

# **HX-DU8602T** WIRELESS DATA TRANSCEIVER

User Manual

Version: V1.2

# CONTENTS

- 1、 SUMMARY .....4**
- 2、 INTERFACE .....4**
  - 2.1 SERIAL DATA LINE INTERFACE ..... 4
  - 2.2 RF INTERFACE ..... 4
- 3、 FUNCTION AND OPERATING INSTRUCTION .....5**
  - 3.1 BOOTING ..... 5
  - 3.2 HIGH/LOW RF POWER SWITCHING ..... 5
  - 3.3 TRANSMITTING CHANNEL SWITCHING ..... 5
  - 3.4 CHANNEL DISPLAY ..... 5
  - 3.5 LOW VOLTAGE INDICATOR..... 5
  - 3.6 OVERVOLTAGE INDICATOR..... 6
  - 3.7 DATA TRANSMITTING INDICATOR ..... 6
- 4、 RADIO SETTING .....6**
  - 4.1 OPEN PORTS ..... 6
  - 4.2 ENTRY THE CONFIGURATION MODE ..... 7
  - 4.3 CONFIGURING THE PARAMETER RADIO MODEM ..... 7
  - 4.4 FINISH TO EXIT THE CONFIGURATION MODE ..... 8
- 5、 SOFTWARE UPGRADING.....9**
- 6、 TECHNICAL SPECIFICATIONS ..... 10**

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## Antenna Installation Warning

1. Any antenna only can be installed and maintained by professional technician. Please make sure that the radio station is closed when you maintain or work nearby the antenna.
2. In general, radio will be connected to a directional (high-gain) antenna, and fixed to the edge or top of building or top of tower. According to the application and antenna gain, total hybrid power may exceed 90W (ERP). Under normal circumstance, only the professional technicians can close to the antenna area, anyone can't touch the antenna or close to 2.3m in diameter range of the antenna.

### Antenna Gain vs Safe distance recommended

Antenna Gain: Maximum 3.5dBi

Safe distance: 2.30m

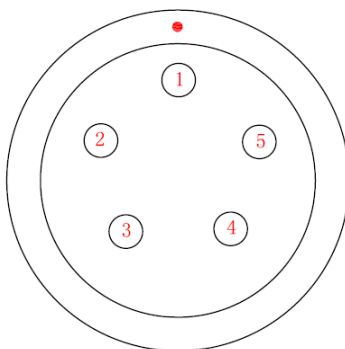
## 1、 Summary

HX-DU8602T is an external transmit-only high-power UHF radio modem, waterproof of IP67、 Durable structure,

HX-DU8602T has 4 pieces of LED、 1 piece of nixie tube and 3 pieces of push-button, for user’s convenience of booting、 channel switching、 power rating、 low voltage alarming and indicating the current operation channel.

## 2、 Interface

### 2.1 Serial data line interface



Interface type: asynchronous serial communication standard of RS232

Pin definitions:

Pin 1-----Power, 9-16V DC; current:<7A

Pin 2-----power grounding, Power GND;

Pin 3-----serial data receiver, RXD;

Pin 4-----serial signal grounding;

Pin 5-----serial data transmission, TXD.

### 2.2 RF interface

HX-DU8602T RF interface is TNC female connector of 50Ω.

## **3、 Function and operating instruction**

### **3.1 Booting**

Press the button of ON/OFF to boot. LED indicator of ON is green, which means the voltage is normal, and the machine can work normally; if LED indicator of ON is red flash, which means the voltage is too low, low voltage protection has been worked; if LED indicator of ON is red, which means the voltage is too high, overvoltage protection has been worked.

### **3.2 High/Low RF power switching**

Pressing the button of PWR for switching RF power level between high and low. If you choose high power, LED indicator of PWR will turn red; if you choose low power, LED indicator of PWR will turn green.

### **3.3 Transmitting channel switching**

Pressing the button of CHANL, 8 channels of “1-8” will be switched within each other, keep pressing for fast forward, digital tube display the current channel number.

### **3.4 Channel Display**

Operation Mode: Display the channel number of “1-8”.

Software upgraded to boot mode: display “b”.

### **3.5 Low voltage indicator**

When the voltage lower than 10V, radio modem will turn on protection, LED indicator of ON will be red flash; voltage back up to 10.2V, LED indicator show green, radio modem will return to normal work.

### 3.6 Overvoltage indicator


When voltage higher than 16V, the radio modem will turn on protection, LED indicator of ON turn red; voltage back down to 15.8V, LED indicator will show green, radio modem will return to work normal.

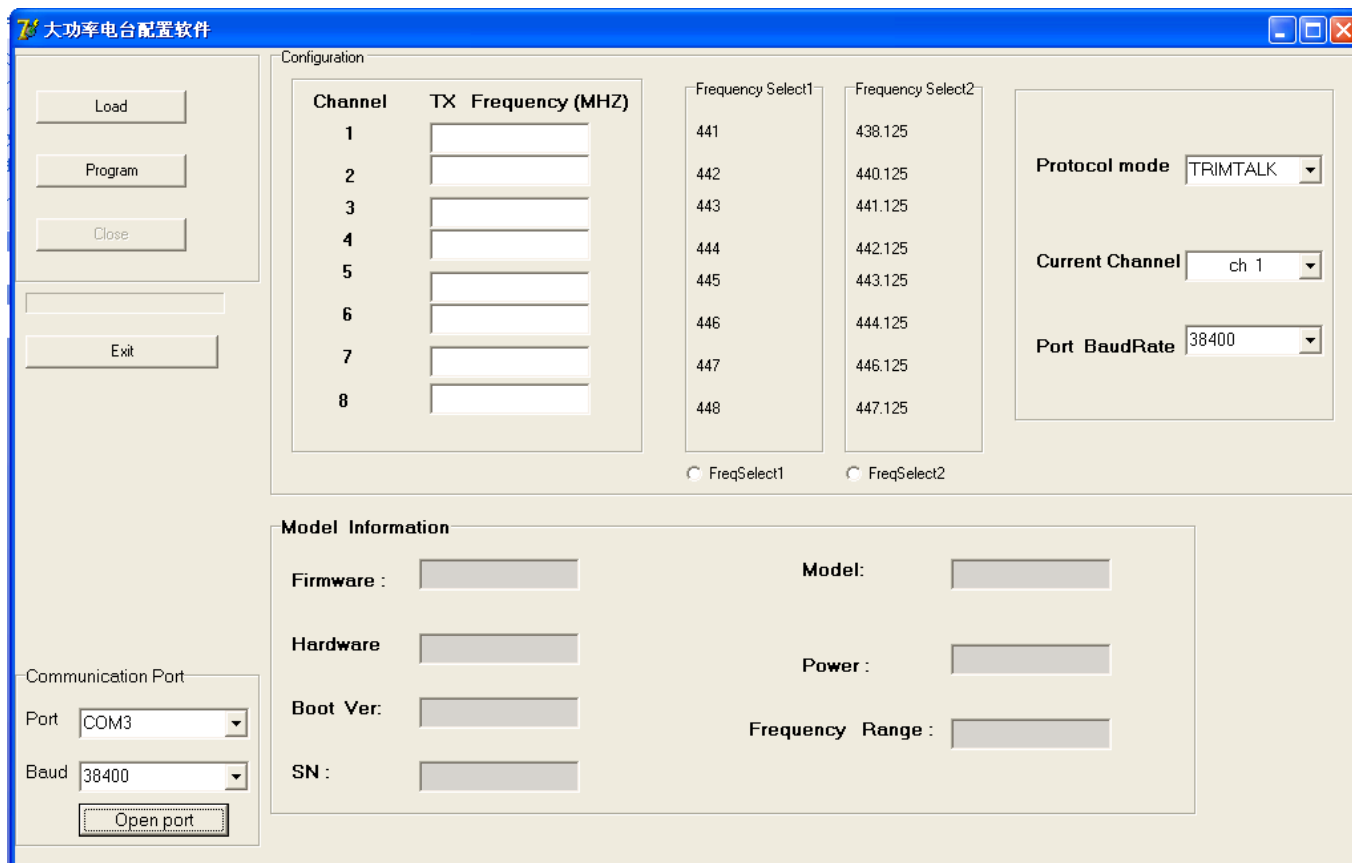
### 3.7 Data transmitting indicator

When data transmitting, LED indicator of TX will turn red flash.


## 4、 Radio setting

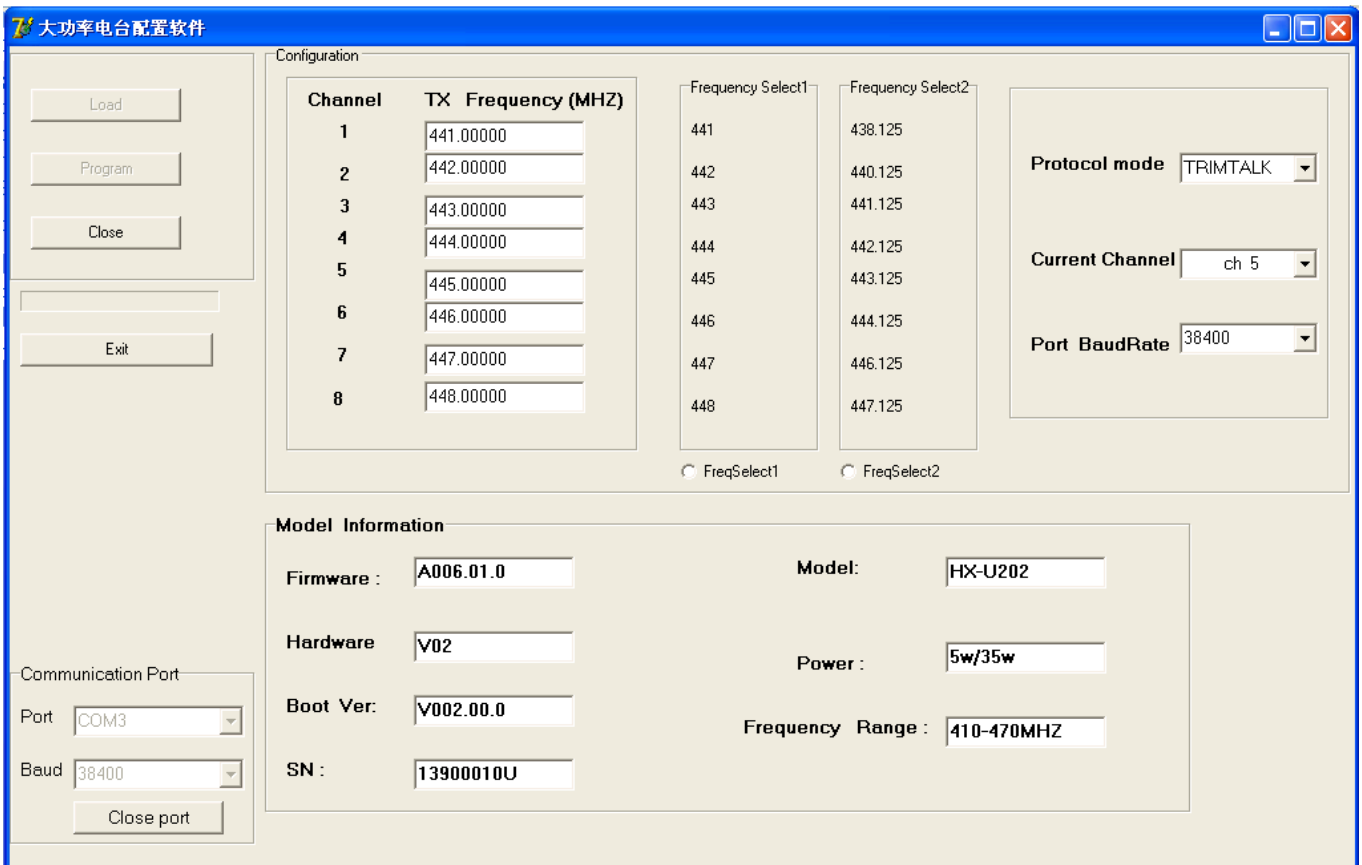
### 4.1 Open ports

Open the configured software, choose the corresponding port, baud rate defaulted as 38400, click the button  to open serial port.



## 4.2 Entry the configuration mode

Connecting the power line and serial port line, which confirmed to be connected correctly, repower, press the button of “ON/OFF” for booting, LED indicator of ON show green. Within 3 seconds, click the button  to make the radio modem enter configuration mode, reading and saving the information of configured radio modem (shown as the chart below), button of “load” failure and turn gray. Digital tube of radio modem show “C”, radio modem has entered the configuration mode.

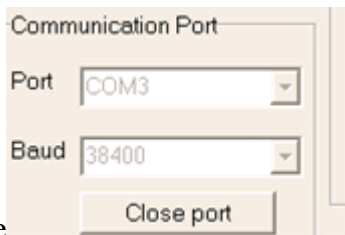


## 4.3 Configuring the parameter radio modem

4.3.1 Configuring the customized frequency, default frequency setting are as follows:

There are two groups of default frequency value, click “FreSelect1 ” or ”FreSelect2” below to choose the corresponding set of frequency value.

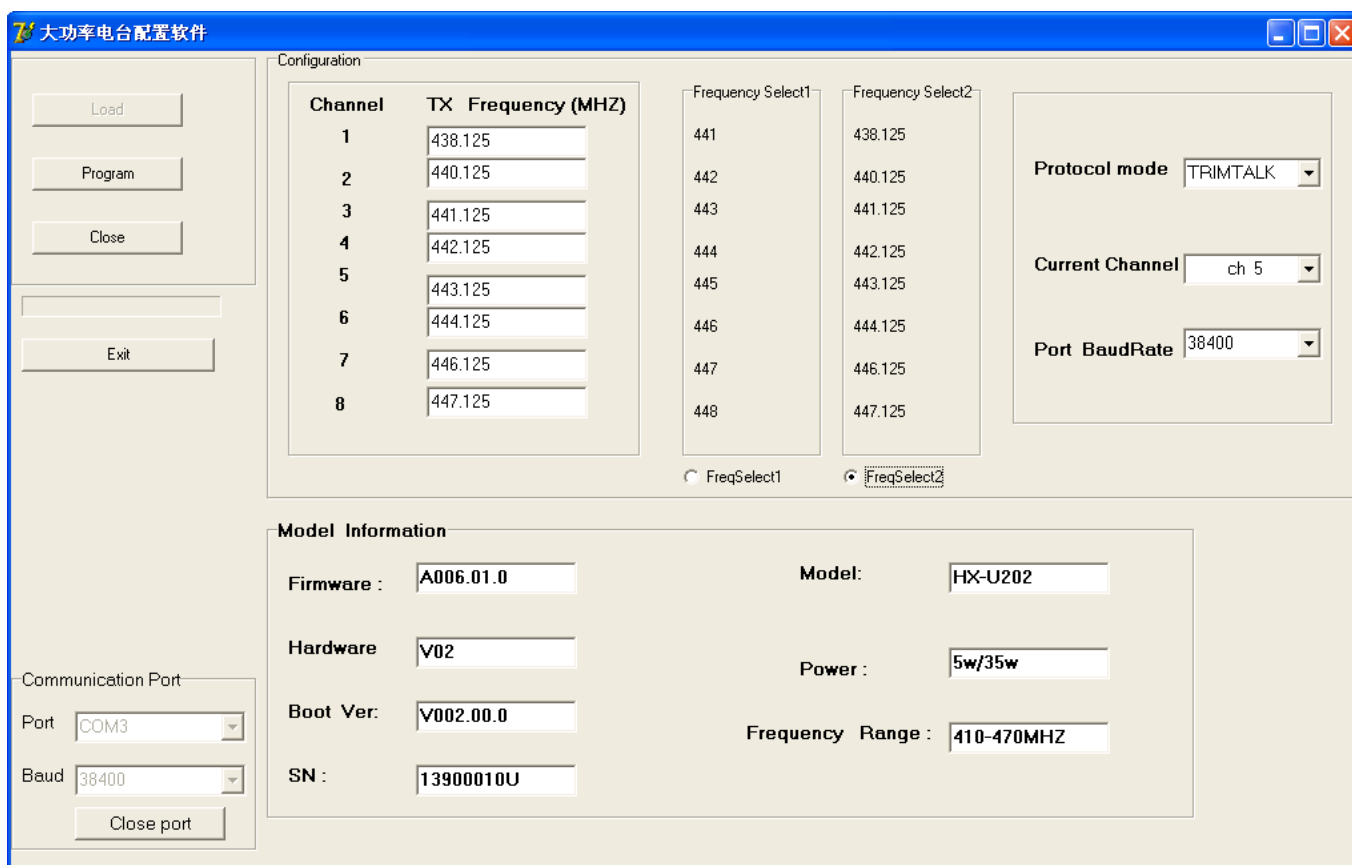
4.3.2 Configuring the serial baud rate optional 9600,19200,38400,57600,115200 bps. (Note: if you want to reconnect radio modem after modifying the baud rate of serial port, you have to modify the serial baud




rate here

### 4.3.3 Configuring the current channel ch1-ch8.

Click the button  to configure the modem parameter.




### 4.4 Finish to exit the configuration mode


Click the button  to exit configuration mode, the digital tube of radio modem will show the current channel number.

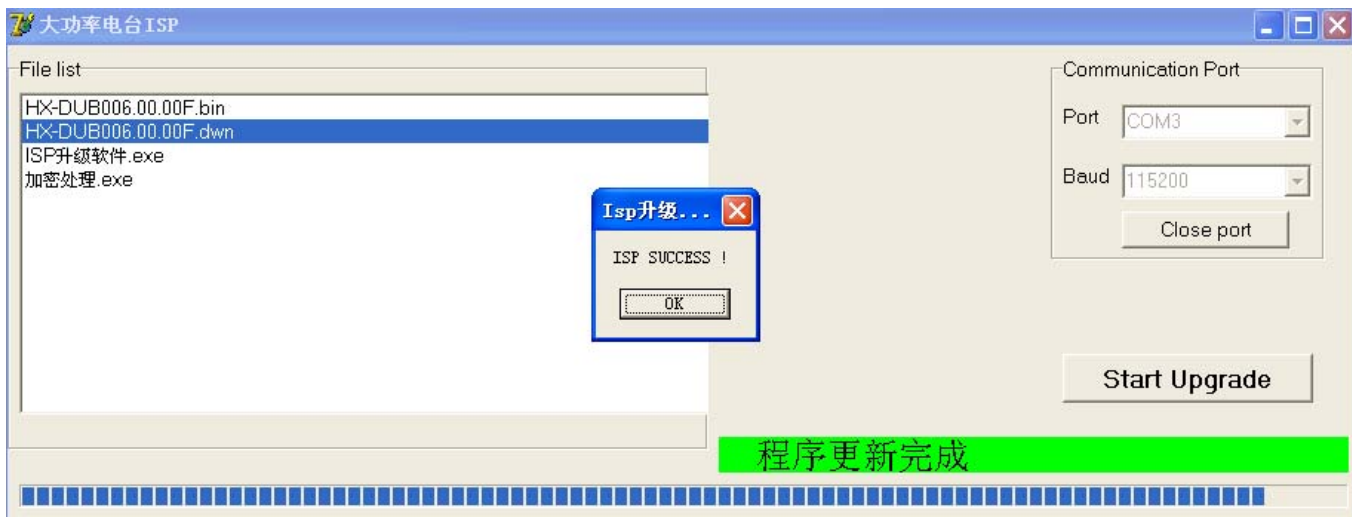


## 5、 Software upgrading

1) connecting the power data line, serial line of DB9 connected to computer. Pressing two buttons of “Channel” and “PWR” simultaneously before power on, and then pressing the button of “ON/OFF” to turn on the machine, LED indicator of “ON” show green. Checking and confirming digital tube show “b”, entering the upgrading mode.

2) Open the firmware upgrading software, choose the corresponding port, choose baud rate 115200, click the button  to open the port.

3) Choose the upgrading file “\*\*\*\*\*.dwn” in the same path, click the button  to upgrade the firmware. Please don't break off operation in the process of upgrading!



4) After finishing the upgrading, upper computer software will pop-up a dialog box to remind you of upgrading successfully, radio modem resetting, digital tube show bright, which means you upgrade successfully.

## 6、 Technical Specifications

General Specifications		
Item	Specifications	
Frequency Range	410~470MHz	
Numbers of Channel	8	
Operating Mode	Simplex	
Channel Spacing	12.5KHz	
Modulation	GMSK、 4FSK	
Operating Voltage	9~16V DC	
Power Consumption (typical)	High power level	70W@DC 12V
	Low power level	35W@DC 12V
	Standby	1.5W@DC 12V
Frequency Stability	<math>\leq \pm 1\text{ppm}</math>	
Water proof level	IP67	
Dimension	186×140×73mm	
Weight	1.5kg	
Operating Temperature	-30~+60℃	
Storage Temperature	-40~+70℃	
Antenna Interface	TNC, female	
Antenna Interface Impedance	50ohm	
Data Power Interface	HGG.1B.305	
Transmitter Specifications		
Item	Specifications	
RF output power	High power	45.5±0.5dBm@DC 12V
	Low power	37±0.5dBm@DC 12V
RF Power Stability	±1dB	
Harmonics	<math>< -30\text{dBm}</math>	
Modem		
Name	Requirements	
Data link Rate	4800pbs 9600pbs、 19200pbs	
Modulation	GMSK、 4FSK	

Operation Voltage: DC 9.0V~16V

### FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an controlled environment.  
This equipment should be installed and operated with minimum distance 2.30m between the radiator & your body

Only service personnel have access to the programming capabilities.  
The end users in all these cases must not be able to program the radios