INSTRUCTION MANUAL

DR600T,DR600T-01

Digital Transceiver

DIGITAL

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User Manual

DR600T, DR600T- 01

Digital Transceiver

We are very grateful for your purchasing Kirisun DR600T,DR600T-01 digital transceiver maufactured by Kirisun Communications Co., Ltd.

We believe Kirisun DR600T,DR600T-01 digital transceiver, which always incorporates the latest technology, brings great convenience to your life and work and meets demands for reliable communication.

Notice

◆ Please carefully read this instruction manual before using the product for your easy operation. We will consider that you have read this manual once you use the product.

◆ Please carefully keep this manual for future reference.

◆ In order to protect your legal rights from infringement, please carefully fill in the warranty card and claim valid receipt.

◆Kirisun and its authorized partners own the intellectual property of all the parts of this product (including accessories). Any design and materials may not be modified, copied, extracted or translated without authorization of Kirisun or its authorized parities.

◆This product may involve update or modification in future, and Kirisun owns the right to change the specifications of software and hardware described in this manual without further notice. Specifications and information contained in this manual are for reference only.

◆ All the contents are carefully proofread, but mistakes may be inevitable. The rights of final explanation are reserved by Kirisun.

Safety Precaution

◆The radio can only be repaired or maintained by professional technicians. The user must not disassemble the radio at liberty.

◆The settings and installation shall be approved by local radio management department.

◆Lightning protection is required when installing the transceiver antenna.

◆Please use qualified power supply, antenna, thunder preventer, feeder and other accessories during installation, otherwise the transceiver may be damaged.

Contents

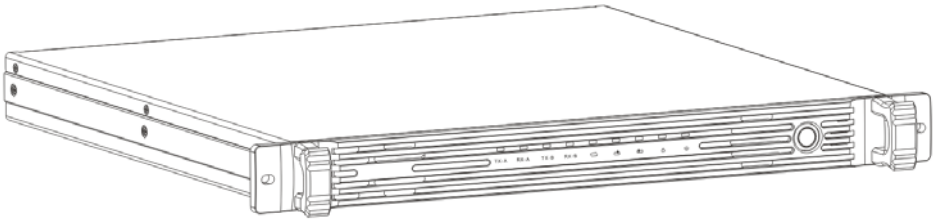
1 Unpacking and Checking

Please carefully open the box and make sure the items listed below are included. For items missing or damaged during delivery, please contact the local dealers for help.

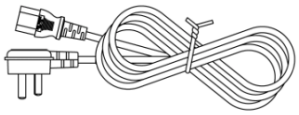
1.1 Accessories

Item	Quantity
Transceiver	1
Power Cable	1
User Manual	1
Certificate	1

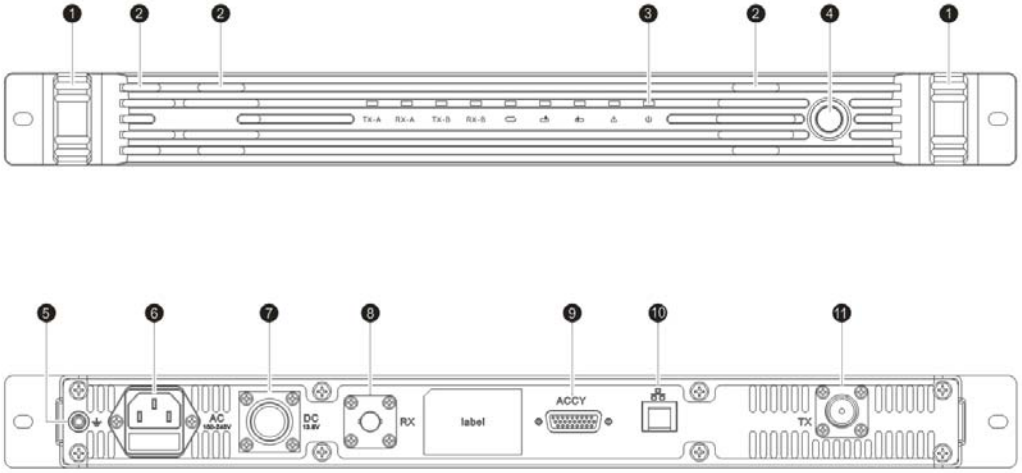
Transceiver:



Power Cable：



2 Overview

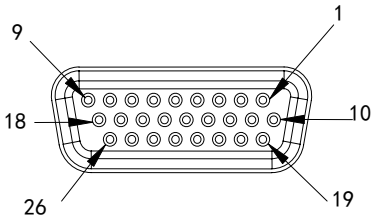


No.	Part Name
1	Handle
2	Fan
3	Indicator
4	Power Switch
5	Ground Interface
6	100-240V AC Inteface
7	13.6V DC Interace
8	RX Signal Interface
9	ACCY Interface
10	Ethernet Interface
11	TX Signal Inteface

2.1 Power Switch

Press this button to power on/off the transceiver.

2.2 ACCY Interface



2.2.1 PIN Description

Pin	Description
PIN1	DC 13.6V Output
PIN2	Ground Cable
PIN3	Null
PIN4	Null
PIN5	Null
PIN6	Null
PIN7	External PTT Signal input, High level active .when connected with Pin20, enter transmission mode used for testing and bridge connection;
PIN8	SPEAKER-
PIN9	SPEAKER+
PIN10	ACC_MAP_ID2; used for testing
PIN11	ACC_MAP_ID1; used for testing
PIN12	Null
PIN13	RS232 serial port RXD
PIN14	RS232 serial port TXD
PIN15	Ground Cable

PIN16	Null
PIN17	Ground Cable
PIN18	External Analogue Audio Input
PIN19	Ground Cable
PIN20	High level electrical signal output
PIN21	Squelch is on when it is connected to PIN20 and it is used for testing
PIN22	Null
PIN23	Null
PIN24	Null
PIN25	Null
PIN26	Null

2.2.2 External Interface Description

- To Activate the External PTT

Connect PIN7 and PIN20 of ACCY interface to activate the external PTT, and you can test the TX signal of transceiver.

- Test the Analogue Receiving

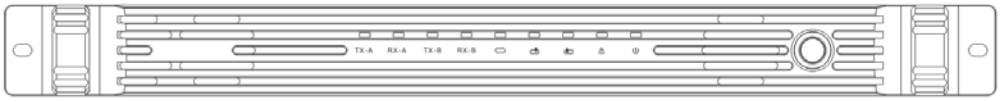
Connect PIN10 and PIN20 of ACCY interface to test the analogue receiving.

- Reset IP Address

Connect PIN10 and PIN20 of ACCY interface. The transceiver changes the IP address and gateway

address to the IP on the label, but the data of them are not changed. After re-boot, the configured IP address and gateway address will be recovered.

2.3 Panel LED Indicator



Indicator	Description
TX-A	Time Slot 1 TX Indicator
RX-A	Time Slot 1 RX Indicator
TX-B	Time Slot 2 TX Indicator
RX-B	Time Slot 2 RX Indicator
	Connection Indicator
	Uplink Indicator
	Dowlink Indicator
	Emergency Indicator
	Power Indicator

3 Basic Operation

3.1Power on /off Transceiver

When the transceiver is off, press the power switch  to power it on. When the indicator  glows, the system starts to operate, and the indicator  or  will indicate the default work mode. Press the power switch  to power off the transceiver when it is on.

3.2Connect to the Controller

After connected with the controller, the indicator  glows. The indicator  is flashing while sending to the controller, and  is flashing while the controller is sending to the transceiver.

3.3Voice and Data Transmission

While the transceiver is sending voice or data to the air interface, the indicator TX-A and TX-B are flashing. If some MS sends data on time slot 1, RX-A flashes, sends data on time slot 2, RX-B flashes.

3.4 IP Interface

Default IP address: 192.168.1.100. You can upgrade software, configure the programming parameters and perform extended development through this interface.

3.5 Emergency Alarm

The emergency indicator glows during abnormal situations, for example, when RX frequency lost lock, the emergency indicator flashes every one second and when TX frequency lost lock, two seconds. When both TX and RX frequency lost lock, the indicator glows constantly. Please turn to professional technician for help when abnormal situations happen.

3.6 Programming Software

Please check the network status before programming the transceiver. First make sure the network button on the tool bar is pressed(the IP address option will be grayed out if it is not pressed) and also make sure the connection button is pressed. In case of the connection button is pressed, the programming software will automatically connect to the matched transceiver through IP according to the IP address; the status bar will show ”XX network” after the connection is completed. If there is another programming software trying to connect to the same transceiver, it shows busy network status on the second software, meanwhile, the connection button will pop up automatically, and you need to click it for re-connection.

3.6.1 Menu

New: creates new channel information. The transceiver creates new channel information configuration file and one analogue channel by default with default parameters.
Open: open the file saved on the device.
Save: saves information configuration on the current channel.

If the channel information is newly created or read from the transceiver, the save path should be selected (similar to “Save as”) .
Save as: choose a path to save the configuration.
Exit: exits the programming software.

3.6.2 Radio Type

Radio Type: select transceiver for radio type. Frequency 136-174MHz，400-470MHz are available, or you can define fr equency band yourself. The self-defined frequency band should be within the available range.

3.6.3 Edit Menu

- General Settings

Equipment ID：the only identity on the device. It is used for recognition to multi-station networking and base station.
Group Call Hang Time: during group call on the terminal, if no PTT button is pressed on any terminals, the transceiver will keep call hang time and does not accept signals of other group. If there is any one of the members press PTT button during the call hang time, the hang time will be counted again. After the call hang time is over, the call ends and the channel resources are released. Value range: 0~7000 milliseconds; step value: 500 milliseconds; 4000 milliseconds by default.
Private Call Hang Time: after a private call is initiated on the terminal, and if no PTT button is pressed on both parties, the transceiver will keep call hang time for the terminals. During the call hang time, the

transceiver does not accept other calls. After the call hang time is over, the call ends and the channel resources will be released. Value range: 0~7000 milliseconds; step value is 500 milliseconds; 4000 milliseconds by default.

Emergency Call Hang Time: after an emergency call is initiated, and if no PTT button is pressed on both parties, the transceiver will keep call hang time for the terminals. During the call hang time, the transceiver does not accept other calls. After the call hang time is over, the call ends and the channel resources will be released. Value range: 0~7000 milliseconds; step value is 500 millisecond; 4000 milliseconds by default.

Call Hang Time: after the terminal call ends, the transceiver keep call hang time for the terminal. During this time, press PTT button without having to establish connection to continue the call. Value range: 0~7000 milliseconds; step value: 500 milliseconds; 4000 milliseconds by default.

- Internet Settings

Local IP：transceiver IP address, such as 192.168.1.100.
Subnet Mask: the transceiver subnet mask in local area network, such as 255.255.255.0.
Gateway: the transceiver gateway in the local area network, such as 192.168.1.1.
DNS：configure the domain name server or set it as 0.0.0.0.

Networking Modes: supports three modes including: no network, as server or as slave device. When it is

used as server, the local monitor port should be configured and the slave device is connected to system network through this port. When it is used as slave device, the serve IP(or domain name) and port should be configured.

Network Time Slot Configuration: both two time slots can be equipped with or without network. In case of network status, the internet time slot ID should be configured. When the transceiver is networked, it will determine whether it should transmit data according to network time slot ID. It transmits data when the ID is different while it does not transmit data if the ID is different.

Indicator Setting: in the networked status, the transceiver will transmit signals regularly according to indicator settings, so that the portable radios can perform roaming according to signals. The time interval to activate the transceiver is ranged from 10 seconds to 600 seconds; 30 seconds by default. The continual time to activate the transceiver is ranged from 200 milliseconds to 7000 milliseconds, 1000 milliseconds by default.

Encryption Setting: encryption is optional. The password is set to be 10 hexadecimal characters, such as: 8A4428331D.

Message Delay Setting: the delay setting is used to prevent network latency. The user can set the delay time based on the network status. Value range: 60 milliseconds to 960 milliseconds; step value is 60 milliseconds.

- Temperature Control

Fan Control Mode: the fan can be turned on constantly or turned on automatically according to power amplification temperature.

Power Amplification Protection Temperature: when the power amplification temperature exceeds

the specified threshold, the power amplifier will be disabled automatically. 85℃ by default.
Fan Enable Threshold Temperature: when the temperature is higher than the specified threshold, the fan will be turned on automatically. 40℃ by default.
Fan Disable Threshold Temperature: when the temperature is lower than the specified threshold, the fan will be turned off automatically. 30℃ by default.
Standing Wave Ratio: used to test whether the antenna is well matched with transmitter. Default value: 3.0.

- Channel Settings

Band Width: select channel spacing for current channel. Options: 12.5kHz、25 kHz. Default value: 12.5 kHz. 25kHz not for FCC used.
Color Code: select color code for current channel. Only radios with same frequency and color code can communicate with each other. Value range: 0~15. Default value: 1.
Squelch Type: select RX mode for current channel. Options: CSQ, CTCSS, CDCSS, -CDCSS. Default value: CSQ.
Squelch Level: set the squelch electrical level.
CTCSS Frequency: when the CTCSS squelch mode is selected, you need to select one CTCSS frequency value, otherwise the call between two parties is not possible. Value range: 0~254.1Hz; step value is 0.1 Hz; default value: 67 Hz.
CDCSS: if the squelch type is CDCSS or –CDCSS, you have to select one CDCSS value, otherwise the call between two parties is impossible. Value range: 0~777; step value: 1; default value: 023.
Notice:
(1)The squelch level is only applied to analogue channel.

(2) The carrier cannot be selected for mixed channel receiving. It must choose CTCSS, CDCSS or –CDCSS.

3.6.4 Programming Menu

Read: read data from transceiver.

There will be a progress bar indicating progress during the reading process, and you can set to automatically exit the data window when the data is fully read.

Write: write the configured data into transceiver.

There will be a progress bar indicating progress during the writing process, and you can set to automatically exit the data window when the data is fully written.

Notice:

(1) Check the network status before reading data and make sure that internet option is ticked. The IP on the software tool bar should be same as the transceiver IP.

(2) When the connection is completed, it shows “internet OK” on the status bar, or it shows “internet XX”.

Upgrade: you can download each function module from PC to transceiver and configure with main parameters.

Select the path for upgrade package before upgrade.

4 Trouble shooting

A. Programming Software Connection Failure

Wrong transceiver IP entered on the programming software or the user forgets transceiver IP.

B. Transmission Failure

Check if the frequency configuration between the portable and transceiver is the same and whether their modes are matched.

5 Parameters

Frequency Range: 136-174MHz，400-470MHz
AC: 100-240V@2.5A 50/60 Hz
DC : 10.8-15.6V@15A
DC Insurance: 13.6V15A
AC Insurance: 2.5A 250VAC, 5x20mm
Insurance Type: HRC ceramic, Time lag (T)
Supplied Power: 200W
TX Power: 40W(UHF) / 45W(VHF)
Size: 482.6mm（Length）*450mm（Width）*44mm（Height）

RF Energy Exposure Compliance

- Your radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) regarding human exposure to radio frequency electromagnetic energy. This radio complies with the FCC RF exposure limits for occupational or controlled RF exposure environment and is authorized by the FCC for occupational use only. In terms of measuring
  RF energy for compliance with the FCC exposure guidelines, your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode.
- The device complies with RF field strength limits of RSS requirement

Your radio complies with the following of RF energy exposure standards and guidelines

- United States Federal Communications Commission, Code of Federal Regulations; 47CFR part 2 sub-part J
- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1:2005; Canada RSS-119 Issue 12, MAY 2015; RSS-247 Issue 1 May 2015
- Institute of Electrical and Electronic Engineers (IEEE) C95. 1-2005 Edition
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998

FCC & ISED Statement

- To ensure optimal performance and compliance with the occupational/controlled environment RF energy exposure limits in the above standards and guidelines, users should transmit no adhere to the following procedures:
- Gain of antenna must not exceed 1.5dBi (VHF), 0dBi(UHF)
- Antenna Installation: Install the mobile antenna at least 100 cm away from your body, in accordance with the requirements of the antenna manufacturer/supplier.

- Pour assurer une performance optimale et le respect du travail / contrôlée limites d'exposition à l'environnement de l'énergie RF dans les normes et les lignes directrices ci-dessus, les utilisateurs
  respecter les procédures suivantes:
- Gain de l'antenne ne doit pas dépasser 1.5 dBi(VHF),0dBi(UHF)
- Installation de l'antenne: Installez l'antenne portable au moins 100 cm de votre corps, conformément
  avec les prescriptions du fabricant de l'antenne / fournisseur.

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.

Note:" Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

This device complies with Industry Canada licence-exempt RSS standard (s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference,including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Kirisun Communications Co.,Ltd.
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