

# TOP QUELLEER 2.4GHZ

# Traxxas TQ 2.4GHz Instructions

#### Introduction

Thank you for purchasing the Traxxas TQ 2.4GHz radio system with Traxxas Link. The transmitter's easy-to-use design provides instant driving fun for new R/C enthusiasts, and also offers a full compliment of pro-level tuning features for advanced users – or anyone interested in experimenting with the performance of their model. The steering and throttle channels feature adjustable Exponential, End Points, and Sub-Trims. Steering and braking Dual Rate are also available. Many of the next-level features are controlled by the Multi-Function knob, which can be programmed to control a variety functions. The detailed instructions and Menu Tree (back page) included in this addendum will help you understand and operate the advanced functions of the new TQ 2.4GHz radio system. For additional information and how-to videos, visit Traxxas.com.

#### Important Radio System Precautions

- For maximum range, always hold the transmitter so the antenna is in a vertical position (pointing straight up). The transmitter's antenna can be swiveled and angled to allow for a vertical position if necessary.
- € Do not kink the receiver's antenna wire. Kinks in the antenna wire will reduce range.
- € DO NOT CUT any part of the receiver's antenna wire. Cutting the antenna will reduce range.
- Extend the antenna wire in the model as far as possible for maximum range. It is not necessary to extend the antenna wire out of the body, but wrapping or coiling the antenna wire should be avoided.
- Do not allow the antenna wire to extend outside the body without the protection of an antenna tube, or the antenna wire may get cut or damaged, reducing range. Always keep the wire protected (in the antenna tube) to prevent the chance of damage.

#### **Installing Transmitter Batteries**

Your TQ 2.4GHz transmitter uses 4 AA batteries. The battery compartment is located in the base of the transmitter.

- Remove the battery compartment door by pressing the tab and lifting the door up.\*
- 2. Install the batteries in the correct orientation as indicated in the battery compartment.
- 3. Reinstall the battery door and snap it closed.
- **4.** Turn on the transmitter and check the status indicator for a solid green light.



If the status LED flashes red, the transmitter batteries may be weak, discharged or possibly installed incorrectly. Replace with new or freshly charged batteries. The power indicator light does not indicate the charge level of the battery pack installed in the model. Refer to the

Troubleshooting section on page 3 for more information on the transmitter's Status LED codes.



#### TQ 2.4GHz Radio System Basic Adjustments

#### Steering Trim

The electronic steering trim located on the face of the transmitter adjusts the neutral (center) point of the steering channel.



#### **Multi-Function Knob**

The Multi-Function knob can be programmed to control a variety of functions. From the factory, the Multi-Function knob controls steering sensitivity, also known as exponential or "expo." When the knob is turned counterclockwise all

the way to the left (default position), expo is off and steering sensitivity will be linear (the most commonly used setting). Turning the knob clockwise will "add expo" and decrease the steering sensitivity in the initial range of steering wheel travel left or right from center. For more detail on steering exponential, refer to page 2.

#### **Throttle Neutral Adjustment**

The throttle neutral adjustment is located on the transmitter face and controls the forward/reverse travel of the throttle trigger. Change the adjustment by pressing the button and sliding it to the desired position. There are two settings available:



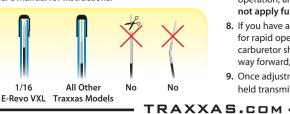
50/50: Allows equal travel for both acceleration and reverse. 70/30: Allows more throttle travel (70%) and less reverse travel (30%).

We strongly recommend to leave this control in its factory location until you become familiar with all the adjustments and capabilities of your model.

**Note:** 50/50 is the default factory setting and the required setting for Traxxas nitro models. To change the throttle neutral adjust position for an electric model, turn the transmitter off before adjusting the neutral position. **You will need to reprogram your electronic speed control to recognize the 70/30 setting. See your Owner's Manual for instructions.** 



To prevent loss of radio range do not kink or cut the black wire, do not bend or cut the metal tip, and do not cut the white wire at the end of the metal tip.





# Compartment TQ 2.4GHz Receiver

Battery



\*\* Model #2208 4-Channel transmitter only

Menu Button

Red/Green Status LED

see page 3 for more info

#### Using the TQ 2.4GHz Radio System

The TQ 2.4GHz Radio System has been pre-adjusted at the factory. The adjustment should be checked before running the model, in case of movement during shipping. Here's how:

- 1. Turn the transmitter switch on. The status LED on the transmitter should be solid green (not flashing).
- 2. If you have an electric model, elevate the model on a block or a stand so that all the tires are off the ground. Make sure your hands are clear of the moving parts of the model.
- 3. If you have an electric model, plug the battery pack in the model into the speed control.
- 4. Switch the receiver on. Do this with a nitro vehicle by switching the on/off switch to "on." If you have an electric vehicle, you must turn the speed control on to power the receiver. The on/off switch is integrated into the speed control. With the transmitter on, press and release the ESC button (.25 seconds). The LED will shine indicating the model is on.
- 5. Turn the steering wheel on the transmitter back and forth and check for rapid operation of the steering servo. Also, check that the steering mechanism is not loose or binding. If the steering operates slowly, check for weak batteries.
- 6. When looking down at model, the front wheels should be pointing straight ahead. If the wheels are turned slightly to the left or right, slowly adjust the steering trim control on the transmitter until they are pointing straight ahead.
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- 7. Gently operate the throttle trigger to ensure that you have forward and reverse operation, and that the motor stops when the throttle trigger is at neutral. Warning: Do not apply full throttle in forward or reverse while the model is elevated.
- 8. If you have a nitro model, operate the throttle trigger on the transmitter and check for rapid operation of the throttle servo. When the throttle trigger is pulled back, the carburetor should open (slide moves out). When the throttle trigger is pushed all the way forward, the brake should lock.
- Once adjustments are made, turn off the receiver on your model, followed by the handheld transmitter.

\*Always keep your Quick Reference Guide in your transmitter

#### Range-Testing the Radio System

Before each running session with your model, you should range-test your radio system to ensure that it operates properly.

- 1. Turn on the radio system and check its operation as described in the previous section.
- 2. Have a friend hold the model. Make sure hands and clothing are clear of the wheels and other moving parts on the model.
- Make sure your transmitter antenna is fully extended, and then walk away from the model with the transmitter until you reach the farthest distance you plan to operate the model.
- Operate the controls on the transmitter once again to be sure that the model responds correctly.
- 5. Do not attempt to operate the model if there is any problem with the radio system or any external interference with your radio signal at your location.

#### • Higher Speeds Require Greater Distance

The faster you drive your model, the more quickly it will near the limit of radio range. At 60mph, a model can cover 88 feet every second! It's a thrill, but use caution to keep your model in range. If you want to see your model achieve its maximum speed, it is best to position yourself in the middle of the truck's running area, not the far end, so you drive the truck towards and past your position. In addition to maximizing the radio's range, this technique will keep your model closer to you, making it easier to see and control.

No matter how fast or far you drive your model, always leave adequate space between you, the model, and others. Never drive directly toward yourself or others.

#### TQ 2.4GHz Binding Instructions

For proper operation, the transmitter and receiver must be electronically 'bound.' **This has been done for you at the factory.** Should you ever need to re-bind the system or bind to an additional transmitter or receiver, follow these instructions. **Note:** the receiver must be connected to a 4.8-6.0v (nominal) power source for binding and the transmitter and receiver must be within 5 feet of each other.

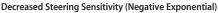
- Press and hold the transmitter's SET button as you switch transmitter on. The transmitter's LED will flash red slowly. Release the SET button.
- $\textbf{2.} \ \textit{Press and hold the receiver's LINK button as you switch the model on. Release the LINK button.}\\$
- When the transmitter and receiver's LEDs turn solid green, the system is bound and ready for use. Confirm that the steering and throttle operate properly before driving your model.

#### Steering Sensitivity (Exponential)

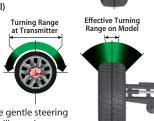
The Multi-Function knob on the TQ 2.4GHz transmitter has been programmed to control Steering Sensitivity (also known as exponential). The standard setting for Steering Sensitivity is "normal (zero exponential)," with the dial full left in its range of travel. This setting provides linear servo response: the steering servo's movement will correspond exactly with the input from the transmitter's steering wheel. Turning the knob clockwise from center will result in "negative exponential" and decrease steering sensitivity by making the servo less responsive near neutral, with increasing sensitivity as the servo nears the limits of its travel range. The farther you turn the knob, the more pronounced the change in steering servo movement will be. The term "exponential" comes from this effect; the servo's travel changes exponentially relative to the input from the steering wheel. The exponential effect is indicated as a percentage—the greater the percentage, the greater the effect. The illustrations below show how this works.

#### Normal Steering Sensitivity (0% exponential)

In this illustration, the steering servo's travel (and with it, the steering motion of the model's front wheels) corresponds precisely with the steering wheel. The ranges are exaggerated for illustrative purposes.



By turning the Multi-Function knob clockwise, the steering sensitivity of the model will be decreased. Note that a relatively large amount of steering wheel travel results in a smaller amount of servo travel. The farther you turn the knob, the more pronounced the effect becomes. Decreased steering sensitivity may be helpful when driving on low-traction surfaces, when driving at high



Turn

Transmitter OFF

Hold both

MENU and SET

Hold both MENU and SET

Hold both

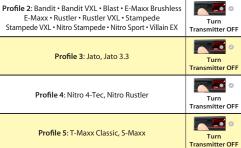
MENU and SET

speed, or on tracks that favor sweeping turns where gentle steering inputs are required. The ranges are exaggerated for illustrative purposes.

Experiment! Try varying degrees of exponential. It's easy to go back to "zero" if you don't like the effect. There's no wrong way to adjust exponential. Any setting that makes you more comfortable with your car's handling is the "right setting."

#### **Selecting Your Model Profile** (Resetting to Defaults)

The TQ 2.4 GHz system has been programmed with servo reversing profiles for use with current Traxxas models. Find your model on this chart and follow the steps to set the default transmitter settings for your model. The settings for servo direction will be set, but you may need to adjust the trim and endpoint settings for the steering and throttle channels. Should you ever need restore your transmitter to the default settings for your model, use the steps described in this chart. See the next page for using the Traxxas TQ 2.4GHz radio system with non-Traxxas models.



Profile 1: 1/16th E-Revo • 1/16th E-Revo VXL

1/16th Slash 4WD • 1/16th Slash VXL 4WD

E-Revo Brushless • E-Revo • Revo • Revo 3.3

Slash • Slash 4X4 • Slayer • Summit • T-Maxx 3.3

# TQ 2.4GHz Advanced Tuning Guide

Your Traxxas transmitter has a programmable Multi-Function knob that can be set to control various advanced transmitter functions. Accessing the programming menu is done by using the menu and set buttons on the transmitter and observing signals from the LED. An explanation of the menu structure follows. Experiment with the settings and features to see if they can improve your driving experience. See the Menu Tree on page 4 for more information.

#### Throttle Sensitivity (Throttle Exponential)

The Multi-Function knob can be set to control Throttle Sensitivity. Throttle Sensitivity works the same way as Steering Sensitivity as described above, but applies the effect to the throttle channel. Only forward throttle is affected; brake/reverse travel remains linear regardless of the Throttle Sensitivity setting.

#### Steering Percentage (Dual Rate)

The Multi-Function knob can be set to control the amount (percentage) of servo travel applied to steering. Turning the Multi-Function knob fully clockwise will deliver maximum steering throw; turning the knob counter-clockwise reduces steering throw (note: turning the dial counter-clockwise to its stop will eliminate all servo travel). Be aware that the steering End Point settings define the servo's maximum steering throw. If you set Steering Percentage to 100% (by turning the Multi-Function knob fully clockwise), the servo will travel all the way to its selected end point, but not past it. Many racers set Dual Rate so they have only as much steering throw as they need for the track's tightest turn, thus making the car easier to drive throughout the rest of the course. Reducing steering throw can also be useful in making a car easier to control on high-traction surfaces, and limiting steering output for oval racing where large amounts of steering travel are not required.

#### **Braking Percentage**

The Multi-Function knob may also be set to control the amount of brake travel applied by the servo in a nitro-powered model. Electric models do not have a servo-operated brake, but the Braking Percentage function still operates the same way in electric models. Turning the Multi-Function knob full clockwise will deliver maximum brake throw; turning the knob counter-clockwise reduces brake throw (Note: Turning the dial counter-clockwise to its stop will eliminate all brake action).

#### **Throttle Trim**

Setting the Multi-Function knob to serve as throttle trim will allow you to adjust the throttle's neutral position to prevent unwanted brake drag or throttle application when the transmitter trigger is at neutral. **Note**: Your transmitter is equipped with a Throttle Trim Seek mode to prevent accidental runaways. See below for more information.



## Throttle Trim Seek Mode

When the Multi-Function knob is set to throttle trim, the transmitter remembers the throttle trim setting. If the throttle trim knob is moved from the original setting while the transmitter is off, or while the transmitter was used to control another model, the transmitter ignores the actual position of the trim knob. This prevents the model from accidentally running away. The LED on the face of the transmitter will rapidly blink green and the throttle trim knob (Multi-Function knob) will not adjust the trim until it is moved back to its original position saved in memory. To restore throttle trim control, simply turn the multi-function knob either direction until the LED stops blinking.

#### Steering and Throttle End Points

The TQ 2.4GHz transmitter allows you to choose the limit of the servo's travel range (or its "end point") independently for left and right travel (on the steering channel) and throttle/brake travel (on the throttle channel). This allows you to fine-tune the servo settings to prevent binding caused by the servo moving steering or throttle linkages (in the case of a nitro car) farther than their mechanical limits. The end point adjustment settings you select will represent what you wish to be the servo's maximum travel; the Steering Percentage or Braking Percentage functions will not override the End Point settings.

#### Steering and Throttle Sub-Trim

Turn

Transmitter ON

•

Turn

Transmitter ON

The Sub-Trim function is used to precisely set the neutral point of the steering or throttle servo in the event that simply setting the trim knob to "zero" does not completely center the servo. When selected, Sub-Trim allows finer adjustment to the servo output shaft's position for precise setting of the neutral point. Always set the Steering Trim knob to zero before making final adjustment (if required) using Sub-Trim. If Throttle Trim has been previously adjusted, the Throttle Trim will need to be reprogrammed to "zero" before making final adjustment using Sub-Trim.

### Disabling the Multi-Function Knob (Setting Lock)

Once you've adjusted all of these settings the way you like them, you may want to disable the Multi-Function knob so none of your settings can be changed. This is especially handy if you operate multiple vehicles with a single transmitter via Traxxas Link.





Press SET to clear settings. LED will turn

Hold both
MENU and SET

Hold both
MENU and SET

Turn
Release MENU and
SET red LED blinks

Release MENU and
MENU and SET

Turn
Release MENU and
SET red LED blinks

Release MENU and
MENU and SET

Turn
Release MENU and
SET red LED blinks

red LED blinks

red LED blinks

red LED blinks

Release MENU and

SET red LED blinks

Release MENU and

SET red LED blinks



Press SET to clear settings. LED will turn solid green. Transmitter is restored to default



Press SET to clear settings. LED will turn solid green. Transmitter is restored to default

2

#### Multiple Settings and the Multi-Function Knob

It is important to note that settings made with the Multi-Function knob are "overlaid" on top of each other. For example, if you assign the Multi-Function to adjust Steering Percentage and set it for 50%, then reassign the knob to control Steering Sensitivity, the transmitter will "remember" the Steering Percentage setting. Adjustments you make to Steering Sensitivity will be applied to the 50% steering throw setting you selected previously. Likewise, setting the Multi-Function knob to "disabled" will prevent the knob from making further adjustments, but the last setting of the Multi-Function knob will still apply.



#### Failsafe

Your Traxxas radio system is equipped with a built-in failsafe function that returns the throttle to its last saved neutral position in the event of a signal loss. The LED on the transmitter and the receiver will rapidly flash red.

#### Traxxas Link

Traxxas Link is an exclusive, patent-pending feature of the TQ 2.4GHz transmitter. Each time the transmitter is bound to a new receiver, it saves that receiver in its memory along with all the settings assigned to that receiver. When the transmitter and any bound receiver are switched on, the transmitter automatically recalls the settings for that receiver. There is no need to manually select your vehicle from a list of model memory entries.

#### **Model Lock**

The Traxxas Link feature can store up to twenty models (receivers) in its memory. If you bind a twenty-first receiver, Traxxas Link will delete the "oldest" receiver from its memory (in other words, the model you used the longest time ago will be deleted). Activating Model Lock will lock the receiver in memory so it cannot be deleted.

You may also bind multiple Traxxas Link transmitters to the same model making it possible to pick up any transmitter and any previously bound model in your collection and simply turn them on and drive. With Traxxas Link, there is no need remember which transmitter goes with which model and there is never a need to have to select any model from a list of model memory entries. The transmitter and receiver do it all for you automatically.

#### To activate Model Lock:

- 1. Switch on the transmitter and receiver you wish to lock.
- 2. Press and hold MENU. Release when the status LED blinks green.
- 3. Press MENU three times. The status LED will blink green four times repeatedly.
- 4. Press SET. The status LED will blink green in single-flash intervals.

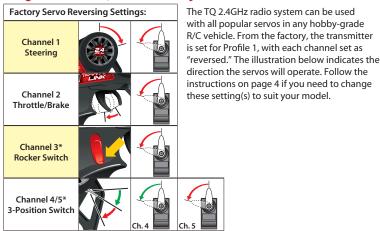
- 5. Press SET once. The status LED will blink red once repeatedly.
- 6. Press MENU once, the LED will blink red twice repeatedly.
- 7. Press SET, the LED will blink rapidly green. The memory is now locked. Press MENU and SET to return to driving mode. **Note**: To unlock a memory, press SET twice at step 5. The LED will blink rapidly green to indicate the model is unlocked. To unlock all models, press MENU twice at step 6 and then press SET.

#### To delete a model

At some point, you may wish to delete a model you no-longer drive from the memory.

- 1. Switch on the transmitter and receiver you wish to delete.
- 2. Press and hold MENU. Release when the status LED blinks green.
- 3. Press MENU three times. The status LED will blink green four times repeatedly.
- 4. Press SET once. The status LED will blink green once repeatedly.
- 5. Press MENU once. The status LED will blink green twice repeatedly.
- Press SET. The memory is now selected to be deleted. Press SET to delete the model. Press and hold MENU to return to driving mode.

#### Using the Traxxas TQ 2.4GHz Radio System with non-Traxxas Models



\* Model #2208 4-Channel transmitter only

#### TRANSMITTER LED CODES

LED Color / Pattern		Name	Notes
•	Solid green	Normal Driving Mode	See page 1 for information on how to use your transmitter controls.
<b>*</b> •	Slow red (0.5 sec on / 0.5 sec off)	Binding	See page 2 for more information on binding.
**	Flashing fast green (0.1 sec on / 0.15 sec off)	Throttle Trim Seek Mode	Turn the Multi-Function knob right or left until the LED stops flashing. See above for more information.
*	Flashing medium red (0.25 sec on / 0.25 sec off)	Low Battery Alarm	Put new batteries in the transmitter. See page 1 for more information.
* *	Flashing fast red (0.125 sec on / 0.125 sec off)	Link Failure / Error	Transmitter and receiver are no longer bound. Turn the system off and then back on to resume normal operation. Find source of the link failure (ie: out of range, low batteries, damaged antenna).
Programming Patterns			
<b>₩</b> or <b>₩</b>	Counts out number (green or red) then pauses	Current menu position	See Menu Tree for more information.
<b>₩ x8</b>	Fast green 8 times	Menu setting accepted (on SET)	
<b>₩</b> x8	Fast red 8 times	Menu SET invalid	User error such as trying to delete a locked model.

#### RECEIVER LED CODES

LED Cold		/ Pattern	Name	Notes
	•	Solid green	Normal Driving Mode	See page 1 for information on how to use your transmitter controls.
	<b>*</b> •	Slow red (0.5 sec on / 0.5 sec off)	Binding	See page 2 for more information on binding.
	* *	Flashing fast red (0.125 sec on / 0.125 sec off)	Fail-Safe / Low Voltage Detect	Consistent Low Voltage in the receiver triggers Fail-Safe so there is enough power to center the

#### Warranty Information

Traxxas warrants your Traxxas electronic components to be free from defects in materials or workmanship for a period of thirty (30) days from the date of purchase. Before returning any product for warranty service, please contact our service department (1-888-TRAXXAS)\* to discuss the problem you are having with the product. After contacting Traxxas, send the defective unit along with your proof of purchase indicating the date purchased, your return address, e-mail, a daytime phone number, and a brief description of the problem to:

#### Traxxas 1100 Klein Road Plano, TX 75074

#### Detailed Limitations for Electronic Components:

- Allowing water, moisture, or other foreign material to enter the component or get onto the PC board.
- Exceeding the maximum input voltage of the electronic component.
   Reverse voltage application.
- Reverse voltage application.
   Incorrect installation or wiring.
- Components worn from use
- Splices to the input or switch harnesses.
- Disassembling the case
   Evensive force when as
- Excessive force when adjusting, pressing, or turning any of the controls.
   Tampering with the internal electronics.
- Incorrect wiring of an FET servo.
- Allowing exposed wiring to short circuit.
  Any damage caused by crash, flooding, or act of God.

#### Limitations

Any and all warranty coverage does not cover replacement of parts and components damaged by abuse, neglect, improper or unreasonable use, crash damage, water or excessive moisture, chemical damage, improper or infrequent maintenance, accident, unauthorized alteration or modification, or items that are considered consumable. Traxxas will not pay for the cost of shipping or transportation of a defective component from you to us.

# Limitations of Liability

Traxxas makes no other warranties expressed or implied. Traxxas shall not be liable for any special, indirect, incidental, or consequential damages arising out of the assembly, installation, or use of their products or any accessory or chemical required to use their products. By the act of operating/using the product, the user accepts all resulting liability. In no case shall Traxxas' liability exceed the actual purchase price paid for the product. Traxxas reserves the right to modify warranty provisions without notice. All warranty claims will be handled directly by Traxxas. The Traxxas warranty gives the customer specific legal rights and possibly other rights that vary from state to state. The customer is required to fill out and return the Registration Card enclosed with the product as a condition of the coverage and performance of the warranty. All dollar amounts stated are in United States dollars. The term "lifetime" shall refer to the product's production life at Traxxas. Traxxas is not obligated to provide upgraded products at a reduced rate when a previous product's production cycle has ended.

#### Traxxas Extended Lifetime Electronics Warranty:

After the expiration date of the free warranty period, Traxxas will repair electronic components for a flat rate. The electronic products covered by this extended service plan include electronic speed controls, transmitters, receivers, servos, and battery chargers. Motors, batteries, and mechanical speed controls are not covered. The covered repairs are limited to non-mechanical components that have NOT been subjected to abuse, misuse, or neglect. Products damaged by intentional abuse, misuse, modification, or neglect, may be subject to additional charges. Visit Traxxas.com or call 1-888-TRAXXAS (1-888-872-9927) for details on extended warranty service and rates.

# FCC Compliance

This device complies with the limits for a Class B digital device as described in part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The limits for a Class B digital device are designed to provide reasonable protection against harmful interference in residential settings. This product generates, uses and can radiate radio frequency energy, and, if not operated in accordance with the instructions, may cause harmful interference to radio communications.

The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

\*U.S. customers only.

