EZWALL-UHD9PRO

ULTRA HD 3×3 VIDEO WALL PROCESSOR



USER MANUAL

Designed and Manufactured in the USA

Smart-AVI

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INTRODUCTION

The EZwall-UHD9Pro is an HDMI 2.0 video wall controller with 4 HDMI inputs and 9 HDMI scaling outputs for video wall processing. It can be controlled from the front panel with on-screen LCM guidance, by IR remote, over RS-232, or through the network web GUI, allowing a range of single-display, multiview and video wall layouts.

FEATURES

- HDMI 2.0b and HDCP 2.2 compliant
- Multi-resolution video output up to 4096 x 2160 @ 60 Hz for video wall
- 4 HDMI inputs and 9 HDMI scaling outputs
- 3×3 video walls, smaller stitched walls, or nine independent screens
- 4-window multiview on one display
- Front panel LCM display screen with button-guided operation
- Scene save and recall from the front panel or the web GUI
- Front panel lock and IR remote control
- RS-232 and TCP/IP control
- Web GUI for routing, video wall setup, multiview, signal configuration, and system management

WHAT'S IN THE BOX?

PART NO.	DESCRIPTION
EZW-UHD9PRO-S	Ultra HD 4×9 Video Wall Processor (Qty 1)
CCPWR06	Power Cord (Qty 1)
—	User Manual (Qty 1)

TECHNICAL SPECIFICATIONS

VIDEO & AUDIO	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18 Gbps
Input Resolution	Up to 4K @ 60 Hz 4:4:4
Output Resolution	Up to 4096 x 2160 @ 60 Hz
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Color Depth	8 / 10 / 12 bit
Audio Formats	HDMI in/out: LPCM 2.0/5.1, Dolby Digital/Plus/EX, DTS, DTS-EX, DTS-96/24 L/R out: PCM 2.0 SPDIF optical: Dolby Digital/Plus, DTS 5.1, PCM 2.0
CONNECTIONS	
Input Ports	4 x HDMI input, Type A, 19-pin female
Output Ports	9 x HDMI output, Type A, 19-pin female
CONTROL	
Control Ports	Front panel buttons, IR remote, RS-232, TCP/IP, Web GUI
RS-232	Baud rate 9600, data bit 8, stop bit 1, no parity
IR Level / Frequency	5 Vp-p / 38 kHz
OTHER	
ESD Protection	IEC 61000-4-2: ±8 kV air-gap, ±4 kV contact
Power Supply	110 to 240 VAC (IEC inlet, power cord included)
Power Consumption	75 W max
Housing	Metal enclosure, 1U rack mount
Dimensions	430 x 220 x 44 mm (16.9 x 8.66 x 1.73 in)
Weight	5 kg (11 lbs)
Operating Temperature	0°C to 40°C / 32°F to 104°F
Relative Humidity	10% to 70% RH (non-condensing)

OPERATION CONTROLS AND FUNCTIONS



Figure 5.1 — Front panel layout

Front panel components

#	NAME	DESCRIPTION
1	LCM Display	Displays the current routing and status of the unit. Used together with the front buttons to set and view parameters.
2	IN SELECT	Input selection: 1 through 4.
3	OUT SELECT	Output selection: 1 through 9, and ALL.
4	ALL	Press ALL, then an input, then ENTER to send one input to all 9 outputs.
5	LOCK	Hold for 3 seconds to lock all front buttons. Hold for 3 seconds again to unlock.
6	RES	Change the output resolution of a selected output, guided by the LCM display.
7	EDID	Change the EDID mode of a selected input, guided by the LCM display.
8	SAVE	Save the current routing and screen layout to a scene.
9	RECALL	Load a previously saved scene.
10	INFO	Press repeatedly to cycle the LCM through IR status, RS-232 baud rate, and IP parameters.
11	NEXT / ENTER	Step through options and confirm a selection during a button sequence.
12	IR	IR receiver for the remote control.

Reading the LCM display

When no command is in progress, the LCM display shows the current routing at a glance. As you press each button in a sequence, the LCM prompts the next step. When a command completes, the display confirms the change before returning to the idle status view.

How to read the tables that follow

Each procedure lists the buttons to press, in order. Follow the on-screen prompts on the LCM display between steps, and press ENTER to confirm.

Route one input to one output

STEP	PRESS
1	OUT SELECT *(the desired output, 1 to 9)*
2	IN SELECT *(the desired input, 1 to 4)*
3	ENTER

Route one input to all outputs

STEP	PRESS
1	ALL
2	IN SELECT *(the desired input, 1 to 4)*
3	ENTER

Change output resolution

Choose the resolution for a specific output.

STEP	PRESS
1	RES
2	OUT SELECT *(the desired output)*
3	NEXT *(step to the desired resolution shown on the LCM)*
4	ENTER

Change input EDID

STEP	PRESS
1	EDID
2	IN SELECT *(the desired input)*
3	NEXT *(step to the desired EDID mode shown on the LCM)*
4	ENTER

Save a scene

STEP	PRESS
1	SAVE
2	OUT SELECT *(the scene number)*
3	ENTER

Recall a scene

STEP	PRESS
1	RECALL
2	OUT SELECT *(the scene number)*
3	ENTER

NOTE: Full 3×3, row, and column video wall stitching is configured through the RS-232 command set (see RS-232 Control) or the TV Wall tab of the web GUI (see Network Control). Multiview is configured from the Multiview tab of the web GUI. The front panel handles source routing, resolution, EDID, and scene memory.

REAR PANEL



Figure 8.1 — Rear panel layout

#	NAME	DESCRIPTION
1	LAN	CAT5 / 5e / 6. TCP/IP or web control.
2	Power	110 to 240 VAC power inlet (IEC) with power switch. Use the supplied power cord.
3	RS232	RS-232 control command port: 9-pin connector (RS232-CTL) or 3-pin terminal block (T + R).
4	Input	4 HDMI signal input ports. Connect to an HDMI source device such as a media player or console with an HDMI cable.
5	Output	9 HDMI signal scaling outputs for the video wall.
6	L/R / TOSLINK	Audio output: analog stereo L/R or SPDIF optical. Choose the input it plays in the LR / TOSLINK row of the web GUI's Matrix tab.

RS232 CONTROL

The EZwall-UHD9Pro can be controlled via RS-232 to manage input and video wall settings. Once connected to a PC, launch your preferred RS-232 console. The connection needs to be set to 9600 bps, 8 data bits, no parity, 1 stop bit. If the RS-232 connection is established before booting up the device, the console displays a startup banner similar to the following:

```
EZW-UHD9Pro V1.0.0
System OK
Type //? for help
```

USING THE MENU

The help menu can be displayed by sending the **"//?"** command, which will prompt the following:

```
EZW-UHD9Pro V1.0.0

//B    = Reboot controller
//Omn  = Input n = 1-4 to Output m = 1-9
//OAn  = Sets all Outputs to Input n = 1-4
//Cm   = Clear Output m = 1-9
//CA   = Clear all Outputs
//CH1  = Clear Output 1 + 2 + 3
//CH2  = Clear Output 4 + 5 + 6
//CH3  = Clear Output 7 + 8 + 9
//CV1  = Clear Output 1 + 4 + 7
//CV2  = Clear Output 2 + 5 + 8
//CV3  = Clear Output 3 + 6 + 9
//Fm   = Flip Output m = 1-9
//FFm  = Unflip Output m = 1-9
//Hrn  = Input n to row r
//Vcn  = Input n to column c
//Wn   = Input n = 1-4 to all Outputs
//Rmz  = Output m set resolution z: 1 - 3840x2160p60 (4K60),
                                    2 - 1920x1080p60, 3 - 4096x2160p60,
                                    4 - 3840x2160p30, 5 - 1920x1200p60,
                                    6 - 1680x1050p60, 7 - 1600x1200p60,
                                    8 - 1280x720p60,  9 - 2560x1440p60,
                                    0 - 1024x768p60,  U - USER, A - AUTO
//HDCP = Enable HDCP content
//?    = Command Help (this menu)
```

RS232 CONTROL (CONTINUED)

All menu commands must be sent with "//" followed by the appropriate command, then Enter. n = Input 1 to 4, m = Output 1 to 9.

COMMAND	DESCRIPTION
//?	Display Help menu
//B	Reboot the device
//Omn	Set Output m to Input n
//OAn	Set Input n as a full 3×3 wall using Outputs 1 through 9 (same as //Wn)
//Cm	Clear the selected Output from stitching
//CA	Clear all Output stitching
//CH1	Clear Output 1 + 2 + 3
//CH2	Clear Output 4 + 5 + 6
//CH3	Clear Output 7 + 8 + 9
//CV1	Clear Output 1 + 4 + 7
//CV2	Clear Output 2 + 5 + 8
//CV3	Clear Output 3 + 6 + 9
//Fm	Flip Output m (rotate 180°)
//FFm	Unflip Output m
//H1n	Set Input n as a 1×3 wall using Output 1 + 2 + 3
//H2n	Set Input n as a 1×3 wall using Output 4 + 5 + 6
//H3n	Set Input n as a 1×3 wall using Output 7 + 8 + 9
//V1n	Set Input n as a 3×1 wall using Output 1 + 4 + 7
//V2n	Set Input n as a 3×1 wall using Output 2 + 5 + 8
//V3n	Set Input n as a 3×1 wall using Output 3 + 6 + 9
//Wn	Set Input n as a full 3×3 wall using Outputs 1 through 9
//Rmz	Set resolution of Output m to z (see below)
//HDCP	Listed in the Help menu. Has no effect on this model.

Output resolution values for //Rmz

z	RESOLUTION
1	3840 x 2160 @ 60 Hz (4K60)
2	1920 x 1080 @ 60 Hz
3	4096 x 2160 @ 60 Hz
4	3840 x 2160 @ 30 Hz
5	1920 x 1200 @ 60 Hz
6	1680 x 1050 @ 60 Hz

z	RESOLUTION
7	1600 x 1200 @ 60 Hz
8	1280 x 720 @ 60 Hz
9	2560 x 1440 @ 60 Hz
0	1024 x 768 @ 60 Hz
U	USER
A	AUTO

NETWORK CONTROL (WEB GUI)

The EZwall-UHD9Pro can also be controlled over your network using a web browser. Before connecting, you will need to find the IP address the device has been assigned on your network. Press **INFO** on the front panel to read it on the LCM display, or use SAVI Finder, a free Smart-AVI utility that finds it automatically.

Locating the device with SAVI Finder

1. Visit https://smartavi.com/helpful-links/ and download SAVI Finder for your operating system.
2. Install and launch SAVI Finder.
3. From the Product drop-down on the right side of the window, select the EZW-UH9 model.
4. Click Search Device. Any matching devices on your local network appear in the list, showing their Device IP and MAC address.
5. Select the device from the list, then click Open Device to launch the web control interface in your default browser.

Alternatively, you can type the IP address directly into your browser's address bar. Google Chrome is recommended for the best compatibility.



Figure 11.1 — SAVI Finder with devices found on the network (shown with another model selected)

Changing the IP address

In SAVI Finder, select the device. Under IP Settings choose DHCP or Static, enter the IPv4 Address, Subnet Mask and Default Gateway for Static, then click Apply IP.

NOTE: If your device does not appear, confirm it is powered on and connected to the same network as your computer, then click Search Device again.

NETWORK CONTROL (WEB GUI) (CONTINUED)

Web interface overview

Opening the device's IP address in your browser loads the EZwall-UHD9Pro web control interface. The tabs are listed on the left, with a Live Status panel showing the device, layout and firmware version:

- **Matrix** — route inputs to outputs in a grid, choose the audio output source, and save and load scenes.
- **Signal Config** — per-port signal type, EDID, resolution, rotation, audio, and freeze / mute / black.
- **TV Wall** — drag across screens to stitch a source into a video wall.
- **Multiview** — four windows on one display.
- **System** — network configuration and factory reset.

Matrix tab

Click a cell to route that input (column) to that output (row). The routing updates immediately.

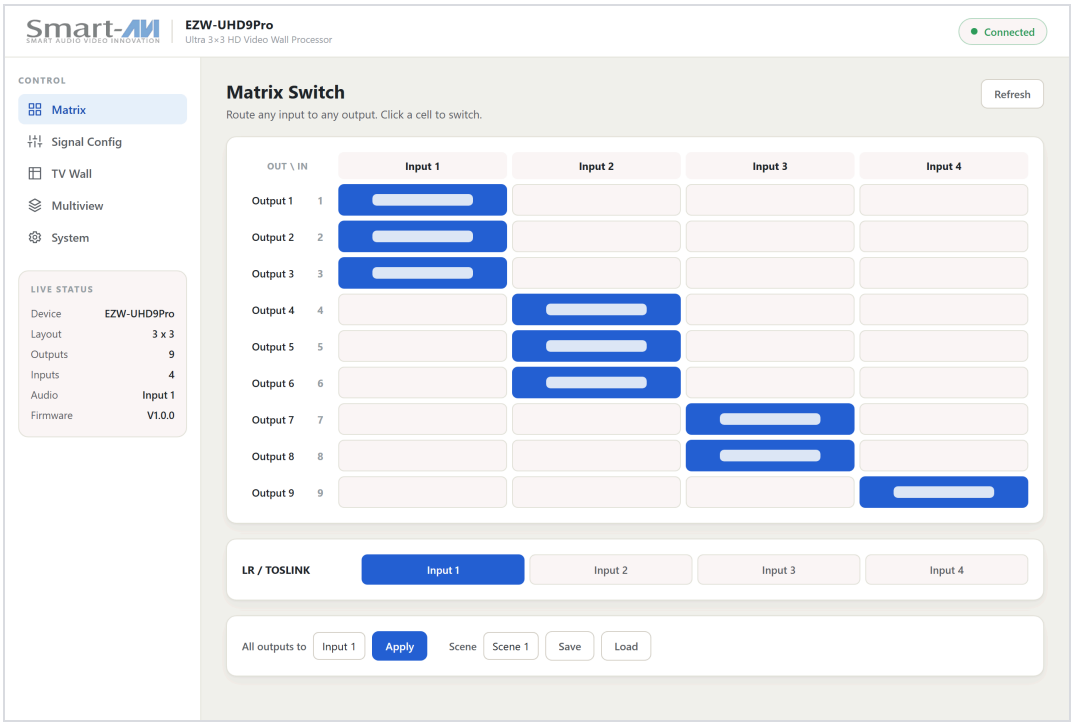


Figure 12.1 — Matrix tab

- **LR / TOSLINK** — selects which input plays on the rear panel audio output.
- **All outputs to** — choose an input and click Apply to send it to every output.
- **Scene** — choose a scene number, then Save the current setup to it or Load it back.
- **Refresh** — reads the current routing back from the device.

NETWORK CONTROL (WEB GUI) (CONTINUED)

Signal Config tab

For each **input**, set the signal type, EDID mode and audio source (Embedded or External L/R). For each **output**, set the resolution and rotation (0, 180, H Mirror, V Mirror), and tick Mute, Freeze or Black. Read refreshes a port from the device.

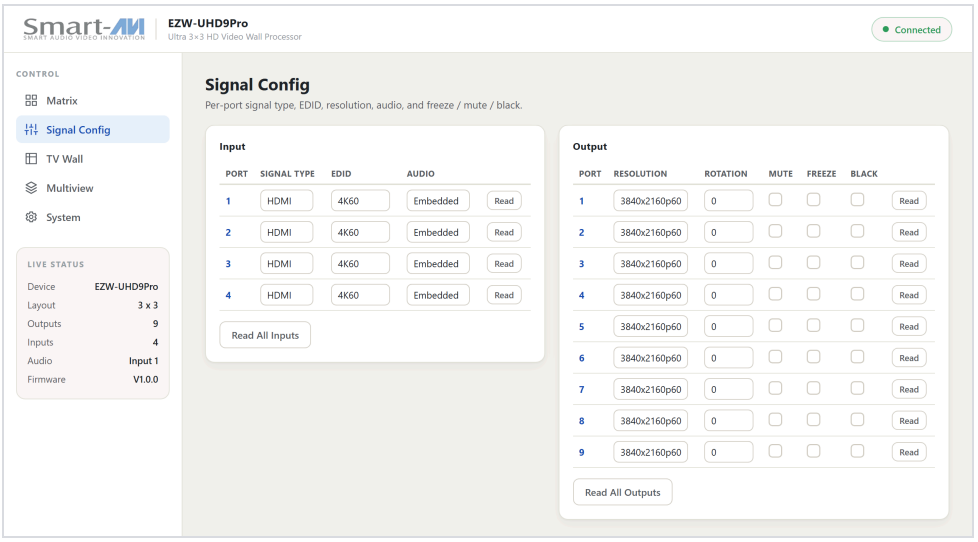


Figure 13.1 — Signal Config tab

TV Wall tab

1. Set Rows and Columns, then choose an Active Source (Input 1 to 4).
2. Drag across screens to stitch that source across them. Clicking one screen routes the source to that screen alone.
3. Press **Write Wall**. A new stitch is not live until you do.

Click a region to change its source or set its bezels. The × on a region, or Un-stitch region, returns those outputs to independent screens right away. Clear All un-stitches every screen.

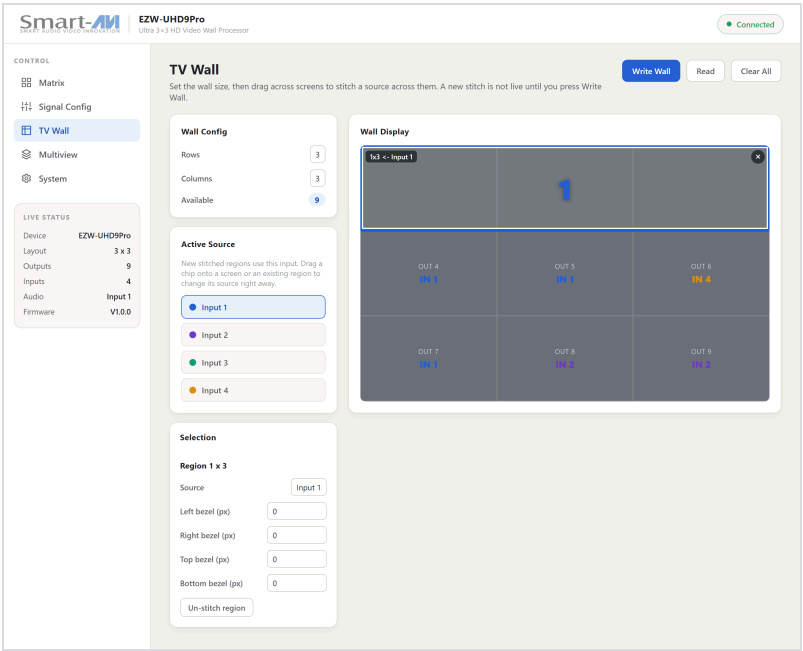


Figure 13.2 — TV Wall tab, with a 1×3 region stitched across Outputs 1–3

NETWORK CONTROL (WEB GUI) (CONTINUED)

Multiview tab

Multiview puts four windows on one display and uses four consecutive outputs. Choose the group under **Display** (for example Out 1-4): the picture appears on the first output, and windows 1 to 4 take their sources from the four outputs in order. Those outputs cannot be used separately while multiview is on.

Tick **Multiview mode**, then drag a window to move it or drag its corner handle to resize it. For the selected window, set its status, layer, input source, position, size and crop, and press **Write Window**, or press **Write All** for all four. **Audio** follows one window or mutes. **Clear** turns multiview off on this display and **Clear All** on every display.

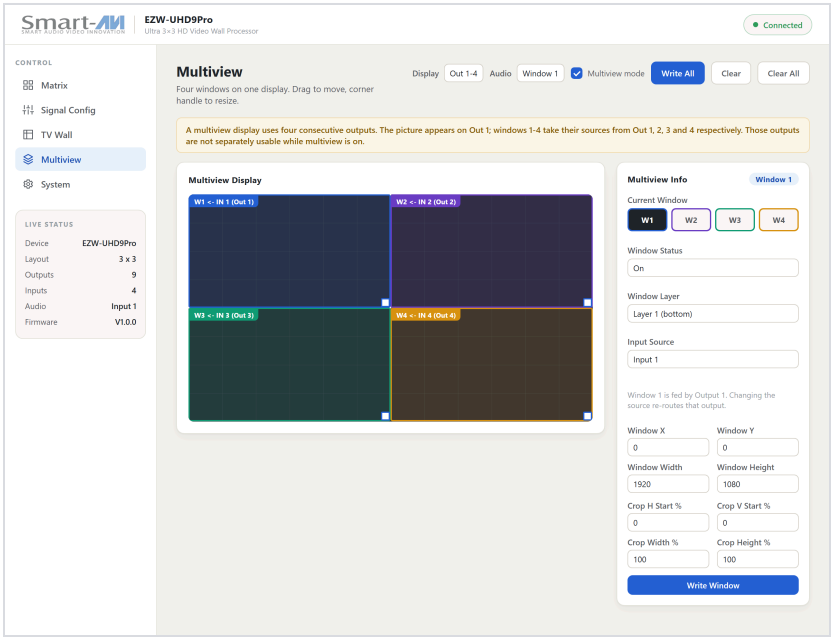


Figure 14.1 — Multiview tab

System tab

To change the unit's IP address, use the IP Settings panel in SAVI Finder (see page 11). Use **Factory Reset** to restore the device to factory defaults, which clears all routing and stitching stored on the device. The firmware version is shown in the Live Status panel on every tab.

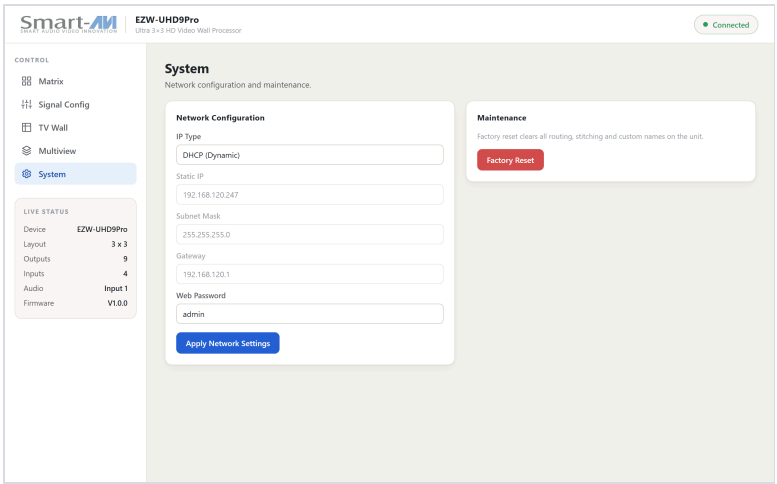


Figure 14.2 — System tab

TROUBLESHOOTING

No Power

- Make sure that the power cord is securely connected to the power inlet of the unit and to a working outlet.
- Check that the power switch on the rear panel is on.

No Video

- Check that all video cables are connected properly.
- Connect the source directly to a display to verify that the source and display are functioning properly.
- Restart the source device and power-cycle the unit.

No Audio

- Check that all audio cables are connected properly.
- Verify the input selected in the LR / TOSLINK row of the Matrix tab matches the source you are listening to.
- Connect the speakers directly to the source to verify the speakers and source audio are functioning properly.

No Network Connection

- Confirm the unit and your computer are on the same network.
- Press INFO on the front panel, or use SAVI Finder, to find the device IP, then open it in a browser.
- To change the IP address, use SAVI Finder's IP Settings panel.

TECHNICAL SUPPORT

For product inquiries, warranty questions, or technical questions, please contact info@smartavi.com.

LIMITED WARRANTY STATEMENT

A. Extent of limited warranty
SmartAVI, Inc. warrants to the end-user customers that the SmartAVI product specified above will be free from defects in materials and workmanship for the duration of 1 year, which duration begins on the date of purchase by the customer. Customer is responsible for maintaining proof of date of purchase.

SmartAVI limited warranty covers only those defects which arise as a result of normal use of the product, and does not apply to any:

- Improper or inadequate maintenance or modifications
- Operation outside product specifications
- Mechanical abuse and exposure to severe conditions

If SmartAVI receives, during the applicable warranty period, a notice of defect, SmartAVI will at its discretion replace or repair the defective product. If SmartAVI is unable to replace or repair the defective product covered by the SmartAVI warranty within a reasonable period of time, SmartAVI shall refund the cost of the product. SmartAVI shall have no obligation to repair, replace, or refund the unit until the customer returns the defective product to SmartAVI. Any replacement product could be new or like new, provided that it has functionality at least equal to that of the product being replaced. SmartAVI limited warranty is valid in any country where the covered product is distributed by SmartAVI.

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To the extent allowed by local law, neither SmartAVI nor its third party suppliers make any other warranty or condition of any kind, whether expressed or implied, with respect to the SmartAVI product, and specifically disclaim implied warranties or conditions of merchantability, satisfactory quality, and fitness for a particular purpose.

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D. Local law
To the extent that this warranty statement is inconsistent with local law, this warranty statement shall be considered modified to be consistent with such law.

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