P/N : VAI-3112S300
24W AMPLIFIER+IR LEARNING KEYPADS EDUCATION KIT

INTRODUCTION

24W RMS left and right channel digital amplifier extra supporting 12keys in 2modes IR learning keypads is ideal for being used in classroom, conference or SOHO room.

The unit is designed to not only enhance sound reinforcement but also allow to control most AV devices remotely through the IR learning facility that let you get rid of hassles from lost remotes or access control over IR extension through the IR receiver window using your existing remote control is also an additional feature.
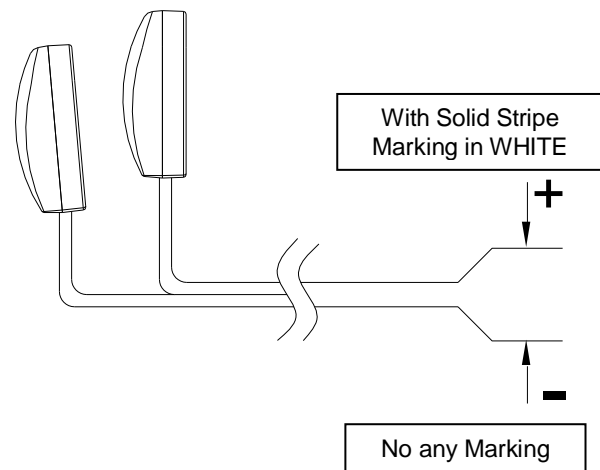
PARTS LIST

VAI-3112S300**(Included)**
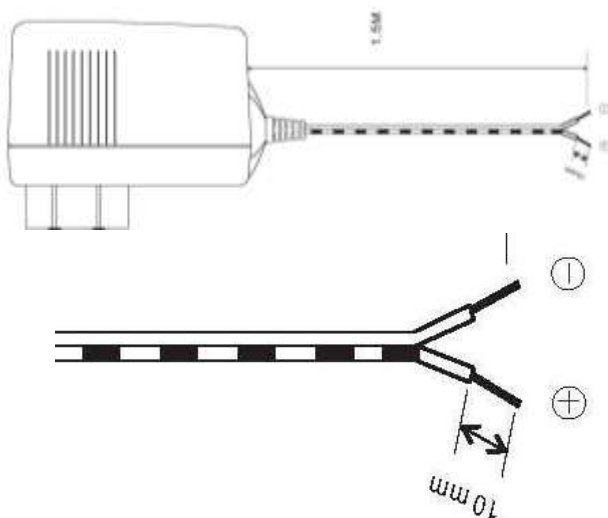Two-gang amplifier +IR learning keypads x 1unit

IEC-0002-05**(Not included)**
Dual emitter, bare lead x 1pc

With Solid Stripe Marking in WHITE

+

No any Marking

−

PWS-2412**(Not included)**
24V switching power x 1pc

1.5M

① I

⊕

10mm

RMC-111**(Not included)**
Customized amplifier remote control x 1pc

VOL BASS TREBLE

L R
BALANCE

ON OFF
LOUDNESS

ELECTRONIC VOLUME CONTROL
REMOTE

SPECIFICATIONS AND FEATURES:

ABOUT AUDIO:

- Output Power：2 x 12W(RMS)@ 8Ω.
- Line Inputs：Stereo Phones (L & R)
  Stereo 3.5mm Jack . (Priority)
  Screw Terminal (Rear PCB, In parallel with 3.5mm Jack Input)
- Frequency Response：35Hz ~ 20KHz.
- Input Sensitivity：(Lo) 200mv / (Hi) 1v.
- Speaker connectors : 4 way connectors for 14~22 AWG cable.(R+,R-,L+,L-)
- Volume control range : - 75 db
- Bass control range : +/- 12 db
- Treble control range : +/- 12 db
- Balance control range : +/- 30 db

ABOUT IR:

IR frequency bandwidth in IR learning receiver: 0 ~100KHz
IR frequency bandwidth in IR repeating receiver: 38KHz
Two following spec of IR emitters available and check what has been included in the kit.
The blinking version with IR peak wavelength: 940nm
The non-blinking version with IR peak wavelength: 650nm
Power Requirement for a kit: 24V DC
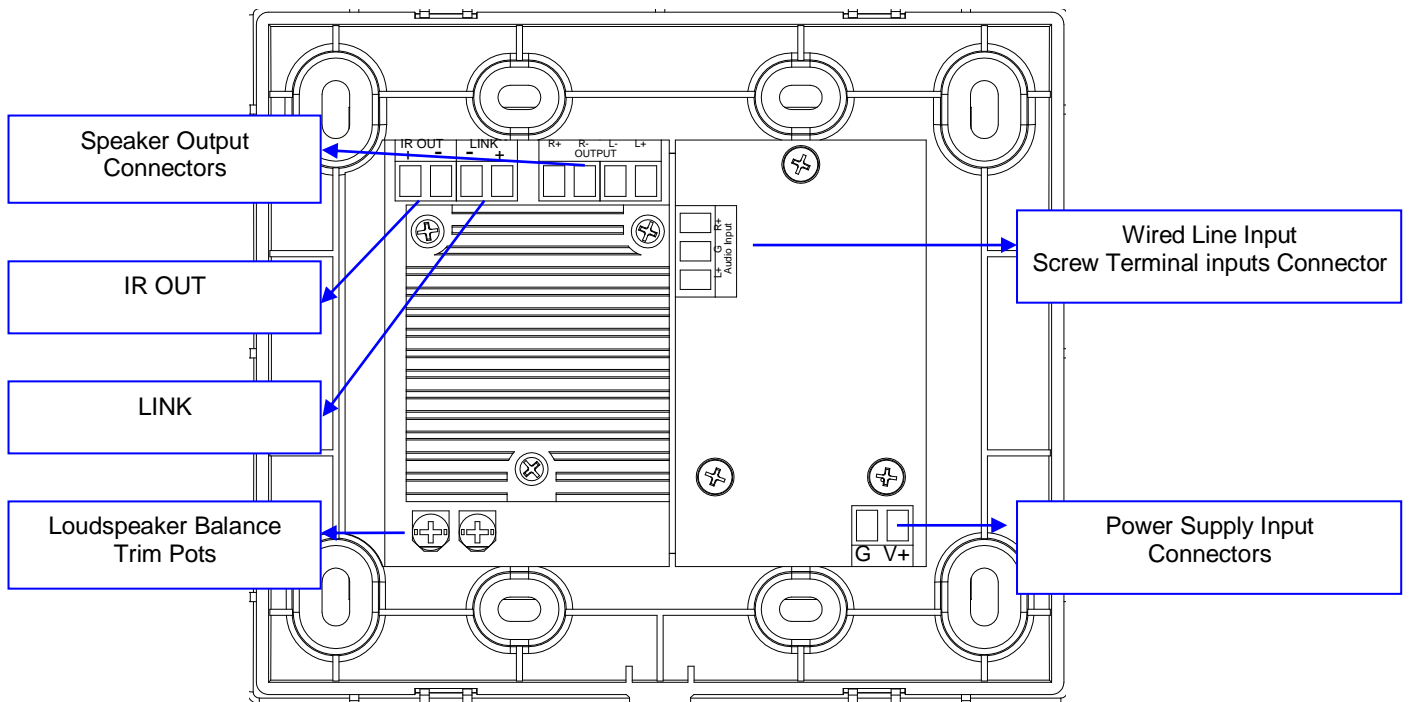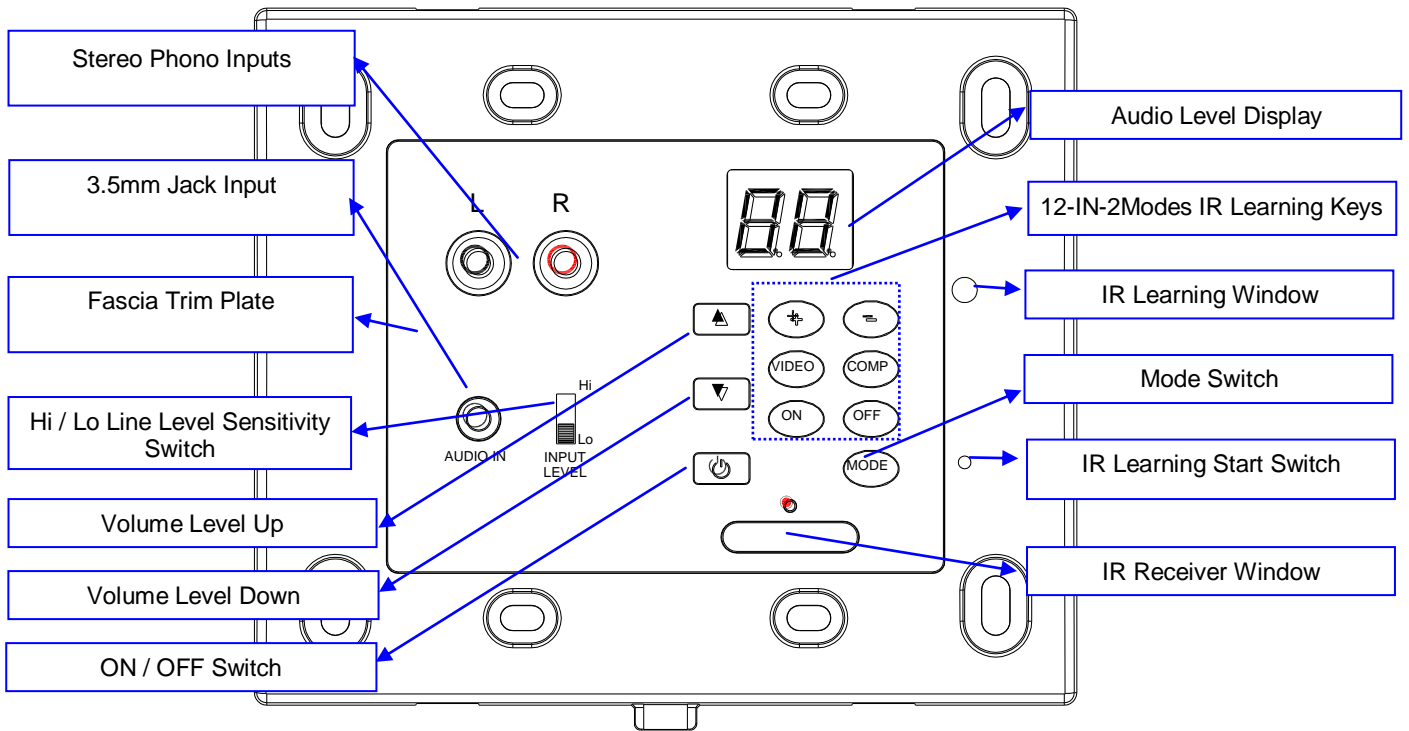
DIMENSIONS AND WEIGHTS:

VAI-3112S300
- Dimensions：140 (W) × 120 (H) × 45 (D) mm.
- Weight：0.23kg

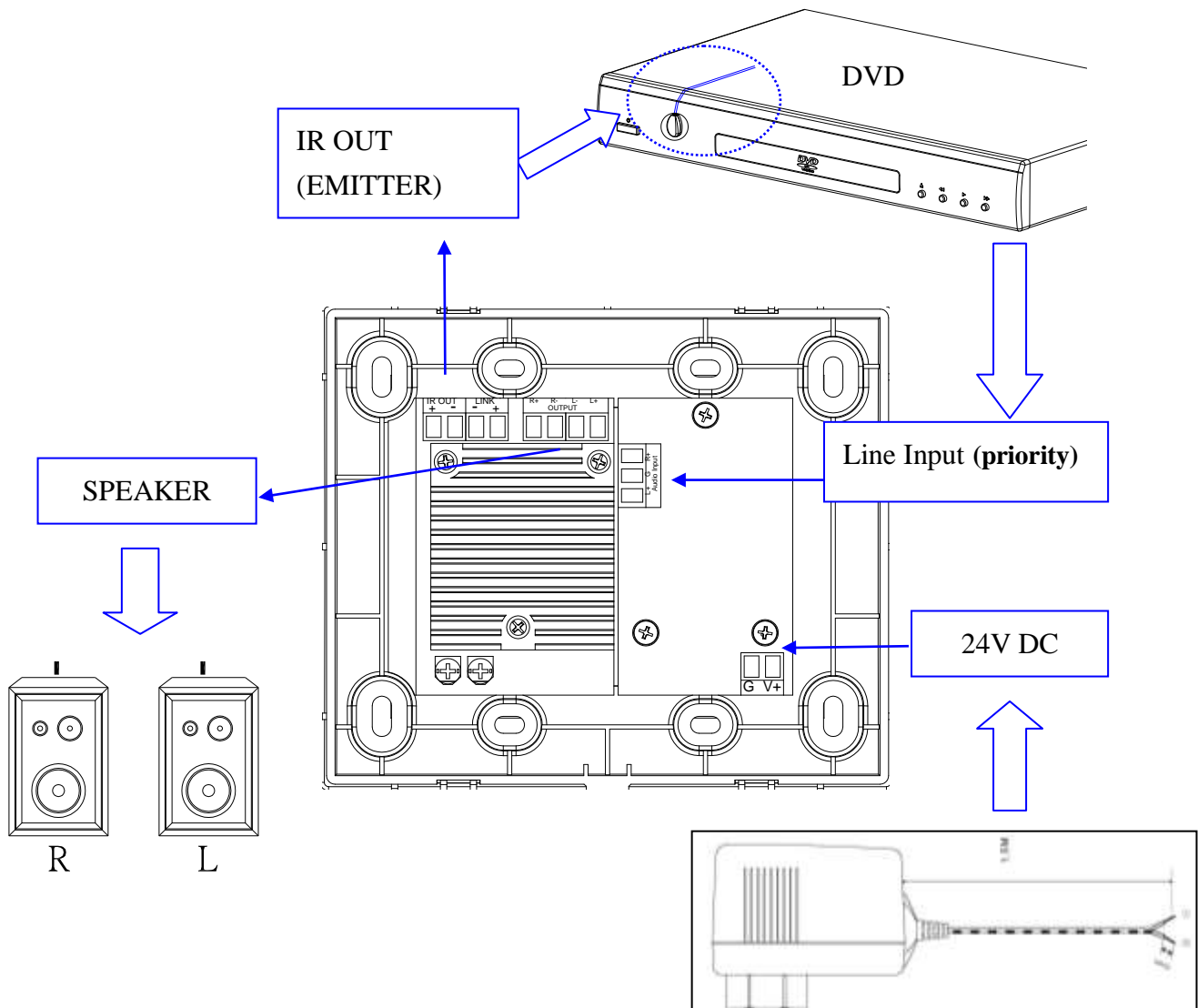IEC-0002E-05 • Dimensions：13x9x6mm
PWS-2412 • Dimensions：90x40x60mm
RMC-111 • Dimensions：88x55x8mm

PRODUCT VIEWS

Stereo Phono Inputs

3.5mm Jack Input

Fascia Trim Plate

Hi / Lo Line Level Sensitivity Switch

Volume Level Up

Volume Level Down

ON / OFF Switch

L   R

Hi
Lo

AUDIO IN   INPUT LEVEL

VIDEO   COMP

ON   OFF

MODE

Audio Level Display

12-IN-2Modes IR Learning Keys

IR Learning Window

Mode Switch

IR Learning Start Switch

IR Receiver Window

Speaker Output Connectors

IR OUT

LINK

Loudspeaker Balance Trim Pots

IR OUT   LINK   R+   R-   L-   L+
OUTPUT

Audio Input

G V+

Wired Line Input Screw Terminal inputs Connector

Power Supply Input Connectors

INSTALLATION

WIRING DIAGRAM AT REAR

IR OUT (EMITTER)
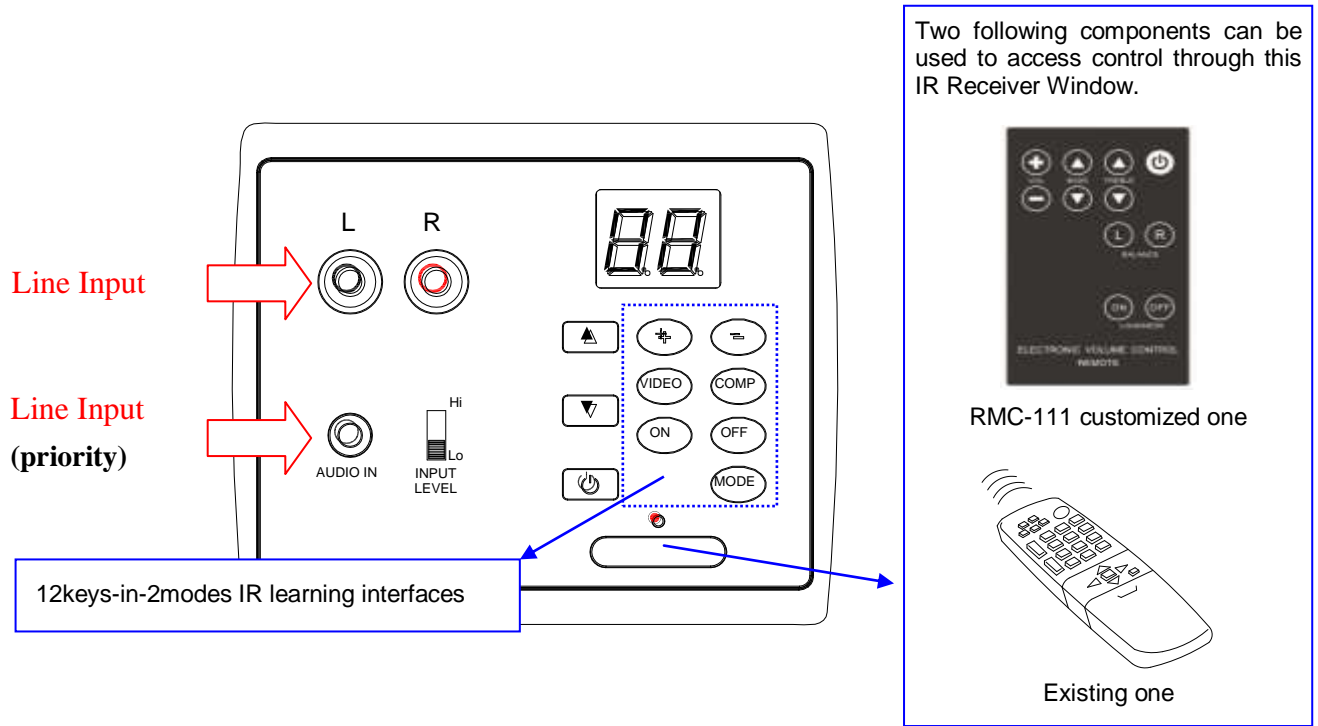
DVD

SPEAKER

Line Input (**priority**)

24V DC

R   L

Line level audio input via 3-p screw connector and output via 4-p connector to the speakers. Wiring in power 24V DC provided in the kit via 2-p terminal positioned at the right bottom of the rear. Prevent the audio signal via this hard-wired input from being interfered, the shielded cable is always recommended.

For adding the facilities of IR learning and repeating, wiring in the provided emitter in the kit and place the emitter head onto the IR window of the component that you desire to control. This assembling will allow you control the component through the IR repeating window is located on the front of VAI-3112S300 using the existing remote control or just conveniently through the keypads over the 12keys-in-2modes IR learning.

Notes:

*The cable of power supply being marked with white dash is standing for positive(+) which should be connected to V+ of the power terminal and the plain black one is negative(-) to be wired in the G terminal.

*The hard-wired audio input at the rear is paralleled to the 3.5mm jack audio input at the front. So be aware both audio sources playing at the same time will mix both signals and this is easily to be retrieved by stopping one of the two sources.

CONNECTIVITY AND CONTROL AT THE FRONT PANEL

Two following components can be used to access control through this IR Receiver Window.

RMC-111 customized one

Existing one

Line Input

Line Input (priority)
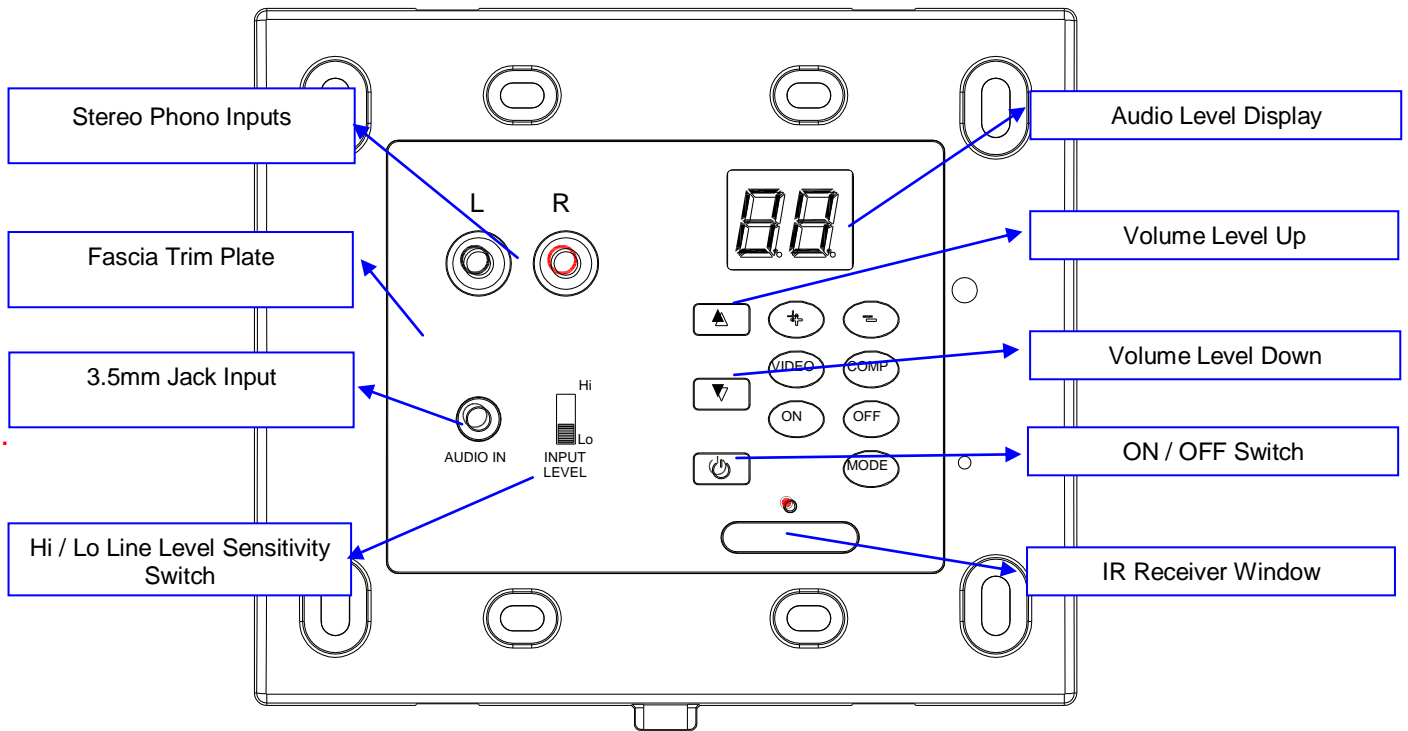
12keys-in-2modes IR learning interfaces

Two line level audio inputs via 2x RCA L/R jacks and 1 x stereo 3.5mm jack are available on the front of the panel. The signal via the 3.5mm stereo jack or hard-wired stereo input from the rear is the priority for operation than stereo inputs. For different levels of input sensitivity varied from MP3,CD,DVD or other devices, there a high/low(HI/1V, LO/200mA)switch allowing to adjust the proper input level for a better sound reproduction without distortion or insufficiency.

The volume adjusting level from 0~31 can be displayed on the LED screen over the control by keypads up and down buttons or our customized remote control RMC-111 as provided. 6Keys-in-1 mode(totally 12keys-in-2modes over mode switching)IR learning keypads let you control AV devices remotely without need of the remote control.

IR repeating receiver window positioned at the right bottom may access IR extension to reach your IR control up to 8 units of AV devices far behind the close door using the existing remote control.

USER GUIDE:

ABOUT 24W STEREO DIGITAL AMPLIFIER

Stereo Phono Inputs

Fascia Trim Plate

3.5mm Jack Input

Hi / Lo Line Level Sensitivity Switch

L   R

AUDIO IN   INPUT LEVEL   Hi   Lo

Audio Level Display

Volume Level Up

Volume Level Down

ON / OFF Switch

IR Receiver Window

The volume and power on/off can be controlled over the keypads or RMC-111 our customized remote control as the functions described below:

CUSTOMIZED IR REMOTE CONTROL RMC-111:

ELECTRONIC VOLUME CONTROL REMOTE

Using the supplied IR Remote Control RMC-111 will give access to adjust the sound levels and tone settings as described below:

- The volume level can be adjusting from 0 lowest to 31 highest.
- Bass (L.1 lowest ~ L.9 highest)
- Treble (H.1 lowest ~ H.9 highest)
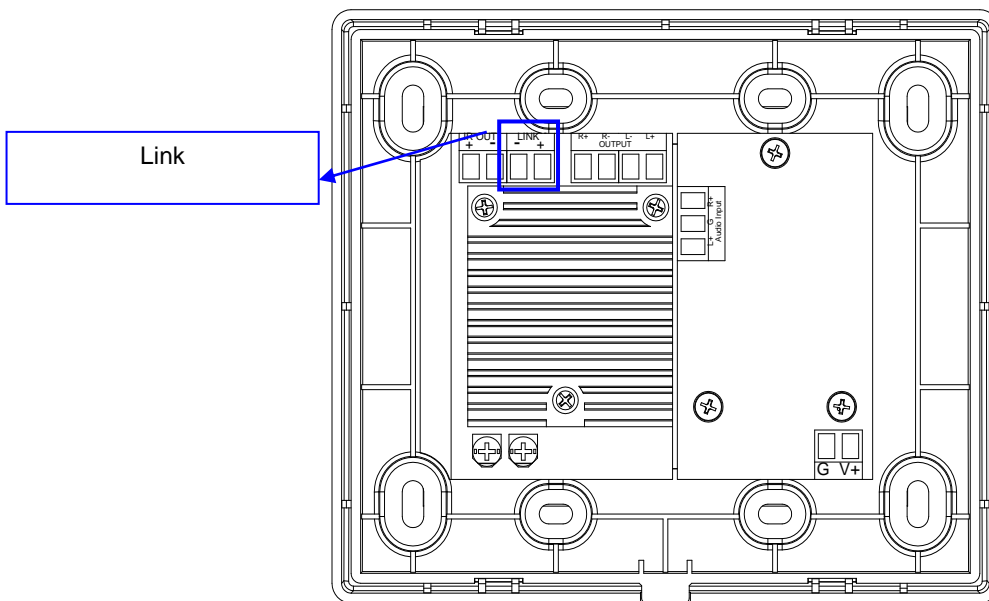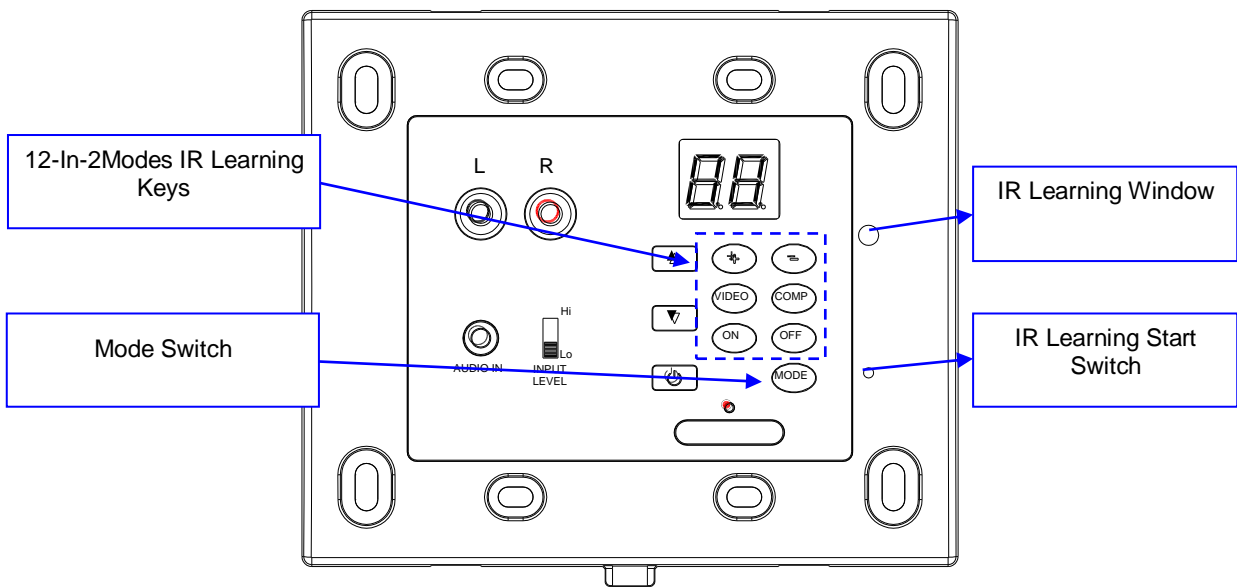- Balance (B.1 Fully Right ~ B.5 Center ~ B.9 Fully Left)
- Loudness on/off

AUDIO SIGNAL INPUTS:

There are three different 'Line' inputs available:

-1 × Stereo phono inputs(L & R)
-1 × 3.5mm Stereo jack input (priority)
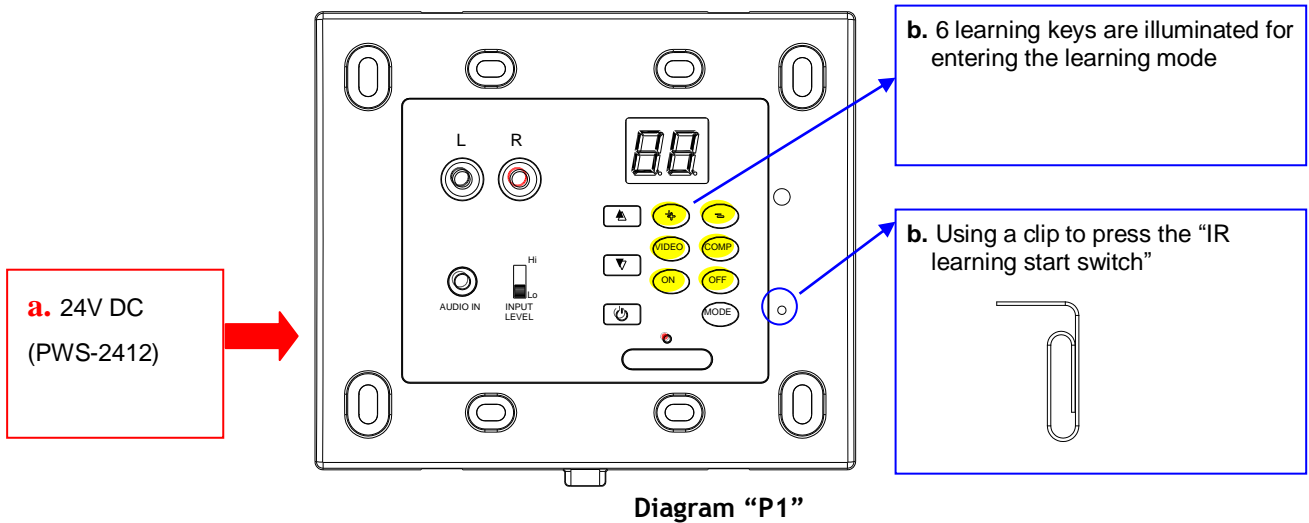-1 × Screw Terminal inputs (Rear PCB) (priority)

NOTE :
In general, the audio signal from headphone output is a kind of low level output which should require to switch the input level to "LO" and for other high input level devices it will be switched to "HI" for better fit in sound reproduction.

ABOUT 12KEYS-IN 2MODES IR LEARNING KEYPADS

12-In-2Modes IR Learning Keys

Mode Switch

IR Learning Window

IR Learning Start Switch

L R

AUDIO IN

INPUT LEVEL

Hi
Lo

VIDEO COMP

ON OFF

MODE

Link

LINK

OUTPUT

Audio Input

G V+

To learn a remote control

Step 1 Enter learning mode+ Diagram "P1"

b. 6 learning keys are illuminated for entering the learning mode

b. Using a clip to press the "IR learning start switch"
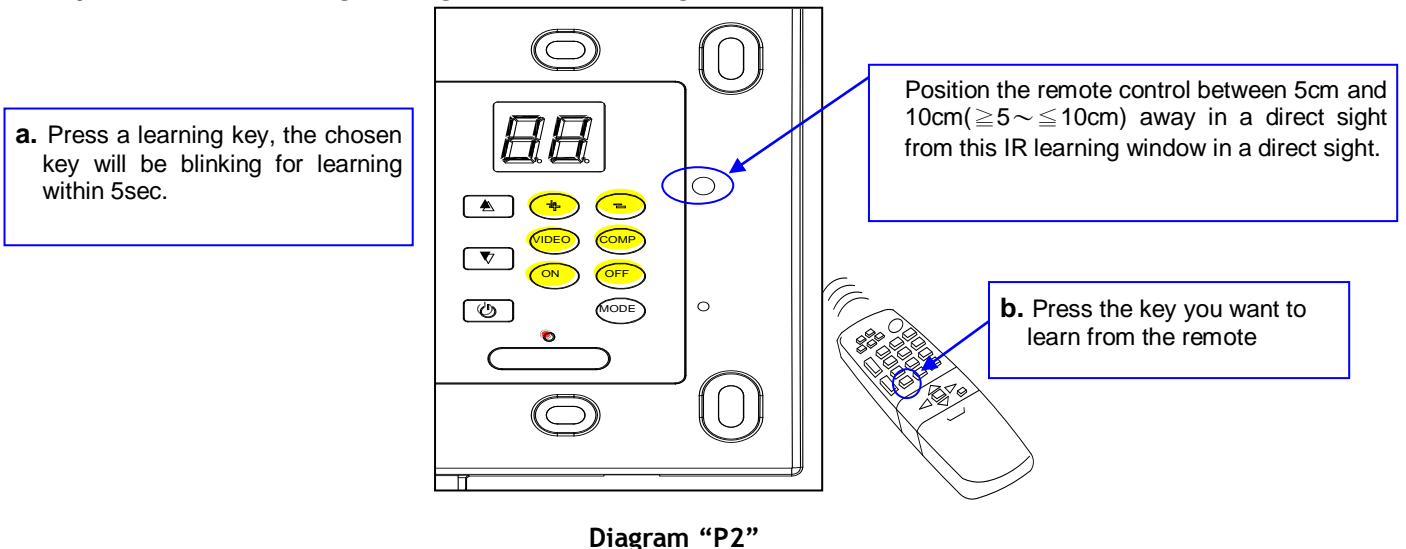
a. 24V DC

(PWS-2412)

Diagram "P1"

a. Wire in power for system stand by but ensure the amplifier is not power on.

b. Using a clip to press the "IR learning start switch" and the LED backlights of 6 learning keys will be illuminated for system entering a learning mode.

NOTE:
*Remove the frame (outer plate) for finding the interfaces of IR learning window and IR learning start switch which are hidden behind at right corner.

Step 2 Codes learning + Diagram "P2" / Diagram "P3"

a. Press a learning key, the chosen key will be blinking for learning within 5sec.

Position the remote control between 5cm and 10cm($\geq 5 \sim \leq 10$cm) away in a direct sight from this IR learning window in a direct sight.

b. Press the key you want to learn from the remote

Diagram "P2"

a. Press a learning key, the chosen key will be blinking for keeping 5second allowing the code learning (as described following) completed in this limited time. **(Diagram "P2")**

b. Aiming the chosen learning key using the remote over pressing the key you want to learn from the remote which this operation is better positioned between 5cm and 10cm($\geq 5 \sim \leq 10$cm) away from the IR learning window of VAI3112S300, the chosen learning key will turn to be illuminated steadily from blinking which means the code learning is completed. **(Diagram "P2")**

8

NOTES:

*Repeat a + b for completion of other keys learning. There are 6 learning keys in each mode and total 12 keys in two modes available in existing VAI3112S300

*Press "MODE" key to get into another 6 keys learning in the other mode under while the "mode" key illuminating and then repeating a + b of step 2 for completion of another 6keys learning.
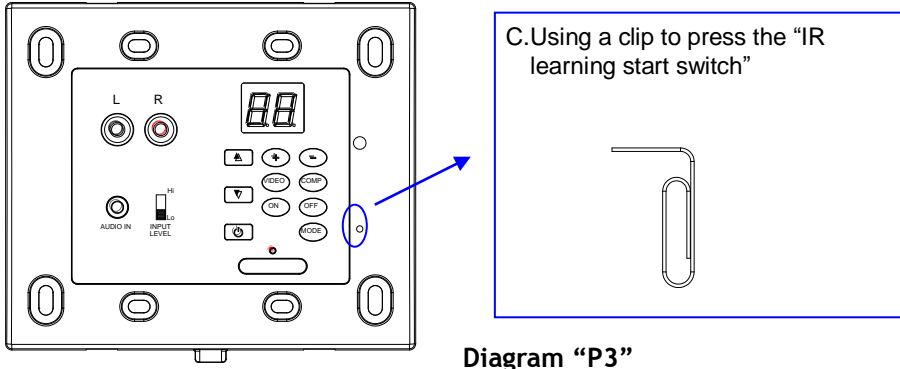

C. Using a clip to press the "IR learning start switch"

Diagram "P3"

c. Until all desired learning being completed, using a clip to press again the "IR learning activation switch" for backing the normal operation. **(Diagram "P3")**

NOTES:

*Keep the remote control between 5cm and 10cm($\geq 5 \sim \leq 10$cm) away from the IR learning window which is the recommended distance for securing a better learning.

*The IR frequency bandwidth 0 ~100KHz in IR learning receiver is compatible for learning most AV devices in this IR bandwidth.

To learn the specific Philips codes

There are two extra steps required below than above operation of normal codes learning.

1) Follow same operation of above mentioned Step 1 a) & b) until the 6 learning keys are illuminated, then press the "▲"(up) key and ensure the other 3keys of ▲, ▼, ⊙ **are** illuminated same as the former 6 learning keys which means the system is entering into Philips code learning as refer to following **Diagram "P4"**.

2) Follow same operation of above mentioned step 2 a) & b), but ensure a perfect learning, Repeat this operation of step 2 a)+b) twice for each code learning.

While all desired learning being completed, using a clip to press again the "IR learning activation switch" for backing the normal operation same as mentioned on above step 2 c). **(Diagram "P3")**
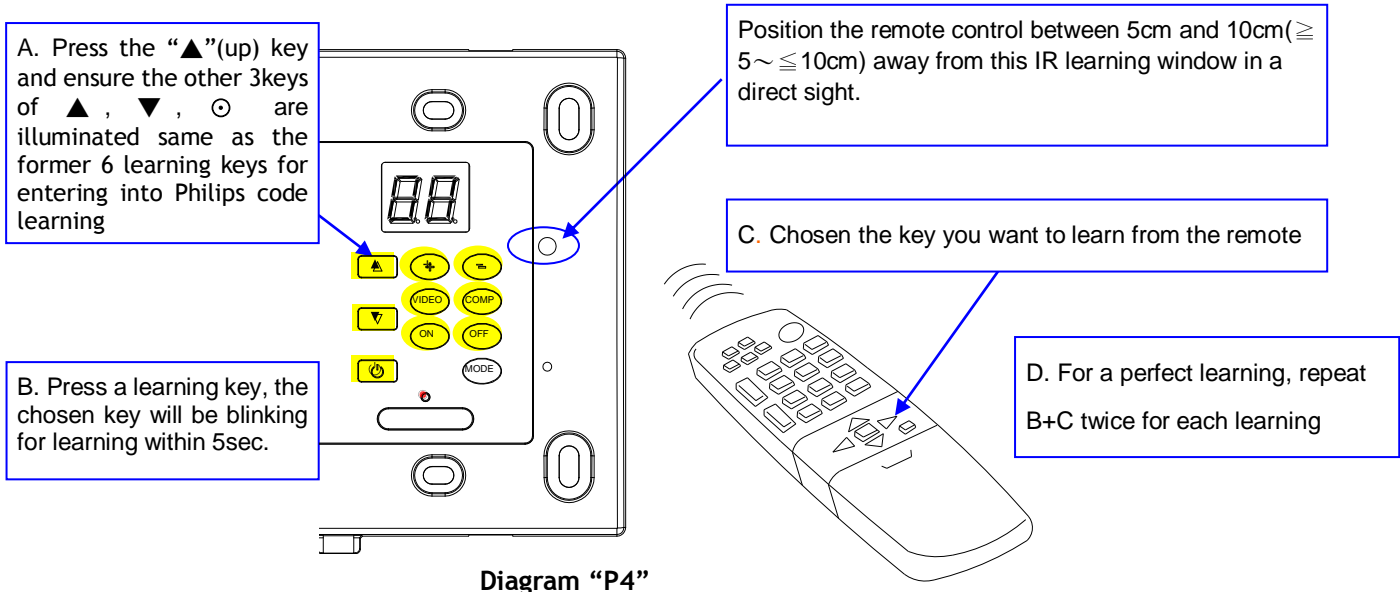
A. Press the "▲"(up) key and ensure the other 3keys of ▲, ▼, ⊙ are illuminated same as the former 6 learning keys for entering into Philips code learning

Position the remote control between 5cm and 10cm($\geq 5 \sim \leq 10$cm) away from this IR learning window in a direct sight.

C. Chosen the key you want to learn from the remote

B. Press a learning key, the chosen key will be blinking for learning within 5sec.

D. For a perfect learning, repeat B+C twice for each learning

Diagram "P4"

ABOUT IR REPEATING FUNCTION:

From a standard installation, the IR OUT terminal at the rear panel can be in parallel connection with 2units of dual emitter like as IEC-0002E-05 that allows you to get control onto your IR-controlled AV devices behind the close door up to 4units. The operation is using your own existing remote control to aim the IR receiver window positioned in front of the panel for a full control onto the remote devices far behind the cabinet (diagram "P5")
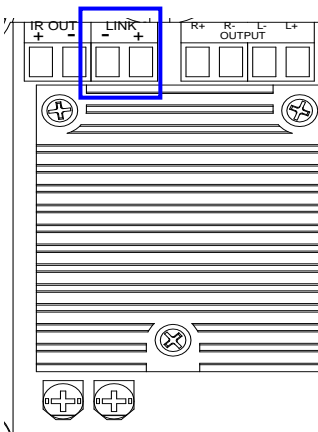

Diagram "P5"
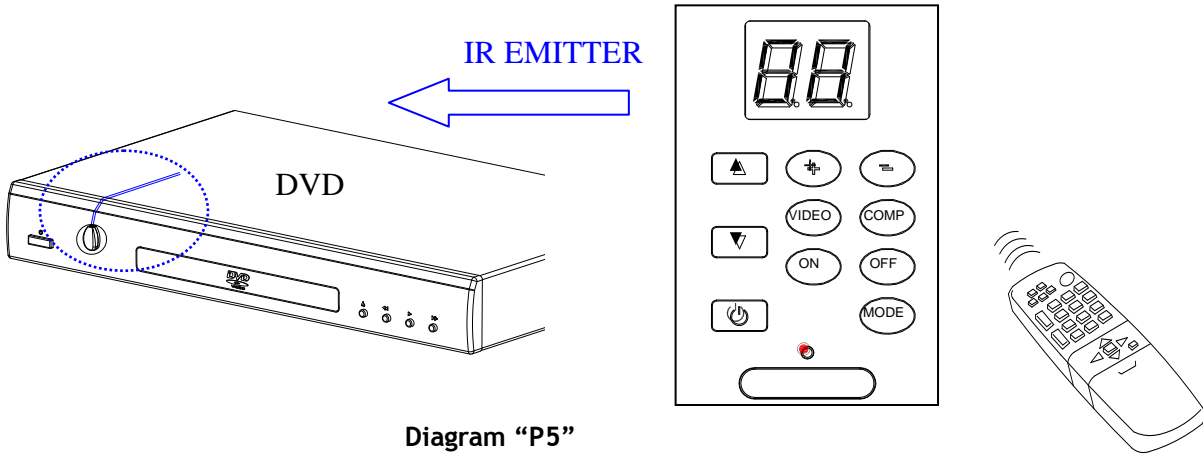
> **NOTES:**
> *Compatibility with most 38KHz IR-controlled AV devices.
> *Control range: Up to 50 feet indoor on axis (range depends on device being controlled and levels of IR or EM interference), 15 to 20 feet in direct sunlight.

ADDITIONAL FEATURES
LINKING UNITS FOR IR LEARNING COPY:

Step 1:Wiring + **Diagram "P6"**

a. Wire in power for system stand by but ensure the amplifier is not power on. **(Diagram "P6")**

b. Units linked via an UTP Cat5 or Cat6 with impedance 100Ω through +/- connector marked "LINK" at the rear can be extended up to 50M long between two units connection and totally can be linked up to 9 units. **(Diagram "P7")**
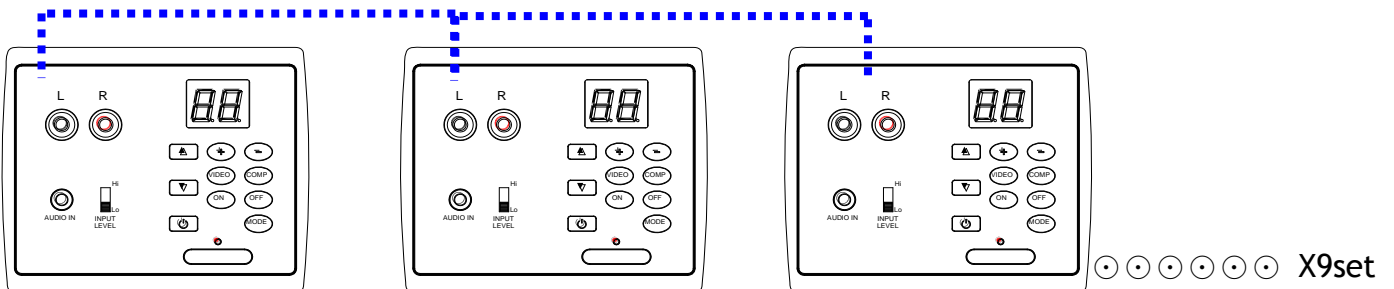
Diagram "P6"

Diagram "P7"

Step 2:
Copy IR learned codes from the first unit to the rest linking units+ **Diagram "P8":**

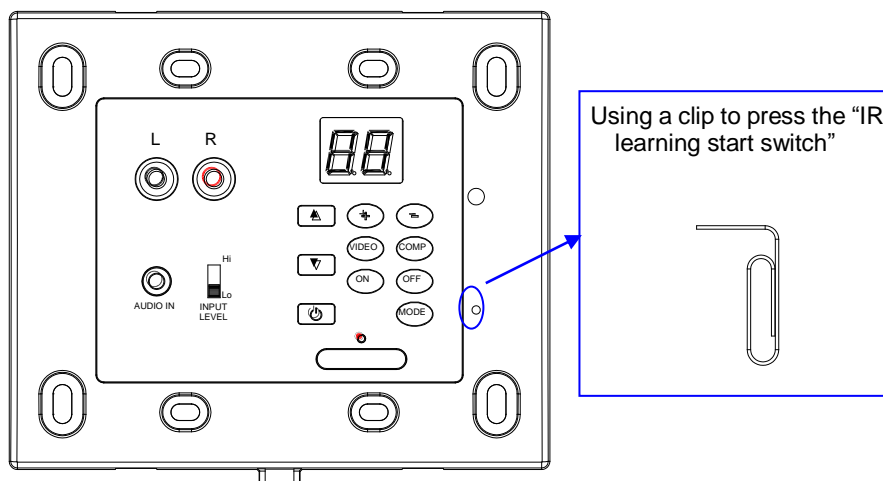Using a clip to press the "IR learning start switch"

Diagram "P8"

Press the "IR learning start switch" twice continuously to enter the copy function. While copy processing the 6 learning keypads on the first unit are illuminated steadily but those on the rest linking units are blinking until the copy completed the LED backlights on all units are varnished. Repeat this operation two times sequentially for securing a perfect copy.

IR EXPANSION

From a standard installation, the IR OUT terminal at the rear panel can be in parallel connection with 2units of dual emitter like as IEC-0002E-05. For getting more control onto the devices than 4 units over IR as mentioned above, then choosing our amplified IR connecting block for expansion up to 8 units of devices will be also a fantastic solution.
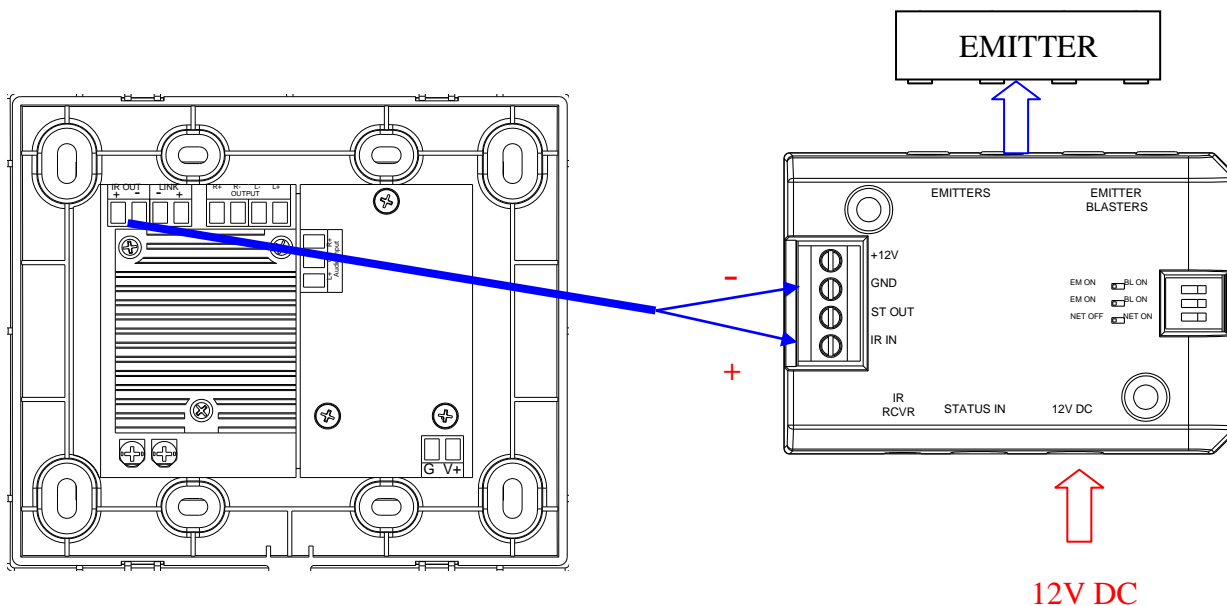

Diagram "P9"