



## DG4000 Firmware Upgrade Procedure

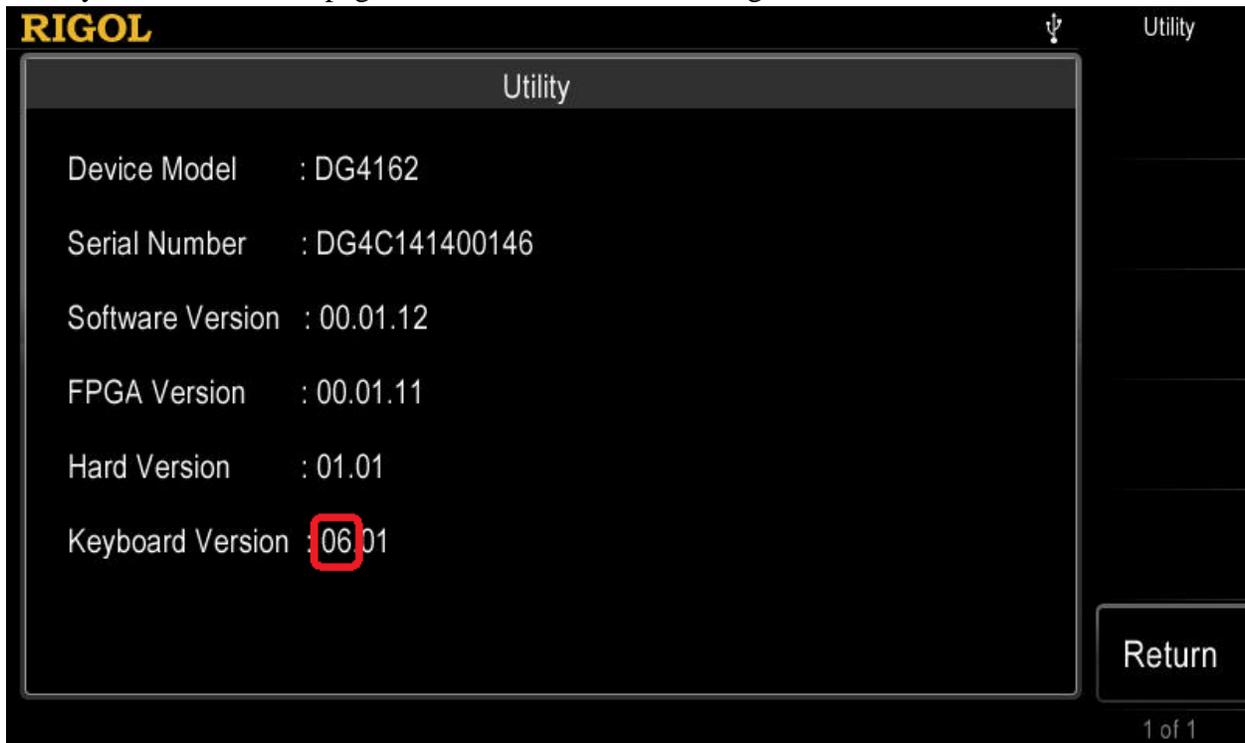
*Date:* 05/31/2016

### *Solution:*

This document covers the updating of the firmware on Rigol DG4000 series arbitrary waveform generators.

The first step is to check the current firmware of the DG4000, press **UTILITY > SYSTEM > Down Arrow to page 2 > Sys Info**

The System Information page should be similar to the image below:



**NOTE:** Software Version = Firmware version. The first doublet of the Keyboard version represents the Bootloader version.

**If the current bootloader revision is less than to 06:** Update the bootloader first using the file located in the Bootloader folder for the DG4000 firmware update.

After updating the bootloader, then **update the DSP code** using the same steps below, but replace the bootloader file with the file located in the DSP folder.

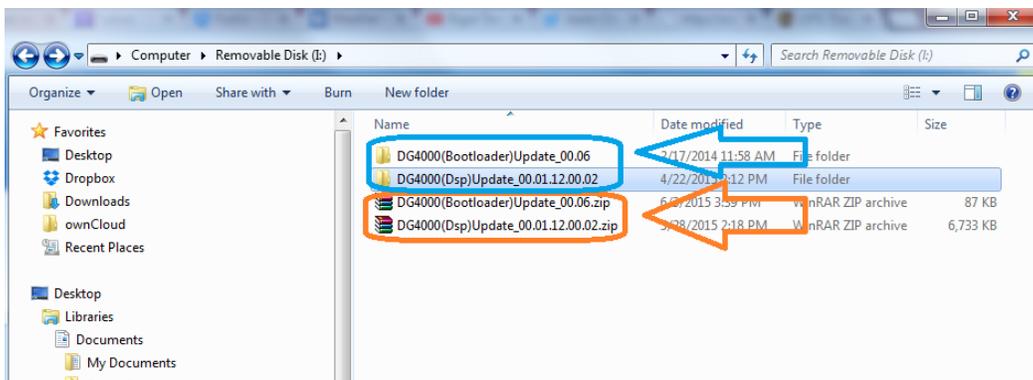
**If bootloader revision is greater than or equal to 06:** Update using the file located in the DSP folder.

1. Download the firmware file and unzip it using a software utility like WinZip. Copy the firmware file to the root directory of a USB memory stick. Valid firmware for the DG4 series have the \*.GEL file extension.

**NOTE:** The USB memory stick must be FAT32 formatted and should be clean (only the DG4 firmware file on the memory stick). USB memory devices with maximum memory of 8GB or less are recommended. We recommend the SanDisk Cruzer Blade 8GB USB memory sticks.

You can test the memory stick by inserting it into a running DG4000 and the instrument should display “USB Device Recognized” or similar if the memory stick is compatible with the instrument.

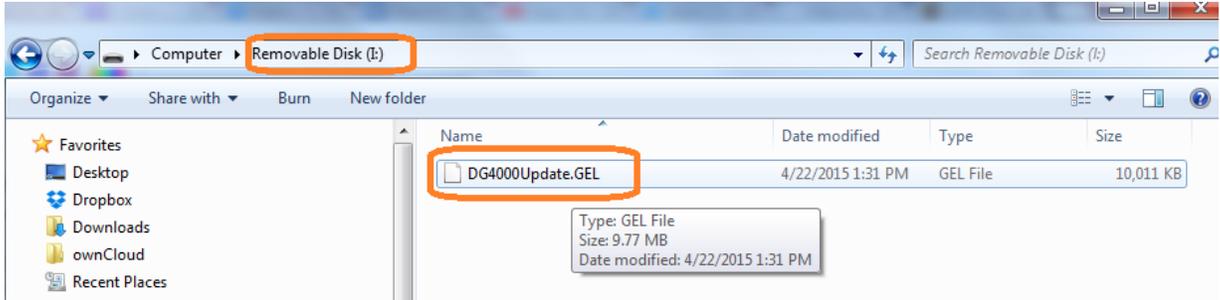
Below is a screen shot showing the original Bootloader and DSP zip files (in orange) along with the unzipped folders (in blue).



**NOTE:** The update files of both the bootloader and DSP code have identical names “DG4000Update.GEL”. The file names must not be changed. Keep each file in the root folder to prevent confusion when updating.



Simply double click on the folder and copy the DG4000Update.GEL folder to the root directory of the USB memory device as shown below:



2. Plug the instrument in to an uninterruptible power supply, but leave the instrument powered off. The instrument indicates it is in standby mode by a pulsing green backlight on the Power button located on the front panel of the instrument.

**WARNING!**

Don't power cycle or disturb the instrument until the upgrade is complete.. as the instrument can be damaged.

3. Power on DG4 and press the help button repeatedly (about 2 times/second) until the MOD and UTILITY buttons located on the front panel light.



4. Insert the USB memory stick into the front USB slot on the DG4000. The front panel buttons should light one-by-one as the firmware is updating.

5. After approximately 5 minutes, all of the front panel buttons should be lit or the instrument will have rebooted on its own. This indicates that the firmware update is complete. Power cycle the DG4000 by pressing the Power button located on the front panel.
6. If you have just updated the bootloader (originally running firmware revisions  $\leq$  00.01.09), remove the bootloader file (DG4000Update.GEL) from the USB memory stick and replace it with the DG4000Update.GEL file located in the DG4000 DSP folder.
7. Repeat steps 1-5 to update the DSP code.
8. Power on DG4 and check the firmware information

### Additional Information:

In some cases it could be that your USB Thumb Drive is incompatible with the DG4000. The result is that the upgrade stops at step 4. Only the Utility; Store and Mod button will be lit:



If this happens, please wait 5 minutes, remove the USB memory stick, and try another thumb drive



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