



## Instruction Manual

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**MR-810 / MR-820**

**MR-812 / MR-822**

**UHF PLL Synthesized True Diversity  
Wireless Microphone System**

MIPRO ELECTRONICS CO., LTD.  
FCC ID: M5XMH-801  
EXHIBIT #: 8



**ELECTRONICS CO.,LTD.**

# CONTENTS

## PLL SYNTHESIZED DIVERSITY SYSTEM

- ◆ PARTS NAME AND FUNCTIONS..... 1, 2
- ◆ INSTALLATION OF THE RECEIVER..... 3
- ◆ RECEIVER OPERATING PROCEDURES..... 4
- ◆ RECEIVER AND AMPLIFIER VOLUME ADJUSTMENT..... 5
- ◆ SWITCHABLE CHANNELS FUNCTIONS..... 6
- ◆ CAUTION ..... 6

## HANDHELD WIRELESS MICROPHONE

- ◆ PARTS NAME AND FUNCTIONS ..... 7
- ◆ BATTERY INSTALLATIONS ..... 8
- ◆ OPERATING INSTRUCTIONS ..... 8

## BELT PACK TRANSMITTER

- ◆ PARTS NAME AND FUNCTIONS..... 9
- ◆ BATTERY INSTALLATIONS ..... 10
- ◆ AF INPUT CONNECTIONS ..... 11

# PLL SYNTHESIZED DIVERSITY SYSTEM

## UHF OPERATING MANUAL

Thank you for selecting **MIPRO UHF PLL Synthesized Diversity System**. Before operating please read this instruction manual carefully and thoroughly in order to attain the correct operating procedures and achieve the best results.

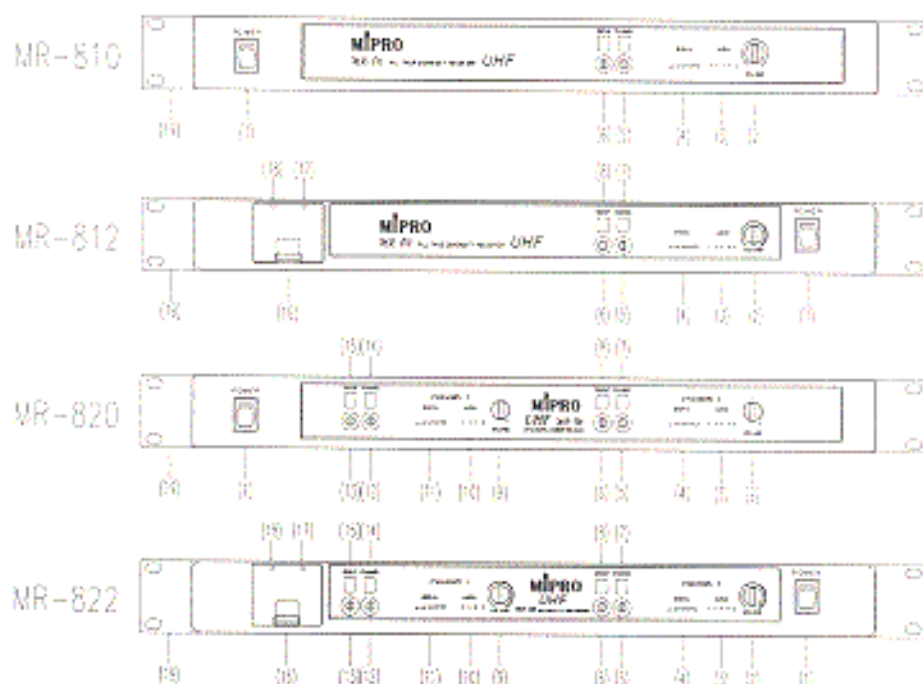
The **MIPRO UHF** true diversity wireless receiver with advanced PLL synthesized true diversity reception design. It allows the users to freely switch to any operating channels as it avoids interference. The revolutionary built-in intelligent dual-slot battery charger allows unlimited usage of batteries! This system utilizes advanced diversity reception as it eliminates signal dropout and unstable. This system is also equipped with "PILOTONE" and the latest "NOISE LOCK" dual-squelch circuit, and provides the efficacy for eliminate the random noise interference when the receiver is at standby state. Audio output is equipped with both balanced and unbalanced outputs for virtually all amplifiers input.

This system includes the following accessories:

- Audio Output Cable × 1      Rack mount Brackets × 1-pair
- Antenna × 2      Instruction Manual × 1
- AC/DC Adapter × 1 OR Power Cable × 1
- Rechargeable Battery × 1 / per channel(for battery charging system)

## 1. PARTS NAME AND FUNCTIONS

### A. Front Panel



(Fig.1)

- (1) Power Switch & Indicator: When switch is turned on, red indicator illuminates to denote normal power status.
- (2)(9) Volume Control: Adjust the AF output level of the channels.
- (3)(10) Audio Signal Level Indicator: Indicate the audio signal level. As soon as the microphone signal is modulated, the LED indicator glows.

# PLL SYNTHESIZED DIVERSITY SYSTEM

## UHF OPERATING MANUAL

- (4)(11) RF Signal Level Indicator: Indicate the RF signal strength received from the microphone. As soon the signal is emitted from the microphone, the LED indicator glows.
- (5)(12) Channel Selector: Indicate the numeric channel being selected.
- (6)(13) Group Changer: For Group Frequency Selection.
- (7)(14) Channel Changer: Each channel allows 30 switchable channels option.
- (8)(15) Group Selector: Indicate the numeric group being selected
- (16) Battery Charger: It allows two 9V rechargeable batteries to be charged.
- (17)(18) Battery Charger Indicator: It denotes battery charging or charged.
- (19) Rackmount Bracket: To install the receiver into an EIA 19-inch standard rack case.

### B. Rear Panel



(Fig. 2)

- (20) Antenna B Input Connector: B Antenna connector can be installed with antenna directly and extended with an antenna cable.
- (21)(27) Balanced Audio Output Jack: With Cannon / XLR type connector provides balanced audio output signal from this jack to the amplifier.
- (22) Unbalanced Audio Output Jack (1-channel receiver): With 1/4" Phone Jack provides audio output signal from this jack to the amplifier.
- (23) Unbalanced Audio Mixed Output Jack (2-channel receiver): With 1/4" Phone Jack provides the mixed unbalanced audio output signal from this jack to the amplifier.
- (24) Unbalanced Level Switch: "LOW" selection is for "Microphone-level" output. "HIGH" selection is for "Line-out" level output
- (25) DC 12V Input Jack: To connect 12 VDC from the AC/DC adapter.
- (26)(28) Squelch Adjusters: Adjust the squelch level to eliminate the RF noise interference at receiver stand-by state.
- (29) AC Input Jack: To connect 85 ~ 265 Volts AC power.
- (30) Antenna A Input Connector: An antenna connector can be installed the antenna directly and extended with an antenna cable.

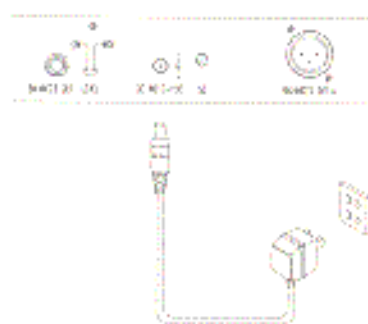
# PLL SYNTHESIZED DIVERSITY SYSTEM

## 2. INSTALLATION OF THE RECEIVER

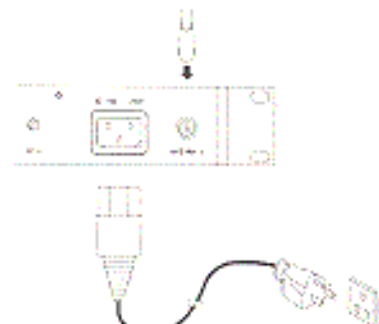


(Fig.3)

1. Install two antennas perpendicularly and fully extended to the antenna input connectors (20)&(30) at the rear panel of the receiver, as shown in Fig. 3.
2. Power Output Connection:
  - (a) Connect the AC/DC adapter cable to DC 12V INPUT JACK (25), then plug the adapter unit into an appropriate AC outlet with caution to the correct voltage under both AC outlet and adapter marked, as shown in fig. 4.
  - (b) With the appropriate AC power cable connects from AC Input Jack (29) to an AC outlet under the marked voltage 85~265 V, as shown in Fig. 5.



(Fig.4)



(Fig.5)

### 3. Audio Output Connection:

- (a) Unbalanced Level Switch (24) Setting Position: When inputs the unbalanced output of a receiver into "Line-in" input jack of a mixer or amplifier or "Electric Guitar", switch the Level Switch (24) to the right "HIGH" position. Low sensitivity may occur if switch to the wrong position. When input the unbalanced output of a receiver into the "MIC-IN" input jack of a mixer or amplifier; switch the Level Switch (24) to the left "LOW" position. Over load distortion may occur if switch to the wrong position. When using electric guitar, don't use "LOW" position as it may have generated insufficient level.
- (b) Unbalanced Output: Using audio output cable attached with "PHONE PLUG" type, connect one end from the unbalance-mixed output jack (23) or the unbalanced output jack (22) of the receiver, and the other end to the "LINE-IN" input jack of the amplifier, as shown in Fig. 3.



# PLL SYNTHESIZED DIVERSITY SYSTEM

## UHF OPERATING MANUAL

- (c) **Balanced Output:** Using audio output cables attached with "XLR" or "Canon" type, connect one end from the balanced output jacks (21)&(27) of the receiver, and the other end to the "MIC IN" input jack of the mixer or amplifier, as shown in Fig. 3. (The characteristic of the 3-pin connector is as shown in Fig. 6)
- (d) **Guitar Output:** Using audio output cable attached with "PHONE PLUG" type, plug one end from the unbalance-mixed output jack (23) or the unbalanced output jack (22) of a receiver, and the other end to the input jack of a guitar amplifier. Switch the Level Switch (24) to "HIGH" position.



Fig. 6

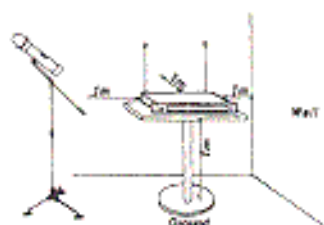


Fig. 7

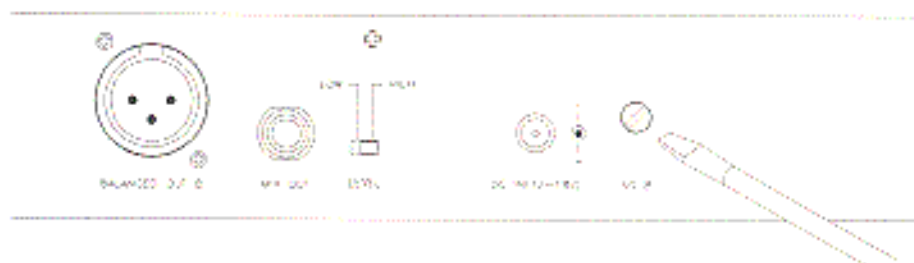


Fig. 8

4. Make sure that the system performs correctly by placing the system away from noise sources. Place the receiver at least 1 meter above the ground and away from noise sources. Place the microphone at least 1 meter away from the receiving antenna, as shown in Fig. 7.
5. The provided two rackmount brackets can be installed and mount into an EIA standard rackmount case, as shown in Fig. 8. As an accessory, you may purchase from MIPRO a front antenna rackmount brackets (FB-30), which can be mounted easily as front antenna, extending from the rear antenna connector to achieve better reception.

## 3. RECEIVER OPERATING PROCEDURES

1. Turn volume controls of the receiver and mixer in use to a minimum setting before turn on the microphones or transmitters. After switches on the receiver, the power switch (1) red indicator illuminates to denote normal power status.



(Fig. 9)

2. If SIGNAL LED indicators (4)(11) of the receiver light on before switching on the microphone or transmitter, it indicates the receiver is receiving interference signals. The more LEDs light on the more severity of interference. This system has Pitotone and NoiseLock dual-squelch features and no noise output will occur. If multiple channels are used and both SIGNAL and AUDIO LEDs glow and interference noise appear, simply

# PLL SYNTHESIZED DIVERSITY SYSTEM

## UHF OPERATING MANUAL

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adjust the Squelch controls (26)(28) clockwise until AUDIO signal indicators to extinguish (Fig. 9). However, by adjusting the squelch controls, it affects the sensitivity level of the receiver, therefore, shorten the operating distance and decreases the stability. Adjust the Channel Selector (5)(12) to a non-interference channel if adjusting the Squelch control is not able to eliminate the interference.

3. Under normal circumstances, the SIGNAL indicator lights up when a microphone or transmitter is turned on near the receiver to indicate the receiver is ready for normal operation. Once sounds to the microphone and the AUDIO LED indicators (3)(10) will glow according to the strength of sound level. If no LED glows or no sound outputs, the system is not function properly, thus it must be checked.
4. Receiver and Amplifier Volume Adjustment:
  - (a) Single-channel Unbalanced Audio Output: Switch the level switch (24) on the receiver rear panel to the left "LOW" position, then adjusts the volume control (2) to 12 o'clock position (Middle position of the knob). Lastly, adjusts volume control of the amplifier or mixer to an appropriate sound level. The volume control (2) is used for fine adjusting the microphone sensitivity. When knob turns to 12 o'clock position, the output level of the wireless microphone sensitivity is the same as the normal dynamic microphone. Once appropriate of the receiver output level is fine adjusted, only to adjust the mixer or amplifier volume control if the sound level needs to increase or decrease. Don't adjust the volume control (2) again.
  - (b) Dual-channel Unbalance-mixed Audio Output: Same adjustment as the single-channel volume control (2)(9) because the output jack (23) is a mixed audio signal. Each volume control (2)(9) adjusts the loudness of each channel. Each channel volume control is independently controlled and no cross-talk will occur.
  - (c) 1 or 2 channel Balanced Output: According to the unbalanced audio output adjusting method is acceptable. The balanced output is irrelevant to the level switch (24).
  - (d) In order to obtain same sensitivity level for both wired microphones in use at the same amplifier or mixer. With audio cables connect both wired microphone and receiver output to each "MIC-IN" input jack of the amplifier or mixer. Adjust both volume controls of the amplifier or mixer to the same desired level, then properly fine adjust the receiver volume control (2) to match the same sensitivity as the wired microphone.
  - (e) If the receiver output level is adjusted excessively, it will cause the saturation distortion of the mixer or amplifier when the microphone is loud. Conversely, S/N ratio will worsen if the receiver volume control (2) is adjusted too low.
5. The battery charging system incorporates a proprietary built-in intelligent battery charger system on the receiver. It accommodates either 1 or 2 PCs 7.2 Volts rechargeable batteries per charge. The indicators (17)(18) red light indicate charging while green light indicate the batteries are fully charged and it cuts off charging current automatically to avoid possible overcharged.