

RC1170-RC232 USER MANUAL

Overview:

Introducing RC11XX-RC232 RF Transceiver boards for the data transmission using RF. Where RC11xx transceiver modules are compact surface-mounted high performance modules for FSK operation with embedded protocol.

This module features with small size (12.7 x 25.4 x 3.3 mm), shielded and optimized for SMD mounting ,Low sleep current consumption, well suited for battery operated equipment and also Embedded RC232™ protocol with Addressing and Error check. Module supports the frequency bands of 865.0 to 867.0 Mz with 15 channels.

Image below shows the RC1170-RC232 RF board with labeled description.

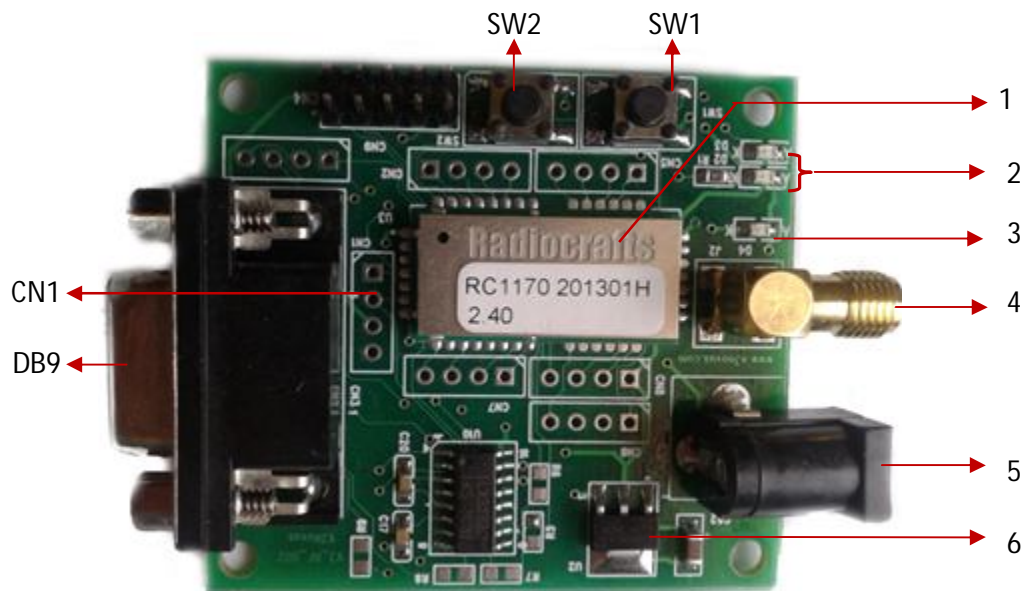


Fig. 1 RC1170 board

1. RC1170 Module:

These modules are compact surface mounted high performance modules with embedded protocol. These modules are small in size, consumes low sleep current, well suited for battery operated equipment.

Has two wire UART interface for easy RS232/422/485 wire replacement. It doesn't require any external component and no configuration required to use single channel.

Supports wide supply voltage range 2.0-3.9V. Also it is easy to use data interface. The modules are completely shielded and pre-certified for operation under the European radio regulations for license-free use.

2. LED'S:

LED 2 and 3 are used network indication and received signal strength indication.

LED 2 glows according to the network and LED 3 glows indicating RSSI (i.e. once it matches SID of other device).

3. LED 4 glows whenever device powered.

4. Antenna Connector:

Edge mounted SMA antenna connector (Female) available to connect RF antenna.

5. Power Connector:

Power supply is available through DC jack. Input power of 5V.

6. Voltage Regulator:

The IL1117 is a series of low dropout voltage regulators available, which can provide up to 1A of output current. The IL1117 is available in seven fixed voltage, 1.2, 1.25, 1.5, 1.8, 2.5, 2.85, 3.3 and 5.0V. Additionally it is also available in adjustable version.

7. DB9:

The RS-232 port is available through D - TYPE 9 pin female connector. Connect to PC using D type male connector cable. Supports baud rate from 300 to 115,200 bits/s.

Pin 2: RD

Pin 3: TD

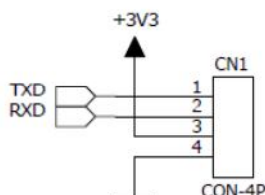
Pin 5: GND

8. SW1,SW2:

Switch 1 for reset and switch 2 for configuration is provided.

9. CN1:

TTL levels of RX and TX available on Connector CN1.



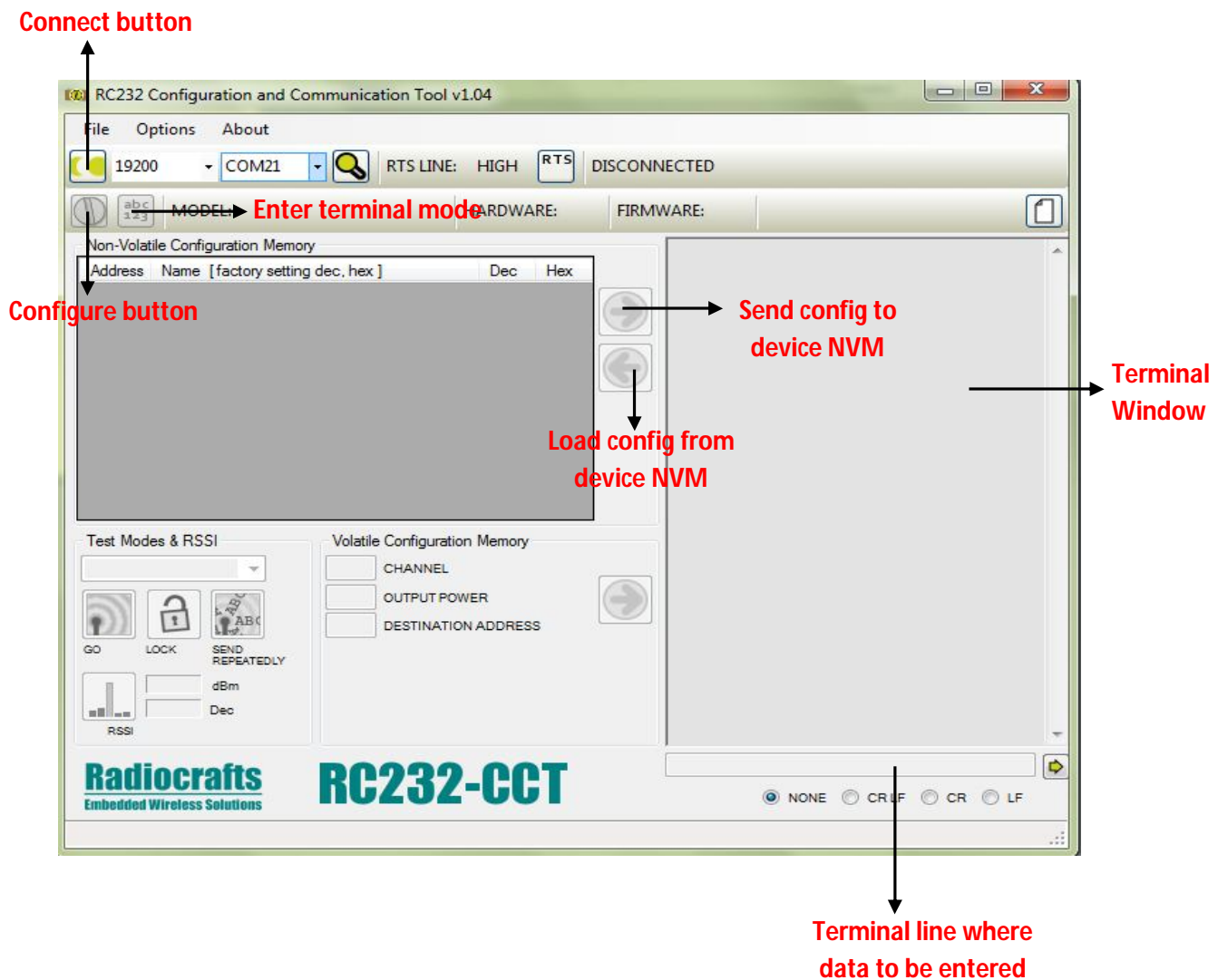
Configuration and Testing:

Follow the below steps for configuration and testing.

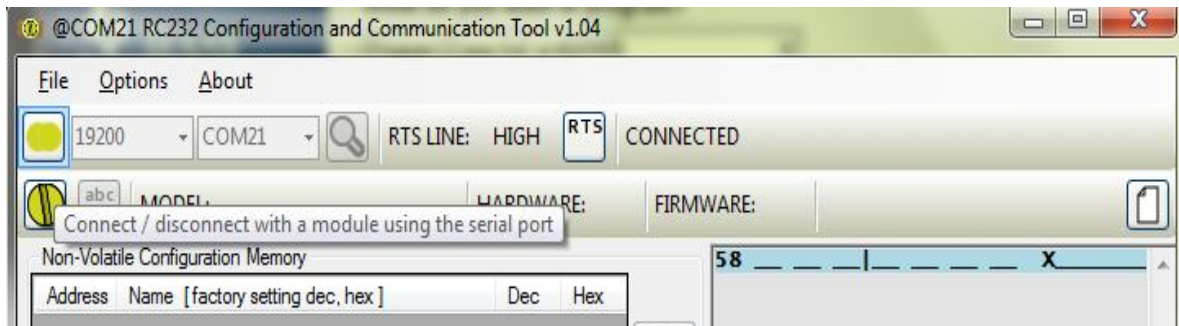
1. Connect router 1 to one serial port and router 2 to another serial port using DB9 connector cable.
2. Power on both the device with 5V supply.
3. Open Radiocrafts RC232 tool which will be as shown below.

[Note: Follow the link below for the tool

<http://www.radiocrafts.com/index.php?sideID=339&listID=165&ledd1=165>]

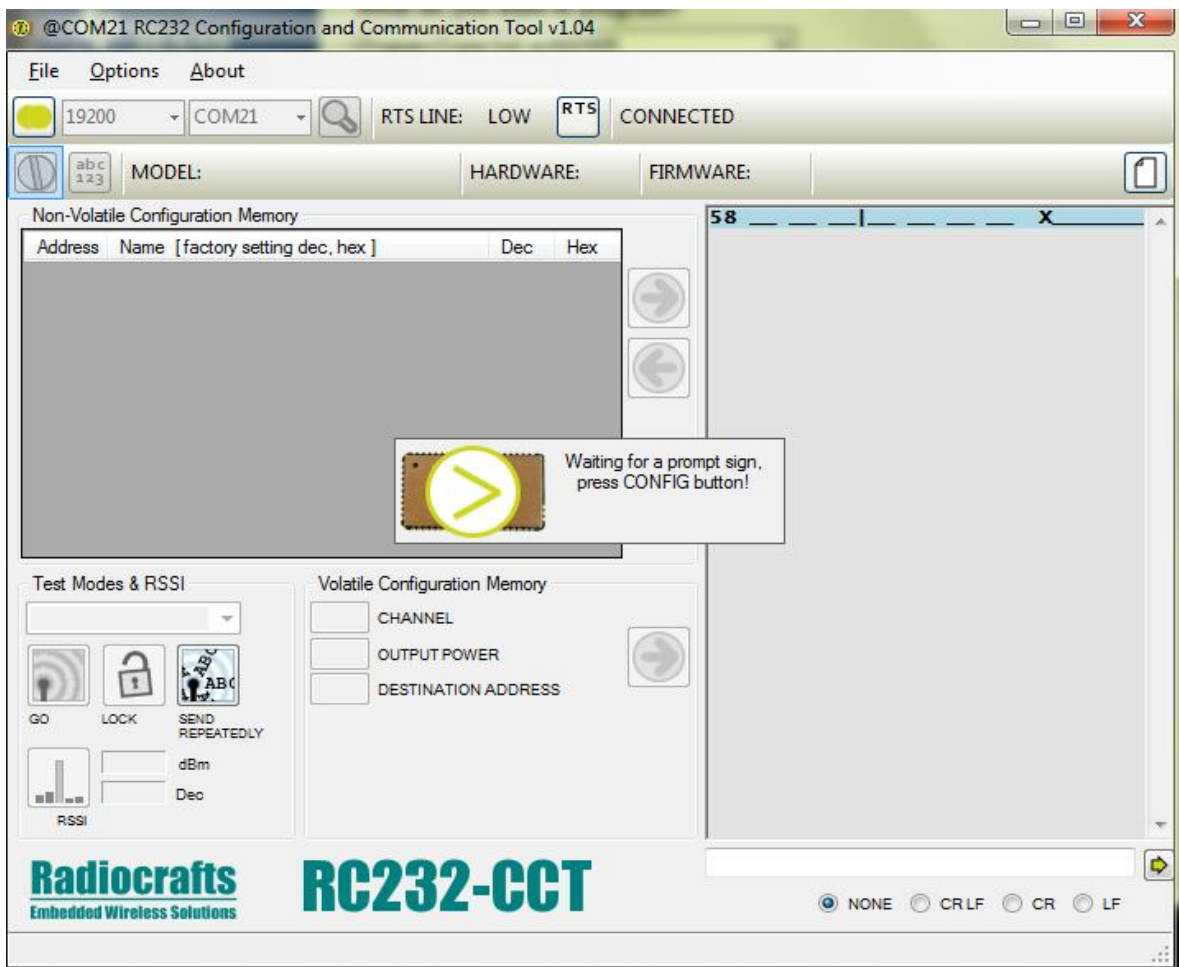


4. Set the port number and baud rate and click on connect shown below.

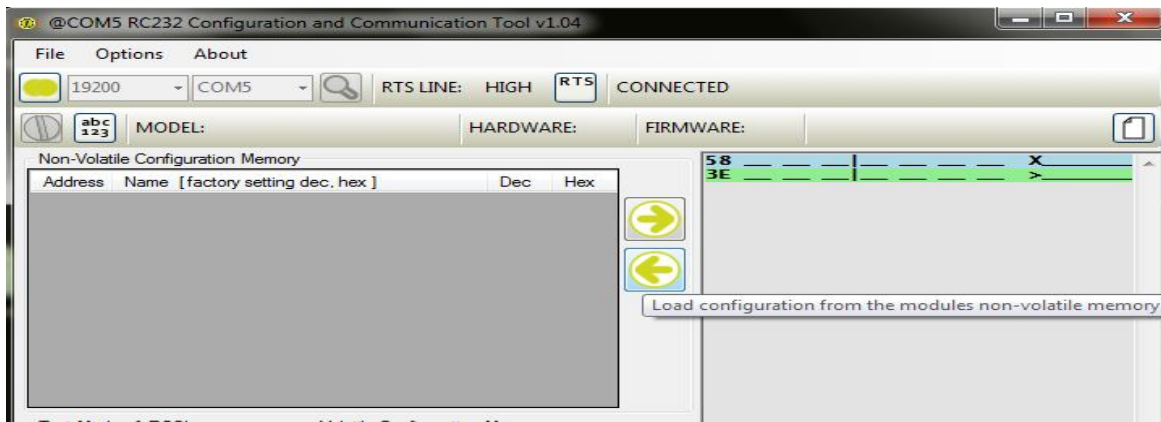


5. Once clicked on connect it will show character 'X' in terminal window as shown above.

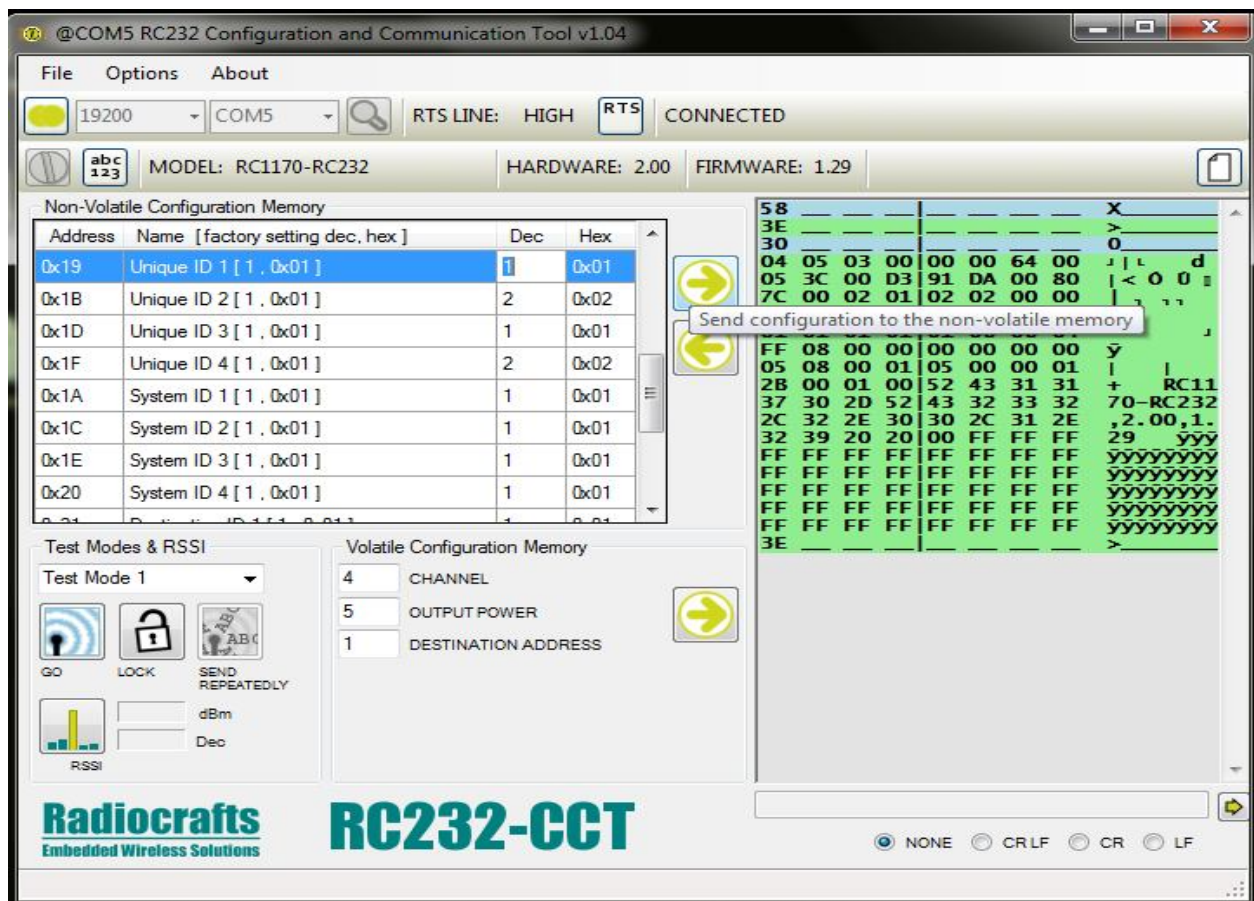
6. Now to enter into configuration mode click on configuration button, window will be as shown below. Press configuration switch SW2 in the board before specified configure timing.



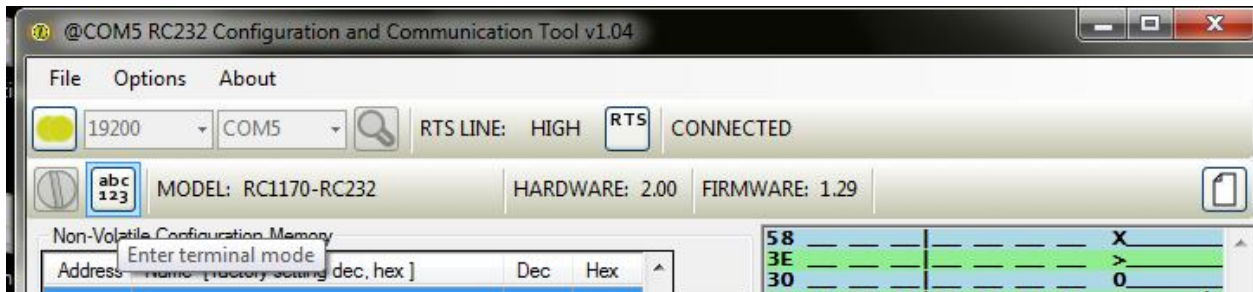
7. Once SW2 is pressed it will enter into configuration mode where changes have to be done. This can be done by clicking left arrow as shown below.



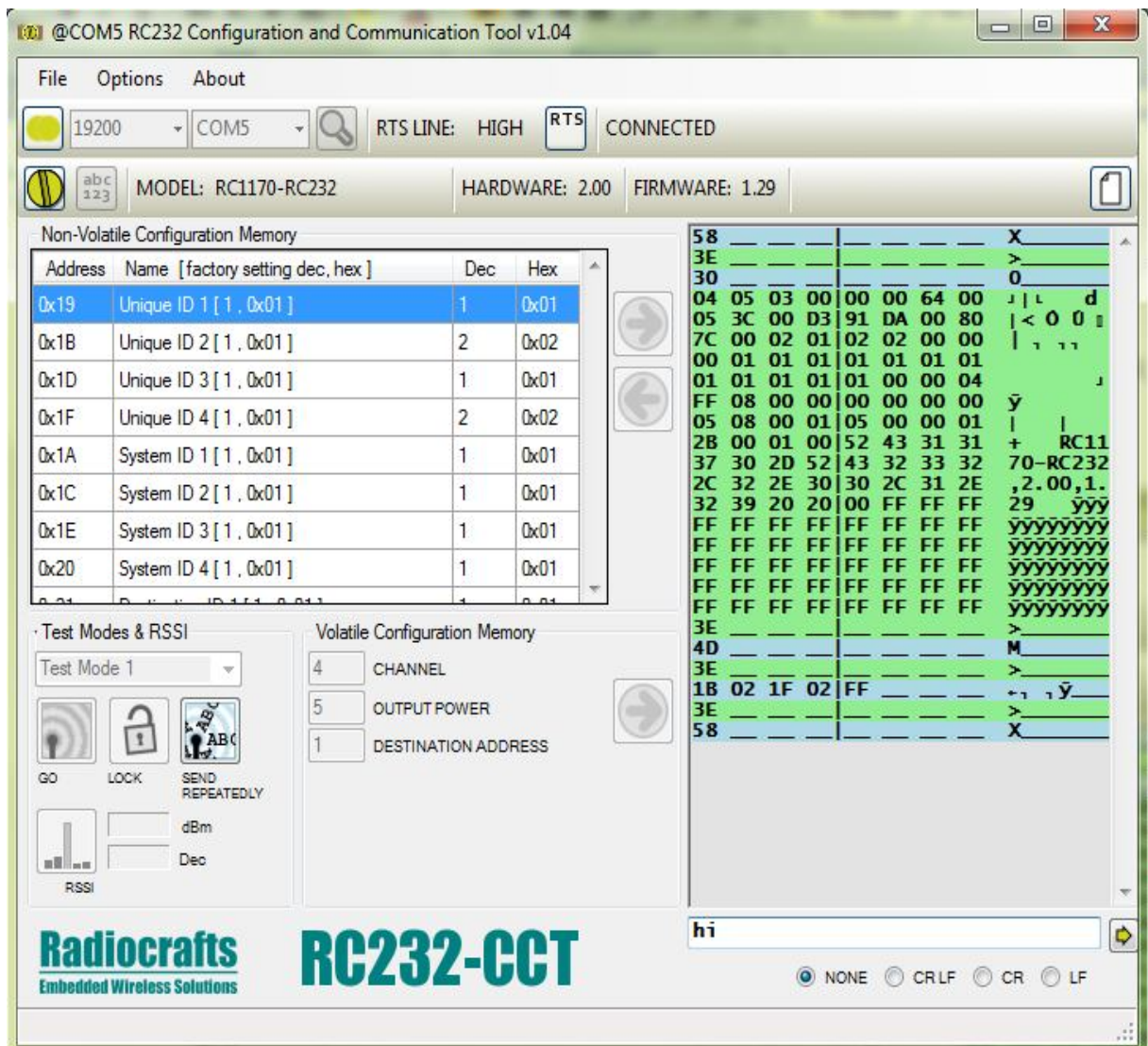
8. Settings has to be done such a way that system ID (SID) should match between the devices and unique ID (UID) should be set to each device.
9. Click on right arrow button to save the settings to NVM. Window will be as shown below.



10. After configurations are set come out of configuration mode to terminal mode. As shown in below figure.

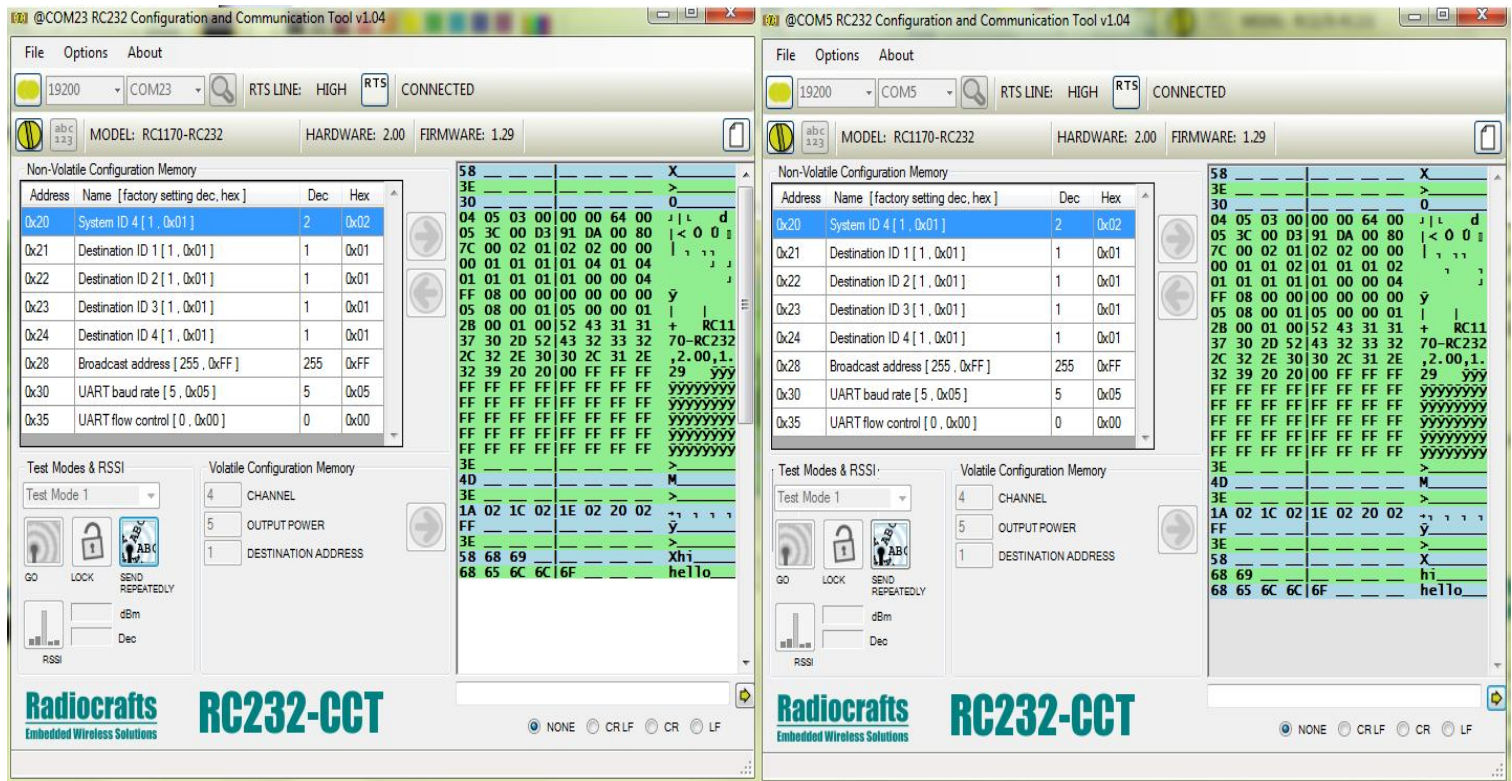


11. After entering into terminal mode, window will be as shown below. Data to be sent should be entered in terminal line at the right bottom and click on send arrow next to that or press enter.



12. Before sending data set one more device following same procedure. Start communicating in between the devices by sending data to and from the devices. The sent data will be indicated by blue color in terminal window and received by green as shown below.

[Below image shows the communication between two modules connected to port 5 and port 23 communicating with hi, hello].



Conclusion:

Thus RC1170-RC232 module serves its best in transmitting data using rc232 protocol with its features. Also by its wide range of application in wireless sensor networks, automatic meter reading, alarm and security systems etc.