

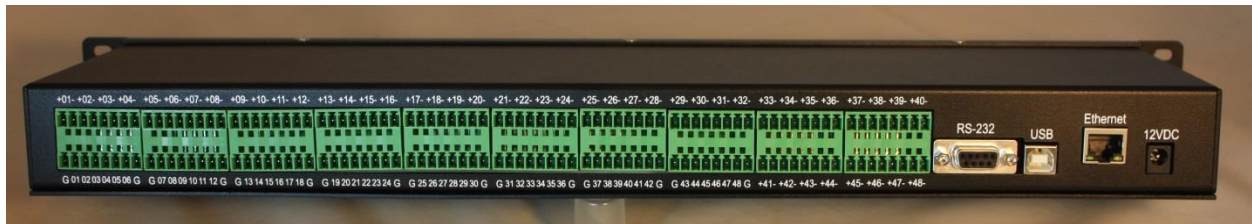
MoTron Electronics MCA-4800

Multi-Channel Audit System

Operation Guide



Front Panel View



Rear Panel View

The MCA-4800 is a 1-RU 19" rack mount hardware device that can simultaneously monitor 48 audio channels for DTMF and 48 contact closure inputs. Decoded DTMF strings and changes on the contact closure inputs are output on the data ports for logging software or for triggering actions. A simple data protocol is used to output DTMF and or changes on the contact closure inputs on the three data ports. Data ports are USB, RS232 and Ethernet. Data is output at 115.2kb, 8,N,1 on all three ports. Supplied with the MCA-4800 is the MCA-1 logging software. If customers wish to create or use their own software programs the protocol is provided below:

\$ccnnnn@

where:

\$ = Start of packet

cc = channel number. For DTMF cue tone inputs this value is 01-48. For contact closure inputs 51-98 is used to identify the input (51 = input 01, 52 = input 02, etc.)

nnnn = Data. If it is DTMF cue tone data it will be something like 598* or 598#, etc. If it is a change in the state of one of the inputs it will output 1111 when the contact on the device connected to it closes and 0000 when it opens.

@ = end of packet

Power

Plug in the supplied 100-240V to 12VDC/3A power supply to the 12VDC input. When plugged in the green Power LED on the front panel will light.

Data Ports

There are three data output ports: USB, Ethernet and RS-232. Captured data is output on all three ports simultaneously at 115.2kb,8,N,1. To confirm that your data port is connected and working send ASCII "V" and the Version of the firmware will be returned from the MCA-4800.

USB

The USB port uses an FTDI FX230 virtual com port IC. The driver should be installed automatically by Windows but if you should need a driver go to the www.FTDIchip.com web site to obtain the most recent driver for that part. When you plug in the USB cable, allow enough time for windows to install the driver before starting up the program. When you start the program and go to the Com config tab you should see the com port that has been assigned to that USB port. If it is not showing up then close the program and wait a little longer and open it again. If the comport is open and the USB plug is removed from the hardware before the program is closed there will be an error reported on the screen. In this case select "Quit" on the error message screen, close the program and wait until the USB port is plugged back into the hardware and before reopening.

Ethernet Port

When we test the Ethernet port at the factory we set it up as a TCP/IP Server with a static IP address of 192.168.1.150 and port of 4001. If you want to make any port setting changes open a browser and go to that IP address. It will ask you for a user name and password which are default settings of "admin" for both fields. The MCA-4800 uses the TTL1 port settings. The PC must be set to the same sub net in which the MCA-4800 is configured. To do this in a Windows OS go to Control Panel > Network Sharing Center > Wireless Network Connection > Properties > Internet Protocol Version 4. Click on "Use The Following IP". An example setting could be 192.168.1.175, enter subnet mask 255.255.255.0 then click OK. The PC can now communicate to the MCA-4800 using a Browser. The unit Ethernet port can also be tested by opening a command prompt and using Telnet. At the prompt:
>Telnet 192.168.1.150 4001

The screen should go black immediately when connected. Type a "V" and you should get the MCA-4800 Version response.

DTMF Inputs

DTMF inputs will accept either balanced or unbalanced audio from -26 to +8 dBm @ 600 ohms. The DTMF inputs are on the rear panel and are marked +01- through +48- over each pair of inputs. When there is a valid DTMF signal the LED on the front panel that corresponds to the input receiving DTMF will turn on and off when DTMF is being decoded. A typical DTMF cue tone signal will consist of four digits that are 50ms of tone and 50ms of space between tones. As the MCA-4800 starts to decode DTMF on a channel input it will buffer the data and start a 200ms timer. Each time a new tone in the sequence is decoded the timer is reset. If no new data is decoded the timer times out. Once it times out the data in the buffer is then sent out the serial ports to the logging program. While the MCA-4800 is primarily used for four digit cue tone logging it will also capture much longer DTMF strings for logging with other applications. Strings up to 31 digits can be logged in one packet.

If the cue tones that are being monitored are not being sent on a dedicated cue tone channel but rather mixed with program audio there can be occasional single false tones decoded. To avoid logging these occasional false digits there is a setting that will filter DTMF strings of less than 4 digits in length. When set to this mode Decoded DTMF of less than 4 digits will be filtered and not output. To implement this setting, the enclosure must be opened and DIP switch 1 turned on. The settings DIP switch is located on the circuit board near the Power LED.

Contact Closure Inputs

The Contact closure inputs are located on the lower tier of the rear panel headers. The first eight headers are used for the 48 contact inputs. There are 6 inputs per section with a "G" or Ground on as the first and last position on each 8 position plug. For example, the inputs on the first header are labeled G 01 02 03 04 05 06 G. The inputs will accept either contact closures, TTL or open collector/drain outputs. The inputs on the MCA-4800 are internally pulled up with a 10K resistor. If you have a device that has a contact closure output that you want to monitor connect one side of the contact to one of the "G" inputs and the other side to one of the numbered contact closure inputs. When an input closes or goes active low from a TTL or Open Collector/Drain output the corresponding green LED on the front panel should light.

For any questions or help with set up please call or email.

MoTron Electronics

PO Box 2748

Eugene, OR 97402-0280

541-687-2118

www.motron.com

email: don@motron.com