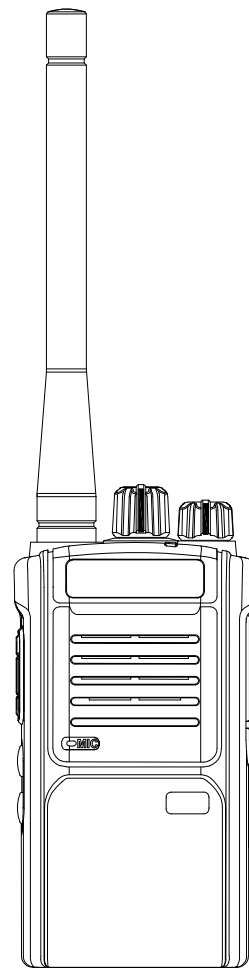


***HYDX***

***HYDX***



**A21**

**User's Manual**

## INTRODUCTION

Thank you very much for purchasing handheld two-way radio A21.

With compact and professional design, stable performance, A21 is widely using for most of industries and area. For example, logistic, transportation, construction and so on.

This radio uses professional and commercial or amateur frequency, you need to apply for use to radio management institution of the provinces, municipal or autonomous regions.

Please read this manual carefully to understand how to properly operate the radio before use.

## Contents

Unpacking and Checking Equipment.....	01
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## Unpacking and Checking Equipment

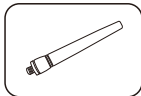
### Welcome to use radio, before using we suggest you:

Please check the packing box of this product and see if there are signs of damage.

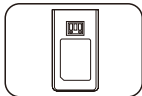
Please open the packing box carefully. We recommend that you identify the items listed in the following packing list. If you find that our product and its accessories in hand are lost or damaged during the shipment. Please immediately contact dealers.

### Parts List

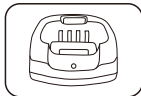
Item	Quantity
Rubber Antenna	1
Li-ion Battery Pack	1
Desktop Charger	1
Power Adapter	1
Belt Clip	1
User's Manual	1



Rubber Antenna



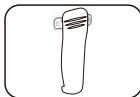
Li-ion Battery Pack



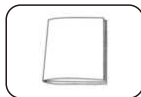
Desktop Charger



Power Adapter



Belt Clip



User's Manual

## Preparation

### ■ Charging the Battery

#### 1. Using the battery

The battery is not completely charged at the factory, please charge it fully before using.

To extend the battery life time, please power off the battery when you don't use two way radio, and save battery in a cool (temperature less than 25°C) and dry place.

#### 2. Precautions of Charging Equipment

- 1) Do not expose the charger to rain or snow.
- 2) Do not operate the charger if it has received a sharp blow, or has been dropped or damaged in any way.
- 3) Do not disassemble the charger if it has received a sharp blow, or has been dropped or damaged in any way.
- 4) Never alter the AC cord or plug provider with the unit. If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician. An improper condition can result in a risk of electric shock.
- 5) To reduce the risk of damage to the cord or plug, pull the plug rather than the cord when disconnecting the charger from the AC receptacle.
- 6) To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
- 7) Use of an attachment not recommended or sold may result in a risk of fire, electric shock, or personal injury.
- 8) Make sure the cord is located so it will not be stepped on, tripped over, or subjected to damage or stress.

9) Extension cords should not be used unless necessary. Improper use of extension cords may lead to the risk of fire and/or electric shock. If an extension cord must be used, please ensure that:

- Extension line cord uses the same pins.
- Use 18AWG wires less than 30meters in length and use 16AWG wires within 45 meters.

10) Do not replace the power cord of chargers. If the power cord damages, you must stop using charger immediately.

### 3. Charging the Battery

Please use the designated charger to charge battery, the battery is not completely charged at the factory. After purchase or you store it for a long time (more than two months), the first time to charge battery cannot make it reach its normal operating capacity. After repeating charge/discharge it two or three times, the operating capacity will increase to its normal capacity.

### 4. Please Charge the Radio According to Operation Steps as Follows:

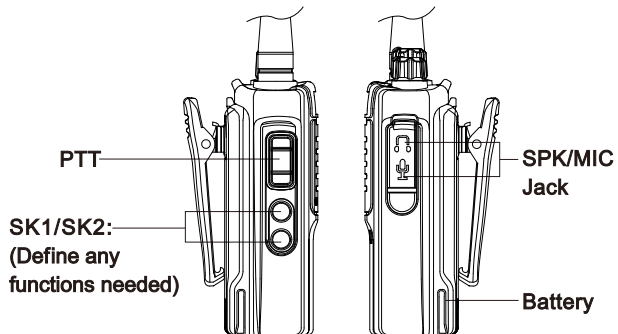
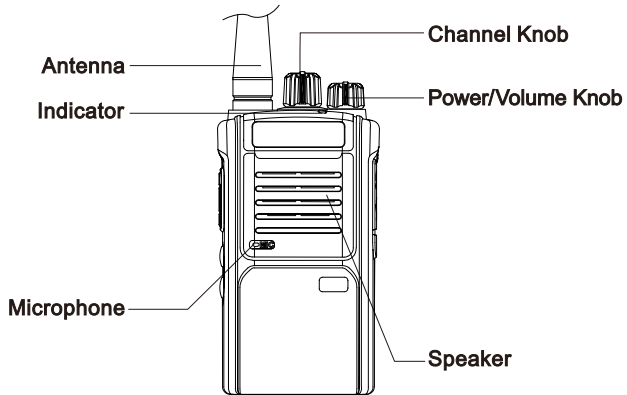
- 1) Inset the plug of charger into power supply socket.
- 2) Insert output terminal of power adapter into DC jack behind the charging kit, the orange indicator will light about 2 seconds then goes out.
- 3) Inset the battery or radio equipment with battery into the charger.
- 4) Confirm the battery and charger terminal contact reliably, when charging indicator light turns into red and charging starts.
- 5) After completion of charging (charging time is about 5 hours), indicator light turns to be green.

### 5. Indicator Display As Following

Status	Indicator
Power Connected	Orange light is on about 2 seconds then goes out
No battery (temperature end judges)	All light goes out
Charge Normally	Red light is on
The battery is fully charged	Green light is on
Fault (over temperature, battery short circuit or over discharge state)	Red light flashes

**Note:** Before charging, please turn off the radio's power which equipped with battery. When charging, using radio will interfere with normal charge of battery and transceiver effect.

## Getting Acquainted

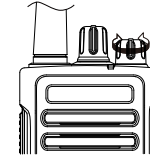


**SK1/SK2 Functions:** Off, Scan, Vox, Squelch Off, Squelch Off Momentary, Emergency Alarm, Annunciation CH No, Battery Volume Level 1-5, Denoise Switch(optional)

## Radio Operations

### ■ Power On/Off

Rotate the power knob clockwise to turn on the radio; To turn off the radio, rotate the power knob anticlockwise.



### ■ Adjust Volume

Clockwise rotate the volume knob to higher the volume or anticlockwise to lower.



### ■ TX

1. According to different settings of monitor, use the defined MONI key to monitor the speaker for some while. Ensure there is no radio transmitting at the chosen channel.

2. Press PTT and face to microphone talking.

1) Please make the distance between you lip and microphone at 2.5-5 cm, and talk as usual to get the best voice quality.

2) Press and hold PTT, the LED red light is on.

3) Release PTT to receive information.

3. When using earphone with VOX function, users can hands-free talking.

4. Also users can active the VOX function which no need to use earphone.

## ■ RX

When radio receiving information, the LED indicator lights on green, you can hear the calling.

1. With same signaling and CTCSS setting can receive information.

2. May not receive any calling if radio is at lower signal and set high level SQL.

3. Local dealers maybe program your radio using CTCSS/DCS.

Users can receive the same signaling information if chosen channel with CTCSS/DCS. Or it cannot receive any calling.

Radio with CTCSS/DCS will help you to ignore ineffective calling.

Although there seems special channel for CTCSS/DCS, radio also can communicate with other radio which programmed the same CTCSS/DCS.

## Program Settings

### 1. Program Code

The radio can set the program code, only the code is correct that can operate it. You can set the “New Program Code” by programming software, the code can be set to “Chinese, A-Z, 0-9”.

### 2. Restore Default Setting

Click the option of “Restore Default Setting” can initialize factory default settings.

### 3. QT/DQT

You can set desired QT/DQT for every channel by programming software. When the channel with QT/DQT, only receive the signal with the same QT/DQT that can open the squelch. If two radios in the same channels use different QT/DQT to call, it cannot turn on the squelch, but the indicator will light on green.

**Note:** The QT/DOT can edit by programming software.

### 4. High/Low Power Selection

The radio is set to high power by default, you can set the power to “High/Low” for each channel by programming software.

### 5. Wide/Narrow Band

You can set wide/narrow band for each channel.

## 6. Busy Channel Lockout

If the radio set the function of “Busy Channel Lockout”, when receiving the signal, press the PTT will prohibit transmitting, and it will make a sound of “Di” until you release the PTT.

## 7. VOX

The function of VOX let you don't press PTT key when transmit. After this function is turned on, the TX operation can be started directly by voice. When the voice stops, the TX is automatically ended. It allows users turn on/off the VOX function by programming software.

- 1) When the radio's channel turns on the function of VOX, talk to the microphone will automatically start transmitting. And stop talking, it will automatically end transmitting, wait for receiving.
- 2) When you use the VOX function of headset, you need to adjust the VOX gain. Set the VOX gain so that the radio can recognize the loudness of sound. If the sensitivity of microphone is too high, the surround noise will cause the radio to start transmitting. If the sensitivity of microphone is too low, the radio will not receive the voice. To let the communication goes well, you must adjust the properly level of VOX gain.

**Note:** When the VOX is turned on and the VOX gain is set to a higher, more sensitive level, if the speaker/microphone is connected to the radio, the receiver signal which through the speaker/microphone will be amplified, may cause the radio to start transmitting.

## 8. Scrambler

The users can turn on/off the scrambler for each channel by programming software. The scrambler is one of the ways of information encryption, it is achieved by cepstrum. After the receiver received the signal, it will be restored to achieve the effect of confidentiality.

**Note:**The scrambling frequency can be set on the “Function Parameter1”.

## 9. TOT

The TOT function can prevent someone to occupy the present channel for long time and limit TX time, meanwhile prevent radio from damage by long time transmitting. If the continuous launching time exceeds the preset value(set by programming software), the radio will stop transmitting and make a warning sound. To stop the warning sound, please release the PTT, then the radio will restore to the receiving status.

## 10. Voice Annunciation

If the “Voice Annunciation” is selected to “Off”, the radio will not make any voice notification; if the “Voice Annunciation” is selected to “Chinese”, it will turn on the function of “Chinese Voice Annunciation”; if it is selected to “English”, the radio will turn on the function of “English Voice Annunciation”.

## 11. Power On Tone Sort

The radio can turn on/off the “Power On Tone Sort”, it has total 7 kinds of tones can be selected.

## 12. SQL

According to the setting of SQL, the radio will turn on the squelch when it receives the corresponding strength signal. The lower the squelch level, the greater the noise will be allowed to open, the further the corresponding distance can talk, but it will be affected by the useless calling.

This function is set to level 3 by default in the factory, you can set the SQL by programming software, it is can be set to level 0-9, when the level is set to 0, the squelch will stay "on", the higher the level, the harder it is to turn on.

## 13. Scan

Set the priority scan channel when radio is scanning.

- 1) None: none priority scan channel.
- 2) Fixed: fixed a channel as the priority scan channel
- 3) Selected: the priority channel is the current channel which selected by the channel knob.

## 14. TX End Tone

The "TX End Tone" will indicate that the transmission of a signal is complete, it can be set to turn on/off.

## 15. Enable Angle Tail

This is the way of tail elimination, it has three elimination modes: 120/180/240.

## 16. OTA (Frequency Measure)

- 1) A radio in channel1: press the PTT+SK1 key, turn on the radio, it will enter to the function of "OTA", the green light will slowly flash.
- 2) Press the PTT of B radio to transmit a signal to A, when the "A" receives the signal, its green light will flash quickly and its speaker will be opened, which means the "A" has successfully cracked and saved the current frequency of "B".
- 3) After confirming that the two radios can communicate with each other in this channel, rotate the channel knob to crack the next frequency.
- 4) If the signal is interfered, the operation of "OTA" will fail, at this time, you need repeat above steps to crack again. The best distance of OTA is between 0.3-1 meter. After finished the "OTA" operation, need to restart the radio to work properly.

**Note:** The function of "OTA" just copies the radio's frequency and QT/DQT, the other settings are not changed. After finished the operation, the frequency and QT/DQT will be in garbled status.

## 17. Quick Team

When one user transmits a signal of "Team", and other users enter to the receiver status of "Quick Team", multiple radios can be quickly synchronized on a channel, this is very convenient for many people who going out in groups.

The Steps of Quick Team:

Receiver: in the channel2, press the SK2 key and turn on the radio at the same time, it will enter to the receiving status of cloning, the green light flashes slowly.



Transmitter: in the channel 2, press PTT+ SK2 key and turn on the radio, it will enter to the transmitting status of cloning, the red light stays on, at this time, the radio enters to the “Quick Team” mode, this procedure will spend about 2 minutes. After finished it, the transmitter will exit the status of transmitting and the receiver will restart, the members in the same group can communicate with each other.

### 18. Enable Digital Mode

Enable the digital mode can achieve the anti-crack function, avoid receiving the illegal signals. Only the digit encoding of two radios are the same that can communicate, the range is 1-49999 and default value is 21888.

### 19. Jump Freq Function

The “Jump Freq Function” is the special QT/DQT, can prevent the radio from being disturbed by unnecessary signals.

### 20. Noise Reduction

Turn on/off the function of noise reduction by programmed key, this function can make the radio reply voice messages clearly in noise environment. When turn on the noise reduction function, it will filter out the environment noise of background, turn off this function, it will be in the normal mode.

## Technical Specifications

General Specification	
Model Name	<b>A21</b>
Frequency Range	UHF: 400-470MHz   VHF: 136-174MHz
Output Power	High power≤5W ; Low power≤2W
Channel	16Channels
Channel Spacing	Wide Band: 25kHz Narrow Band: 12.5kHz
QT/DQT	50 QT/DQT
Antenna Impedance	50 Ohm
Working Temperature	-20°C~+50°C
Working Voltage	DC7.4V
Battery Type	Li-ion battery
Dimension(antenna excluding)	115.5 (H) *57.5 (W) *38.5 (D) mm
Weight(include antenna, battery)	About 230g

## Troubleshooting

Symptom	Solution
No power	<ul style="list-style-type: none"> <li>●The battery may have run out, please replace it or recharge it.</li> <li>●Battery may not be properly installed, please take it off and re-install.</li> </ul>
Battery lasts a short time after charge	<ul style="list-style-type: none"> <li>●The battery life is over, please replace new battery.</li> </ul>
Can't talk to other members of your group	<ul style="list-style-type: none"> <li>●Verify that you are using the same frequency and QT/DQT as the rest of the group.</li> <li>●Verify transmitting is within the range of signal reception/function of the radio.</li> </ul>
Hearing other conversation on a channel (not group members)	<ul style="list-style-type: none"> <li>●Please change all radios' QT/DQT setting in your group.</li> </ul>

## Appendix I CTCSS(Hz)

1-67.0	14-103.5	27-159.8	40-199.5
2-69.3	15-107.5	28-162.2	41-203.5
3-71.9	16-110.9	29-165.5	42-206.5
4-74.4	17-114.8	30-167.9	43-210.7
5-77.0	18-118.8	31-171.3	44-218.1
6-79.7	19-123.0	32-173.8	45-225.7
7-82.5	20-127.3	33-177.3	46-229.1
8-85.4	21-131.8	34-179.9	47-233.6
9-88.5	22-136.5	35-183.5	48-241.6
10-91.5	23-141.3	36-186.2	49-250.3
11-94.8	24-146.2	37-189.9	50-254.1
12-97.4	25-151.4	38-192.8	
13-100	26-156.7	39-196.6	

## Appendix II DCS

023	071	143	225	266	356	452	532	664
025	072	145	226	271	364	454	546	703
026	073	152	243	274	365	455	565	712
031	074	155	244	306	371	462	606	723
032	114	156	245	311	411	464	612	731
036	115	162	246	315	412	465	624	732
043	116	165	251	325	413	466	627	734
047	122	172	252	331	423	503	631	743
051	125	174	255	332	431	506	632	754
053	131	205	261	343	432	516	645	
054	132	212	263	346	443	523	654	
065	134	223	265	351	445	526	662	

## Warranty Card

Contact: \_\_\_\_\_

Company Name: \_\_\_\_\_

ADD: \_\_\_\_\_ Post Code: \_\_\_\_\_

Tel: \_\_\_\_\_ Mob: \_\_\_\_\_

Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

Ordered No: \_\_\_\_\_ Purchase Date: \_\_\_\_\_

(S/N): \_\_\_\_\_ (EAN): \_\_\_\_\_

Warranty card No: \_\_\_\_\_

Trouble Description: \_\_\_\_\_

### Terms and Conditions

- 1) This warranty is provide only for product purchased from authorized dealer of Juston Electronic Equipment Co.,Ltd. (hereinafter called).
- 2) This product can be free warranted from manufacture within the specified period.
- 3) Within the specified warranty period, will repair or replace non consumable parts (excluding casing, accessories, batteries, cables, and consumable) that are damaged under normal use (by judgement of) at no additional charge.
- 4) The warranty will not be covered under the following conditions.
  - A. Out-of-warranty products.
  - B. The product is modified without approval.
  - C. Obvious attack of appearance whatever it is.
  - D. The product is subjected to unusual physical or electrical stress, including physical damage, burnt components and broken

connectors, watered radio.

E. The serial number label is removed or altered.

5) This warranty card must be presented together with dealer's invoice when the defective product is returned for repair. Otherwise, our company has the right to refuse to provide any free warranty service during the warranty period.

6) The customer is responsible for returning the defective product at his own expense.

7) Your warrant period is calculated from the date of invoice of this product.