

4K HDR HDMI Matrix Switcher - 4x2
B-660-MTRX-4X2

BINARY

API COMMAND SET
v1.0.0

FC CE

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1. Overview

The following information will guide the installer through the set-up and programming for controlling a B-660-MTRX-4X2 via RS-232 serial and Telnet. Read through these instructions thoroughly before starting the process to ensure that all parameters and commands are correctly executed.

1.1. Before You Begin

Ensure that the following items are on hand before proceeding.

- B-660-MTRX-4X2 Matrix Switcher with Latest Firmware Installed.....
- RS-232 Serial or IP Controller.....
- Documentation for the RS-232 Control System.....
- Cables and Adapters to Connect to the Control System.....
- List of Functions to Program into the Controller.....

2. RS-232 Port Communication

2.1. RS-232 Port Configuration

This matrix uses a 3-pin terminal connector with defined pins for RS-232 serial communication, this allows for using standard category or other standard cable to connect the matrix to a controller or PC. If using a pre-built adapter ensure that the pins match Diagram 1 on the matrix side and the pins on the controlling device for the other side. Refer to the documentation for the control device being used for proper construction of the cable or selection of a port adapter.

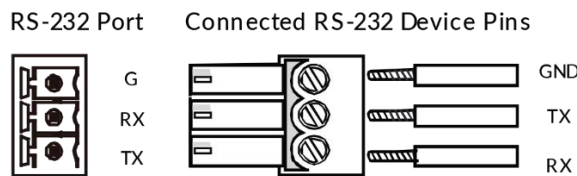


Diagram 1: RS-232 Port Pinout

2.2. RS-232 Communication Format

The following settings are default to the matrix and must be used when connecting.

Parameter	Value
Baud Rate	115200 bps
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow Control	None

3. Command Structure

Commands for this matrix are structured in a [Command] [Parameter(s)]<CR>LF> format. All commands and responses are case sensitive and should be entered as defined in the commands listed below.

Syntax: [Command] [Parameter]<CR>LF>

Example Command for selecting Input 1 (source) on Output 2 (display):

SET SW in1 out2<CR>LF>

4. Command Table

4.1. Input and Output Switching

IDX	Function	Command	Example
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1	Switch Input for Output	<p>Command: SET SW <i>in out</i><CR><LF> Return: SW <i>in out</i><CR><LF> Parameter: <i>in</i> = {in1, in2, in3, in4}; <i>out</i> = {out1,out2};</p> <p>Description: SW is short for Switch Switch one input source for <u>one output sink</u></p>	<p>Command: SET SW in1 out2<CR><LF></p> <p>Return: SW in1 out2<CR><LF> Description: Switch input 1 for hdmi output 2</p>
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2	Get which input mapping to the indicate Output	<p>Command: GET MP <i>out</i><CR><LF> Return: Mp <i>in out</i><CR><LF></p> <p>Parameter: <i>in</i> = {in1, in2, in3, in4}; <i>out</i> = {out1,out2}; Description: MP is short for mapping Get which input mapping to <u>the indicate Output</u></p>	<p>Command: GET MP <i>out1</i><CR><LF> Return: MP in1 <i>out1</i><CR><LF> Description: Get which input mapping to output 1</p>
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3	Switch indicate input for all outputs	<p>Command: SET SW <i>in all</i><CR><LF> Return: SW <i>in all</i> <CR><LF> Parameter: <i>in</i> = { in1, in2, in3, in4}; all = {all}; Description: SW is short for Switch Switch one input source for all output sink</p>	<p>Command: SET SW in1 <i>all</i> <CR><LF> Return: SW in1 <i>all</i><CR><LF> Description: Switch input1 for all output sink</p>
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4	Get which output mapping to all input	<p>Command: GET MP <i>all</i><CR><LF> Return: MP <i>in out</i><CR><LF> MP <i>in out</i><CR><LF> Parameter: <i>in</i> = {in1, in2, in3, in4}; all = {all}; Description: <i>in</i> - none means power down output MP is short for mapping Get which output mapping to all input</p>	<p>Command: GET MP <i>all</i> <CR><LF> Return: MP in1 <i>out1</i><CR>... MP in2 <i>out2</i><CR><LF> Description: Get which output mapping to all input</p>
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4.2. CEC Control

IDX	Function	Command	Example
5	Set CEC POWER ON/OFF	<p>Command: SET CEC_PWR <i>out prm</i><CR><LF> Return: CEC_PWR <i>out prm</i><CR><LF> Parameter: <i>prm</i> = {on, off} <i>out</i> = {out1, out2}; Description: Set sink power on or off</p>	<p>Command: SET CEC_PWR out1 <i>on</i><CR><LF> Return: CEC_PWR out1 <i>on</i><CR><LF> Description: Set sink hdmi output 1 power on</p>

6	Set CEC AUTO POWER ON/OFF	<p>Command: SET AUTOCEC_FN <i>out prm</i><CR><LF> Return: AUTOCEC_FN <i>out prm</i><CR><LF> Parameter: <i>prm</i> = {on, off} <i>out</i> = {out1, out2}; Description: Set sink auto power Function ON or OFF</p>	<p>Command: SET AUTOCEC_FN <i>out1 on</i><CR><LF> Return: AUTOCEC_FN <i>out1 on</i><CR><LF> Description: Set sink hdmi output 1 auto power ON</p>
7	Get CEC AUTO POWER ON/OFF Status	<p>Command: GET AUTOCEC_FN <i>out</i><CR><LF></p> <p>Return: AUTOCEC_FN <i>out prm</i><CR><LF></p> <p>Parameter: <i>prm</i> = {on, off} <i>out</i> = {out1, out2}; Description: Get Sink auto power Function ON or OFF Status.</p>	<p>Command: GET AUTOCEC_FN <i>out1</i><CR><LF></p> <p>Return: AUTOCEC_FN <i>out1 on</i></p> <p>Description: Get Sink auto power status, and the status is ON.</p>
8	Set CEC POWER Delay Time	<p>Command: SET AUTOCEC_D <i>out prm</i><CR><LF></p> <p>Return: AUTOCEC_D <i>out prm</i><CR><LF></p> <p>Parameter: <i>out</i> = {out1, out2}; <i>prm</i> = {1,2,3...} // according to the actual time counter, 1 means 1 minute ,2 means 2 minutes, Default wait time is 2 minutes, Max wait time is 30 minutes.</p> <p>Description: AUTOCEC_D is short for CEC auto Power Delay Timing</p>	<p>Command: SET AUTOCEC_D <i>out1 2</i><CR><LF></p> <p>Return: AUTOCEC_D <i>out1 2</i><CR><LF></p> <p>Description: when no active signal to hdmiout1, 2 minutes later, the unit will auto power off.</p>
9	Get CEC POWER Delay Time Status	<p>Command: GET AUTOCEC_D <i>out</i> <CR><LF> Return: AUTOCEC_D <i>out prm</i><CR><LF> Parameter: <i>out</i> = {out1, out2}; <i>prm</i> = {1,2,3...} // according to the actual time counter, 1 means 1 minute ,2 means 2 minutes, Default wait time is 2 minutes, Max wait time is 30 minutes. Description: AUTOCEC_D is short for CEC auto Power Delay Timing</p>	<p>Command: GET AUTOCEC_D <i>out1 2</i> <CR><LF> Return: AUTOCEC_D <i>out1 2</i> <CR><LF></p> <p>Description: Get hdmiout1 auto power delay time, the result is 2 minutes</p>

4.3. EDID Configuration

IDX	Function	Command	Example
10	Set Input EDID	<p>Command: SET EDID <i>in prm</i><CR><LF></p> <p>Return: EDID <i>in prm</i><CR><LF></p> <p>Parameter: <i>in</i> = {in1, in2, in3, in4}; <i>prm</i> = {1 ~11} 1) Restore Defaults; 2) Copy EDID from HDMI out1; 3) Copy EDID from HDMI out2; 4) 4K@60Hz 4:4:4, 2.0ch, with HDR; 5) 4K@60Hz 4:4:4, 5.1ch, with HDR; 6) 4K@60Hz 4:4:4, 7.1ch, with HDR; 7) 4K@30Hz 4:4:4, 2.0ch, with HDR and 4:2:0; 8) 4K@30Hz 4:4:4, 7.1ch, with HDR and 4:2:0; 9) 1080P@60Hz, 2.0ch; 10) 1080P@60Hz, 5.1ch; 11) 1080P@60Hz, 7.1ch ; Description: Set Input EDID</p>	<p>Command: SET EDID <i>in1 4</i><CR><LF> Return: EDID <i>in1 4</i><CR><LF> Description: Set in1 EDID 4K@60Hz 4:4:4, 2.0ch, with HDR</p>

11	Get All Input EDID status	<p>Command: GET EDID <i>all</i> <CR><LF> Return: EDID <i>in prm</i><CR> EDID <i>in prm</i><CR><LF> Parameter: in = {in1,in2,in3,in4}; prm = {1 ~11} 1) Restore Defaults; 2) Copy EDID from HDMI out1; 3) Copy EDID from HDMI out2; 4) 4K@60Hz 4:4:4, 2.0ch, with HDR; 5) 4K@60Hz 4:4:4, 5.1ch, with HDR; 6) 4K@60Hz 4:4:4, 7.1ch, with HDR; 7) 4K@30Hz 4:4:4, 2.0ch, with HDR and 4:2:0; 8) 4K@30Hz 4:4:4, 7.1ch, with HDR and 4:2:0; 9) 1080P@60Hz, 2.0ch; 10) 1080P@60Hz, 5.1ch; 11) 1080P@60Hz, 7.1ch ; Description: Get all input EDID Status</p>	<p>Command: GET EDID <i>all</i> <CR><LF> Return: EDID in1 <i>1</i><CR> EDID in2 <i>2</i><CR> Description: Get all input EDID Status</p>
12	Get one input EDID Status	<p>Command: GET EDID <i>in</i> <CR><LF> Return: EDID <i>in prm</i><CR><LF> Parameter: in = {in1,in2,in3,in4}; prm = {1 ~11} 1) Restore Defaults; 2) Copy EDID from HDMI out1; 3) Copy EDID from HDMI out2; 4) 4K@60Hz 4:4:4, 2.0ch, with HDR; 5) 4K@60Hz 4:4:4, 5.1ch, with HDR; 6) 4K@60Hz 4:4:4, 7.1ch, with HDR; 7) 4K@30Hz 4:4:4, 2.0ch, with HDR and 4:2:0; 8) 4K@30Hz 4:4:4, 7.1ch, with HDR and 4:2:0; 9) 1080P@60Hz, 2.0ch; 10) 1080P@60Hz, 5.1ch; 11) 1080P@60Hz, 7.1ch ; Description: Get one input EDID Status</p>	<p>Command: GET EDID in1<CR><LF> Return: EDID in1 <i>4</i><CR><LF> Description: Get in1 edid status, and the status is 4K@60Hz 4:4:4, 2.0ch, with HDR;</p>

4.4. System Info

IDX	Function	Command	Example
13	Factory reset	<p>Command: RESET<CR><LF> Return: RESET<CR><LF> Description: Factory reset</p>	<p>Command: RESET<CR><LF> Return: RESET<CR><LF> Description: Factory reset all board</p>
14	Get selected target firmware version	<p>Command: GET VER<CR><LF> Return: VER <i>prm</i><CR><LF> Parameter: <i>prm</i> = {...}// according to actual firmware version Description: Get selected target firmware version</p>	<p>Command: GET VER<CR><LF> Return: VER 1.0<CR><LF> Description: Get all module firmware version</p>
15	Set IR System Code	<p>Command: Set IR_SC <i>prm</i> <CR><LF> Return: IR_SC <i>prm</i><CR><LF> Parameter: <i>prm</i> = {<i>all, mode1, mode2</i>}; <i>mode1</i> = 0x00 <i>mode2</i> = 0x4e Description: Set IR System Code</p>	<p>Command: Set IR_SC <i>mode1</i><CR><LF> Return: IR_SC <i>mode1</i><CR><LF> Description: Set IR System code mode 1</p>

16	Get IR System Code	Command: Get IR_SC <CR><LF> Return: IR_SC <i>prm</i> <CR><LF> Parameter: <i>prm</i> = { <i>all</i> , <i>mode1</i> , <i>mode2</i> }; <i>mode1</i> = 0x00 <i>mode2</i> = 0x4e Description: Get IR System Code	Command: Get IR_SC <CR><LF> Return: IR_SC <i>mode1</i> <CR><LF> Description: Get IR System code , IR System code is mode 1
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17	Get the API list	Command: help<CR><LF> Description: Get the API list	Command: help<CR><LF> Description: Get the API list
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4.5. Audio Mute

IDX	Function	Command	Example
18	Set Audio Output mute	Command: SET MUTE <i>out pcm</i> <CR><LF> Return: MUTE <i>out pcm</i> <CR><LF> Parameter: <i>pcm</i> = {on, off}; //on means mute; off means unmute <i>out</i> = {hdmiaudioout1, hdmiaudioout2, spdifaudioout1, spdifaudioout2, audioout1, audioout2}; Description: Set Audio mute or not mute.	Command: SET MUTE <i>audioout1 on</i> <CR><LF> Return: MUTE <i>audioout1 on</i> <CR><LF> Description: Set audioout1 mute on
19	Get Audio Output mute status	Command: GET MUTE <i>out</i> <CR><LF> Return: MUTE <i>out pcm</i> <CR><LF> Parameter: <i>pcm</i> = {on, off}; //on means mute; off means unmute <i>out</i> = {hdmiaudioout1, hdmiaudioout2, spdifaudioout1, spdifaudioout2, audioout1, audioout2, all}; Description: Get Audio Output mute status	Command: GET MUTE <i>audioout1</i> <CR><LF> Return: MUTE <i>audioout1 pcm</i> <CR><LF> Description: Get Audio Output mute status.

5. SUPPORT

Need Help? Contact Tech Support!

If you need further clarification, please call tech support at **800.838.5052**, or email **support@snapav.com**. For other information, instructional videos, support documentation, or ideas, visit our website and view your item's product page at **www.snapav.com**.