<u>The MotionMonitor xGen Hardware Guide:</u> <u>The MotionMonitor xGen Interface to Polhmeus Hardware</u>

The following document outlines the steps required to configure and collect from Polhemus Liberty, Patriot, G4, Viper or Fastrak devices that are connected to The MotionMonitor xGen computer via USB. The Polhemus drivers, Polhemus PiMgr or Viper Command manager host software should first be installed using the installation CD and instructions provided by Polhemus.

Before using the Polhemus G4 system, the RF Configuration and G4CreateSrcCfg utilities must be run to setup the system configuration and source (transmitter) setup, respectively. Please see <u>Appendix II</u> for more information on configuring the G4.

Please view Appendix I for more details on configuring the Polhemus Viper.

1. Start The MotionMonitor xGen and go to the Hardware node in the Setup Components window. Add the Polhemus device from the Add button in the parameters panel at the bottom of the Components window or by right clicking the Hardware node and adding the device through the cascading drop list.

🖌 Setup 🛛 🔯 Analysis	
لمَر, World Axes	^
🔅 Hardware 🛛 👩	Add
a Subjects	
the Objects	*
Live period: 10	se
Live period: 10 Playback step interval: Use	formula V .01 se

2. Click on the Polhemus device to bring up the Polhemus parameters panel. Specify the name (optional), Hardware type (Liberty, Patriot, G4, Fastrak or Viper), Measurement rate (30Hz, 40Hz, 60Hz, 120Hz, 240Hz, 480Hz or 960Hz depending on supported measurement rates for the selected Hardware type), and browse to the G4 calibration file, if using the G4 Hardware type.

Components	x
🗲 Setup 📉 Analysis	
, World Axes	^
V 😯 Hardware	
& Subjects	
🔹 Objects	~
	_
Polhemus name: Polhemus 1	
Measurement rate: 120 Hz 🗸	
\square Synchronizing event: when Use drop-lists \checkmark <no selection=""> \checkmark becomes true</no>	
▼ Setup	
Hardware type: Viper 🗸	
Stylus to use: <pre> </pre> <pre> NOTE: Stylus rigid body must be a Polhemus sensor</pre>	
Distortion correction in use: None	
Correct Distortion	
 Suspend live data (reduces CPU requirements by making data only available in post-processing) 	
GACtivate	

The stylus that is being used for aligning this hardware device (i.e. digitizing a new world axes, unique from the default transmitter coordinate system) must be selected here for the Stylus to use. After Activating the hardware, the "Align" button will result in a sequence of prompts for digitizing a new world axes layout according to the selections for the World Axes layout in the World Axes Setup Component.

The default transmitter reference frame is depicted below. Readings from the sensors can only be accurately taken from the front (positive X) hemisphere. When using the G4 and Viper Hardware devices, data from the sensors can be taken from any side of the transmitter, but the sensors must be in a particular hemisphere when the device is Powered on and activated. Both systems also support the use of multiple transmitters. However, the settings for each system must be configured prior to activating hardware in The MotionMonitor xGen. For the G4, these settings are configured in the G4CreateSrcCfg utility. For the Viper, these settings are configured in the Viper command manager (see Appendix I).



Data in the Live window can be suspended by placing a mark in the checkbox for Suspend live data. The processing and display of data in a live mode uses computer resources, so this option allows the user to optimize computer resources and free up more processing power for data collection. This setting is independent for each hardware device and once an activity has been recorded data from the full measurement rate will be accessible for analysis.

A synchronizing Boolean event can be specified for performing an active alignment of the Polhemus data stream with synchronous events from other hardware data streams. The Synchronizing event used here must be defined from the Polhemus data (i.e. the stylus pen button or event marker interconnect provided by The MotionMonitor, which could be defined as *Polhemus1.Sensor1.Event* ==1, for instance, if the synchronizing event were connected to the first sensor). The Polhemus Viper does not support an event marker interconnect at this time.

The Align to other hardware and Correct distortion buttons are advanced features for hybrid configurations and for performing metal mappings, respectively. Please contact your <u>Client</u> <u>Support Engineer</u> for more information regarding these processes.

The "Activate" button will initialize the communication between The MotionMonitor xGen and Polhemus hardware.

3. Expand the Polhemus node to show the activated sensors. Selecting a Sensor brings up the Sensor parameters panel. Smoothing settings can be enabled or disabled here, pre or post data collection. In this menu you can also enable Polhemus Fly True Technology (FTT) Mode for Polhemus Viper Sensors. This feature allows for real time distortion mitigation during data collection and must be enabled before data collection. Only Viper FT sensors support FTT Mode. The sensor LED on the electronics unit will turn Blue with the FTT is engaged. Please refer to the Viper User Manual or contact your <u>Client Support Engineer</u> for more information on using the FTT Mode. There are two settings for the FTT:

<u>Stationary Source Mode:</u> Sources are mounted in a fixed position.

Moving Source Mode: Sources may be used in dynamic conditions.

Components				×					
🖌 Setup 🔛 Analysis									
L World Axes									
Hardware Polhemus1									
lensor1									
🚴 Subjects				~					
FTT mode: Stationary Source	Mode 🗸								
Repair: Max interval: 1				sec					
Butterworth filter: Freq:	20								
Chebyshev filter: Freq:	20								
FFT lowpass filter: Freq:	20	Rolloff:	2						
FFT highpass filter: Freq	: 0	Rolloff:	2						
🔂 Add Notch Filter 🛛 Apply	/ to All								

4. At this point, data available directly from the Polhemus hardware can be displayed in graphs or used in custom equations, as depicted below.

Analy	313 1	variabi													
Type:	Sc	alar	\sim	Name:	Sensor 1Position	Expression:	Use drop-lists \lor	Polhemus1	\sim	Sensor1 $ \!$	Axes	~	Pos 🗸 🔨	~ r	no derivative 🗸 relative to World 🗸 🏢 🗙
Type:	Sc	alar	\sim	Name:	Sensor 10rientation	Expression:	Use drop-lists $\ \lor$	Polhemus1	\sim	Sensor1 $ \!$	Axes	\sim	Ori 🗸 Eul 🖓	\sim	ZYX V Z V no derivative V relative to World V
Type:	Sc	alar	\sim	Name:	Sensor 1EventMarker	Expression:	Use drop-lists $\ \lor$	Polhemus1	\sim	Sensor1 $ \smallsetminus $	Event	~	no derivative v	-	
(🕽 Ac	dd	Scal	ar 🗸	variable										

5. A Stylus will need to be configured for digitizing the alignment of the Polhemus hardware device, force plates and defining joint centers or other landmarks of interest for your subject. From the Hardware node in the Setup Components window add the Stylus device from the Add button in the parameters panel at the bottom of the Components window or by right clicking the Hardware node and adding the device through the cascading drop list.

 Setup 	Malysis	
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a Sub	ojects	
> 🝲 Ob	jects	
> x Per	manent Variables	
V 😿 Dor	manent Scrint Variables	~
Live period	10]
Live period	. [10	Se
Playback st	ep interval: Use formuli ~ .01	se

Click on the Stylus device to bring up the Stylus parameters panel. Specify the name and Rigid body affixed to the stylus. An Is-button-pressed expression is a Boolean value that allows for an external trigger to be used in the OK messages where the stylus is being used in the setup, such as when performing the alignment of a hardware device, aligning force plates or when digitizing a subject. The Rigid body is at stylus tip checkbox can be enabled when the origin of the Rigid body specified for the stylus is already located at the tip for the stylus being used, as in the example of Polhemus Stylus Pens. The Calibrate button walks through the procedure of calculating the vector offset from the Rigid body origin to the stylus tip or captures the orientation of the stylus if the Rigid Body is at stylus tip is selected. A tutorial video for configuring and calibrating a stylus can be found at https://themotionmonitor.com/support/.

Component	S			×
🖌 Setup	Analysis			
→ Wor → 🗘 Harc	ld Axes dware			^
/ S	tylus1			~
Stylus name	: Stylus1			
Rigid body:	Use drop-lists ${\scriptstyle\lor}$	<no selection=""></no>	• •	
Is-button-pr	essed expression:	Use drop-li: ~	<no selection=""></no>	~
Rigid bod	y is at stylus tip			
A Calibrate				

6. The next step is to define your biomechanical model within **The MotionMonitor xGen**, which entails selecting which body segments you'll be tracking, assigning rigid bodies to track each body segment, defining segment endpoints or joint centers and generating customized segment axes, if desirable. To begin this process, right click on the Subjects header within the Components Setup tab and add a new subject by clicking on the "Add Subject" button in the Subjects parameters panel or right clicking on the Subjects node and selecting Add Subject.

Cor	npor	nents	×
F	Setu	up 🚾 Analysis	
~	3	Subjects	^
	~	Subject1	
		> / Segments	
		> 🖋 Joints	
		Muscles	
	-	9 Objects	
×	x	Permanent Variables	
		X SacrumSensor	
		X RThighSensor	
_		X LThighSensor	~
Bod Bod	Assu ly ma ly heig Assu	me neutral stance while supine use formula 75 ght: Use formula 1.75 me rigid bodies to be prioritation-only 1.75	kg m
Ľ	Etatic		
Chi	bue to		
Styl	ius to		
	Enab	le muscle modeling	
Max	kimun	n foot-to-GRF distance: 50	cm
	Use s	spline fit to forces and moments	
9	Spline	e interval: 10	msec
٨	Cali	ibrate] 🔽 Anthropometrics] Import Muscle Model 💽 Export Muscle Model 🖉 Map Muscles 🚿 Track	

As seen above, a name can be assigned to the subject and basic anthropometric data can be entered. Confirmation for the orientation of the subject during the static reading and selection of a stylus to be used for digitizing are also selected here. The Calibrate button can be clicked after all of the required setup information has been entered.

7. The Segments header located under the Subject node is where the desired segments to be tracked can be enabled as well as where the assignment for which rigid body will be used to track the segment is defined. Additional basic anthropometric information can be defined here for each segment as well.

	S	
🖌 Setup	Malysis	
	>> Thorax	
🛩 🔒 Su	bjects	- 1
~ 🔒	Subject1	
~	2 Segments	
	> 🗌 🧷 Head	
	> 🗹 🧪 Thorax	
	> 🗌 🦯 Lumbar	
	> 🗌 🧷 Sacrum	1
Rigid body: Existing ri	Use existing v jid body: Use drop-lists v RigidBodyCollection1 v Thorax v Axes v]
Rigid body: Existing ri ongitudinal Anterior axis Drigin: Prox	Use existing v jid body: Use drop-lists v RigidBodyCollection1 v Thorax v Axes v axis: Positive X-axis v : Positive Z-axis v imal joint v]
Rigid body: Existing ri Longitudinal Anterior axis Drigin: Pros Segment-ma	Use existing v gid body: Use drop-lists v RigidBodyCollection1 v Thorax v Axes v axis: Positive X-axis v : Positive Z-axis v amal joint v ss-to-body-mass ratio: 0.216	
Rigid body: Existing ri Longitudinal Anterior axis Drigin: Pro Segment-ma COM-offset-t	Use existing Use existing RigidBodyCollection1 Thorax Axes Axes Axes Axes Axes Construct X-axis Construct X-ax]
Rigid body: Existing ri Longitudinal Anterior axis Drigin: Pro Segment-ma COM-offset-t Longitudinal-	Use existing v gid body: Use drop-lists v RigidBodyCollection1 v Thorax v Axes v axis: Positive X-axis v imal joint v ss-to-body-mass ratio: 0.216 o-segment-length ratio: 0.82 ROG-to-segment-length ratio: 0.465]
Rigid body: Existing ri Longitudinal Anterior axis Drigin: Prov Segment-ma COM-offset-t Longitudinal- Transverse-	Use existing v gid body: Use drop-lists v RigidBodyCollection1 v Thorax v Axes v axis: Positive X-axis v imal joint v ss-to-body-mass ratio: 0.216 o-segment-length ratio: 0.82 ROG-to-segment-length ratio: 0.465 KOG-to-segment-length ratio: 0.3199	

8. Each body segment which is enabled will require the definition of a proximal and distal endpoint or joint centers. The required joint centers will be automatically populated based on the selection of segments.

Components	×
🗲 Setup 🛛 📉 Analysis	
> 🖉 Segments	^
🗸 🔰 Joints	
💋 C7/T1	
💋 T12/L1	
🖋 L5/S1	
🖋 Left Hip	
🖋 Right Hip	
J Left Knee	
Right Knee	
Muscles	
Diects	
$\sim x$ Permanent Variables	
X SacrumSensor	
X RThighSensor	
X IThighSensor	~
··· Linghberger	
Location method: Use expression	
Use expression	
Position: Use for Digitize with stylus	
Forward offset: 0 Use Davis formula	cm
Leftward offset: Use Bell formula	cm
Use Bell formula with stylus	
Upward offset: 0	cm

9. As seen above, each joint center can be defined using a digitizing method or expression based on marker positions. Alternatively, the hip and shoulder joints can be defined using linear regression algorithms or functional (rotational) methods.

- 10. Once these definitions are completed, the Subject Calibrate button can be clicked. A warning message will be displayed for any definitions that have not been appropriately defined.
- 11. Additionally, if alternative or anatomically based local coordinate systems are desired, they can be defined by right clicking on a segment and selecting Add Axis System. First, the Rigid Body axes tracking the segment and general axes layout are selected. Then, points can be defined for the proximal and distal endpoints of the primary axis, a point along the secondary axis and a point for the Origin. The default local coordinate axes generated by The MotionMonitor xGen are defined as having a long axes through the joint centers and A/P and M/L axes being orthogonal to the long axes and parallel to the world when the subject was standing in the neutral position.

Components	×
🗲 Setup 🧧 Analysis	
 Head Head Inorax Landmarks Axis Systems Axis Systems 	^
PrimaryAxisProximalPoint PrimaryAxisDistalPoint SecondaryAxisPoint Origin Landmarks Frond-Suntay Angle Sets	
	~
Axis system name: AxisSystem1 Rigid body: Use existing ~ Existing rigid body: Use drop-lists ~ RigidBodyCollection1 ~ Thorax ~ Axes ~ Primary axis: Positive X-axis ~ Secondary axis: Positive X-axis ~ Longitudinal axis: Positive X-axis ~ Anterior axis: Positive Z-axis ~	

12. At this point, the **The MotionMonitor xGen** subject is fully defined and can be used for **biomechanical models**, recording activities, performing computations and reducing data.

See our "Getting Started Biomechanics Guide" for more information on these aforementioned topics. For further configuration of your software, visit <u>https://themotionmonitor.com/support/</u> where you can...

- Download The MotionMonitor xGen Elements PDF, a written manual explaining key features of the software
- Review tips for Best Practices in configuring your MotionMonitor xGen software for optimal performance
- Take a video tour of The MotionMonitor xGen basic elements.
- Review training and tutorial videos, including basic software functionalities.

Appendix I: Viper Hardware Configuration

The *VPcmdMgr* software should be installed on the computer which Viper is connected to. Contact your <u>Client Support Engineer</u> if you require this installer.



Sensor data can be streamed and visualized (as a plane) within the command manager by selecting

the "Continuous mode" stream icon (). Clicking the "Edit Tracker Configuration" icon () will bring up the up the settings options for the sensors.

													_	_
Viper Command Manager - Pre-Release build 0.0.0.48	200811a	- Aug 1	11 2020 16:26:54	1							•	- 0	1	×
File View Device Motion Graphics Tools Help														
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Device Status 🛛 🗘 🗙	SEL	J Sns	Frane	BB	x	Y	Z	Az	E1	Ro				
COLHEMUS IVINOVATION IN MOTION** Viper 79200012 1	1	1	000034948	88	9.583	-1.536	1.641	-162.589	8.117	57.074				< ×
						4								
					Irack	ker connected via	a USB.			IN, DEG			_	

Click on the "All Sensor Settings" icon (¹) to bring up the Sensor Block Configuration menu. Here the settings for the Viper can be configured. Settings that need to be configured before collecting data in The MotionMonitor xGen are described below. For a full description of this menu, please see the Viper User Manual.



FTT Mode: This mode is set through Sensor parameters panel in The MotionMonitor xGen, as described previously in Step 3.

Source Select: The Source Select command is used to override the default Source Selection when multiple Sources are used. Typically, all present sources can be selected.

Hemisphere settings: Hemisphere tracking allows for tracking coverage around all sides of the source/s.

Filters and Prediction Filter settings can be enabled or disabled for Position and Orientation readings.

Once settings are configured, press the "Apply Changes" (\checkmark) icon to save the settings for these menus. The settings will be applied to any sensor with a check box next to it in the Status pane.



In SEU Block Configuration menu (()), this is where the position and orientation of the transmitters is defined when using multiple source configurations. For a full description of this menu, please see the Viper User Manual.

SEI	J Bl	ock Config		џх
Ð		∰ <u>≵</u> ↓ ∨ 5		
⊡	Ide	entification		
	SEU	J ID	1	_
Ξ	Ou	tput		
	Fra	mes per Second	480	
	÷	Units	INCH, EULER_DEGREE	
Ξ	Ge	ometry		
	Ξ	Source 1 Configuration		
		Src 1 Freq	1	
		Src 1 Start Hem	POS X	
		E Src 1 Pos (Inch)	0.00,0.00,0.00	
			0.00,0.00,0.00	
	Ξ	Source 2 Configuration		
		Src 2 Freq	2	
		Src 2 Start Hem	POS X	
		E Src 2 Pos (Inch)	0.00,0.00,0.00	
		E Src 2 Rot (Deg)	0.00,0.00,0.00	
	÷	Source 3 Configuration		[
	+	Source 4 Configuration		
Ξ	I/C) Config		
	Du	al Output	Disabled	
	Ŧ	RS-422 Serial I/O	115200, No Parity	
Ξ	Ot	her Properties		
	Syr	nc Mode	Internal	
	Sty	lus Mode	Marker	

For the Output Units section, the Position Units must be set to "CM" and the Orientation Units must be set to "QUATERNION".

Prior to exiting the Viper Command Manager, the configuration settings should be saved using the *Device Persist Current Configuration*. This will prevent the settings from being overwritten when the console is power cycled. When prompted to confirm Persist Current Configuration to Viper Flash Memory, click Yes.

🚺 Viper Command Manager - Pre-Release build 0.0.0.48 200811a - Aug 11 2020 16:26:54					
File View	Device Motion Graphics Tools Help				
	Persist Current Configuration	Persist Current Configuration	×		
Device Status	Reload Default Configuration	Persist Current Configuration to Viper Flash Memory?			
Po	BIT Results	If you do this:			
<u>S INNO</u>	Toggle Connection	Viper will retain the persistent settings through power OFF and ON.			
🗹 🔽 Vi	Connect via	(Currently saved settings will be over-written.)			
2 🔲 1	⊕∀⊕⊜∶	Do not show this again 🕢 Yes No			

You are now ready to exit and collect data in The MotionMonitor xGen.

Note: The tracker will stop updating a sensor when its signal-to-noise ratio gets too small. That is, when it is too far away from the source and the signal is weak. With a micro sensor this will happen closer than with a FT sensor.

When the sensor is detected by the source again, there is a brief pause in all sensor data before resuming the data acquisition.

Appendix II: G4 Hardware Configuration

Shown below are the main components for a Polhemus G4 system with USB interface. Components of note include transmitter(s), wifi receiver, sensors and G4 hub.



The following images are meant to be used as a guide for the setup of your G4 system. The images and text to follow may also become helpful if the need for troubleshooting should ever arise.

The following image depicts the G4 hub connections. The indicator light on the side of the hub will be solid blue when the hub is successfully communicating with the wifi receiver. The "D-Input" port allows an event marker to be connected to the system, sensors can be connected to the "Sensor 1", "Sensor 2" and "Sensor 3" ports.



The "G4 User Manual", provided by Polhemus, contains step by step instructions for setting up and configuring your G4 transmitters. See the section on Source Configuration File for detailed instructions.

The G4 system communicates with the computer by WiFi and as such its sensor data is sensitive to wifi interference in the environment. To achieve the best quality of data, it is recommended that the system be configured to run on the wifi channel with the least amount of 3rd party traffic. To determine which wifi channels are unused in your environment, you can run a wifi analyzer or scanner program which will read the signals and report usage and signal strength. There are several free applications for this available on the web, one such program is called inSSIDerOffice, an image of which is shown below. You can see in the image that in this environment Channels 1, 2, and 3 of the 2.5 GHz band are available, while Channels 4-11 are in use by other wifi devices.

inSSIDer Office		-	1000 Mar	united assesses.		
<u>File View H</u> elp					5 days i	emaining in trial Register Buy Now
LEARN	\rangle	NETWO	RKS	CHANNELS	ANALYZE	metageek
X Networks Table keyt	poard shortcuts: j=	down, k=up, s	s=star, c=clear all			
x inSSIDer has starred	the network you a	are connected	l to. To optimize a dif	ferent one, star it in the Net	works list below	
FILTERS	or Vendor	Channel		gnal Security ∨	802.11 ∨	
SSID	SIGNAL 🔻	CHANNEL	SECURITY	MAC ADDRESS 8	A	6 53
🛧 swing 🛛 🤝	-50	6	WPA2-Personal	68:7F:74:17:87:4D n	swing	Channel Link Score
duckless	-52	11+7	WPA2-Personal	C2:9F:DB:83:24:3B n	MAC 68:7F:74:17:B7:4D	
webcheckout	53	11+7	WPA2-Personal	C6:9F:DB:83:24:3B n	Security WPA2-Personal	Co-Channel 2
duckless	64		WPA2-Personal	C2:9F:DB:83:2E:07 n	802.11 n	Overlapping 3
webcheckout	64	6	WPA2-Personal	C6:9F:DB:83:2E:07 n	-20 T	Signal -50 dBm
HP8C72AC			Open	02:2B:0B:95:59:90 b		
Sumac	69	8	WPA2-Personal	70:56:81:C9:0F:8B n		
Mallardnet			WPA2-Personal	70:73:CB:B9:E1:17 n	-60	
TDG_02	71		WPA2-Personal	70:73:CB:BE:18:BD n		
TDG Guest			WPA2-Personal	72:73:CB:BE:18:BE n		
BAT CAVE !!!!!!!	72		WPA2-Personal	28:CF:DA:B7:6C:AD n		
Mallardnet	- 77	411-10	WPA2-Personal	70.72:CB-89:E1:18 n	-100	10.22
<					10.22 .30	10.25 .50
2.4 GH: dand					5 GHz Band	
-30 +						1-30
-40-		*	swing			-40
-50						-50
-60 -						-60
-70-						-70
-80						-80
-90	1 2 2			2 10 11	10 48 55 54 100	-90
	2 2	10			40 40 00 04 100	112 124 130 149 101

After determining the appropriate wifi channel for your system, connect the G4 receiver to the computer. All hubs should be powered off. Launch the "G4 System Setup" utility. Select the RF Channel Group from the radio button or dropdown menu. The one hundred series corresponds to Channels 1-11 of the 2.4 GHz band. Using the example above, the RF Channel Group could be set to Group 101, 102 or 103. When you have made the appropriate selections, click "Next" and then "Continue to Hub Setup."

G4 POLHEMUS
RF Dongle Setup
Step 2: Select the RF Channel Group for this Dongle.
0 1 0 2 0 3 0 4 0 W 101
Mext
RF Dongle Connected: Serial Num 504B40119 Restart Dongle Setup Skip Dongle Setup Quit
📼 G4 Setup: Configuring RF Dongle 📃 💻 💌
RF Dongle Setup
Configured Successfully.
Configured Successfully.
B RF Dongle Setup Ongle Configured Successfully. ? RF Dongle Serial Num: SNUM RF Channel Group: 1 Rb Count: 0 RF Address: 316cabe1b7 Device ID: 1
B RF Dongle Setup Ongle Configured Successfully. (*) RF Dongle Serial Num: SNUM (*) RF Channel Group: 1 1 Hub Count: 0 0 RF Address: 316cabe1b7 0 Device ID: 1 1 Step 4: When Ready, Continue to Hub Setup. (*)
Barrier Construction Image: Construction of the second

The hubs now need to be associated with the dongle. During this process you can leave the G4 receiver connected to the computer. Connect the first hub to the computer using a USB cord and turn it on.

G4 Setup: Configuring Hubs	
G ⁴	POLHEMUS INNOVATION IN MOTION"
	Hub Setup
First Plug in first G4 Hub (If possible, leave R	Hub: to USB and power on. F Dongle plugged in.)
Joining Hubs to RF Dongle St RF Channel Group: 1 RF Address: 316cabe1b7 Joined Hubs:	rial Num SNUM 🛛 🕐
	,
Searching fo	r Hub
Back to Dongle Setup Skip Hub Setup	Quit

Once the Hub is found, the utility will report the Hub Serial Number. Click "Join Hub 1."



For your remaining hubs, you will repeat the process. Power down the first hub, connect the next hub and power it on. Select "More Hubs" and repeat the process until all hubs have been configured. After the last hub is configured select "Finished"



Once the hubs are all configured, you can select "Update Dongle Configuration Now," this will send the configuration information to the dongle & propt the user to also save a *.g4d file on the computer.

64 Setup: Sto	ring Configuration				
G ⁴	Poly INNOVATION	IEMUS on IN MOTION" tup			
Manakar G'- AK	RF Dongle Serial Num: SNUM RF Channel Group: 1 RF Address: 6c9f5272ff Hub Count: 0 Device ID: 1	0			
Hubs:	1 2				
Step 5: When Ready, Update Dongle with new Hub IDs.					
	Update Dongle Configuration Now	Skip			
	RF Dongle Connected.				
Restart G4 Se	etup Back to Hub Setup	Quit			

You are now ready to run your G4 system with The MotionMonitor xGen. Close the "G4 Utility" and launch The MotionMonitor software. Under the Setup tab in Components, right click on the hardware node to add the Polhemus device. Select G4 from the Hardware type dropdown and specify the measurement rate, 120 Hz. Browse to the Calibration file (*.g4c) which was setup through the G4 Create Source Configuration utility. The Calibration file refers to the source/transmitter calibration and so is different from the *.g4d file saved above. Finally, enter the number of sensors that will be used for the session. You are now ready to activate your G4 system and collect data. For more information on experiment setup and analysis, please refer to **The MotionMonitor xGen – Elements** and **Data Capture with Polhemus Devices** documents.

Components	X
🖌 Setup 🔤 Analysis	
L. World Axes	ח
🔺 🔅 Hardware	
Polhemus1	
8 Subjects	
🝲 Objects	
$oldsymbol{x}$ Permanent Variables	
🕵 Permanent Script Variables	
🧱 Permanent Scripts	
Permanent Toolbars	
E Biofeedbacks	
The second secon	
Polhemus name: Polhemus1	
Hardware type: G4	
Measurement rate: 120 Hz 🔻	
G4 calibration file: C:/Polhemus/G4 Files/January8.g4c	
Number of sensors: 3	
Stylus to use: <pre><pre>NOTE: Stylus rigid body must be a Polhemus sensor</pre></pre>	
Suspend live data	
Synchronizing event: when Use drop-lists v <no selection=""> v becomes true</no>	
Activate Align 🗱 Align to Other Hardware	