KVM-4X1MV4K Tesira Command Sheet

For Tesira Command String blocks · Version 1.0.2

Every command the KVM-4X1MV4K takes over the network, as fixed strings for Tesira Command String blocks. The unit is controlled on its own control port (TCP 8001); no other KanexPro software is needed. The same strings, with their bytes, are in `KanexPro-KVM-4X1MV4K-Tesira-Command-Sheet-1.0.2.csv` for copying.

> **Before you start —** the Tesira server must reach the KVM-4X1MV4K on TCP port 8001. Give the unit a fixed IP address (or a DHCP reservation).

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1. CONNECTION

HOW THE UNIT IS CONTROLLED	
Transport	TCP, port 8001 (the unit's control port)
Line ending	"!" (hex `21`), after every string
Pacing	One string at a time. The unit answers within about 1.5 s; wait for the answer before the next string.
A refused string	The unit answers with an error line.

2. USING THE STRINGS

1. Point the Command String block at the unit's IP address, TCP port 8001.
2. Add one command per row of section 3: its string, then the line ending (hex `21`).
3. Wire each command to the control that should send it. The Bytes column is the whole string as it goes on the wire, to compare with a network capture.

Settings that only the unit's own web page has (its network, logins and firmware) stay on that page.

3. COMMANDS

73 strings, and a template for each level with more values than fit a list.

#	Command	String	Bytes (hex, with the line ending)
1	**Show: Show (single screen) = HDMI 1**	`s in source 1`	`73 20 69 6E 20 73 6F 75 72 63 65 20 31 21`
2	**Show: Show (single screen) = HDMI 2**	`s in source 2`	`73 20 69 6E 20 73 6F 75 72 63 65 20 32 21`
3	**Show: Show (single screen) = HDMI 3**	`s in source 3`	`73 20 69 6E 20 73 6F 75 72 63 65 20 33 21`
4	**Show: Show (single screen) = HDMI 4**	`s in source 4`	`73 20 69 6E 20 73 6F 75 72 63 65 20 34 21`
5	**Layout: Layout = Single screen**	`s multiview 1`	`73 20 6D 75 6C 74 69 76 69 65 77 20 31 21`
6	**Layout: Layout = PIP**	`s multiview 2`	`73 20 6D 75 6C 74 69 76 69 65 77 20 32 21`
7	**Layout: Layout = PBP**	`s multiview 3`	`73 20 6D 75 6C 74 69 76 69 65 77 20 33 21`
8	**Layout: Layout = Triple**	`s multiview 4`	`73 20 6D 75 6C 74 69 76 69 65 77 20 34 21`
9	**Layout: Layout = Quad**	`s multiview 5`	`73 20 6D 75 6C 74 69 76 69 65 77 20 35 21`
10	**Layout: Picture-in-picture position = Left top**	`s PIP position 1`	`73 20 50 49 50 20 70 6F 73 69 74 69 6F 6E 20 31 21`

11	Layout: Picture-in-picture position = Left bottom	`s PIP position 2`	`73 20 50 49 50 20 70 6F 73 69 74 69 6F 6E 20 32 21`
12	Layout: Picture-in-picture position = Right top	`s PIP position 3`	`73 20 50 49 50 20 70 6F 73 69 74 69 6F 6E 20 33 21`
13	Layout: Picture-in-picture position = Right bottom	`s PIP position 4`	`73 20 50 49 50 20 70 6F 73 69 74 69 6F 6E 20 34 21`
14	Layout: Picture-in-picture size = Small	`s PIP size 1`	`73 20 50 49 50 20 73 69 7A 65 20 31 21`
15	Layout: Picture-in-picture size = Middle	`s PIP size 2`	`73 20 50 49 50 20 73 69 7A 65 20 32 21`
16	Layout: Picture-in-picture size = Large	`s PIP size 3`	`73 20 50 49 50 20 73 69 7A 65 20 33 21`
17	Layout: Side-by-side arrangement = Mode 1	`s PBP mode 1`	`73 20 50 42 50 20 6D 6F 64 65 20 31 21`
18	Layout: Side-by-side arrangement = Mode 2	`s PBP mode 2`	`73 20 50 42 50 20 6D 6F 64 65 20 32 21`
19	Layout: Side-by-side shape = Full screen	`s PBP aspect 1`	`73 20 50 42 50 20 61 73 70 65 63 74 20 31 21`
20	Layout: Side-by-side shape = 16:9	`s PBP aspect 2`	`73 20 50 42 50 20 61 73 70 65 63 74 20 32 21`
21	Layout: Triple arrangement = Mode 1	`s triple mode 1`	`73 20 74 72 69 70 6C 65 20 6D 6F 64 65 20 31 21`
22	Layout: Triple arrangement = Mode 2	`s triple mode 2`	`73 20 74 72 69 70 6C 65 20 6D 6F 64 65 20 32 21`
23	Layout: Triple shape = Full screen	`s triple aspect 1`	`73 20 74 72 69 70 6C 65 20 61 73 70 65 63 74 20 31 21`
24	Layout: Triple shape = 16:9	`s triple aspect 2`	`73 20 74 72 69 70 6C 65 20 61 73 70 65 63 74 20 32 21`
25	Layout: Quad arrangement = Mode 1	`s quad mode 1`	`73 20 71 75 61 64 20 6D 6F 64 65 20 31 21`
26	Layout: Quad arrangement = Mode 2	`s quad mode 2`	`73 20 71 75 61 64 20 6D 6F 64 65 20 32 21`
27	Layout: Quad shape = Full screen	`s quad aspect 1`	`73 20 71 75 61 64 20 61 73 70 65 63 74 20 31 21`
28	Layout: Quad shape = 16:9	`s quad aspect 2`	`73 20 71 75 61 64 20 61 73 70 65 63 74 20 32 21`
29	Keyboard and mouse: Keyboard and mouse go to = Window 1	`s usb select win 1`	`73 20 75 73 62 20 73 65 6C 65 63 74 20 77 69 6E 20 31 21`
30	Keyboard and mouse: Keyboard and mouse go to = Window 2	`s usb select win 2`	`73 20 75 73 62 20 73 65 6C 65 63 74 20 77 69 6E 20 32 21`
31	Keyboard and mouse: Keyboard and mouse go to = Window 3	`s usb select win 3`	`73 20 75 73 62 20 73 65 6C 65 63 74 20 77 69 6E 20 33 21`
32	Keyboard and mouse: Keyboard and mouse go to = Window 4	`s usb select win 4`	`73 20 75 73 62 20 73 65 6C 65 63 74 20 77 69 6E 20 34 21`
33	Keyboard and mouse: Change computer with mouse hotkeys on	`s mousekeys 1`	`73 20 6D 6F 75 73 65 6B 65 79 73 20 31 21`
34	Keyboard and mouse: Change computer with mouse hotkeys off	`s mousekeys 0`	`73 20 6D 6F 75 73 65 6B 65 79 73 20 30 21`
35	Keyboard and mouse: Move the mouse across windows to change computer on	`s multiview 0 roaming switch 1`	`73 20 6D 75 6C 74 69 76 69 65 77 20 30 20 72 6F 61 6D 69 6E 67 20 73 77 69 74 63 68 20 31 21`

36	Keyboard and mouse: Move the mouse across windows to change computer off	`s multiview 0 roaming switch 0`	`73 20 6D 75 6C 74 69 76 69 65 77 20 30 20 72 6F 61 6D 69 6E 67 20 73 77 69 74 63 68 20 30 21`
37	Keyboard and mouse: Outline the window with the keyboard and mouse on	`s window usb border 1`	`73 20 77 69 6E 64 6F 77 20 75 73 62 20 62 6F 72 64 65 72 20 31 21`
38	Keyboard and mouse: Outline the window with the keyboard and mouse off	`s window usb border 0`	`73 20 77 69 6E 64 6F 77 20 75 73 62 20 62 6F 72 64 65 72 20 30 21`
39	Layout: Show each window's input name on	`s window source osd 1`	`73 20 77 69 6E 64 6F 77 20 73 6F 75 72 63 65 20 6F 73 64 20 31 21`
40	Layout: Show each window's input name off	`s window source osd 0`	`73 20 77 69 6E 64 6F 77 20 73 6F 75 72 63 65 20 6F 73 64 20 30 21`
41	Show: Switch to a new source by itself on	`s auto switch 1`	`73 20 61 75 74 6F 20 73 77 69 74 63 68 20 31 21`
42	Show: Switch to a new source by itself off	`s auto switch 0`	`73 20 61 75 74 6F 20 73 77 69 74 63 68 20 30 21`
43	Sound: Sound from = Window 1's source	`s output audio 0`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 30 21`
44	Sound: Sound from = HDMI 1 sound	`s output audio 1`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 31 21`
45	Sound: Sound from = HDMI 2 sound	`s output audio 2`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 32 21`
46	Sound: Sound from = HDMI 3 sound	`s output audio 3`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 33 21`
47	Sound: Sound from = HDMI 4 sound	`s output audio 4`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 34 21`
48	Sound: Volume = {level} (0 to 100)	`s output audio vol {level}`	`the level in place of {level}`
49	Sound: Volume = 0	`s output audio vol 0`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 76 6F 6C 20 30 21`
50	Sound: Volume = 50	`s output audio vol 50`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 76 6F 6C 20 35 30 21`
51	Sound: Volume = 100	`s output audio vol 100`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 76 6F 6C 20 31 30 30 21`
52	Sound: Mute on	`s output audio mute 1`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 6D 75 74 65 20 31 21`
53	Sound: Mute off	`s output audio mute 0`	`73 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 6D 75 74 65 20 30 21`
54	Picture: Output resolution = 4096x2160p60	`s output res 1`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 31 21`
55	Picture: Output resolution = 4096x2160p50	`s output res 2`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 32 21`
56	Picture: Output resolution = 3840x2160p60	`s output res 3`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 33 21`
57	Picture: Output resolution = 3840x2160p50	`s output res 4`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 34 21`
58	Picture: Output resolution = 3840x2160p30	`s output res 5`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 35 21`

59	Picture: Output resolution = 3840x2160p25	`s output res 6`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 36 21`
60	Picture: Output resolution = 1920x1200p60RB	`s output res 7`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 37 21`
61	Picture: Output resolution = 1920x1080p60	`s output res 8`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 38 21`
62	Picture: Output resolution = 1920x1080p50	`s output res 9`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 39 21`
63	Picture: Output resolution = 1360x768p60	`s output res 10`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 31 30 21`
64	Picture: Output resolution = 1280x800p60	`s output res 11`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 31 31 21`
65	Picture: Output resolution = 1280x720p60	`s output res 12`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 31 32 21`
66	Picture: Output resolution = 1280x720p50	`s output res 13`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 31 33 21`
67	Picture: Output resolution = 1024x768p60	`s output res 14`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 31 34 21`
68	Picture: Output resolution = Auto	`s output res 15`	`73 20 6F 75 74 70 75 74 20 72 65 73 20 31 35 21`
69	Picture: Picture mode = Video	`s output itc 1`	`73 20 6F 75 74 70 75 74 20 69 74 63 20 31 21`
70	Picture: Picture mode = PC	`s output itc 2`	`73 20 6F 75 74 70 75 74 20 69 74 63 20 32 21`
71	Picture: With no source show = Black screen	`s output vka 1`	`73 20 6F 75 74 70 75 74 20 76 6B 61 20 31 21`
72	Picture: With no source show = Blue screen	`s output vka 2`	`73 20 6F 75 74 70 75 74 20 76 6B 61 20 32 21`
73	Power: Power On	`power 1`	`70 6F 77 65 72 20 31 21`
74	Power: Power Standby	`power 0`	`70 6F 77 65 72 20 30 21`

4. READING THE UNIT BACK

Send these to read the unit back (on a timer, or after a change).

#	String	Bytes (hex)	The reply gives
1	`r power`	`72 20 70 6F 77 65 72 21`	Power
2	`r in source`	`72 20 69 6E 20 73 6F 75 72 63 65 21`	Show (single screen)
3	`r multiview`	`72 20 6D 75 6C 74 69 76 69 65 77 21`	Layout
4	`r PIP position`	`72 20 50 49 50 20 70 6F 73 69 74 69 6F 6E 21`	Picture-in-picture position
5	`r PIP size`	`72 20 50 49 50 20 73 69 7A 65 21`	Picture-in-picture size
6	`r PBP mode`	`72 20 50 42 50 20 6D 6F 64 65 21`	Side-by-side arrangement
7	`r PBP aspect`	`72 20 50 42 50 20 61 73 70 65 63 74 21`	Side-by-side shape

8	`r triple mode`	`72 20 74 72 69 70 6C 65 20 6D 6F 64 65 21`	Triple arrangement
9	`r triple aspect`	`72 20 74 72 69 70 6C 65 20 61 73 70 65 63 74 21`	Triple shape
10	`r quad mode`	`72 20 71 75 61 64 20 6D 6F 64 65 21`	Quad arrangement
11	`r quad aspect`	`72 20 71 75 61 64 20 61 73 70 65 63 74 21`	Quad shape
12	`r usb select win`	`72 20 75 73 62 20 73 65 6C 65 63 74 20 77 69 6E 21`	Keyboard and mouse go to
13	`r mousekeys`	`72 20 6D 6F 75 73 65 6B 65 79 73 21`	Change computer with mouse hotkeys
14	`r multiview 0 roaming switch`	`72 20 6D 75 6C 74 69 76 69 65 77 20 30 20 72 6F 61 6D 69 6E 67 20 73 77 69 74 63 68 21`	Move the mouse across windows to change computer
15	`r window usb border`	`72 20 77 69 6E 64 6F 77 20 75 73 62 20 62 6F 72 64 65 72 21`	Outline the window with the keyboard and mouse
16	`r beep`	`72 20 62 65 65 70 21`	Beep
17	`r window source osd`	`72 20 77 69 6E 64 6F 77 20 73 6F 75 72 63 65 20 6F 73 64 21`	Show each window's input name
18	`r auto switch`	`72 20 61 75 74 6F 20 73 77 69 74 63 68 21`	Switch to a new source by itself
19	`r output audio`	`72 20 6F 75 74 70 75 74 20 61 75 64 69 6F 21`	Sound from
20	`r output audio vol`	`72 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 76 6F 6C 21`	Volume
21	`r output audio mute`	`72 20 6F 75 74 70 75 74 20 61 75 64 69 6F 20 6D 75 74 65 21`	Mute
22	`r output res`	`72 20 6F 75 74 70 75 74 20 72 65 73 21`	Output resolution
23	`r output itc`	`72 20 6F 75 74 70 75 74 20 69 74 63 21`	Picture mode
24	`r output vka`	`72 20 6F 75 74 70 75 74 20 76 6B 61 21`	With no source show
25	`r fw version`	`72 20 66 77 20 76 65 72 73 69 6F 6E 21`	Firmware

5. TROUBLESHOOTING

Nothing happens.

Check the unit's IP address and that TCP 8001 is open between the Tesira server and the unit (same network or VLAN, or routed; no firewall in between). Check the line ending is sent after each string.

The unit answers with an error.

The string or its value is not one it takes, or the unit is in standby: turn it on first.