Radio Setup Checklist

Introduction

By now you should have charged your transmitter battery, calibrated the battery voltage reading on the Taranis, and performed stick calibration. You should also have read the **Taranis Quick Start Guide** (QSG) and know how to navigate the Taranis menu system. You don't need to know what everything does at this point, you just need to know how to move around in the menu structure. It wouldn't hurt for you to learn to use those two button press short cuts as well. They can save a lot of button pressing.

OK, if you are ready to go, it's time to adjust the rest of the radio settings prior to setting up your first model.

Lesson Goals

The goal for this lesson is to develop an understanding of the Radio Setup menus, and to provide detailed descriptions of all items on the main **Radio Setup** menu. It will also walk you through the other Radio Setup pages explaining how to make use of them.

Prerequisites

To complete this lesson, you should:

1. Have a charged battery in your Transmitter
2. Have OpenTX flashed to your Transmitter with OpenTX version 2.0x
3. Read the **Taranis Quick Start Guide** and understand basic menu navigation.

Background

Settings made in the **Radio Setup** menus are global, that is they remain the same for every model selected. Certain radio settings such as whether to use the internal or external module are model specific, so they are done in the **Model Setup** menu for each model. This lesson covers what you need to know to configure the Transmitters global parameters.

Steps/Checklist

> **NOTE:**
>
> Menu navigation is performed by pressing the menu keys. Some actions require a long press (**LP**) of the menu key others a short press (**SP**) of a menu key. In this and the lessons that follow menu key actions will be in the form of **LP** or **SP** and the key name(**MENU**, **PAGE**, **EXIT**, **+**, **-**, or **ENT**.

Radio Setup

1. Turn on your transmitter and clear any warning screens.
2. When you get to the main model screen, LP **MENU** to move to the **Radio Setup**.
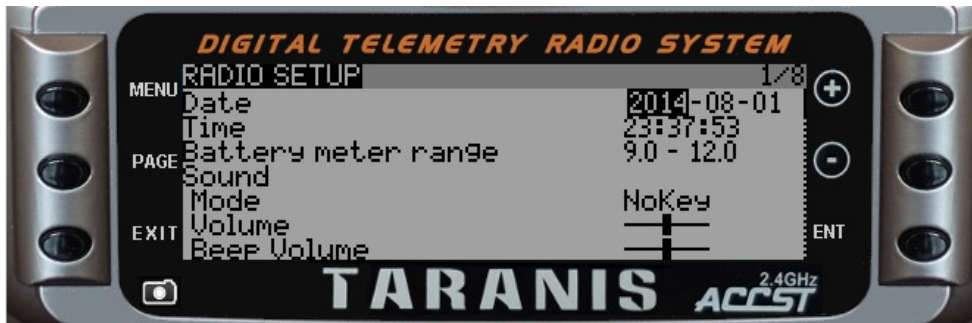
3. Radio Setup consists of 8 pages of entries. Press **"-"** to move down through the the entries one at a time. Pressing **+** moves up through the entries. Pressing **"+"** at the top of page 1/8 (one of eight) will take you to the bottom of page 8. Pressing **"-"** at the bottom of page 8 will take you to the top of page 1.

4. The image below is a combination of all 8 screens. Take the time to move up and down within **Radio Setup** to get the feel of navigating a multipage screen.
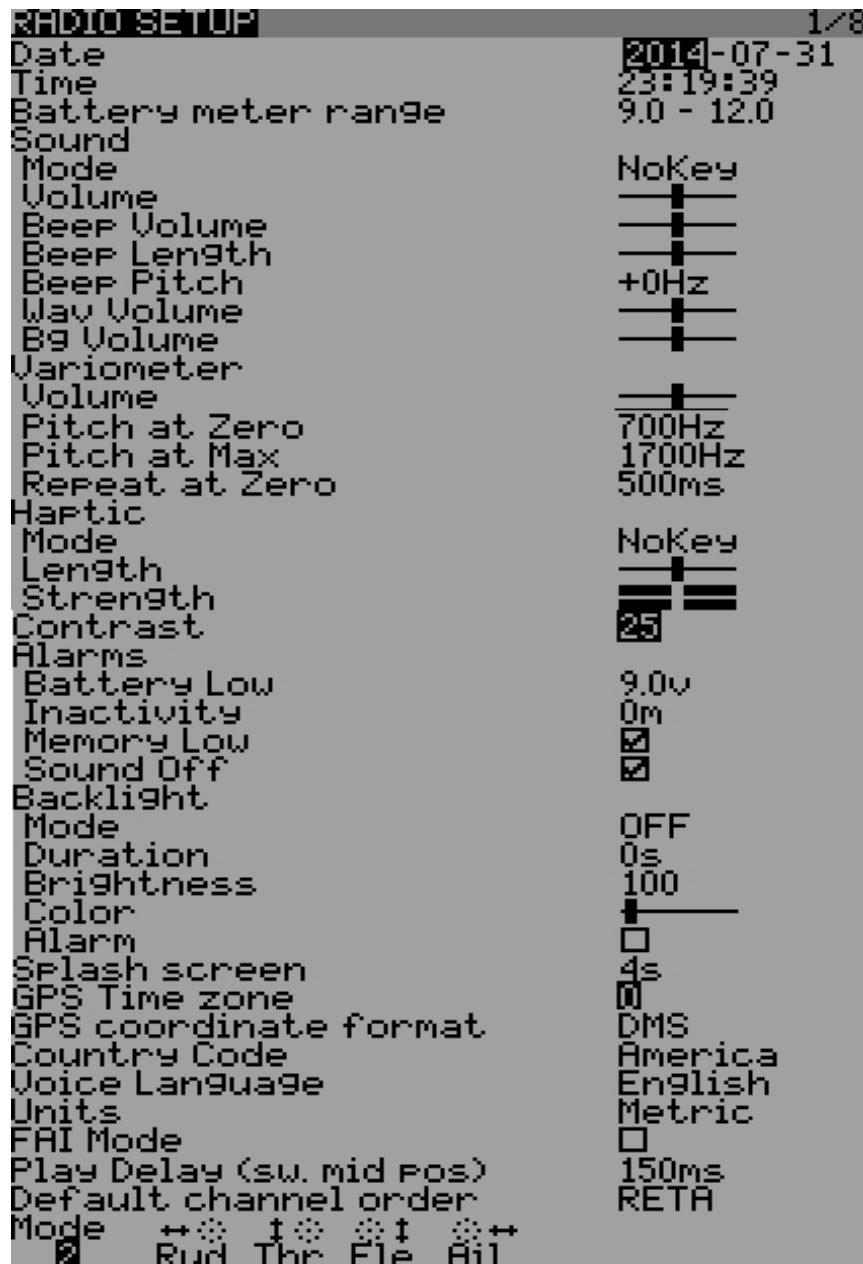
5. Go to the top of **Radio Setup** to **Date**. Press **ENT** to begin editing. Pressing the **"+"** and **"-"** keys will increase and decrease the year. Once the year is set, press **ENT** to finish entering the year then press **"-"** to move to the month. Press **ENT** to edit the month. Pressing the **"+"** and **"-"** keys will increase and decrease the month. Once the month is correct, press **ENT** then **"-"** again to finish editing month and move to day. Press **ENT** to edit the day. Set the day in the same manner you set the year and month. When you are finished press **ENT** then **"-"** to move to the hour of the day.

6. Time on the Taranis is kept in 24 hour time (sometimes called "military time"). For those of you who are unused to 24 hour time. Just remember 1 through 12 PM are entered as 13 through 24. Just add 12 to the PM time, and you have the hour. Now enter the time in the same way you entered the date. Press **ENT** to begin editing, press **"+"** and **"-"** to increase of decrease the entry, and press **ENT** again to finish editing. Press **"-"** to move to the next entry down the list. When you are finished entering the time, press **"-"** to move down to **Battery meter range**.

7. **Battery meter range** is used to set the low and high ends of the range of the graphical radio (transmitter) battery meter on the main screens. This setting only affects the battery meter display. Set the first number to the voltage where you consider your transmitter battery "empty" the second number is the maximum voltage of your transmitter battery when it is "full". The battery that comes shipped with the Taranis is a 6 cell NiMh (Nickle Metal Hydride) battery. When fully charged the battery will read about 8.4 volts and when most of it's useful charge is gone it will read about 6.6 volts although the battery will still work down to slightly lower than 6 volts before the transmitter shuts off. The battery meter is just an indication of the remaining capacity in the battery. I use 7.0 volts as the bottom of my meter and 8.4 volts at the top. If you use a 2 or 3 cell LiPo or LiFe battery, set the range to suit your battery. When finished setting the **Battery meter range** press **"-"** to move down to **Sounds**.

8. **Sounds** controls when you hear sounds (beeps, warnings, voice tracks, and background music) and how loud they are. The speaker on the Taranis is very small the volume it can output is relatively low. What may sound as a relatively loud sound in a quiet room, can be very quiet when you are out of doors. Adjust your volumes accordingly. Of course, the settings can always be changed.

   ○ **Mode** controls when sounds play. The options are: **All, NoKey, Alarm, and Quiet**.

     ▪ **All** plays all sounds

     ▪ **NoKey** plays all sounds except key presses

     ▪ **Alarm** only plays alarms such as low RSSI and battery warnings

     ▪ **Quiet** plays no sounds at all

   ○ **Volume** is a slider. It is the master volume control. All other volume controls are relative to the volume set here. (Example: Volume is set at half and Beep Volume at full. The maximum Beep Volume will be half.) To adjust Volume highlight it's slider and press **ENT**. The **"+"** and **"-"** keys increase and decrease the volume. When the slider is where you want it, press **ENT**. Then press **"-"** to move down to the next slider.

   ○ **Beep Volume** is just what the name implies. Adjust the slide to the volume you desire. If you want to hear the how loud the beep sound is, move down to the Wav Volume and move the slider all the way left or right. Each time a slide hits it's

"stops" it will beep. You can use this same technique to hear the differences in **Beep Length** and **Beep Pitch**.

- ○ **Beep Length** the length of time the beep tone is played. There are 5 settings from extra short to extra long. Adjust the slider to your preference.

- ○ **Beep Pitch** adjusts the pitch of the beep upward in 15 Hz increments. The tone can not be lowered below 0. Adjust the beep tone to your preference, then move down to **Wav Volume**.

- ○ **Wav Volume** controls the play back volume of mono sound track recordings in Waveform Audio File (wav) file format. These are the files played using the Play Track option in Special Functions.

- ○ **Bg Volume** controls the play back volume of wav files that are played using the Background Music option in Special Functions.

9. **Variometer** a variometer (or vario) is a device that reports the increase or decrease in altitude of an aircraft. The FrSky variometer sensor can do this as text on one of the telemetry screens, as audio alerts, and by increasing or decreasing the pitch of a tone. Variometer sensors are typically used on sailplanes, but modelers have found uses for them on other craft as well. If you do not have a variometer sensor, you can skip the **Variometer** settings and move down to **Haptic**.

   - ○ **Volume** adjusts the volume of the vario tones.

   - ○ **Pitch at Zero** is the pitch in Hz of the tone played when the vertical speed is between the **Sink Min** and **Climb Min** values defined in the **Telemetry** panel. The value can be set from 300 Hz up to 1100 Hz.

   - ○ **Pitch at Max** is the vario pitch at maximum vertical speed as defined in the **Telemetry** panel (**Climb Max**). The value can be set from 700 Hz up to 2900 Hz. As the rate of climb increases the pitch of the tone will increase linearly from the Pitch at Zero to the Pitch at Max. The Pitch at Max must always be greater than the Pitch at Zero.

   - ○ **Repeat at Zero** - The delay in milliseconds between beeps. The range is from 200 (5 beeps/sec) up to 1000 (1 beep/sec). Vario tone is continuous when below the **Sink Min** value defined in the **Telemetry** panel. The tone repeats at the **Repeat at Zero** rate when between the **Sink Min** and **Climb Min** values. When the vertical speed is above the **Climb Min** value the rate of the tone increases linearly to about 12.5 beeps per second (80 Ms) at **Climb Max** vertical speed.

10. **Haptic** is a tactile feedback option which can be added to the Taranis. Adding the new **Haptic** components to the Taranis requires intermediate to advanced level soldering skills. **Haptic** is built into the Taranis Plus which will be available "soon". If you do not have Haptic on your Taranis, you should skip down to **Contrast**.

    - ○ **Mode** controls when sounds play. The options are: **All, NoKey, Alarm, and Quiet**.

      - • **All** vibrates any time a sound would play.

      - • **NoKey** vibrates any time a sound would play except key presses

      - • **Alarm** only vibrates for alarms such as low RSSI and battery warnings

- • **Quiet** does not vibrate

11. **Contrast** adjusts the display contrast. The minimum is 0, the maximum is 45, and the default contrast is 25. Press **ENT** to edit the contrast. Press the **"+"** and **"-"** keys to get the contrast that's best for you, then press **ENT** to exit **Contrast** adjustment.

12. Alarms allows you to select which alarms alert you, and in some cases when.

   - ○ **Battery Low** allows you to set the alarm voltage for the transmitter battery. When the battery reaches this voltage you can be alerted by a voice alert or haptic (vibration) depending on your equipment and settings. A safe value for the 6 cell NiMh battery shipped with the Taranis is 7.0V. Adjust the value to suit your particular battery and preferences.

   - ○ **Inactivity** sets the time in minutes the Taranis can be inactive (no movement of sticks, buttons, sliders, etc.) before receiving a voice (and/or haptic) alert. A value of zero turns off the alert.

   - ○ **Memory** Low allows you to be notified when the Taranis begins to run low on memory. This is a handy alarm to have on if you run LUA scripts. The check mark will toggle each time you press **ENT**.

   - ○ **Sound Off** will alert you if you inadvertently turn off all sounds thereby blocking alarms. The check mark will toggle each time you press **ENT**.

13. **Backlight** allows you to select when the display backlight turns on, how long it stays on, and how bright it will be.

   - ○ Mode determines when the backlight turns on. The options are: **Off, Keys, Sticks, Keys + Sticks,** and **On**.

     - ▪ **Off** the backlight never turns on

     - ▪ **Keys** the backlight turns on any time you press one of the 6 menu buttons

     - ▪ **Sticks** the backlight turns on any time you move one of the sticks, or switches, but not the sliders or pots (S1 or S2)

     - ▪ **Keys + Sticks** the backlight turns on any time you press one of the 6 menu buttons or move a stick or switch.

     - ▪ **On** the backlight turns on and stays on

   - ○ **Duration** the length of time the backlight stays on after being activated (does not apply when the M**ode** is set to **On**).

   - ○ **Brightness** controls the brightness of the backlight. Values between 0 (backlight off) and 100 (full brightness). Adjust this setting to suit your preference.

   - ○ **Color** changes the color of the display (only available on the Taranis Plus)

   - ○ **Alarm** turns on the backlight when an alarm condition occurs. The check mark will toggle each time you press **ENT**.

14. **Splash Screen** the time the splash screen (the opening screen when the transmitter powers on) stays on in seconds.

15. **GPS Time zone** specifies Universal Time Coordinated (UTC) Offset for local longitudinal time zone (-12 through +12). For example the GPS Time zone for New York City is -5 except during Daylight Saving Time when it is -4.

16. **GPS coordinate format** the format in which GPS coordinates are displayed. The options are **DMS** and **NMEA**.

    ○ **DMS** displays the coordinates in degrees, minutes, and seconds

    ○ **NMEA** displays the coordinates in degrees and decimal minutes

17. **Country Code** sets the radio to be compliant with the regulations on your region. The options are **America, Japan,** and **Europe**.

18. **Voice Language** the language to be used for voice alerts. The default is English which is the only language shipped on the Taranis SD card. Other languages can be downloaded through the download function of Companion.

19. **Units** the units used in telemetry displays, and voice alerts. The options are **Imperial** (used in the USA and a few other countries) or **Metric** (used by the rest of the world).

20. **FAI Mode** disables all telemetry except RSSI and battery voltage (A1/A2) to comply with the FAI international rules for competition. Once enabled FAI Mode can not be changed without reloading the Taranis firmware. This option only appears if **FAI choice** is selected as part of the firmware options in Companion.

21. **Play Delay (sw. mid pos)** delays playing wav files associated with the mid position of 3 position switches when switching from one position to another, unless the switch remains in the mid position for longer than the time specified in milliseconds (1000ms = 1 second, 500ms=1/2 second, 330ms=1/3 second, etc). For example if you have wav files that play "High Rate", "Mid Rate", and "Low Rate" when switch A is in the top, mid, and bottom positions. Without a play delay, the "Mid Rate" file would play when switching A quickly from bottom to top. Setting Play Delay to 330ms would prevent "Mid Rate" from playing unless the switch lingered on the middle position for longer than 1/3 of a second.

22. **Default channel order** determines the order in which the four primary controls (Rudder, Elevator, Aileron, and Throttle) are inserted on channels 1-4 when creating a new model. Default channel order only determines the channel order assigned to the primary controls, and the order in which channels are assigned in the Trainer screen. Any order of the 4 primary controls (T, A, E, and R) can be selected. TAER is the default for Spektrum/JR, and AETR is the default for Futaba/Hitec,

23. **Mode** determines which sticks move which controls on the airplane. The vast majority of RC pilots use either Mode 1 or Mode 2. Click on Mode and change the values. You can see on the display how the controls assigned to the sticks change. Most pilots in Europe fly with Mode 1 (Elevator and Rudder on the left stick and Throttle and Aileron on the right stick), while most US pilots prefer Mode 2 (Rudder and Throttle on the left stick and Aileron and Elevator on the right stick). Mode 3 and 4 are available, but I never heard of anyone using them. Mode 3 reverses the stick assignments of Mode 2, and Mode 4 reverses the assignments of Mode 1. Pick the Mode you prefer and when done press **EXIT.**

NOTE:

Next class in this series "**Basic Airplane Set Up on Taranis**" class will be based on **Mode 2** with **AETR** as the **Default channel order**. If you set your transmitter up the same way now, the class will be much easier to follow. You can always change the **Mode** or **Default channel** order to something else later.

You are finished with Radio Setup. Your Taranis should light up, beep, and squawk just the way you want it to. If you don't like how something is setup, go back and change it. That's the

beauty of this radio. You can make it perform just the way you like.

That's all the hard work out of the way. Out of the 8 Radio Setup pages, you have already visited 3 of them. Radio Setup, Calibration, and Analog Inputs (where you set the battery calibration). Now it's time to take a look at the other Radio Setup pages, and discover more about your Taranis. Let's move on to the next lesson the Taranis **General Radio Settings**.