

HX-DU8602T Wireless Data Transceiver

User Manual

Version: V1.4

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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		
	0–5 dBi	5–10 dBi	10–16.5 dBi
The minimum safe distance	0.6m	1.06m	2.3m

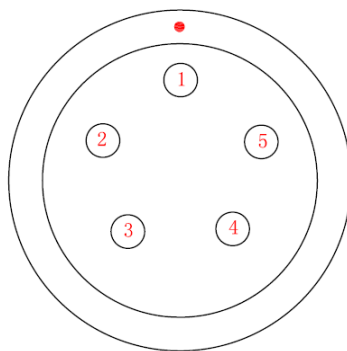
1、Summary

HX-DU8602T is an external transmit-only high-power UHF radio modem, waterproof of IP67、Durable structure, which can apply to all outdoor weather conditions.

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;

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 to switch 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 CHANNEL, 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.

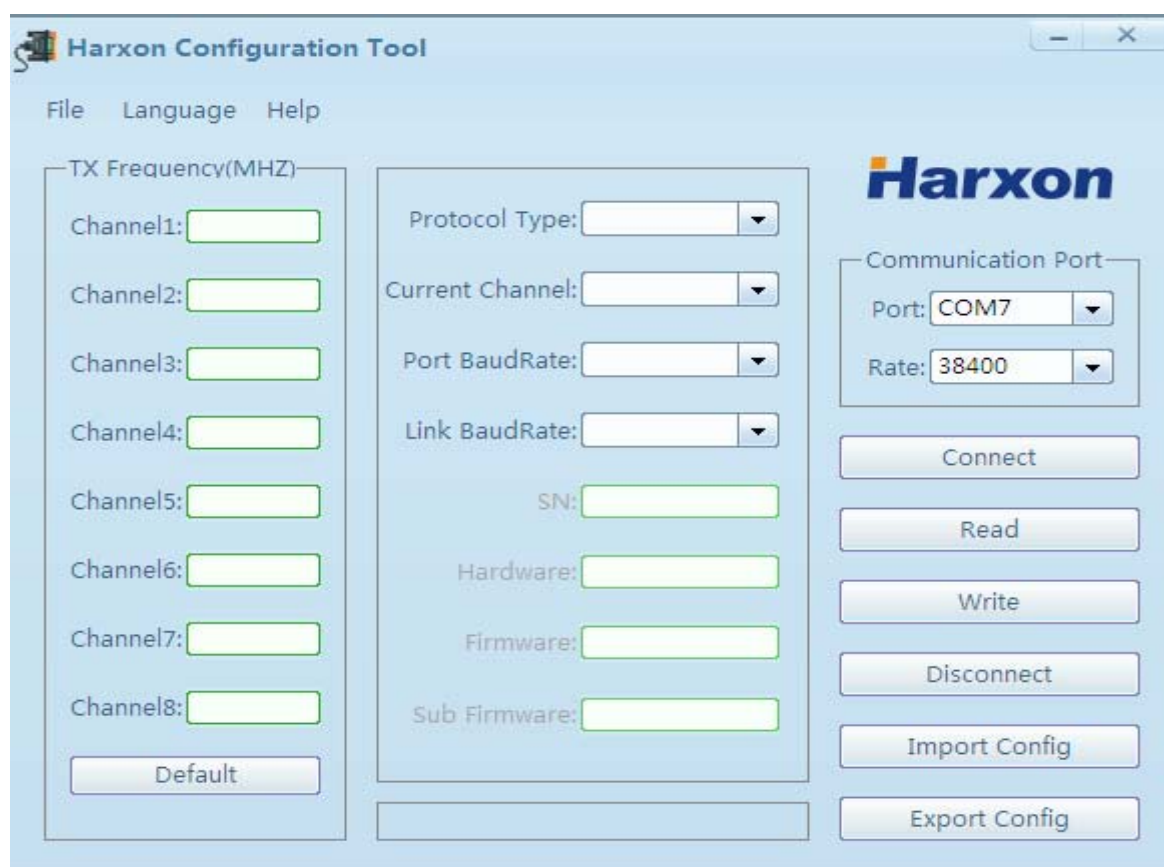
3.7 Data transmitting indicator

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


4、Radio setting

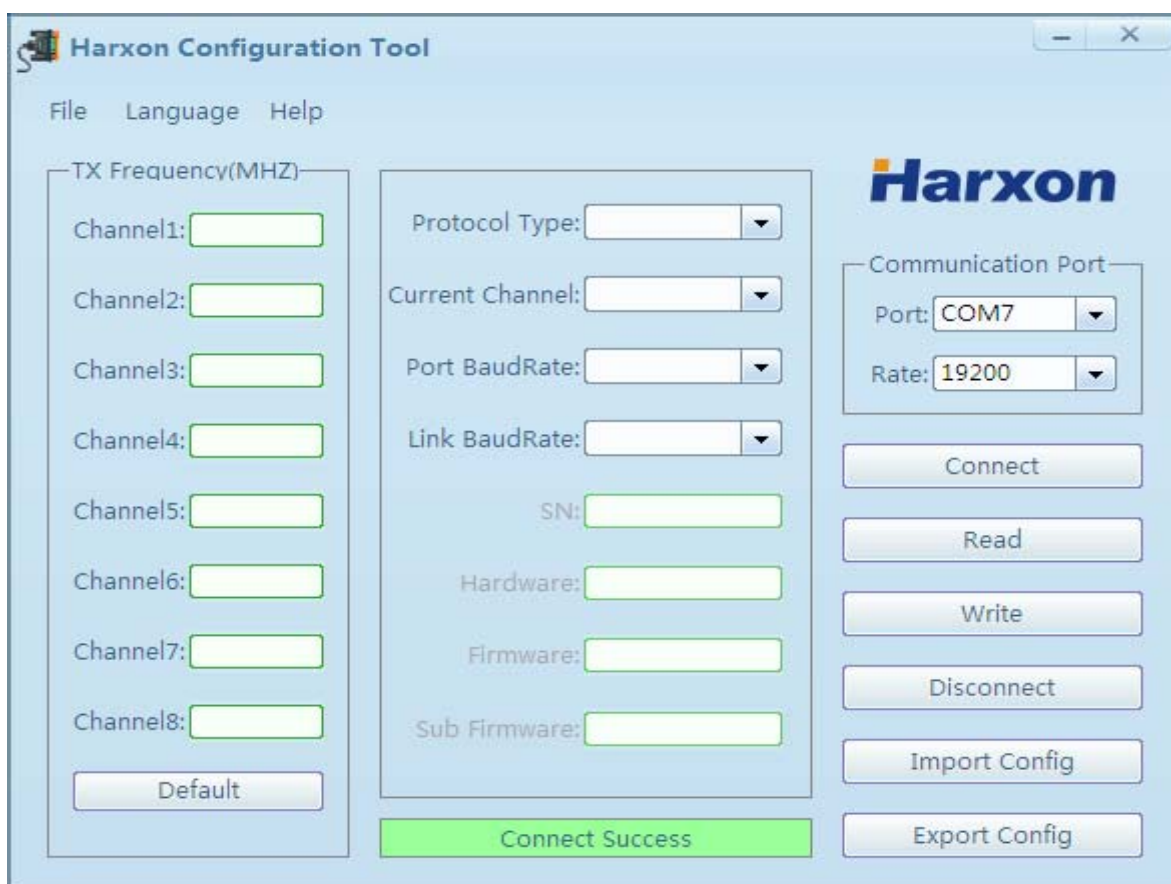
4.1 Selecting ports

Open the configuration tool, then select the corresponding port and set the serial-port baud rate.

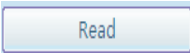


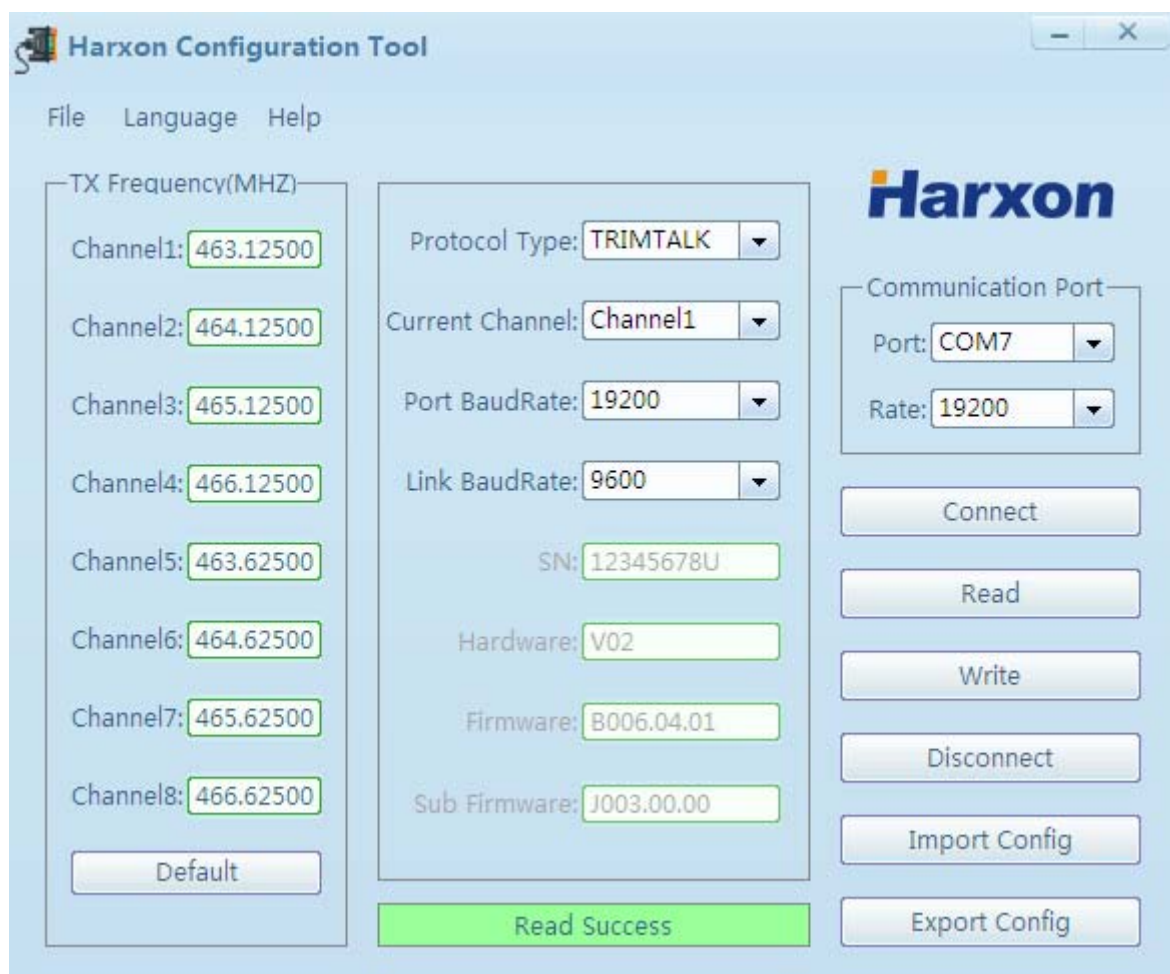
4.2 Entry the configuration mode

Connecting the power wire and data wire correctly, then restart and press the button of “ON/OFF” for booting, LED indicator of ON will be green. Clicking the button  within 3 seconds to make the radio modem enter configuration mode, if digital tube of radio modem show “C”, or the progress bar show “Connect Success”, it means that the radio modem has entered to the configuration mode.



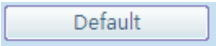
4.3 Read the radio modem parameter

Clicking the button  can read the radio modem parameter when in configuration mode. It means all the radio modem parameter has been read out when progress bar show “Read Success”.



4.4 Configuring the radio modem parameter

4.3.1 Configuring the custom frequency and default frequency setting are as follows:

Click the button  , the TX frequency of channel1-channel8 will be revert to the default frequency.

4.3.2 Configuring the protocol type

There are several protocols such as TRIMTALK, TRIMMARK3, TRANSEOT and etc can be selected.

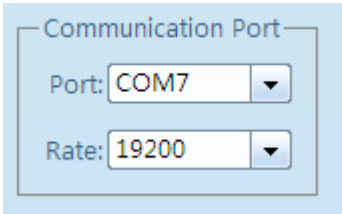
4.3.3 Configuring the current channel

There is channel 1 to 8 can be selected.

4.3.4 Configuring the serial baud rate

There are five baud rate be selected, such as 9600, 19200, 38400, 57600, 115200 bps which will be listed in the communication port as below. (Note: The radio modem should be reconnected after the baud

rate of serial-port revised.)



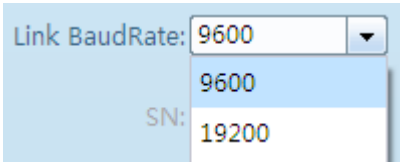
Communication Port

Port: COM7

Rate: 19200

4.3.5 Configuring the Link baud rate

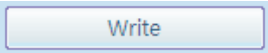
The default link baud rate is 9600 bps, a different baud rate can be selected from below list.

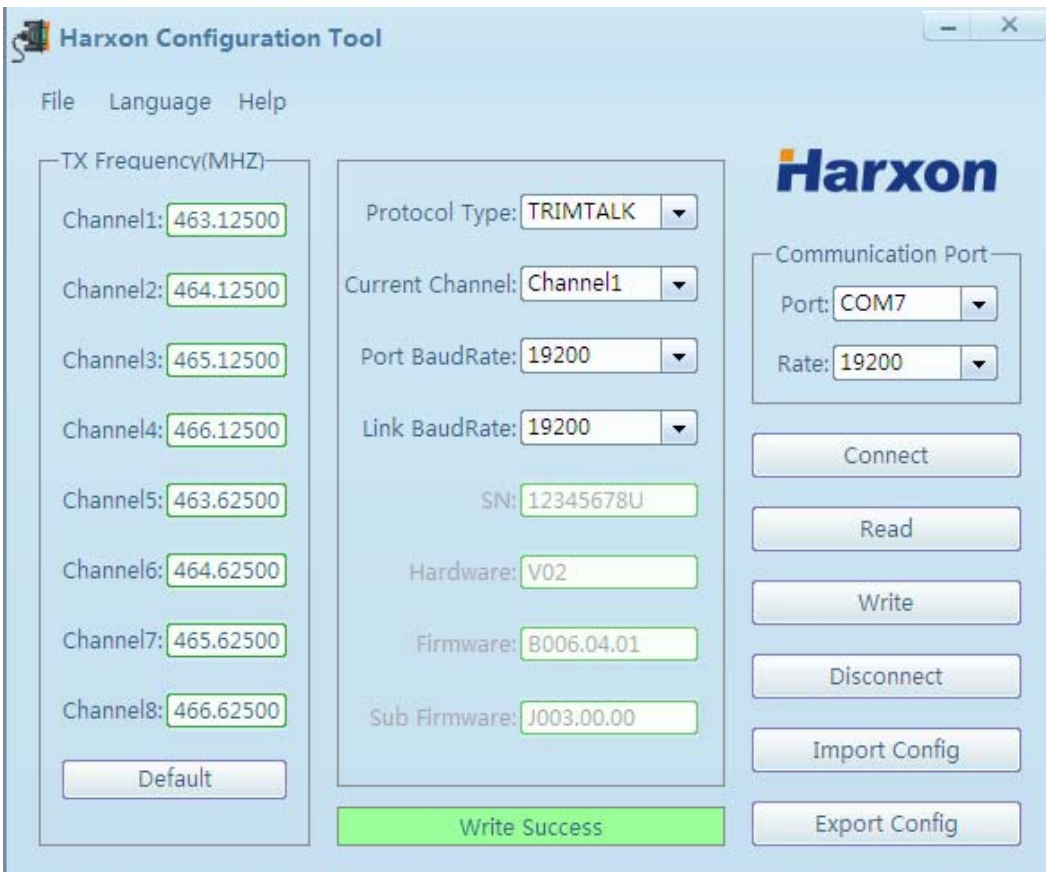


Link BaudRate: 9600

SN: 19200

4.3.6 Write the radio modem parameter

Click the button  to overwrite the radio's current configuration. The progressing bar show "Write Success", that means all the radio modem parameter has been written.



Harxon Configuration Tool

File Language Help

TX Frequency(MHZ)

Channel1: 463.12500

Channel2: 464.12500

Channel3: 465.12500

Channel4: 466.12500

Channel5: 463.62500

Channel6: 464.62500

Channel7: 465.62500

Channel8: 466.62500

Default

Protocol Type: TRIMTALK

Current Channel: Channel1

Port BaudRate: 19200

Link BaudRate: 19200

SN: 12345678U

Hardware: V02

Firmware: B006.04.01

Sub Firmware: J003.00.00

Write Success

Communication Port

Port: COM7

Rate: 19200

Connect

Read

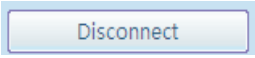
Write

Disconnect

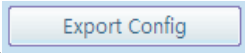

Import Config

Export Config

4.4 Finish to exit the configuration mode

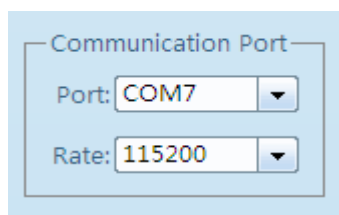
Click the button  to exit configuration mode, the digital tube of radio modem will show the current channel number.

5.5 Import and export configuration

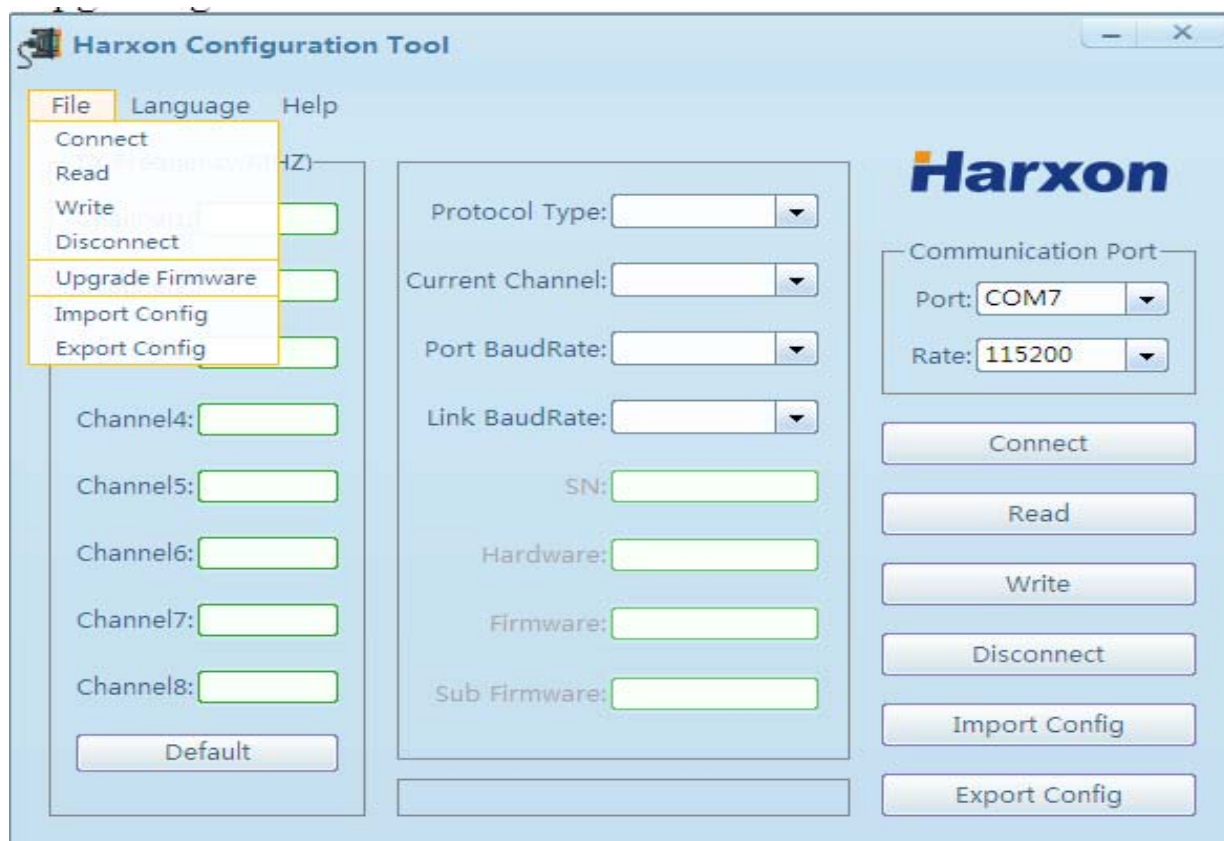
Click the button  to write a configuration file to a selected location on your computer. Click the button  to import a configuration file to a selected location on your computer.

5、 Software upgrading

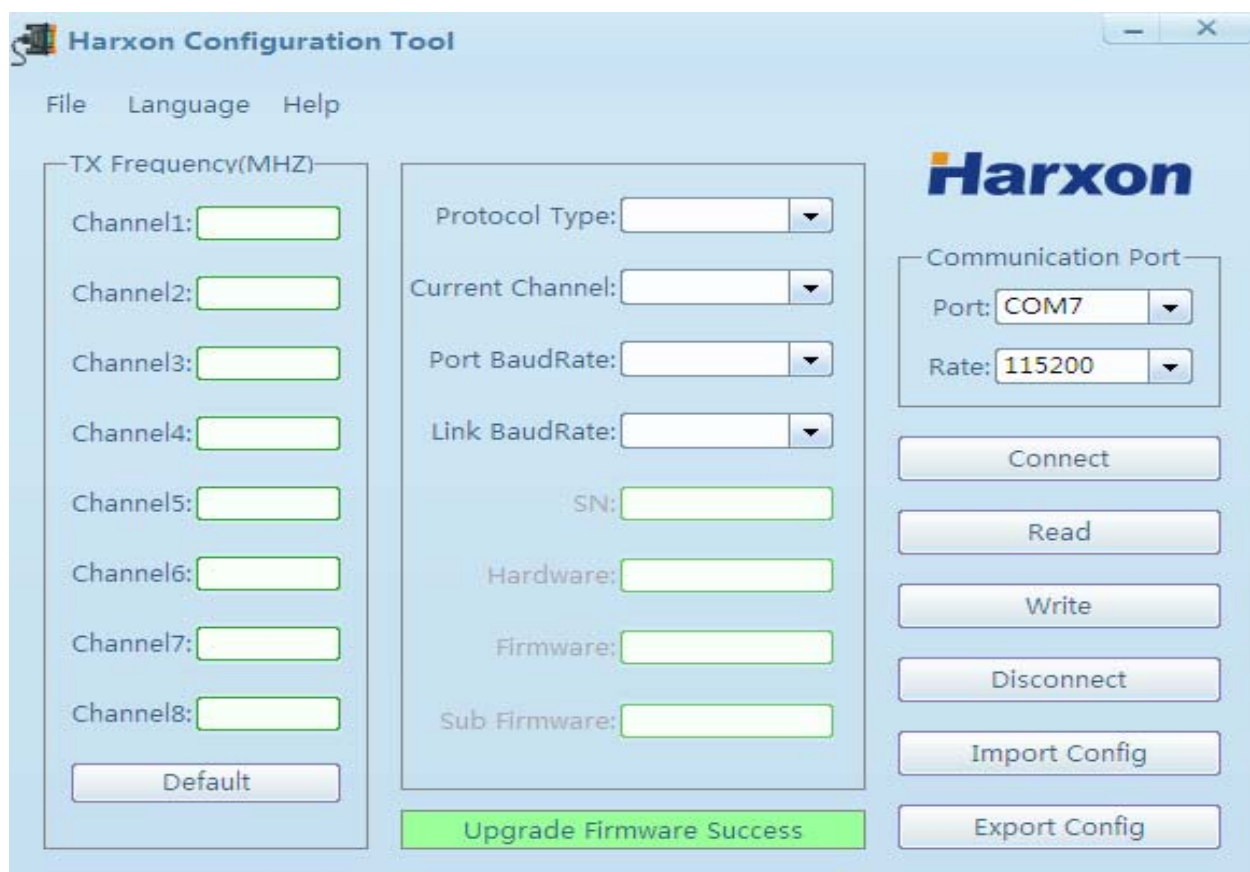
- 1) connecting the power data line, serial line of DB9 connected to computer. Pressing two buttons of “Channel” and “PWR” simultaneously before power on, and then pressing the button of “ON/OFF” to turn on the machine, LED indicator of “ON” show green. Checking and confirming digital tube show “b”, entering the upgrading mode.
- 2) Open the Harxon Configuration Tool, select the corresponding port, set serial-port baud rate to 115200bps.



- 3) Select the menu file->upgrade firmware



- 4) Selecting the upgrading file “*****.dwn” in the file, click the button “open” to start the firmware upgrading. Please don’t break off operation in the process of upgrading!
- 5) After finishing the upgrading, the progress bar show “Upgrade Firmware Success”, that means that upgrade operation has been completed, radio modem resetting, digital tube show bright, which means upgrade successfully.



6、 Technical Specifications

General Specifications		
Item	Specifications	
Frequency Range	410~470MHz	
Numbers of Channel	8	
Operating Mode	Simplex	
Channel Spacing	25KHz	
Modulation	GMSK	
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	<±1ppm	
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	43.5±0.5dBm@DC 12V
	Low power	37±0.5dBm@DC 12V
RF Power Stability	±1dB	
Harmonics	<-30dBm	
Modem		
Name	Requirements	
Data link Rate	4800bps、9600bps、19200bps	
Modulation	GMSK	

Operation Voltage: DC 9.0V~16V

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for a 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.