

5×1 HDMI/USB-C Seamless Presentation Switch with HDBaseT 3.0 Out —
4K60 to 40m, 4K30 to 70m

Consolidate Five BYOD and Legacy Sources with Seamless Switching, KVM, Dante Audio & HDBaseT Extension



The **KanexPro SW-5X1PS-70M** is a 5×1 seamless presentation switcher with an HDBaseT 3.0 receiver. It takes **2× HDMI**, **1× HDMI with USB-B**, and **2× USB-C (DP Alt Mode)** inputs, and the USB-C inputs provide **60W charging**. Over HDMI it carries uncompressed **4K@60Hz 4:4:4** video. Over a single CAT6a (F/FTP) cable, HDBaseT 3.0 carries **4K@60 up to 40m (131ft)** and **1080p or 4K@30 up to 70m (230ft)**.

Three inputs carry USB to the host: **USB-C 1**, **USB-C 2**, and **HDMI 3 with its USB-B port**. HDMI 1 and HDMI 2 carry video and audio only.

The receiver includes **1× HDMI**, **1× USB-B for PC input**, **1× HDMI output**, and **2× USB-A extension ports** for a keyboard, mouse, USB camera and other devices, giving **USB 2.0 extension and KVM**. USB devices at the receiver run at up to 350Mbps to a host at the switcher and up to 480Mbps to a PC on the receiver's USB-B port.

The switch supports **single-screen and Multiview modes** (Single, PIP, PBP, Triple, Quad). Switching is seamless in single-screen mode and fast switching in Multiview. The **HDMI and HDBaseT outputs are mirrored**: both displays show the same picture.

It features **1× analog audio input**, **1× analog audio output**, **Dante® 2×2 audio I/O**, analog audio embedding/de-embedding, and a built-in **3×3 audio matrix with DSP**. Audio is **LPCM 2.0 at 48kHz**.

The device can be controlled via **front panel**, **bi-directional IR**, **RS-232**, **RS-232 pass-through**, **TCP/IP**, **Web GUI**, and **Dante Controller**.

The receiver can be powered either by a **24V DC adapter** or **PoE over HDBaseT**.

Surge Protection Recommended —

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, or lightning strikes. Use of surge protection systems is highly recommended.

TABLE OF CONTENTS

1. Features	3
2. Specifications	3
3. Introduction	5
Before you begin	5
4. Panel descriptions	5
Switch: front panel	5
Switch: rear panel	6
HDBaseT receiver panel	7
5. Certifications	8
6. IR cable pin assignment	8
7. IR remote	8
8. Web GUI user guide	9

continued

Connecting to the Web GUI	9
User page	9
Information page	10
Status page	10
Preset page	10
EDID page	10
Video page	11
Audio page	12
USB page	12
RS-232 page	12
Network page	13
System page	13
9. Dante® Web GUI user guide	13
Connecting to the Dante® Web GUI	13
Information page	13
Network page	13
System page	13
10. RS-232 control commands	14
System setting	14
Input setting	15
Output setting	16
Audio setting	17
Single-screen setting	19
Multiview setting	20
Receiver (RX) setting	21
CEC setting	22
USB setting	23
RS-232 setting	23
Preset setting	25
Network setting	26
Password setting	28
Status report	28
11. Connection diagram	29
12. Category	29
13. Application Example	30
14. Troubleshooting	30
15. Installation FAQ	31
16. Integration FAQ	31



1. Features

- ✓ HDMI 2.0b, HDCP 2.2 and DP 1.2 compliant
- ✓ Supports 18Gbps video bandwidth
- ✓ Supports video resolution up to 4K@60Hz 4:4:4
- ✓ Uncompressed 4K@60 over HDBaseT 3.0 up to 40m (132ft) via single CAT6a (F/FTP)
- ✓ Uncompressed 1080p & 4K@30 over HDBaseT 3.0 up to 70m (230ft) via single CAT6a (F/FTP)
- ✓ Up to 5 multiview display modes: Single / PIP / PBP / Triple / Quad
- ✓ 5×1 seamless switching (single screen) and fast switching in multiview mode
- ✓ Inputs: 2× USB-C, 2× HDMI, 1× HDMI with USB-B, 1× Analog audio in, 1× Dante 2ch
- ✓ Outputs: 1× HDMI, 1× HDBaseT (mirrored), 1× Analog audio out, 1× Dante 2ch
- ✓ HDMI and HDBaseT (PoE) mirrored outputs
- ✓ Dante 2×2 audio input and output
- ✓ Supports analog/Dante audio embedding and de-embedding
- ✓ USB-C supports DP Alt Mode for A/V, USB 2.0, 100M Ethernet and 60W charging
- ✓ Local USB 2.0 KVM switching and USB 2.0 extension over HDBaseT 3.0
- ✓ Supports manual and automatic input switching modes
- ✓ CEC and RS-232 control for external device ON/OFF
- ✓ Advanced EDID management
- ✓ Flexible control via front panel buttons, IR remote, RS-232, TCP/IP, and Web GUI
- ✓ Supports standard PoE power supply (TX: PSE, RX: PD)

2. Specifications

TECHNICAL	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
DP Version	DP 1.2
Video Bandwidth	18Gbps
USB Bandwidth	TX USB Devices to TX Host/USB-C: 480Mbps RX USB Devices to TX Host/USB-C: 350Mbps RX USB Devices to RX Host: 480Mbps
Network Bandwidth (LAN and USB-C Connection)	100Mbps
Input Video Resolution	480i ~ 1080p50/60Hz, 4Kx2K@24/30Hz, 4K2K@50/60Hz 4:4:4
Output Video Resolution	Auto, 3840×2160p60, 3840×2160p50, 4096×2160p60, 4096×2160p50, 3840×2160p30, 3840×2160p25, 1920×1200p60RB, 1920×1080p60, 1920×1080p50, 1360×768p60, 1280×800p60, 1280×720p60, 1280×720p50, 1024×768p60
IR Level	12Vp-p
IR Frequency	Wideband 20K–60KHz
Color Depth	Input: 8/10/12-bit (8-bit at 4K60Hz 4:4:4) Output: 8-bit



continued

Color Space	RGB, YCbCr 4:4:4 / 4:2:2, YUV 4:2:0
Audio Formats	LPCM 2.0
Audio Sample Rate	48KHz
Transmission Distance	1080P & 4K30 — 230ft / 70m 4K60 — 131ft / 40m
HDR	Input supports HDR; Output does not support HDR
ESD Protection (Human-body Model)	±8kV (Air-gap discharge), ±4kV (Contact discharge)
TX ANALOG AUDIO	
Input Impedance	10K Ohms
Output Impedance	330 Ohms
Line Input Level (Maximum)	8.2 dBu (2 Vrms), @ balanced or unbalanced audio
Line Output Level (Maximum)	8.2 dBu (2 Vrms) @ balanced audio 2.2 dBu (1 Vrms) @ unbalanced audio
Frequency Response	(+0.5 dB, -1 dB) 20 Hz to 20 kHz
Audio Output Sync Delay	0 to 50 ms
Audio S/N Ratio	93 dB @ 2Vrms, 1kHz, A-weighted
Audio THD+N	<0.1% @ 0dBV, 1kHz
RX ANALOG AUDIO	
Output Impedance	330 Ohms
Line Output Level (Maximum)	8.2 dBu (2 Vrms) @ balanced audio 2.2 dBu (1 Vrms) @ unbalanced audio
Frequency Response	(+0.5 dB, -1 dB) 20 Hz to 20 kHz
Audio Output Sync Delay	0 to 50 ms
Audio S/N Ratio	93 dB @ 2Vrms, 1kHz, A-weighted
Audio THD+N	<0.1% @ 0dBV, 1kHz
DANTE AUDIO	
Audio Formats	LPCM 2.0



3. Introduction

This 5x1 seamless presentation switch has three HDMI inputs and two USB-C inputs. The USB-C inputs carry DisplayPort Alt Mode video, USB 2.0, 100M Ethernet and up to 60W of charging. The switch has one HDMI output and one HDBaseT output, and both show the same picture.

The HDBaseT output supports standard PoE. It carries an uncompressed signal over a single CAT6A (F/FTP) cable up to 230ft (70m) at 4K@30Hz 4:4:4, or up to 131ft (40m) at 4K@60Hz 4:4:4. The output can show one source full screen, or several sources in one of the multiview layouts: Single, PIP, PBP, Triple or Quad.

You can switch USB 2.0 locally as a KVM. The switch also passes USB from the transmitter to the receiver, either through its local hub or over HDBaseT, and it passes RS-232 and IR control signals in both directions.

For audio, the switch has one analog input, one analog output and a Dante® 2x2 input and output. A built-in 3x3 audio matrix lets you set EQ, volume and delay separately for each path.

BEFORE YOU BEGIN

Use surge protection. This product contains sensitive electronic parts. Electrical spikes, surges, electric shock and lightning strikes can damage them, so we strongly recommend a surge protection system to protect your equipment and extend its life.

Wire the HDBaseT cable straight through. Both ends of the network cable must use the same wiring. Do not use a crossover cable. The conductor order at each end is the standard T568B order:

POSITION	CONDUCTOR
1	White and Orange
2	Orange
3	White and Green
4	Blue
5	White and Blue
6	Green
7	White and Brown
8	Brown

4. Panel descriptions

SWITCH: FRONT PANEL

No.	Name	Function Description
1	IR Window	Receives the signal from the IR remote.
2	USB-C 1 / USB-C 2 / HDMI 3 / HDMI 4 / HDMI 5 buttons	In single-screen mode, press a button to select that input, and its light comes on. In multiview mode, the lights show which inputs are on screen. For example, if USB-C 1, HDMI 3 and HDMI 5 feed the three windows of a Triple layout, those three lights come on. If USB-C 1 feeds every window, only the USB-C 1 light comes on. You set the window sources in the Web GUI. Press any input button to return to single-screen mode. The button light turns off automatically 1 second after each press.
3	AUTO button	Press to turn auto switching on or off. The button stays lit while auto switching is on.



continued

No.	Name	Function Description
4	PRESET button	Press to step through the saved preset scenes. The light turns off 1 second after each press. You create the scenes in the Web GUI.
5	POWER button	Press and hold for 3 seconds to put the switch into standby, and the button lights. In standby, press it briefly to turn the switch back on, and the light goes out.

SWITCH: REAR PANEL

No.	Name	Function Description
1	LAN port	Connect to a router or network switch. This port gives the USB-C inputs internet access and lets you control the unit from the Web GUI.
2	RESET button	Press and hold for 5 seconds to restore the factory default settings.
3	RS-232 port	RS-232 serial port. Use it to pass RS-232 signals through the system, or to control this product with RS-232 commands.
4	IR IN port	Connect the IR receiver cable here to pass IR signals through the system, or to control this product with the IR remote.
5	IR OUT port	Connect the IR blaster cable here. It sends out the IR signal received at the IR IN port of the HDBaseT receiver.
6	LINE IN port	Analog audio input, balanced or unbalanced, up to 2Vrms. For a balanced connection, wire L+, L-, ground, R+, R-. For an unbalanced connection, wire L+, ground, R+.
7	LINE OUT port	Analog audio output, balanced up to 2Vrms or unbalanced up to 1Vrms. For a balanced connection, wire L+, L-, ground, R+, R-. For an unbalanced connection, wire L+, ground, R+.
8	DANTE port	Dante® network port. Connect it to the network switch that serves your other Dante® devices. It both sends and receives audio.
9	DC 24V port	Power input. Connect the supplied DC 24V power supply.
10	HDBT OUTPUT port	HDBaseT output. Connect it to the receiver's HDBaseT IN port with a CAT6A (F/FTP) cable.



continued

No.	Name	Function Description
11	Data Signal Indicator (Yellow)	On: an HDMI signal with HDCP is present. Flashing: an HDMI signal without HDCP is present. Off: no HDMI signal.
12	Link Signal Indicator (Green)	On: the transmitter and receiver have a good connection. Flashing: the connection is poor. Off: they are not connected.
13	HDMI OUTPUT port	HDMI output. Connect an HDMI display, such as a TV or monitor.
14	HDMI IN 3/4/5 VIDEO INPUTS	HDMI inputs. Connect HDMI sources, such as a DVD or Blu-ray player.
15	HOST 3 port	USB host port. Connect it to a PC.
16	USB-C 1/2 ports	USB-C inputs. Connect USB-C sources here. These ports also charge the connected device at up to 60W.
17	USB DEVICES ports	Two USB ports for a mouse, keyboard, USB camera or other USB devices.

HDBASET RECEIVER PANEL

No.	Name	Function Description
1	Power LED	Lights red when the receiver has power.
2	LINK LED	On: the transmitter and receiver have a good connection. Flashing: the connection is poor. Off: they are not connected.
3	VIDEO LED	On: an HDMI signal with HDCP is present. Flashing: an HDMI signal without HDCP is present. Off: no HDMI signal.
4	HDBT LED	Lights green when HDBaseT IN is the selected input.
5	HDMI LED	Lights green when HDMI IN is the selected input.
6	SELECT button	Press to choose the input.
7	IR IN port	Connect the IR receiver cable. The IR signal goes out of the transmitter's IR OUT port.
8	IR OUT port	Connect the IR blaster cable. It sends out the IR signal received at the transmitter's IR IN port.
9	DEVICES ports	Two USB ports for a whiteboard, mouse, keyboard, USB camera or other USB devices.
10	SERVICE port	Firmware update port.
11	HDBaseT IN port	HDBaseT input. Connect it to the transmitter's HDBT OUTPUT port with a CAT6A (F/FTP) cable.



continued

No.	Name	Function Description
12	Data Signal Indicator (Yellow)	On: an HDMI signal with HDCP is present. Flashing: an HDMI signal without HDCP is present. Off: no HDMI signal.
13	Link Signal Indicator (Green)	On: the transmitter and receiver have a good connection. Flashing: the connection is poor. Off: they are not connected.
14	HDMI IN port	HDMI input. Connect an HDMI source, such as a DVD or Blu-ray player.
15	HOST port	USB host port. Connect it to a PC.
16	HDMI OUT port	HDMI output. Connect an HDMI display, such as a TV or monitor.
17	LINE OUT port	Analog audio output, balanced up to 2Vrms or unbalanced up to 1Vrms. For a balanced connection, wire L+, L-, ground, R+, R-. For an unbalanced connection, wire L+, ground, R+.
18	RS-232 port	RS-232 serial port. Use it to pass RS-232 signals through the system, or to control the receiver with RS-232 commands.
19	DC 24V port	Power input. Connect a DC 24V power supply.

The receiver can also be powered by PoE through its HDBaseT IN port.

5. Certifications

The supplied 24V/8A desktop power supply is CE, FCC and UL certified. The switch meets HDMI 2.0b and HDCP 2.2, and its ESD protection is rated to IEC 61000-4-2.

6. IR cable pin assignment

The illustration shows the pin assignment of the IR receiver cable and the IR blaster cable.

How far the IR receiver picks up the remote depends on the angle:

- Within $\pm 45^\circ$ of the receiver, the remote works at distances up to 16ft (5m).
- Within $\pm 90^\circ$ of the receiver, the remote works at distances up to 26ft (8m).

7. IR remote

NO.	BUTTON	FUNCTION DESCRIPTION
	Power	Turns the switch on, or puts it into standby.
②	VIDEO: USB-C 1 / USB-C 2 / HDMI 3 / HDMI 4 / HDMI 5	In single-screen mode, selects the input. The matching input button on the front panel lights blue.
	VIDEO: previous / next	In single-screen mode, steps backward or forward through the inputs in a loop.
	VIDEO: AUTO	Turns auto switching on or off.
	VIDEO: PRESET	Steps through the saved preset scenes.



continued

NO.	BUTTON	FUNCTION DESCRIPTION
	VIDEO: multiview	Each short press moves to the next layout: Single, PIP, PBP, Triple, Quad, then back to Single.
	VIDEO: RES.	Steps through the output resolutions.
	VIDEO: FREEZE	Freezes or unfreezes the picture.
	VIDEO: RX HDBT	Sets the receiver to take its picture from its HDBaseT IN port.
	VIDEO: RX HDMI	Sets the receiver to take its picture from its HDMI IN port.
	③ AUDIO: USB-C 1 / USB-C 2 / HDMI 3 / HDMI 4 / HDMI 5 / WIN 1 / AIN / DANTE	Selects the audio source for the HDMI and HDBaseT outputs. USB-C 1, USB-C 2, HDMI 3, HDMI 4, HDMI 5 and WIN 1 (Window 1) are all part of the Main In audio group, which covers the HDMI and USB-C inputs.
	AUDIO: Mute	Mutes or unmutes Master Out.
	AUDIO: VOL- / VOL+	Lowers or raises the Master Out volume.

8. Web GUI user guide

You can control the presentation switch from a web browser.

CONNECTING TO THE WEB GUI

Step 1: Find the current IP address. If the switch is not connected to a router, it uses the default address 192.168.0.100 (subnet mask 255.255.0.0, gateway 192.168.0.1). On a network with a DHCP server, it takes an address from the server. To read the current address, send the ASCII command `r ip addr` from a serial command tool. The reply shows the address this unit is using. See *RS-232 control commands* below for how to connect.

Step 2: Connect your PC. Connect the switch's LAN port to your PC with a UTP cable. Give the PC an address on the same network segment as the switch, for example 192.168.0.50 when the switch is on its default address.

Step 3: Open the Web GUI. Type the switch's IP address into your browser. The login page opens.

The Web GUI has two accounts:

USERNAME	PASSWORD
Admin	admin
User	user

The User account gives day-to-day control. The Admin account gives full configuration. You can change both passwords on the Network page.

USER PAGE

Select **User**, enter the password `user` and click **Login**. The User page lets you:

- ① **Preset:** recall a saved preset scene.
- ② **Video:** choose the multiview layout, pick the source for each window, freeze the picture, or mute the audio.
- ③ **Master Out:** set or mute the Master Out volume. You can also turn the HDMI/HDBaseT output, Line Out and Dante Out on or off one by one.



INFORMATION PAGE

Select **Admin**, enter the password `admin` and click **Login**. The Information page opens first. It shows the model name, software version, IP information and the current internal temperature of the switch.

Four controls sit in the upper right corner of every Admin page:

- ① **Master Out volume**: click the volume icons to raise or lower it, or click the mute icon to mute or unmute it. The mute icon turns red while the output is muted.
- ② **User**: shows whether you are logged in as User or Admin.
- ③ **Power icon**: turns the switch on, or puts it into standby.
- ④ **Logout icon**: logs you out and returns to the login page.

STATUS PAGE

The Status page shows each input and output: whether it is connected, its resolution, color space, color depth and HDCP state.

PRESET PAGE

You can save up to five preset scenes.

- ① **Preset Name**: type a name for the scene. Chinese characters are not supported.
- ② **Save**: saves the current settings to the scene.
- ③ **Clear**: clears the saved scene.
- ④ **Recall**: loads the saved scene.

EDID PAGE

- ① Use the drop-down list for each input to choose its EDID from the table below.
- ② To save an EDID to your PC, choose a port from the drop-down list: USB-C 1, USB-C 2, HDMI 3, HDMI 4, HDMI 5, HDMI OUT or HDBT OUT.
- ③ Click **Download** to save that EDID as a .bin file.
- ④ Click **Load EDID** to load your own EDID. Only .bin files are supported.
- ⑤ Click **Save EDID** to store your own EDID on the switch.

NO.	EDID MODE	NO.	EDID MODE
1	Auto	9	1680x1050, Stereo Audio 2.0
2	Copy HDMI OUT	10	1600x1200, Stereo Audio 2.0
3	Copy HDBT OUT	11	1440x900, Stereo Audio 2.0
4	4K2K60_444, Stereo Audio 2.0	12	1360x768, Stereo Audio 2.0
5	4K2K30_444, Stereo Audio 2.0	13	1280x1024, Stereo Audio 2.0
6	1080P, Stereo Audio 2.0	14	1024x768, Stereo Audio 2.0
7	720P, Stereo Audio 2.0	15	User Defined 1
8	1920x1200, Stereo Audio 2.0	16	User Defined 2



VIDEO PAGE

Switch Mode

- ① **Auto Switch:** turns automatic input switching on or off.
- ② **Fallback Input:** sets the input the switch goes to when the current source is disconnected while auto switching is on. Choose USB-C 1, USB-C 2, HDMI 3, HDMI 4, HDMI 5 or Auto. On Auto, the switch moves to the next live signal in this order: USB-C 1, USB-C 2, HDMI 3, HDMI 4, HDMI 5.

Auto switching works only in single-screen mode.

Window layout

- ① **Window layout:** chooses the display mode: 1 Single, 2 PIP, 3 PBP, 4 Triple or 5 Quad.
- ② **Freeze:** freezes the picture.
- ③ **AV Mute:** mutes both audio and video.
- ④ **PIP Position:** places the inset window in PIP mode.
- ⑤ **PIP Size:** sets the size of the inset window in PIP mode.
- ⑥ **Display Mode:** chooses the window arrangement in PBP, Triple and Quad modes.
- ⑦ **Display Aspect:** chooses the window aspect ratio in PBP, Triple and Quad modes.
- ⑧ **Border:** turns window borders on or off and sets their color in PBP, Triple and Quad modes.

Output Setting

- ① **Resolution:** chooses the output resolution from the table below. On Auto, the switch reads the EDID of the connected display and outputs the resolution that suits it.
- ② **HDMI HDCP:** sets the HDCP version on the HDMI output.
- ③ **HDBT HDCP:** sets the HDCP version on the HDBaseT output.

Click **Save** to apply your changes.

NO.	OUTPUT RESOLUTION	NO.	OUTPUT RESOLUTION
1	Auto	9	1920x1080p60
2	3840x2160p60	10	1920x1080p50
3	3840x2160p50	11	1360x768p60
4	4096x2160p60	12	1280x800p60
5	4096x2160p50	13	1280x720p60
6	3840x2160p30	14	1280x720p50
7	3840x2160p25	15	1024x768p60
8	1920x1200p60RB		



AUDIO PAGE

The audio matrix has three inputs and three outputs. The inputs are Main In (the HDMI and USB-C inputs), Line In and Dante In. The outputs are the HDMI/HDBaseT output, Line Out and Dante Out.

Source Select

- ① **Main In:** chooses which HDMI or USB-C input, or Window 1, feeds Main In.
- ② **HDMI/HDBT Out:** chooses the source for the HDMI and HDBaseT outputs.
- ③ **Line Out:** chooses the source for the analog output.
- ④ **Dante Out:** chooses the source for the Dante output.

Click **Save** to apply your changes.

Input Setting. Set the level of Main In, Line In and Dante In, or mute and unmute each one.

Output Setting

- ① **Master Out:** set the level of the HDMI/HDBaseT output, Line Out and Dante Out one at a time, or turn all three on to set them together.
- ② **HDMI/HDBT Out, Line Out and Dante Out:** use the **Mix** list to choose the channel arrangement for each output. You can also set each output's delay and level, or mute it.

GEQ Setting

- ① **Output:** chooses which output to equalize.
- ② **Equalizer:** chooses the EQ curve. **Flat** sets every band to 0dB. **Custom1** to **Custom5** are five curves you can set yourself.

USB PAGE

- ① **Follow Video:** USB follows the selected video source. In multiview mode, USB follows the source in Window 1.
 - ② **Manual Switch:** you choose USB-C 1, USB-C 2 or Host 3 yourself.
 - ③ **Auto Switch:** the switch detects a connected host and moves USB to USB-C 1, USB-C 2 or Host 3 automatically.
- Click **Save** to apply your changes.

RS-232 PAGE

RS-232 Settings

- ① **Local RS-232:** sets the baud rate, data bits, parity and stop bits of the transmitter's RS-232 port.
- ② **Remote RS-232:** sets the same values for the receiver's RS-232 port.

RS-232 Commands (Display Auto Power)

These settings let the switch turn the display on and select its input over RS-232.

- ① **Local/Remote RS-232 Commands:** turns the local and remote commands on or off, and chooses whether they are sent as HEX.
 - ② **Display On/Off Command:** enter the display's power on and power off commands.
 - ③ **Delay 1:** sets how long to wait before the next action, such as sending the Display Input Select command.
 - ④ **Display Input Select:** enter the command that sets the display's input.
 - ⑤ **Delay 2:** sets how long to wait after the Display Input Select command before the next action.
- Click **Save** to apply your changes.

RS-232 Commands (General)

- ① **RS-232:** choose Local or Remote.
 - ② **Command:** turn HEX on or off as needed, then type the command.
 - ③ **Command Ending:** choose the line ending to add.
- Click **Send** to send the command out of the chosen RS-232 port.



NETWORK PAGE

- ① **Network Configuration:** sets the IP mode (DHCP or Static), IP address, subnet mask, gateway, Telnet port and domain name. The page also shows the unit's domain name, which ends in `.local`. On most networks you can type that name into a browser to reach the Web GUI without knowing the IP address.
- ② **Account Passwords:** changes the User and Admin login passwords.
Click **Save** to apply your changes.

SYSTEM PAGE

Display Control

- ① **CEC Command:** turns CEC control on or off.
- ② **Display Auto Power:** when on, the switch controls the display for you. It turns the display on or off, or switches the display's input, over RS-232 or CEC, depending on whether the transmitter is on or in standby and whether it has a signal.
- ③ **Auto Power off Timer:** sets how long the switch waits, after the transmitter goes into standby or loses its signal, before it sends the display-off command.
- ④ **Control Type:** chooses how the display is controlled: CEC, RS-232, or both.

System Utilities

- ① **Front Panel Buttons:** ON means the front panel buttons work. OFF locks them.
- ② **Beep:** turns the beep on or off.
- ③ **USB-C Ethernet Access:** turns network access through the USB-C inputs on or off.
- ④ **PoE Function:** turns PoE on the HDBaseT output on or off.
- ⑤ **Fan Speed:** sets the fan speed.
- ⑥ **Reboot:** restarts the switch.
- ⑦ **Restore Factory Settings:** returns the switch to its factory settings.
- ⑧ **Export Settings:** saves the configuration to a file.
- ⑨ **Import Settings:** loads a saved configuration file.

Firmware Update. You can update the MCU, Web, Scaler or receiver software here. Click **Choose File**, select the update file, then click **Update**. The update is complete when the progress bar reaches 100%.

9. Dante® Web GUI user guide

The switch has a separate built-in Web GUI for its Dante® interface.

CONNECTING TO THE DANTE® WEB GUI

1. Connect the presentation switch and your PC to the same Ethernet switch, each with its own network cable. 2. Set your PC's network connection to **Obtain an IP address automatically**. 3. Open Dante® Controller on the PC and find the Dante® device on the **Routing** page. 4. Click the **Device Info** tab to see the Dante® device's IP address. 5. Type that IP address into your browser to open the Dante® Web GUI login page. 6. Select the username **Admin**, enter the password `admin`, and click **Login**. The Information page opens.

INFORMATION PAGE

This page shows the model name, software version and IP information of the Dante® interface.

NETWORK PAGE

This page sets the IP mode (DHCP or Static), IP address, subnet mask, gateway, Telnet port, TCP port and domain name of the Dante® interface. You can also change the model name it reports. The page shows the Dante® interface's own domain name, which ends in `.local`. On most networks you can type that name into a browser to reach the Dante® Web GUI.

SYSTEM PAGE

- ① **Account Passwords:** enter the old password, then the new password twice, and click **Save**.
- ② **Firmware Update:** updates the Dante® interface firmware and SDK software. Click **Browse**, select the update file, then click **Update**. The update is complete when the progress bar reaches 100%.
- ③ **Dante Control:** click **Reset** to restore the Dante® interface's factory settings, or **Reboot** to restart it.



10. RS-232 control commands

You can also control the switch with ASCII commands over RS-232 or TCP/IP.

To connect over RS-232, wire the switch's RS-232 port to your PC through the supplied 3-pin Phoenix connector and an RS-232 to USB cable. The three pins are TX, RX and Ground. Follow the wiring diagram for the connection. Then open a serial command tool on your PC and send the commands below.

Use these port settings: **115200 baud (default), 8 data bits, 1 stop bit, no parity**. Over the network, send commands to **TCP/IP port 8000**. In the command list, x is the first parameter and y the second.

If the switch replies Please use "s net reboot!" command or repower device to apply new config!, apply the change by sending s net reboot or by power-cycling the unit.

SYSTEM SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
?	List all commands	?	Firmware versions, then the command list. Example versions: MCU 1.1.0 Web 1.1.0 Scaler 20230228-10 FPGA 1.1.0 RX 1.18.02	
help	List all commands	help	Same as ?	
r type	Get the device model	r type	The device's model name	
r status	Get the device's current status	r status	A full status report (see <i>Status report</i> below)	
r fw version	Get the firmware versions	r fw version	MCU 1.1.0 Web 1.1.0 Scaler 20230228-10 FPGA 1.1.0 RX 1.18.02	
s power on	Power on the device	s power on	Power on, System Initializing... Initialization Finished!, then the firmware versions	
s power off	Power off the device	s power off	Power off	
r power	Get the current power state	r power	power on OR power off	
s reboot	Reboot the device	s reboot	Reboot..., System Initializing... Initialization Finished!, then the firmware versions	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s reset</code>	Reset to factory defaults	<code>s reset</code>	Reset to factory defaults, System Initializing... Initialization Finished!, then the firmware versions	
<code>s front button x</code>	Lock or unlock the front panel buttons. x: 0 unlocked; 1 locked	<code>s front button 0</code>	Front button: Unlocked	0
<code>r front button</code>	Get the front panel button lock state	<code>r front button</code>	Front button: Unlocked	
<code>s beep x</code>	Turn the beep off or on. x: 0 off; 1 on	<code>s beep 0</code>	Beep: Off	0
<code>r beep</code>	Get the beep state	<code>r beep</code>	Beep: Off	
<code>s ir x</code>	Turn IR off or on. x: 0 off; 1 on	<code>s ir 1</code>	IR: On	1
<code>r ir</code>	Get the IR state	<code>r ir</code>	IR: Off	
<code>s UsbcAccess Network x</code>	Turn USB-C network access off or on. x: 0 off; 1 on	<code>s UsbcAccess Network 1</code>	USB-C Access Network: On	1
<code>r UsbcAccess Network</code>	Get the USB-C network access state	<code>r UsbcAccess Network</code>	USB-C Access Network: On	
<code>s fan speed x</code>	Set the fan speed. x: 0 Auto; 1 25%; 2 50%; 3 75%; 4 100%	<code>s fan speed 0</code>	Fan Speed: Auto	0
<code>r fan speed</code>	Get the fan speed	<code>r fan speed</code>	Fan Speed: Auto	
<code>r temp</code>	Get the internal temperature	<code>r temp</code>	Temp: 65C	
<code>s poe x</code>	Turn PoE on the HDBaseT port off or on. x: 0 off; 1 on	<code>s poe 1</code>	PoE: On	1
<code>r poe</code>	Get the PoE state of the HDBaseT port	<code>r poe</code>	PoE: On	

INPUT SETTING



COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s input x EDID y	Set an input's EDID. x: 0 all inputs; 1 USB-C 1; 2 USB-C 2; 3 HDMI 3; 4 HDMI 4; 5 HDMI 5. y: EDID mode 1–16 from the EDID table (1 is Auto, which takes the EDID from the HDBaseT output, the HDMI output, or both)	s input 0 EDID 1	One line per input, for example Input USB-C 1 EDID: Auto through Input HDMI 5 EDID: Auto	1
r input x EDID	Get an input's EDID mode. x: 0 all inputs; 1–5 as above	r input 0 EDID	Input USB-C 1 EDID: Auto and so on, one line per input	
r input x EdidData	Get an input's EDID data. x: 0 all inputs; 1–5 as above	r input 0 EdidData	Input USB-C 1 EDID Data: <00 FF FF FF...> and so on, one line per input	

OUTPUT SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s output res x	Set the output resolution. x: 1–15 from the output resolution table (1 is Auto)	s output res 1	Out Resolution: Auto	1
r output res	Get the output resolution	r output res	Out Resolution: Auto	
s output x hdp y	Set output HDCP. x: 0 all outputs; 1 HDMI output; 2 HDBaseT output. y: 1 Auto; 2 HDCP 1.4; 3 HDCP 2.2	s output 0 hdp 1	Output HDMI HDCP: Auto, Output HDBT HDCP: Auto	1
r output x hdp	Get output HDCP. x: 0 all outputs; 1 HDMI; 2 HDBaseT	r output 0 hdp	Output All HDCP: Auto	
s output avmute x	Turn AV mute off or on. x: 0 off; 1 on	s output avmute 1	Output AV Mute: On	0
r output avmute	Get the AV mute state	r output avmute	Output AV Mute: On	
s output freeze x	Turn picture freeze off or on. x: 0 off; 1 on	s output freeze 1	Output Freeze: On	0
r output freeze	Get the freeze state	r output freeze	Output Freeze: On	
s output itc x	Set the output video mode. x: 1 Video mode; 2 PC mode	s output itc 1	Output ITC: Video Mode	1
r output itc	Get the output video mode	r output itc	Output ITC: Video Mode	



AUDIO SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s main in audio x</code>	Set the source for Main In (HDMI/USB-C In). x: 1 Window 1; 2 USB-C 1; 3 USB-C 2; 4 HDMI 3; 5 HDMI 4; 6 HDMI 5	<code>s main in audio 1</code>	Main In Audio: Window 1	1
<code>r main in audio</code>	Get the Main In source	<code>r main in audio</code>	Main In Audio: Window 1	
<code>s output x audio y</code>	Set an output's audio source. x: 0 all outputs; 1 HDMI/HDBT Out; 2 Line Out; 3 Dante Out. y: 1 Main In (HDMI/USB-C In); 2 Line In; 3 Dante In	<code>s output 0 audio 1</code>	Output HDMI/HDBT Audio: Main In (HDMI/USB-C In), then the same for Line and Dante	1
<code>r output x audio</code>	Get an output's audio source. x: 0–3 as above	<code>r output 1 audio</code>	Output HDMI/HDBT Audio: Main In (HDMI/USB-C In)	
<code>s input x audio vol+</code>	Raise an input's level. x: 0 all inputs; 1 Main In (HDMI/USB-C In); 2 Line In; 3 Dante In	<code>s input 1 audio vol+</code>	Input Main In (HDMI/USB-C In) Audio Volume: 50	
<code>s input x audio vol-</code>	Lower an input's level. x: 0–3 as above	<code>s input 1 audio vol-</code>	Input Main In (HDMI/USB-C In) Audio Volume: 50	
<code>s input x audio vol y</code>	Set an input's level. x: 0–3 as above. y: 0–100	<code>s input 1 audio vol 50</code>	Input Main In (HDMI/USB-C In) Audio Volume: 50	50
<code>r input x audio vol</code>	Get an input's level. x: 0–3 as above	<code>r input 1 audio vol</code>	Input Main (HDMI/USB-C In) Audio Volume: 50	
<code>s input x audio mute y</code>	Mute or unmute an input. x: 0–3 as above. y: 0 mute off; 1 mute on	<code>s input 0 audio mute 1</code>	Input Main (HDMI/USB-C In) Audio Mute: On, Input Line Audio Mute: On, Input Dante Audio Mute: On	0
<code>r input x audio mute</code>	Get an input's mute state. x: 0–3 as above	<code>r input 0 audio mute</code>	As above	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s master member x y z</code>	Choose which outputs Master Out controls. x: 0 exclude, 1 include HDMI/HDBT Out. y: 0 exclude, 1 include Line Out. z: 0 exclude, 1 include Dante Out	<code>s master member 1 1 1</code>	Master Member: 111	111
<code>r master member</code>	Get the Master Out members	<code>r master member</code>	Master Member: 111	
<code>s master audio vol+</code>	Raise the Master Out level	<code>s master audio vol+</code>	Master Audio Volume: 50	
<code>s master audio vol-</code>	Lower the Master Out level	<code>s master audio vol-</code>	Master Audio Volume: 50	
<code>s master audio vol x</code>	Set the Master Out level. x: 0–100	<code>s master audio vol 50</code>	Master Audio Volume: 50	50
<code>r master audio vol</code>	Get the Master Out level	<code>r master audio vol</code>	Master Audio Volume: 50	
<code>s master audio mute x</code>	Mute or unmute Master Out. x: 0 mute off; 1 mute on	<code>s master audio mute 1</code>	Master Audio Mute: On	0
<code>r master audio mute</code>	Get the Master Out mute state	<code>r master audio mute</code>	Master Audio Mute: On	
<code>s output x audio vol+</code>	Raise an output's level. x: 0 all outputs; 1 HDMI/HDBT Out; 2 Line Out; 3 Dante Out	<code>s output 1 audio vol+</code>	Output HDMI/HDBT Audio Volume: 50	
<code>s output x audio vol-</code>	Lower an output's level. x: 0–3 as above	<code>s output 1 audio vol-</code>	Output HDMI/HDBT Audio Volume: 50	
<code>s output x audio vol y</code>	Set an output's level. x: 0–3 as above. y: 0–100	<code>s output 1 audio vol 50</code>	Output HDMI/HDBT Audio Volume: 50	50
<code>r output x audio vol</code>	Get an output's level. x: 0–3 as above	<code>r output 1 audio vol</code>	Output HDMI/HDBT Audio Volume: 50	
<code>s output x audio mute y</code>	Mute or unmute an output. x: 0–3 as above. y: 0 mute off; 1 mute on	<code>s output 0 audio mute 1</code>	Output HDMI/HDBT Audio Mute: On, Output Line Audio Mute: On, Output Dante Audio Mute: On	0
<code>r output x audio mute</code>	Get an output's mute state. x: 0–3 as above	<code>r output 0 audio mute</code>	As above	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s output x audio mix y</code>	Set an output's channel mix. x: 0–3 as above. y: 1 Stereo; 2 Left; 3 Right; 4 Left and Right	<code>s output 0 audio mix 1</code>	Output HDMI/HDBT Audio Mix: Stereo, Output Line Audio Mix: Stereo, Output Dante Audio Mix: Stereo	Stereo
<code>r output x audio mix</code>	Get an output's channel mix. x: 0–3 as above	<code>r output 0 audio mix</code>	As above	
<code>s output x audio delay y</code>	Set an output's audio delay. x: 0–3 as above. y: 0–50 milliseconds	<code>s output 0 audio delay 50</code>	Output HDMI/HDBT Audio Delay: 50ms, Output Line Audio Delay: 50ms, Output Dante Audio Delay: 50ms	0
<code>r output x audio delay</code>	Get an output's audio delay. x: 0–3 as above	<code>r output 0 audio delay</code>	As above	
<code>s output x audio eq y val z</code>	Set one band of an output's graphic EQ. x: 0–3 as above. y: band 1–31. z: value 0–20	<code>s output 0 audio eq 1 val 20</code>	Output HDMI/HDBT Audio EQ Index 1 to Value 20, then the same for Line and Dante	
<code>r output x audio eq y val</code>	Get one EQ band of an output. x: 0–3 as above. y: band 1–31	<code>r output 0 audio eq 1 val</code>	As above	
<code>s output x audio eq preset y</code>	Set an output's EQ preset. x: 0–3 as above. y: 1 Flat; 2 Custom1; 3 Custom2; 4 Custom3; 5 Custom4; 6 Custom5	<code>s output 0 audio eq preset 1</code>	Output HDMI/HDBT Audio EQ Preset 1, Output Line Audio EQ Preset 1, Output Dante Audio EQ Preset 1	1
<code>r output x audio eq preset</code>	Get an output's EQ preset. x: 0–3 as above	<code>r output 0 audio eq preset</code>	As above	
<code>s output x audio eq reset</code>	Reset an output's graphic EQ. x: 0–3 as above	<code>s output 0 audio eq reset</code>	Output HDMI/HDBT Audio EQ Reset, Output Line Audio EQ Reset, Output Dante Audio EQ Reset	

SINGLE-SCREEN SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s auto switch x</code>	Turn auto switching off or on. x: 0 off; 1 on	<code>s auto switch 0</code>	Auto Switch: Off	0
<code>r auto switch</code>	Get the auto switching state	<code>r auto switch</code>	Auto Switch: Off	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s input source x	Send an input to the output. x: 1 USB-C 1; 2 USB-C 2; 3 HDMI 3; 4 HDMI 4; 5 HDMI 5	s input source 1	Input Source: USB-C 1	1
r input source	Get the selected input	r input source	Input Source: USB-C 1	
s fallback input x	Set the fallback input. x: 0 Next Input; 1 USB-C 1; 2 USB-C 2; 3 HDMI 3; 4 HDMI 4; 5 HDMI 5	s fallback input 0	Fallback Input: Next Input	0
r fallback input	Get the fallback input	r fallback input	Fallback Input: Next Input	

MULTIVIEW SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s multiview x	Set the display mode. x: 1 Single; 2 PIP; 3 PBP; 4 Triple; 5 Quad	s multiview 1	Multiview: Single	1
r multiview	Get the display mode	r multiview	Multiview: Single	
s window x in y	Set a window's source. x: 0 all windows; 1–4 Window 1–4. y: 1 USB-C 1; 2 USB-C 2; 3 HDMI 3; 4 HDMI 4; 5 HDMI 5	s window 1 in 1	Window 1 in USB-C 1	
r window x in	Get a window's source. x: 0 all windows; 1–4 Window 1–4	r window 0 in	Window 1 in USB-C 1, Window 2 in USB-C 2, Window 3 in HDMI 3, Window 4 in HDMI 4	
s PIP position x	Set the PIP window position. x: 1 Left Top; 2 Left Bottom; 3 Right Top; 4 Right Bottom	s PIP position 4	PIP Position: Right Bottom	4
r PIP position	Get the PIP window position	r PIP position	PIP Position: Right Bottom	
s PIP size x	Set the PIP window size. x: 1 Small; 2 Medium; 3 Large	s PIP size 3	PIP Size: Large	3
r PIP size	Get the PIP window size	r PIP size	PIP Size: Large	
s PBP mode x	Set the PBP arrangement. x: 1 PBP Mode 1; 2 PBP Mode 2	s PBP mode 1	PBP Mode: Mode 1	1



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>r PBP mode</code>	Get the PBP arrangement	<code>r PBP mode</code>	PBP Mode: Mode 1	
<code>s PBP aspect x</code>	Set the PBP aspect ratio. x: 1 Full screen; 2 16:9	<code>s PBP aspect 1</code>	PBP Aspect: Full Screen	1
<code>r PBP aspect</code>	Get the PBP aspect ratio	<code>r PBP aspect</code>	PBP Aspect: Full Screen	
<code>s triple mode x</code>	Set the Triple arrangement. x: 1 Triple Mode 1; 2 Triple Mode 2	<code>s triple mode 1</code>	Triple Mode: Mode 1	1
<code>r triple mode</code>	Get the Triple arrangement	<code>r triple mode</code>	Triple Mode: Mode 1	
<code>s triple aspect x</code>	Set the Triple aspect ratio. x: 1 Full screen; 2 16:9	<code>s triple aspect 1</code>	Triple Aspect: Full Screen	1
<code>r triple aspect</code>	Get the Triple aspect ratio	<code>r triple aspect</code>	Triple Aspect: Full Screen	
<code>s quad mode x</code>	Set the Quad arrangement. x: 1 Quad Mode 1; 2 Quad Mode 2	<code>s quad mode 1</code>	Quad Mode: Mode 1	1
<code>r quad mode</code>	Get the Quad arrangement	<code>r quad mode</code>	Quad Mode: Mode 1	
<code>s quad aspect x</code>	Set the Quad aspect ratio. x: 1 Full screen; 2 16:9	<code>s quad aspect 1</code>	Quad Aspect: Full Screen	1
<code>r quad aspect</code>	Get the Quad aspect ratio	<code>r quad aspect</code>	Quad Aspect: Full Screen	
<code>s window x border y</code>	Set a window's border. x: 0 all; 1–4 Window 1–4. y: 0 Off; 1 Black; 2 Red; 3 Green; 4 Blue; 5 Yellow; 6 Magenta; 7 Cyan; 8 White; 9 Gray	<code>s window 0 border 0</code>	One line per window, for example Window 1 Border: Off, Window 2 Border: Yellow	0,0
<code>r window x border</code>	Get a window's border. x: 0 all; 1–4 Window 1–4	<code>r window 0 border</code>	As above	

RECEIVER (RX) SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s rx input x</code>	Set the receiver's input. x: 1 HDBT IN; 2 HDMI IN	<code>s rx input 1</code>	RX Input: HDBT. If the receiver is not ready, the reply is Error, RX not ready!	1
<code>r rx input</code>	Get the receiver's input	<code>r rx input</code>	RX Input: HDBT	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>r rx hdmi5v</code>	Get the 5V state of the receiver's HDMI input	<code>r rx hdmi5v</code>	RX HDMI 5V: 1	
<code>r rx host5v</code>	Get the 5V state of the receiver's USB host port	<code>r rx host5v</code>	RX Host 5V: 1	
<code>s rx auto switch mode x</code>	Set how the receiver detects a source for auto switching. x: 1 TMDS; 2 5V	<code>s rx auto switch mode 1</code>	RX Auto Switch Mode: TMDS	1
<code>r rx auto switch mode</code>	Get the receiver's detection mode	<code>r rx auto switch mode</code>	RX Auto Switch Mode: TMDS	
<code>s rx auto switch x</code>	Turn receiver auto switching off or on. x: 0 off; 1 on	<code>s rx auto switch 1</code>	RX Auto Switch: On	1
<code>r rx auto switch</code>	Get the receiver's auto switching state	<code>r rx auto switch</code>	RX Auto Switch: On	
<code>s rx usbpower x</code>	Set 5V power on the receiver's two USB device ports. x: 0 Force off; 1 Force on; 2 Follow	<code>s rx usbpower 1</code>	RX UsbPower: Force On	2
<code>r rx usbpower</code>	Get the receiver's USB port power mode	<code>r rx usbpower</code>	RX UsbPower: Force On	

CEC SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s cec power on</code>	Send the CEC power on command	<code>s cec power on</code>	CEC Power On	
<code>s cec power off</code>	Send the CEC power off command	<code>s cec power off</code>	CEC Power Off	
<code>s auto power feature x</code>	Turn Display Auto Power off or on. x: 0 off; 1 on	<code>s auto power feature 1</code>	Auto Power Feature: On	1
<code>r auto power feature</code>	Get the Display Auto Power state	<code>r auto power feature</code>	Auto Power Feature: On	
<code>s auto power off timer x</code>	Set how long the switch waits before sending the display-off command over CEC or RS-232. x: 1 5 sec; 2 10 sec; 3 30 sec; 4 1 min; 5 5 min; 6 10 min	<code>s auto power off timer 4</code>	Auto Power Off Timer: 1 min	4
<code>r auto power off timer</code>	Get the auto power off timer	<code>r auto power off timer</code>	Auto Power Off Timer: 1 min	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s auto power control x</code>	Set how Display Auto Power controls the display. x: 1 CEC; 2 RS-232; 3 CEC and RS-232	<code>s auto power control 1</code>	Auto Power Control: CEC	1
<code>r auto power control</code>	Get the Display Auto Power control type	<code>r auto power control</code>	Auto Power Control: CEC	

USB SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>s UsbSwitchMode x</code>	Set the USB switching mode. x: 1 Auto (detects USB 5V, then switches); 2 Manual; 3 Follow video (HDMI 3 is bound to USB Host 3)	<code>s UsbSwitchMode 1</code>	UsbSwitchMode: Auto mode	1
<code>r UsbSwitchMode</code>	Get the USB switching mode	<code>r UsbSwitchMode</code>	UsbSwitchMode: Auto mode	
<code>s UsbManual x</code>	Switch USB by hand. x: 1 USB-C 1; 2 USB-C 2; 3 USB Host 3	<code>s UsbManual 3</code>	UsbManual: USB Host 3	1
<code>r UsbSwitchStatus</code>	Get the current USB connection	<code>r UsbSwitchStatus</code>	UsbSwitchStatus: USB-C 1	
<code>s UsbPower x</code>	Set 5V power on the transmitter's two USB device ports. x: 0 Force off; 1 Force on; 2 Follow	<code>s UsbPower 1</code>	UsbPower: Force on	2
<code>r UsbPower</code>	Get the transmitter's USB port power mode	<code>r UsbPower</code>	UsbPower: Force on	

RS-232 SETTING



COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s serial x setting y	Set a serial port's format. x: 0 all RS-232 (local and HDBaseT); 1 local RS-232; 2 HDBaseT RS-232. y: written as baud-databits parity stopbits, for example 115200-8n1. Baud: 115200, 57600, 56000, 38400, 19200, 9600, 4800 or 2400. Data bits: 7 or 8. Parity: n (none), o (odd) or e (even). Stop bits: 1 or 2	s serial 0 setting 115200-8n1	Local RS-232: 115200-8n1, HDBT RS-232: 115200-8n1	115200-8n1
r serial x setting	Get a serial port's format. x: 0-2 as above	r serial 0 setting	As above	
s serial x enable y	Turn a serial port off or on. x: 0-2 as above. y: 0 off; 1 on	s serial 0 enable 1	Local RS-232: on, HDBT RS-232: on	on
r serial x enable	Get a serial port's on/off state. x: 0-2 as above	r serial 0 enable	As above	
s serial x HEX/ASCII power on <y1> delay1 <y2> input <y3> delay2 <y4>	Store the display power-on sequence. x: 0 TX and RX RS-232; 1 TX RS-232; 2 RX RS-232. Choose HEX or ASCII. y1 is the power on command; y2 is a delay of 0-999 sec; y3 is the input select command; y4 is a delay of 0-999 sec. You can leave out everything after y1.	s serial 1 ASCII power on <PWRON> delay1 <10> input <INPUT1> delay2 <10>	Set TX RS-232 ASCII power on <PWRON> delay1 <10> input <INPUT1> delay2 <10>	
r serial x power on command	Get the stored power-on sequence. x: 0-2 as above	r serial 0 power on command	TX RS-232 ASCII power on <PWRON> delay1 <10> input <INPUT1> delay2 <10>, then the same for RX	
s serial x HEX/ASCII power off <y1> delay <y2>	Store the display power-off command. x: 0-2 as above. Choose HEX or ASCII. y1 is the power off command; y2 is a delay of 0-999 sec and can be left out	s serial 1 ASCII power off <PWROFF> delay <1>	Set TX RS-232 ASCII power off <PWROFF> delay <1>	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
r serial x power off command	Get the stored power-off command. x: 0–2 as above	r serial 0 power off command	TX RS-232 ASCII power off <PWROFF> delay <1>, RX RS-232 HEX power off <66 77 88 99> delay <1>	
s serial x HEX/ASCII command <y> end z	Send a command out of a serial port. x: 0–2 as above. Choose HEX or ASCII. y is the command. z is the line ending: 0 none; 1 <CR>; 2 <LF>; 3 <CR><LF>	s serial 1 ASCII command <SET INPUT1> end 0	Set TX RS-232 ASCII command <SET INPUT1>	

More examples for the serial commands:

EXAMPLE	FEEDBACK
s serial 2 ASCII power on <PWRON>	Set RX RS-232 ASCII power on <PWRON>
s serial 2 HEX power on <11 22 33 44> delay1 <10> input <55>	Set RX RS-232 HEX power on <11 22 33 44> delay1 <10> input <55>
s serial 2 HEX power off <66 77 88 99>	Set RX RS-232 HEX power off <66 77 88 99>
s serial 2 HEX command <66 77 88 99> end 3	Set RX RS-232 HEX command <66 77 88 99>

PRESET SETTING

Presets save every setting except the network settings.

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s preset save x	Save the current settings to a preset. x: 1–5	s preset save 1	Preset Save: Preset 1	
s preset recall x	Load a preset. x: 1–5	s preset recall 1	Preset Recall: Preset 1	
s preset clear x	Clear a preset. x: 1–5	s preset clear 1	Preset Clear: Preset 1	
s preset x name y	Name a preset. x: 1–5. y: up to 16 characters	s preset 1 name MeetingRoom 1	Preset 1 Name: MeetingRoom 1	
r preset x name	Get a preset's name. x: 1–5	r preset 1 name	Preset 1 Name: MeetingRoom 1	



NETWORK SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
<code>r ipconfig</code>	Get the current IP configuration	<code>r ipconfig</code>	IP Mode: DHCP IP: 192.168.62.106 Subnet Mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 Telnet port: 23 MAC: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1)	Static IP 192.168.0.100, mask 255.255.0.0, gateway 192.168.0.1
<code>r mac addr</code>	Get the MAC address	<code>r mac addr</code>	MAC: 6C:DF:FB:0C:B3:8E	
<code>s ip mode x</code>	Set static IP or DHCP. x: 0 Static; 1 DHCP	<code>s ip mode 0</code>	IP mode: Static (Please use "s net reboot!" command or repower device to apply new config!)	1
<code>r ip mode</code>	Get the IP mode	<code>r ip mode</code>	IP mode: DHCP	
<code>s ip addr xxx.xxx.xxx.xxx</code>	Set the IP address. Turn DHCP off first.	<code>s ip addr 192.168.1.100</code>	IP address: 192.168.1.100 (Please use "s net reboot!" command or repower device to apply new config!). With DHCP on, the reply is DHCP on, Device can't config static address, set DHCP off first.	
<code>r ip addr</code>	Get the IP address	<code>r ip addr</code>	IP: 192.168.62.106	



continued

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s subnet xxx.xxx.xxx.xxx	Set the subnet mask. Turn DHCP off first.	s subnet 255.255.255.0	Subnet Mask: 255.255.255.0 (Please use "s net reboot!" command or repower device to apply new config!). With DHCP on, the reply is DHCP on, Device can't config subnet mask, set DHCP off first.	
r subnet	Get the subnet mask	r subnet	Subnet Mask: 255.255.255.0	
s gateway xxx.xxx.xxx.xxx	Set the gateway. Turn DHCP off first.	s gateway 192.168.1.1	Gateway: 192.168.1.1 (Please use "s net reboot!" command or repower device to apply new config!). With DHCP on, the reply is DHCP on, Device can't config gateway, set DHCP off first.	
r gateway	Get the gateway	r gateway	Gateway: 192.168.1.1	
s tcp/ip port x	Set the TCP/IP control port. x: 1–65535	s tcp/ip port 8000	TCP/IP port: 8000	8000
r tcp/ip port	Get the TCP/IP control port	r tcp/ip port	TCP/IP port: 8000	
s telnet port x	Set the Telnet port. x: 1– 65535	s telnet port 23	Telnet port: 23	23
r telnet port	Get the Telnet port	r telnet port	Telnet port: 23	
s net reboot	Restart the network module	s net reboot	Search for IP, Please wait ...!, then the full IP configuration in the same form as r ipconfig	



PASSWORD SETTING

COMMAND CODE	FUNCTION DESCRIPTION	EXAMPLE	FEEDBACK	DEFAULT SETTING
s admin password x	Set the Admin login password. x: up to 16 characters	s admin password admin	admin password: admin	admin
r admin password	Get the Admin login password	r admin password	admin password: admin	
s user password x	Set the User login password. x: up to 16 characters	s user password user	user password: user	user
r user password	Get the User login password	r user password	user password: user	

STATUS REPORT

The r status command returns a report like the example below. It starts with the firmware versions:

`` Status Info TX 1.00.14 Web 2.00.07 Scaler 20240126-15 FPGA 3.00.01 RX 1.18.02 ``

Outputs:

OUTPUT	CABLE	RESOLUTION	COLORSPACE	COLORDEPTH	HDCP	AVMUTE	SOURCE
HDMI OUT	Connected	3840x2160p 60Hz	RGB	8bit	2.2	On	1/2/3/4
HDBT OUT	Connected	3840x2160p 60Hz	RGB	8bit	2.2	On	1/2/3/4

Inputs:

INPUT	CABLE	RESOLUTION	COLORSPACE	COLORDEPTH	HDCP	EDID
USB-C 1	Connected	1920x1080p60	RGB	8bit	1.4	AUTO
USB-C 2	Connected	1920x1080p60	RGB	8bit	1.4	4K2K60_444, Stereo Audio 2.0
HDMI 3	Connected	3840x2160p60	RGB	8bit	2.2	AUTO
HDMI 4	Connected	3840x2160p60	YUV 4:4:4	8bit	Off	User Defined 2
HDMI 5	Disconnect	None	None	None	None	AUTO

System:

POWER	POE	KEY	BEEP	IR	USBCACCESS	TEMP(C)	BAUD
On	On	Off	On	On	On	50%	41
							115200

Network:

TCP/IP		TELNET	MAC	
8000		23	6C:DF:FB:01:23:13	
DHCP	IP		GATEWAY	SUBNETMASK
On	192.168.062.111		192.168.062.001	255.255.000.000
(Static:	192.168.000.100		192.168.000.001	255.255.000.000)

11. Connection diagram

The connection diagram shows a typical system: sources connected to the switch, the switch connected to a local display, and the HDBaseT receiver connected to a remote display over a single CAT6A cable.

HDMI, the HDMI High-Definition Multimedia Interface and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries. Dante® is a registered trademark of Audinate.

12. Category

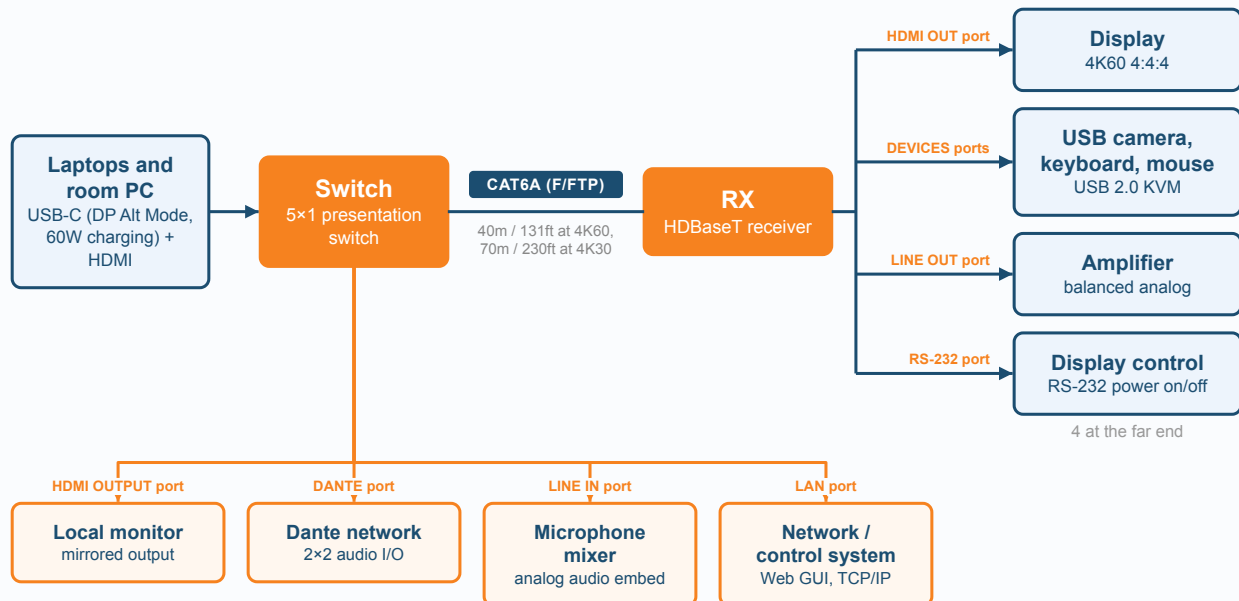
A category and subcategory still need to be chosen. They were not picked here; a person should choose from the checklist options.



13. Application Example

TYPICAL SETUP

5×1 HDMI/USB-C Seamless Presentation Switch with HDBaseT 3.0 Out — 4K60 to 40m, 4K30 to 70m



How it works: Three inputs carry USB to the host: **USB-C 1, USB-C 2, and HDMI 3 with its USB-B port**. HDMI 1 and HDMI 2 carry video and audio only. The receiver includes **1× HDMI, 1× USB-B for PC input, 1× HDMI output, and 2× USB-A extension ports** for a keyboard, mouse, USB camera and other devices, giving **USB 2.0 extension and KVM**. USB devices at the receiver run at up to 350Mbps to a host at the switcher and up to 480Mbps to a PC on the receiver's USB-B port. The switch supports **single-screen and Multiview modes** (Single, PIP, PBP, Triple, Quad). Switching is seamless in single-screen mode and fast switching in Multiview. The **HDMI and HDBaseT outputs are mirrored**: both displays show the same picture. It features **1× analog audio input, 1× analog audio output, Dante® 2×2 audio I/O**, analog audio embedding/de-embedding, and a built-in **3×3 audio matrix with DSP**. Audio is **LPCM 2.0 at 48kHz**. The device can be controlled via **front panel, bi-directional IR, RS-232, RS-232 pass-through, TCP/IP, Web GUI, and Dante Controller**. The receiver can be powered either by a **24V DC adapter or PoE over HDBaseT**.

14. Troubleshooting

Q: The remote display works at 1080p or 4K30 but breaks up or drops out at 4K60. What should I check?

A: Check the cable run first: 4K60 is rated to 131ft (40m) on a single CAT6A F/FTP cable, while 1080p and 4K30 reach 230ft (70m). If the run is longer than 40m, set the output to 3840x2160p30 or a lower resolution.



Q: Audio from the analog outputs is out of sync with the picture. How do I correct it?

A: The analog LINE OUT on both the transmitter and the receiver has an adjustable audio output sync delay of 0 to 50ms. Increase it until the sound matches the picture. For Dante audio, the latency setting can be chosen from 2, 3, 4, 5 or 10ms.

Q: Analog audio sounds distorted or overloads the next device. What should I check?

A: First confirm the signal into LINE IN does not go above 8.2dBu (2Vrms). Then check how the output is wired: a balanced LINE OUT reaches 8.2dBu (2Vrms) but an unbalanced one reaches only 2.2dBu (1Vrms), so set the receiving device's input level to suit.

Q: IR commands are not reaching the switch or the device it controls. What should I check?

A: Confirm the supplied wideband IR receiver cable is plugged into IR IN and the IR blaster cable into IR OUT, both 3.5mm mini-jacks. Also check that the remote's carrier frequency is within the 20kHz to 60kHz wideband range.

Need help? — For additional support, visit kanexpro.com/support, or scan the QR code below for the product page.

15. Installation FAQ

Q: How is a typical SW-5X1PS-70M system wired?

A: Connect up to 3 HDMI sources and 2 USB-C laptops to the transmitter, then connect a local display to its HDMI OUTPUT. Run a single CAT6A (F/FTP) cable from the HDBT OUTPUT to the receiver's HDBaseT IN, and connect the remote display to the receiver's HDMI OUT.

Q: Which connectors are used for analog audio and RS-232, and are the mating plugs supplied?

A: LINE IN and LINE OUT on the transmitter use 5-pin 3.5mm Phoenix connectors, the receiver LINE OUT is also a 5-pin Phoenix connector, and RS-232 on both units uses a 3-pin 3.5mm Phoenix connector. The box includes 3x 5-pin and 2x 3-pin male Phoenix plugs.

Q: How are the IR connections made?

A: The transmitter and the receiver each have an IR IN and an IR OUT on 3.5mm stereo mini-jacks. A 4.9ft (1.5m) IR blaster cable and a 4.9ft (1.5m) wideband IR receiver cable are included, and the IR path is 12Vp-p, wideband 20kHz to 60kHz.

Q: Which network ports does the transmitter have?

A: The transmitter has a LAN RJ45 port, which handles control and the 100Mbps network connection shared with the USB-C inputs. It also has a separate DANTE RJ45 port that connects to the Dante audio network.

Q: Which mounting hardware comes with the switch?

A: The box includes 4 mounting ears and 8 machine screws. The transmitter measures 8.66 x 5.91 x 1.73 in (220 x 150 x 44mm) and the receiver measures 5.51 x 4.13 x 0.85 in (140 x 105 x 21.5mm).

16. Integration FAQ

Q: Which control protocols can a third-party control system use with the SW-5X1PS-70M?

A: A control system can drive the switch over RS-232 through the 3-pin Phoenix port, or over TCP/IP through the LAN RJ45 port. The switch can also be controlled from its front panel buttons, the IR remote and the Web GUI.

Q: Can the switch turn the displays on and off?

A: Yes. It can turn external devices on and off over CEC or RS-232, so the display can follow the system without a separate controller.

Q: Can a USB-C laptop get a wired network connection through the switch?

A: Yes. Each USB-C input carries 100M Ethernet as well as DisplayPort Alt Mode audio and video, USB 2.0 and 60W charging. The network connection runs at 100Mbps through the transmitter's LAN port.

Q: Can USB devices at the display end, such as a camera or keyboard, work with the laptop at the table?

A: Yes. USB 2.0 is extended over the HDBaseT link, so devices plugged into the receiver's USB DEVICES ports reach the transmitter's USB host or USB-C laptop at 350Mbps. Devices on the transmitter's own USB DEVICES ports run at 480Mbps.

Q: How does the switch join a Dante audio system?

A: Connect the DANTE RJ45 port to the Dante network. The switch then sends and receives 2 channels of Dante audio, and Dante audio can be embedded into the HDMI/HDBaseT output or de-embedded from the selected source.

