iGR External Radio Operation

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Using the iGR as an external radio, instead of as a repeater, lessens the issues with correction messages that are longer than ½-second in transmitted length. External radio operation also greatly reduces the complexity of configuration and lessens the effects of other users on the same frequency.

Some GNSS/GPS receivers also benefit by having a single cable power both the base and the external radio:

Part Number	Compatible Devices	Power for Base Receiver
2004030051	CHC X91+, X900+, P3, N71	YES
A00630	Ashtech/Spectra: ProMark/ProFlex 500 ,800, ZMax, ZExtreme, ZSurveyor Javad: Most receivers Topcon: Most receivers	NO, a separate power cable is needed for the GPS receiver.
66656-10	iGage iG8, iG8a, iG9, iG9a CHC: i70, i80, i90, i86 Trimble: R12, R10, R8S, R8 series, R7, 5700, 5800, 4800, 4700 Spectra: Epoch 35, Epoch 50 SP80, SP85	YES
A00780	Carlson: BRx7, BRx6 E-Survey: E300, E500, E800, E900 FOIF: A90 Gintec: G20, G30, G30 PRO Genec/SxBlue: F100, F90 GeoMax: Zenith 60, 10, 20, F2 Hemisphere: C631, S631 Stonex: S990A, S980A, S900A, S900, S850A, S700A UniStrong: E500, E800, G970II, G970IIPro, G960, G970C, G990II, G950, G960	YES

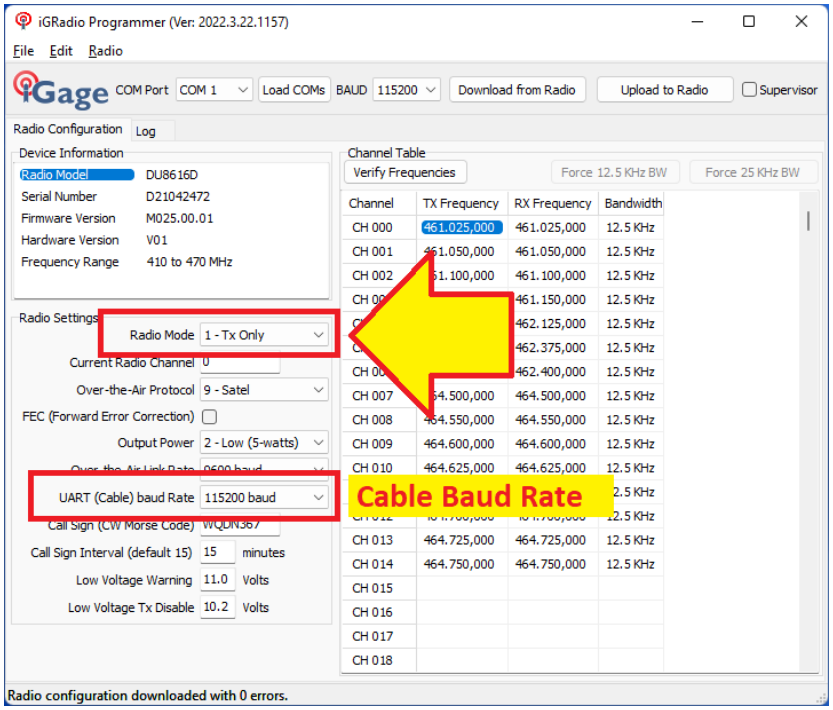
GeoMax, Carlson, Hemisphere, Stonex Receiver note

These receivers have two circular connectors on the bottom. Use the 5-pin connector for connecting to an external radio.

Configuring the iGR radio

The only differences between configuring a repeater (as described in the iGR User Manual) and configuring an external radio are:

1. Change the 'Radio Mode' from '3 – Repeater' to '1 – Tx Only'.
2. Possibly modify the UART (Cable) baud Rate to match the external port on the GNSS receiver.



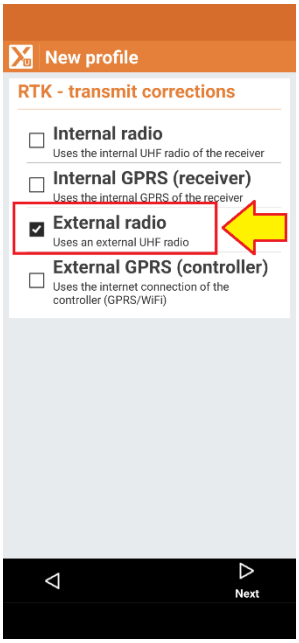
Start with the Output Power set to Low (5-watts). Once you get the base working in the field, with the antenna set above your head and a rover is receiving corrections, then you can change the output power to High or Medium.

Configuring your GNSS Base Receiver

When choosing the destination for correction messages, choose the correct external port and cable baud rate. The exact method will depend on the field software you are using. Typical configurations for X-PAD, SurvCE/SurvPC and Landstar7 are detailed below.

X-PAD Ultimate Survey

From the Settings, GNSS & Total Stations Instruments list, when you create a Base Profile, choose External radio for the RTK – transmit corrections destination:



Then on the RTK Radio configuration dialog:

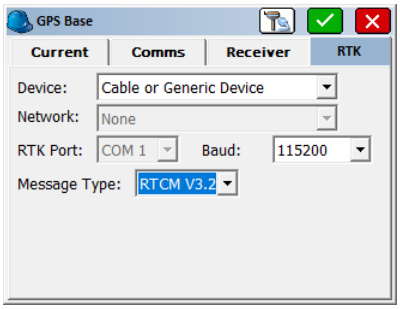
Set the Baud rate to match the rate selected on the iGR radio, typically 115200.

Set the Format to either RTCM3.2 or SCMRX. SCMRX is preferred for use with iGage iG8 and iG9 receivers.

After doing a START BASE operation from the main menu, the red RX/TX LED should blink once each second as corrections are sent from the GNSS receiver to the external iGR radio.

Carlson SurvCE/SurvPC

From the Equip: GPS Base configuration on the RTK tab:



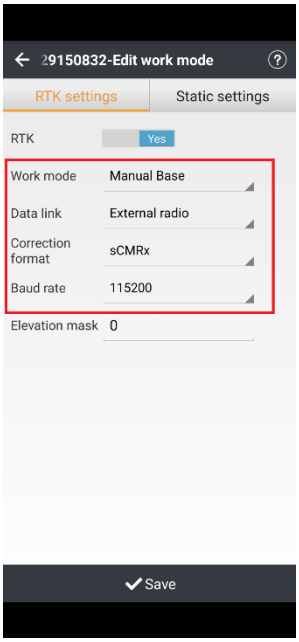
Set the Device to Cable or Generic Device.

Set the Baud rate to match the Cable Baud Rate configured on the iGR radio.

After completing the Base configuration, the red RX/TX LED should blink once each second as corrections are sent from the GNSS receiver to the external iGR radio.

CHC Landstar7

From the Landstar7 main menu, select Config. Work Mode and build a new profile:



Enable RTK = Yes, set the Work mode to Manual Base, choose Data Link = External radio, choose an appropriate Correction format (typically sCMRx or RTCM3.2), choose the Baud rate to match the iGR radio configuration (typically 115200).

Once you save the profile, then you can Apply work mode? Yes. Finally Accept the selected work mode to start the base with a position.