MI-HORIZON3D

Digital 3D Cinema System

Installation & Operation Manual

Revision No. 1.0.0

masterImage
ABSOLUTELY 3D

Revision History

Revision	Date	Release Status	Author	Remarks
PD 0.1	24th February 2014	Preliminary Document	RJG	
PD 0.2	27th February 2014	Preliminary Document	RJG	Changes to software utility
PD 0.3	6th March 2014	Preliminary Document	RJG	Text Improvement
PD 0.4	12th May 2014	Preliminary Document	RJG	Packaging additions
1.0.0	22nd May 2014	Initial Release	RJG	

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1. Introduction

1.1. Welcome

Congratulations on choosing the finest digital projection 3D system available.

The MASTERIMAGE MI-HORIZON3D delivers the clearest, brightest, full-color images in a studio-approved single projection, patented three-way beam, liquid crystal, digital 3D system.

Paired with MASTERIMAGE high quality 3D eyewear, the MI-HORIZON3D provides the clearest and truest color 3D picture of any available liquid crystal 3D system.

This user manual provides all the information required for simple installations and the operation of the MI-HORIZON3D, with any DLP cinema projector and digital cinema server.

1.2. Contacting Technical Support

If you require technical support, our contact information is listed below:

	MASTERIMAGE 3D, INC
Email:	support@masterimage3d.com
Web Site:	**www.MasterImage3d.com**
USA Tel:	**+1-323-606-7800**
UK Tel:	**+44 1753 785131**
Asia Tel:	**+82-2-3438-1600**

2. Warnings and Cautions

2.1. Installation Consideration

When planning installation of the MI-HORIZON3D, ensure that the image height entering the system is less than 55mm.

The auditorium throw ratio should be greater than 1.5:1 for this version of the system.

2.2. Heat Damage

To avoid burning the polarizer film of the liquid crystal panel ensure a panel surface temperature of <80˚F is maintained.

2.3. General Electrical Safety

Disconnect the power cord before servicing or opening the control box for any reason.

2.4. General Handling

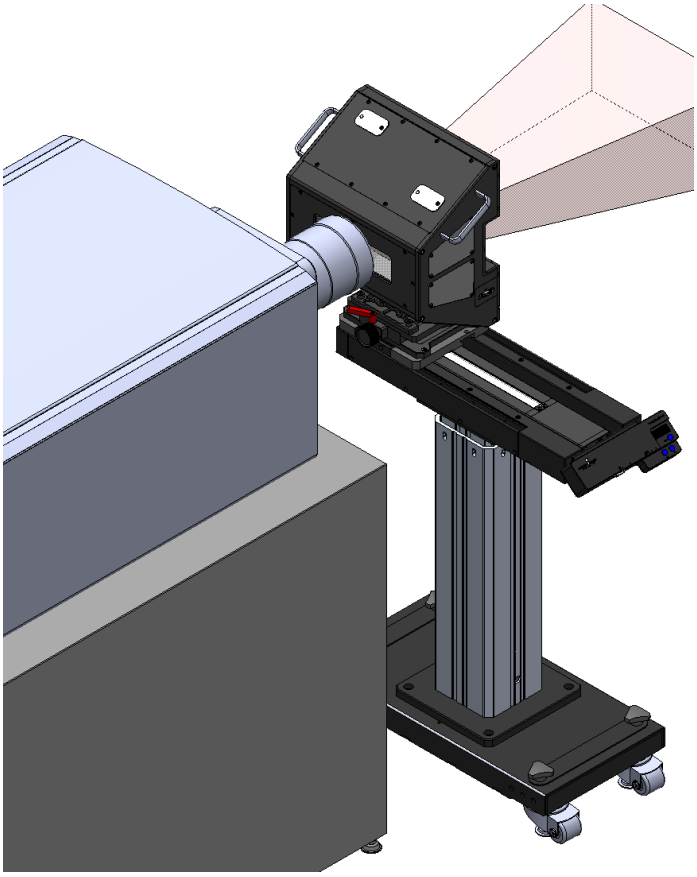
Avoid touching any optical components with bare hands. Handle the optical head assembly by the handles only.

3. System Overview

3.1. The New Horizon of Digital 3D Projection

Key Features:

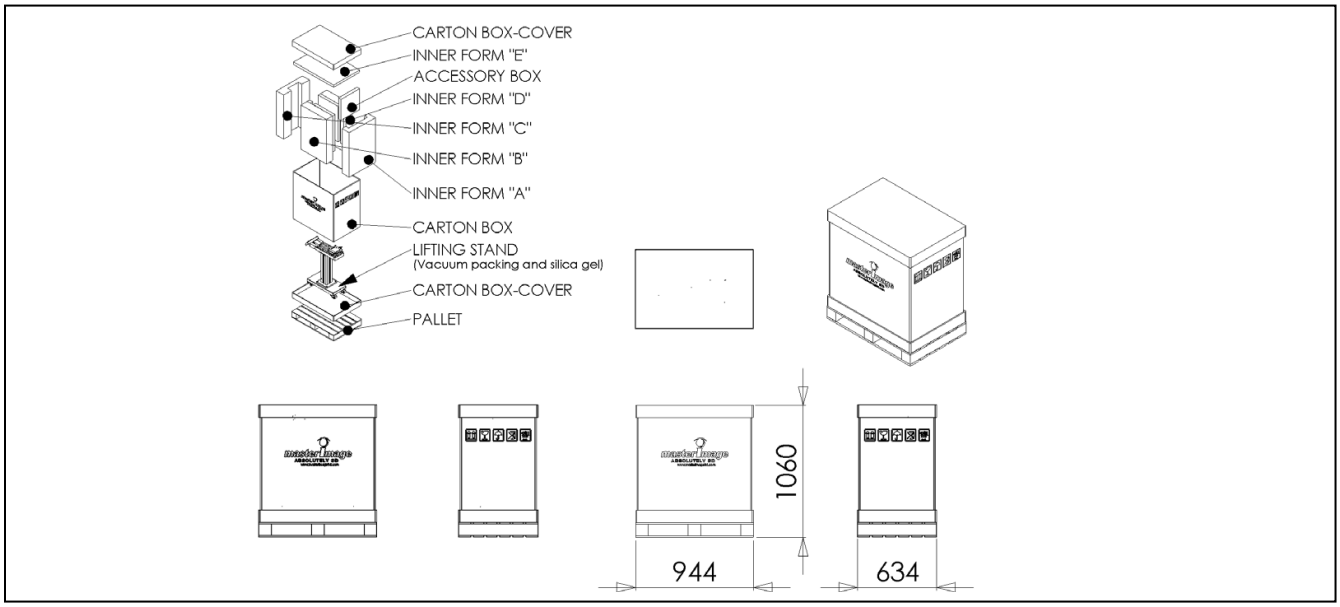
- MI-HORIZON3D is a single-projection; three-way beam, liquid crystal based, easy-to-use, high-quality Digital 3D Cinema System that enables 3D cinema presentation. The system can be quickly installed in front of the lens of any DLP digital cinema projector.
- MI-HORIZON3D's patented construction three-way beam uses three specific Liquid Crystal (LC) panels that are accurately bonded to ensure effective polarization of the left and right images from the projector lens.
- MI-HORIZON3D provides an accurate synchronization function for both current format 72Hz, 24fps, triple flash and future HFR 3D formats.
- MI-HORIZON3D is perfectly matched to the high quality polarized 3D eyewear produced by MASTERIMAGE 3D.
- MI-HORIZON3D consists of the three-way beam optical head, actuator, control box, connection cables, and floor stand.



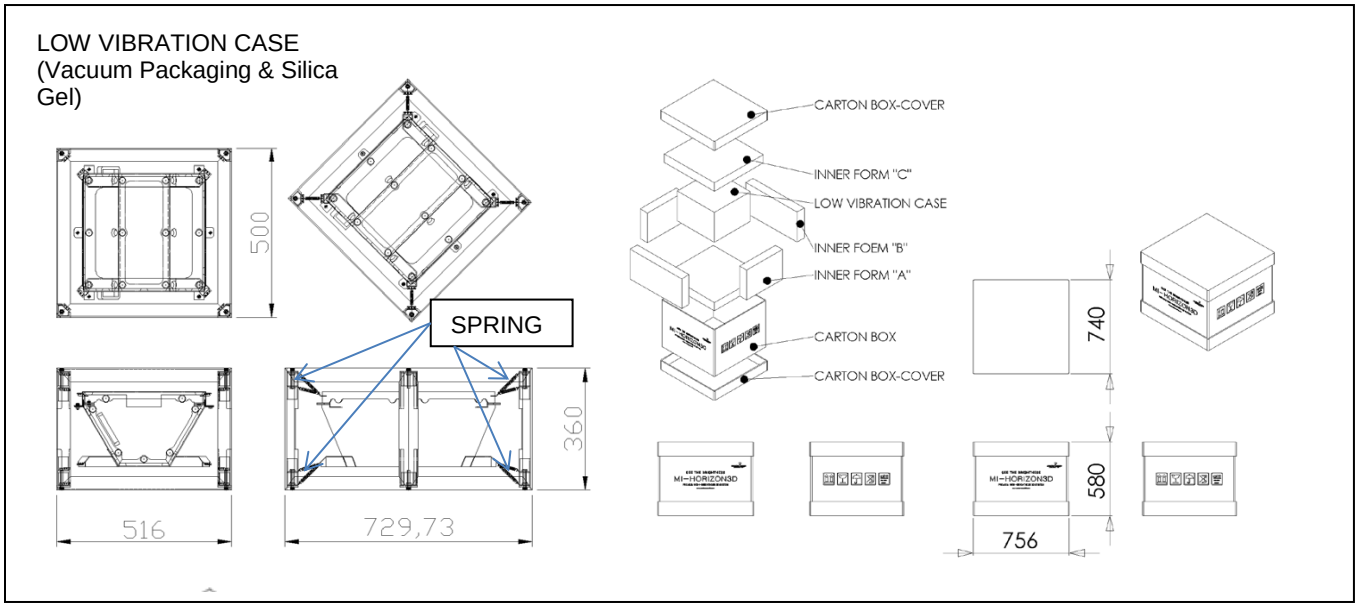
4. Installation and Configuration

4.1. Unpacking the MI-HORIZON3D

Inspect the MI-HORIZON3D packaging box for any external damage. Report any damage to shipper and to MasterImage 3D.



Floor Stand Outer Carton contains Floor Stand, Actuator, Control Box and Accessories



Low Vibration Case for Head Assembly

Head Assembly Outer Carton Box

4.2. Confirm Package Contents of MI-HORIZON3D

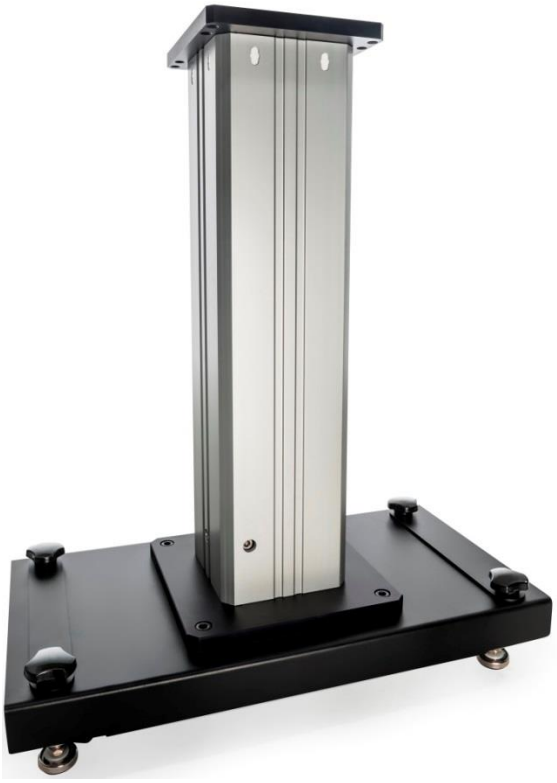
- Optical Three-Way Beam Head Assembly inside Low Vibration Case
- Floor Stand
- Actuator
- Control Box
- Power Adaptor
- Sync Cable
- Actuator Cable
- 3D Glasses

5. Detailed Component Overview

5.1. Three-Way Beam Optical Head Assembly

5.2. Actuator & Control Box

5.3. Floor Stand



5.4. Control Box – Front Panel & Connections

Actuator Connector

Dip Switch:

Used to reverse 3D polarity & actuator position

Run/Stop Button

Operation LED:

Displays Running Freq. & Error Codes

GPIO/TTL Connector

Used for Automation and Sync

Ethernet Port:

Used for Automation and Connection of Monitor Program

2D Button:

Used to move the Optical Head Assembly to the 2D position

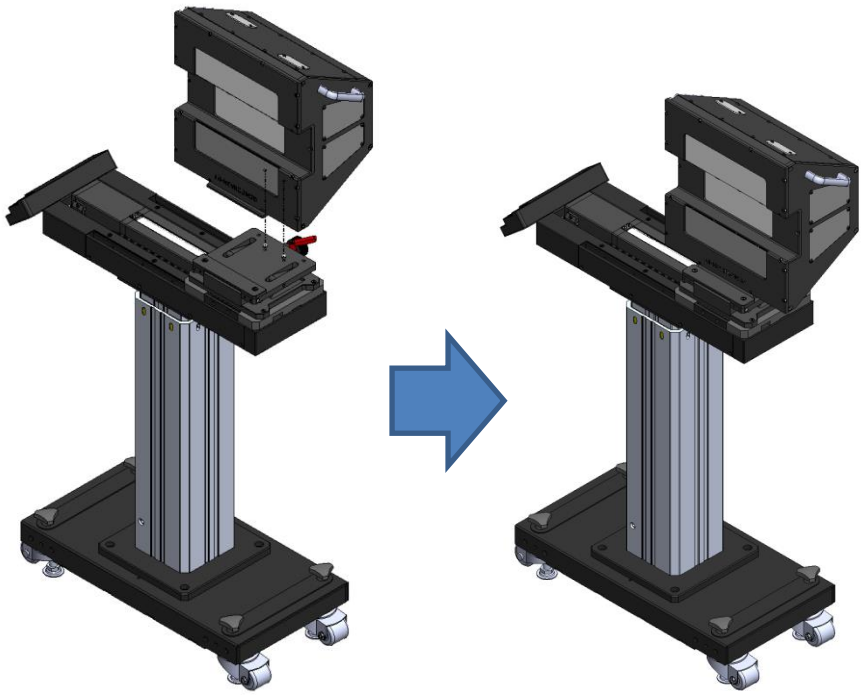
3D Button:

Used to move the Optical Head Assembly to the 3D position

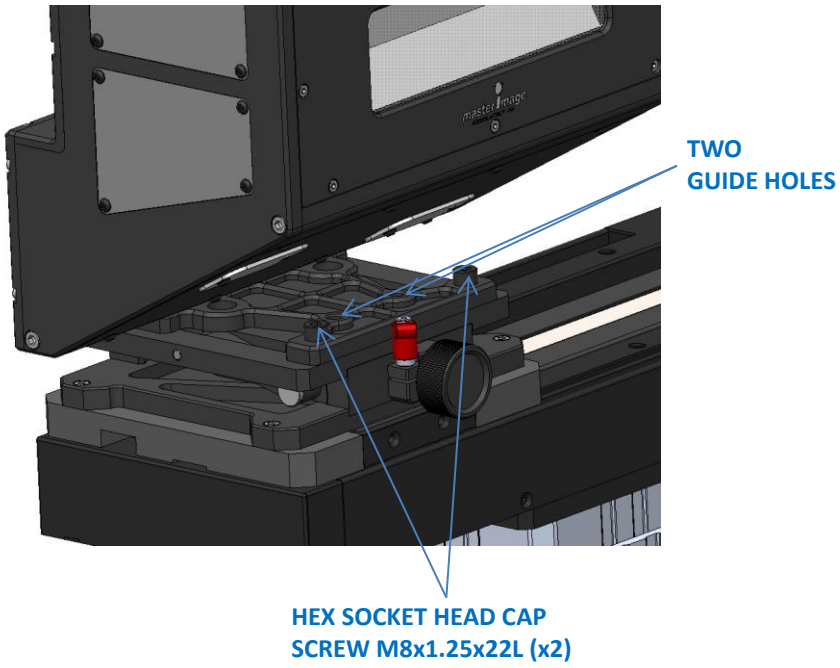
6. System Setup

6.1. Initial System Assembly

6.1.1. Attach Optical Head to Actuator



Insert the optical head assembly into the front section of the actuator tilt stage whilst aligning with the two guide pins. Once located correctly secure with two hex screws provided.

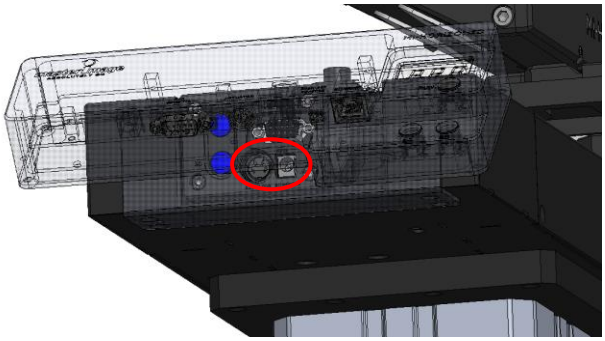


6.1.2. Cable Connections

1. Attach the LC Connector from the Actuator assembly to the Optical Head Assembly.

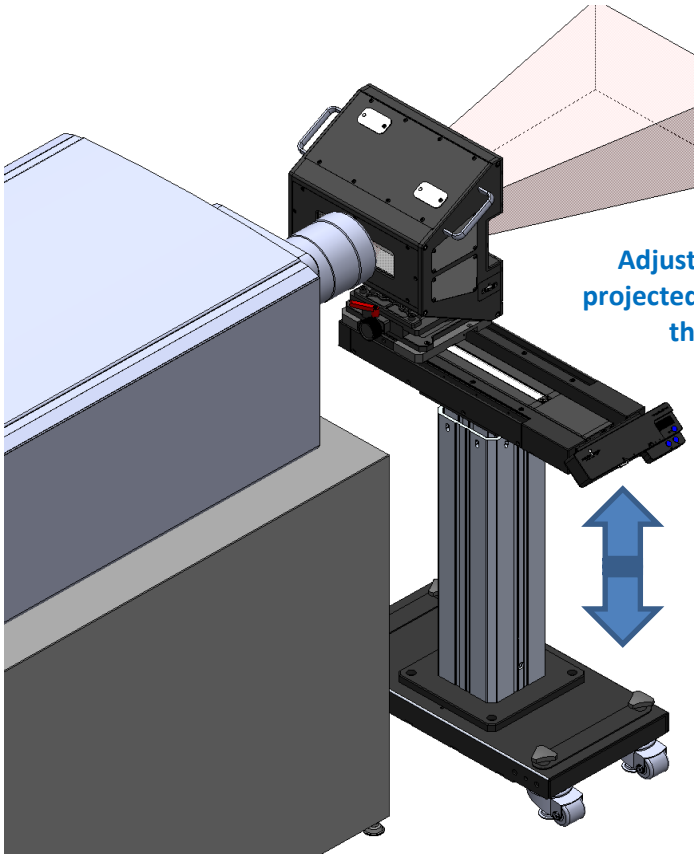
LC Cable Connection

2. Ensure the Actuator Cable is connected between the Control Box and Actuator and the LC Cable is connected to the rear of the Control Box. Connect the 24v DC power cable to the Actuator.

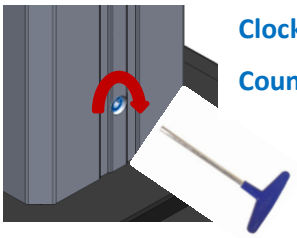


Actuator & Power Cable Connection

6.1.3. Initial Height Adjustment



Adjust the height of the optical head so the projected light beam coincides with the center of the optical head entrance window.

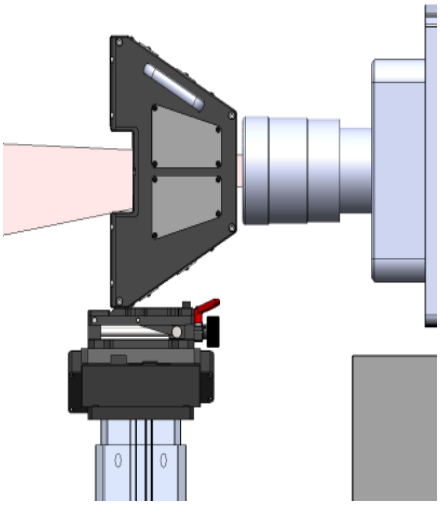


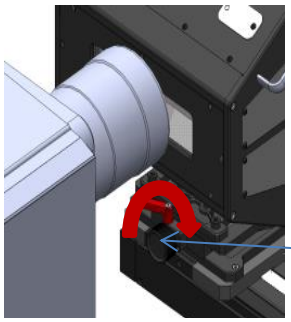
Clockwise: UP

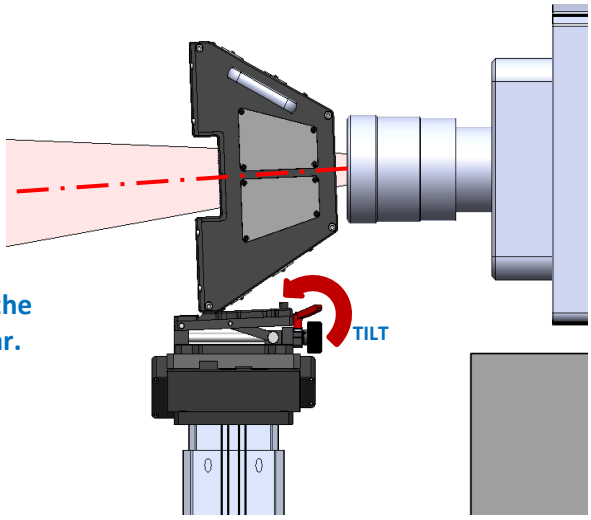
Counter-Clockwise: DOWN

ALLEN WRENCH (TYPE-T) 6mm

IMPORTANT The Optical Head Assembly must be installed perpendicular to the light path exiting the lens. The angle of this light may not be the same angle as the lens itself, so observe the light path from the side to make sure the head is exactly perpendicular.

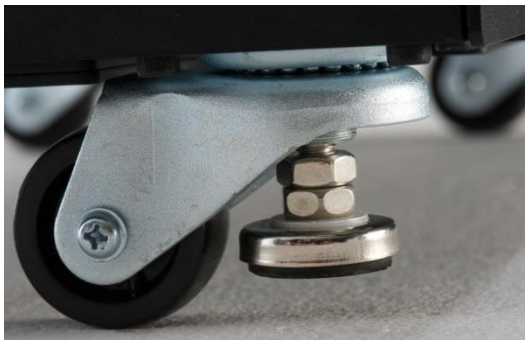






Adjust the tilt of the optical head so the projected light beam is perpendicular.

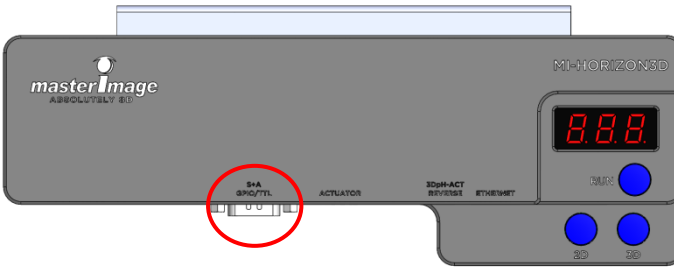
6.1.4. Locking Feet



Once the height and tilt adjustment has been made, lock down all four rolling wheels to prevent system movement.

6.1.5. GPIO Cable

Connect the GPIO cable from the DLP Digital Cinema Projector.



GPIO Cable Connection

6.2. Initial Test

6.2.1. Auto Power On

To turn on the control box power automatically, connect the main cable from the DC power supply to a power outlet.

With no sync signal present the LED display panel indicates 00 showing that it is in a READY state.

Auto Power On and Display Indication

6.2.2. Actuator Operation – 3D Position

Press the 3D button for 2 seconds. The actuator moves to the 3D position.

The 3D button flashes for approx. 13 seconds before becoming steady

If a GPIO Sync signal is present the LC Panels will become active and the frequency displayed on the LED, the Run button will illuminate.

6.2.3. Actuator Operation – 2D Position

Press the **2D** button for 2 seconds. The LC Panel operation will be stopped (Run LED Off) and the actuator moves to the 2D position.

The 2D button flashes for approx.13 seconds before becoming steady.

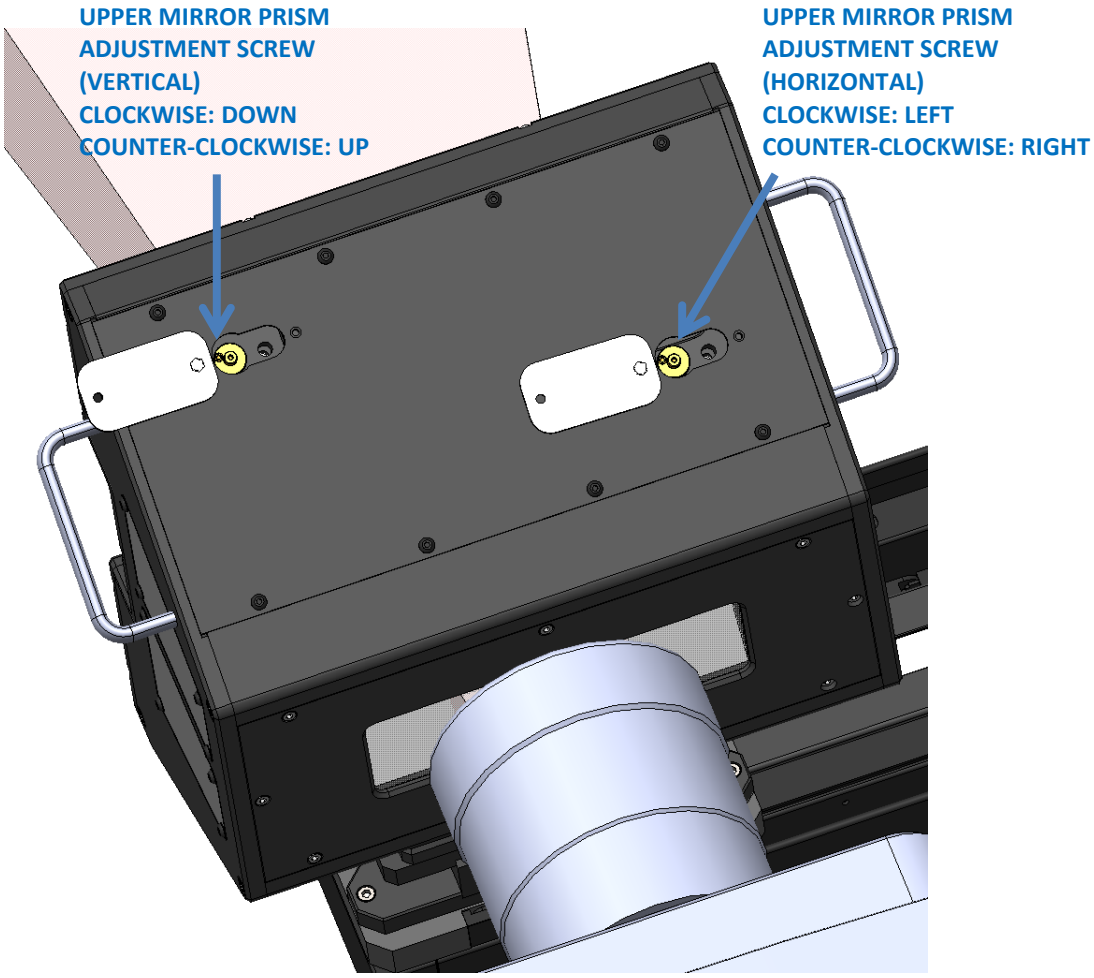
7. MI-HORIZON3D System Alignment & Configuration

7.1. Upper Beam Alignment

1, Open the two adjustment screw covers on the top side of the optical head assembly.

2, Load the standard cross-hair test pattern from the projector.

3, Using a 2mm or 5/64” hex key use the right hand screw to alter the horizontal image position and the left hand screw for the vertical image position.

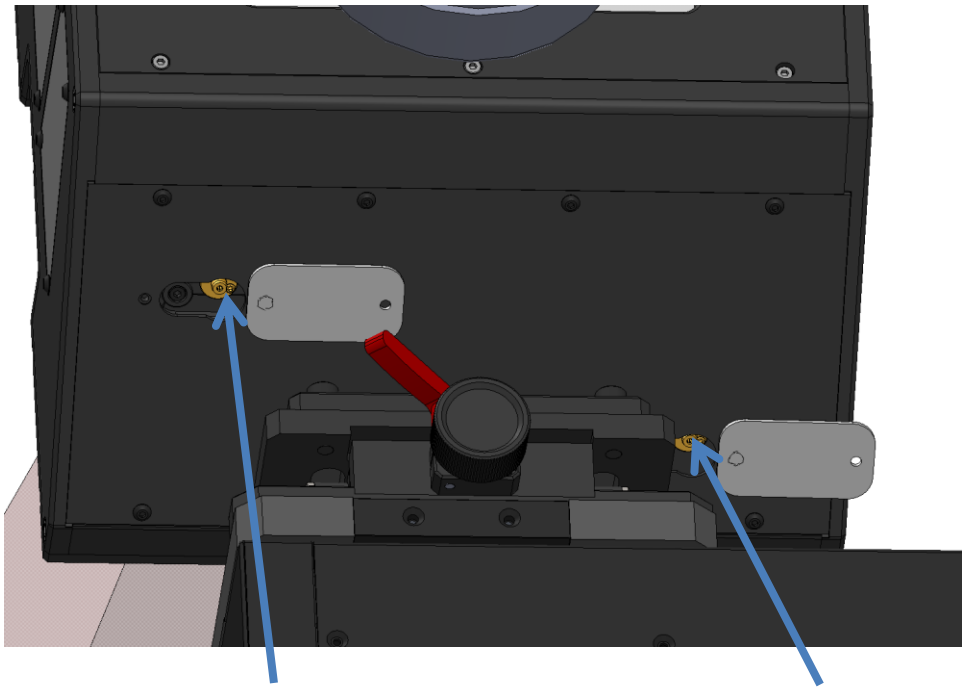


7.2. Lower Beam Alignment

1, Open the two adjustment screw covers on the bottom side of the optical head assembly.

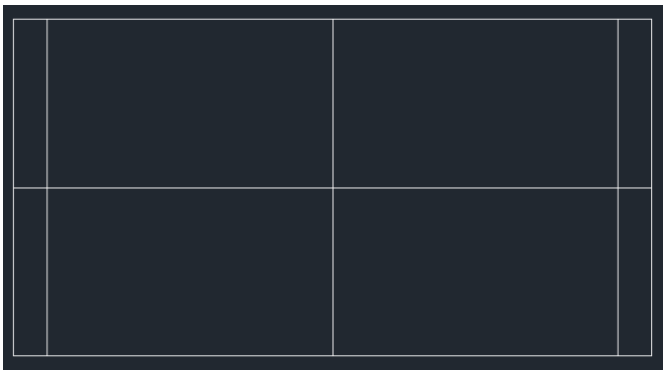
2, Using the same standard cross-hair test pattern from the projector.

3, Using a 2mm or 5/64” hex key use the right hand screw to alter the vertical image position and the left hand screw for the horizontal image position.



LOWER MIRROR PRISM ADJUSTMENT SCREW (HORIZONTAL)
CLOCKWISE: RIGHT
COUNTER-CLOCKWISE: LEFT

LOWER MIRROR PRISM ADJUSTMENT SCREW (VERTICAL)
CLOCKWISE: UP
COUNTER-CLOCKWISE: DOWN

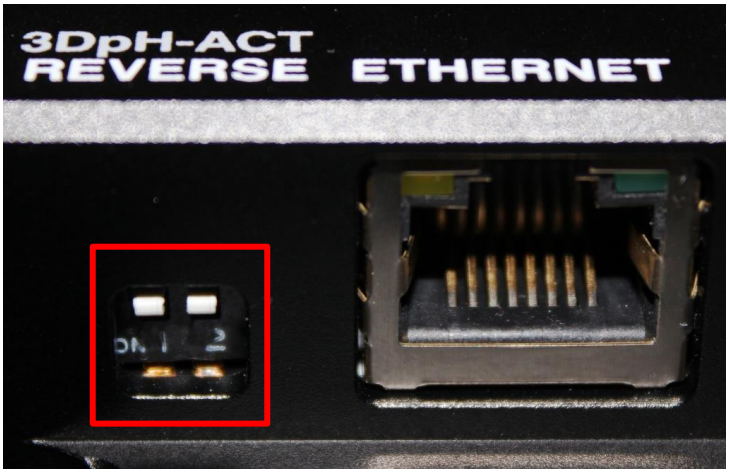


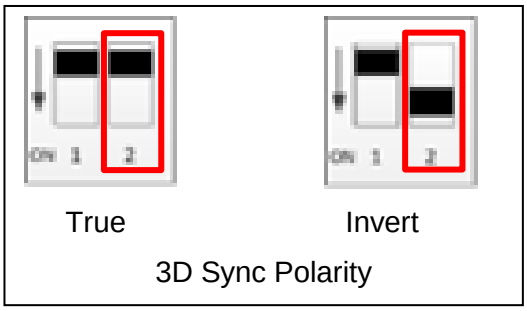
Once alignment of both the upper and lower secondary images is complete, close the four adjustment screw covers.

7.3. 3D Phase Sync Polarity

If necessary it is possible to change the sync polarity of the 3D phase by changing the position of DIP switch 2 on the Control Box next to the Ethernet RJ-45 Connector.

Using the tip of your finger nail move the switch to the ON position as indicated to 'Invert' the sync polarity.

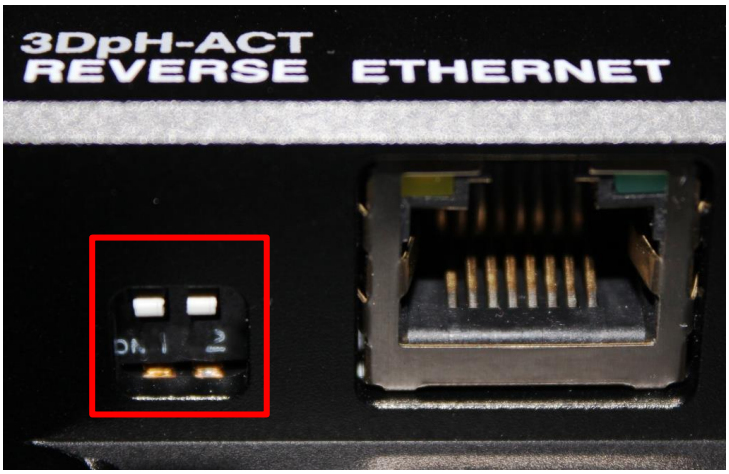


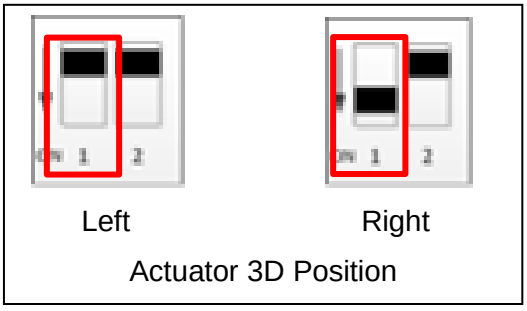


7.4. Actuator 3D Position

If necessary it is possible to change the actuator 3D position by changing the position of DIP switch 1 on the Control Box next to the Ethernet RJ-45 Connector.

Using the tip of your finger nail move the switch to the ON position as indicated to change the Actuator 3D Position from Left to Right depending on your installation.





8. Projector Configuration

8.1. Projector 3D File Configuration

The projector's 3D control file must be configured to work with the MI-HORIZON3D. These procedures describe configuring the control files for Series II projectors.

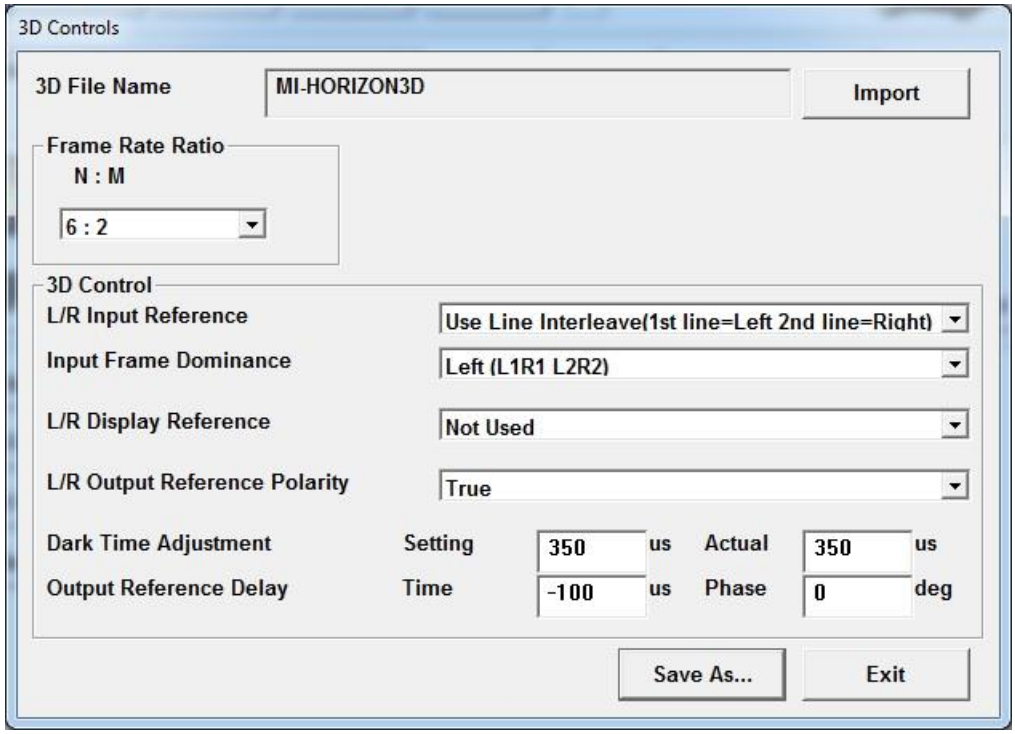
The **Dark Time** should be set to **350µS** with the **Delay** being set to **-100µS**. These figures are applicable to all frame rates and projector flash configurations.

Follow the instructions for the appropriate projector.

8.2. Series II Projectors

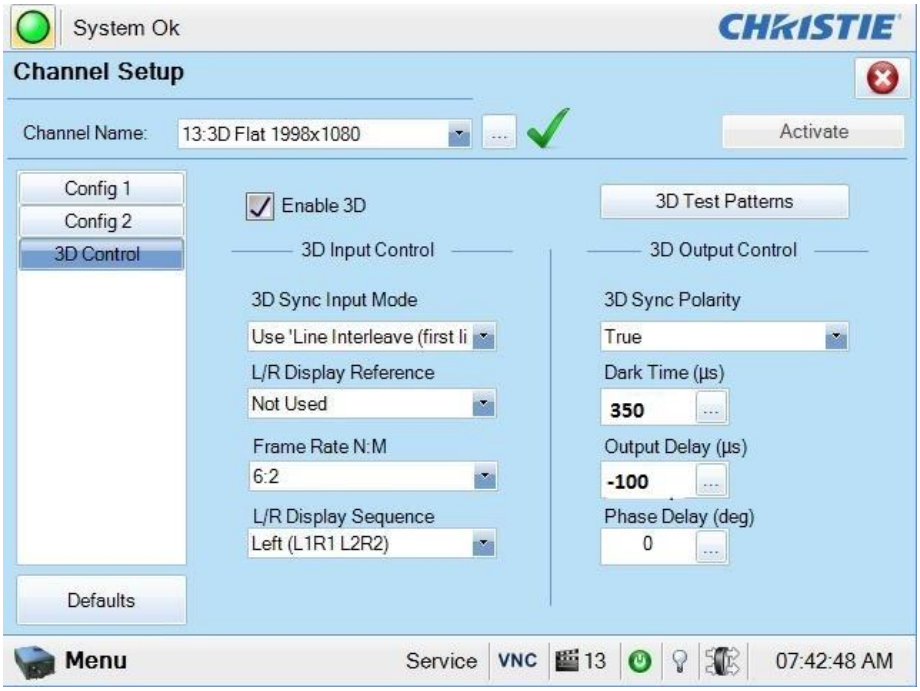
Configure the projector settings as shown in the graphics below for NEC, Christie, and Barco Projectors.

8.2.1. NEC Series II File Settings for External Server Playback



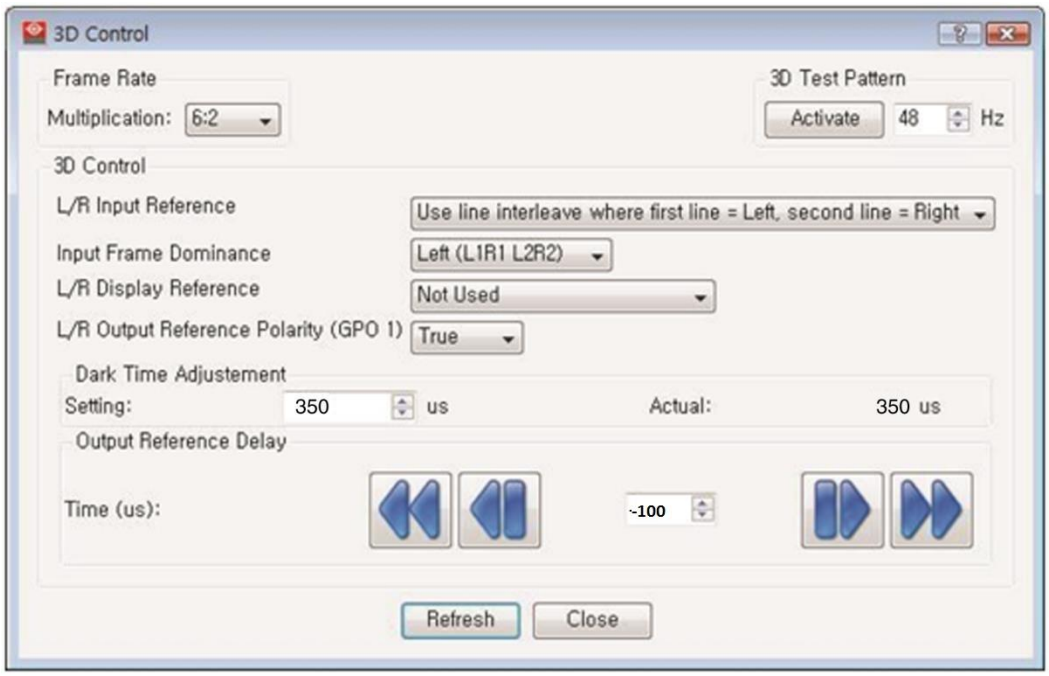
NEC

8.2.2. Christie Series II File Settings for External Server Playback



Christie

8.2.3. Barco Series II File Settings for External Server Playback



Barco

Barco Series II projectors have a pre-installed 3D configuration file for the settings required by the MI-CLARITY3D system. It is possible to select this file rather than making fully manual entries, but editing of Dark Time and Output Reference Delay would be required.

8.2.4. IMB Configuration Settings

Projector configuration settings when using an IMB (Integrated Media Block) are slightly different; an example of this is given below for a Christie projector and a Doremi IMB. The changes are highlighted in bold; other projector/IMB manufacturers' configurations may vary slightly. Contact the respective manufacturers for specific information.

Config. 1

- Input = IMB-Internal
- Data Format = 4:4:4 (RGB)
- Source File = Based on content resolution + aspect ratio (1998x1080 Flat, 2048x858 Scope, etc.)
- Screen File = Site-specific (typically Flat or Scope based on content)
- Use PCF = not selected (unchecked)
- Lamp File = Site-specific
- ILS File = Site-specific
- Auxiliary Lens = Site-specific – Selected if Anamorphic Lens or WCL needed, otherwise unselected

Config. 2

- Measured Color = Site Specific (Create on-site)
- Target Color = DC28_DCI_XYZE_314_351
- **Color Space = Unity RGB**
- Gamma = Gamma 2.6
- LUT-CLUT = Linear_9x9x9
- Scan Type = Progressive
- LD Bypass = Selected (this sends IMB output directly to ICP. This is required if no LD is installed)

3D Control

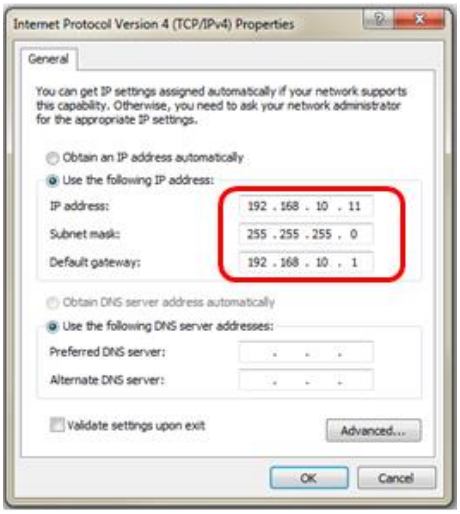
- Enable 3D = Selected
- **3D Sync Input Mode = Use Selected Input Port (polarity = true)**
- Frame Rate N:M = 6:2
- L/R Display Sequence = Left (L1R1 L2R2)
- 3D Sync Polarity = True (If left/right eye images swapped set to Inverted)
- Dark Time = 350
- Output Delay = -100
- Phase Delay = 0

9. System Setup Using the Monitor Application

9.1. Initial Configuration

Connect your PC to the MI-HORIZON3D with an Ethernet cable and configure your network settings with Control Panel of Microsoft Windows.

You can use a different IP address that is suitable to your network



9.2. Execute the Monitor Application using a Web Browser

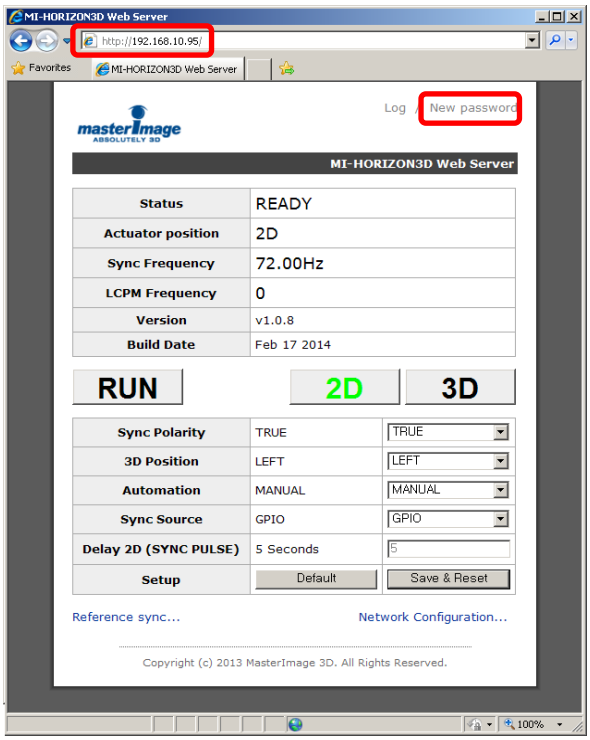
Input the default IP address of the MI-HORIZON3D (192.168.10.95) into your web browser.

When attempting to connect a security window will be displayed, enter the user ID and password information and select OK.

The default user id and password is like as below:

- User ID: “admin”
- Password: “mi”

Once access is gained the MI-HORIZON3D Web Server will be displayed.



MI-HORIZON3D Web Server shows all the system status information.

- **Status:** Ready or Running
- **Actuator Position**: 2D or 3D
- **Sync Frequency**: Sync frequency from the Projector
- **LCPM Frequency**: Operating Sync frequency from the Liquid Crystal Panel
- **Version & Build Date**: Built date and Firmware Version No.

9.2.1. Changing the User Password

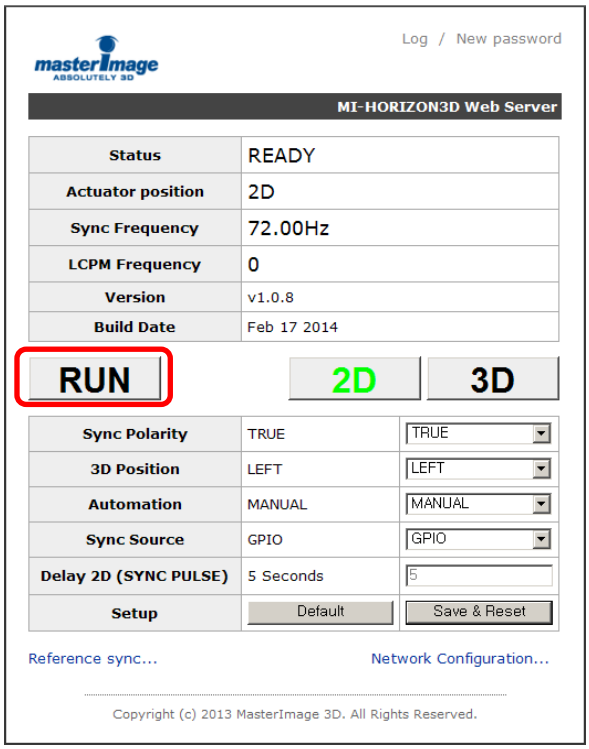
To prevent access to the MI-HORIZON3D from unauthorized persons it is possible to change the system password.

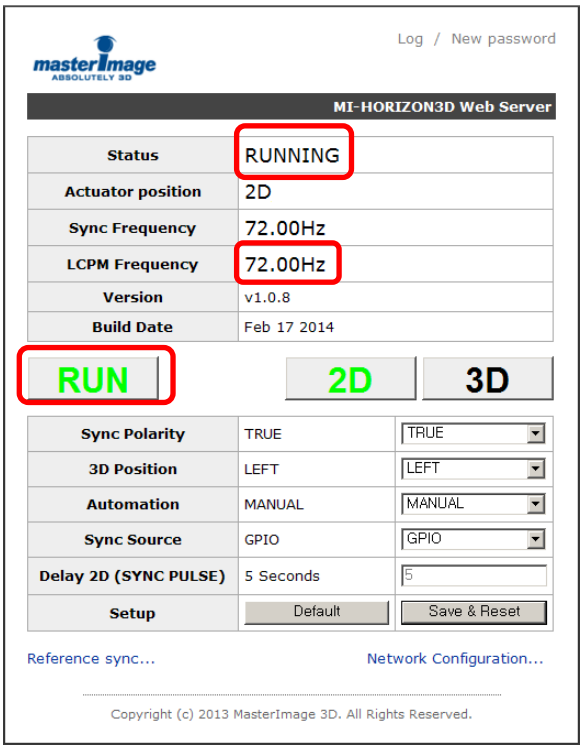
Click the [New Password] link in the upper right corner of the MI-HORIZON3D Web Server and the 'Change Password' dialog box will be displayed.

- Input the current password. (mi)
- Input a new password.
- Input the new password for confirmation and click the [Save password] button.

9.3. System Operation via the Monitor Application

Click the [RUN] button to start the Liquid Crystal Panel operation.





The color of the [RUN] button will change from black to green.

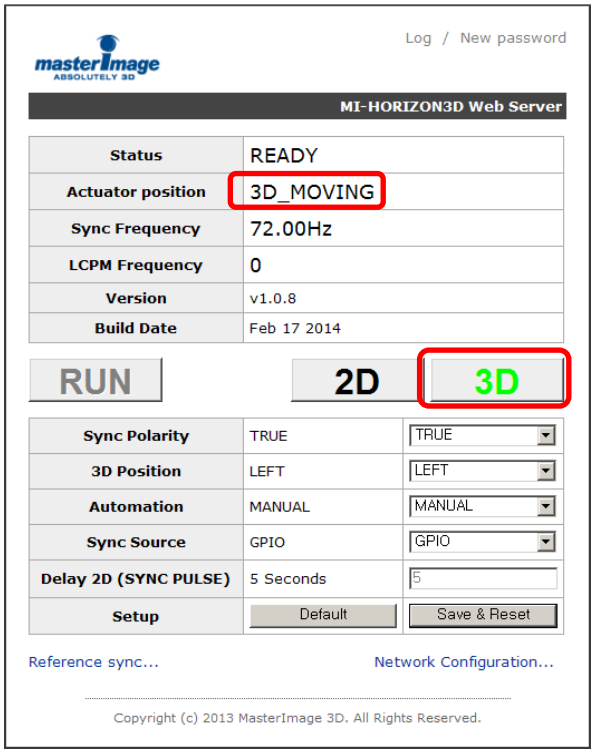
The indication under Status will change from ‘Ready’ to ‘Running’.

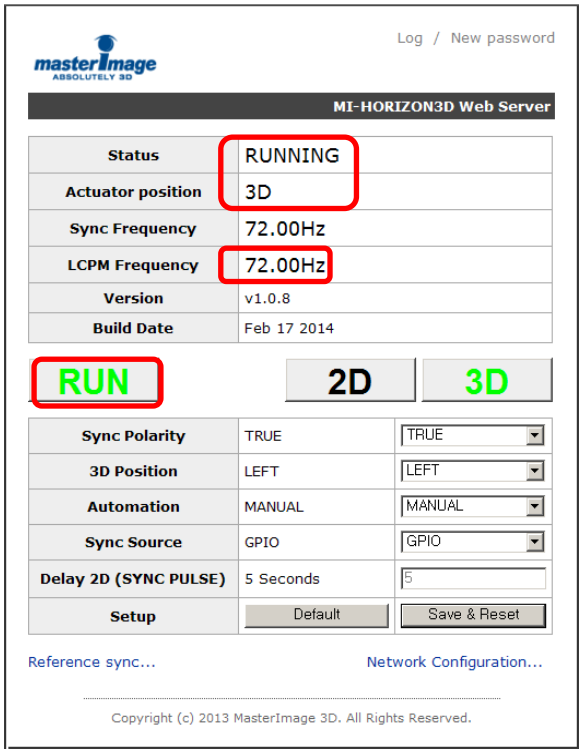
Once synchronized the Liquid Crystal Panel operating frequency will be displayed.

9.4. Position Movement via the Monitor Application

9.4.1. 3D Position

Click the [3D] button to move the actuator to the 3D position.





The color of the [3D] button will change from black to green.

The color of the [RUN] button will change from black to green.

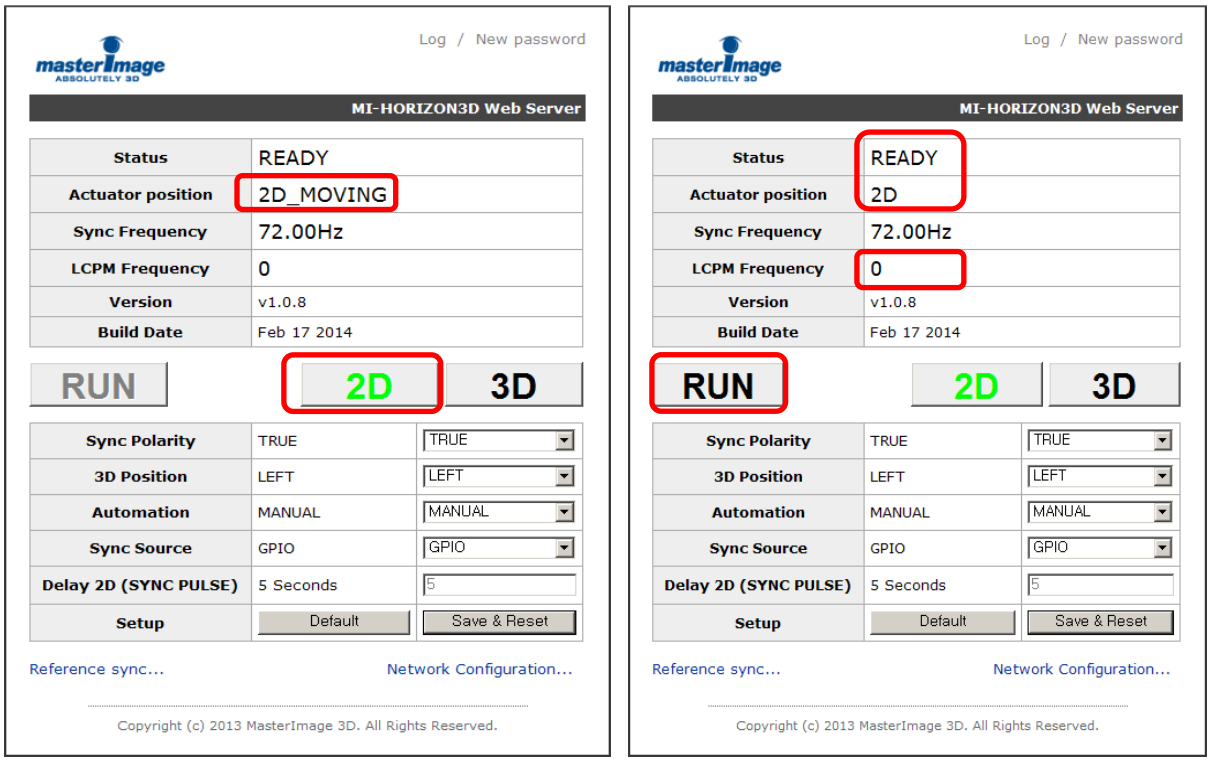
The indication under Status will change from ‘Ready’ to ‘Running’.

Whilst the actuator is transitioning to the 3D position ‘3D_Moving’ will be displayed, when the 3D position is reached this will change to ‘3D’.

Once synchronized the Liquid Crystal Panel operating frequency will be displayed.

9.4.2. 2D Position

Click the [2D] button to move the actuator to the 2D position.



The color of the [3D] button will change from green to black.

The color of the [2D] button will change from black to green.

The color of the [RUN] button will change from green to black.

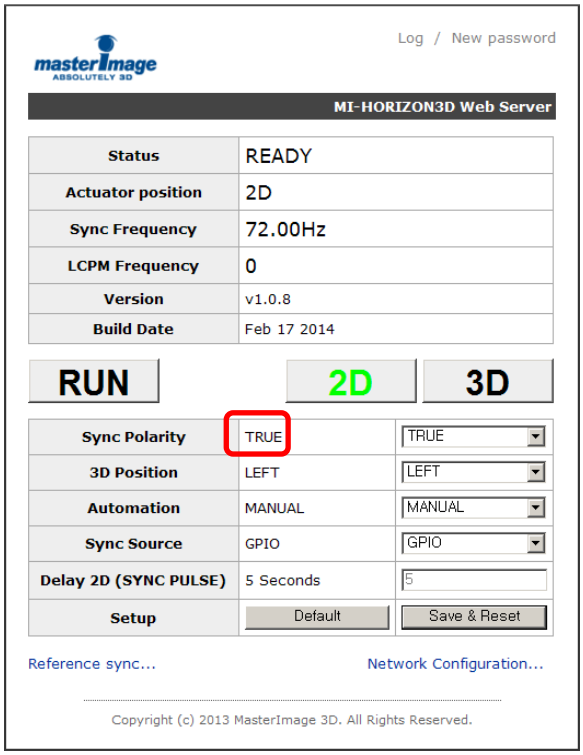
The indication under Status will change from ‘Running’ to ‘Ready’.

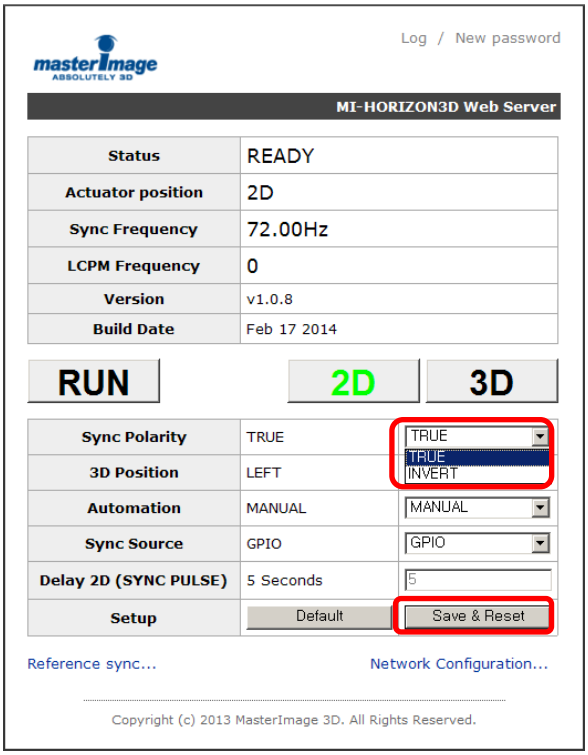
Whilst the actuator is transitioning to the 2D position ‘2D_Moving’ will be displayed, when the 2D position is reached this will change to ‘2D’.

The Liquid Crystal Panel operation will stop and the frequency will display as 0.

9.5. Sync Polarity via the Monitor Application

Check the current value of the Sync Polarity.



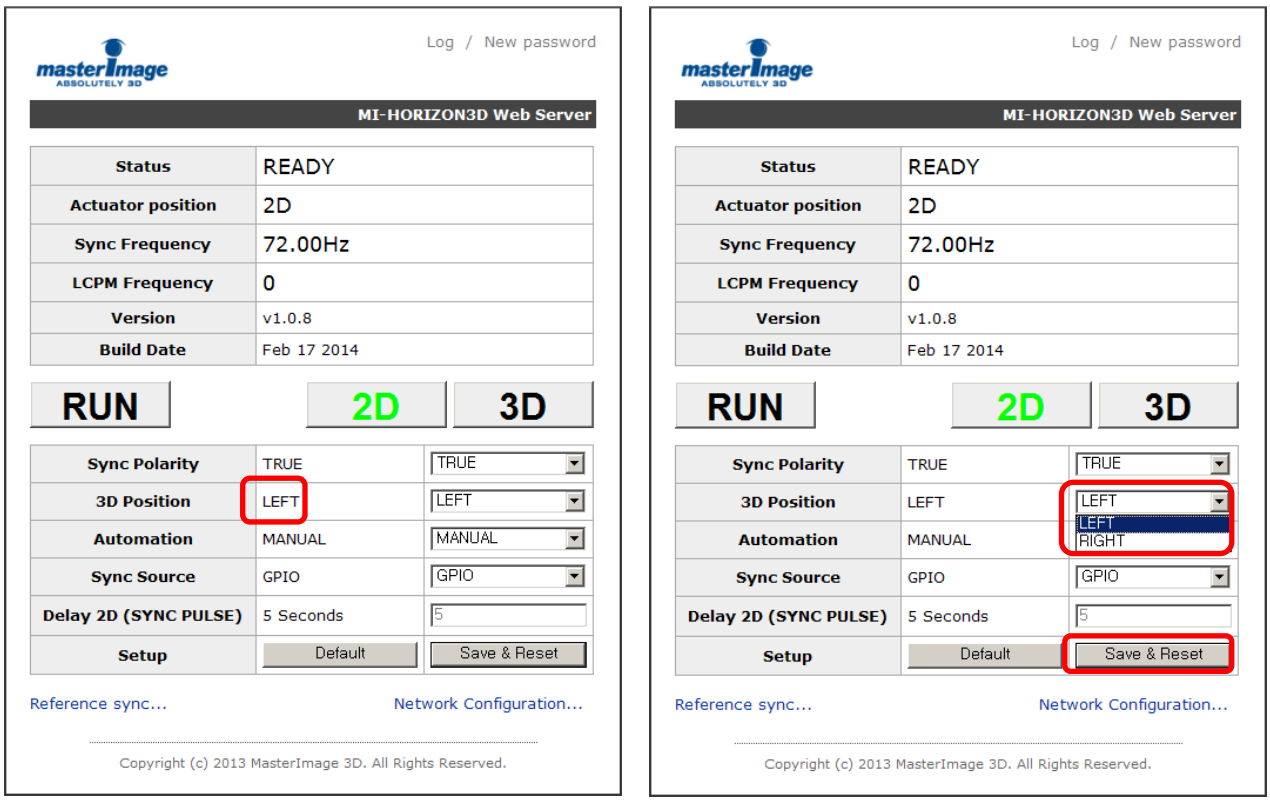


Depending on the condition of 3D material on screen change the Sync Polarity as required from ‘True’ to ‘Invert’.

Click [Save & Reset] to accept any changes.

9.6. Setting 3D Position via the Monitor Application

Check the current setting for the 3D position of the Actuator.

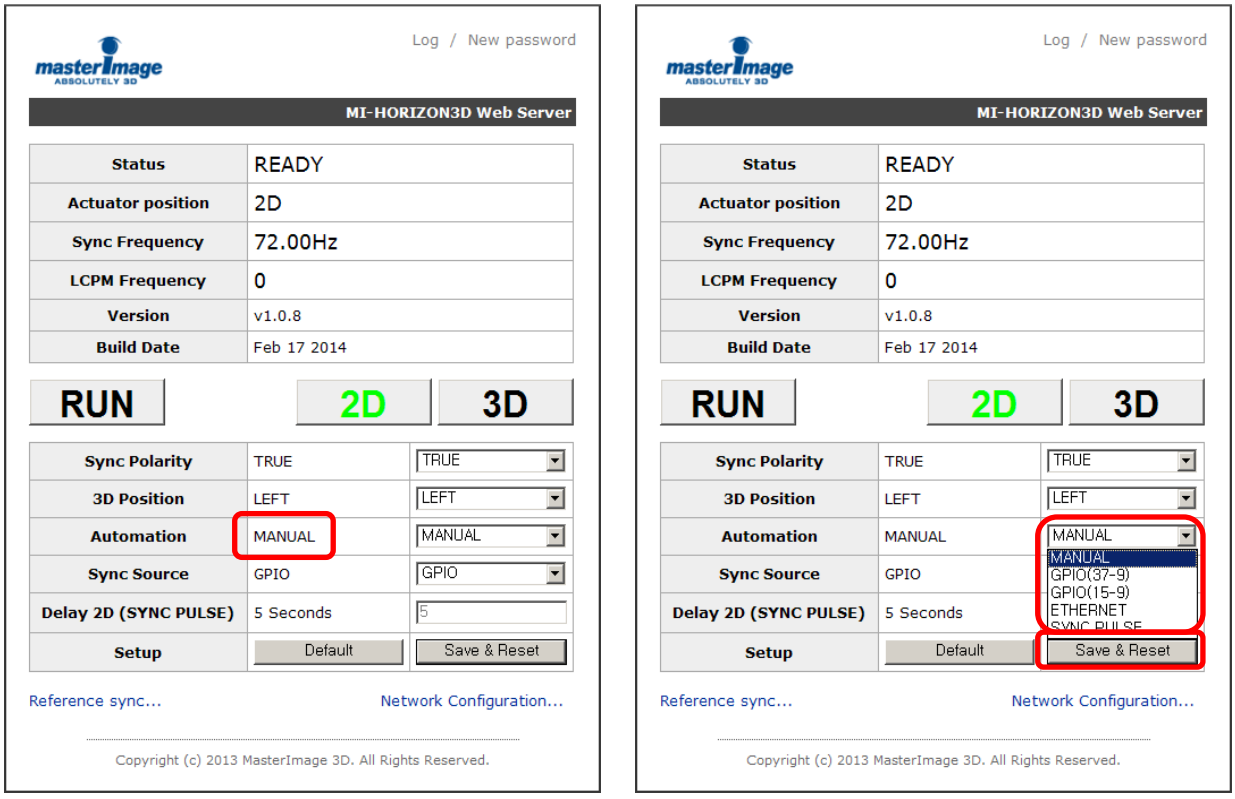


If required by the installation requirements for the system the 3D Position can be changed from ‘Left’ to ‘Right’ accordingly.

Click [Save & Reset] to accept any changes.

9.7. Automation Source via the Monitor Application

Check the current setting for the Automation Source of the system, by default this is set to 'Manual'.



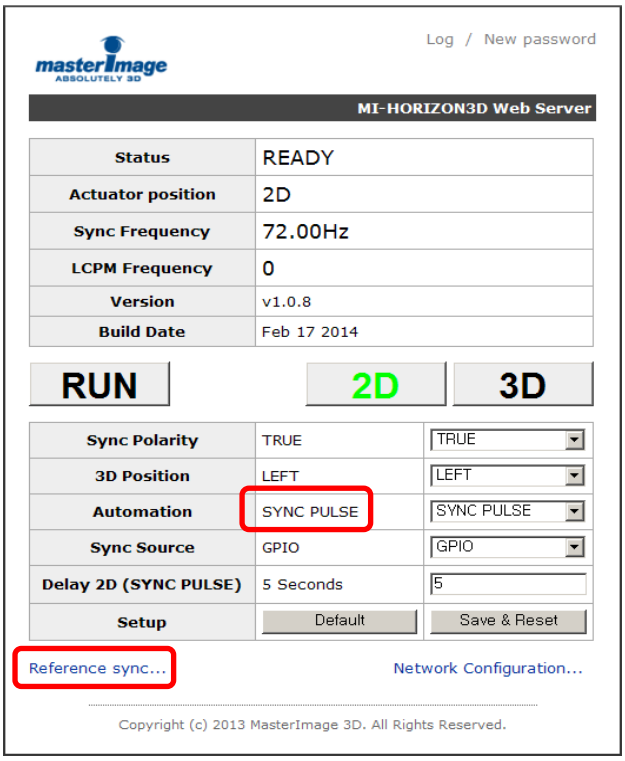
The options available for selection are:

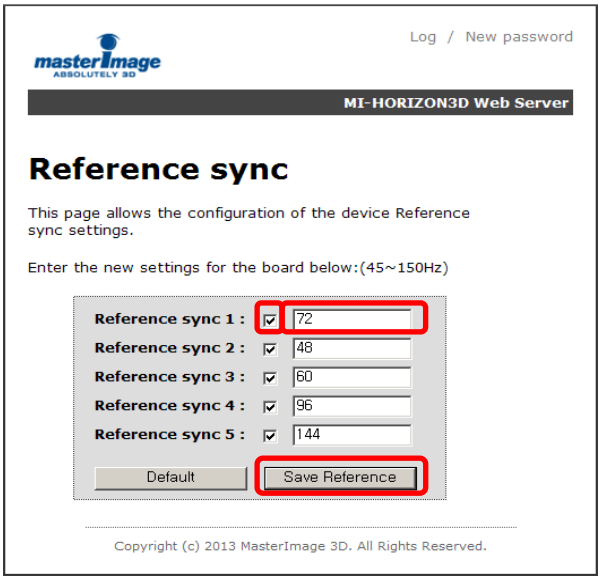
- Manual – Control via front panel button
- GPIO (37-9) – Automation via the 37-pin GPIO cable connection
- GPIO (15-9) – Automation via the 15-pin GPIO cable connection
- Ethernet – Automation via server ethernet connection
- Sync Pulse – Automation via GPIO/TTL sync pulse detection

Click [Save & Reset] to accept any changes.

9.8. Sync Pulse Automation Reference Frequency via the Monitor Application

Set the reference frequencies when the automation source is set to Sync Pulse.





Once the Automation Source has been set to Sync Pulse click [Reference Sync] in the bottom left of the application.

Up to five reference frequencies can be activated and these can be altered from 45-150Hz as required. The default settings being 72Hz, 48Hz, 60Hz, 96Hz and 144Hz.

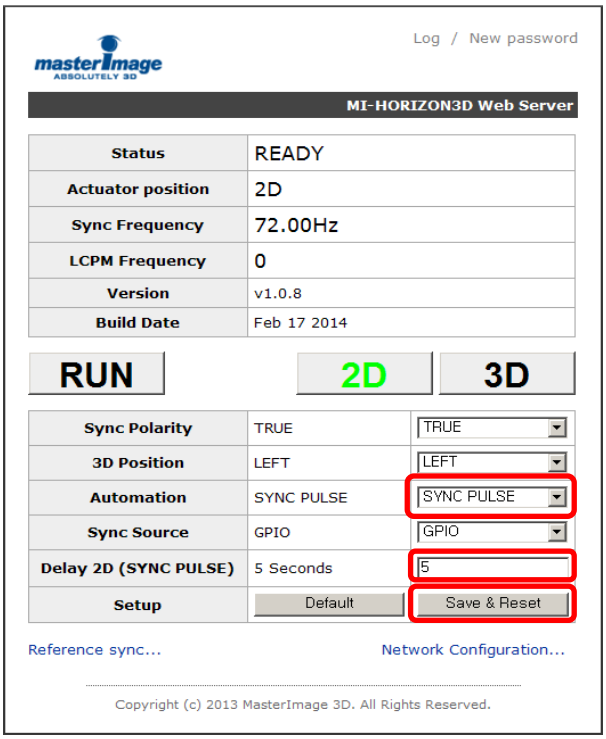
Deselect the check box for any frequency that is not currently being used or required.

Click [Save Reference] to accept any changes.

Click your browser back button to return to the main screen.

9.9. 2D Delay Time via the Monitor Application

When using the Sync Pulse Automation option with material of varying frequency or frame rate it may be necessary to apply 2D Delay Time to the system to prevent unwanted 2D transition.



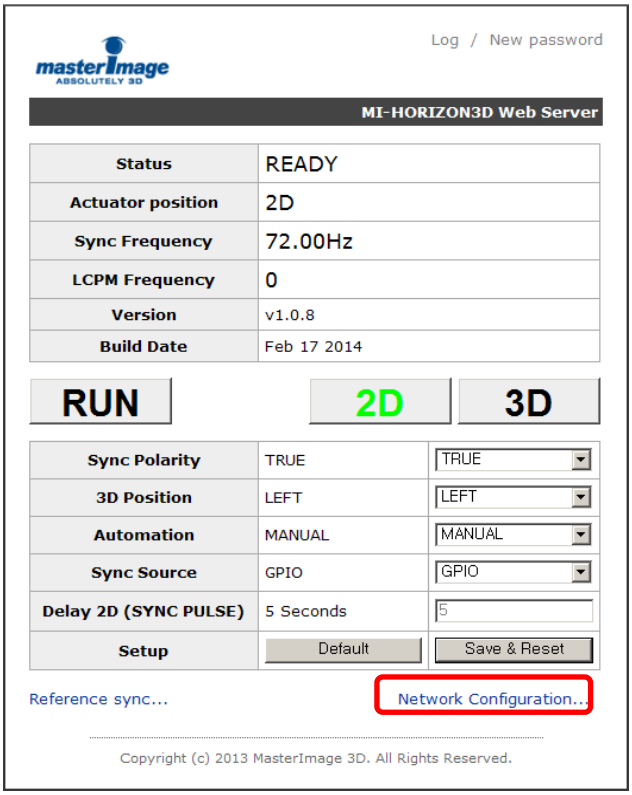
The input value range for this option is between 5 and 30 seconds.

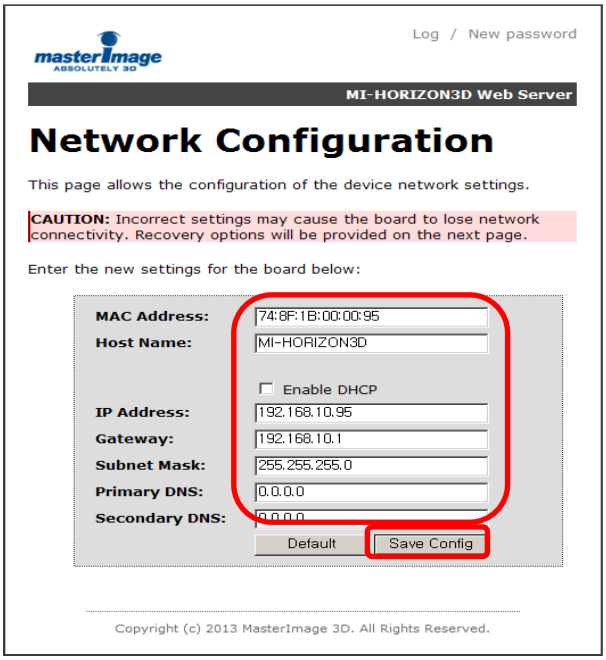
Enter the required 2D Delay Time for your particular situation i.e. transition from 48fps HFR 3D to 24fps 3D.

Click [Save & Reset] to accept the changes.

9.10. Network Configuration via the Monitor Application

Configure the network settings of the MI-HORIZON3D to operate on your network via ethernet communication.





Click [Network Configuration] to access the settings window.

Enter the IP Address, Gateway, Subnet Mask, Primary DNS and Secondary DNS of your network accordingly.

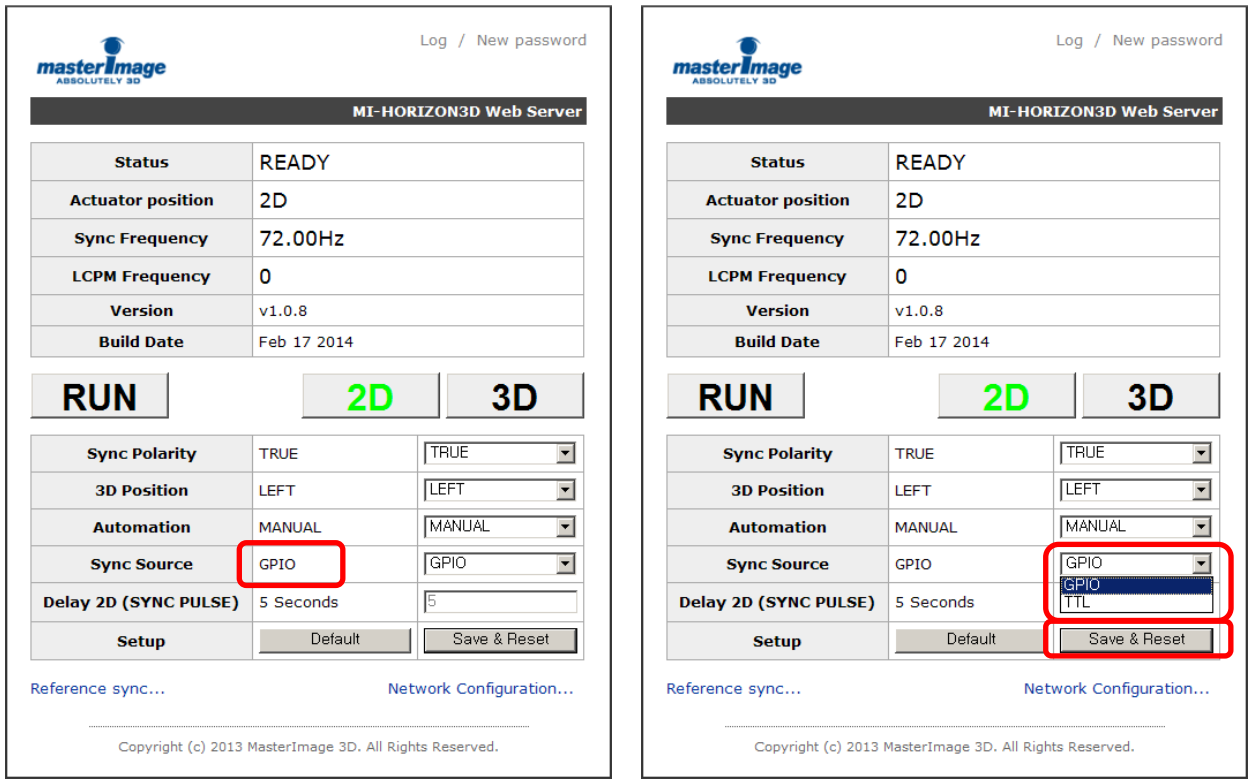
Click the [Save Config] button to accept any changes. Note the system will reboot in order to recognize these changes.

Click your browser back button twice to return to the main screen.

The default IP Address is 192.168.10.95
The maximum Ethernet speed is 1Mbps

9.11. Sync Source via the Monitor Application

Check the current setting for the Sync Source. The default is [GPIO].



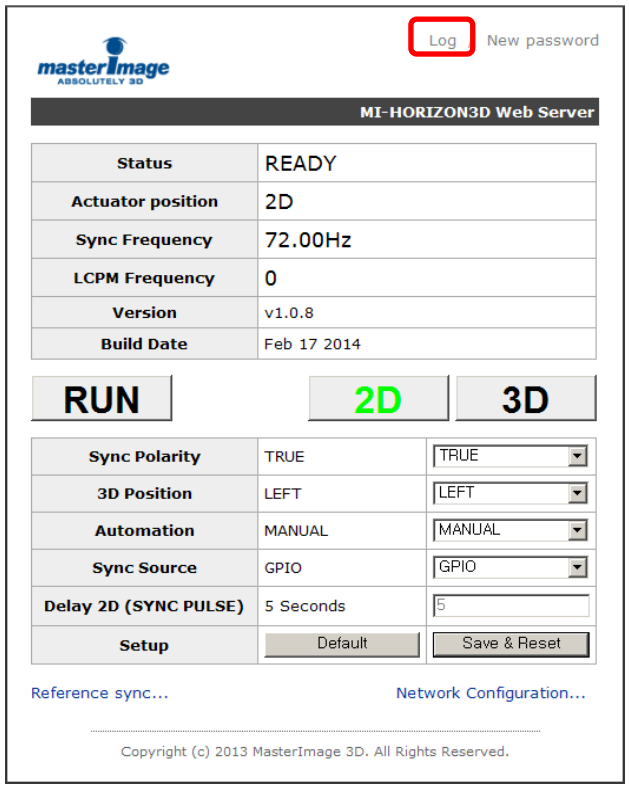
Choose the option for [TTL] if the system is being used in a non-cinema application.

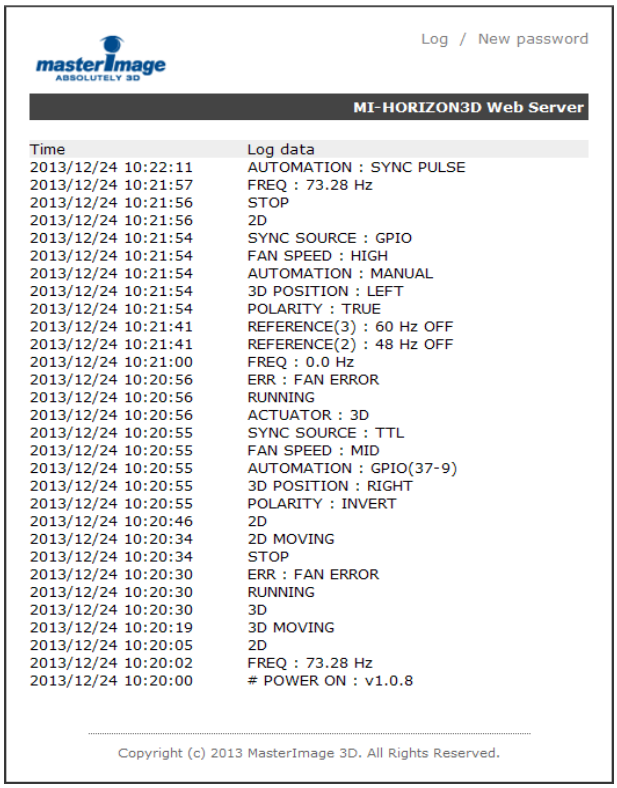
Click [Save & Reset] to accept any changes.

9.12. Log File via the Monitor Application

The system contains a log function that stores the last 200 records of activity including any errors that occurred.

In order to access the log file click [Log] at the top of the Monitor Application.



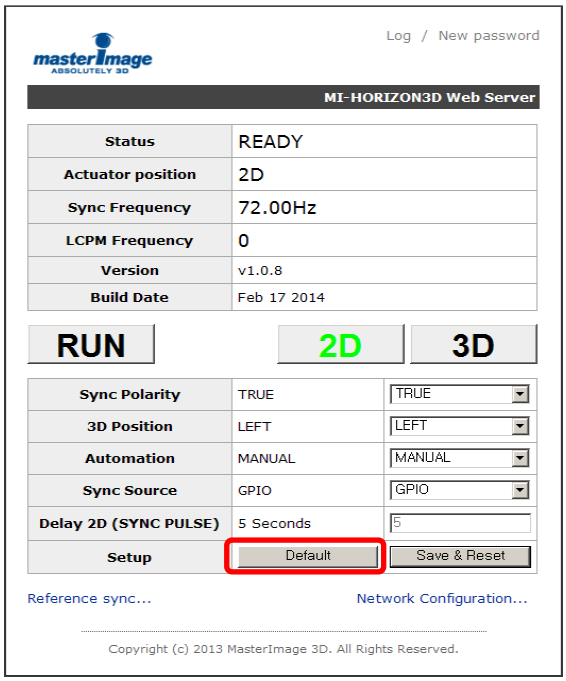


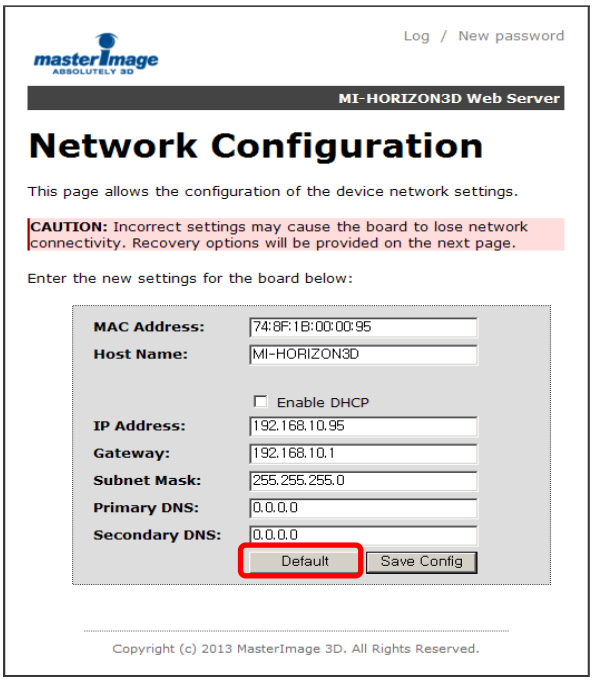
The Log File will be displayed accordingly. For an explanation of the respective log entries please refer to the table on the following page.

	LOG	Description
Status	# POWER ON : v1.0.0	Power On : Firmware Version Number
	RUNNING	RUNNING
	STOP	STOP
	2D	Current Position : 2D
	2D MOVING	Actuator Moving to 2D Position
	3D	Current Position : 3D
	3D MOVING	Actuator Moving to 3D Position
	STOP MOVING	Actuator Stop
	FREQ : 72.0Hz	Sync Change
	SYNC PULSE : 3D	SYNC PULSE Input [2D/3D]
	GPIO 15-9 : 3D	GPIO 15-9 Input [2D/3D]
	GPIO 37-9 : 3D	GPIO 37-9 Input [2D/3D/RUN]
	AUTO COMMAND : RUN	AUTOMATION COMMAND [2D/3D/RUN/STOP]
Setting	3D POSITION : LEFT	ACTUATOR 3D Position Setting
	SYNC SOURCE : GPIO	Sync Source Setting
	AUTOMATION : GPIO(37-9)	Automation Source Setting
	REFERENCE(1) : 72Hz	Reference Sync Frequency Setting
	REFERENCE(1) : 72Hz ON	Reference Sync Frequency Enabled
	REFERENCE(1) : 72Hz OFF	Reference Sync Frequency Disabled
	POLARITY : TRUE	Sync Polarity Setting
	PASSWORD : CHANGED	Password Changed
	IP : 192.168.10.95	Ethernet IP Setting
	GW : 192.168.10.1	Ethernet Gateway Setting
	MASK : 255.255.255.0	Ethernet Subnet Mask Setting
	FACTORY RESET	Factory Reset
	DELAY 2D : 5	Delay 2D Time Setting
	HOST NAME : MI-HORIZON3D	SYSTEM NAME Setting
	MAC : 00-00-00-00-00-00	MAC-ADDRESS Setting
	POLARITY(SW) : TRUE	POLARITY Mode Switch Setting
	3D POSITION(SW) : LEFT	3D POSITION Mode Switch Setting
Error	ERR : ACT NOT DETECT	No Connection with the Actuator
	ERR : ACT NOT LIMIT	No Movement of the Actuator Normally
	ERR : ACT FAULT	Malfunction Status of the Actuator

9.13. Factory Default via the Monitor Application

Should it be necessary for any reason to reset the system to Factory Default this can be achieved by clicking the [Default] button. This can be completed for operational settings or network configuration.





10. MI-HORIZON3D Troubleshooting.

10.1. Error Indication via LED Display

Check the Control Box LED display for any error indication as per the below table.

Error code	Description
E01	No connection with the Actuator
E02	No movement of the Actuator normally
E03	Malfunction status of the Actuator

11. Appendix A – Firmware Upgrade for MI-HORIZON3D

11.1. Prerequisites for Upgrading Firmware

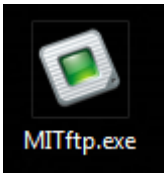
1. Access the MasterImage ftp site using these credentials:

   ftp://masterimage3d.us

   Login: **mi3dguest1**

   Password: **MI3DuploadASIA**

2. From the MI-HORIZON3D folder, download and install the MI-HORIZON3D firmware upgrading utility.



   Installed shortcut: MITftp.exe

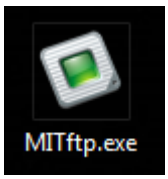
3. Download and save the latest firmware file having a "*.hex" file extension.

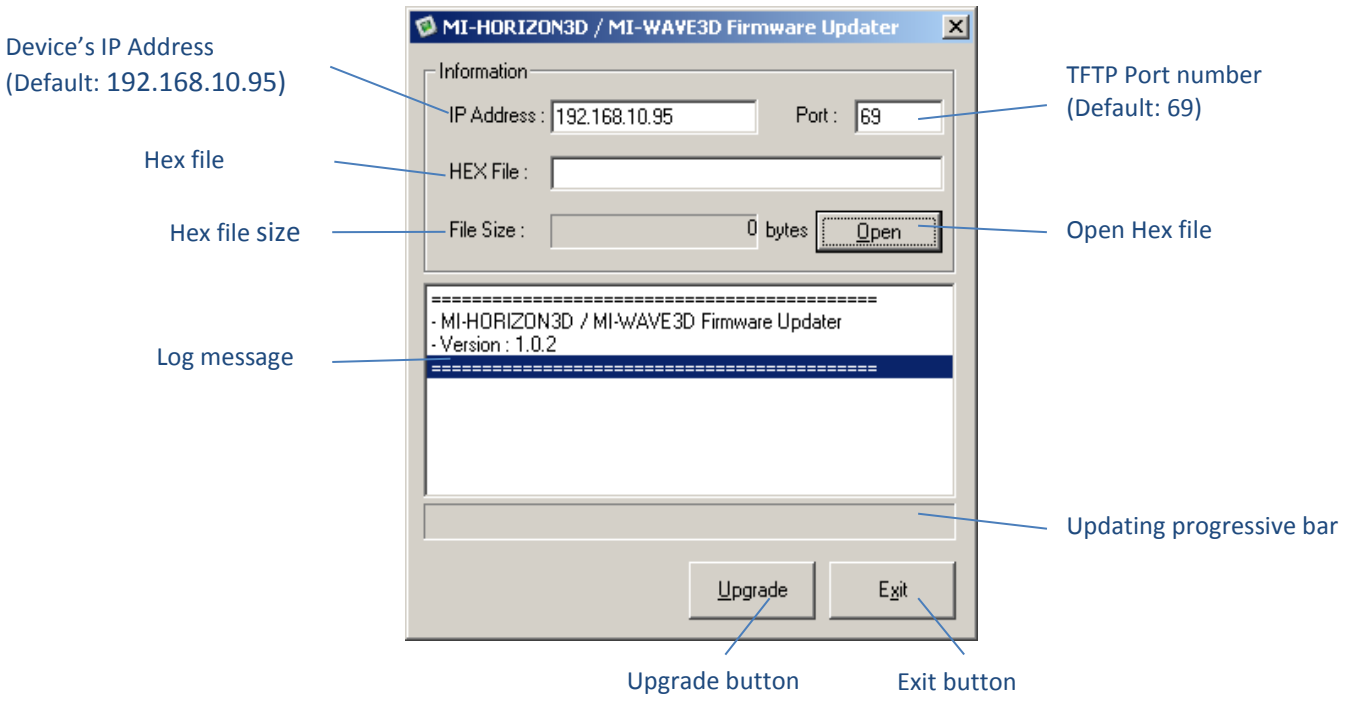
   Example:
   MI-HORIZON3D_v1.1.1_20121119.hex

4. Prepare a CAT5-E cable for connection to the system.

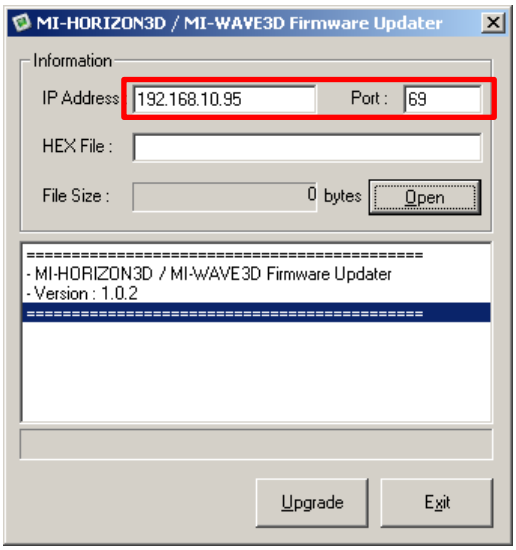
11.2. Firmware Upgrade Procedure

1. Connect the MI-HORIZON3D control box to your PC with the Ethernet cable.
2. Execute "MITftp" utility by double-clicking the utility's icon on your PC.





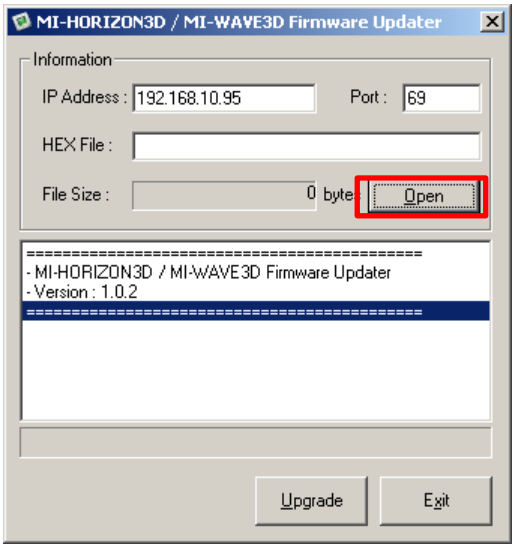
3. Configure the utility to match your individual site network requirements.



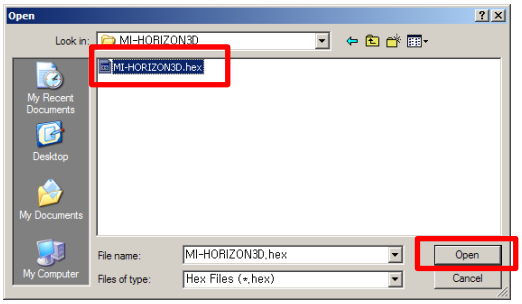
Enter the device IP address and Port Number.

Default: IP: 192.168.10.95 Port: 69

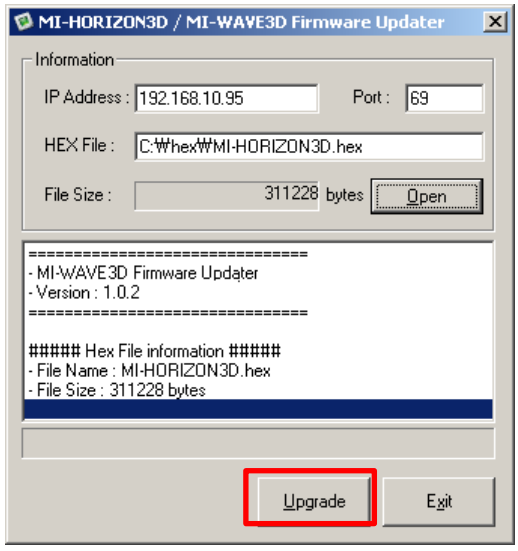
4. Click the [Open] button to select the firmware (.hex) file saved to your PC.



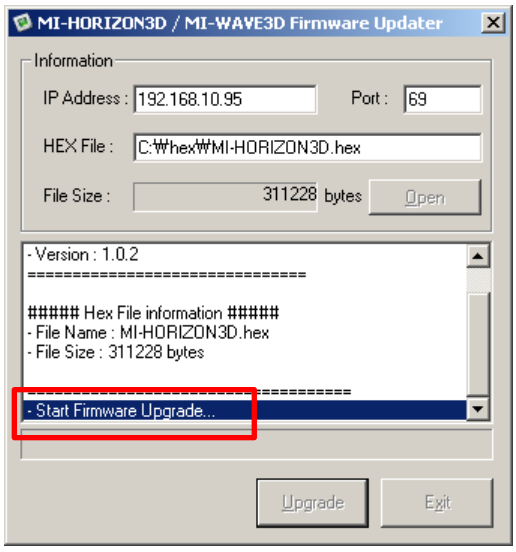
5. Select the file to be used and click [Open].



6. Click the [Upgrade] button to start the upgrade of the selected file to the system.

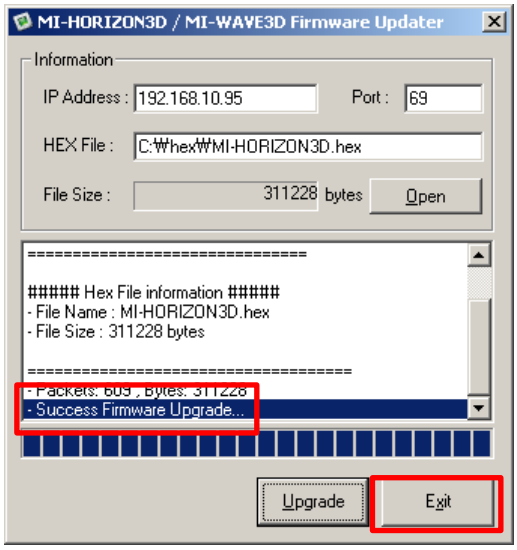


7. You will see the “Start Firmware Upgrade” message in the utility after pressing the [Upgrade] button.



8. You will see the “Success Firmware Upgrade” message in the utility after the progress bar reaches the end.

Click the [Exit] button to close the utility after successful upgrade.



Note: Should the upgrade procedure fail for any reason, disconnect the power from the system for 10 seconds, reconnect and attempt the procedure again.

12. Appendix B – MI-HORIZON3D Automation

Table B-1. GPIO Automation

DSUB9(GPIO)		Comm. Direc-tion	DSUB37	Description	Comments
Pin name	Pin number		Pin number		
NC	1			No connection	
PRJ_COM_nRUN	2	←	12(+)	Liquid Crystal Panel RUN command	Comparator 24V max, 12V threshold (LM2901H)
	5		31(-)		
PRJ_SYNC	3	←	9(+)	Vertical sync pulse	
	5		28(-)		
PRJ_COM_nUP	4	←	2(+)	Optical Head Assembly 3D command Low Pulse ≥ 200ms	
	5		21(-)		
GND	5		20,21,22, 28,29,30, 31,	Ground	
PRJ_COM_nDOWN	6	←	3(+)	Optical Head Assembly 2D command Low Pulse ≥ 200ms	(LM2901H)
	5		22(-)		
PRJ_STS_nLOCK	7	→	1(+)	Liquid Crystal Panel driving status High pulse ≥ 200ms	Open collector output 24V, 20mA (SN7407)
	5		20(-)		
PRJ_STS_nUP	8	→	10(+)	Optical Head Assembly position status High pulse ≥ 200ms	
	5		29(-)		
PRJ_STS_nDOWN	9	→	11	Optical Head Assembly position status High pulse ≥ 200ms	
	5		30		
Shield ground	frame		frame	Chassis Ground Connection	

Table B-2. GPIO (15-9 pin) Automation

DSUB9(GPIO)		Comm. Direction	DSUB15	Description	Comments
Pin name	Pin number		Pin number		
NC	1				
NC	2				
SYNC	3	←	7(+)	Vertical sync pulse	Comparator 24V max , 12 threshold (LM2901H)
NC	4				
GND	5		13,14	Ground	
NC	6				
NC	7				
NC	8				
NC	9				
Shield ground	frame		frame	Chassis Ground Connection	

12.1. Ethernet Automation

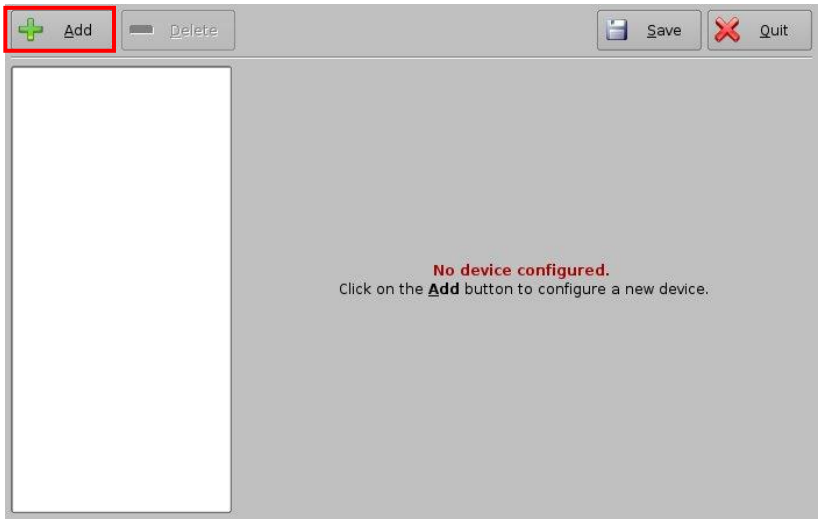
This section covers the requirements for Ethernet automation in detail and explains the process for the writing of macros for commonly found digital cinema servers in the market.

Attempt these steps only if you are familiar with server configuration settings. If you are unsure of the processes involved, please contact the respective manufacturer of your equipment for further information.

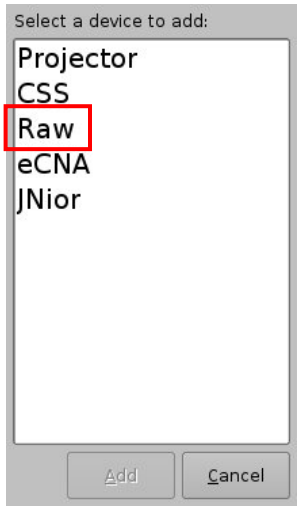
If you require detailed information on other forms of automation control please contact MasterImage at *support@masterimage3d.com* for details.

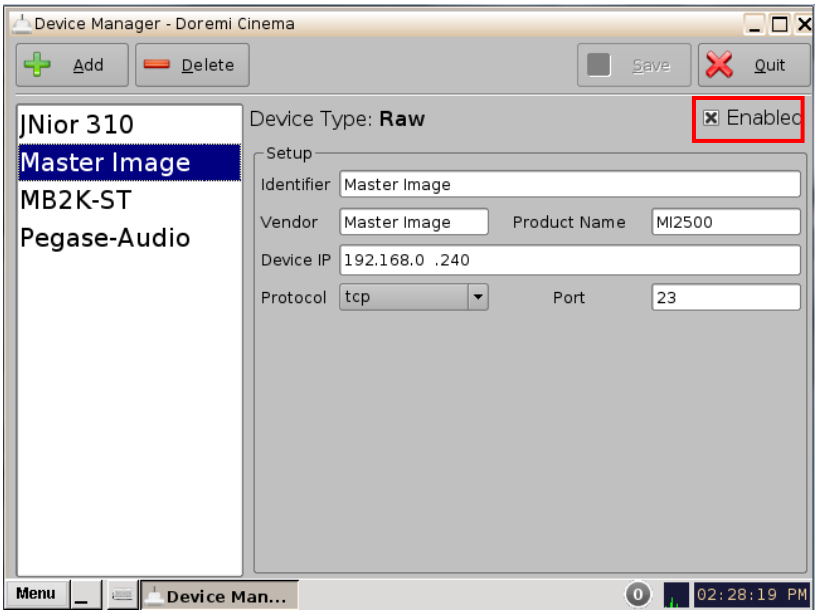
12.1.1. Doremi Server

1. Within the server menu, open Device Manager (Menu > DTS Digital Cinema > Device Manager)



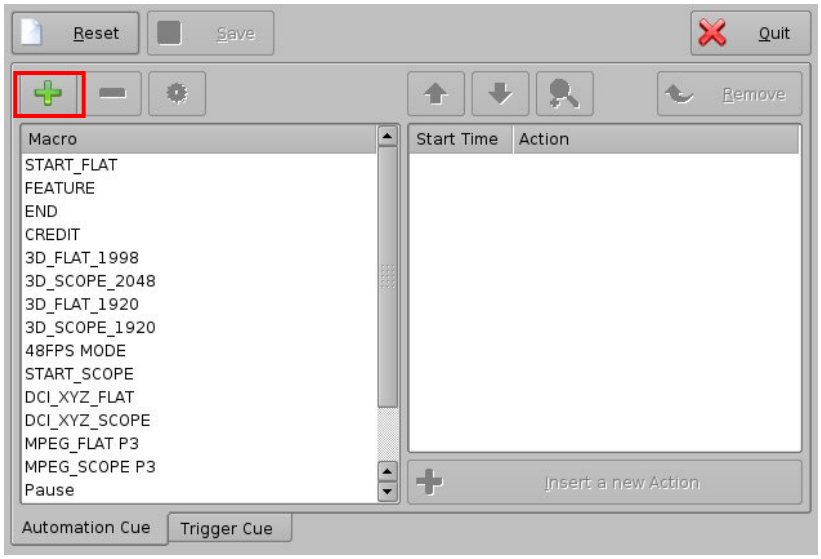
2. Click the **Add** button and the list of devices will display (shown right).
3. Select the **Raw** option to create MasterImage as a known device in the server's listing.
4. Complete the fields as shown below. Ensure the settings entered match those of the MI-HORIZON3D for IP Address and Port Number. Check the **Enabled** box and save the entry.



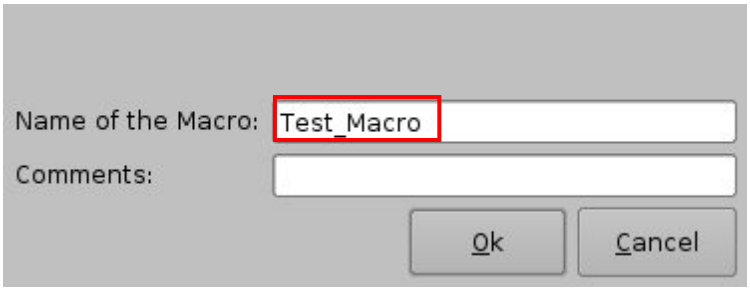


The MI-HORIZON3D has now been successfully added into the server configuration.

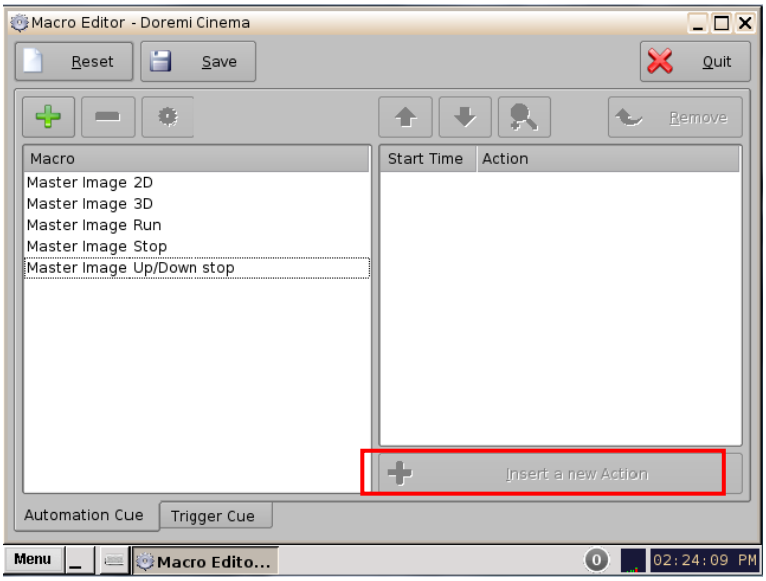
It is now possible to create the macro files to enable the server to control the MI-HORIZON3D. The files required are: **MasterImage Start**, **MasterImage Stop**, **MasterImage 2D**, **MasterImage 3D** and **MasterImage Up/Down Stop**. These are created in the Macro Editor option of the server menu. (Menu > DTS Digital Cinema > Macro Editor)



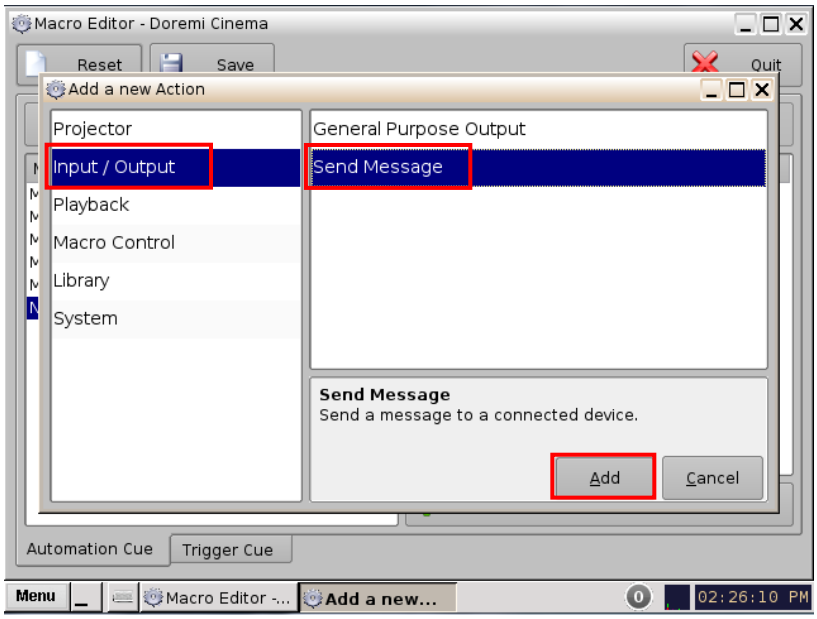
1. Within the Automation Cue tab click the **+** button to start a new macro. Replace the default Test_Macro text with the label for one of the MI macros (for example, **MI Start**).



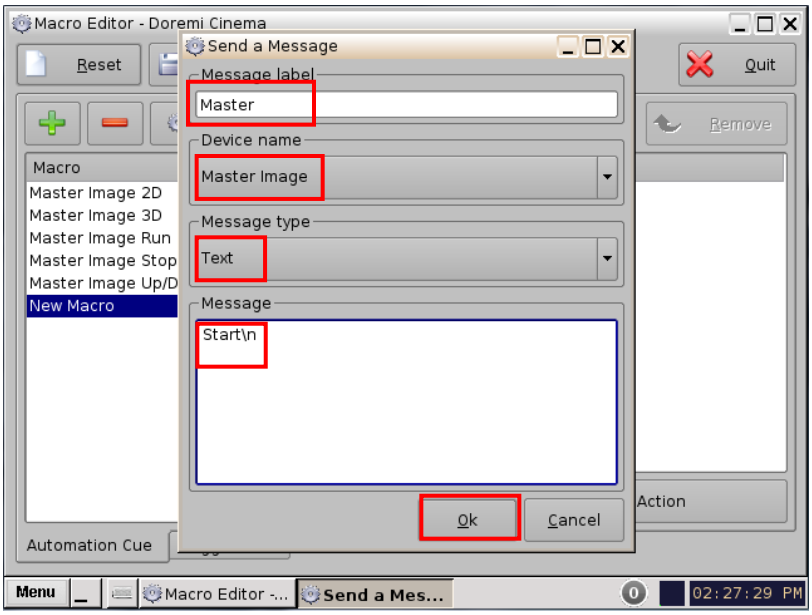
2. After the item has been created click **OK** return to the main Macro Editor screen. Repeat this process for the other four required macros, **MasterImage Stop**, **MasterImage 2D**, **MasterImage 3D** and **MasterImage Up/Down Stop**.



3. To insert an action for each newly created macro, select the macro in question from the list within the Macro window and click the **Insert a New Action** button which will become available.



4. Highlight the **Input/Output** option and **Send Message**, and then click the **Add** button. The following configuration window will appear:



5. In this window, choose the device **MasterImage** from the **Device** name dropdown list and type in the Message label of **MasterImage Start**. Ensure the Message type is Text and type **Start\n** in the Message box. After all fields have been completed click the **OK** button.

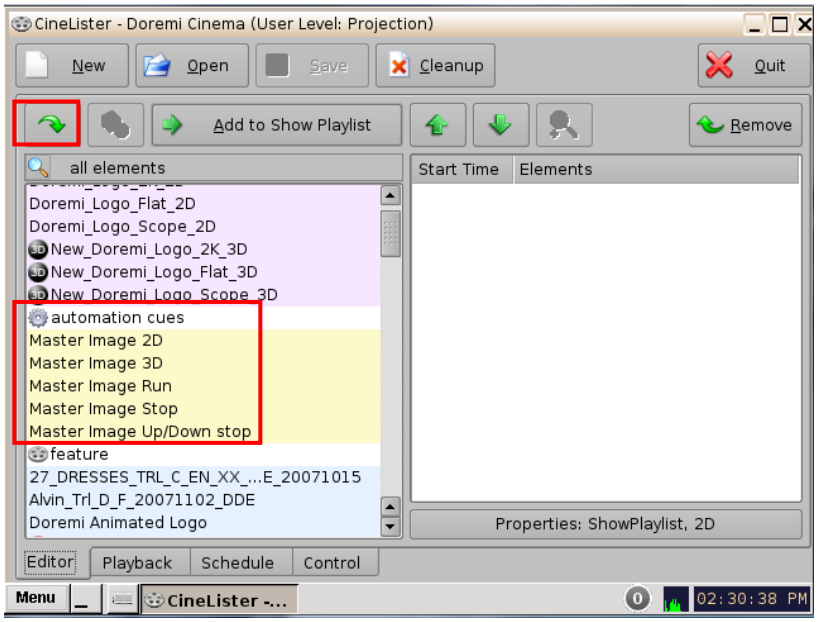
6. Repeat this step for the remaining four macros entering the corresponding message text:

MasterImage Stop	**Stop\n**
MasterImage 2D	**PFD DOWN\n** (or **2D\n**)
MasterImage 3D	**PFD UP\n** (or **3D\n**)
MasterImage Up/Down Stop	**PFD Stop\n** (or **LCM Stop\n**)

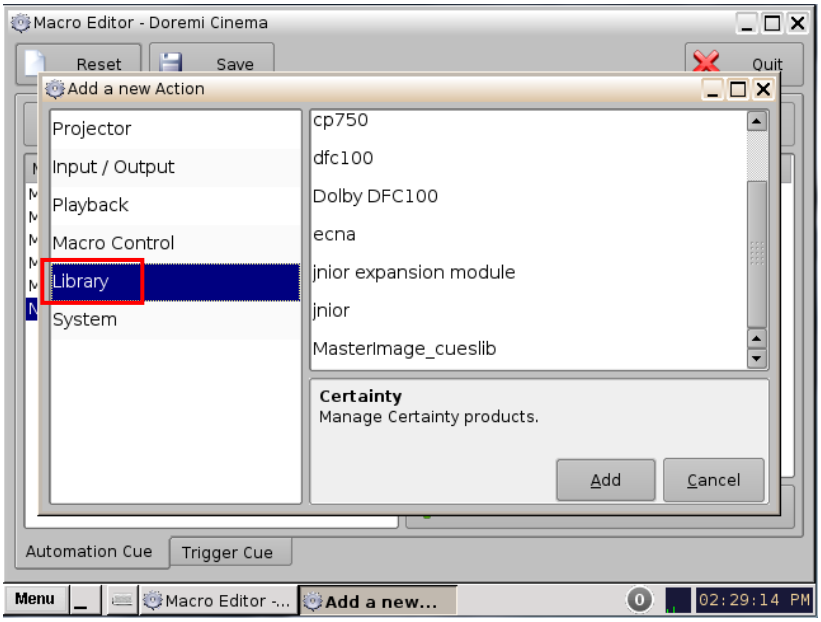
At the end of each command, add the text “\n” to complete the command

7. Once all message text has been added, click the **Save** button from the main Macro Editor screen.

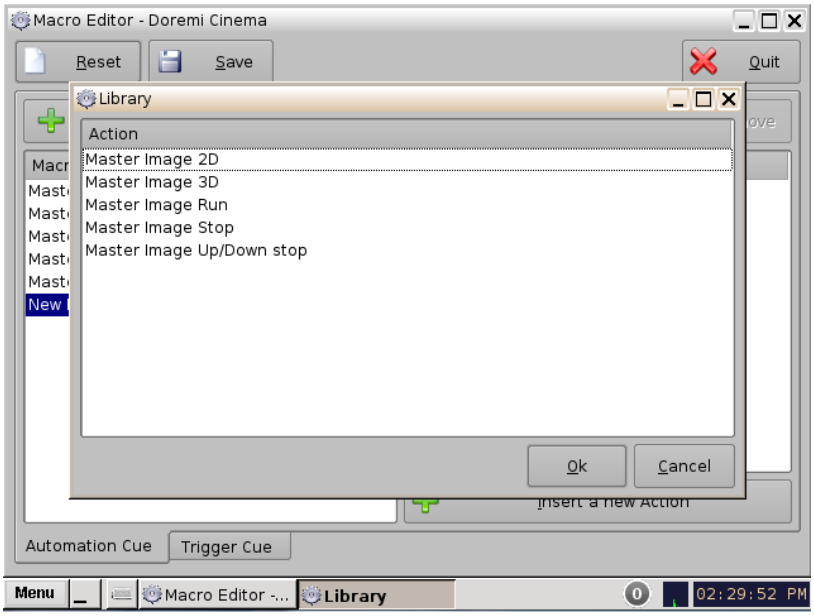
8. Now when you return to the CineLister screen and click the **Refresh** button, the macros will all display in the **Automation Cues** section (shown below) and can be added to future playlists as required.



In future versions of Doremi software updates, the MasterImage macros will be included in a file named MasterImage_cueslib. This will remove the requirement for the information to be entered manually as described in the above steps.



The MasterImage_cueslib file will be found in the **Library** section of the Macro Editor and the macros will be seen within that file.



12.1.2. Qube Server

To create automation macros for the MI-HORIZON3D in the Qube server it is necessary to edit two XML files within the server's configuration.

The files in question are located in the path C:/Program Files/Qube Cinema/XP and are named *automationdevices.xml* and *automationcues.xml*

Within the same path it is necessary to load a new file named *MasterImage.xml*

1. First create a link between the server and the MI-HORIZON3D within the *automationdevices.xml* file. Below you will see the structure of this file:

```
<?xml version="1.0" encoding="utf-8"?>
<Devices xmlns="http://schemas.qubecinema.com/Automation/Devices/2008-01-26">
    <Device name="Device Name" class="Device Class" enable="true">
    <Configuration>
        <Key name="File" value="file name of the device"/>
        <Key name="Address" value="address value"/>
        <Key name="Port" value="port value"/>
    </Configuration>
  </Device>
</Devices>
```

2. Complete the red fields with the details of the MasterImage MI-CLARITY3D where:

"Device Name"	is	"MasterImage"
"Device Class"	is	"Qube.Automation.streamdevice.TCP"
"file name of the device"	is	"MasterImage.xml"
"addess value"	is	MI-HORIZON3D Assigned IP Address
"port value"	is	"23"

It is recommended that **Notepad++** or a similar program is used for xml file editing.

The *automationdevices.xml* file is a shared file for all devices that the server can control via automation cues thus it will contain information for devices such as DLP Projector, Sound System and Lighting Control etc. For this reason the file cannot be replaced and must be modified with the lines added as above for the MI-HORIZON3D.

Next it is necessary to create and load onto the server the *MasterImage.xml* file. This file defines and names the commands and text that will be sent to the MI-HORIZON3D.

3. Edit this file so that it contains the information below:

```
<?xml version="1.0" encoding="utf-8"?>
<StreamDevice name="MasterImage"
xmlns="http://schemas.qubecinema.com/Automation/StreamDevice/2008-01-26">
    <Method name="Start">
        <Instructions>
            <Send>Start&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
    <Method name="Stop">
        <Instructions>
            <Send>Stop&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
    <Method name="3Dposition">
        <Instructions>
            <Send>PFD UP&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
    <Method name="2Dposition">
        <Instructions>
            <Send>PFD Down&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
    <Method name="PFDStop">
        <Instructions>
            <Send>PFD Stop&#x0D;&#x0A;</Send>
        </Instructions>
    </Method>
</StreamDevice>
```

The symbols
&#x0A are necessary at the end of each command to close the command in the xml structure.

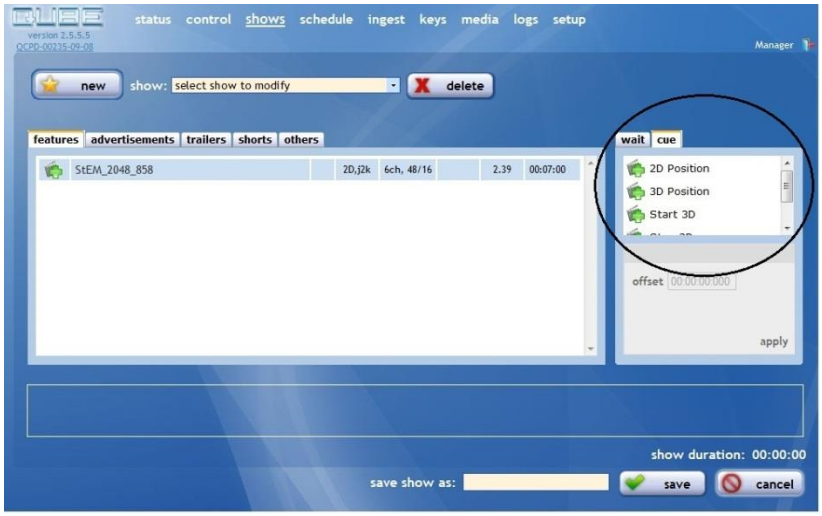
Finally the *automationcues.xml* file can be edited so that the MI-HORIZON3D device is associated with the command names that have been created. This allows the cues to be seen in the Qube graphical interface.

Again, this file is a shared file with other devices in the system so must be edited and not replaced.

4. Edit this file so that it contains the information below:

```
<Cue name="Start 3D">
    <Actions>
        <InvokeMethod name="Start" device="MasterImage"/>
    </Actions>
</Cue>
<Cue name="Stop 3D">
    <Actions>
        <InvokeMethod name="Stop" device="MasterImage"/>
    </Actions>
</Cue>
<Cue name="3D Position">
    <Actions>
        <InvokeMethod name="3Dposition" device="MasterImage"/>
    </Actions>
</Cue>
<Cue name="2D Position">
    <Actions>
        <InvokeMethod name="2Dposition" device="MasterImage"/>
    </Actions>
</Cue>
<Cue name="Up/Down Stop">
    <Actions>
        <InvokeMethod name="PFDStop" device="MasterImage"/>
    </Actions>
</Cue>
```

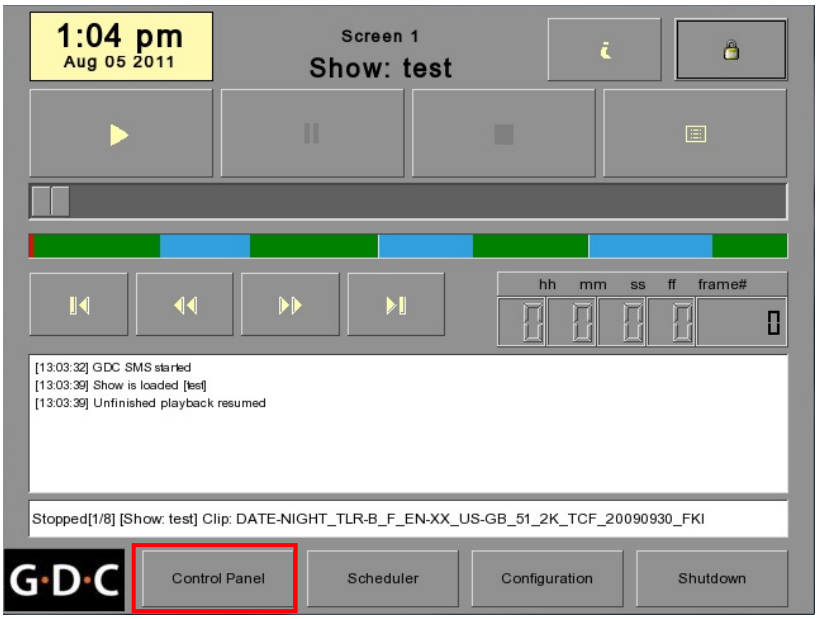
Once this file has been edited and saved the graphical interface of the Qube server will display the new cues that can be selected for future playlist creation.



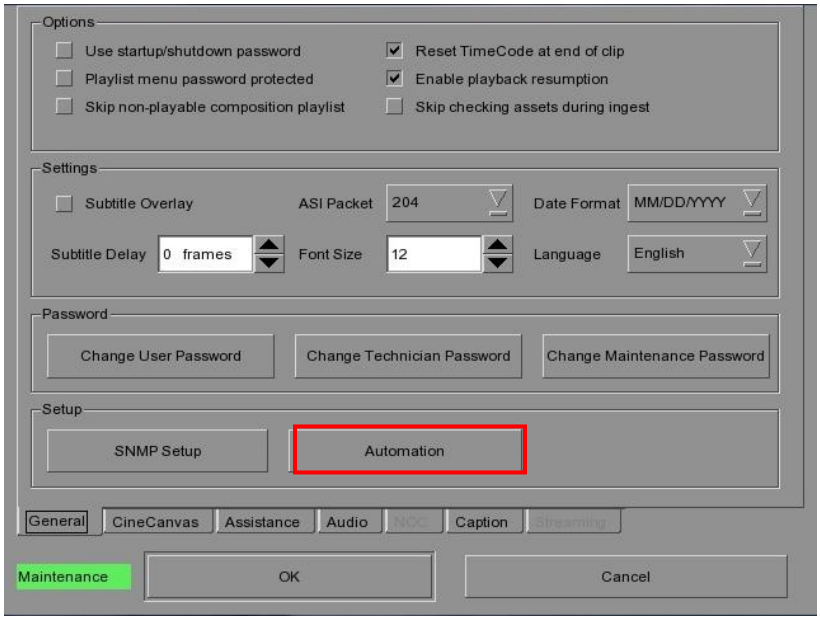
12.1.3. GDC Server

The steps described below are specific to the GDC SX-2001 server. If information is required for different models, please contact GDC directly.

1. In the SMS Main Menu click the **Control Panel** button and log on as **Maintenance Access**.

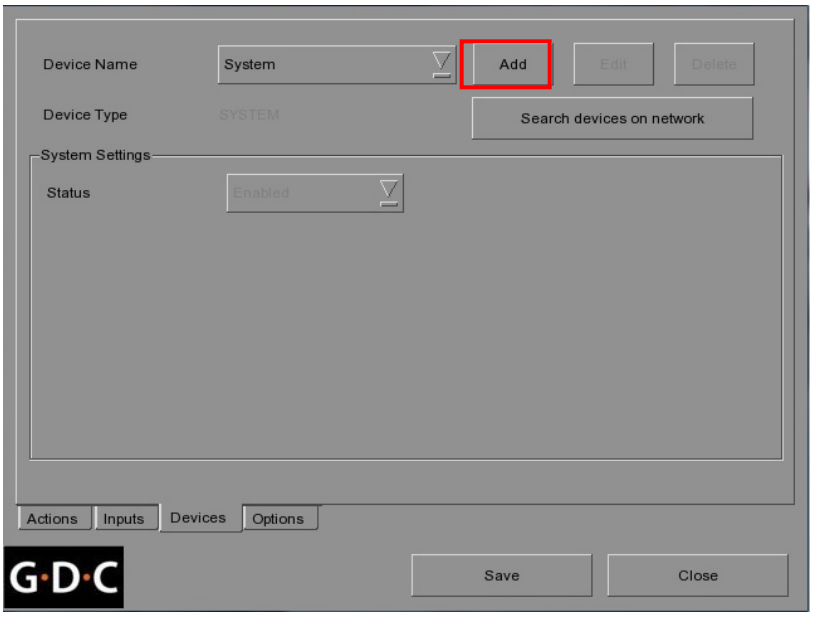


2. Once you have logged on, click the **Automation** button found on the **General** tab.

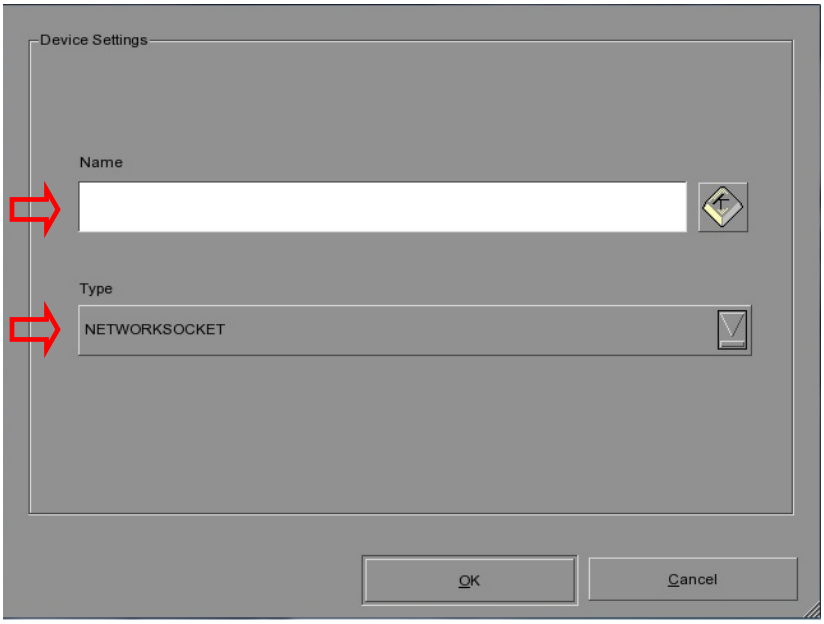


The MI-HORIZON3D must be added as a device within the GDC server configuration.

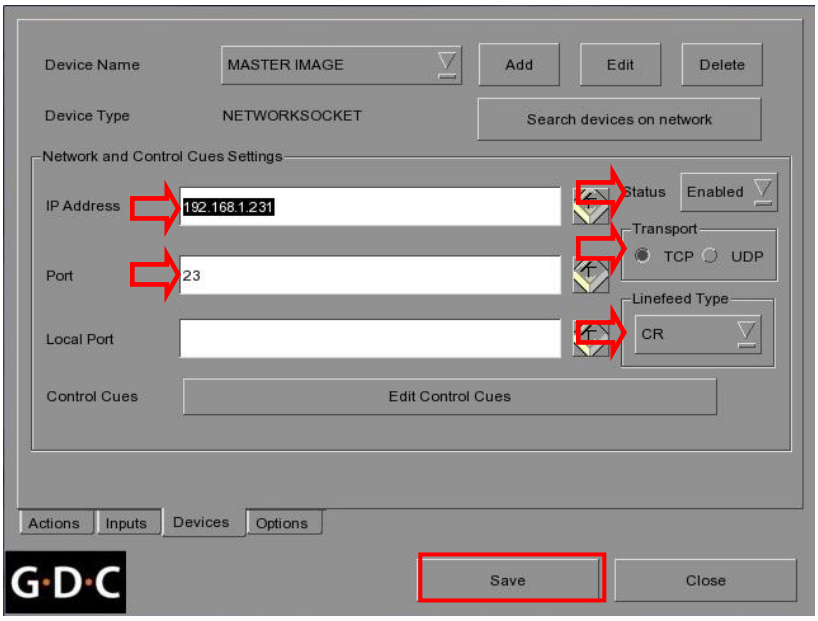
3. Select the **Devices** tab and click the **Add** button.



The following screen will display:

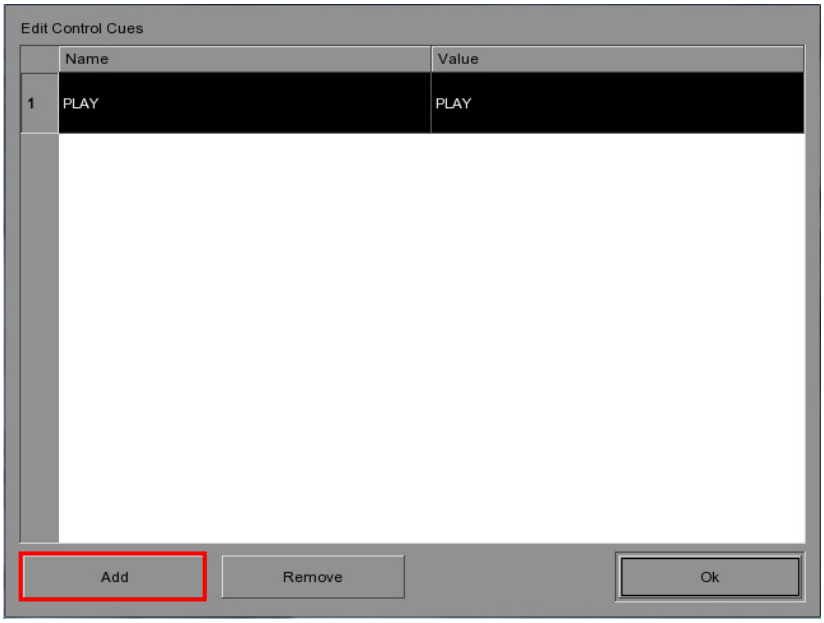


4. Name the new device **MasterImage**, and ensure the **Type** selection is set to **NETWORKSOCKET**, then click **OK**.
5. In the next screen, enter the configuration settings for the MI-HORIZON3D **IP Address** and **Port Number**.
6. In the **Transport** option select **TCP** and in the **Linefeed Type** select **CR** and ensure the **Status** is set to **Enabled**.
7. Once all entries have been made click the **Save** button.

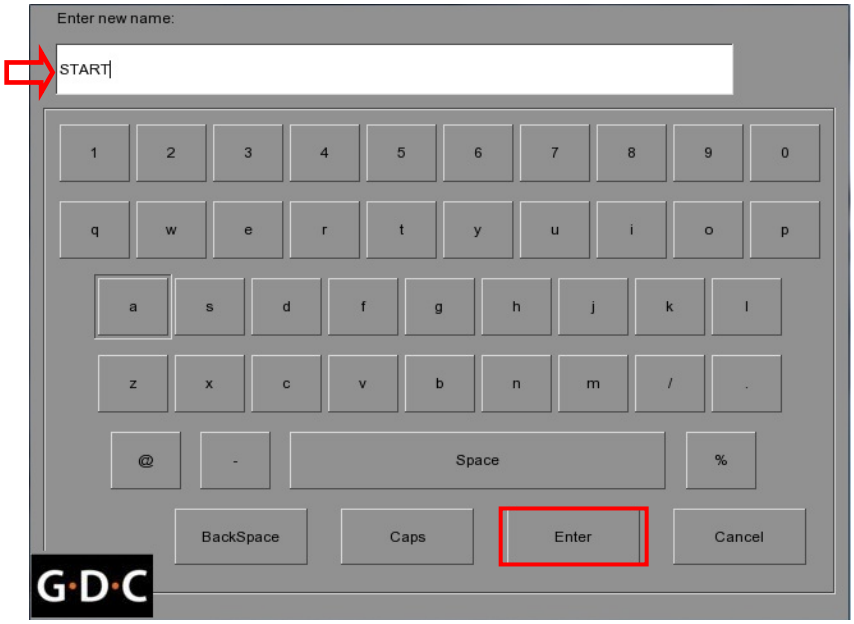


Last, it is necessary to program the control macros in the server.

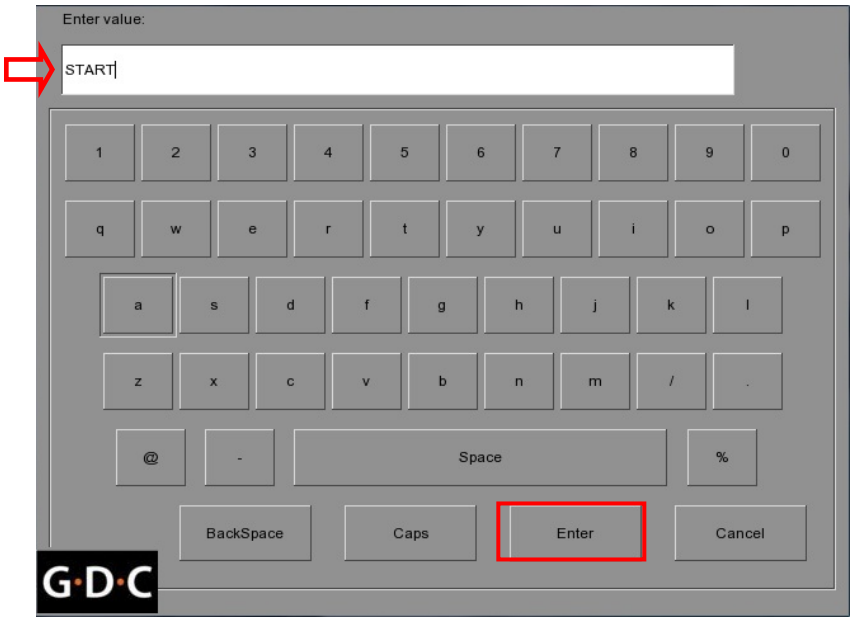
8. Click the **Edit Control Cues** button and the following screen will display.



9. Click the **Add** button to create a new event. In this case, name the event **START**.



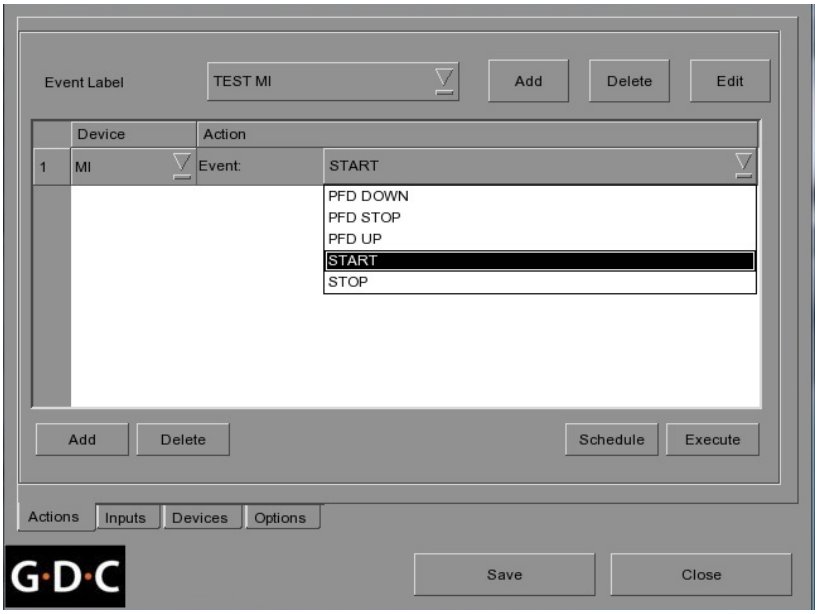
10. Click the **Enter** button and enter the command value for the event. Again in this case, **START**.



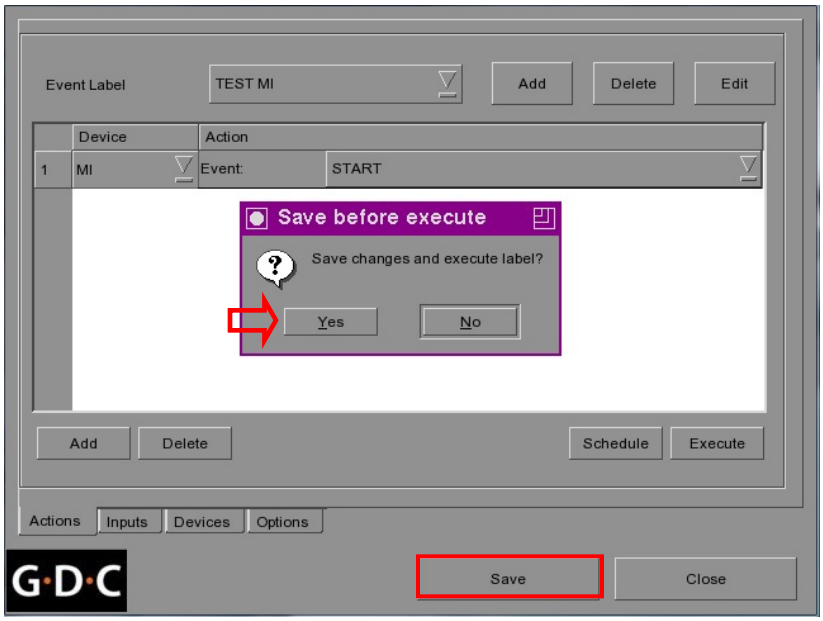
11. Click the **Enter** button to save this change, then go back and make entries for the remaining four macros that are required.

Event Name STOP	Enter Value STOP
Event Name 2D POSITION	Enter Value PFD DOWN
Event Name 3D POSITION	Enter Value PFD UP
Event Name UP/DOWN STOP	Enter Value PFD STOP

12. Once all macros have been created, return to the **Actions** tab of the **Automation** screen to create the events that are needed to communicate. This is done by clicking the **Add** button.
13. For each event, choose the device that was defined in the first step, **MasterImage**, and then select the required event action from the dropdown list, for example: **Start**.
14. Follow the same steps to create the rest of the event actions for **Stop**, **3D Position**, **2D Position** and **Up/Down Stop**.



15. Once all event actions have been created click the **Save** button followed by **Yes**.



13. Appendix C – Installation Record

The form below is an example of the installation record form to be filled out once the MI-HORIZON3D has been set up and configured.

For a copy of the form to be filled out, 'contact your equipment provider or email a request to support@masterimage3d.com.

Once the form is completed, send it to support@masterimage3d.com.

MasterImage 3D System Installation Record

1. Theatre Information

				Date New/Rev.	8/29/2012
Theatre Name	SuperVisual Multiplex			Auditorium No.	2
Address	152 Cinema Street				
City	Cinema Town		State/Province	CA	
Zipcode	94832		Country	USA	
Theatre Manager	Steve Clarity		Theatre Phone	818-549-7853	
Technical Manager	Dave Christie		Technical Phone	818-549-8526	
Screen Size	45' x 24'	Throw distance	60'	No of Seats	160

2. System Information

2-1. MI 3D System

Model No.	MI-WAVE3D	Voltage	120	200/220
Serial No.	1207-0549	Software Ver.	1.2.0 R23	
Install Date	29-Aug	Install Rep.	Stuart Legend	
Distributor/Integrator	Digitech Services			
Install Notes				

2-2. Projector

Manufacturer	Christie	Model No.	CP-2220
Notes	Doremi IMB installed		

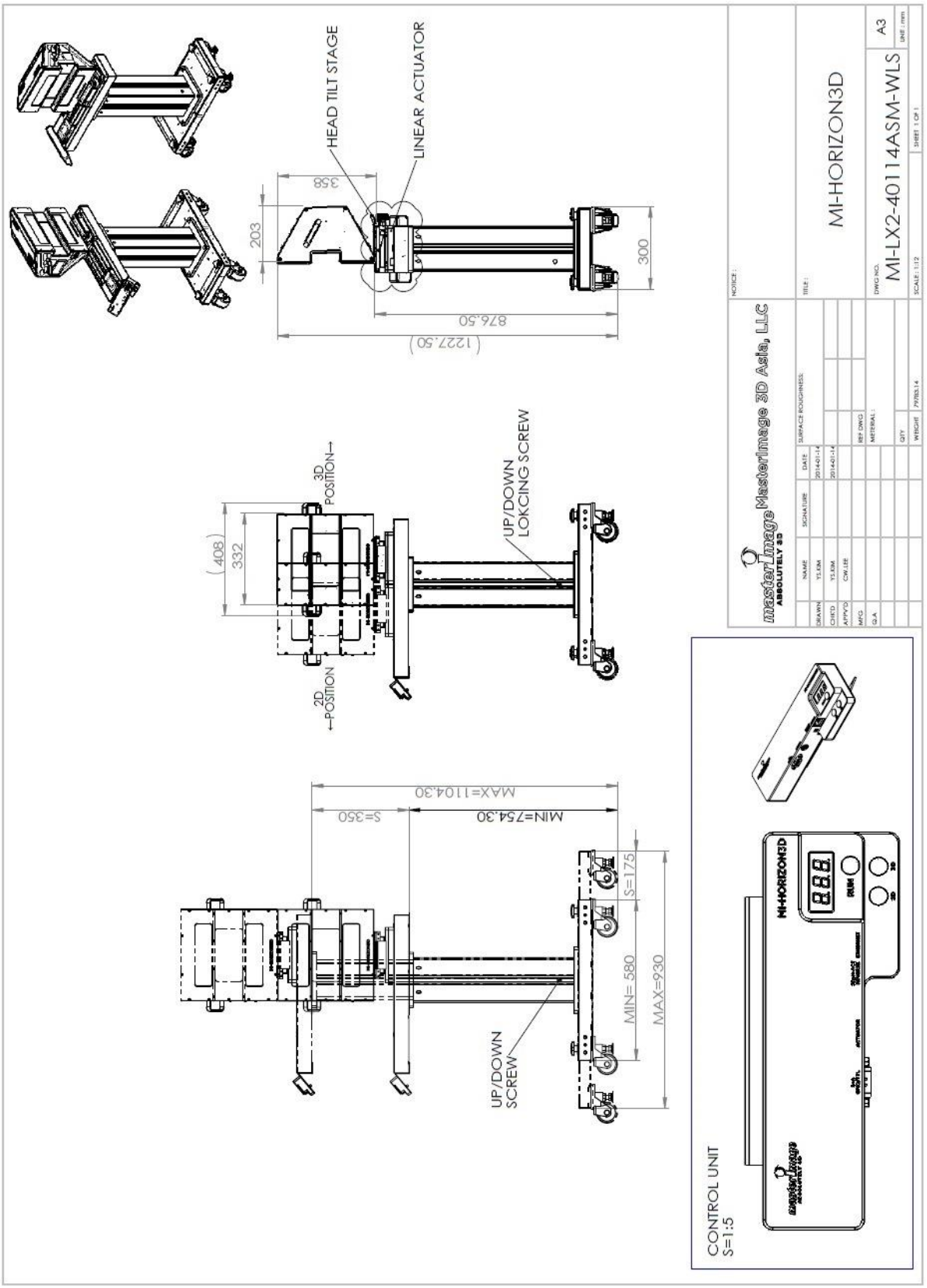
2-3. Server/IMB

Manufacturer	Doremi	Model No.	DCP-2K4
Notes			

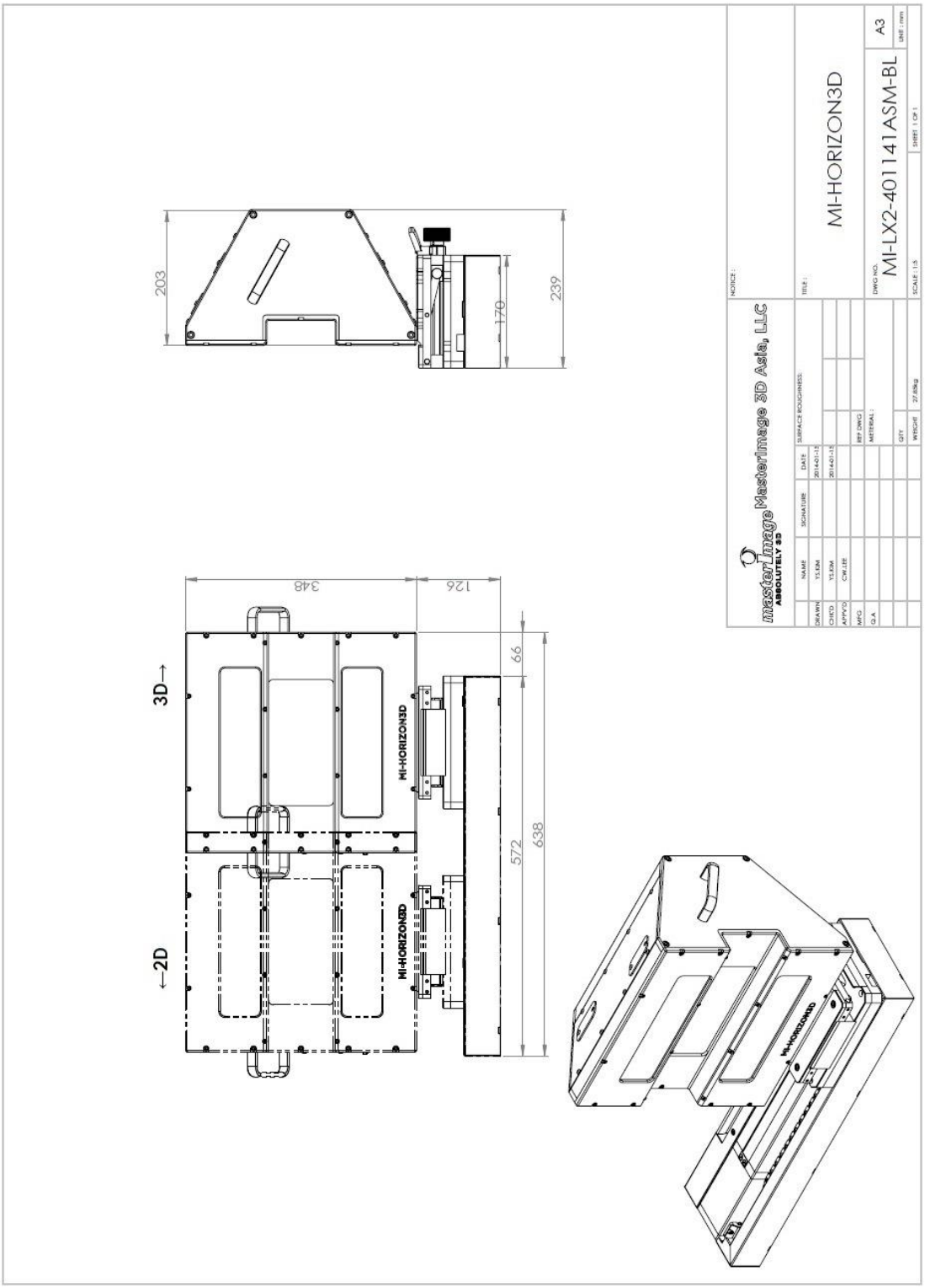
2-4. Silver Screen

Manufacturer	Severtson	Model No.	
Notes			

14. Appendix D – Dimensional Drawings



Optical Head Assembly



End of Manual

For additional information, go to *www.masterimage3d.com*.