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JERRAY Wireless DMX512 2.4G Transceiver PCB Modules Board

JERRAY Wireless DMX512 2.4G Transceiver PCB Modules User Manual

1. PRODUCT OVERVIEW

The JERRAY Wireless DMX512 2.4G Transceiver PCB Modules are designed for wireless transmission of DMX512 protocol data, suitable for LED stage lighting control. These modules operate in the 2.4GHz ISM band, offering 126 channels with automatic frequency hopping for reliable performance and high anti-jamming capabilities. They are compact, making them ideal for integration into various lighting fixtures.

Each module functions as both a transmitter and a receiver, allowing flexible configuration within a DMX lighting system. Communication is established by setting identical ID codes on the transmitting and receiving units.

2. KEY FEATURES

- 126 channels with automatic frequency hopping for enhanced anti-jamming capability and reliable operation.
- Compact size, suitable for integration into various lighting equipment.
- 7 settable ID code groups, enabling multiple independent wireless systems in the same location without interference.
- Tricolor LED display for status indication, with single-key operation for ease of use.
- Capable of transmitting standard DMX512 protocol data from controllers to lighting fixtures.

3. SETUP INSTRUCTIONS

3.1 Power Connection

Connect the module to a stable 5VDC power supply. Ensure correct polarity to prevent damage to the unit.

3.2 ID Code Setting

The modules use ID codes to establish communication. There are 7 available ID codes, each corresponding to a specific LED color combination:

1: RED

2: GREEN

3: RED + GREEN = YELLOW

4: BLUE

5: RED + BLUE = PURPLE

6: GREEN + BLUE = CYAN

7: RED + GREEN + BLUE = WHITE

To set the ID code:

1. Press the "key" button once to indicate the current ID setting.
2. Press the "key" button again to cycle through the ID values. Each press will increment the ID value by one.
3. Select the desired ID code. Both the transmitting and receiving modules must be set to the same ID code for communication.
4. If multiple wireless networks are used in the same area, ensure each network uses a unique ID code to prevent interference.

3.3 Module Identification

The image below illustrates the DMX512 wireless transceiver PCB modules, highlighting the key components such as the control button and LED indicator.

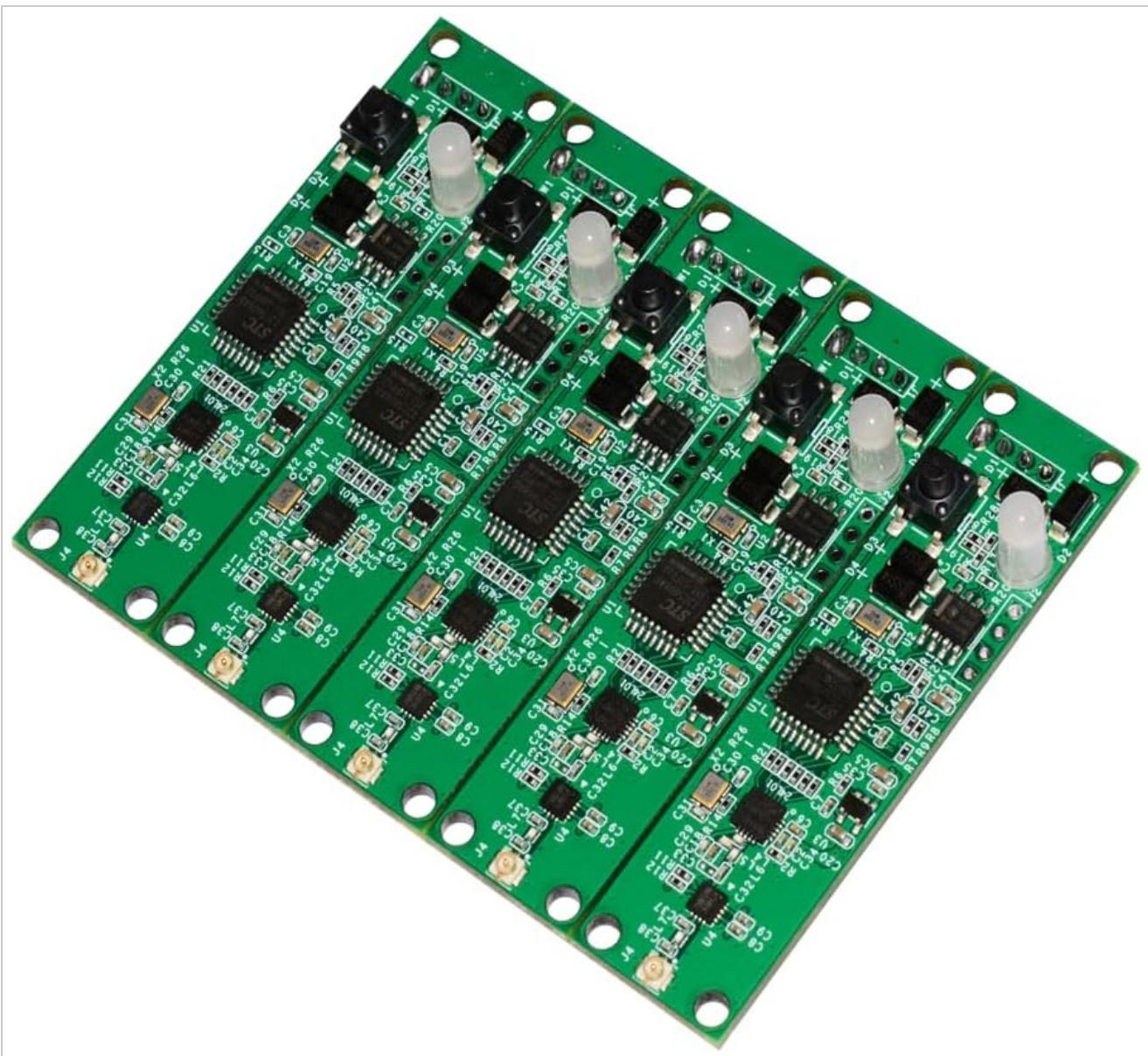


Figure 1: JERRY Wireless DMX512 2.4G Transceiver PCB Modules. This image shows multiple green PCB modules, each equipped with an STC microcontroller, a push-button, and a translucent LED indicator, designed for wireless DMX signal transmission and reception.

4. OPERATING INSTRUCTIONS

4.1 Establishing Communication

1. Power on both the DMX512 wireless transmitter board and the receiver board.
2. Press the "key" button on both the transmitter and receiver to set them to the same ID value. Refer to Section 3.2 for ID code setting.
3. The red LED on the transmitter will flash when it is transmitting DMX data and searching for an interference-free frequency section.
4. The receiver will automatically adjust its communication frequency section. The green LED on the receiver will flash until it receives data with the correct, matching ID value.
5. Once communication is successfully established, the green LED on the receiver will flash faster as DMX data transmission rate increases.

4.2 LED Indicator Status

- **LED constant light up:** Indicates no DMX signal input or no wireless communication established.
- **Red LED flash:** Indicates the module is transmitting DMX data.
- **Green LED flash:** Indicates the module is receiving DMX data. A faster flash rate signifies a higher data transmission rate.

4.3 RF Frequency

The modules operate within the 2.400-2.525 GHz RF frequency range, utilizing a total of 126 channels. The system automatically searches for and selects the optimal channel to minimize interference.

5. TROUBLESHOOTING

- **No Communication (LED constant light up):**
 - Verify that both transmitter and receiver modules are powered on.
 - Ensure the DMX signal is correctly connected to the transmitter.
 - Check that the ID codes on both the transmitter and receiver are identical.
- **Interference Issues:**
 - If using multiple wireless DMX systems in the same area, ensure each system uses a unique ID code.
 - Minimize physical obstructions between the transmitter and receiver.
 - Avoid placing modules near other 2.4GHz wireless devices (e.g., Wi-Fi routers, Bluetooth devices) if possible.
- **Incorrect LED Indication:**
 - Review the ID code and LED color correlation table in Section 3.2 to confirm the expected color for the set ID.

6. TECHNICAL SPECIFICATIONS

Input Voltage	5VDC
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Work Frequency Band	2.4GHz ISM band (2.400-2.525 GHz)
Channels	126 channels (automatic frequency section)
Max Transmitting Power Rate	20dBm
Receiver Sensitivity	-94dBm
Port	RS485 or CPU series port AURT
ID Codes	7 groups settable
Item Weight	9.3 ounces
Package Dimensions	5.06 x 3.36 x 1.4 inches

7. MAINTENANCE

To ensure the longevity and optimal performance of your DMX512 wireless transceiver modules, follow these general maintenance guidelines:

- Keep the modules clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Avoid exposing the modules to extreme temperatures, humidity, or direct sunlight.
- Ensure proper ventilation if integrating into an enclosed space.
- Handle the PCB modules with care to prevent physical damage to components or solder joints.

8. WARRANTY AND SUPPORT

For information regarding warranty coverage, technical support, or service inquiries, please refer to the documentation provided with your purchase or contact JERRAY customer support directly. Keep your purchase receipt as proof of purchase for any warranty claims.