

DIGITALVIEW[®] ALC-4096 Control Matrix

All control methods for the ALC-4096 HDMI / DisplayPort / USB-C Interface Controller

Local (at the display)

OSD Buttons

— 5 or 8 button switch mount, directly on the monitor. Access functions via on-screen menu navigation.

IR Remote

— DV wireless remote (P/N 5590001xx-3) with IR sensor connected to IR1.

Host-initiated

DDC/CI

— Monitor Control Command Set over I²C, via the HDMI, DisplayPort, or USB-C video cable. Limited function set defined by MCCS standard.

Serial command (RS-232 protocol)

RS-232

— Direct serial via CN8 (9600, 8N1).

USB-C

— RS-232 commands over USB-C serial connection.

Ethernet

— RS-232 commands bridged over network via AI-50 board.

Supported Not available via this method

Functions: 48 | Control methods: 6

Function	OSD Buttons Menu path	IR Remote P/N 5590001xx-3	DDC/CI HDMI / DP / USB-C	RS-232 CN8 serial	USB-C RS-232 over USB-C	Ethernet RS-232 via AI-50
Picture						
Brightness (Backlight level)	✓ <i>Picture > Brightness</i>	✓ 1	✓	✓ 0xe0	✓ 0xe0	✓ 0xe0
Black Level	✓ <i>Picture > Black level</i>	✓ 1	—	✓ 0x81	✓ 0x81	✓ 0x81
Contrast	✓ <i>Picture > Contrast</i>	✓ 1	✓	✓ 0x82	✓ 0x82	✓ 0x82
Sharpness	✓ <i>Picture > Sharpness</i>	✓ 1	✓	✓ 0x8a	✓ 0x8a	✓ 0x8a
Saturation	✓ <i>Color > Saturation</i>	✓ 1	—	✓ 0x83	✓ 0x83	✓ 0x83
Hue	✓ <i>Color > Hue</i>	✓ 1	—	✓ 0x84	✓ 0x84	✓ 0x84
Gamma	✓ <i>Color > Gamma</i>	✓ 1	—	✓ 0x9d	✓ 0x9d	✓ 0x9d
Aspect Ratio	✓ <i>Advanced > Aspect Ratio</i>	✓ 1	—	✓ 0x8c	✓ 0x8c	✓ 0x8c
Display Orientation (0° / 180°)	✓ <i>Display > Disp Rotate</i>	✓ 1	—	✓ 0x8e	✓ 0x8e	✓ 0x8e
Colour						
Colour Temperature Select	✓ <i>Color > Temperature</i>	✓ 1	✓	✓ 0xb3	✓ 0xb3	✓ 0xb3
User Colour — Red Level	✓ <i>Color > Temp > User > R</i>	✓ 1	✓	✓ 0xb4	✓ 0xb4	✓ 0xb4
User Colour — Green Level	✓ <i>Color > Temp > User > G</i>	✓ 1	✓	✓ 0xb5	✓ 0xb5	✓ 0xb5
User Colour — Blue Level	✓ <i>Color > Temp > User > B</i>	✓ 1	✓	✓ 0xb6	✓ 0xb6	✓ 0xb6
Audio						
Volume						

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	✓ Audio > Volume	✓ 1	✓	✓ 0x80	✓ 0x80	✓ 0x80
Mute On/Off	✓ Audio > Mute	✓ Mute button	—	✓ 0x80, "m"	✓ 0x80, "m"	✓ 0x80, "m"
Input						
Input Source Select	✓ Input > D0/D1/D2	✓ AV/TV button	✓ 2	✓ 0x98	✓ 0x98	✓ 0x98
Auto Source Seek	✓ Advanced > Auto Source Seek	✓ 1	—	✓ 0x99	✓ 0x99	✓ 0x99
Power						
Power On/Off (soft)	✓ Hold Menu 3-4 sec	✓ Power button	✓ 4	✓ 0xc8	✓ 0xc8	✓ 0xc8
Power Save On/Off	✓ Advanced > Power Save	✓ 1	—	✓ 0x9f	✓ 0x9f	✓ 0x9f
Default Power State	✓ Advanced > Default Power	✓ 1	—	✓ 0xee, 0x6B, 0x50	✓ 0xee, 0x6B, 0x50	✓ 0xee, 0x6B, 0x50
Backlight						
Backlight On/Off	—	—	—	✓ 0xe1	✓ 0xe1	✓ 0xe1
Backlight DA/PWM Mode	✓ Factory > BL Setup > D/A / PWM	✓ 1	—	✓ 0xe5	✓ 0xe5	✓ 0xe5
Backlight PWM Frequency	✓ Factory > BL Setup > Frequency	✓ 1	—	✓ 0xe6	✓ 0xe6	✓ 0xe6
Backlight Invert	✓ Factory > BL Setup > Invert	✓ 1	—	✓ 0xe7	✓ 0xe7	✓ 0xe7
Minimum Backlight Level	✓ Factory > BL Setup > Min. Level	✓ 1	—	✓ 0xee, 0x5C	✓ 0xee, 0x5C	✓ 0xee, 0x5C
Light Sensor						
Light Sensor On/Off	✓ Factory > BL Setup > Light sensor	✓ 1	—	✓ 0xee, 0x78, 0x30	✓ 0xee, 0x78, 0x30	✓ 0xee, 0x78, 0x30
Light Sensor Level/Backlight Curve	—	—	—	✓ 0xee, 0x78, 0x31-0x48	✓ 0xee, 0x78, 0x31-0x48	✓ 0xee, 0x78, 0x31-0x48
Query Light Sensor Value	—	—	—	✓ 0xee, 0x70, 0x50, 0x35, 0x33	✓ 0xee, 0x70, 0x50, 0x35, 0x33	✓ 0xee, 0x70, 0x50, 0x35, 0x33
OSD						
OSD Menu Rotate	✓ Other > Rotate	✓ 1	—	✓ 0x8f	✓ 0x8f	✓ 0x8f
OSD H Position	✓ Other > OSD H Position	✓ 1	—	✓ 0x90	✓ 0x90	✓ 0x90
OSD V Position	✓ Other > OSD V Position	✓ 1	—	✓ 0x91	✓ 0x91	✓ 0x91
OSD Transparency	✓ Other > Transparency	✓ 1	—	✓ 0x92	✓ 0x92	✓ 0x92

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OSD Menu Timeout	✓ <i>Other > Menu Time</i>	✓ 1	—	✓ 0x93	✓ 0x93	✓ 0x93
OSD Status Enquiry	—	—	—	✓ 0xbb	✓ 0xbb	✓ 0xbb
OSD Turn Off	✓ <i>Menu button (auto timeout)</i>	✓ <i>OSD NEXT button</i>	—	✓ 0xbd	✓ 0xbd	✓ 0xbd
OSD Switch Mount Lock	—	—	—	✓ 0xee, 0x62	✓ 0xee, 0x62	✓ 0xee, 0x62
Configuration						
Hot Key 1 Assignment	✓ <i>Advanced > Hot Key 1</i>	✓ 1	—	✓ 0xa0, "1"	✓ 0xa0, "1"	✓ 0xa0, "1"
Hot Key 2 Assignment	✓ <i>Advanced > Hot Key 2</i>	✓ 1	—	✓ 0xa0, "2"	✓ 0xa0, "2"	✓ 0xa0, "2"
Panel Timing Setting	—	—	—	✓ 0xee, 0x74	✓ 0xee, 0x74	✓ 0xee, 0x74
User EDID	—	—	—	✓ 0xee, 0x76	✓ 0xee, 0x76	✓ 0xee, 0x76
EDID Reset	✓ <i>Factory > EDID Setup > Reset</i>	✓ 1	—	✓ 0xee, 0x76 + "R"	✓ 0xee, 0x76 + "R"	✓ 0xee, 0x76 + "R"
RS-232 Acknowledge On/Off	—	—	—	✓ 0xc1	✓ 0xc1	✓ 0xc1
Command Availability Check	—	—	—	✓ 0xc4	✓ 0xc4	✓ 0xc4
Queries & Status						
Video Input Status	✓ <i>Information (read-only)</i>	—	—	✓ 0xc9	✓ 0xc9	✓ 0xc9
Video H Resolution	✓ <i>Information (read-only)</i>	—	—	✓ 0xb7	✓ 0xb7	✓ 0xb7
Video V Resolution	✓ <i>Information (read-only)</i>	—	—	✓ 0xb8	✓ 0xb8	✓ 0xb8
Video H Sync Frequency	—	—	—	✓ 0xb9	✓ 0xb9	✓ 0xb9
Video V Sync Frequency	—	—	—	✓ 0xba	✓ 0xba	✓ 0xba
Board Temperature	—	—	—	✓ 0xee, 0x70, 0x50, 0x3B, 0x34	✓ 0xee, 0x70, 0x50, 0x3B, 0x34	✓ 0xee, 0x70, 0x50, 0x3B, 0x34
Runtime Counter	—	—	—	✓ 0xa1	✓ 0xa1	✓ 0xa1
BIOS Version	—	—	—	✓ 0xcb, "0"	✓ 0xcb, "0"	✓ 0xcb, "0"
PCBA Number	—	—	—	✓ 0xcb, "1"	✓ 0xcb, "1"	✓ 0xcb, "1"
Revision Number	—	—	—	✓ 0xcb, "3"	✓ 0xcb, "3"	✓ 0xcb, "3"

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Copyright	—	—	—	✓ 0xf8	✓ 0xf8	✓ 0xf8			
Reset & Test									
Reset (OSD parameters)	✓ <i>Other > Reset</i>	✓ 1	—	✓ 0xce	✓ 0xce	✓ 0xce			
Restore Factory Defaults	✓ <i>Hold SEL DN + power on</i>	—	✓ 3	✓ 0xcf	✓ 0xcf	✓ 0xcf			
Test Pattern	—	—	—	✓ 0xcd	✓ 0xcd	✓ 0xcd			
Button Emulation (RS-232 only)									
Menu Button	n/a	n/a	—	✓ 0xf7	✓ 0xf7	✓ 0xf7			
Select Up	n/a	n/a	—	✓ 0xfb	✓ 0xfb	✓ 0xfb			
Select Down	n/a	n/a	—	✓ 0xfa	✓ 0xfa	✓ 0xfa			
Right / +	n/a	n/a	—	✓ 0xfc	✓ 0xfc	✓ 0xfc			
Left / -	n/a	n/a	—	✓ 0xfd	✓ 0xfd	✓ 0xfd			
<div style="text-align: center;">48 Total functions</div>		<div style="text-align: center;">35 OSD Buttons</div>		<div style="text-align: center;">33 IR Remote</div>		<div style="text-align: center;">11 DDC/CI</div>		<div style="text-align: center;">48 RS-232 / USB-C / Ethernet</div>	

Notes

- 1 IR remote accesses this function indirectly via OSD menu navigation (SEL UP/DN and +/- buttons emulate the physical switch mount).
- 2 DDC/CI input source selection is limited to HDMI and USB-C. RS-232 additionally supports DisplayPort.
- 3 DDC/CI factory reset excludes user colour temperature and brightness settings.
- 4 DDC/CI Power On/Off is supported via HDMI and DisplayPort only — not available via USB-C DDC/CI.
- 5 **OSD Buttons** — 5 momentary button switch mount (P/N 4161003700-3) or 8-button digital type (P/N 416100520-3). Connected via CNC1.
- 6 **IR Remote** — Digital View remote control unit P/N 5590001xx-3 with IR sensor connected to IR1 on the controller board.
- 7 **RS-232** via CN8: 9600 baud, 8N1. Command strings up to 380 bytes. Via J1: up to 50 bytes per string.
- 8 **USB-C (RS-232)** uses the same command protocol as CN8. The USB-C connection presents as a virtual serial port.
- 9 **Ethernet (AI-50)** — AI-50 board (P/N 4160282xx-3) bridges RS-232 commands over Ethernet via ESP32 MCU. See [digitalview.com/board-ai-50](https://www.digitalview.com/board-ai-50).
- 10 Command codes shown are RS-232 hex command bytes. DDC/CI uses standard MCCS VCP codes over the I²C bus embedded in the video cable.
- 11 **Button Emulation** — these RS-232 commands simulate physical button presses. Marked "n/a" for OSD and IR as these ARE the physical buttons.