

Distributor Field Firmware Update for G-Force

I. Update the Firmware to v7.4 using the update utility.

1. Place the v7.4 firmware that was emailed to you on your desktop.
2. Plug in the G-Force via USB to the PC that will update the G-Force.
3. Unzip the G-Force Firmware Updater v2.1.0.1 folder and place it on your desktop. There should be three files inside the folder. Double-click on the G-Force Firmware Updater.exe to launch the program.
4. In the software, click on the browse button and navigate to the v7.4 firmware file.



5. Click on the Initialize Bootloader button.

2. Click Initialize Bootloader

Initialize Bootloader

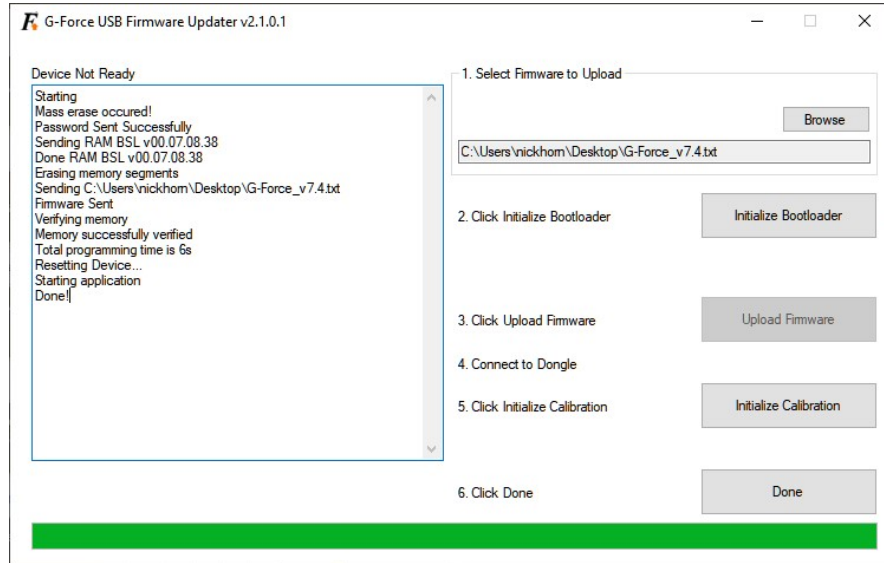
Click on Ok to clear the Bootloader Initiation popup window.

6. Unplug the cable from the G-Force, then plug it back in.
7. The G-Force should now display FWUPDATE and QUIT. Press the up arrow. The screen should now display BOOTLOADER.
8. Click on the Upload Firmware button in the software.

3. Click Upload Firmware

Upload Firmware

9. The green progress bar will show the update procedure.
10. When the progress bar is fully across the bottom of the window, the box on the right hand side of the screen will display Done!



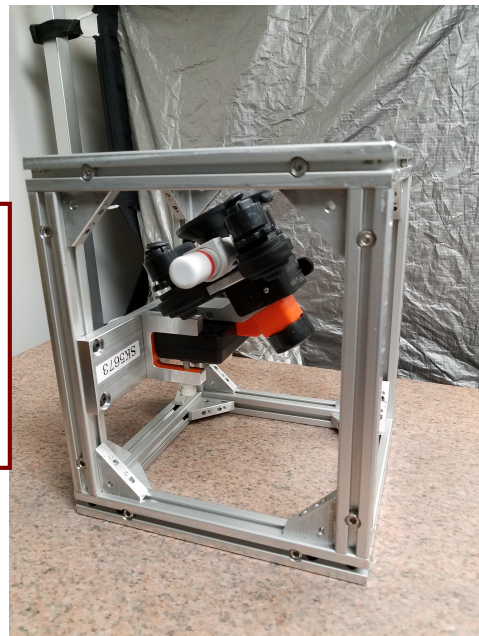
Leave the software open and proceed to **II. Field Calibration.**

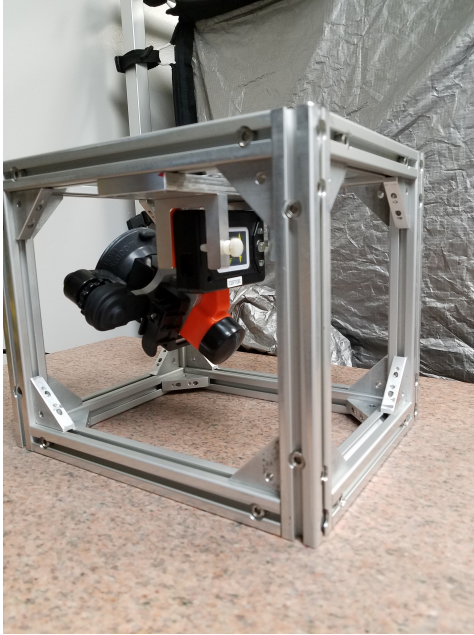
Note: In the following steps, you will read about x, y, and z orientation. LMI has a specially designed “cage” for calibration that we use when we calibrate each G-Force before it leaves LMI. Each axis is captured twice – the second time is always at 180 degrees rotation from the first. We are going to perform a rough field calibration without the use of the cage, so the following pictures show the orientation for each axis. Try to mimic these as best as possible when performing the steps in Section II. Field Calibration.



Z axis

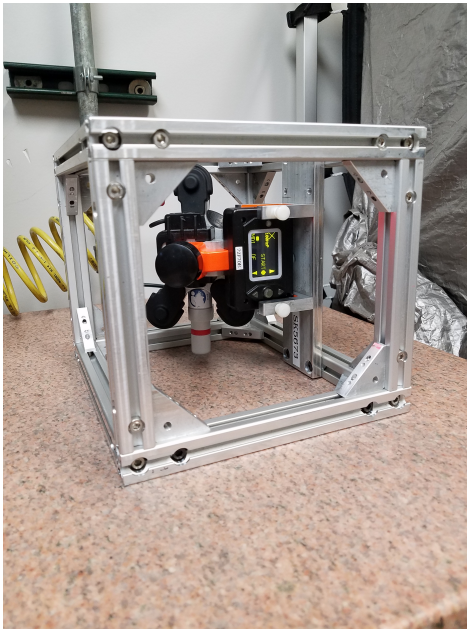
Display up,
then display down.





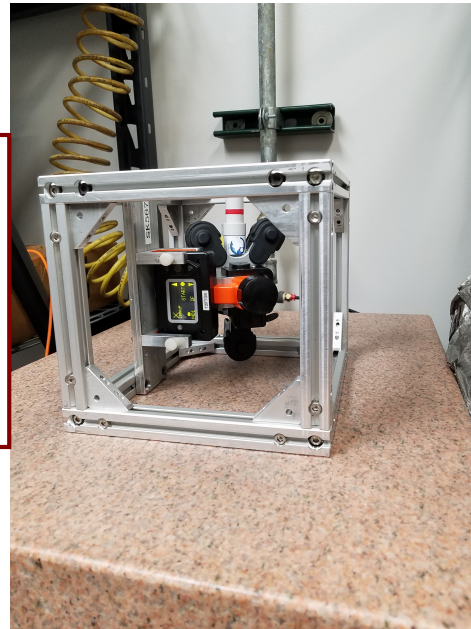
Y axis

Display forward,
then rotate
180 degrees



X axis

USB port facing up,
then USB
port facing
down



II. Field Calibration

1. Click on the Initialize Calibration button in the software. The display on the G-Force should now read *UP to read OS* and *DOWN to exit*. Unplug the G-Force and press the up arrow.
2. The screen should briefly display the message *Now do cal.*
3. **VERY IMPORTANT: Hold the G-Force so that the display is parallel to the earth (Z-axis orientation with screen facing up) while pressing and holding down the up arrow for about three seconds before pressing the center button.** You will enter the ALL AXES Test mode.
4. With the display parallel to the earth, look at the z axis. It should display higher than 1.02 as you tilt the G-Force slightly forward and back. While it is displaying the highest number, press the down arrow until you see the z axis reset back to 1.00.



Looking down toward the floor with display parallel to the floor. Look for highest number under z column and press the down arrow.

5. Rotate the G-Force up 180 degrees from the orientation it was in. The display will be parallel to the earth, but upside down. Gently rock the G-Force forward and back until it displays the highest number greater than 1.00. When it does, press the down arrow again until the z axis resets to 1.00.



Looking up at the ceiling, display parallel to the floor. Look for highest number under z column and press the down arrow.

6. Rotate the G-Force so the display is perpendicular to the earth (“normal” viewing orientation). We are now in y-axis orientation. Gently rock the G-Force forward and back and side to side to determine the highest number under the y-axis. When you’ve found that number, press the down arrow until it resets to 1.00.



Looking forward with display upright and perpendicular to the floor. Look for highest number under y column.

7. Rotate the G-Force 180 degrees clockwise, so the display is now upside down. Gently rock the G-Force forward and back and side to side to determine the highest number under the y-axis. When you’ve found that number, press the down arrow until it resets to 1.00.

Note: This number might not exceed 1.00. If it does not, the axis is okay and there is no need to push the down arrow.



Looking forward with display upright and perpendicular to the floor, but upside down. Look for highest number under y column.

8. Hold the G-Force so the display is perpendicular to the earth, with the usb port side facing down towards the earth. This is in x-axis orientation. Repeat the same rocking back and forth, side to side motion to determine the highest number under the x-axis. When that number is displayed on the screen, press the down arrow.



Looking forward with display upright and perpendicular to the floor, usb port down towards the floor. Look for highest number under x column.

9. Rotate the G-Force 180 degrees to where the usb port is now facing up. Repeat the same rocking back and forth, side to side motion to determine the highest number under the x-axis. When that number is displayed on the screen, press the down arrow. **Note:** This number might not exceed 1.00. If it does not, the axis is okay and there is no need to push the down arrow.

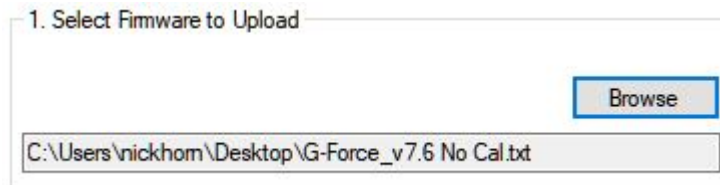


Looking forward with display upright and perpendicular to the floor, usb port up towards the ceiling. Look for highest number under x column.

10. Press and hold the up arrow for three seconds to exit the All Axes Test mode.

III. Updating to firmware v7.6 No Cal

1. Move firmware **G-Force_v7.6 No Cal.txt** from the email to your desktop.
2. In the software, click on the browse button and navigate to the **v7.6 No Cal** firmware file.



3. Plug the USB cable into the G-Force.
4. Click on the Initialize Bootloader button.

2. Click Initialize Bootloader

Initialize Bootloader

Click on Ok to clear the Bootloader Initiation popup window.

5. Unplug the cable from the G-Force, then plug it back in.
6. The G-Force should now display **FWUPDATE** and **QUIT**. Press the up arrow. The screen should now display **BOOTLOADER**.
7. Click on the Upload Firmware button in the software.

3. Click Upload Firmware

Upload Firmware

8. The green progress bar will show the update procedure.
9. When the progress bar is fully across the bottom of the window, the box on the right had side of the screen will display Done!
10. Click the **Done** button to shut down the program.

