

## SYSTEM CONFIGURATOR

# **USER GUIDE**

194-914-0010-EN10



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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 KCU-1P (G2 & G3), Haptic Bridge (G5) and associated D-BOX hardware.
- Configure (or modify) a haptic system.
- Change the Main Secondary ACMs arrangement (G3 and G3 FLEX Only).

> If you require a reconfiguration on 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: <u>support@d-box.com</u>

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 Generations

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

For **G5** haptic systems, firmware & programming are applied to the Haptic Bridge and Haptic Actuators:



Generation	G2	G2	G3	G5
Stroke	1.5in, 3in & 6in	6in	1.5in, 3in & 6in	1.5in
Max. Number of Actuators	3	2	2	4 8 <u>with</u> the <u>Haptic Expander</u> *

\* see <u>G5 Haptic System User Guide</u> for more details on the Haptic Expander

#### 2.2 Haptic Actuator Positions

Name

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	$(FL) \cap (FC) \cap (FR)$
FR	Front-Right	
BL	Back-Left	<sw  (<="" td=""></sw >
BC	Back-Center	
BR	Back-Right	BC BC
SU	Surge	
SW	Sway	Y SU
Y	Yaw	- V



## **3. SOFTWARE INSTALLATION**

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

- **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 <u>website</u>.
- **STEP 2:** Download, extract and install (**Setup.exe**) the D-BOX System Configurator package available on our website.

#### 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 is 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 Windows Start menu/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 is available) or up to date (if the latest firmware is already in use):





The device icon displays its status. The possible values are:

Device Icon	Status	Action required
	Unknown: Refresh firmware status	Initial status. Refresh the status using the Refresh Firmware Status button.
	Outdated firmware should be updated	A newer firmware is available. Update firmware by using the Update Firmware button.
	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 update. Click **OK**:

D-BOX System Configurator	DBOX
Firmware Update     Configuration Update     ACM Rearrangement (G3 only)       D-BOX Haptic Bridge (00000121) [Outdated (Update firmware)]     Image: Configuration Update firmware)]       Image: Platform 01     Image: Configuration Update firmware)]    <	Refresh Firmware Status Update Firmware Please connect all system components
Proceed with update? Avoid disconnecting or powering off D-BOX hardware while the firmwa	are update is in progress. Interrupting the process may cause problems.
	Execution Details



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

D-BOX Syste	em Configurato	r				Dł	вох
Firmware Update	Configuration Update	ACM Rearrangement (G3 only)					
- D-BOX Haptic B	ridge (00000121) [Outdat	ed (Update firmware)]			Refresh Firmware St	atus	Update Firmware
<ul> <li>Platform 01</li> <li>Haptic Bridge</li> <li>Haptic Actua</li> <li>AC218 SM0</li> <li>Haptic Actua</li> <li>AC218 SM0</li> <li>Haptic Actua</li> <li>AC218 SM0</li> <li>Haptic Actua</li> <li>AC218 SM0</li> <li>AC218 SM0</li> </ul>	e (00000121) tor (00000363) 602 (22030633) tor (00000364) 602 tor (00000372) 602 (22100055) tor (00000437) 602 (22030733)	Operation in p Please wait	rogress. This may	Please connect a	Il system components		
							Execution Details

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



Your firmware is now up to date!



#### 4.3 G5 Configuration Update

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

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

**NOTE:** Here 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:

D-BOX System Configurator	DBOX
Firmware Update       Configuration Update       ACM Rearrangement (G3 only)         Hardware Selection       Actual DOF Configuration         Communication Device       Platform         D-BOX Haptic Bridge (00000121)       1         OF Configuration Filter       1         DoF Configuration Filter       5         Dof Configuration Filter       5	Compatible Configuration Selection
S       4       Roll       Yaw         Pitch       Surge         Heave       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)	No configuration selected
	Apply Configuration Refresh Information
	Execution Details



The **Actual DOF Configuration** box shows the actual configuration (may be empty for a new system). There is no selection to be done in this section:

D-BOX System Configurator	DBOX
Firmware Update Configuration Update ACM Rearrangement (G3 only)	
Hardware Selection       Actual DOF Configuration         Communication Device       Platform         D-BOX Haptic Bridge (00000121)       1         1       10774         Pitch √       Surge         Heave √       Sway	Compatible Configuration Selection
Interface Count Actuator Count Configuration Axes 5 4 Roll Yaw Pitch Surge Heave Sway	No configuration selected
Configuration         Description           1052         PH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-BC0)           10774         RPH - 4 Actuators - 5 Intf(M, S-FR0, S-FL0, S-BL0, S-BR0)	
	Apply Configuration Refresh Information
	Execution Details

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

D-BOX System Configurator		DBOX
Hardware Opdate     Communication Opdate     Action     Communication Device     Platform     D-BOX Haptic Bridge (00000121)     1	Compatible Configuration Configuration Axes 10774 Roll ✓ Yaw Pitch ✓ Surge Heave ✓ Sway	tion Selection —————
Configuration     Description       1052     PH - 4 Actuators - 5 Intf (M, S-FC0, 5       10774     RPH - 4 Actuators - 5 Intf (M, S-FR0, 5	ration Axes Roll Yaw Pitch Surge Heave Sway	No configuration selected
	Apply Configuration	Refresh Information
		Execution Details



**OPTION A:** You can manually enter the configuration # (see below) into **the Configuration** box. See Appendix A for more details:



#### Make sure to connect each actuator RJ45 cable to the Haptic Bridge lettered port as per the plan above.

NOTE: See <u>G5 Haptic System User Guide</u> for configurations with 5 to 8 actuators using the Haptic Expander.

**OPTION B:** Filter by configuration attributes (see Appendix A for common configurations):

- 1. Validate that the number of Interface (Haptic Bridge + Actuators) detected is accurate. If it is not the case, check the system connections and click on the Refresh Information button.
- 2. Validate that the number of actuators detected match your requested configuration. Otherwise, you can manually change the value as desired.
- 3. Optional: Check the boxes of the desired axes (degrees of freedom) you want.



**STEP 3:** The **Configuration and Description** section shows the list of all the available configurations using the information you entered in the Configuration Filter.

D-BOX System Configurator		DBOX
Firmware Update Configuration Update ACM Re	earrangement (G3 only)	
Hardware Selection     Platform       Communication Device     Platform       D-BOX Haptic Bridge (00000125)     •	Actual DOF Configuration Configuration Axes 10721 Roll J Yaw Pitch J Surge Heave Sway	Compatible Configuration Selection
DOF Configuration Filter		
Interface Count     Actuator Count     Configu       3     2       Configuration     Description       1044     RP - 2 Actuators - Front (as Back) 3 / 1045       RP - 2 Actuators - Right (No Mix) 3 / 1047       RP - 2 Actuators - Back (No Mix) 3 / Right (No M	ACMs (M, S-FR0, S-FR0) CMs (M, S-BR0, S-FR0) CMs (M, S-BL0, S-BR0)	No configuration selected
1048 RP - 2 Actuators - Front (No Mix) 3 10719 RP - 2 Actuators - Front 3 ACMs (M, 10721 RP - 2 Actuators - Back 3 ACMs (M,	ACMs (M, S-FR0, S-FL0) S-FR0, S-FL0) S-BL0, S-BR0)	Apply Configuration Refresh Information
		Execution Details

By selecting a configuration, its layout appears in the **Compatible Configuration Selection** box. The layout displays the following elements:

- The Haptic Bridge connected with their arrangement.
- The Haptic Actuator(s) connected, their assigned connection slot (Haptic Bridge).
- The Haptic Actuator(s) physical positions on the simulator, chair, or platform.

Firmware Update       Configuration Update       ACM Rearrangement (G3 only)         Hardware Selection       Actual DOF Configuration       Configuration         Communication Device       Platform       Configuration       Accustor         DeBOX Haptic Bridge (00000121)       Image: Configuration       Configuration       Accustor         DOF Configuration Filter       Image: Configuration       Accustor       Configuration       Accustor         S       4       Image: Configuration       Accustor       Configuration       Accustor       Configuration         1052       PH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-BC0)       Forth       Surge       Forth       Surge         10774       RPH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-BC0, S-BC0)       Configuration       Position       Position         1052       PH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-BC0, S-BC0)       Configuration       Position       Position         10774       RPH - 4 Actuators - 5 Intf (M, S-FC0, S-FL0, S-BL0, S-BR0)       S-BC0       Configuration       Position         10774       RPH - 4 Actuators - 5 Intf (M, S-FC0, S-FL0, S-BL0, S-BR0)       S-BC0       Configuration       Position         10774       RPH - 4 Actuators - 5 Intf (M, S-FC0, S-FL0, S-BL0, S-BR0)       S-BC0       Position       Position	D-BOX System Configurator			DBOX
Hardware Selection       Actual DOF Configuration         Communication Device       Platform         D-BOX Haptic Bridge (00000121)       Image: Configuration         DOF Configuration Filter       Image: Configuration         Interface Count       Actuator Configuration         S       Image: Configuration         S       Image: Configuration         DoS2       PH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-BC0)         10774       RPH - 4 Actuators - 5 Intf (M, S-FC0, S-FL0, S-BL0, S-BR0)    Actuator Assignation          DoS2       PH - 4 Actuators - 5 Intf (M, S-FC0, S-FL0, S-BL0, S-BR0)    Actuator Assignation          DoT/1       RPH - 4 Actuators - 5 Intf (M, S-FC0, S-FL0, S-BL0, S-BR0)             Actuator Actuators - 5 Intf (M, S-FR0, S-FL0, S-BL0, S-BR0)	Firmware Update Configuration Update AC	M Rearrangement (G3 only)		
DOF Configuration Filter         Interface Count       Actuator Count         5       4         Pitch       Surge         Heave       Sway         Configuration       Description         1052       PH - 4 Actuators - 5 Intf (M, S-FC0, S-BC0, S-BC0)         10774       RPH - 4 Actuators - 5 Intf (M, S-FR0, S-FL0, S-BL0, S-BR0)	Hardware Selection     Platform       Communication Device     Platform       D-BOX Haptic Bridge (00000121)     •	M Configuration Axes 10774 Roll ✓ Yaw Pitch ✓ Surge Heave ✓ Sway	Compatible Configuration Selection	
Configuration       Description       V         1052       PH - 4 Actuators - 5 Intf (M, S-FC0, S-BC0, S-BC0)       Actuator       Assignation       Position         10774       RPH - 4 Actuators - 5 Intf (M, S-FR0, S-FL0, S-BL0, S-BR0)       D       Roll, Pitch, Heave       Front Right         G       Roll, Pitch, Heave       Front Left       J       Roll, Pitch, Heave       Rear Right	DOF Configuration Filter Interface Count Actuator Count Con 5 4	nfiguration Axes Roll Yaw Pitch Surge Heave Sway		
Apply Computation Relies in mormation	Configuration Description 1052 PH - 4 Actuators - 5 Intf (M, S-F 10774 RPH - 4 Actuators - 5 Intf(M, S-I	CO, S-FCO, S-BCO, S-BCO) FRO, S-FLO, S-BLO, S-BRO)	Actuator         Assignation           D         Roll, Pitch, Heave           G         Roll, Pitch, Heave           J         Roll, Pitch, Heave           M         Roll, Pitch, Heave           Apply Configuration         Refresh Information	Position Front Right Front Left Rear Left Rear Right



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

D-BOX System Configurator		DBOX
Firmware Update Configuration Update ACM R	earrangement (G3 only)	
Hardware Selection       Communication Device     Platform       D-BOX Haptic Bridge (00000125)     1	Configuration Axes Configuration Axes 10721 Roll ✓ Yaw Pitch ✓ Sur Heave Swa	v ge ay
Proceed with update? Avoid disconnecting or powering off		uration update is in progress. Interrupting the process may cause problems.
10719         RP - 2 Actuators - Front 3 ACMs (M           10721         RP - 2 Actuators - Back 3 ACMs (M,           10723         PH - 2 Actuators - Front/Back 3 ACI           10725         YSw - 2 Actuators - 3 ACMs (M, S-Y           10727         YSu - 2 Actuators - 3 ACMs (M, S-Y           10729         SwSu - 2 Actuators - 3 ACMs (M, S-Y	, S-FR0, S-FL0) S-BL0, S-BR0) Ms (M, S-FC0, S-BC0) 0, S-Sw0) 0, S-Sw0) Sw0, S-Su0) Sw0, S-Su0)	Apply Configuration Refresh Information
		Execution Details

D-BOX System Configurator	DBOX
Firmware Update Configuration Update ACM Rearrangem	nent (G3 only)
D-BOX Haptic Bridge (00000121)         1         1           4         4           Configuration         Description           1052         PH - 4 Actuators - 5 Intf (M, S-FC0, S-FC0, S-bc)           10774         RPH - 4 Actuators - 5 Intf (M, S-FR0, S-FL0, S-BI)	CU, S-BCU) Actuator Assignation Position D Roll, Pitch, Heave Front Right C Rel Pitch Heave Front Right
	G Roll, Pitch, Heave Front Left J Roll, Pitch, Heave Rear Left M Roll, Pitch, Heave Rear Right Apply Configuration Refresh Information
	Execution Detail

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

D-BOX System Configurator				DBOX	
Firmware Update Configuration Upd	date ACM R	earrangement (G3	only)		
Hardware Selection Communication Device	Platform	Actual DOF Conf Configuration	iguration — Axes		Compatible Configuration Selection
D-BOX Haptic Bridge (00000125) •	1	10721	Roll √ Pitch √ Heave	Yaw Surge Sway	
Operation compl	eted				
Update process comple					
					<u>~</u>
					Ok
10719         RP - 2 Actuators - Froi           10721         RP - 2 Actuators - Bac           10723         PH - 2 Actuators - Froi           10725         YSw - 2 Actuators - 3           10727         YSu - 2 Actuators - 3	nt 3 ACMs (M k 3 ACMs (M, nt/Back 3 ACf ACMs (M, S-Y ACMs (M, S-Y	, S-FR0, S-FL0) S-BL0, S-BR0) Ms (M, S-FC0, S-BCI 0, S-Sw0) 0, S-Sw0)	))		
10729 SwSu - 2 Actuators - 3	3 ACMS (M, 5-	Sw0, S-Su0)			Apply Configuration Refresh Information
					Execution Details

## 5. G2 & 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 is completed may cause improper operation.

STEP 1: Connect the hardware to your computer. See your haptic system User Guide if necessary.
 <u>G2 Motion System Installation Guide</u>
 G3 Installation, User & Troubleshooting Guide

STEP 2: Start the D-BOX System Configurator from the Windows Start menu/D-BOX folder.

NOTE: Running the software requires administrative privileges.

#### 5.2 G2 & G3 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 **G2**, **G3** and **G3 FLEX** ACM(s), KCU-1P, KCA & KCA-T.

A firmware update can also change the actuator model (**G3 and G3 FLEX only**). For example, if you replace 1.5inch actuators by 3-inch actuators, you need to update the firmware. **See section 5.3 for more details**.

- **NOTE:** Firmware update applies to a KCU-1P and all subcomponents. <u>If you have multiple KCU-1P, you need to</u> <u>update them one at a time</u>.
- **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 is available) or up to date (if the latest firmware is already in use):





The device icon displays its status. The possible values are:

Device Icon	Status	Action required
	Unknown: Refresh firmware status	Initial status. Refresh the status using the Refresh Firmware Status button.
	Outdated firmware should be updated	A newer firmware is available. Update firmware by using the Update Firmware button.
	Up to date: No action required	The latest firmware is installed. No action required.

STEP 2: If your components are outdated, select the KCU-1P you want to update then press the **Update Firmware** button. A dialog box will appear asking you if you want to proceed with update. Click **OK**:

D-BOX System Configurator		D	BOX
Firmware Update       Configuration Update       ACM Rearrangement (G3 only)         D-BOX KCU (00004431) [Outdated (Update firmware)]       Image: Configuration 01       Image: Configuration 01         Image: Platform 01       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (21160076)       Image: Configuration 01       Image: Configuration 01       Image: Configuration 01         Image: ACM (G3) (Main) (Configuration 01       Image: Configurati	Please connect all system cc	Refresh Firmware Status Imponents	Update Firmware
Proceed with update? Avoid disconnecting or powering off D-BOX hardware while the firmware upda		ocess may cause problems.	Cancel
			Execution Details



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

D-BOX System Configurator			D	BOX
Firmware Update Configuration Update ACM Rearra	angement (G3 only)			
D-BOX KCU (00004431) [Outdated (Update firmware)]			Refresh Firmware Status	Update Firmware
ACM (G3) (Main) (21160076)		Please connect all sy		
1.5in - i Series - 250lb (AC7 AKM22C) (16176046)				
1.5in - i Series - 250lb (AC7 AKM22C) (23299030)				
	Operation in progress. This may Please wait	y take a few minutes.		
				Execution Details

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

D-BOX System Configurator	DBOX
Firmware Update Configuration Update ACM Rearrangement (G3 only)	
D-BOX KCU (00004431) [Up-to-date (No action required)]	Refresh Firmware Status Updated
Platform 01	Please connect all system components
1.5in - i Series - 250lb (AC7 AKM22C) (16176046)	
1.5in - i Series - 250lb (AC7 AKM22C) (23299030)	
Operation completed	
Update process completed	
	Ok
	Execution Details



## 5.3 Changing the Haptic Actuator Type (G3 and G3 FLEX Only)

A firmware update must be performed when there is a mismatch between the configured actuator(s) and the connected actuator(s).

As an example, if you connect 3-inch actuators instead of 1.5-inch actuators, a red window appears showing the mismatch. That means the configuration is different from the old configuration for which the ACM was initially configured:



**NOTE**: If a G2 system is connected, you cannot use this function.



To proceed with the firmware update, select the KCU-1P device then click **Update Firmware**. Follow the onscreen instructions:

D-BOX System Configurator		D	BOX
Firmware Update       Configuration Update       ACM Rearrangement (G3 only)         L D-BOX KCU (00004431) [Outdated (Update firmware)]       Platform 01         Platform 01       Configured in ACM: 1.5in - i Series - 250lb (AC7 AKM22C) (14476046)         Currently connected: 3in - i Series - 400lb (AC231 AKM24D)	Please connect all system con	Refresh Firmware Status mponents	Update Firmware
Proceed with update? Actuator(s) do not match with current configuration.		Ok	Cancel

D-BOX System Configurator	DBO			
Firmware Update Configuration Update ACM Rearrangement (G3 only)				
D-BOX KCU (00004431) [Outdated (Update firmware)]		Refresh Firmware Status	Update Firmware	
<ul> <li>Platform 01</li> <li>ACM (G3) (Main) (08520126)</li> </ul>	Please connect all system co	omponents		
Configured in ACM: 1.5in - i Series - 250lb (AC7 AKM22C) (14476046)				
Currently connected: 3in - i Series - 400lb (AC231 AKM24D)				
Proceed with update? Avoid disconnecting or powering off D-BOX hardware while the firmware upda	te is in progress. Interrupting the pr	ocess may cause problems.	Cancel	
			Execution Details	



D-BOX System Configurator			D	BOX
Firmware Update Configuration Update ACM Rearranger	ment (G3 only)			
D-BOX KCU (00004431) [Outdated (Update firmware)]			Refresh Firmware Status	Update Firmware
• ACM (G3) (Main) (08520126)				
Configured in ACM: 1.5in - i Series - 250lb (AC7 AKM2	2C) (14476046)			
Currently connected: 3in - i Series - 400lb (AC231 AKM24	4D)			
1.5in - i Series - 250lb (AC7 AKM22C)				
	Operation in progress. This may Please wait	take a few minutes.		
				Execution Details

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

D-BOX System Configurator		вох
Firmware Update Configuration Update ACM Rearrangement (G3 only)		
D-BOX KCU (00004431) [Up-to-date (No action required)]	Refresh Firmware Status	Update Firmware
T Platform 01	Please connect all system components	
3in - i Series - 400lb (AC231 AKM24D) (14476046)		
3in - i Series - 400lb (AC231 AKM24D)		
Operation completed		
Update process completed		
	A 10	
		_
	Ok	
		Execution Details

## 5.4 G2 & G3 Configuration Update

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

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

**NOTE:** Here 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 (KCU-1P) linked to the haptic system(s) you want to configure, then select the platform number (if multiple haptic systems are connected):

D-BOX Syst	tem Configurat	tor				DBOX
Firmware Update	Configuration Updat	te ACM Rearrangen	nent (G3 only)			
Hardware Selecti Communication I D-BOX KCU (000	ion Device 004431)	Platform Configu	OOF Configuratio ration Axes 10093 Roll √ Pitch √ Heave	n Yaw Surge Sway	Compatible Configuration Selection ————	
DOF Configuration	on Filter					
Interface Count	Actuator Count	Configuration	Axes Roll Pitch Heave	Yaw Surge Sway	No configuration selecte	d
Configuration	Description					
1020 1022 1025 1026 10004 10006 10008 10010 10012 10012	RP - 2 Actuators - Front RP - 2 Actuators - Right RP - 2 Actuators - Back ( RP - 2 Actuators - Front RP - 2 Actuators - Front RP - 2 Actuators - Back 1 PH - 2 Actuators - Front YSw - 2 Actuators - 1 Int YSw - 2 Actuators - 1 Int YSw - 2 Actuators - 1 Int	(as Back) 1 Intf (M-FR (No Mix) 1 Intf (M-BI (No Mix) 1 Intf (M-BL (No Mix) 1 Intf (M-FR 1 Intf(M-FR0-FL1) 1 Intf(M-BL0-BR1) /Back 1 Intf(M-FC0-BC f(M-Y0-Sw1) f(M-Y0-Sw1) 1tf(M-Sw0-Sw1)	0-FL1) K0-FR1) )-BR1) 0-FL1) C1)			
					Apply Configuration Refresh Information	
						Execution Details



The **Actual DOF Configuration** box shows the actual configuration. There is no selection to be done in this section:

D-BOX System Configurator		DBOX <sup>*</sup>
Firmware Update Configuration Update ACM R	earrangement (G3 only)	
Hardware Selection       Communication Device     Platform       D-BOX KCU (00004431)     1	Actual DOF Configuration Configuration Axes 10093 Roll √ Yaw Pitch √ Surge Heave Sway	Compatible Configuration Selection
DOF Configuration Filter Interface Count Actuator Count Configu 1 2	ration Axes Roll Yaw Pitch Surge Heave Sway	No configuration selected
Configuration         Description           1020         RP - 2 Actuators - Front (as Back) 1           1022         RP - 2 Actuators - Right (No Mix) 1           1025         RP - 2 Actuators - Back (No Mix) 1           1026         RP - 2 Actuators - Front (No Mix) 1           10006         RP - 2 Actuators - Front 1 Intf(M-RU           10008         PH - 2 Actuators - Front/Back 1 Intf           10010         YSw - 2 Actuators - Front/Back 1 Intf           10010         YSw - 2 Actuators - 1 Intf(M-RU           10012         YSw - 2 Actuators - 1 Intf(M-Yo-Sw)           10014         SwSu - 2 Actuators - 1 Intf(M-Sw)	Intf (M-FR0-FL1) Intf (M-BR0-FR1) Intf (M-BL0-BR1) Intf (M-FR0-FL1) 0-FL1) 0-BR1) (M-FC0-BC1) I) ) Su1)	Apply Configuration Refresh Information
		Execution Details

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

D-BOX System Configurator		DBOX
Firmware Update Configuration Update ACM R	earrangement (G3 only)	
Hardware Selection     Communication Device     Platform     D-BOX KCU (00004431)     DOF Configuration Filter	Actual DOF Configuration Configuration Axes 10093 Roll $\checkmark$ Yaw Pitch $\checkmark$ Surge Heave Swav	Compatible Configuration Selection
Interface Count Actuator Count Configu 1 2	iration Axes Roll Yaw Pitch Surge Heave Sway	No configuration selected
Configuration         Description           1020         RP - 2 Actuators - Front (as Back) 1           1022         RP - 2 Actuators - Right (No Mix) 1           1025         RP - 2 Actuators - Back (No Mix) 1           1026         RP - 2 Actuators - Front (No Mix) 1           10004         RP - 2 Actuators - Front 1 Intf(M-FR           10006         RP - 2 Actuators - Back 1 Intf(M-FR           10008         PH - 2 Actuators - Front 1 Intf(M-FR           10010         YSw - 2 Actuators - 1 Intf(M-YO-Sw           10012         YSu - 2 Actuators - 1 Intf(M-YO-Su           10014         SwSu - 2 Actuators - 1 Intf(M-SW)	Intf (M-FR0-FL1) Intf (M-BR0-FR1) ntf (M-BL0-BR1) Intf (M-FR0-FL1) 0-FL1) 0-BR1) (M-FC0-BC1) 1) ) SU1)	
		Apply Configuration Refresh Information
		Execution Details



**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 for common configurations)

**OPTION B:** Filter by configuration attributes (see Appendix B for common configurations):

- 1. Validate that the number of ACMs detected is accurate. If it is not the case, check the system connections and click on the Refresh Information button.
- 2. Validate that the number of actuators detected match your requested configuration. Otherwise, you can manually change the value as desired.
- 3. Optional: Check the boxes of the desired axes (degrees of freedom) you want.

**STEP 3:** The **Configuration and Description** section shows the list of all the available configurations using the information you entered in the Configuration Filter:

D-BOX System Configurator		DBOX
Firmware Update Configuration Update ACM R	earrangement (G3 only)	
Hardware Selection       Communication Device       D-BOX KCU (00004431)	Actual DOF Configuration         Configuration         Axes         10093         Roll √         Yaw         Pitch √         Heave         Sway	Compatible Configuration Selection
DOF Configuration Filter		
Interface Count Actuator Count Configu 1 2	ration Axes ☑ Roll	No configuration selected
ConfigurationDescription1020RP - 2 Actuators - Front (as Back) 11022RP - 2 Actuators - Right (No Mix) 11025RP - 2 Actuators - Back (No Mix) 11026RP - 2 Actuators - Front (No Mix) 110004RP - 2 Actuators - Front 1 Intf(M-RL10006RP - 2 Actuators - Back 1 Intf(M-BL)	Intf (M-FR0-FL1) Intf (M-BR0-FR1) ntf (M-BL0-BR1) Intf (M-FR0-FL1) 0-FL1) BR1)	
		Apply Configuration Refresh Information
		Execution Details



By selecting a configuration, its layout appears in the **Compatible Configuration Selection** box. The layout displays the following elements:

- The ACM connected with their arrangement Main and Secondary.
- The Haptic Actuator(s) connected, their assigned connection slot (ACM).
- The Haptic Actuator(s) physical positions on the simulator, chair, or platform.

D-BOX System Configurator			DBOX
Firmware Update Configuration Update ACM F	Rearrangement (G3 only)		
Hardware Selection     Platform       Communication Device     Platform       D-BOX KCU (00004431)     1	Actual DOF Configuration       Configuration     Axes       10093     Roll √     Yaw       Pitch √     Surge       Heave     Sway	Compatible Configuration Selection	
DOF Configuration Filter Interface Count Actuator Count Config 1 2 Configuration Description	uration Axes Roll Yaw Pitch Surge Heave Sway		
1020         RP - 2 Actuators - Front (as Back) 1           1022         RP - 2 Actuators - Right (No Mix) 1           1025         RP - 2 Actuators - Back (No Mix) 1           1026         RP - 2 Actuators - Back (No Mix) 1           1027         RP - 2 Actuators - Front (No Mix) 1           1028         RP - 2 Actuators - Front (No Mix) 1           10004         RP - 2 Actuators - Front 1 Intf(M-FI           10006         RP - 2 Actuators - Back 1 Intf(M-BL	Intf (M-FR0-FL1) Intf (M-BR0-FR1) Intf (M-BL0-BR1) Intf (M-FR0-FL1) R0-FL1) 0-BR1)	Actuator Assignation A Roll, Pitch B Roll, Pitch Apply Configuration Refresh Information	Position Rear Left Rear Right
			Execution Details

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

D-BOX System Configurator		DBOX
Firmware Update Configuration Update ACM	Rearrangement (G3 only)	
Hardware Selection       Communication Device     Platform       D-BOX KCU (00004431)     1	Actual DOF Configuration Configuration Axes Noll ✓ Yaw Pitch ✓ Surge Heave Sway	Compatible Configuration Selection
Proceed with update? Avoid disconnecting or powering of	f D-BOX hardware while the configuration	update is in progress. Interrupting the process may cause problems.
10004 RP - 2 Actuators - Front 1 Intf(M-F 10006 RP - 2 Actuators - Back 1 Intf(M-B	R0-FL1) .0-BR1)	Apply Configuration Refresh Information
		Execution Details

D-BOX Syst	em Configurator						Dł	BOX
Firmware Update	Configuration Update ACN	M Rearrangement (G3 only)						
D-BOX KCU (000	D04431) 1 2 Description RP - 2 Actuators - Front (as Back) RP - 2 Actuators - Right (No Mix	Operation in pro Please wait c) 1 Intf (M-FRU-PL1) c) 1 Intf (M-FRU-PL1)	ogress. This may tak	e a few min Actuator	utes.		Position	
1025 1026 10004 10006	RP - 2 Actuators - Back (No Mix) RP - 2 Actuators - Front (No Mix) RP - 2 Actuators - Front 1 Intf(M- RP - 2 Actuators - Back 1 Intf(M-	) 1 Intf (M-8L0-BR1) :) 1 Intf (M-FR0-FL1) I-FR0-FL1) -BL0-BR1)	-	A B	Roll, Pitcl Roll, Pitcl	ו ו	Rear Left Rear Right	
				Apply Config	guration	Refresh Information		
								Execution Details

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

D-BOX System Configurator		DBOX
D-BOX KCU (00004431)     1     1     10004		
Operation completed Update process completed successfully		
		Ok
	Apply Configuration	Refresh Information
		Execution Details



## 5.5 ACM G3 ACM & G3 FLEX Rearrangement

The **ACM Rearrangement (G3)** tab allows you to change the arrangement of an ACM from Main to Secondary and vice-versa. Please note the following:

- 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 (1) ACM at a time to the KCU-1P to perform this operation.

STEP 1: Click on 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 if you want to switch your ACM from **Main** to **Secondary** or vice-versa:

D-BOX System Configurator		BOX
Firmware Update Configuration Update ACM Rearrangement (G3 only)		<u> </u>
	Refresh Firmware Status	Select ACM first
ACM Secondary	Make sure to connect only one ACM to the communi	cation unit
		Execution Details

D-BOX System Configurator	DBOX			
Firmware Update Configuration Update ACM Rearrangement (G3 only)				
D-BOX KCU (00004431)		Refresh Firmware Status	Switch to Main ACM	
ACM Secondary	Make sure to connect on	ly one ACM to the comr	nunication unit	
Proceed with update?	e is in progress. Interrupting the	process may cause problem	s	
			Cancel	
			Curred	

D-BOX Syste	em Configurato	r			BOX	
Firmware Update	Configuration Update	ACM Rearrangement (G3 only)				
D-BOX KCU (000	004431)				Refresh Firmware Status	Switch to Main ACM
						nunication unit
		Operation in p Please wait	rogress. This may	take a few minutes.		

**NOTE:** You can click the **Execution Details** button at any time to read 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 good operational order.



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

NB of Actuators	<b>Actuator Position</b>	Config. #	Config. Description	Pictogram Reference
1	Back Center	1050	P - 1 Actuator - Back 2 ACMs (M, S-BCO)	
2	Front	10719	RP - 2 Actuators - Front 3 ACMs (M, S-FRO, S-FLO)	
2	Back	10721	RP - 2 Actuators - Back 3 ACMs (M, S-BLO, S-BRO)	
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-FRO, S-FLO, S-BCO)	
4	Front / Rear	10774	RPH - 4 Actuators - 5 ACMs (M, S-FR0, S-FL0, S-BL0, S-BR0)	

R = Roll, P = Pitch, H = Heave



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

<b>NB of Actuators</b>	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-BLO-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-BLO-FC1-BR2)	
3	2	1 Front / 2 Back	10023	RPH - 3 Actuators - 1Front/2Back 2 ACMs (M-BLO-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-BRO-FR1)	
4	4	-	10235	RPH - 4 Actuators - 4 ACMs (M-FR1, S-FL1, S-BL1, S-BR1)	

**R** = Roll, **P** = Pitch, **H** = Heave