#### TTX404 2.4GHz 4-Channel Spread Spectrum Radio

# INSTRUCTION MANUAL

The Tactic TTX404 radio system uses 2.4GHz spread spectrum technology, and automatically selects and shifts between frequencies in the 2.4GHz band very rapidly. This prevents unwanted outside interference from interrupting control of the model, ensuring error-free flying and eliminates the need to pull frequency pins before every flight. Tactic 2.4GHz transmitters and receivers are not compatible with other brand 2.4GHz equipment.



For safe operation and best results, it's strongly recommended to completely read this manual before use! Also read and understand the instructions included with the model. Damage resulting from misuse or modification will void your warranty.

#### **FEATURES**

- \* 2.4GHz Spread Spectrum Technology
- \* Transmitter can bind to multiple Tactic 2.4GHz receivers
- \* Includes tiny, lightweight 6-channel receiver
- \* Built-in failsafe and wireless trainer function
- \* Analog and digital trims with servo reversing
- \* Power status LED and built-in charge jack

# TTX404 TRANSMITTER (Tx)

Four "AA" batteries are required to power the transmitter. Non-rechargeable alkaline or rechargeable nickel-cadmium (NiCd) or nickel-metal hydride (NiMH) cells can be used. Do not mix old and new cells, or mix non-rechargeable alkaline cells with rechargeable NiCd or NiMH cells, etc. See the SERVOS AND ACCESSORIES section at the end of this manual for battery options available at local hobby retailers.

To install the batteries, slide open the battery door on the rear of the Tx (see figure 1). Install the batteries in the holder as shown in the diagram (see marks molded inside the case). Make sure to note the proper polarities on each cell. Close the battery door.

**POWER SWITCH AND LED INDICATOR:** The power status LED should turn on when the power switch is moved to the "ON" position. The transmitter should have good power for flight if the LED is on solid. If the power LED is flashing it's an indication that the internal batteries are weak. Never attempt to fly a model if the LED is flashing! Make sure to replace alkaline batteries that are weak. Or, if using optional NiCd or NiMH rechargeable batteries, fully charge the batteries before attempting a flight. If the power LED begins to flash during a flight the aircraft should be landed as soon as possible!



IMPORTANT: Do not operate an R/C model with weak batteries as it could result in reduced range and/or possible loss of control of the aircraft! Replace weak alkaline batteries before attempting a flight! Rechargeable batteries should be fully recharged prior to each flight!

**AILERON (CH1, left/right):** Controls the moveable surfaces at the end of both main wings. With the aileron reversing switch in the NORMAL position, moving the aileron stick to the right will cause the airplane's right wing to drop and the airplane will bank to the right. Moving the aileron stick to the left will cause the airplane's left wing to drop and the airplane will bank to the left. This is one important function for turning the aircraft.

**ELEVATOR (CH2, up/down):** Controls the moveable surfaces on the horizontal section of the airplane's tail. With the elevator reversing switch in the NORMAL position, pulling the elevator stick back (towards you) will cause the nose of the airplane to rise. Pushing the elevator stick forwards (towards the antenna) will cause the nose of the airplane to drop. When using the ailerons to bank the airplane's wings, pulling the elevator stick back will help to turn the aircraft more quickly.

**THOTTLE (CH3, up/down):** Controls the speed (R.P.M.) at which the engine or electric motor operates. With the throttle reversing switch in the NORMAL position, pulling the throttle stick back (towards you) will cause the engine's speed to be at minimum. Pushing the throttle stick forward (towards the antenna) will cause the engine's speed to be at maximum.

**RUDDER (CH4, left/right):** Controls the direction of the tail of the airplane. With the rudder reversing switch in the NORMAL position, moving the rudder stick to the right will cause the airplane's tail to move right. Moving the rudder stick to the left will cause the airplane's tail to move left.

**TRIMS:** Each channel also includes a "trim" lever, located adjacent to the respective stick. Trims for the aileron, elevator, and rudder channels are used to finely adjust the moveable surfaces in the aircraft. Ideally, when the sticks are released during a flight and allowed to spring back to center position, the aircraft should not veer in any direction on its own. If the aircraft does veer, slightly move the trim lever for the respective control surface until the aircraft no longer veers in any unwanted direction.

Moving the throttle trim lever slightly up or down will finely adjust the engine or motor at low speeds. For safety reasons, it's a good idea to use throttle trim when controlling engine/motor speed when the aircraft is on the ground. For aircraft with glow engines, the precise position of the trim lever is helpful when determining the engine's preferred idle point.

The trims for the aileron, elevator, and rudder channels are digital. The black levers for these trims can be pushed either side of the center position. Each push of the button will cause the output of the respective servo to finely rotate one position.

**REVERSING SWITCHES:** Four reversing switches are built into the Tx, one for each channel. Each switch can reverse the rotational direction of the servo that is connected to the respective channel. This is often a much easier method for changing the direction of a servo's movement as opposed to altering the mechanical connections between the model's surface and the servo.

### **CHARGE JACK**

The TTX404 includes a built-in charge jack located on the right side for convenient recharging of NiCd or NiMH batteries. Do NOT attempt to recharge alkaline batteries! This charge jack is compatible with charge leads designed for Futaba® brand transmitters (incompatible with charge leads for Hitec, Airtronics, JR or Spektrum radios).

To use the charge jack with optional NiCd or NiMH batteries, make sure the transmitter's power switch is in the OFF position. Connect a compatible charge lead to the jack and follow the instructions included with the charger for charging of NiCd or NiMH batteries rated at 4.8V. It's not recommended to charge batteries at greater than 1 amp through this charge jack. It's strongly recommended to re-insert the cap back into the jack when not in use.

#### TRAINER FUNCTION

The TTX404 transmitter includes a built-in **wireless** trainer function – no trainer cable required! This trainer system connects the teacher's radio to the student's radio by wireless connection. One Tactic TTX404 transmitter's trainer function is compatible with other Tactic brand transmitters which also include the wireless trainer function. But Tactic's wireless trainer function is not compatible with trainer systems in any other brand radios.

To use the trainer function:

- 1. The teacher and the student must have a Tactic radio that includes the wireless trainer function.
- 2. The teacher's transmitter must be held within 1 meter of the student's transmitter to bind them together. (The teacher's Tx can be binded together with only one student transmitter at a time.)
- 3. Pull the trainer switch on the teacher's transmitter, and then turn on the teacher's transmitter.
- 4. The teacher's transmitter should blink 3 times to indicated it has become binded to the student's transmitter. Once this occurs, release the teacher's trainer switch.

# TR624 RECEIVER OPERATION AND INSTALLATION

**RECEIVER (Rx):** Mount the TR624 receiver as specified in your model's instructions. It's important to keep the Rx as far away from the engine/motor, servos, and ESC and other electronic items as possible. To prevent the receiver from becoming damaged, it might be acceptable to attach it inside certain models using Velcro®. In certain cases, wrapping the receiver with foam rubber can help to prevent damage from occurring due to vibration, but foam rubber can prevent adequate airflow from passing over the receiver in warm environments which might not be recommended. Additional Tactic receivers can be purchased from your local retailer (part number TACL0624) that will also work with the transmitter included with this system.

**SERVOS:** CENTER THE TRIMS on the Tx. Mount the servos inside the model, and connect the linkages to the servo using an appropriate length servo arm.

All servos should be mounted as shown in the model's instructions. Use rubber grommets, screws and brass eyelets supplied when mounting your servos (see figure 5). Do NOT over-tighten the mounting screws. The servos should be able to move slightly to compensate for engine vibration. Use a servo horn long enough to accommodate the entire range of movement for that particular control. When mounting the servos, make sure the pushrods are not too loose or bind in anyway. Pushrods should be capable of operating the full range of the servo. This can be tested by moving the Tx sticks

to maximum positions several times while observing the movement of the control services. If a servo is binding or sticks in flight, it should be re-adjusted so not to drain excessive current from the battery and thus shorten flight time.

Connect the servos to the receiver as shown in Figure 4. Route the wires so they do not interfere with any moving parts. Slide the transmitter's trim levers to finely adjust the servo's center point as needed to match the installation. See the SERVOS AND ACCESSORIES section at the end of this manual for a full list of optional servos.

**ELECTRONIC SPEED CONTROL (ESC):** If the model is electric powered, an optional electronic speed control will be necessary to control speed of the electric motor. Connect the receiver plug on the ESC to the slot marked CH3 (throttle) on the receiver. Center the transmitter's throttle trim and follow the ESC instructions for proper operation and connection of the power battery.

**GLOW POWERED AIRCRAFT:** If the model is powered by a glow engine, a switch harness and 4-cell battery (4.8V) will be necessary to power the receiver and servos. See the SERVOS AND ACCESSORIES section for suggested options.

**ON/OFF POWER SWITCHES AND BATTERIES:** Refer to the model's instructions for the preferred way to mount the on/off power switch and battery. It's often necessary to locate the battery in a specific position to optimize the model's center of gravity. Always locate a model's on/off switch in a location well away from the model's propeller. For glow models, locate the switch away from the engine's exhaust.

To mount an on/off power switch inside an airplane, cut a hole in the side of the fuselage large enough to allow the switch's lever to move freely from end-to-end. If the switch harness includes mounting screws, be sure not to cut the hole so long that would prevent the mounting screws from being installed firmly.

A switch harness with charge lead is included with the TTX404 Radio System for glow applications. This switch harness includes three leads. As shown in figure ??, one lead connects to the receiver's "BAT" socket. Another lead connects to the battery. The final lead connects to the battery charger for recharging the battery through the switch harness without having to remove the battery from the model.



IMPORTANT! Always make sure that power is applied to the transmitter FIRST, and that the throttle stick is at minimum position. Once this is confirmed, then turn on the power switch for the receiver. Failure to do so could result in the model becoming uncontrollable and cause a safety hazard.

# BIND THE RECEIVER TO THE TRANSMITTER

For proper operation of the TTX404 transmitter and receiver system, it is necessary to "bind" them together electronically. This ensures sole communication between the two, and prevents other transmitters from being able to control the receiver. To bind the Tx and Rx:

- 1. Turn on the transmitter.
- 2. Apply power to the receiver.
- 3. If the receiver's LED flashes once and then stays on, the Rx is already bound to the Tx and you can skip to the next section. Otherwise, insert a small diameter screwdriver through the hole marked "BIND" and press the pushbutton until the LED glows red and then turns off after about one second.
- 4. Release the "BIND" button.
- 5. If the binding is successful, the Rx LED will flash once and then remain ON.
- 6. Test for proper Tx / Rx functionality in the next section. If the radio doesn't appear to have become properly binded, repeat steps 1-6 above.

# SYSTEM CHECK AND OPERATION



**IMPORTANT!** During all pre-flight preparations with the aircraft on the ground, make sure the throttle stick remains at the minimum position and do not stand the transmitter upright on the ground. Make sure to carefully place the Tx on its back on the ground! This will prevent the transmitter from falling over and possibly dislodging the throttle stick from the low position and causing a safety hazard. Make sure all devices are properly mounted inside the model, and all wiring connections are solid to prevent them from easily becoming dislodged during normal flight. It's best to check the system with the propeller removed from the aircraft.

- 1. Once all connections are made, it's time to check the general operation of the radio and all other components before attempting a flight.
- 2. Move the transmitter's throttle stick to the minimum position.

- 3. Turn on the transmitter, and then the receiver.
- 4. Make sure all servos are rotating in the proper direction. If any servo is turning in the wrong direction, change the position of the reversing switch for that particular channel (refer to the model's instructions if necessary).
- 5. With both sticks at neutral position, move the Tx trim levers for the aileron, elevator, and rudder channels so each respective control surface is perfectly aligned with the main surface. For example: When the aileron trim lever is in the center position, it's best that the trailing edge of the aileron is aligned with the trailing edge of the wing itself (not above or below the wing's trailing edge).
- 6. It's important to determine that when the transmitter's throttle stick is at maximum position the same command will be delivered to the model, and vise-versa for minimum throttle. Depending on whether the model is electric powered or uses a glow engine:
  - a. Electric aircraft: confirm that when the throttle stick is at maximum position the electronic speed control gives the appropriate indications (LED and/or audible indicators) for full forward flight. And, when the throttle stick is at minimum position the electronic speed control gives the appropriate indications for "off" or no motor rotation.
  - b. Glow engines: confirm that when the throttle stick is at maximum position the mechanical linkage to the engine allows the engine to be at full throttle. And, when the throttle stick is at minimum position and the throttle trim lever is moved to minimum position, the engine stops completely.
- 7. Perform a "range check". The "range" is the safe operating distance from the Tx to the Rx, and should be as far as you can clearly see the model. With the assistance of another person, place the aircraft on the ground and walk away from the model. Operate the transmitter's controls, and ensure the movement of all surfaces is according to the movement of the transmitter.
- 8. Anytime power is to be removed from the radio system, it's important to shut down power in the aircraft **first**. Otherwise, the aircraft could become out of control and cause a safety hazard!
  - a. For a glow engine, move the throttle stick and throttle trim lever to minimum position to stop the engine. Once the engine has stopped, turn off power to the receiver. Only afterwards should power to the transmitter be shut off.
  - b. For an electric flight model, reduce the throttle stick to minimum and turn off the ESC's power switch. Then turn off the power switch for the receiver. Only afterwards should power to the transmitter be shut off.

# **FLYING THE AIRCRAFT**

1. Once all setup procedures have been confirmed, re-attach the propeller to the model.



IMPORTANT: Be very careful to avoid moving propellers!!

- 2. Start the engine, or arm the electronic speed control.
- 3. During the first flight, it might be necessary to re-trim the aileron, elevator, and rudder channels to allow the airplane to sustain smooth, even flight. If further adjustments are required on the ground, make sure to turn off the engine or ESC/motor before making such adjustments.
- 4. When the flight is completed, remove power from the system as described before. Shut down power to the electronic speed control or glow engine first, then the receiver, and finally the transmitter.

#### FAILSAFE FUNCTION

This radio system includes a "failsafe" function, which will automatically center (bring to neutral) all servos if the receiver loses signal communications from the transmitter. When the receiver regains signal it will automatically resume normal function. It's a good idea to test this function on the ground. With the engine or electric motor turned off, power the transmitter and receiver and make sure all controls work properly. Turn off power to the transmitter and observe if the airplanes controls move to the pre-set neutral point. Re-apply power to the transmitter and confirm that total control of all aircraft surfaces is regained. If it does not appear the failsafe system is functioning properly, see the Troubleshooting Guide at the end of this manual.

# **SAFETY GUIDE**

The Academy of Model Aeronautics (AMA) has established an Official Safety Code. Model flying **MUST** be in accordance with this Code in order for AMA Liability Protection to apply. All questions relating to the AMA Safety Code, liability insurance program, and other official AMA information can be attained from the AMA:

Academy of Model Aeronautics 5161 East Memorial Drive Muncie, Indiana 47302 (765) 287-1256 – Business (765) 289-4248 – Fax (800) 435-9262 – Membership Services http://www.modelaircraft.org http://www.modelaircraft.org/files/Memanual.PDF

The AMA's Official 2009 Safety Code includes the following regarding the use of model aircraft:

# 2009 Official Academy of Model Aeronautics National Model Aircraft Safety Code Effective January 1, 2006 GENERAL

- 1. A model aircraft shall be defined as a non-human-carrying device capable of sustained flight in the atmosphere. It shall not exceed limitations established in this code and is intended to be used exclusively for recreational or competition activity.
- 2. The maximum takeoff weight of a model aircraft, including fuel, is 55 pounds, except for those flown under the AMA Experimental Aircraft Rules.
- 3. I will abide by this Safety Code and all rules established for the flying site I use. I will not willfully fly my model aircraft in a reckless and/or dangerous manner.
- 4. I will not fly my model aircraft in sanctioned events, air shows, or model demonstrations until it has been proven airworthy.
- 5. I will not fly my model aircraft higher than approximately 400 feet above ground level, when within three (3) miles of an airport without notifying the airport operator. I will yield the right-of-way and avoid flying in the proximity of full-scale aircraft, utilizing a spotter when appropriate.
- 6. I will not fly my model aircraft unless it is identified with my name and address, or AMA number, inside or affixed to the outside of the model aircraft. This does not apply to model aircraft flown indoors.
- 7. I will not operate model aircraft with metal-blade propellers or with gaseous boosts (other than air), nor will I operate model aircraft with fuels containing tetranitromethane or hydrazine.
- 8. I will not operate model aircraft carrying pyrotechnic devices which explode or burn, or any device, which propels a projectile of any kind. Exceptions include Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight. Rocket motors up to a G-series size may be used, provided they remain firmly attached to the model aircraft during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code; however, they may not be launched from model aircraft. Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Air Show Advisory Committee Document.
- 9. I will not operate my model aircraft while under the influence of alcohol or within eight (8) hours of having consumed alcohol.
- 10. I will not operate my model aircraft while using any drug which could adversely affect my ability to safely control my model aircraft.
- 11. Children under six (6) years old are only allowed on a flight line or in a flight area as a pilot or while under flight instruction.
- 12. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

## **RADIO CONTROL**

- 1. All model flying shall be conducted in a manner to avoid overflight of unprotected people.
- 2. I will have completed a successful radio equipment ground-range check before the first flight of a new or repaired model aircraft.
- 3. I will not fly my model aircraft in the presence of spectators until I become a proficient flier, unless I am assisted by an experienced pilot.
- 4. At all flying sites a safety line or lines must be established, in front of which all flying takes place. Only personnel associated with flying the model aircraft are allowed at or in front of the safety line. In the case of air shows or demonstrations a straight safety line must be established. An area away from the safety line must be maintained for spectators. Intentional flying behind the safety line is prohibited.
- 5. I will operate my model aircraft using only radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
- 6. I will not knowingly operate my model aircraft within three (3) miles of any preexisting flying site without a frequency-management agreement. A frequency-management agreement may be an allocation of frequencies for each site, a day-use agreement between sites, or testing which determines that no interference exists. A frequency-management agreement may exist between two or more AMA chartered clubs, AMA clubs and individual AMA members, or individual AMA members. Frequency-management agreements, including an interference test report if the agreement indicates no interference exists, will be signed by all parties and copies provided to AMA Headquarters.
- 7. With the exception of events flown under official AMA rules, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flight line.
- 8. Under no circumstances may a pilot or other person touch a model aircraft in flight while it is still under power, except to divert it from striking an individual.
- 9. Radio-controlled night flying is limited to low-performance model aircraft (less than 100 mph). The model aircraft must be equipped with a lighting system which clearly defines the aircraft's attitude and direction at all times.
- 10. The operator of a radio-controlled model aircraft shall control it during the entire flight, maintaining visual contact without enhancement other than by corrective lenses that are prescribed for the pilot. No model aircraft shall be equipped with devices which allow it to be flown to a selected location which is beyond the visual range of the pilot.

# FREE FLIGHT

- 1. I will not launch my model aircraft unless I am at least 100 feet downwind of spectators and automobile parking.
- 2. I will not fly my model aircraft unless the launch area is clear of all individuals except my mechanic, officials, and other fliers.
- 3. I will use an effective device to extinguish any fuse on the model aircraft after the fuse has completed its function.

#### SERVOS AND ACCESSORIES

Stock #DescriptionHCAM0110CS-12 High Speed Micro ServoHCAM0120CS-35 High Power Mini BB ServoHCAM0165CS-64 Standard High Torque 2BB Servo

HCAM0191 CS-70MG Super Torque 2BB Servo

HCAM0290 CS110 Digital Micro High Speed BB MG Servo HCAM0295 CS115 Digital Micro High Torque BB MG Servo

HCAM0300 CS126 Digital Std 2BB Servo

HCAM0304 CS140 Digital Std High Speed 2BB MG Servo HCAM0308 CS150 Digital Std High Torque 2BB MG Servo

HCAM0312 CS160 Digital Std High Torque/Speed 2BB MG Servo HCAM0316 CS170 Digital Std Ultra Torque 2BB Titanium Gear Servo

GPMM1210 ElectriFly<sup>™</sup> ES50 Nano Servo GPMM1220 ElectriFly ES80 Micro Servo GPMM1230 ElectriFly ES100 Standard Servo

HCAM6301 HydriMax™ Ultra NiMH 4.8V 750 Flat Rx AAA HCAM6308 HydriMax Ultra NiMH 4.8V 1600 Flat 2/3A HCAM6321 HydriMax Ultra NiMH 4.8V 2000 Flat Rx AA HCAM2400 Switch Harness w/Charge Plug – Futaba J

HCAM2430 Switch Harness w/Charge Plug – JR/Hitec/Spektrum

HCAM2500 Y-Harness Futaba J

GPMM1800 ElectriFly Silver Series SS-8 Brushless 8 Amp ESC GPMM1810 ElectriFly Silver Series SS-12 Brushless 12A ESC GPMM1820 ElectriFly Silver Series SS-25 Brushless 25A ESC FUGP6688 4 AA Rechargeable Cells w/1 Hr Wall Charger

SANP3500 Sanyo AA Alkaline Batteries (4) SANP3501 Sanyo AA Alkaline Batteries (8)

SANP1100 N-700AAC 1.2V AA NiCd Rechargeable Cells TACL0445 Tactic TTX404 2.4GHz 4 Channel Receiver Only

# **SPECIFICATIONS**

## **TTX404 4-Channel Transmitter**

Channels: 4

Frequencies: 2.403 – 2.480GHz Modulation: FHSS spread spectrum

Input power: four "AA" alkaline, NiCd, or NiMH cells (3.8-8.0V, not included)

Output power: < 0.1W Power indicators: LED

Reversing switches: slide switches all channels

Trims: analog for throttle, digital for aileron, elevator, rudder

Antenna: built-in non-removable

Charge jack: built-in (Futaba® compatible, for use with optional NiCd or NiMH cells)

Trainer function: included

#### **Tactic TR624 Receiver Specifications:**

Channels: 6

Frequencies: 2.403 – 2.480GHz Modulation: FHSS spread spectrum

Input power: four "AA" alkaline, NiCd or NiMH cells (4.0-6.0V, not included)

Dimensions: 1.77 x 0.98 x 0.5" (45 x 25 x 13mm)

Weight: 0.28 oz (8g)

#### Other items included:

- \* On/off switch harness with built-in charge lead
- \* 4 cell "AA" battery holder for receiver
- \* Neckstrap

# **IMPORTANT WARNINGS AND PRECAUTIONS**

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\* **NEVER** allow water or moisture to make contact with the electronic components inside the transmitter, receiver, servos, switch harness, etc.! This could lead to failure or improper functionality of components and poor control of aircraft which could pose a safety hazard.

\* **NEVER** operate R/C model aircraft near power lines, radio or cell phone towers, roads or automobiles, buildings, or pedestrians. Be very careful in locations where many R/C aircraft are being used simultaneously.

\* **NEVER** operate R/C equipment if you are physically impaired as it could pose a safety hazard to yourself or others in the are.

- \* NEVER allow small children to operate/control model R/C equipment without the supervision of an adult.
- \* **NEVER** allow the transmitter's throttle stick to accidently be moved away from the "off" or minimum position while the model's engine/motor is moving.
- \* **ALWAYS** range check the radio system before use.
- \* **ALWAYS** make sure that all transmitter stick movements operate all servos properly in the model. Check the proper operation of control surfaces before- and after starting the engine/motor.
- \* **ALWAYS** make sure the transmitter antenna is unfolded entirely so that it's pointing upright to ensure max. range and control of the aircraft.
- \* Do not store your radio equipment in extremely hot or cold locations, in direct sunlight, in locations with high humidity. Store R/C equipment in cool and dry locations.
- \* Do not allow chemicals to come in contact with any parts of the radio system. Substances such as glow fuel, gasoline, CA glue, etc. could permanently damage plastic parts of the radio system.
- \* If NiCd batteries were installed in the transmitter, remove the batteries before placing the radio in long-term storage.

# **TROUBLESHOOTING**

RANGE IS SHORT: Interference – check Rx installation and servo connections. Low Tx or Rx battery – replace the batteries or recharge if applicable. Transmitter antenna not unfolded properly. Rx may need to be located to a different position in the model for better reception. Crash damage – send the radio to Hobby Services for repair.

RUN TIME IS SHORT: Low Tx or Rx batteries – replace or recharge the batteries. Obstructed servo linkages causing excess battery drain – free the linkages / pushrods.

Tx POWER SWITCH ON BUT SERVOS DO NOT FUNCTION: Tx or Rx batteries are low – replace or recharge the batteries. Rx switch is in the off position – turn on the ESC or switch harness. Switch harness or ESC is connected incorrectly – check all connections and the ESC instruction manual. Rx is not binded to the Tx properly – perform binding process again.

INTERFERENCE OR SERVOS GLITCHING: Out of range – operate the model more closely to the transmitter. Outside radio interference from pagers, strong industrial or other commercial transmitters in the area - check your local R/C club regarding local operation. Rx located too closely to engine, motor, or servos or other moving mechanical parts which might be creating unwanted electrical noise – relocate Rx inside the mode.

CONTROL SURFACE MOVES IN THE WRONG DIRECTION: Reverse the position of the reversing switch for the appropriate channel.

ONLY ONE SERVO GLITCHES: Servo is bad – replace the servo or send to Hobby Services for repair.

FAILSAFE NOT WORKING CORRECTLY: Receiver is not properly binded to the transmitter – bind the Rx to the Tx and re-try. Contact Hobby Services for further details.

#### **FCC STATEMENT**

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions.

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Rf Radiated Exposure Statement: The equipment complies with FCC Rf radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

**NOTE:** THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

# 1-YEAR LIMITED WARRANTY - \*U.S.A. and Canada Only

Tactic warrants this product to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. During that period, Tactic will, at its option, repair or replace without service charge any product deemed defective due to those causes. You will be required to provide proof of purchase (invoice or receipt). This warranty does not cover damage caused by abuse, misuse, alteration or accident. If there is damage stemming from these causes within the stated warranty period, Tactic will, at its option, repair or replace it for a service charge not greater than 50% of its then currant retail list price. Be sure to include your daytime telephone number in case we need to contact you about your

repair. This warranty gives you specific rights. You may have other rights, which vary from state to state.

For service on your Tactic product, send it post paid and insured to:

#### **HOBBY SERVICES**

3002 N. Apollo Dr., Suite 1
Champaign, IL 61822
Tel: (217) 398-0007 (9:00am - 5:00pm CST, M-F)
E-mail: hobbyservices@hobbico.com

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- \* This product is suitable only for people of 14 years and older. This is not a toy!
- \* WARNING: CHOKING HAZARD May contain small parts. Keep away from children under 3 years. Please retain packaging for future reference.
- \* No part of this manual may be reproduced in any form without prior permission.
- \* The contents of this manual are subject to change without prior notice.
- \* Tactic is not responsible for the use of this product.