LIGHTWARE
INNOVATIVE, RELIABLE, MADE IN EUROPE.

Quick Start Guide

DCX-2x1-HC10
DCX-3x1-HC20

Important Safety Instructions

Please read the supplied safety instruction document before using the product and keep it available for future reference.

Introduction

The DCX-2x1-HC10 matrix switcher is designed for simple and easy classroom and auditorium use with USB-C and HDMI input ports, secure Ethernet connection and remote powering ability for one device over the USB-C port up to 100W.

TAURUS DCX

Video resolution can reach up to 4K@60Hz 4:4:4 with data speeds of up to 5 Gbps.

LARA interface is also available for the DCX-series devices.

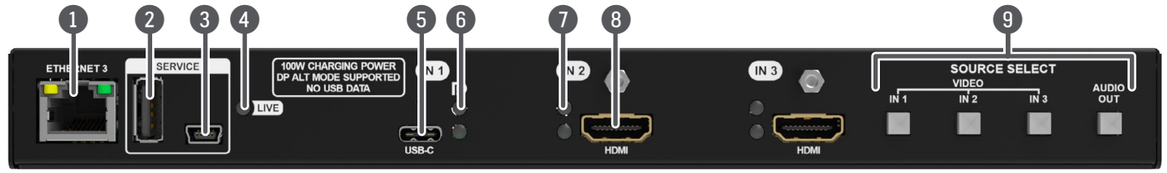
The DCX-3x1-HC20 matrix switcher brings all the functionalities of the DCX-2x1-HC10 model with added bi-directional RS-232 control, GPIO and OCS capabilities.

Box Contents

- Switcher unit
- Safety and warranty info, Quick Start Guide
- 24V power adaptor with IEC power cable
- Phoenix® Combicon 3-pole flat connector [1]
- Phoenix® Combicon 5-pole connector
- Phoenix® Combicon 8-pole connector [1]
- Phoenix® Combicon 3-pole male connector [1]
- 2 pcs of M3x4 flat head screw
- Type C (USB-C) to Type C (USB-C) Cable, 1m

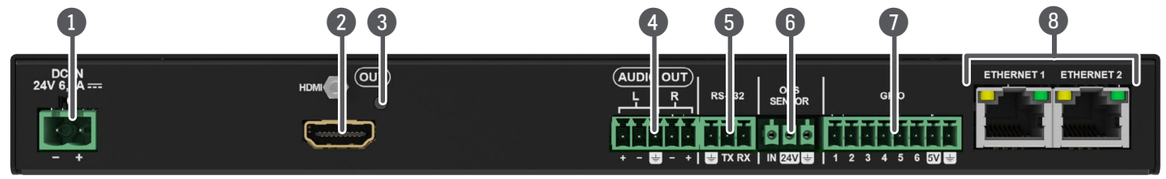
[1] Only for the DCX-3x1-HC20 model.

Front View (DCX-3x1-HC20)



1. **Ethernet Port** — RJ45 connector for configurable 100Base-T Ethernet communication.
2. **USB-A Port** — **The SERVICE-labelled USB-A connector can be used to connect Stream Deck devices.**
3. **Micro-USB Port** — The SERVICE labelled USB mini-B port is designed for service functions.
4. **Live LED** — See the details in the table on the right.
5. **USB-C Input Port** — AV signal can be transferred up to a resolution of 4K@60Hz 4:4:4 and data speeds up to 5 Gbps with remote charging. Use cables certified for USB 3.1 Gen1 (5Gbps) and Displayport Alternate mode HBR2 (4x5.4Gbps) applications.
6. **Video input status LEDs** — See the details in the table on the right.
7. **Video input status LEDs** — See the details in the table on the right.
8. **HDMI Input Port** — HDMI input port for sources. The applied cable shall not be longer than 5m (22AWG) when the signal resolution is 4K. Use cables certified for HDMI 2.0 (3x6Gbps) applications.
9. **Input Select Buttons** — For more details on the button functionality, see the table below. When the LEDs blink green three times after pressing the button, they show that the front panel lock is enabled.

Rear View (DCX-3x1-HC20)



1. **DC Input** — The device can be powered by an external 90W power supply. Connect the output to the 2-pole Phoenix connector. For more details, see the powering options below.
2. **HDMI Output Port** — HDMI output port for connecting sink devices (e.g. displays).
3. **Video Ouput Status LEDs** — See the details in the table on the right.
4. **Analog Audio Output Port** — Audio output port (5-pole Phoenix) for balanced analog audio output signal. The signal is de-embedded from the selected video signal.
5. **RS-232 Port** — **3-pole Phoenix connector for bi-directional RS-232 communication.**
6. **OCS Sensor** — **3-pole Phoenix connector (male) for connecting an occupancy sensor. The port provides 24V output voltage (50mA).**
7. **GPIO** — **8-pole Phoenix connector for configurable general purpose. Max. input/output voltage is 5V, see the details on the next page.**
8. **Ethernet Port** — RJ45 connectors for configurable 100Base-T Ethernet communication.

⚠ ***Always use the supplied power supply. Warranty void if damage occurs due to use of a different power source.***

Button functionality

DCX-2x1-HC10

Use the **IN1** and **IN2** buttons for selecting the video source. **IN1** button switches the USB-C IN1 to the output, **IN2** button switches the HDMI IN2 to the output.

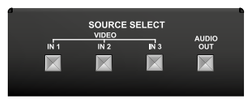
Use the **AUDIO OUT** button for selecting the audio source of the analog audio output.

The sequence is the following (for audio switching):

❶ USB-C IN 1 → ❷ HDMI IN 2 →

DCX-3x1-HC20

Use the **IN1**, **IN2** an **IN3** buttons for selecting the video source. **IN1** button switches the USB-C to the output, **IN2** switches the HDMI IN2 to the output and **IN3** switches HDMI IN3 to the output.



Use the **AUDIO OUT** button for selecting the audio source of the analog audio output.

The sequence is the following (for audio switching):

❶ USB-C IN 1 → ❷ HDMI IN 2 → ❸ HDMI IN 3 →

Setting a Dynamic IP Address (DHCP)

1. Keep the **Audio out** button pressed for 5 seconds; all front panel LEDs start to blink.
2. Release the button, then press it 3 times quickly. DHCP is now enabled.

Lock / Unlock Buttons

Press the **VIDEO IN1** and **AUDIO OUT** buttons together (within 100 ms) to disable/enable front panel buttons; front panel LEDs blink 4 times when locking / unlocking.

Powering Options

DCX series switchers are designed to provide power delivery for the connected device over the USB-C connector. The DCX series models are able to supply a device with 100W.

Arrangement of the status LEDs

Front Panel LEDs

Live LED		
● blinking	blinking	The device is powered on and operational.
○	off	The device is not powered or out of operation.
Video Input Status LED (the upper one) (for the USB-C input port)		
→ ●	on	There is a valid video signal on this port.
→ ○	off	There is no valid video signal on this port.
→ ●	blink once	The port is selected by a button press.
USB Status LED (the lower one) (for the USB-C input port)		
→ ●	on	The USB Host connected and selected.
→ ○	off	No USB Host or deselected port.

Video Selection LED (the upper one) (for the HDMI input port)		
→ ●	on	The video signal is selected.
→ ○	off	The video signal is not selected.
Video Input Status LED (the lower one) (for the HDMI input port)		
→ ●	on	Video is present on the input port.
→ ○	off	Video is not present on the input port.

Rear Panel LEDs

Video Output Status		
●	on	The video signal is present.
○	off	The signal is not present or muted.

ℹ *When Dark mode is enabled, no LEDs are lit, even though the device is fully functional.*

Further information on the device is available at www.lightware.com.
The User's Manual is also available via the QR code below:

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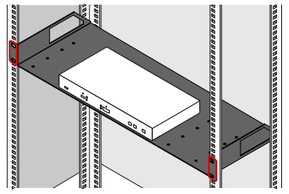
Budapest, Hungary

Doc. ver.: 1.1
19210131

Mounting the Device (with optionally available accessories)

Rack Shelf

The example on the right demonstrates the applications of the **Rack Shelf** accessory.



For fixing the device to a Rack shelf, use the screws supplied with the switcher. Longer screws may touch internal parts and harm the device.

UD Mounting Plate F100 and PSU F100/F110

The following examples show how a device and the corresponding PSU fit onto an UD kit.

UD Mounting Pro P210 and PSU P120/P130

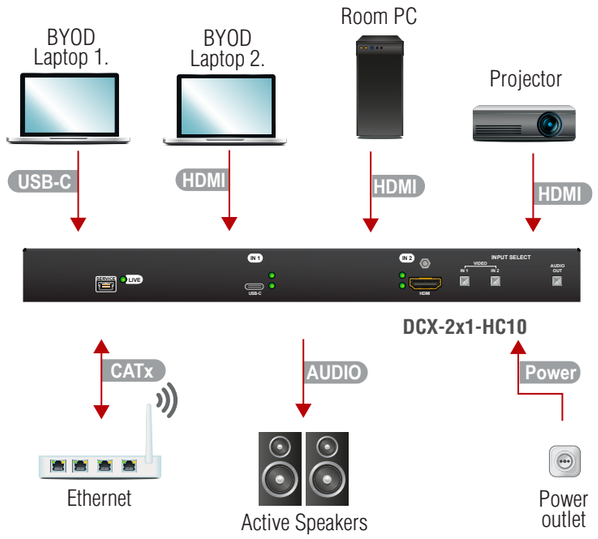
For more information about mounting and for mounting steps please see the User Manual of the device or the Mounting Assembly Guide available on the website.

Factory Default Settings

To restore factory default values, do the following steps: Make sure the switcher is powered off. Press and keep pressing the **VIDEO IN2** button. Power on the switcher while the **VIDEO IN2** button is being pressed for 10 seconds. The device restores the factory default settings and reboots.

IP address	Dynamic (DHCP is enabled)
Hostname	lightware-<serialno>
Crosspoint setting	input 1 on all outputs
HDCP mode	Auto
Color space / color range	Auto / Auto
HDMI mode	Auto
Emulated EDID	F47 - (Universal HDMI with PCM audio)
Audio source	embedded audio
Analog audio output	enabled (de-embedded from HDMI signal)
Analog audio output levels	Volume (dB): 0.00; Balance: 0 (center)
USB-C Power Limit	100W output power
Port Power Role	Dual Role
RS-232 port setting	**9600 BAUD, 8, N, 1**
HTTP, HTTPS	**Enabled**
HTTP, HTTPS authentication	**Disabled**
LARA	**Disabled**

Connecting Steps (DCX-2x1-HC10)



USB-C Connect a USB-C source (e.g. BYOD laptop) to the USB-C input port. The applied cable shall be certified for USB 3.1 Gen1 (5Gbps) and Displayport Alternate mode HBR2 (4x5.4Gbps) applications.

HDMI Connect an HDMI source (e.g. BYOD laptop or room PC) to the HDMI input port.

HDMI Connect an HDMI sink (e.g projector) to the HDMI output port.

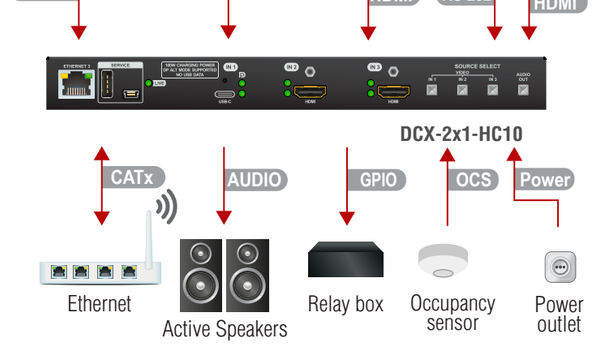
CATx Optionally connect the Ethernet port to a Local Network Switch to provide Ethernet connection for device configuration and BYOD internet access.

Audio Optionally connect an audio device (e.g. active speakers) to the analog audio output port by an audio cable.

Power Connect the external power supply to the AC power socket and the switcher unit.

Powering the device is recommended as the final step.

Connecting Steps (DCX-3x1-HC20)



USB-C Connect a USB-C source (e.g. BYOD laptop) to the USB-C input port. The applied cable shall be certified for USB 3.1 Gen1 (5Gbps) and Displayport Alternate mode HBR2 (4x5.4Gbps) applications.

HDMI Connect an HDMI source (e.g. BYOD laptop or room PC) to the HDMI input port.

RS-232 Optionally for RS-232 extension: connect a controller/controlled device (e.g. projector) to the RS-232 port.

HDMI Connect an HDMI sink (e.g projector) to the HDMI output port.

CATx Optionally connect the Ethernet port to a Local Network Switch to provide Ethernet connection for device configuration and BYOD internet access.

Audio Optionally connect an audio device (e.g. active speakers) to the analog audio output port by an audio cable.

GPIO Optionally connect a device (e.g. a relay) to the GPIO port.

OCS Optionally connect an occupancy sensor to the OCS port.

Power Connect the external power supply to the AC power socket and the switcher unit.

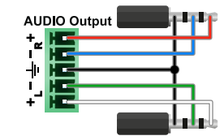
Powering the device is recommended as the final step.

Audio Cable Wiring Guide

The DCX series is built with a 5-pole Phoenix® output connector. See a few examples below of the most common assembling cases.

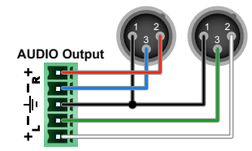
Balanced output to balanced input

Phoenix - 2x6.3 (1/4") TRS



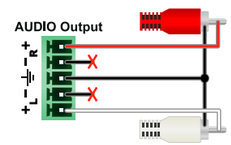
Balanced output to balanced input

Phoenix cable - 2x XLR plugs



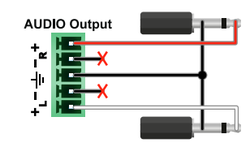
Balanced output to unbalanced input

Phoenix - 2x RCA



Balanced output to unbalanced input

Phoenix - 2x 6.3 (1/4") TS



Software Control – Using Lightware Device Controller (LDC)

The device can be controlled from a computer using the Lightware Device Controller software. The application is available at www.lightware.com, install it on a Windows PC or a macOS and connect to the device via LAN.

Firmware Update

Lightware Device Updater2 (LDU2) is an easy and comfortable way to keep your device up-to-date. Establish the connection via Ethernet. Download and install the LDU2 software from the company's website www.lightware.com, where you can find the latest firmware package as well.

LARA - Lightware Advanced Room Automation

LARA is a room automation platform designed to make setting up meeting rooms for easy and quick use possible. It connects the services and devices in the rooms with rules that can be customized to best suit the needs of the user. For more information, please see lightware.com/lara.