

Document No.: UM- Wireless Router-001

Version No.: V1.0

# UT-NET WIRELESS ROUTER

## USER MANUAL

Total 14 Pages

Formulated by: Yang Xing

Audited by: Ren Chong

Reviewed by: \_\_\_\_\_

Approved by: \_\_\_\_\_

Zhuhai Unitech Power Technology Co., Ltd.

**June 9,2009**

## Modification Records

| Date        | Version | Modification     | Modifier  | Approver  |
|-------------|---------|------------------|-----------|-----------|
| June 9,2009 | V1.0    | Original version | Yang Xing | Ren Chong |
|             |         |                  |           |           |
|             |         |                  |           |           |
|             |         |                  |           |           |
|             |         |                  |           |           |
|             |         |                  |           |           |
|             |         |                  |           |           |
|             |         |                  |           |           |
|             |         |                  |           |           |
|             |         |                  |           |           |

---

### **Copyright Statement**

The copyright of User Manual for UT-NET Wireless Router Product shall be owned by Zhuhai Unitech Power Technology Co., Ltd. Any part of the manual shall not be copied or spread in any form, by any approach (electronic or mechanical, including photocopying or recording), for any purpose, without written approval from the above company.

(C) Copyright 2005 Zhuhai Unitech Power Technology Co., Ltd. All Copyrights Reserved



is the registered trademark owned by Zhuhai Unitech Power Technology Co., Ltd.

---

## Guide for Readers

### Target:

The manual describes the operating instructions for the wireless router developed by Zhuhai Unitech Power Technology Co., Ltd., enables users to make a basic understanding on the product's functions, performances and features, to know the product's use and maintenance methods well. The manual aims to help with debugging personal and other related personal to correctly use the router, including router's installation, commissioning, maintenance, etc .

### Objective Readers:

The manual is formulated for the UT-NET wireless router's users, and focuses on providing the instructions for the product's installation guidelines and operating procedures for installation and operation personal.

### Content

The main contents cover general, installation, operation , maintenance, etc.

### Conventions:

The manual complies with the following conventions:

- 1 All the menus come with "";
- 2 All references adopt *Italic*;

**NOTE** means the matters requiring readers to pay attention.

**WARNING** means the matters that may cause serious errors and must be attended.

---

## **Foreword**

The UT-NET wireless router is one of important products in JOYO system, which wireless signal is capable of covering target substations, thus achieving the wireless operations on locks of smart key, as well as the true on-line real-time “five-protection”.

---

## Contents

|                                     |    |
|-------------------------------------|----|
| Chapter I General .....             | 8  |
| 1. 1. Brief.....                    | 8  |
| 1. 2. Scope of Applications.....    | 8  |
| 1. 3. Functions and Features .....  | 8  |
| 1. 4. Model and Configuration ..... | 8  |
| Chapter II Installation.....        | 9  |
| 2.1 Installation Steps .....        | 9  |
| 2.2 Cautions in Installation .....  | 11 |
| Chapter III Operation.....          | 11 |
| 3.1 Display Panel.....              | 11 |
| 3.2 Operation .....                 | 11 |
| Chapter IV Parameters Settings..... | 11 |
| Chapter V Display.....              | 12 |
| Chapter VI Maintenance.....         | 12 |
| 4.1 Update Maintenance .....        | 12 |

---

|                              |    |
|------------------------------|----|
| 4.2 Routine Maintenance..... | 12 |
| 4.3 Troubleshooting.....     | 12 |
| 5.1 Warning .....            | 13 |

---

## Chapter I General

### 1. 1. Brief

The UT-NET wireless router is a wireless transceiver, which can be applicable to harsh industrial environments, and adapts to working temperature between -40 °C and 85 °C. The wireless router features data routing, data transfer, signal coverage and so on, its self-organizing and self-healing capacity ensures network normal and stable.

### 1. 2. Scope of Applications

UT-NET wireless router is mainly applied to the Company's JOYO system, functioning as the providing core data link, as well as ensuring the data security and communication stability in JOYO system.

### 1. 3. Functions and Features

UT-NET wireless router adopts AC or DC power supply. The wireless router mainly functions as routing and forwarding the wireless data. It's capable of achieving intelligent routing of data on MESH network, choosing the best and the shortest path to the purpose; also forwarding the data to the node device (such as: the smart key), and receiving the data from node devices.

Each router supports 700-meter distance communication in open outdoor environment, and multi routers' wireless signal can co-work to cover a wider area.

Typical operating voltage and power:

| Product Name           | Model      | voltage range           | Power |
|------------------------|------------|-------------------------|-------|
| UT-NET wireless router | WXLYQ-1_FB | 90~264VAC<br>120~370VDC | 2W    |
| UT-NET wireless router | WXLYQ-2_FB | 85~265VAC<br>110~340VDC | 2W    |
| UT-NET wireless router | WXXTQ-1_FB | 90~264VAC<br>120~370VDC | 2W    |

### 1. 4. Model and Configuration

The product's models are as follows:  
UT-NET wireless router , WXLYQ-1\_FB



UT-NET wireless router , WXLYQ-2\_FB

UT-NET wireless router, WXXTQ-1\_FB

## Chapter II Installation

### 2.1 Installation Steps

- Install WXLYQ-1\_FB UT-NET wireless router

1. Select the installation site. The installation site of wireless router is based on the actual distribution network test results. Please see details in *Instructions for Debugging of UT-NET Wireless Network* .

2. Install the power. Each router is equipped with two cable terminals in parallel in the internal. Any one of two terminals can be used to power the router, and the other terminal can be used to output to power other routers. See below:

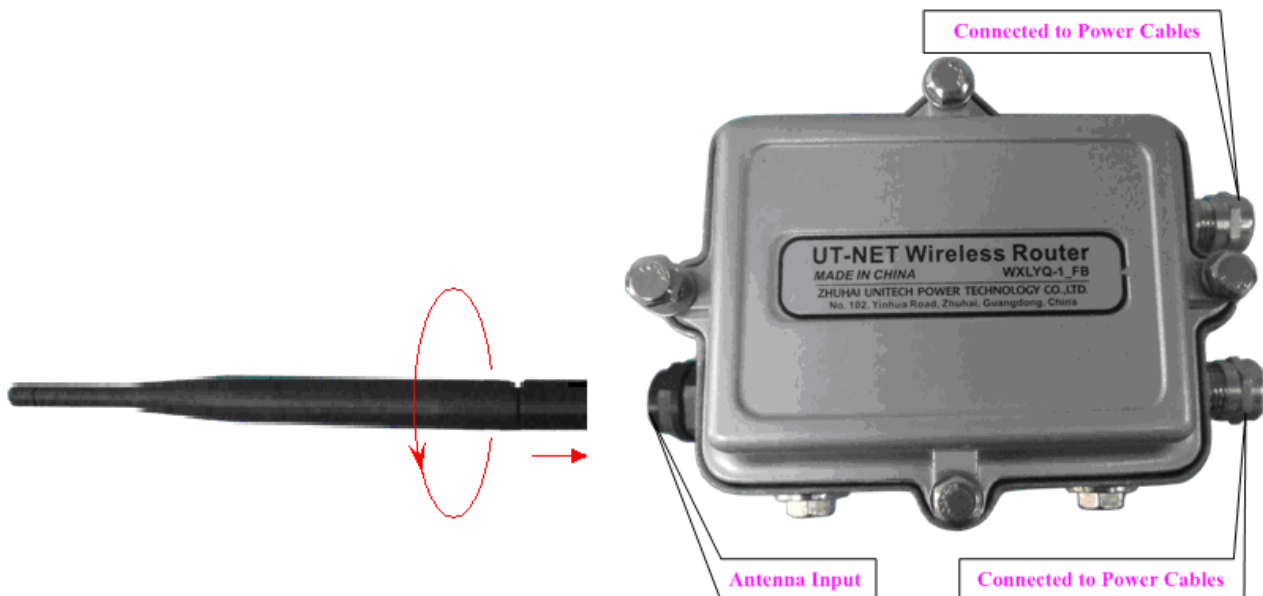


Figure 1

3. Install the antenna into the antenna input port as figure 1. Fix the router. Router comes with mounting bracket, the special bracket can be customized as needed. Turn the antenna to the vertically upward direction.

- Install the WXLYQ-2\_FB UT-NET wireless router

1. Select the installation site. WXLYQ-2\_FB UT-NET wireless router is used in conjunctions

with the serial port and network controller, IV host and other equipments, therefore, in addition to compliance with the principle of distribution network, it is necessary to consider the installation of communication cables. It supports two serial communication modes: RS-232 and 422, please select the proper communication mode as needed. See Figure 2

2. Install the power. -see the above instructions for WXLYQ-1\_FB UT-NET wireless router.

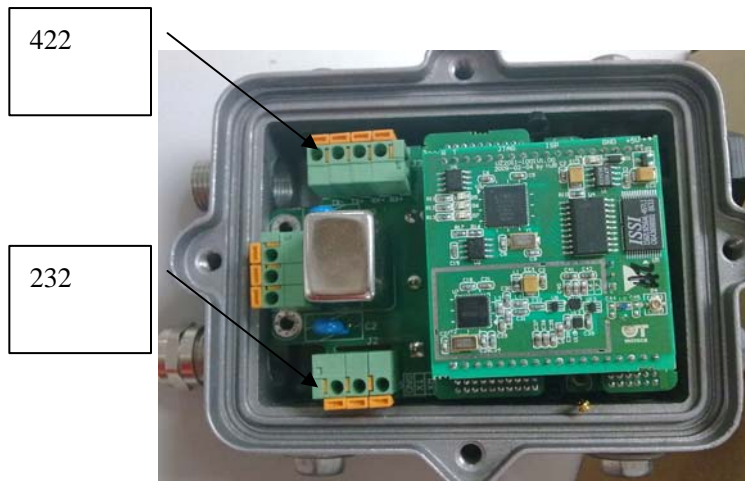


Figure2

3. Install the antenna. The same as the WXLYQ-1\_FB UT-NET wireless router in 2.1.3.

- Install the WXXTQ-1\_FB UT-NET wireless router
  1. Select the installation site. Please select the site in accordance with the distribution principles in *Instructions for Debugging of UT-NET Wireless Network*. it should be installed in the center of the entire network.



Figure 3

2. Install the power. The same to the router.

---

3. Install the antenna. The same The same as the WXLYQ-1\_FB UT-NET wireless router in 2.1.3.

## 2.2 Cautions in Installation

1. Pay attention to whether the antenna is solidly fixed, and fix it solidly if it's loose.
2. Please do place the waterproof ring while installing the router or coordinator.



Figure 4 waterproof ring

3. While installing the cover of router, please do not install it in reverse position, thus avoiding any incursion of water.

## Chapter III Operation

### 3.1 Display Panel

### 3.2 Operation

## Chapter IV Parameters Settings

The parameters of UT-NET wireless router have been ready for operation. It is no necessary to reset. The default operating channel is 2460 MHz, the communication baud rate of WXLYQ-2\_FB UT-NET wireless router is 57600, MAC address is 8600510000000000.under special circumstances, and the baud rate of WXLYQ-2\_FB UT-NET wireless router may be modified by "wireless module configuration tool" .

---

## Chapter V Display

## Chapter VI Maintenance

### 4.1 Update Maintenance

### 4.2 Routine Maintenance

It is available to make a diagnostic test on the installed wireless network by "UT-NET network PC-terminal program" if need to check if whether the router runs normally. This tool is used to debug the wireless network. the network topology is as shown below.

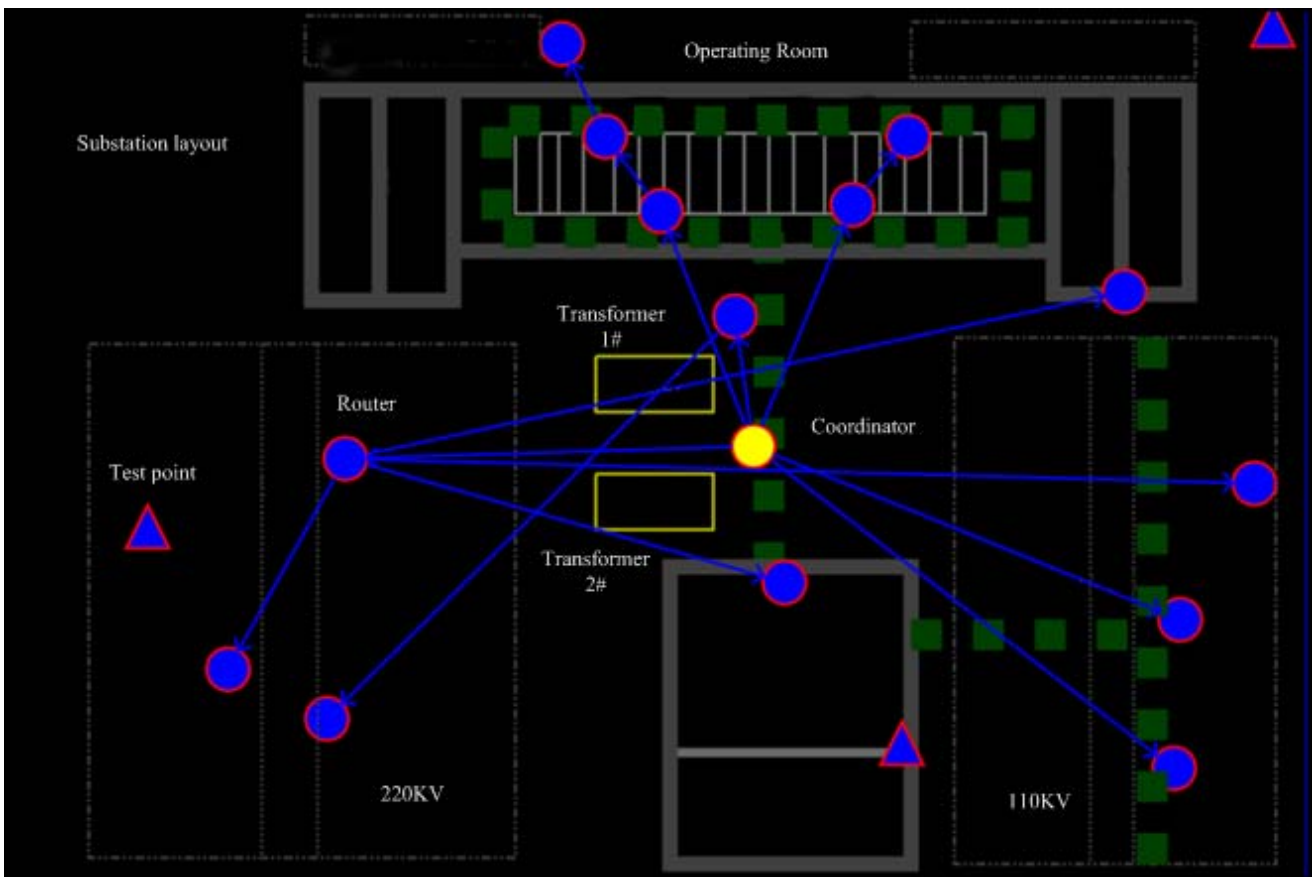


Figure 5

### 4.3 Troubleshooting

1. The router's cover is easy to produce static electricity. While the router is being connected to power supply, please ensure it has been grounded.

- 
2. The inversely-installed router cover and loosened screws may cause incursion of water. The router cover is directional, please follow the cover's right direction to install.
  3. Incursion of water; Ensure that the router's cover isn't inverse, check whether sealing ring exists and is correctly installed.
  4. Router can't be load network and distribute signal successfully. Check if the router is correctly installed on the proposed distribution site; use the smart key to detect the existence of signal in the site.
  5. Antenna's signal is relatively low, when the smart key is close to the router, the signal is low. Check if the antenna is loose, if loose, please tighten the antenna. If the router has been working, but the signal is still low, please replace the router.
  6. The WXLYQ-2\_FB UT-NET wireless router vehicle-mounted antenna is difficult to be installed and fixed on an improper site. Vehicle-mounted antenna is provided with magnetic suction, if the WXLYQ-2\_FB UT-NET wireless router is installed in the switchgear cabinet, the antenna can be sucked on the cabinet roofing, please insert its other end into the cabinet through the reserved hole on the top of the cabinet

## 5.1 Warning

### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### **Antenna Installation:**

**WARNING:** It is installer's responsibility to ensure that when using the authorized antennas in the United States (or where FCC rules apply), only those antennas certified with product are used. The use of any antenna other than those certified with the product is expressly forbidden in accordance to FCC rules CFR47 part 15.204. The installer should configure the output power level of antennas, according to country

---

regulations and per antenna type. Professional installation is required of equipment with connectors to ensure compliance with health and safety issues

Install and use the device must according to the regulations:

1. This device will not be sold to the general public; it will be sold to the electric power system only.
2. This device requires controlled installation location by professional installers.
3. This device requires professional configuration for use.
4. This device is generally for industry/commercial use.