

Christie Vive Audio SKA-3D



Quick Start Guide

020-101241-01

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NOTICES

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The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol

 means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, there are separate collection systems for used electrical and electronic products. Please help us to conserve the environment we live in.

Canadian manufacturing facility is ISO 9001 and 14001 certified.

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For complete information about Christie's limited warranty, see the Christie website (www.christiedigital.com) or contact your Christie dealer. In addition to the limitations that may be specified in Christie's limited warranty, the warranty does not cover:

- a. Problems or damage occurring during shipment, in either direction.
- b. Projector lamps (See Christie's separate lamp program policy).
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- d. Problems or damage caused by combination of a Product with non-Christie equipment, such as distribution systems, cameras, DVD players, etc., or use of a Product with any non-Christie interface device.
- e. Problems or damage caused by the use of any lamp, replacement part or component purchased or obtained from an unauthorized distributor of Christie lamps, replacement parts or components including, without limitation, any distributor offering Christie lamps, replacement parts or components through the internet (confirmation of authorized distributors may be obtained from Christie).
- f. Problems or damage caused by misuse, improper power source, accident, fire, flood, lightning, earthquake or other natural disaster.
- g. Problems or damage caused by improper installation/alignment, or by equipment modification, if by other than Christie service personnel or a Christie authorized repair service provider.
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- i. Problems or damage caused by use of a projector in the presence of an oil-based fog machine or laser-based lighting that is unrelated to the projector.
- j. For LCD projectors, the warranty period applies only where the LCD projector is in "normal use." "Normal use" means the LCD projector is not used more than 8 hours a day, 5 days a week.
- k. Except where the Product is designed for outdoor use, problems or damage caused by use of the Product outdoors unless (i) such Product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such Product and (ii) if the Product is an LCD flat panel, such LCD flat panel is not exposed to direct sunlight.
- l. Image retention on LCD flat panels.
- m. Defects caused by normal wear and tear or otherwise due to normal aging of a Product.
- n. Products where the serial number has been removed or obliterated.
- o. Products sold by a Reseller to an End User outside of the country where the Reseller is located unless (i) Christie has an office in the country where the End User is located or (ii) the required international warranty fee has been paid.
- p. Products when there is failure to perform maintenance as required and in accordance with the maintenance schedule.
- q. This warranty does not obligate Christie to provide any on site warranty service at the Product site location.

PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Please see the Maintenance section for specific maintenance items as they relate to your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, will void the warranty.

Addendum

The CD included with this printed manual contains an electronic copy in English. Please read all instructions before using or servicing this product.

手冊中包含的光盤，帶有着中文的电子副本，使用或維修本產品前，請仔細查閱所有的指示。

手冊中包含的光盤，帶有着中文繁體的電子副本，使用或維修本產品前，請仔細查閱所有的指示。

Le DC fourni avec ce manuel imprimé contient une copie électronique en français. S'il vous plaît lire toutes les instructions avant d'utiliser ou de réparer ce produit.

Das CD, das mit diesem gedruckten Handbuch eingeschlossen ist, enthält eine elektronische Kopie auf in deutscher Sprache. Vor der Anwendung oder der Instandhaltung dieses Produktes lesen Sie bitte alle Anweisungen.

Il CD fornito con il manuale stampato contiene una copia elettronica in lingua italiano. Si prega di leggere tutte le istruzioni prima di utilizzare o riparare questo prodotto.

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매뉴얼과 함께 포함되어 있는 CD 에는 한글로 된 전자사본을 포함하고 있습니다 . 본 제품을 사용 혹은 서비스하기 전에 모든 지침 사항들을 읽어 보시기 바랍니다 .

O CD incluído com o impresso livro contém um eletrônico cópia em Português. Por favor lido todas as instruções antes de usar ou prestando serviço esse resultado.

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El DC incluido con este manual impreso contiene una copia electrónica en español. Por favor, lea todas las instrucciones antes de usar o dar servicio a este producto.

Компакт диск, що постачається з цим друковане керівництво містить електронну копію українською мовою. Будь ласка, прочитайте всі інструкції перед використанням або обслуговуванням цього продукту.

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Important Safety Information

Read this information thoroughly and completely before installing, or operating the SKA-3D.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- To reduce the risk of electric shock, disconnect AC power cord to completely remove power from the unit before repair or maintenance.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplett utstyr og er tilkoplett et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet.
- Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
- Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.

Introduction

The SKA-3D is a professional audio and video processor and video scaler. It accepts audio and video signals on multiple inputs and in multiple formats and outputs a selected combination of audio and video.

This user manual provides information about SKA-3D controls, installation, operation, troubleshooting, and specifications.

What's in the Box?

Quantity	Description	Part Number
1	SKA-3D	108-446105-XX
1	Region-specific power cord	N/A
1	Pair of rack ears	N/A
2	Rack ear screws	N/A
1	16-pin Phoenix connector	N/A
1	8-pin Phoenix connector	N/A
7	3-pin Phoenix connectors	N/A

Controls

This section describes the SKA-3D controls.

Front Panel



Ref.	Item	Description
A	Headphone level	Adjusts the headphone volume.
B	Source select	Adjusts the audio source for headphone monitoring.
C	Mic level	Adjusts the microphone listening level. This control does not change the main output amplitude.
D	Navigation buttons	Provides left, right, up, and down buttons for menu system navigation.
E	Enter	Saves menu system changes.
F	Mic mix select	Selects between Mute, Booth+Auditorium, and Booth.
G	Mute	Mutes the master volume.
H	Lock	Locks the front-panel controls to prevent accidental changes.
I	Menu	Accesses the menu.
J	Video select	Selects the input video source.
K	Audio select	Selects the audio input source.
L	Exit	Exits the menu.
M	Main volume	Adjusts the main output volume level.

Rear Panel



Ref.	Item	Description
A	AC power switch	Turns the power on and off.

Indicators

This section describes the SKA-3D indicators.



Ref.	Item	Description
A	Mic level	Indicates the microphone input level. From left to right, the LED lights represent these input levels: <ul style="list-style-type: none"> • Green - -40 dB • Green - -30 dB • Green - -20 dB • Green - -10 dB • Yellow - -5 dB • Red - Clip

Ref.	Item	Description
B	Liquid crystal matrix (LCM) display	<p>Indicates the status of the scaler. The display provides a 19-character, two-line display in this display format: [VIDEO_INPUT] [AUDIO_FORMAT] [AUDIO_INPUT] [3D_FORMAT] [OUTPUT_RESOLUTION] [MASTER_VOLUME_IN_DB]</p> <p>To change the settings:</p> <ul style="list-style-type: none"> • VIDEO_INPUT - the current video input. • AUDIO_FORMAT - the current audio format. • AUDIO_INPUT - the current audio input. • 3D_FORMAT - the current 3D format. • OUTPUT_RESOLUTION - the current output resolution. • MASTER_VOLUME - the current master volume level (dB). To change the volume, adjust the Main Volume or press Mute.

Connections

This section describes the SKA-3D front and rear connections.

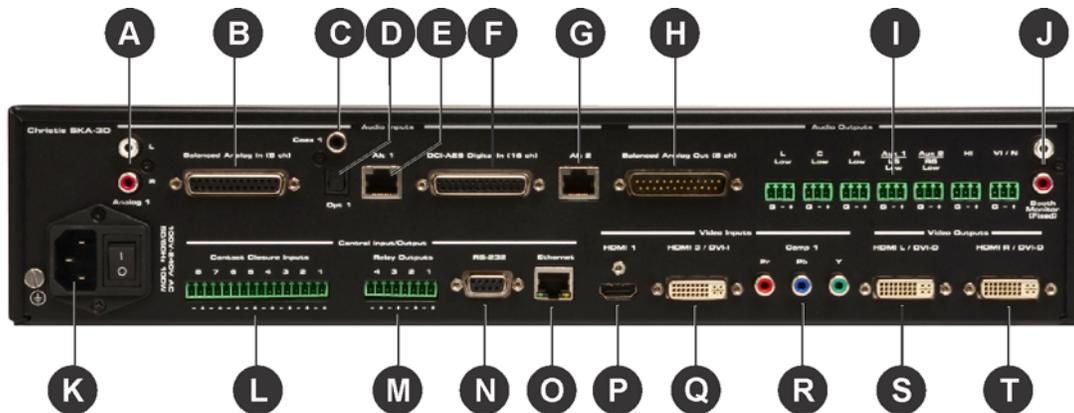
Front Panel



Ref.	Item	Description
A	Analog 2	Accepts 2-channel analog audio using one pair of RCA-type connectors.
B	Analog 3	Accepts 2-channel analog audio using one pair of RCA-type connectors.
C	Coax 2	Accepts multichannel digital audio (DTS® and Dolby® Digital) and two-channel Linear PCM using a cable with an RCA-type connector.
D	Opt 2	Accepts multichannel digital audio (DTS® and Dolby® Digital) and two-channel Linear PCM using a cable with an optical cable with a TOSLINK connector.
E	Coax 3	Accepts multichannel digital audio (DTS® and Dolby® Digital) and two-channel Linear PCM using a cable with an RCA-type connector.
F	Opt 3	Accepts multichannel digital audio (DTS® and Dolby® Digital) and two-channel Linear PCM using a cable with an optical cable with a TOSLINK connector.

Ref.	Item	Description
G	Headphone out	Accepts a pair of stereo headphones using a 1/4" TRS jack.
H	Mic	Accepts a microphone using a balanced XLR connector.
I	Comp 2	Accepts three Component (YPbPr) video cables from the source to these RCA-type connectors.
J	VGA 1	Accepts an a VGA (RGBHV) cable from the source to this HD-15 connector.
K	HDMI 2	Accepts an HDMI cable from the source to this HDMI connector.
L	HDMI 4 / DVI-D	Accepts a DVI-D or HDMI-to-DVI cable from the source to this DVI connector. This input also accepts HDMI audio.

Rear Panel



Ref.	Item	Description
A	Analog 1	Accepts 2-channel analog audio using one pair of RCA-type connectors.
B	Balanced Analog In (8 ch)	Accepts a DB-25 type connector and up to eight channels of multichannel analog audio.
C	Coax 1	Accepts multichannel digital audio (DTS® and Dolby® Digital) and two-channel Linear PCM using a cable with an RCA-type connector.
D	Opt 1	Accepts multichannel digital audio (DTS® and Dolby® Digital) and two-channel Linear PCM using a cable with an optical cable with a TOSLINK connector.
E	Alt 1	Accepts the RJ-45 connector from a DB-25-to-RJ-45 cable that carries digital audio. This input receives the first eight channels (1 - 8) of digital audio.
F	DCI-AES Digital In (16 ch)	Accepts a DB-25 type connector for up to 16 channels of multichannel digital audio.
G	Alt 2	Accepts the RJ-45 connector from a DB-25-to-RJ-45 cable that carries digital audio. This input receives the second eight channels (9 - 16) of digital audio.
H	Balanced Analog Out (8 ch)	Accepts a DB-25 type connector and handle up to eight channels of multichannel analog audio

Ref.	Item	Description
I	Phoenix connectors (Audio Out)	Accepts single audio channel outputs: L Low, C Low, R Low, Aux 1 LS Low, Aux 2 RS Low, HI, VI / N. These can be configured using the web interface or serial control commands.
J	Booth Monitor (Fixed)	Accepts an L/R RCA-type cable for the projection booth monitors output. The audio output level is fixed and is controlled by the external amplification device / monitors.
K	AC power inlet	Accepts an AC power cord.
L	Contact Closure Inputs (1-8)	Accepts up to eight inputs for control of devices using contact closure.
M	Relay Outputs (1-4)	Accepts up to four controlled device inputs to these trigger outputs to control screens, drapes, lights, or other devices. Connect trigger wires to removable terminal block plugs.
N	RS-232	Accepts an RS-232 serial connector to control other devices.
O	Ethernet	Accepts an Ethernet connection, to connect the A/V Cinema Scaler 3D to a network in order to use IP control.
P	HDMI 1	Accepts an HDMI cable from the source to this HDMI connector.
Q	HDMI 3 / DVI-I	Accepts a DVI (analog or digital) cable from the source to this DVI connector. This input also accepts HDMI audio.
R	Comp 1	Accepts three Component (YPbPr) video cables from the source to these RCA-type connectors.
S	HDMI L / DVI-D	Outputs the left-eye video signal from a 3D source.
T	HDMI R / DVI-D	Outputs the right-eye video signal from a 3D source.

Installation

WARNING

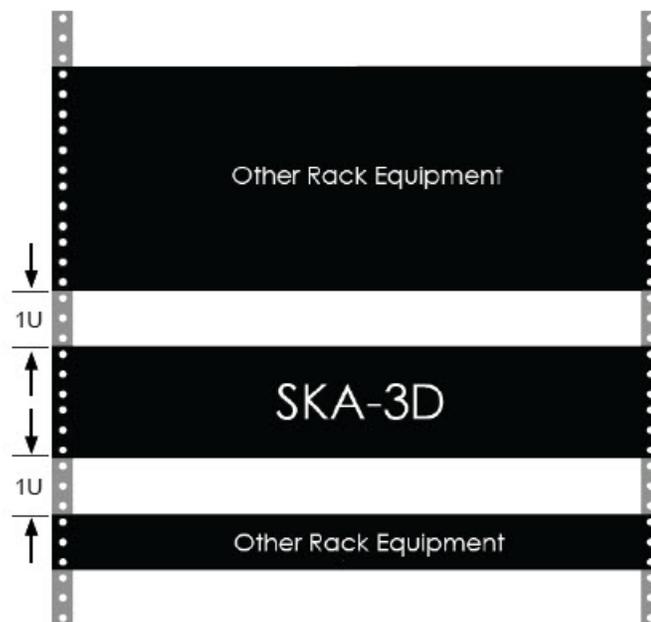
An incorrect power setup creates a fire and shock hazard. Do not operate the SKA-3D unless the power cord, power socket, and power plug meet the appropriate local rating standards. Have a certified electrician install a permanent single-phase connection from the amplifier to the AC supply for correct installation. Failure to comply could result in death or serious injury.

NOTICE

Make sure the SKA-3D is properly ventilated. Provide 1U of space above and below the SKA-3D. Make sure that vents are not blocked and that air can flow freely through the unit. Do not place the SKA-3D directly above or below a heat source such as a power amplifier or server. If the SKA-3D is not rack-mounted, never place another piece of equipment (or heat source) on top or below the SKA-3D.

1. Slide the SKA-3D into your rack.

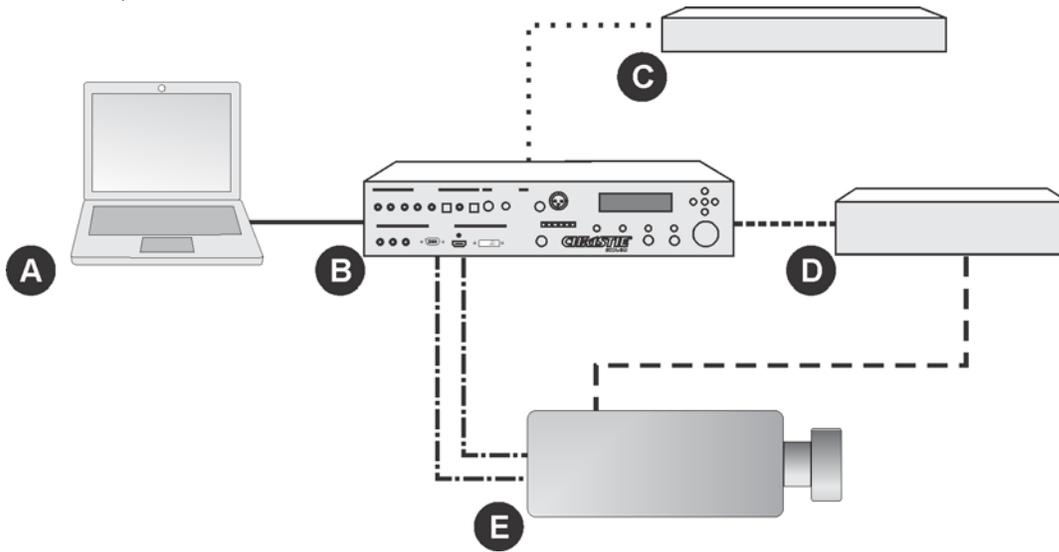
Provide 1U of space above and below the SKA-3D. Do not place the SKA-3D directly above or below a heat source such as a power amplifier or server. If the SKA-3D is not rack-mounted, never place another piece of equipment (or heat source) above or below the SKA-3D.



2. Install the SKA-3D rack ears.
3. While holding the SKA-3D in position, insert a screw through each of the rack mounting ears.
4. Tighten the screws to secure the SKA-3D to the rack.
5. Connect one end of the power cord to the AC power inlet and the other end to a power outlet.
6. Connect the output and input connections.

See [Connections](#) on page 6 for connection locations.

For example,



A	Computer	D	Automation Controller
B	SKA-3D	E	Projector
C	Blue Ray Player	Ethernet, General-purpose input/output (GPIO), or RS-232
————	VGA or HDMI	- - - -	Ethernet or GPIO
▪ ▪ ▪ ▪	HDMI, or an optical/audio connection and component	- · - · - ·	DVI-D

7. Turn the power on.

See [Turn the Power On](#) on page 11.

Operation

This section provides procedures and information for operating the SKA-3D. Most operations can be completed using the web interface, SKA-3D controls, or RS-232 commands.

See the SKA-3D User Manual (P/N: 020-101056-XX) for a complete list of RS-232 commands.

Turn the Power On



An incorrect power setup creates a fire and shock hazard. Do not operate the SKA-3D unless the power cord, power socket, and power plug meet the appropriate local rating standards. Have a certified electrician install a permanent single-phase connection from the amplifier to the AC supply for correct installation. Failure to comply could result in death or serious injury.

NOTICE

Never try to hold the AC power switch in the on position if it does not stay there itself. Failure to comply may result in equipment or property damage.

1. Make sure the power cord is connected.
2. Move the AC power switch to the on position.

Turn the Power Off

Move the AC power switch to the off position.

Access the SKA-3D Web Interface

1. Open a web browser.
2. Type the SKA-3D IP address in the navigation bar.

For example,

`http://192.168.206.100`

3. Press **Enter**.

Manage Presets

Presets allow you to save configured settings for audio inputs, video inputs, audio modes, and master volume levels. The SKA-3D has 10 presets that can be applied manually or triggered with an event. Event-triggered presets require an automation controller.

Configure Presets

Ten preset are available on the SKA-3D. Configure presets using the web interface or the SKA-3D controls. It is useful to use the web interface when multiple presets are set at one time. Use the SKA-3D controls to change individual preset settings. On the controls, presets are numbered 1-9 and the 10th preset is represented by the letter A.

Configure Presets using the Web Interface

1. Open the SKA-3D web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
2. Click the **Automation** tab.
3. Click the **Presets** tab.
4. Enter a name for the preset under **Preset Name**.
5. Select the **Switch to Video Input** from the list.
6. Select the **Switch to Audio Input** from the list.
7. Select the **Switch to Audio Mode** from the list.
Options change depending on the selected audio input.
8. Select the volume setting from the list. If **Custom** is selected, move the slider to the required volume.
9. If required, repeat steps 4 to 8 for the remaining presets.

For example,

Preset	Preset Name	Switch to Video Input	Switch to Audio Input	Switch to Audio Mode	Set Master Volume Level	Custom Vol. Level
1	Bypass	None	Digital DCI AES	DCI 8 Channel Mapping 7.1	Custom	7.0
2	HDMI+1	HDMI 1	HDMI Audio	Auto Format Detect	Custom	3.0
3	3D+HDMI	HDMI 2	HDMI Audio	Auto Format Detect	Custom	7.0
4		No Action	No Action	No Action	No Change	5.0
5		No Action	No Action	No Action	No Change	5.0
6		No Action	No Action	No Action	No Change	5.0
7		No Action	No Action	No Action	No Change	5.0
8		No Action	No Action	No Action	No Change	5.0
9		No Action	No Action	No Action	No Change	5.0
10		No Action	No Action	No Action	No Change	5.0

10. Click **Save**, and save the presets as an XML file.

Configure Presets using the SKA-3D Controls

1. Press **Menu** on the front of the SKA-3D.
2. Press the left or right navigation button to display **Automation Settings**.

3. Press **Enter**.
4. Press the up or down navigation button to display **Preset Settings**.
5. Press the left or right navigation button and select the automation preset to configure.
6. Press **Enter**.
7. Press the left or right navigation button and select the required video input.
8. Press the down navigation button to display **SWITCH TO AUDIO**.
9. Press the left or right navigation button and select the required audio input.
10. Press the down navigation button to display **SWITCH TO AUDIO Mode**.
11. Press the left or right navigation button and select the required mode.
12. Press the down navigation button and display **MASTER VOL LEVEL**.
13. Press the left or right navigation button to select the required volume setting.
14. If required, press the down navigation button to adjust the **CUSTOM** volume.
15. Press **Exit** until you return to the status screen.

Import Presets from a File

1. Open the SKA-3D web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
2. Click the **Automation** tab.
3. Click the **Presets** tab.
4. Click **Browse**, and select the preset XML file to import.
5. Click **Load**.

Manually Apply a Configured Preset

1. Open the SKA-3D web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
2. Click the **Input/Output** tab.
3. Click **Apply** beside the automation preset that you want to apply.

Manage Trigger Inputs

Trigger inputs provide communication with automation devices. The SKA-3D has 8 trigger inputs.

Configure Trigger Inputs

Configure trigger inputs using the web interface or the SKA-3D controls. It is useful to use the web interface when multiple trigger inputs are set at one time. Use the SKA-3D controls to change individual configuration settings.

Configure Trigger Inputs using the Web Interface

1. Open the SKA-3D web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
2. Click the **Automation** tab.
3. Click the **Trigger Inputs** tab.
4. Select the **Trigger Input** from the list.
5. Select the **Switch to Preset** from the list.
6. Click **Test** to test the trigger input.
7. Repeat steps 4 to 6 for the remaining trigger inputs.
8. Click **Save**, and save the trigger inputs as an XML file.

Configure Trigger Inputs using the SKA-3D Controls

1. Press **Menu** on the front of the SKA-3D.
2. Press the left or right navigation button to display **Automation Settings**.
3. Press **Enter**.
4. Press the up or down navigation button to display **Trigger Inputs**.
5. Press the left or right navigation button and select the automation trigger input to configure.
6. Press **Enter**.
7. Press the up or down navigation button to display **SWTICH TO PRESET**.
8. Press the left or right navigation button to select the preset to use when the trigger event is called.
9. Press **Exit** until you return to the status screen.

Import Trigger Inputs from a File

1. Open the SKA-3D web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
2. Click the **Automation** tab.
3. Click the **Trigger Inputs** tab.
4. Click **Browse**, and select the trigger inputs XML file to import.
5. Click **Load**.

Manage Trigger Outputs

Trigger outputs provide control of automation devices such as lighting systems, curtains, or motorized screens. The SKA-3D has 4 available trigger outputs.

Configure Trigger Outputs

Configure trigger outputs using the web interface or the SKA-3D controls. It is useful to use the web interface when multiple trigger outputs are set at one time. Use the SKA-3D controls to change individual configuration settings.

Configure Trigger Outputs with the Web Interface

1. Open the SKA-3D web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
2. Click the **Automation** tab.
3. Click the **Trigger Outputs** tab.
4. Select the **Event Trigger** from the list.
5. Select the **Output State** from the list.
6. Select the **Action** from the list. If **Pulse** is selected, complete the **Pulse Duration** field.
7. Repeat steps 4 to 6 for the remaining trigger outputs.
8. Click **Save**, and save the trigger outputs as an XML file.

Configure Trigger Outputs with the SKA-3D Controls

1. Press **Menu** on the front of the SKA-3D.
2. Press the left or right navigation button to display **Automation Settings**.
3. Press **Enter**.
4. Press the up or down navigation button to display **Trigger Outputs**.

5. Press the left or right navigation button and select the automation trigger output to configure.
6. Press **Enter**.
7. Press the up or down navigation button to display **TRIGGER TYPE**.
8. Press the left or right navigation button to select the trigger type.
9. Press the up or down navigation button to display **EVENT TRIGGER**.
10. Press the left or right navigation button and select the trigger event.
11. Press the up or down navigation button to display **TRIGGER SIGNAL**.
12. Press the left or right navigation button to select the trigger signal.
13. If required, press the up or down navigation button to display **PULSE LENGTH**; otherwise, skip to step 15.
Pulse adjustments are not required for levels.
14. Press the left or right navigation button to select the pulse length.
15. Press **Exit** until you return to the status screen

Import Trigger Outputs from a File

1. Open the SKA-3D web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
2. Click the **Automation** tab.
3. Click the **Trigger Outputs** tab.
4. Click **Browse**, and select the trigger outputs XML file to import.
5. Click **Load**.

Manage Firmware

The SKA-3D ships with the latest firmware. This section describes how to view the current firmware version and how to update the firmware.

Display the Firmware Version

1. Press the up or down navigation button to display **Christie Digital SKA-3D**.
2. Press the right navigation button to display the current firmware and boot code.
3. Press **Exit** to return the status screen.

Update the Firmware



Save the current system settings before updating the firmware. From the web interface, open the **System Configuration** screen and click **Backup** in the System Settings pane.

1. Turn the SKA-3D power on.
See [Turn the Power On](#) on page 11.
2. Connect one end of the Ethernet cable to the Ethernet port on the SKA-3D and then connect the other end of the cable to the Ethernet port on the computer running the web interface.
See [Access the SKA-3D Web Interface](#) on page 11.
3. Click the **System Configuration** tab.
4. Click **Browse** in the **Firmware Upgrade** pane.
5. Click **OK** when the LCM prompts you to verify that you want to overwrite the current firmware.
The web interface is disabled during the firmware upgrade.
6. Wait for the SKA-3D to reboot or press **Lock** to bypass the reboot countdown.
The SKA-3D reboots.
7. If required, click **Reset** to reset the SKA-3D to its default settings.
8. If required, click **Restore** to load the system settings file.

Troubleshooting

This section provides information and procedures for resolving common issues with the SKA-3D. If you cannot resolve an issue, contact a Christie representative. See the back cover of this document for the contact information for your region.

Problem	Resolution
Power is not available	<ul style="list-style-type: none">• Connect the SKA-3D power cord to an AC outlet.• Turn the power switch on the back panel on.• Verify that the front panel LCM displays the Status Screen.
Video does not work as expected	<ul style="list-style-type: none">• Verify that the SKA-3D is correctly connected to the video source.• Wait 30 seconds for video to display after turning the SKA-3D power on.• Check that the video source is connected to the video input that is currently selected. Press Video Select on the front panel to select the video input.
Audio does not work as expected	<ul style="list-style-type: none">• Verify that the SKA-3D is correctly connected to the audio source.• Slowly increase the volume by turning the main volume knob on the front panel.• Make sure that "MUTE" is not displayed in the LCM. If it is, press Mute on the front panel.• Check that the audio source is connected to the audio input that is currently selected. Press Audio Select on the front panel to select the audio input.
Video artifacts, such as green sparkles, appear on the screen	<ul style="list-style-type: none">• Verify that the video cable between the audio input source and the SKA-3D is correctly connected. Make sure that all connections are secure.• Make sure that none of the cables are damaged. Replace any damaged cables.

Specifications

This section provides the specifications for the SKA-3D.

Supported Video Formats

The SKA-3D supports up to 1080p / 2k 60 Hz video formats.

Format	VGA / DVI-A	Component	HDMI	DVI (Digital)
640 x 480 / 60 Hz	✓		✓	✓
800 x 600 / 60 Hz	✓		✓	✓
1024 x 768 / 60 Hz	✓		✓	✓
1152 x 864 / 60 Hz	✓		✓	✓
1360 x 768 / 60 Hz	✓		✓	✓
1280 x 960 / 60 Hz	✓		✓	✓
1280 x 1024 / 60 Hz	✓		✓	✓
1600 x 1200 / 60 Hz	✓		✓	✓
1280 x 800 / 60 Hz	✓		✓	✓
1920 x 1200 / 60 Hz	✓		✓	✓
1680 x 1050 / 60 Hz	✓		✓	✓
1400 x 1050 / 60 Hz	✓		✓	✓
1440 x 900 / 60 Hz	✓		✓	✓
720 x 480i / 60 Hz	✓		✓	✓
720 x 576i / 50 Hz		✓	✓	✓
720 x 480p / 60 Hz		✓	✓	✓
720 x 576p / 50 Hz	✓	✓	✓	✓
1280 x 720p / 60 Hz	✓	✓	✓	✓
1280 x 720p / 50 Hz	✓	✓	✓	✓
1920 x 1080i / 60 Hz	✓	✓	✓	✓
1920 x 1080i / 60 Hz		✓	✓	✓
1920 x 1080i / 50 Hz		✓	✓	✓
1920 x 1080p / 60 Hz	✓	✓	✓	✓
1920 x 1080p / 50 Hz	✓	✓	✓	✓
1920 x 1080p / 24 Hz			✓	✓
1920 x 1080p / 25 Hz			✓	✓

Format	VGA / DVI-A	Component	HDMI	DVI (Digital)
1920 x 1080p / 30 Hz			✓	✓
2048 x 1080p / 24 Hz			Bypass Only	Bypass Only
2048 x 1080p / 25 Hz			Bypass Only	Bypass Only
2048 x 1080p / 30 Hz			Bypass Only	Bypass Only
2048 x 1080p / 48 Hz			Bypass Only	Bypass Only
2048 x 1080p / 50 Hz			Bypass Only	Bypass Only
2048 x 1080p / 60 Hz			Bypass Only	Bypass Only

Supported Audio Formats

Specification	Value
Audio	<ul style="list-style-type: none"> • Digital PCM, up to 16 channels • Balanced analog + 4 dB, up to 8 channels • Dolby Digital • Dolby Digital Plus • Dolby TrueHD • DTS • DTS-HD • DTS-HD Master Audio • Dolby Pro Logic II • Unbalanced analog -10 dB, stereo • Microphone, balanced

Power

Specification	Value
Input	100-240VAC, (50/60 Hz), 100W, 0.6A

Control and Network Ports

Specification	Value
Ethernet	RJ-45
RS-232	DB-9
8 Contact Closure Inputs	16-Pin Phoenix
4 Dry Relay Outputs	8-Pin Phoenix

Connections

Specification		
Outputs	Video	<ul style="list-style-type: none"> • HDMI L / DVI-D (left eye in dual stream 3D mode; active output in sequential 3D mode) • HDMI R / DVI-D (right eye in dual stream 3D mode)
	Audio	<ul style="list-style-type: none"> • 8 x Balanced Analog (DB-25) • L (left) Low, Balanced Analog (3-Pin Phoenix) • C (center) Low, Balanced Analog (3-Pin Phoenix) • R (right) Low, Balanced Analog (3-Pin Phoenix) • Aux 1 / LS (left surround) Low, Balanced Analog (3-Pin Phoenix) • Aux 2 / RS (right surround) Low, Balanced Analog (3-Pin Phoenix) • HI (hearing impaired), Balanced Analog (3-Pin Phoenix) • VI/N (visually impaired / Narrative) • Booth Monitor, Unbalanced Analog (RCA) • Headphone (TRS)
Inputs	Video	<ul style="list-style-type: none"> • 2 x HDMI (support for embedded audio) • 1 x DVI-D (support for embedded audio) • 1 x DVI-I (does not support audio in analog mode) • 2 x Component (3 x RCA) • VGA (HD15)
	Audio	<ul style="list-style-type: none"> • 16 x DCI-AES Digital, 8 Pairs (DB-25) • DCI-AES ALT 1 Pairs 1-4 (RJ-45) • DCI-AES ALT2 Pairs 5-8 (RJ-45) • 8 x Balanced Analog (DB-25) • 3 x Analog (RCA) • 3 x Coax SPDIF (RCA) • 3 x Optical SPDIF (Toslink) • 2 x HDMI/DVI (support for embedded audio) • Microphone (XLR)
DB-25, Female, Balanced Analog In		<ul style="list-style-type: none"> • Reference level: 300 mV (rms) • Maximum input level before clipping: 4 V (rms) • Input impedance: 25 kΩ • Frequency response: ±0.5 dB @20 to 20 kHz ±3.0 dB @ 10 to 38 kHz • THD: <0.001% @ 1 kHz 3 V (rms) • SNR: 110 dB, A-weight, 20 to 20 kHz • Balanced input can be used with unbalanced or balanced sources
Analog Microphone input (XLR)		<ul style="list-style-type: none"> • Input gain range (control knob): 9 dB to 60 dB • Phantom power support

Specification	
DB-25, Male, Balanced Analog out	<ul style="list-style-type: none"> • Reference level: 300 mV (rms), 0 dBFS output = 3 V (rms) • Output impedance: <100 Ω • Frequency response: ±0.5 dB @ 20 to 20 kHz ±3.0 dB @ 10 to 38 kHz • THD: <0.001% @ 1 kHz 3 V (rms) • SNR: 110 dB, A-weight, 20 to 20 kHz
Analog Balanced Secondary Output, Phoenix Connector (HI, VI/N)	<ul style="list-style-type: none"> • Reference level: 150 mV • Frequency response: ±0.5 dB @ 20 to 20 kHz • THD: <0.001% @ 1 kHz 2 V (rms) • SNR: 100 dB, A-weight, 20 to 20 kHz
Analog Unbalanced Variable Level Output (Booth Monitor Headphone)	<ul style="list-style-type: none"> • Volume control range: -60 dB to 0 dB; 0 dBFS @ 0 dB user-adjustment = 500 mV (rms) • Minimum load: 10 Ω • Frequency response: ±0.5 dB @ 20 to 20 kHz • THD: <0.01% @ 1 kHz 2V (rms) • SNR: 90 dB, A-weight, 20 to 20 kHz (at max. setting)

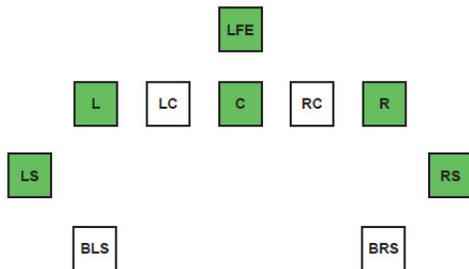
Physical

Specification	Value
Dimension (W x H x D)	19 in. x 3.5 in.* x 12 in. (48.3 cm x 30.5 cm* x 8.9 cm) *Height with feet is 4 in. (10.2 cm)
Net Weight	21.7 lb (9.8 Kg)

Channel Mapping

This section describes channel mapping in relation to the SKA-3D audio input signal.

3 Screen Channels and 2 Surround Channels



DCI 6-Channel or Dolby Digital 5.1¹

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		
Bottom right side (BRS)		
Left center (LC)		
Right center (RC)		
Low frequency effects (LFE)	✓	✓

DCI 8-Channel or SDDS 7.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		
Bottom right side (BRS)		
Left center (LC)	✓ ^a	
Right center (RC)	✓ ^a	
Low frequency effects (LFE)	✓	✓

a. Not used.

Dolby Surround 7.1

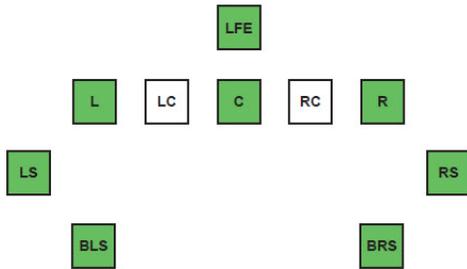
Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓

1. Straight-through channel mapping.

Channel	Input	Output
Left surround (LS)	✓	✓ + BLS
Right surround (RS)	✓	✓ + BRS
Bottom left side (BLS)	✓ ^a	
Bottom right side (BRS)	✓ ^b	
Left center (LC)		
Right center (RC)		
Low frequency effects (LFE)	✓	✓

- a. Down-mixed to LS.
- b. Down-mixed to RS.

3 Screen Channels and 4 Surround Channels



DCI 6-Channel or Dolby Digital 5.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		✓ ^a
Bottom right side (BRS)		✓ ^b
Left center (LC)		
Right center (RC)		
Low frequency effects (LFE)	✓	✓

- a. LS is duplicated on BLS.
- b. RS is duplicated on BRS.

DCI 8-Channel or SDDS 7.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		✓ ^a
Bottom right side (BRS)		✓ ^b
Left center (LC)	✓ ^c	
Right center (RC)	✓ ^c	
Low frequency effects (LFE)	✓	✓

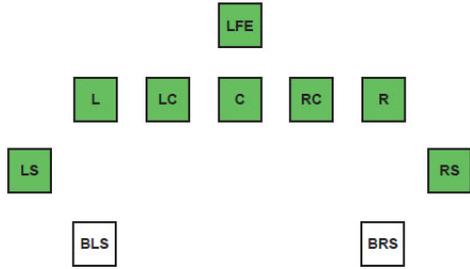
- a. LS is duplicated on BLS.
- b. RS is duplicated on BRS.
- c. Not used.

Dolby Surround 7.1¹

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)	✓	✓
Bottom right side (BRS)	✓	✓
Left center (LC)		
Right center (RC)		
Low frequency effects (LFE)	✓	✓

1. Straight-through channel mapping.

5 Screen Channels and 2 Surround Channels



DCI 6-Channel or Dolby Digital 5.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		
Bottom right side (BRS)		
Left center (LC)		✓ ^a
Right center (RC)		✓ ^a
Low frequency effects (LFE)	✓	✓

a. Not used.

DCI 8-Channel or SDDS 7.1¹

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		
Bottom right side (BRS)		
Left center (LC)	✓	✓
Right center (RC)	✓	✓
Low frequency effects (LFE)	✓	✓

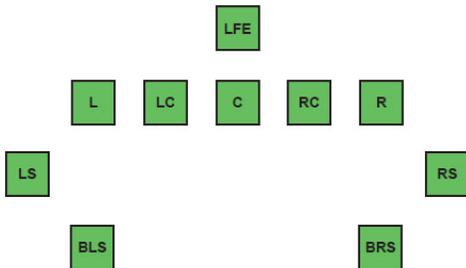
1. Straight-through channel mapping.

Dolby Surround 7.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓ + BLS
Right surround (RS)	✓	✓ + BRS
Bottom left side (BLS)	✓ ^a	
Bottom right side (BRS)	✓ ^b	
Left center (LC)		✓ ^c
Right center (RC)		✓ ^c
Low frequency effects (LFE)	✓	✓

- a. Down-mixed to LS.
- b. Down-mixed to RS.
- c. Not used.

5 Screen Channels and 4 Surround Channels



DCI 6-Channel or Dolby Digital 5.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		✓ ^a
Bottom right side (BRS)		✓ ^a
Left center (LC)		✓ ^a

Channel	Input	Output
Right center (RC)		✓ ^a
Low frequency effects (LFE)	✓	✓

a. Not used.

DCI 8-Channel or SDDS 7.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)		✓ ^a
Bottom right side (BRS)		✓ ^b
Left center (LC)	✓	✓
Right center (RC)	✓	✓
Low frequency effects (LFE)	✓	✓

a. LS is duplicated on BLS.

b. RS is duplicated on BRS.

Dolby Surround 7.1

Channel	Input	Output
Left (L)	✓	✓
Right (R)	✓	✓
Center (C)	✓	✓
Left surround (LS)	✓	✓
Right surround (RS)	✓	✓
Bottom left side (BLS)	✓	✓
Bottom right side (BRS)	✓	✓
Left center (LC)		✓ ^a
Right center (RC)		✓ ^a
Low frequency effects (LFE)	✓	✓

a. Not used.



ASSY TECH DOCS SKA-3D

Corporate offices

USA – Cypress
ph: 714-236-8610
Canada – Kitchener
ph: 519-744-8005

Worldwide offices

United Kingdom
ph: +44 118 977 8000
France
ph: +33 (0) 1 41 21 00 36
Germany
ph: +49 2161 664540

Eastern Europe
ph: +36 (0) 1 47 48 100
Middle East
ph: +971 (0) 4 299 7575
Spain
ph: + 34 91 633 9990

Singapore
ph: +65 6877-8737
Beijing
ph: +86 10 6561 0240
Shanghai
ph: +86 21 6278 7708

Japan
ph: 81-3-3599-7481
South Korea
ph: +82 2 702 1601