

RC T2000

Telemetry system for RC Altimeter #3 PRO with
variometer function and voice announcements



Manual version: 1.1

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Introduction

RC T2000 was designed especially for use with the RC Altimeter #3 PRO. It is a telemetry system to track current altitude, climb/sink speed, maximum altitude achieved in flight, temperature, glitches, GPS data and battery voltage of radio controlled (R/C) aircraft in real time. All flight data is displayed on high contrast LCD display and voice announcements are possible when needed.

How it works

The RC T2000 module uses 433MHz two way radio link to transfer data from yours R/C plane via the RC Altimeter #3 PRO module to the ground unit. Data transfer is digital so there won't be any noise or wrong data reception.

Vario works on principle that RC Altimeter #3 PRO logger detects small changes in altitude and transmits them to RC T2000 which converts them into a variable audio tone. Changes small as 10 cm/s will be indicated by change in tone. Sinking produces a continuous tone which becomes deeper with increasing sink rate. Climbing gives a pulsed rising sound. The pulse frequency rises as the rate of climb increases.

All the data is displayed on LCD display. If the RC T2000 detects that battery in your R/C plane is low, it alerts you with low battery announcement. If there is no reception, "----" is displayed and audio is on mute.

Key features

- Voice announcements.
- Variometer with audio tone for lift or sink.
- Mute function – train your eye for weak thermals.
- Alarm signal for low battery of yours R/C plane.
- Onboard 350mAh LiPo battery for up to 8 hours working time.
- Two way digital data transition at 69 channels.
- Set RC Altimeter #3 PRO to zero and all settings via RF link.
- Strong and durable casing.
- Long range - more than 1 km.

Specifications

Board Dimensions	59 mm x 42 mm x 17 mm 2.32" x 1.65" x 0.67"
Weight	63 grams
Temperature Range ¹	-10°C ~ +60°C
Onboard Battery	1 cell Kokam LiPo 3.7 V 350 mAh
Duration	8 hours
Displayed Altitude Resolution	0.1 meter.
Displayed Battery Resolution	0.1 volts.
Displayed Vario Resolution	0.1 m/s.

¹ Specifications are taken from component ratings and system limits and may not have been tested to the full extent of the specified ranges.

NOTE:

For charging the RC T2000, set your charger for:
1 LiPo cell 3.7V, charging current max. 350 mA.

Physical overview

Figure 1 shows the RC T2000 module. To turn the module ON, press and hold the Left/ON button for 2 seconds. To turn it OFF, press and hold Right/OFF button for about 4 seconds.

The module consists of LCD display, three pushbuttons, 3 pin connector that is used for charging, 4 pin connector used for PC interface (for firmware updates) and 3.5 jack phone connector for audio tone.

For charging you will get 3 pin cable with red wire soldered to middle pin and black wire soldered to side pins, so it doesn't matter how you turn it when you charge the RC T2000.

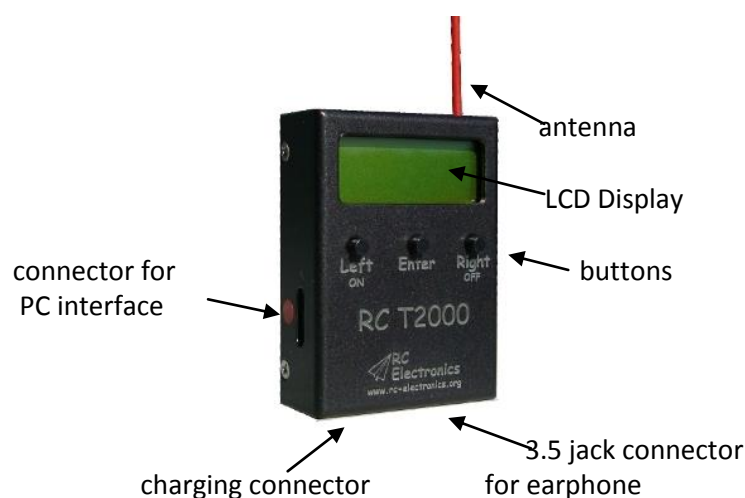
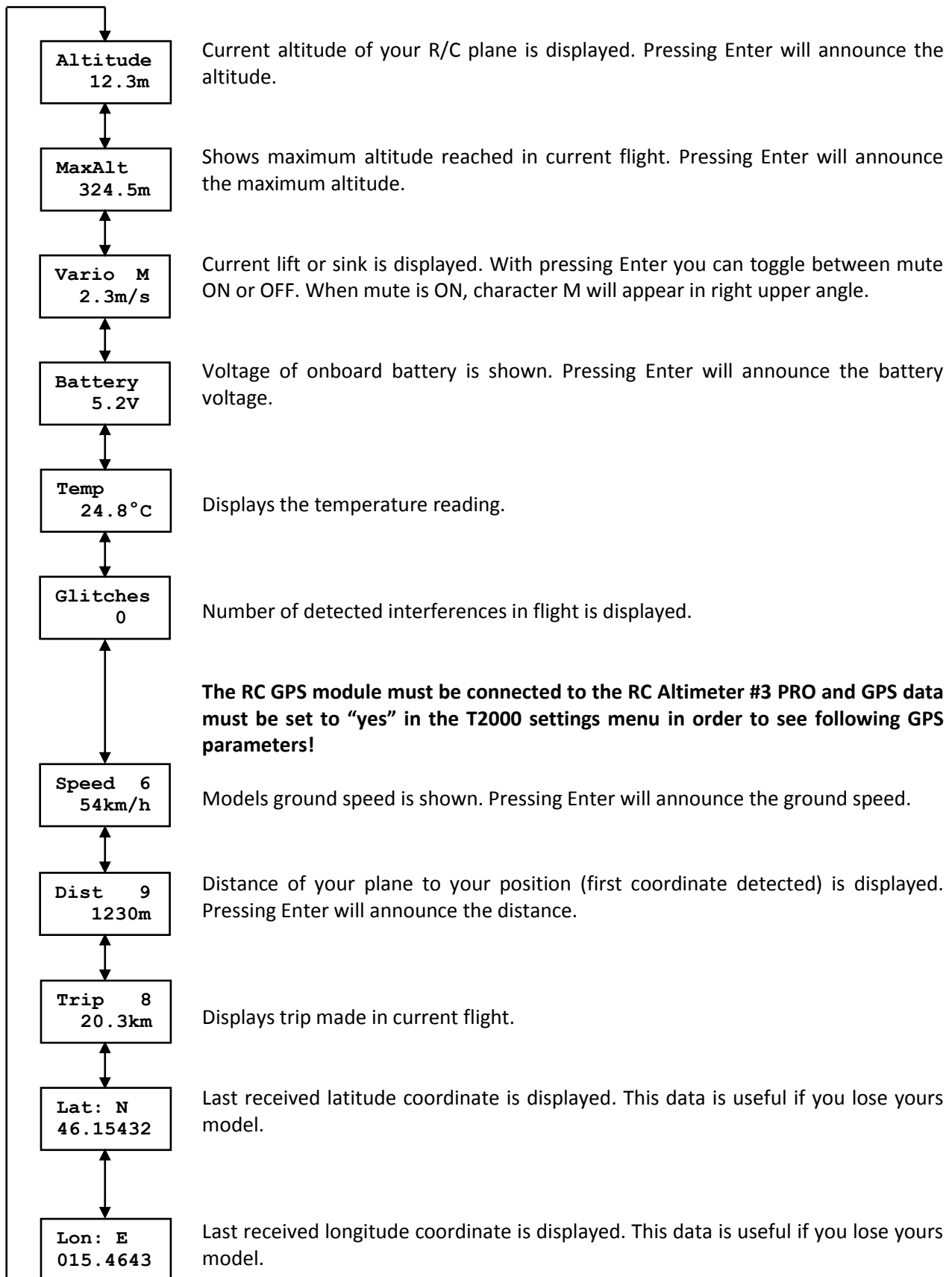
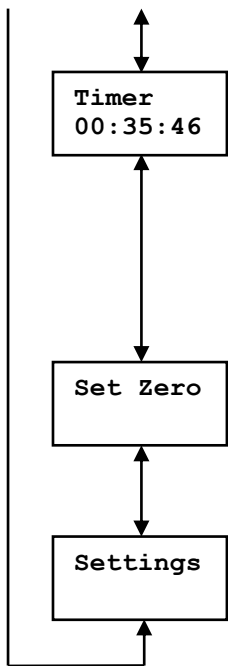


Figure 1: The RC T2000 module.

Main menu





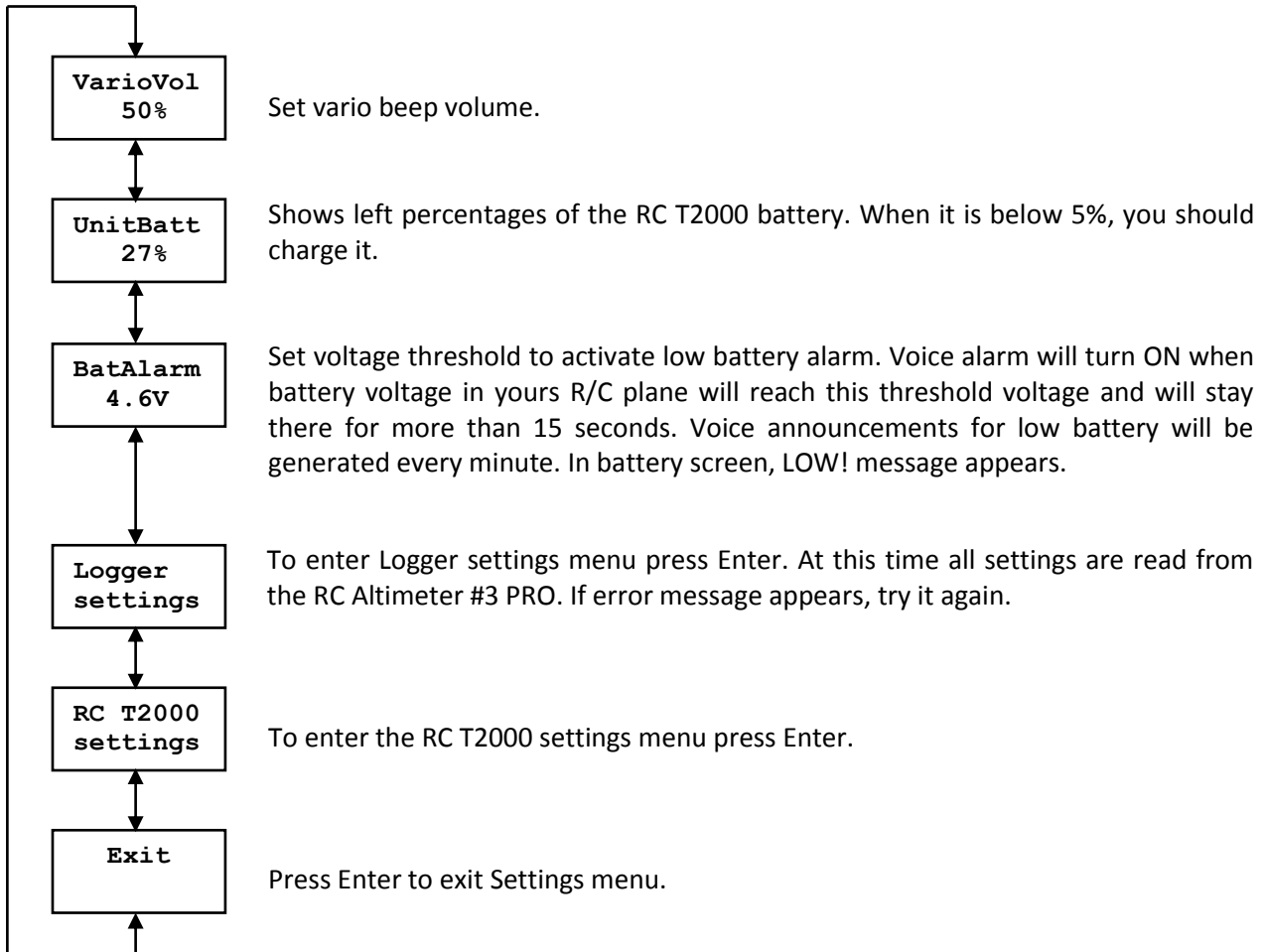
To start/stop the stopwatch, press Enter. To reset it press and hold Enter until it shows 00:00:00 (or the time set in "TimCount" menu). Every time you turn ON the RC T2000 module, the stopwatch will reset to 00:00:00 (or to the time set in "TimCount" menu). The stopwatch has a precision of 1 s. When started, a time announcement will be made every minute (or a time is set in "TimCount" menu). The time will count down and the last 15 s will be announced verbally. This function is used for F5J, F3K or F3J training.

Pressing Enter command for setting to zero will be send to the RC Altimeter #3 PRO. It will set altitude and some other parameters to zero and create a new flight on SD card. If Error! message appears on screen, please try it again.

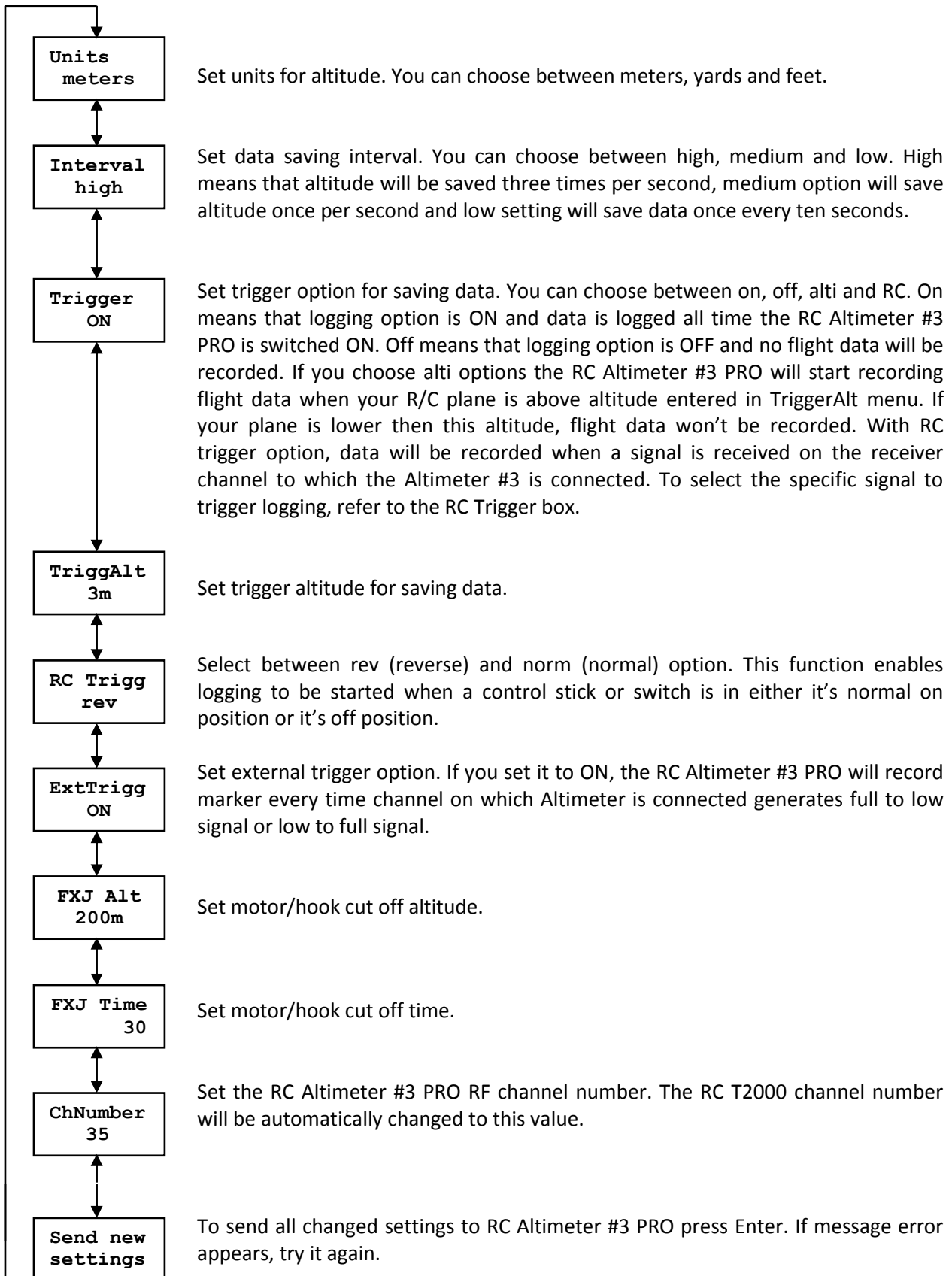
To enter Settings menu press Enter

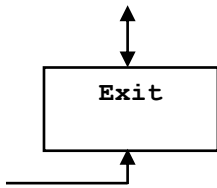
Settings menu

You can change selected value by pressing Enter. When > < markers appear, you can change value with pressing Left and Right button. When you are finished, press Enter button again and markers will disappear.



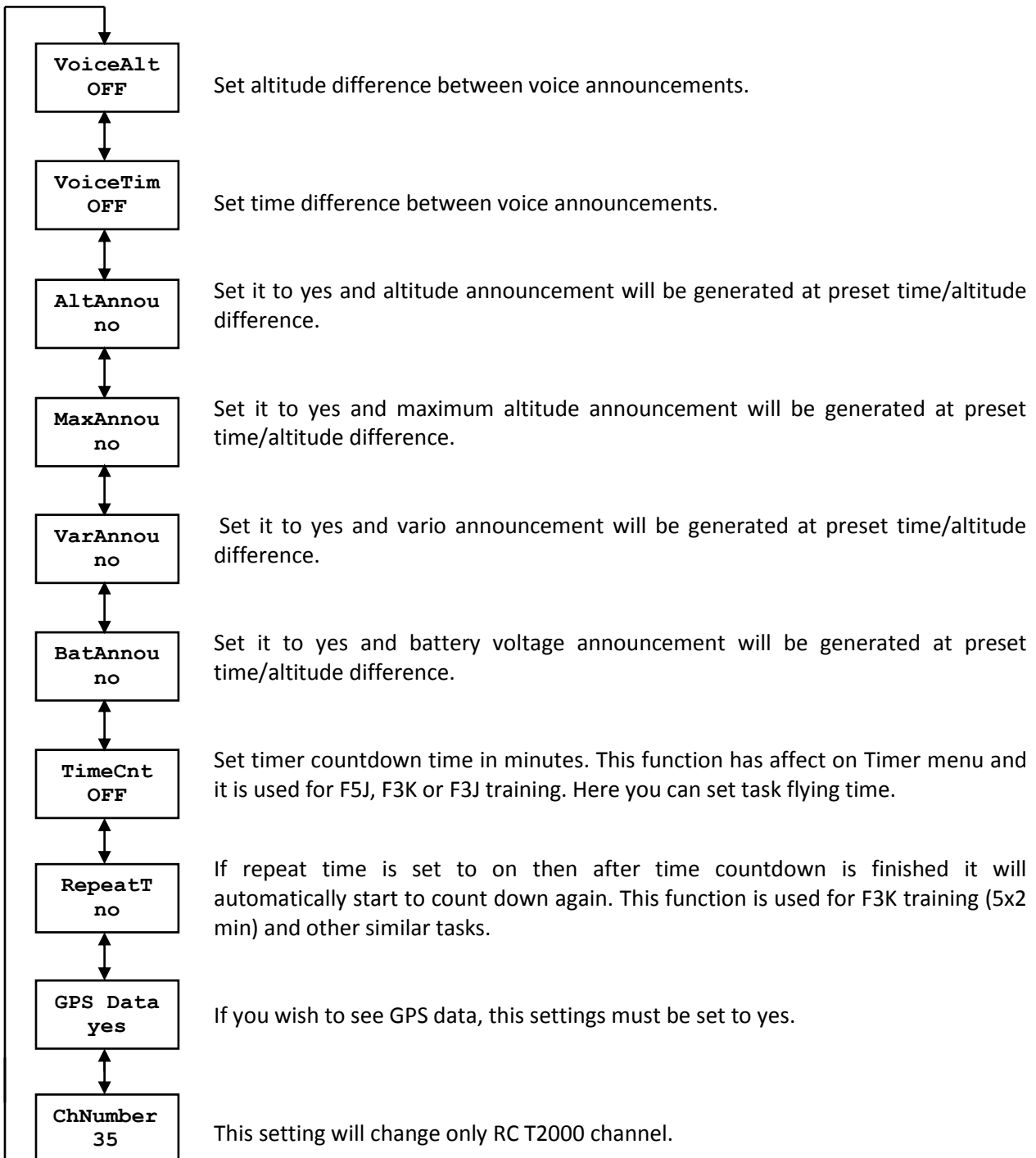
Logger settings

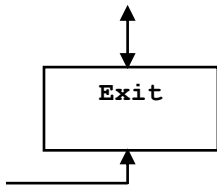




Press Enter to exit Logger settings menu.

RC T2000 settings





Press Enter to exit RC T2000 settings menu.

Firmware upgrade

The RC T2000 module provides the ability to upload new firmware to the module. No installation is required for the Firmware Upgrade software. You can download it from www.rc-electronics.org. After downloading, run the Firmware Uploader v1_2.exe file. Select the correct COM port and specify the new firmware file (RC_T2000_v1.xx.hex). After you have selected the firmware, connect the RC T2000 module to USB interface and wait for about 4 s and click the “Upload” button. After pressing the “Upload” button, upload of the new firmware will start. You should only use a firmware update file specifically provided for the RC T2000 module. Using an incorrect update file will render the RC T2000 module inoperable.

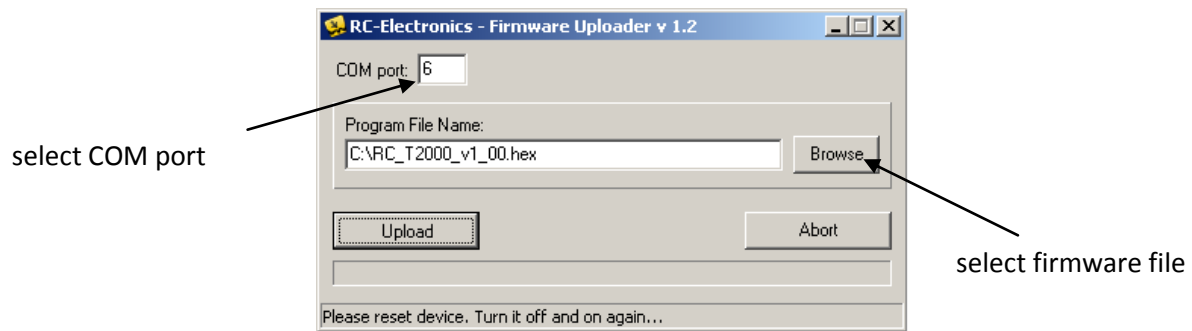


Figure 2: Firmware uploader.