

MCS-Spectrum

Tactile Colorist Control Surface



Users Manual



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Introduction

Thank you for purchasing the MCS-Spectrum. The MCS-Spectrum allows you to control color correction applications in an intuitive manner. No longer do you have to use a mouse and keyboard to change individually, you can now use a tactile control surface to change multiple parameters.

The MCS-Spectrum has numerous interface options. It has two slots to accommodate the MCS-Interface Cards. These are available in:

- RS-232
- RS-422
- USB
- Ethernet
- GPI (8 in / 8 out)

Additionally, the MCS-Spectrum has an expansion port, which allows it to be connected to an MCS-3000 series controller as a peripheral or to connect to other MCS-3000 series peripherals.

Unpacking

When you receive your MCS-Spectrum, you should receive the following items:

- MCS-Spectrum
- This Users Manual
- Power Supply appropriate for your location

If you have also purchased any optional MCS-Interface cards with the MCS-Spectrum, the card or cards may be preinstalled in the correct slot.

Please take a moment to register your product at:

<http://www.jlcooper.com>

This will allow us to notify you of important updates and changes to software or features.

Setup

If the MCS-Spectrum will be used as a “stand alone” controller, that is without an MCS-3800, an MCS-Interface card must be installed. The interface card, which communicates with the host must be installed into Slot 1. An optional second MCS-Interface card can be installed in Slot 2.

Installation and Use

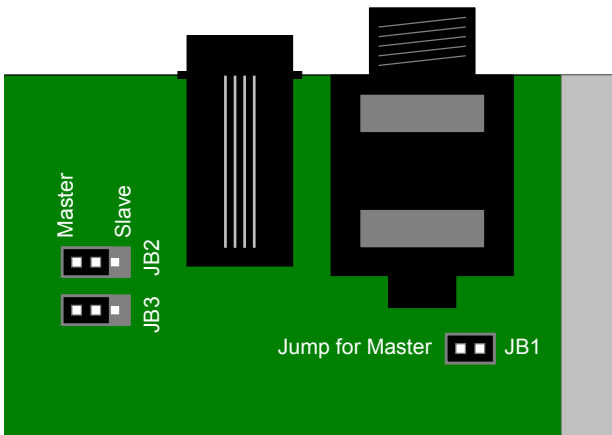
Connecting the MCS-Spectrum

Connecting the MCS-Spectrum is straightforward. The MCS-Spectrum can connect to a host computer by using the expansion port or an interface card installed in slot 1.

Configuring the MCS-Spectrum as a Master

When the MCS-Spectrum is directly connected to a host computer using an interface card in Slot 1, it becomes the master. That is, the MCS-Spectrum communicates directly with the host and any other MCS Series controller become slave or expander peripherals. Expander peripherals connect to the MCS-Spectrum using the Expander port on the rear of the MCS-Spectrum.

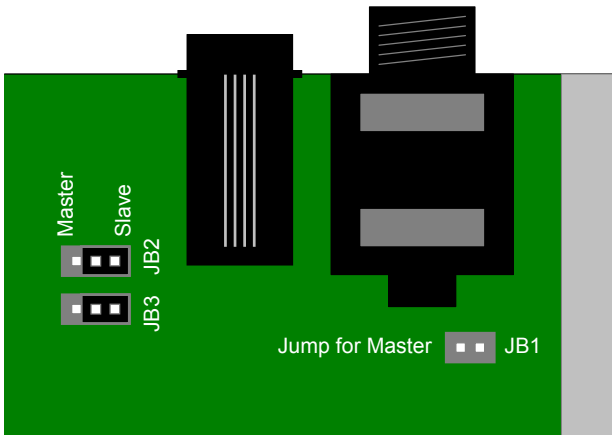
The diagram below shows how to set the jumpers in the MCS-Spectrum to operate as a Master. In this case, JB2 and JB3 in the MCS-Spectrum MUST be placed in the “MASTER” position. JB1 in the MCS-Spectrum MUST be installed.



Configuring the MCS-Spectrum as a Slave

When another MCS Series controller, such as the MCS-3800, is directly connected to a host computer, the MCS-Spectrum becomes a slave or expander peripheral. In this situation, the MCS-Spectrum communicates indirectly with the host through the master. The slave or expander MCS-Spectrum connects to the master controller using the Expander port on the rear of the MCS-Spectrum.

The diagram below shows how to set the jumpers in the MCS-Spectrum to operate as a slave or expander peripheral. In this case, JB2 and JB3 in the MCS-Spectrum **MUST** be placed in the “SLAVE” position. JB1 in the MCS-Spectrum **MUST** be removed. The jumper for JB1 can be installed on one of the pins of JB1 for safekeeping.



Self Test

Buttons and LEDs are tested by pressing any button. When a button is pressed, the corresponding LED illuminates indicating that the button and LED are functioning.

The MCS-Spectrum has a self test mode, which aids in troubleshooting the controller. The self mode is accessed by pressing and holding Page 1 and Page 2 during power up.

The trackballs and rings are tested by rolling the balls or turning the rings. The direction and control will be indicated in the left display.

The encoders are tested by turning the knobs. The direction and value of each encoder will be indicated on the right display.

Technical Reference

Electrical Connections

The MCS-Spectrum can have a variety of interface cards. Among these are:

- MCS-3000 Series RS-422 Card #920320
- MCS-3000 Series RS-232 Card #920321
- MCS-3000 Series USB Card #920384
- MCS-3000 Series Ethernet Card #920394
- MCS-3000 Series GPI card #920355

In host mode, the MCS-Spectrum can connect to the host through the Expansion port (using an MCS-3800) or through an MCS-3000 Series Interface Card. Only the RS-422, RS-232, USB and Ethernet cards can be used in slot 1 to connect the MCS-Spectrum to a host computer.

The Quad RS-422 and GPI cards are intended to reside in Slot 2 and require special software support. Please consult your user documentation to use these cards in your application.

MCS-3000 Series RS-422 Interface Card

The RS-422 Interface is intended for operation with a VTR, controller or a host computer. It provides the advantages of RS-422, which allows for long cable runs. With low loss, low capacitance cable, the RS-422 Interface Card can accommodate cable runs up to 1km.

The RS-422 Interface has a female D-Sub connector. The interface can be configured to connect to either a deck or a host. Five jumpers on the interface card configure the pinout. All five jumpers must be placed in either the “To Computer” or “To Machine” position. The port is configured to communicate at 38400 bits/sec, 1 start bit, 8 data bits, 1 stop bit and odd parity.

MCS-RS422 Interface Pinout

	Setting on Card	
	“To Computer”	“To Machine”
1	Ground	Ground
2	Transmit A	Receive A
3	Receive B	Transmit B
4	Ground	Ground
5	not used	not used
6	Ground	Ground
7	Transmit B	Receive B
8	Receive A	Transmit A
9	Ground	Ground

Note: These signals are at the RS-422 Interface card.

MCS-3000 Series RS-232 Interface Card

The RS-232 Interface is intended for operation with a host computer. It provides the advantages of a standard interface, which is found on many computers.

The RS-232 Interface has a male D-Sub connector. The port is configured to communicate at 1 start bit, 8 data bits, 1 stop bit and odd parity. Five jumpers allow the port speed to be set for 38400, 19200, 9600, 4800 and 2400 bits/sec to accommodate various situations.

MCS-RS232 Interface Pinout

1	DCD*
2	Transmit
3	Receive
5	Ground
6	DSR*
8	CTS*

Note: These signals are at the RS-232 Interface card

** These pins are not used by the card and are connected together for ports that require handshake.*

MCS-3000 Series USB Interface Card

The USB Interface is intended for operation with a host computer. It provides the advantages of a standard interface, which is found on most modern computers.

The USB Interface has a female USB B type connector and uses the USB v1.1 protocol. For Windows computers, there is a driver that allows the device with this interface card to appear as a com port. This driver can be downloaded from the JLCooper support web site, <http://www.jlcooper.com/pages/downloads.html>. With the driver, the virtual com port is configured to communicate at 38400 bits/sec, 1 start bit, 8 data bits, 1 stop bit and no parity.

MCS-3000 Series Ethernet Interface Card

The Ethernet Interface is intended for operation with a host computer. It provides the advantages of a standard interface, long cable runs, use over private/public/wired/wireless networks, the ability of being shared among computers and the ability to work with any platform that supports TCP/IP.

To use the Ethernet Interface, the software application **MUST** be written to specifically support the Ethernet Interface. Consult your software's users documentation for details on how to configure the software.

To configure the MCS-Spectrum Ethernet settings, an Ethernet Interface card must be in slot 1. You can verify this by visually checking slot 1 for the presence of an Ethernet card or by referring to the display during power up. If an Ethernet card is present at power up, the display will show:



```
Ethernet Card in Slot #1  
No Card Found in Slot #2
```

To set the IP address, press Page4 + Page8 to access the configuration page. The right display will show:



```
Pg6      Pg7      Pg8  
Mask    IP Add.  Exit
```

Press Page7 to set the IP Address and TCP Port Number of the MCS-Spectrum.

The displays will show:

```
Set IP Address          Set Port
255 . 255 . 255 . 255  65535
```

Use the knobs below each number to set values necessary for your network. Press Page8 when you are done.

To set the IP mask, press Page4 + Page8 once again to access the configuration page. The right display will show:

```
Pg6      Pg7      Pg8
Mask     IP Add.  Exit
```

Press Page6 to set the IP subnet mask of the MCS-Spectrum. The displays will show:

```
Set Mask Address
255 . 255 . 255 . 255
```

Use the knobs below each number to set values necessary for your network. Press Page8 when you are done.

Note: You must power cycle the MCS-Spectrum for the Ethernet settings to take effect.

Footswitch

The MCS-Spectrum has a GPI jack at the rear panel of the unit. Any normally open switch contact with a ¼-inch mono plug will work.

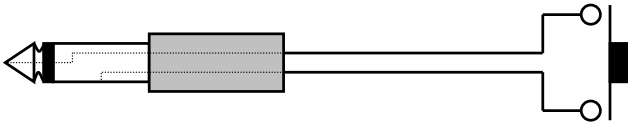


Figure 1: GPI Connection

Power

The MCS-Spectrum requires a 12 volt DC supply capable of delivering at least 1.25 amps. The unit comes with a power supply appropriate for the country in which the unit was sold. If you need a power supply specific to your location, please contact your local distributor or JLC Cooper Electronics.

Location	JLCooper Part Number
North America	561025
Outside North America	561024 + appropriate cord for location

Table 2: JLCooper approved Power Supplies

*Warning: Using a power supply other than the units specified in the above table can result in damage to the MCS-Spectrum and/or other equipment which is **not** covered by the JLCooper Factory Warranty.*

Troubleshooting

If for some reason the MCS-Spectrum does not give you the expected results, take a moment to do some investigating. The most important concept is that you have your MCS-Spectrum connected properly as outlined in *Installation and Use*. Take a moment to double check your setup.

A common problem is forgetting to turn the power switch on or turning the unit on after the software application has launched.

In addition, the JLCooper website (www.jlcooper.com) will contain up to date information on drivers, applications and troubleshooting.

If all else fails, you can contact the JLCooper Service Department at: service@jlcooper.com.

Care and Service

If properly cared for, your MCS-Spectrum should provide years of troublefree performance. While the MCS-Spectrum is built in a rugged metal enclosure, please avoid dropping the MCS-Spectrum.

Clean with a soft, damp cloth. Do not allow liquids, dust or other foreign matter to get inside the unit.

There are no user-serviceable parts in the MCS-Spectrum. Please refer to the JLCooper Electronics Limited Factory Warranty on the following page for detailed warranty and service information.

JLCooper Electronics Limited Warranty

JLCooper Electronics ("JLCooper") warrants this product to be free of defects in materials or workmanship for a period of 12 months from the date of purchase. This warranty is non-transferable and the benefits apply only to the original owner. Proof of purchase in the form of an itemized sales receipt is required for warranty coverage. To receive service under this warranty, customers in the United States should contact the JLCooper factory at (310) 322-9990 and talk to a service technician. If necessary, a Return Authorization number may be issued. For our customers outside the United States, it is recommended that you first contact your Dealer or Distributor, since they may offer their own service or support policy. If local support is not obtainable, please send a FAX to JLCooper's Service Department at +1 310 335 0110 with a detailed description of the service required. Upon issuance of return authorization, the product should be packed in the original shipping materials and shipped prepaid and insured to: Service Department, JLCooper Electronics, 142 Arena Street, El Segundo, CA 90245. Please include the following: copy of the sales receipt, your name and address (no P.O. Boxes, please), a brief description of the problem, and any other related items discussed with the service department and considered necessary to evaluate the product or effect a repair. The return authorization number must be clearly written on the outside of the package. JLCooper will at its option, without charge for parts or labor, either repair or replace the defective part(s) or unit. Shipping costs are not covered by this warranty. JLCooper's normal repair turn around time at the factory is approximately 15 business days from receipt of product to shipping. Your actual turn around time will include return shipping. Actual turn around time will vary depending upon many factors including the repeatability of the customer's reported complaint, the availability of parts required for repair, the availability of related products needed to evaluate the product if necessary. Priority services are available at additional cost. These should be discussed with the service technician at the time the return authorization is issued. This warranty provides only the benefits specified and does not cover defects or repairs needed as result of acts beyond the control of JLCooper including but not limited to: abuse, damage by accident/negligence, damage from using incorrect power supply, modification, alteration, improper use, unauthorized servicing, tampering, or failure to operate in accordance with the procedures outlined in the owner's manual; nor for natural or man-made events such as, but not limited to flooding, lightning, tornadoes, earthquake, fire, civil unrest, war, terrorism, etc.

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