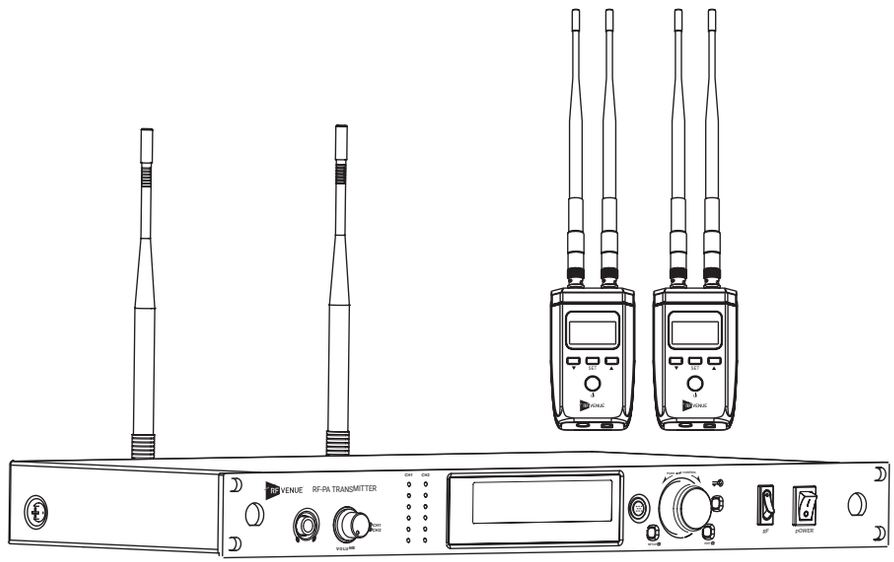


Instruction Manual

RF PA Extension Kit

RF Venue, Inc. | 24 Walpole Park South Unit 1, Walpole, MA 02081 | **www.rfvenue.com**

DFU-0006 rev A

RF PA Extension Frequency Chart						
	Group					
Channel	1	2	3	4	5	6
1	470.325	470.000	470.600	470.525	470.825	471.300
2	473.200	471.000	472.475	471.525	471.575	472.425
3	475.450	473.375	473.850	473.400	473.325	473.925
4	476.700	474.875	475.850	474.775	473.950	474.925
5	479.450	480.750	477.600	477.775	474.825	477.175
6	482.450	483.250	480.725	480.400	476.025	479.800
7	486.200	485.375	481.750	481.975	477.700	481.050
8	487.700	488.875	485.000	482.650	480.825	483.800
9	492.325	490.750	486.100	484.400	482.950	484.425
10	494.825	495.000	487.100	485.800	484.325	486.800
11	496.200	496.750	488.475	488.025	485.950	491.300
12	500.325	499.000	491.725	488.775	489.325	492.175
13	502.700	501.750	494.225	492.650	490.575	494.300
14	503.700	503.750	495.650	494.525	493.275	496.675
15	NA	505.375	498.100	496.150	496.325	497.800
16	NA	NA	498.975	498.650	498.375	499.300
17	NA	NA	500.150	500.525	499.950	503.050
18	NA	NA	500.850	501.525	501.825	503.800
19	NA	NA	503.350	503.025	502.825	505.175
20	NA	NA	504.850	503.900	504.200	505.925
21	NA	NA	505.475	505.150	504.950	NA
22	NA	NA	NA	505.850	505.950	NA

7 Notes for the product

1. To achieve the best reception of the signals, keep the receiver at least 3 meters apart from the transmitter.
2. For best results, maintain a three meter minimum distance between the **RF-PA-TX** and **RF-PA-RX**.

IMPORTANT NOTICE

- The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.
- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CONTENTS

1 Notes for system operations

- Keep the unit away from fire and heat source.
- Turn the volume to minimum at both the mixer and amplifier before setting up the system.
- When multiple transmitters are stacked at the same time, it is recommended to use the same frequency group to avoid frequency interference.
- Caution : The suitable environment for this product is with a temperature between -10°C (14°F) and +50°C (122°F).

2 Features

- The **RF-PA Transmitter** provides 2 channels of independent audio via UHF radio link to any number of remote RF PA Receivers. It makes it easy to quickly add remote speakers for dance floors, conference breakouts, lobbies, green rooms, dressing rooms, fills, and more—without having to run or strike long, obtrusive cables.
- The **RF-PA Receiver** is compact, cable-free, and can be used by simply attaching it to the speaker. It provides users with self-contained groups to avoid interference and perfectly reproduce all frequency bands.
- Two channels operating on distinct, non-interfering frequencies can be used for either left and right channel or individual channel transmission.
- The compact and cable-free **RF-PA Receiver** easily attaches to speakers. Each receiver can be configured to provide delay set by distance in feet or meters, or by time in milliseconds.
- The 2.4 GHz **Sync** Feature provides synchronization of frequency and channel settings with the **RF-PA Receiver** at the press of a button.
- The **RF-PA Transmitter** combines a 2.4 GHz **Sync** wireless transmission technology with highly stable circuitry and signal performance, to synchronize frequency and channel settings to the **RF-PA Receiver** just by pressing a button. It also includes a pass through circuit that will bypass audio even if the unit is powered off. With its dedicated front panel RF Power switch, remote speakers can be turned on and off as needed during an event. The **RF-PA Receiver** can be used in a wide range of projects and performance venues.

3 Specifications

3-1 RF-PA Receiver

Model	**RF PA Receiver**
Carrier Frequency	470~506 MHz
Number of Channels	2 Channels
Transmitter Receiver Sync	2.4 GHz RF **Sync**
Antenna Selection	True Diversity
Signal to Noise Ratio (S/N)	>106dB(A)
Total Harmonic Distortion (THD)	<0.5%@1kHz
Reception Sensitivity	-95dBm, S/N>80dB
Mirror Rejection Ratio	>80 dB
General Frequency Response	50Hz~18KHz±2dB
Antenna Connector	TNC Female
Display	LCD
Functions Displayed	Group, Channel, Frequency, Antenna A/B, AF Indication, RF Indication, **Sync** ID, Delay Time (distance)
Controls	Power Switch, Group, Channel, Frequency, Reception Sensitivity Key Lock, Delay Time, Display Settings, Language
Audio Output Level (MAX)	Mini XLR Jack : +10dBu(Line)-10dBu(MIC)
Audio Output Impedance	600Ω
Mute	Noise Mute and Pilot Tone
Output Port	Balanced Mini XLR
Power	DCV INPUT 12V/0.5A
Dimensions	365mm(L) x 70mm(W) x 30mm(H)

Specification provided above may be slightly different from the product.

3-2 RF-PA Transmitter

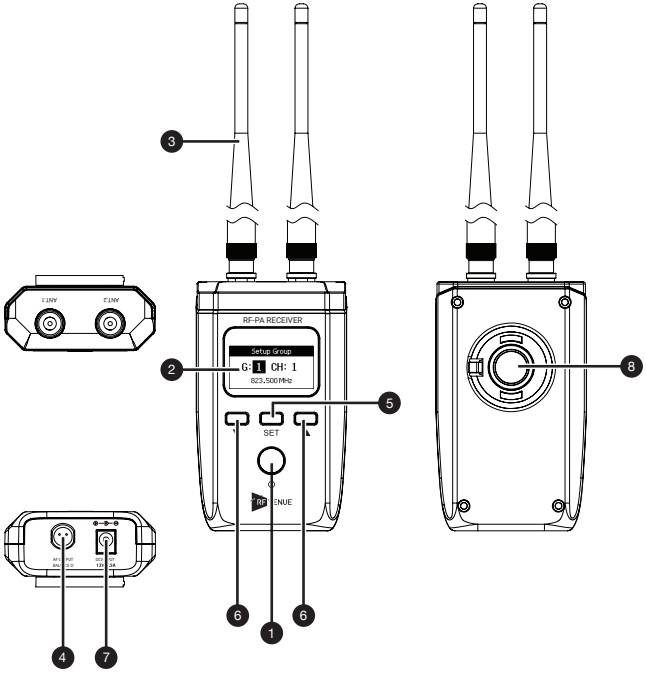
Model	**RF PA Transmitter**
Carrier Frequency	470~960 MHz
Number of Transmit Channels	2 Channels
Frequency Matching	2.4 GHz **Sync**
RF Power Output	10mW/50mW (according to local regulations)
RF Stability	<±10kHzFc
Modulation Frequency Deviation	±48kHz
Spurious Emissions	<-50dBc
LCD Display	Group, Channel, Frequency, Mute, Remoset ID, Volume
Controls	Power, Group, Channel, Frequency, Transmitted Power, Key Lock
Dimension	200mm(L) x 480mm(W) x 46mm(H)

Specification provided above may be slightly different from the product.

4 Description of Parts

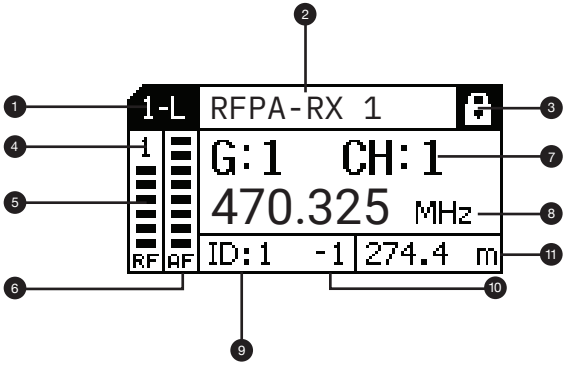
4-1 RF-PA Receiver

1. **Power Switch:** Press once to turn on; press and hold for two seconds to turn off
2. **LCD Display:** Displays the emitter setting parameters
3. **Antenna:** Receiver Antenna
4. **Audio Output Connector:** 3 pin Mini XLR connector
5. **SET:** Set mode for adjusting frequency, group, channel, reception sensitivity, key lock, delay time, display settings, language
6. **▲ / ▼:** Use“SET button”to change parameter settings
7. **Power Input Jack:** DCV INPUT 12V/0.5A
8. **Retainer**



4-2 RF PA Receiver Display

1. **Transmitter Channel Indication:** indicates the transmitter channel
2. **User Name**
3. **Key Lock**
4. **Receiver Antenna Indication**
   - 1: ANT1
   - 2: ANT2
   - ⊗: No signal
5. **RF Reception Strength Indication**
6. **Audio Indication**
7. **The Current Group Channel**
8. **The Current Frequency**
9. **Sync ID**
10. **Sync ID2**
11. **Delay Time Indication**



4-3 RF-PA Transmitter

1. **Power ON/OFF**

2. **RF Switch:** Enables/disables the RF Transmission.

3. **Key Lock:** Press and hold for 2 seconds to lock all key functions. Press and hold again for 2 seconds to release the lock.

4. **EXIT:** When the **RF-PA-TX** is the “Setup Menu” mode, press EXIT to cancel the selection or exit the menu.

5. **Rotary Switch:** When the **RF-PA-TX** is in the “Function Setting Menu” mode, rotate the rotary switch to select the desired function up or down.

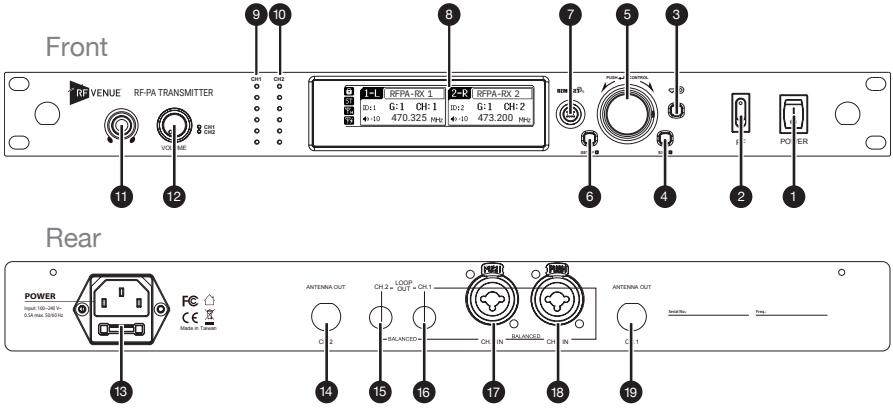
   Click the rotary switch (or SETUP button) to enter the option, turn the rotary switch to adjust the setting value.

   Press the [SETUP] button to save the settings.

6. **SETUP:** Press and hold for about 2 seconds to enter the “Setup Menu”; press SETUP to save the setting value after selecting with the rotary controller.

7. **Sync:** When the transmitter is set, press **Sync** signal to the receiver.

8. **LCD Display:** See [Description of transmitter LCD display]



9 **CH1 Volume Indication**

10 **CH2 Volume Indication**

11 **¼ inch Stereo Headphone Jack**

12 **Volume Control/Monitoring Channel Indication:**

Rotate: monitoring volume adjustment

Press: switching channels

CH1, CH2 on together: listen to both channels at the same time

CH1 on: listen to CH1 only

CH2 on: Listen to CH2 only

13 **AC Power Jack:** 100~240VAC

14 **CH2 BNC Antenna Output Jack**

15 **Balanced Loop Out Connector CH2 Loop Out**

16 **Balanced Loop Out Connector CH1 Loop Out**

17 **Balanced XLR/Ø6.3mm Combined Input (CH2 Audio Input (Balanced))**

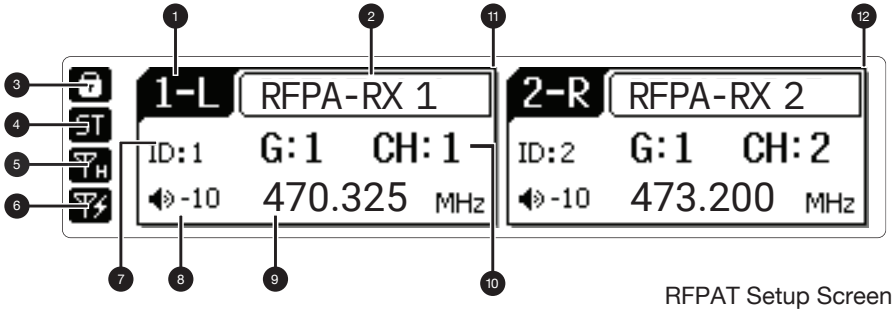
18 **Balanced XLR/Ø6.3mm Combined Input (CH1 Audio Input (Balanced))**

19 **CH1 BNC Antenna Output Jack**

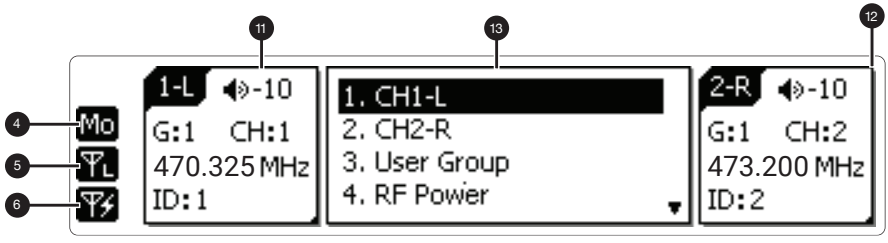
4-4 RF-PA Transmitter LCD Display Content

1. **Transmitting Channel Indication**
2. **User's Name**
3. **Key Lock**
4. **Stereo/Mono Status Indication**
   ST : Stereo Mo : Mono
5. **Transmitted Power Status Indication**
   T_H : High transmit power T_L : Low transmit
6. **RF Transmission Status Indication**
   $T_{\lightning}$: RF transmit on $T_{\times}$: RF transmit off
7. **Sync ID**
8. **Volume**
9. **Frequency**
10. **Preset Group Channels**
11. **CH1 BNC Antenna Output Jack**
12. **CH1L Windows**
13. **CH2R Windows**

RF-PA-TX LCD Screen Display Content



RFPAT Setup Screen

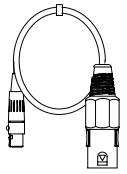


4-5 Accessories

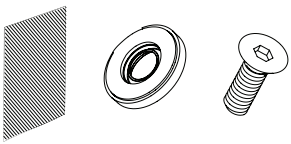
1. **AC Power Cable**
   (**RF-PA-TX** Accessory)

2. **Switching Power Transformer**
   (**RF-PA-RX** Accessory)

3. **Ø3.5mm X 50cm Cable**
   (mini XLR female to XLR male/**RF-PA-RX** Accessory)



4. **Hook and Loop Tape, Mount, Screws**
   (**RF-PA-RX** Accessory)



5 Connecting

5-1 RF-PA Receiver

Step 1

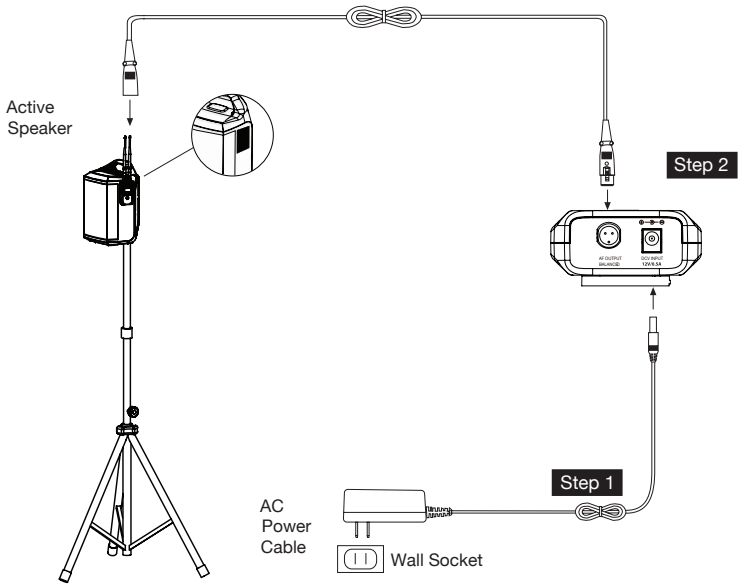
Connecting to the power supply

Connect to the power adapter: Plug the receiver into the DC socket first, and then plug the other end into the AC socket (100~240VAC).

Step 2

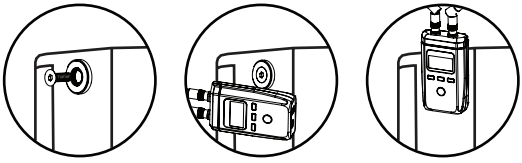
Connect the audio signal cable

Connect **RF-PA-RX** audio output to active speaker, mixer or amplifier input.

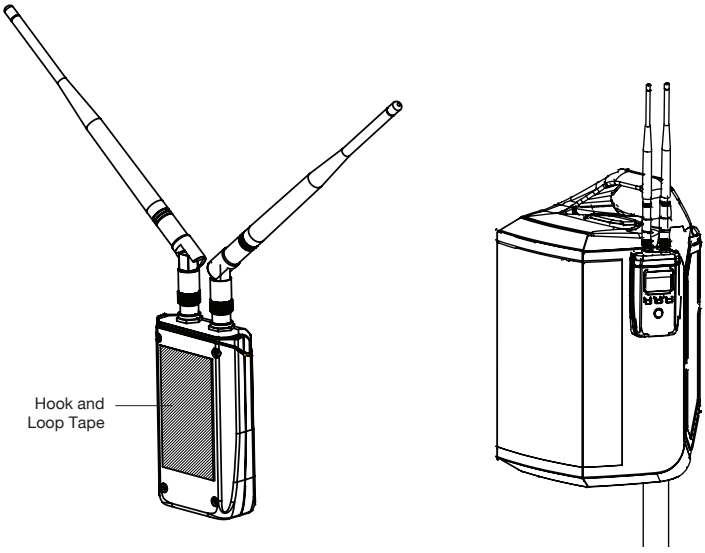


There are two ways to mount receivers to active speakers:

Method 1 (speaker with screws):
Attach the mounting bracket to the speaker with the provided 10MM bolt.



Method 2 (speaker without screws):
Affix adhesive backed hook and loop tape to speaker and to RF-PA-RX



5-2 RF-PA Transmitter

Step 1

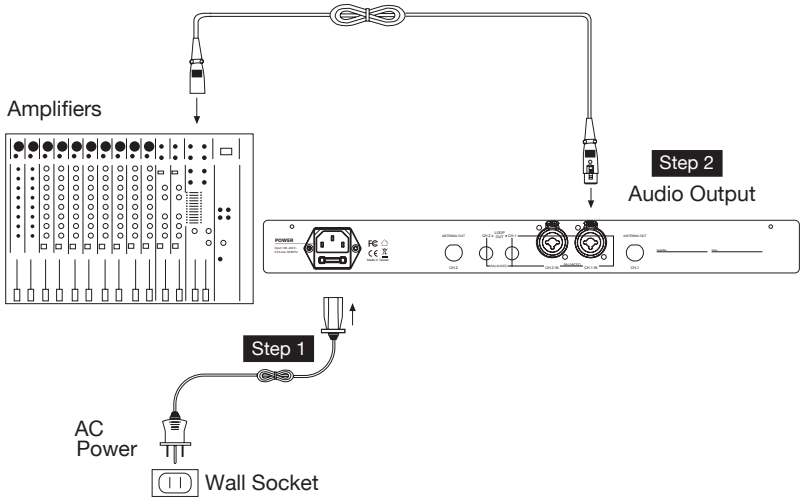
Connecting to the power supply

Plug the transmitter into the AC, and then plug the other end into the AC outlet (100~240VAC).

Step 2

Connecting to the audio signal cable

XLR or ¼ inch audio cable, one end connects the audio source to the “BALANCED” audio input of the **RF-PA-TX**, and the other end connects to the audio output of the MIXER.



6 Instruction for use

6-1 How to use RF-PA Receiver

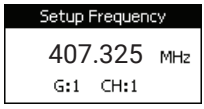
Parameter Settings

Hold the SET button for 2 seconds to enter the setting mode; press the ▲ / ▼ button to select the item, and press SET again to enter the setting mode. Press ▲ / ▼ keys for parameter setting, hold SET again to save the setting and exit.

System Settings

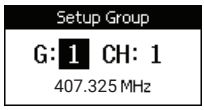
1. Frequency

1MHz per unit	Press the ▲ / ▼ keys to set the frequency
0.025MHz per unit	Press the ▲ / ▼ keys to set the frequency

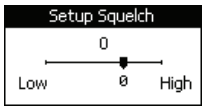


2. Group Channel

G : Group	Select the default group 1~6.
CH : Channel	Select a default channel.

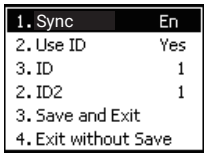


3. Squelch
+5~ -10: The higher the value, the higher the reception sensitivity. (Default value is 0)



4. Sync

Enabled (En)	Frequency can be matched to the transmitter
Disabled (Dis)	No frequency can be matched to the transmitter



(1) Use ID

Yes	The ID should be the same as the transmitter in order to match the frequency of the transmitter.
No	All transmitters can be matched to the transmitter regardless of the ID.

(2) ID

ID of **RF-PA-TX** and **RF-PA-RX** should be the same to complete pairing

(3) ID2

Please refer to the "**Sync**" section of the instruction manual

(4) Save and Exit

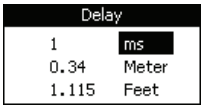
Save the settings and return to the main menu

(5) Exit without Save

Return to the main menu without saving the setting

5. Delay

Select the unit to be displayed first, either ms, meter or feet, and then press ▲ / ▼ to adjust the delay time.

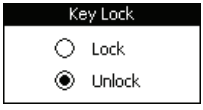


6. Edit User Name

Press the ▲ / ▼ keys to select a letter, number or symbol, press Set to fill and set the next word

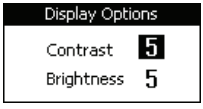
7. Key Lock

Lock	When the frequency pairing is completed, the receiver would stay in the Lock ON mode
Unlock (default)	The receiver does not lock when the pairing is completed.



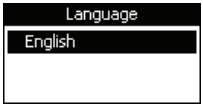
8. Display Options

Contrast : 0~9 (default 5)
Brightness : 0~9 (default 5)



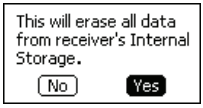
9. Language

English



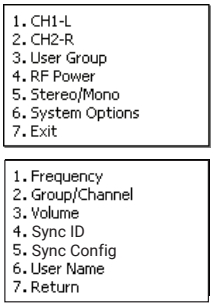
10. Factory Reset

Yes	Restore factory settings
No	Cancellation



6-2 How to use RF-PA Transmitter

Hold the SETUP key for 2 seconds to enter the setting mode. Use the rotary controller to select the setting, push the rotary controller (or press the setup key) to enter the screen setting. Turn the rotary controller to adjust the desired value or function. Press the SETUP key to save the setting value and the EXIT button to return to the previous screen. Rotate the rotary switch to adjust the desired value or function, and click the SETUP key to save the setting value. Press the EXIT button to return to the previous screen.



▲CH1-L, CH2-R Select a list

1. ~2. CH1-L / CH2-R

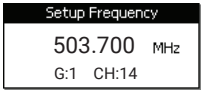
(1) Frequency

Adjust the left 3-digit frequency; rotate the rotary controller to "+/- ".

Click the rotary controller after adjusting.

To adjust the right 3-digit frequency, turn the rotary controller to "+/- ".

After setting, press SETUP to save the setting value.



Set the frequency number in 1MHz and then in 0.025MHz.

(2) Group / Channel

Spin the rotary switch to select group "G:" group 1~6; press the rotary switch after adjustment.

Spin the rotary switch to adjust the channel "CH:" up to 22 selectable channels and press the SETUP button to save the settings when finished.

Set the group number first, then set the channel number.

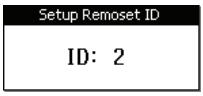
(3) Volume

Adjustment range: -20dB ~

The graph currently sets the sensitivity to Gain 0dB (default)

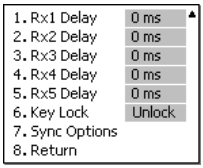
(4) **Sync** ID

Sync ID: 0~255. This setting affects the usage of **Sync**; The **Sync** ID settings of the receiver and transmitter must be the same to enable the



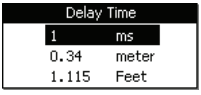
(5) **Sync** Config

RF-PA-TX can set up 5 different audio delay times to synchronize to 5 receivers with different ID2s when using the **Sync** function. Note that any number of **RF-PA-RX** can be used with **RF-PA-TX**, but the number of Receiver devices that can be synchronized from the Transmitter is limited to 5. Additional Receivers are easily configured for the correct frequency manually.



#1. ~ 5. Delay Time

Select the unit to be displayed first. You can choose from milliseconds, meters and feet, then click the shuttle to adjust the time delay.

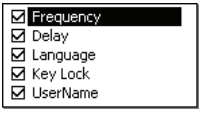


#6. Key Lock

Lock	When the frequency pairing is completed, the receiver should remain in the Lock ON mode.
Unlock	The receiver would not be locked when the frequency pairing is completed. (Default value)

#7. Synchronization Options

Use the rotary controller to select the **Sync** synchronous transmission setting item, and then press the rotary controller button to perform the check.



(6) User Name

Rotate the rotary controller to select a letter, number or symbol, then click the rotary controller to fill in and set the next word.

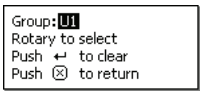
3. User Group

(1) Edit

G: U1~U6 , CH : 1~24
this channel is not enabled.

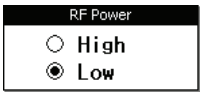
(2) Clear Group

Select the group U1~U6 you want to delete click SETUP. The program will confirm the group yout want to delete again, click “Yes” to start deleting.



4. RF Power

High	High transmitted power
Low	Low transmitted power

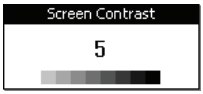


5. Stereo / Mono

Stereo	CH-1L, CH-2R input audio with individual transmission.
Mono	CH-1L, CH-2R input audio are mixed and sent.

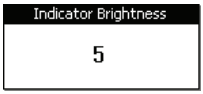
6. System Options

(1) Screen Contrast : 0~9 (default 5)



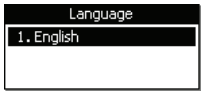
(2) Screen Brightness: 0~9 (default 5)

(3) Indicator Brightness: 0~9 (default 5)



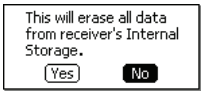
(4) Language

English



(5) Factory Reset

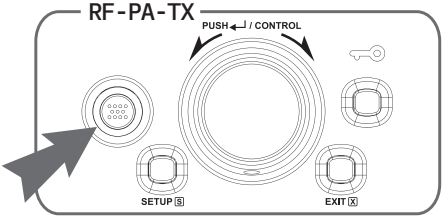
Yes	Restore factory settings
No	Cancellation



Sync

1. **Sync**: Press the Sync button and the blue light will start flashing indicating that the frequency data is being transmitted.
2. **Sync** success: The receiver screen flashes three times
3. **Sync** failure: If the receiver does not respond, please check:
   (1) If the "frequency range label" is set to the receiver and the transmitter is the same.
   (2) “Allowed" setting is required for the "FM function" in the receiver function menu.
   (3) The receiver and transmitter ”Device ID” settings must be the same.

   *When using the **Sync** function, please avoid using the **Sync** function with more than two transmitters at the same time. Avoid interfering with each other's **Sync** signals, which may result in a loss of frequency pairing.



4. **RF-PA-TX** can set 5 different delay times altogether, and simultaneously send them to 5 receivers, so that the 5 receivers can have their own delay time settings.
   (1) Rx1 Delayed mapping to receiver ID2 = 1
   (2) Rx2 Delayed mapping to receiver ID2 = 2
   (3) Rx3 Delayed mapping to receiver ID2 = 3
   (4) Rx4 Delayed mapping to receiver ID2 = 4
   (5) Rx5 Delayed mapping to receiver ID2 = 5