

SUPERIO

XD SERIES

X-DOCK PRO
CD-321EA-PRO



	Contents	Page
01.	Product Overview.....	3
02.	Main Features.....	3
03.	Before You Connect.....	4
04.	Front Panel.....	5
05.	Rear Panel.....	6
06.	Installation and Connection.....	7
07.	Display Operation.....	8
08.	EDID Settings.....	9
09.	USB Peripherals.....	9
10.	USB Power Modes.....	10
11.	Host Charging.....	10
12.	Network Connection.....	10
13.	Audio Operation.....	11
14.	Troubleshooting.....	11-13
15.	Technical Specifications.....	13-14



superio

01 | PRODUCT OVERVIEW

The SUPERIO CD-321EA-PRO connects a compatible computer to HDMI displays, USB peripherals, a wired network and an audio system through a single USB-C host connection.

The docking station provides two USB-A ports and one USB-C port for peripheral devices, with data transfer speeds of up to 5Gbps. It also features advanced USB device power management with two selectable power modes.

CD-321EA-PRO offers easy EDID management for improved compatibility between source devices and displays. The integrated RJ45 Ethernet port provides network connectivity to the connected USB-C host, while USB-C Power Delivery allows simultaneous charging when a compatible power supply is connected.

The docking station provides two HDMI outputs, two USB-A device ports, one USB-C device port, Gigabit Ethernet and an audio output. USB Power Delivery allows the connected computer to charge through the same USB-C host cable.

On compatible Windows computers, Multi-Stream Transport (MST) supports two independent display signals at resolutions up to 3840 × 2160 at 60 Hz. On macOS, the docking station supports Single-Stream Transport (SST) and display mirroring.

02 | MAIN FEATURES

- Two HDMI 2.0 outputs.
- Two independent 4K60 display signals via MST on compatible Windows computers.
- DisplayPort 1.4a input with Display Stream Compression (DSC) support.
- HDR10 support.
- HDCP 2.2 with backward compatibility with HDCP 1.4.
- Two USB-A device ports and one USB-C device port, each supporting up to 5 Gbps.
- Gigabit Ethernet supporting 10/100/1000 Mbps.
- Analogue stereo audio output and S/PDIF support.
- Audio resolution up to 24-bit/192 kHz.
- USB Power Delivery 3.0 with host charging up to 100 W, depending on the power supply and operating load.
- Selectable AUTO and ON power modes for USB peripherals.
- Selectable PASS and fixed 1080P EDID modes.
- Plug-and-play operation on Windows and macOS without additional driver installation.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

03 | BEFORE YOU CONNECT

Host computer

Use a computer with a USB-C port that supports DisplayPort Alt Mode for video output.

For two independent external display signals, the computer must support MST. The operating system, graphics hardware and selected display settings must support the intended display configuration.

The computer must support USB Power Delivery charging through its USB-C port to receive charging power from the docking station.

USB-C host cable

Use a USB-C cable suitable for video, USB data and the required charging power. A charging-only cable cannot provide the full functionality of the docking station.

HDMI displays and cables

Use displays and HDMI cables suitable for the intended resolution, refresh rate and colour format.

Power supply

Connect the included USB-C PD power supply to the rear-panel port marked "100W PD". Available host charging power depends on the power supply and the load connected to the docking station.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

04 | FRONT PANEL

1. USB-C INPUT

Connect the host computer to this port.

This connection carries video, USB data and charging power between the computer and the docking station.

2. POWER indicator

Front-panel power indicator.

3. PD Charging status indicators

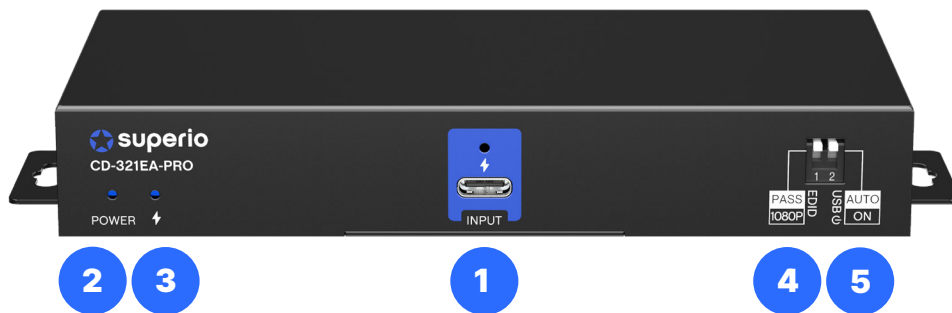
4. EDID switch

Selects PASS or 1080P mode.

5. USB power switch

Selects AUTO or ON mode for the USB device ports.

Refer to the printed labels beside the switches when selecting a mode.



ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

05 | REAR PANEL**1. HDMI OUTPUT 1**

Connect the first HDMI display.

2. HDMI OUTPUT 2

Connect the second HDMI display.

3. USB DEVICE 1

USB-A connection for a peripheral such as a camera, keyboard or conference speakerphone. Supports data rates up to 5 Gbps.

4. USB DEVICE 2

USB-A connection for a peripheral. Supports data rates up to 5 Gbps.

5. USB DEVICE 3

USB-C connection for a peripheral. Supports data rates up to 5 Gbps.

The three USB device ports share a maximum total output current of 3 A.

6. ETHERNET

Connect to a wired network. Supports 10, 100 and 1000 Mbps Ethernet.

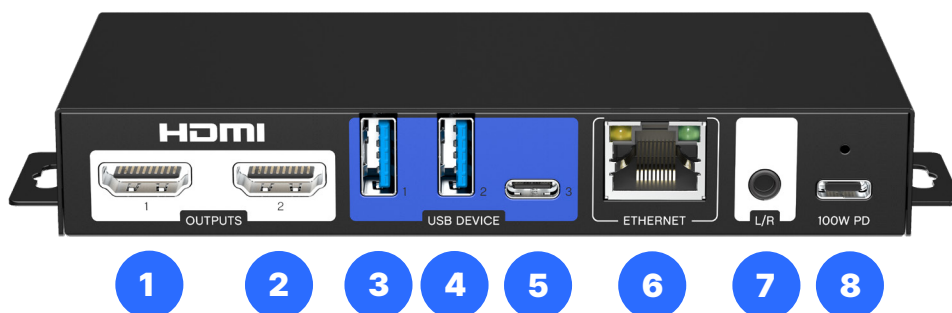
L/R audio output

Connect an analogue stereo audio system using the 3.5 mm connector. The docking station also supports S/PDIF digital audio.

100W PD

Connect the external USB-C PD power supply.

This is the power supply connection. Connect the computer to the front-panel INPUT port.



ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

06 | INSTALLATION AND CONNECTION

1. Position the docking station

Place the unit where its connections remain accessible and its ventilation openings are unobstructed.

2. Connect the displays

Connect the displays to HDMI OUTPUT 1 and HDMI OUTPUT 2 as required.

3. Connect USB peripherals

Connect USB devices to the rear-panel USB-A or USB-C device ports.

4. Connect the network

Connect the ETHERNET port to a network switch or other suitable network connection.

5. Connect external audio

If required, connect the L/R output to an analogue audio input on active speakers, an amplifier or another audio device.

6. Connect the power supply

Connect the USB-C PD power supply to the rear-panel 100W PD port.

7. Connect the host computer

Connect the computer to the front-panel USB-C INPUT.

8. Configure the computer

Select the required display arrangement, resolution, refresh rate and audio output in the computer's settings.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

07 | DISPLAY OPERATION

Windows

On a compatible Windows computer, MST allows the two HDMI outputs to carry independent display signals.

Open the Windows display settings and select the required arrangement. Select extended desktop operation to use the external displays as separate desktop areas.

The docking station supports simultaneous output of two independent 3840 × 2160 signals at 60 Hz with RGB or YCbCr 4:4:4 and 8-bit colour.

macOS

The docking station supports SST and display mirroring on macOS. MST-based operation with two independent external display signals is not supported.

Connecting two HDMI displays does not provide two independent extended desktops through this docking station on macOS.

Single-display and mirror operation

Mirror mode supports resolutions up to 3840 × 2160 at 60 Hz.

Resolution and refresh rate

Available display modes depend on the capabilities of the computer, displays and cables, as well as the selected EDID mode.

Selecting the fixed 1080P EDID mode limits the advertised display mode to 1080p at 60 Hz.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

08 | EDID SETTINGS

EDID is the information used by the video source to identify supported display and audio capabilities.

The front-panel EDID switch provides two settings.

PASS

Selects EDID pass-through mode. This mode does not combine the EDID information from both connected displays.

1080P

Presents a fixed EDID with 1920 × 1080 resolution at 60 Hz and two-channel audio.

Use this setting when the installation requires a fixed 1080p60 display mode.

Select PASS when configuring a higher-resolution display mode.

09 | USB PERIPHERALS

The docking station provides three USB device ports:

- USB DEVICE 1: USB-A.
- USB DEVICE 2: USB-A.
- USB DEVICE 3: USB-C.

Each port supports data rates up to 5 Gbps. Actual transfer performance depends on the host connection and the connected devices.

The three ports share a total power budget of 5 V/3 A. The 3 A limit applies to all three ports combined, not to three simultaneous 3 A loads.

A USB peripheral connected to a powered port still requires an active host connection for normal USB data communication.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

10 | USB POWER MODES

AUTO

USB device-port power follows the active host input.

When the host computer is disconnected, power to the USB device ports is switched off.

ON

USB device-port power remains on whenever the docking station has external power, including when the host computer is disconnected.

The AUTO/ON function controls peripheral power. It does not act as a USB data switch.

11 | HOST CHARGING

The docking station supports USB Power Delivery 3.0 and is backward compatible with earlier PD versions.

The maximum supported host charging level is 100 W at 20 V/5 A. Available charging power depends on the connected power supply and the operating load.

With video active and the USB device ports drawing their full combined load of 5 V/3 A, 80 W is available for host charging.

Charging performance also depends on the computer's charging requirements and the USB-C cable.

The rear-panel "100W PD" marking indicates the PD power connection. It does not mean that 100 W is continuously available to the computer under every operating condition.

12 | NETWORK CONNECTION

Connect the ETHERNET port to the wired network.

Supported connection speeds are:

- 10 Mbps.
- 100 Mbps.
- 1000 Mbps.

The Ethernet controller is RTL8153BvB.

Wake-on-LAN, PXE/network boot and MAC address pass-through are supported at controller level. Their availability in a particular installation depends on the computer and its system support.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

13 | AUDIO OPERATION

The docking station extracts audio from the USB-C/DisplayPort signal.

For analogue audio, connect the 3.5 mm L/R output to an appropriate stereo line input on the external audio system.

Select the appropriate display-audio output in the computer's sound settings. Output volume is controlled from the host computer.

The docking station supports audio resolution up to 24-bit/192 kHz and also supports S/PDIF digital audio.

USB audio devices

A USB headset or conference speakerphone connected to a USB device port operates as a separate USB audio device.

Select the required playback and recording device in the operating system or conferencing application. Connecting an analogue audio system and a USB audio device does not automatically enable simultaneous playback through both.

14 | TROUBLESHOOTING

No image on either display

- Check that the computer is connected to the front-panel USB-C INPUT.
- Confirm that the computer's USB-C port supports DisplayPort Alt Mode.
- Check that the host cable supports video and data.
- Check the HDMI connections and select the correct input on each display.
- Check the computer's display settings.
- Test with one display connected.
- If necessary, select the fixed 1080P EDID mode and test again.

Only 1080p is available

- Check whether the EDID switch is set to 1080P.
- Select PASS for higher-resolution operation.
- Check the supported modes of the computer, display and cables.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

Two displays show the same image

- On Windows, select extended desktop operation in the display settings and confirm MST support.
- On macOS, two independent external display signals via MST are not supported by this docking station.

4K at 60 Hz is unavailable

- Check that the computer and display support the requested mode.
- Check the USB-C and HDMI cables.
- Confirm that the EDID switch is not set to 1080P.
- Check the selected resolution and refresh rate in the computer's display settings.

A USB peripheral is not detected

- Check the host connection and the peripheral cable.
- Confirm that the host cable supports USB data.
- Test the peripheral on another USB device port.
- Check that the combined power demand of the connected peripherals does not exceed 3 A.
- In AUTO mode, confirm that an active host input is present.

USB peripherals lose power when the computer is disconnected

- This is the expected behaviour in AUTO mode.
- Select ON if peripheral power must remain available while the docking station has external power.

The computer does not charge

- Check that the PD power supply is connected to the rear-panel 100W PD port.
- Confirm that the computer supports USB-C PD charging.
- Check the power supply and the charging capability of the host cable.

The computer charges more slowly than expected

- Available charging power depends on the power supply and connected load.
- With video active and a full 5 V/3 A USB peripheral load, 80 W is available for host charging.
- Check the charging requirements of the computer.

No wired network connection

- Check the Ethernet cable and network connection.
- Confirm that the host computer is connected to the docking station.
- Check the network adapter and network settings in the operating system.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

No sound from the analogue output

- Check the connection from L/R to the external audio system.
- Select the appropriate display-audio output on the computer.
- Check the computer's volume and mute settings.
- Check the input selection and volume on the external audio system.
- If using a USB speakerphone, select that device separately in the operating system or application.

15 | TECHNICAL SPECIFICATIONS**HOST INTERFACE**

Connection: USB-C.

Host USB data rate: Up to 10 Gbps, subject to connected device bandwidth.

Video input: DisplayPort Alt Mode, DisplayPort 1.4a.

Video lane allocation: Two DisplayPort lanes.

DisplayPort bandwidth: 16.2 Gbps.

Display Stream Compression: Supported.

HDMI OUTPUTS

Connections: Two HDMI outputs.

HDMI version: HDMI 2.0.

HDMI video bandwidth: 18 Gbps.

Maximum dual-display mode: Two independent 3840 × 2160 signals at 60 Hz via MST.

Maximum mirror mode: 3840 × 2160 at 60 Hz.

Colour formats: RGB and YCbCr 4:4:4, 4:2:2 and 4:2:0.

Supported 4K60 colour modes: 4:4:4 at 8-bit; 4:2:2 at 10-bit; 4:2:0 at 10-bit.

HDR: HDR10.

HDCP: HDCP 2.2, backward compatible with HDCP 1.4.

USB DEVICE PORTS

Connections: Two USB-A ports and one USB-C port.

Data rate: Up to 5 Gbps per port.

Combined power budget: 5 V/3 A maximum.

Power modes: AUTO and ON.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM

POWER DELIVERY

Standard: USB PD 3.0, backward compatible.

Maximum host charging: Up to 100 W at 20 V/5 A, depending on power supply and load.

Host charging with video and full USB load: 80 W at a combined USB device load of 5 V/3 A.

ETHERNET

Supported speeds: 10/100/1000 Mbps.

Controller: RTL8153BvB.

AUDIO

Analogue output: 3.5 mm stereo.

Digital audio: S/PDIF supported.

Maximum audio resolution: 24-bit/192 kHz.

Audio source: USB-C/DisplayPort signal.

Volume control: Host controlled.

EDID

Selectable modes: PASS and 1080P.

Fixed mode: 1920 × 1080 at 60 Hz with two-channel audio.

PASS mode: Does not combine connected display EDIDs.

OPERATING SYSTEMS

Windows: Tested and verified; MST operation supported on compatible hosts.

macOS: Tested and verified; SST/mirroring supported.

ChromeOS: Not verified.

Additional drivers: Not required for Windows and macOS.

ARCHITECTURAL INTEGRATION SUPPORT

Direct technical support from experienced specialists for system designers and installers. Everything you need in one place, with easy access to software, drawings, user manuals, firmware and other technical resources.

WWW.SUPERIO.COM