

Plugin Installation Instruction and User's Guide

**Xenon 1950/1952, Vuquest 3320g, Granit1910i/1911i/1920i, scan engine N5600,
Voyager 1470g/1472g/1602g**

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1. Introduction

This Guide provides information about installation and licensing of the Data Matrix DPM Decoder/Plugin for **Honeywell Xenon 1950/1952, Vuquest 3320g, N5600 scan engine, Granit 1910i/1911i/1920i** and **Voyager** area images, integrated by means of **TotalFreedom™** Plugin Software Development Kit.

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Since the installation procedures for these platforms are identical, the description is combined into one manual and all devices (jointly or separately) may be referenced further in the text as an **Imager**. The references to the **Honeywell Xenon 1950/1952 User's Guide** shall mean that there are similar references to the **Vuquest™ 3320g Area-Imaging Scanner User's Guide**, etc. and they are not mentioned only for conciseness.

This Guide deals only with EZConfig-scanning utility versions 4.0 and onward. These versions have been updated to be browser-based and improved to provide both an intuitive interface and enhanced efficiency.

Appendix 1 contains basic information about EZConfig-scanning utility that you might need when installing plugin.

2. Installing Plugin

Unpack purchased/downloaded from 2DTG site Multi-Platform plugin "**Plugin_x.x.zip**" file, containing **icEveryCode_x.x.moc**.

2.1 Flashing Plugin into the Imager

2.1.1 Checking/Updating Imager Firmware

Important:

Earlier Firmware versions of an Imager may not be compatible with Multi-Platform Plugin. Please check if the firmware version is up-to-date (Appendix 1) before proceeding further.

If firmware is not up-to-date, download it (<http://www.2dtg.com/supporting-software-downloads>) to your PC and upload into the imager by clicking **Update Firmware** on the "*Home > Connected Device*" page.

Note: the upload procedures for the imager firmware and plugin are identical.

The screenshot shows the Honeywell EZConfig web interface. At the top, it says "Honeywell | Scanning & Mobility" and "EZConfig". Below that, there are navigation links: "GETTING STARTED | NEW FEATURES | CHECK FOR EZConfig UPDATES | FAQ | HELP | TECHNICAL KNOWLEDGE BASE". A green bar indicates "CONNECTED DEVICE". The breadcrumb trail is "Home > Connected Device > Update Firmware".

On the left, under "Device Details", there is an image of a handheld scanner. To its right, the following information is displayed:

- Device/Model : Xenon XP 1950g Area-Imaging Scanner
- Serial Number : 19052B54D0
- Firmware Number : EV000257BAA

On the right, under "Update from File", there is a "File Name:" field with a "Choose File" button. The file name "icEveryCode_17.10.2.moc" is entered and circled in red. Below this field is an "Update Device" button.

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2.1.2 Firmware/Plugin Flashing Procedure

- In the opened *Update Firmware* Window click on “Browse” to the firmware/plugin file and click “Open”.
- Then click on “**Update Device**” to upload the firmware file into the device ROM.
- Wait until this process is finished (it may take 1-2 minutes).

At this point Plugin becomes already functional (except for Granit 1920i – Section 2.1.3) in DEMO mode and can read DPM samples (Section 4).

2.1.3 Enabling Plugin for Granit 1920i

Unlike all others Total Freedom platforms Granit 1920i requires one more step to make plugin working – enabling exposure mode setting (default mode is EXPMOD9). We recommend changing it to EXPMOD2:

- Scan **EXPMOD2** command code (*on the right*) or send this command from EZConfig Command Center.



For Trial version of the Plugin GO TO Section 2.3

For Operational version continue with Section 2.2

2.2 Licensing Plugin

License for each Imager is generated using proprietary encryption mechanism, which uses Scanner's **Serial Number** (SN) as an input parameter and returns **License Key** (alphanumeric string of 20 characters). Scanner will call “check license function” by passing the SN as parameter every time the Imager is powered on.

The syntax for the license command to send to Imager is: **<Prefix>LIC#<License Key>**, where **<Prefix>:= 990009C72** – Xenon 1950 and Vuquest3310g or **:*:990009C72** – Xenon 1952 (see Appendix 1 for more detail).

2.2.1 Get License Key

There are three ways to get your License Key:

1. In the “My Account” section of the site (under Order No.) when you are logged in.

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Note: enter 10-character Serial Number(s) in the “Order Comments” window at the end of the Check-out process (we recommend scanning all serial numbers into this window to avoid typos).

2. License Key (20 characters string) for each submitted Serial number will be e-mailed to you within 24 hours together with the **License command code**.
3. Contact Customer Support.

2.2.2 Scan License command code

or Send License Key to the Imager using EZConfig Command Center:

990009C72LIC#<License key> - Xenon 1950 and Vuquest3320g or
:*:990009C72LIC#<License key> – Xenon 1952.

Scan RESET_ . command code to save the configuration



2.2.3 Migrating from Trial- to-Licensed Plugin

If the Trial version of the Plugin has already been installed into the Imager, the installation of the purchased licensed version includes only three steps, as follows (see Section 3.2 for detail):

- Get License Key
- Scan License programming code
- Scan RESET_ . programming code to save the configuration



2.3 Finalizing Plugin Installation

Check DPM Plugin. If you can read Data Matrix symbols below, installation was successful.

Note: it is recommended to temporarily disable System's Data Matrix Decoder first by scanning **IDMENA0** code.



Operational Plugin:

Trial/Demo Plugin:

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2D Technology Group	Test1	Data Matrix xxx	2D Technol*****	Tes**	Data Mat*****
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Scan **TRMUSB124.** command code to switch device to USB-Keyboard (HID) Mode to be able to receive Scan Data in any regular applications like, Notepad, Excel, etc.



3. Removing Plugin

Removes all files from Plugin folder – **PLGDLA** (including **License**).

Scan **PLGDLA.** command code to remove Plugin and save configuration - scan **RESET_.** (above)



4. Reading Techniques

Follow the general guideline described in the Reading Techniques section of the “**Xenon 1950/1952 User's Guide**”, etc.

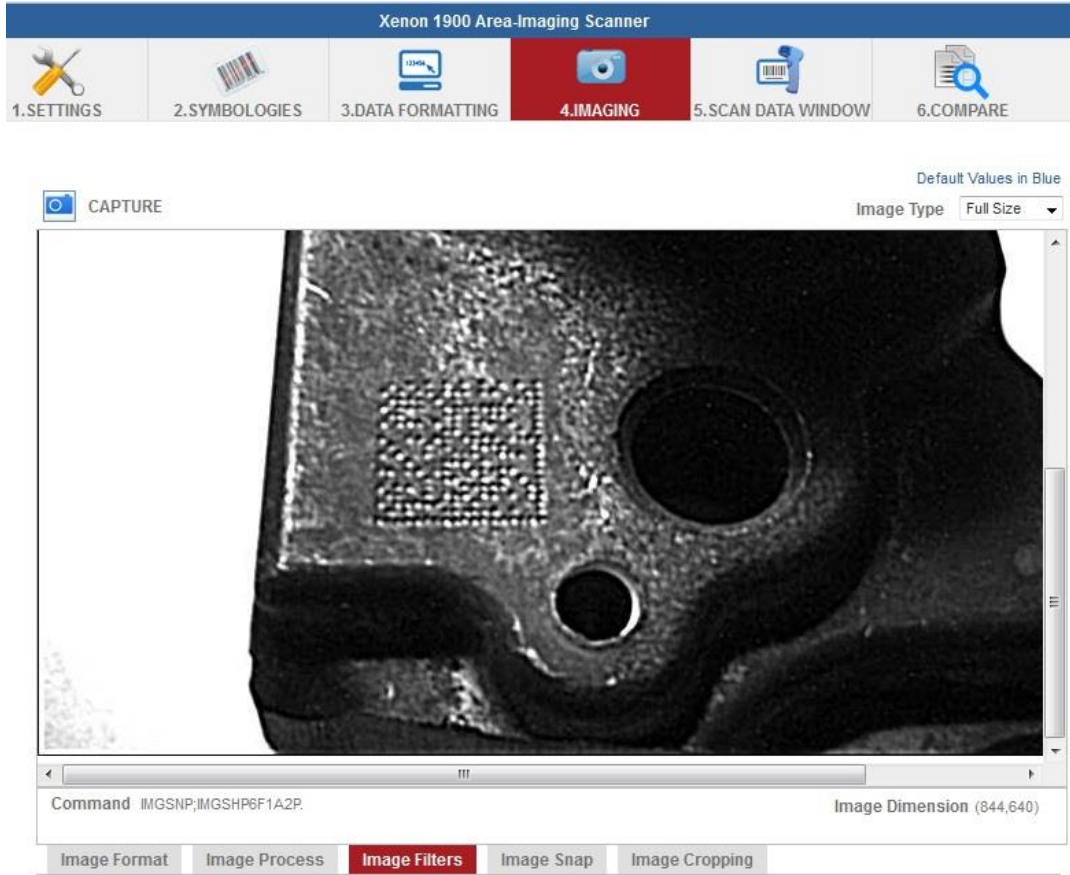
For DPM marks - hold the Imager such that its front surface is tilted to the mark surface, and the mark is centered. Depending upon the type of the mark the tilt may vary within a 30-50 degree range (Xenon1950/1952, Granit 1910i/1911i) or 10-20 degree (Vuquest3320g).

Reading Distance depends on imager model – HD, SR or ER. For DPM reading HD model is normally the best choice. The distance is ranging from 0.5 to 6 inches for most samples (average ~ 3.5 inch), approximately. So, the optimal distance for most readings would be ~ 2-4 inches. Depending upon the mark and lighting conditions maximum distance might be as great as ~ 8 inches.

Imaging

Imaging might be useful for DPM decoding if the scanner is connected to **EZConfig Scanning**. It allows you to control visually the quality of the captured image by changing reading distance, angle, and lighting (See **Image Capture Settings** article of the **EZConfig** on-line Help for more detail).

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5. Appendix 1. EZConfig-Scanning utility and related software

5.1 HSM Driver

Download and Install «**Honeywell Scanning and Mobility (HSM) USB Serial driver**» (currently **Ver.3.5.20**: <http://www.2dtg.com/supporting-software-downloads>)

- Uninstall any previous installed Honeywell USB Serial Drivers.
- Extract the driver files and follow “Honeywell USB Serial Driver Installation” instructions in the README-file that comes with the package.

Installation notice:

*If the driver is installed correctly, **Device Manager**>**Universal Serial Bus Controllers** of your computer will be appended with a “**Honeywell Control Device**” line.*

5.2 EZConfig-Scanning Installation and Operation

Download and Install “**EZConfig for Scanning**” Utility (currently Version 4.5.35) - lunch **EZConfig-Scanning v4_v4.5.35_Setup** and follow on-screen installation instructions.

5.2.1 Establishing communication with the Imager

- Scan **TRMUSB130** command code to program the Imager to emulate a regular RS232-based COM Port (**Honeywell Xenon 1950/1952 User's Guide**)
- Start **EZConfig Scanning** and connect **Imager** to PC via USB cable.
- Click “Connected Device” on the opened HSM *Home* window

Connection Notes:

*At this point **Device Manager** of your computer will be updated with 2 new lines:*

- “*Xenon 1950/1952 Area-Imaging Scanner*” - under “**Universal Serial Bus Controllers**”
- “*Xenon 1950/1952 Area-Imaging Scanner (COM##)*” - under “**Ports (COM & LPT)**”.
- Upon connection the left side of the **EZConfig** “*Home > Connected Device*” window should be depicting the parameters of the device:

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The screenshot shows the 'CONNECTED DEVICE' page. On the left, under 'CONNECTED DEVICE', there is a 'Refresh' button and an image of a scanner. Below the image, the device is identified as 'Xenon XP 1950g Area-Imaging Scanner'. A box contains the following details: Model: 1950g, Serial No: 19052B54D0, Firmware No: EV000257BAA, Connection: USB SERIAL, and a link to 'Show License/Plug-in Info'. A status message says 'Firmware is up to date'. On the right, the 'License/Plug-in Info' section has a 'License Info' list with checkboxes for Stacked Linear Symbolologies, Matrix Symbolologies, OCR, Imaging Available, PDF Symbology, Plug-in Enable, Postal Symbolologies, Linear Symbolologies, Image Capture, and Color Fusion. The 'Plug-in Info' section has a checkbox for 2DTG_DecodePlugIn. An 'Ok' button is at the bottom right.

It's important to check out two things on this screen:

- If the Firmware in your device is up to date (otherwise, you may not be able to install plugin).
- If you have already another plugin installed in this device (you may need to remove it before installing the new one) – right picture above.

5.2.2 Working with Command Center

Though in most cases it is more convenient to send the command to the imager using appropriate Programming codes, some commands can be sent only by means of **Command Center**.

The screenshot shows the 'Command Center' interface. It has a navigation bar with tabs for 1.SETTINGS, 2.SYMBOLOGIES, 3.DATA FORMATTING, 4.IMAGING, 5.SCAN DATA WINDOW, and 6.COMPARE. The '5.SCAN DATA WINDOW' tab is active. Below the navigation bar, there is a 'Command Center' section with a 'Create Programming Bar Code' button. A 'Command Type' dropdown menu is set to 'Menu Command'. A text input field is provided for entering a command, and a 'Send Command' button is at the bottom.

To call the **Command Center**, go to “Home > Connected Device > 5.Scan Data Window” by clicking **Scan Data Window** on the “Home > Connected Device” page.

The Serial Command Window allows you to use serial commands

to communicate with a connected device. Type a serial command in the text box and click on **Send Command** to send a command or a query to the device.

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6. Appendix 2. Quick Reference Chart.

This Appendix provides a list of the commands related to Plugin installation process or operation. Some of them shall be executed in a Debug mode for the results to be displayed.

6.1 Licensing and Testing Plugin

Scan Programming Barcode received from
2DTG or Use Command Center:
990009C72LIC#<License key>.
:*:990009C72LIC#<License key>. (1952)

Reset (Save)



RESET_.

Disable System Data Matrix Decoder

Enable System Data Matrix Decoder



IDMENA0.



IDMENA1.

6.2 Testing and Diagnostics / Operations

Enable Debug Mode



PLGDBG1.

Disable Debug Mode



PLGDBG0.

Display Plugin Directory



PLGDIR.

Display Plugin Information



PLGINF.

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Enable Plugin



PLGDCE1.

Disable Plugin



PLGDCE0.

6.3 Removing Plugin

Remove Plugin (including License)



PLGDLA.

Reset (Save)



RESET_.

6.4 Configure Common Interfaces

USB – Keyboard (HID) Mode



TRMUSB124.

USB Serial Emulation



TRMUSB130.

6.5 Enabling Plugin for Granit 1920i

Enabling Plugin for Granit 1920i



EXPMOD2

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7. Appendix 3. Plugin Testing and Diagnostic

7.1 Plugin Directory (PLGDIR.)

Scan **PLGDIR**. Programming code to display Plugin directory:

PLGDIR. return:	
PLGDIROptModes	168
icEveryCode	794
Lic.key	10
icEveryCode.plugin	223856
2097152 total,1872324 free,224828 used	

Note: “**Lic key**”-line above may return one of two values, as follows:

- “**Lic key 0**” – submitted License Key has incorrect syntax.
- “**Lic key 10**” – means that syntax is correct. However, it does not necessarily mean that License Key itself is correct. If Plugin is still in DEMO mode after licensing - check PLGINF.

7.2 Plugin Information (PLGINF.)

Scan **PLGINF**. Command code twice to display information about Plugin

PLGINF. return:	
[Decode Plugin Configuration]	
<Decode.plugin>	
[name]:	2DTG_DecodePlugin
[company]:	2D Technology Group, Inc.
[licensed]:	YES
[active]:	YES
[majorrevision]:	17
[minorrevision]:	10
[build]:	2
[certificate]:	102148
[certificatetime]:	2009/08/10 15:00:05
[guid]:	abcd1234
[filename]:	icEveryCode.plugin
[mainroutineorder]:	AFTER
[barcodeinterceptmode]:	YES
[entrydatastate]:	MODIFIED
[chainonexit]:	CHAINIFFAILURE
[loadstatus]:	SUCCESS

Majorrevision

Minorrevision indicate the Date of the installed Plugin file → year (yy)

Build date (dd)

Mainroutineorder indicates the order of the Plugin in the decode routine (AFTER or BEFORE the system decoder)

[licensed]: YES/NO - indicates if the Plugin is licensed or not.

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Note:

- Plugin is not licensed (by default) after its download (Section 3.1.1) to the scanner. The decode output is modified to make plugin to return "*" instead of some characters (DEMO Mode). Accordingly, the **[licensed]**-line in the print-out above will display "NO".
- If licensing (Section 3) failed for any reason (License Key or its syntax is incorrect) plugin will stay in DEMO mode and "**[licensed]**"-line in the print-out above will display "NO" (as it's supposed to do for DEMO mode).
- "**[licensed]**"-line displays "YES" only when correct License Key is entered to the scanner.

7.3 Reading Data Matrix symbol in DEBUG Mode

When reading Data Matrix in the Debug Mode (**PLGDBG1.**), Plugin returns the information about the type of the decoding algorithm that has been used for this particular symbol (Dot Peen or Standard) and relative level of symbol distortion (Focus: 0-3). Plugin calling procedure is also displayed.

```
[PLGUIN_DEBUG] Plugin decode process
[PLGUIN_DEBUG] Call system decoder for menuing
[PLGUIN_DEBUG] Plugin decode process
[PLGUIN_DEBUG] Next decoder is a plugin
[PLGUIN_DEBUG] ==== Focus: 0 ==== ----- Dotpeen Decoding OK -----
2D Technology Group
```