



2.4GHZ DIGITAL REMOTE CONTROL SYSTEM

*Includes**

Advanced 2.4GHz 7-channel professional transmitter

Advanced 2.4GHz micro 7.7g 7-channel receiver

*See box label for detailed contents listing

Features

- Simple one-button transmitter/receiver binding
- Lightweight (7.7 gram) micro 7-channel receiver
- Dual rate (Ail & Ele)
- Eleven mixing (Ail & Ele mixing for flying wing types of models)
- Unique **slow-rate** retract/flap switch (channel 5)
- Range check mode
- Trainer function
- Low voltage alarm
- Throttle reverse safety function
- Side & rear ergonomic grips for maximum transmitter security
- Steel carry handle and neck strap mount
- Directional antenna
- Precision, adjustable height dual-axis stick units
- Front-mounted reversing switch panel
- Low power consumption 4-cell transmitter
- Convenient crystal-free operation
- Simulator socket (USB simulator cable available separately)
- LCD display
- Channel 5, 2 way switch.
- Channel 6, rotary switch
- Channel 7, 3 way switch



For use with recreational radio controlled model aircraft only.

Not a toy—suitable only for persons aged 14+.

Planet
rock-solid r/c

V8.10

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WARNING!

Model aircraft flying is a potentially hazardous sport which has the potential to endanger life, cause injury or damage property.

When you see this symbol in this manual, your attention is being drawn to a potential hazard and you should take particular note.

WARRANTY CONDITIONS

For a period of one year from time of purchase, J. Perkins Distribution Ltd will repair or replace, at its discretion, any items showing manufacturing or assembly defects that has been found faulty by our service department. This does not affect your statutory rights.

J Perkins Distribution Ltd does not accept any liability for any injury, damage or consequential damage arising as a result of failure to observe the procedures and precautions outlined in this manual. J Perkins Distribution Ltd does not accept any liability that may arise from any misuse or modification of this equipment. Please note that, whilst every effort is made to ensure the accuracy of instructions and materials included with this product, mistakes can occur and neither J. Perkins Distribution Ltd nor its distributors will be held liable for any loss or damage arising from the use of this system or for any loss or damage arising from omissions or inaccuracies in the associated instructions, references, web sites or materials included or referred to with this product.

We reserve the right to modify the design of this product, the box contents and manual without prior notification. E&OE

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web: www.jperkinsdistribution.co.uk

EU REGULATIONS

J Perkins Distribution Ltd declares that this remote control system is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC on Radio equipment and Telecommunications Terminal Equipment. A copy of the declaration(s) of conformity can be obtained from J Perkins Distribution Ltd, Ashford rd, Lenham, Kent. UK ME17

2DL. This system complies with the EU directive on Waste Electrical and Electronic Equipment. Do not dispose of this product in household waste. At the end of the products' life, dispose of it at a designated collection point for the recycling of waste electrical and electronic equipment.

Please contact your supplier for any advice required on disposal.



INTRODUCTION

Thank you for purchasing an Advanced 2.4GHz Planet T7 radio control system. It is designed for remotely operating park-fly or indoor R/C model aircraft safely in the easiest possible manner without the need for crystals.

It's uncomplicated yet sophisticated design makes it an ideal first system or a general purpose sport system for R/C modelling.

It uses state-of-the-art computer technology to bind it's transmitter and receiver in such a fashion that, under most model flying conditions, interference that would normally cause loss of control in 35MHz or 27MHz equipment is nearly always rejected—and in most cases radio functionality is entirely unaffected. This makes for a safer, more reassuring flying experience.

It also enables a pilot to turn up, switch on and fly under most conditions—subject to local flying guidelines and rules.

The new design single aerial micro receiver is ultra-compact and allows for rapid and convenient installation especially when compared with some twin-unit multi-aerial receiver designs.

NB. The Planet T7 is not a complete system; other parts must be purchased in order to obtain full functionality from this equipment.

Please read all instructions carefully before using your Advanced 2.4GHz Planet T7 radio control system.

SAFETY INFORMATION

WARNING!

This equipment must be assembled carefully into an appropriate R/C aircraft according to the manufacturers' recommendations.

Note that Planet T7 is not a 'full range' system and must only be used with small Park Flyer/coaxial helicopter type R/C models operated at relatively short range (around 150 metres).

This product is a sophisticated control system for model aircraft and is not a toy. Suitable only for persons aged 14+

Check all radio equipment carefully before use and range check before every flight.

Never fly near people, animals, buildings, power lines, water or trees.

Ensure that all batteries are either fresh (if alkaline) or charged (if rechargeable) before using this equipment.

Observe BMFA safety codes at all times when operating radio controlled models

This equipment is designed to be installed and used only within a radio control hobby environment.

2.4GHz signals are less tolerant of obstacles so never

fly close to structures, trees, hedges which if flown behind may cause a temporary loss of signal.

Never fly in rain.

UK AIR LAW, BMFA & SAFETY

All model aircraft operated in the UK are subject to UK Air Law. It should be noted that in the UK a considerable burden of responsibility and a strict duty of care lie with the pilot of any model aircraft. Under UK Air Law the pilot assumes all responsibility for his aircraft.

Radio control model aircraft are potentially capable of inflicting severe personal injury or even death to people or animals and can cause considerable damage to property if operated incorrectly or irresponsibly.

In the UK, the British Model Flying Association (BMFA) (<http://www.bmfa.org>) is responsible for overseeing all aspects of model flying.

If you are new to R/C modelling we strongly recommend you download the BMFA handbook (<http://www.bmfa.org/handbook/index.html>) which contains much useful information about model flying including legal, insurance, safety obligations and technical recommendations for model pilots.

NEW TO RADIO CONTROL? If

you are new to radio control (R/C) modelling, please do not expect to be able to install this equipment into a model aircraft and immediately 'fly around'. R/C models require time and training in order to be assembled and flown successfully. We suggest you seek advice from an experienced pilot or your supplier regarding flight training and approved flying sites. If any information in this manual is unclear, please contact your supplier for help.

NOT WHAT YOU EXPECTED?

If the information presented in the preceding paragraphs and opposite is not what you expected and you either cannot or choose not to accept the responsibilities associated with operating this equipment in a model in the UK, you should not buy this product.

In the event you have already purchased this product; you should return the product in it's original condition and obtain a refund from your supplier.

TRANSMITTER FEATURES



CONTROL TRIMS

These are used to fine trim the position of the servos.

CHANNEL 5 SWITCH

The 5th channel retract switch on the upper case operates a servo at normal or slow rate. The slow rate allowing for more realistic deployment of spoilers, scale retractable undercarriage or flaps. Normal rate allowing for use with cameras, lights, and other functions requiring a standard speed channel.

To switch from slow to normal rate use the 5th channel dip switch located in the reversing switch bay.

CHANNEL 6 ROTARY SWITCH

The 6th channel rotary switch can be used to operate flaps, spoilers or other controls where a rotary control is needed.

CHANNEL 7 SWITCH

Channel 7 is a 3-way switch suitable for flaps, air-brakes, spoilers, lights and many other applications.

CHANNEL 7 ALARM

The T7 is equipped with an optional alarm sound. This is intended for such functions like winch systems where the default switch position would be in the centre. In this mode the transmitter would give a warning sound and the LCD display will show CH7 if the switch is not in the centre position when the transmitter is switched on.

To activate or deactivate this function: pull and hold the trainer switch forward then turn on the transmitter, then switch the D/R on and off twice until the display changes from C-0 to C-1 or C-1 to C-0

TRAINER SWITCH

The T7 includes a trainer switch and socket to allow a pupil/trainer relationship to exist between two Planet radios.

DUAL RATE SWITCH

The dual rate switch combines both Aileron and Elevator to one single switch assignment. Separate values can be set using the travel adjuster pots found under the front reverse switch cover.

ELEVON MIXING

This function is used to control flying wing type models. This operation mixes both Elevator and Aileron servos to enable both servos to operate as Elevator and Ailerons. Travel adjustment pots are used to control both movement values.

RANGE CHECK FUNCTION

The Planet 7 includes a range check function. To operate this function press the range check button located under the reverse switch cover, you will see R-C appear in the LCD screen and hear a slow BEEP-BEEP sound. The range check function is active only while the range check button is pressed, once released the T7 will go back to full range. When the button is pressed & held output power is reduced by approximately 65% and range should be around 80 metres. Check that range with the button pressed is 80m \pm 15m prior to flight.

BATTERY STATUS LCD AND LOW VOLTAGE ALARM

This display provides a digital readout of Transmitter voltage and includes a low voltage alarm. Stop flying and replace the batteries when the low voltage alarm sounds or when the display voltage display falls to 4.4V.

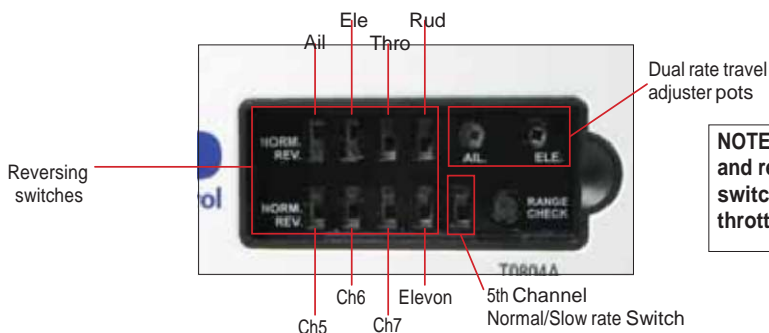
⚠ WARNING!

Failure to stop flying immediately when the voltage alarm sounds or the display voltage reads 4.4V or less may lead to loss of control!

REVERSING SWITCHES

Reversing switches are used to reverse the direction of all channels.


The reversing switches are located beneath a removable cover on the front panel of the transmitter.



NOTE: Both the transmitter and receiver must be switched off before changing throttle reverse function.

BATTERY FITTING

4 AA alkaline batteries are required. They are not supplied.

Install the 4 batteries into the battery compartment in the rear of the transmitter, by pressing and sliding the mark on the cover: 

Please ensure correct polarity is observed.

CHARGING SOCKET

Rechargeable AA batteries of the same voltage can be substituted for alkaline batteries.

N.B. Take note of the polarity diagram on the rear case and use a correctly rated 4.8V charger to charge the rechargeable batteries.

SIMULATOR LEAD SOCKET

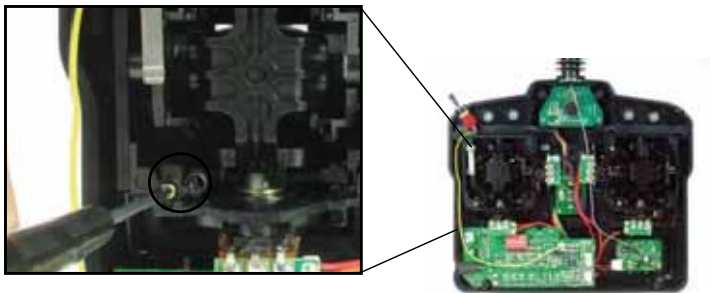
On the rear of the transmitter. For optional Simulator lead connection.

STICK TENSION ADJUSTMENT

Your T7 transmitter features adjustable spring tension on the 3 primary flying controls, aileron, elevator, rudder. To adjust tension remove the 6 screws retaining the rear transmitter case as below:



Use a small cross head screwdriver to adjust spring tension:



Replace the case and screws carefully after adjustment.

N.B. This procedure exposes delicate electronics. You must not touch or allow anything to fall into the circuitry. If you do not feel comfortable doing this, please ask your supplier for assistance.

STICK HEIGHT ADJUSTMENT

Use an allen key to slacken the stick end, adjust to desired height and retighten allen screw.



S

R7M RECEIVER

The R7M receiver is a precision electronic device at the heart of your control system. It should be handled carefully and protected from moisture, vibration and dust.

It has been designed to operate with small lightweight JP EnErG servos in a light duty environments, e.g. Park Flyer aircraft, JP Twister co-axial helicopters. It should be noted that some model aircraft installations, for example, those involving retractable undercarriage, flaps, etc, may impose high current loads/drain on receiver and batteries.

Therefore, always perform careful ground tests on your airborne equipment BEFORE flying and always perform battery and circuit current checks after connecting servos to control surfaces or aircraft fixtures. Note the observed current consumption under idle/running conditions and check that battery and circuit capacity are sufficient for safe flight at all times under all conditions. If in doubt, run high current load servos from a separate battery pack.

Take particular care of the gold-plated receiver pins when attaching or disconnecting connectors.

R7M DEPLOYMENT

The receiver should be secured and mounted in protective foam (JP No 5508000 not supplied) to protect and cushion it in the event of impact or vibration: The electronics are sensitive to moisture or damp. Do not expose the receiver to damp or wet conditions.

When installed in a model the aerial should be deployed perpendicular to the rear face of the receiver. The receiver aerial is fragile. Do not expose it to vibration, stretching or contact with any object. Ensure that the receiver aerial is arranged as in the picture below:

5508000 receiver/
battery packing



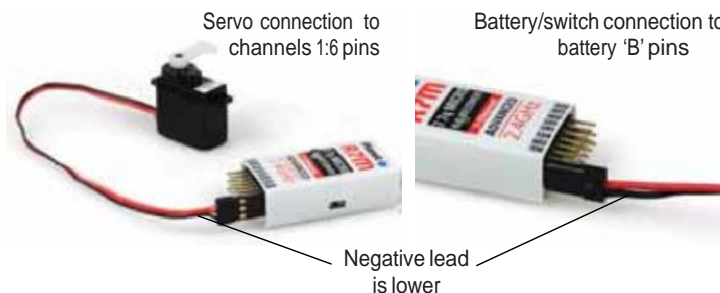
Aerial deployment



RECEIVER CONNECTIONS

The lower gold pin is negative, the centre pin is positive and the upper pin is signal.

No physical polarisation of connectors is provided therefore check carefully before making connections to the receiver.



R7M SPECIFICATIONS

Operation.....4.8V to 6.0V Idle
current (transmitter and receiver on, no servos connected) ...40mA

⚠ WARNING!

Warning: The R7M Receiver must not be operated below 4.4V!

Warning: Incorrect connection may cause damage and/or receiver failure!

Warning: Exposure of the receiver to high vibration, damp or wet conditions may cause it to stop working!

Planet SERVOS

Servos are not supplied.

The following JP EnErG servos have been extensively tested and flown with Planet 7 and should be used with this system:



7712105	SUPER MICRO 6.0g SERVO (S6 EnErG)
7712115	SUPER MICRO DIGITAL 7.5g SERVO (S7.5D EnErG)

BATTERY AND SWITCH

Batteries and switch are not supplied.

The following 4.8V battery and switch are recommended:



4405515	ENERG-PRO NiMH 4.8V AA-2100 FLAT
7721049	SWITCH & CHARGING HARNESS



BINDING TRANSMITTER TO RECEIVER

A working 2.4Ghz transmitter and receiver have a coded, 'bound' relationship with each other. The setting up of this relationship is known as 'binding'.

In a 'bound' transmitter/receiver relationship the receiver is exclusively bound to your transmitter and can only respond to signals received from that transmitter. It will not respond to any other device or transmitter.

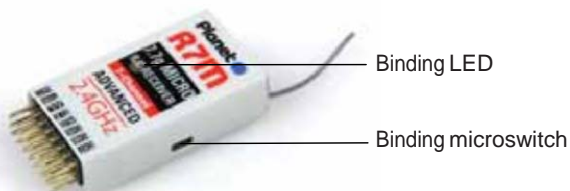
Once a transmitter is bound to it's receiver, re-binding of transmitter and receiver is not normally required. However, by binding your receiver, for example, to a friend's Planet 7 transmitter, the unique relationship between your original transmitter and receiver will be broken. Should you wish to - or need to, re-establish or 'bind' your transmitter with your receiver once more; proceed as follows:

HOW DO I RECOGNISE WHEN MY RECEIVER IS NOT BOUND?

Upon connecting the battery in the model the receiver status indicator LED will flash on and off slowly regardless of whether the transmitter is switched on or not. Even when the transmitter is switched on; no control or change in the slow flash of the LED will be seen.

HOW DO I BIND RECEIVER AND TRANSMITTER?

- ▼ 1. Switch off the transmitter.
- ▼ 2. Connect receiver battery. Press the binding microswitch on the receiver undersurface briefly once with your fingernail or a small screwdriver.



- ▼ 3. The receiver status indicator will flash in groups of three.



Binding LED
flashing in threes

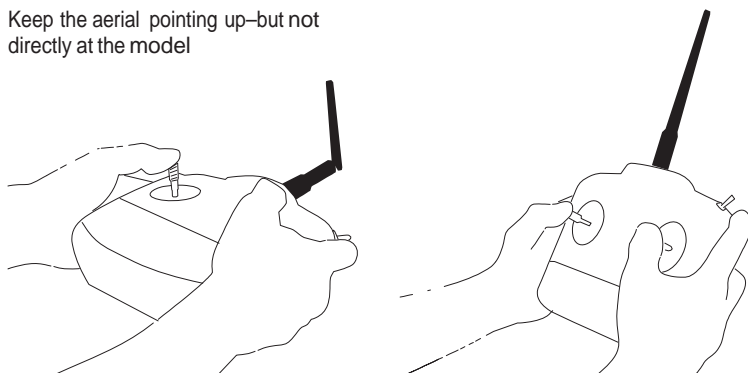
- ▼ 4. Switch on the transmitter.
As the signals are acquired, the Binding LED will flash briefly and then glow solidly a few seconds later indicating a successful binding.
- ▼ 5. Operate your model as normal. The Binding LED glows solidly once bound with the transmitter.

TRANSMITTER USAGE

TRANSMITTER AERIAL POSITIONING

The transmitter aerial can be angled to optimise the transmitted signal. During operation keep the aerial pointing upwards at all times. Do not fly with the aerial pointing downwards. Avoid pointing the aerial directly at your model.

Keep the aerial pointing up—but not directly at the model



RANGE AND POWER CHECK

- ▼ It is important to check the transmitter will operate the model satisfactorily at a safe range.
- ▼ In order to do this place your model on the ground and walk away from the model whilst operating the swashplate/aileron controls. Have an assistant stand by the model and signal what the controls are doing to confirm they operate correctly.
Check that the servos in the model operate without interference up to a distance of at least 100 metres.
- ▼ Ensure that fresh/charged batteries are being used for transmitter and receiver. Check that the transmitter LED screen is displaying a voltage greater than 4.4V.

⚠ WARNING!

Do not fly at 100 metres distance or greater. At distances of greater than 50 metres, it will become difficult to see your model and at 100 metres it will be very difficult to see accurately and therefore to control safely. We strongly recommend you fly no further away than 50 metres.

⚠ WARNING!

Planet 7 has been tested with many types of models and operated at ranges significantly greater than that recommended. However, 2.4GHz equipment is affected by terrain, weather and obstacles to a significantly greater degree than is conventional lower frequency R/C equipment. Therefore, do not be tempted to exceed these specifications
Do not exceed the distances specified!

BATTERY STATUS LCD

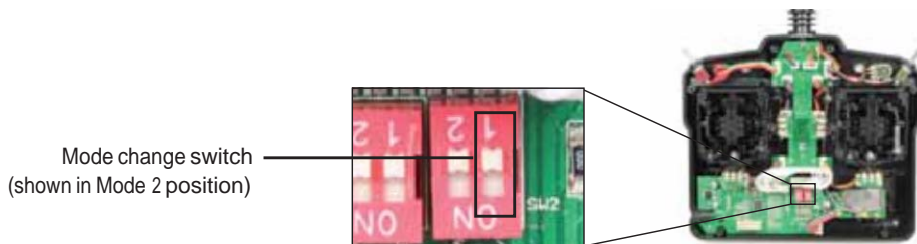
This display provides a digital readout of Transmitter voltage. Stop flying and replace the batteries when voltage display falls to 4.4V.

WARNING!

Failure to stop flying immediately when the display reads 4.4V or less may lead to loss of control!

MODE CHANGE SWITCH

Located at the bottom left of the main PCB is the mode change switch which facilitates conversion between throttle left (Mode 2) layout and throttle right (Mode 1) layout.



- ▼ 1. Remove batteries from battery compartment.
- ▼ 2. Unscrew the six screws that retain the rear cover of the transmitter case and carefully unplug the connector from the main pc board.
- ▼ 3. On the lower main pc board found below the stick units there are two small red switch blocks. The first three switches from left to right should be in the high position, do not touch these! Flick the fourth switch either up for mode-2 or down for mode-1.
- ▼ 4. Unscrew the small screw retaining the metal ratchet to the stick assembly and transfer to the opposite stick unit.
- ▼ 5. Remove the centring spring and retainer from this stick unit and transfer these parts to the first stick unit. Make sure this stick unit now centres correctly and the ratchet is working smoothly on the other stick unit.
- ▼ 6. Re-attach the two connectors to the main pc board and fit rear tx cover back into position and screw the six retaining screws back into place.
- ▼ 7. Replace batteries into battery compartment and switch transmitter on to check it works servos OK with the throttle now working on the opposite side.

PLANET 7 FAILSAFE

The Planet 7 2.4GHz radio system has an easy to operate built in programmable failsafe system. Channel No:1 (throttle channel) can be programmed to return to its preset position if the signal is lost. Channels No: 2,3 & 4 return the their to neutral position if the signal is lost.

Channel No:1

To set your throttle failsafe-preset position simply make sure the throttle stick is in the idle position then turn on your transmitter. Now turn on the receiver.

Once the receivers LED has stopped flashing and is solid you have set the failsafe. It is always recommended to have the failsafe set in the lowest position possible.

WARNING!

This will result in your aircraft descending uncontrollably and immediately in whatever attitude is determined by the dynamics and speed of your model at the time!

This failsafe setting is designed to prevent the model from flying away (and thereby posing a threat to the safety of third parties).

THROTTLE LEFT (MODE 2) LAYOUT



Your Planet T7 can be flown in either throttle left or throttle right format. The throttle stick is on the left side of the transmitter in the above arrangement. The primary flying controls are shown here.

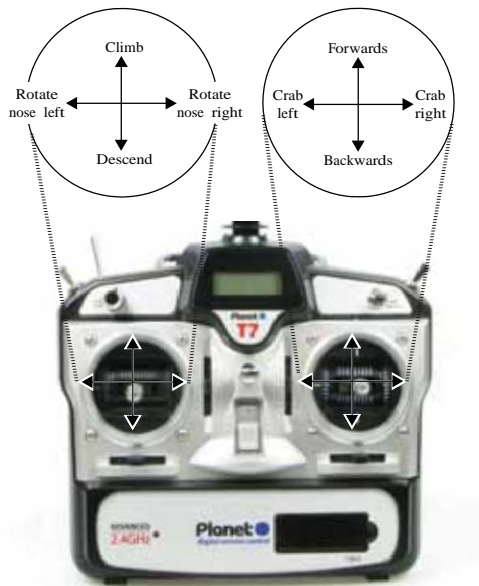
THROTTLE RIGHT (MODE 1)



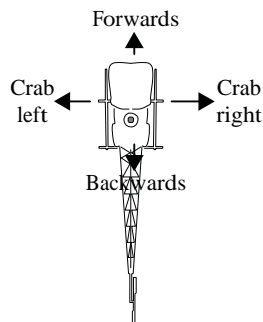
The throttle stick is on the right side of the transmitter in the above arrangement. The primary flying controls are shown here.

HELICOPTER MODE 2

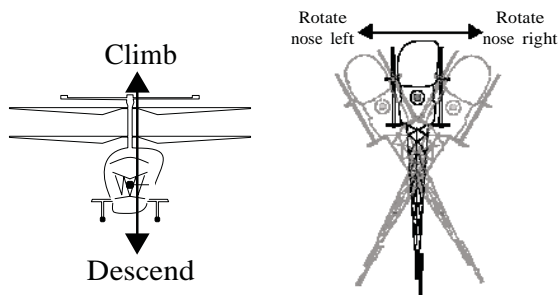
- ▼ Each dual axis stick unit of your transmitter controls 2 helicopter functions (complete with trimmers on each function) giving you control about all 4 axes of flight).



- ▼ The right stick operates the 'cyclic' steering controls and moves the helicopter forwards/backwards and to the left/right in the horizontal plane.

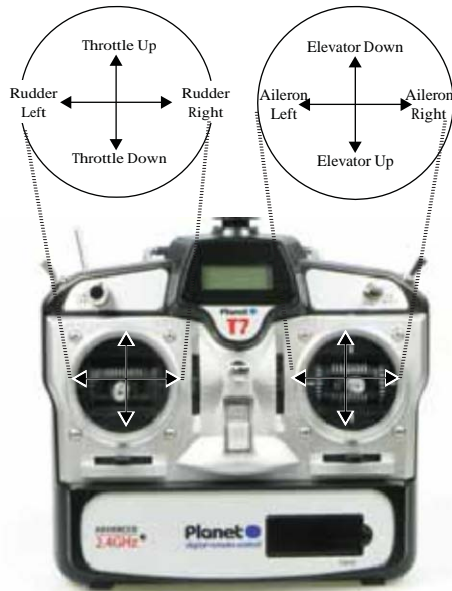


- ▼ The left stick operates the throttle (main rotor speed) and yaw control.



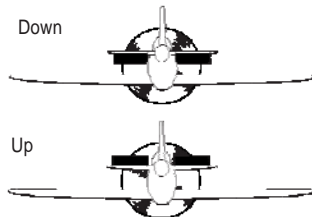
AIRCRAFT MODE 2

- ▼ Each dual axis stick unit of your transmitter controls 2 aircraft functions (complete with trimmers on each function) giving you control about all 4 axes of flight). See above.

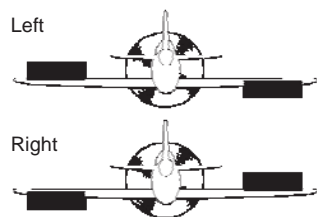


- ▼ The right stick operates the elevator which moves the model up/down and the aileron which rolls the model left/right.

Elevator Controls:

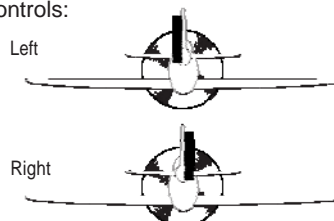


Aileron Controls:



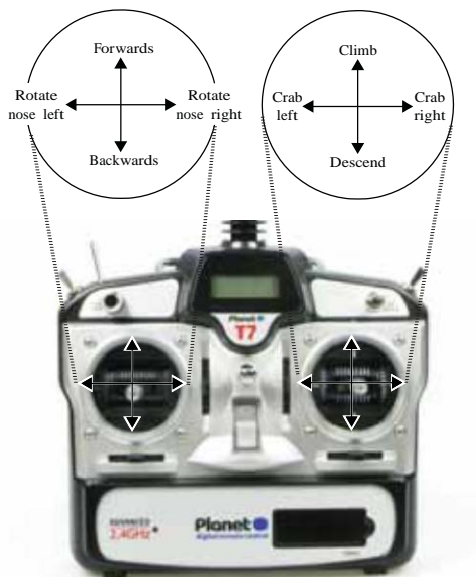
- ▼ The left stick operates the throttle which increase and decreases speed and Rudder which turns the model left/right.

Rudder Controls:

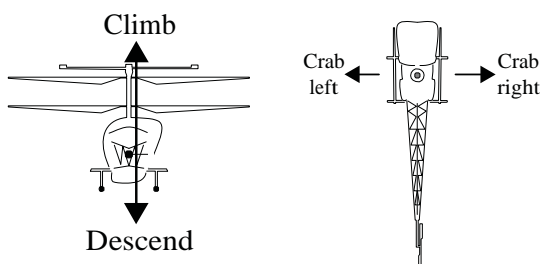


HELICOPTER MODE 1

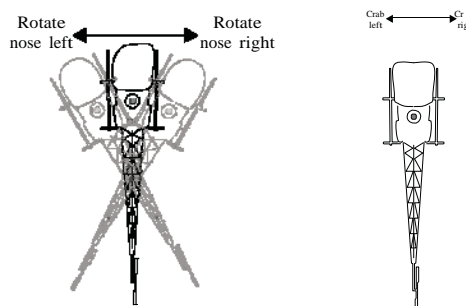
- ▼ Each dual axis stick unit of your transmitter controls 2 helicopter functions (complete with trimmers on each function) giving you control about all 4 axes of flight).



- ▼ The right stick operates the throttle (main rotor speed) and the roll 'cyclic' steering controls which moves the helicopter to the left/right in the horizontal plane.

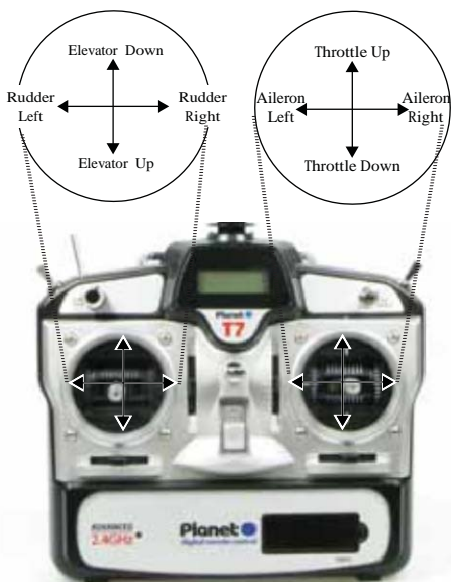


- ▼ The left stick operates both yaw control and the forwards/backwards 'cyclic' steering controls.



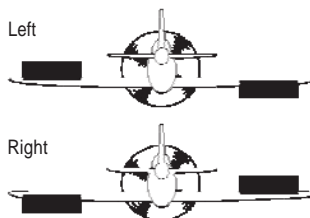
AIRCRAFT MODE 1

- ▼ Each dual axis stick unit of your transmitter controls 2 aircraft functions (complete with trimmers on each function) giving you control about all 4 axes of flight).



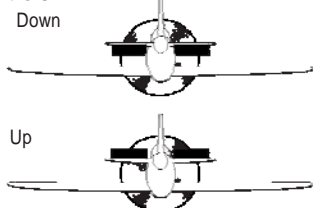
- ▼ The right stick operates the throttle which increase and decreases speed and the aileron which rolls the model left/right.

Aileron Controls:

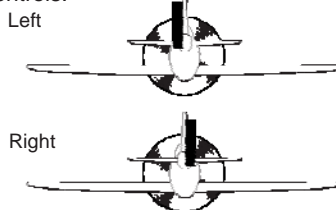


- ▼ The left stick operates the elevator which moves the model up/down and Rudder which turns the model left/right.

Elevator Controls:



Rudder Controls:



TX Operation Environment temperature: — 20 - 25°C

RX Operation Environment temperature: — 20 - 25°C

TX & RX Humidity: 50%-60%

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

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 AUTHORITY TO OPERATE THE EQUIPMENT

NOTE: 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 or more 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.

--CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

- Different types of batteries or new and used batteries are not to be mixed;
- Batteries are to be inserted with the correct polarity;

Planet

rock-solid r/c

J Perkins Distribution, Lenham, UK



www.jperkinsdistribution.co.uk