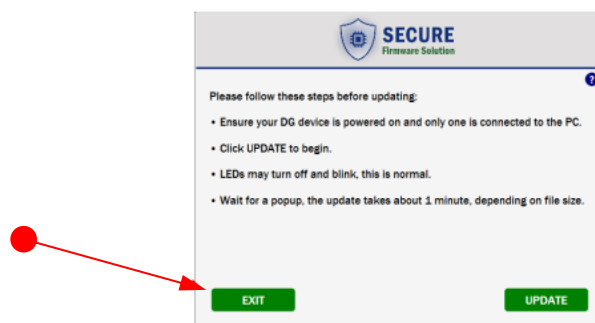


Figure 46 – Exit Set-up Directions

14. Select **[EXIT]**.

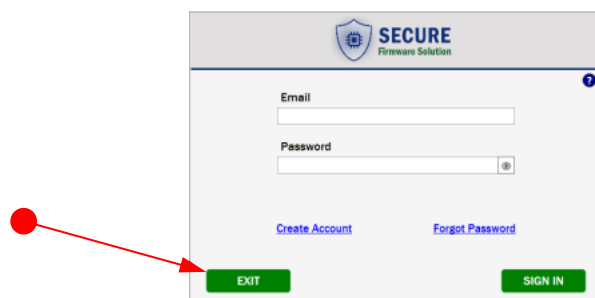


Figure 47 – Exit Program

15. Select **[EXIT]**.

4.6 Verifying Firmware Version

Start → DGTech VSI NxGen PLUS → VSI NxGen PLUS Config Utility

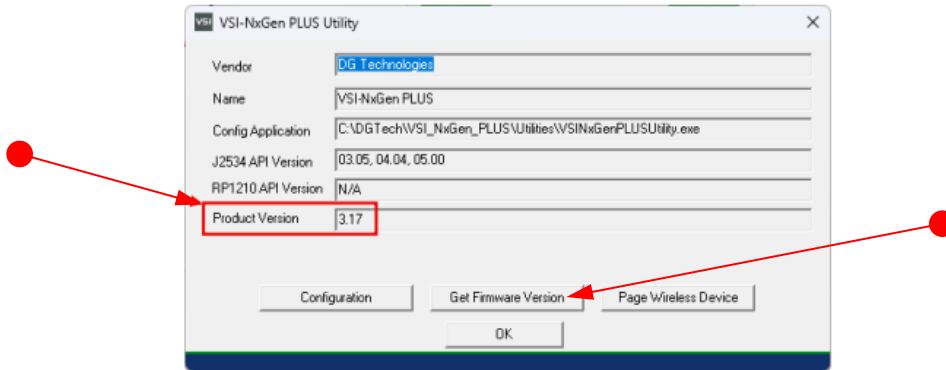


Figure 48 – Product Version

1. Select **[Get Firmware Version]**. Notice **[Product Version]** which indicates the installed software driver version number.

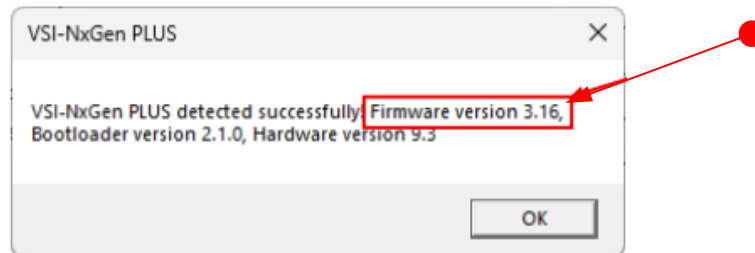


Figure 49 – Firmware Version

2. Notice the **[Firmware version]**. Select **[OK]**.

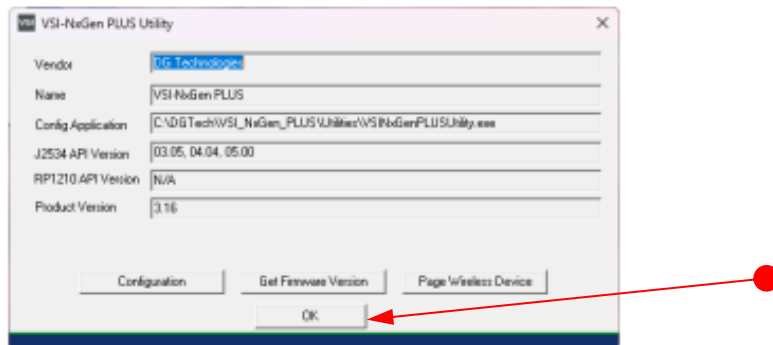


Figure 50 – Firmware Version

3. When this screen is displayed, select **[OK]**.

4.5 VSI NxGen PLUS Configuration Utility

The VSI NxGen PLUS tool comes with support for many protocols (see [Standards and Protocols Supported](#)). The VSI NxGen PLUS Configuration Utility will tell you what protocols, API versions, and Product Version are supported. You can also use the VSI NxGen PLUS Configuration Utility to get the current firmware version. Utility can be found in:

Start → DGTech VSI NxGen PLUS → VSI NxGen PLUS Config Utility

4.6.1 How to Create Log Files for Tech Support

The VSI NxGen PLUS Configurations Utility has a feature to create a Log file (CSV) and save it in the PC.

What are Logs?

Logs are records of communication data that help track and diagnose issues when using the VSI NxGen PLUS tool. Capturing logs ensures that DG Technical Support has the necessary diagnostic data to analyze and resolve issues efficiently.

Why Capture Logs?

Logs are recommended when there is a communication problem while using the tool. They record traces to help engineers narrow down the root cause of problems. **It is essential to stop logging after creating the log file by deactivating the [Turn Logging On] checkbox to prevent any unnecessary data or logs from being stored on the PC.** See Figure 11.

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How to Capture a Log File

1. Access the VSI NxGen PLUS Configure Utility.

Start → DGTech VSI NxGen PLUS → VSI NxGen PLUS Config Utility, and click the [Configuration] selection

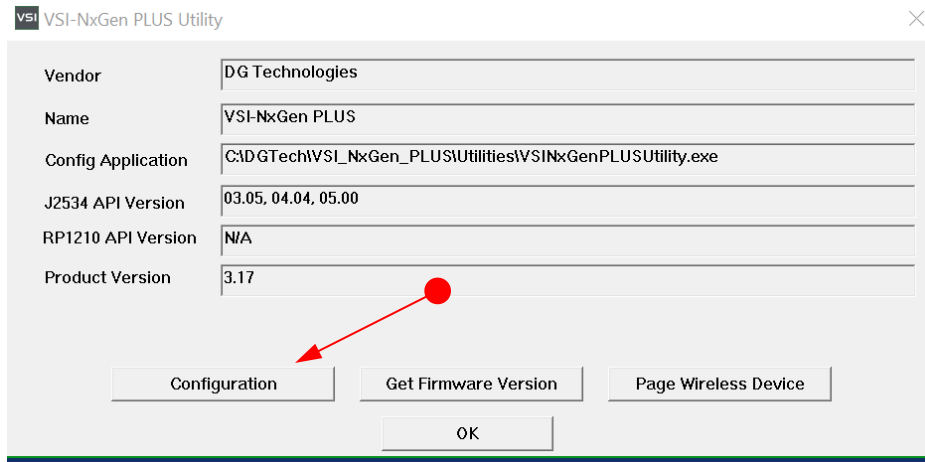


Figure 51 - VSI NxGen PLUS Configuration Utility

2. Click the [Configuration] selection.

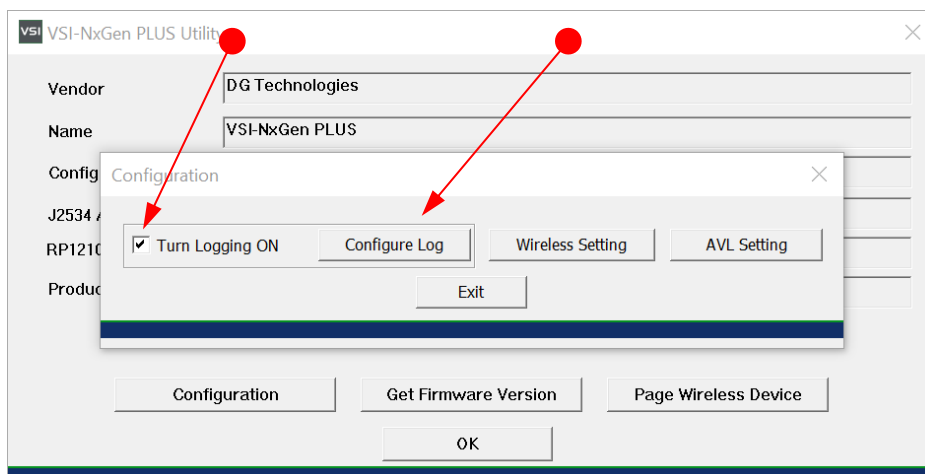


Figure 52 - VSI NxGen PLUS Configuration Utility – Select Logging Configuration

3. Activate the checkbox [Turn Logging ON] and click on [Configure Log].

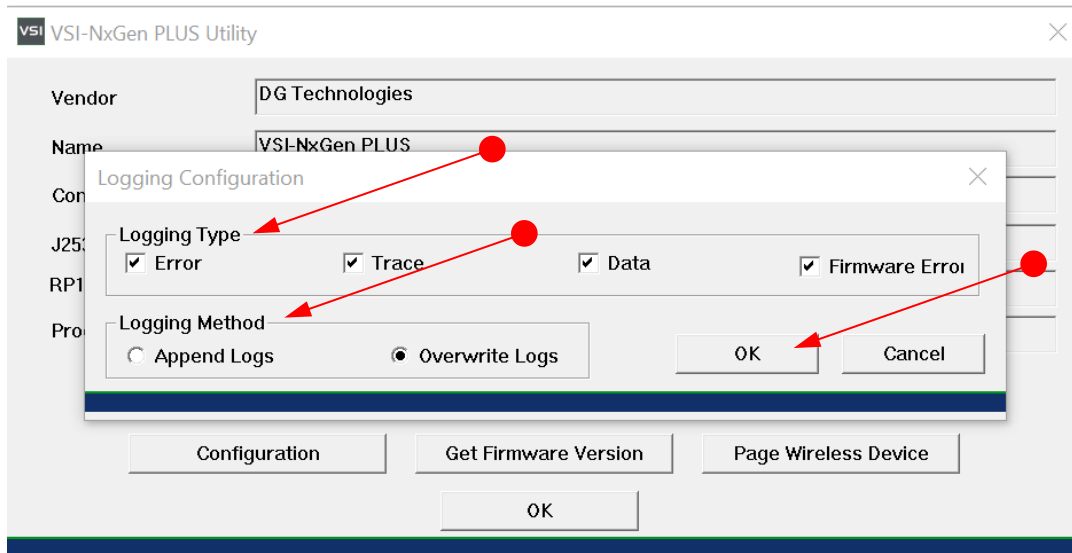


Figure 53 - VSI NxGen PLUS Select Logging Type and Method Configuration

4. The Logging Configuration Selection page pops up. Select [**Logging Type**] and [**Logging Method**] and click [**OK**].

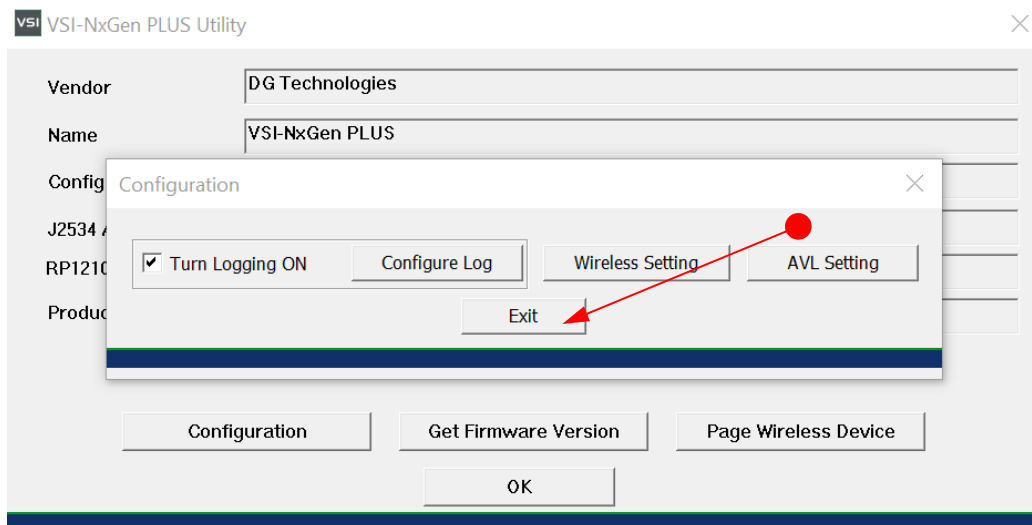


Figure 54 - VSI NxGen PLUS Logging Confirmation Page

5. The Logging Configuration page pops up. Select [**Exit**].

6. The Log files will be saved in the path below:

My PC → Local Disk (C:) → DGTech → VSI NxGen PLUS → Utilities → Logs

NOTE:

- **[Append]:** If you need to add new data to the end of an existing file, the Log file will be significant and challenging to send to Technical Support.
- **[Overwrite]:** Replacing the entire content of an existing file with new data.
 - The best practice is to use **[Overwrite]**, but rename the last log file before overwriting it. This approach ensures that you keep a backup of previous logs while maintaining a clean and updated log file.
- **[Logging Type] (Error, Trace, Data, Firmware Error):** Keep all active as shown in the Figure 53 unless you need to reduce the log file size.

5 Hardware Connection to the PC



The above image depicts the typical connection to the vehicle.

IMPORTANT: the following sequence of connections must be followed, otherwise damage to vehicle or VSI NxGen PLUS may occur.

Step 1: Connect the VSI NxGen PLUS to the OBD II cable). Note: Do not power unit from multiple sources.

Step 2: Connect the VSI NxGen PLUS's USB cable to the PC that the software was installed on and note that the Power LED is a solid **Green** and the Vehicle Connection LEDs are a solid **Green**.

Step 3: Connect the 16 PIN J1962 OBDII Cable to the vehicle. Note: after this connection and Key is ON, the Vehicle Connection LEDs are solid **Green**.

6 Included Software Applications

6.1 DG Update

The purpose of this application is to ensure the most current version of the VSI NxGen PLUS software drivers are installed. For the best user experience, it is essential that the current version is used at all times. Also, refer to the Secure Firmware Solution section to ensure the firmware is also up-to-date



DO NOT DISCONNECT POWER FROM THE VSI NxGen PLUS 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 used manually from the Windows Start Menu:

Start → DGTech Utilities → DG Update

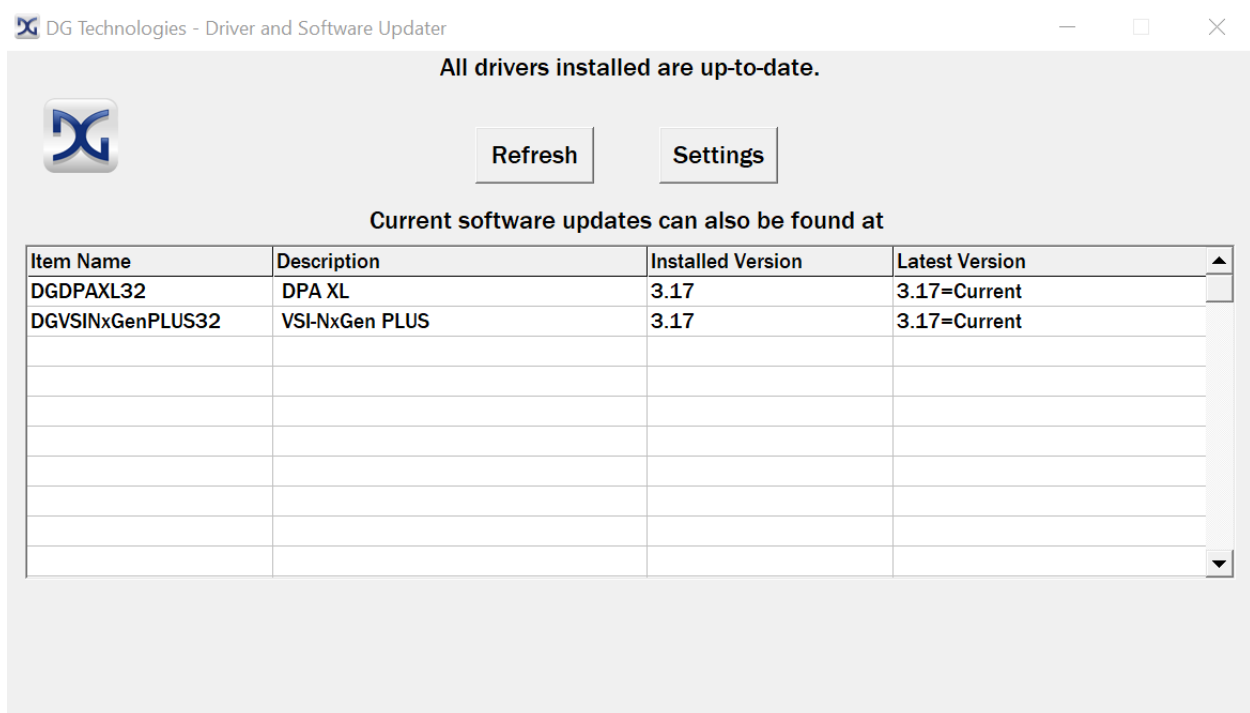


Figure 54 – All Drivers Installed are up-to-date

The above screen shows All drivers installed are up-to-date.

NOTE: The 30-day default setting can be changed by selecting the **Settings** button.

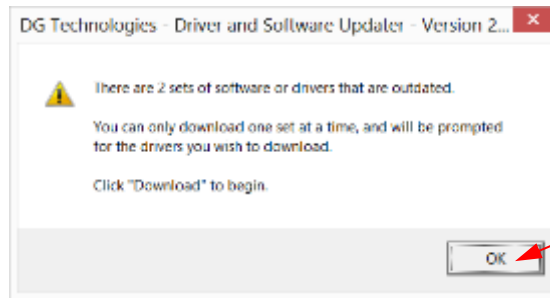


Figure 55 – Drivers are Out of Date

If Drivers are out of date, this message box will be shown. Select **[OK]**.

6.1.1 DG Update – Drivers Out of Date

In this example, the VSI NxGen PLUS drivers are out of date (**Red**). Only if updates are available will the Download button and progress bar appear on the screen. Select **Download**.

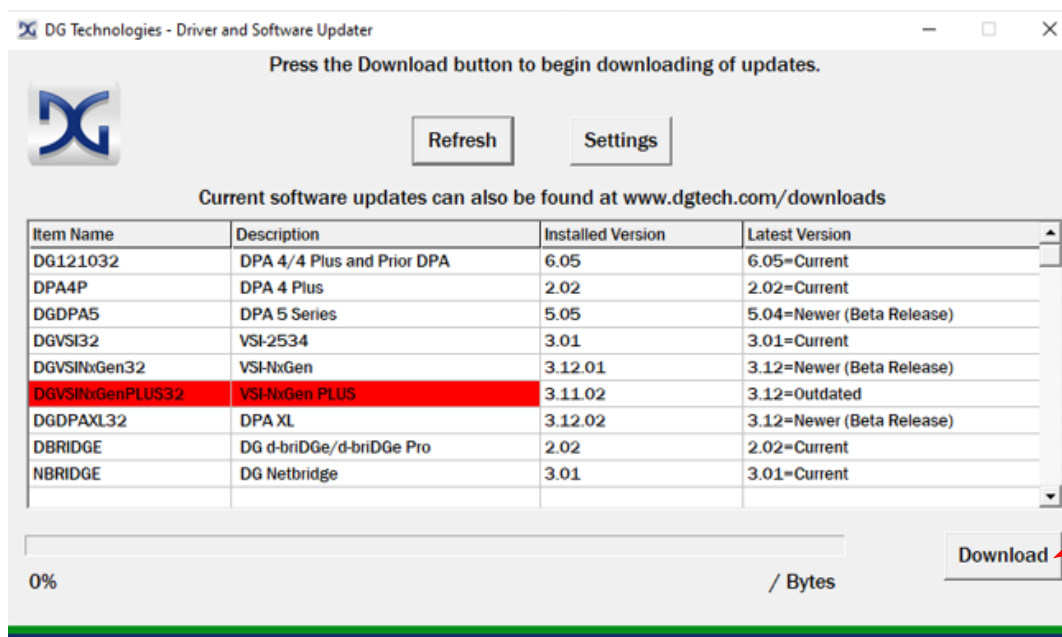


Figure 56 - DG Update Main Update Screen

Connect your PC to the Internet and click the **Refresh** button. If the check for updates was successful, the second column of will display information showing the most current versions. Should an install be out of date the color of the row will be red.

6.1.2 Successful Connect – Update Available

In this case above, one of the products is out of date (**Red**), the user will be automatically 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.

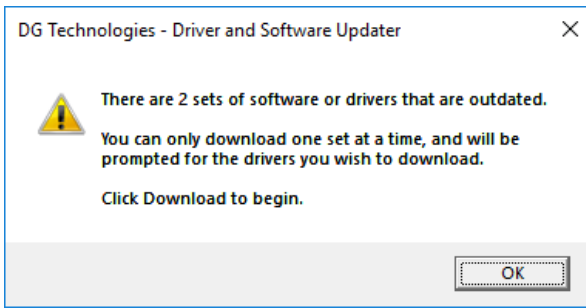


Figure 57 - DG Update Out of Date Message

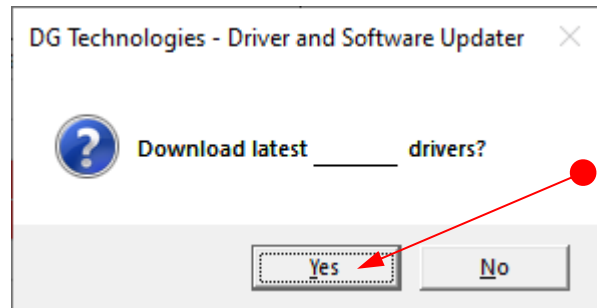


Figure 58 - DG Update Prompt for Download

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 VSI NxGen PLUS or shut down computer until installation is complete.

6.1.3 Advanced Settings - Setting Default Time 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.

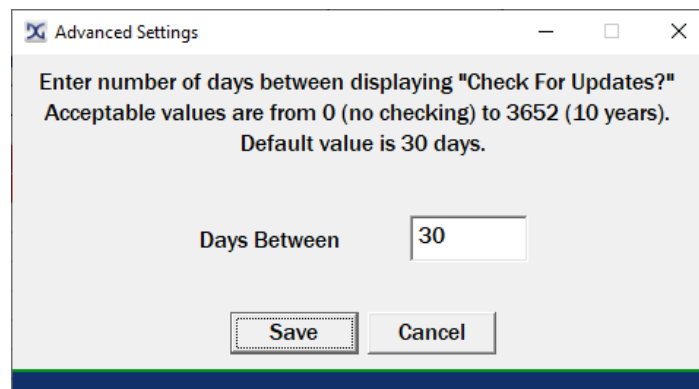


Figure 59 - DG Update Advanced Settings

6.2 Adapter Validation Tool (AVT)

If your OEM application is having trouble communicating with the VSI NxGen PLUS, you can use the J2534 (AVT) to help troubleshoot this problem. AVT allows you to determine:

- If your drivers are installed correctly
- If a connection to your tool can be made
- If a connection to your vehicle for PC communications is working

- Please check that the OEM application is configured to use the VSI NxGen PLUS, and the correct protocol is selected.

6.2.1 AVT Startup

Click AVT on the desktop or from the start menu. If you have RP1210 and J2534 drivers installed on your computer you will see the AVT Launcher screen. Since the VSI NxGen PLUS does not support RP1210 you should always choose the Car / OBDII image if you are presented with this screen.

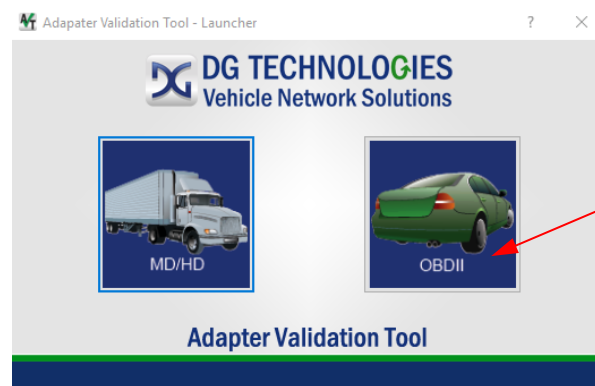


Figure 60 - AVT Startup



Figure 61 - AVT OBDII Automated Test

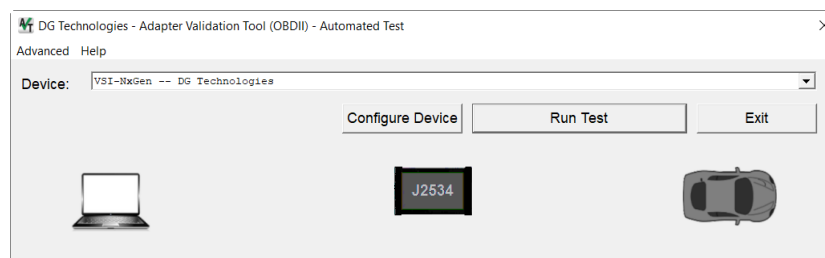


Figure 62 - AVT OBDII Automated Test Run Test

- Turn vehicle ignition to the key-on, engine-off (KOEO) position. Select **Run Test**.
- Note: In the **Device:** dropdown, the VSI NxGen PLUS is selected. If using a different device, make the applicable selection.

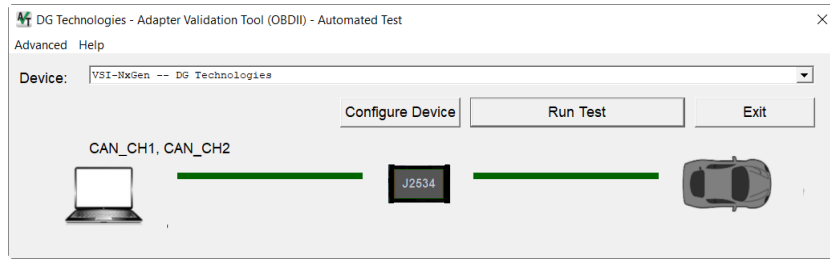


Figure 63 - AVT OBDII Automated Test Successful Connection

- Solid **Green** lines will appear in the successful connection locations. If a **Red** line appears between either side, check those connections and Run Test again.
- Note: By selecting **Help** from the menu, a more detailed User Manual for this application is available.

6.2.2 DG Data Recorder

The purpose of this Data Recorder allows the users to record data from the vehicle networks via DG Technologies' vehicle adapters. It is capable of recording 100% data on the connected channels & protocols. It can be used to record data at the same time as an adapter is in use by another application or it can be used in standalone mode to record data when no other application is running.

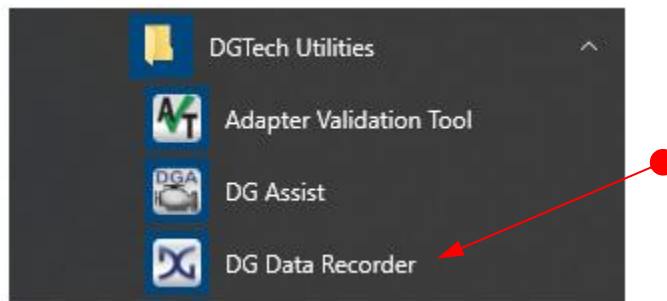


Figure 64 – Data Recorder Selection Under DGTech Utilities

The Data Recorder selection can be found under DGTech Utilities from the desktop or from the start menu.

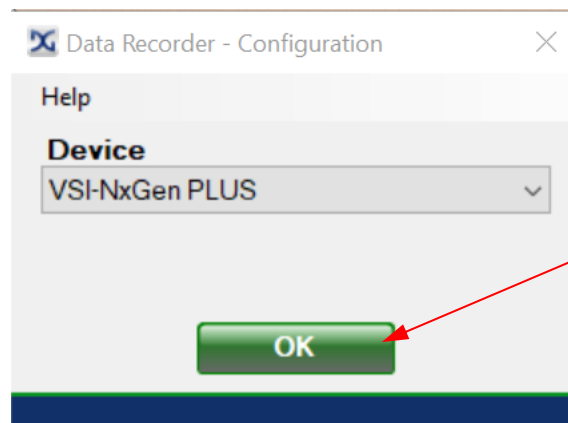


Figure 65 – DG Data Recorder Configuration

- Go to:  → DGTech Utilities → DG Data Recorder.
- Device being used, VSI NxGen PLUS, should be shown.
- Select **[OK]**.

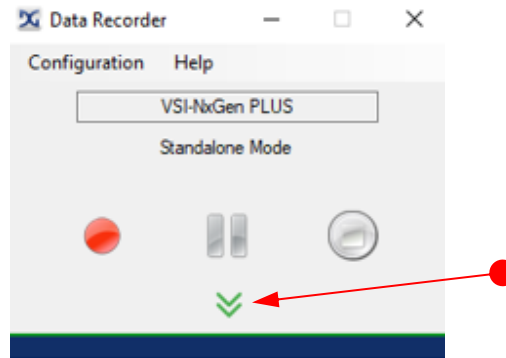


Figure 66 – DG Data Recorder Drop-Down Arrow

- Select Drop-Down Arrow for a list of options or select icon to go directly to function.

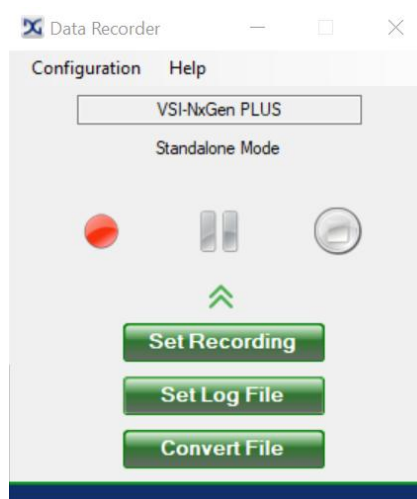


Figure 67 – Selection of Drop-Down Arrow

- Indicator Table

Indicator	Definition
	Start Recording
	Pause Recording
	Stop Recording

Figure 68 – DG Data Recorder Indicator Table

- Make appropriate selections to Start, Pause and Stop recordings.
- To view, print or email log file, the log file is found here: C:\DGTech\DGTech Utilities\Logs. File will read: DataRecorder-VSI-NxGenPLUS.csv. Check the file date/time to ensure it coincides with the log date/time.
- Note: By selecting **Help** from the menu, a more detailed User Manual for this application is available.

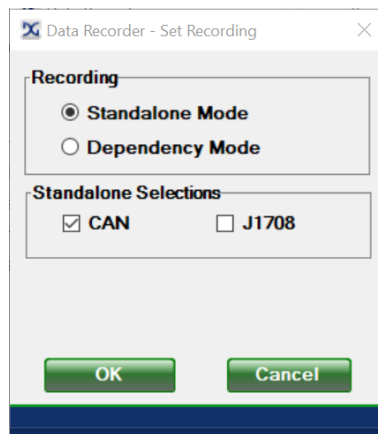


Figure 69 – Selection of **[Set Recording]**

- Select **[Set Recording]** to set recording mode and standalone selections.
- Select **[OK]** to continue.
- Select **[Cancel]** to cancel selections.

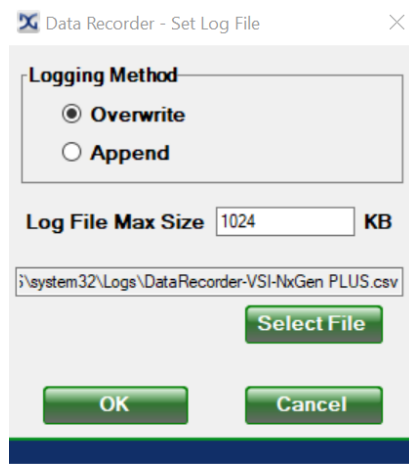


Figure 70 – Selection of **[Set Log File]**

- Select **[Set Log File]** to select logging method and specific files
- Select **[OK]** to continue.
- Select **[Cancel]** to cancel selections.

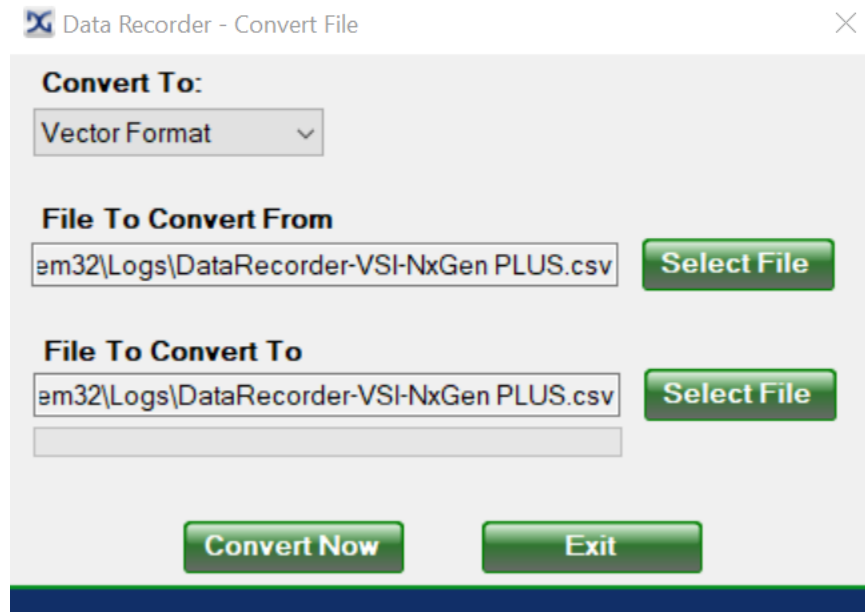


Figure 71 – Selection of **[Convert File]**

- Select File format you want to convert to.
- Select **[Select File]** to convert file format(s) location.
- Select **[Convert Now]** to immediately convert file format(s).
- Select **[Exit]** to cancel file conversion.

Appendix A. Technical Support and Return Merchandise

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.



DG Technologies Technical Support

Phone: 1-248-888-2000

Fax: 1-248-888-9977

E-mail: techsupp@dgtech.com

Website: 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 VSI NxGen PLUS, 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 Repair Services

Attn: RMA# xxxxxxxx

DG Technologies

33604 West 8 Mile Road

Farmington Hills, MI 48335

Appendix B. Warranty Information and Limitation Statements

Warranty Information

DG Technologies, Inc. the VSI NxGen PLUS 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 1-248-888-2000 and must be included with the product being returned (for more details, see section *Return Merchandise Authorization (RMA)*). A VSI NxGen PLUS 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 Information

Please direct all inquiries to:

DG Technologies
33604 West 8 Mile Road
Farmington Hills, MI 48335
Phone 1-248-888-2000
Fax 1-248-888-9977

Changes not expressly approved by DG Technologies, Inc. to the VSI NxGen PLUS could void the user's authority to operate the VSI NxGen PLUS.

Appendix C. List of Acronyms Used in this Document

Acronym	Description
API	Application Programming Interface
AVT	Adapter Validation Tool
CAN	Controller Area Network
CAN FD	Controller Area Network Flexible Data
DG	DG Technologies
DoIP	Diagnostics over IP
DPDU API	Diagnostic Protocol Data Application Programming Interface
DW CAN	Dual Wire Controller Area Network
Class2	GM's implementation of SAE J1850 Protocol
ECU	Electronic Control Unit.
FTCAN	Fault Tolerant Controller Area Network
FW	Firmware
ID	Identification
ISO	International Standards Organization
ISO14230	Keyword protocol running over UART
ISO9141	Serial Communication Protocol implemented in Ford & CARB
J2534	SAE Specification for Legislated Reprogramming Support
LED	Light Emitting Diode
KWP	Keyword Protocol
KWP2000	Keyword Protocol 2000 (ISO 14230)
NDIS	Nissan Data Scan for connector type: NDS I (1989-2000)
OBD	On Board Diagnostics
OEM	Original Equipment Manufacturer
PC	Personal Computer
PWM	Pulse Width Modulation, used in Ford's implementation of J1850
RP1210	TMC recommended practice Windows Application Programming Interface (API)
RAM	Random Access Memory
SAE	Society of Automotive Engineers
SCI	DCX's proprietary UART based protocol
SCP	Standard Corporate Protocol, Ford's implementation of J1850 (J1850 PWM)
STG	Short to Ground
SFS	Secure Firmware Solution
SWCAN	Single Wire Controller Area Network
TMC	Technology and Maintenance Council
UAC	User Account Control
USB	Universal Serial Bus
VBAT	Vehicle Battery
VDA	Vehicle Datalink Adapter
VNI	Vehicle Network Interface
VPW	Variable Pulse Width Modulation used in GM implementation of J1850