HX-DU8608D Wireless Data Transceiver

User Manual

Version：V1.0

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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. Summary

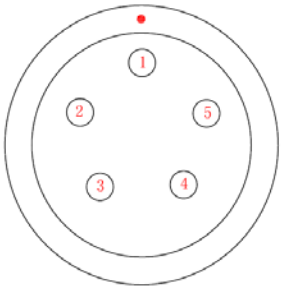
HX-DU8608D is an Integrated transceiver high-power UHF radio modem, waterproof of IP67、Durable structure，which can apply to all outdoor weather conditions.

HX-DU8608D 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.

1、 Interface

2.1 Serial data line interface

Interface type: asynchronous serial communication standard of RS232



Pin definitions：

Pin 1------Power，9-16V DC；

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.

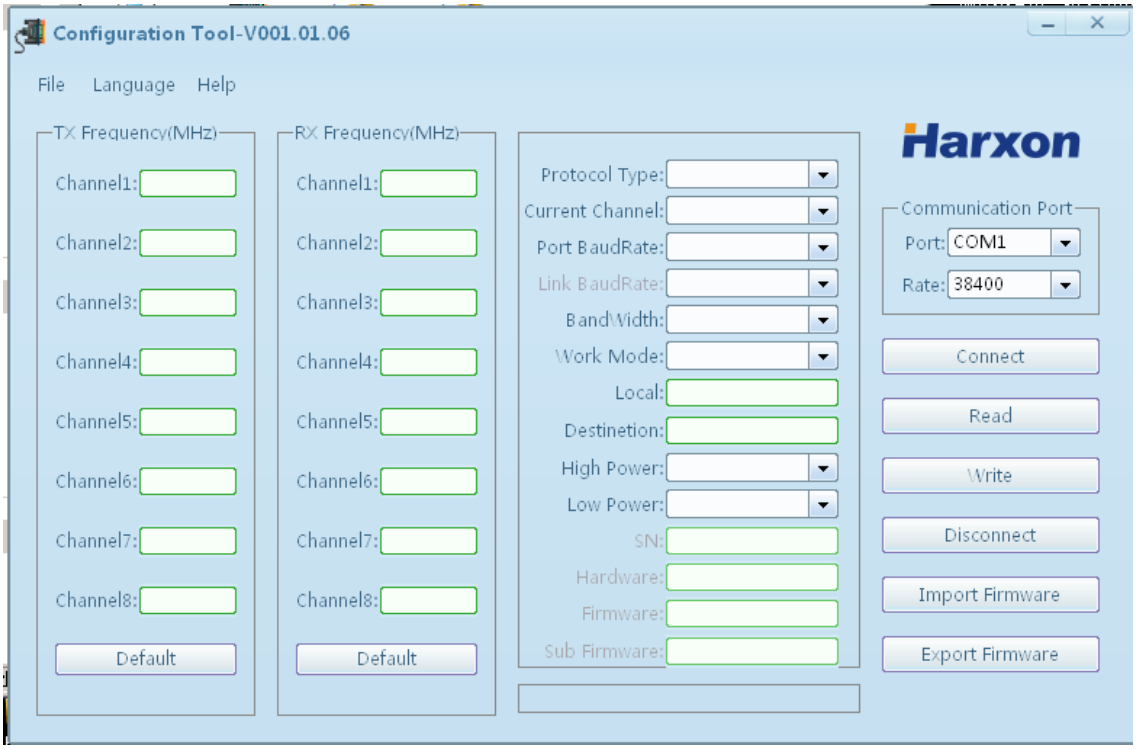
3.7 Data transceiver indicator

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

4、Radio setting

4.1 Open ports

Open the configured software, choose the corresponding port, baud rate defaulted as 38400, port defaulted as COM1.



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 writing the information of configured radio modem (shown as the chart below).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 customed frequency, default frequency setting are as follows: There are two groups of default frequency value, the TX frequency and the RX frequency can be configured.

Note: Only local dealer and manufacturer have the right to edit the channel list based on your radio license and loaded into your radio before delivery.

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

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.

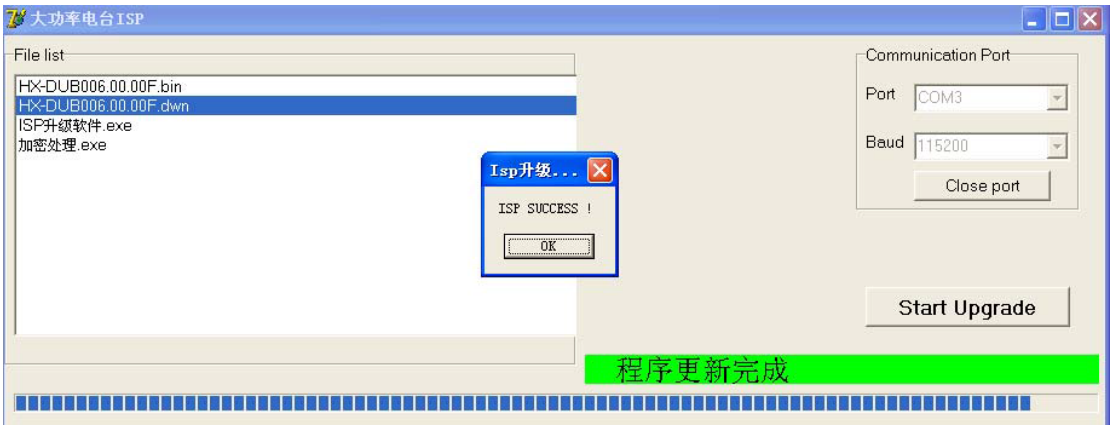
5、 Software upgrading

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 Open port to open the port.

3）Choose the upgrading file “******.dwn” in the same path, click the button Start Upgrade 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 Specification	
Item	**Specification**
Frequency range	410~470MHz
Operating mode	Half-duplex
Channel spacing	12.5KHz
Modulation type	GMSK

Operation voltage	12V	
Power dissipation(Typical)	High power level（35W）	≤110W @ DC 12V
	High power level（30W）	≤100W @ DC 12V
	High power level（20W）	≤75W @ DC 12V
	Low power level (15W)	≤60W @ DC 12V
	Low power level (10W)	≤45W @ DC 12V
	Low power level (5W)	≤25W @ DC 12V
	Standby	≤1.5W @ DC 12V
Frequency stability	≤±1.0ppm	
Size	186×140×73mm	
Weight	About 1.5kg	
Temperature(operation)	-30℃~+60℃	
Temperature(storage)	-55℃~+85℃	
Antenna port	TNC，female	
Antenna impedance	50ohm	
Data interface	5Pin	
Transmitter		
Item	**Specification**	
RF output power	High level（35W）	45.5±0.5dBm@DC12V
	High level（30W）	44.8±0.5dBm@DC12V
	High level（20W）	43±1dBm@DC12V
	Low level（15W）	41.8±1dBm@DC12V
	Low level（10W）	40±1dBm@DC12V
	Low level（5W）	37.5±1dBm@DC12V
Power stability	±1dB	
Harmonics	>50dB	
Receiver		
Item	**Specification**	
Sensitivity	-114dBm@BER 10^{-3}，9600bps	
Co-channel rejection	>-12dB	
Adjacent channel selectivity	>45dB@12.5KHz	

Modem	
Item	**Specification**
Data Link rate	9600bps、19200bps
Modulation type	GMSK

FCC statements:
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.
NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.
Federal Communication Commission (FCC) Radiation Exposure Statement
When using the product, maintain a distance of 300cm from the body to ensure compliance with RF exposure requirements.