MARK ROBERTS MOTION CONTROL

BROADCAST PANEL

JOYSTICK BROADCAST HEAD CONTROLLER

QUICK START GUIDE

QSG Product Code: MRMC-1480-02
Products Covered: MRMC-1331-01, MRMC-1451-00

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Broadcast Panel Quick Start Guide

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Products Covered: MRMC-1331-01, MRMC-1451-00
Modification Date: 31 March 2022

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Contents

Chapter 1 **Quick Start**

Important safety instructions

To ensure the best from the product, please read this manual carefully. Keep it in the safe place for future reference.

To reduce the risk of electric shock, do not remove the cover from the unit. No user serviceable parts inside. Refer servicing to qualified personnel.

Power and connections

- This unit must be connected to a mains socket outlet with a protective earth connection.
- This unit is not disconnected from the AC power source as long as it is connected to the wall outlet.
- When not using the unit for a long period of time, ensure that the AC power cord is disconnected from the wall outlet.
- The AC wall outlet should be installed near to the unit and be easily accessible.
- Do not plug in or attempt to operate an obviously damaged unit.

General care

- Do not force switches or external connections.
- When moving the unit, disconnect the mains cable.
- Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Use a clean dry cloth.
- Do not use around flammable gas. All electrical equipment can generate sparks that can ignite flammable gas.
- Keep away from pets and children. The head has powerful motors that can pinch, so take care not to get your hands trapped in the head or cabling.
- Keep cables tidy. Use cable ties to keep them out of harm's way. If you have a head with slip rings then make use of them; avoid

running any cables between the base and the rotating head or camera.

Location

Installation of this unit should be away from sources of excessive heat, vibration, and dust.

Intellectual property

This product includes confidential and/or trade secret property. Therefore, you may not copy, modify, adapt, translate, distribute, reverse engineer, or decompile contents thereof.

Overview

Thank you for using the Broadcast Panel from Mark Roberts Motion Control (MRMC). The Broadcast Panel is a robust controller designed for day-in, day-out use in professional studio and Outside Broadcast environments and provides full control of our complete range of MRMC heads and rigs.

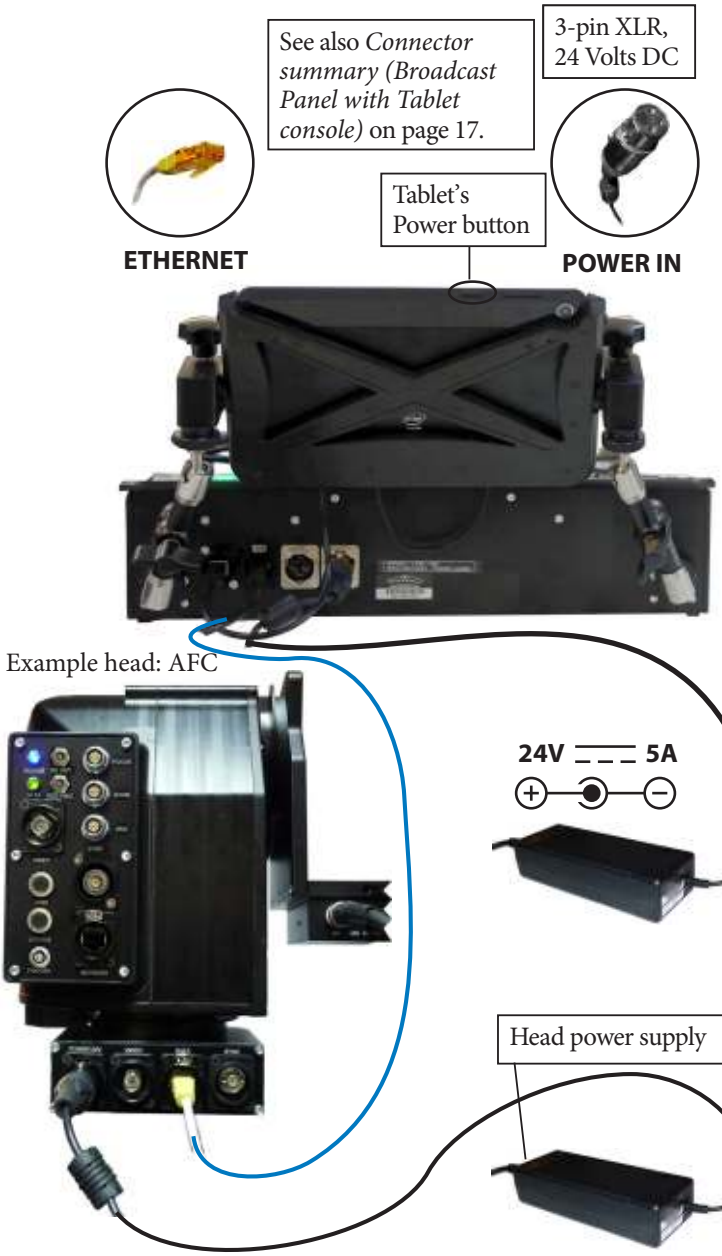
The following variants of Broadcast Panel are available at MRMC:

- **USB Broadcast Panel**: Connects to the PC, laptop or tablet via a USB connection and can be configured to control a broad range of MRMC robotic heads via Flair or MHC software.
- **USB Broadcast Panel with Ear**: Connects to a Flair PC via a USB connection and includes another joystick that can be configured for 3 additional axes on larger rigs.
- **Broadcast Panel - Tablet console**: The Broadcast Panel may be supplied with an integrated tablet (running MHC) and internal Ethernet Hub

The panel includes the following features:

- Record and playback of static camera positions - You can store up to 16 static head “preset” positions (including lens settings) and go to any preset position at the touch of a button.
- Head select - You can switch control between up to 12 connected heads via Ethernet
- Focus and zoom control

Starting your Broadcast Panel (Tablet console)



1. Plug in the Ethernet cable to the back of the panel.
2. Connect the other end of the Ethernet cable to your head or an Ethernet hub if you are connecting multiple heads.

> Note
>
> Make sure to plug in the Ethernet cable into the base of the head, not into the other Ethernet ports.

3. Ensure that the tablet is connected to the Broadcast Panel using the USB cable supplied.
4. Connect power to your head(s) and power them up.
5. Connect power to the Broadcast Panel and power it up.
6. Switch on the tablet and Microsoft Windows will start. Once Windows has loaded on the tablet, MHC will start automatically. Once MHC started, you can start using the Broadcast Panel.

> Note
>
> It will take approximately 60 seconds for the panel to start up. Once the LCD display and buttons are lit up with text displayed, the panel is ready to use.

7. Select the head you want to control from the **HEAD SELECT** panel

   The default configuration is:

   Head 1 = 192.168.1.236

   Head 2 = 192.168.1.237

   Head 3 = 192.168.1.238

   Head 4 = 192.168.1.239

8. Ensure that the **MASTER SPEED** is set to the desired position.
9. Set the **DIRECTION** toggle switches.
10. Move your head using the Pan/Tilt/Focus/Zoom controls as desired.

Starting your USB Broadcast Panel

See also *Connector summary (USB Broadcast Panel)* on page 18.

1. Connect the head to the PC running MHC using Ethernet.

> Note
>
> Make sure to plug in the Ethernet cable into the base of the head, not into the other Ethernet ports.

2. Connect the PC to the Broadcast Panel using the USB cable supplied.
3. Connect power to your head(s) and power them up.
4. Connect power to the Broadcast Panel and power it up.
5. When using the Broadcast Panel on a Flair PC, switch on the PC and launch Flair. Refer to the *Hand Help Box Setup* section in the Flair Manual to understand how to configure the Broadcast Panel controls to be used with Flair. Also, ensure that you set the **`Joysticks: True`** in the config.ini file.
6. If using the Broadcast Panel on an MHC PC:

    6.1 Switch on the PC and Microsoft Windows will start. Once Windows has loaded on the PC, MHC will start automatically. Once MHC started, you can start using the Broadcast Panel.

> Note
>
> It will take approximately 60 seconds for the panel to start up. Once the LCD display and buttons are lit up with text displayed, the panel is ready to use.

    6.2 Select the head you want to control from the **HEAD SELECT** panel

    The default configuration is:

    Head 1 = 192.168.1.236

    Head 2 = 192.168.1.237

    Head 3 = 192.168.1.238

    Head 4 = 192.168.1.239

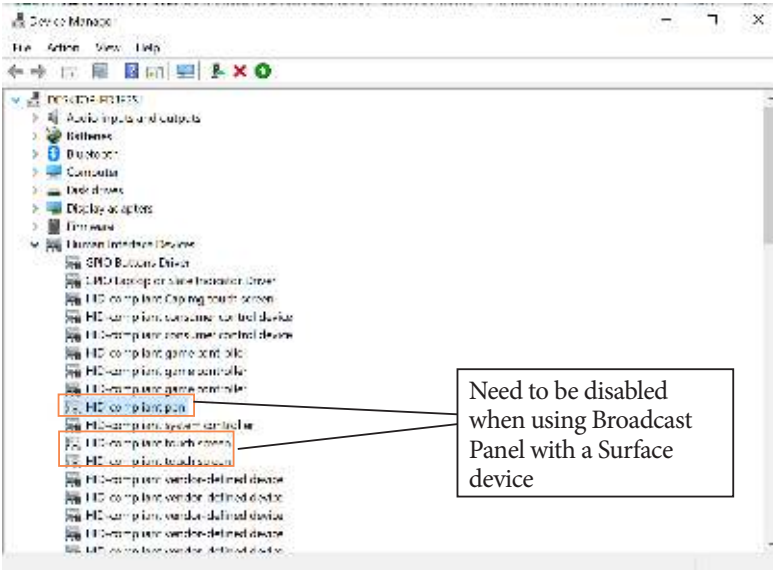
6.3 Ensure that the **MASTER SPEED** is set to the desired position.

6.4 Set the **DIRECTION** toggle switches.

7. Move your head using the Pan/Tilt/Focus/Zoom controls as desired.

Important

You will need to disable the touch screen and pen in Windows to work with Broadcast Panel and Surface device.



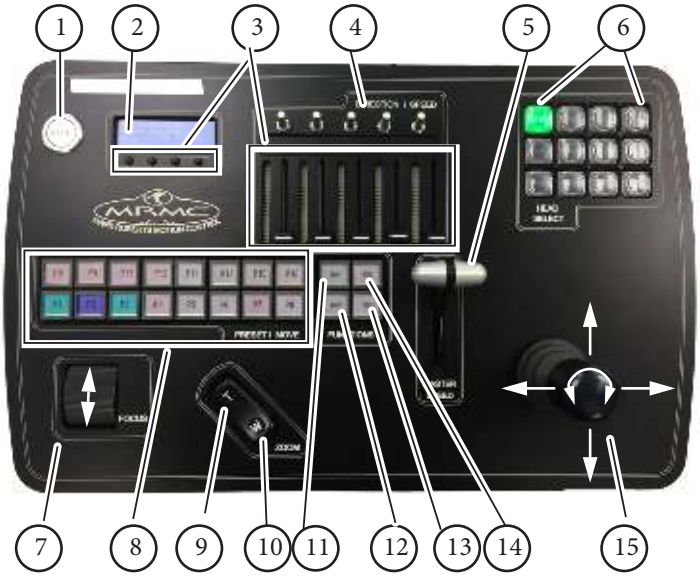
Turning off the system

Turn off the tablet first by shutting down Microsoft Windows in the normal way. As there is no power switch on the Broadcast Panel or head, to turn these off you simply remove the power cable.

Note

Should the battery of the tablet run out, it may take up to 10 minutes to start up.

Broadcast Panel Controls



1. E-stop
2. Screen for messages
3. Reserved for future use
4. Enable, disable or change direction of axes
5. Master Speed for all controls
6. Head selection
7. Focus
8. 16 **PRESETS** for recording and playing back static camera positions
9. **T**elephoto zoom
10. **W**ide angle zoom
11. Stop the move
12. Set/activate group presets
13. Store the preset
14. Home the selected head

15. Camera head direction and position joystick

> Note
>
> Physical effects of most controls are adjustable in MHC, in terms of the **limit** (range) of motion, **direction**, **speed**, **damping** (smoothing of jerkiness in the controls), **input exponential** and **scale** (sensitivity).

Broadcast Panel with Ear Controls

Broadcast Panel with Ear has an additional joystick that can be configured to use 3 additional axis on the robot in Flair. The other controls and button work exactly as the version with no ear. For details refer to *Broadcast Panel Controls* on page 8.

Setting the control directions

In the Broadcast Panel you can specify the directions of the focus, zoom and joystick controls for your particular head, lens gearing attachments, and preference. For example, some people prefer the camera to point upward when the joystick is pulled back, while others prefer the opposite logic whereby pushing forward ("up") on the joystick targets the camera upward in the scene. To set the control directions, you can toggle the controls in the Direction/Speed section of the panel. The following table describes the control position:

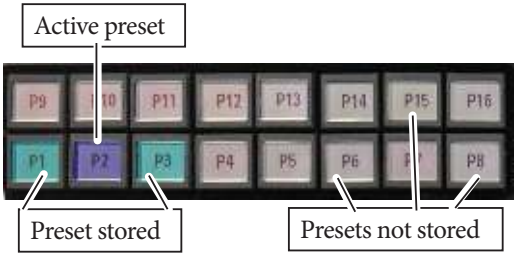
Position	LED	Description
Forward (Green light)		Enabled and head moves in the same direction as the joystick or control
Off (No light)		Disabled - Moving the axes control on the panel will not move the head
Reverse (Amber light)		Enabled and direction inverted - Moving the axis control will move the head in the opposite direction.

Recording a preset

1. If you have multiple heads connected, select the head for which you want to record the preset using the buttons in the Head Select section on the Broadcast Panel.
2. Press the **STORE** button.
3. If you haven't done so already, use the axes controls on the Broadcast Panel to go to the head direction and position, and lens focus and zoom setting that you want to record.
4. Press one of the 16 preset buttons.
5. Repeat steps 2 and 3 to record additional preset moves, using a different preset button for each position.

Pressing one of the numbered preset buttons will store the current settings to that button, overwriting the previous settings for that button.

Preset button states



Go To Preset

To go to a preset position, press one of the Preset buttons P1 – P16.

> Note
>
> If no preset has yet been stored then the default preset position is 0 for all axes.

Stop

Pressing this button would stop the selected robot.

Home

Pressing the **HOME** function button will home the first axis that can be homed in the selected robot. For an AFC head, the axis homed is the pan axis and for a Robotic Pod the axis homed would be the focus axis.

Stop button

The top left button is a **STOP** button pressing which would stop the Broadcast Panel controls from functioning. This can be used in situations where you want to avoid accidentally pressing any controls that result in the robot changing its position.

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Appendix 1 **Troubleshooting**

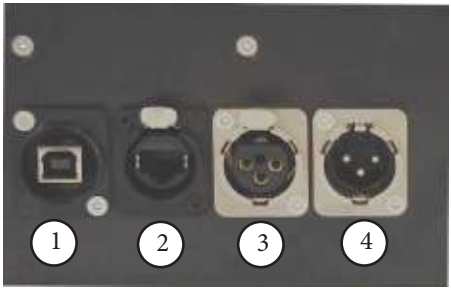
Typical symptoms, causes, and actions

Symptoms or message on the controller	Cause and/or action
Preset labels do not appear on the Broadcast Panel	1. Go to **Control Panel > Devices and Printers** in Microsoft Windows. 2. If you see many games controller devices, then right-click each and select **Remove Device** to remove each of them one by one. (Refer to the figure below.) 3. Unplug the Broadcast Panel from the PC for a few seconds and plug it again. 4. Wait a few seconds. This should show the preset labels on the panel. 5. Start MHC Client and text should now appear on the panel's LCD buttons. If this does not work then remove all devices from the PC that are not connected. 6. Reconnect Broadcast Panel. 7. Restart MHC.

Symptoms or message on the controller	Cause and/or action
MHC does not detect changes in the focus control position	1. Go to **Control Panel** > **Devices and Printers** in Microsoft Windows. 2. With the Broadcast Panel connected, right-click the device named **STM32 Human interface** and select R**emove Device** to remove it. 3. Unplug the Broadcast Panel from the PC for a few seconds and plug it again. 4. Wait a few seconds. Windows should display notifications as the device is automatically detected and set up. 5. Start MHC Client and movements of the focus wheel should be detected within MHC. If this does not work then remove all devices from the PC that are not connected. 6. Reconnect Broadcast Panel. 7. Restart MHC.

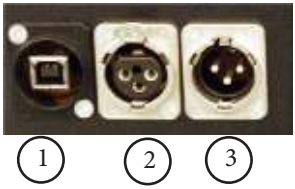
Appendix 2 **Back panel**

Connector summary (Broadcast Panel with Tablet console)



1. **USB** port for communication between the Broadcast Panel and the tablet.
2. **NETWORK** Ethernet RJ45 connector is connected to the head or if you are using multiple heads then to the switch that connects the heads. It is used for all communications and control between MHC and head.
3. **POWER 24V OUT** output connector, 3-pin XLR, 24 Volt DC power supply which can be used to power any device or head that uses 24 Volt DC power.
4. **POWER 24V IN** (12 Watts) input power connector, 3-pin XLR, 24 Volt DC power supply.

Connector summary (USB Broadcast Panel)



1. **USB** port for communication between the Broadcast Panel and the tablet.
2. **POWER 24V OUT** output connector, 3-pin XLR, 24 Volt DC power supply which can be used to power any device or head that uses 24 Volt DC power.
3. **POWER 24V IN** (12 Watts) input power connector, 3-pin XLR, 24 Volt DC power supply.

Connector pin-out information

USB connector

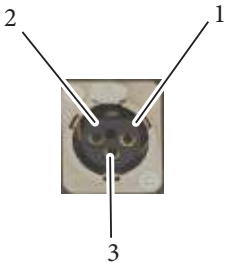
USB is a USB Series B Male connector used for communication between the Broadcast Panel and the PC.

1. VCC
2. D-
3. D+
4. GND

24V Out connector

24V Out is a (3-pin XLR Female) connector that can be used to power up any other equipment.

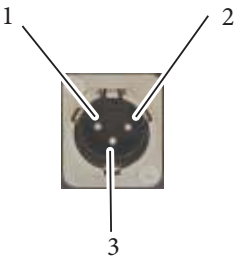
1. GND
2. +24V
3. N/C



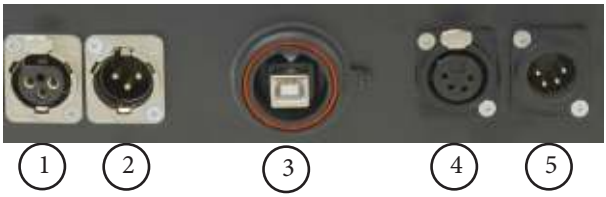
24V In connector

24V In is a (3-pin XLR Male) connector to supply power to the Broadcast Panel.

1. GND
2. +24V
3. N/C



Connector summary (Broadcast Panel with Ear)



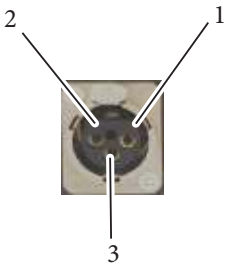
1. **POWER 24V OUT** output connector, 3-pin XLR, 24 Volt DC power supply which can be used to power any device or head that uses 24 Volt DC power.
2. **POWER 24V IN** (12 Watts) input power connector, 3-pin XLR, 24 Volt DC power supply.
3. **USB** port for communication between the Broadcast Panel and the tablet.
4. **ESTOP IN** 4-way XLR female connector connected to UESA and acts as a feed in for UESA, when interrupted. Selftest with pulsed signal on both channels.
5. **ESTOP OUT** 4-way XLR male connector is used to connect to a 4-way XLR female. Both channels open when UESA interrupted. It forwards the e-stop to following devices like other CS8C or Drive of Linear Track.

Connector pin-out information

24V Out connector

24V Out is a (3-pin XLR Female) connector that can be used to power up any other equipment.

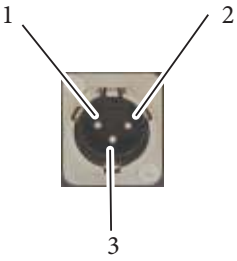
1. GND
2. +24V
3. N/C



24V In connector

24V In is a (3-pin XLR Male) connector to supply power to the Broadcast Panel.

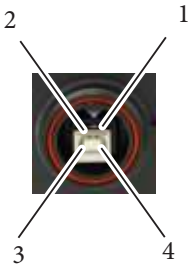
1. GND
2. +24V
3. N/C



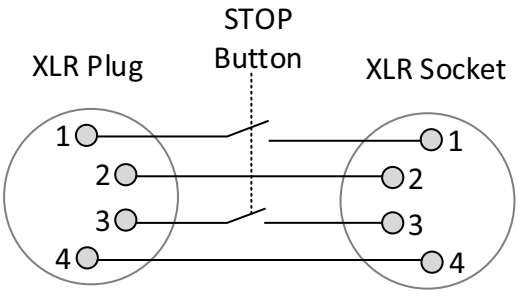
USB connector

USB is a USB Series B Male connector used for communication between the Broadcast Panel and the PC.

1. VCC
2. D-
3. D+
4. GND



ESTOP system



Notes

Appendix 3 **Specifications**

Weight: 2.8Kg

Power requirements: 24 Volts DC

Temperature range: -10 to +45 °C
Humidity tolerance: 0% to 90% relative humidity, non-condensing

Dimensions are shown as follows. All measurements are in cm and exclude the tablet.

Notes

Notes

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