DIGITALINX

EDU-KIT-001 Installation Guide

EDU-KIT-001
RX / Receiver

FIRMWARE   ON   LINK   HDCP   ⏻   DIGITALINX

NETWORK — INPUT — OUTPUT — CONTROL — AUDIO — MIC

TCP/IP   HDBT IN/PoC   TO DISPLAY   FROM TOUCHSCREEN   IR OUT   TX ⏚ RX   RS232   REMOTE MUTE   L ⏚ R   LINE OUT   LINE   MIC   MIC + + −   2x20 Watts @ 4Ω   24V DC

⏻   LINK   HDCP   RESET   SOURCE SELECT   TO PC   FIRMWARE   HDMI IN 1   HDMI IN 2

MIC   SOURCE   VOLUME   ON   OFF   HDMI 1   HDMI 2   IR   CONFIG   DIGITALINX
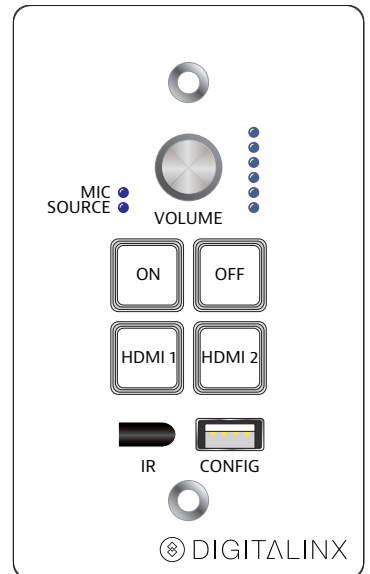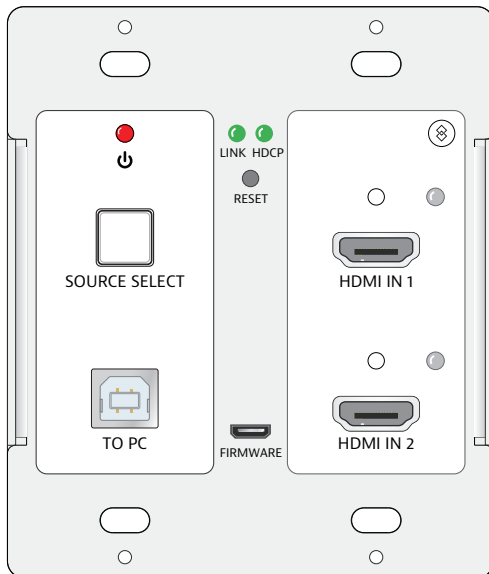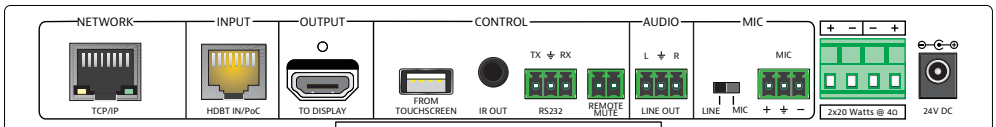
The Digitalinx EDU-KIT-001 is a multi-function AV distribution system designed to provide HDMI video switching, system control, video extension and analog audio amplification in a convenient kit. Utilizing the Valens Colligo VS2110 series chips, power, control, video up to 1080p, and audio are transported over a single 30m (98 ft) solid core Category 5e cable between the wall plate transmitter and the receiver. The wall plate control module connects to the wall plate transmitter with a second Category 5e cable. All the power needed for the system is provided by the receiver. Additionally, the receiver features a built-in web GUI for control and analog audio de-embedding to a built-in 2x20 watt stereo amplifier.

Included Accessories

· Receiver
· Transmitter
· Control Panel
· Locking Power Supply with Power Cable
· USB Type A to Type B Cable
· IR Emitter
· Two Mounting Rails with Screws
· Six Wall Box Screws
· Three 3-pole Removable Terminal Blocks
· One 2-pole Removable Terminal Block
· One 4-pole Removable Terminal Block
· Installation Guide

Safety Precautions

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

· Unpack the equipment carefully and save the original box and packing material for possible future shipment.
· Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
· Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
· Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
· Refer all servicing to qualified service personnel.
· To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
· Do not put any heavy items on the extension cable in case of extrusion.
· Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
· Install the device in a place with good ventilation to avoid damage caused by overheating.
· Keep the module away from liquids.
· Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
· Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
· Unplug the power cord when left unused for a long period of time.
· Information on disposal for scrapped devices: do not burn or mix with general household waste. Please treat them as normal electrical waste and recycle the devices properly.

Receiver Front Panel
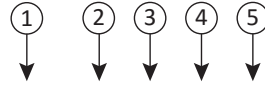
EDU-KIT-001
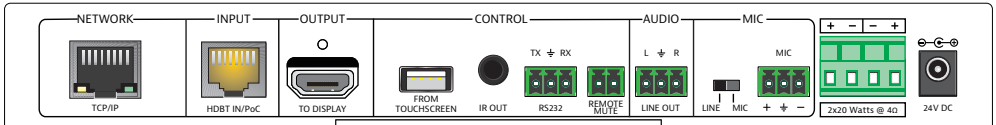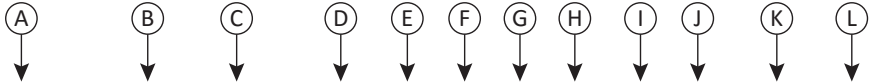RX / Receiver

FIRMWARE   ON   LINK   HDCP   ⏻   ⊛ DIGITALINX

1. Firmware Update Port
2. System Power Indicator
3. HDBaseT Link Indicator
4. HDCP Status Indicator
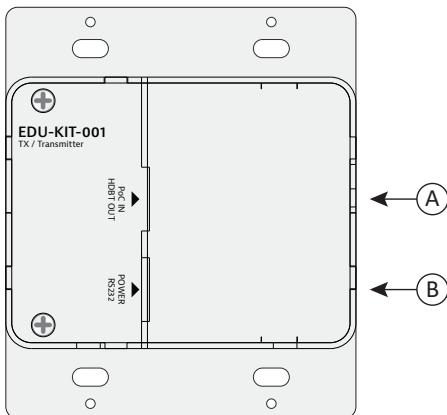5. Receiver Power Indicator

Receiver Rear Panel

NETWORK   INPUT   OUTPUT   CONTROL   AUDIO   MIC

TCP/IP   HDBT IN/PoC   TO DISPLAY   FROM TOUCHSCREEN   IR OUT   RS232   REMOTE MUTE   LINE OUT   LINE   MIC   2x20 Watts @ 4Ω   24V DC

TX ⏚ RX   L ⏚ R   MIC   + − − +   + + −

A. Network Port
B. HDBaseT Input and PoC Output
C. HDMI Output
D. USB Port to Touchscreen Display
E. IR Output to Display
F. RS232 Output to Display
G. Remote Mute Contact Closure
H. Line Level Analog Audio Output
I. Line/Mic Level Selector Switch
J. Microphone Input
K. Speaker Output
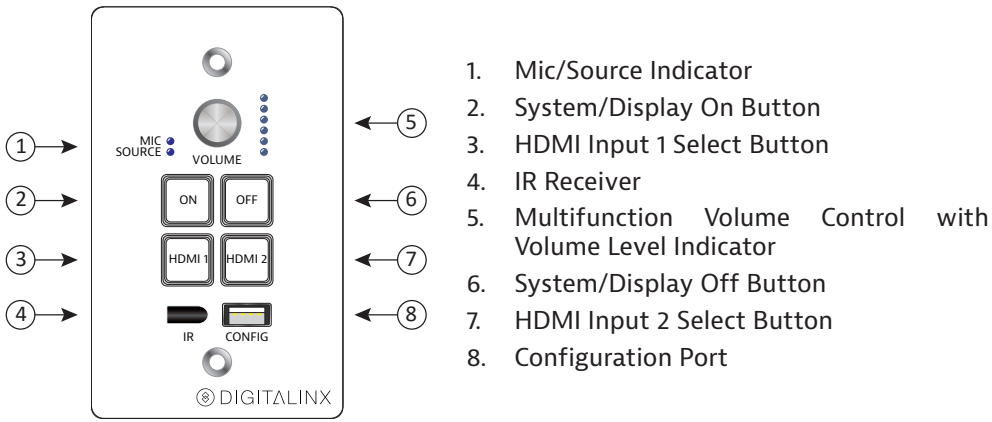L. 24V DC Power Input

Transmitter Front
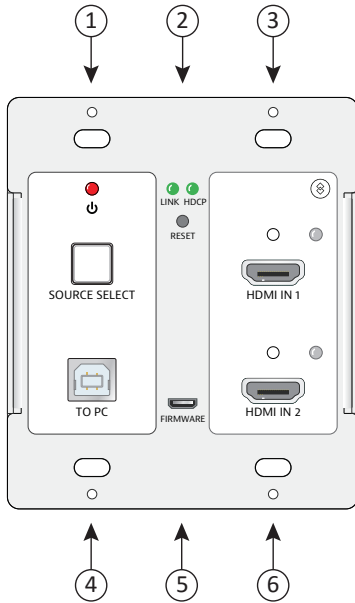
1. Power Indicator and Source Select Button
2. Link and HDCP Status LEDs and Reset Button
3. HDMI Input 1 with Activity Indicator
4. USB Port to Host PC
5. Firmware Update Port
6. HDMI Input 2 with Activity Indicator

① ② ③

LINK HDCP
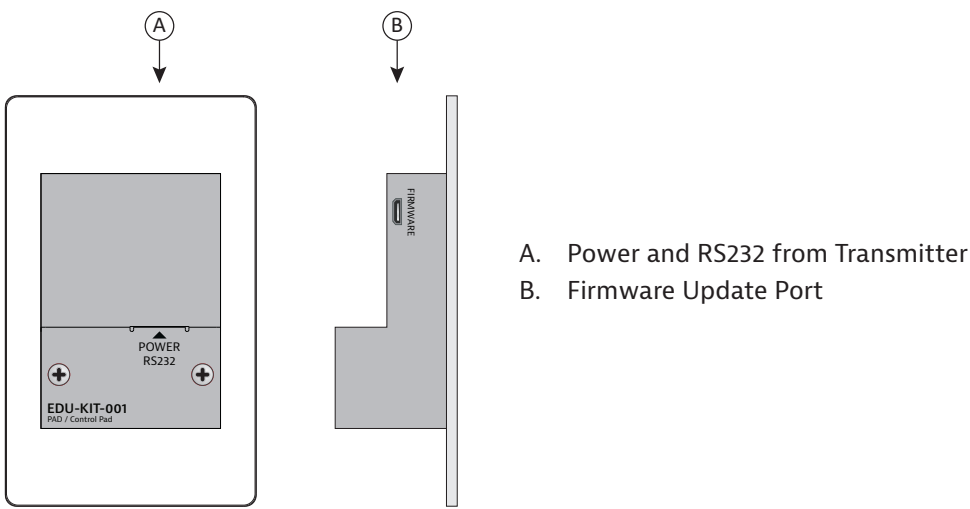RESET
SOURCE SELECT
TO PC
FIRMWARE
HDMI IN 1
HDMI IN 2

④ ⑤ ⑥

Transmitter Rear

EDU-KIT-001
TX / Transmitter

PoC IN
HDBT OUT

POWER
RS232

Ⓐ

Ⓑ

A. HDBaseT Output and PoC Input
B. Power and RS232 to Control Panel

Control Panel Front

1. Mic/Source Indicator
2. System/Display On Button
3. HDMI Input 1 Select Button
4. IR Receiver
5. Multifunction Volume Control with Volume Level Indicator
6. System/Display Off Button
7. HDMI Input 2 Select Button
8. Configuration Port

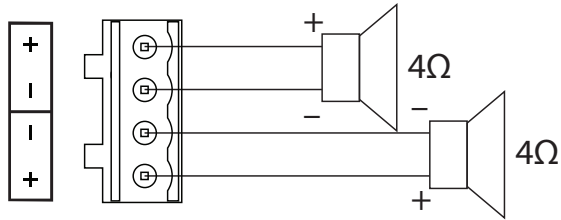# Control Panel Rear

A. Power and RS232 from Transmitter
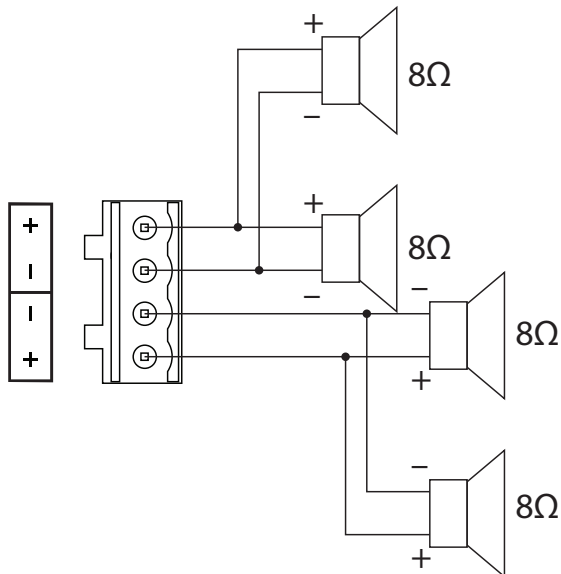B. Firmware Update Port

Speaker Wiring Configurations

4Ω Load with 4Ω Speakers

4Ω Load with 8Ω Speakers

Installation Instructions

1. Verify all components included with the EDU-KIT-001 are present before installation.
2. Turn off power and disconnect the audio/video equipment by following the manufacturer's instructions.
3. Attach the included rubber feet or mounting ears to the receiver.
4. Connect an HDMI cable between the HDMI output of the Receiver and the HDMI input of the display. The HDMI cable should not exceed 5 meters (16 feet).
5. Connect a microphone to the microphone input connector.
   a. "+" connects to positive
   b. "−' connects to negative
   c. "⏚" connects to ground.
6. Adjust the microphone input mode selector based on the type of microphone to be connected to the Receiver.
   a. MIC – 48dB gain
   b. LINE – 4dB gain
7. Connect the speakers to be used in accordance with the Speaker Wiring Configurations. If an external audio amplifier is to be used with the system, connect the unbalanced analog audio output of the Receiver to the input of the amplifier.
8. If the display is to be controlled via IR, plug the IR emitter to the IR Out port of the Receiver and mount the IR emitter bud to the IR receiver port of the display.
9. If the display is to be controlled via RS232, plug the 3-pole terminal plug end of the included RS232 cable into the RS232 port on the Receiver and the DE9 end to the display.
10. Connect a USB cable between the display's interactive white board USB port and the USB port labeled "From Touchscreen" on the rear of the Receiver.
11. Connect a Category 6A or greater cable between the Network TCP/IP port and the facility's network.
12. Connect a Category 6A or greater cable between the Input port of the Receiver and the Output port of the Transmitter. This cable cannot exceed 30 meters (98 feet).
13. Connect a Category 6A or greater cable between the Power and RS232 port on the Transmitter and the Power and RS232 port on the Control Panel.
14. Connect the included USB cable between the TO PC port on the front of the Transmitter and the PC to receive the commands from the interactive white board.
15. Plug the power supply into the power input port on the Receiver.
16. Power on the Receiver by plugging the power cable into the power supply.
17. Power on all audio/video devices.

IR Learning

If the power command for the display remote is a toggle, use the same button for the ON and OFF commands below.

Enter IR Learning Mode

Press and hold the HDMI 1 button on the Control Panel for three seconds. The ON and OFF buttons will light up.

Programming the Display On and Display Off Functions

1. Press the ON button, and it will start to flash.
2. Point the display remote at the Control Panel IR sensor and the press the Power On button on the remote. The ON button on the Control Panel will stop flashing.
3. Press the OFF button, and it will start to flash.
4. Point the display remote at the Control Panel IR sensor and the press the Power Off button on the remote. The OFF button on the Control Panel will stop flashing.
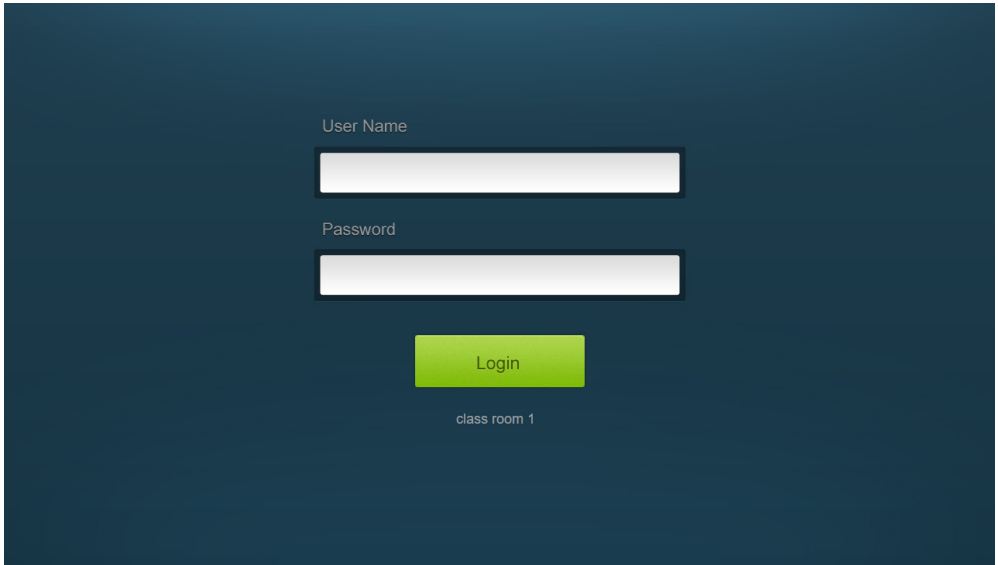
Exit IR Learning Mode

Press and hold the HDMI 2 button on the Control Panel for three seconds. The ON and OFF buttons will go dark.

Web Browser Configuration

The default IP address of the EDU-KIT-001 is 192.168.0.178. This can be changed in the Network settings.

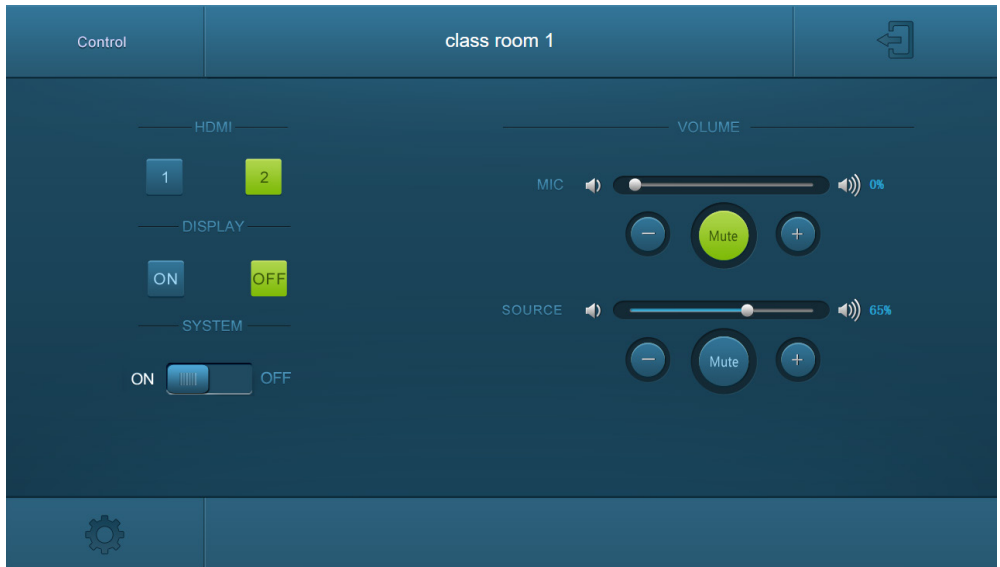## Logging In

To change the settings of the web browser interface or program RS232 commands for the display, log into the EDU-KIT-001 as an administrator. The User Name is *admin* and the default Password is *admin*.

Device Control Screen

HDMI
Switch between HDMI 1 and HDMI 2.

Display
Turn the display on or off.

System
Turn the system on or off.

Volume
Mute and unmute audio sources. Volume may be changed by pressing the "+" or "-" buttons or by dragging the volume slider.

To enter the configuration settings, click on the gear icon on the lower left corner of the Control interface.

Setting Tab

Password
Change the password for the *admin* and *user* login screen.

Display Control Select
Select whether the display will be controlled via IR or RS232.

Display/Power Sync
Select whether the display and system will be powered on and off simultaneously. This option is only active if the display is controlled via RS232.

I/O Mode Select
Select whether the contact closures need to be normally open (N.O.) or normally closed (N.C.) to mute the audio output for integration with a mass notification system.

Label
Rename the label at the top of the Control screen.

Audio Delay
Sets up the audio delay to sync the audio with the video on the display. The delay time is 0 to 340 ms. Click the GO button the activate the new value.

Save/Cancel
Saves or cancels changes made to this screen.

Command Tab (RS232 Display Control)

This tab defines the RS232 display control commands. If a display requires hex commands, make sure the *Hex* box is checked.

Display On
Enter the RS232 command to turn on the display.

Display Off
Enter the RS232 command to turn off the display.

Input Select
Enter the RS232 command to switch to the input which is connected to the Receiver.

Baud Rate
Select the baud rate necessary to communicate with the display. Available baud rates are: 2400, 4800, 9600, 14400, 19200, 38400, 56000, 57600, and 115200 baud.

Input Select Delay
Enter the delay time in seconds between the Power On and Input Select commands. This delay may be between 1 and 100 seconds.

Command Ending
Select the command ending after each RS232 command. Available command endings are: null, carriage return, line feed, and carriage return and line feed.

Save/Cancel
Saves or cancels changes made to this screen.

Network Tab

DHCP/Static IP
Select whether the system will use a static IP or will be provided an IP via DHCP.

IP Address
Enter the IP address for the system.

Subnet Mask
Enter the subnet mask for the system.

Gateway
Enter the gateway address for the system.

Save/Cancel
Saves or cancels changes made to this screen.

Transmitter Operation

Plugging in an HDMI source will automatically switch to that input. Pressing the *Source Select* button will switch sources.

Control Panel Operation

Power On and Off the System

To power on the system, press and hold the ON button on the Control Panel for three seconds. If the display is controlled via RS232, the display and system power on functions may be tied together.

To power off the system, press and hold the OFF button on the Control Panel for three seconds. If the display is controlled via RS232, the display and system power off functions may be tied together.

Power On and Off the Display

To power on the display, press the ON button on the Control Panel.

To power off the display, press the OFF button on the Control Panel.

Select Input Sources

Press the HDMI 1 or HDMI 2 buttons on the Control Panel to select the appropriate source device.

Volume Control Functions

Turning the Volume knob clockwise will raise the volume; counterclockwise will lower the volume.

Pressing the Volume knob will mute or unmute the current audio source.
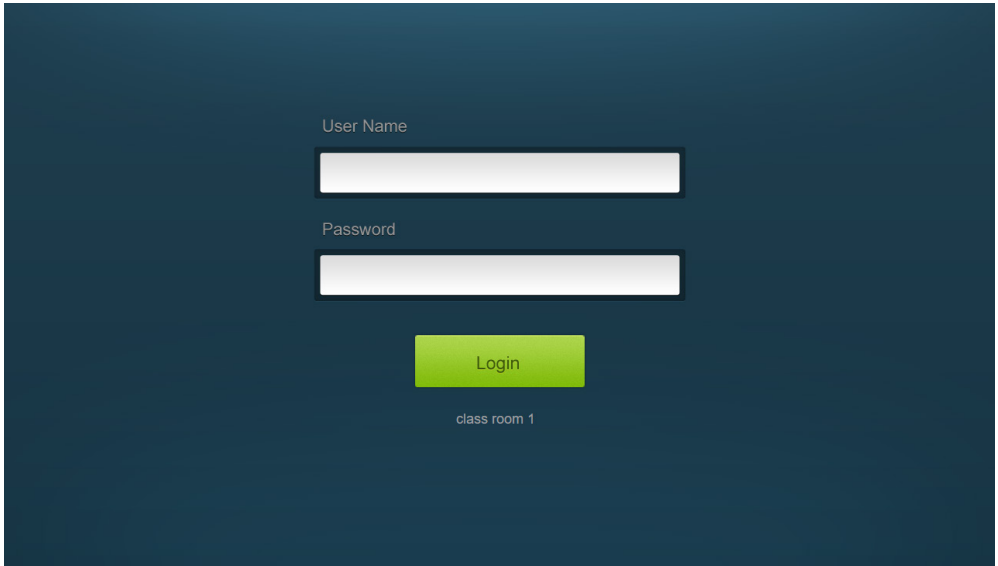
Pressing and holding the Volume knob for three seconds will switch to the other audio source. If the audio source is muted, this action will unmute the source.

Web Browser Control

The web browser control interface is an alternative method to control the system without having to interact with the Control Panel.

The default IP address of the EDU-KIT-001 is 192.168.0.178. This can be changed in the Network settings by an administrator.

Logging In

The User Name is *user* and the default Password is *user*.

Device Control Screen

HDMI
Switch between HDMI 1 and HDMI 2.

Display
Turn the display on or off.

System
Turn the system on or off.

Volume
Mute and unmute audio sources. Volume may be changed by pressing the "+" or "-" buttons or by dragging the volume slider.

Copy and Load Control Settings

The system IR or RS232 configuration can be copied to a USB thumb drive and loaded into additional systems or be saved as a backup.

Copy Control Settings

Insert a 4GB or smaller FAT32 formatted thumb drive into the Configuration port on the front of the Control Panel.

Simultaneously press and hold the OFF and HDMI 2 buttons on the Control Panel for three seconds. As soon as the buttons are released, they will light up while the copy is in progress.

Remove the thumb drive from the Configuration port once the buttons go dark.

Load Control Settings

Insert a 4GB or smaller FAT32 formatted thumb drive with saved configuration settings into the Configuration port on the front of the Control Panel.

Simultaneously press and hold the ON and HDMI 1 buttons on the Control Panel for three seconds. As soon as the buttons are released, they will light up while the upload is in progress.

Remove the thumb drive from the Configuration port once the buttons go dark.

Firmware Update

Web GUI

Open a web browser and enter the IP address of the Receiver directed at port 100. If the IP address is at 192.168.0.178, enter *192.168.0.178:100* into the web browser.

When prompted, enter the admin username and password (*admin* and *admin* by default). Once logged in, the following screen will be available.
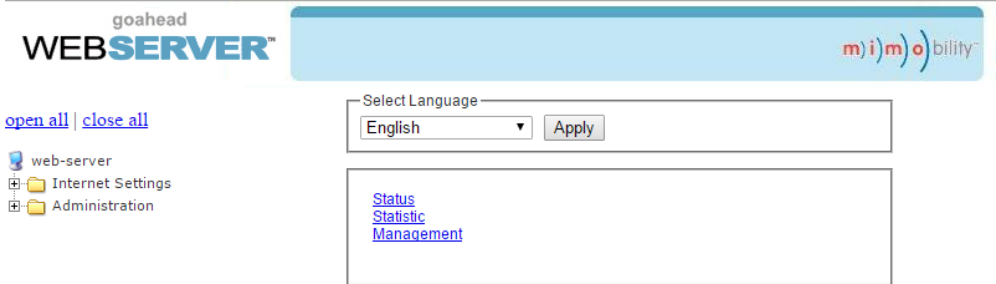
Click the plus symbol next to *Administration*, then click on *Upload Program* to upload the new firmware.

Click the *Choose File* button and navigate to the web GUI update file. The web GUI update file will have *Ralink* in the file name. After the file is selected, click on *Apply*.
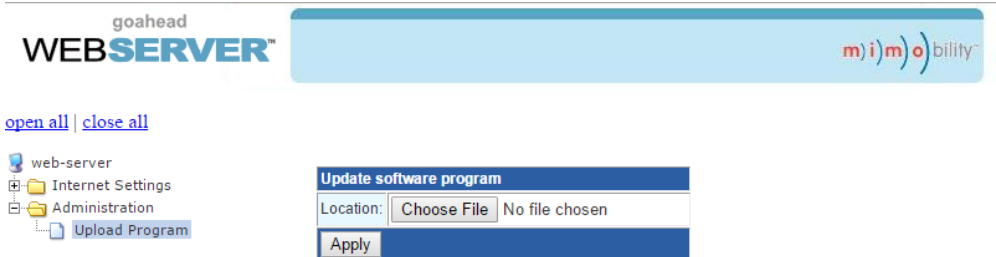
A confirmation dialog window will open to verify the new software will be uploaded to the device. The web page will appear to load for about 30 seconds while the web GUI software is being uploaded into the receiver. Once complete, the receiver will reboot.

Receiver Update

Copy the upgrade software (updata.exe) and the firmware file (.bin with *RX* in the file name) to a folder on the computer's desktop.
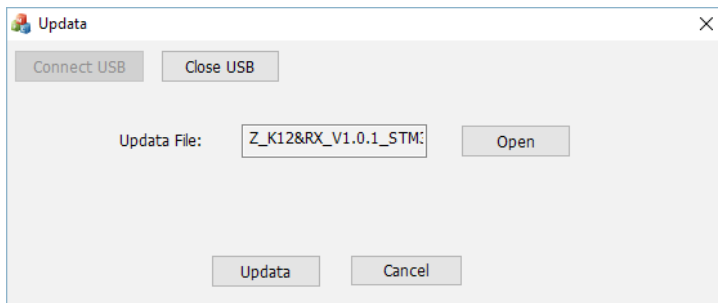
Connect a micro USB type B cable between the computer and the Firmware port on the Receiver.

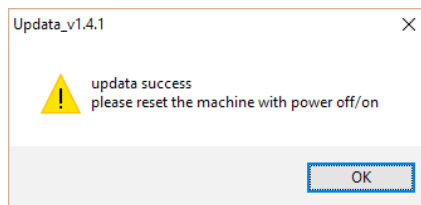Run the upgrade software.

Click the *Connect USB* button.

Click *Open*, then navigate to the location of the firmware file for the Receiver.

Click *Updata* to start the firmware upgrade.


When the firmware is uploaded successfully, a popup window will open stating to reboot the device.

Close the Updata software.

If the firmware update fails, close the upgrade software and power cycle the device. Running the software from a USB drive has been known to cause issues with updating the firmware. Occasionally, a USB to RS232 adapter may cause conflicts with the firmware update.
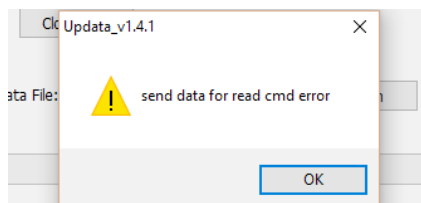
Transmitter Update

The firmware update procedures for the Transmitter are identical for the receiver. The firmware file for the Transmitter will have *TX* in the file name.

Control Panel Update

The firmware update procedures for the Control Panel are identical for the receiver. The firmware file for the Control Panel will have *WP4* in the file name.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

Technical Specifications

Supported Audio, Video and Control	
Maximum Video Compatibility	Deep Color 48/36/30/24 Bit at 1080p
Video Compliance	HDMI 1.4, HDCP 1.4
HDMI EDID	Pass-through from Display
Embedded Audio	Up to PCM 2 channel
Analog Audio Frequency Response	20Hz-20KHz
Analog Audio Output Impedance	50 Ω Analog Output; 4/8 Ω Speaker Output
Maximum Rated Power Output (Audio)	40 Watts
Maximum Passive HDMI Distance	5 m (16 ft)
IR Carrier Frequency Range	33-55kHz at 5 volts
RS232 Baud Rate	2400, 4800, 9600, 14400, 19200, 38400, 56000, 57600, and 115200 baud
Ethernet	100BaseT
USB	Supports USB 2.0
Contact Closure	NO and NC for system mute
HDBaseT Signal Characteristics	
Maximum Distance	30 m (98 ft)
Cable Requirements	Continuous solid core Category 5e or greater with TIA/EIA-568B crimp pattern (no couplers in-line)
Bandwidth	10.2 Gbps
HDBaseT Chipset	VS2110 series chipsets
Other	
Standard Warranty	2 Years
Included Items	Receiver, Transmitter, Control Panel, Locking Power Supply with Power Cable, USB Type A to Type B Cable, IR Emitter, Two Mounting Rails with Screws, Six Wall Box Screws, Three 3-pole Removable Terminal Blocks, One 2-pole Removable Terminal Block, One 4-pole Removable Terminal Block, Installation Guide

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

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