ACE RC®

COUGAR
2.4GHz Digital Radio System

2.4GHz Digital Radio System

COUGAR 2.4GHz 3CH DIGITAL RADIO SYSTEM PS3i
No.8308 IFHSS 2.4GHz

COUGAR 2.4GHz 3CH DIGITAL RADIO SYSTEM P3
No.8310 IFHSS 2.4GHz

COUGAR 2.4GHz 2CH DIGITAL RADIO SYSTEM P2
No.8227 IFHSS 2.4GHz

⚠ Please read all instructions thoroughly before operating this device.

The contents are subject to change without prior notice due to product improvements and specification changes.

INSTRUCTION MANUAL

WARRANTY

Thunder Tiger Corporation guarantees this model kit to be free from defects in both material and workmanship. The total monetary value under warranty will in no case exceed the cost of the original kit purchased. This warranty does not cover any components damaged by use or modification. Part or parts missing from this kit must be reported within 60 days of purchase. No part or parts will be sent under warranty without proof of purchase. To receive part or parts under warranty, the service center must receive a proof of purchase and/or the defective part or parts. Should you find a defective or missing part, contact the authorized Thunder Tiger Service/Distributor nearest you. Under no circumstances can a dealer or distributor accept return of a kit if assembly has started.

INTRODUCTION

Congratulations on your purchase of the ACE RC Cougar 2.4GHz digital radio system. The Cougar radio system was specially designed with the latest wireless and advanced-programming technology to meet driver's requirements. With spread spectrum and smart frequency-hopping system, the Cougar radio system delivers precision and smoothness of operation at the same time without any interference risks. Cougar pistol radios are configured for operating surface R/C models.
With proper use and care, ACE RC Cougar will make the control advanced and simple, and provide you with many years of enjoyment. Before operating your new radio system or installing into your model, please take a few minutes to familiarize with the various features of the system by reading this owner's manual thoroughly.

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ADVANCED TECHNICAL FEATURES

FHSS -Frequency hopping spread spectrum

Advanced frequency-hopping program on the spread spectrum base for added safety, reliability and virtually interference-free communication.

SIBL-Security ID binding link

A binding feature is included in the ACE RC 2.4 GHz spread spectrum system to ensure the transmitter and receiver only bind to each other and prevent interferences from other controllers.

FSPC-Failsafe programmable individual channel

In extremely rare circumstances where signal loss is encountered, the system features a failsafe program allowing individual channel to restore back to initial settings.

iFHss/iFHss+ data mode

Improved data format and protocol, Courgar P2 / P3 provides a faster and less power consumtion data transmission. Such technology also reveals an extremely data reliability while data is on the air.

FEATURES

TRANSMITTER (for Cougar PS3i)

- Easy-to-read LCD Display Screen
- 10-model memory
- Changeable plug-in 2.4GHz RX module for ease of maintenance
- Electronic digital trim levers for throttle and steering
- Steering/Throttle/Aux EPA
- Steering/Throttle/Brake ARC adjustment
- Steering dual-rate adjustment
- Battery voltage indicator
- Adjustable steering wheel tension
- Low battery alarm

TRANSMITTER (for Cougar P2 / P3)

- Advanced 2.4GHz frequency-hopping spread spectrum technology
- Steering/Throttle trims
- Steering/Throttle servo reversing
- Throttle/Brake ATV–Adjustable Travel Volume
- Steering dual-rate adjustment
- LED battery voltage indicator
- Adjustable steering wheel tension
- Low battery alarm
- Folding antenna
- Advanced iFHss/iFHss^{+} data mode

RECEIVER

- The TRS402ss is the 2.4GHz 4CH receiver paired with the COUGAR P2 / P3 / PS3i transmitter. Its compact and small size allows you to install it almost anywhere on your model.
- Cougar P2 / P3 also can pair with TRS401ss receiver by using iFHss mode.

SYSTEM CONTENTS

Item	COUGAR PS3i	COUGAR P2	COUGAR P3
Item No	8308	8227	8310
Transmitter	COUGAR PS3i	COUGAR P2	COUGAR P3
Receiver	TRS401ss	TRS402ss	
Servos	N/A		
Accessory	Switch hardness x 1, Receiver Battery holder x 1		

SPECIFICATIONS

Transmitter	COUGAR PS3i	COUGAR P2	COUGAR P3
Item No.	8308	8227	8310
Configuration	Pistol Grip		
Encoder	3Ch	2Ch	3Ch
Current Drain	130mA@9.6V	40mA@7.2V	
Servo Reverse	CH1~CH3	CH1~CH2	CH1~CH3
Transmission System	FHSS		
Frequency(MHz)	2.4GHz		
Modulation	GFSK(PPM)		
Frequency Band Width	2402~2479MHz		
ID No.	13bit		
Display	LCD	LED	
Mode Memory	10	None	
Antenna Type	1/4 λ Dipole Sleeve		
Antenna Peak Gain	2dBi Typical		
Power Requirement	9.6V/8 cell AA Battery	7.2V/6 cell AA Battery	

Receiver	TRS402ss
Item No	AQ6367
Frequency(MHz)	2.4GHz
Channel	4CH
BEC	No
Modulation	PPM
Type	Single Antenna W / Gain
Battery Power	4.8~7.4V

*for iFHss^{+} data mode

Receiver	TRS401ss
Item No	AQ2280
Frequency(MHz)	2.4GHz
Channel	4CH
BEC	No
Modulation	PPM
Type	Single Antenna
Battery Power	4.8~7.4V

*for iFHss data mode

COUGAR
2.4GHz 3CH DIGITAL RADIO SYSTEM PS3i

1. Transmitter Antenna
2. Power Indicator
3. Edit Buttons
4. LCD Display
5. Digital Steering Trim lever
6. Digital Throttle Trim lever
7. Digital Steering D/R(Dual Rate) lever
8. AUX Ch Button
9. External Charging Jack
10. 2.4GHz binding SW
11. Steering Wheel
12. Power Switch
13. Throttle Trigger
14. Steering tension adjustment
15. Battery Cover

COUGAR 2.4GHz 2CH DIGITAL RADIO SYSTEM P2

COUGAR 2.4GHz 3CH DIGITAL RADIO SYSTEM P3

1. Transmitter Antenna
2. Battery Level Indicator
3. HI/LO Throttle ATV (Adjustable Travel Volume)
4. Servo reversing switches
5. Steering Trim
6. Throttle Trim
7. Steering D/R (Dual Rates)
8. AUX Ch Button (for P3 only)
9. External Charging Jack
10. 2.4GHz binding SW
11. Steering Wheel
12. Power Switch
13. Throttle Trigger
14. Steering Tension Adjustment
15. Battery Cover

TRANSMITTER CONTROLS (for PS3i)

1. **Transmitter Antenna:** Straighten up the antenna before operating the model.
2. **Power Indicator:** The LED light indicates power is "on" or "off".
3. **Edit Buttons:** The left and right buttons are the "functions" selecting keys. The up(+) and down(-) buttons are the value adjusting keys. For additional details on specific operation, please refer to the "function" setting procedure (Page 8).
4. **LCD Display:** The Cougar transmitter features an "Easy-to-Read" screen. Use the "Edit Buttons" to select the function (left and right key) and change settings (with the "up" & "down" keys). For additional details on specific operation, please refer to the "Function" setting procedure (Page 8).
5. **Digital Steering Trim lever:** Push this lever left or right to adjust the center point of the steering servo. The cursor will move on the top ruler line of the LCD screen to display the current position.
6. **Digital Throttle Trim lever:** Push this lever up or down to adjust the center point of the throttle/brake servo. The cursor will move on the left ruler line of the LCD screen to display the current position. This adjustment sets the braking amount of "Drag Brake" and "Coast Brake".

NOTE: The Digital Throttle Trim function adjusts neutral point without affecting maximum throttle servo travel and full-throttle position.

The Digital Steering Trim function adjusts maximum steering servo travel for both left and right steering. If adjustments are incorrect, steering linkage binding or damages to the steering servo may occur.

7. **Digital Steering D/R(Dual Rate) lever:** Push this lever left or right to adjust the amount of the steering dual rate. Right to increase dual rate amount and left to decrease the amount.
8. **AUX Ch Button:** Provides an extra function for the control of the model.
9. **External Charging Jack:** For rechargeable NiCd/NiHM battery pack on the transmitter only.
10. **24GHz binding SW:** The Binding SW button is located on the back of the 2.4GHz transmitter unit. For additional details, please refer to the "Binding" setting procedure (Page 7).
11. **Steering Wheel:** Controls the steering of the model.
12. **Power Switch:** Slide to turn the transmitter on or off.
13. **Throttle Trigger:** Pull or push to control throttle on the model.
14. **Steering Tension Adjustment:** Use a Phillip type screw driver to tighten or loosen the tension on the steering wheel.
15. **Battery Cover:** Slide for removing the cover and install / remove the batteries.

TRANSMITTER CONTROLS (for P2/P3)

1. **Transmitter Antenna:** Straighten up the antenna before operating the model.
2. **Battery Level Indicator:** Three LEDs indicate the battery voltage level. If the Red LED flashes, please replace the batteries.
3. **HI/LO Throttle ATV (Adjustable Travel Volume):** Provide the function to let you independently preset the maximum travel of the throttle servo either side (high / low) of neutral.
4. **Servo reversing switches:** To reverse the servo's rotation direction at the flip of the switch. The reversing switches are recessed into the transmitter to prevent accidental operation.

iFHss/iFHss$^+$ switch:iFHss$^+$ provides faster and more reliable data transmission, and has less power consumption. Note you should use TRS402ss receiver in compliance with iFHss$^+$ mode.

5. **Steering Trim:** Adjusts the steering in small increments or decrements to run the model straight.
6. **Throttle Trim:** Adjusts the throttle in small increments or decrements to shift the neutral position.
7. **Steering D/R (Dual Rates):** Push this lever left or right to adjust the amount of the steering dual rate. Right to increase dual rate amount and left to decrease the amount.
8. **AUX Ch Button:** Provides an extra function for the control of the model. (for Cougar P3 only)
9. **External Charging Jack:** For rechargeable NiCd/NiHM battery pack on the transmitter only.
10. **2.4GHz binding SW:** The Binding SW button is located on the back of the 2.4GHz transmitter. For additional details, please refer to the “Binding” setting procedure (Page 7).
11. **Steering Wheel:** Control the steering of the model.
12. **Power Switch:** Slide to turn the transmitter on or off.
13. **Throttle Trigger:** Pull or push to control the movement of the model.
14. **Steering Tension Adjustment:** Use a Phillip type screwdriver to tighten or loosen the tension of the steering wheel.
15. **Battery Cover:** Slide cover to install or remove batteries.

INSTALLATION

Transmitter batteries replacement/installation

1) Slide the battery cover in the direction as shown to remove the cover.
2) Install 6pcs alkaline or rechargeable “AA” size cells into the battery holder connected to the transmitter.
3) Slide on the battery cover and make sure it is closed securely.
4) Turn the power on to check. If the Power Indicator LED fails to light, check the batteries for insufficient contact or incorrect battery polarity.

CHECK:

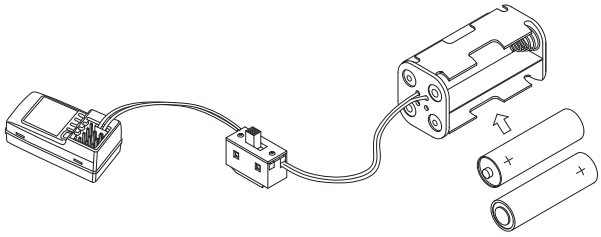
a) Use only fresh, alkaline cells, all of the same brand.
b) Make certain that the contacts in the battery holder stay clean by using a pencil eraser to gently remove any corrosion or dirt that may accumulate on them. It is recommended to do this each time you install fresh cells into your transmitter.
c) If using the rechargeable battery pack, simply remove the battery holder by pulling out the connector from the transmitter. Then plug-in the battery pack connector to the transmitter.
d) When the rechargeable battery is installed in the transmitter, it can be charged through the external charging jack located on the transmitter.

⚠ CAUTION:

a) Do not attempt to charge alkaline batteries, they may explode!!
b) When charging the rechargeable battery, set the power switch on “OFF” position before charging. The charger plug must be correct type (“+” inside and “-“outside, type TAMIYA N-3U or equivalent). The wrong type may burst causing personal injury and damage.
c) Always be sure the batteries are loaded in the correct polarity order. If the batteries are loaded incorrectly, the transmitter may be damaged.
d) When the transmitter is not used for any short or long period of time, always remove the batteries from the transmitter.

Receiver battery replacement/installation

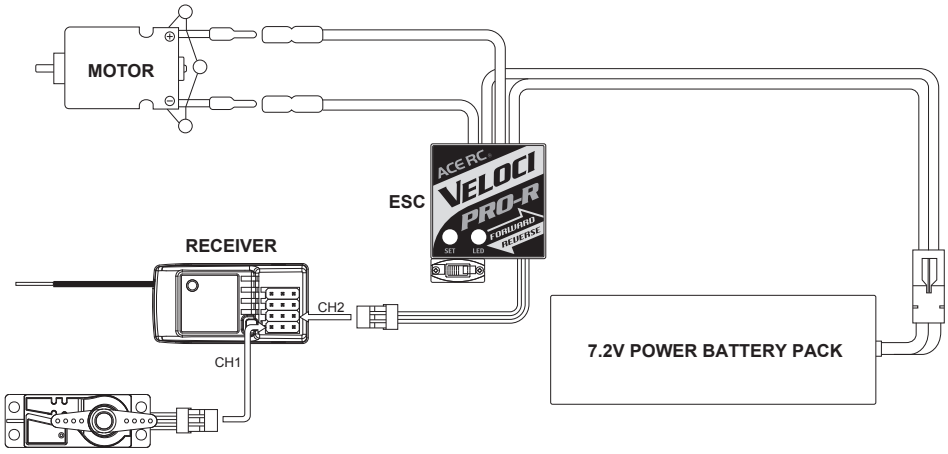
Insert 4 fresh AA cells into the receiver battery holder. Make sure the batteries are located in the correct polarity order. Maintain the battery contacts in the same way as described in previous section.
Insert the switch harness plug into the receiver socket marked “BATT”.



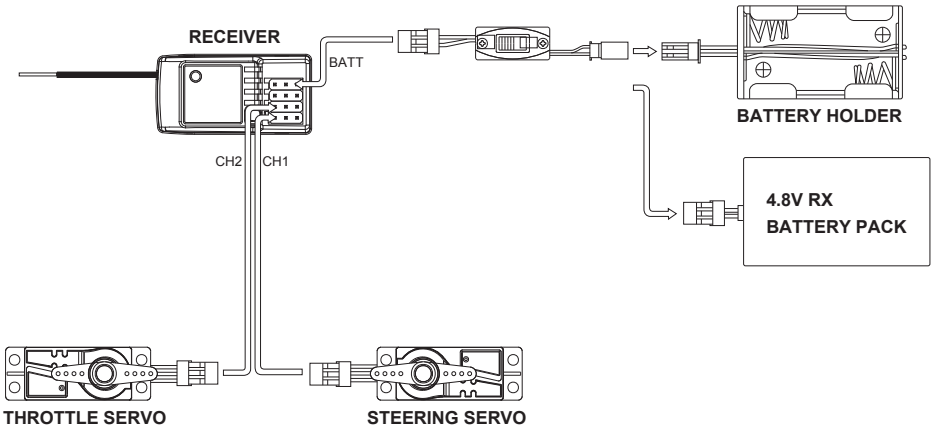
Radio installation

1) Connect the receiver, servos, and switch hardness/battery pack as shown.
2) If you are not familiar with all the control systems. Do the “bench test” before to install all the devices on the model.
3) Always follow the “**transmitter on first, off last**” procedure.
4) Always install the receiver as far as possible from the motor, ESC, power battery, motor wires.. or other noise sources. Especially, do not route the motor wires next to the receiver, crystal or receiver antenna.

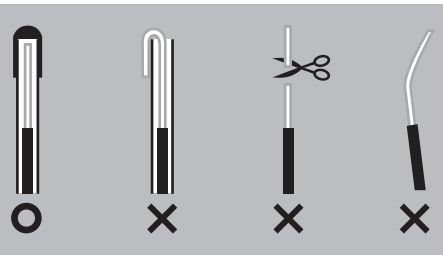
Electric Power Model Installation



Gas Power Model Installation



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

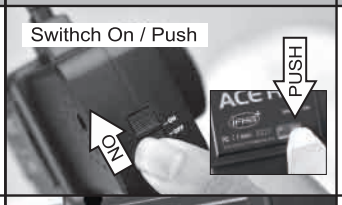
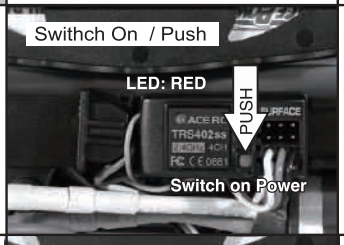
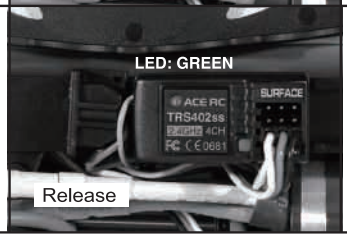


BINDING PROCESS

A binding feature is included in the ACE RC Cougar 2.4GHz spread spectrum system to ensure the transmitter and receiver bind properly and prevent interference from other controllers.
To manually bind Tx/Rx, please proceed as per the following steps:

a. Press and hold the “Binding SW” button on the back side of the transmitter while turning on the transmitter.
b. Release the “Binding SW” button after the green / red LED flashes indicating the transmitter is binding.
c. Press and hold the bind button on the receiver while turning on the receiver. Binding process will then start automatically.The LED will turn green/red flash on the receiver.
d. Release the “Binding SW” button. Successful binding is confirmed by the binding LED changing from a quick blinking and then remain solid on the transmitter. The LED will turn green on the receiver. Once binding is complete, the system will automatically connect.
e. Binding frequency: 2400 / 2401 / 2481 / 2482 four frequencies, so it allows four people to do binding at the same time. (for Cougar P2 / P3 only)

Note: Binding process may take 2~4 seconds to execute. If binding fails, the LED on the receiver will turn red. Please turn off the power and repeat the steps from a) ~d).

Step	TX Action	RX Action	LED
a		No Action	_
b		No Action	TX LED : GREEN FLAH (for Cougar PS3i) TX LED：GREEN/RED FLASH (for Cougar P2/P3)
c	No Action		RX LED：GREEN/RED FLASH
d	No Action		TX LED： GREEN FLASH-->GREEN SOLID RX LED： RED SOLID-->GREEN SOLID

FAIL SAFE (F/S) FUNCTION SETTING

ACE RC COUGAR 2.4GHz R/C system features a built-in Failsafe function to automatically set a servo command if the receiver loses the signal from transmitter due to interference. For safety, we strongly recommend to active the FAILSAFE function on your Cougar R/C system.

Setting up the Failsafe (F/S) Function:

a. After binding the transmitter and receiver, you can continually set up the F/S function. Turn on the transmitter power and then receiver power.
b. Press and hold the “Binding SW” button on the receiver for 2~4 seconds. The LED will start flashing GREEN on the receiver.

> ⚠ **CAUTION:** Do not release the “Binding SW” button on the receiver until STEP C is completed.

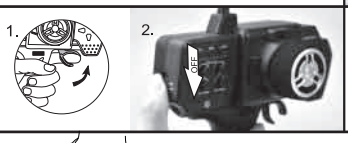
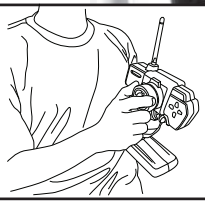
c. Move and hold the throttle trigger to the position you want the control to be in if a failsafe condition should occur. First, keep steering wheel at neutral position (steering servo at neutral position). To set up F/S function with the throttle servo position at "Brake", first push the trigger to the brake position and hold. To set up F/S function with servo position at "Neutral", keep the trigger at neutral position.

> **NOTE:**
> Always set the throttle trigger to neutral or full brake position and steering servo to neutral position in case of any unexpected control error!
> **Factory pre-settings for RC car F/S function are :**
> ■ Electric Car- Steering servo at neutral, throttle at neutral.
> ■ Nitro Car- Steering servo at neutral, throttle at idle.

d. After the Step C, release the “Binding SW” button on the receiver first and then the throttle trigger. The LED turns to solid “RED” and then back to solid “GREEN” indicating the F/S function has now been activated.
e. Test by turning off your transmitter and watching the servo failsafe position activate.
F/S at "Neutral": To check the fail safe is working properly, by moving the throttle trigger to the full forward (full brake), hold this position and then turn off the transmitter. The F/S function should move the throttle servo to “Neutral” position and the steering servo to “Neutral” position.
F/S at "Brake": To check the fail safe is working properly, by keeping the throttle trigger at neutral and then turn off the transmitter. The F/S function should move the throttle servo to “Brake” position and the steering servo to “Neutral” position.
f. If the F/S function fails or need to change the F/S hold position, repeat the steps a) ~e). After the F/S is completed, you can start normal operation.

> ⚠ **CAUTION:**
> FAILSAFE function will be reset after binding your transmitter & receiver.

FAIL SAFE (F/S) FUNCTION SETTING

Step	TX Action	RX Action	Check
a	Binding Complete	Binding Complete	TX LED：GREEN SOLID RX LED：GREEN SOLID
b	No Action		RX LED：GREEN FLASH
c	**1.** Steering:Neutral **2.** Keep brake or keep trigger at neutral 	No Action	**Pre-settings for F/S function:** ■EP Car : Steering at Neutral / ESC at Neutral ■GP Car : Steering at Neutral / Carb. at Iddle
d	Release later 		RX LED：RED SOLID-2s->GREEN SOLID
e	1. Keep brake 2. Swithch Off 	No Action	F/S function activates
f	OK!  		

BUZZER LED (for Cougar PS3i)

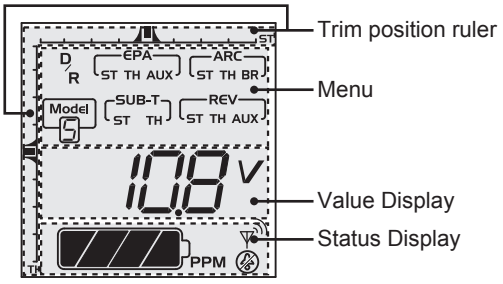
	Status	Tone of buzzer	LED (close to Binding SW)
1	Boot-up	Bee	Green LED flashing
2	Bind	Bee	Green LED flashing rapidly
3	Binding OK	-	Green LED flashing
4	PWM abnormal	-	
5	Range check	-	

BUZZER LED (for Cougar P2 / P3)

	Status	Tone of buzzer	LED (close to Binding SW)
1	Boot-up	Bee-Bee-Bee	Green LED flashing
2	Bind	Bee	Red / Green LED flashing interactively
3	Binding OK	Bee-Bee-Bee	Green LED flashing
4	PWM abnormal	Beep	Red LED flashing
5	Range check	Beep	

FUNCTIONS (for PS3i)

There are 4 distinct areas on the screen: “Menu”, “Value Display”, “Status Display”, and “Trim position ruler”. Using the left and right “Edit Buttons”, the cursor will jump to the function you would like to edit. When you enter the menu function, you can press the up and down “Edit Buttons” to edit the value. Upon completing settings, simply press the right and left buttons to move the cursor to other functions, the previous value is now saved.

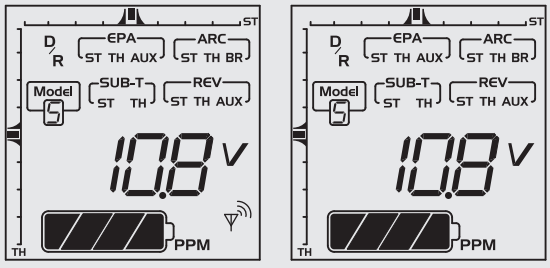


1. Power On

Slide up the “Power Switch” to turn on the radio. You will hear a short “Beep” tone. The “model number”(Model) will be displayed on the “Menu” area, the battery voltage value”(10.8V) will be displayed on “Value Display” area, and “battery voltage status diagram”( ) / transmitter system (“**PPM**”) and audio on/off setting (“ ”) RF Transmitting on/off ( ) will be shown on “Status Display” area.
The current neutral position of the steering and throttle servos are displayed on “Trim position rulers”.
If all the radio system and RF module are correct, and the switch is set on the “ON” position, then the RF Transmitting sign ( ) will be shown on the “Status Display” to make you use the current model No setting to play your model. Or use the “Edit Buttons” to start the programming procedure. The following are the set-up procedure and detail description for each function.

NOTE:

1) Battery status is easily read on the voltage value or battery status diagram. Charge or change the battery when the voltage is lower than 8.8V.
2) For the radio RF system, the Cougar P3i feaatures PPM system, so the **PPM** is shown on the display.
3) If you plan to study all the function setting procedure, or to adjust many functions data, we strongly suggest to cancel the RF transmitting function before executing the setting procedure. You can remove the RF module or put the power switch on the “Display” position. Note that the RF Transmitting sign ( ) will not be shown on the display.



Tramsmitting on **Tramsmitting off**

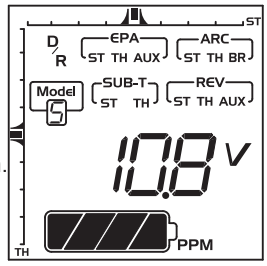
2. Audio on/off beep setting “ ”

Default	“Audio On” mode

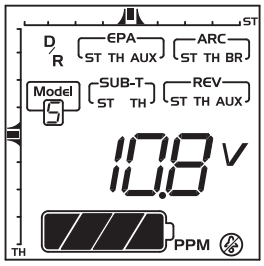
The audio default setting is “On” eventhough no icon is displayed on the screen. Under the “Audio on” mode, a "Beep" is emitted whenever the edit button or digital trim lever is operated. The radio can be switched to “silent” mode easily. When switched to “Silent” mode, the “ ” icon is displayed on the right lower "Status Display" .

1) Turn off the radio.
2) Press the “up”(+) and “right”(▷) buttons and hold them.
3) Turn on the radio, a short “Beep” is emitted (power on) , followed by a long “Bi” tone (finish tone mode switching). Release the “up”(+) and "right" (▷) button.

NOTE:
Repeat the above 1)~3) steps to switch back to “audio on” mode.



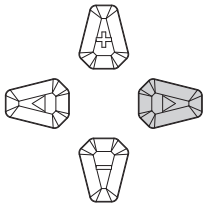
Audio on Mode



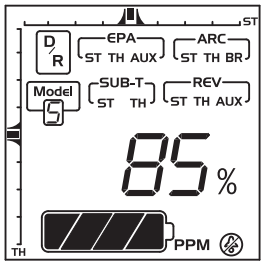
Audio off Mode

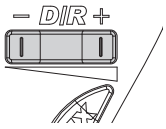
3. D/R (Dual Rate) D/R

Default	100%
Adjusting Range	0%~150%

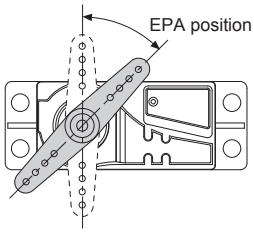


Press the right edit button, then move the cursor to “D/R” and the steering servo dual rate setting function. On the “Value Display”, the current D/R value will be shown. Use the up and down edit buttons to adjust the value.
Th2 D/R function adjusts the overall travel of the steering servo. Under the D/R setting, the steering servo left and right steering angles will be adjusted simultaneously.
More travel (Higher D/R %) means more sensitivity for the steering wheel.





TIP:
You also can use the “Digital Steering D/R(Dual Rate) lever” to adjust the D/R value all the time even the function selecting cursor is not under the D/R mode.



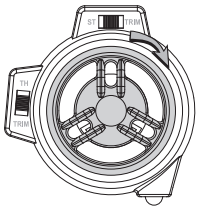
4. EPA (End Point Adjustment) EPA ST TH AUX

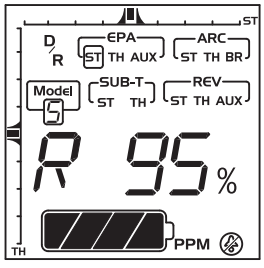
The EPA (End Point Adjustment) function sets the maximum travel end points for each servo. On both travels, the individual EPA can be set with different values. Move the cursor to the channel you select to start the setting procedure.

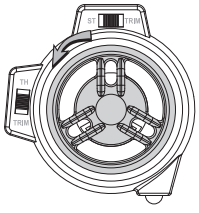
4.1) EPA / ST EPA ST TH AUX

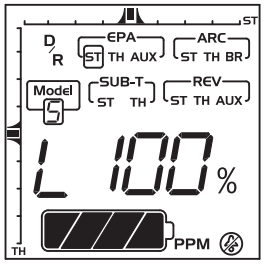
Default	100%
Adjusting Range	R 0%~120%, L 0%~120%

This function adjusts the right(R) and left(L) maximum steering angle. Under this mode, the right steering angle EPA setting is selected first. “R” and current EPA value are displayed there. Use the up/down buttons to adjust the right EPA. Turn the steering wheel to the left, the “R” on the display switches to “L” allowing you to adjust Left EPA.









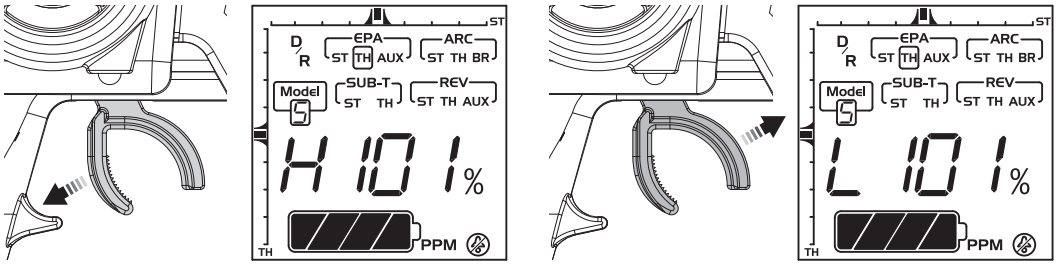
NOTE:
If a servo's maximum travel interferes with mechanical parts, it may cause linkage binding or even damage to the servo. It's advised to first turn the steering wheel to the fullest and then adjust the EPA to the suitable value and visually confirm no biding is occurring.

4.2) EPA/TH [EPA ST TH AUX]

Default	**H 100%, L100%**
Adjusting Range	**H 0%~140%, L 0%~160%**

The EPA/TH function adjusts full throttle (H) and low/brake (L) amount. Enter the EPA/TH setting mode, pull the trigger back, "H" is displayed on left side of the "Value Display" with the current EPA value. Use the up/down buttons to set full throttle EPA value.

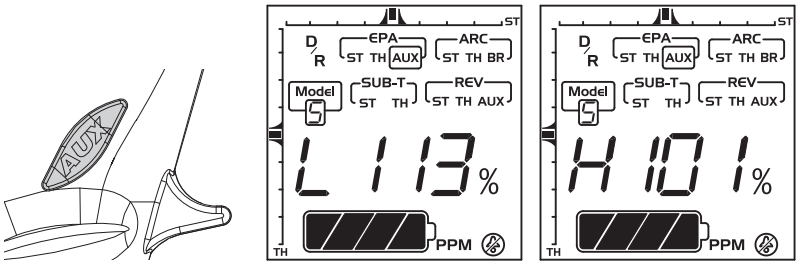
NOTE:
When using an ESC on a electric- powered model, set the value to "H 100%". Push the trigger forward, "H" switches to "L", use the up(+)/down(-) buttons to adjust the brake EPA value.



4.3) EPA/AUX [EPA ST TH AUX]

Default	**100%**
Adjusting Range	**H 0%~150%, L 0%~150%**

The EPA/AUX function adjusts the auxiliary 3rd channel EPA. Enter the EPA/AUX setting mode as previously done for the steering and throttle EPA settings, press the AUX Ch Button to select the servo traveling side. "H" and "L" are displayed to represent the different sides.



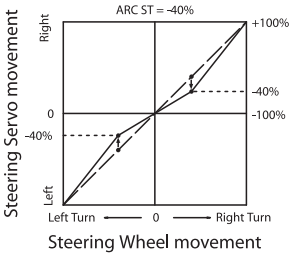
5. ARC (Adjust Rate Control) [ARC ST TH BR]

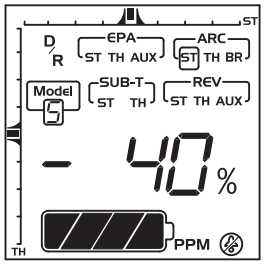
The ARC function changes the movement curve on the servo steering wheel and throttle trigger. When ARC is set to 0%, the movement curve is linear. Default ARC value is 0%. Detailed settings and adjustments are described below.

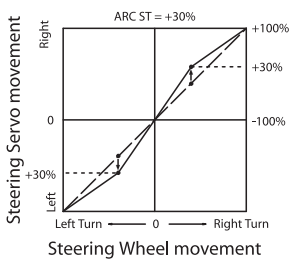
5.1) ARC/ST

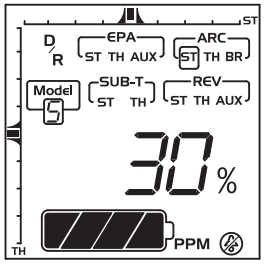
Default	**0%**
Adjusting Range	**-100%~100%**

The ARC/ST function adjusts the sensitivity of the steering servo responsiveness near the neutral position. This setting affects both left and right steering servo movements at the same time and by the same percentage. Negative steering ARC setting provides lower sensitivity around the neutral point area and higher responsiveness out of the neutral point area. Positive steering ARC provides the opposite effect.





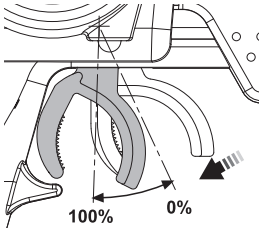


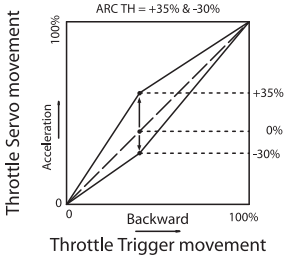


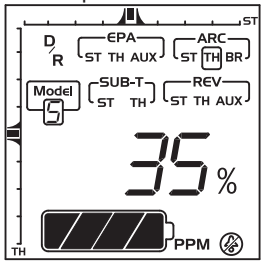
5.2) ARC/TH

Default	**0%**
Adjusting Range	**-100%~100%**

The ARC/TH adjusts the throttle responsiveness by setting a curve from neutral point to full throttle position. Positive ARC/TH increases the response while negative ARC/TH broadens the power band.



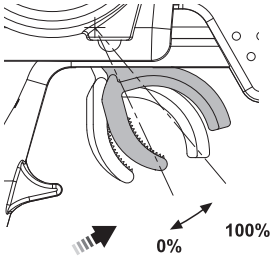


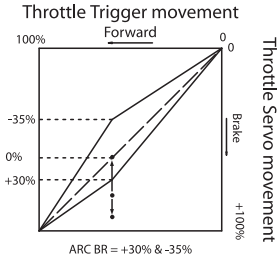


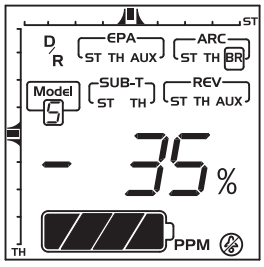
5.3) ARC/BR

Default	**0%**
Adjusting Range	**-100%~100%**

The ARC/BR adjusts the brake responsiveness by setting a curve from neutral point to throttle full close position. Positive ARC/BR for sharper braking-power and negative for milder braking-power.



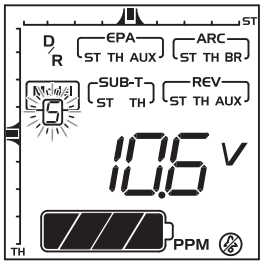




6. Model Number

Default	Model 0
Adjusting Range	Model 0~9

10 models can be saved in the radio memory code (Model 0~9). The Model No. flashes on the display. Use up(+)/down(-) buttons to call the model you want to select. When turning the transmitter on, the last model will be re-called on the model icon. Any amendments done on a particular model No. are automatically saved.



7. SUB-T (Sub trim)

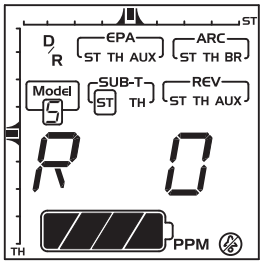
ST (Steering)

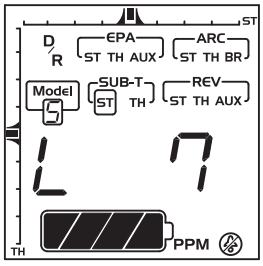
Default	R 0
Adjusting Range	L125~R125

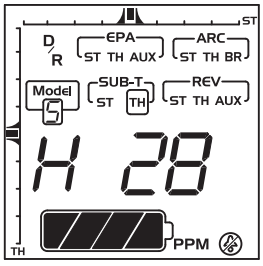
TH (Throttle)

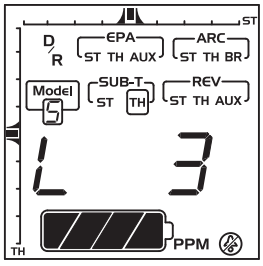
Default	H 0
Adjusting Range	L125~H125

The SUB-T(sub trim) function allows the minor adjustments of the neutral point on the steering and throttle servos. Use the “up”(+) and “down”(-) buttons to adjust. Under the SUB-T/ST mode, use the “up”(+) button to increase the movement of the steering servo neutral point toward right side and use the “down”(-) button to adjust toward left side. Default value is “R0” on the display. If the adjusting is to the left side and over the default neutral point, then the “R” will be changed to “L”.
SUB-T/TH mode adjusts the throttle servo. Proceed as the SUB-T/TH, note that R/L (right/left) have now changed to H/L (high/low).





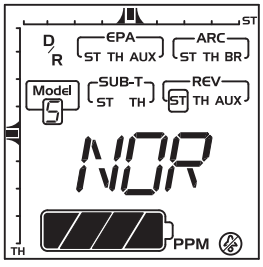


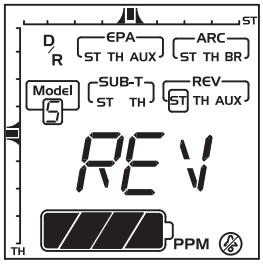


8. REV (reverse)

Default	NOR
Adjusting Range	NOR/REV

The REV (reverse) function reverses the direction of the servos relative to transmitter input. Enter this mode, the “NOR”(normal) or “REV”(reverse) are displayed on the display and can be switched by pressing the “up”(+) or “down”(-) buttons to change direction. For each individual servo (steering, throttle & AUX) direction can be changed.





FUNCTIONS (for P2 / P3)

1. Servo Reversing

It is sometimes necessary or convenient to reverse the output direction of the servo. The direction of the rotation for each individual servo can be changed by simply flipping the reversing switch that corresponds to the channel number on the receiver where the servo is plugged in. Under normal circumstances, Ch1 is steering, Ch2 is throttle. Using the reversing switches as needed.

*for Cougar P2

2. iFHss/iFHss+ Data mode

iFHss : To back-ward compatible to our TRS401ss reciever.
iFHss+: You can switch to fast data mode and get a fast and reliable control to your R/C model, we recommand to use this mode if your TRS402ss reciever also supports this mode.

*for Cougar P3

3. Steering Trim

- **Neutral position trim**
  By turning the Steering Trim knob clockwise or counter-clockwise, the steering neutral can be adjusted as needed.

NOTE
Be sure the steering trim on the transmitter is at the neutral position before you are trying to make an adjustment.

HELPFUL HINT
When you install a servo, always check to be sure the servo is at its neutral position.

- **Servo travel**
  Changing the trim can affect the overall settings. When adjustments are made with this trim, it is recommended to re-check your installation for maximum servo travel.

HELPFUL HINT
If it takes most of your trim movement to get a servo to the neutral position, re-position the servo horn or servo saver on the servo and inspect your linkage installation.

FUNCTIONS (for P2 / P3)

4. Throttle Trim

- **Neutral position trim**
  Once the neutral position of the throttle trigger is set, by turning the Throttle Trim knob clockwise or counter-clockwise, the throttle neutral can be adjusted as needed.

HELPFUL HINT
When using an ESC, set the throttle trim to neutral and make adjustments to the speed control.
On a gas powered model, set the trim to neutral and adjust the throttle linkage to the point where the carburetor is fully closed in accordance with your engine instruction manual.

- **Servo travel**
  Trim adjustments will affect the overall servo travel; check the brake side (backward) movement when changes are made.

HELPFUL HINT
If you have used most of the trim movement to get the servo to the neutral position, re-center the servo horn closer to the neutral position and inspect your throttle linkage.

5. Throttle ATV

Throttle Adjustable Travel Volume/ATV provides the function to preset independently throttle travel of the servo either side of neutral. It offers easier adjustments to set the throttle operation at idle and maximum power.

6. Steering D/R

Steering D/R allows you to change the steering travel while running by turning the dual rate dial as shown to correct over-steering and under-steering problems by increasing or decreasing steering sensitivity. You can adjust sensitivity of your model to your own preferences with this function.

FCC INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC CAUTION

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices). 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, and (2) This device must accept any interference received, including interference that undesired operation.

FCC RADIATION EXPOSURE STATEMENT

This 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.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

USING CAUTION AT THE RACING TRACK

- Do not operate the model or use the radio in rain, lightning, or at night.
- Do not operate the model or use the radio if you have been drinking alcohol or under the influence of any other substance that will affect your skills.
- Always check battery power before you operate.
- Keep out of reach of children.
- Do not store the radio in temperatures below -10 ˚C(14˚F) or above 40˚'5fC (104˚F) or in a humid, dusty, or high vibration environment. Keep the radio away from direct sunlight.
- To prevent corrosion, take out the batteries if you are going to store the radio for a long period.

ACCESSORIES

■ TX & RX

No.8308
COUGAR PS3i 2.4GHz
3CH Digital Radio System

No.8310
COUGAR P3 2.4GHz 3CH
Radio System

No.8227
COUGAR P2 2.4GHz 2CH
Radio System

AQ6367
2.4GHz 4CH RX, TRS402ss

AQ2280
2.4GHz 4CH RX, TRS401ss

ACCESSORIES

■ TX/RX Charger & Ni-MH Battery (for Cougar P2/P3)

AT6169 120V2P/110mA
AT6169-J 100V2P/110mA
AT6169-E 230V2P/110mA
AT6169-U 230V3P/110mA

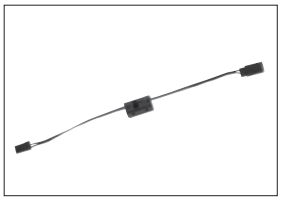
2989 Ni-MH Conversion Kit,120V2P (AA x 10)
2989-J Ni-MH Conversion Kit,100V2P (AA x 10)
2989-E Ni-MH Conversion Kit,230V2P (AA x 10)
2989-U Ni-MH Conversion Kit, 230V3P (AA x 10)

■ TX/RX Charger & Ni-MH Battery (for Cougar PS3i)

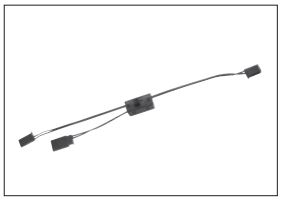
AT2139 110V2P/110mA
AT2139-J 100V2P/110mA
AT2140 230V2P/110mA
AT2141 230V3P/110mA

2970 Ni-MH Conversion Kit,120V2P (AA x 12)
2970-J Ni-MH Conversion Kit,100V2P (AA x 12)
2971 Ni-MH Conversion Kit,230V2P (AA x 12)
2972 Ni-MH Conversion Kit, 230V3P (AA x 12)

■ Switch Harness



AG2051
Switch Harness, Futaba & JR



AG2078
Y Switch Harness, Futaba

■ Ni-MH Battery

2927
Ni-MH Battery 2/3A,
4.8V/1.2Ah (4) for RX

2932
Ni-MH Battery 2/3A,
6V/1.2Ah (2+3) for RX

2938
Ni-MH Battery 2/3A,
6V/1.2Ah (4+1) for RX

2939
Ni-MH Battery 2/3A,
4.8V/1.2Ah (2+2) for RX

2946
Ni-MH Battery AA,
9.6V/1.1Ah(8) for TX

2969-J/S
Ni-MH Battery AA,
4.8V/1.1AH (4) for RX

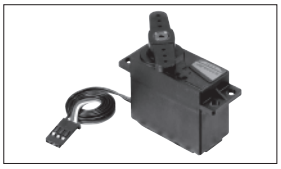
2988
Ni-MH Battery AA,
7.2V/1.1Ah(6) for TX

ACCESSORIES

■ Analog Servos

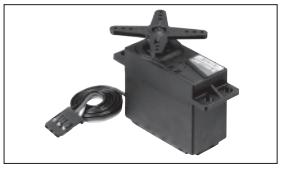
8114
Standard Servo
3.8Kg/6V,S1903

8117
Micro Servo
2.0Kg/6V,C1016



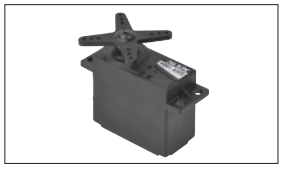
8118
Metal Gear High Torque Servo
9.8Kg/6V,S2008MG

8120
Metal Gear High Torque Servo
8.6Kg/6V,S1807MG

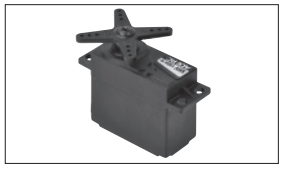


8121
Metal Gear Standard Servo
3.8Kg/6V,S1903MG

8139
Metal Gear Micro Servo
2.0Kg/6V,C1016MG



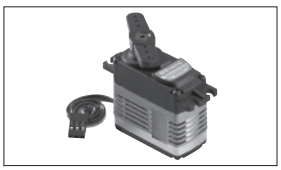
8150
7.4V High Voltage Servo
3.9Kg/7.4V,SHV1504



8151
7.4V High Voltage Servo
3.9Kg/7.4V,SHV1504MG

■ Digital Servos

8126
Digital Speed Servos
12.5Kg/6V,DS1213



8127
Digital Torque Servos
14.5Kg/6V,DS1015

8128
Digital Speed Servos
12.5Kg/6V,DS1313

CE EU Declaration of Conformity CE

according to the R&TTE Directive 1995/5/EC

For the following equipment:

Product	:	**Remote Controller for Models**
Type Designation/Trademark	:	**SKY MASTER TS4、SKY MASTER TS6、Cougar PS3**
		SKY TECH TS6i、Cougar PS3i/ACE RC
		TRS401ss、TRS601DD/ACE RC
Manufacturer's Name	:	**Thunder Tiger Corp.(Ningbo)**
Manufacturer's Address	:	**CW5 YUYAO,FAR-EAST INDUSTRY PARK,**
		ZHEJIANG PROVINCE,CHINA

is herewith confirmed to comply with the requirements set out in the Council Directive 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC.For the evaluation of the compliance with this Directives,the following standards were applied:

EN 300328 V1.7.1:2006

EN 301 489-1 V1.8.1:2008

EN 301 489-17 V1.3.2:2008

EN 60065:2002/A1:2006

Responsible for making this declaration is the:

Manufacturer ☒ **Authorized representative established within the EU** ☐

Authorized representative established within the EU (if applicable):

Company Name	:	
Company Address	:	

Person responsible for making this declaration

Name,Surname	:	**Kevin Lin**
Position/Title	:	**Manager**

China (Place) **2009-06-18** (Date)

Declaration of Conformity

Annex IV of the R&TTE Directive 1999/5/EC

For the following equipment:

Product	**Remote Controller for Models**
Type Designation/Trademark	**Cougar P2、Cougar P3、TRS402ss / ACE RC**

Manufacturer's Name	**Thunder Tiger Corp. (Ningbo)**
Manufacturer's Address	**28 Jin-Feng Road, Liang Hui Industrial Park, Yuyao, Zhejiang 315400, CHINA**

is herewith confirmed to comply with the requirements set out in R&TTE Directive 1999/5/EC of 9th March, 1999, Annex IV For the evaluation of the compliance with this Directive, the following standards were applied:

EN 300328 V1.7.1:2006

EN 301 489-1 V1.8.1:2008

EN 301 489-17 V2.1.1:2009

EN 60065:2002/A11:2008

Responsible for making this declaration is the :

Manufacturer ☒ **Authorized representative established within the EU** ☐

Authorized representative established within the EU (if applicable):

Company Name

Company Address

Person responsible for making this declaration

Name, Surname	**Kevin Lin**
Position/Title	**Manager**

Kevin Lin

China (Place) **2011-03-31** (Date)

SERVICE

Thank you for purchasing of the ACE RC COUGAR Radio. Thunder Tiger strives to bring you the highest level of quality and service we can provide. We race and test our products around the world to bring you state-of-the-art items. Thunder Tiger guarantees that you should enjoy many hours of trouble free use from our R/C products. Thunder Tiger products have been sold worldwide through the authorized distributors that are supported directly and rapidly from Thunder Tiger. You may find that Thunder Tiger is always pursuing to explore new items creatively with highest quality. To update the latest product information and to get the best technical support, please feel free to contact your local hobby shops or Thunder Tiger authorized distributor.

TROUBLE SHOOTING

Do not try to operate your model if you find your radio is not working properly. Check out the radio as following steps. If you can not solve the problems then contact with the Thunder Tiger authorized distributor for service.