

# HAYES INSTRUMENT Co.

502 S CANNON BLVD  
SHELBYVILLE, TN 37160

TOLL FREE: 1 800 251 1280  
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## Topcon Robotic Series with RC2II and Radios Complete Setup Guide for the TDS Ranger

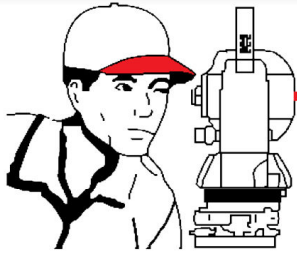
December 05

**Concepts**— When using RC2II and Radios, the majority of communication is handled by the radio link. The RC2II is used only for the quick-lock function. When the user activates the quick-lock function, the RC-2II transmitter sends an Infrared Single that is picked up by the RC2 Handle on the total station. The gun then turns to the source of the infrared beacon (RC-2II) and performs an Autolock

**Total Station Setup**— (note: many of the settings below are defaulted correctly)

1. Connect the radio to the total station via the 9-pin to 6-pin Hirose radio cable and turn the radio on.
2. From the main total station menu:
  - Select the Para Menu [**F6**]
  - Select the Communication Menu [**F2**]
  - Select Serial Port RS232C/RC [**F1**]
  - Select **<RC>** using the [**F3/F4**] keys
  - Press Set [**F1**] then YES [**F5**]
  - Select Set RC [**F3**]
  - Verify the following settings:
    - \* Channel [**1**]
    - \* V.Search [**15**]
    - \* RC [**S**]
    - \* Retry [**Std**]
    - \* Delimit [**ETX**]
    - \* REC-A/B [**B**]
    - \* NEZ-REC [**Std**]
    - \* TrkState [**ON**]
    - \* B.Rate [**4800**]
    - \* Data.L [**8**]
    - \* Parity [**None**]
    - \* Stop Bit [**1**]
  - Press SET [**F1**] then YES [**F5**]
  - Press [**ESC**] back to the main total station menu.





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3. From the Main Total Station Menu:
  - Press **Prog [F1]** then **MORE [F6]**
  - Press **EXT.LINK [F3]**
  - Press **2. Setting [F2]**
  - Select **1. CABLE/RADIO MODEM/RC [F1]**
  - Using the Up/Down **[F3/F4]** arrow keys, select **RADIO MODEM SATEL 3ASd.**
  - Press **SET [F1]**
  - At the Setting menu, Select **4.PARAMETER (RADIO MODEM) [F4]**
  - Select **1.SELECT PARAMETERS [F1]**
  - Using the Up/Down arrow keys, select **<REC-B>**. Press **SET [F1]**
  - Select **4.PARAMETER (RADIO MODEM) [F4]**
  - Select **2. SET FREQUENCY (3ASd) [F2]**
  - If the Frequency needs to be changed, press **INP [F1]** and type in the desired Frequency. Else press **OK [F6]**.
  - Press **[ESC]**
  - Select 1. Execute **[F1]**

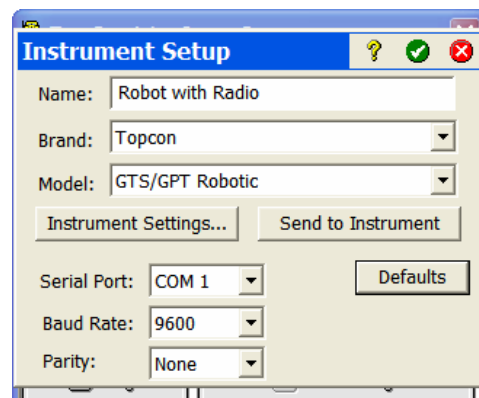
## RC-2II

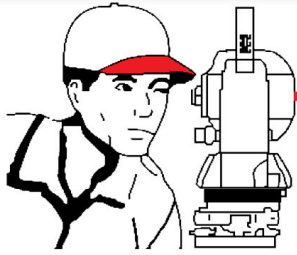
1. Open the battery chamber and remove the batteries. Locate the dip-switch block at the bottom of the battery chamber and verify that dip-switch 3 is to the right. The other switches should be set to the left.
2. Put in fresh batteries if unsure about their age (typical battery life is 40 hrs).
3. Connect the Y-cable between the radio, data collector, and RC-2II.



## Ranger Setup

1. Run Survey Pro and Open a job for work.
2. Go to **[Job] - [Settings]**
3. Press **[Create New Instrument]**
4. Create an Instrument Profile with the following settings.
  - Name: **Robot with Radio**
  - Set the Brand to **<Topcon>**
  - Set the Model to **<GTS/GPT Robotics>**
  - Ignore the Serial port and baud rate settings for now.
5. Press **[Instrument Settings]**





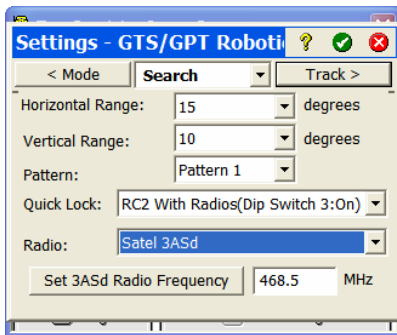
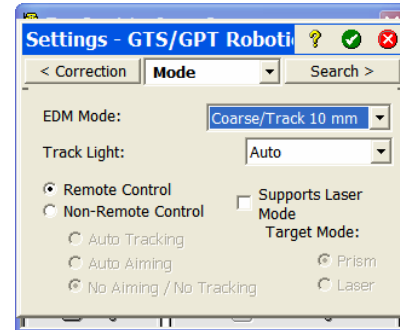
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6. Set the EDM Mode: to the desired resolution.
7. Track Light: **Auto**
8. Check the **Remote Control** option.
9. Press the **{Search}** tab at the top of the display.



10. Set the desired Horizontal and Vertical Range.
11. Set Pattern to **<Pattern 1>**.
12. Set the Quick Lock: **<RC2 With Radios (Dip Switch 3:On)>**
13. Set the Radio to **<Satel 3ASd>** (or 2ASd if that is what you are using).
14. Enter the desired Frequency and press the **[Set 3ASd Radio Frequency]** button.
15. Press the **{Track}** index tab at the top of the display.

16. Set the desired search delay value in the Start Searching After: Field. (*3 is a typical value*).

17. Set the Track Speed value.

- GTS 800/802/810/815 should be set to **<Machine Control>**.
- GTS 820/GPT 8000/8200 should be set to **<Survey Control>**.

18. Set the Sensitivity to reflect the average distance that you will be shooting. **<Low>** (0-300ft), **<Medium>** (300-600ft), **<High>** (600+ft)

19. Set the Turn Speed to **<High>**.

20. Press the **{Correction}** index tab at the bottom of the display.

21. Verify that all the correction values are set to: **0**

22. Press the **[green check]** button to return back to the Instrument Setup Page.

23. Press the **[Defaults]** button to default the computed Baud Rate and Parity values. Verify that the Baud Rate is set to **9600** and the Parity to **None**.

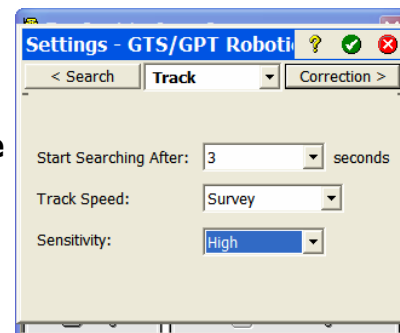
24. Press the **[Send to Instrument]** button. Survey Pro should return a "Happy" sound.

25. Press the **[green check]** Button to exit out to the Instrument Profile page.

26. Press the **[green check]** again to exit back to the Main Survey Pro Menu.

27. Select **[Survey] - [Remote Control]**.

28. Verify active Angles are updating on the display.



You are now connected to your total station and ready to begin your survey.

