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› [Taidacent](#) /

› Taidacent XKT-R04 Wireless Charging Chip Solution User Manual

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Model: XKT-R04

1. INTRODUCTION

This manual provides detailed instructions for the Taidacent XKT-R04 Wireless Charging Chip Solution. This module is designed for wireless power supply applications, specifically for charging 4.2V lithium batteries. It features a high-current wireless power supply chip, offering a simple circuit design and efficient power transfer.

2. PRODUCT OVERVIEW

The Taidacent XKT-R04 solution consists of two main components: a transmitting module with its coil and a receiving module with its coil. These components work together to enable wireless power transfer.

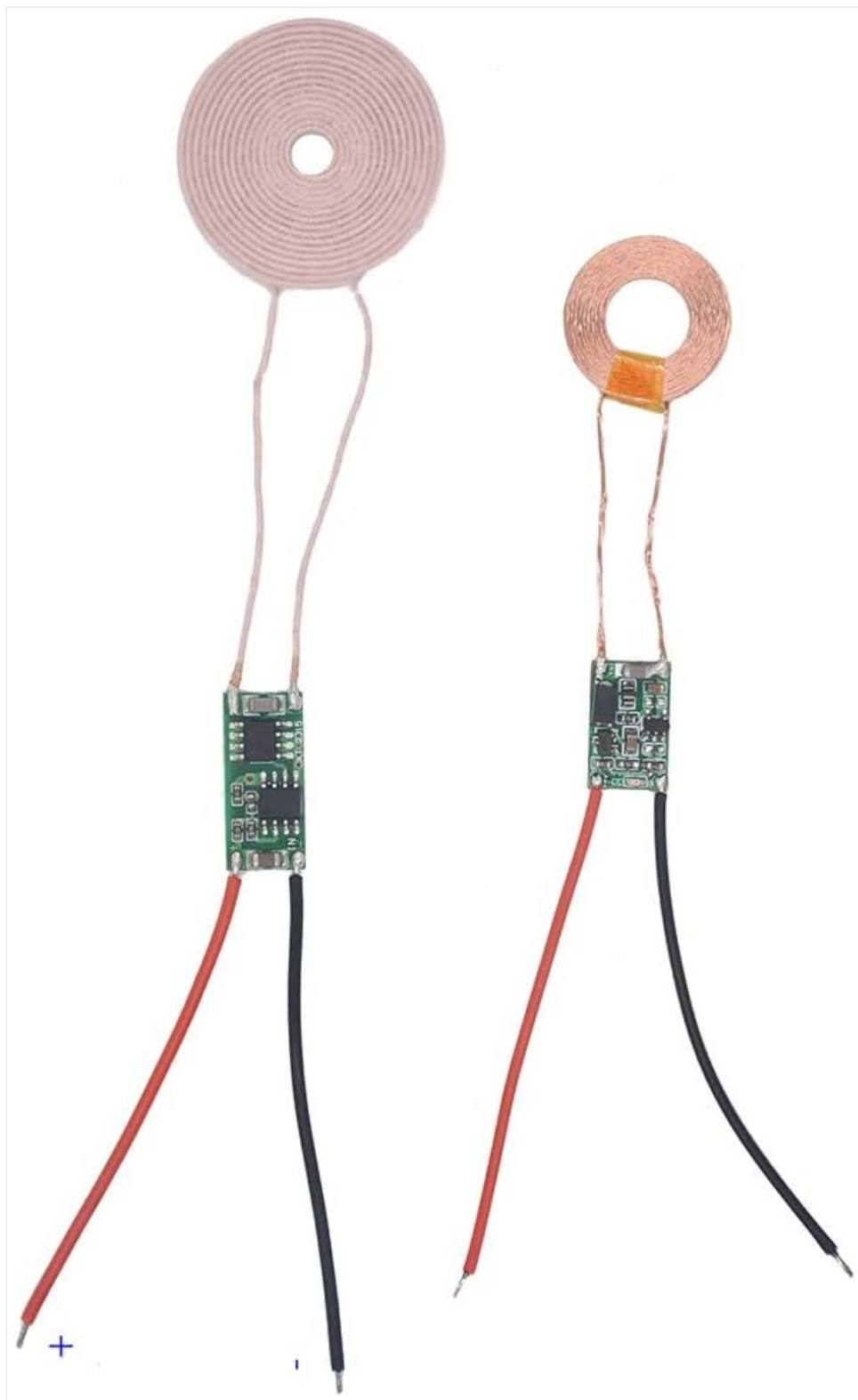


Figure 1: Overview of the Taidacent XKT-R04 transmitting and receiving modules.

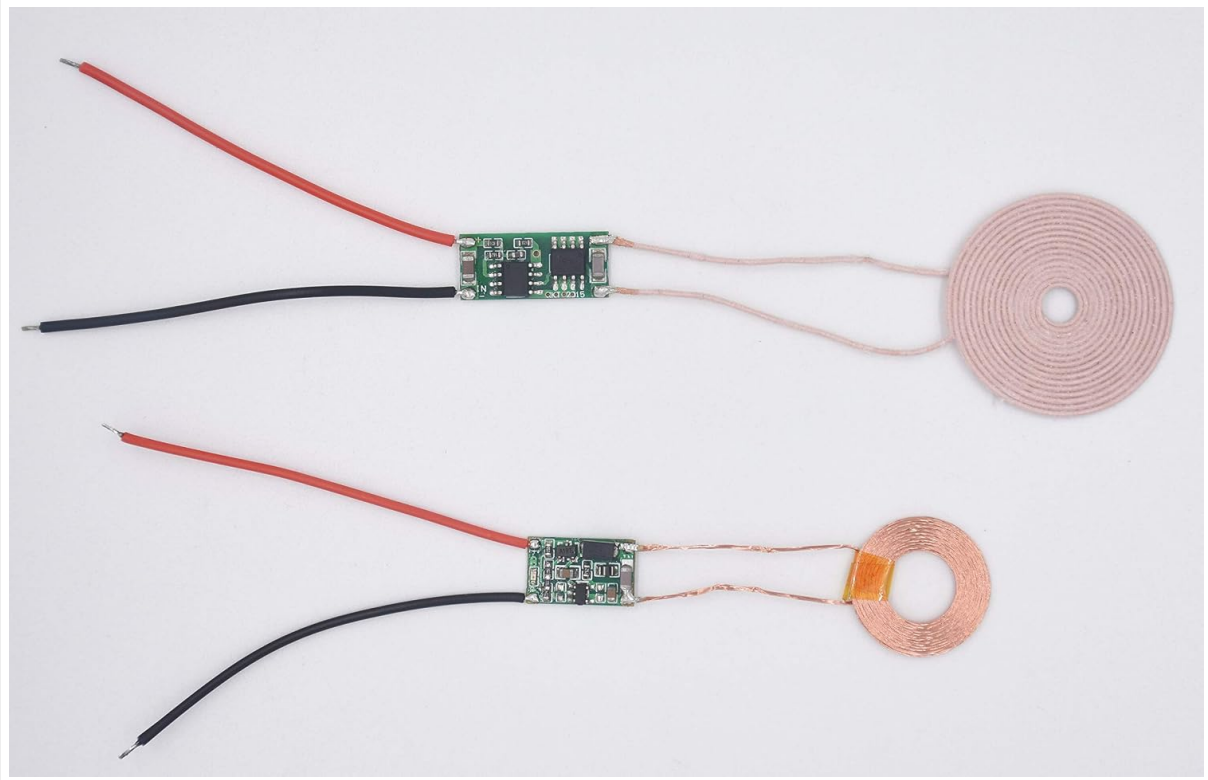


Figure 2: Transmitting coil (top, 32mm outer diameter) and receiving coil (bottom, 20mm outer diameter) with their respective modules.

3. TECHNICAL SPECIFICATIONS

Parameter	Value
Transmit Power Supply Voltage	5V
Transmit Working Current	50~500mA
Transmitting Coil (Outer Diameter)	33mm
Transmitting Coil (Inner Diameter)	5mm
Transmitting Coil (Thickness)	1mm
Receiving Coil (Outer Diameter)	20mm
Receiving Coil (Inner Diameter)	10mm
Receiving Coil (Thickness)	1.3mm
Receiving Coil Inductance	9.5uH

Transmission Distance vs. Output

- **1mm Distance:** Receive output 4.2V @ 600mA
- **2mm Distance:** Receive output 4.2V @ 450mA
- **3mm Distance:** Receive output 4.2V @ 250mA
- **4mm Distance:** Receive output 4.2V @ 200mA (reverse side of coil)
- **5mm Distance:** Receive output 4.2V @ 150mA (reverse side of coil)
- **6mm Distance:** Receive output 4.2V @ 100mA (reverse side of coil)
- **7mm Distance:** Receive output 4.2V @ 90mA (reverse side of coil)

- **8mm Distance:** Receive output 4.2V @ 70mA (reverse side of coil)
- **9mm Distance:** Receive output 4.2V @ 50mA (reverse side of coil)

4. SETUP AND INSTALLATION

Follow these steps to set up your Taidacent XKT-R04 wireless charging solution:

1. **Connect the Transmitting Module:** Connect a 5V power supply to the input wires of the transmitting module. The red wire is for positive (+), and the black wire is for negative (-).
2. **Connect the Receiving Module:** Connect the output wires of the receiving module to your 4.2V lithium battery. Ensure correct polarity: red wire to battery positive (+), black wire to battery negative (-).
3. **Position the Coils:** Place the transmitting coil and receiving coil in close proximity. For direct charging of a 4.2V lithium battery, the distance between the coils must be **more than 2mm** to prevent overvoltage damage to the receiving module. Refer to the "Transmission Distance vs. Output" table in the specifications section for expected performance at various distances.

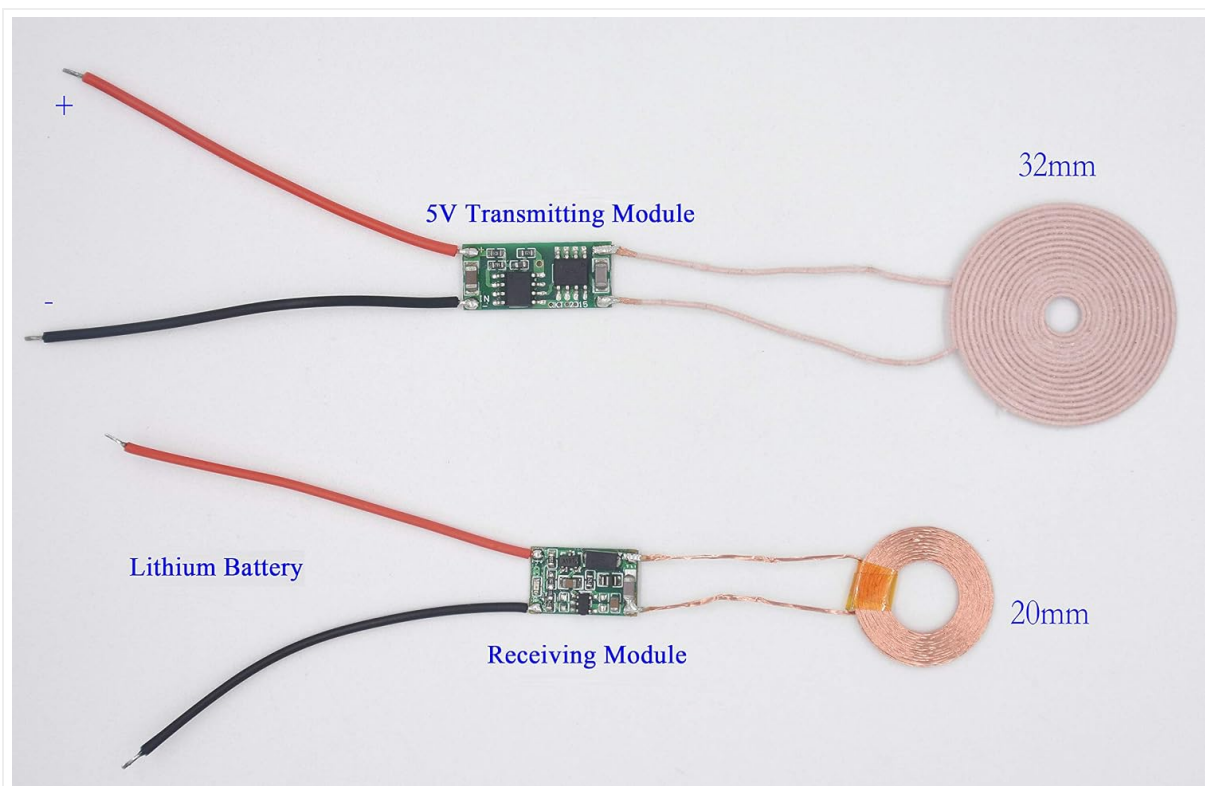


Figure 3: Connection diagram showing the 5V transmitting module input and the receiving module output connected to a lithium battery.

5. OPERATION

Once the modules are correctly connected and the coils are positioned, the wireless charging process will begin.

- **Charging Indicator:** A red light on the receiving board will illuminate when the battery is actively charging.
- **Full Charge Indication:** The red light on the receiving board will turn off once the connected battery is fully charged.

6. IMPORTANT SAFETY NOTES AND WARNINGS

- **Coil Distance for 4.2V Lithium Batteries:** When charging a 4.2V lithium battery directly, the distance between the transmitting and receiving coils **must be greater than 2mm**.

- **Overvoltage Risk:** Placing the coils too close (less than 2mm) can cause overvoltage, which will damage the receiving module. Ensure proper spacing to prevent component failure.
- **Polarity:** Always ensure correct polarity when connecting the power supply and the battery to their respective modules. Incorrect connections can cause damage.

7. TROUBLESHOOTING

- **No Charging Indication (Red Light Off):**
 - Verify that the 5V power supply is correctly connected to the transmitting module and is active.
 - Check the connection of the receiving module to the 4.2V lithium battery for correct polarity.
 - Ensure the transmitting and receiving coils are properly aligned and within the effective transmission distance (refer to specifications).
- **Module Damage / Malfunction:**
 - If the module was operated with coils closer than 2mm while charging a 4.2V lithium battery, it might have suffered overvoltage damage.
 - Inspect for any visible signs of damage on the circuit boards.

8. MAINTENANCE

The Taidacent XKT-R04 wireless charging chip solution requires minimal maintenance. Keep the modules and coils clean and free from dust or debris. Avoid exposing the components to moisture or extreme temperatures.

9. WARRANTY AND SUPPORT

Specific warranty information for the Taidacent XKT-R04 is not provided in this manual. For warranty details, technical support, or further assistance, please contact your retailer or the manufacturer directly.