

# **D-BOX**

## **SYSTEM CONFIGURATOR**

**USER GUIDE**

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## 1. INTRODUCTION

The D-BOX System Configurator is a free software tool used to update and configure your **G2**, **G3** or **G5** haptic systems.

Haptic system users can use the D-BOX System Configurator to:

- Update the firmware of a Communication Unit, Haptic Bridge (**G5**) and associated D-BOX hardware.
- Configure (or modify) a haptic system.
- Change the Main – Secondary ACMs arrangement (**G3 only**).



If you require a reconfiguration of your **G1** haptic system, please contact our [Support team](#).

### **D-BOX Technical Support**

2172 rue de la Province, Longueuil, Québec, Canada, J4G 1R7

BY EMAIL: [support@d-box.com](mailto:support@d-box.com)

BY PHONE: 1-888-442-3269 ext. 931 (toll-free CAN/US)  
1-450-442-3003 ext. 931 (other regions)



## 2. BEFORE RUNNING THE SYSTEM CONFIGURATOR

### 2.1 Haptic System Product Families

For **G2** & **G3** haptic systems, each ACM holds a programming specific to its actuator's configuration (firmware + programming).

For **G5** haptic systems, firmware + programming is applied to the Haptic Bridge and Haptic Actuators.



| Product Family           | G2           | G2        | G3                 | G5                                            |
|--------------------------|--------------|-----------|--------------------|-----------------------------------------------|
| Controller               | ACM-II       | ACM-II    | ACM-G3 FLEX        | G5 Haptic Bridge                              |
| Stroke                   | 1.5 in, 3 in | 6 in      | 1.5 in, 3 in, 6 in | 1.5 in                                        |
| Max. Number of Actuators | 3 per ACM    | 2 per ACM | 2 per ACM          | 4 per Bridge<br>8 (with the Haptic Expander*) |

\* See [G5 Haptic System User Guide](#) for more details on the Haptic Expander.

### 2.2 Actuator Positions

The logo used to represent the actuator positions is a man sitting on a sofa (top view). The following figure describes the characters used to define the actuator positions.

| LEGEND | POSITION     | PICTOGRAM REFERENCE |
|--------|--------------|---------------------|
| FL     | Front-Left   |                     |
| FC     | Front-Center |                     |
| FR     | Front-Right  |                     |
| BL     | Back-Left    |                     |
| BC     | Back-Center  |                     |
| BR     | Back-Right   |                     |
| SU     | Surge        |                     |
| SW     | Sway         |                     |
| Y      | Yaw          |                     |

### 3. SOFTWARE INSTALLATION

The D-BOX System Configurator is compatible with **Microsoft Windows 7, 8, 10 & 11 – 64 bit**.

**STEP 1:** Make sure you have the latest version of D-BOX HaptiSync Center installed on your PC before installing and running the D-BOX System Configurator. D-BOX HaptiSync Center package is available on our [website](#).

**STEP 2:** Download and install (**Setup.exe**) the D-BOX System Configurator package available on our [website](#).

**NOTE:** You can also run the D-BOX System Configurator installer silently by running the following command:

`.\Setup.exe /silent /AcceptLicense:Yes`

### 4. G5 HAPTIC SYSTEM

#### 4.1 Starting the System Configurator



Do not interrupt the update process while it is running. Interrupting the update process before it has completed may cause improper operation.

**STEP 1:** Connect the hardware to your computer. See your haptic system user guide if necessary:

[D-BOX G5 Installation, User & Troubleshooting Guide](#)

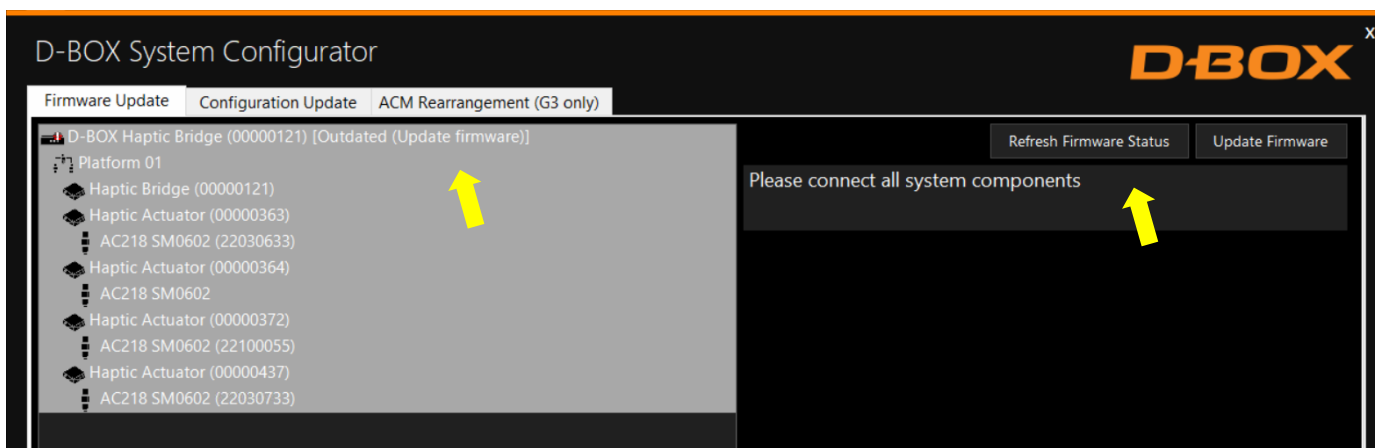
**STEP 2:** Start the D-BOX System Configurator from the D-BOX folder.

**NOTE:** Running the software requires administrative privileges.

#### 4.2 G5 Firmware Update

The Firmware Update tab is the active tab when you start the application. This tab allows you to update the firmware of the Haptic Bridge and Haptic Actuators.

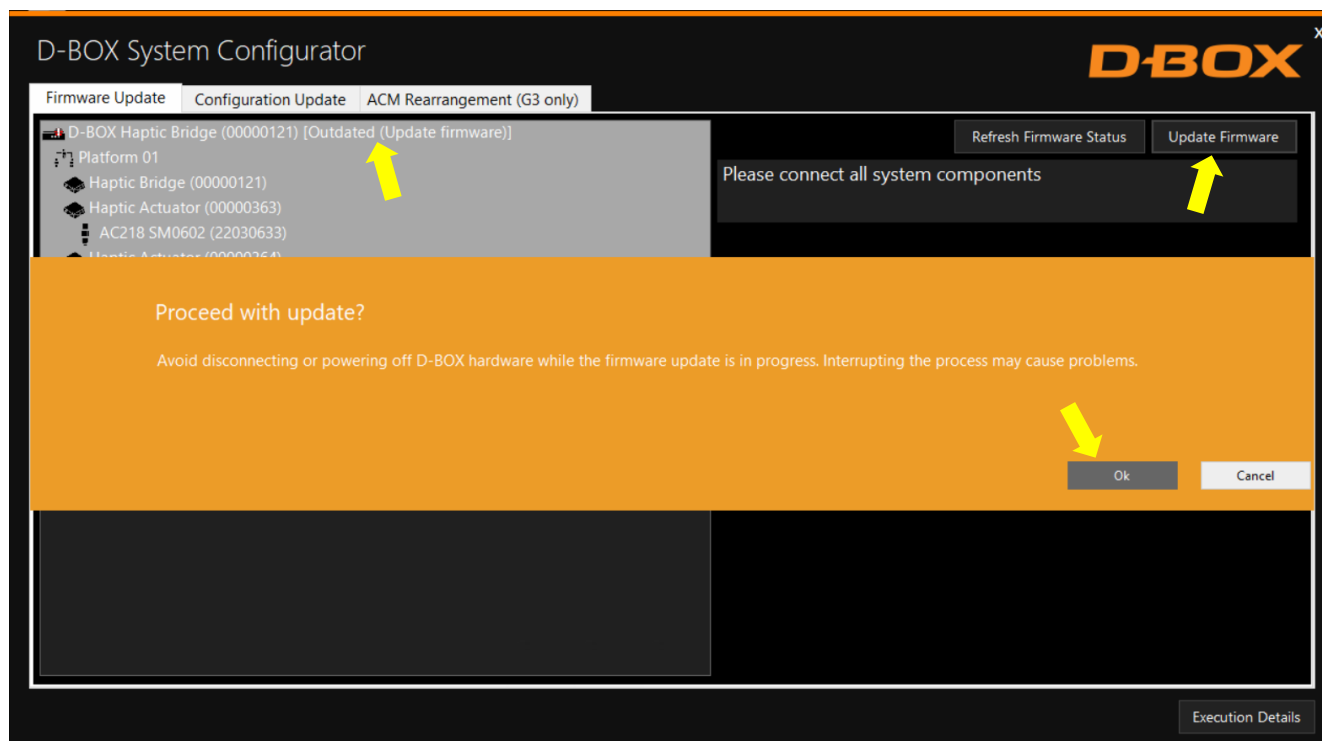
**STEP 1:** Click the **Refresh Firmware Status** button. This action refreshes the status of the firmware and updates the status to *Outdated* (if a newer firmware version is available) or *Up to date* (if the latest firmware is already in use).



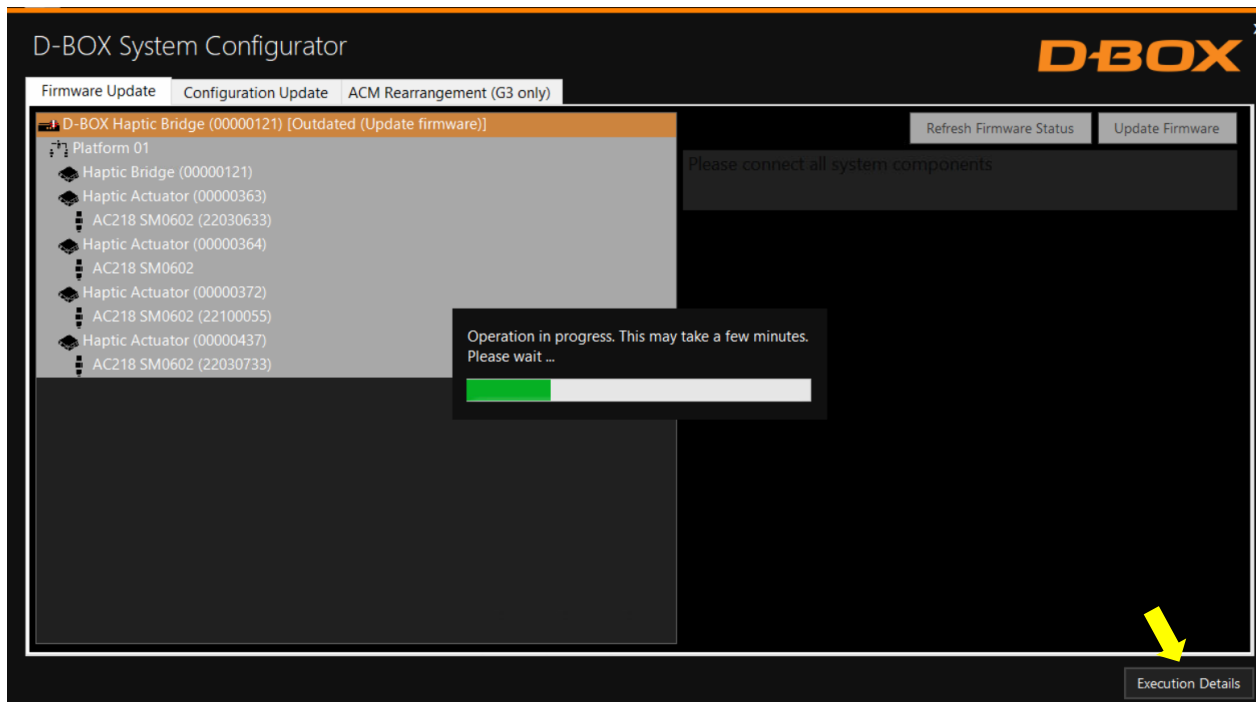
The Device icon displays the firmware's status.

| Device Icon                                                                       | Status                               | Action required                                                                             |
|-----------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------|
|  | Unknown: Refresh firmware status     | Initial status. Refresh the status by clicking <b>Refresh Firmware Status</b> .             |
|  | Outdated: Firmware should be updated | A newer firmware version is available. Update firmware by clicking <b>Update Firmware</b> . |
|  | Up to date: No action required       | The latest firmware is installed. No action required.                                       |

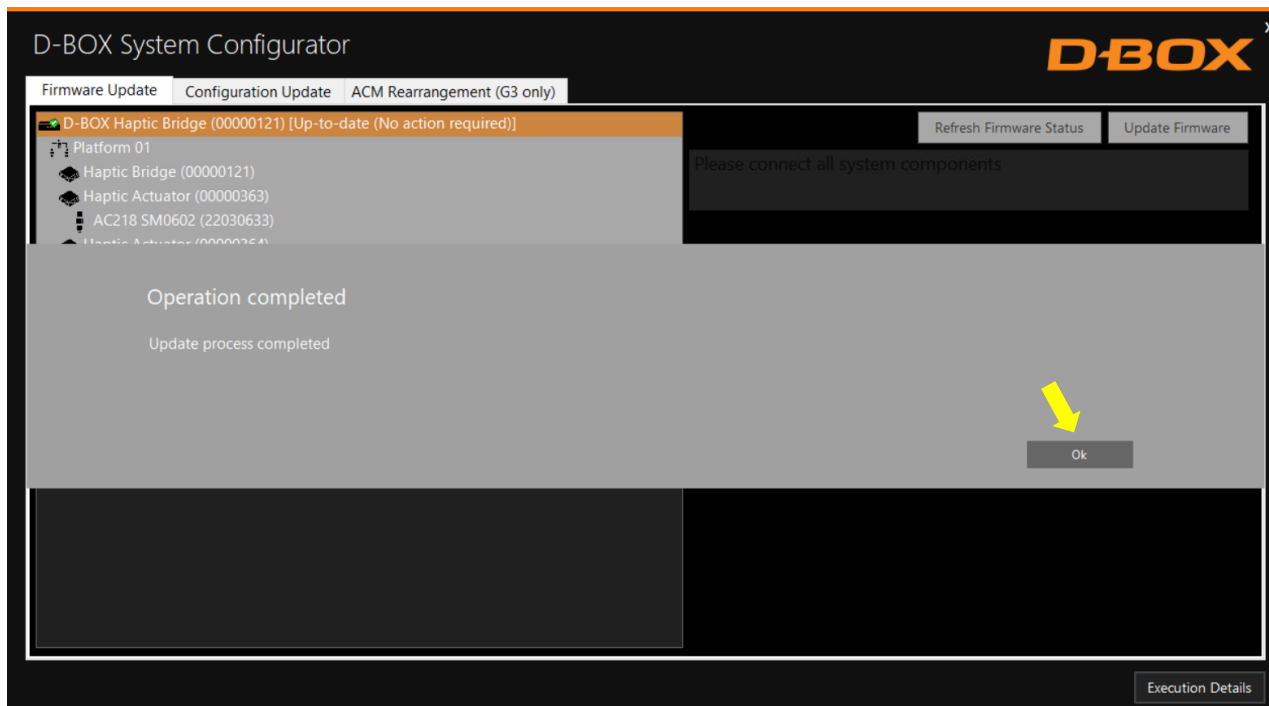
**STEP 2:** If your components are outdated, select the Haptic Bridge, then press the **Update Firmware** button. A dialog box will appear asking you if you want to proceed with the update. Click **OK**.



**NOTE:** The update process may take a few minutes. Click the **Execution Details** button at any time to see details about the ongoing operation.



Once the update process is complete, the following window will appear. Click **OK**.



Your firmware is now up to date.

### 4.2.1 Silent Firmware Update (Command Line)

You can also update the firmware silently from the command line. If several comm units are connected, they are all updated at once. Just run the following command:

```
.\SystemConfigApp.exe -UpdateFirmware
```

The command returns one of these values:

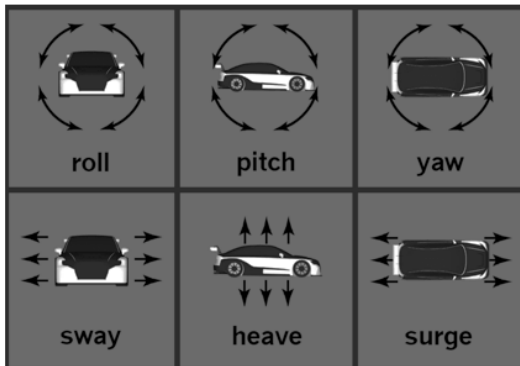
| Value | Result                              |
|-------|-------------------------------------|
| 0     | Update succeeded on all comm units  |
| 1     | Update succeeded on some comm units |
| 2     | Update failed on all comm units     |

### 4.3 G5 Configuration Updates

The Configuration Update tab allows you to:

- Configure your haptic system (Haptic Actuator positions and axes (Degrees of Freedom - DOF))
- Change the position assigned to each actuator.
- Change the number of actuators in the configuration.

The following are the possible axes (DOF) that can be configured for a D-BOX haptic system.



**STEP 1:** From the Hardware Selection box, select the communication device (D-BOX Haptic Bridge) linked to the haptic system you want to configure, then select the platform number (if multiple haptic systems are connected).

D-BOX System Configurator

D-BOX

Firmware Update

Configuration Update

ACM Rearrangement (G3 only)

Hardware Selection

Communication Device

D-BOX Haptic Bridge (00000121)

Platform

1

Actual DOF Configuration

Configuration

10774

Axes

Roll ✓

Pitch ✓

Heave ✓

Yaw

Surge

Sway

Compatible Configuration Selection

No configuration selected

Apply Configuration

Refresh Information

DOF Configuration Filter

Interface Count

5

Actuator Count

4

Configuration

Axes

☐ Roll

☐ Pitch

☐ Heave

☐ Yaw

☐ Surge

☐ Sway

| Configuration | Description                                               |
|---------------|-----------------------------------------------------------|
| 1052          | PH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-BC0, S-BC0) |
| 10774         | RPH - 4 Actuators - 5 Intf(M, S-FR0, S-FL0, S-BL0, S-BR0) |

Execution Details

The Actual DOF Configuration box shows the actual configuration (might appear empty for a new system).

D-BOX System Configurator

D-BOX

Firmware Update

Configuration Update

ACM Rearrangement (G3 only)

Hardware Selection

Communication Device

D-BOX Haptic Bridge (00000121)

Platform

1

Actual DOF Configuration

Configuration

10774

Axes

Roll ✓

Pitch ✓

Heave ✓

Yaw

Surge

Sway

Compatible Configuration Selection

No configuration selected

Apply Configuration

Refresh Information

DOF Configuration Filter

Interface Count

5

Actuator Count

4

Configuration

Axes

☐ Roll

☐ Pitch

☐ Heave

☐ Yaw

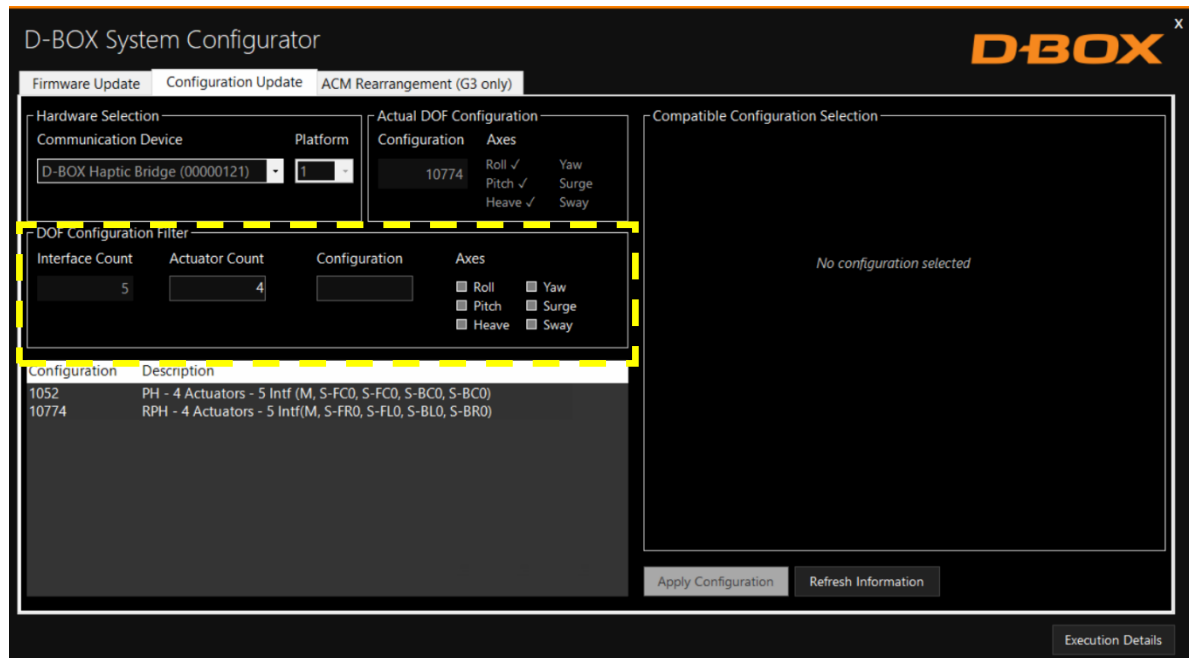
☐ Surge

☐ Sway

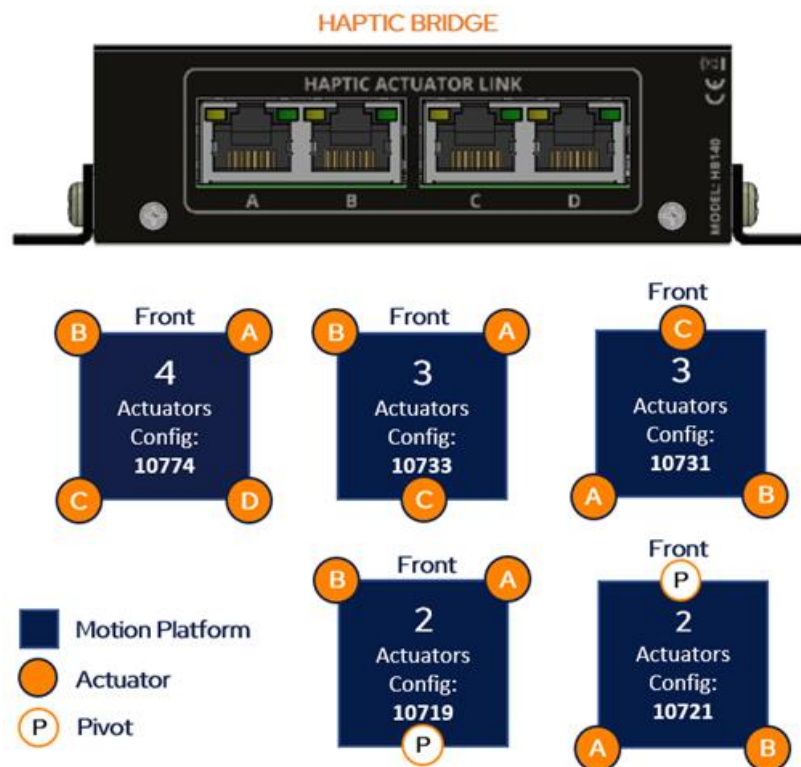
| Configuration | Description                                               |
|---------------|-----------------------------------------------------------|
| 1052          | PH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-BC0, S-BC0) |
| 10774         | RPH - 4 Actuators - 5 Intf(M, S-FR0, S-FL0, S-BL0, S-BR0) |

Execution Details

**STEP 2:** The DOF Configuration Filter box helps you find the available configurations for your haptic system.



**OPTION A:** You can manually enter the configuration number (see below) into the Configuration box (see [Appendix A](#) or [C](#) for more details).



Make sure to connect each actuator (RJ45) cable to the lettered port of the Haptic Bridge as indicated in the image above.

**NOTE:** See [G5 Haptic System User Guide](#) for configurations with five to eight actuators using the Haptic Expander.

**OPTION B:** Filter by configuration attributes (see [Appendix A](#) or [C](#) for common configurations) by:

1. Validating that the number of interfaces (Haptic Bridge + actuators) detected is accurate. If they do not, check the system connections and click the **Refresh Information** button.
2. Validating that the number of actuators detected match your requested configuration. Otherwise, manually change the value as desired.
3. Optional: Checking the boxes of the desired axes (degrees of freedom) you require.

**STEP 3:** The Configuration and Description box lists all the available configurations using the information you have entered into the DOF Configuration Filter.

The screenshot shows the 'D-BOX System Configurator' window. It has three tabs: 'Firmware Update', 'Configuration Update', and 'ACM Rearrangement (G3 only)'. The 'Configuration Update' tab is active.

**Hardware Selection:** 'Communication Device' is set to 'D-BOX Haptic Bridge (00000125)' and 'Platform' is set to '1'.

**Actual DOF Configuration:** 'Configuration' is '10721'. The 'Axes' section shows: Roll ✓, Pitch ✓, Heave, Yaw, Surge, Sway.

**DOF Configuration Filter:** 'Interface Count' is '3', 'Actuator Count' is '2', and 'Configuration' is empty. The 'Axes' section shows: Roll ✓, Pitch ✓, Heave, Yaw, Surge, Sway.

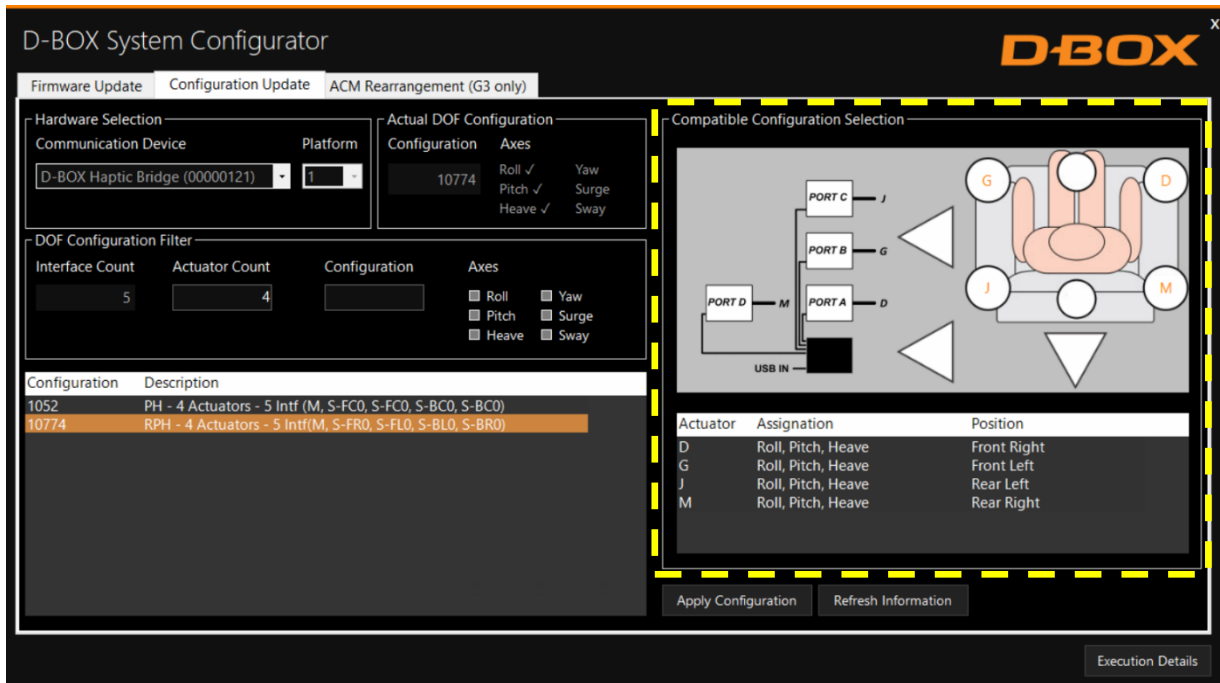
**Compatible Configuration Selection:** A large box on the right that currently says 'No configuration selected'.

**Configuration List:** A table with two columns: 'Configuration' and 'Description'. It lists several configurations, with '10721' highlighted by a yellow dashed box.

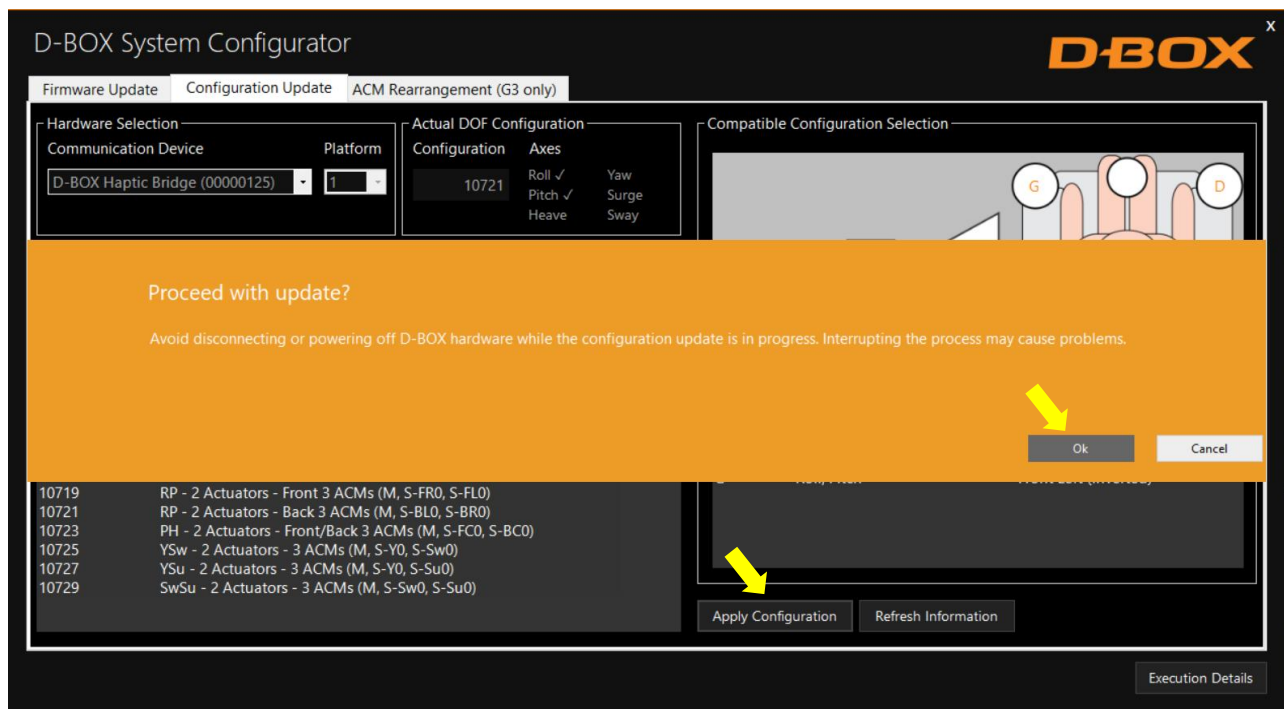
| Configuration | Description                                                 |
|---------------|-------------------------------------------------------------|
| 1044          | RP - 2 Actuators - Front (as Back) 3 ACMs (M, S-FR0, S-FL0) |
| 1045          | RP - 2 Actuators - Right (No Mix) 3 ACMs (M, S-BR0, S-FR0)  |
| 1047          | RP - 2 Actuators - Back (No Mix) 3 ACMs (M, S-BL0, S-BR0)   |
| 1048          | RP - 2 Actuators - Front (No Mix) 3 ACMs (M, S-FR0, S-FL0)  |
| 10719         | RP - 2 Actuators - Front 3 ACMs (M, S-FR0, S-FL0)           |
| 10721         | RP - 2 Actuators - Back 3 ACMs (M, S-BL0, S-BR0)            |

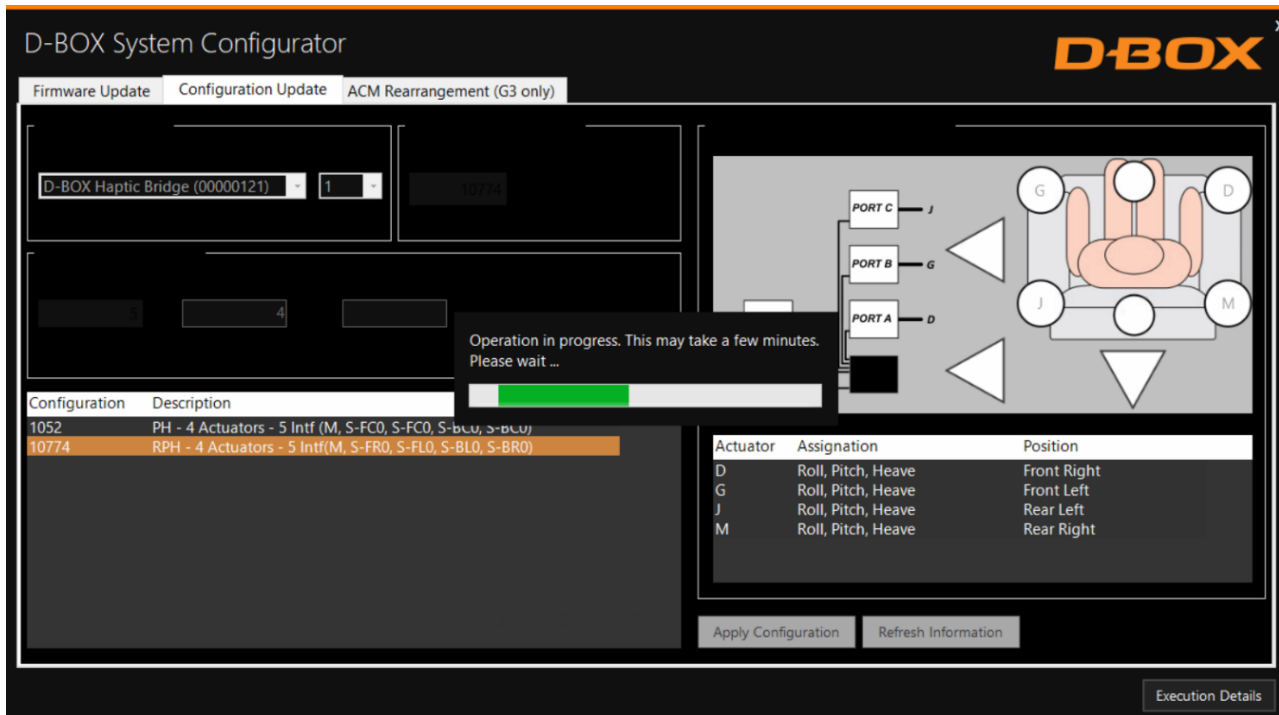
At the bottom right, there are buttons for 'Apply Configuration', 'Refresh Information', and 'Execution Details'.

By selecting a configuration, its layout appears in the Compatible Configuration Selection box. The layout displays the positions of the Haptic Actuator(s) on the simulator, chair, or platform, and the associated port on the Haptic Bridge.

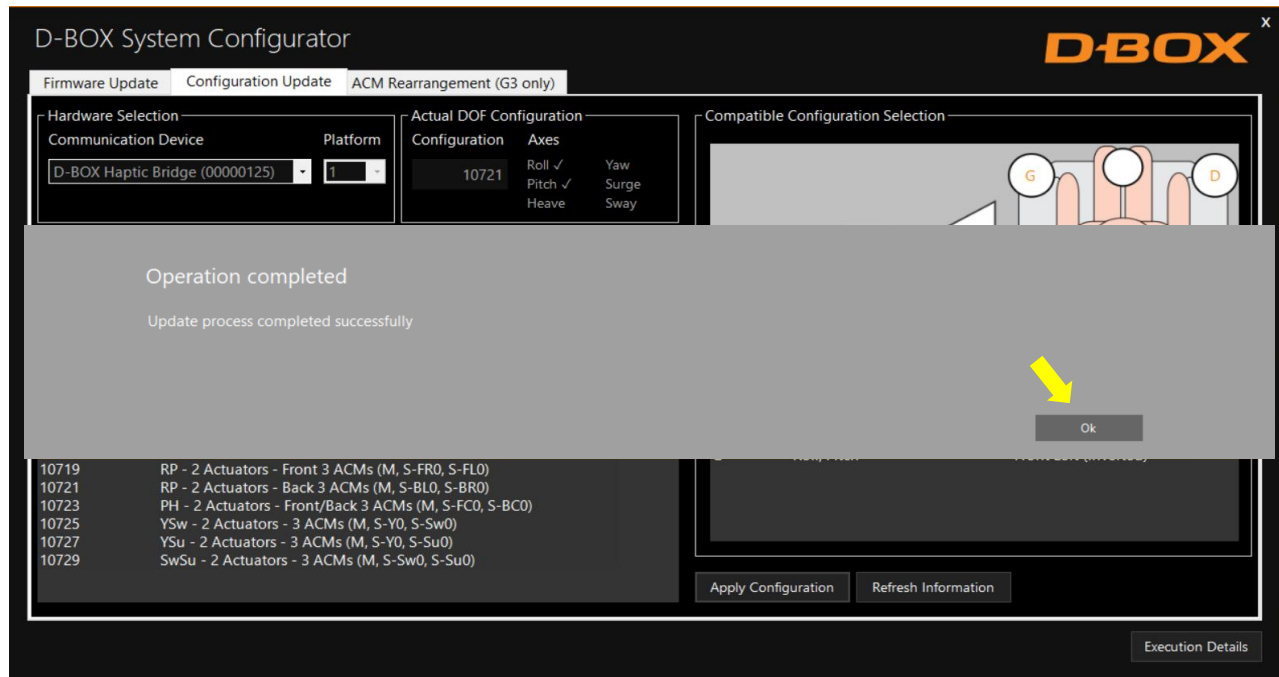


**STEP 4:** Once the configuration is chosen, click **Apply Configuration** to start the configuration update process, then follow the instructions.





Once the configuration update is complete, the following confirmation window appears. Click **OK**.



## 5. G2 and G3 HAPTIC SYSTEMS

### 5.1 Starting the System Configurator



Do not interrupt the update process while it is running. Interrupting the update process before it has completed may cause improper operation.

**STEP 1:** Connect the hardware to your computer. See your haptic system User Guide if necessary.

[G2 Motion System Installation Guide](#)

[G3 Installation, User & Troubleshooting Guide](#)

**STEP 2:** Start the D-BOX System Configurator from the D-BOX folder.

**NOTE:** *Running the software requires administrative privileges.*

### 5.2 G2 and G3 Firmware Updates

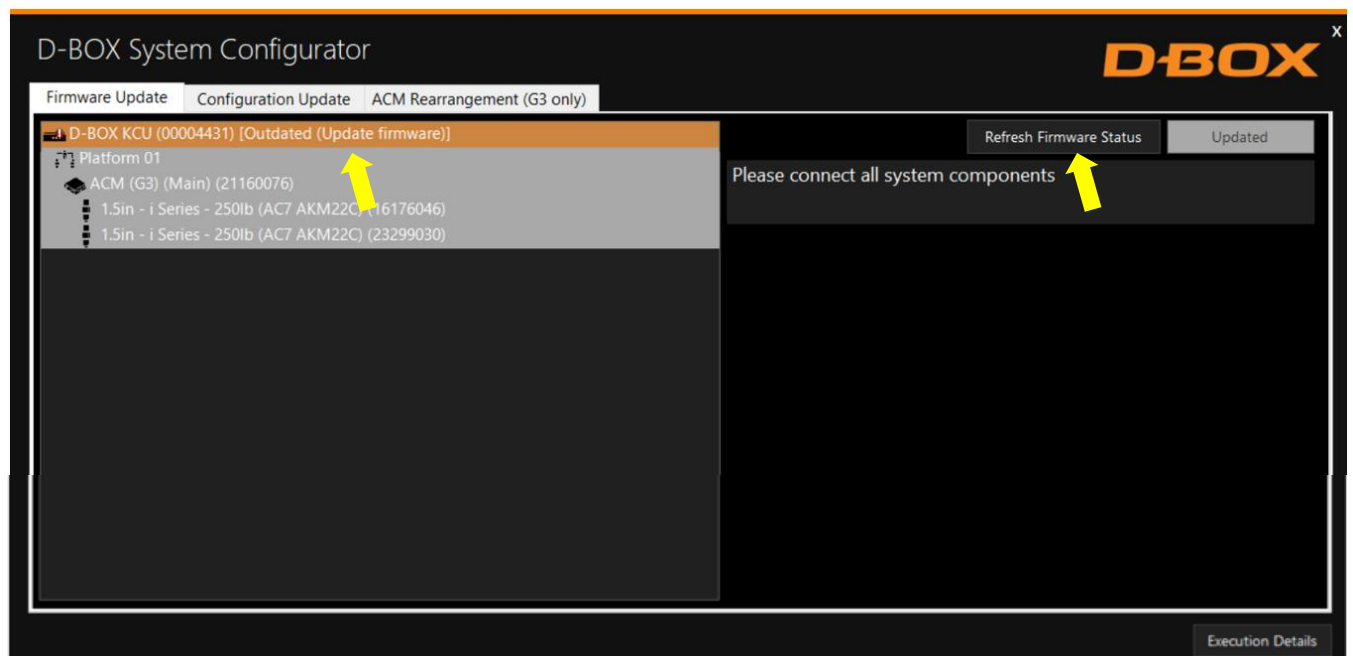
The Firmware Update tab is the active tab when you start the application. This tab allows you to update the firmware of the G2, G3 and G3 FLEX ACM(s), Communication Unit (e.g. KCU-IX, KCU-1P), KCA, and KCA-T.

A firmware update can also change the actuator model (G3 only). For example, if you replace 1.5-inch actuators with 3-inch actuators, you will need to update the firmware see [section 5.3](#) for more details).



A firmware update applies to a Communication Unit and all subcomponents (ACM, KCA, KCA-T). If you have multiple Communication Units, **you must update them one at a time**.

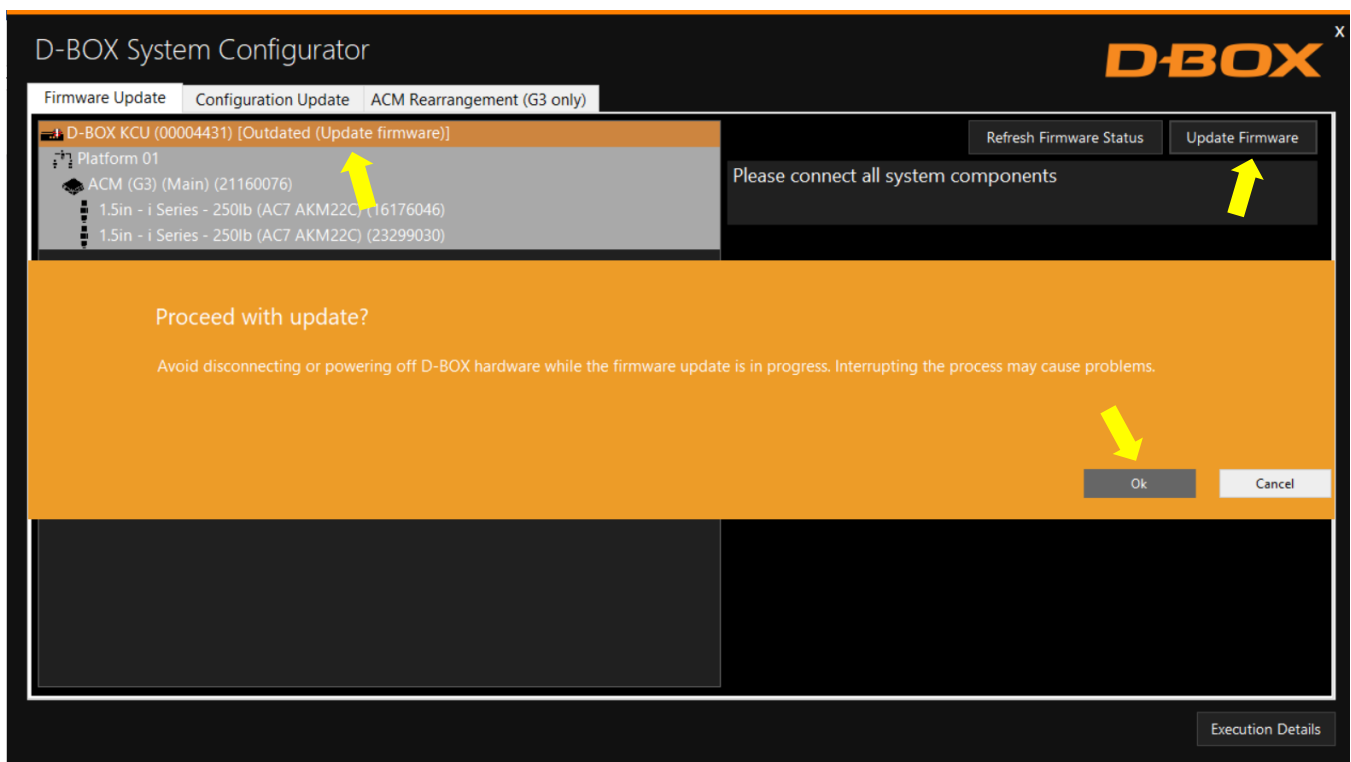
**STEP 1:** Click **Refresh Firmware Status**. This refreshes the status of the firmware and updates the status to *Outdated* (if a newer firmware version is available) or *Up to date* (if the latest firmware is already in use).



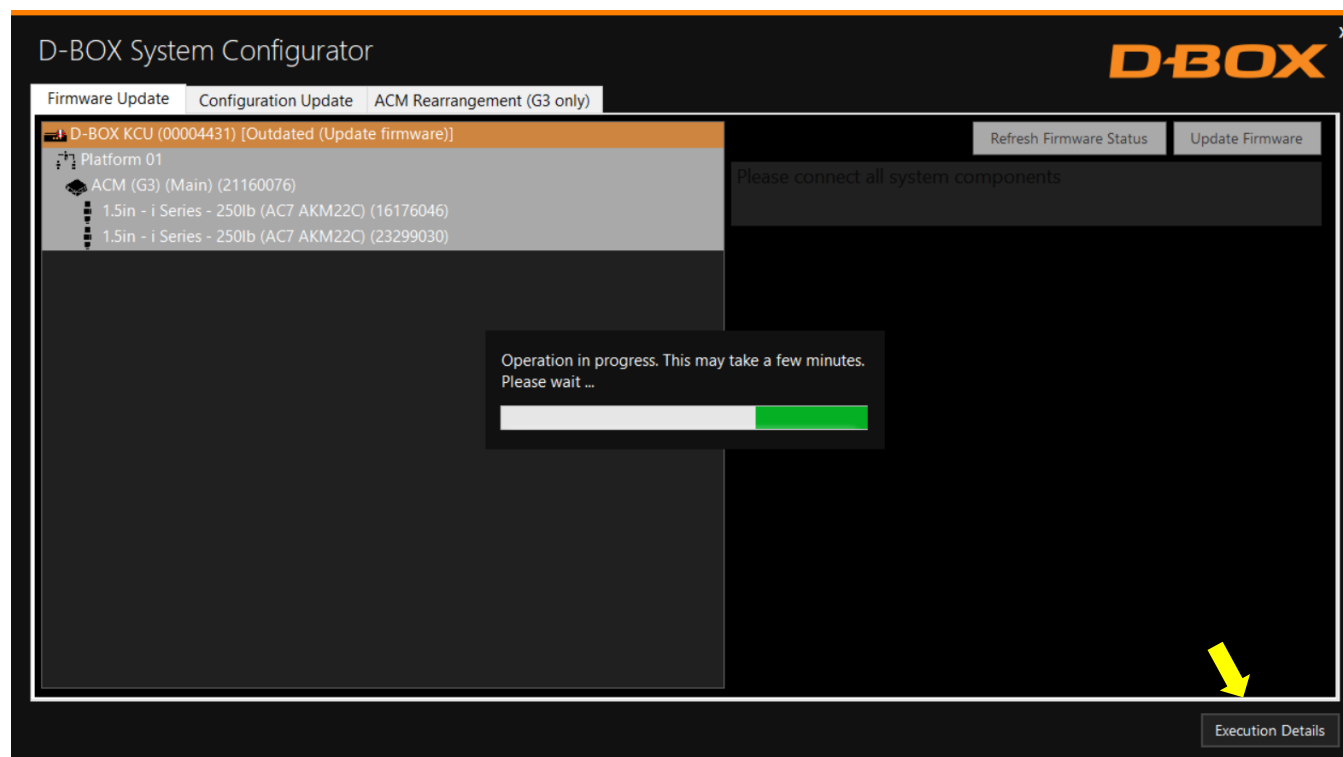
The Device icon displays the firmware's status.

| Device Icon                                                                       | Status                               | Action required                                                                             |
|-----------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------|
|  | Unknown: Refresh firmware status     | Initial status. Refresh the status by clicking <b>Refresh Firmware Status</b> .             |
|  | Outdated: Firmware should be updated | A newer firmware version is available. Update firmware by clicking <b>Update Firmware</b> . |
|  | Up to date: No action required       | The latest firmware is installed. No action required.                                       |

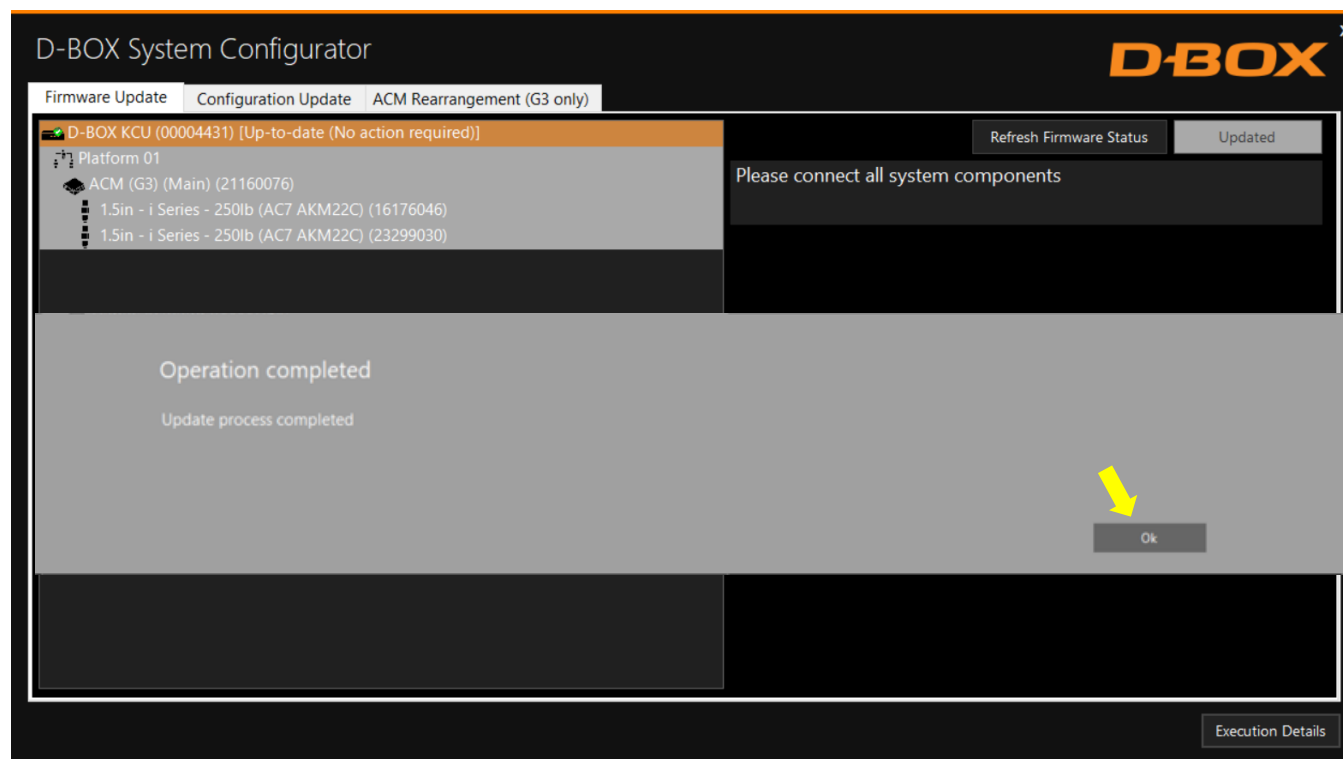
**STEP 2:** If your components are outdated, select the Communication Unit (e.g. KCU-IX, KCU-1P) you need to update, then press **Update Firmware**. A dialog box appears asking if you want to proceed with update. Click **OK**.



**NOTE:** The update process may take a few minutes. Click the **Execution Details** button at any time to see details about the ongoing operation.



Once the update process is complete, the following window appears. Click **OK**.



### 5.2.1 Silent Firmware Update (Command Line)

You can also update the firmware silently from the command line. If several comm units are connected, they are all updated at once. Just run the following command:

```
.\\SystemConfigApp.exe -UpdateFirmware
```

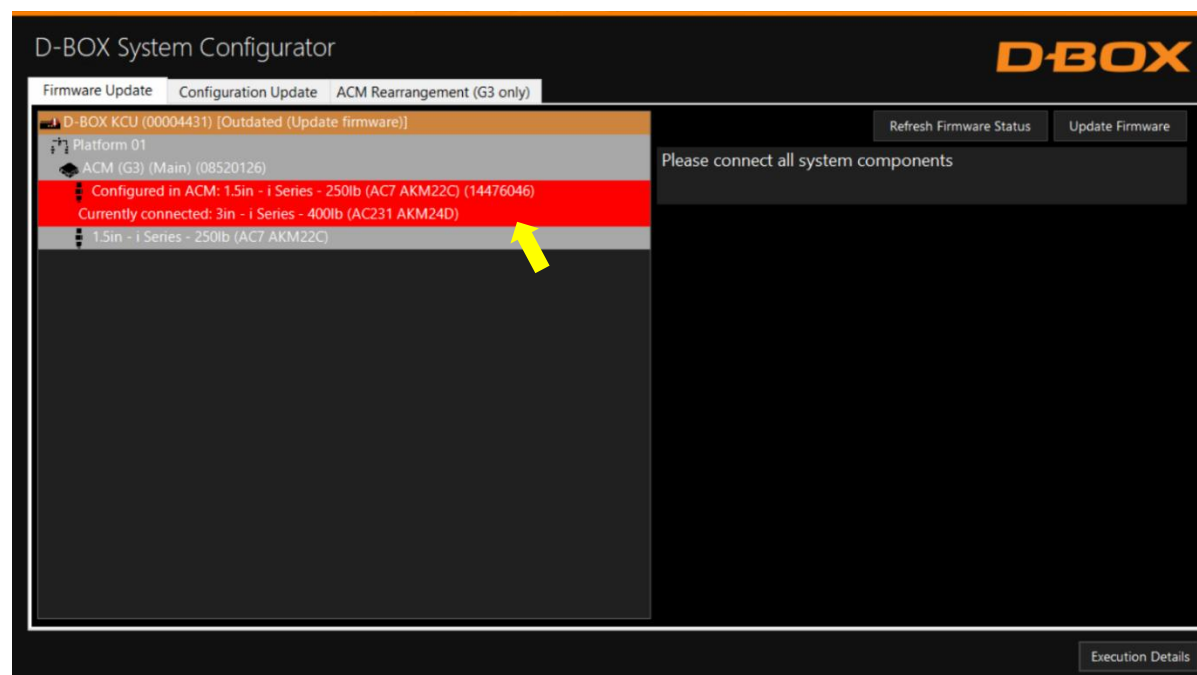
The command returns one of these values:

#### Value Result

- |   |                                     |
|---|-------------------------------------|
| 0 | Update succeeded on all comm units  |
| 1 | Update succeeded on some comm units |
| 2 | Update failed on all comm units     |

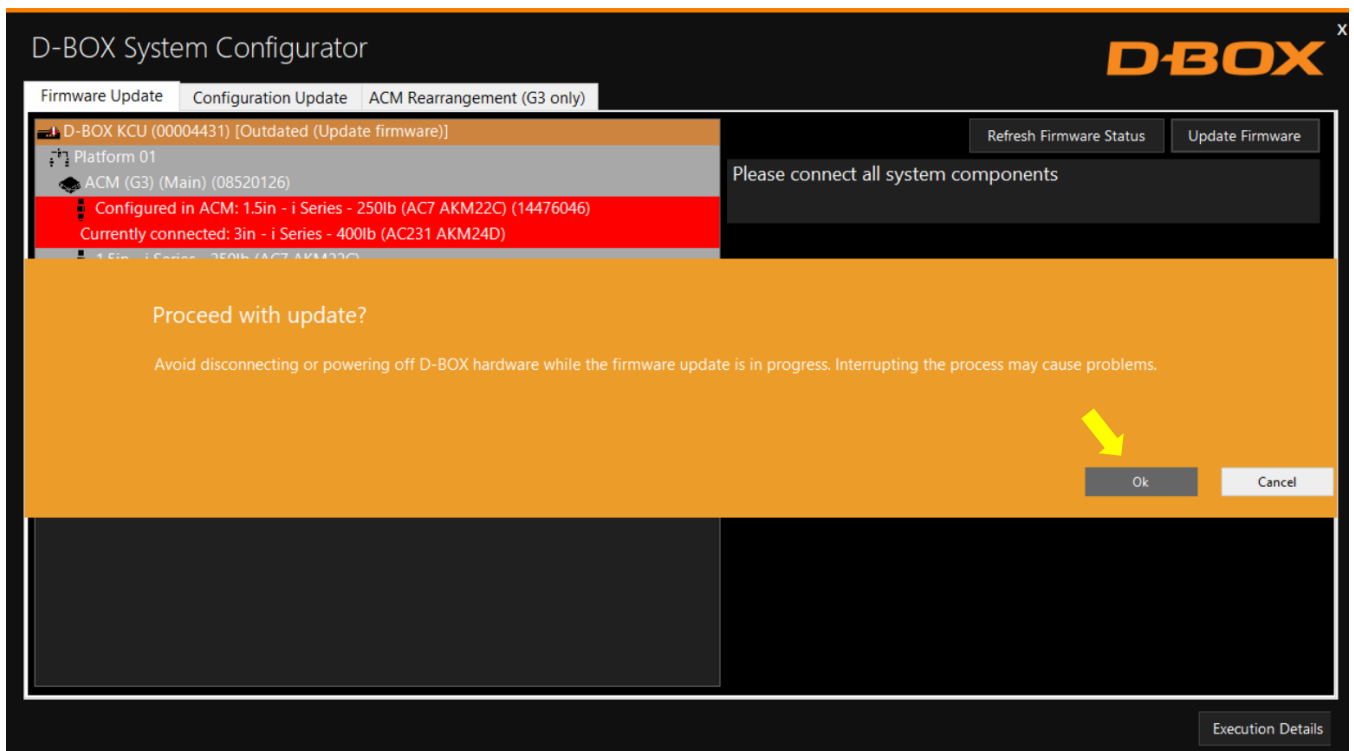
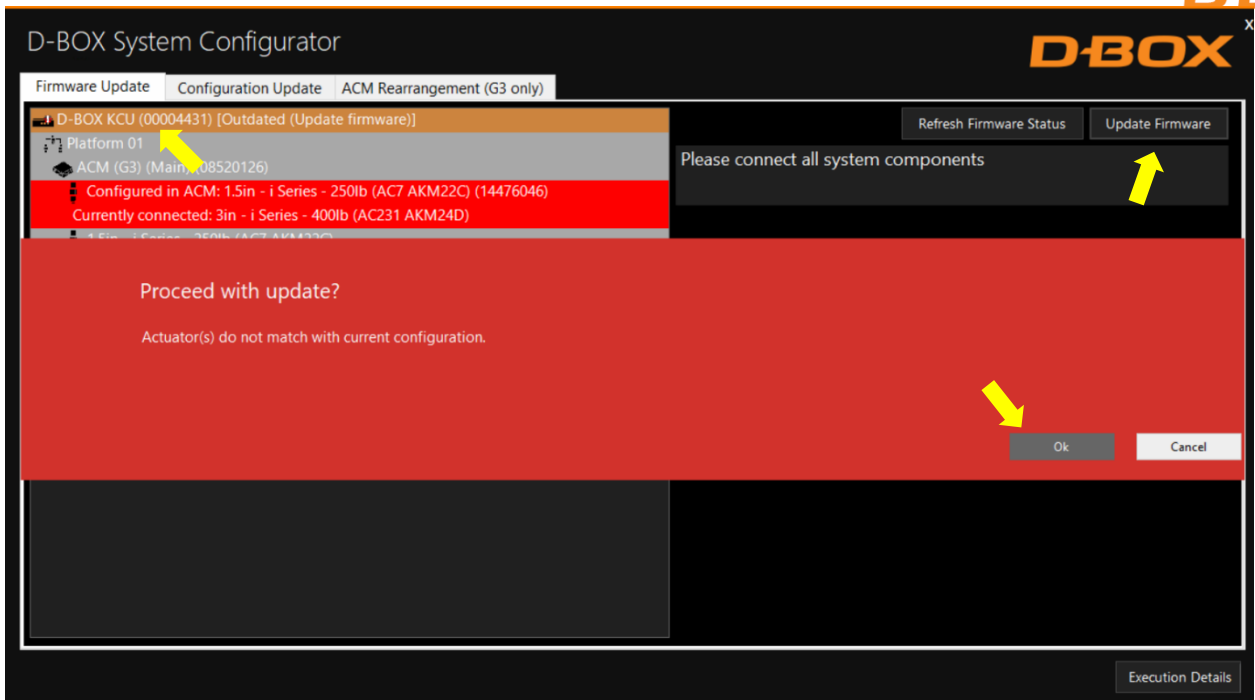
### 5.3 Changing the Actuator Type (G3 only)

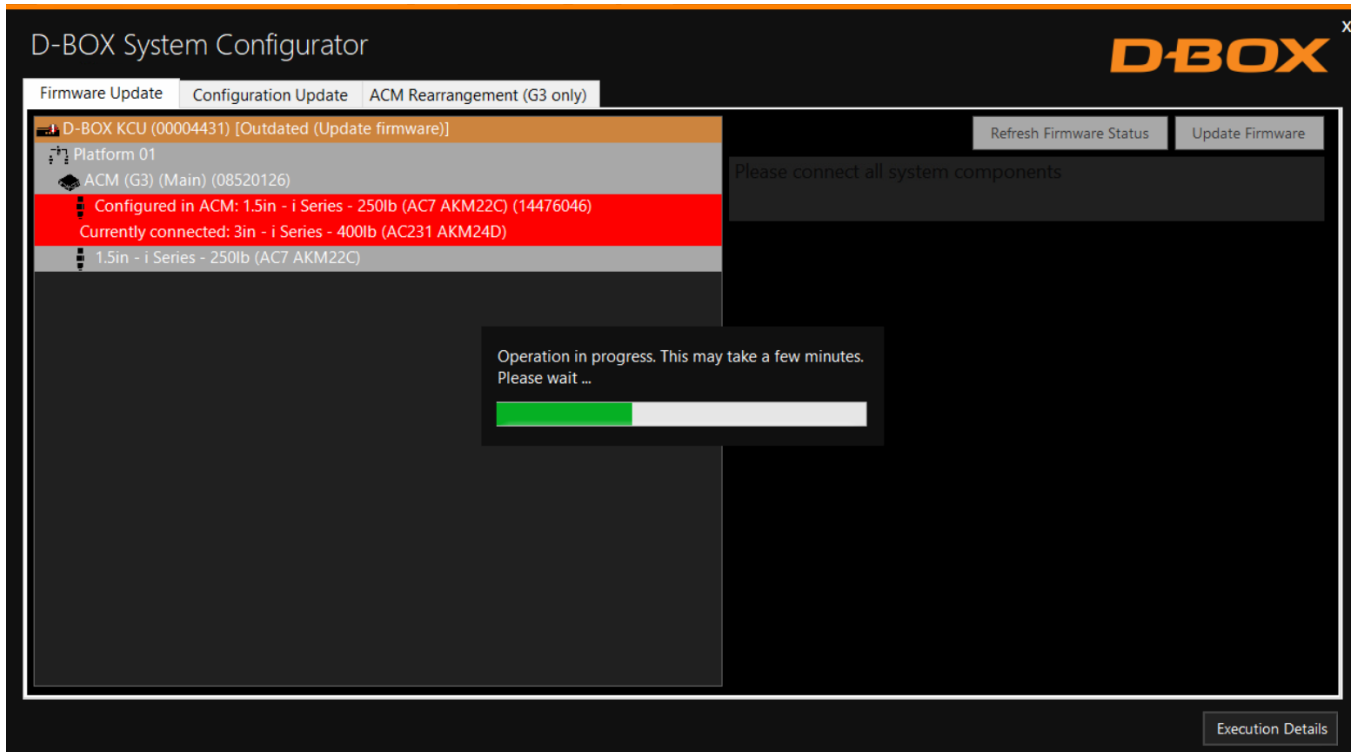
A firmware update must be performed when there is a mismatch between the configured actuator(s) and the connected actuator(s). For example, if you connect 3-inch actuators, instead of 1.5-inch actuators, a red window appears indicating the mismatch, indicating that the configuration is different from when the ACM was initially configured.



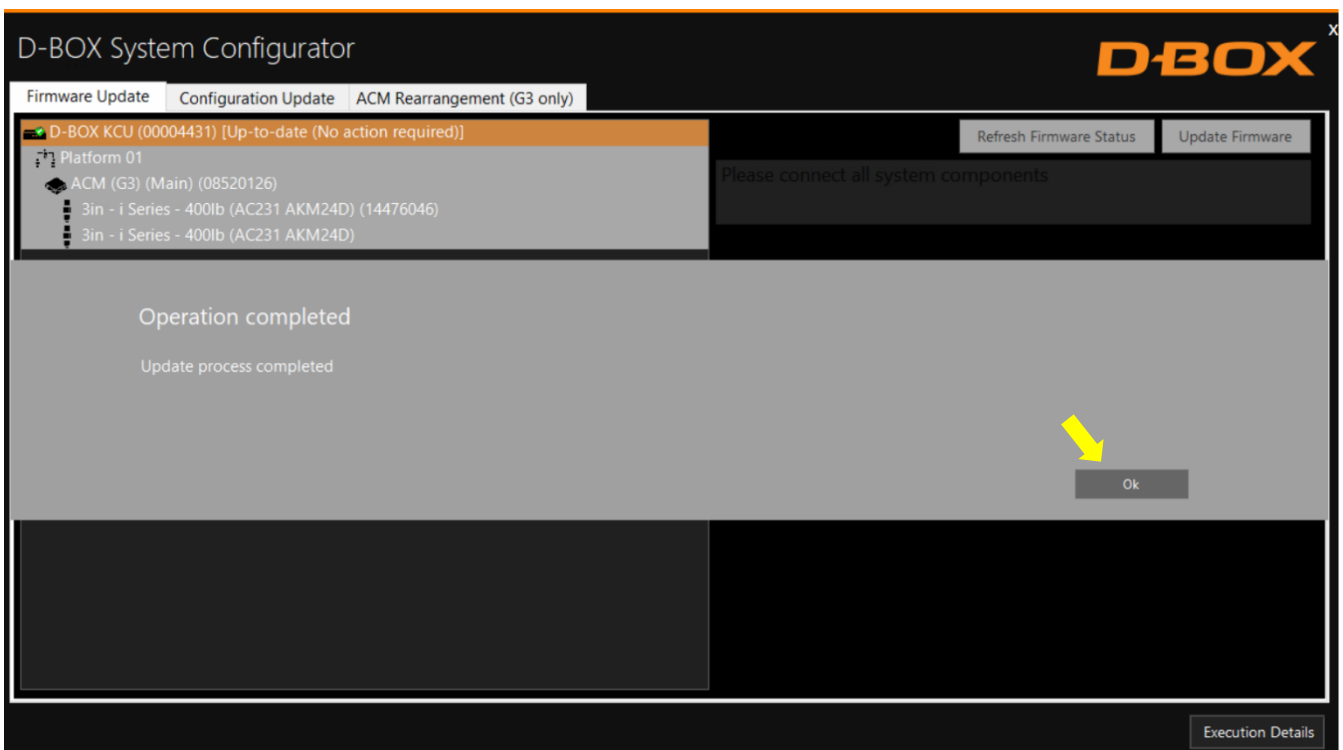
**NOTE:** You cannot use this function with a G2 system.

To proceed with the firmware update, select the Communication Unit (e.g. KCU-1X, KCU-1P) then click **Update Firmware**, and then follow the instructions.





Once the operation is completed, click **OK**. Your haptic system is now up to date.

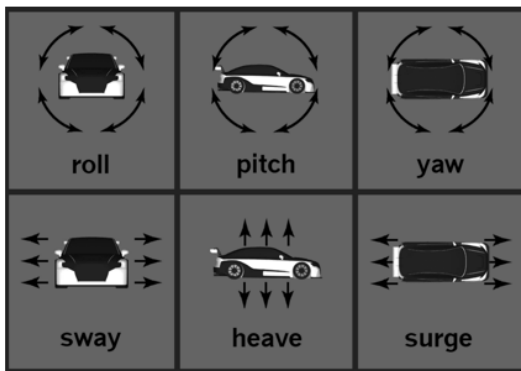


## 5.4 G2 and G3 Configuration Updates

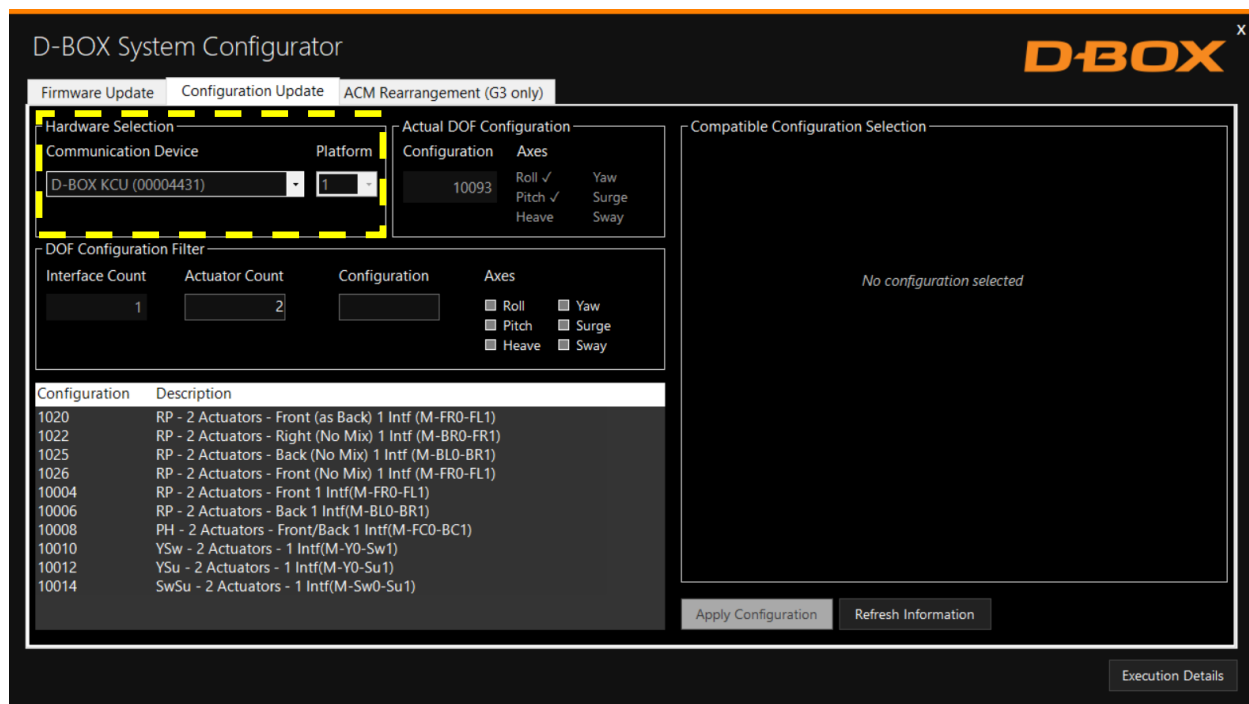
The **Configuration Update** tab allows you to:

- Configure your haptic system (Actuator positions and axes (Degrees of Freedom - DOF))
- Change the position assigned to each actuator.
- Change the number of actuators in the configuration.
- Modify the number of ACMs in the configuration.

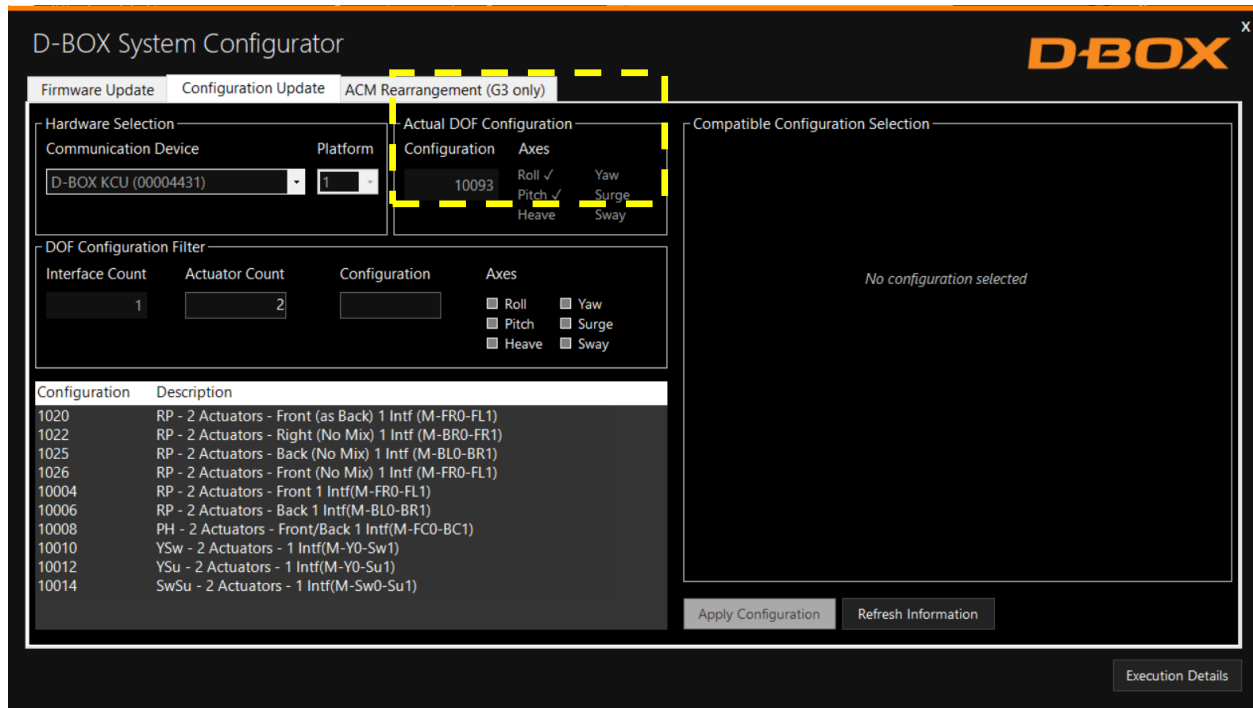
The following are the possible axes (DOF) that can be configured for a D-BOX haptic system.



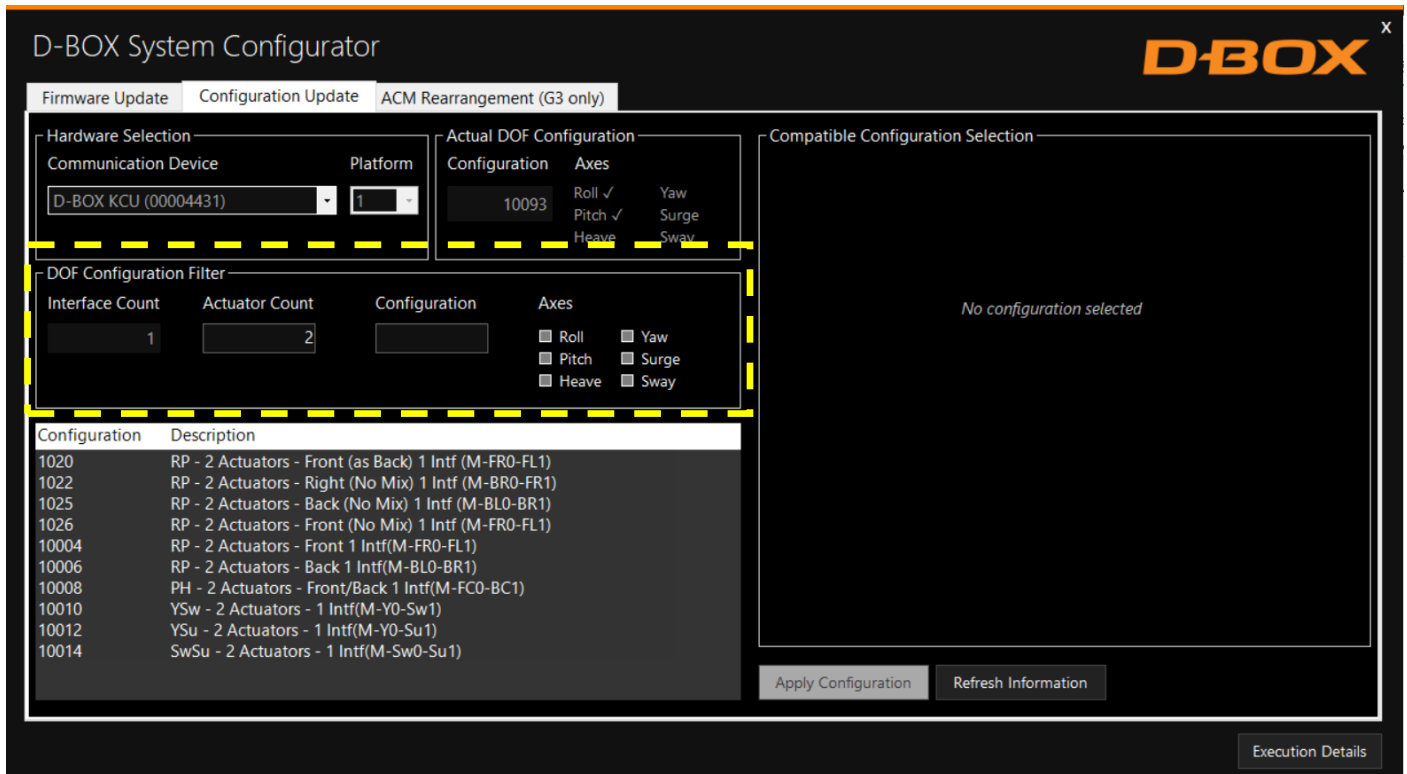
**STEP 1:** From the Hardware Selection box, select the Communication Unit linked to the haptic system(s) you want to configure, then select the platform number (if multiple haptic systems are connected).



The Actual DOF Configuration box shows the actual configuration.



**STEP 2:** The DOF Configuration Filter box helps you find the available configurations for your haptic system.



**OPTION A:** If you know the number of the configuration, you can select it from the list then proceed with the programming (see [Appendix B](#) or [C](#) for common configurations).

**OPTION B:** Filter by configuration attributes (see [Appendix B](#) or [C](#) for common configurations) by:

1. Validating that the number of ACMs detected (Interface Count) is accurate. If it is not, check the system connections and click **Refresh Information**.
2. Validating that the number of actuators detected match your requested configuration. Otherwise, manually change the value as desired.
3. Optional: Checking the boxes of the desired axes (degrees of freedom) you require.

**STEP 3:** The Configuration and Description section lists all the available configurations, using the information you entered into the DOF Configuration Filter.

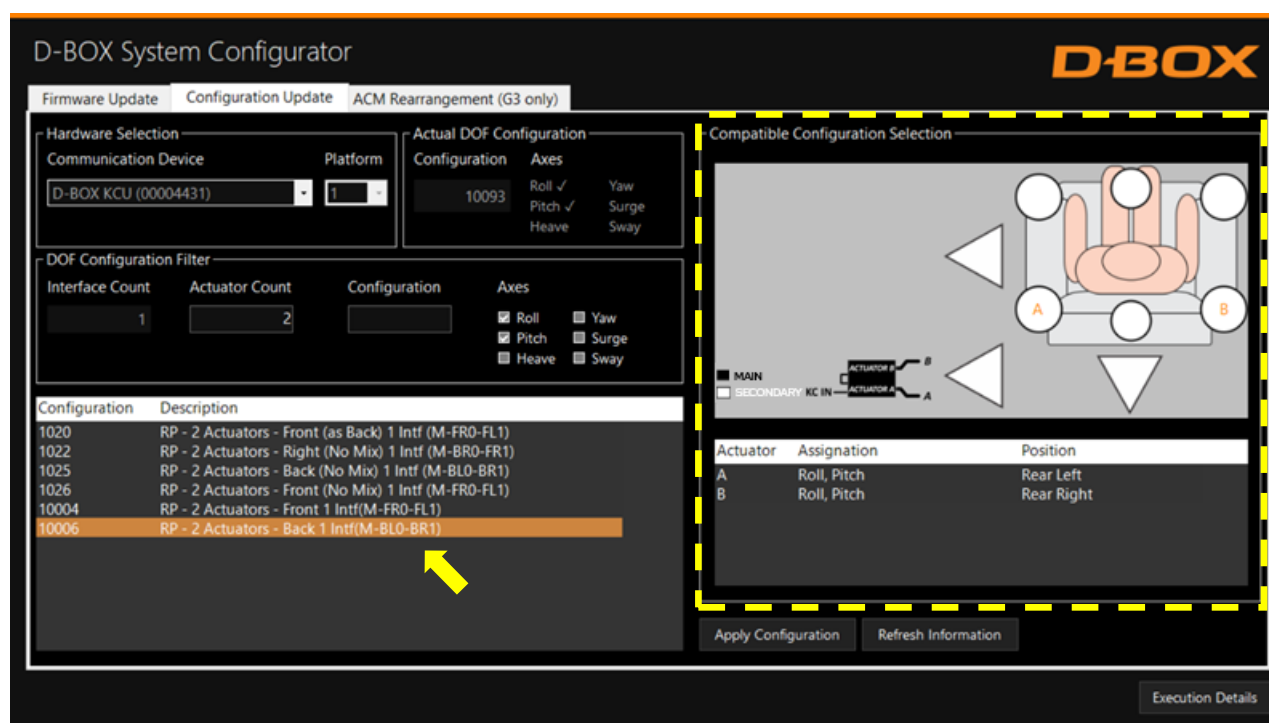
The screenshot shows the D-BOX System Configurator interface. It has a dark theme with orange accents. The top bar includes the D-BOX logo and a close button. Below the bar are three tabs: 'Firmware Update', 'Configuration Update', and 'ACM Rearrangement (G3 only)'. The main area is divided into several sections:

- Hardware Selection:** Includes a 'Communication Device' dropdown (set to 'D-BOX KCU (00004431)') and a 'Platform' dropdown (set to '1').
- Actual DOF Configuration:** Shows a 'Configuration' dropdown (set to '10093') and a grid of axes: Roll (checked), Pitch (checked), Heave, Yaw, Surge, and Sway.
- DOF Configuration Filter:** Includes 'Interface Count' (set to '1'), 'Actuator Count' (set to '2'), a 'Configuration' dropdown, and a grid of axes: Roll (checked), Pitch (checked), Heave, Yaw, Surge, and Sway.
- Configuration List:** A table with two columns: 'Configuration' and 'Description'. It lists several configurations, with the first one highlighted by a dashed yellow box.
- Compatible Configuration Selection:** A large empty box with the text 'No configuration selected'.
- Buttons:** 'Apply Configuration' and 'Refresh Information' are located at the bottom right of the main area. An 'Execution Details' button is at the bottom right of the interface.

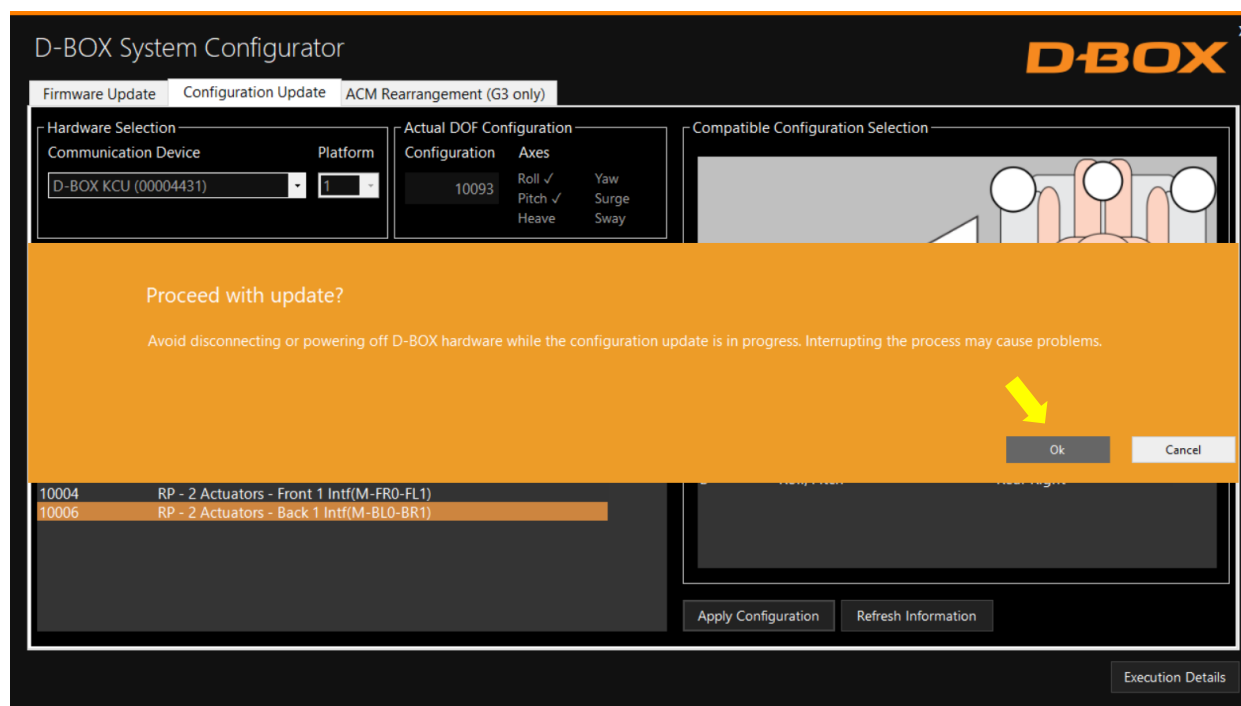
| Configuration | Description                                           |
|---------------|-------------------------------------------------------|
| 1020          | RP - 2 Actuators - Front (as Back) 1 Intf (M-FR0-FL1) |
| 1022          | RP - 2 Actuators - Right (No Mix) 1 Intf (M-BR0-FR1)  |
| 1025          | RP - 2 Actuators - Back (No Mix) 1 Intf (M-BL0-BR1)   |
| 1026          | RP - 2 Actuators - Front (No Mix) 1 Intf (M-FR0-FL1)  |
| 10004         | RP - 2 Actuators - Front 1 Intf(M-FR0-FL1)            |
| 10006         | RP - 2 Actuators - Back 1 Intf(M-BL0-BR1)             |

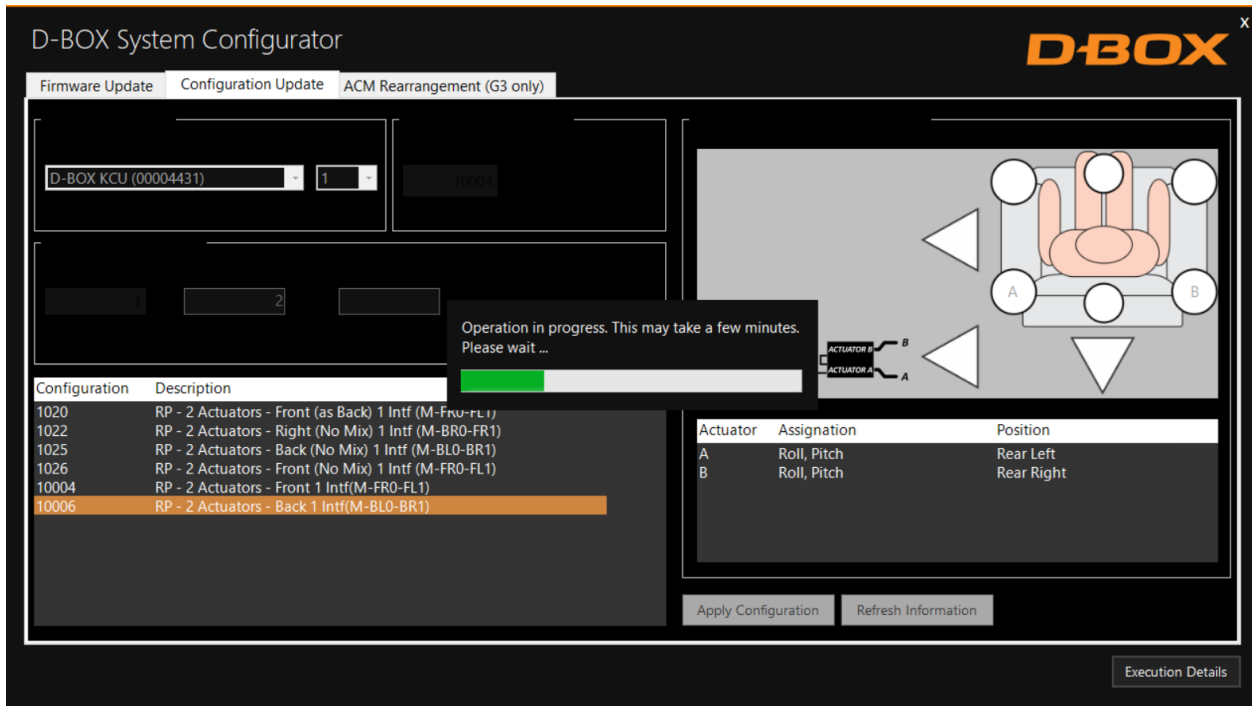
A selected configuration's layout is displayed in the Compatible Configuration Selection box. It shows the following elements:

- The connected ACM(s) with their arrangement – Main and Secondary.
- The connected actuator(s) and their assigned connection ports on the ACM.
- The positions of the actuator(s) on the simulator, chair, or platform.

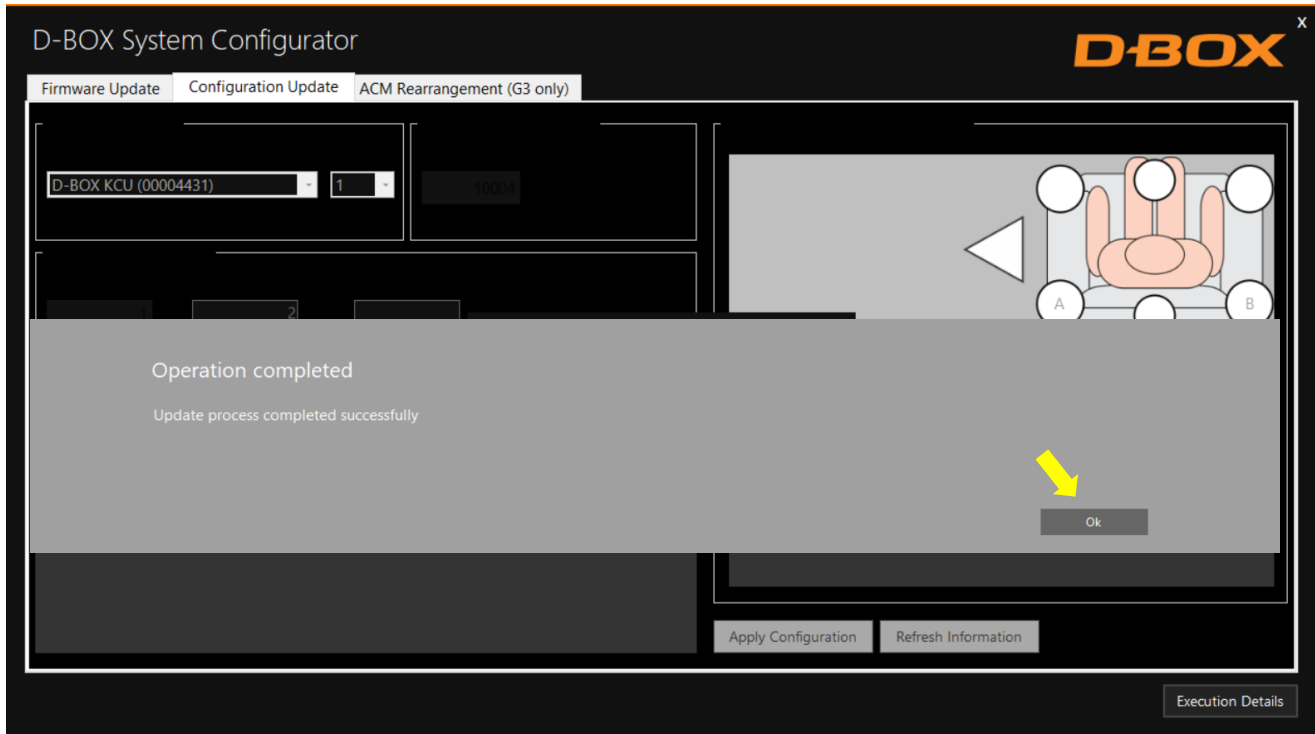


**STEP 4** Once the configuration is chosen, click **Apply Configuration** to start the configuration update process, then follow the instructions.





Once the configuration update is complete, the following confirmation window appears. Click **OK**.



## 5.5 ACM G3 and ACM G3 FLEX Rearrangement

The ACM Rearrangement (G3 only) tab allows you to change the arrangement of an ACM from Main to Secondary, and vice-versa.

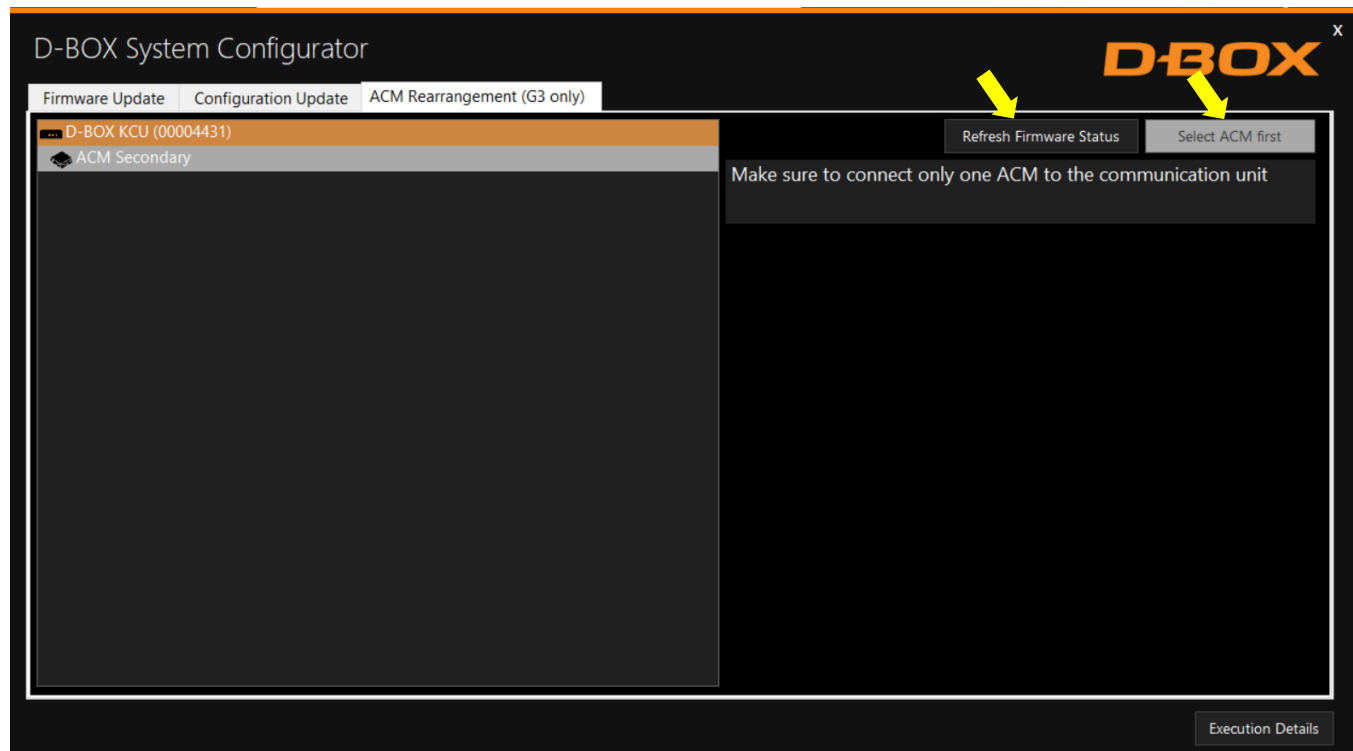
**NOTE:** If an ACM Main is connected, only the **Switch to Secondary ACM** button is available. Conversely, if an ACM Secondary is connected, only the **Switch to Main ACM** button is available.

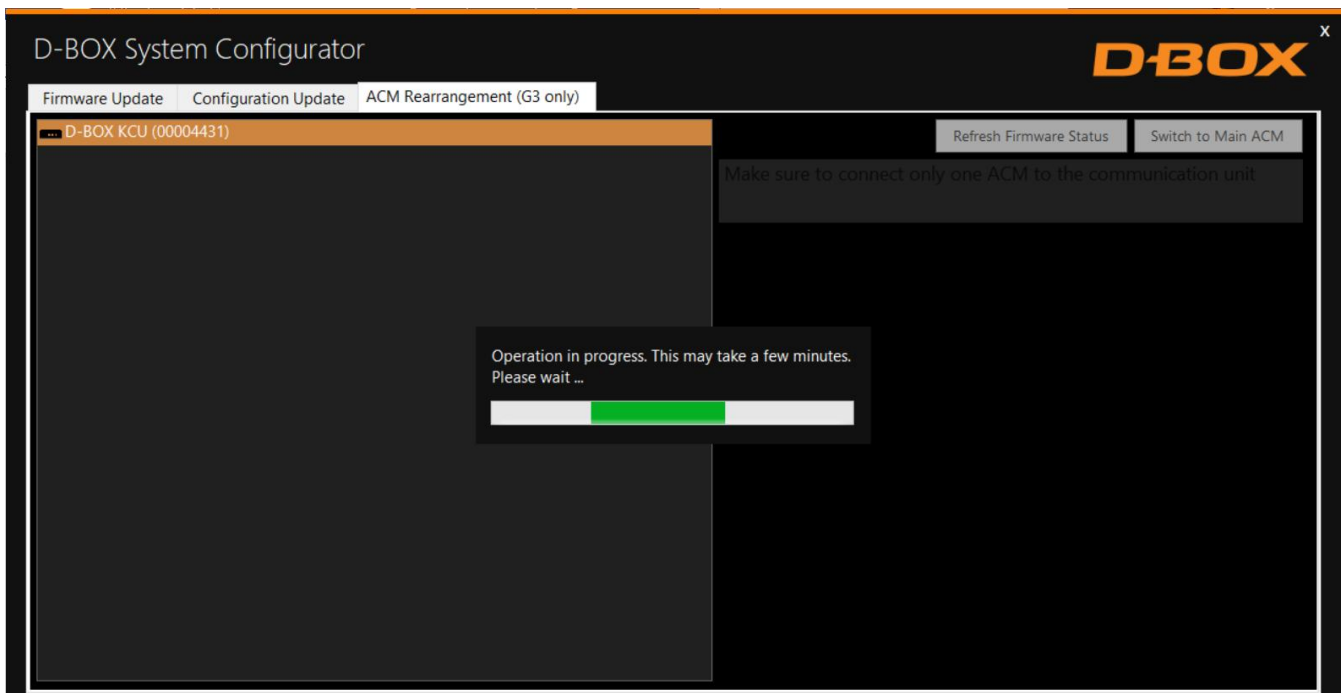
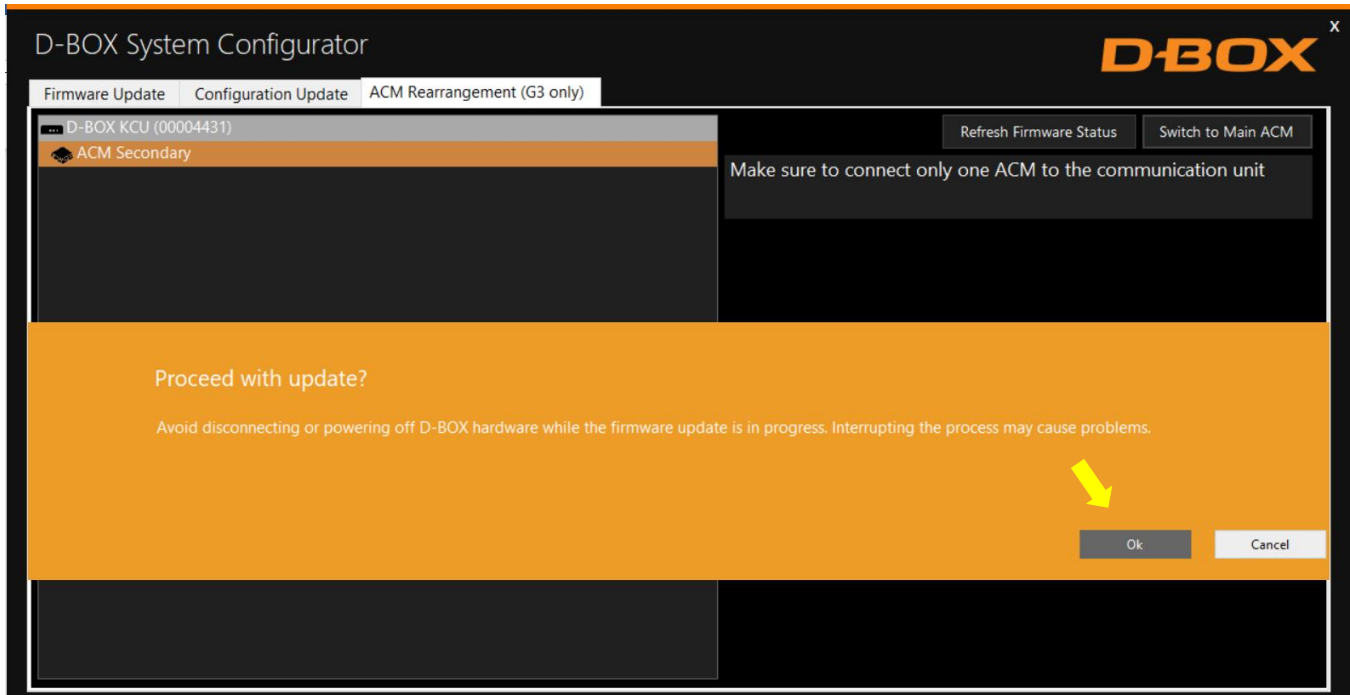


Connect only one ACM to the Communication Unit at a time to perform this operation.

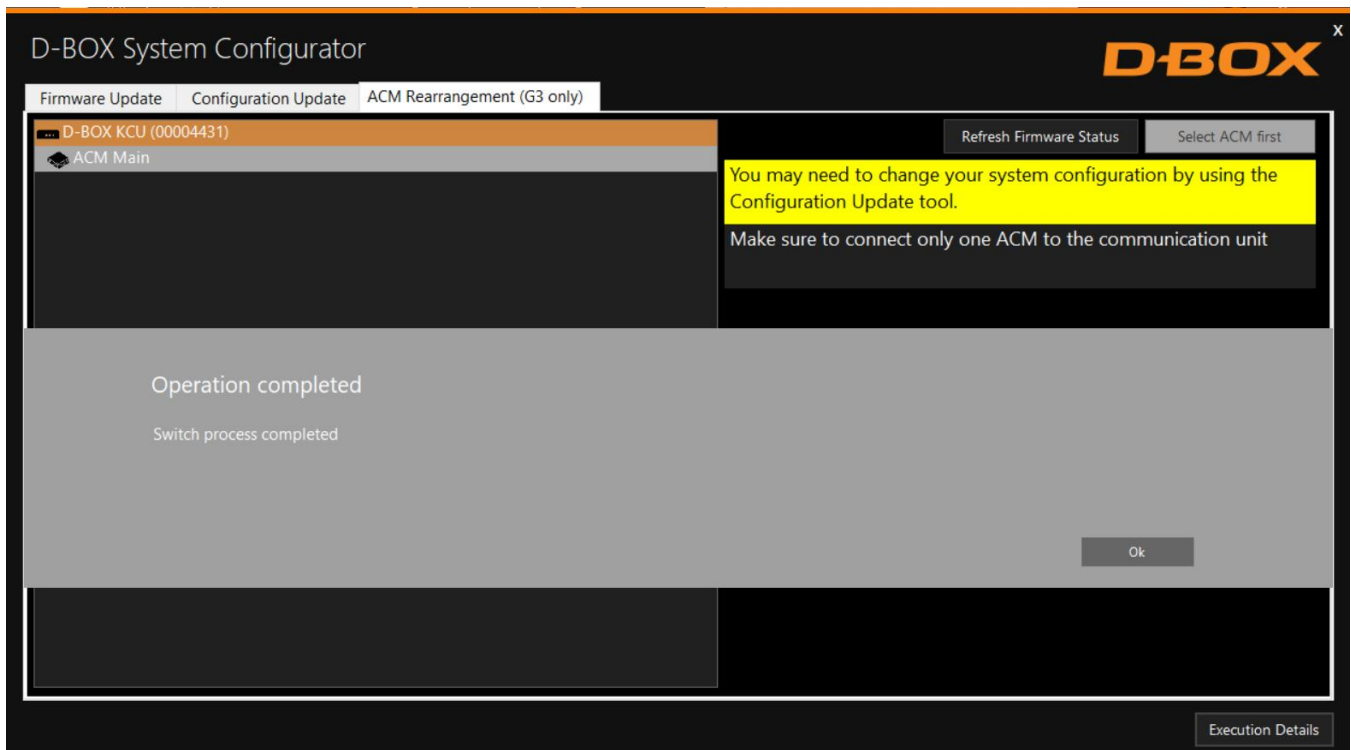
**STEP 1:** Click the **Refresh Firmware Status** button to view the actual configuration of the ACM.

**STEP 2:** Click the **Switch to Secondary ACM** (or **Switch to Main ACM**) button to switch your ACM from Main to Secondary or vice-versa.





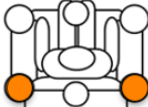
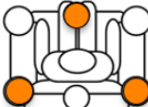
**NOTE:** Click the *Execution Details* button at any time to see details about the ongoing operation.



Once the ACM is configured:

1. Replace the ACM arrangement sticker on top of the ACM.
2. Rearrange the connections between ACMs (see User Guide, if needed).
3. Change your system configuration by using the Configuration Update tab if necessary.
4. Run your application to check if your haptic system is in operational order.

## APPENDIX A: G5 COMMON CONFIGURATIONS (1 - 3 DOF)

| NB of Actuators | Actuator Position | Config. # | Config. Description                                              | Pictogram Reference                                                                 |
|-----------------|-------------------|-----------|------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1               | Back Center       | 1050      | P - 1 Actuator - Back 2 ACMs (M, S-BC0)                          |  |
| 2               | Front             | 10719     | RP - 2 Actuators - Front 3 ACMs (M, S-FR0, S-FLO)                |  |
| 2               | Back              | 10721     | RP - 2 Actuators - Back 3 ACMs (M, S-BL0, S-BR0)                 |  |
| 3               | 1 Front / 2 Back  | 10731     | RPH - 3 Actuators - 1Front/2Back 4 ACMs (M, S-BL0, S-BR0, S-FC0) |  |
| 3               | 2 Front / 1 Back  | 10733     | RPH - 3 Actuators - 2Front/1Back 4 ACMs (M, S-FR0, S-FLO, S-BC0) |  |
| 4               | Front / Rear      | 10774     | RPH - 4 Actuators - 5 ACMs (M, S-FR0, S-FLO, S-BL0, S-BR0)       |  |

R = Roll, P = Pitch, H = Heave

## APPENDIX B: G2/G3 COMMON CONFIGURATIONS (1 – 3 DOF)

| NB of Actuators | NB of ACMs | Actuator Position | Config. # | Config. Description                                           | Pictogram Reference                                                                   |
|-----------------|------------|-------------------|-----------|---------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1               | 1          | Back Center       | 1028      | P - 1 Actuator - Back 1 ACM (M-BC1)                           |    |
| 2               | 1          | Front             | 10004     | RP - 2 Actuators - Front 1 ACM (M-FR0-FL1)                    |    |
| 2               | 2          | Front             | 10005     | RP - 2 Actuators - Front 2 ACMs (M-FR1, S-FL1)                |    |
| 2               | 1          | Back              | 10006     | RP - 2 Actuators - Back 1 ACM (M-BL0-BR1)                     |    |
| 2               | 2          | Back              | 10007     | RP - 2 Actuators - Back 2 ACMs (M-BL1, S-BR1)                 |    |
| 3               | 1          | 1 Front / 2 Back  | 10022     | RPH - 3 Actuators - 1Front/2Back 1 ACM (M-BL0-FC1-BR2)        |    |
| 3               | 2          | 1 Front / 2 Back  | 10023     | RPH - 3 Actuators - 1Front/2Back 2 ACMs (M-BL0-BR1, S-FC1)    |  |
| 3               | 3          | 1 Front / 2 Back  | 10024     | RPH - 3 Actuators - 1Front/2Back 3 ACMs (M-BL1, S-BR1, S-FC1) |  |
| 3               | 1          | 2 Front / 1 Back  | 10025     | RPH - 3 Actuators - 2Front/1Back 1 ACM (M-FR0-BC1-FL2)        |  |
| 3               | 2          | 2 Front / 1 Back  | 10026     | RPH - 3 Actuators - 2Front/1Back 2 ACMs (M-FR0-FL1, S-BC1)    |  |
| 3               | 3          | 2 Front / 1 Rear  | 10027     | RPH - 3 Actuators - 2Front/1Back 3 ACMs (M-FR1, S-FL1, S-BC1) |  |
| 4               | 2          | Front / Rear      | 10093     | RPH - 4 Actuators - Front/Back 2 ACMs (M-FR0-FL1, S-BL0-BR1)  |  |
| 4               | 2          | Left / Right      | 10233     | RPH - 4 Actuators - Left/Right 2 ACMs (M-FLO-BL1, S-BR0-FR1)  |  |
| 4               | 4          | -                 | 10235     | RPH - 4 Actuators - 4 ACMs (M-FR1, S-FL1, S-BL1, S-BR1)       |  |

R = Roll, P = Pitch, H = Heave

## APPENDIX C - MIXING G5 AND G3 HAPTIC SYSTEMS (ACM G3 FLEX ONLY)

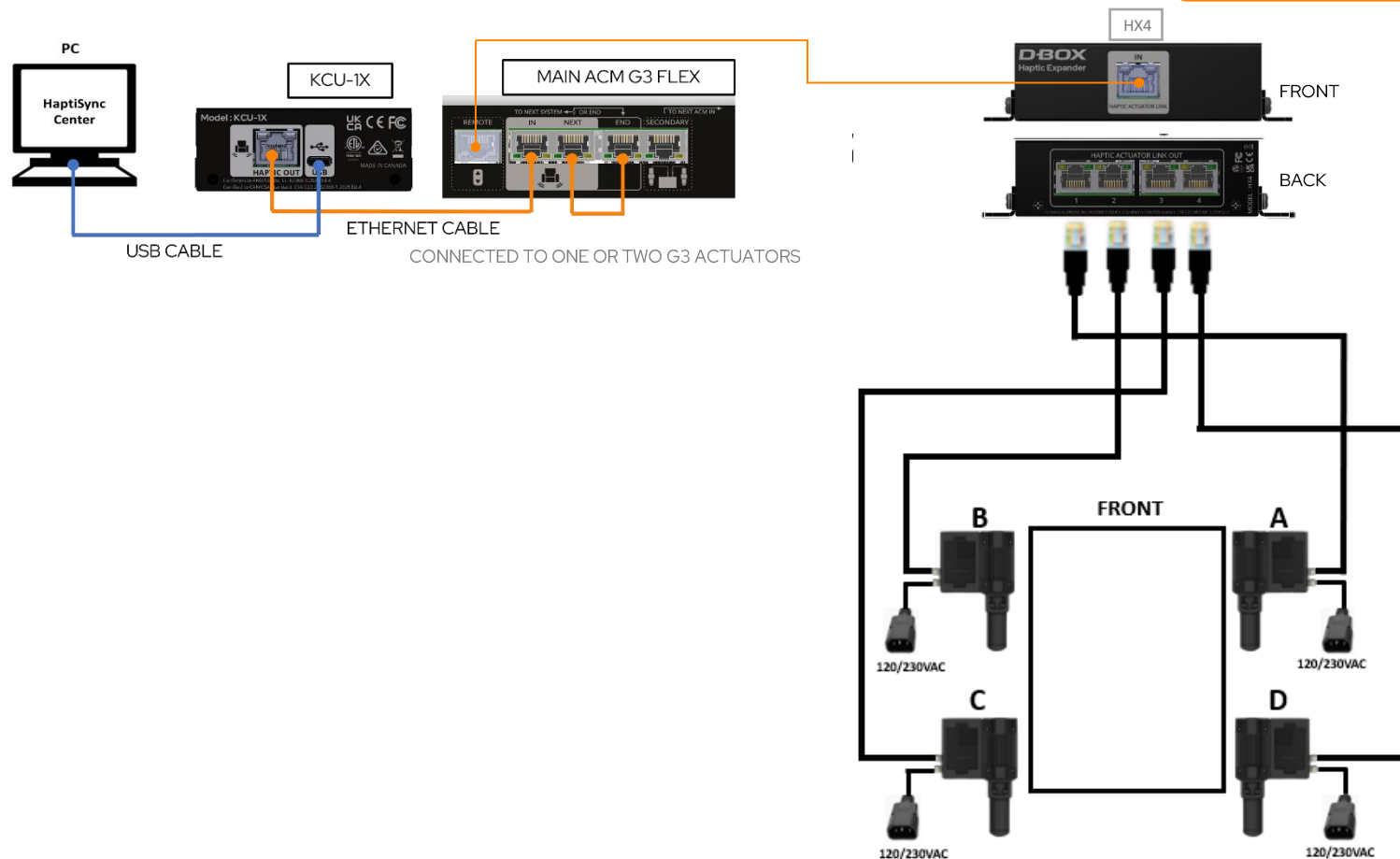
These configurations require connecting your PC to a KCU-1X—the KCU-1X to the main ACM G3 FLEX—main ACM G3 FLEX to a Haptic Expander—Haptic Expander to the G5 actuators.

### NOTE:

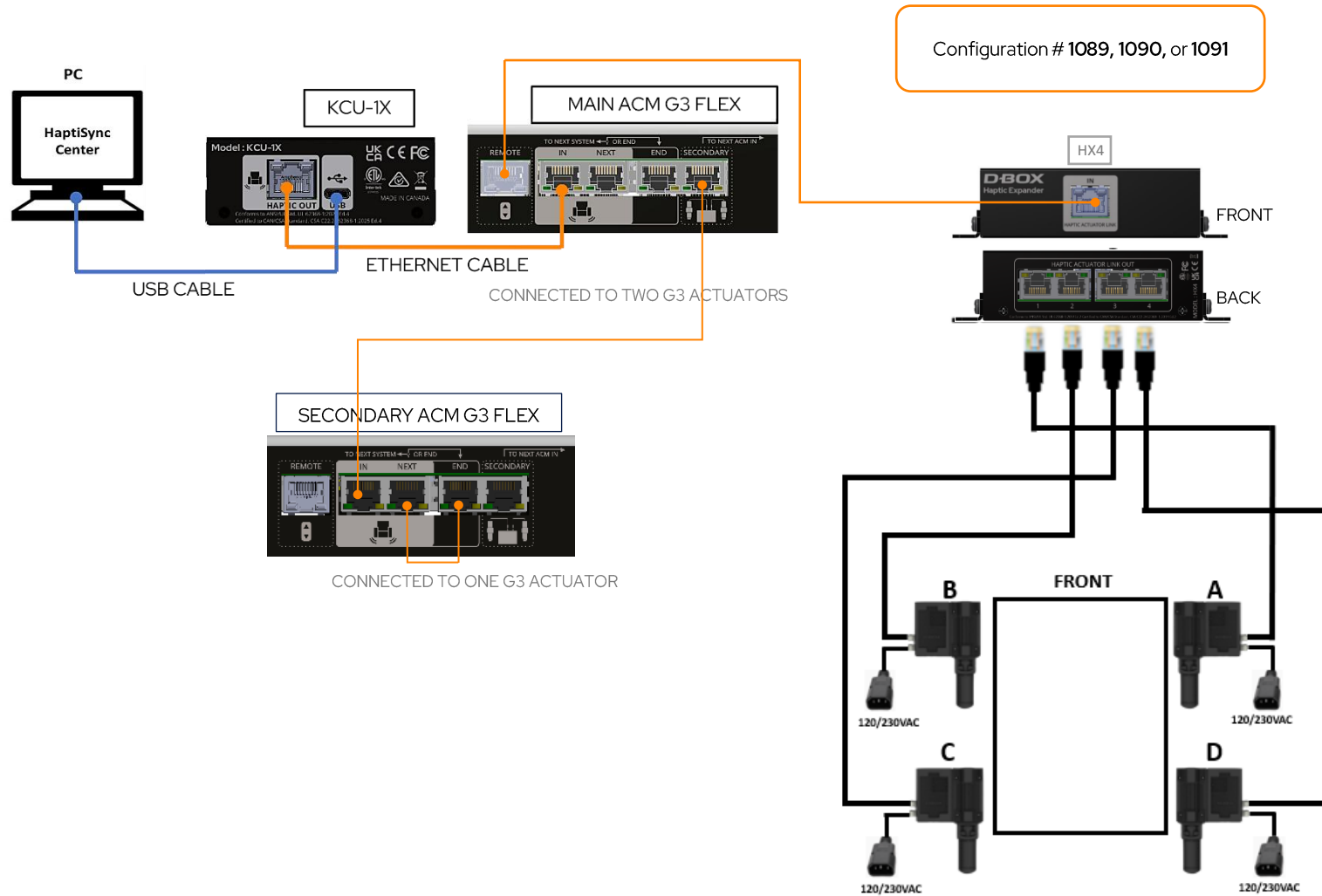
- Remember to update your firmware whenever making a change to your setup/configuration.
- A Haptic Expander (HX4) is required when mixing a G3 haptic system (ACM G3 FLEX only) using one or more actuators (maximum of four) and a G5 haptic system using two or more actuators (connected to the REMOTE port of the Main ACM).

### Option 1 (4 G5s Roll-Pitch-Heave/1 or 2 G3s Yaw, Sway, Surge, Yaw-Sway, Yaw-Surge, or Sway-Surge)

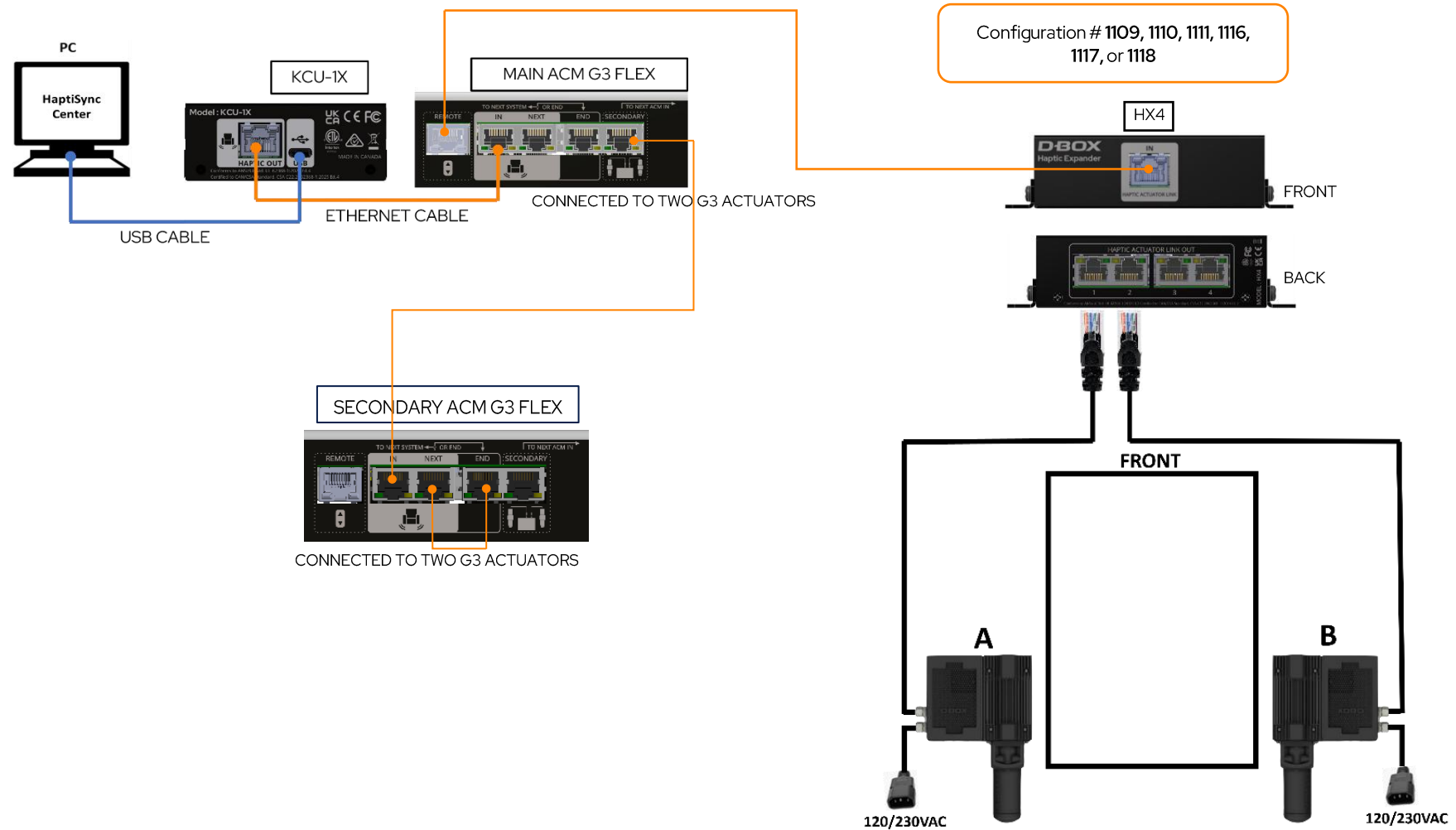
Configuration #1095, 1096, 1097,  
1098, 1099, or 1100



Option 2 (4 G5s Roll-Pitch-Heave /3 G3s Yaw-Sway-Surge)



**Option 3 (4 G3s Roll-Pitch-Heave/2 G5s Yaw-Sway, Yaw-Surge, or Sway-Surge)**



### Common Configurations

**NOTE:** The following list does not represent every possible mixed configuration. See the System Configurator for more information.

| Actuators  | Number of ACM G3 FLEX | Configuration #    | Description                                                                                                                                                                                                                                  |
|------------|-----------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4-G5, 1-G3 | 1                     | 1098               | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Yaw<br>(M-Y1, S-FR0, S-FL0, S-BL0, S-BR0)                                                                                                                                                             |
| 4-G5, 1-G3 | 1                     | 1099               | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Sway<br>(M-Sw1, S-FR0, S-FL0, S-BL0, S-BR0)                                                                                                                                                           |
| 4-G5, 1-G3 | 1                     | 1100               | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Surge<br>(M-Su1, S-FR0, S-FL0, S-BL0, S-BR0)                                                                                                                                                          |
| 4-G5, 2-G3 | 1                     | 1095               | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Yaw-Sway<br>(M-Y0-Sw1, S-FR0, S-FL0, S-BL0, S-BR0)                                                                                                                                                    |
| 4-G5, 2-G3 | 1                     | 1096               | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Yaw-Surge<br>(M-Y0-Su1, S-FR0, S-FL0, S-BL0, S-BR0)                                                                                                                                                   |
| 4-G5, 2-G3 | 1                     | 1097               | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Sway-Surge<br>(M-Sw0-Su1, S-FR0, S-FL0, S-BL0, S-BR0)                                                                                                                                                 |
| 4-G5, 3-G3 | 2                     | 1089, 1090 or 1091 | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Yaw-Sway-Surge<br><b>1089</b> (M-Y0-Sw1, S-Su1, S-FR0, S-FL0, S-BL0, S-BR0)<br><b>1090</b> (M-Y0-Su1, S-Sw1, S-FR0, S-FL0, S-BL0, S-BR0)<br><b>1091</b> (M-Y1, S-Sw0-Su1, S-FR0, S-FL0, S-BL0, S-BR0) |
| 3-G5, 4-G3 | 2                     | 1108               | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Sway-Surge<br>(M-FR0-FL1, S-BL0-BR1, S-Y0, S-Sw0, S-Su0)                                                                                                                                          |
| 3-G5, 4-G3 | 2                     | 1115               | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Sway-Surge<br>(M-FL0-BL1, S-BR0-FR1, S-Y0, S-Sw0, S-Su0)                                                                                                                                          |

| Actuators  | Number of ACM G3 FLEX | Configuration # | Description                                                                               |
|------------|-----------------------|-----------------|-------------------------------------------------------------------------------------------|
| 2-G5, 4-G3 | 2                     | 1109            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Sway<br>(M-FR0-FL1, S-BL0-BR1, S-Y0, S-Sw0)    |
| 2-G5, 4-G3 | 2                     | 1116            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Sway<br>(M-FLO-BL1, S-BR0-FR1, S-Y0, S-Sw0)    |
| 2-G5, 4-G3 | 2                     | 1110            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Surge<br>(M-FR0-FL1, S-BL0-BR1, S-Y0, S-Su0)   |
| 2-G5, 4-G3 | 2                     | 1117            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Surge<br>(M-FLO-BL1, S-BR0-FR1, S-Y0, S-Su0)   |
| 2-G5, 4-G3 | 2                     | 1111            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Sway-Surge<br>(M-FR0-FL1, S-BL0-BR1, S-Sw0, S-Su0) |
| 2-G5, 4-G3 | 2                     | 1118            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Sway-Surge<br>(M-FLO-BL1, S-BR0-FR1, S-Sw0, S-Su0) |
| 1-G5, 4-G3 | 2                     | 1112            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw<br>(M-FR0-FL1, S-BL0-BR1, S-Y0)                |
| 1-G5, 4-G3 | 2                     | 1119            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw<br>(M-FLO-BL1, S-BR0-FR1, S-Y0)                |
| 1-G5, 4-G3 | 2                     | 1113            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Sway<br>(M-FR0-FL1, S-BL0-BR1, S-Sw0)              |
| 1-G5, 4-G3 | 2                     | 1120            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Sway<br>(M-FLO-BL1, S-BR0-FR1, S-Sw0)              |
| 1-G5, 4-G3 | 2                     | 1114            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Surge<br>(M-FR0-FL1, S-BL0-BR1, S-Su0)             |

| Actuators  | Number of ACM G3 FLEX | Configuration # | Description                                                                                               |
|------------|-----------------------|-----------------|-----------------------------------------------------------------------------------------------------------|
| 1-G5, 4-G3 | 2                     | 1121            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Surge<br>(M-FL0-BL1, S-BR0-FR1, S-Su0)                             |
| 4-G5, 2-G3 | 2                     | 1092            | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Yaw-Sway<br>(M-Y1, S-Sw1, S-FR0, S-FL0, S-BL0, S-BR0)              |
| 4-G5, 2-G3 | 2                     | 1093            | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Yaw-Surge<br>(M-Y1, S-Su1, S-FR0, S-FL0, S-BL0, S-BR0)             |
| 4-G5, 2-G3 | 2                     | 1094            | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Sway-Surge<br>(M-Sw1, S-Su1, S-FR0, S-FL0, S-BL0, S-BR0)           |
| 4-G5, 3-G3 | 3                     | 1088            | <b>G5</b> Roll-Pitch-Heave / <b>G3</b> Yaw-Sway-Surge<br>(M-Y1, S-Sw1, S-Su1, S-FR0, S-FL0, S-BL0, S-BR0) |
| 3-G5, 4-G3 | 4                     | 1101            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Sway-Surge<br>(M-FR1, S-FL1, S-BL1, S-BR1, S-Y0, S-Sw0, S-Su0) |
| 2-G5, 4-G3 | 4                     | 1102            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Sway<br>(M-FR1, S-FL1, S-BL1, S-BR1, S-Y0, S-Sw0)              |
| 2-G5, 4-G3 | 4                     | 1103            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw-Surge<br>(M-FR1, S-FL1, S-BL1, S-BR1, S-Y0, S-Su0)             |
| 2-G5, 4-G3 | 4                     | 1104            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Sway-Surge<br>(M-FR1, S-FL1, S-BL1, S-BR1, S-Sw0, S-Su0)           |
| 1-G5, 4-G3 | 4                     | 1105            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Yaw<br>(M-FR1, S-FL1, S-BL1, S-BR1, S-Y0)                          |
| 1-G5, 4-G3 | 4                     | 1106            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Sway<br>(M-FR1, S-FL1, S-BL1, S-BR1, S-Sw0)                        |

| Actuators  | Number<br>of ACM<br>G3 FLEX | Configuration # | Description                                                                         |
|------------|-----------------------------|-----------------|-------------------------------------------------------------------------------------|
| 1-G5, 4-G3 | 4                           | 1107            | <b>G3</b> Roll-Pitch-Heave / <b>G5</b> Surge<br>(M-FR1, S-FL1, S-BL1, S-BR1, S-Su0) |