

4K-2500 RS232 Control Protocol

Document Conventions & Definitions

All commands are shown in ASCII

Angle brackets (and anything within them) <> represent 1 byte of data.

Port Configuration

These are the settings that are required for successful communication with a 444K matrix.

Serial port control:

Baud Rate: 115200

Data Bits: 8

Parity: None

Stop Bits: 1

Command Structure

The general structure of commands to be sent to the matrix is detailed below:

#X_d ab h=k

The general format is:

- 1) X = Function select
- 2) d = Operating parameter
- 3) a = Input/output select
- 4) b = Channel Number (1-8, 0=all)
- 5) h = Property parameter
- 6) k = Property value

Please note this structure does vary dependent on the type of command being executed. Each command type is provided with an example instruction throughout this document.

Commands are applicable for all variants of matrix and cards within the 4K range

Establishing communication

Once a serial cable has been attached from the 444K-8x8-L unit to a control device (i.e. PC, laptop or 3rd party control system) and mains power applied the link is active. Simply enable the port from the control device and the 444K-8x8-L will accept incoming commands.

Commands

Control of the 444K-8x8-L matrix can be broken down in to the following 5 categories:

1. General System Commands
2. Audio Control
3. EDID Management
4. Crosspoint Control
5. Mode switching
6. IP Port Configuration

The tables below step through each of these command types in turn providing command examples

1. General System Commands

Function	Command Example	Response	Description
Product info	#system help	#####SYSTEM STR##### #Company : Smart-e #Type : 4K2500 #Release : 1V1 #Debug : 1T7 #Web : www.smart-e.co.uk #E-mail : sales@smart-e.co.uk #Tell : 00441306628264 #Build : 19-03-07 15:11:12 #ID : 61E0D42C #####SYSTEM END#####	Obtain product information including model number, software version, build date and internal serial number
Backlight shut down settings	#lcd shut=60	LCD backlight level:8 LCD backlight shut time:60s LCD back to the main time:20s	Set the amount of time the LCD backlight on the front panel remains on after a command. Time in seconds Range 1-3599 3600 - never
Backlight level settings	#lcd level=8	LCD backlight level:8 LCD backlight shut time:60s LCD back to the main time:20s	Set the backlight level for the LCD. Range 1-10
Backlight time back to menu settings	#lcd main=20	LCD backlight level:8 LCD backlight shut time:60s LCD back to the main time:20s	Set the amount of time the LCD remains on current view before returning to main view. Time in seconds. Range 10-599 600 - never
Query backlight settings	#lcd level=help	LCD backlight level:8 LCD backlight shut time:60 s LCD back to the main time:20 s	Check the current status of LCD

2. Audio Control

Function	Command Example	Response	Description
Mute audio output	#audio_d out2 onoff=0	<AUDIO out2 onoff> Data:Off.	Mute audio for output 2
Unmute audio output	#audio_d out2 onoff=1	<AUDIO out2 onoff> Data:On.	Enable audio for output 2
Audio output delay	#audio_d out3 delay=50	<AUDIO out2 delay> Data:50.	Delay output 3 for 50ms
Audio output lock	#audio_l out4 onoff=1	<AUDIO out4 onoff> Lock:1	Lock audio for output 4
Unlock audio output	#audio_l out4 onoff=0	<AUDIO out4 onoff> Lock:0	Unlock audio for output 4

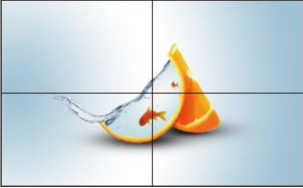




3. EDID Management

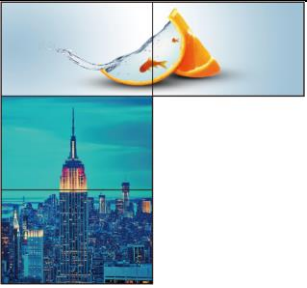



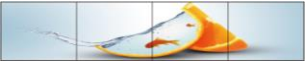

Function	Command Example	Response	Description
Set input EDID	#edid_d in1 data=1	<EDID in1 set> Data:1080P.	Sets the input EDID Variables: 0=4K 1=1080p 2=4K60 Beta 3=User
Lock EDID input	#edid_l in4 data=1	<EDID in4 set> Lock:1.	Lock input 4 EDID
Unlock EDID input	#edid_l in4 data=0	<EDID in4 set> Lock:0.	Unlock input 4 EDID




4. Crosspoint Control

Function	Command Example	Response	Description
Set individual video crosspoint	#video_d out2 matrix=1	<out2 switching> Data:input1.	Set video crosspoint input 1 to output 2
Set all video crosspoints	#video_d out0 matrix=2	<out1 switching> Data:input2. <out2 switching> Data:input2. <out3 switching> Data:input2. <out4 switching> Data:input2.	Set video crosspoint input 2 to all outputs
Disable video output	#video_d out2 onoff=0	<out2 onoff> Data:Off.	Disable video output 2
Enable video output	#video_d out2 onoff=1	<out2 onoff> Data:On.	Enable video output 2

5. Mode switching for Seamless, Video Wall and Multi-viewer

Function	Command Example	Response	Description
Seamless switching	#mode:0	[Demo 0] Mode seamless P2P	Set crosspoint input 1 to output 1 input 2 to output 2 input 3 to output 3 input 4 to output 4
Seamless switching	#mode:1	[Demo 1] Mode seamless in1	Set crosspoint input 1 to all outputs
Seamless switching	#mode:2	[Demo 2] Mode seamless in2	Set crosspoint input 2 to all outputs
Seamless switching	#mode:3	[Demo 3] Mode seamless in3	Set crosspoint input 3 to all outputs
Seamless switching	#mode:4	[Demo 4] Mode seamless in4	Set crosspoint input 4 to all outputs
Video wall	#mode:5	[Demo 5] Mode joint 2x2	
Video wall	#mode:6	[Demo 6] Mode joint 2x1x2	
Video wall	#mode:7	[Demo 7] Mode joint 1x2	
Video wall	#mode:8	[Demo 8] Mode joint 2x1x2	
Video wall	#mode:9	[Demo 9] Mode joint 2x1	

Video wall	#mode:10	[Demo 10] Mode joint 2x1 1x2	
Video wall	#mode:11	[Demo 11] Mode joint 1x3	
Video wall	#mode:12	[Demo 12] Mode joint 3x1	
Video wall	#mode:13	[Demo 13] Mode joint 1x4	
Video wall	#mode:14	[Demo 14] Mode joint 4x1	
Mirror video wall mode 15-24	#mode:15-24		Mirrored version of the above
Multi-viewer	#mode:25	[Demo 25] Mode split 2x2	

Multi-viewer	#mode:26	[Demo 26] Mode split 2x3L	
Multi-viewer	#mode:27	[Demo 27] Mode split 3x2U	
Multi-viewer	#mode:28	[Demo 28] Mode split 1x4	

6. IP Port Configuration

Function	Command Example	Response	Description
Query current IP settings	#ip help	#DHCP : off #IP : 192.168.1 .168 #MASK : 255.255.255.0 #GW : 192.168.1 .1 #DNS : 144.144.144.144 #MAC : 00:08:DC:E0:D4:2C #Netbios : WEB	Obtain the current ip address, gateway, subnet mask and DNS
Change ip settings	#ip ip=192.168.1.88 mask=255.255.255.0 gw=192.168.1.1 dns=144.144.144.144	IP : 192.168. 1. 88. GW : 192.168. 1. 1. MASK: 255.255.255. 0. DNS : 144.144.144.144.	Change the IP settings. And field can have the value in a range of 0-255