Commander

2.4 GHz DIGITAL PROPORTIONAL 9-CH RADIO CONTROL SYSTEM

Instruction Manual

No.8901

FCC ID: VEJ-COUGARGP3

THUNDER TIGER GROUP
thundertiger.com

JC7405

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您可登入TTR官網或YouTube官方頻道，以獲取最新的產品資訊與更詳盡的產品說明

Introduction

Congratulations on your purchase of the Commander advanced 2.4GHz spread spectrum radio control system. This system was specifically-designed with the latest wireless and Thunder Tiger advanced-programming technology to meet R/C model requirements. With spread spectrum and smart frequency-hopping system, the Commander radio system delivers precision & reliability control without any interference risks.

System Contents

Transmitter

Receiver

Manual

Features

■ **2.4GHz Frequency hopping spread spectrum wireless system**
Built with advanced frequency hopping program on the spread spectrum base to deliver system safety and reliability without interference risks.

■ **Security ID binding link**
A binding feature is included with the Commander 2.4 GHz spread spectrum system ensuring transmitter and receiver only recognize each other to prevent interferences from other controllers.

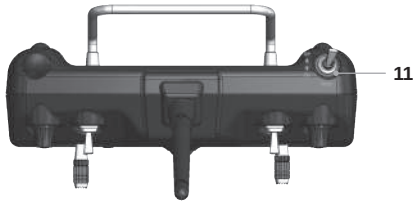
■ **Range checking function**
A range checking button on the transmitter reduces transmitter signal for pre-flight range check. It is recommended to perform range check before every flight.

Specifications

Transmitter	Commander
Item No.	8901
Configuration	Dual Sticks
Encoder	9Ch
Frequency(GHz)	2.4GHz
Modulation	GFSK
Current Drain	60mA@7.2V
Frequency Band Width	2402~2479MHz
Transmission System	FHSS
Antenna Type	1/4λDipole Sleeve
Antenna Peak Gain	2dBi Typical
Power Requirement	7.2V/6 cell AA Battery
Dimension (w/o antenna)	180 x 180 x 70mm
Weight (g/oz)	435g / 15.37oz

Receiver	TRS901DD
Frequency(GHz)	2.4GHz
BEC	No
Type	PPM
Antenna Type	Dual Antenna & Diversity
Battery Power	4.8~7.4V
Dimension(mm)	29.2 x 44.9 x 14.1
Weight(g/oz)	10.5g / 0.37oz

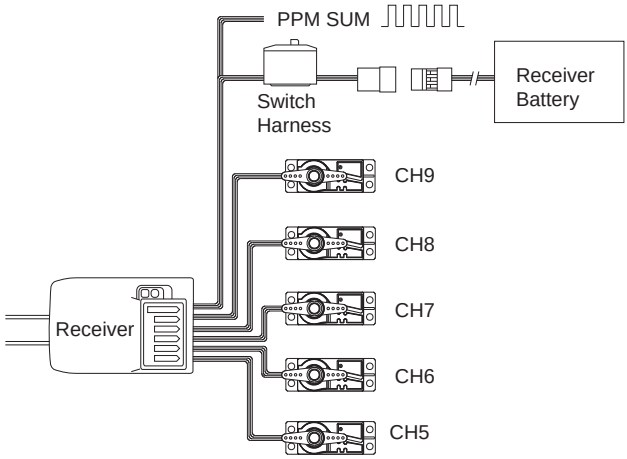
Transmitter Controls



1. **Antenna**
2. **Flight Mode Switch:**
   (1) Take Off Mode: When the GPS antenna receives 7 signals from the satellite, it will switch to the GPS mode automatically.
   (2) Landing Assist: The Landing Assist will automatically decelerate and stabilize the drone when in landing, the function will be activated when drone is within 2M from the ground.
   (3) Return Home: The Return Home feature will autopilot the drone back to the original take off point and proceed the landing automatically.
3. **IOC (Intelligent Orientation Control):**
   (1) IOC OFF: When IOC switches to the “OFF” mode, the IOC function will be dismissed.
   (2) IOC ON: When IOC switches to the “ON” mode, the drone will be heading locked intelligently and oriented to its original take off point
4. **Gimbal Angle Knob(Tilt):** Trim the Tilt of the Gimbal.
5. **Gimbal Angle Knob(Roll/Pan):** Trim the Roll or Pan of the Gimbal.
6. **Joystick**
7. **Binding Button**
8. **Stick Mode Switch:**
   (1) MODE 1:
   (1-1) Altitude Control (CH 3) is at right joystick/ Up and Down.
   (1-2) Forward/Backward Control(CH 2) is at left joystick/ Up and Down.
   (2) MODE 2:
   (2-1) Altitude Control (CH 3) is at left joystick / Up and Down.
   (2-2) Elevator Control (CH 2) is at right joystick/ Up and Down.
9. **Power Switch**
10. **Charger Jack**
11. **Reract Landing Skid Switch:** To control the Retract Landing Gear uplock / downlock.

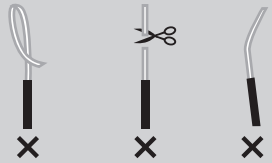
Radio installation

Before installing your radio into your model, connect the receiver, servos, and switch harness/battery pack as shown. In addition to checking for proper operation, this "bench test" helps you become familiar with the operation of your radio. Begin by turning on the transmitter, and then turn on the receiver switch. Make sure that all servos and trims levers are operating, and take a few moments to "play" with your system. After completion of your bench testing, turn off the receiver, followed by the transmitter.



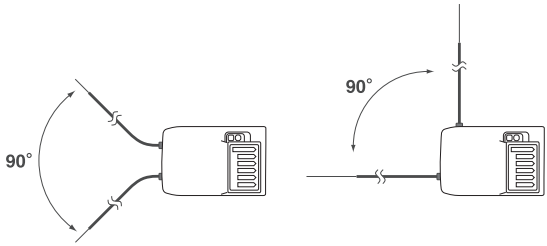
CAUTION

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.



HELPFUL HINT

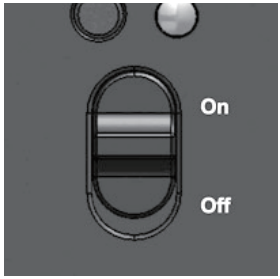
1. The two antennas must be kept as straight as possible. Otherwise it will reduce the effective range.
2. The two antennas should be placed at 90 degrees to each other.



Functions

The Commander transmitter was specifically-designed to operate air models. Basic functions for this transmitter are listed below.

1. Power On



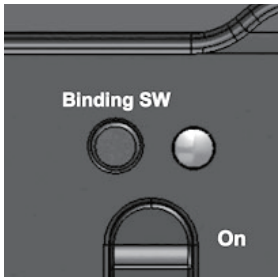
a) Turn On/Off

After installing the transmitter batteries, turn on the transmitter power by sliding up the switch located on the front middle position of the transmitter. The LED light turns “GREEN”. To turn off the power, slide down the switch, the LED indicator light will turn off.

b) Low Battery Power Warning

If the transmitter battery power is too low, a “Bi--Bi--” warning tone will be emitted and the LED indicator will flash “GREEN”. It’s very dangerous to fly the model with low battery transmitter. Please change the batteries immediately.

2. Binding process



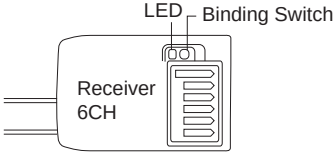
A binding feature is included in the Commander 2.4 GHz spread spectrum system to ensure the transmitter and receiver bind properly and prevent interference from other controllers. To bind Tx/Rx, please proceed as per the following:

a) Press and hold “Binding SW” button located on the transmitter.

b) Simultaneously, turn on the power.

c) Release the “Binding SW” button. The binding LED will blink Green / Red, indicating the transmitter is binding.

Press & hold Binding switch



d) Press and hold the BINDING push button on the Receiver, plug the battery power connector on the receiver to turn power on. Then release the BINDING button.

e) Successful binding is confirmed by the binding LED changing from Green / Red to a Green flash on the transmitter. The LED will turn green on the receiver. Upon confirmation, turn off power of the receiver and transmitter and launch normal start-up procedures.

NOTE

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

3. Range-Check

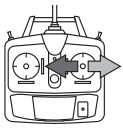
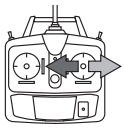
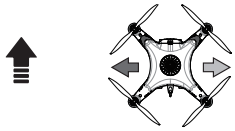
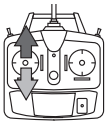
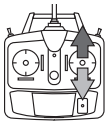
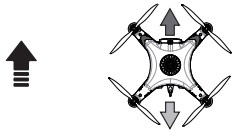
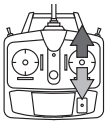
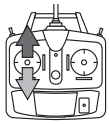
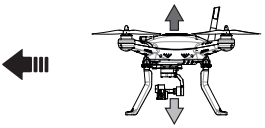
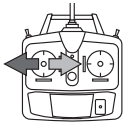
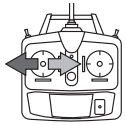
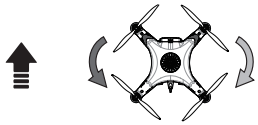
A built-in range-check function on the transmitter reduces signal strength for pre-flight range-check. When this function is activated, signal strength is weak. Use the weak signal strength for pre-flight range-check to confirm operation of wireless radio control system is normal. It is recommended to perform a complete range-check before every flight.

Range-Checking" procedure:

a) Turn both transmitter and model power on and ensure the system is functioning properly.
b) Take the transmitter to a distance of about 20~30m from the model.
c) Press and hold the "Binding SW" button. Signal strength is now weak. The transmitter buzzer will signal with a "Bi - - Bi" warning tone. Please do not release "Binding SW" at this stage.
d) Operate both left and right sticks to drive movement on the servos.Visually confirm that all movements are accurate and signal is interference-free.
e) Release "Binding SW" button. Signal reverses back to full strength and warning tone stops. And the warning tone also will stop in the same time.
f) Model is ready to fly.

NOTE
Never push the "Binding SW" button during flight. Flying under weak signal strength will result in signal loss and model crash.

4. Stick Controls

	Mode 1	Mode 2	Drone Movement
Aileron			
Elevator			
Throttle			
Rudder			

Forward Direction (Indicates Front Side)

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.

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 may cause undesired operation.

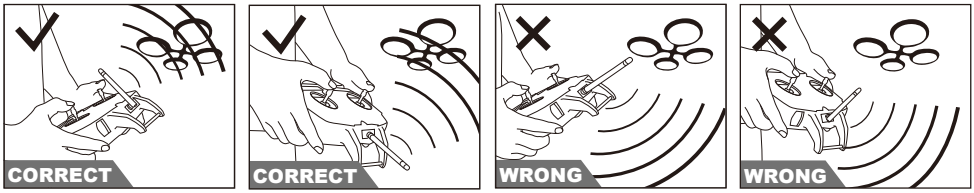
FCC Radiation Exposure Statement

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 Flying Field

- Always perform a pre-flight range-check to ensure conditions are interference-free.
- Do not operate the model or use the radio in rain or lightning.
- Do not operate the model or use the radio if you have been drinking alcohol or under the influence of any other substance that could affect your skills and judgment.
- Always check battery charge before flight.
- Keep out of reach of children.
- Do not store the radio in temperatures below -10 ˚C (14˚F) or above 40˚C (104˚F) or in a humid, dusty, or high vibration environment.
- Keep the radio away from direct sunlight.
- To prevent corrosion, remove batteries before storing the radio for a long period.

Additional Note for 2.4GHz Radio System



For best operating range, always ensure the largest section of your transmitter antenna faces the model.

Warning! Operating range may be significantly reduced with the transmitter antenna pointing directly at the model!

Service

Thank you for purchasing the ACE RC Commander Radio. This radio was produced by Thunder Tiger Corp.

Thunder Tiger products are sold worldwide through authorized distributors supported directly by Thunder Tiger. To receive the latest product information and enjoy full technical support, please contact your nearest hobby shop or Thunder Tiger authorized distributor.

Status Indication Chart

The following chart indicates LED and buzzer status. Do not operate your model if you suspect your radio is not working properly. If you encounter a signal not indicated on this chart and can not solve the problems by yourself, please contact your local Thunder Tiger authorized distributor for service.

Status	Transmitter		Receiver
	Buzzer	Binding LED	LED indication
Initializing (when power on)	Bi-Bi-Bi	Red/ 1 second	Red/ 1 second
Normal Operation	-	Green/ Flashing	Green/ Solid
Binding	-	Green/ Red Flash	Green/ Red Flash
Binding Success	-	Green/ Flashing	Green/Solid
Binding Failed	-	Green/ Red Flash	Green/ Red Flash
RF Failed	--	Red	Red/ Solid
Range Check	Bi - - Bi	Green/ Rapid Flashing	Green/ Solid
Low Battery	Bi - - Bi	Green/ Flashing	Green/ Solid

Declaration of Conformity

according R&TTE Directive 1999/5/EC

For the following equipment:

Product	:	**Remote Controller**
Type Designation/Trademark	:	**COMMANDER(#8901)/TTRobotix**
		TRS901DD/TTRobotix
Manufacturer's Name	:	**Thunder Tiger Corp. (Ningbo)**
Manufacturer's Address	:	**28 Jin-Feng Road, Liang Hui Industrial Park, Yuyao,**
		Zhejiang 315400 China

- **Council Directive 1995/5/EC R&TTE on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity**

For the evaluation of the compliance with this Directives, the following standards were applied :

EN 300 328 V1.8.1:2012-6

EN 301 489-1 V1.9.2:2011

EN 301 489-17 V2.2.1:2012

EN 60950-1:2006+A11:2009+A1:2010+A12:2011

EN 62479

Responsible for making this declaration is the :

Manufacturer **Authorized representative established within the EU**

EC Distribution

Company Name	:	**THUNDER TIGER EUROPE GmbH**
Company Address	:	**Rudolf-Diesel-Str. 1, 86453 Dasing, Germany**

Person responsible for making this declaration

Name, Surname	:	**Janet Chang** Janet
Position/Title	:	**Engineer**
Date	:	**2014-11-28**

Federal Communication Commission 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).

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 1 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 1 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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 may cause undesired operation