

ESP302

Friendly 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

| Iı | ntroduc | tion | 1 |
|------|--|--|---|
| 1.1 | Scope of | f the Manual | 1 |
| 1.2 | Prerequi | isite | 1 |
| F | ront pa | nel interface | 2 |
| 2.1 | Start-up | | 2 |
| 2.2 | Home M | 1enu | 3 |
| 2.3 | Move M | 1enu | 4 |
| | 2.3.1 | Absolute Tab | 4 |
| | 2.3.2 | Relative Tab | 5 |
| | 2.3.3 | Cycle Tab | 6 |
| 2.4 | GPIO M | 1enu | 6 |
| 2.5 | Status M | Ienu | 7 |
| | 2.5.1 | Errors Tab | 7 |
| | 2.5.2 | Status Tab | 7 |
| | 2.5.3 | Log Tab | 8 |
| 2.6 | Setting I | Menu | 8 |
| | 2.6.1 | Motion Tab | 8 |
| | 2.6.2 | Display Tab | 9 |
| | 2.6.3 | Ethernet Tab | 9 |
| | 2.6.4 | Config Tab | 10 |
| 2.7 | Program | 1 Menu | 11 |
| 2.8 | About M | lenu | 11 |
| W | Vebsite i | interface | 12 |
| 3.1 | Interface | e Overview | 12 |
| 3.2 | Controll | er – IP Management | 14 |
| 3.3 | Controll | er – Users Management | 15 |
| 3.4 | Controll | er – General Information | 16 |
| 3.5 | Controll | ler – Firmware Update | 17 |
| 3.6 | System | – Error file Display | 19 |
| 3.7 | Front Pa | anel – Move | 20 |
| 3.8 | Front Pa | anel – Jog | 22 |
| 3.9 | Front Pa | anel – Cycle | 23 |
| 3.10 | Front Pa | anel – I/O Control | 24 |
| 3.11 | Front Pa | anel – Device Status | 25 |
| | 3.11.1 | Device Status – Error FIFO | 25 |
| | 3.11.2 | Device Status – Controller Status | 25 |
| | In 1.1 1.2 F 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.7 2.8 3.1 3.2 3.4 3.5 3.6 3.7 3.8 3.9 3.10 3.11 | Introduct 1.1 Scope o 1.2 Prerequit Interface 2.1 Start-up 2.2 Home M 2.3 Move M 2.3 Move M 2.3 Move M 2.3 2.3.1 2.3 2.3.2 2.3.3 2.4 GPIO M 2.5.1 2.5 Status M 2.5 Status M 2.5.1 2.5.2 2.5.3 2.6.1 2.6.1 2.6.2 2.6.3 2.6.4 2.7 Program 2.8 About M Status M 2.6.1 2.6.2 2.6.3 2.6.4 2.7 Program 2.8 About M Status M 3.1 Interface 3.2 Controll 3.4 Controll 3.5 Controll 3.6 System 3.7 Front Pa 3.10 Fr | Introduction 1.1 Scope of the Manual 1.2 Prerequisite Front panel interface |

| Service Fo | orm | |
|------------|--|----|
| 3.16 | Documentation | |
| 3.15 | Files – Log Files | |
| 3.14 | Files – Configuration files | |
| 3.13 | Files – Program files | 29 |
| 3.12 | Terminal | 27 |
| | 3.11.4 Device Status – Driver Status | |
| | 3.11.3 Device Status – Hardware Status | 26 |



Friendly Motion Controller/Driver ESP 302 Controller

1.0 Introduction

1.1 Scope of the Manual

The ESP302 is an advanced stand-alone, easy to use, motion controller with up to 3 integrated motor drivers, outstanding powerful programming functionality.

It offers different operating modes through its user-friendly touchscreen front panel, command remote port, and web interface offering high-speed communication through 10/100/1000 Base-T Ethernet.

The ESP302 provides advanced trajectory and synchronization features to precisely control from the most basic to the most complex motion sequences. Multiple digital triggers provide users with additional data acquisition, synchronization and control features that can improve the most demanding motion applications.

The Enhanced System Performance (ESP) architecture consists of ESP-compatible controllers and stages. When used with ESP-compatible stages, the ESP302 plug-and-play concept significantly increases user friendliness and improves overall motion performance.

To maximize the value of the ESP302 Controller/Driver system, it is important that users become thoroughly familiar with available documentation.

The present manual describes:

- The controller Front panel interface (used in LOCAL mode)
- The controller Website interface (used in WEB INTERFACE mode).

1.2 Prerequisite

It is mandatory that **ESP302 Start-Up Manual** be thoroughly read and understood before going through these interfaces.

Particularly, for Web interface mode, a connection must be established between the computer and the controller either directly or through a network.

2.0 Front panel interface

This section provides a detailed explanation of the controller front panel menus and fonctions.

2.1 Start-up

Upon start-up, the controller begins booting and analyses the connected hardware. If new ESP compatible stages have been connected, configuration is automatically modified and the "Home" page is displayed. Example with 2 stages connected on axis 1 and axis 2:

| | Mon May 20 2019 16:23 IP: none | | | | |
|---------|--------------------------------|--|--|--|--|
| Home | Axis 1 Power ON | | | | |
| Move | -9.555 | | | | |
| Gpio | Axis 2 Power ON | | | | |
| Status | mm 0.000 | | | | |
| Setting | | | | | |
| Program | mm NO STAGE | | | | |
| About | [NC] | | | | |
| | Kill all motors | | | | |
| | | | | | |



| Status | Motion | Display Eth | ernet Confi | ig |
|---------|-------------------------|---------------------|---------------------------------|---------------------|
| Setting | | Axis 1 | Axis 2 | Axis 3 |
| About | Stage Current config | UTS50CC UTS50CC | TRB6CC TRB6CC boot failed | NO STAGE UTS50CC |
| | New config | UTS50CC | TRB6CC | DUMMY_STAGE |
| | | apply new config | apply new config | apply new config |
| Reboot | | boot | | |
| | | | | |

The "boot failed" mention appears on the faulty axis (Axis 2 in the example above).

• Note the faulty axis and connect another stage on it.

2.2 Home Menu

This page appears by default after power-up but it can be displayed from another page by pressing the "Home" button on the screen top left. Pressing the other buttons located below ("Move", "GPIO" ...) will change the display to the other available pages described further.

Home page displays for each axis its present status ([OFF] or [NC] if no stage).

- First press "Power ON". The status changes to [ON] and the button to "Home".
- Press "Home". The stage starts moving to find its reference position. When done, the status changes to **[REF]** and the button to "Power OFF".
- If the homing sequence fails, the status turns back to **[OFF]** and the button to "Power ON".
- Do this for each present axis.

Jog slider buttons can then be pressed, maintained and shifted right or left like a joystick to manually move the stage. If slightly moved, the speed will be low and if moved totally, it will be high.

Each axis can be turned off by pressing "Power OFF" and turned on again by pressing "Power ON" without losing position information.

Pressing "Kill all motors" kills all axes. Position information is lost and axes must be homed again to be operated.

The axes current positions are normally displayed. It is possible to have a bigger display by swiping the display to the right with the finger (swipe to the left to return).



It is also possible to lock the screen to have a bigger display by using the LC command in remote mode. See ESP302 Programmer's Manual for details.

Screen locked with LC1:



Screen locked with LC2:

| Mon May 20 2019 16:29 IP: none | Locked |
|--------------------------------|--------|
| Axis 1 mm | 0 000 |
| [OFF] | 0.000 |
| Axis 2 mm | 0 000 |
| [OFF] | 0.000 |
| Axis 3 MIO | TACE |
| INCI INC L | DIAGL |

Note that current Date and HOST IP address are displayed on the top of all screens.

2.3 Move Menu

2.3.1 Absolute Tab

Absolute tab allows making absolute moves.

- Positions are displayed under the axis name.
- If not already done, press "Power ON" and then "Home" to initialize each axis.



- Modify the axis velocity if necessary.
- Set "Move #1" and/or "Move #2" expected position.
- To set a value, press on the value area, a virtual keyboard appears.
- Type the desired number (erase with " \leftarrow ") and valid by pressing " \uparrow ".



- Launch displacement by pressing the appropriate "Go" button.
- Each axis position counter can be reset to 0 in the current position by clicking "Reset Position" button (equivalent to sending xxDH0 command).

2.3.2 Relative Tab

Relative tab allows making relative moves.

- Positions are displayed under the axis name.
- Set the desired velocity and displacement value.
- Press forward ">" or backward "<" button to execute the displacement step in the expected direction.



2.3.3 Cycle Tab

Cycle tab allows making continuous cycle moves between two positions.

- Positions are displayed under the axis name.
- Set the desired velocity, limit positions #1 and #2 and Dwell time (duration at each limit position).
- Press "Cycle" button to launch cycling. The button turns to "Stop".
- Press "Stop" to stop cycling.



2.4 GPIO Menu

This page allows controlling and monitoring the 16 digital I/Os (2 groups of 8).

- Tick GPIO1 or GPIO2 "OE" button if you want to set the group in output mode (green) instead of input (white).
- When set as output, each bit can be set to "1" (green) or reset to "0" (white).
- When set as input, each bit state is displayed ("1": green, "0": white).

Note that open inputs are reporting level "1" by default.



2.5 Status Menu

2.5.1 Errors Tab

This tab shows pending errors. Its content is erased after it is displayed.

Note that if they are unread errors, the "Status" menu button is blinking red/green until visiting this menu.

| | Mon May 20 2019 16 | :32 | IP: none | |
|---------|--------------------|--------|----------|--|
| Home | Errors | Status | Log | |
| Move | Error list: | | | |
| Gpio | No error | | | |
| Status | | | | |
| Setting | | | | |
| Program | | | | |
| About | | | | |
| | | | | |
| | | | | |

2.5.2 Status Tab

This tab displays axes hardware flag status (ZM, EOR- and EOR+), and if they are in motion, have a motor fault or a following error.

It also reports if at least one motor is ON, one program or one trajectory is executing.

| | Mon May 20 2019 | 16:32 | IP: none | | | |
|---------|---|---|---------------------|--------------------|--|--|
| Home | Errors | Status | Log | | | |
| Move | Axe ZM | EOR- EOR+ | In Motion Motor Fau | lt Following Error | | |
| Gpio | 2 | | | | | |
| Status | Motor ON for at lea | st one axis: | | | | |
| Setting | At least one program At least one trajecto | At least one program is executing: At least one trajectory is executing: | | | | |
| Program | | | | | | |
| About | | | | | | |
| | | | | | | |
| | | | | | | |

2.5.3 Log Tab

This page displays the content of the firmware log files. The front panel is locked in this page in case of boot failure.

• Press error.log or boot.log to display the content of the file.



2.6 Setting Menu

2.6.1 Motion Tab

This tab allows setting motion parameters:

- OH (home search high speed)
- JW (jog low speed)
- JH (jog high speed)
- VA (velocity)
- AC (acceleration)

Modifying a value changes its color from green to red.

"Apply parameters" applies modified parameters to the stages (modified values in red turn to green).

"Read parameters" button displays the currently applied parameters (values in green) and erases red pending modifications.

| | Mon May 20 2019 | 9 16:32 | IP: none | | |
|---------|-----------------|--------------|----------|-------------|--------|
| Home | Motion | Display | Ethernet | Config | |
| Move | Velocity: | Axis 1 | Axis | 2 | Axis 3 |
| Gpio | ОН | 20 | 10 | | |
| Status | JW | 4 | 20 | | |
| Setting | VA | 40 | 20 | | Avic 3 |
| Program | Acceleration: | 160 | 80 | | AXIS 5 |
| About | Rea | d parameters | | Apply parar | neters |
| | | | | | |
| | | | | | |

2.6.2 Display Tab

Display page can be used to configure the number of digits for axes position display. "Apply parameters" applies modified parameters (modified values in red turn to green). "Read parameters" button displays the current parameters (values in green).

Moreover, date and time can be adjusted in the bottom of the screen. (Do not forget to press "Set" to apply your changes).

| | Wed September 1 | 2021 09:29 | IP: none | 2 | |
|---------|-----------------|-----------------|----------|--------|--------|
| Home | Motion | Display | Ethernet | Config | |
| Move | Position displ | ау | | | |
| Gpio | Decimal digits | Axis 1 | Ax | is 2 | Axis 3 |
| Status | Rea | Read parameters | | | eters |
| Setting | Touch Screen | | | | |
| Program | | | | | |
| About | Date 2021 | 9 | 1 | Set | |
| | Time 9 | 27 | | Set | |
| | | | | | |

This tab also allows to set the screen brightness.

2.6.3 Ethernet Tab

This page allows configuring the IP setting of the "Host" Ethernet port.

Static IP:

- Tick "static IP" if you want to set your own IP address parameters.
- Type your settings and press "Set". The new address is displayed on the top.

| | Mon May 20 201 | 9 16:33 | IP: none | | |
|---------|-------------------------|--|----------|--------|--|
| Home | Motion | Display | Ethernet | Config | |
| Move | Host | | | | |
| Gpio | Туре | static IPdynamic IP | | | |
| Status | IP address | | | | |
| Setting | Gateway | | | | |
| Program | Remote | | | | |
| About | IP address Netmask : | : 192.168.254.25 255.255.255.0 | 4 | | |
| | | | Set | | |
| | | | | | |

Dynamic IP:

- Tick "dynamic IP" to let the network choose an address automatically.
- Press "Set". The button turns to "Cancel (Searching.)" while the network tries to negociate an IP address. Press again to stop searching.

Once an address is allocated, it is displayed on the top of the screen.

| | Mon May 20 2019 | 9 16:33 | IP: none | |
|---------|-------------------------|--|----------|--------|
| Home | Motion | Display | Ethernet | Config |
| Move | Host | | | |
| Gpio | Туре | static IPdynamic IP | | |
| Status | IP address | | | |
| Setting | Netmask Gateway | | | |
| Program | Remote | | | |
| About | IP address Netmask : | : 192.168.254.25 255.255.255.0 | 4 | |
| | | | Set | |
| | | | | |

2.6.4 Config Tab

This page allows reviewing axes configuration.

It is automatically dispayed when the power-up automatic configuration fails (non ESP compatible stage or stage not recognized).

This tab can also be used to configure a Dummy stage for simulation on axes with no physical stage connected. In the example below, axis 3 reports "NO STAGE", Current config is "UTS50CC" (stage previously connected) and proposed New config is "DUMMY STAGE".

• Press "apply new config" and then "Reboot" if you want to simulate a stage on this axis.



2.7 Program Menu

The page allows running programs stored in the controller. Writing a new program is not possible from front panel, it shall be done with a remote connection (with commands or sftp files upload).

- Select the program you want to execute and press "Run Program". Several programs can be launched simultaneously.
- Press "Stop All programs (X running)" to stop all programs execution. "X" reports the number of programs currently running.



2.8 About Menu

This page gives information about software versions and connected stages.

| | Mon May 20 2019 16:33 | IP: none |
|---------|-------------------------------------|---|
| Home | Controller version: | ESP302 Snapshot version 20190517 |
| Move | | ESP302 FrontPanel version 0.2.6 ESP302 Host version 0.1.23 ESP302 MotionKernel version 0.02f 05/15/2019 |
| Gpio | Stage 1: | ESP302 Web version 2.1.0 |
| Status | Stage 1. | SNB182709 UTS@UTS50CC@XPS-DRV11 |
| Setting | Stage 2: | UTS50PP SNB186222 UTS@UTS50PP@XPS-DRV11 |
| Program | Stage 3: | NO STAGE |
| About | | UTS@UTS50CC@XPS-DRV11 |
| | 16:33:24 up 4:31, 0 users, load ave | rage: 0.01, 0.03, 0.00 |
| | | |

3.0 Website interface

3.1 Interface Overview

ESP302 web interface is compatible with Windows 7 and above.

The ESP302 software tools provide users a convenient access to the most common features and functions of the ESP302 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 ESP302 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.

| | - □ × 1 ↑ ★ ☆ ♡ |
|--|--------------------|
| Ye beside - Legin A | |
| | |
| | |
| | |
| <>>Newport [®] | |
| ESP302 Motion Controllor / Driver | |
| | |
| Device: ESP-3004-1234 | |
| Username: Administrator | |
| Role: O User | |
| SIGN IN | est. |
| Remember me | |
| AXES O A Newport Mon | |
| CAUTION How Controller | |
| Allow Andrew Allow | |
| | 313. |
| | |
| And the second s | |

Once logged, the main tab is displayed across the top of the ESP302 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.

Main menus (with User or Administrator Rights)

| ← → | | | | | | - C Rechercher | <u> </u> |
|---------|----------|------------|-------|-------------|----------|----------------|-------------------------|
| Newport | ® System | Controller | Files | Front panel | Terminal | Documentation | [Administrator logout] |
| | | | | | | | |

Sub-menus for CONTROLLER (with Administrator Rights)

| | | | | | | ▼ C Rechercher | - □ × × ↑ ★ \$ @ |
|------------|-------------|----------------|--------|---------------------|--------------|----------------|--------------------------|
| 𝔍 Newport° | System | Controller | Files | Front panel | Terminal | Documentation | [Administrator logout] |
| | IP manageme | ent Users mana | gement | General information | Firmware upo | date | |

Restricted set of sub-menus for CONTROLLER (with User Rights)

| ← → ∞ http://192.168.33.71/ ∞ ESP302 - Terminal × ♪ | | | | | | | | × |
|--|---------------|--------|-------|-------------|----------|---------------|-----------------|--------|
| 𝖘 Newport [®] | System | | Files | Front panel | Terminal | Documentation | [Anonymous log | jout] |
| | General infor | mation | | | | | | |

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

3.2 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. Host name termination can also be modified.

<u>ATTENTION:</u> the IP address visible on the following screenshots probably does not correspond to the one of your device! See Start-Up Manual for further details.

| ← → mttp://192.168.33.71/ | _ | _ | _ | _ | _ | - C Rechercher | _ □ × - ○ ☆ ☆ ♡ |
|---------------------------------|-------------------|----------------------|---------|---------------------|--------------|----------------|--|
| Newport [®] | System | Controller | Files | Front panel | Terminal | Documentation | [Administrator logout] |
| | IP managemer | nt Users mana | agement | General information | Firmware upd | date | |
| • Static IP configuration |) | | | | | | |
| Static IP addr | ess 192 | . 168 . 33 | . 71 | | | | |
| Netmask va | lue 255 | . 255 . 254 | . 0 | | | | |
| Gateway IP addr | ess | | | | | | |
| O Dynamic IP configurat | tion | | | | | | |
| MAC addr | ess D4:36:3 | 9:2B:30:04 | | | | | |
| Current IP addr | ess 192.168. | 33.71 | | | | | |
| Netmask va | lue 255.255. | 254.0 | | | | | |
| Current gateway | / IP | | | | | | |
| Remote IP addre | ess 192.168. | 254.254 | | | | | |
| Subnet ma | ask 255.255. | 255.0 | | | | | |
| Hostna | me ESP-300 | 4- 1234 | (*) | | | | |
| (*) Changes marked with an aste | erisk require a n | eboot to take effect | | | | | |
| | SAVE CONF | IGURATION | REBOOT | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| ESP302 Motion Contro | oller / Driv | er - ESP-300 | 04-1234 | | | | © 2018 Newport Corporation. All rights reserved. |

3.3 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:

• Click on "New Account" and the following window appears:

| ← <> ∞ http://192.168.33.71/ | | | | | | ÷ | C Recherch | er | | - ک | □ ↑★3 | × |
|---|------------------------|------------------|---|--|---------------|-------------|------------|-----|----------------------|------------------|-------------|---------|
| ESP302 - Users management × Newport [®] | System Co | ntroller Files F | ront pane | el Terr | ninal | Docu | umentati | ion | | [Admir | iistrator I | ogout] |
| User accounts mana | igement | | | | | | | | | | | |
| Login | Role | | | | | | | | | | | |
| Administrator | Administrator (all ri | Cr | eate a ne | ew accou | nt | | | | | | | |
| Anonymous | Regular user | | | | | | | | | | | |
| NEW ACCOUNT | | | Login: | Technician1 | | | | | | | | |
| Warning: it is highly advised to | o change user password | New password | rd (8 char. max): (confirm): Role: | •••••••••••••••••••••••••••••••••••••• | ⊖ Admir ОК | * nistrator | EL | | | | | |
| ESP302 Motion Contr | oller / Driver - | ESP-3004-1234 | | | | | | | © 2018 Newport Corpo | oration. All rig | hts reserv | red. |

- Type in a Login name (without blank), password, and role (User or Administrator).
- Click "OK" to add the new access account.

| ← → ∞ http://192.168.33.71/ | | | | | - C Rechercher | |
|-------------------------------|-------------------------------|-------------------|-------------------|--------------|----------------|--|
| ESP302 - Users management × | System Control | ler Files F | ront panel | Terminal | Documentation | [Administrator logout] |
| | IP management Users | management Gen | neral information | Firmware upd | late | |
| User accounts man | agement | | | | | |
| Login | Role | | | | | |
| Administrator | Administrator (all rights) | EDIT | | | | |
| Anonymous | Regular user | EDIT DELETE | | | | |
| Technician1 | Regular user | EDIT DELETE | | | | |
| NEW ACCOUNT | | | | | | |
| Warning: it is highly advised | to change user passwords from | factory settings. | | | | |
| ESP302 Motion Cont | roller / Driver - ESP | -3004-1234 | | | | © 2018 Newport Corporation. All rights reserved. |

3.4 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.

| → 🐼 http://192.168.32.97/ | - C | - □ × ♪ ☆ ☆ © |
|---|--|---|
| ESP302 - General information × [] Newport® | System Controller Files Front panel Terminal Documentation | [Administrator logout |
| | IP management Users management General information Firmware update | |
| | Components version display | |
| Snapshot version | ESP302-N200002 | |
| Operating system version | Linux 4.9.28-geed43d1050 #11 SMP PREEMPT Tue Feb 6 09:13:25 CET 2018 | |
| Web server version | ESP302 2.3.1 (20191113) | |
| Snapshot details | Refer to ESP302-InstallerHistory.pdf | |
| Stage database revision | StageDataBase V4.3.5 - ESP302 Controller | |
| Control boards | | |
| Available driver slots | 3 | |
| | | |
| | IP configuration | |
| Host name | ESP-3004-1234 | |
| Host IP address | 192.168.32.97 (DHCP) | |
| Host netmask | 255.255.254.0 | |
| Gateway IP address | 192.168.33.253 | |
| | | |
| ESP302 Motion Contr | oller / Driver - ESP-3004-1234 e2 | 019 Newport Corporation. All rights reserved. |
| | | |

3.5 Controller – Firmware Update

Users can regularly update the controller with new firmware releases. Updating the firmware does overwrite the stageX.ini files if changes are required. Since configuration will be reset when upgrading the firmware, these files should be backed up prior to the firmware upgrade.

NOTE

Controller configuration files including stage1.ini, stage2.ini and stage3.ini files can be downloaded and saved from the "Config" folder of the controller using SFTP connection. See Start-Up Manual for more information.

Updating the ESP302 Firmware

- Download the firmware installer pack from the ESP302 webpage at www.newport.com.
- Connect to the ESP302 controller. For more information see Start-Up Manual.
- Login on to the ESP302 with Administrator rights.
- Go to Controller \rightarrow Firmware update.

| ← ⊕ @ http://192.168.254.254/ | | | | | | • | C Rechercher | | | - م | ■ × ↑★☆© |
|--|--|--|---------------|------------------|------------------|-------|--------------|----|-------------------|------------------|-----------------|
| Newport [®] | System | Controller | Files F | ront panel | Terminal | Doc | umentation | | | [Admin | istrator logout |
| | IP managemer | it Users mana | gement Gen | eral information | ▼ Firmware up | odate | | | | | |
| install ∃ | og | | | | | | | | | | |
| | | update.log file | e contents | | | | | | | | |
| [2001-01-21 23:12:44] IF [2001-01-21 23:12:44] IF [2001-01-21 23:12:44] IF [2001-01-21 23:12:48] TF | lesystem upde cated snaps ror: invalid e system was | tte starting tt: snapshot-ESB signature (file not modified. | 302-N10001-MR | F.tbz | | < v | | | | | |
| 258 5 Mb free / 399 2 Mb total | | | | | | | | | | | |
| | | | | | | | | | | | |
| Firmware name | Size | Uploaded | | Action | | | | | | | |
| snapshot-ESP302-N10001 | .tbz 140.1 Mb | 2001-01-22 00:08 | :30 DOWNLOA | DINSTALL | DELETE | | | | | | |
| UPLOAD FIRMWARE | | | | RESTART CO | NTROLLER | | | | | | |
| | | | | | | | | | | | |
| ESP302 Motion Contr | oller / Driv | er - ESP-EBI | D4 | | | | | ©2 | 018 Newport Corpo | oration. All rig | nts reserved. |

• Click on UPLOAD FIRMWARE and select the installer pack file saved on the PC. The snapshot installer is uploaded, verified, and then appears in the firmware list:

| Firmware name | Size | Uploaded | Action |
|----------------------------|-----------|---------------------|-------------------------|
| snapshot-ESP302-N10001.tbz | 140.1 Mb | 2001-01-22 00:08:30 | DOWNLOAD INSTALL DELETE |
| snapshot-20190517.tbz | 140.1 Mb | 2001-01-22 00:20:59 | DOWNLOAD INSTALL DELETE |
| UPLOAD FIRMWARE | | | RESTART CONTROLLER |
| | | | |
| SP302 Motion Controlle | r / Drive | er - ESP-EBD4 | |

• Click INSTALL in the snapshot line and the following Confirmation window appears:



- Select "Yes, I confirm that I want to install this upgrade". Resetting the controller IP address or user accounts is optional.
- Click INSTALL NOW. The controller reboots and the following window appears:

| | 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 fin |
| | ок |
| | |

• Click OK.



Updating the stages Database

• Scroll down the Firmware Update page.

The present StageDataBase version is displayed. It can be saved on your computer by clicking DOWNLOAD.

| Stages database | | | |
|--|----------|---------------------|---------------|
| Database version | Size | Uploaded | Action |
| StageDataBase V4.3.5 - ESP302 Controller | 442.5 Kb | 2019-11-13 18:21:20 | DOWNLOAD |
| UPLOAD DATABASE | | RESTA | RT CONTROLLER |
| | | | |
| 6P302 Motion Controller / Driver | - ESP | -3004-1234 | |

- Click UPLOAD DATABASE and browse to select the new "database.txt" on your computer.
- Once uploaded, click RESTART CONTROLLER to apply changes.

3.6 System – Error file Display

The Error File Display is an important screen for troubleshooting the ESP302 controller. When the ESP302 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.

| Error log file contents | × | □ × | - | Rechercher | - 0 | | | | | | |
|--|-------|-------------------|----------------------------|--------------------|-------|----------|-------------|--------|--------------|-----------------|-------------------------------------|
| System Controller Files Front panel Terminal Documentation | out] | ninistrator logou | [Admir | | | | | | | | 🐼 ESP302 - Error file display 🛛 🗙 🎦 |
| Error file display Error log file contents error.log | | | | entation | Docur | Terminal | Front panel | Files | Controller | System | 𝔍 Newport [®] |
| Error log file contents | | | | | | | | | lay | Error file disp | |
| Error log file contents | | | | | | | | | | | |
| error.log | | | | | | | | | | nte | Error log file conte |
| error.log | | | | | | | | | | 1113 | Entor log life conter |
| error.log | | | | | | | | .log | erro | | |
| | | | | | ^ | | | | | | error.log |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | ~ | | | | | | |
| ESD302 Motion Controller / Driver - ESD-3004-1234 | | rights recensed | ewport Corporation_All ris | @ 2018 Mourport Co | | | | 1-1231 | or - ESD_300 | troller / Driv | ESP302 Motion Cont |

3.7 Front Panel – Move

The Move page provides access to basic group functions like POWER ON, HOME, or POWER OFF, and executes relative and absolute moves.

The Move page also provides a convenient review of all important axes information like axes names, status and positions. All axes are listed in the Move page.

| ESP30 | http://192.168.32.9 Move > | 97/ | | | | | | - C Rechercher | | - □ × ♪ ①☆恋恋♡ |
|-------|--|---------------|------------------|----------------|-------------------|----------------|-------|-----------------|---------------------------|-------------------------|
| 9 | Newp | ort® | System C | ontroller F | iles Front pa | anel Termina | al Do | ocumentation | | [Administrator logout] |
| | | | Move Jog | Cycle I/O cont | trol Device statu | S | | | | |
| ı | Move to posi | ition | | | | | | | | |
| | Position | Status | Action | Positioner | Parameters | Absolute move | e 1 | Absolute move 2 | Relative move | |
| | -51.15 | 5140h | POWER ON | Axis 1 | ♦ VIEW/SET | * | | * | | |
| | 0 | 5140h | POWER ON | Axis 2 | 🔹 VIEW/SET | * | 60 | * | | |
| | 0 | 5140h | POWER ON | Axis 3 | VIEW/SET | » | 60 | » | | |
| | | | KILL ALL | | | * All together | | * All together | All together | |
| F | Refresh delay (in m | illiseconds): | 200 SET | | | | | | | |
| ES | SP302 Motio | on Contr | oller / Driver - | ESP-3004-1 | 234 | | | | © 2019 Newport Corporatio | n. All rights reserved. |

• Click "POWER ON". The Status changes and the Action button changes from "POWER ON" to "HOME". The homing parameters button becomes active. See example with axis 3 below:

| Status | Action | Positioner | Pa | rameters |
|--------|----------|------------|----|----------|
| 5040h | POWER ON | Axis 1 | | VIEW/SET |
| 5140h | POWER ON | Axis 2 | • | VIEW/SET |
| 5340h | HOME | Axis 3 | | VIEW/SET |

• When clicking on this button, homing parameters can be modified.

| Axis | 1 homing parame | ters |
|--------------------|-----------------------|------|
| | Low | High |
| Home search speed: | 0.25 | 0.5 |
| Homing method: | Negative limit signal | × |
| | | SET |

• Modify if necessary and click "SET" or "CANCEL" to abort.

• Click "HOME" button. The stage starts moving to find its reference position. When done, the Action button changes to "POWER OFF" and the grey controls become active. If the homing sequence fails, the Action button turns back to "POWER ON".

| Status | Action | Positioner | Parameters | Absolute move 1 | Absolute move 2 | Relative move |
|--------|-----------|------------|------------|--|-------------------|---------------|
| 5140h | POWER ON | Axis 1 | VIEW/SET | • 02 • • • • • • • • • • • • • • • • • • | © 20 | |
| 5140h | POWER ON | Axis 2 | VIEW/SET | » | SO GO | |
| 4340h | POWER OFF | Axis 3 | VIEW/SET | » G0 | » G0 | |
| | KILL ALL | | | All together | > All together 60 | All together |

• When clicking "VIEW/SET", move parameters can be modified.

| | Values in stages.ini | Active values |
|---------------|----------------------|---------------|
| Velocity: | 10 | 20 |
| Acceleration: | 40 | 80 |
| Jerk value: | 0 | 0.125 |

- Modify if necessary and click "SET" or "CANCEL" to abort.
- Enter an allowed absolute position value in the "Absolute move 1" or "Absolute move 2" field and click "Go", or enter a relative move value in the "Relative move" field and click forward or backward arrow. The stage moves to the new position.
- You can also click on ">>" button to fill an absolute move area with the current axis position (see example "in Absolute move 2").

| Position | Status | Action | Positioner | Parameters | Absolu | te move 1 | Absolut | te move 2 | Relative | move |
|----------|--------|-----------|------------|------------|--------|--------------|----------|----------------|----------|-------|
| 0 | 5140h | POWER ON | Axis 1 | t VIEW/SET | * | | * | | | |
| 0 | 5140h | POWER ON | Axis 2 | ◆ VIEW/SET | » | | * | | | |
| -41.25 | 4340h | POWER OFF | Axis 3 | ▲ VIEW/SET | * | 10 GO | » -4 | 1.25 GO | | |
| | | KILL ALL | | | All to | | * All to | gether 60 | All toge | ether |

• If more than one axis is enabled, a move value can be entered for each, and simultaneous motions can be executed by pressing the "GO" button next to the "All together" label.

| Position | Status | Action | Positioner | Parameters | Absolute move 1 | Absolute move 2 | Relative move |
|----------|--------|-----------|------------|------------|-----------------|--------------------------|---------------|
| 0 | 5140h | POWER ON | Axis 1 | VIEW/SET | * | » | |
| 0 | 4340h | POWER OFF | Axis 2 | • VIEW/SET | » 5 GO | * G0 | |
| 5.006 | 4340h | POWER OFF | Axis 3 | • VIEW/SET | » 10 GO | » 5 GO | |
| | | KILL ALL | | | All together GO | * All together GO | All together |

- Anytime, you can click on "POWER OFF" to disable a stage. The Action button changes to "POWER ON".
- Click on "POWER ON" to enable the stage again without loosing encoder position.
- When clicking "KILL ALL", all axes are killed and the encoder positions are lost. They have to be powered on and homed again.

3.8 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).

- Click on the "Action" button to Power ON and Home the axis.
- Then start Jog by pressing forward or backward arrow (simple for Jog low speed or double for Jog high speed).
- Click on "STOP" to stop Jog.
- Move parameters can be modified, even during Jog, with the "VIEW/SET" button.

| |) • http://192.168.32.9 | 17/ | | | | | ≁ Ĉ Rec | hercher | × ロ = ロ × の 会 邸 (2000) |
|----|-------------------------|---------------|----------------|---------------|-------------------|---------------|-----------|---------|--|
| Q | Newpo | ort® | System C | Controller F | iles Front p | anel Terminal | Documenta | ation | [Administrator logout] |
| | | | ▼ Move Jog | Cycle I/O con | trol Device statu | s | | | |
| | | | | | | | | | |
| | Jog to veloci | ity | | | | | | | |
| | Position | Status | Action | Positioner | Parameters | Jog | | | |
| | -139.895 | 4340h | POWER OFF | Axis 1 | VIEW/SET | Image: stop | > | | |
| | -44,944 | 4340h | POWER OFF | Axis 2 | VIEW/SET | Image: stop | > >> | | |
| | 0 | 5140h | POWER ON | Axis 3 | | | | | |
| | | | KILL ALL | | | STOP | > >> | | |
| | | | | | | | | | |
| F | Refresh delay (in mi | illiseconds): | 200 SET | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| ES | SP302 Motio | n Contr | oller / Driver | - ESP-3004-1 | 234 | | | | © 2019 Newport Corporation. All rights reserved. |

3.9 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).

| Newp | ort° | System | Controller F | iles Front p | anel Termina | l Documenta | tion | [Administr |
|-----------------------|--------------------|---------------------|---------------|-------------------|----------------|----------------|------------|-------------|
| - | | Move Jog | Cycle I/O con | trol Device statu | IS | | | |
| cle betwe Position | en two p Status | oositions Action | Positioner | Parameters | Position 1 | Position 2 | Dwell time | Cycle |
| 0 | 5140h | POWER ON | Axis 1 | ♦ VIEW/SET | * | * | ms | < STOP ► |
| 0 | 5140h | POWER ON | Axis 2 | • VIEW/SET | * | » | ms | < STOP > |
| 9.883 | 4740h | ABORT | Axis 3 | • VIEW/SET | » 10 | » 5 | 100 ms | STOP ► |
| | | KILL ALL | | | * All together | * All together | | |
| esh delay (in m | illiseconds): | 200 SET | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

- Enter Position 1, Position 2 and Dwell time (time the stage remains in each position).
- Click on one of the arrows to start cycling.
- Click on "STOP" to stop motion.
- Move parameters can be modified, even during cycling, with the "VIEW/SET" button.

3.10 Front Panel – I/O Control

This page allows controlling and monitoring the 16 digital I/Os (2 groups of 8).

- Tick GPIO1 or GPIO2 "O" button if you want to set the group in output mode instead of input ("I").
- When set as output, each bit can be set to "1" (green) or reset to "0" (white).
- When set as input, each bit state is displayed ("1": green, "0": white).

Note that open inputs are reporting level "1" by default.

| | | | | | | - C Rechercher | × ⊐ × Ω+ † ★ © |
|---------------------------------|---------------|---------------|-------------|-----------|----------|----------------|--|
| SP302 - I/O control X | | | | | | | [Administrator logout] |
| <>> Newport [®] | System | Controller | Files Fr | ont panel | Terminal | Documentation | |
| | Move Jog | g Cycle I/O c | ontrol Devi | e status | | | |
| | | | | | | | |
| I/O control | | | | | | | |
| | | Digital I/ | 0 | | | | |
| Connector | I/0 1 | 2 3 4 | 567 | 8 | | | |
| GPI01 | 0. | | | | | | |
| GPIO2 | • • 🥥 | | | | | | |
| Refresh delay (in milliseconds) | : 200 SE | | | | | | |
| ESP302 Motion Cont | roller / Driv | er - ESP-EBD | 4 | | | | © 2018 Newport Corporation. All rights reserved. |

3.11 Front Panel – Device Status

3.11.1 Device Status – Error FIFO

The Error FIFO section is an important page for trouble-shooting. When encountering any problem during the use of the system, information about the errors related to the commands are found in this page.

| | 12.168.254.254/ | | | | | | ✓ C Rechercher | <mark>-</mark> ■ <mark>×</mark> ρ- ↑ ★ Ω ⊍ |
|-----------------------|---------------------------|----------------|-------------------|---------|--------------------|----------|----------------|--|
| ESP302 - Device statu | × 📑 | | | | | | | |
| ⊲∕ Nev | vport® | Syste | m Controller | Files | Front pane | Terminal | Documentation | |
| ⊟ Error | FIFO | Move | Jog Cycle I/O | control | ▼ Device status | | | ^ |
| | Timestamp | Code | Desc | ription | | | | |
| Slot #0 | 3890027 | 0 | NO ERROR DETECTED | | | | | |
| Slot #1 | 3890033 | 0 | NO ERROR DETECTED | | | | | |
| Slot #2 | 3890040 | 0 | NO ERROR DETECTED | | | | | |
| Slot #3 | 3890047 | 0 | NO ERROR DETECTED | | | | | |
| Slot #4 | 3890053 | 0 | NO ERROR DETECTED | | | | | |
| Slot #5 | 3890063 | 0 | NO ERROR DETECTED | | | | | |
| Slot #6 | 3890072 | 0 | NO ERROR DETECTED | | | | | |
| Slot #7 | 3890083 | 0 | NO ERROR DETECTED | | | | | |
| Slot #8 | 3890090 | 0 | NO ERROR DETECTED | | | | | |
| Slot #9 | 3890097 | 0 | NO ERROR DETECTED | | | | | |
| Contr | oller status | 3 | Description | | | | | |
| TS regis | ter 1 bit 0 | Avis #1 in n | pescription | _ | | | | |
| 15 Tegis | ter i bit 0 | MAIS #1 III II | 1011011 | _ | | | | ~ |
| ESP302 M | lotion Conf | roller / | Driver - ESP-EB | D4 | | | | © 2018 Newport Corporation. All rights reserved. |

3.11.2 Device Status – Controller Status

The Controller Status section reports different information about axes or controller.

| ← → Ø http://192.168.254.254/ | | | _ | _ | ▼ C Rechercher | <mark>- □ ×</mark> רייס, רייס, רייס רייס, רייס, רייס |
|-------------------------------------|--------------------------------------|------------|---------------|----------|----------------|--|
| ♦ Newport [®] | System Controller | Files | Front panel | Terminal | Documentation | [Administrator logout] |
| | Move Jog Cycle I | /O control | Device status | | | |
| Controller stat | us | | | | | ^ |
| Bit location | Description | | | | | |
| TS register 1 bit 0 | Axis #1 in motion | | | | | |
| TS register 1 bit 1 | Axis #2 in motion | | | | | |
| TS register 1 bit 2 | Axis #3 in motion | | | | | |
| TS register 1 bit 4 | Motor power of at least one axis | × | | | | |
| TX register 1 bit 0 | At least one program is executing | | | | | |
| TX register 1 bit 4 | At least one trajectory is executing | | | | | |
| TX1 register 1 bit 0 | Controller boot failed | | | | | |
| TX1 register 1 bit 1 | Axis #1 boot configuration failed | | | | | |
| TX1 register 1 bit 2 | Axis #2 boot configuration failed | | | | | |
| TX1 register 1 bit 3 | Axis #3 boot configuration failed | | | | | |
| TX1 register 2 bit 0 | Hardware inhibit not detected | | | | | |
| TX1 register 2 bit 1 | Drivers 48V not detected | | | | | |
| TX1 register 2 bit 2 | Axis #1 motor ON | × | | | | |
| TX1 register 2 bit 3 | Axis #2 motor ON | × | | | | ~ |
| ESP302 Motion Co | ntroller / Driver - ESP-E | 3D4 | | | | © 2018 Newport Corporation. All rights reserved. |

3.11.3 Device Status – Hardware Status

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

| | | | | | | | a di Buhusha | | - | | × |
|--------------------------|--------------------------------|-----------|-----------|---------------|---------|----------|----------------|------------------------|----------------|-----------|-------|
| ESP302 - Device status × | | | | | | | * O Rechercher | | 100 | | |
| Newport [®] | System Control | ler | Files | From | t panel | Terminal | Documentation | | | nistrator | |
| | Move Jog Cycle | I/O c | ontrol | ▼ Device s | tatus | | | | | | |
| Hardware state | us | | | | | | | | | | ^ |
| Bit location | Description | Axis 1 | Axis 2 | Axis 3 | | | | | | | |
| xTS register 1 bit 0 | Stage not connected | | | × | | | | | | | |
| xTS register 1 bit 1 | Motor ON | × | × | | | | | | | | |
| xTS register 1 bit 2 | Axis moving | | | | | | | | | | |
| xTS register 1 bit 3 | Axis synchronized | | | | | | | | | | |
| xTS register 1 bit 4 | Origin not done | | | × | | | | | | | |
| xTS register 2 bit 0 | Following error | | | | | | | | | | |
| xTS register 2 bit 1 | Motor fault | | | × | | | | | | | |
| xTS register 2 bit 2 | Negative hardware travel limit | | | × | | | | | | | |
| xTS register 2 bit 3 | Positive hardware travel limit | | | × | | | | | | | |
| xTS register 2 bit 4 | Home signal | | | × | | | | | | | |
| Driver status | | | | | | | | | | | 1 |
| Rit location | Description | 1 | Axis A | xis Axis | 5 | | | | | | ~ |
| ESP302 Motion Co | ntroller / Driver - ESP | -EBD | 4 | i. | | | | © 2018 Newport Corport | ation. All rig | ghts rese | rved. |

3.11.4 Device Status – Driver Status

The Driver Status section reports some potential driver defaults.

| http://192.168.254.254/ - Device status × | | _ | _ | | ▼ C Rechercher | - م |
|---|-----------------------------------|-----------|---------------|----------------|----------------|------------------------------------|
| Newport® | System Controller | Files | Front | panel Terminal | Documentation | [Admir |
| | Move Jog Cycle I/ | O control | Device sta | itus | | |
| TS register 1 bit 2 | Axis moving | | | | | |
| TS register 1 bit 3 | Axis synchronized | | | | | |
| TS register 1 bit 4 | Origin not done | | × | | | |
| TS register 2 bit 0 | Following error | | | | | |
| TS register 2 bit 1 | Motor fault | | × | | | |
| TS register 2 bit 2 | Negative hardware travel limit | | × | | | |
| TS register 2 bit 3 | Positive hardware travel limit | | × | | | |
| TS register 2 bit 4 | Home signal | | × | | | |
| Driver status Bit location | Description | Axis 1 | Axis Axis 2 3 |] | | |
| TS1 register 1 bit 0 | Fuse broken or Low supply voltage | | | _ | | |
| TS1 register 1 bit 2 | Parameters error | | | | | |
| TS1 register 1 bit 4 | Peak current limit | | | | | |
| resh delay (in millisecon | ds): 200 SET | | | | | |
| 302 Motion Co | ntroller / Driver - ESP-EB | D4 | | | | © 2018 Newport Corporation. All ri |

3.12 Terminal

•

The Terminal screen allows the execution of all ESP302 controller commands. Refer to ESP302 Programmer's manual for command descriptions.

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

- Click to select a function, which then appears in the "Command" area.
 - Define the arguments for the function.

| | | | | | | | | | | - • | x |
|---|---|---|--|---------------------|-------------|---|--------------|---------------|------------------------|-----------------|------------|
| (<) (<) (<) (<) (<) (<) (<) (<) (<) (<) | 2.168.254.254/ | | | | | | ✓ C Recherc | her | Q | r 🕆 🖈 | # <u> </u> |
| ESP302 - Terminal | × 📑 | | | | | | | | | | |
| | (nort [®] | System | Controller | Files | Front panel | Terminal | Documentat | tion | | dministrato | r logout] |
| Cener | port | - | | | | | | | | | |
| Comm OH OH OL? OR OR OR PA PA? PH PR Q1? QP Comm The co | hand list sets the home se gets the home se gets the home se gets the home se gets the home se initiates the home initiates the home moves an axis to gets the advourt gets the hardwar gets the hardwar gets the hardwar gets the motor ty quit programming hand history is o | arch high speed arch high speed arch low speed arch mode for a rarch mode for a search mode for a search for an u search mode for a search for an u search for an u search for an a basfulte posi- position for an a basfulte posi- position for an a statute posi- posi- position for an a statute posi- position for an a statute posi- posi- position for an a statute posi- posi- posi- posi- posi- posi- | Search value for an axis value for an axis value for an axis value for an axis axis value for an axis axis with current mo axis with a specific m axis ition axis con on Status | de node Reply | | Command: PR moves an axis to a Arguments: int axisNumber 1 float relativePositio 10 CANCEL | on OK | CLEAR HISTORY | GENERATE PR | DGRAM | |
| | | | | | | | | | | | |
| ESP302 M | otion Contro | oller / Driv | er - ESP-EBI | D4 | | | | © 201 | 8 Newport Corporation. | All rights rese | erved. |

• 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".

| A (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) | | | | | | - C Rechercher | | <mark>ــــــــــــــــــــــــــــــــــــ</mark> | | x 2 🙂 |
|--|---|---|------------|-------------|--|----------------|-------------------|---|----------------|----------|
| 🥖 ESP302 - Terminal 🛛 🛛 🕹 📑 | | | | | | | | | | |
| <♥ Newport [®] | System C | Controller | Files | Front panel | Terminal | Documentation | | [Adminis | strator Io | gout] |
| Command list OH sets the home s OL sets the home s OL sets the home s OL gets the home s OM gets the home s OM gets the home s OM initiates the hom OR initiates the hom PA moves an axis t PA gets the absolut PH gets the absolut PH gets the maxim QM gets the maxim QM gets the maxim QM gets the maxim | earch high speed val earch high speed val earch low speed val earch node for an a earch mode for an a search mode for an axis ne search for an axis ne search for an axis e search for an axis o a nabsolute position or an axis o a telative position motor current fol type for an axis ng mode | Search fue tor an axis lue for an axis lue for an axis lue for an axis xis xis with current moot with a specific m n s r an axis | le lode | | Command API to execute 1PR10 Received message | | EXECU | TE | EP | |
| Command history Command The command history is ESP302 Motion Contro | : empty roller / Driver | Status i | Reply | _ | _ | | GENERA GENERA | TE PROGRA | NM s reserv | ed. |

• When the function is executed, the controller's response code will appear in the "Received message" window and a description will appear beneath. If the command was carried out successfully, 0 is returned. In all other cases, there will be an error code. The error code description is also provided.

| | | | | | | ✓ C Rechercher | - م | - □ ↑ ★ | × |
|--|--|---|-----------------|-------------|---|--|-------------------------------|---------------|----------|
| 🦉 ESP302 - Terminal 🛛 🗙 📑 | | | | | | | | | |
| Newport [®] | System | Controller | Files | Front panel | Terminal | Documentation | [Ac | iministrator | logout] |
| Command list OH sets the home OL? gets the home OL? gets the home OM sets the home OM sets the home OM sets the home OR initiates the h PA moves an axis PA? gets the absol PH gets the hand OR initiates the h PA moves an axis PA? gets the maxis QT? gets the maxis QM? gets the moto. QP quit programm Command history Command | search high speed search high speed search low speed search low speed search mode for a me search for an a search mode for a me search for an a to an absolute posi- tue position for an vare status for all a to a relative positi num motor current type for an axis sing mode | Search value for an axis value for an axis value for an axis value for an axis n axis axis with current mo axis with a specific m ition axis of of Status Repl 0 | de node Y | | Command API to execute 1PR10 Received messag 0, | e as carried out successfully. CLEAR HISTO | EXECUTE RY GENERATE PRO | KIRAM | |
| | | | | | | | | | |
| | | | | | | | | | |
| ESP302 Motion Con | troller / Driv | er - ESP-EB | D4 | | | | © 2018 Newport Corporation. A | l rights rese | rved. |

The functions are listed in alphabetical order and can be searched for using the search bar at the top of the Function list.

All the executed commands are listed in the "Command history" list.

- Click "DELETE" on the line you wish to remove.
- Click on "GENERATE PROGRAM" to save a program containing the commands of the history list in the controller.
- Click "CLEAR HISTORY" to reset the list.



ESP302 Motion Controller / Driver - ESP-EBD4

3.14 Files – Configuration files

In this webpage Configuration files stored on the controller can be downloaded, uploaded, viewed, edited or deleted. Note: Users must be logged in with Administrator rights in order to access this webpage. **Only experimented users (or Newport support personnel) should be allowed to make changes in these files.**

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 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.

RELOAD

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

| <♥ Newport® | System Cor Program files Co | ntroller Files Fro ponfiguration files Log files | ont panel Terminal | Documentation | | [/iumins |
|--|--------------------------------|---|---|--|---|--------------|
| Configuration files 4.5 Gb free / 5.7 Gb total STAGE1.ini STAGE2 | lini STAGE3.ir | UP! OAD FILE UPDATE STACE Display as listing Show "useless" files i StageDataBase.txt | DR LOAD CONFIG SAVE FACTORY SETTINGS system.ini | RELOAD | STAGE1.mi AGE@NO_DRIVER] tage parameters riolfformations mment = ibility rKH=EBDF302 = iver parameters river> | <u>∭</u> 2 > |

FACTORY SETTINGS

This button allows retrieving all the original configuration files.

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

| Confirmation |
|--|
| You can choose here which configuration file(s) you want to reset to factory settings. |
| □ StageDataBase.txt □ system.ini |
| 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 |

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 i | new configuration. |
| | ок | CANCEL |
| | | _ |

3.15 Files – Log Files

In this webpage log files stored on the ESP302 controller can be downloaded, uploaded, viewed, edited or deleted.

- Click on the log file name to open the file in the text editor. In the text editor the user can edit, save, save as, view, delete the log file or download again the original file.
- Click "UPLOAD FILE" to upload a log file from the user's PC to the ESP302 controller. When uploading a file, take note of the file extension.
- Click "DOWNLOAD AS ZIP" to download all log files at once in a zip folder to the user's PC.

| Newport® | System | Controller | Files | Front panel | Terminal | Docur | mentation | | [Ac | dministrator |
|--------------------------|---------------|---------------|-----------|-------------|--------------|---------|-------------------------|---|------------------------------------|--------------|
| | Program files | Configuration | files Log | files | | | | | | |
| .og files | | | | | | | - m 7 | boot.log | <u>m</u> 2 | × |
| - | | | | DOWNLOW | | 10 FU F | boot.log | | | , |
| 5 Gb free / 5.7 Gb total | | □ Display as | listing | DOWNLOAI | JAS ZIP UPLU | ADTILE | Controll | er_Boot [Mon Jan 1 00:15:58 20) | 01] | |
| | | | | | | | StageAutoConfig = Enabl | ed | | |
| | - | | | | | | Controll | er Boot: Configuration STAGE 1 : | | |
| heat lag | | corial log | trace lea | | | | Controller_Boo | t: Driver name = XPS-DRV11L (10) |) | |
| boot.log error. | log | senalitoy | trace.log | | | | Controller_Boo | t: Check EOR+ and EOR- t: EOR+ and EOR- are activated . | for axis #1 => Ax | ia |
| | | | | | | | not connected | | | |
| | | | | | | | Controller Boo | t m_Conf_EspSytem: 1 | | |
| | | | | | | | Controll | er_Boot: Configuration STAGE 2 | | |
| | | | | | | | Controller_Boo | t: Driver name = XPS-DRV11L (10) |) | |
| | | | | | | | Controller_Boo | t: Check EOR+ and EOR- t: EOR+ and EOR- are activated : | for axis $\pm 2 \implies \Delta x$ | ia |
| | | | | | | | not connected | | | |
| | | | | | | | Controller Boo | t m_Conf_EspSytem: 3 | | |
| | | | | | | | Controll | er Boot: Configuration STAGE 3 | | |
| | | | | | | | Controller_Boo | t: Driver name = XPS-DRV11L (10) |) | |
| | | | | | | | Controller_Boo | t: Check EOR+ and EOR- | | |
| | | | | | | | not connected | t: EOR+ and EOR- are activated : | IOF AXIS #3 -> AX | 18 |
| | | | | | | | Controller Boo | t m_Conf_EspSytem: 7 | | |
| | | | | | | | Controll | er Boots Create aver | | |
| | | | | | | | > Controller | ::CreateAxes | | |
| | | | | | | | CreateAxes: Rearme_Time | = 5500 ARUS_Time = 1499 Time | e_Base = 0.000100 | |
| | | | | | | | CreateAxes: (Rearme_Tim | <pre># Time_Base) + 0.01 = 0.56000 * Time_Base) + 0.01 = 0.159900</pre> | 0 | |
| | | | | | | | CreateAres: (AROS_TIME | - Time_Base) + 0.01 - 0.155500 | | |

ESP302 Motion Controller / Driver - ESP-EBD4

3.16 Documentation

Under the webpage Documentation users can open and download ESP302 manuals, drivers and example code.



Service Form

Your Local Representative

Tel.: _____

| | Fax: |
|---|---|
| | |
| | |
| Name: | Return authorization #: |
| Company: | (Please obtain prior to return of item) |
| Address: | Date: |
| Country: | Phone Number: |
| P.O. Number: | Fax Number: |
| Item(s) Being Returned: | |
| Model#: | Serial #: |
| | |
| Description: | |
| Reasons of return of goods (please list any specific problems): | |
| 8 (L) I I) <u> </u> | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

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

