

Control4® 4K UHD LU Series

Setup Guide



Control4®

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Warnings



- During initial set up and during any changes to the installation, please switch off power at the wall socket then unplug mains power from the C4-LU1082 and any equipment that is to be connected to it *prior* to connecting any leads and or cables. Plug in and switch power back on again after all interconnection leads are in place.

Pendant le montage initial et lors de toute modification apportée à l'installation, s'il vous plaît mettre hors tension à la prise murale, puis débranchez l'alimentation de la C4-LU1082 de la feuille et tout équipement qui doit être relié à lui *avant* tout branchement conduit et ou câbles. Branchez et rallumer puissance après que tous les câbles d'interconnexion sont en place.



- Do not run zone HDBaseT Cat5e/6/7 cabling in proximity to mains power cables. Must use shielded cables to improve EMI/EMC.

Ne s'exécutent pas zone HDBaseT Cat5e/6/7 câblage à proximité des câbles d'alimentation secteur. Doit utiliser des câbles blindés pour améliorer EMI / EMC.



- The C4-LU1082 uses Power over HDBaseT (PoH). Do not connect to non-PoH devices—damage may result.

The C4-LU1082 utilise la puissance via HDBaseT (PoH). Ne branchez pas sur les périphériques non-PoH, des dommages peuvent survenir.



- During operation the C4-LU1082 and associated receivers may feel warm to the touch—particularly the receivers. This is normal, and to be expected. It is important to ensure that HDBaseT receivers have sufficient cool air flow to them.

Au cours de l'opération les feuilles C4-LU1082 et les récepteurs HDBaseT associés peuvent se sentir chauds au toucher—particulièrement les récepteurs. C'est bien normal. Il est important de s'assurer que les récepteurs HDBaseT ont un écoulement d'air cool pour eux.



- The MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable. The socket-outlet shall be installed near the equipment and shall be easily accessible.

La fiche ou un coupleur d'appareil est utilisé comme dispositif de déconnexion, le dispositif de sectionnement doit rester facilement accessible. La prise de courant doit être installée près de l'équipement et doit être facilement accessible.



- There are no user-serviceable components within this device. Removal of the cover from this device may present a shock hazard, and void the warranty.

Il n'ya pas de composants réparables par l'utilisateur au sein de cet appareil. Retrait de la couverture de cet appareil peut présenter un danger d'électrocution et annuler la garantie.



- Do not operate with a damaged cord or plug.

Ne pas faire fonctionner avec un cordon ou une prise endommagée.



- This unit must be operated indoors only.

Cet appareil doit être utilisé uniquement à l'intérieur.



- EZ-type RJ-45 connectors must *not* be used. Using EZ-type RJ-45 connectors with the Control4 4K Ultra HD system will void your warranty.
Les connecteurs "EZ" RJ45 ne doivent pas être utilisés. L'utilisation des connecteurs "EZ" RJ45 avec le système Control4 Ultra HD 4K annulera votre garantie.



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Introduction

The Control4® 4K Ultra HD HDMI Matrix System comprises a Control4 4K Ultra HD AV Matrix Switch (C4-LU1082, C4-LU862, C4-LU642, C4-LU642L, C4-LU1082D, C4-LU862D, C4-LU642D) and Control4 4K HDBaseT Receivers (C4-LU1E, C4-LU1). The Control4 4K Ultra HD HDMI Matrix system is designed to accept HDMI and digital audio AV sources at its inputs and route them to local audio breakouts and to remotely located HDBaseT receivers along with control and Ethernet (C4-LU1E only) signals.

Note: This document refers to the Control4 4K Ultra HD 10x10 AV Matrix Switch (C4-LU1082) and the Control4 4K Ultra HD HDBaseT Receiver (C4-LU1E) but supports the entire Control4 4K Ultra HD product line.

In this document, each input signal source is termed a *source* and each output and HDBaseT receiver is called a *zone*. A device connected to a zone—typically a TV, monitor or projector—is called a *sink*.



Interconnection between the matrix switch and associated HDBaseT receivers is through one single CAT5e, CAT6, or CAT7 cable for each zone. Single CAT5e/6/7 cable interconnect between these components is made possible by the use of HDBaseT technology. HDBaseT enables video and audio, as well as power, Ethernet, IR, and RS-232 to all be sent over large distances by a single cable per zone.

Cable quality recommendations and associated information can be found in the [Specification](#) tables in this document.

Warning: EZ-type RJ-45 connectors must *not* be used. Using EZ-type RJ-45 connectors with the Control4 4K Ultra HD system may cause performance problems or even damage to the matrix switch and will void your warranty.

The Control4 4K Ultra HD system is designed to be controlled by commands from a Control4 system. IP control is the preferred method of control.

The C4-LU1082 is built into a 2RU high metal housing and is fitted with feet should table or desktop mounting be preferred. Rack-mount brackets are supplied for rack-mount installations.

Control4 4K UHD LU series model variant matrix

The tables below summarize the differences between the switches that comprise the C4-LU product line:

HDMI Matrix Switch									
Model number	Audio downmix on HDMI inputs	HDMI inputs	HDMI outputs	HDBaseT outputs	IR ports	RS-232 ports	Digital audio inputs	Analog audio outputs	HDBT range*
C4-LU1082	—	10	2	8	8	8	8	8	Up to 100m
C4-LU862	—	8	2	6	6	6	8	8	Up to 100m
C4-LU642	—	6	2	4	4	4	8	8	Up to 100m
C4-LU642L	—	6	2	4	4	4	0	0	Up to 70m
C4-LU1082D	yes	10	2	8	8	8	8	8	Up to 100m
C4-LU862D	yes	8	2	6	6	6	8	8	Up to 100m
C4-LU642D	yes	6	2	4	4	4	8	8	Up to 100m

HDBaseT Receiver						
Model number	HDBaseT ports	HDMI output ports	LAN ports	IR ports	RS-232 ports	HDBT range*
C4-LU1E	1	1	1	1	1	Up to 100m
C4-LU1	1	1	0	1	1	Up to 70m

*Please refer to [Cable quality recommendations](#) for more detail.

Related documents and resources

Document title	Location
Control4 4K Ultra HD LU Series documentation	ctrl4.co/4kmatrix
Control4 4K Ultra HD 10x10 AV Matrix Switch (C4-LU1082) Data Sheet	ctrl4.co/4kmatrix-ds
Control4 4K Ultra HD 10x10 AV Matrix Switch Setup Guide (latest version of this document)	ctrl4.co/4kmatrix-sg
HDMI and HDBaseT Cabling Guide	ctrl4.co/avcableguide/
Control4 System User Guides	ctrl4.co/userguide
Control4 Composer Pro Getting Started	ctrl4.co/cpro-gs
Control4 Composer Pro User Guide	ctrl4.co/cpro-ug
Entertainment Solutions Guide	ctrl4.co/mediadist
Other dealer documentation	ctrl4.co/docs

C4-LU1082 Matrix

The C4-LU1082 features:

- 10 HDMI inputs
- 8 digital audio inputs
- 8 HDBaseT outputs
- 2 HDMI outputs
- 8 analog audio outputs



The C4-LU1082 is designed so that any audio or video input can be switched to any audio or video output, or combination of outputs.

The C4-LU1082 is capable of switching full 4K program sources under HDCP2.2 content protection and is fully compatible with earlier HDCP versions.

Additional features include:

- An embedded 1000Base-T (Gigabit or 1000 Mbps) Ethernet switch with 100Base-TX ports to each zone
- Infrared (IR) control pass-through between the matrix switch and connected HDBaseT receivers
- RS-232 control pass-through capability between the matrix switch and connected HDBaseT receivers
- Fully controlled audio crosspoint with stereo zone outputs and S/PDIF inputs. Independent control of volume, bass, treble and lip sync delay on each zone

Front panel

The C4-LU1082 has four back-lit LED icons on the front panel which indicate operational status.



Power—The Power icon will be illuminated when the C4-LU1082 is powered up. During the boot process the icon will flash slowly. After the boot has completed, the icon will be continuously lit.



Link—The Link icon will be illuminated whenever the C4-LU1082 detects an Ethernet connection, specifically that the matrix has been granted an IP address via DHCP and has a socket connection with a control device.



Media—The Media icon will illuminate when any zone on the C4-LU1082 has been turned on.



Alert—The Alert icon will illuminate when the C4-LU1082 requires attention. It will be off in normal operation.

Special system state indication

Firmware update—The Power and Alert icons will flash alternately every half second, indicating a firmware update is in progress.

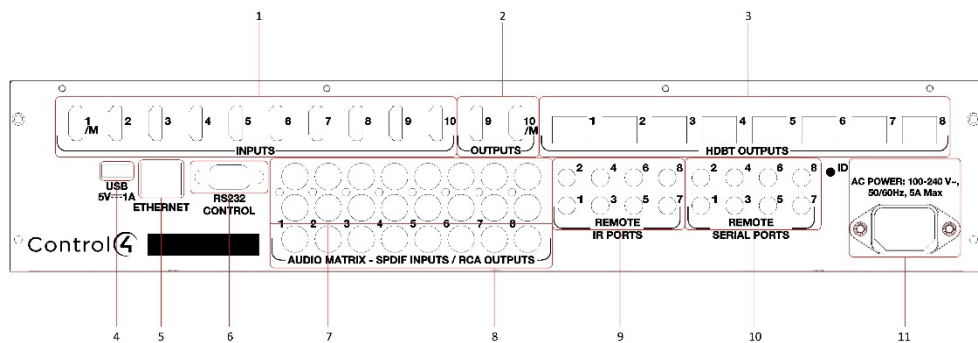
Factory restore—The Power icon will flash rapidly for five seconds when a factory restore has been initiated. All icons will be lit continuously while the restore process is in progress. A normal reboot will follow.

Rear panel

This section details the rear panel features of the C4-LU1082.



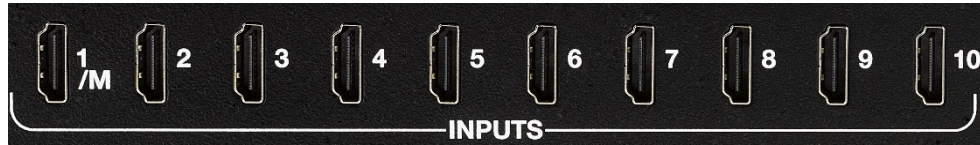
All connectors are located on the rear of the C4-LU1082 as depicted in the schematic below.



- 1 10 x HDMI input connectors (sources 1 to 10)
- 2 2 x Local HDMI output connectors (HDMI outputs 9 and 10)
- 3 8 x RJ45 type HDBaseT zone connectors (HDBaseT outputs 1 to 8)
- 4 1 x USB socket (not supported)
- 5 1 x RJ45 type Ethernet port for control and LAN-extend to and from Zone 1 to 8 HDBaseT receivers
- 6 1 x DB9 socket for RS-232 control
- 7 8 x dual RCA jacks for local stereo analog audio out
- 8 8 x RCA jacks for local S/PDIF digital audio in
- 9 8 x 3.5 mm (1/8") jacks for IR-extend to or from zone HDBaseT receivers. Use only stereo (TRS) 3.5 mm cables.
- 10 8 x 3.5 mm jacks for RS-232-extend to and from zone HDBaseT receivers. Use only stereo (TRS) 3.5 mm cables.
- 11 Power connector

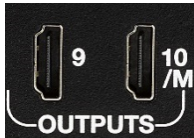
HDMI inputs

The C4-LU1082 has 10 HDMI inputs which are numbered 1/M through to 10 on the left side of the back of the unit. Connect these to video sources such as PVRs, DVD players, and cable or satellite boxes.



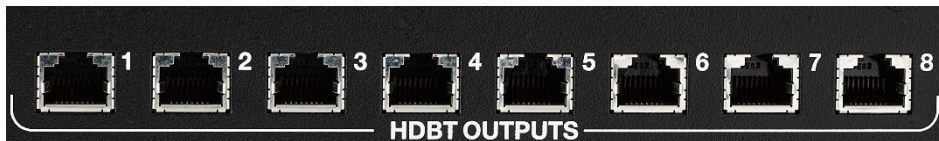
HDMI local outputs

The C4-LU1082 has two HDMI local outputs to drive local sinks, such as AV receivers. Outputs 9 and 10/M are next to the inputs in the middle of the back panel.



HDBaseT outputs

The C4-LU1082 has eight HDBaseT outputs numbered 1 through 8 on the right side of the back panel. Connect these with CAT5e/6/7 cable to C4-LU1E HDBaseT Receivers for remote zones.



USB

The C4-LU1082 has a single USB, which is not used at this time.



Ethernet

The C4-LU1082 has an Ethernet socket for remote control and LAN-extend to and from the zones.

The C4-LU1082 features an internal 1000Base-T switch for control and LAN-extend routing. The external port and the internal processor port are both 1000 Mbps, while the remote zone ports are all fixed at 100 Mbps.



RS-232

The C4-LU1082 has a DB9 socket for serial remote control using RS-232 signaling. Connect a straight-through serial cable from a Control4 controller to use this method of control.



Audio inputs

The C4-LU1082 can derive audio input in any combination from the 10 HDMI inputs or the eight S/PDIF inputs.

The S/PDIF stereo audio input ports can be routed through the internal matrix switch to either the RCA outputs, or to the HDBaseT/HDMI outputs as audio only (accompanying black video).

The S/PDIF inputs only support stereo PCM.



Audio outputs

The C4-LU1082 provides stereo analog outputs on the upper two rows of red (right) and white (left) RCA sockets.

Each audio output can be independently configured to extract any one of the HDMI input audio signals or from any digital coax (S/PDIF) stereo connector input. Each of these audio output ports features independently adjustable audio parameters—sync delay and volume.

For product models that do not support audio downmixing, the HDMI audio source must be stereo PCM for any RCA output to be audible.

Remote IR ports

The C4-LU1082 provides direct connection “pipes” to the HDBaseT receiver IR ports using 3.5 mm stereo sockets.

The Remote IR ports are used for routing external IR control signals in one direction between the C4-LU1082 and the connected C4-LU1E HDBaseT receivers. These connections are treated as through connections; they are not switched connections. That is, IR port 1 connects to the HDBaseT receiver connected to Zone 1, IR port 2 to that at Zone 2 and so on to port 8 being connected to the HDBaseT receiver at Zone 8.

Any given zone's IR direction can be independently configured as either matrix switch to HDBaseT receiver or as receiver to matrix switch.



Remote serial ports

The C4-LU1082 provides full-duplex direct connection “pipes” to the HDBaseT receiver serial ports via 3.5 mm stereo sockets.

The remote serial ports are used for routing external RS-232 signals between the C4-LU1082 and the connected C4-LU1E HDBaseT receivers. These connections are treated as through connections; they are not switched connections. That is, serial port 1 connects to the HDBaseT receiver connected to zone 1, serial port 2 to that at zone 2, and so on to port 8 being connected to the HDBaseT receiver at zone 8.



AC input

The C4-LU1082 has a standard 3-pin IEC mains socket at the right side of the enclosure.

The C4-LU1082 is shipped with a mains cable to connect to a 110 or 240VAC mains supply. The C4-LU1082 has a universal AC input and will accept any AC voltage from 100 to 240V at either 50 or 60 Hz.



ID button

The C4-LU1082 has an ID button that is used to identify the device in a Control4 system.



System configuration

The C4-LU1082 is designed to be controlled by a Control4 system. To assist with installation, some configuration options are available using the embedded web page.

Refer to the sections on [Device discovery](#) and [Embedded web page control](#) for full details.

C4-LU1E HDBaseT Receiver

C4-LU1E HDBaseT receivers are the remote receiving ends of the Control4 4K Ultra HD system and one is required for each connected zone. (Direct outputs 9 and 10/M are HDMI and do not require HDBaseT receivers.)



HDBaseT receiver mounting

There is no mounting bracket supplied with the C4-LU1E. The device is small and lightweight and requires no source of external power so it can be placed in a convenient position close to the zone's display monitor.

Self-adhesive hook-and-loop strips (supplied with C4-LU1082 switch) may be used to attach the HDBaseT receiver near the HDMI input socket of the monitor, allowing a short, low-cost HDMI interconnect lead to be used.

The C4-LU1E metal enclosure is designed to dissipate heat generated by its internal circuitry, and may be quite warm to the touch. This is completely normal. It is important to make sure there is adequate free-air circulation around the receiver to ensure proper cooling.

Power

The C4-LU1E dispenses with a local plug-pack power supply and uses Power-over-HDBaseT (PoH) instead. Power is supplied down the CAT5E/6/7 cable from the C4-LU1082.

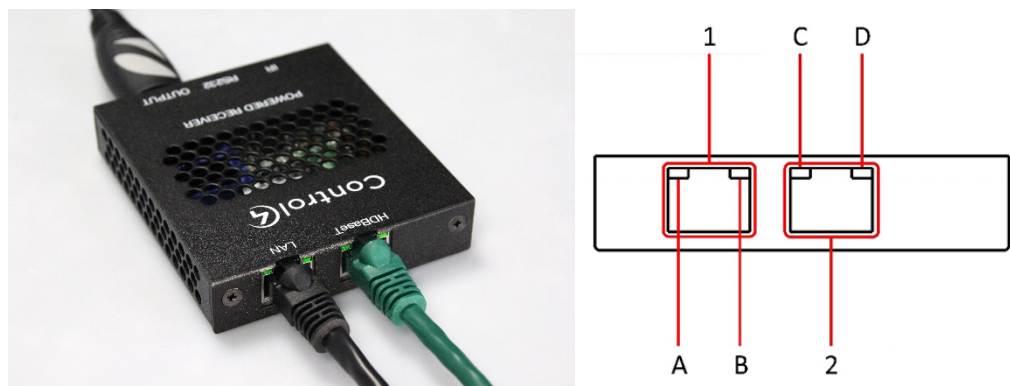
4K display connections

Not all HDMI inputs on all 4K-capable displays are able to support 4K HDCP 2.2 content. Consult the display documentation to ascertain which HDMI inputs are suitable for this type of content.

For optimal performance, make sure the HDMI cable to connect the display and the C4-LU1E is no longer than required.

LED status indicators

The C4-LU1E uses the LEDs in the RJ45 LAN and HDBaseT sockets to indicate its operational status. Refer to the schematic diagram (below) for LED designations.



LAN link LED—The LAN link LED (A) is the left LED on the LAN socket (1).

- **Off**—There is no valid Ethernet connection.
- **On solid (green)**—The port is operating as a 100Base-TX connection.

LAN activity LED—The LAN activity LED (B) is the right LED on the LAN socket (1).

- **Off**—No link has been established.
- **On flashing (green)**—There is data activity on this port.

HDBT link LED—The HDBaseT link LED (C) is the left LED on the HDBaseT socket (2).

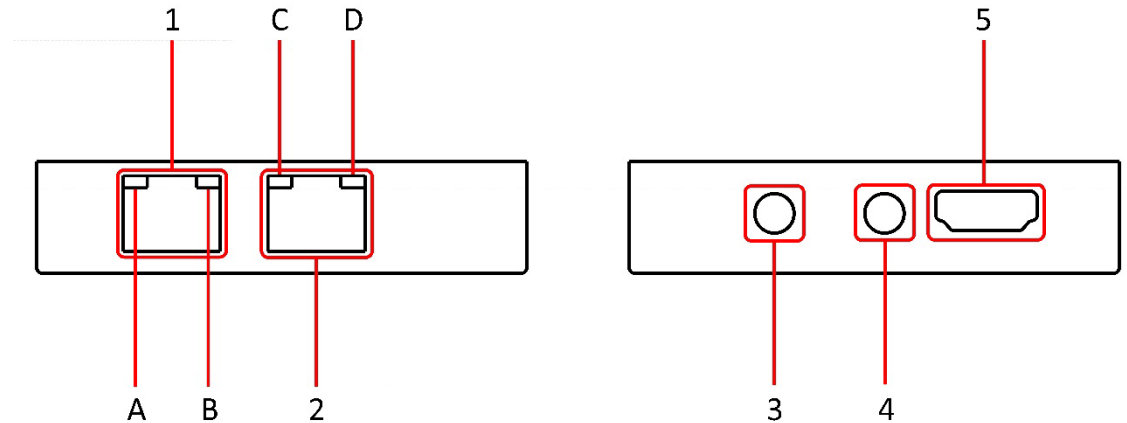
- **On regular flash (green)**—The HDBaseT cable link to the C4-LU1082 has been made successfully and the system is ready to transmit video from source to sink on that zone.
- **Off or random flickering (amber)**—No HDBaseT link or a cabling error.

HDBT HDCP LED—The HDBT HDCP LED (D) is the right LED on the HDBT socket (2).

- **On solid (green)**—Protected (HDCP) video content is being transferred on the HDBaseT link.
- **On flashing (green)**—Unprotected (no HDCP) video content is being transferred on the HDBaseT link. Irregular flashing may indicate an issue with the video link.
- **Off**—No video content is being transferred. (Usually means that no source has been selected for that zone or the source is off).

C4-LU1E connections

All connectors are located on the front and rear sides of the C4-LU1E as depicted in the schematics below.



- 1 1 x RJ45 for connection to LAN via patch lead.
- 2 1 x RJ45 for HDBaseT connection.
- 3 1 x 3.5 mm (1/8 inch) Tip, Ring and Sleeve (TRS) jack for IR-extend to or from matrix.
- 4 1 x 3.5 mm TRS jack for RS-232-extend to and from matrix.
- 5 1 x HDMI output connector.

LAN

The LAN port provides a 100Base-TX connection from the internal switch. Traffic is derived from the 1000Base-T LAN connection within the matrix.

HDBT

The HDBT port is the end-point connection of HDBaseT signals from the matrix.

IR

The C4-LU1E provides direct connection “pipes” to the matrix IR ports via 3.5 mm stereo sockets.

The IR ports are used for routing external IR control signals in one direction between the C4-LU1E HDBaseT receivers and the C4-LU1082 matrix. These connections are treated as through connections; they are not switched.

RS-232

The C4-LU1E provides full-duplex direct connection pipes to the matrix serial ports through 3.5 mm stereo sockets.

The RS-232 ports are used for routing external RS-232 signals between the C4-LU1E HDBaseT receivers and the C4-LU1082 matrix. These connections are treated as through connections; they are not switched.

HDMI

The C4-LU1E has one HDMI output. Connect this to a video sink such as a TV or projector using a short HDMI cable.

System features

This section describes the primary features of the Control4 4K Ultra HD system.

EDID management and calibration

The Extended Display Identification Data (EDID) of sinks (TVs, Display Panels, etc.) attached to the zones are merged and presented to sources. This ensures that the sources output the correct audio and video format to all sinks.

The way the C4-LU1082 manages EDIDs is dependent on whether or not a Calibration step has been performed:

Uncalibrated system

When a new sink (display) is switched to a source the C4-LU1082 stores its EDID. The new sink EDID data is then merged with all other sink EDIDs currently connected to the same source. This merged EDID information is then written to the source if the merged EDID is different from what is already presented to the source.

This process involving merging occurs on each new connection.

Calibrated system

The calibration process gathers the EDID and HDCP information from all connected sink devices and pre-calculates the merged EDID. This results in faster switching times and it also isolates the effect on one zone from another zone when new connections are routed. After calibration, the merged sink EDID information is stored for future use until recalibration.

Each sink device should be powered on while calibration is performed to ensure the active sink EDID is presented to the calibration algorithm. The calibration process also optimizes HDCP exchange information. Calibrating a system minimizes interruptions to active TVs or display panels when selecting sources and facilitates straightforward setup with minimal effort.

Exclusive source selection (zone lock mode)

A source can be locked to a particular zone. The exclusive source selection feature enables enhanced features, such as multichannel audio, 4K, and 3D, to become active in the locked zone, if supported by both the source and zone equipment—even if other zones in the system do not support these features in a calibrated system.

- Any single zone can be locked to a single source, thus creating a so-called “locked connection”.

- In this mode the system's merged EDID for this connection is overridden and the specific EDID for the zone is passed through to the source. A typical example would be switching a 3D-capable zone to a 3D-capable source in instances where not all zones in the system can support 3D.
- No other zone can connect to a source that is locked.
- Multiple locked connections are allowed but locked sources cannot be shared.
- When the zone of a locked connection is disconnected the source is unlocked and available for selection by other sources.
- When the zone of a locked connection changes to a new source, the existing source is unlocked.
- Locking a zone to a source that is already switched to one or more other zones will cause that source to disconnect from those zones.
- Please refer to 'Lock Settings' section on the Properties page of the Control4 driver for additional settings.

Intelligent and flexible audio routing

Flexible audio routing within the system allows audio from HDMI sources or digital coax (S/PDIF) audio input connectors on the C4-LU1082 to be routed to the stereo RCA analog output connectors on the C4-LU1082 or the HDMI output connectors.

Matrix switch models that have audio downmixing capability automatically determine the audio format that will be sent from a source to a sink device. The format that will be sent is automatically determined from the supported EDID format of the sink/TV and the audio format that the source is transmitting. This feature allows audio from a source to be distributed to multiple zones simultaneously in the audio format that is suitable for each zone: for example, a theater zone can have multichannel audio and a stereo TV zone can have stereo audio simultaneously when connected to the same source.

NOTE: Audio input to the S/PDIF inputs must be stereo PCM.

C4-LUxxxD models—Audio downmix

Multichannel audio downmix is supported on the C4-LUxxxD models of the product range. This functionality allows the RCA audio output to be available as stereo for any of the supported audio formats when audio is derived from an HDMI source (see specification section for supported formats).

In addition to audio downmix capability from the HDMI inputs, audio is also intelligently routed to the HDMI/HDBaseT outputs depending on the supported audio formats of the sink. The audio format that is routed to an output is automatically downmixed depending on source and supported sink device formats.

Note: Downmixing is supported for HDMI inputs only and is not supported for S/PDIF inputs.

C4-LUxxx models

Multichannel audio downmix for HDMI inputs is *not* supported on the C4-LUxxx (non-D) models of the product range. If a multichannel audio signal is selected as the source for one or more RCA analog outputs, then no signal will be passed, and the associated outputs will be muted.

Audio sync delay

Each stereo RCA audio output port has programmable audio sync delay capability which is used to bring the audio from these ports and the displayed video closer to synchrony. This feature is controlled in the “Audio Delay” section of the Properties page in the Control4 driver.

Volume control

Each stereo RCA audio output port has programmable volume. Volume is controlled by the Control4 system.

Operation

Apply power

After power is applied to the C4-LU1082, the matrix will go through a power-up routine lasting a minute or two.

When this routine is completed, the matrix will reconnect the most recent configuration set prior to power-down: source-to-zone interconnections or standby if none.

Calibration

It is recommended that the system be calibrated on first use or after any new devices (source or zone equipment) are added or source and or zone allocations changed. If the system calibration is not kept up-to-date there may be interruptions to audio and or video at zones when other zones are switched to a source that is already in use.

The system is calibrated from a Control4 driver action.

Creating input to output switched selections

While input to output selections would typically be handled automatically by the Control4 system after the system is configured, input to output selections may also be made, for diagnostic purposes, by using the controls on the embedded web page. Refer to the section “Embedded web page control” for details.

Device discovery

The C4-LU1082 supports SDDP for quick and easy identification. Refer to Control4 Composer Pro User Guide for more details.

Alternately, when the ID button at the rear of the unit is pressed, a broadcast IP message is sent for identifying the matrix switch in the Control4 project.

Check that the C4-LU1082 is powered up and ready for use and that it has a connection to the LAN from its Ethernet socket before attempting identification.

Embedded web page control

The web interface may be used for diagnostic purposes or testing when Control4 system is not yet active. This section describes using the web interface under this condition.

Default network settings

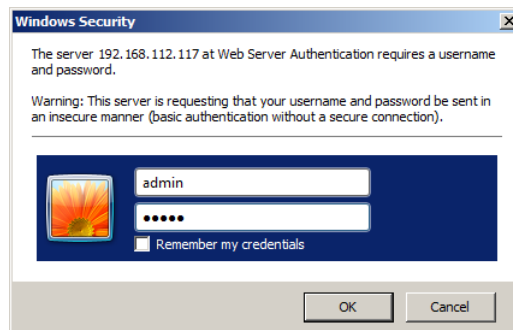
The matrix switch is configured for DHCP by default. Use an IP scanner or other discovery application to retrieve the DHCP IP address.

Note: If the matrix switch is not requesting a DHCP IP address, a factory restore sets the matrix switch back to DHCP mode. See the “Factory restore” section.

Connecting to the matrix switch

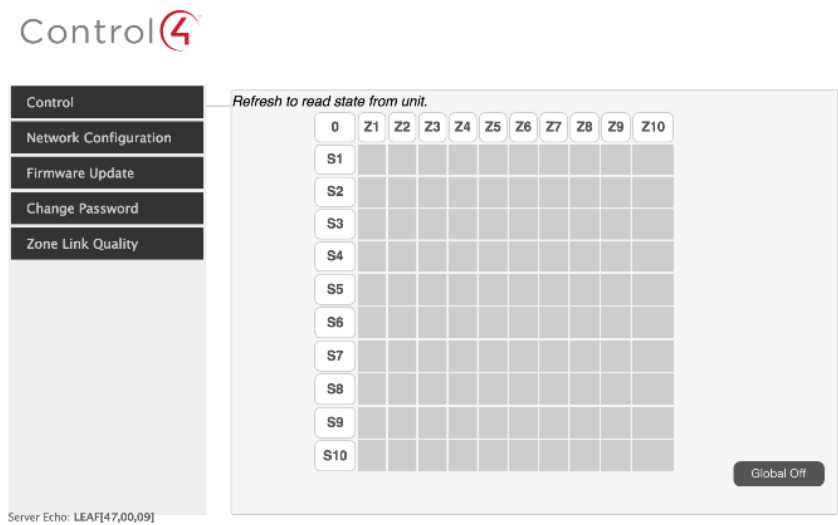
To connect to the web interface on the C4-LU1082:

- Enter the IP address of the C4-LU1082 into a web browser. For example, enter **192.168.1.15**.
- Enter the username and password of the unit (default is “admin” for both) at the login screen.

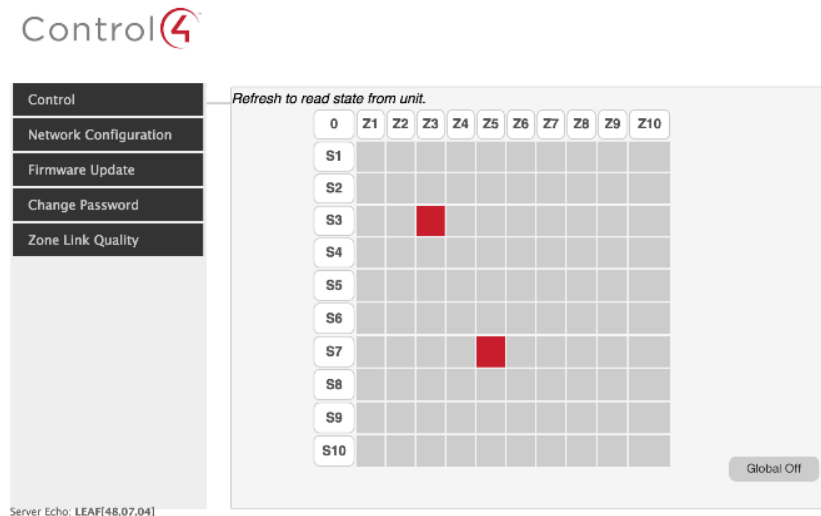


Manually setting inputs to outputs

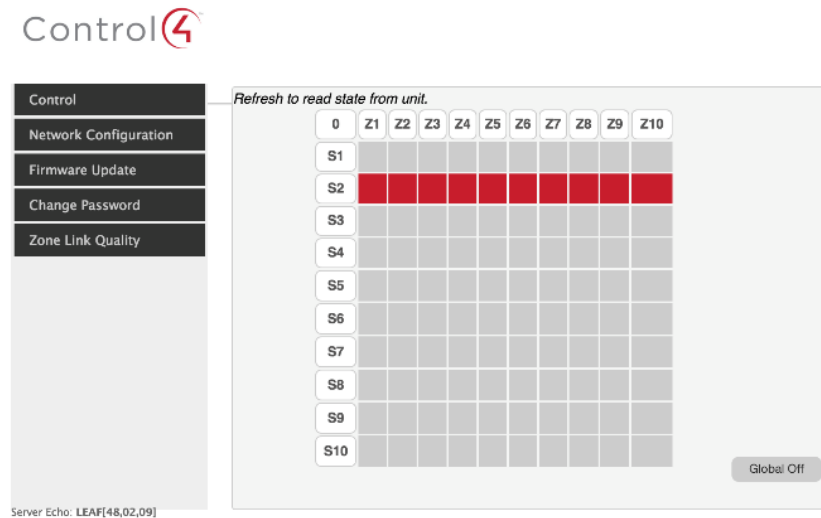
- Use the mouse to select **Control**. The following screen will be displayed.



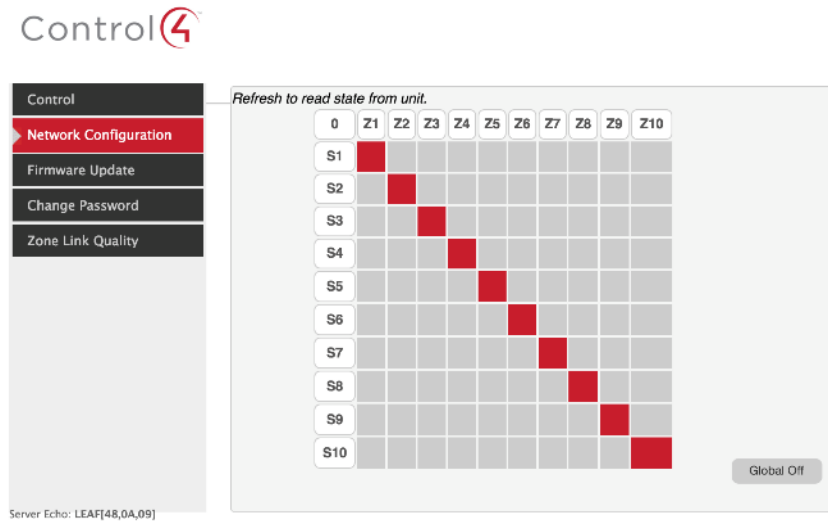
- Use the mouse to select any of the gray squares; connecting any sources to any zones. The squares will turn red indicating which sources are connected to which zones. In the following example, source 3 is connected to zone 3 and source 7 is connected to zone 5.



- To clear all previous connections, click **Global Off** before changing to a new source or zone. All squares will return to gray, indicating this state.
- Clicking the **S(1-10)** (source) button on the left side of the table will send a global On for that source—meaning all HDBaseT zones will be connected to the same source. In the following example, **S2** has been pressed, connecting all zones to source 2:



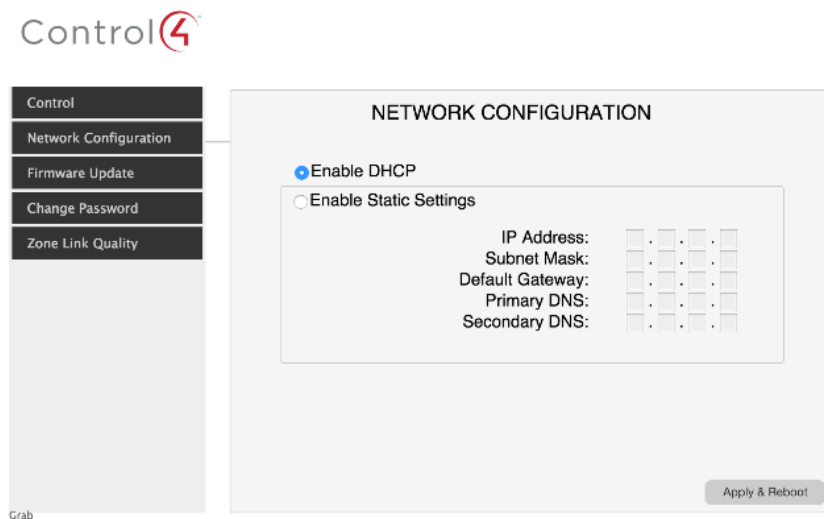
- Clicking **0** at the top left corner of the matrix graphic results in each source being connected uniquely to its respective zone. That is, source 1 to zone 1, source 2 to zone 2 and so on to source 10 to zone 10:



Configuring network settings

To configure the network settings on the C4-LU1082:

- Click on **Network Configuration**.
- Select **Enable DHCP** or **Enable Static Settings**. If setting the matrix switch to static IP, enter the IP Address, Subnet Mask, Default Gateway, Primary DNS, and Secondary DNS information.



- Click **Apply & Reboot**.

Default IP address

If there is no DHCP server in the LAN network, it is still possible to connect to the matrix switch with the default IP address. The default IP address is 192.168.112.45 with subnet mask 255.255.255.0.

In this situation, the connection method is a bit different: instead of making a connection to the LAN by plugging the Ethernet cable into the C4-LU1082 LAN socket, connect a C4-LU1E receiver to any one of the zone HDBaseT ports using a network patch cable, and then connect the C4-LU1082 LAN port to the network using another network patch cable.

After the system has powered-up, connect to the matrix switch with the default IP address.

Note: Your PC must be configured with a static IP address under the same subnet in order to connect to the default IP address.

Factory restore

The C4-LU1082 contains a read-only factory default firmware image. This makes it possible to reset the unit back to a defined state should the operational software image become corrupted or if it is necessary to remove all user configuration data.

To reset the firmware to factory default:

- Unplug the power.
- While holding in the rear-panel ID button, power the matrix switch on.
- Hold the ID button until the front-panel power LED stops flashing quickly and then starts flashing slowly. This will take about 10 seconds.

The restore process may take ten minutes or longer to finish. During this process the LEDs on the front of the matrix will flash for some time, followed by all LEDs remaining on solid for several minutes, followed by an automatic self-reboot.

After the factory restore process is complete the Power LED will be on solid and the Alert LED will be off.

Specifications

A full set of specifications on the whole 4K UHD LU series can be found in the 4K Ultra HD LU Series Matrix System Data Sheet (ctrl4.co/4kmatrix-ds).

Cable quality recommendations

For HDBaseT in general, higher resolution calls for better cable quality or shorter cable runs. The following table specifies the HDBaseT limitations with respect to range, video format and cable grade.

Warning: EZ-type RJ-45 connectors must *not* be used. Using EZ-type RJ-45 connectors with the Control4 4K Ultra HD system will void your warranty.

All HDBaseT cable runs are to be terminated at both ends according to the same standard (either T-568B or T-568A). Any termination wiring must be as short as possible with equal length pairs that are twisted close to the connector. It is recommended to terminate cables such that excess cable length is eliminated, avoiding turns and corners that may degrade signal quality.

We strongly recommend terminating shielded S/FTP CAT cable using shielded connectors at both ends. This is particularly important in lightning-prone areas. Properly grounded, shielded category cable can significantly reduce the likelihood of issues that commonly arise from lightning strikes.

Note, however, that some installation locations may have poor electrical earthing (grounding). This is commonly the case with older building construction and wiring. In these cases, it may be preferable to only terminate the HDBaseT cable shield with a shielded RJ45 connector at the switch end of the cable and not have the cable shield connected to the RJ45 connector at the HDBaseT Receiver end of the cable. Please consult with a licensed electrician for further details.

Note: Shielded cables must be used to improve EMI/EMC.

C4-LUxxx, C4-LUxxxD, C4-LU1E cable specifications:

Cable type	Range	Pixel clock rate	Video data rate	Supported video
CAT5e/ CAT6	100 m	<=225 MHz	<= 5.3 Gbps (HD Video)	Up to 1080p, 60 Hz, 36 bpp (data rates lower than 5.3 Gbps or below 225 MHz TMDS clock).
	70 m	>225 MHz	> 5.3 Gbps (Ultra HD Video)	1080p 60 Hz 48 bpp, 1080p 60 Hz 3D, and 4K2K 30Hz 4K2K 60hz 4:2:0 video formats
CAT6a/ CAT7	100 m			

For all C4-LU products (except C4-LU642L and C4-LU1) the table above specifies that CAT5e or CAT6 cable are acceptable for 4K video formats as long as the runs do not exceed 70 m. For full 100 m runs, it is necessary to use CAT6a or CAT7 cable.

C4-LU642L, C4-LU1 cable specifications:

Cable type	Range	Pixel clock rate	Video data rate	Supported video
CAT5e/C AT6	60 m	<= 225 MHz	<= 5.3 Gbps (HD video)	Up to 1080p, 60 Hz, 36 bpp (data rates lower than 5.3 Gbps or below 225 MHz TMDS clock).

	35 m	> 225 MHz	> 5.3 Gbps (Ultra HD video)	1080p 60 Hz 48 bpp, 1080p 60 Hz 3D, and 4K2K, 30Hz video formats
CAT6a/ CAT7	70 m	<= 225 MHz	<= 5.3 Gbps (HD video)	Up to 1080p, 60 Hz, 36 bpp (data rates lower than 5.3 Gbps or below 225 MHz TMDS clock).
	40 m	> 225Mhz	> 5.3 Gbps (Ultra HD video)	1080p 60 Hz 48 bpp, 1080p 60 Hz 3D, and 4K2K 30Hz 4K2K 60hz 4:2:0 video formats

For C4-LU642L and C4-LU1 products the table above specifies that CAT5e or CAT6 cable are acceptable for 4K video formats as long as the runs do not exceed 35 m. For maximum 40 m runs at 4K, it is necessary to use CAT6a or CAT7 cable.

Further recommendations and information can be found in the *HDMI and HDBaseT Cabling Guide* (ctrl4.co/avcableguide/).