

# Remote Control Systems

2.4 Ghz RADIO CONTROL

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Other instructions for use with battery R/C are found with the ESC.

<http://www.rcs-rc.com/pages/instructions>

# TX-6

## Digital Proportional R/C

Thank you for purchasing this DSM2/DSMX COMPATIBLE 5 channel TX-6 handpiece.

**USE WITH 2 x CENTRE OFF RCS BATTERY R/C ESC's SEPARATELY & AT THE SAME TIME.**

**WE USE & RECOMMEND THE RCS ALPHA-3v2 "A" & "B" COMBINED RX/ESC's.**

**EACH # ALPHA-3v2 IS MARKED CAB "A" or CAB "B".**

**OTHER BRANDS OF SINGLE CHANNEL CENTRE OFF ESC's CAN BE USED.**

**N.B. IT IS NOT SUITABLE FOR LIVE STEAM LOCOS.**

### INSTRUCTION MANUAL

THESE INSTRUCTIONS REFER SPECIFICALLY TO THE **DELTANG R/C** BASED TX-6 HANDPIECE.

They should be read in conjunction with the RCS ESC you are using.



CONTROL 2 X CENTRE OFF LOCOS.  
EACH WITH TWO SOUND TRIGGER  
FUNCTIONS.



REMOVE REAR OF TX-6 TO INSERT  
THE 9 VOLT BATTERY.  
LED BLINKS WHEN BATTERY LOW.  
A HIGH QUALITY 9V SNAP IS USED.



LAYOUT OF THE CONTROLS.

### THE TX-6 IS GUARANTEED FOR ONE YEAR.

When used for battery R/C you will supply a locomotive or trail car, the 14 – 20 volt traction batteries (depending on ESC), a fuse, ON-OFF switch and wires where necessary, to connect the ESC to the battery and motor(s).

Where soldering is necessary, we recommend a low wattage soldering iron and resin core solder.

**TO AVOID CONFUSION WITH OTHER OPERATORS, WE SUGGEST YOU MARK THE TX TO SHOW WHICH LOCO IT IS OPERATING.**

## CAUTION

DO NOT ATTEMPT TO ALTER THE TUNING OF THE RADIO EQUIPMENT.  
DO NOT USE RADIO CONTROL EQUIPMENT IN THUNDERSTORMS.

CHILDREN UNDER 12: ADULT SUPERVISION RECOMMENDED DURING USE.

RCS TX & RX PRODUCTS MUST NOT BE USED FOR CONTROLLING RIDE ON LOCOMOTIVES CAPABLE OF CARRYING MEMBERS OF THE GENERAL PUBLIC.

## PREPARING THE #TX-6

THESE INSTRUCTIONS REFER TO THE **RCS TX-6** 2.4 GHz 5 CHANNEL R/C.

### 1. "BINDING".

The 1st procedure is to "BIND" the receiver (RX) to the Transmitter (TX).

"BINDING" is accomplished by following a few simple steps below.

When binding we recommend removing the servos from the RX in case they are not correctly adjusted. Adjust servo parameters after binding has taken place..

**HOW TO "BIND" USING A DSM2 RX OR RCS #ALPHA-3v2 ESC.**

**MANUAL BINDING** using a binding plug.

1.1 Insert the "BINDING" plug supplied with the DSM2 RX into the "BINDING" pins on the **RX**.

You can also use the # BINDER switch assembly if you do not wish to get inside the loco.

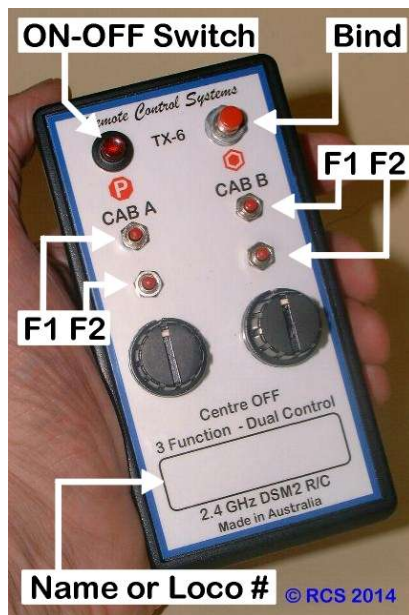
1.2. The RX LED will start blinking very rapidly to indicate it is ready to be bound.

**AUTOMATIC BINDING = no binding plug.**

1.3 Turn the DSM2-EM(AB) Auto Bind RX ON & the RX LED will blink slowly looking for a TX. Wait 20 seconds for the RX to enter bind mode. The RX LED (& front headlight if programmed to), will blink rapidly and is ready to be bound.



ON - OFF SWITCH



FUNCTIONS OF TX-6.



BUTTONS TO HOLD DURING BINDING.

1.4 Press **and hold** the right pushbutton on the handpiece marked with a hexagonal symbol. You may need to keep TX & RX about 1 x metre apart for binding to take place.

1.5 Then press **and hold** the ON - OFF button to ON. Hold both buttons until the RX LED stops flickering & starts blinking slowly. Then let both TX buttons go. The TX button also blinks slowly & then goes to solid ON.

1.6 The LED on all RX's will blink more slowly & then go solid ON when "BINDING" is complete.

**N.B. "BINDING" plug MUST be removed BEFORE the SYSTEM is turned OFF. (AB RX's have no binding plug)**  
1.7 The "BINDING" plug is removed & stored safely.

RCS offers an optional extra # **BINDER** cable and switch. When fitted this will enable any non RCS loco to be bound to any TX without requiring access to the inside of the loco. This will enable any loco to be swapped between any other DSM2 TX's. You will be able to "hand off" speed matched locos for MU'ing into a consist.

Not needed with the **#ALPHA-3v2** which has the RX LED linked to the Pad # 1 front light output.

## 2. USING THE TX-6 WITH A "CENTRE OFF" ESC'.



CAB "A" FORWARDS.



CAB "A" REVERSE.



CAB "A" FORWARDS.



CAB "B" REVERSE.

The TX-6 can be used intuitively with most of the centre off ESC's that are available.

There are two knobs. One for each cab. Both knobs must be centred at the détenté click. The dot on the knob should facing forwards when the TX and Loco(s) are turned ON.

**CAB A** knob uses Ch # 1 to control speed & direction.

**CAB A** knob uses Ch # 3 to control speed & direction.

Make sure both knobs are centered before you switch the system on.

Switch on the ESC first & then the TX-6. Most Centre Off **ESC's** calibrate themselves when switched on.

Twist the knob gently left or right until the loco starts moving.

The TX-6 has been designed so that normally twisting the CAB knobs to the right (CW) is forwards direction and movement. If the loco runs backwards when the CAB knob is turned to the right, we reverse the motor wiring to correct the direction and maintain the standard.

Turn the knob back to the left to slow down. You can feel the détenté as you arrive at neutral to stop the loco.

Then, once in neutral you can twist the knob to the left (CCW) to go backwards.

**#ALPHA-3v2 ESC's** have directional lights & two sound triggers. # LT-SW4v2 is needed for proper control of them. If the directional lights are incorrect, swap over the wiring to them so they match the loco speed and direction.

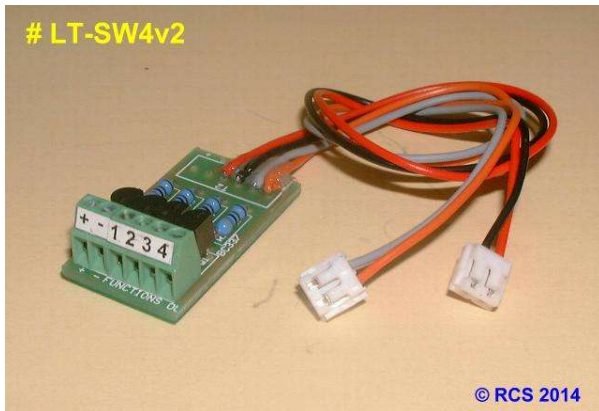
TX-6 CAB "A" top pushbutton is Ch # 2 HIGH. Output is pad # 2 on ESC A.

TX-6 CAB "A" bottom pushbutton is Ch # 2 LOW. Output is pad # 3 on ESC A.

TX-6 CAB "B" top pushbutton is Ch # 4 HIGH. Output is pad # 3 on ESC B.

TX-6 CAB "B" bottom pushbutton is Ch # 4 LOW. Output is pad # 4 on ESC B.

Instructions on how to wire the # LT-SW4 for sound triggers & lighting outputs from the ALPHA-3 A & B ESC's, are included with the # LT-SW4.



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The Ch # 5 bind button is not used for anything else on the ALPHA-3v2 ESC's.

If controlling other brands of RX's and ESC you may be able to use the bind button on Ch # 5 to control a servo function. OR; with extra parts, more sound function triggers.

If your ESC does not have directional lights, RCS has a small add on module **# 2-M-F** that reads the speed & direction of the Channel # 1 output & switches lights accordingly. A standard servo "Y" cable is needed. Not supplied.

### 3. PROGRAMMING THE ALPHA-3v2 ESC WITH A TX-6.

We have set up the # ALPHA-3v2 with features we think will be the most useful for average Large Scalers. Below are the settings we made & the codes used to change them. "Ch # 5" Bind button is not used as a sound trigger.

**Centre OFF operation.** We supply the ESC set to "CENTRE OFF" operation which has 150° speed control from neutral to full speed each way. You can change any CAB "A" ESC to a CAB "B" ESC and vice versa.

CAB A code is 1, 1, 1, 1.

CAB B code is 1, 1, 1, 3.

**Auto Directional Lights.**

CAB A & CAB B. Code = 3, 1, 5, 0, 4.

**Set Pad # 3 trigger.**

CAB A. Ch # 2 Top LH Button Code = 3, 3, 1, 2, 2.

CAB B. Ch # 4 Top RH Button Code = 3, 3, 1, 4, 2.

**Set Pad # 4 trigger.**

CAB A. Ch # 2 Bottom LH Button Code = 3, 4, 1, 2, 1.

CAB B. Ch # 4 Bottom RH Button Code = 3, 4, 1, 4, 1.

**Pad # 1 front headlight follows RX LED.**

CAB A & CAB B. Code = 5, 1, 2, 1.

The system is infinitely programmable but the instructions are too detailed to publish here in their entirety.

To give you some idea of what you can do please visit <http://www.deltang.co.uk/rx65a-v610-p.htm> for information on how to invoke programming mode and how to actually change the various features.

#### INVOKING ALPHA-3v2 PROGRAMMING USING THE TX-6.

We strongly recommend programming only one ESC at a time

Step 1. Turn ON TX-6



Step 2. Press & HOLD F2 & F4 buttons.



Step 3. Turn the ALPHA-3 ESC ON, it will start blinking. Programming mode has been invoked.

Step 4



TO MAKE A MENU ITEM LEVEL CHANGE:  
Twist RH knob to left (CCW) & back to neutral.  
LED will count required blinks then:

Step 5



TO ACCEPT A MENU ITEM LEVEL CHANGE:  
Twist RH knob to right (CW) & back to neutral.  
Once LEVEL change is accepted Next LEVEL follows.

Here are some examples of what you might like to change.

#### Fail Safe.

This can be turned OFF if you want the loco(s) to continue running with the TX turned OFF:

To disable the fail safe on both Cab A & Cab B ESC's use 5, 4, 5, and then sleep mode, use 5, 3, 7.

If you want to reactivate fail safe use 5, 4, 1 and then sleep mode use 5, 3, 1 depending on the settings you wish to use.

#### Locos back to back.

You might like to reverse the default start direction so you can add a loco back to back with another on the same CAB.

Assuming both locos are on CAB A. Use 1, 1, 6, 2. To go back to the default use: 1, 1, 6, 1.

Assuming both locos are on CAB B. Use 1, 1, 6, 2. To go back to the default use: 1, 1, 6, 1.

#### Cab Light.

Maybe you want to switch a cab light ON and OFF. You can use Ch # 2 (LOW) or CH # 4 (LOW) for this.

Ch # 2 (LOW). To change from momentary to latch ON - OFF. Use 3, 3, 2, 2, 1. Back to momentary use: 3, 3, 1, 2, 1.

Ch # 4 (LOW). To change from momentary to latch ON - OFF. Use 3, 4, 2, 4, 1. Back to momentary use: 3, 4, 1, 4, 1.

Contact RCS if you have any other requests and we can send you the programming codes for the particular feature you wish to change.

If you have trouble programming please call RCS and we will walk you through the steps.