



Using the iGR Repeater with the Carlson BRx7

Date: 11 August 2021

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You can use the BRx7 as a Base in Repeater Mode or directly connected to the radio with a cable.

Important Notes:

ROX is an uncompressed format and cannot be used at 9600 baud as a repeater. Based on our testing we strongly recommend that you use Message Type = RTCM3.2.

FEC must be disabled for operation at 9600 baud.

For direct cable connections, you can use 9600 or 19200 over-the-air baud rate.

For repeater operation, you must use 19200 over-the-air baud rate.

A special wideband 25 kHz bandwidth FCC license is required for 19200 over-the-air use.

The following configurations have been tested and are known to work:

As a Repeater

Warning: 9600 baud will not have enough capacity to support RTCM3.2 with more than 15 satellites tracked.

Radio Configuration

The screenshot shows the iGage iGRadio Programmer (Ver: 2021.2.20.1155) interface. The 'Radio Configuration' tab is active, displaying the following settings:

- COM Port: COM 1
- BAUD: 115200
- Buttons: Download from Radio, Upload to Radio (highlighted), Supervisor (checked)
- Radio Model: DU8616D
- Serial Number: D21042472
- Firmware Version: M025.00.01
- Hardware Version: V01
- Frequency Range: 410 to 470 MHz
- Radio Mode: 3 - Repeater
- Current Radio Channel: 0
- Over-the-Air Protocol: 9 - Satel
- FEC (Forward Error Correction):
- Output Power: 2 - Low (5-watts)
- Over-the-Air Link Rate: 19200 baud
- UART (Cable) baud Rate: 115200 baud
- Call Sign (CW Morse Code):
- Call Sign Interval (default 15): 15 minutes
- Low Voltage Warning: 11.0 Volts
- Low Voltage Tx Disable: 10.2 Volts

The Channel Table is also visible, showing a list of channels with their TX Frequency, RX Frequency, and Bandwidth (25 KHz).

Channel	TX Frequency	RX Frequency	Bandwidth
CH 000	461.025,000	461.025,000	25 KHz
CH 001	461.075,000	461.075,000	25 KHz
CH 002	462.375,000	462.375,000	25 KHz
CH 003	462.400,000	462.400,000	25 KHz
CH 004	464.500,000	464.500,000	25 KHz
CH 005	464.550,000	464.550,000	25 KHz
CH 006	464.650,000	464.650,000	25 KHz
CH 007	464.700,000	464.700,000	25 KHz
CH 008	464.725,000	464.725,000	25 KHz
CH 009	464.750,000	464.750,000	25 KHz
CH 010			
CH 011			
CH 012			
CH 013			
CH 014			
CH 015			
CH 016			
CH 017			
CH 018			

Radio updated with 0 errors.

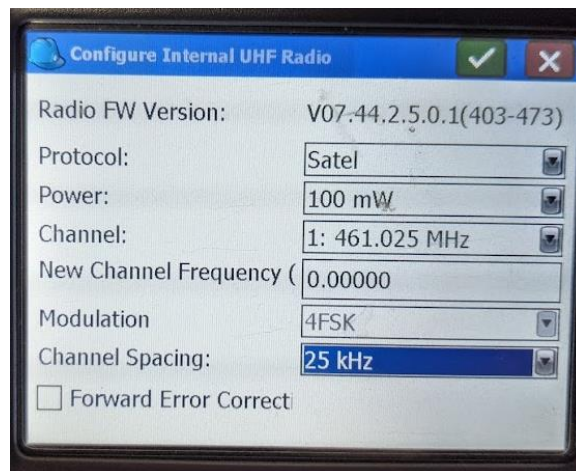
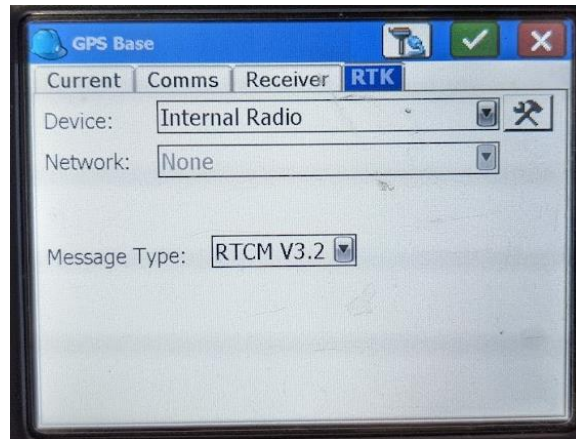


Note: Over the air baud rate is 19200 and Bandwidth must be set to 25 kHz. A wideband FCC license is required for this operation mode.

BRx7 Configuration



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30-seconds after the Base is configured in SurvCE, it will begin to broadcast corrections. The RxTx LED on the iGR should blink GREEN then RED every second.

Direct Cable Connection

Connect the serial/power cable provided with your BRx7 to the center connector on the receiver. A UHF antenna is not required as the internal radio will not be used.



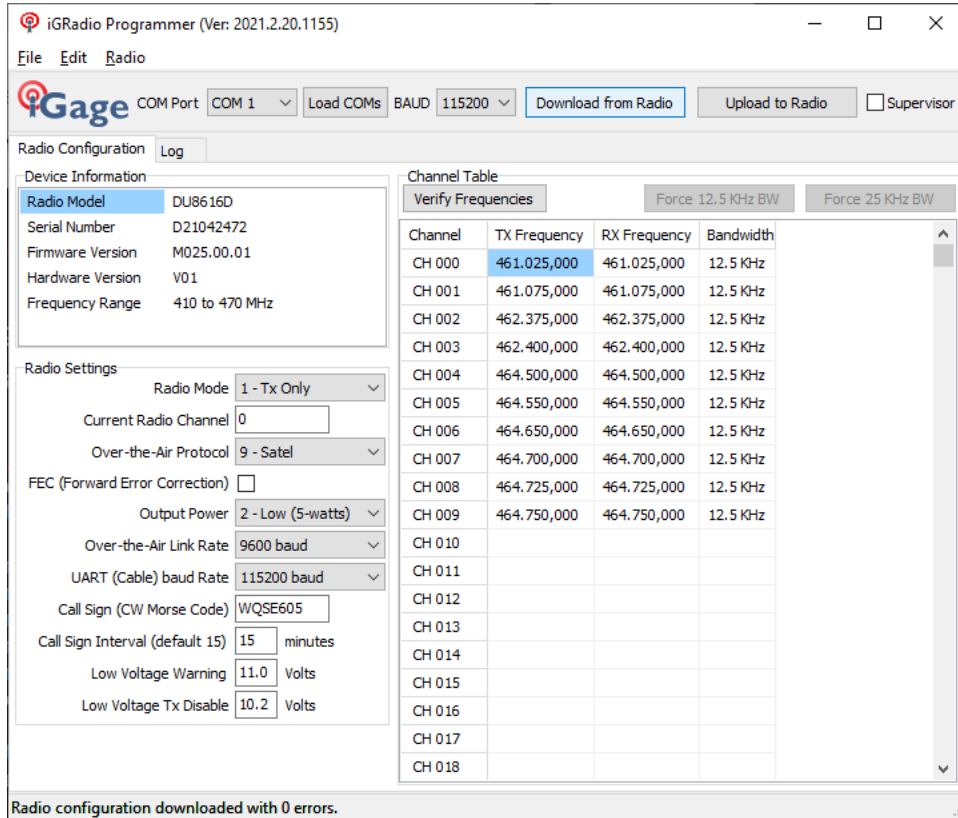
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Connect the provided iGR programming cable to the BRx7 serial cable with a 'DB9 Male-Male Null Modem Adapter':



iGR Configuration

Configure the iGR radio as shown below:

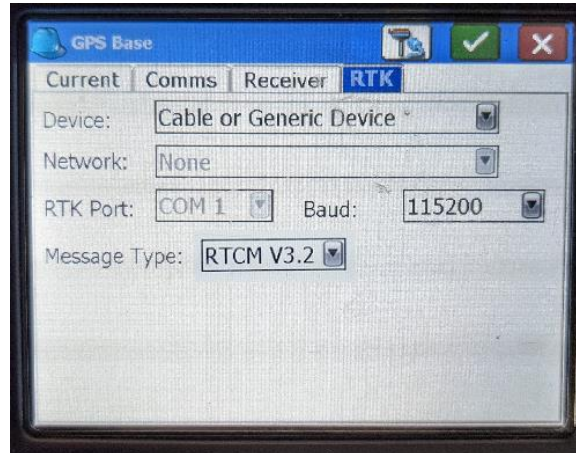


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Both 9600 and 19200 baud over-the-air will work (the base and rover must match of course.)

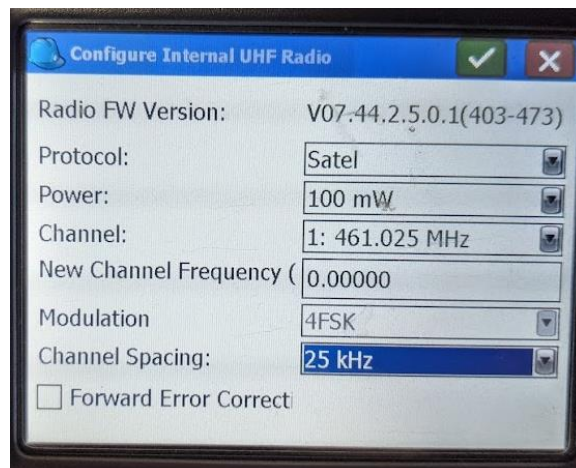
BRx7 Configuration





Continue setting up the base normally. 30-seconds after the base is setup, it should begin sending corrections out the serial port. The RxTx LED on the iGR will blink RED once per second.

The BRx7 Rover radio configuration should match the iGR configuration:



Note: if the iGR is set to 19200, then the Rover Channel Spacing must be 25 kHz. If the iGR is set to 9600 baud, then the Rover Channel Spacing must be 12.5 kHz. The Frequency (ignore the channel number) and FEC must match on the Base and Rover.