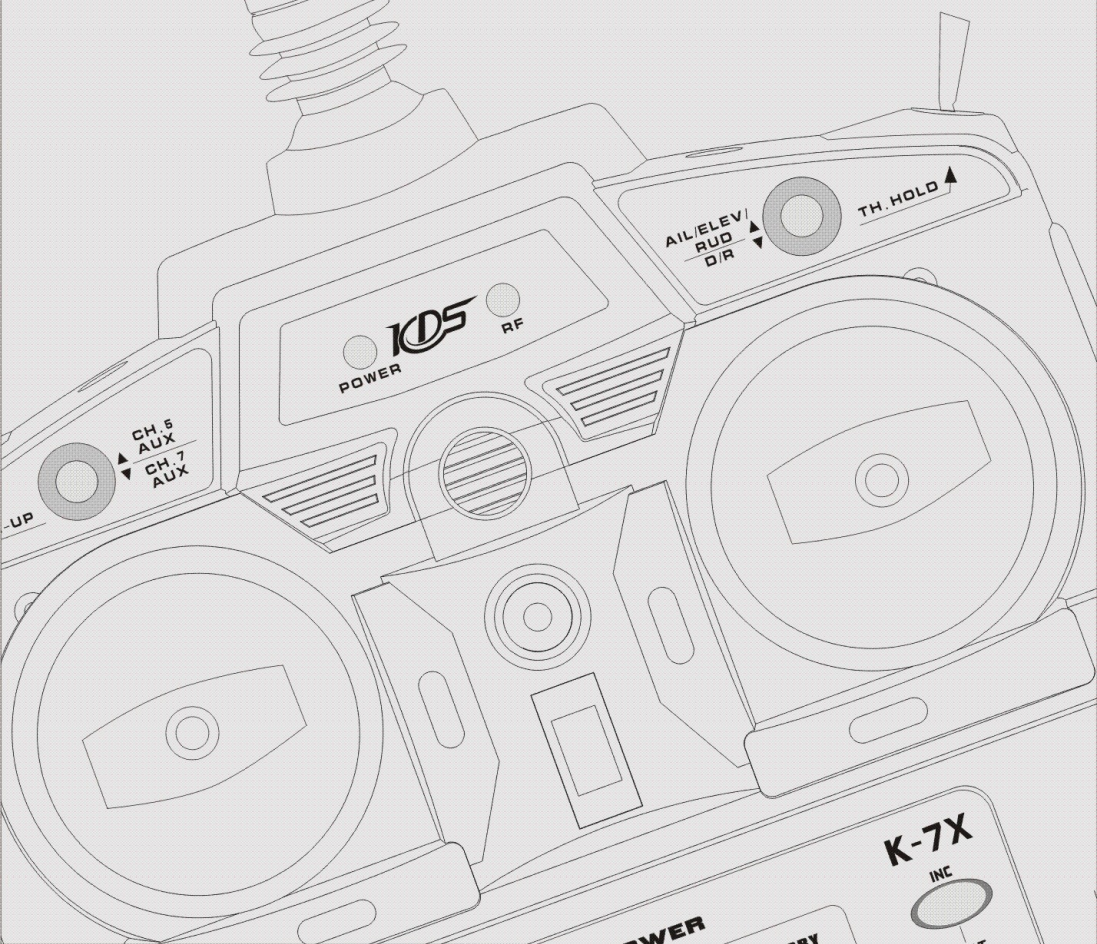


# ***K-7X<sup>2.4GHz</sup>***

# ***Remote controller***

## ***System Manual***



**KDS** KDS MODEL  
SHENZHEN KDS MODEL TECHNOLOGIES CO., LTD.

**KDS**

**POWER**  
3ITEM 6CHANNEL 7MODEL MEMORY

**K-7X**


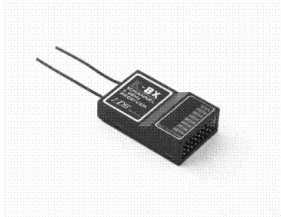
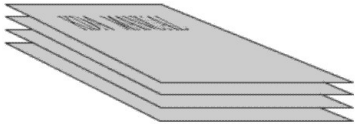
INC

EXIT

DEC

## Contents

Before using this product, check that you have all of the following items. If any items are missing, please contact dealer.

Name	Amount	Picture
<p><b>Transmitter</b></p>	<p><b>1</b></p>	
<p><b>Receiver</b></p>	<p><b>1</b></p>	
<p><b>Manual</b></p>	<p><b>1</b></p>	

## Introduction

Thank you for purchasing KDS7CH digital proportional R/C system. This system is extremely versatile and may be used by beginners and professionals alike. In order for you to make the best use of your system and to fly safely, please read this manual carefully. If you have any difficulties while using your system, please contact your hobby dealer.

## Liability Declaration

KDS model company has the right to change the product, including the exterior, the functions parameter, and operating requirements, but no notice.

KDS model does not provide any guarantee, declaration and promise for special use of any KDS products.

The recommended or text technologies data in the technology introduction for KDS model company only indicates the test result at that time, but it does not mean KDS model company acknowledges the result in law.

KDS model company will not be responsible for the result made by using any product or circuit, including the incidental or indirect compensation.

The parameters of KDS electronic products will be changed under different conditions. The products will work only after all the functions parameters are approved by each use intension.

## Precaution of Safety

- It requires professional skills and technical knowledge to install and operate R/C model properly. Incorrect installation and operation will result in severe property loss and personal injuries.
- KDS-7X 2.4GHz control system is exclusively designed for civil use of R/C models. Don't use it in any other flying machines.
- The governmence for R/C model is different in different place, therefore, please consult your local regulatory body and follow the rules and regulations to operate legally.
- Radio wave transfers almost in straight routine in 2.4GHz, please make sure there is no any obstacle when you are operating the product. The antenna tube should point at the controlled model to ensure efficient control, and keep conductive materials away from receiver and transmitter.
- If there is prang, collision, welter and other accidents when operating, please test all the things before next operating.
- Always keep electrical components away from small children.
- Stop flying long before your batteries become low on charge. Do not rely on your radio's low battery warning systems, intended only as a precaution, to tell you when to recharge. Always check your transmitter and receiver batteries prior to each flight.
- Before flying, be sure that the frequency you intend to fly with is not in use, and secure any frequency control device (pin, tag, etc.) for that frequency before turning on your transmitter. It is never possible to fly two or more models on the same frequency at the same time. Even though there are different types of modulation (AM, FM, PCM), only one model may be flown on a single frequency at any one time.
- While you are getting ready to fly, if you place your transmitter on the ground, be sure that the wind won't tip it over. If it is knocked over, the throttle stick may be accidentally moved, causing the engine to speed up. Also, damage to your transmitter may occur.
- Before taxiing, be sure to extend the transmitter antenna to its full length. A collapsed antenna will reduce your flying range and cause a loss of control. It is a good idea to avoid pointing the transmitter antenna directly at the model, since the signal is weakest in that direction.
- Don't fly in the rain! Water or moisture may enter the transmitter through the antenna or stick openings and cause erratic operation or loss of control. If you must fly in wet weather during a contest, be sure to cover your transmitter with a plastic bag or waterproof barrier. Never fly if lightning is expected.

## Part 1 KDS 2.4GHz Remote Controller System

KDS-7X 2.4GHz REMOTE CONTROLLER SYSTEM UNITS ADVANCED ELECTRONIC DEVICE, AND FEATURES WIDE USE. It can support multi-users and multi-equipment simultaneously, and features quick response, high precision, and strong capability for anti-jamming.

KDS-7X 2.4GHz R/C system supports one transmitter and several receivers, and makes it possible that single radio can control several models simultaneously.

KDS-7X 2.4GHz R/C system supports different brand gyro

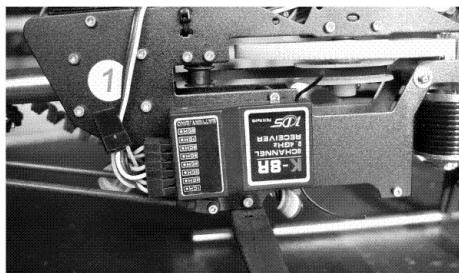
KDS-7X 2.4GHz R/C system reacts quickly and precisely

### 1. Mounting of Receiver

Installation position shall follow these conditions:

1. Keep the receiver away from engine, motor, ESC, battery, and other metal parts
2. The antenna can not be covered by metal, carbon material or the other electronic conduction material

Keep the antenna in 90 degrees with installed frame or bottom plate, it means that try to keep the antenna visible, see the graph below:



### 2. Connect Devices to Receiver

Connecting all devices and parts to the corresponding channels. Take notice of 3P signal wire must be connected in right way, or it will cause the severe damage to certain device or fail to work. There are some corresponding symbols of 3P on one side of the receiver:

- (-) means cathode of power connected to the earth, usually links to the black line or brown line of 3P signal wire
- (+) means the anode of power, usually links to the red wire of 3P signal wires.
- (s) means signal wire, usually links to the white or yellow wire of 3P signal wires.

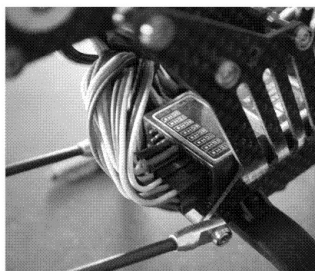
Notice: please assess the power demand of the receiver of model when selecting the electricity supply style, ensure the receiver can get enough power supply when using, the voltage of the receiver not less than 4.2V at any time.

### 3. Binding Transmitter and Receiver

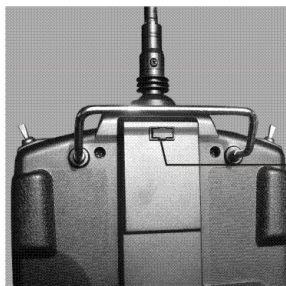
Before using the 2.4GHz remote controller system, you must bind the transmitter and the receiver. Binding them as following steps:

- 1) Power on receiver by plugging the ESC line, then plug the 'BIND line' into the 'BIND' slot of receiver. Then the LED of receiver will flash three times per second. Then you can remove the "BIND" line'.

- 2) Hold the 'BIND button' of transmitter, then turn it on (keep holding), the RF LED of transmitter will flash fast.
- 3) After about half second, binding will finish, the LED of receiver will shine twice slowly, then enter working mode.
- 4) Release the 'BIND button' of transmitter, the RF LED will keep light, which indicates it is in working mode.



The receiver has been plugged bind line



Bind button on the back of transmitter

**Notice:**

1)KDS-7X 2.4GHz remote controller system sustain multiple receivers operation and long-distance scanning, so please make sure there's only your radio scanning. If there is any person who also use KDS-7X 2.4GHz remote controller system at local, please operate only after other users pare the signal.

KDS-7X supports seven models saving in one transmitter, they are numbering as n1 to n7. The binding will save the serial number in receiver. So if you bind one receiver with n1, it can only work when the transmitter is switched to n1.

## 4. Control Distance

All remote controller system equipment has an effective range. It's not the same on the ground, and on the water surface or in the sky; It's not the same on flat ground and complex land; It's not the same in rainy days and in sunny days; And besides, the external electrical environment is changing continuously. It's quite necessary for the users who want to control at a long distance to test effective distance beforehand.

Radio wave transfers almost in a straight line, please make sure there is no object between antenna and the controlled model. And the antenna should point at receiver's antenna, and keep the controlled model in certain distance where the model can be seen.

# Part2 Transmitter Manual

## 1 Features

- 1 . LED display which shows model type and battery voltage on normal status.
- 2 . 7 models parameters store supported
- 3 . Support 5 points throttle(THR) curve in **NORMAL** mode and **IDLE** mode.
- 4 . Support 5 points pitch(PIT) curve in **NORMAL** mode, **IDLE** mode and **HOLD** mode.
- 5 . Support **HELI**(helicopter) mode and **AERO** mode. Following modes are supported in each mode:

HELI mode	<ul style="list-style-type: none"> <li>✓ <b>HP1:</b> Normal helicopter with 1 servo</li> <li>✓ <b>HP2:</b> Swash helicopter with 2 servos</li> <li>✓ <b>HP3:</b> CCPM 120° swash helicopter with 3 servos</li> </ul>
AERO mode	<ul style="list-style-type: none"> <li>✓ <b>AP:</b> Normal aero plane</li> <li>✓ <b>VP :</b> V-tail plane</li> <li>✓ <b>DP:</b> Delta wing plane</li> </ul>

TABLE1 - Model type list

- 6 . 7 channels standard servo signal output
- 7 . Set reverse (REV), sub trim (SUB) and travel by LED and button.
- 8 . Dual rate (DR) control supported
- 9 . Throttle hold supported.
- 10 . Gyro sensitivity adjusting supported
- 11 . Return to battery voltage display after no operation till 30 seconds.
- 12 . Beep when battery voltage is low (gate voltage can be set)
- 13 . Beep when throttle is not in zero when power on
- 14 . Down timer relate to throttle

## 2 Transmitter Panel



## 2 Transmitter Panel

Switch & Button	Description	Detail
<b>IDLE</b>	In HELI mode, it is used to switch NORMAL mode and IDLE mode. In AERO mode, it controls channel6.	See Section-6.6 Section-6.7 Section-6.8 Section-7
<b>DR</b>	it is used to control dual rate of aileron, elevator and rudder.	See section-6.4
<b>HOLD</b>	THR hold switch.	See section-6.5
<b>GEAR</b>	In AERO mode, it controls channel5. In HELI mode, it controls channel7.	See section-7 See section-6.10
<b>UP</b>	Page up button	
<b>DN</b>	Page down button	
<b>INC</b>	Increase button	
<b>DEC</b>	Decrease button	

TABLE2 - Button list

## 3 Batteries Charging

If you are using NiCd or NiH batteries, you can charge it with a external power without getting batteries out.

You can find the power slot in the right side of transmitter, use a power with the plug shown as CHART20.



**Warning:**  
The power should be 11.6V, the current should be at least 50mA. Other styles may be dangerous!

CHART20 - External Power

## 4 Stick Adjusting

To adjust the stick length, you should use a 1.5mm inner hexagonal screwdriver. Use the screw driver rotate anticlockwise one or two cycles to release the stick head, then you can rotate the stick head to adjust the length (see CHART21). Tighten the screw when finishing adjusting.

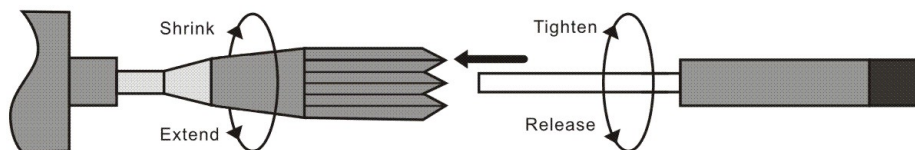


CHART21 - Stick Adjusting

## 5 System setting

Hold **UP** and **DN**, and turn on transmitter, it will enter system setting mode like following:



CHART2 - System setting interface

There are three items "S1", "S2", "S3" and "S4".

- ✓ Press **INC** or **DEC** will change setting index from S1 to S4
- ✓ Press **UP** or **DN** will change setting content as TABLE3

Index	Content
S1. Model choice	Support seven models, see Section-10
S2. Model type choice	<ul style="list-style-type: none"> <li>✓ AP : Normal aero plane</li> <li>✓ VP : V-tail plane</li> <li>✓ DP : Delta wing plane</li> <li>✓ Hp1: Normal helicopter with 1 servo</li> <li>✓ HP2: Swash helicopter with 2 servos</li> <li>✓ HP3: CCPM 120°swash helicopter with 3 servos</li> </ul>
S3. Stick type choice	<ul style="list-style-type: none"> <li>✓ D1: Right hand mode</li> <li>✓ D2: Left hand mode</li> </ul>
S4. Low voltage gate	Set the voltage gate of low battery warning

TABLE3 - Details of system setting



## 6 Helicopter Mode

HP1, HP2 and HP3 are HELI mode, in this mode, the LED will display like CHART3:



In HELI mode, the channel is:

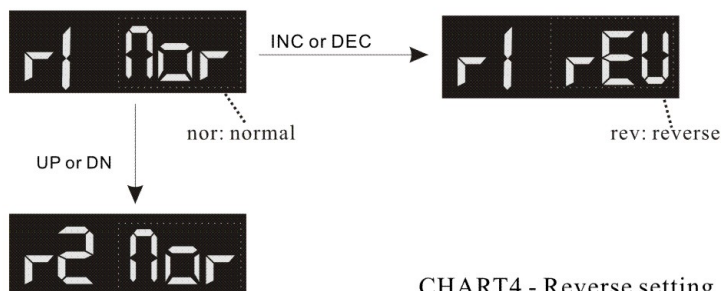
Channel	Control	Detail
1	AIL	Aileron
2	ELE	Elevator
3	THR	Throttle
4	RUD	Rudder
5	GY	Gyro
6	PIT	Pitch
7	AUX	Auxiliary

TABLE3 - HELI Channels list

In HELI mode, there are 10 items which can be set, during configuration, you can press INC and DEC at the same time to exit setting and return to using mode.

### 6.1 Reverse setting

Set normal or reverse for 6 channels, default is normal. To enter reverse setting, turn on transmitter, then press UP and DN at the same time, you will see "r1 xxx" like CHART4.



Press UP or DN will change channel number, seems like "r2 xxx" "r3 xxx", etc. Press INC or DEC will change reverse status.

## 6.2 End point setting

Set travel(end point) from 0~120 for 6 channels, default is 100. To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time twice, you will see "E1 xxx" like CHART5.

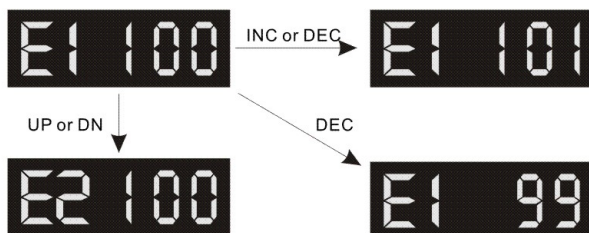


CHART5 - End point setting

Press **UP** or **DN** will change channel number, seems like "E2 xxx" "E3 xxx", etc. Press **INC** or **DEC** will increase or decrease the travel value.

## 6.3 Sub trim setting

Set sub trim from -100~100 for 6 channels, default is 0. To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time three times, you will see "T1 xxx" like CHART6.

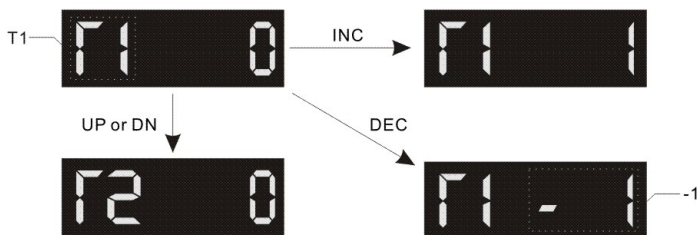


CHART6 - Sub trim setting

Press **UP** or **DN** will change channel number, seems like "T2 xxx" "T3 xxx", etc. Press **INC** or **DEC** will increase or decrease the sub trim value.

## 6.4 Dual rate setting

DR switch (see CHART1) controls the dual rate of aileron, elevator and rudder. And the rate of aileron, elevator and rudder can be set separately. There are two rates for DR SW=0 and DR SW=1, the two rates can be set from 0~120. Default value is 100 for DR SW=0, 70 for DR SW=1.

To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time four times, you will see "dA0 xxx" like CHART7.

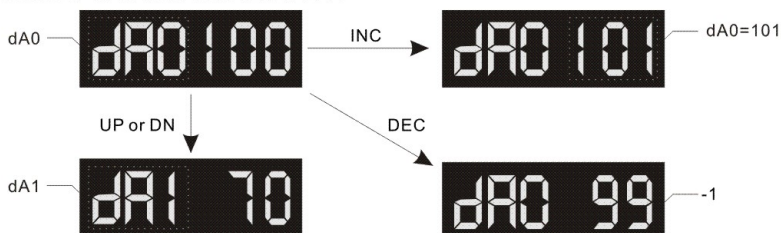


CHART7 - Dr for Ail setting.

## 6.4 Dual rate setting

Press **UP** or **DN** will change the channel as TABLE4. Press **INC** or **DEC** will increase or decrease the rate value.

LED Display	Text	Meaning
	dA0	Ail rate on DR SW=0
	DA1	Ail rate on DR SW=1
	De0	Ele rate on DR SW=0
	De1	Ele rate on DR SW=1
	Dr0	Rud rate on DR SW=0
	Dr1	Rud rate on DR SW=1

TABLE4 - Dr setting turn

## 6.5 Throttle holding setting

Throttle holding will lock the throttle at setting value, in lock status, the throttle signal will not be changed even if the throttle stick is changed. It is controlled by HOLD switch (see CHART1). When HOLD switch to 1, the throttle signal is locked (holding status), when HOLD switch to 0, the throttle signal is normal (change by throttle stick).

The holding value is from -20~+20, default is 0.

To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time five times, you will see "H1 xxx" like CHART8.

Press **INC** or **DEC** will increase or decrease the holding value.

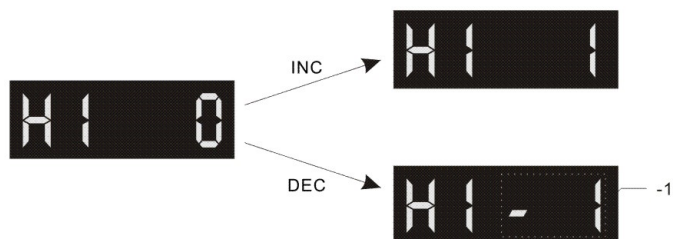


CHART8 - Throttle holding setting

## 6.6 Gyro sensitivity adjusting

To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time six times, you will see "G1 xxx" like CHART9.

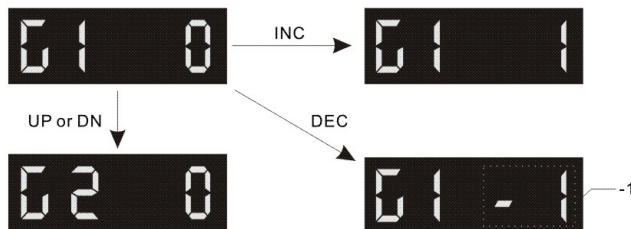


CHART9 - Gyro sensitivity setting

There are two sensitivities for gyro -- G1 and G2. The gyro signal is one of the two values decided by IDLE switch (see CHART1). When the IDLE switch in IDLE mode, the gyro signal is G2, when IDLE switch in NORMAL mode, the gyro signal is G1.

The sensitivity value can be set from -100~+100. When it is greater than 0, the gyro is in head-lock mode, when the value is lesser than or equal to 0, the gyro is in non-lock mode. The default value is G1=G2=0.

## 6.7 Throttle curve setting

There are two throttle curves, one is for NORMAL mode, the other is for IDLE mode. Every curve has 5 points. Each point means the relation between signal and stick position as TABLE5.

To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time seven times, you will see "CN1 xxx" like CHART10.

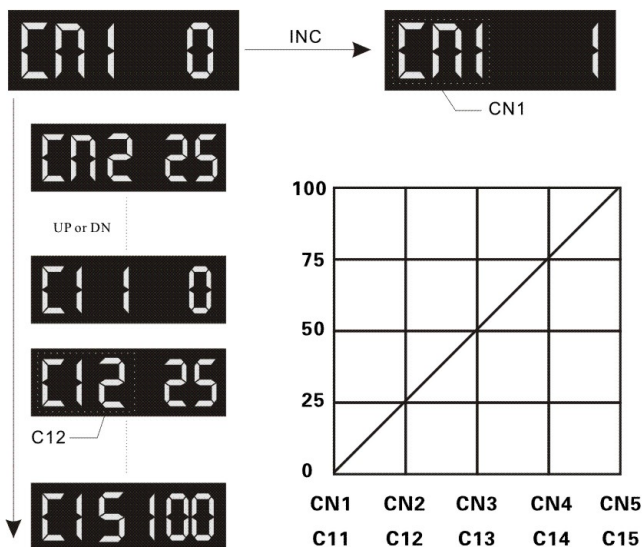


CHART10 - Throttle curve setting

## 6.7 Throttle curve setting

Press **UP** or **DN** will change setting from CN1 to CN5 and CI1 to CI5. Press **INC** or **DEC** will increase or decrease the value of the point.  
 CN1~CN5 are the five points for NORMAL mode, CI1~CI5 are the five points for IDLE mode.

Point index	Stick position	Default signal value
1	Stick at lowest position	0
2	Stick at 25% position	25
3	Stick at center	50
4	Stick at 75% position	75
5	Stick at highest position	100

TABLE5 - Throttle curve stick value

## 6.8 Pitch curve setting

There are three pitch curves, the first is for NORMAL mode, the second is for IDLE mode, the third is for HOLD mode. Each point means a stick position as TABLE5.  
 To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time eight times, you will see "PN1 xxx" like CHART11.

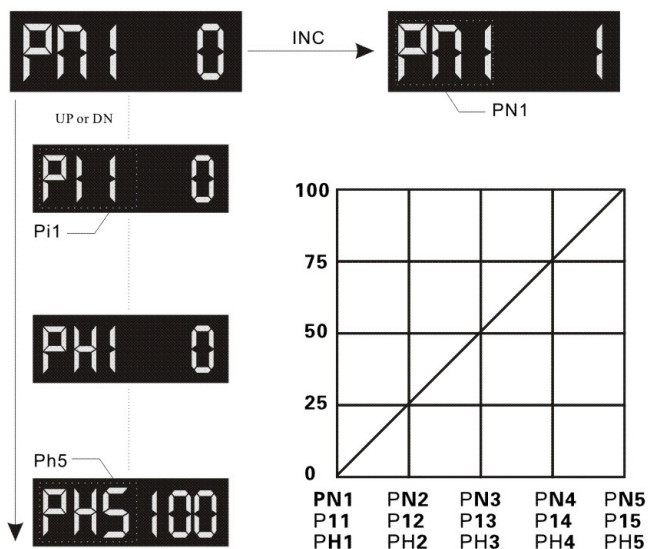


CHART11 - Pitch curve setting

Press **UP** or **DN** will change setting from PN1 to PN5, then P11 to P15, then PH1 to PH5.  
 Press **INC** or **DEC** will increase or decrease the value of the point.  
 PN1~PN5 are the five points for NORMAL mode, P11~P15 is the five points for IDLE mode, PH1~PH5 are the five points for HOLD mode,

### \*Signal and Curve

The output signal of transmitter is related to "Curve" and "End point". For example, if the transmitter in HELI NORMAL mode, and THR curve of NORMAL mode is 0,30,75,80,100 (show as CHART12), and THR end point is 110. Then, if the THR stick is in 25% position, the curve value is 30, the output signal is  $110 \times 30\% = 33\%$ .

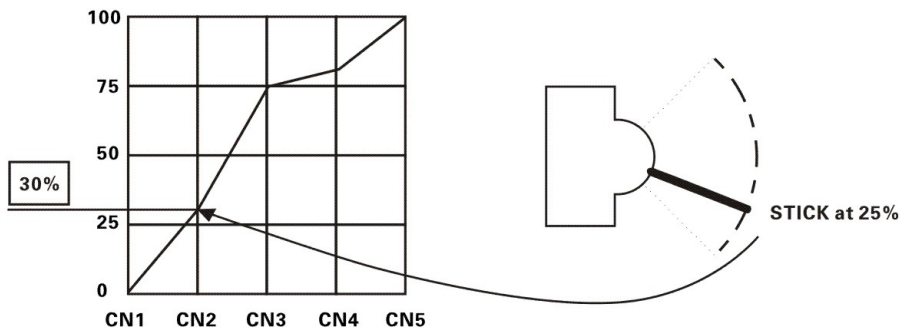


CHART12 - Signal and Curve

### 6.9 Swash mixture setting

There are three items in swash mixture: AIL, ELE, PIT. All of three mixture percent values are from -100~+100, default values is 50.

To enter this setting, turn on transmitter, then press **UP** and **DN** the same time nine times, you will see "PA xxx" like CHART13.

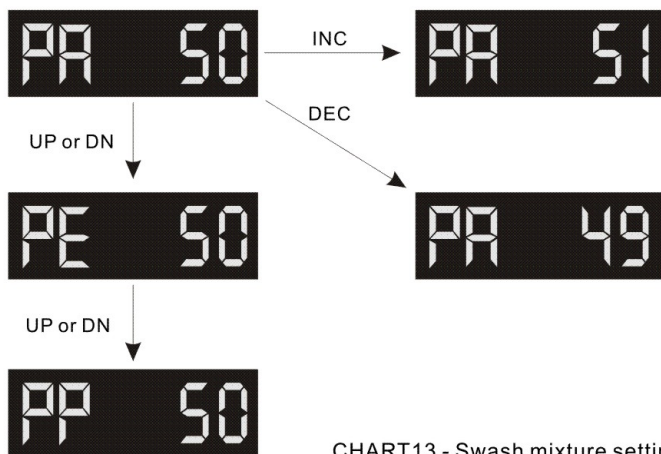


CHART13 - Swash mixture setting

Press **UP** or **DN** will change setting from PA to PE to PP, which means the "Mixture percent" of AIL, ELE and PIT.

Press **INC** or **DEC** will increase or decrease the value of the point.

## 6.10 Aux channel setting

When in HELI mode, the GEAR switch controls channel 7, and the AUX channel. There are two items in AUX channel setting, A1 and A2, control the signal of AUX channel when GEAR switch in different position.

To enter this setting, turn on transmitter, then press **UP** and **DN** at the same time ten times, you will see "A1 xxx" like CHART14.



CHART14 - AUX channel

Press **UP** or **DN** will change setting from A1 to A2.

Press INC or DEC will increase or decrease the value of the position.

## 7. Aero Mode

AP is AERO mode. In AERO mode, the LED will display like CHART15:



CHART15 - AERO mode

In AERO mode, the channel is:

Channel	Control	Detail
1	AIL	Aileron
2	ELE	Elevator
3	THR	Throttle
4	RUD	Rudder
5	GER	Gear, controlled by GEAR switch
6	FLA	Flap, controlled by IDLE switch

TABLE6 - AERO Channels list

There are six settings in V-tail mode. To enter setting, press **UP** and **DN** at the same time special times, and five operations beyond are the same as in HELI mode. See TABLE8 for details. You can press **INC** and **DEC** at the same time to exit setting and return to using mode.

UP&DN press times	Setting	Detail
1	Reverse	See section-6.1
2	End point	See section-6.2
3	Sub trim	See section-6.3
4	Dual rate	See section-6.4
5	Throttle holding	See section-6.5

TABLE7 - AERO Channels list

## 8 V-tail Mode

VP is V-tail mode. In this mode, the LED will display like CHART16:



The channels and switches are the AERO mode, see TABLE6. There are six settings in V-tail mode. To enter setting, press **UP** and **DN** at the same time for special times, and five operations beyond is same as in HELI mode. See TABLE8 for details. You can press **INC** and **DEC** at the same time to exit setting and return to using mode.

UP&DN press times	Setting	Detail
1	Reverse	See section-6.1
2	End point	See section-6.2
3	Sub trim	See section-6.3
4	Dual rate	See section-6.4
5	Throttle holding	See section-6.5
6	V-tail mixture	See section-8.1

TABLE8 - V-tail settings



## 8.1 V-tail mixture setting

There are four items in this setting: V1, V2, V3, V4. The value is from -100~+100, default value is V1=V3=V4=50, V2=-50. The output signal is decided by TABLE9.

Stick \ Signal	Ch2	Ch4
ELE stick	V1	V2
RUD stick	V3	V4

TABLE9 - V-tail signal

Press **UP** or **DN** will change setting from V1 to V4. Press **INC** or **DEC** will increase or decrease the value. See CHART17.

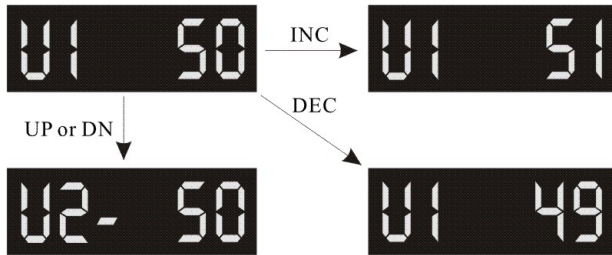


CHART17 - V-tail mixture setting

## 9 Delta wing Mode

DP is Delta wing mode. In this mode, the LED will display like CHART18:



CHART18 - Delta wing mode

The channels and switches are the same as AERO mode, see TABLE6.

There are six settings in Delta wing mode. To enter setting, press **UP** and **DN** at the same time special times, and five operations beyond are the same as in HELI mode. See TABLE10 for details. You can press **INC** and **DEC** simultaneously to exit setting and return to using mode.

UP&DN press times	1	Reverse	See section-6.1	2	End point	See section-6.2
Setting	3	Sub trim	See section-6.3	4	Dual rate	See section-6.4
Detail	5	Throttle holding	See section-6.5	6	Delta wing mixture	See section-9.1

TABLE10 - Delta wing settings

## 9.1 Delta wing mixture setting

There are four items in this setting: d1, d2, d3, d4. The value is between -100~100, default value is d1=d2=d3=100, d4=-100. The output signal is decided by TABLE 11.

Stick \ Signal	CH2	CH4
AIL stick	D1	D2
ELE stick	D3	D4

TABLE11 - Delta wing signal

Press **UP** or **DN** will change setting from V1 to V4. Press **INC** or **DEC** will increase or decrease the value. See CHART19.

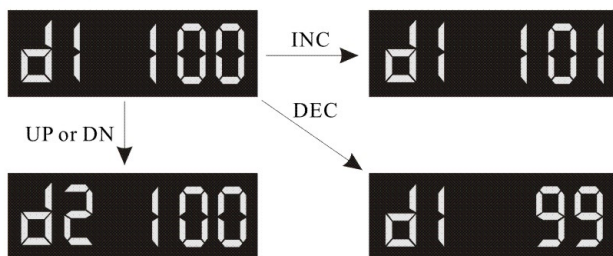


CHART19 - Delta wing mixture setting

## 10 Models Switch

KDS7CH can support seven models, each model can has its own parameters. To switch **among** the five models, you should hold **UP** and **DN**, then turn on transmitter, then press **INC** till "S1 xx" is shown like CHART20.

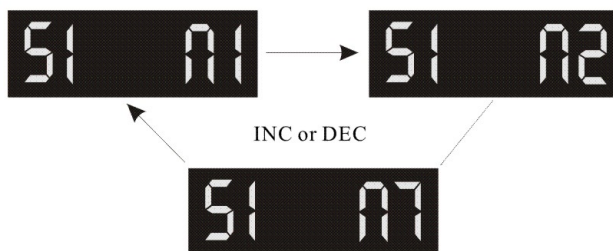


CHART20 - Model switch

Press **INC** or **DEC** will switch from n1 to n7 which indicates each seven model. When some model is selected, press **UP** and **DN** at the same time to return to normal using mode. Now the transmitter will load the parameters of your selection and all your settings will be saved into the model you selected.

## 11 Throttle warning

KDS7CH supports throttle warning. If the throttle stick not is in the lowest position when power on, the transmitter will block in warning status. You will see "THro" in panel and hear continuously beep till you move the stick to the lowest position.



CHART21 - Throttle warning

## 12 Idle warning

KDS7CH supports Idle warning. If the Idle switch on when power on, the transmitter will block in warning status. You will see "IdLE" in panel and hear continuously beep till you switch Idle to off.



CHART22 - Idle warning

## 13 Down timer

KDS7CH has a down timer relate to throttle.

When in normal using status, press **DEC** and **DN** at the same time to enter down timer. The default value is five minutes, like CHART22. You can press **INC** or **DEC** to change the value.

When you push throttle stick up, the timer will run from the value you set to zero. After minutes remaining, the transmitter will beep to notify you.



CHART23 - Down timer

## 14 No Control Protection

KDS 7CH remote controller system supports 'No Control Protection' function. You can predefine a set of values for each channel. The receiver will use these values if it lose the signal from transmitter.

To set the values, please do as following steps:

1. Turn on the transmitter and receiver, bind them.
2. Adjust the transmitter, make all channels to the position as you prefer.
3. Press 'UP' and 'INC' at the same time, the screen of transmitter will display 'NCP' like Chart 24, and the RF led shines, at the same time, the led of receiver will go out.
4. After 1 second, the transmitter and the receiver will restore to normal status, the define of 'NCP' is done.



CHART24-NCP setting

## 15 Using PPM signal

KDS 7CH is a digital device, it also has a signal output slot on the bottom. But in common using, the output signal is PCM format. If you are using a flying simulator on your computer, the simulator software can not work with KDS PCM signal. So you must switch the signal to PPM by following steps:

1. Set the model to the type you prefer, for simulator using, it should be set to AP normally.
2. Turn off the transmitter, then Hold 'INC' and 'DEC' , and turn on it.
3. You will see the screen shows 'PP XX.XV' like chart 25.
4. The transmitter switches to PPM status now, and the signal from the slot is standard PPM format, you could connect it with simulator adapter.



CHART 25 – PPM status

**Notice:** when the transmitter in PPM status, the RF module stops working and RF led will off, then the receiver will lost signal if it was on.

## 16 Changing Transmit Frequency

Electric interference may exist when using remote controller system, if it interferes with the frequency of your remote controller system, your devices will be out of control. Under these circumstances, you can try to change the transmit frequency by following steps to keep away from it:

1. Turn off receiver, turn on transmitter.
2. Hold the bind button of transmitter until the RF led shines once a second.
3. Release the bind button, then press bind button again instantly, RF led will shine for 1 second.

Turn off the transmitter, frequency changing is completed.

**Notice:**

1. You must turn on the transmitter again after frequency changing.
2. The new frequency is selected randomly, if the interfere still exists, you can try to change it again until the interference disappear.
3. After the frequency changing, all the receiver bindings with this transmitter should be rebinded again.