RC T2020 HE

Telemetry system for use in falconry.

Manual version: 1.0

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Contents

Introduction

The RC T2020 HE was designed for use in falconry. It can receive the data transmitted by the RC TRX30 HE unit. It is a telemetry system to track current altitude, maximum altitude, flight duration with integrated manual stopwatch function, climbing/descending speed, maximum climbing speed, maximum descending speed and battery status of transmitter and ground unit, all in real time. All flight data is displayed on high contrast LCD display.

Key Features

- Altimeter.
- Variometer with climbing/descending indication.
- Stopwatch.
- Two-way data communication at 69 channels – possibility to monitor multiple TRX units.
- Long range – more than 1 km.
- Simple charging over USB port – no special charger needed.
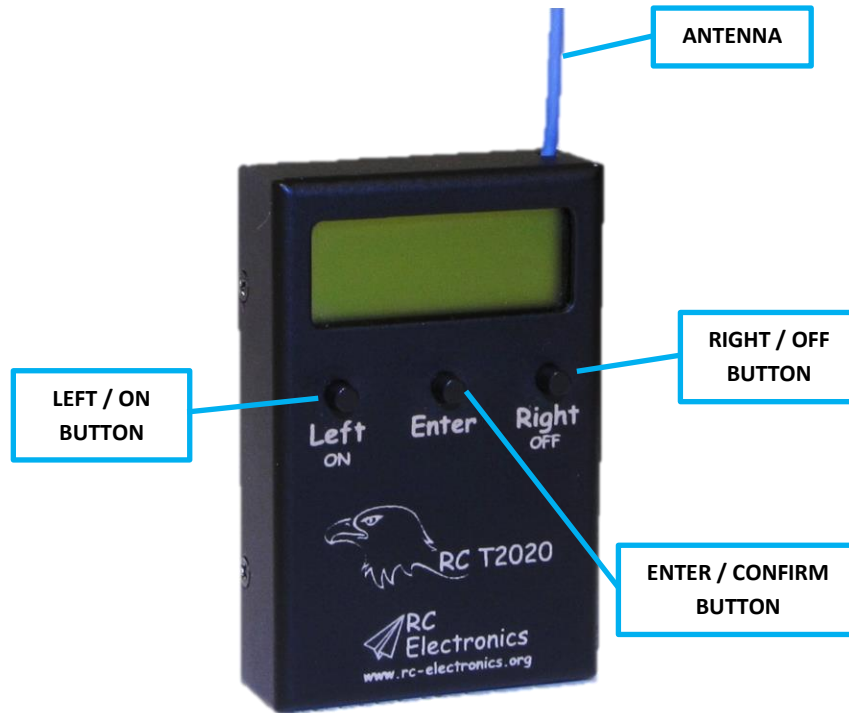- Strong and durable casing.

Specifications

Unit Dimensions	65 mm x 42 mm x 17 mm 2.56" x 1.65" x 0.67"
Weight	60 g
Temperature Range[1]	-10°C ~ +60°C
Onboard Battery	1 cell LiPo 3.7 V 250 mAh
Battery Duration	8 h
Displayed Altitude Resolution	1 m/ft
Displayed Battery Resolution	0.1 V
Displayed Vario Resolution	1 (m/ft)/min.

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

Physical overview

Front view

ANTENNA

RIGHT / OFF BUTTON

LEFT / ON BUTTON

ENTER / CONFIRM BUTTON

Bottom view

USB CHARGING SOCKET

3,5 JACK SOCKET (NOT IN USE!)

CHARGING LED INDICATOR
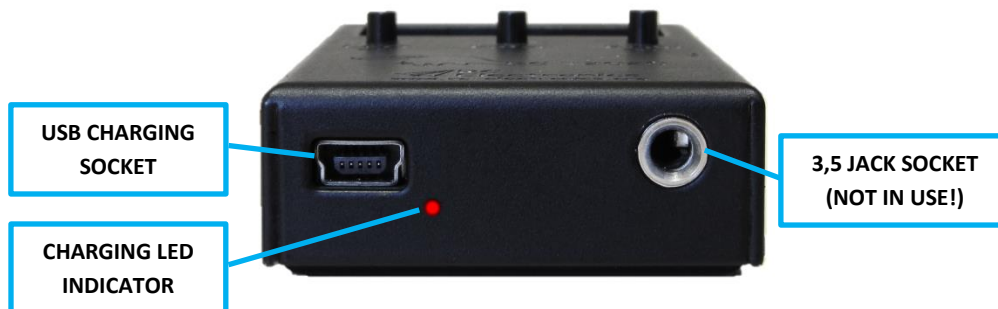
Note!

At the time of writing this user manual, 3.5 jack socket is not in use, although future firmware versions may support audio beeps for vario.

Operating instructions

Starting the RC T2020 HE

To turn the RC T2020 HE on, press and hold the "LEFT/ON" button for approximately 2 seconds.

```
RC T2020
 v1.004
```

After starting the RC T2020, unit model and firmware version are shown for 1 second.

```
SerialNr
 011004
```

For another second, the serial number is shown.

Menu & Functions overview

```
H:    0m↑
00:00:00
```

Current height with climbing/descending indicator (arrow).

Stopwatch (press Enter to start/resume or to pause it).

```
MaxHeigh
   100m
```

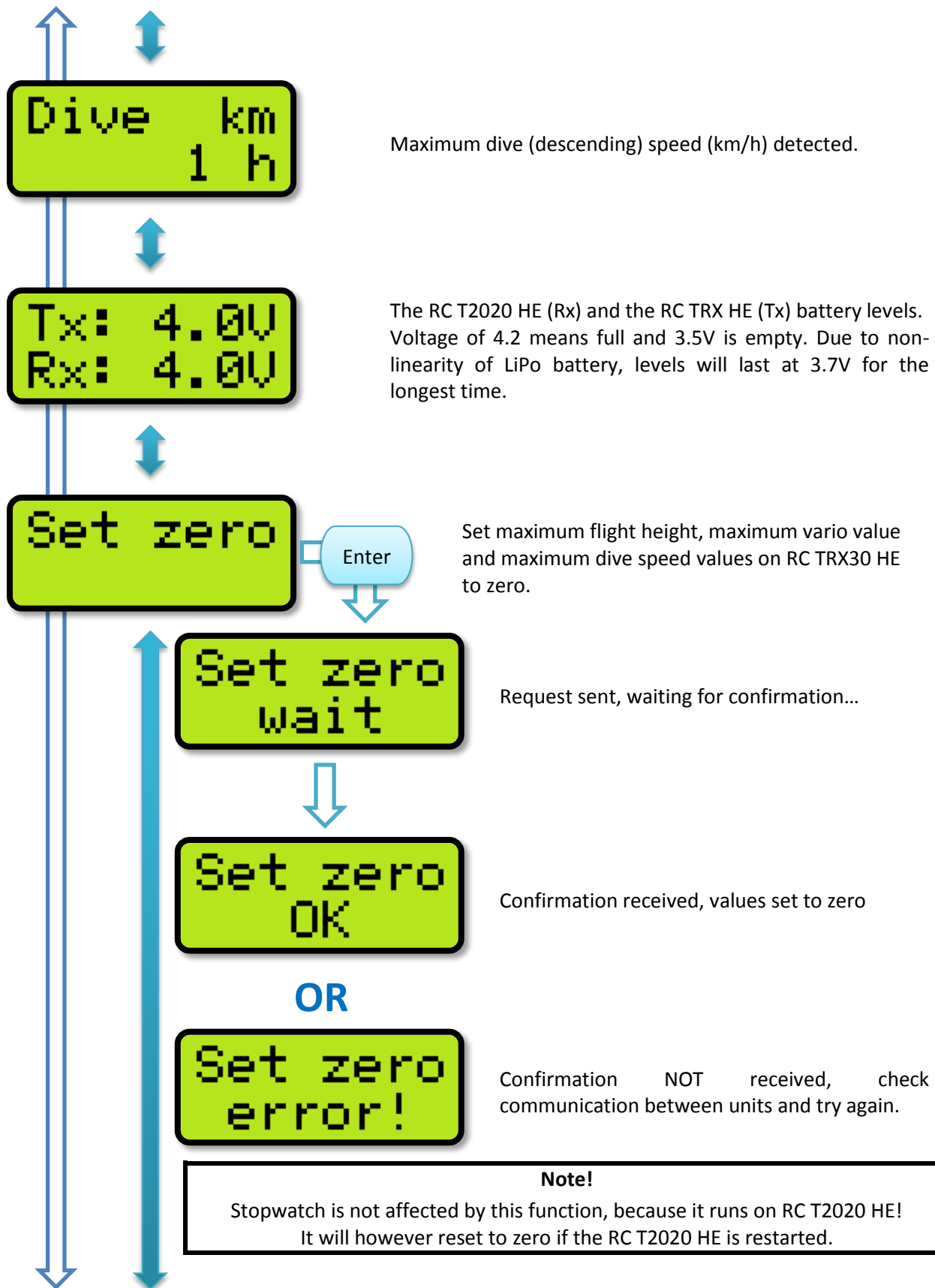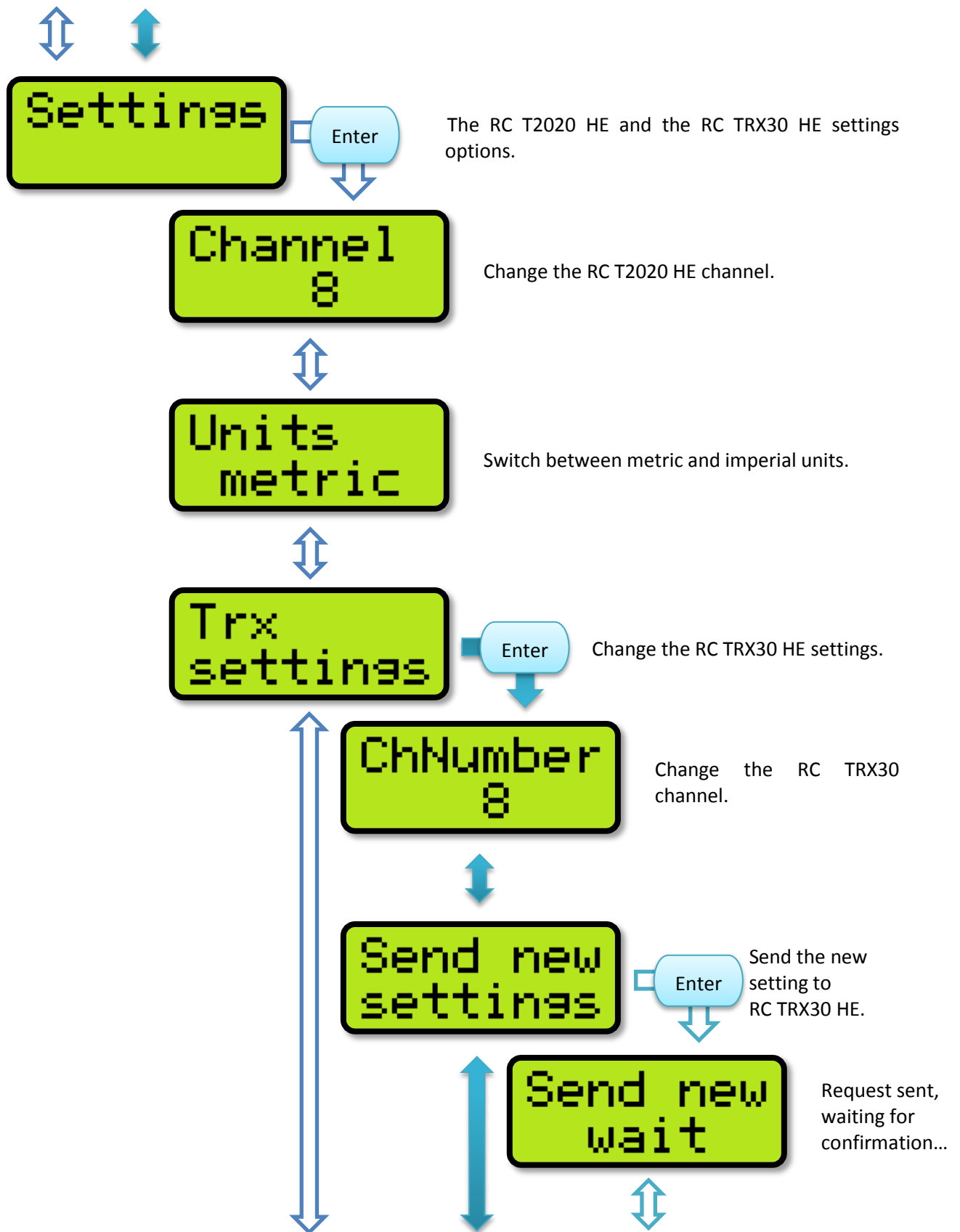Maximum flight height recorded during last flight.

```
V: -24m
M: 20min
```

Current vario (m/min). Vario is climbing or diving of facon.

Max vario value (m/min).

```
Dive   km
       1 h
```

Maximum dive (descending) speed (km/h) detected.

```
Tx: 4.0V
Rx: 4.0V
```

The RC T2020 HE (Rx) and the RC TRX HE (Tx) battery levels. Voltage of 4.2 means full and 3.5V is empty. Due to non-linearity of LiPo battery, levels will last at 3.7V for the longest time.

```
Set zero
```

Enter

Set maximum flight height, maximum vario value and maximum dive speed values on RC TRX30 HE to zero.

```
Set zero
   wait
```

Request sent, waiting for confirmation…

```
Set zero
     OK
```

Confirmation received, values set to zero

OR

```
Set zero
 error!
```

Confirmation NOT received, check communication between units and try again.

Note!
Stopwatch is not affected by this function, because it runs on RC T2020 HE!
It will however reset to zero if the RC T2020 HE is restarted.

Settings — Enter

The RC T2020 HE and the RC TRX30 HE settings options.

Channel 8

Change the RC T2020 HE channel.

Units metric

Switch between metric and imperial units.

Trx settings — Enter

Change the RC TRX30 HE settings.

ChNumber 8

Change the RC TRX30 channel.

Send new settings — Enter

Send the new setting to RC TRX30 HE.

Send new wait

Request sent, waiting for confirmation...

```
Send new
   OK
```

Settings changed.

OR

```
Send new
error!
```

Settings not changed, check communication between units.

```
Exit
```

Exit the RC TRX30 HE settings (returns to "Trx settings").

```
Exit
```

Exit Settings (returns to first page – current height with stopwatch).

Note 1!

To make value changes (where available) press Enter. Arrows appear on both sides of the value:

```
Channel
>   8   <
```
```
ChNumber
>   8   <
```
```
Units
>metric<
```

Set the desired value using Left and Right buttons and confirm with Enter.

Note 2!

If there are no RC TRX30 HE units available on the current channel, related values will be replaced by dashes.

With no unit connected and no user interaction, the RC T2020 HE will turn off after 2 minutes – battery saver function!

```
H: ----
00:00:00
```

Turning the RC T2020 HE OFF

To turn the RC T2020 HE unit OFF, the "RIGHT/OFF" button needs to be pressed for approximately 4 seconds.

Charging

Charging of the RC T2020 HE is very simple and convenient as it can be charged using a common A to mini B USB cable. Because of well-designed built-in charger, there is no fear of overcharging the battery. Upon charging, the red LED near the mini USB connector on the bottom side of the RC T2020 HE housing is on. When fully charged, the LED is off.

> **Note!**
> Although the unit has sophisticated charger, it is strongly advised to disconnect the USB cable when charging is complete. This way, the battery lifespan will remain longer and the battery healthier.
> It is also important to check the unit's battery and recharge it if needed. If battery gets discharged too much, it may become unusable. In such case, the unit must be sent to service center for battery replacement.

Firmware update

- Download the latest firmware for the RC T2020 HE unit from our web site. Firmware should start with name RC_T2020_HE_vXXX.bin. XXX is version number (101 means v1.01).

- Connect the unit with a USB A to mini B cable to PC.

- Press right (OFF) button and hold it pressed. When OFF button is pressed, press and hold down left (ON) button. See figure 1.

- You can release OFF button, but ON button must be held pressed until the end of the firmware update.

- Wait for around 15 s and new disk drive (figure 2) will appear with firmware.bin file on it.

- Delete firmware.bin file and copy latest firmware file to this disk drive.

- When you see new FW file on this disk, you release the ON button and update is finished.

- Turn ON device and update is finished.
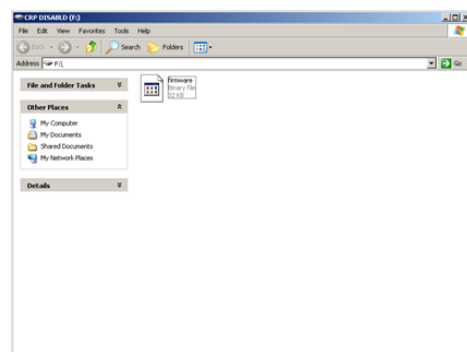

Figure 1: Left and Right buttons.

Figure 2: New disk drive.

Revision history

June 2012	Initial release of owner manual.