HDANYWHERE

Quick Start Guide:

Stacking MHUB S

Stacking with a Control System

Working with a Control System is easy.

If you are using a Control System to control your MHUB S devices then **you do not need a Zone Processor** to act as a controller. Connect and stack your MHUBs as per the example wiring diagrams on page 7 and ensure that you follow the instructions detailed below.

YOU MUST INITIALISE ALL HDA DEVICES BEFORE YOUR DRIVER WILL WORK!

Control System drivers for MHUB S **will not work** until your device has been initialised in a process called “First Boot”. To complete this step you will require our app, uControl, to scan your network, find your devices, and initialise them one-by-one.

I’m using a Control System, why should I do this?

It is important to carry out this step as it registers the Extended Warranty for the owner and connects your MHUB(s) to HDA Cloud for improved customer support and troubleshooting analysis. This step also instructs MHUB for third-party operation and Expanded IO (using MHUB’s IR ports directly from your Control System) if your driver supports that feature.

Finding a Control System driver.

For an up-to-date list of supported drivers please visit the following link:
http://support.hdanywhere.com/hda-control-drivers/

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Glossary

Please read!

The terminology used with MHUB S and how it works is uniquely used by HDA. To avoid any confusion please take a moment to acquaint yourself with the following terms used throughout this guide.

Foundation Layer

The MHUB S system which is directly connected to a video source(s) is referred to as the Foundation Layer. Ideally, this system should be physically installed at the bottom of your MHUB S stack. Inside uOS this system is referred to as S1.

Connections

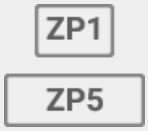
A Connection is used to define a cabled connection between various MHUB systems. Depending on the combination of HDA devices in your stack will determine what ports can be paired or not.

Stack Layer

The Stack Layer is an alphanumeric identifier within uOS starting from the Foundation Layer (Layer S1) which represents the order of MHUB systems that are connected to one another by a Connection. For example, if you had four MHUB S systems stacked together then you would start with the Foundation Layer (Layer S1), then the second MHUB S (Layer S2), followed by the third MHUB S (Layer S3) and finally the fourth MHUB S (Layer S4).

IR Cascade

MHUB S supports infrared (IR) passback from a display receiver connected to one MHUB system to be passed to another MHUB through a process called IR Cascading. IR Cascading works from the top of your stack and goes down the MHUB Stack Layers until it reaches the Foundation Layer or is instructed to stop within uOS.



Master / Controller

A hardware device (like a Zone Processor) designed to control other MHUB or MZA systems when they are operating in stack mode. It is not possible to create a stack without a Master / Controller present in your setup. Should be called M1.

uControl

uControl is our app for control and configuration of stacked systems. If you are using MHUB S with a control system then you do not need to use uControl other than the first booting system so that it is properly initialised.

Stacking basics

Assumptions

This guide assumes that the reader is already familiar with MHUB and HDBaseT matrix systems.

Hardware Requirements

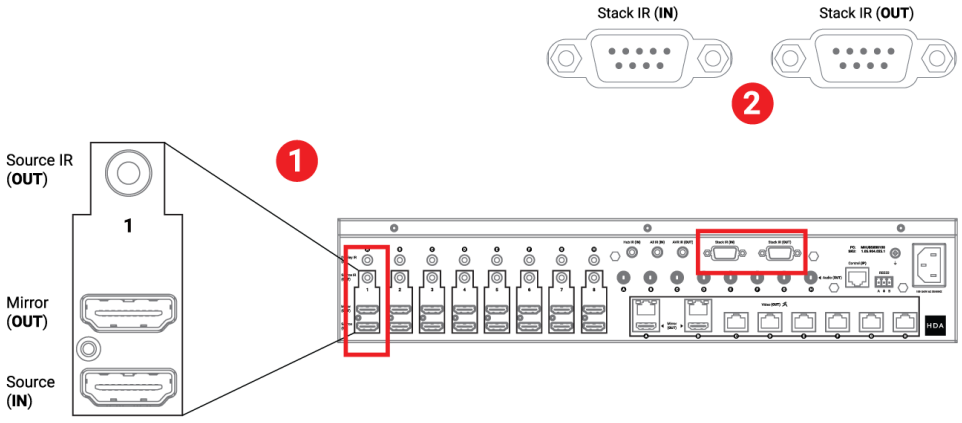
In order to build an MHUB S stack you will need the following in your setup:

- One or more MHUB S devices.
- HDMI cables to connect MHUB S devices together (sold separately).
- uControl Zone Processor 1 or 5 (ZP1/ZP5) to act as your Controller.

Ports essential to building a stack

Stacking is made possible by two ports on the rear of each MHUB S.

1. **The “Mirror (OUT)” port**
   This port mirrors any HDMI signal connected to the “Source (IN)” port directly below it. Connecting the “Mirror (OUT)” port to the “Source (IN)” port on another MHUB S (must be next in the Stack Layer) will make that video available on the new MHUB S device (see page 7).
2. **“Stack IR (IN)” & “Stack IR (OUT)” ports**
   Used for MHUB S’ IR Cascading function and can be connected using the Source IR Stacking Cable included with MHUB S (see page 8). Stack IR only works with a maximum of 4 MHUB S systems.



Important MHUB S (8+8x8) 100 Rear Ports required for stacking.

Controlling the stack with a uControl Zone Processor

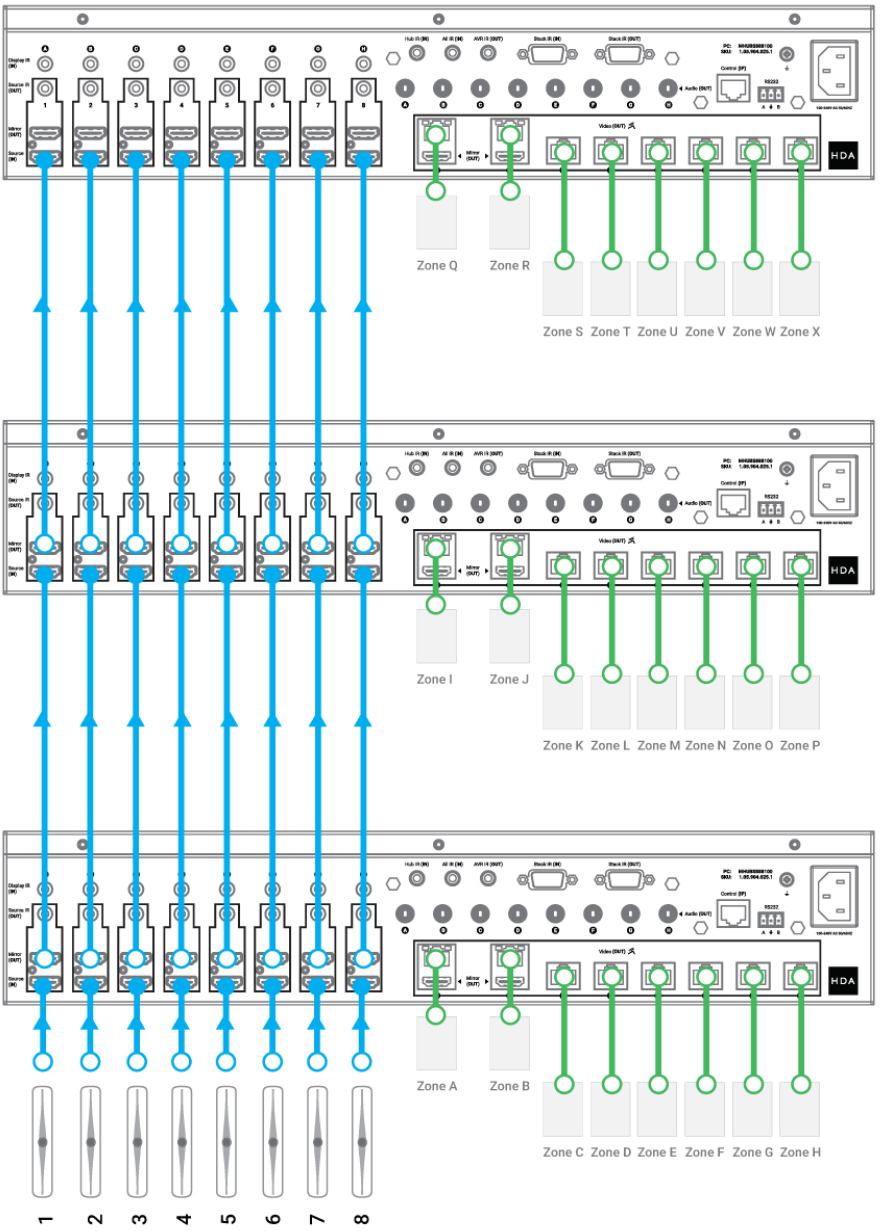
The Zone Processor (ZP) is a **necessary component** that is required to build a stacked system and must be present in your LAN along with your MHUB S devices. When uControl detects this arrangement in your network then the app will offer you the option to configure the collection of devices as a stacked system and will set the MHUBs into stacked mode. At the same time the ZP will be instructed to change into Controller mode and when this happens, any on-board IO present on the ZP (CEC, IR, RS232 ports) will cease to function.

For best results HDA recommends that the ZP is connected to the LAN via its Ethernet connection rather than WiFi which may introduce unwanted control lag/delay.

What does the Zone Processor do?

The ZP replaces the MHUB as the primary user interface for the system. Source naming, Connections, IoT, switching, uControl pack installation and Sequences are now all done on the ZP rather than the individual MHUB devices. When the MHUB is in operation, uControl communicates with the ZP only and the ZP translates that command into an appropriate instruction for the target MHUB to execute.

8x24 wiring diagram: video only



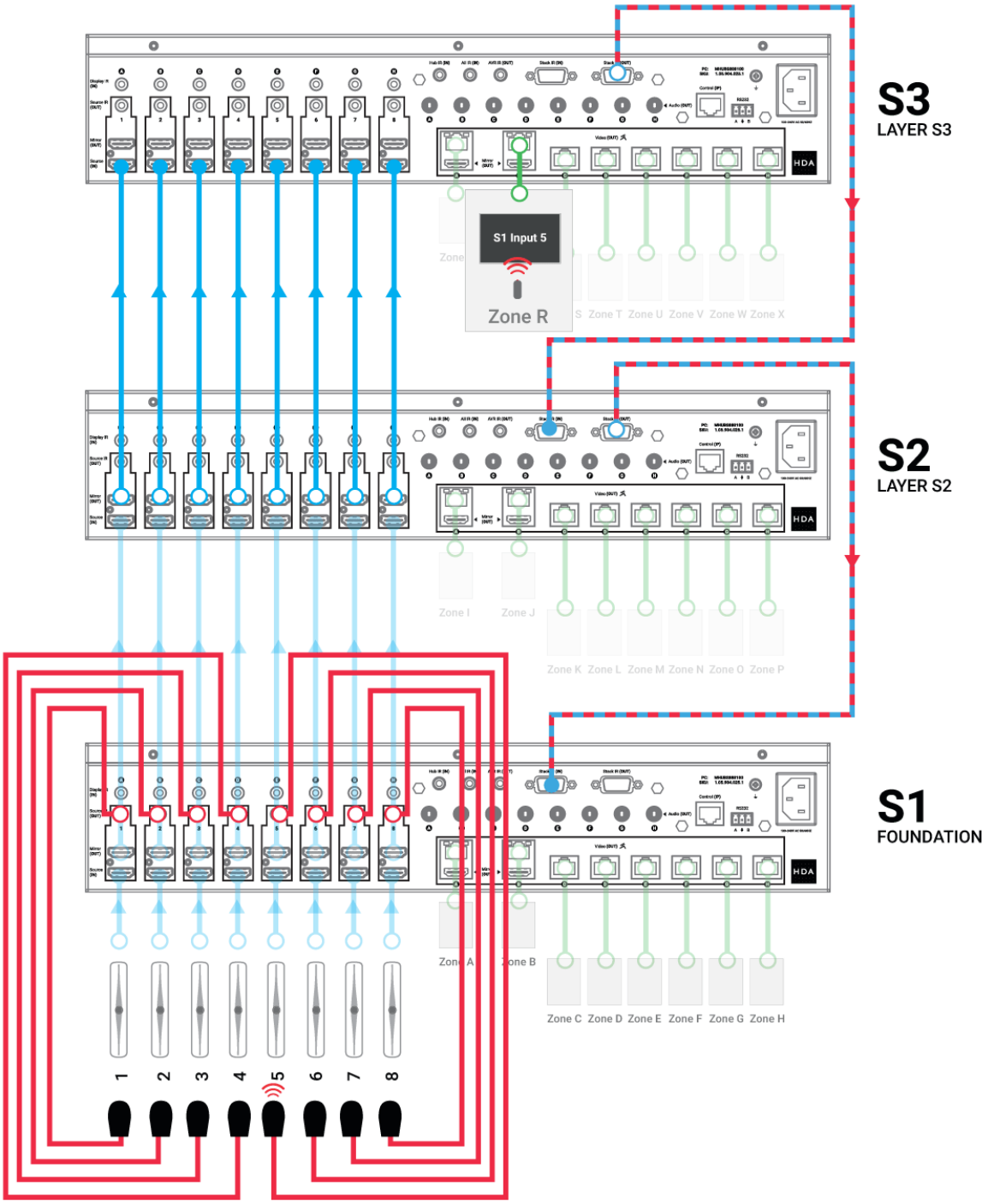
nji

Video sources (1-8) are connected to the Foundation Layer (S1) and Connections have been defined in uOS connecting the “Mirror (Out)” ports on (S1) to the “Source (IN)” ports on (S2) for all 8 ports. This is repeated again on (S3).

Stacking rules:

1. Any input served from a “Mirror (Out)” port must match the “Source (IN)” port identifier. You can not switch port IDs (eg. Mirror 1 to Input 4)
2. A Connection can only be defined between incremental Stacking Layers, S1 to S2 to S3 and so on. It is not possible to jump between devices, for example, S1 to S3.

8x24 wiring diagram: cabling for IR Cascade



Zone R which is served from MHUB S (S3) is currently watching video content on Input 5 which originates from the Foundation Layer (S1) Input 5. With IR Cascading enabled and MHUB connected using the Source IR Stacking Cable it is possible to send the IR signal received in Zone R through S3, S2 and finally to the Foundation Layer (S1) where the IR is transmitted.

IR Cascading rules:

1. Cascading IR applies to source control only. You can not Cascade IR to displays.
2. Cascading IR goes down the Stacking Layers only.
3. Similar to Connections, IR Cascading can only be defined between incremental Stacking Layers: S3 to S2 and finally S1. It is not possible to jump between devices, for example, S3 to S1.
4. The Source IR Stacking Cable is 50cm/1.64ft
5. All “Source IR (OUT)” ports have two modes: Local and Passthrough. If the port is set to Local, then any IR received from a stacked MHUB will be transmitted on the receiving MHUB. If the port mode is Passthrough then the IR signal will be transported off that MHUB down the Stack Layer until it reaches an instruction to execute the IR command Locally.
6. Local and Passthrough modes can be set from uOS on the Zone Processor.
7. Any input served from a “Mirror (Out)” port must match the “Source (IN)” port identifier. You can not switch port IDs (eg. Mirror 1 to Input 4)
8. A Connection can only be defined between incremental Stacking Layers. It is not possible to define a Connection from S1 to S3.

Get setup in 15 steps

1

Sanity check hardware and connections

Make sure that all your MHUB S devices are connected to your LAN, connected to one another and powered on.

2

Ensure that the Zone Processor is on and connected to LAN

The Zone Processor (ZP) is the secret ingredient in building a stack. If it is not on or the app can not discover it on your network then you won't be able to progress much further!

3

Make sure uControl is on the latest software

Stacking requires the latest software from HDA. If you have uControl already installed check with your app store to see if there is an update available.

4

Launch uControl

… And select "Connect to System" to get started.

SCREENSHOT

5

Select the Stack option

uControl will scan your network and will find your MHUB S devices and your ZP. When this happens it will ask you if you want to connect to a system in Standalone mode or Stack. Select Stack.

SCREENSHOT

6

Tell uControl what ZP will become your Controller

If you have more than one ZP in your Stack then uControl will ask which device you would like to convert into your Controller. If you are unsure which device to pick, there is a magnifying glass icon which will make ZP's main LED flash so that you can be sure of your choice.

7

IMPORTANT STEP: Add devices to your stack and setting their Stack Layer

uControl will present you with all the MHUB devices that it found in its scan. By selecting the MHUB you will be adding it to your stack and you will notice a number on the left-hand-side. This is the Stack Layer ID. This number should mirror the physical arrangement of your MHUB systems so that the Foundation Layer is 1, the system above it is 2 and so on. If you are unsure which MHUB is which then look for the same magnifying glass icon which will trigger and LED to identify the system for you.

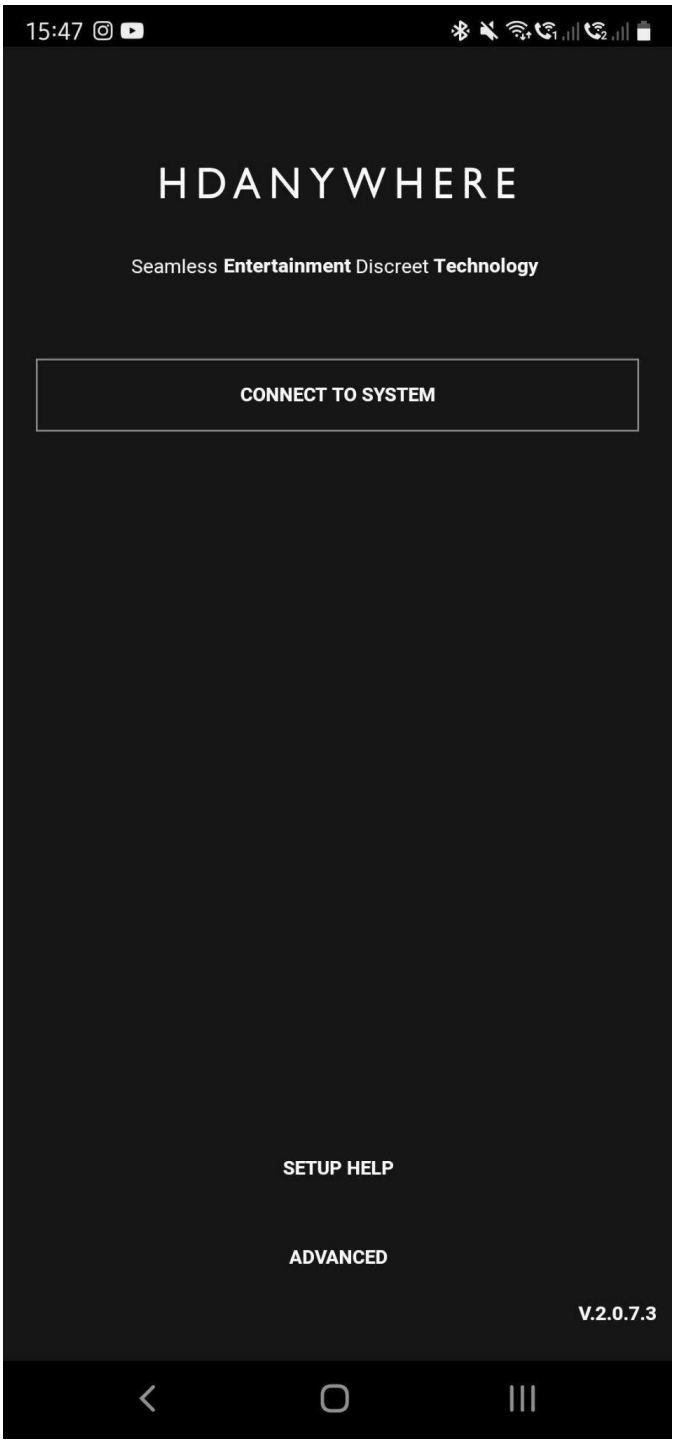
SCREENSHOT

This step is very important because you can not undo it after it is complete.

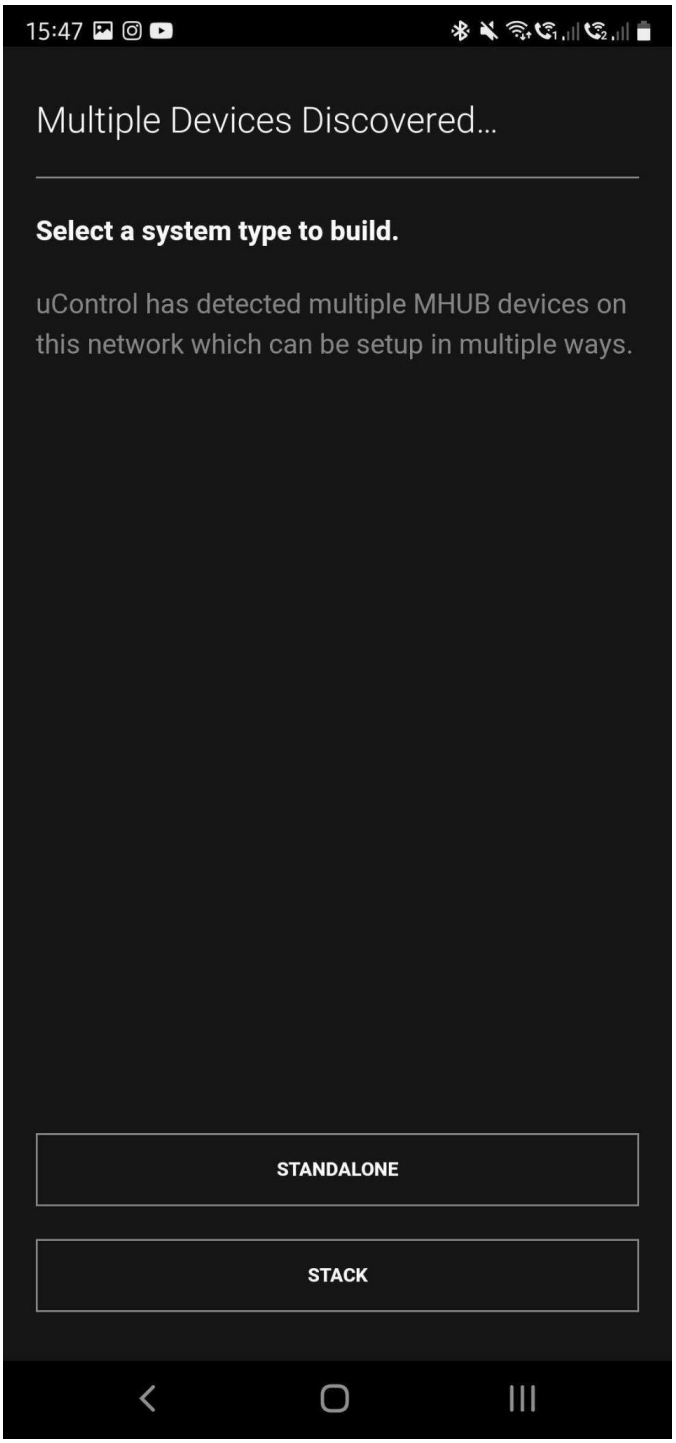
8	**uControl will gather data from all systems and prepare the ZP for configuration** uControl will connect to every HDA device in your network and will pull all data from the system to pass to the ZP. At this stage you will be asked to leave uControl and access the ZP. Click on the button that says "Continue Setup on Device"	
9	**If the background colour changes then you have accessed the ZP** The first thing that you need to do is agree to the End User License Agreement (EULA) and register the owner of the system (formerly referred to as a HDA Cloud account).	SCREENSHOT
10	**Name each device** Give all the HDA hardware that uControl found a human-friendly name that you can recognise easily.	SCREENSHOT
11	**Define Connections** During this step you will be telling the ZP how each MHUB is connected to one another.	SCREENSHOT
12	**Name Inputs** Give each one of your video source inputs a name that you can recognise easily.	SCREENSHOT
13	**Create Zones** A Zone is a space in your property like a boardroom, living room, bedroom or gym. Once you have created all the Zones that your MHUB S system serves you need to assign an output into that Zone.	SCREENSHOT
14	**Setup is complete** Phew, that was quick!	
15	**Customise your system** Now that the main system is setup you can return to uControl and switch inputs and distribute video as you like. At this point you can further customise your system by installing uControl packs for your sources and displays or setting up automations for your new system.	

Image Gallery

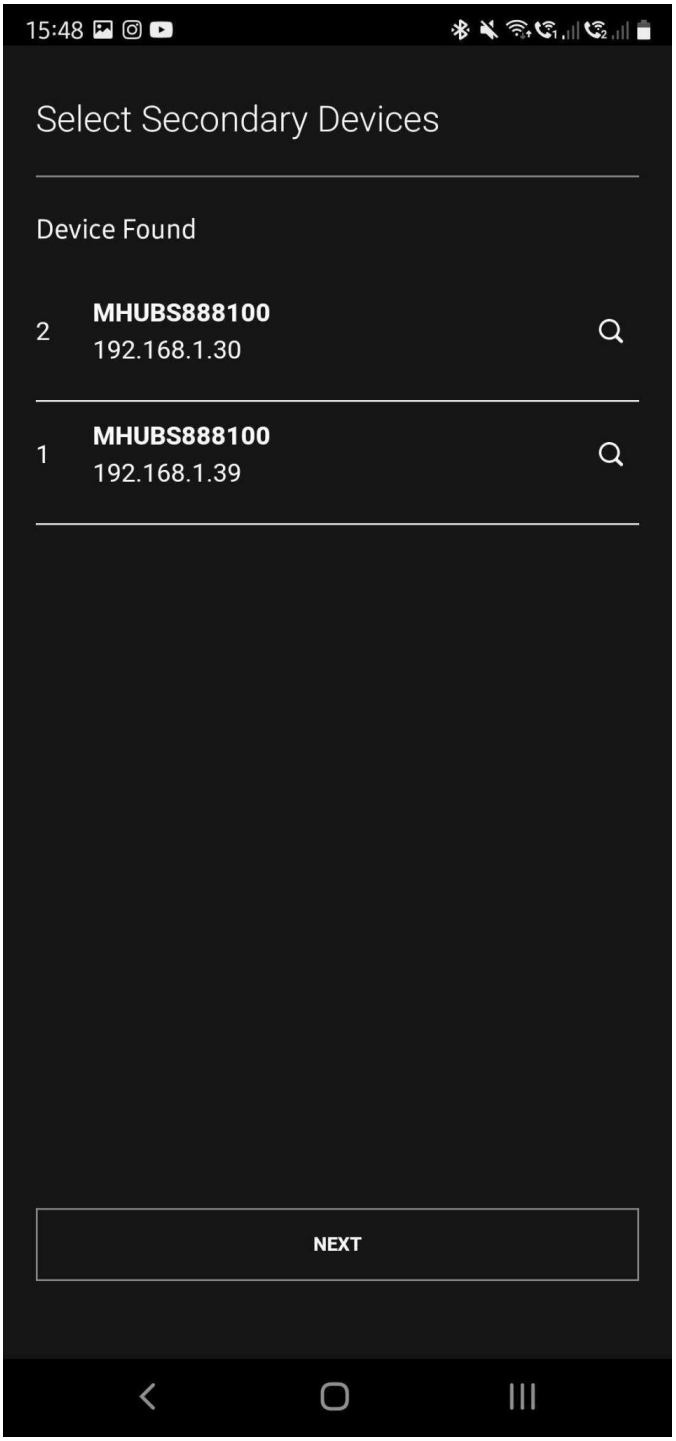
Connect to System



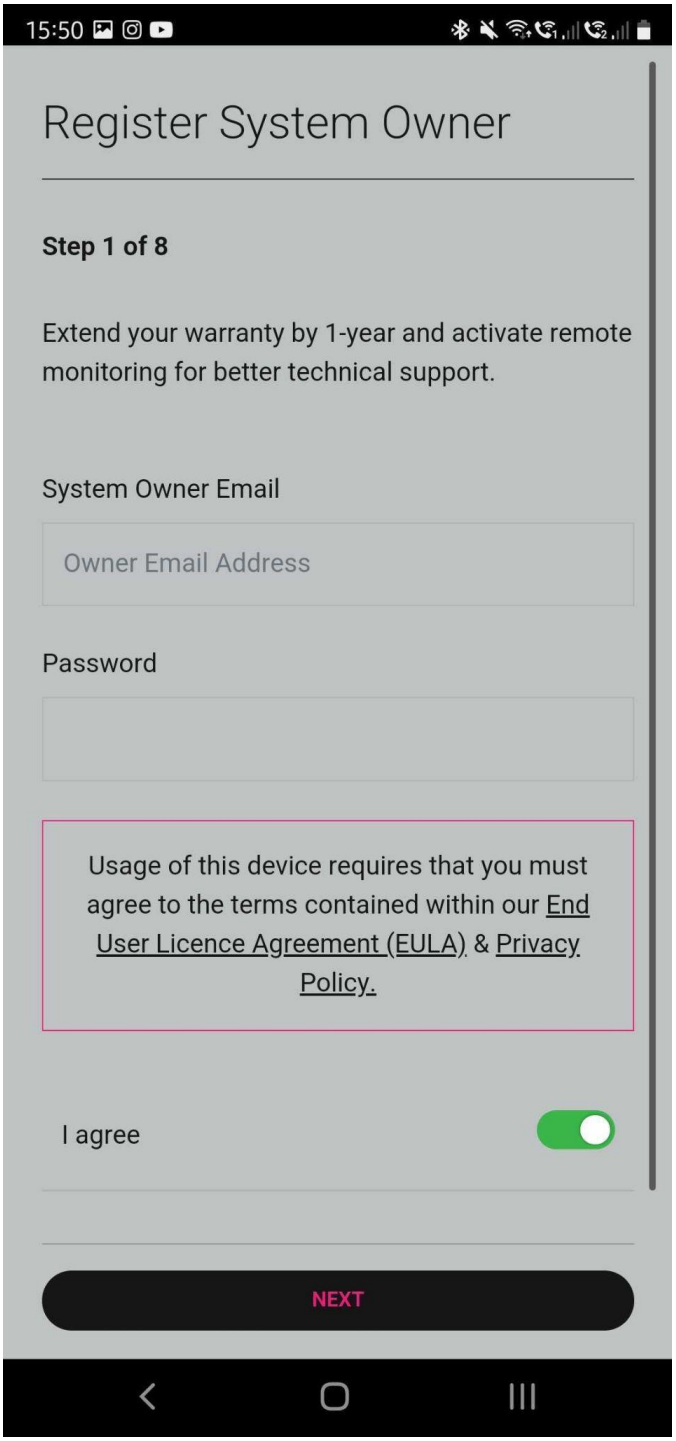
Select the Stack option



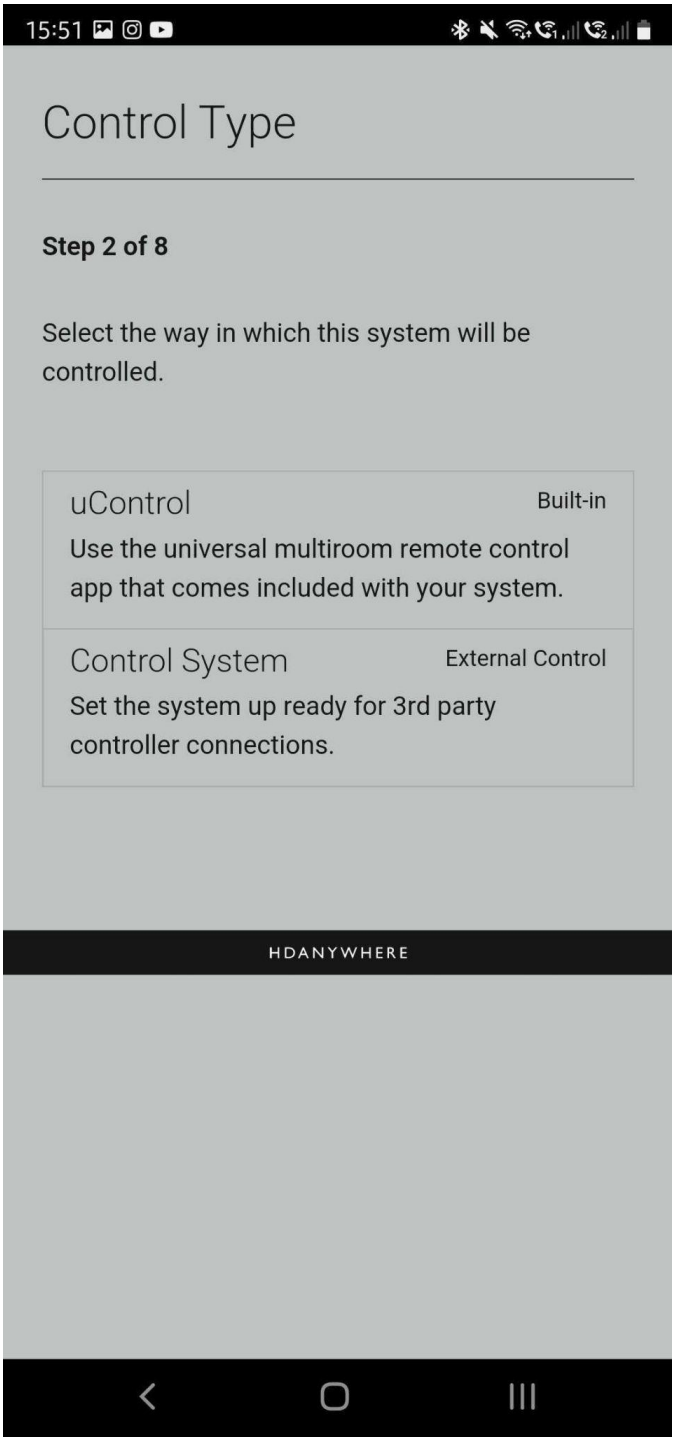
Setting Stack Layer order



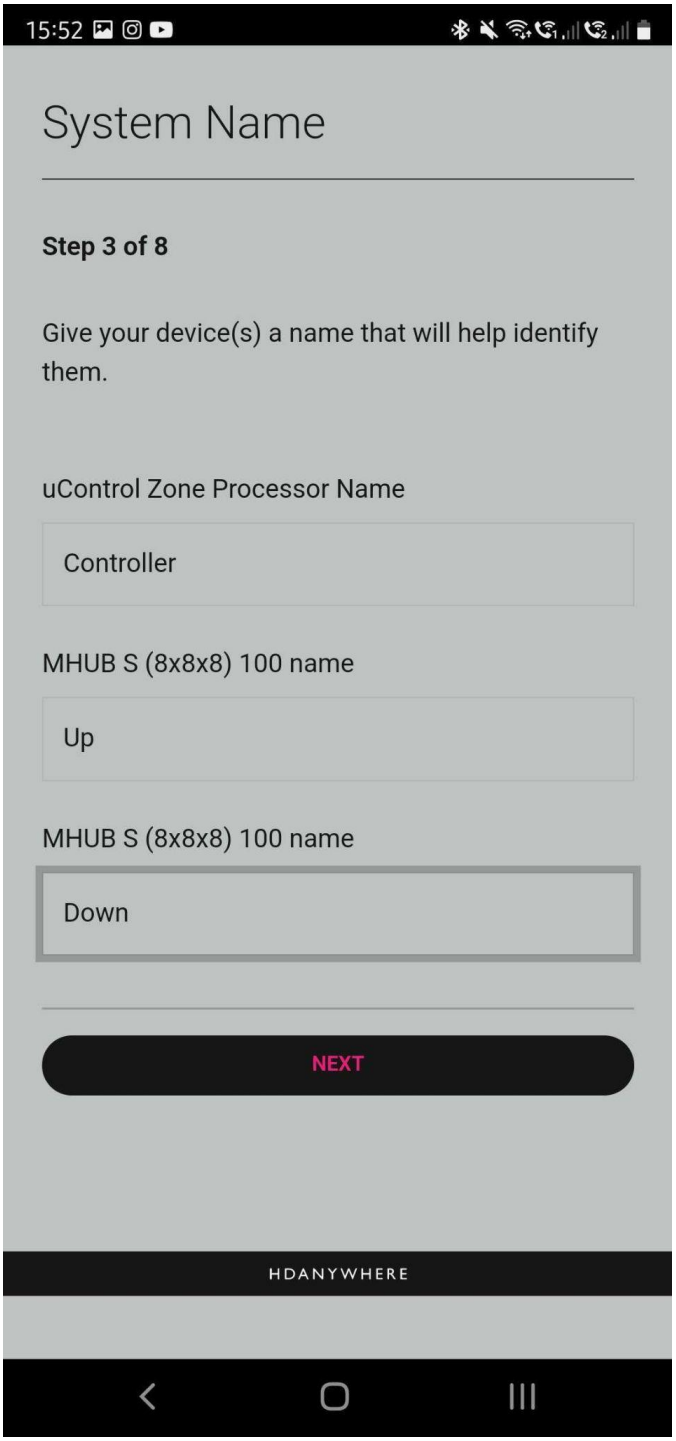
Accessing uOS



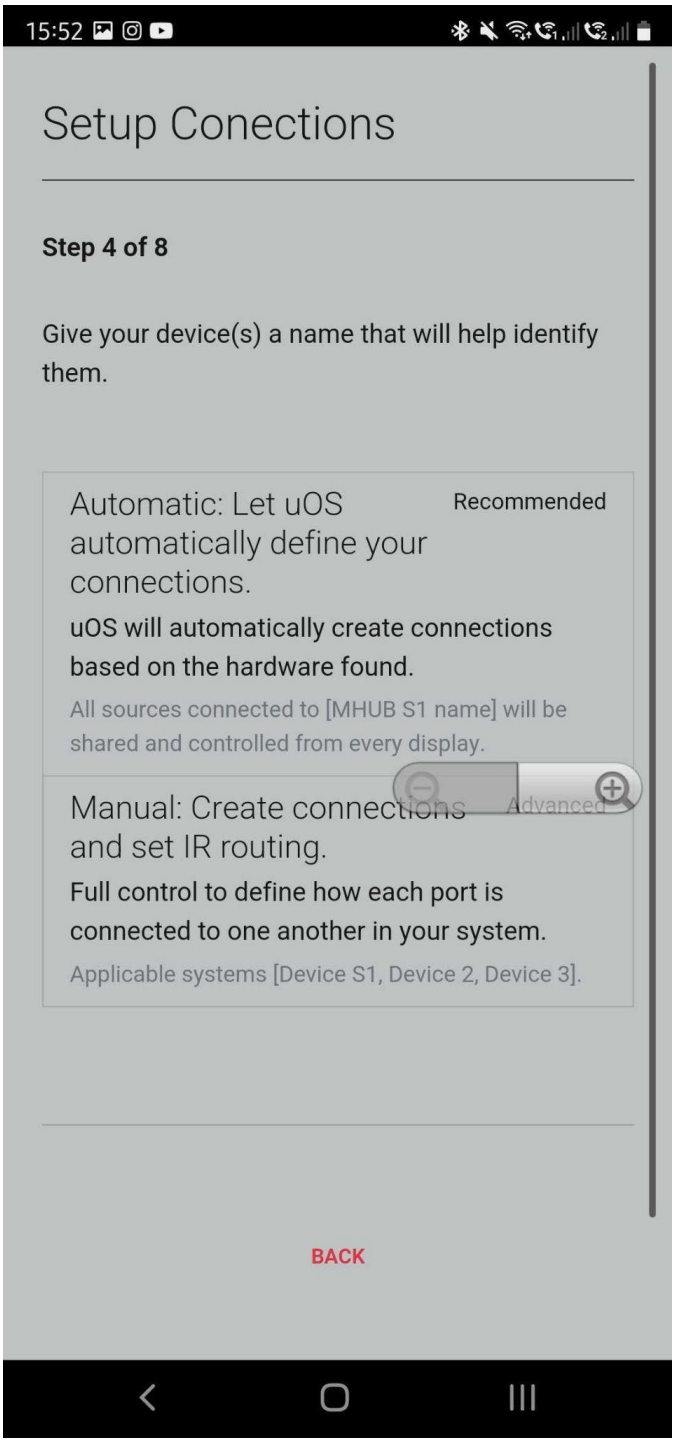
Select “uControl”



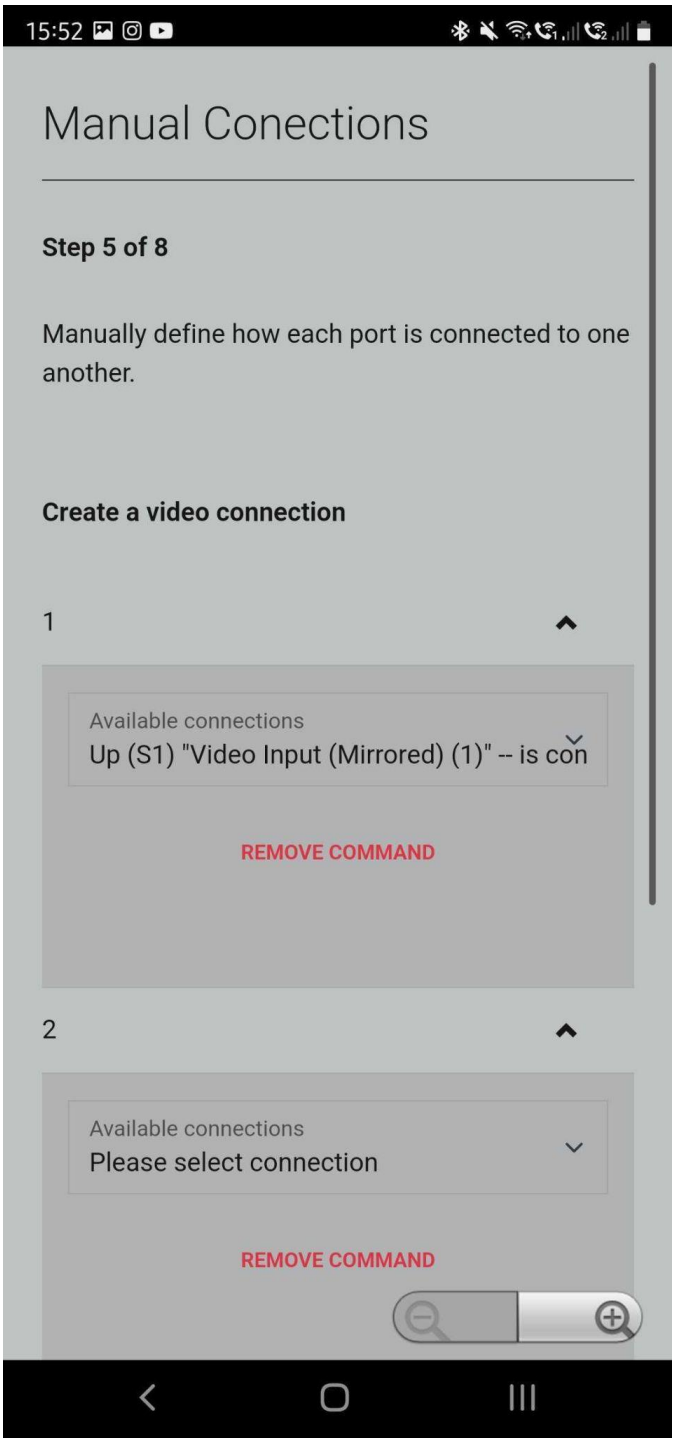
Provide a System Names



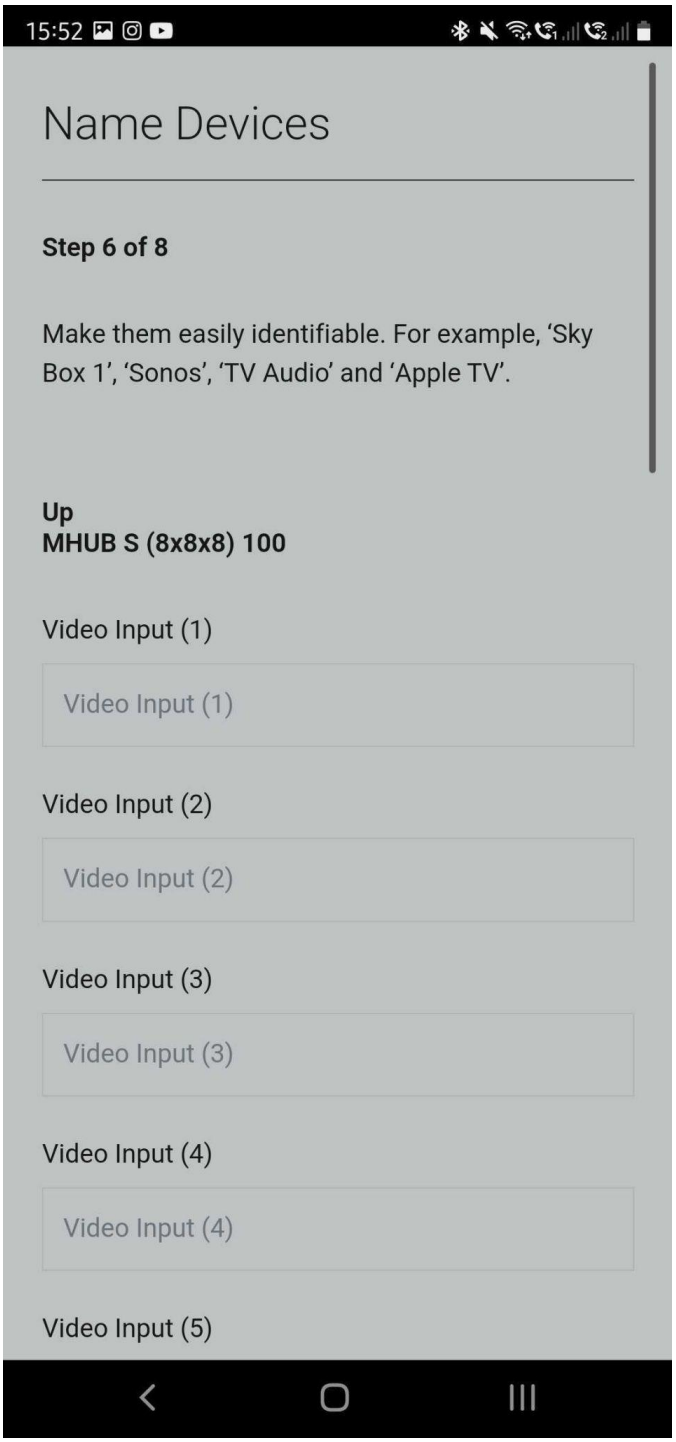
Select “Manual”



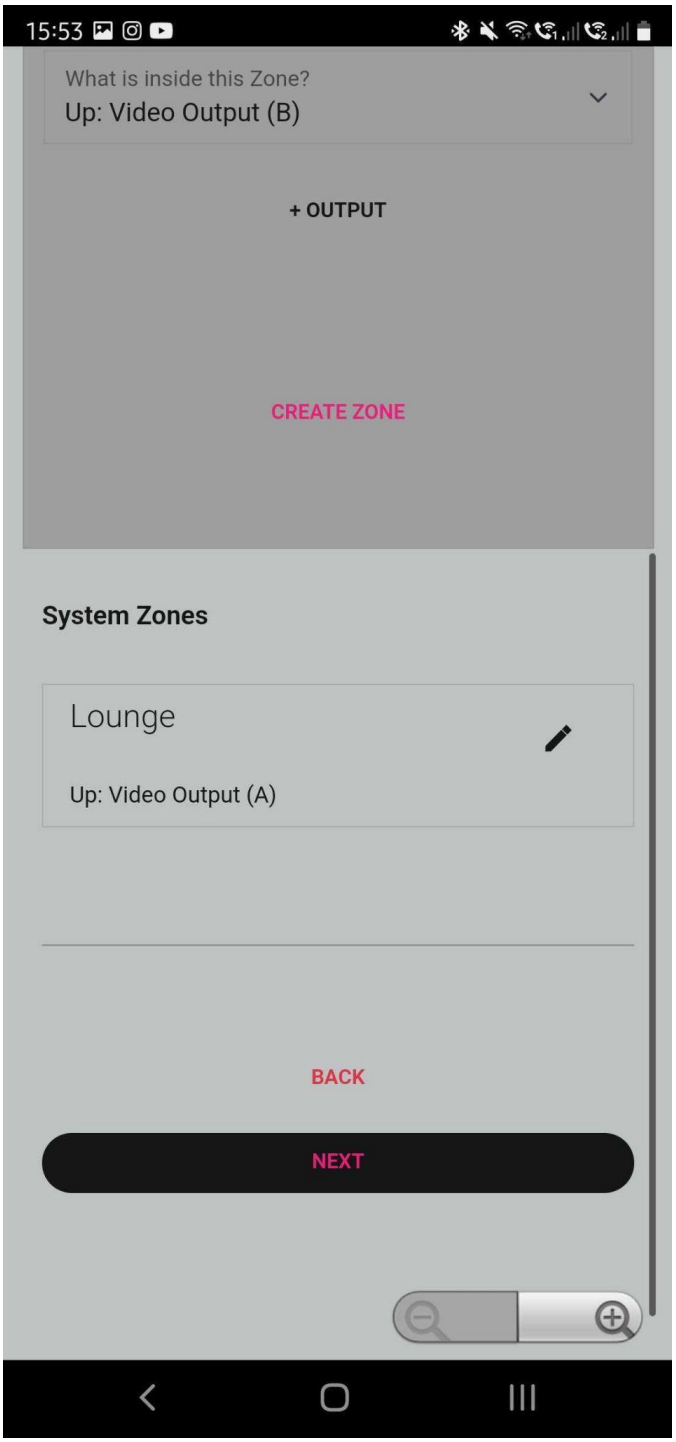
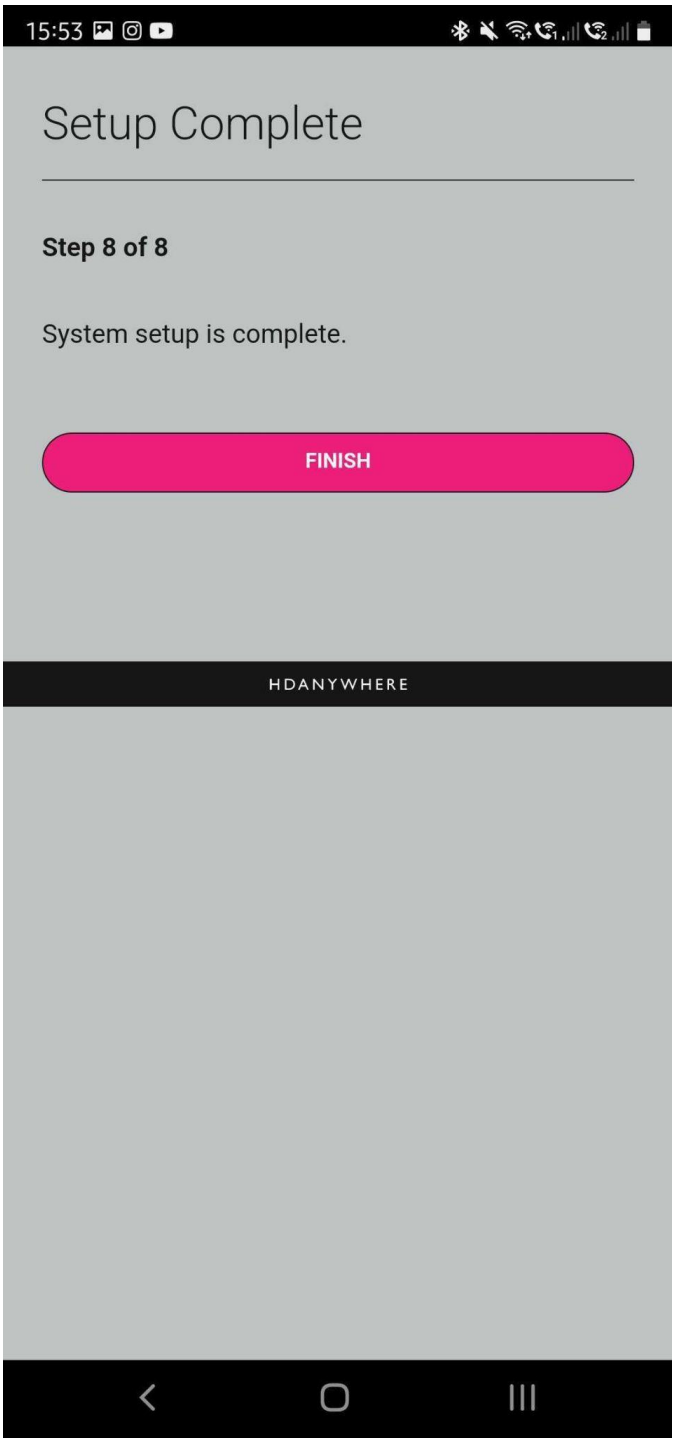
Creating a Connection



Name your devices



Create a Zone



Select “uControl”