

# **XPS-D**

## Universal High-Performance Motion Controller/Driver







## User Interface Manual

©2019 by Newport Corporation, Irvine, CA. All rights reserved.

Original instructions.

No part of this document may be reproduced or copied without the prior written approval of Newport Corporation. This document is provided for information only, and product specifications are subject to change without notice. Any change will be reflected in future publishings.

## **Table of Contents**

1.0	Iı	ntroduction	.1
	1.1	Scope of the Manual	1
	1.2	Prerequisite	1
	1.3	Special case of HXP-ELEC-D controller	1
	1.4	System Environment	1
2.0	U	ser Interface description	. 2
	2.1	Interface Overview	2
	2.2	Restart and Reboot	3
	2.3	Controller – Users Management	3
	2.4	Controller – IP Management	4
	2.5	Controller – General Information	5
	2.6	Controller – Terminal Configurator	5
	2.7	Controller – TCL to API Builder	6
	2.8	Controller – Firmware Update	8
	2.9	System – Error file Display	9
	2.10	System – Previous Error File Display	10
	2.11	System – Default Configuration	10
	2.12	System – Quick Configuration	11
	2.13	System – Manual Configuration	11
	2.14	Stage – Add, Remove or Edit Stages	12
	2.15	Stages – Create Custom Stages	12
	2.16	Stages – Tuning	13
		2.16.1 Tuning – Auto-Scaling	13
		2.16.2 Tuning – Auto-Tuning	14
	2.17	Stages – Lissajous	17
	2.18	Front panel – Move	18
	2.19	Front panel – Cycle	19
	2.20	Front panel – Jog	19
	2.21	Front panel – Spindle	20
	2.22	Front panel – I/O Control	21
	2.23	Front panel – Device Status	21
		2.23.1 Device Status – Positioner Errors	21
		2.23.2 Device Status – Hardware Status	22
		2.23.3 Device Status – Driver Status	22
	2.24	Terminal	23
	2.25	Data Acquisition – Easy Gathering	25
	2.26	Data Acquisition – Easy External Gathering	31

	2.27	Data Acquisition – Functional Tests	35
	2.28	Files – Gathering Files	
	2.29	Files – Trajectory Files	
	2.30	Files – TCL Scripts	
	2.31	Files – Configuration Files	
	2.32	Files – Log Files	40
	2.33	Documentation	41
3.0	Н	XP-ELEC-D specific menus	
	3.1	System menu	42
	3.2	Stages menu	42
	3.3	Front panel menu	42
		3.3.1 Front panel – HXP Tool	43
		3.3.2 Front panel – HXP Work	44
	3.4	Files menu	45
		3.4.1 Files – Configuration files	45
Serv	vice Fo	)rm	



## Universal High-Performance Motion Controller/Driver XPS-D Controller

## 1.0 Introduction

## 1.1 Scope of the Manual

The XPS is an extremely high-performance, easy to use, integrated motion controller/driver offering high-speed communication through 10/100/1000 Base-T Ethernet, outstanding trajectory accuracy and powerful programming functionality. It combines user-friendly web interfaces with advanced trajectory and synchronization features to precisely control from the most basic to the most complex motion sequences. Multiple digital and analog I/O's, triggers and supplemental encoder inputs provide users with additional data acquisition, synchronization and control features that can improve the most demanding motion applications.

To maximize the value of the XPS Controller/Driver system, it is important that users become thoroughly familiar with available documentation.

The present **XPS-D User Interface Manual** describes the Graphical User Interface (also called web interface) of the controller. It applies to several controller versions of the XPS-D family. Therefore, some details of the screenshots presented in this manual may slightly differ from reality (background picture or footer product name for instance).

## 1.2 Prerequisite

It is mandatory that the applicable **Start-Up Manual** (dedicated to your controller version) be thoroughly read and understood before going through the User Interface.

Particularly, Ethernet connection must be established between the computer and the controller, either directly or through a network.

## 1.3 Special case of HXP-ELEC-D controller

In case of XPS-D controller preconfigured to drive a Newport Hexapod (then referenced HXPxxx-ELEC-D), some menus may not be accessible, especially those dedicated to system/stage configuration (to prevent modifying the factory settings) On the other hand, several additional pages or features specific to hexpod group become available: see section 3.0.

## 1.4 System Environment

XPS-D web interface is compatible with Windows 7 and above.

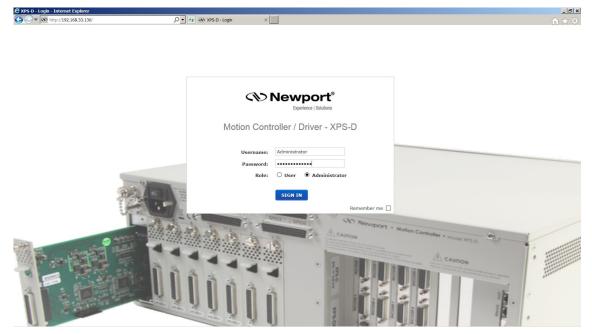
## 2.0 User Interface description

## 2.1 Interface Overview

The XPS software tools provide users a convenient access to the most common features and functions of the XPS controller. All software tools are implemented as a web interface. The advantage of a web interface is that it is independent from the user's operating system and doesn't require any specific software on the host PC.

When connected to the controller, a log-in menu pops up. There are two options to login to the XPS controller: as "User" or as "Administrator". Users can log-in only with User rights. Administrators can log-in with User or with Administrator rights by selecting the respective Role in the login page. When logged-in with Administrator rights, you have an extended set of tools available.

The predefined user has the log-in name **Anonymous**, Password **Anonymous**. The predefined Administrator has the log-in name **Administrator**, Password **Administrator**. Both the log-in name and the password are case sensitive. Select **"Remember me"** to save the login credentials.



Once logged, the main tab is displayed across the top of the XPS Motion Controller/Driver main program window, and lists each primary interface option. Each interface option has its own pull-down menu that allows the user to select various options by clicking the mouse's left button.

#### Administrator Menus (with Administrator Rights)

🙋 XPS-D - Internet Explorer									_ 8 ×
http://192.168.33.130/     http://192.16		• • و	* XPS-D	×					☆☆ (1)
									[ Administrator logout ]
Newport <sup>®</sup>	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	
Experience   Solutions									

#### Sub-Menu for CONTROLLER (with Administrator Rights)

C XPS-D - Internet Explorer										_ 8 ×
		• - م	CND XPS-D	×						☆★☆
										[ Administrator logout ]
Newport®	System	Stages	Controller	Files F	Front panel	Terminal	Data acquis	sition Doc	umentation	
Experience   Solutions								•		
	IP management	Users m	anagement C	eneral information	Terminal co	nfigurator TC	L to API builder	Firmware update		

#### **Restricted set of User Menus**

🙋 XPS-D - Internet Explorer								X
😋 🕞 🔻 🗠 http://192.168.33.130/		P + + ⊂	XPS-D	×				合★⇔
								[Administrator logout ]
𝔍 Newport®	System	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	

On the following pages, a brief description of each available tool is provided.

### 2.2 Restart and Reboot

After making changes to the hardware or software parameters a Restart or a Reboot of the controller will be a necessary to apply the changes. Restart is a quicker process than a Reboot.

- Restart = reload all configuration files.
- Reboot = reload files + re-initialize hardware.

## 2.3 Controller – Users Management

This tool allows managing User accounts. There are two types of users: Administrators and Users. Administrators have configurations rights. Users have restricted rights to use the system.

The following steps are needed to create a new user:

1. Click on "New Account" and the following window appears:

XPS-D - Users management - Internet Ex	kplorer							_ 8
• http://192.168.33.130/			D - Users management X					
	System	Stages Cont	roller Files	Front panel	Terminal	Data acquisi	tion Docume	
Experience   Solutions	IP management	▼ Users managemen	t General information	n Terminal cor	figurator TC	L to API builder	Firmware update	
User accounts manag	jement							
Login	Role							
Administrator	Administrator (all rights)	) EDIT			- 4			
Anonymous	Regular user	EDIT	Create	a new accou	nt			
NEW ACCOUNT			Lo	ogin: Technician 1				
			New passw	rord:				
Warning: it is highly advised to c	hange user passwords fro	om factory settir	New password (confi		٠			
			F	Role: 🖲 User	O Administrator			
					OK	EL		
				_	_	_		
					_			
Motion Controller / Driv	er - XPS-D							© 2017 Newport Corporation. All rights reserved.

- 2. Type in a Login name, password, and role (User or Administrator).
- 3. Click "OK" to add the new access account.

<ul> <li>http://192.168.33.130/</li> </ul>		P <b>-</b> ↔	CN5 XPS-D - Users r	management ×						[ Administrat
Newport	System	Stages	Controller	Files	Front panel	Terminal	Data acquis	sition	Documentation	[ Administrat
Experience   Solutions	IP management	Users ma	▼ nagement	General information	n Terminal con	igurator TCL	L to API builder	Firmware	update	
ser accounts manage	ment									
-										
Login	Role									
Administrator A	Administrator (all rights)	EDIT	DELETE							
Anonymous R	Regular user	EDIT	DELETE							
Technician1 R	Regular user	EDIT	DELETE							
NEW ACCOUNT										
arning: it is highly advised to cha	inge user passwords fro	m factory setti	ings.							

Motion Controller / Driver - XPS-D

## 2.4 Controller – IP Management

To access this Web Tool, users must be logged in with Administrator rights. This screen allows HOST Ethernet plug IP address management and setting (see **Start-Up Manual** for further details).

									[ Administrato
Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acqu	isition Docu	mentation
Experience   Solutions	▼ IP management	Users n	nanagement	General informatio	n Terminal co	figurator	TCL to API builder	Firmware update	
<ul> <li>Static IP configuration</li> </ul>									
Static IP address	192 . 168	. 33 .	130						
Netmask value	255 . 255	. 254 .	0						
☑ Gateway IP address	192 . 168	. 33 .	253						
O Dynamic IP configuration									
MAC address	00:0b:ab:cb:ce:8	9							
Current IP address	192.168.33.130								
Netmask value	255.255.254.0								
Current gateway IP	192.168.33.253								
Remote IP address	192.168.254.254								
Subnet mask	255.255.255.0								
Command protocol security									
If you have old applications the enable the legacy protocol to doing so will expose your >	still support them. W	ARNING:	1						
Enable the legacy comman	nd protocol listener o	n port 5001							
	AVE CONFIGURATI	ION REI	воот						
_									

## 2.5 Controller – General Information

This screen provides valuable information about the firmware and the hardware of the controller. It is an important screen for troubleshooting the controller. This screen also displays information about the IP configuration as well as TCL scripts which are currently running.

http://192.168.33.130/		P <u></u> + +	COS XPS-D - General	information ×					Administrat
Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acquisitio	n Documentation	[ Administra
Experience   Solutions	IP managemen	t Users ma	nagement G	eneral informati	on Terminal con	figurator TC	L to API builder Fir	mware update	
	Components ve	ersion display							
Snapshot version	20170824								
Firmware version	XPS-D Firmware Star	dard Installer							
Firmware build version	XPS Unified V1.0.12								
QNX kernel version				s-newport mode)					
Web server version	XPS-D 2.0.0-beta5 (2	20170824)							
Snapshot details	Refer to XPSFirmware	eHistory.pdf							
Stage database revision	StageDataBase V4.0.	0 - Beta 3							
Control boards	PCI1	PCI2	PCI3	PCI4					
Available driver slots	E5362D0_E4832D1 8	<u>E5362D0</u>	×	×					
		IP configuration	on						
Host IP address	192.168.33.130 (stat	ic)							
Host netmask	255.255.254.0								
Gateway IP address	192.168.33.253								
Ru	nning TCL scripts								
No runr	ing process at the mor	ment							

## 2.6 Controller – Terminal Configurator

Under **Controller**  $\rightarrow$  **Terminal configurator**, an Administrator user can specify which API functions will be displayed to all users in the **Terminal** webpage. Not all API functions may be useful to a given application especially after the application has been developed. For this purpose simplifying the Terminal display may be helpful.

- 1. Click a line to select/deselect the API function.
- 2. Once all desired API functions are selected, click RESTART CONTROLLER.

In the following example a total of 7 API functions were selected.

9 • I	http://192.168.33.130/		P <u>-</u> +	XPS-D - Termina	al configurator ×					(Administrate
0		System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[
	Experience   Solutions	IP managemen	nt Users m	anagement C	Seneral inform	ation Terminal con	figurator TC	L to API builder Firmwa	are update	
Termi	inal functions allow	ved to users	;							
(n this p	age, the administrators can s	pecify which API fi	unctions will be d	splayed to all users.						
	ne to select/deselect the API					vill be visible in <u>Terminal</u> (o	urrently: 3 selecte	d)		
		RESTORE DEF	AULTS - SELEC		LECT ALL	RESTART CONTROLL	R			
			AUEIS SEEC	TALL UNSU						
	API	name				Description				
	FirmwareVersionGet			Return firmware	version from fir	mware.ref				
	FirmwareBuildVersionNu	mberGet		Return firmware	build version n	umber				
	InstallerVersionGet			Return installer p	oack version					
	Reboot			Reboot the contr	oller					
	RestartApplication			Restart the Cont	roller					
	ControllerMotionKernelT	imeLoadGet		Get controller m	otion kernel tim	e load				
	ControllerRTTimeGet			Get controller co	rrector period a	nd calculation time				
	ControllerStatusGet			Get controller cu	rrent status and	d reset the status				
	ControllerStatusRead			Read controller of	urrent status					
	ControllerStatusStringGe	:t		Return the contr	oller status strir	ng				
	ElapsedTimeGet			Return elapsed t	ime from contro	oller power on				
				Return elapsed time from controller power on Return the error string corresponding to the error code						

	Exercises Solitons  Functions list  ControllerStatusStringGet FirmwareVersionGet GatheringConfigurationSet GatheringConfig	http://192.168.33.130/		• • ٩	🕈 👀 XPS-D - Terminal	×					ſ
Controller/StatusStringGet     API to execute     EXECUTE       ImmarkVersionGet     GatheringDataGet     EXECUTE       GatheringDataGet     Received message       Reboot     TCLScripExecute	Functions list     Citoticellisticulationaget       Formaers/ensionaget     Citoticellisticulationaget       Gathering/DataSet     Relocit       TCLScriptExecuteAndWatt     Citoticellisticulationaget		System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Adminis
GatheringConfigurationSet GatheringConfigurationSet Reboot TCLScriptExeute	GatheringConfugurationSet GatheringConfugurationSet Reboot TCLScriptExeute TCLScriptExeute TCLScriptExeuteAndWait	ControllerStatusStringGet				~				EXECU	JTE
~	Command history Command histor	GatheringConfigurationSet GatheringDataGet Reboot TCLScriptExecute					Receiv	ed message			_
	Command history GENERATE TCL DISPLAY GATHERING DATA DISPLAY EXTERNAL GATHERING					~					

Motion Controller / Driver - XPS-D

## 2.7 Controller – TCL to API Builder

Under **Controller**  $\rightarrow$  **TCL to API builder**, users can write custom API functions from a TCL script then add the custom API to the terminal and launch the custom API.

#### **Example**

For this example, there must be a TCL file "ExcitationSignalSet.tcl" uploaded to the XPS controller.

Go to the XPS Controller  $\rightarrow$  TCL To API builder webpage:

1. Load the existing TCL script named ExcitationSignalSet.tcl by clicking on the folder icon in the text editor.



- **2.** In the Parameters list enter the arguments "char PositionerName[250], int Mode, double Frequency, double Amplitude, double Time".
- 3. Enter a description in the API description: "Set excitation signal mode from TCL".

http://192.168.33.130/	ېر	🗸 🔹 XPS-D - TCL to API builder	×	LAdministra
	System Stage	es Controller File	es Front panel	Terminal Data acquisition Documentation
	IP management Us	sers management General in	formation Terminal co	onfigurator TCL to API builder Firmware update
User TCL functions list		RESTART APPLICATION		ExcitationSignalSet
				Parameters list: 250], int Mode, double Frequency, double Amplitude, double Time API description: Set excitation signal mode from TCL
				<pre>####################################</pre>
				<pre>if (\$code == -2) {     puts stdout "\$AFIName ERROR =&gt; \$code : TCP timeout"     set tcl_argw(0) "\$AFIName ERROR =&gt; \$code :</pre>

4. Save the custom API by clicking in the floppy disk icon in the text editor.



- **5.** In the TCL function list, "int ExcitationSignalSet(char PositionerName[250], int Mode, double Frequency, double Amplitude, double Time) // Set excitation signal mode from TCL" is added.
- 6. Click "RESTART APPLICATION" to take in account the changes.
- 7. Connect to the website, go to the "Terminal" page and search for the new API, "ExcitationSignalSet," in the Function list.

Terminal - Internet Explorer     Mttp://192.168.33.130/		• • و	y 👀 XPS-D - Terminal	×		_			 ^ ∱ ☆ :
	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Administrator log
Functions list EventExtendedConfiguration EventExtendedConfiguration EventExtendedConfiguration EventExtendedGat EventExtendedGat	ActionSet FriggerGet			^	Set ex Argui char Pr Enter	ion: ExcitationSi citation signal mode f ments: bsitionerName[250] araameter value	rom TCL	ITTONER OR GROUP	
EventExtendedStart EventExtendedWait ExcitationSignalSet FileGatheringRename FileScriptHistoryRename FirmwareVersionGet GatheringConfigurationGet GatheringConfigurationGet GatheringConfigurationGet	rGet			_	double Enter double Enter double	parameter value Frequency Darameter value Amplitude Darameter value Time Darameter value			
GatheringCurrentNumberGet					CLEAR HISTORY	GENERATE TCL	OK DISPLAY GATHERING	G DATA DISPLAY EXTER	NAL GATHERING

Terminal - Internet Explorer		• • و	🕈 👀 XPS-D - Terminal	×					
<b>Newport®</b> Experience   Solutions	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Adminis
Functions list	ActionCot					tion: ExcitationSignal mode fr	-		
EventExtendedConfigurationA EventExtendedConfigurationT EventExtendedConfigurationT EventExtendedGet	ActionSet FriggerGet				char P Group		SELECT POS	ITIONER OR GROUP	
EventExtendedRemove EventExtendedStart EventExtendedWait ExcitationSignalSet FileGatheringRename				-	int Mor 1 double 500	frequency			
FileScriptHistoryRename FirmwareBuildVersionNumber FirmwareVersionGet GatheringConfigurationGet GatheringConfigurationSet	rGet				double 10 double 2	Amplitude Time			
GatheringCurrentIndexGet GatheringCurrentNumberGet				~	CAM	ICEL	ок		
Command history						GENERATE TCL	DISPLAY GATHERING	G DATA DISPLAY EXT	FERNAL GATHERIN
Command history					CLEAR HISTORY	GENERATE TCL	DISPLAY GATHERING	G DATA DISPLAY EXT	FERNAL GATHERIN

## 2.8 Controller – Firmware Update

Users can regularly update the controller with new firmware releases. Updating the firmware does overwrite the stages.ini or system.ini files if changes are required. The configuration will also be reset when upgrading the firmware hence the Configuration should be backed up prior to the firmware upgrade. Refer to the FirmwareHistory document which explains changes to the stages.ini and system.ini files, if any.

Refer to the XPS webpage at www.newport.com for more information including the FirmwareHistory document, the StageDataBase.txt file and the new firmware installer pack.

#### Updating the XPS Firmware

- 1. Download the firmware installer pack from the XPS webpage at www.newport.com.
- 2. Connect to the XPS controller. For more information see Start-Up Manual.
- 3. Login on to the XPS with Administrator rights.
- **4.** Go to Controller  $\rightarrow$  Firmware update.

			Ω <u>▼</u> ↔ ≪5 XP5	S-D - Firmware update 🛛 🛛					[ Administ
	L '	ystem Stages		troller Files	Front panel	Terminal	Data acquisi	tion Docume	
Experience   Sound		nagement	Users manageme	ent General inform	mation Terminal co	figurator TC	L to API builder	Firmware update	
Firmware install	log								
		update.lo	g file contents						
[2017-00-24 21:34:13] I [2017-00-24 21:35:57] [2017-00-24 21:35:57] [2017-00-24 21:36:34] [2017-00-24 21:36:34] [2017-00-24 21:36:34] [2017-00-24 21:36:34] [2017-00-24 21:36:34] [2017-00-24 21:36:34] [2017-00-24 21:36:34] [2017-00-24 21:36:34] [2017-00-24 21:38:33] [2017-00-24 21:38:33]	mapshot is a (ARNING: this imapshot can ielected file system partit iecond-stage (ystem partit inapshot succ iperating sys lacked up fil	uthentic and controller's be extracted s successful ion successful bootloader su ion successful essfully extr tem kernel su	looks consister s firmware.ref of without error ly backed up ally formatted a ally checked aga accessfully ins illy mounted facted accessfully ins	doesn't specify an as a QNX4 filesyste ainst bad blocks talled					
	-								
Available firmwares		Uploaded		Action					
175.6 Mb free / 383.4 Mb tota	Size	<b>Uploaded</b> 7-07-27 17:03:5	0 DOWNLOAD	Action Install Delet	3				
175.6 Mb free / 383.4 Mb tota Firmware name	Size 77.2 Mb 2017		-						
175.6 Mb free / 383.4 Mb tota Firmware name snapshot-20170725.tbz	Size           77.2 Mb         2017           34.0 Mb         2017	7-07-27 17:03:5	4 DOWNLOAD	INSTALL DELET	E				

- 5. Click on UPLOAD FIRMWARE and select the installer pack file saved on the PC.
- 6. Click INSTALL and the following Confirmation window appears:

ware.ref doesn't specify an installer type
Confirmation
n f Please confirm you want to <b>install</b> the following firmware snapshot:
snapshot-20170824.tbz
This operation will take a few minutes, during which the system will be reformatted. The controller's configuration will be reset, so <u>backup your system.ini and stage.ini</u> ! It will not destroy your user files, which are on a separate partition.
Reset all user accounts to factory defaults
☑ YES, I confirm that I want to install this upgrade
INSTALL NOW CANCEL
ACIUM

- 7. Select "Yes, I confirm that I want to install this upgrade." Resetting the controller IP address or user accounts is optional.
- **8.** Click INSTALL NOW.



#### This will reboot the controller and reset the controller configuration.

A firmware update occured
It appears that there are new entries in the firmware install logs.
You will be taken to the firmware update page in order to review the update logs and ensure that everything went fine.
ок

#### NOTE

Controller configuration files including stages.ini and system.ini files can be downloaded under Files→ Configuration files prior to updating the controller firmware. See chapter 2.31: "Files – Configuration Files" for more information.

## 2.9 System – Error file Display

The Error File Display is another important screen for troubleshooting the XPS controller. When the XPS encounters any error during booting, for instance due to an error in the configuration files or because the configuration is not compatible with the connected hardware, there are entries in the error log file that guides you to correct the error. If several consecutive boot sequences contain errors, they are all reported.

When no error is detected during the last system boot, this file becomes blank.

♥ Mttp://192.168.33.130/		<del>-</del> م	🔸 🖘 XPS-D - Error file d	isplay ×					Administrator log
	System	Stages	Controller	Files	Front pa	nel Terminal	Data acquisition	Documentation	[ Administrator log
	Default config	guration	Quick configuration	Manual co	nfiguration	Error file display	Previous error file display		
rror log file contents									
		Error.	log						
						^			
						~			

## 2.10 System – Previous Error File Display

The Previous error file display shows all errors encountered during the previous series of consecutive faulty XPS boots once the last is OK. After the following boot (OK or not), this file becomes blank.

PS-D - Previous error file display - Internet	Explorer								_ 8
Sv http://192.168.33.130/		<del>.</del> م	🔸 🖈 XPS-D - Previous e	error file di ×					Administrator logo
	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Administrator tog
experience   solutions	Default config	guration	Quick configuration	Manual config	guration Erro	r file display	Previous error file display		
Previous error log file c	ontents								
		PreviousE	rror.log						
Fri Sep 01 17:19:16 2017 - E Fri Sep 01 17:19:16 2017 - E Fri Sep 01 17:19:16 2017 - E RestartApplication: ReadPara	rror: ReadFrom rror: AllGroup rror: MotionKe meterFromConfi	ConfigFile ::ReadSingl ernel : Read igFile() fai	-> The Groupl.Pas s .eAxisGroup() failed Groups() failed .led during Firmware	section not fou 1 SpecialFeature	nd : reading	^			
Notion Controller / Driver	- XPS-D	-	_	-	-	~		© 2017 Newport	Corporation. All rights reserve

## 2.11 System – Default Configuration

With the help of this screen, a fast, basic configuration of the XPS controller can be done. For further information, refer to Configuration Manual.

) <b>-</b> (	http://192.168.33.130/			• م	5 XPS-D - Default confi	guration ×						Administrator
<b>N</b>	lewport		System	Stages	Controller	Files	Front pa	inel 1	「erminal	Data acquisition	Documentation	
		t	▼ Default confi	iguration	Quick configuration	Manual c	onfiguration	Error file	display	Previous error file display		
Defaul	It configuratio	n (for	single ax	(es)								
				,								
Slot	Stage model	Driver	model	Configuratio	n in StageDataBase		Name					
1	TRB25CC	XPS-E	DRV11	TRB@TRB	25CC@XPS-DRV11	Gr	oup1.Pos	]				
2	VP-25XA	XPS-I	DRV11	VP@VP-2	25XA@XPS-DRV11	Gr	oup2.Pos	1				
3	UTS50CC	XPS-I	DRV11	UTS@UTS	50CC@XPS-DRV11	Gr	oup3.Pos	1				
	BGS50CC	XPS-E	DRV11	BGS@BGS	50CC@XPS-DRV11	Gr	oup4.Pos		PLY &			
4		no	ine	Unknov	wn configuration	N	lot used	RE	воот			
4 5	Unknown							1				
	Unknown Unknown	nc	ine	Unknov	wn configuration	N N	lot used					
5			ine ine		wn configuration		lot used lot used					

Motion Controller / Driver - XPS-D

© 2017 Newport Corporation. All rights reserved.

## 2.12 System – Quick Configuration

The Quick configuration is very similar to the Default configuration as it also lists all detected hardware including Newport ESP compatible stages and motor drivers under the respectively columns Stage Model and Driver model. The Quick configuration differs in the source for stage configuration.

As a result, this screen also provides valuable information for diagnosing or troubleshooting the system.

For further information, refer to Configuration Manual.

<b>•</b>	http://192.168.33.130/		, <b>○ - +</b> , ≪ x	PS-D - Quick configuration	×				Administrator
<b>N</b>	lewport	System	Stages Co	ntroller Files	Front par	nel Terminal	Data acquisition	Documentation	
		Default co	nfiguration Quick con	figuration Manua	I configuration	Error file display	Previous error file display		
Quick	configuration	(for single a)	(es)						
Slot	Stage model	Driver model	Configuration in stag	ges.ini Na	ime				
1	TRB25CC	XPS-DRV11		Not	used				
	VP-25XA	XPS-DRV11		V Not					
2	11 2344			Not Not	used				
2	UTS50CC	XPS-DRV11			used				
				Not					
3	UTS50CC	XPS-DRV11		Not Not	used	APPLY & REBOOT			
3	UTS50CC BGS50CC	XPS-DRV11 XPS-DRV11		Not Not Not	used used	APPLY & REBOOT			
3 4 5	UTS50CC BGS50CC Unknown	XPS-DRV11 XPS-DRV11 none		Not	used used	APPLY & REBOOT			

#### Motion Controller / Driver - XPS-D

© 2017 Newport Corporation. All rights reserved.

## 2.13 System – Manual Configuration

Manual Configuration allows you to review the current system configuration or to define a new one. See Configuration Manual for further information.

http://192.168.33.130/		• • و	xPS-D - Manual con	figuration ×					[ Administrator
	System	Stages	Controller	Files	Front panel	Terminal	Data acquisitior	Documen	
Experience   occurrins	Default config	uration Qu	lick configuration	Manual config	uration Error	file display	Previous error file display		
Manual configuration									
n this page you can configure posit	ioners and positione	er groups for each	supported positioner g	roup family. You c	an also configure a	boot script to be r	in at system startup.		
When you're satisfied with the syste	m configuration, cli	ck the Apply and	restart button to app	ly your changes ar	nd restart the contro	oller.			
Boot script (optional)									
Group families									
Single axis groups (4 de	efined)					Click to fold			
Group1 TRB@TRB25CC@XPS-DRV11-DIGIT/	₩, slot 1: Pos VP@	Group VP-25XA@XPS-DRV11		Gron S@UTS50CC@XPS-DR	up3 XV11-DIGITAL, slot 3: Pos	BGS@BGS50CC@	Group4 XPS-DRV11-DIGITAL, slot 4: Pos	Create a new group	
🔹 Spindle groups (0 defin	ed)								
🛨 XY axes groups (0 defin	ied)								
🛨 XYZ axes groups (0 def	ined)								
<ul> <li>Multiple axes groups (0</li> </ul>	defined)								
CLEAR CONFIGURATION	APPLY AND I	REBOOT							
Current system.ini [hand ed	lit1				New system	n.ini			

## 2.14 Stage – Add, Remove or Edit Stages

With the help of this screen, a stage from the Newport stage data base can be added to or removed from the personal stage data base, called stages.ini, as well as modified. On the left side of the screen, you can review the name of the stages that are already in stages.ini file. See **Configuration Manual** for details.

http://192.168.33.130/		<del>ر+ _</del> 0	NPS-D - Add, remove	or edit ×							Administrate
	System	System Stages (		Files	Front panel	Terminal	Data acquisitio	on	Documenta	ation	[ Portinianae
reference   elements	Add, remov	e or edit stages	Create custom stag	jes Tuni	ng Lissajous						
Add, remove or edit sta	iges										
In this page, the administrators can	configure the sta	age configurations tha	t will be selectable whe	n building the	controller configuratio	n for each positioner.			RESTART A	PPLICATION	REBOOT
Stages already in stages.ini	(5)				Stages in S	stageDataBase (6	60)				
Click on a stage to duplicate, renam	e, modify or dele	te it.			Click on a sta	ge family to browse th	e list of stage configura	tions in	it.		
a		~	~		BGI	1 📃	BGS		DUMMY	F	MS
-	DUMMY	TRB	UTS		GTS GTS		IDL165		IDL225	<b>I</b>	DL280
BGS50CC DUM	MMY_STAGE D_DRIVER	TRB25CC XPS-DRV11-DIGI	UTS50C		idl	560	ILS		IMS	🚞 l	TA
_					MF/	. 🚞	MTN		NPA	· •	IPM
3					NPC	- 💼	NPX		NPXY	1	IPXYZ
VP VP-25XA						-XY	PR		PSM	F	GV
XPS-DRV11-DIGITAL					RV		RVS		SR	۲ 🚞 ۲	RA
					TRE TRE		URB		URS	📄 u	ITS
					UZI	1 📃	UZS		VP	<b></b>	M
					ZVF						
otion Controller / Drive											

## 2.15 Stages – Create Custom Stages

This web page is used to build stage configuration files for stages not found in the controller's StageDataBase.txt such as non-Newport stages.

The integrated web tool, **Stages**  $\rightarrow$  **Create custom stages**, is accessible when logged in as administrator. This web tool is designed to help users configure the XPS controller for motors and stages that are not included in the XPS general stage data base such as stages not manufactured by Newport. The tool generates a new entry in the customer's stage database, *stages.ini*, which is stored on the controller and is accessible through the webpage **Files**  $\rightarrow$  **Configuration files**.

🗸 😽 🖘 XPS-D - C ages × Files Stages Controller Front panel Terminal Data acquisition Documentation System Newport Add, remove or edit stages Create custom stages Tuning Lissajous Add custom stage ale click to configure an it its type. The stage is ready to Motor driver interface Backlash Profile Corrector Driver tion do Encode Stage rvitude ne searcl SAVE CLEAR Motion Controller / Driver - XPS-D

Refer to Configuration Manual for more information.

## 2.16 Stages – Tuning

#### 2.16.1 Tuning – Auto-Scaling

Auto-scaling is only available with positioners that feature a direct drive motor such as the XM, ILS-LM, IMS-LM or RGV100BL. To guarantee consistent performance of these stages, it is strongly recommended to perform Auto-scaling once the load is attached to the stage. During auto-scaling, the XPS controller measures the mass (inertia for rotation stages) on the positioner and returns recommended values for the Scaling Acceleration parameter.

Repeat Auto-scaling with any major change of the payload on the positioner. With no major change of the payload, there is no need to redo Auto-scaling.

- To perform Auto-scaling, do the following:
- 1. Select the main tab TUNING. Then select a positioner name. The following screen appears:

⊘Newport <sup>®</sup>	System	Stages	Controller	Files	Front panel	Terminal	Data	acquisition	Documentation	
	Add, remove	or edit stages	Create custom st	ages Tuni	ng Lissajous					
ositioner tuning									Refresh del	ay (ms): 200 SET
roup1.Pos V INITIALIZE	KILL	KILL ALL					Current	position: -4.91	336 Absolute mo	ve:
ate: Not initialized state due to a	GroupKill or K	illAll command								AUTO-SCALING
Corrector parameters			- Filters	parameters				- Acquisition pa	rameters	
Type: Positioner corrector PIDFF a	Type: Pos	sitioner correcto	r notch filters			Gathering 1 Gathering 2		× ×		
Closed loop status		1 (closed)	Notch free	quency 1 (Hz)		0		Gathering 3		~
KP		219000	Notch ban	dwidth 1		0		Gathering 4		>
кī		15600000	Notch gain	n 1		0		Gathering 5		⊻
KD		875	Notch free	quency 2 (Hz)		0				
KS		0.8	Notch ban	dwidth 2		0		Number of points		1000
Integration time (s)		1e+99	Notch gain	1 Z		0		Frequency divider		10
Derivative filter cut off frequency (Hz,	)	4000								
GKP		0	Backlash	filter paramete	rs			Velocity		720
GKI		0						Acceleration		1000
GKD		0		elocity cut-off free		50		Minimum jerk time		0.005
K form		0	Current a	cceleration cut-off	frequency	50		Maximum jerk time		0.05
K feed forward acceleration (units/s/s	)	1			SET SAVE TO F	LE CANCEL				
K feed forward jerk		0			SET SAVETOT	CANCEL		Distance to move (	relative)	0
AULO-IUNING Mode:	Short settling	Y							м	OVE
SET	SAVE TO FILE	CANCEL								

**2.** Click "Kill" if not in "Not initialized state", then click "Auto-scaling". The stage vibrates and an auto-scaling progress bar appears.

Newport <sup>®</sup>	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	
	Add, remove	or edit stages	Create custom s	tages T	▼ uning				
Positioner tuning								Refresh delay (m	is): 200 <b>SET</b>
Group1.Pos 🔽	KILL	KILL ALL					Current position: 0.324	459 Absolute move:	
tate: Scaling calibration state									
- Corrector parameters			- Filters	parameter	5		Acquisition pa	rameters	
							Gathering 1		
Type: Positioner corrector PIDFF	acceleration		Type: Po	sitioner corre	ctor notch filters		Cathering 2		~
Closed loop status		1 (closed)		Auto	scaling in prog	ress	athering 3		> > > > > > > > > > > > > > > > > > >
KP		219000			• • •		athering 4		~
KI		15600000	Please wait while	e the controller	attempts to auto-scale	this positioner's acceler	ation. athering 5		
KD		875							
KS		0.8					umber of points		1000
Integration time (s)		1e+99					requency divider		10
Derivative filter cut off frequency (H	lz)	4000							
GKP		0	Backlash	i filter param	eters		Velocity		720
GKI		0					Acceleration		1000
GKD		0		elocity cut-off		50	Minimum jerk time		0.005
K form		0	Current a	cceleration cut	-off frequency	50	Maximum jerk time		0.05
K feed forward acceleration (units/s,	/s)	1			SET SAVE TO	FILE CANCEL			
K feed forward jerk		0					Distance to move (	relative)	0
Mode:	Short settling	Y						MOVE	CANCEL
SET	SAVE TO FIL	CANCEL							

**3.** When the auto-scaling routine is complete, the results are displayed. To save the recommended values and reboot the controller, click "Save". The positioner should now work properly.

Group1 Pos ♥       RUTALIZE       KILL ALL       Current position:       -0.5584       Ab         State: Not initialized state from soling calibration       Filters parameters       Gathering 1       Gathering 2         Closed loop status       1 (closed) ♥       Auto-scaling results       Gathering 3       Gathering 3         Kit       219000       Auto-scaling of this positioner's acceleration yielded the following value:       87733.121       Gathering 4       Gathering 5         Kit       0.88       0.88       0.88       SVE       CANCEL       Number of points         Integration time (s)       0.88       0.90       SVE       CANCEL       Number of points	Admended
Positioner tuning Group! Pos ♥ NUTALEZE KILL KILL KIL State: Not initialized state from scaling calibration Corrector parameters Type: Positioner corrector PIDFF acceleration Closed loop status 1 (closed) ♥ K <sup>P</sup> 219000 KS 0.875 KS 0.88 Derivative filter cut off frequency ( <i>thz</i> ) 4000	solute move:
Group 1 Pos     NILTALIZE     NILL ALL     Current position:     0.58584     Ab       State: Not initialized state from scaling calibration       Filters parameters       Type: Positioner corrector PIDFF acceleration       Cosed loop status     1 (closed) ♥       Kit     219000       Kit     15600000       Kit     6755       Click = save > to use this value and reboot.       Integration time (s)     6400       Derivative filter cut off frequency (Hz)     4000	solute move:
State: Not initialized state from scaling calibration       Corrector parameters       Acquisition parameters       Closed loop status       Closed loop status     1 (closed)        KP     219000       KD     875       KS     0.8       Integration time (s)     1es99       Derivative filter cut off frequency (Hz)     4000	AUTO-SCALING
Corrector parameters     Filters parameters     Acquisition parameters       Type: Positioner corrector PIDFF acceleration     Auto-scaling results     Gathering 1       Closed loop status     1 (closed) V     Auto-scaling of this positioner's acceleration yielded the following value: 87753.121     Gathering 3       KD     a75     Click * save > to use this value and reboot.     Number of points       Integration time (s)     1:59000     SAVE     CANCEL	V
Type: Positioner corrector PIDFF acceleration     Gathering 1       Closed loop status     1 (closed)       KP     219000       KI     15600000       KS     0.8       Integration time (s)     1e+99       Derivative filter cut off frequency (Hz)     4000	Y
Type: Positioner corrector PIDFF acceleration     Gathering 2       Closed loop status     1 (closed) v       KP     219000       KI     15600000       KS     0.8       Integration time (s)     1e+99       Derivative filter cut off frequency (Hz)     4000	> > > >
Closed loop status     1 (closed)     Gathering 3       KP     219000     Auto-scaling of this positioner's acceleration yielded the following value:     Gathering 4       KI     15600000     8775     Gathering 4       KS     0.8     Click * save > to use this value and reboot.     Number of points       Integration time (s)     1e+99     SAVE     CANCEL       Derivative filter cut off frequency (Hz)     4000     Frequency divider	v v
Interaction (inc)     Interaction (inc)     Gathering is all patients of sector in plane and plane in the sector in plane and plane plane	¥
KD     875     Click * save > to use this value and reboot.       KS     0.8       Integration time (s)     1e+99       Derivative filter cut off frequency (Hz)     4000	
KS 0.8 Click « save » to use this value and reboot. Number of points Integration time (s) 1e+99 Derivative filter cut off frequency (Hz) 4000	Ľ
Integration time (s) 1e+99 Derivative filter cut off frequency (Hz) 4000	
Derivative filter cut off frequency (Hz) 4000	1000
	10
GKP 0 Videoity	
Backlash filter parameters Velocity	720
CVD Current velocity cut-off frequency 50	1000
Current acceleration cut-off frequency     So	0.005
K feed forward acceleration (units/s/s) 1	0.05
K feed forward lerk 0	
Distance to move (relative)	0
Mode: Short setting	MOVE CANCEL
SET SAVE TO FILE CANCEL	

NOTE

All other functions of the tuning page should be used only by experienced users.

### 2.16.2 Tuning – Auto-Tuning

NOTE

Apart from the Auto-scaling feature, which is described in the previous chapter, only experienced motion control users should use the TUNING tool of the XPS controller.

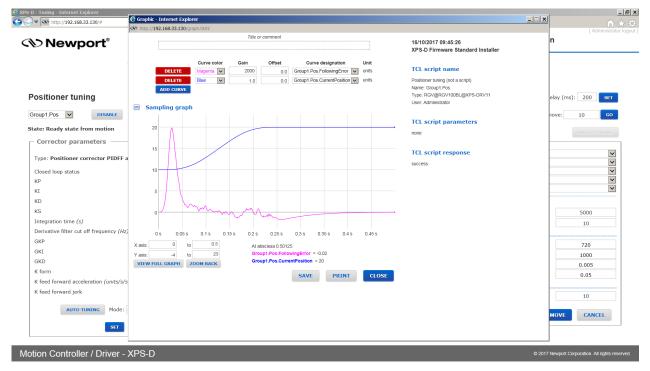
All Newport positioners are supplied with default tuning parameters that provide consistently high performance for the vast majority of applications. Use the Tuning tool with Newport positioners only when not fully satisfied with the dynamic behavior of the positioners. Auto-Tuning works best with direct drive stages. Friction drive or ballscrew drive systems may not result in optimum tuning using this feature.

The following is a brief description of the TUNING tool:

1. Select a positioner name. The following screen appears:

http://192.168.33.130/	٩	🔹 🍫 👀 XPS-D - Tuning	×					<u>^</u>
enewport	System Stages	Controller	Files From	t panel Tern	ninal I	Data acquisition	Documentation	[ Administra
Experience   Solutions	Add, remove or edit stage	s Create custom s	tages Tuning	Lissajous				
Positioner tuning							Refresh delay (	ms): 200 <b>SET</b>
Group1.Pos V INITIALIZE	KILL KILL ALL				Cur	rent position: -0.363616	63 Absolute move:	60
State: Not initialized state due to a G	FroupKill or KillAll comma	nd						
Corrector parameters		- Filters	parameters			<ul> <li>Acquisition para</li> </ul>	ameters	AUTO-SCALLING
						Gathering 1		~
Type: Positioner corrector PID dua	l FF voltage	Type: Pos	sitioner corrector filter li	ist get ( group (numbe	er 1)	Gathering 2		~
Closed loop status	1 (closed)	There are	no settable parameters for	r this filter.		Gathering 3		> >
KP	3539					Gathering 4		~
KI	43245	Backlash	filter parameters			Gathering 5		~
KD	0							
KS	0.8		elocity cut-off frequency	100		Number of points		1000
Integration time (s)	1e+99	Current ad	celeration cut-off frequence	cy 100		Frequency divider		10
Derivative filter cut off frequency (Hz)	400							
GKP	0		SEL	SAVE TO THE O	ANGEL	Velocity		2
GKI	0					Acceleration		8
GKD	0					Minimum jerk time		0.05
K form	1					Maximum jerk time		0.05
K feed forward velocity (units/s)	4.308681672					Flaxing of the time		0.05
K feed forward acceleration (units/s/s	) 7.49235e-05							-
Friction	0					Distance to move (re	lative)	0
AUTO-TUNING Mode: \$	Short settling						MOVE	CANCEL
SET	SAVE TO FILE CANCEL							
otion Controller / Driver -		-		_	_		6 00 /3 V	port Corporation. All rights re

- 2. Using this screen, perform a data gathering with your current parameter settings:
  - 1. Initialize and home the positioner, then move to the desired start position (set the position in the "Absolute move" field on top righte and then click "Go").
  - 2. Under "Acquisition parameters", define the gathering data: For the stage tuning, it is recommended to gather only the following error and the current position.
  - 3. Define the frequency divisor. The frequency divisor defines the sampling rate of the gathering. A frequency divisor equal to one means one data point is gathered every servo cycle. With most positioners, it is sufficient to set a value of 10.
  - 4. Define the number of points in relation to the distance, the frequency divisor, the velocity and the acceleration.
  - 5. Define the velocity, acceleration and jerk time.
  - 6. Define a typical motion distance.
  - 7. When done, click "MOVE". The following page appears:



**Newport**<sup>®</sup>

- **3.** If satisfied with the results, there is no need to tune the stage. If not satisfied, return to the tuning page by clicking "Close" and move back to the start position.
- 4. Next to the Auto-tuning button, there is a Mode field for Auto-tuning. Select "Short settling" or "High robustness". Choose "Short settling" to improve the settling time after a motion or to reduce the following error during the motion. Short settling will define "high" PID vales for your stage, but there is a risk of oscillation. Choose "High robustness" to improve the robustness of the motion system and to avoid oscillations during or after a motion. "High robustness", for instance, can avoid oscillations for a rotation stage with high payload inertia. When done with the selection, click Auto-tuning.
- 5. The stage vibrates for a couple of seconds. When done the following screen appears:

🗧 XPS-D - Tuning - Internet Explorer											_ 8 ×
🕒 🗢 http://192.168.33.130/#		¢+ <u>-</u> ک	XPS-D - Tuning	×							
Newport <sup>®</sup>	System	Stages	Controller	Files	Front panel	Terminal	Data	acquisition	Documenta	ation	[Administrator logout ]
	Add, remove	e or edit stages	Create custom s	tages Tu	ning						
Positioner tuning									Refre	sh delay (ms):	200 SET
Group1.Pos V DISABLE	KILL	KILL ALL					Current	position: 10.0	0117 Absolu	ute move:	10 60
State: Ready state from auto-tunin	q										
Corrector parameters			- Filters	parameters				- Acquisition p	arameters		IDTO-SCALING
								Gathering 1	FollowingError		~
Type: Positioner corrector PIDFF	acceleration		Type: Po:	sitioner correc	tor notch filters			Gathering 2	CurrentPosition		V
Closed loop status		1 (closed) 🗸		0		_		Gathering 3			<b>&gt;</b>
КР		134051.527		Auto	-scaling succes	s	- 1	Gathering 4			×
кі		8641192.83	The positio	ner's corrector p	arameters have been wo	rked out successfully.		Gathering 5			
KD		649.86				ок					
KS		0.8				OR		Number of points			5000
Integration time (s)		1e+99					_	Frequency divider			10
Derivative filter cut off frequency (H.	z)	4000					_				
GKP		0	Backlash	filter parame	ters			Velocity			720
GKI		0						Acceleration			1000
GKD		0		elocity cut-off fr		50		Minimum jerk time	•		0.005
K form		0	Current a	cceleration cut-	off frequency	50		Maximum jerk tim	e		0.05
K feed forward acceleration (units/s/	(s)	1			SET SAVE TO F	LE CANCEL					
K feed forward jerk		0			SET	CARCEL		Distance to move	(relative)		10
	Short settling									MOVE	CANCEL
SET	SAVE TO FI	CANCEL									
Motion Controller / Driver -	XPS-D								0	2017 Newport Corp	oration. All rights reserved.

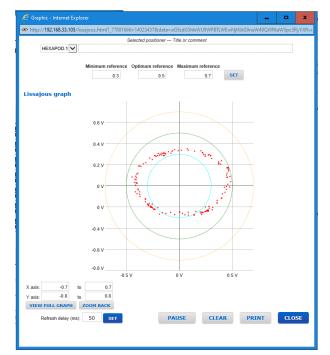
- 6. Press "OK" in the pop-up window, the proposed modifications are colored in red. You must click "Set" to apply the new parameters. "Set" only changes the working parameters without saving them. Recover the previous parameters by rebooting the system.
- 7. To test the behavior of the motion system with the new parameters, repeat the same data gathering and compare the results. Make manual changes to the settings if necessary and verify the behavior.
- 8. To permanently save the settings to the stages.ini, press "SAVE TO FILE". "SAVE TO FILE" overwrites the current settings in your stages.ini. Press "SAVE TO FILE" only when fully satisfied with the results. For recovery, Newport recommends making a copy of the stages.ini with the old settings.

#### NOTE

For further information about the meaning of the different tuning parameters, see Features Manual.

## 2.17 Stages – Lissajous

This page shows the current amalog encoder signals. Refer to Features Manual for more details.



## 2.18 Front panel – Move

The Move page provides access to basic group functions like initialize, home, or motor disable, and executes relative and absolute moves where speed, acceleration and jerk time can be modified during motion (but not during the acceleration period).

The Move page also provides a convenient review of all important group information like group names, group states and positions. All motion groups are listed in the Move page.

- Click "Initialize". The State number changes from 0 to 42 and the Action button changes from "Initialize" to "Home".
- Click "Home". The stage starts moving to find its reference position. When done, the state number is 11 and the action button changes to disable.
- Enter an allowed absolute position value in the "Abs move 1" or "Abs move 2", or a relative move value in the "Relative move" field and click "Go". The stage moves to the new position.
- You can click on "Disable" to disable a stage. The Action button changes to "Enable".
- Click on "Enable" to enable the stage again without loosing encoder position.

plorer .33.130/		• م	*9 CN5 XPS-D - Mov	e ×				 ش ۲
		n Stages	Controlle	r Files Fr	ont panel Termi	nal Data acquisi	tion Documentation	[ Administrator
ice   Solutions	Move	Cycle Jog	Spindle	I/O control Device	status			
on								
on								
State	Action	Positioner	Parameters	Absolute move 1	Absolute move 2	Relative move		
7	INITIALIZE	Group1.Pos	VIEW/SET	GO	60	< ×		
1	INITIALIZE	Group2.Pos	VIEW/SET	GO	60			
1	INITIALIZE	Group3.Pos	VIEW/SET	60				
1	INITIALIZE	Group4.Pos		00				
	KILL ALL							
	on State 1 1	State Action 7 INITIALIZE 1 INI	System Stages Move Cycle Jog ON State Action Positioner 7 IntriaLizz Group1.Pos 1 IntriaLizz Group2.Pos 1 IntriaLizz Group3.Pos 1 IntriaLizz Group3.Pos 1 IntriaLizz Group3.Pos	System     Stages     Controlle       Move     Cycle     Jog     Spindle       On     State     Action     Positioner     Parameters       7     INITIALIZE     Group1.Pos     Generations       1     INITIALIZE     Group2.Pos     Generations       1     INITIALIZE     Group3.Pos     Generations       1     INITIALIZE     Group3.Pos     Generations       1     INITIALIZE     Group4.Pos     Generations	System     Stages     Controller     Files     Fr       Move     Cycle     Jog     Spindle     I/O control     Device       On     State     Action     Positioner     Parameters     Absolute move 1       7     INTIALIZE     Group1.Pos     Cristices     Cristices       1     INTIALIZE     Group2.Pos     Cristices     Cristices       1     INTIALIZE     Group2.Pos     Cristices     Cristices       1     INTIALIZE     Group2.Pos     Cristices     Cristices       1     INTIALIZE     Group4.Pos     Cristices     Cristices	System     Stages     Controller     Files     Front panel     Termination       Nove     Cycle     Jog     Spindle     I/O control     Device status       On     State     Action     Positioner     Parameters     Absolute move 1     Absolute move 2       7     INITIALIZE     Group1.Pos     Conservers     Conservers     Conservers     Conservers       1     INITIALIZE     Group3.Pos     Conservers     Conservers     Conservers     Conservers       1     INITIALIZE     Group4.Pos     Conservers     Conservers     Conservers     Conservers	System     Stages     Controller     Files     Front panel     Terminal     Data acquisition       Nove     Cycle     Jog     Spindle     I/O control     Device status	System     Stages     Controller     Files     Front panel     Terminal     Data acquisition     Documentation       Nove     Cycle     Jog     Spindle     I/O control     Device status

Motion Controller / Driver - XPS-D

#### © 2017 Newport Corporation. All rights reserved

#### NOTE

A spindle group can do relative moves and absolute moves. So, it can be used in the Move page. See Features Manual for more information about Spindle moves.

#### NOTE

In case of XPS-D controller driving a hexapod, even though this Move page can be used to move each actuator independently, it is much easier to use HXP Tool or HXP Work page, through which all actuators will be simultaneously controlled to obtain the desired carriage motion.

## 2.19 Front panel – Cycle

The cycle page allows cycling of a stage. A cycle motion moves back and forth between two defined positions where speed, acceleration and jerk time can be modified during motion (but not during the acceleration period).

<b>New</b>		System	Stages	Controlle	r Files	Front panel	Terminal		Data acquisition	Documentation	
Exper	ience   Solutions	Move	Cycle Jog	Spindle	I/O control	Device status					
ycle betwee	en two p	ositions									
Position	State	Action	Positioner	Parameters	Position 1	Position 2	Dwell time		Cycle		
-0.36361663	7	INITIALIZE	Group1.Pos	VIEW/SET			ms	1	STOP		
-2.9726	1	INITIALIZE	Group2.Pos	VIEW/SET			ms	<	STOP		
6.227	1	INITIALIZE	Group3.Pos	VIEW/SET			ms		STOP		
-6.258268	1	INITIALIZE	Group4.Pos	VIEW/SET			ms	4	STOP >		
		KILL ALL									
fresh delay (in mi	lliseconds):	200 SET									

Motion Controller / Driver - XPS-D

## 2.20 Front panel – Jog

The Jog page allows executing a jog motion. A jog motion is a continuous motion, where only the speed and acceleration are defined, but no target position. Speed and acceleration can be changed during the motion (but not during the acceleration period).

For a Jog motion, the jog mode must be enabled: click on the "Action" button to Initialize, Home and then Enable Jog.

System     Stages     Controller     Files     Front panel     Terminal     Data acquisition     Documentation       Move     Cycle     Jog     Spindle     I/O control     Device status	idministrator lo
Move     Cycle     Jog     Spindle     I/O control     Device status       Dg to velocity	
Position     State     Action     Positioner     Parameters     Jog       -0.36361663     7     INTIALIZE     Group1.Pos     Group1.2     Group1.2	
-0.36361663 7 INTIALIZE Group1.Pos Control of Control o	
6.227 1 INITIALIZE Group3.Pos VIENVASA CONDUCTOR	
-6.258268 1 INITIALIZE Group4.Pos Remove Remove Participation	
KILLALL	

Motion Controller / Driver - XPS-D

© 2017 Newport Corporation. All rights res

## 2.21 Front panel – Spindle

The Spindle page provides similar functions to the Jog page. However, specific jog actions are replaced by spindle actions that only work for Spindle groups.

#### NOTE

Spindle configuration does not allow indexing of the rotary stage. For a rotary stage to have indexing and move more than 360 degrees, the user must configure the stage as a group type other than spindle and change the software travel limits, MinimumTargetPosition and MaximumTargetPosition, in the stages.ini file. Refer to section 2.14: "Stage – Add, Remove or Edit Stages" for more details. Additionally, the rotary may need to have optical travel limits disabled. Refer to the rotary stage User's Manual.

▼ 🔊 http://192.16	t Explorer 58.33.130/		• ۹	★y CNS XPS-D - Spind	le ×					_ 로 슈 ☆ 영
⊗ New			n Stages	Controller	r Files	Front panel	Terminal	Data acquisition	Documentation	[ Administrator logot
Expo	nence   Sulditor	Move	Cycle Jog		I/O control	Device status				
Spindle										
spinale										
Position	State	Action	Positioner	Parameters	Spindle	e				
-0.36361663	7	UNSPINNABLE	Group1.Pos	VIEW/SET	STOP	>				
-2.9726	1	UNSPINNABLE	Group2.Pos	VIEW/SET	< STOP					
-2.9726 6.227	1	UNSPINNABLE UNSPINNABLE	Group2.Pos Group3.Pos	VIEW/SET	< STOP					
					< STOP STOP STOP STOP					

Motion Controller / Driver - XPS-D

EDH0405En1021 - 03/21

## 2.22 Front panel – I/O Control

The I/O Control page shows the current states or values of all analog and all digital I/O's of the controller and allows the user to set all the analog and digital outputs of the controller.

		Sys	tom		Ste	ages	,	<b>C</b> 0	ntrol	llor		Files		Ero	nt r	banel	Т	erminal	Па	ta acqui	eition	п	ocum	onto	tion		ministrate
		- Oya	sten	·	01	ages	·	00				nes				Janer		erminar	Da	ta acqui	SILIOII		ocun	enta	uon		
reference Loon	0013	Mov	e	Cyc	le	Joi	9	Spin	dle	I/C	cont	rol	De	evice s	status	S											
I/O control																											
					Dig	gital :	1/0																				
Connector	I/0	1	2	3	4	5	6	7	8 9	9 1	0 11	1 12	13	<b>3 1</b> 4	1	5 16											
GPIO3.DI	IN	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0	0	D																		
GPI03.DO	OUT	$\bigcirc$	0	0	0	0	0	0 (	C																		
GPI05.DI	IN	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0 (					C														
GPI05.DO	OUT	$\bigcirc$	$\bigcirc$	$\bigcirc$	0	0	0	0 (				0	C			0											
GPI06.DI	IN	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0 (					C														
GPIO6.DO	OUT	$\bigcirc$	$\bigcirc$	$\bigcirc$	0	0	0	0 (				0	C			0											
					Ana	alog	1/0																				
Connector	I	/0	١	/alue				Conr	ecto	r	1/0	C		Val	ue												
GPIO4.ADC1	1	N	-0	.0015	2		GP	104.0	AC1		out	r 🗌	0.0	0000		SET											
GPIO4.ADC2	1	N	-0	.0012	2		GP	104.0	AC2		OUT	г	0.0	0000		SET											
GPIO4.ADC3	1	N	-0	.0015	2		GP	104.0	AC3		ou	г	0.0	0000		SET											
GPIO4.ADC4	1	N	-0	.0018	2		GP	104.0	AC4		OU	г	0.0	0000		SET											
GPIO4.ADC5	1	N	-0	.0009	1		GP	104.0	AC5		out	г	0.0	0000		SET											

## 2.23 Front panel – Device Status

The Device Status page contains several sections.

#### 2.23.1 Device Status – Positioner Errors

The Positioner Errors section is an important page for trouble-shooting. When encountering any problems during the use of the system, information about the errors related to the positioners are found in this page.

<ul> <li>http://192.168.33.130/</li> </ul>	, <b>○ + </b> + , ≪	XPS-D - Devio	e status	×					
> Newport <sup>®</sup>	System Stages C	Controller	File	es Fr	ont panel	Terminal	Data acquisition	Documentation	[ Adm
Experience   Solutions	Move Cycle Jog S	bindle	I/O control	Device	status				
		Group1 Pos	Group2 Pos	Group3 Pos	Group4 Pos				
	Positioner error state	ок	ОК	ОК	ок				
	I2C transfert error								
	GPIO transfert error								
	Fatal internal error								
Interferometer glitch error o	on axis or reference or Zygo P2 fatal error								
Interfero	meter no signal error on axis or reference								
Ho	ome search mechanical zero inconsistency								
	AqB and Sine/Cosine out of phase								
	Second driver in fault								
	First driver in fault								
X or Y co.	rrection is out of encoder correction limits								
	Sine and Cosine radius error								
	Encoder frequency or coherance error								
	Encoder quadrature error								
	Plus end of run glitch								
	Minus end of run glitch								

## 2.23.2 Device Status – Hardware Status

The Hardware Status section is another important page for trouble-shooting, but not all information is related to an error.

					status	XPS-D - Device	• • • •	Q		<ul> <li>http://192.168.33.130/</li> </ul>
[ Adminis	Documentation	Data acquisition	Terminal	Front panel	Files	ontroller	s Co	Stage	System	
				Device status	O control	ndle I/	og Spi	ycle Jo	Move C	Experience   Journal
										Positioner errors
										Hardware status
					Group4 Pos	Group3 Pos	Group2 Pos	Group1 Pos		
					103	103	103	103		
									gathering error	External
									C transfert error	120
									gathering error	GPIO External
									O pulses ended	PC
									error (underrun)	
									xis or reference	Interferometer glitch error on a
										Interferometer no signal error on a
									iver powered on	
					×	×	×	×	iver powered on	
									id driver in fault	
									st driver in fault	
										X or Y correction is out of encoder
									ine radius error	Sine and Cos
									AqB overspeed	
									uadrature error	Encoder q

#### 2.23.3 Device Status – Driver Status

The Driver Status section is another important page for trouble-shooting, but not all information is related to an error.

The type of status information that you can get depends on the drivers used.

http://192.168.33.130/		\$	) <b>-</b> +7 (\$	XPS-D - Device	e status	×					Administ
>Newport®	System	Stag	es C	ontroller	File	s Fr	ont panel	Terminal	Data acquisition	Documentation	[ Adminisu
Experience   Solutions	Move	Cycle	log Sp	bindle I	/O control	Device	status				
Positioner errors											
Hardware status											
Driver status											
Driver status											
				Group1	Group2	Group3	Group4				
				Pos	Pos	Pos	Pos				
		Dr	iver in fault								
		Inhi	bition input								
	TG is open	ed or no stage	connected								
		Current or	power limit								
		I□T or dy	namic error								
Initialization or Invalid pa	arameters or Dig	ital stepper ov	errun error								
	Thermistor i	fault or over t	emperature								
afe STop or Internal fuse broken	or voltage out o	of range, conta	ict Newport								
	Short-circuit	or current foll	owing error								
esh delay (in milliseconds):	200 SET										

## 2.24 Terminal

The Terminal screen allows the execution of all XPS controller functions. It also provides a convenient method for generating executable TCL scripts. For more details about TCL scripts, see **Features Manual**.

To execute a function from the Terminal, do the following:

- 1. Click to select a function, which then appears in the "API to execute" window.
- **2.** Define the arguments for the function.
- For functions with dynamic arguments "ADD BLOCK" and "REMOVE BLOCK" buttons are available. Alternatively, you can use a "," as a separator between different arguments.

http://192.168.33.130/		<u>• -</u> ۹	y XPS-D - Terminal	×					[ Administ
	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Administ
Functions list									
GroupInitializeNoEncoderRes GroupInitializeWithEncoderC GroupJogCurrentGet				^		ion: GroupMove	Absolute		
GroupJogModeDisable GroupJogModeEnable GroupJogParametersGet GroupJogParametersSet						nents: oupName[250]			
GroupKill GroupMotionDisable GroupMotionEnable					RV double 110	TargetPosition	SELECT POSI	TIONER OR GROUP	
GroupMotionStatusGet GroupMoveAbort GroupMoveAbsolute				_		TargetPosition			
GroupMoveAoSolute GroupMoveEndWait GroupMoveRelative GroupPositionCurrentGet					CAN	CEL	ADD BLOCK OK	REMOVE BLOCK	
GroupPositionSetpointGet									
Command history					CLEAR HISTORY	GENERATE TCL	DISPLAY GATHERING	DISPLAY EXTERN	AL GATHERING
Command			Status Reply						

Motion Controller / Driver - XPS-D

• For some arguments like ExtendedEventName, ExtendedActionName or GatheringType, the argument name is not directly accessible. In these cases, define the first part of the argument name, then click in the field again and define the second part of the argument name. See the example below for defining the GatheringType with the function GatheringConfigurationSet():

#### Step 1:

Click **"SELECT EXTERNAL GATHERING"** then select the positioner name and click **"OK"**.

Select item in list	ConfigurationSet	
Please choose an item from the list below. GroupJ Pos GroupJ Pos GroupJ Pos Groupd Pos CorrectedEncoderPosition CorrectorOUtputBeforeCompensation CorrectorOUtputBeforeCompensation CorrectorOUtputBeforeCompensition Cor	SELECT GATHERING	
CLEAR HISTORY GENERATE T	TCL DISPLAY GATHERING DATA	DISPLAY EXTER

#### Step 2:

Click "SELECT EXTERNAL GATHERING" again then select the parameter name and click "OK".

Please choose an item from the list InnerFollowingError ISRCorrectorTimeUsage ISRProfilerTimeUsage	below.		SELECT GATHERING	
ISRServitudesTimeUsage RawCorrectorOutput RawCurrentPosition SetpointAcceleration SetpointAcceleration SetpointVelocity	~	ADD BLOCK	ок	
ОК	CANCEL			

#### Step 3:

To add another parameter, click **"ADD BLOCK".** Repeat Step 1 and Step 2.

Function: GatheringConfigurationSet	
Configuration acquisition	
Argument:	
char Type[250]	
Group1.Pos.SetpointPosition SELECT GATHERING	
CANCEL HELP ADD BLOCK OK	
DAR HISTORY GENERATE TCL DISPLAY GATHERING DATA	DISPLAY EXTERNA

**3.** When all arguments are defined, click "OK". Now review the final syntax of the function and make final text changes, as needed. When done, click "Execute".

System         Stages         Controller         Files         Front panel         Terminal         Data acquisition         Documentation           Functions list         Command         API to execute         API to execute         API to execute         API to execute	Terminal - Internet Explorer     Mttp://192.168.33.130/		• <del>-</del> م	xPS-D - Terminal	×					<u> </u>
Functions list     ComputitalizeNoEncoderReset     API to execute       Group/big/big/big/big/big/big/big/big/big/big		System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Administrate
Groupbill Groupbill Groupbill Groupbill Groupbill Groupbill Groupbill Stability Groupbill Groupbill Stability Groupbill Stability Groupbill Stability Groupbill Stability Groupbill Stability Groupbill Stability Groupbill Stability Groupbill Stability Groupbill Stability Stabil	Functions list GroupInitializeNoEncoderRet GroupInitializeWhEncoderC GroupJogCurrentGet GroupJogNodeDisable GroupJogNodeDisable				^	API to Group	execute MoveAbsolute(RV,11)	)	EXE	SUTE MELS
Command history GENERATE TCL DISPLAY GATHERING DATA DISPLAY EXTERNAL GATHERING	GroupKill GroupMotionDisable GroupMotionEnable GroupMoveAbort GroupMoveAbsolute GroupMoveEndWait GroupMoveRelative				_					
	Command history					CLEAR HISTORY	GENERATE TCL	DISPLAY GATHERING	DATA DISPLAY EXTERNA	L GATHERING

Motion Controller / Driver	r - XPS-D ¢:	2017 Newport Corporation. All rights reserved.
4.	When the function is executed, the controller's response code will appreciate Received message window and a description will appear below the R window. If the command was carried out successfully, 0 is returned. It cases, there will be an error code. Use the function ErrorStringGet() to code description.	eceived message In all other

M http://192.168.33.130/		<u>•</u> ح	🔊 👀 XPS-D - Terminal	×					(
	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Adminis
Functions list					Com	mand			
Functions list									
GroupInitializeNoEncoderRes	set					execute			
GroupInitializeWithEncoderC	alibration			^	Group	MoveAbsolute(RV.11	))	EXEC	UTE
GroupJogCurrentGet									
GroupJogModeDisable						ed message			
GroupJogModeEnable					0,				
GroupJogParametersGet GroupJogParametersSet									
GroupKill									
GroupMotionDisable									
GroupMotionEnable									
GroupMotionStatusGet									
GroupMoveAbort				_					
GroupMoveAbsolute									
GroupMoveEndWait									
GroupMoveRelative									
GroupPositionCurrentGet GroupPositionSetpointGet				~	<b>The ex</b>	mmand was carried o			
					ine co		a successiony.		
Command history					CLEAR HISTORY	GENERATE TCL	DISPLAY GATHERING	5 DATA DISPLAY EXTERNAL	GATHERING
Command			is Reply						
GroupMoveAbsolute(Grou	p2.Pos.1)	0							DELE

#### Motion Controller / Driver - XPS-D

The functions are listed in alphabetical order and can be searched for using the search bar at the top of the Function list. Functions listed are those available for display through the **Controller**  $\rightarrow$  **Terminal configurator** or functions available for the current system configuration. For example, if the system consists only of SingleAxis groups, no group specific functions for Spindles, XY groups, XYZ groups or MultipleAxis groups will be listed.

## 2.25 Data Acquisition – Easy Gathering

Under **Data acquisition**  $\rightarrow$  **Easy gathering**, users can define and save servo synchronous data gathering configurations for routine data acquisition operations including: time-based, event-based, or function based gathering. For more in-depth information regarding data gathering types, refer to **Features Manual**.

<ul> <li>http://192.168.33.130/</li> </ul>			XPS-D - Easy ga	thering ×					
	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	
experience   outurins	Easy gathering	Easy ex	ternal gathering	Functional tes	sts				
ata gathering									
Existing gathering conf	igurations				Config	uration name		SAVE CONFIGURATION	DELETE
					When	to start		ADD TRIGGER	HELP
					REMO				
					What the REMO	o collect VE <u>Group1.Pos.C</u>	urrentPosition	ADD DATA	HELP
					How n	uch to collect		MODIFY	HELP
					Data co	ng frequency: 2 000 Ilection duration: 10 samples, one every	seconds		
DISPLAY	RT								

Motion Controller / Driver - XPS-D

© 2017 Newport Corporation. All rights reserved.

The following procedure describes how to use the webpage to configure easy data gathering. In the initial factory configuration, an example trigger and data configuration is set (see example in the image below). It should be deleted before starting a new gathering.

Configuration name	SAVE CONFIGURATION	
When to start	ADD TRIGGER	HELP
REMOVE Immediate What to collect	ADD DATA	HELP
REMOVE Group1.Pos.CurrentPosition		
How much to collect	MODIFY	HELP
Sampling frequency: 2 000 Hz Data collection duration: 10 seconds 20 000 samples, one every 4 ticks		

#### **Step 1: Configuration name**

1. Enter a name for the Gathering Configuration. Example: Stage\_Position.

Configuration name	SAVE CONFIGURATION	DELETE
Stage_Position		
When to start	ADD TRIGGER	HELP
Empty list. Please specify at least one trigger.		
What to collect	ADD DATA	HELP
Empty list. Please select at least one type of data to collect	:	
How much to collect	MODIFY	HELP
Sampling frequency: 2 000 Hz Data collection duration: 10 seconds 20 000 samples, one every 4 ticks		

#### Step2: When to start

This step configures the data collection trigger and is based upon the API function EventExtendedConfigurationTriggerSet([Actor].[Category].Event Name, Parameter1, Parameter2, Parameter3, Parameter4). For more information regarding this API, refer to **Features Manual**. If this section is not empty, delete example event trigger by clicking REMOVE.

- 1. Click on ADD TRIGGER and the following window appears.
- From the list, highlight the group name, positioner name, TimerX or GPIO that triggers when to start collecting data and then click ADD. If the trigger selection is Immediately or Always, click OK and skip down to <u>Step 3: What to Collect</u>.

Example: Group1.Pos

Pleas	e choose an it	em from th	e list be	low.
Group1				
Group1.Pos			^	
Group2 Group2.Pos				ADD
Group2.Pos Group3				
Group3.Pos				CLEAR
Group4				CLLAR
Group4.Pos GPIO4.ADC1				
GPIO4.ADC2			*	
Event name:	Group1.Pos			
Parameter 1:				
Parameter 2:				
Parameter 3:				
Parameter 4:				

**3.** From the list, highlight the event that starts the data gathering and then click ADD. Depending on the event selection, Parameters 1 through Parameter 4 need to be filled in.

Example: SGamma.ConstantVelocityState

Plea	se choose an item from	the list be	elow.
SGamma.Co SGamma.Co SGamma.Co	nstantDecelerationEnd nstantDecelerationStart nstantDecelerationState nstantVelocityEnd nstantVelocityStart	^	ADD
SGamma.Mo SGamma.Mo SGamma.Mo	tionStart	~	CLEAR
Event name:	Group1.Pos.SGamma.	ConstantV	elocityStat
Parameter 1:			
Parameter 2:			
Parameter 3:			
Parameter 4:			

**4.** Click OK when the trigger has been specified. Example: Gathering starts when the constant velocity state is reached for positioner Group1.Pos.

Configuration name	SAVE CONFIGURATION	
Stage_Position		
When to start	ADD TRIGGER	HELP
REMOVE Group1.Pos.SGamma.ConstantVelocityStat	e	
What to collect	ADD DATA	HELP
Empty list. Please select at least one type of data to colle	ect.	
How much to collect	MODIFY	HELP
Sampling frequency: 2 000 Hz Data collection duration: 10 seconds 20 000 samples, one every 4 ticks		

#### Step 3: What to collect

This step configures the data type to be collected and is based upon the API function GatheringConfigurationSet([DataType]). Refer to **Features Manual** for more information. If this section is not empty, delete example data collection type by clicking REMOVE.

- 1. Click on ADD DATA and the following window appears.
- **2.** From the list, highlight the positioner name or GPIO from which data will be collected and then click ADD. Example: Group1.Pos

	choose an item from the		
Please	choose an item from the	list below	N.
Group1.Pos Group2.Pos Group3.Pos Group4.Pos CorrectedEncoderf	Position	^	ADD
CorrectedSetpoint CorrectorOutput CorrectorOutputBe	Position foreCompensation foreCompensationFiltered	± ~	CLEAR
Data type:	Group1.Pos		
		ок	CANCEL

**3.** If a positioner name is selected, from the list, highlight the data type to be collected and then click ADD. Example: CurrentPosition

Please	choose an item from the lis	t below	v.
CorrectorOutputD CorrectorOutputD CorrectorOutputP CPUTotalLoadRat CurrentAcceleratio CurrentPosition	eforeExcitationCorrectorOut amperFilter ualPID D io	^	ADD CLEAF
CurrentVelocity EstimatedVelocity		$\sim$	

**4.** Click OK when the data type has been specified. Example: once the trigger event occurs, current position values will be collected for positioner Group1.Pos.

Configuration name	SAVE CONFIGURATION	
Stage_Position		
When to start	ADD TRIGGER	HELP
REMOVE Group1.Pos.SGamma.ConstantVelocityState		
What to collect	ADD DATA	HELP
REMOVE Group1.Pos.CurrentPosition		
How much to collect	MODIFY	HELP
Sampling frequency: 2 000 Hz Data collection duration: 10 seconds 20 000 samples, one every 4 ticks		

**5.** Repeat Step 3 Add Data to add other data types to be collected under this specific Gathering Configuration.

#### Step 4: How much to collect

This step specifies the sampling frequency and sampling duration for the gathering configuration and is based upon the API function

EventExtendedConfigurationActionSet(GatheringRun, Nb of points, Divisor, 0, 0). Refer to **Features Manual** for more information.

1. Click on MODIFY to specify the frequency at which data is collected and the duration of the data sampling. The maximum sampling frequency is at the XPS servo rate. *Example: Data will be collected at 2 kHz frequency for a total of 2 minutes.* 

PI	ease set the <b>sampling fre</b>	equency ar	<b>ifiguration</b> ad <b>duration</b> of the data colle cy: 8 000 Hz	ection.	
Requested frequency:	2000	Hz	Requested duration:	120	sec
Exact frequency:	2000	Hz	Exact duration:	120	sec
Sampling period:	0.5	msec	Number of samples:	240000	
				ок	CANCEL

#### **Step 5: Save Configuration**

- 1. Click on SAVE CONFIGURATION to save the gathering configuration.
  - Example: Gathering starts when the constant velocity state is reached for positioner Group1.Pos. Once the trigger event occurs, current position values will be collected for positioner Group1.Pos. Data will be collected at 2 kHz frequency for a total of 2 minutes.

Configuration name	SAVE CONFIGURATION	
Stage_Position		
When to start	ADD TRIGGER	HELP
REMOVE Group1.Pos.SGamma.ConstantVelocityState		
What to collect	ADD DATA	HELP
REMOVE Group1.Pos.CurrentPosition		
How much to collect	MODIFY	HELP
Sampling frequency: 2 000 Hz		

Data collection duration: 2 minutes 240 000 samples, one every 4 ticks

#### **Step 6: Start Gathering**

Motion Controller / Driver - XPS-D

1. To begin gathering data, click on START.

http://192.168.33.130/#		P <u>-</u> +	<ul> <li>XPS-D - Easy gat</li> </ul>	thering ×					[ Administra
Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	
	Easy gathering	Easy ext	ernal gathering	Functional tes	ts				
Data gathering									
Existing gathering con	figurations				Config	uration name		SAVE CONFIGURATION	DELETE
Stage_Position					Stage_	Position			
					When	to start		ADD TRIGGER	HELP
					REMO	Group1.Pos.5	Gamma.ConstantVelocityState	2	
					What t	o collect		ADD DATA	
					REMO	Group1.Pos.C	CurrentPosition		
					How m	uch to collect		MODIFY	
						ng frequency: 2 000 Ilection duration: 2			
					240 00	0 samples, one ever	ry 4 ticks		

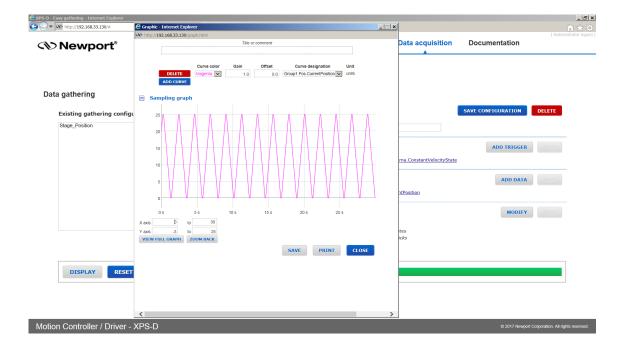
2. The controller then begins to monitor for the configured trigger.

DISPLAY	ABORT	Waiting for trigger
	3.	Once the trigger event occurs, the data acquisition begins and a status bar appears.
DISPLAY	STOP	30 % completed

4. Once the data acquisition is complete, click on DISPLAY to view the data.

> Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	
-	▼ Easy gathering	Easy ext	ternal gathering	Functional tes	ts		•		
ta gathering									
Existing gathering conf	igurations				Configu	uration name		SAVE CONFIGURATION	DELETE
Stage_Position									
					When t	o start		ADD TRIGGER	
					REMO	VE Group1.Pos.5	Gamma.ConstantVelocityState		
					What t	o collect		ADD DATA	
					REMO	VE Group1.Pos.C	urrentPosition		
					How m	uch to collect		MODIFY	
					Data co	ig frequency: 2 000 Ilection duration: 2 3 samples, one ever	minutes		
DISPLAY RES	ET E	100 % comple	ted						_
		too <i>vo</i> compre							

5. The Data Graph is displayed. Colors, cales, gains and offsets can be changed. The graph can be saved or printed. Click "Close" to return to Easy Gathering screen.



## 2.26 Data Acquisition – Easy External Gathering

Under **Data acquisition**  $\rightarrow$  **Easy external gathering,** users can define and save data gathering configurations for routine data acquisition operations triggered by an external device. For more in depth information regarding data gathering types, refer to **Features Manual**. In the initial factory configuration, an example trigger and data configuration is set. It should be deleted before starting a new gathering.

Prewport		<u>• -</u> ۹	XPS-D - Easy ext	ernal gathe ×					
	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	
	asy gathering	Easy ext	▼ ernal gathering	Functional tes	sts				
xternal data gathering									
Existing external gathering	configuratio	ns			Conf	guration name		SAVE CONFIGURATION	DELETE
						n to start v list. Please specify a	t least one trigger.	ADD TRIGGER	HELP
					Wha	to collect		ADD DATA	HELP
					Empt	/ list. Please select at	least one type of data to collec	ct.	
					How	much to collect		MODIFY	HELP
					20 00	0 samples, one every	external tick		

Motion Controller / Driver - XPS-D

The following procedure describes how to use the webpage to configure easy external data gathering.

#### **Step 1: Configuration name**

1. Enter a name for the Gathering Configuration. Example: Stage\_Position.

Configuration name	SAVE CONFIGURATION	
Stage_Position		
When to start	ADD TRIGGER	HELP
Empty list. Please specify at least one trigger.		
What to collect	ADD DATA	HELP
Empty list. Please select at least one type of data to colle	ct.	
How much to collect	MODIFY	
240 000 samples, one every external tick		

#### Step 2: When to start

This step configures the data collection trigger and is based upon the API function EventExtendedConfigurationTriggerSet([Actor].[Category].Event Name, Parameter1, Parameter2, Parameter3, Parameter4). For more information regarding this API, refer to **Features Manual**. If this section is not empty, delete example event trigger by clicking REMOVE.

- 1. Click on ADD TRIGGER and the following window appears.
- 2. From the list, highlight Immediate or Always. Click ADD and then click OK.

Example: Immediate

	Trigger s	election	
Plea	se choose an item	from the list	below.
DIHighLow DILowHigh DIToggled ExcitationSign ExcitationSign		^	ADD
Immediate Jog.Constant Jog.Constant	AccelerationEnd AccelerationStart AccelerationState	~	CLEAR
Event name:	Immediate		
Parameter 1:			
Parameter 2:			
Parameter 3:			
Parameter 4:			
		ок	CANCEL

#### **Step 3: What to collect**

This step configures the data type to be collected and is based upon the API function GatheringExternalConfigurationSet([DataType]). Refer to **Features Manual**. If this section is not empty, delete example data collection type by clicking REMOVE.

- 1. Click on ADD DATA and the following window appears.
- **2.** From the list, highlight the positioner name from which position data will be collected and then click ADD. *Example: Group2.Pos*

Please choose	n item from the list below.
Group1.Pos Group2.Pos Group4.Pos ExternalLatchPosition GPI04.ADC1 GPI04.ADC2 GPI04.ADC3 GPI04.ADC3 GPI04.ADC4 GPI04.ADC5	ADD CLEAR
Data type: Group2.Pos	

**3.** From the list, highlight the data type ExternalLatchPosition, and then click ADD. *Example: ExternalLatchPosition* 

Group4.Pos	
ExternalLatchPosition	^
GPIO4.ADC1	ADD
GPIO4.ADC2	
GPIO4.ADC3	
GPIO4.ADC4	CLEAR
GPIO4.ADC5	CLEAR
GPIO4.ADC6	
GPIO4.ADC7	$\checkmark$
GPIO4.ADC8	

- 4. Click OK when the data type has been specified.
- 5. Repeat <u>Step 3 Add Data</u> to add other data types to be collected under this specific Gathering Configuration.

#### Step 4: How much to collect

This step specifies the number of data points per set. This step is based upon the API function EventExtendedConfigurationActionSet(ExternalGatheringRun, Nb of points, 1, 0, 0). Refer to **Features Manual** for more information.

1. Click on MODIFY to specify the number of data points to be collected. Example: 20000 data samples will be collected for every external trigger.

Sampling configuration											
Please set the <b>number of sa</b>	amples of the data collection.										
Number of samples:	20000 OK CANCEL										

#### **Step 5: Save Configuration**

1. Click on SAVE CONFIGURATION to save the gathering configuration.

Example:

Configuration name	SAVE CONFIGURATION	
Stage_Position		
When to start	ADD TRIGGER	
REMOVE Immediate		
What to collect	ADD DATA	
REMOVE Group2.Pos.ExternalLatchPosition		
How much to collect	MODIFY	
20 000 samples, one every external tick		

#### Step 6: Start Gathering

1. To begin gathering data, click on START.

Easy external gathering - Internet E	xplorer	<del>، -</del> ر	XPS-D - Easy ext	ernal gathe ×					ŕ
Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Administr
	Easy gathering	g Easy ext	ernal gathering	Functional tes	ts				
ternal data gathering									
Existing external gathe	ring configurat	ions			Config	juration name		SAVE CONFIGURATION	DELETE
Stage_Position					Stage	_Position			
					When	to start		ADD TRIGGER	HELP
					REM	ove Immediate			
					What	to collect		ADD DATA	HELP
					REM	OVE Group2.Pos.E	xternalLatchPosition		
					How	nuch to collect		MODIFY	
					20 000	) samples, one every	external tick		
DISPLAY	रा								
on Controller / Driver	- XPS-D							© 2017 Newport	Corporation. All rights
2	2. The c trigge		er then i	mmedia	tely begi	ns to mo	nitor for the c	configured ext	ernal
ISPLAY ABORT	Wait	ting for trigger	·						
3	. Once	the tri	oger ever	nt occur	s the dat	a acquisi	tion begins a	nd a status ba	r annear

DISPLAY STOP 30 % completed

**4.** Once the data acquisition is complete, click on DISPLAY to view the data just like for Easy Gathering.

# 2.27 Data Acquisition – Functional Tests

The FUNCTIONAL TESTS page allows running TCL scripts saved in the "/Admin/Public/Scripts/ FunctionalTests" folder of the XPS controller. Supplied in the firmware, the Functional Tests scripts will then display the results of a gathering file.

Select the TCL Script name then press "Execute script" to run the script or "Kill script" to stop its execution.

PS-D - Functional tests - Internet Explor	er								_ & ×
Nr http://192.168.33.130/#		P-	xPS-D - Function	al tests 🛛 🕹 📃					合大帝
Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Administrator logout ]
Experience   Solutions	Easy gatherin	q Easy ex	ternal gathering	Functional to	ests				
Functional tests									
Functional tests									
TCL	script selection								
TCL file name	GetVersion.tcl		V						
Arguments string	Enter the TCL script	's arguments							
Arguments string									
Arguments string	Enter the TCL script		CRIPT						
Arguments string			CRIPT						
Arguments string			CRIPT						

Motion Controller / Driver - XPS-D

© 2017 Newport Corporation. All rights reserved.

# 2.28 Files – Gathering Files

In this webpage gathering files stored on the XPS controller can be downloaded, viewed, edited or deleted. To generate gathering files refer to **Features Manual**.

#### Download/Edit/View/Delete

Click on the gathering file name to open the file in the text editor and a window will appear with a graphical representation of the data. In the text editor the user can view, edit, save, save as or delete the gathering file (in the controller) and download it to the user's PC.

#### **UPLOAD FILE**

Click UPLOAD FILE to upload a gathering file from the user's PC to the XPS controller.

#### DOWNLOAD AS ZIP

Click DOWNLOAD AS ZIP to download all gathering files to the user's PC.

-D - Gathering files - Internet Explorer thtp://192.168.33.130/#			XPS-D - Gathering files	×					ا ش :
<b>≫Newport</b> ®	System	Stages Co	ontroller F	Files Front	panel	Terminal	Data acquisition	Documentation	[ Administrato
Experience   Solutions	Gathering files	Trajectory files	TCL scripts	Configuration f	iles Log	files			
								Text editor	
Gathering files								Text editor	
566.7 Mb free / 959.0 Mb total		<ul> <li>Display as listir</li> <li>Show all files</li> </ul>	19 <b>r</b>	DOWNLOAD AS ZIP	UPLOAD FILE				
2									
Gathering.dat									
tion Controller / Driver								© 2017 Newn	ort Corporation. All rights re:
aon controller / Driver	- 1 0-0								on corporation. Fairing no rea

#### NOTE

Ensure the web browser zoom is set at 100% to avoid image corruption when displaying a gathering file.

# 2.29 Files – Trajectory Files

In this webpage trajectory files stored on the XPS controller can be downloaded, uploaded, viewed, edited, created or deleted.

#### Download/Edit/View/Delete

Click on the trajectory file name to open the file in the text editor. In the text editor the user can view, edit, save, save as or delete the trajectory file (in the controller) and download it to the user's PC.

#### **UPLOAD FILE**

Click UPLOAD FILE to upload a trajectory file from the user's PC to the XPS controller.

#### DOWNLOAD AS ZIP

Click DOWNLOAD AS ZIP to download all trajectory files to the user's PC.

PS-D - Trajectory files - Internet Explorer		Q <b>• •</b> <sub>2</sub> ∞	XPS-D - Trajectory files X					Administrator
	System	Stages C	ontroller Files	Front panel	Terminal	Data acquisition	Documentation	Lydministrator
	Gathering files	Trajectory files	TCL scripts C	configuration files Lo	g files			
Trajectory files					R	- L	Text editor	1 🗹 🗙
666.7 Mb free / 959.0 Mb total		🗌 Display as listi	DOWNL	OAD AS ZIP UPLOAD FIL				^
This folder is empty.								
								~

Motion Controller / Driver - XPS-D

# 2.30 Files – TCL Scripts

In this webpage TCL script files stored on the XPS controller can be downloaded, viewed, edited or deleted. TCL scripts could also be uploaded through this webpage.

#### Download/Edit/View/Delete

Click on the TCL script file name to open the file in the text editor. In the text editor the user can view, edit, save, save as or delete the TCL script (in the controller) and download it to the user's PC.

#### **UPLOAD FILE**

Click UPLOAD FILE to upload a TCL script file from the user's PC to the XPS controller.

#### DOWNLOAD AS ZIP

Click DOWNLOAD AS ZIP to download all TCL script files to the user's PC.

#### **RUN SCRIPT**

Click RUN SCRIPT to launch the selected script. Several scripts can be launched.

#### KILL SCRIPTS

l

Click KILL SCRIPTs to stop all scripts.

PS-D - TCL scripts - Internet Explorer		, <b>○ •</b> • ∞ xP	S-D - TCL scripts X					ـــــــــــــــــــــــــــــــــــــ
	System	Stages Con	troller Files	Front panel	Terminal	Data acquisiti	ion Documentation	[ Administrator
experience   Solutions	Gathering files	Trajectory files	TCL scripts C	onfiguration files Log	g files			
TCL scripts			R	UN SCRIPT KILL SCRIPTS		₩ <b>7</b>	cycle1.tcl	∰ Ø ×
566.7 Mb free / 959.0 Mb total		Display as listing	DOWNLO	DAD AS ZIP UPLOAD FILE				~
FunctionalTests	le1.tcl	cycle2.tcl	cycle3.tcl	cycle4.tcl	*	eneration of histor	-	
GetTCLLibraryVersion.tcl Gro	DupHomeSearch.tcl	GroupInitialize.tcl	GroupMoveAbsolu	te.tcl		global tcl argv if {\$code != -2 && set code2 r"] if {\$code2	<pre>{socketID code APIName} {  \$code != -108} {  [catch "ErrorStringGet \$set"] </pre>	
					ErrorSt	ringGet ERROR => \$c se } else {		RROR => \$code"
	/11 testbench 70321.tcl	TestVersion.tcl	XPS AST Cycle.tcl		timeout TCP tim	se } } if {\$code pu se eout" }	st tcl_argv(0) "\$APIName \$:	strError" => \$code : TCP
						DU	its stdout "SAPIName ERROR	=> Scode : The

# 2.31 Files – Configuration Files

In this webpage Configuration files stored on the XPS controller can be downloaded, uploaded, viewed, edited or deleted. Note: Users must be logged in with Administrator rights in order to access this webpage.

#### Download/Edit/View/Delete

Click on the configuration name to open the file in the text editor. In the text editor the user can view, edit, save, save as or delete the configuration file (in the controller) and download it to the user's PC.

#### **UPLOAD FILE**

Click UPLOAD FILE to upload a configuration file from the user's PC to the XPS controller. When uploading a file, take note of the file extension.

#### LOAD CONFIG

Click LOAD CONFIG to upload all configuration files as a zip file from the user's PC to the controller.

#### SAVE CONFIG

Click SAVE CONFIG to download all configuration files as a zip file from the controller to the user's PC.

#### **UPDATE STAGE DB**

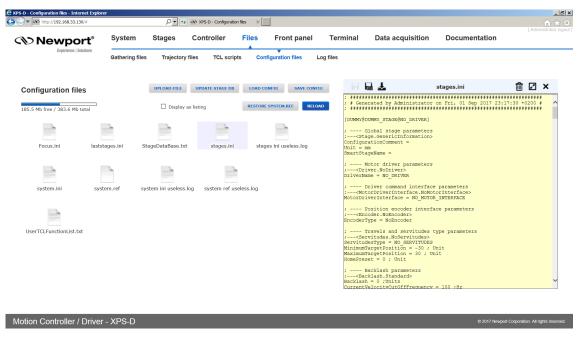
Click UPDATE STAGE DB to upload a new StageDataBase.txt file from the user's PC to the controller.

#### **RESTORE SYSTEM.REF**

Click RESTORE SYSTEM.REF to restore the original System.ref file as it was upon delivey.

#### RELOAD

Click RELOAD to reboot or restart controller to apply configuration changes.



# 2.32 Files – Log Files

In this webpage log files stored on the XPS controller can be downloaded, uploaded, viewed, edited or deleted. Note: Users must be logged in with Administrator rights in order to access this webpage.

#### Download/Edit/View/Delete

Click on the log file name to open the file in the text editor. In the text editor the user can view, edit, save, save as or delete the log file (in the controller) and download it to the user's PC.

#### **UPLOAD FILE**

Click UPLOAD FILE to upload a log file from the user's PC to the XPS controller. When uploading a file, take note of the file extension.

#### DOWNLOAD AS ZIP

Click DOWNLOAD AS ZIP to download all log files to the user's PC.

▼ Mttp://192.168.33.130/#			5 XPS-D - Log files	×								ft) nistrat
	System	Stages	Controller	Files	Front panel	Tern	ninal	Data acquisition	Documentation		[	
Experience   Solutions	Gathering files	Trajectory file	es TCL scrip	ts Cor	figuration files Lo	g files						
.og files								7	Boot.log	Ŵ		×
66.7 Mb free / 959.0 Mb total		Display as lis	ting	DOWNLOA	D AS ZIP UPLOAD FIL	E				-		
							נם	ACUpdateDelay = 0.00	-			
APIList.txt APIList I	Extended.txt /	PIList Extended AllConfig.txt	Boot.log		Error.log		PCI_CIEB	oard #1	-			
Log.log PCI CIE	Header.log PC	CIE1 Header.log	PCI CIE2 Head	er.log PC	CI CIEBoard1 Axes.log		PCIAxis PCIDriver I P M PCIAxis M PCIAxis	RegisterIndex = 128, RegisterValue = 8 20 Driver MUX values 21 CIEAxis #2 (Encod	derPlug #1) from CIE Board , m_PCIDriverRegisterIndex s: (0) 8, (1) 4, (2) 2, (3 derPlug #3) from CIE Board , m_PCIDriverRegisterIndex	= 384, 3) 1 #1 OK;		
PCI CIEBoard 1 Header.log P	CI CIEBoard2 Axes	log PCL CIEBo	ard2 Header.log	Previous	Error log		P( m_PCIAxis) PCIDriver) I:	CI_CIEAxis #3 (Encod RegisterIndex = 256, RegisterValue = 2 2C Driver MUX values	<pre>5: (0) 8, (1) 4, (2) 2, (3) derFlug #2) from CIE Board , m_PCIDriverRegisterIndex 5: (0) 8, (1) 4, (2) 2, (3) derPlug #4) from CIE Board</pre>	<pre>#1 OK: = 416, 3) 1</pre>		
Zygo.log	or one could be find		ar treadering				m PCIAxis) PCIDriver I P( P( P) P( P) P( P) P)	RegisterIndex = 320, RegisterValue = 1 2C Driver MUX values I_PCOManager PCODivider = 1 I_PCOGenerator #1 ( I_PCOGenerator #2 ( I_PCOGenerator #2 ( I_PCOGenerator #2 (	. m_PCIDriverRegisterIndex s: (0) 8, (1) 4, (2) 2 , (1 0K	= 432, 3) 1		)27

Motion Controller / Driver - XPS-D

© 2017 Newport Corporation. All rights reserved.

# 2.33 Documentation

Under the webpage Documentation users can open and download XPS-D manuals, help files, drivers and example code.

XPS-D - Documentation - Internet Exp	lorer	و+ • و	Sty XPS-D - Documentation	×				上日上 合 会 O (Administrator logout)
Newport		Stages	Controller I	Files Fron	t panel Termina	I Data acquisition	n Documentation	[ Administrator logour ]
Documentation							DOW	INLOAD AS ZIP
Drivers	Help Files	Online resources (literature & downloads)	Visit www.newport	.com XPS-D Cor Manu	ifiguration XPS-D Feat		XPS-D User Interface Manual.pdf	
XPSFirmwareHistory.pdf	XPS-Unified- ProgrammersManu	al.pdf						

Motion Controller / Driver - XPS-D

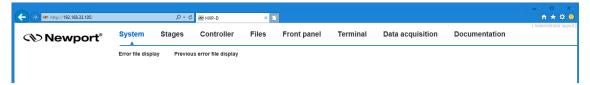
# 3.0 HXP-ELEC-D specific menus

When an XPS-D controller is preconfigured to drive a hexapod (referenced HXP-ELEC-D), some menus are different. They are described in this section.

### 3.1 System menu

Since the configuration is built in factory, the configuration pages of the XPS-D standard "System" menu are no longer available.

This menu only includes "Error file display" and "Previous error file display" pages:



# 3.2 Stages menu

For the same reason, the "Stages" menu (Administrator only) is restricted to "Lissajous" page:

← → <u>∞ http://192.168.33.105/</u>		ۍ - م	🚾 HXP-D	×	1				_	■ ★ ☆	×
Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation			jout ]
	Lissajous										

# **3.3** Front panel menu

This main menu is emphasized with pages dedicated to hexapod which are described after:

← → ∞ http://192.168.33.105/		، + م	🖒 💀 HXP-D		× 📑							×
Newport®	System	Stages	Controll	er Fil	es F	Front panel	Те	rminal	Data acquisition	Documentation	inistrato	r logout ]
(	HXP Tool	HXP Work	Move C	ycle Jo	g Spir	ndle I/O cor	trol	Device status	5			

#### 3.3.1 Front panel – HXP Tool

The HXP Tool page provides access to incremental moves and RightPath Trajectory moves along and around the axes of the Tool coordinate system. See Features Manual for details. A couple of comments about this page:

**Position** refers to the position of the Tool coordinate system in the Work coordinate system.

State refers to the state of the Hexapod group.

Action gray field next to Group state is a dynamic action button. Its function changes according to the group state. It allows to Initialize, Home and Disable the hexapod.

KILL ALL stops all motion and sets the Hexapod to the "Not Initialized" state.

Coordinate lists the coordinate (X, Y, Z, U, V, or W).

Under **Incremental move**, it is possible to increment individual coordinates by entering a value in one of the six fields and pressing the "<" or ">" button next to the input window. It is also possible to increment all six coordinates at the same time ("<" and ">" button next to the "All togheter" mention).

**Increm. trajectory** allows executing RightPath Trajectory motions. After choosing the type of trajectory (Line, Rotation or Arc), and entering the definition parameters, the motion is launched by pressing "GO" button.

**Coordinate systems** area displays and allows changing the different coordinate systems. These changes are not saved automatically in "system.ini" file.

Reset buttons reloads the genuine coordinate system (saved in system.ini).

Set permanent saves the coordinate system in system.ini file

Refresh delay (in milliseconds) sets screen update delay for position and group state.

🕅 Newp	orτ	System	Stages		ntroller	Files	Front p	aner	10	erminal Data	acquisition	Documentation	
		HXP Tool	HXP Work	Move	Cycle	Jog	Spindle	I/O cont	trol	Device status			
Hexapod Tool	frame												
Position S	State	Action	Coordinat	e Inc	remental m		Increm. tra ● Line ○ Rota		5				
-0.081455768			X axis Z		0		0						
0.020384606			Y axis ↔		0		0						
-14.962852940			Z axis ‡		0		0						
-0.005250848	11	DISABLE	U axis 🗠		0								
0.002620972			۷ axis ۵		0								
0.031251317			W axis J		0								
		KILL ALL			All together		GO						
Coordinate syst	ems	x	Y	z	U	v	w				1		
Tool in Carriage		0.000	0.000	25.000	0.000	0.0	00 0.0	000 <b>R</b>	ESET	SET PERMANENT			
Base in World		0.000	0.000	25.000	0.000	0.0	00 0.0	000 <b>R</b>	ESET	SET PERMANENT			
Work in World		0.000	0.000	209.000	0.000	0.0	00 0.0	000 R	ESET	SET PERMANENT			
		7	o change a refere	nce frame, c	lick on a cell a	nd change it	s value						
		200 SET											

# 3.3.2 Front panel – HXP Work

The HXP Work page is similar to the HXP Tool page. It provides access to incremental moves and RightPath Trajectory moves along and around the axes of the Work coordinate system, but also to absolute moves in Work. See Features Manual for details.

More over, the ">>" buttons can be used to fill the "Absolute move" parameters with current position values, either individually or "All together".

Newport <sup>®</sup>	System	Stages	Con	troller	Files	Fro	nt panel	Тег	minal	Data ac	quisition	Docume	entation	( Administra			
	HXP Tool	HXP Work	Move	Cycle	Jog	Spindle	I/O co	ntrol	Device statu	5							
lexapod Work frame																	
Position State	Action	Coordinate	Ab	solute mov	/e 1	Absolu	ite move 2	: 1	incremental	move	Increm. tr						
-0.081455782		X axis 2	*	0	60	*	0	ю 💽	0		0						
0.020385436		Y axis ↔	*	0	60	*	0	:0	0		0						
-14.962854198		Z axis ‡	*	0	60	*	0	:o .	0		0						
-0.005249504	DISABLE	U axis 🗠	*	0	60	*	0		0								
0.002620583						V axis د	*	0	60	*	0	:o .	0				
0.031253706		W axis J	*	0	60	*	0		0								
	KILL ALL				60	* All	ogether	:o	All togeth	er 🕨	60						
Coordinate systems	х	Y Z		U	v	١	v										
Tool in Carriage	0.000	0.000	25.000	0.000	0.0	100	0.000	RESET	SET PERMANE	ит							
Base in World	0.000	0.000	25.000	0.000	0.0	100	0.000	RESET	SET PERMANE	NT							
Work in World	0.000	0.000 2	09.000	0.000	0.0	100	0.000	RESET	SET PERMANE	NT							
	Te	change a referenc	e frame, cl	ick on a cell a	nd change it	ts value											
efresh delay (in milliseconds):	200 <b>SET</b>																

#### 3.4 Files menu

#### **3.4.1** Files – Configuration files

This page remains available (for Administrator only) even though the configuration is built in factory. It may be used by experimented users or with the help of Newport support to make configuration changes directly in the configuration files.

However, a "**FACTORY SETTINGS**" button is added to simply allow retrieving all the original configuration files. This affects the HEXAPOD group but also the additional single axes if any.

← → ∞ http://192.168.33.105/		5 <del>-</del> Q	👁 HXP-D - Configurat	ion files 🛛 🗋					- □ × ↑★♀♀
<♥ Newport®	System	Stages	Controller	Files	Front panel	Terminal	Data acquisition	Documentation	[ Administrator logout ]
	Gathering files	Trajectory 1	files TCL scrip	ots Cont	iguration files Lo	g files			
Configuration files	ĺ	UPLOAD FILE		LOAD CON	FIG SAVE CONFIG		<u>e 1</u>	Text editor	ŵ
Geometry RRPS.ini Hexapoo	Matrix.txt S	tageDataBase.txt	stages.ini		system.ini				
system.ref									
									~
HXP-D Motion Controlle	er / Driver -	- XPS-a062	2					© 2018 Newport C	orporation. All rights reserved.

After pressing this button, the following window appears. Tick the files you want to restore and click "RESET FILES".

as	Confirmation
	You can choose here which configuration file(s) you want to reset to factory settings.
	Geometry_RRPS.ini
	HexapodMatrix.txt
	StageDataBase.txt
	stages.ini
	system.ini
	system.ref
	Please select which one(s) to restore and confirm your choice.
	Your current settings will be erased, so back them up first if necessary!
	RESET FILES CANCEL
1000	

A message pops up to inform restore success. Click OK to restart the controller and reload the new configuration.

Restore succe	SS	
The operation completed successfully. Press OK to make the	e controller reload the ne	w configuration.
	ок	CANCEL

# **Service Form**

#### Your Local Representative

Tel.: \_\_\_\_\_

	Fax:
Name:	Return authorization #:
Company:	(Please obtain prior to return of item)
Address:	Date:
Country:	
P.O. Number:	
Item(s) Being Returned:	
Model#:	
Description:	
Reasons of return of goods (please list any specific problems):	

# 

Visit Newport Online at: www.newport.com

# North America & Asia

Newport Corporation 1791 Deere Ave. Irvine, CA 92606, USA

Sales Tel.: (800) 222-6440 e-mail: sales@newport.com

**Technical Support** Tel.: (800) 222-6440 e-mail: tech@newport.com

Service, RMAs & Returns Tel.: (800) 222-6440 e-mail: service@newport.com

# Europe

MICRO-CONTROLE Spectra-Physics S.A.S 9, rue du Bois Sauvage 91055 Évry CEDEX France

# Sales

Tel.: +33 (0)1.60.91.68.68 e-mail: france@newport.com

**Technical Support** e-mail: tech\_europe@newport.com

Service & Returns Tel.: +33 (0)2.38.40.51.55

