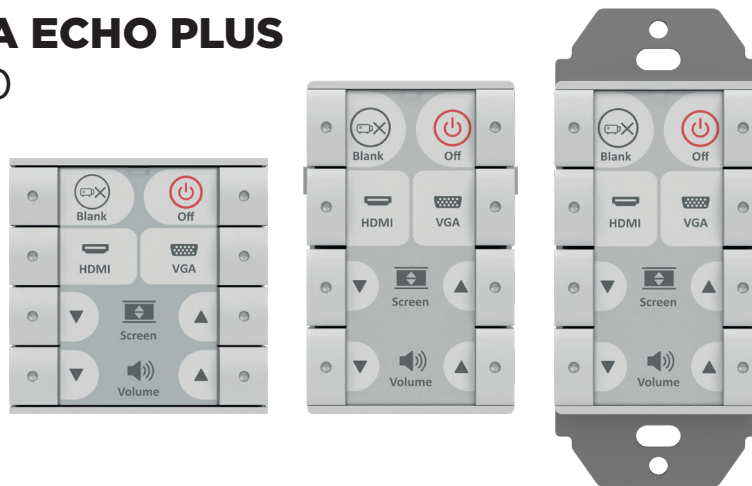# INSTALLATION MANUAL
BIAMP IMPERA ECHO PLUS
000.0000.000

WHAT IS IN THE BOX?

Echo Plus, DK

- 1 x Biamp Impera Echo Plus
- 1 x 12V wall plug PSU Terminal connectors
- 1 x Front cover
- 1 x Paper cover
- Quick guide

Echo Plus, EU

- 1 x Biamp Impera Echo Plus
- 1 x 12V wall plug PSU Terminal connectors
- 1 x Front cover
- 1 x Paper cover
- Metal plate
- 2 x screws for metal plate
- Quick guide

Echo Plus, US

- 1 x Biamp Impera Echo Plus
- 1 x 12V wall plug PSU Terminal connectors
- 1 x Front cover
- 1 x Paper cover
- Metal plate
- 2 x screws for metal plate
- Quick guide

IMPORTANT SAFETY INSTRUCTIONS

Caution:
Read these instructions:
Read and understand all safety and operating instructions before using the equipment.

Keep these instructions:
The safety instructions should be kept for future reference.

Heed all warnings:
Follow all warnings and instructions marked on the equipment or in the user information.

Avoid attachments:
Do not use tools or attachments that are not recommended, because they may be hazardous.

Warning!:
- This equipment should be operated only from the included power supply.
- To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).
- Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.
- Do not defeat the safety purpose of a polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards. Contact your local Biamp reseller or distributor.
- If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.
- Do not use this equipment near water.
- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and objects filled with liquids.
- Unplug the product before cleaning. Clean only with a dry cloth and not cleaning fluid or aerosols. Such products could enter the unit and cause damage, fire, or electric shock. Some substances may also mar the finish of the product.

FCC Class A Notice:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation. The Class A limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

FCC regulations state that any unauthorized changes or modifications to this equipment, not expressly approved by the manufacturer, could void the user's authority to operate this equipment.

The lightning bolt triangle is used to alert the user to the presence of uninsulated "dangerous voltages" within the unit's chassis that may be of sufficient magnitude to constitute a risk of electric shock to humans.

The exclamation point triangle is used to alert the user to presence of important operating and service instructions in the literature accompanying the product.

DESCRIPTION

Echo Plus is a compact yet surprisingly intelligent AV control system. It is remarkably simple to use, thanks to an intuitive graphical interface with a minimum number of buttons.

With Echo Plus anyone can start up a presentation without complicated procedures.
Simply press ONE button and you are ready to begin!

Echo Plus is a perfect choice for the classroom, meeting or conference room and is easy to install. Echo Plus can control devices through IR, RS232 or even LAN. Echo Plus is available in polar white.

The drawings in the manual of Biamp Control Echo Plus is based on the DK, US and EU versions.

Function description	
RS-232 (Tx+Rx)	1
RS-232 (Tx) or IR (controls up to 2 IR devices)	1
LAN device control	2
I/O	3
Buttons	8
NEB Bus	1 (2 units)
USB port for configuration	1
PIR sensor input	Yes
Light on/off	Yes
Room darkening	Yes
Screen up/down	Yes
Volume control	Yes
Device feedback	Yes

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SPECIFICATIONS

Power input	
Voltage	12 VDC
Power Usage	1 W
Connector type	2 pin screw block

Power adaptor (included)	
Input voltage	100 VAC - 240 VAC
Line frequency	50 Hz – 60 Hz
Max power usage	Max 8 W

RS-232 port	
Ports	1 x bi-directional
Baud rate	1200 – 115200 bit/sec
Data bits	7, 8
Parity	Even, Odd, None
Stop bits	1, 2
Connector	3 pin screw block

RS-232 or IR port	
Ports	1 x uni-directional
Baud rate	1200 – 115200 bit/sec
Data bits	7, 8
Parity	Even, Odd, None
Stop bits	1, 2
IR frequency	400 Hz to 500 KHz
Connector	2 pin screw block

Compliancy	
IEC/EN	61000-6-1
IEC/EN	61000-6-2
FCC	Part 15, Class A
CE	

Input / Output	
Ports	3 x I/O
Input trigger low	< 1VDC
Input trigger high	> 4VDC
Output type	Open drain
Isolated output	No
Max voltage load	24 VDC
Max current	0.5 A
Connector	4 pin screw block

Network (LAN)	
Speed	10 / 100 Mbit
Duplex modes	Half or Full
DHCP	Default off
Default IP	192.168.254.252
Default gateway	192.168.1.1
Default subnet mask	255.255.255.0

| General	
Width EU (mm)	55 mm
Height EU (mm)	55 mm
Depth EU (mm)	17 mm
Width DK (mm)	45 mm
Height DK (mm)	72 mm
Depth DK (mm)	17 mm
Width US (mm)	1.8 inch
Height US (mm)	4.1 inch
Depth US (mm)	0.9 inch
Weight EU/DK/US	90 g
Shipping weight	0,3 kg
Shipping dimension: EU, DK (W/H/D)	155x85x55 mm
Shipping dimension: US (W/H/D)	150x170x55 mm
Storage temperature	-20 °C to 50 °C
Storage moisture	Non-condensing
Operation temperature	0 °C to 30 °C
Operation moisture	Non-condensing

QUICK GUIDE TO THE ECHO PLUS

Buttons, indicators and connectors are available on the front and rear panels. These are shown below:

Front:

With front cover

Without front cover
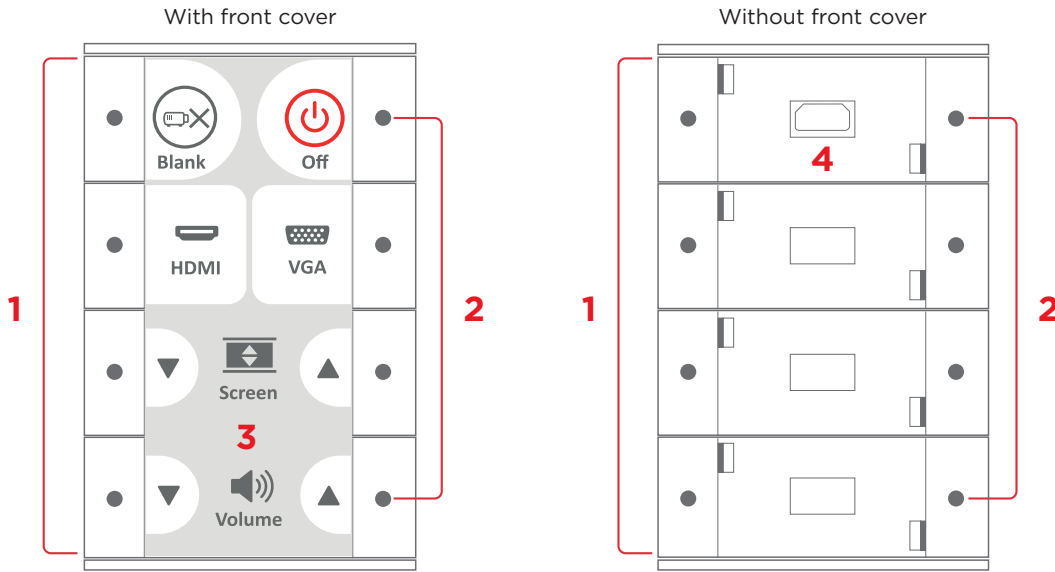
Number	Description
1	Push buttons for controlling the AV setup
2	Red LED lights for indication of AV setup status
3	Front cover with label for button description
4	Mini USB for programming (behind front cover)

Back:

DK version

US version

EU version
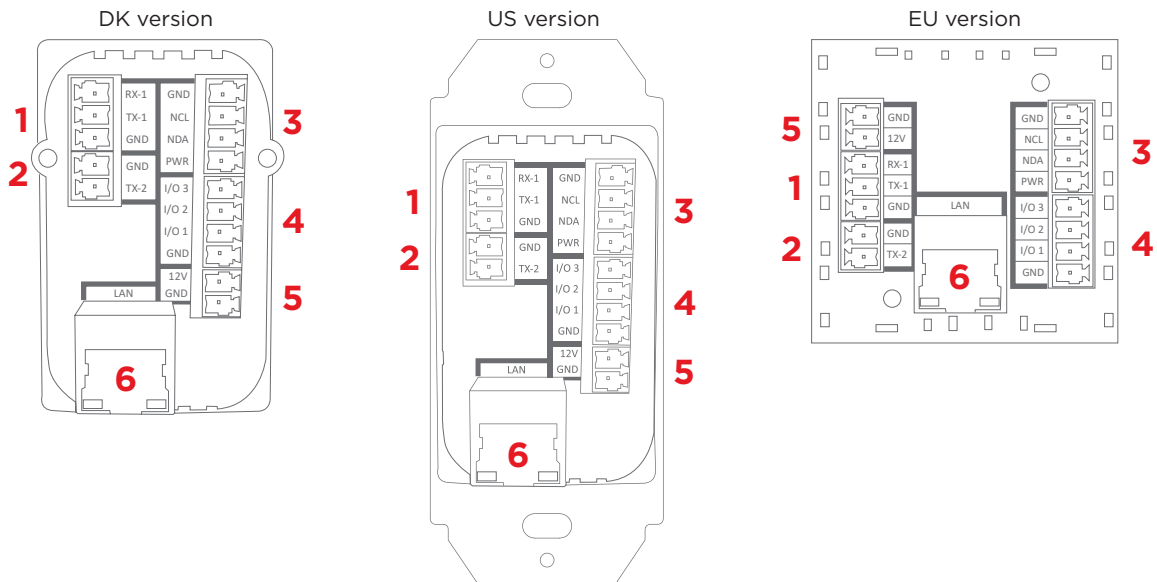
Number	Description
1	RS-232 port, Bi-directional
2	RS-232 or IR port, Uni-directional
3	NEB bus port
4	Input/Output connector
5	12 VDC power input
6	RJ-45 Network (LAN) connector

HARDWARE INSTALLATION

The Biamp Impera Echo Plus can be installed in standard electrical back boxes or by using mounting brackets. Each model (DK, US, EU) fits in typical boxes matching specific installation requirements for the country of sale.

1. Prepare the installation site by installing the needed back box or brackets.
   Pull the needed cables through the back box or bracket.

2. Mount the supplied connectors to the cables as needed and connect to the control system.

3. Mount the control system in the back box or on the bracket - **See different versions below**.

4. Connect and apply power to the control system.

5. Configure the control system using the Biamp Project Designer.

DK version

- Insert a flathead screwdriver gently and pry out the front cover.
  Remove the front cover and the paper label behind it.

- Insert a flathead screwdriver into the button. Gently push and pry out the button.

- Insert the control system in a frame matching the back box used.

- Insert screws (not supplied) matching the back box into the two holes.
  Secure the control system to the back box without overtightening the screws.

- Remount the paper label, insert a printed transparent label showing the button functions, and mount the front cover. Note that the front cover mounts in only one direction.

Flathead screwdriver

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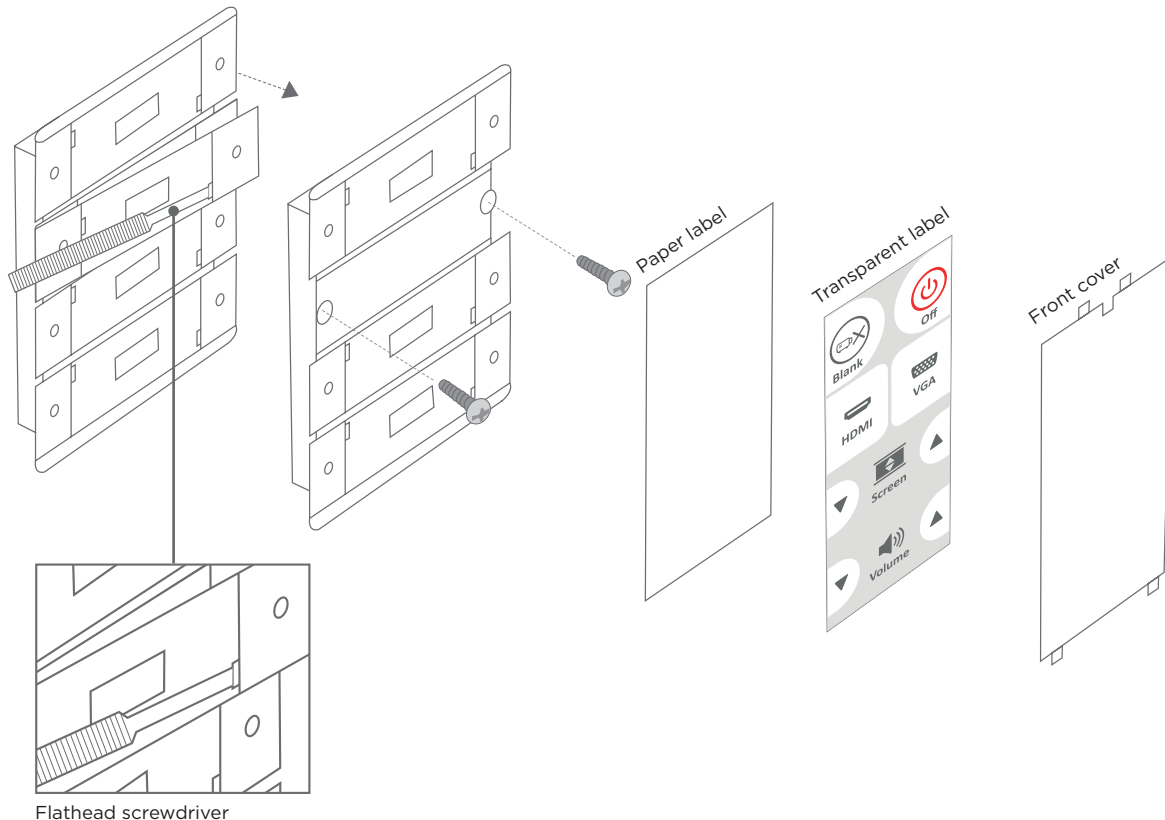
HARDWARE INSTALLATION

US version

- Insert screws matching the back box into the two mounting holes.
  Secure the control system to the back box or bracket without overtightening the screws.

- Mount the frame on the control system with the supplied screws.

- Insert a flathead screwdriver gently and pry out the front cover.
  Remove the front cover and the paper label behind it.

- Remount the paper label, insert a printed transparent label showing the button functions, and mount the front cover. Note that the front cover mounts in only one direction.
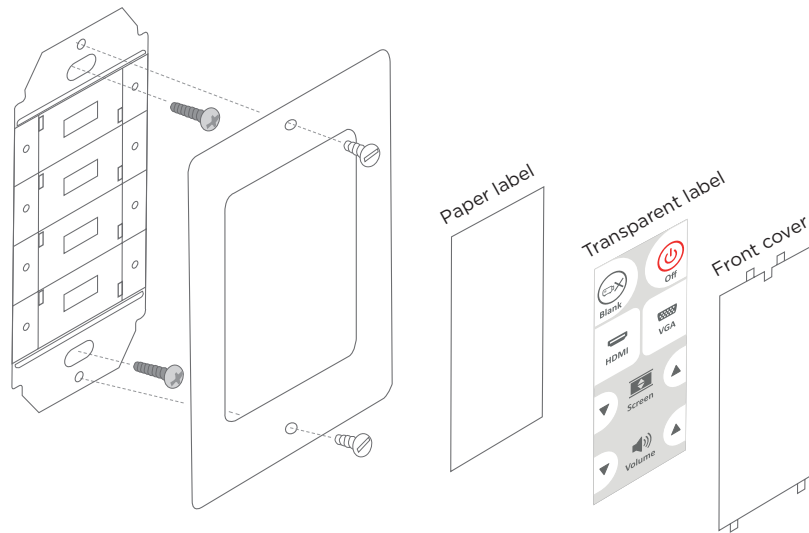
EU version

- Insert a flathead screwdriver gently and pry out the front cover.
  Remove the front cover and the paper label behind it.

- Insert the control system in a frame matching the back box used.

- Insert screws matching the back box or bracket into the two holes. Secure the control system to the back box or bracket without overtightening the screws.

- Remount the paper label, insert a printed transparent label showing the button functions, and mount the front cover. Note that the front cover mounts in only one direction.
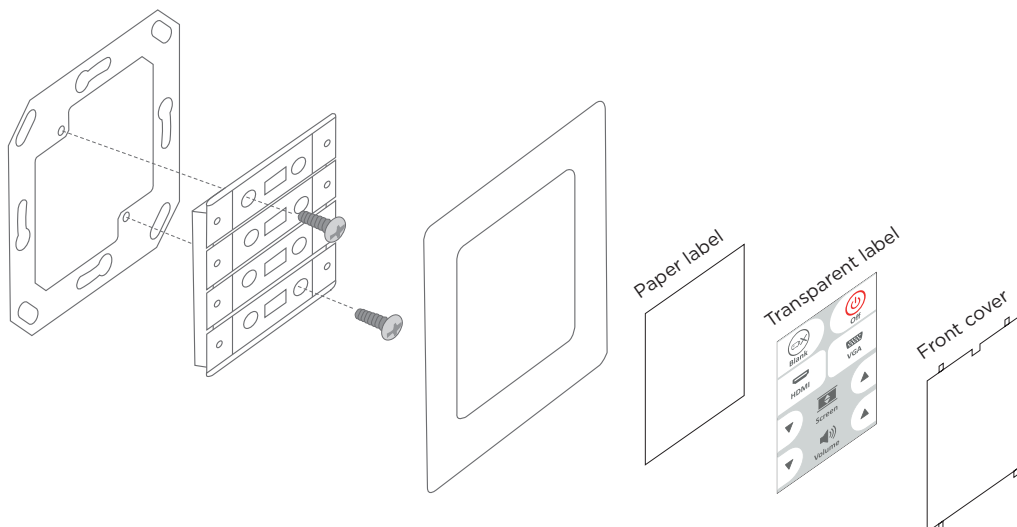
CONNECTIONS AND CONTROLS

Power input port
Connect the Echo Plus to the supplied universal mains AC power adaptor. Using the supplied 2 pole screw block terminal connect white/black wire to 12V and black wire to GND.
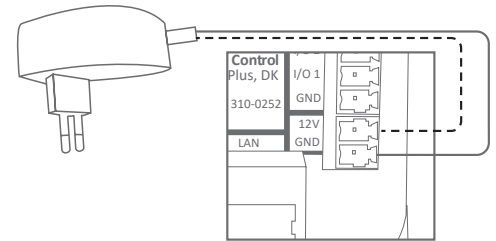

I/O ports
Echo Plus has three I/O (Inputs/Outputs) available that can be configured as either output or input. The ports are not potential free; you may need external relays to prevent ground loops depending on your application.

When used as outputs, the I/O ports are active low. When activated, the I/O ports are tied to GND through a FET transistor, called open drain/collector function.
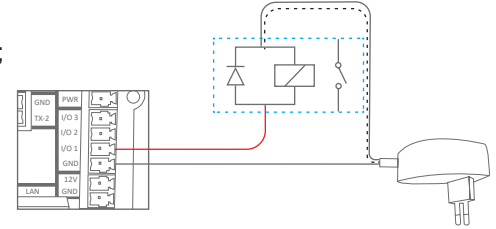
When used as inputs the inputs are default HIGH and must be connected to ground in order to change state to LOW.
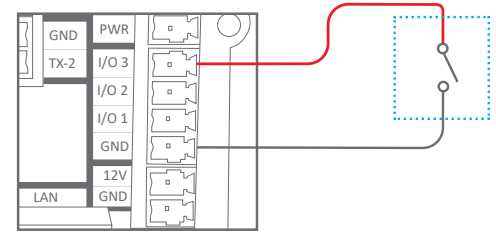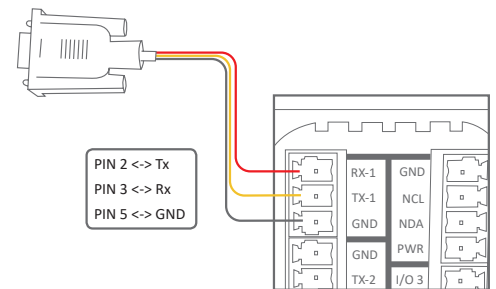

RS-232
The RS-232 port is used for one- or two-way communication. A two way port is used for devices where reply commands is used.
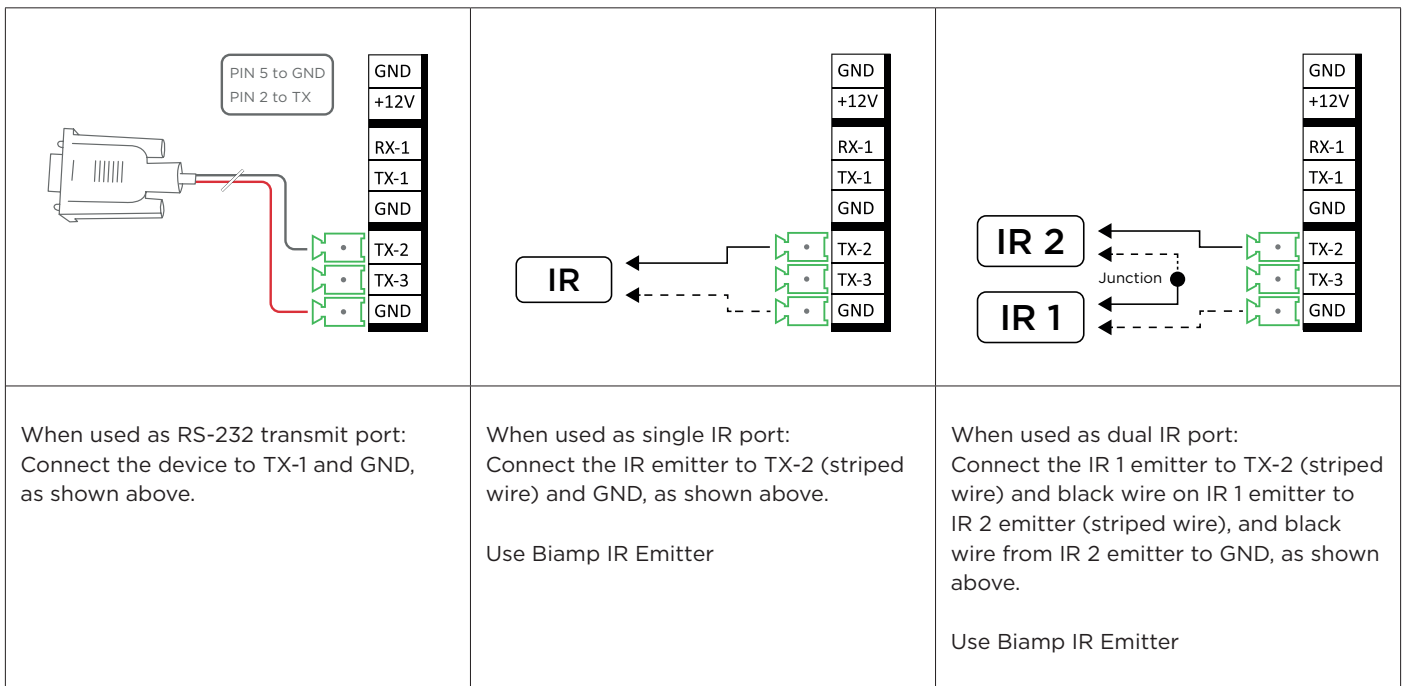
Connect the Echo Plus as shown here.

RS-232/IR port
The RS-232/IR port is used for either one-way RS-232 or IR communication depending on the setup made in Biamp Project Designer.

Be aware that the port can't be used as RS-232 and IR port at the same time.

Connect the port as shown below:

When used as RS-232 transmit port: Connect the device to TX-1 and GND, as shown above.	When used as single IR port: Connect the IR emitter to TX-2 (striped wire) and GND, as shown above. Use Biamp IR Emitter	When used as dual IR port: Connect the IR 1 emitter to TX-2 (striped wire) and black wire on IR 1 emitter to IR 2 emitter (striped wire), and black wire from IR 2 emitter to GND, as shown above. Use Biamp IR Emitter

NEB port

The Echo Plus has a built-in NEB (Extension Bus) which can be used to add 2 NEB devices.

Connect your NEB devices as shown to this port with a cable not exceeding 20 cm of length. Use NEB extenders if distances above 20 cm between the units is needed. See the Biamp website for details on the NEB Extender.
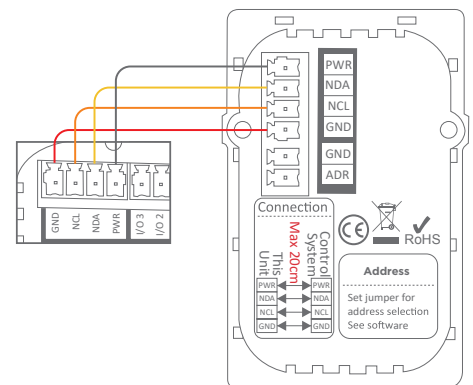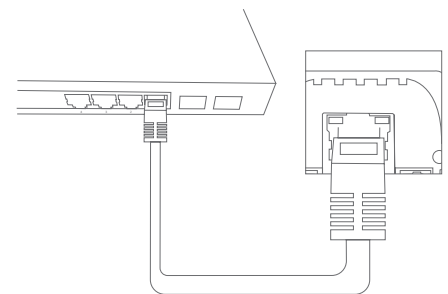

LAN port

The network connector integrates the system into a local area network. Please connect the Echo Plus to your LAN if using any of the LAN features of the product.

Two LEDs on the connector indicate the following:

Color	Off	On	Blink
Yellow	No Link	Link	Activity
Green	10 Mbit	100 Mbit	

Factory default IP setting of the Echo Plus is:

IP address: 192.168.254.253
Subnet: 255.255.255.0
10/100Mbit: Auto
DHCP: Disabled

Buttons

The eight front panel buttons are accessed by the end user to control the AV system in which Echo Plus functions as the controller. The buttons are numbered as shown to the right.

Each button has a tactile click feedback to ensure proper activation. Also, each button has an embedded red LED light to indicate current status of the AV system.

Button function and LED indication are set up using the Biamp Project Designer software.

Configuration through USB port

The USB port is used exclusively for configuring the Echo Plus from the Biamp Project Designer software. It can't be used to control any external devices.

The front panel USB port is located beneath the front cover and label. The host USB port can power the control system while configuring, so no external power is needed when configuring the Echo Plus. However, external power and the USB port may be connected at the same time, for example when changing the configuration on an already installed unit.

The USB connector for connecting to the Echo Plus is type "mini USB B 5P". (It is available on the web as a USB A to Mini USB B 5P).
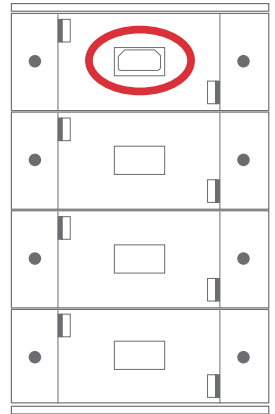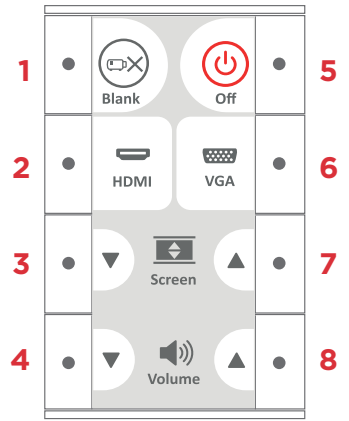
TROUBLESHOOTING

Error indication using LEDs

If there is a fault in either the configuration or the Echo Plus unit, this will be indicated on the front button LED indicators. Button LEDs 1-4 are used to indicate the error; the LED indicators are numbered as shown.

1	•
2	•
3	•
4	•
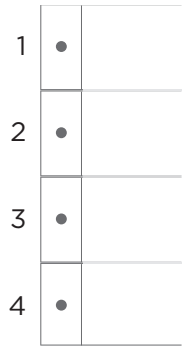
The flashing error descriptions and patterns are described below:

LED shows	Description	Solution
1 ● Off 2 ● Off 3 ● Off 4 ☀ Flashing	No connection to one or more NEB units.	• Check that the NEB units used in the project are connected. • Check that the NEB units used in the project are configured correctly. • After doing one of the above, remove the power to the control system for 20 sec before reconnecting the power again.
1 ☀ Flashing 2 ☀ Flashing 3 ☀ Flashing 4 ● Off	No project found on the control system or unable to start the project.	• Try to upload the project again. • Alternatively, there can be a problem in the project you have uploaded. In this case, try uploading an empty project and see if this works.
1 ☀ Flashing 2 ☀ Flashing 3 ● Off 4 ● Off	Unexpected Error.	• Turn off the power to the control system for 20 sec before turning the power on again.
1 ● Off 2 ☀ Flashing 3 ☀ Flashing 4 ● Off	No contact to Biamp network unit.	• Check to confirm the SN used in the Biamp Project Designer matches the one for the Biamp unit on your network. • Check LAN connection to the Biamp network unit.
1 ● Off 2 ☀ Flashing 3 ☀ Flashing 4 ☀ Flashing	Firmware upgrade Biamp network unit.	• One or more of the Biamp network units used in the current project needs a firmware upgrade before it will work with this project.
1 ● Off 2 ● Off 3 ☀ Flashing 4 ● Off	Error in serial number.	• You need to return the unit to Biamp or your local dealer for replacement/repair.
1 ☀ Flashing 2 ● Off 3 ● Off 4 ☀ Flashing	Resuming factory default settings.	• When pressing Switch 1 and 4 during power on, the system will delete the current settings and resume factory default. This method is only intended to be used if the control system locks up and enters "Unexpected Error".

This document describes how to install and operate the Biamp Impara Echo Plus.

CHANGES - Biamp reserve the right to change the specification and functions of this product without prior notice.

Questions, AFTER reading this manual, can be addressed to the local distributor or: Biamp, 9300 S.W. Gemini Drive, Beaverton, OR 97008, USA by mail: support@biamp.com or you may use our contact form at www.biamp.com.

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