DMS 4 channel Horizon Hobby Sports Cub etc multiprotocol radio set up

1. 4 Channel (Aileron, Elevator, Throttle, Rudder) *plus* a channel for stabilization mode
2. Stabilizer
    a. SAFE self-leveling and restricted turning angle/rate
    b. Intermediate self-leveling and un-restricted turning angle/rate
    c. Advanced NO self-leveling, still corrects for wind gusts, no turn restrictions
3. ***If*** you use "Companion" on your computer, then set ***your*** radio type in Companion with Settings -> Radio profiles.

IMPORTANT

1. The choice of switches and pots/sliders shown below, suits my radio and my style. *You need to allocate switches etc, to suit your radio and your style. BUT, this does* ***NOT*** affect the basic model set up, nor affect output channel allocation on the pictures that follow. For example, you need to choose a 2 position switch for Thr cut and a 3 position switch for the 3 stabilization options.
2. My radio is RadioMaster Zorro, Mode 2, again this ***does not alter*** basic model set up.

Radio channel allocation (MUST be "AETR" for any multiprotocol transmitter)

Ch Num	Order	Use
1	A	Aileron
2	E	Elevator
3	T	Throttle
4	R	Rudder
5	Stab Mode	Stabilization mode (SAFE/Intermediate/Advanced) ***Model specific.***
6	Panic	Momentary button immediately applies SAFE mode while pressed ***Model specific.***

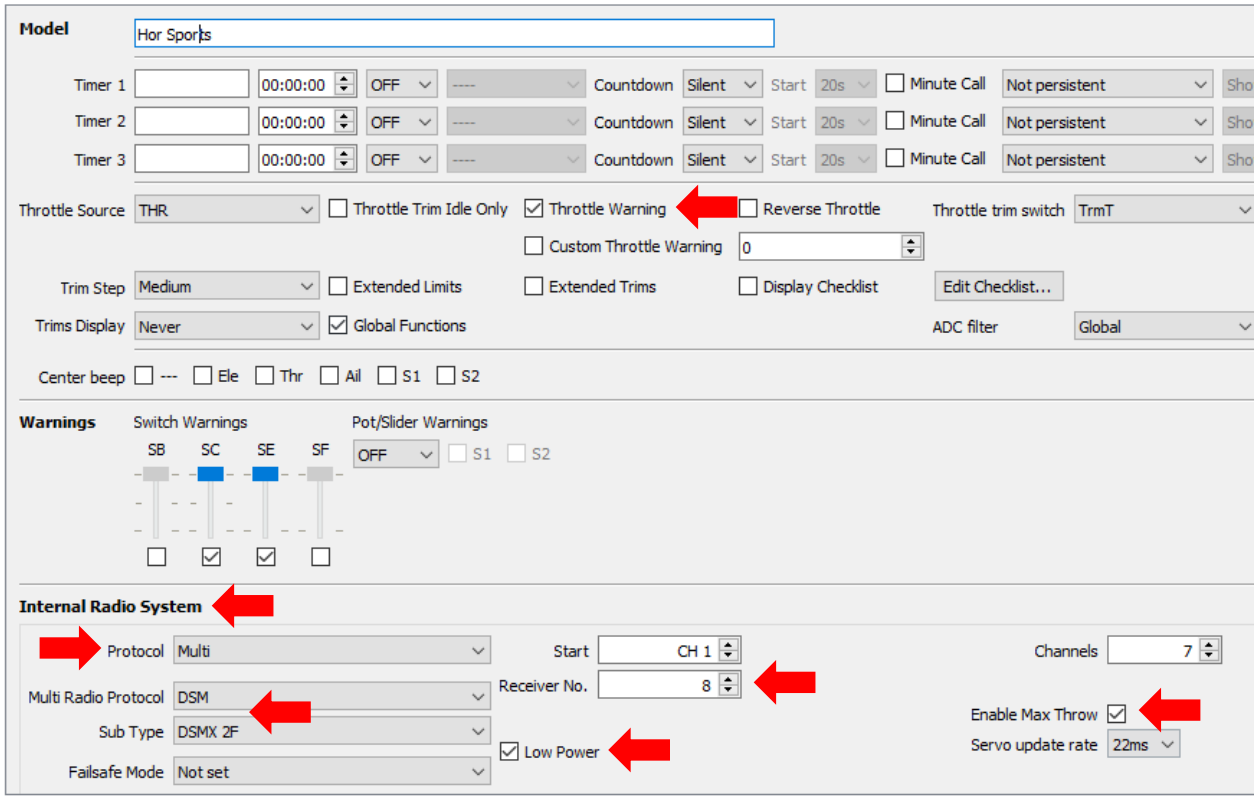
Note – The multiprotocol module automatically rearranges the transmitter output order, to suit the receiver protocol selected.

Protocol – settings. See "**1- Setup**" next page.

Setting	Value
For an Internal Protocol Module	Internal Radio System
For an External Protocol Module	External Radio System
Protocol	Multi
Multi Radio Protocol	DSM
Sub Type	DSMX_2F

Cont'd over

1 - Setup – SET THIS FIRST



Notes:

Set Internal Radio System ***OR*** External Radio System as above.

Important:

1. Set the protocol sections as shown.
2. Set the Receiver Number to a UNIQUE number for each receiver that you use.
3. For the DSM planes that auto bind, they bind better when “Low Power” is selected as shown above. For indoor flying this should stay in this mode to lessen interference with the other close by radios & planes. *Once bound, untick this if flying this model outdoors.*
4. Enable Max Throw – *VERY IMPORTANT for DSM receivers!!*

<u>Throttle Warning</u>

Set this so you are warned if the throttle is not all the way down before the transmitter is activated.

<u>Switch Warning (above picture)</u>

To ensure that the Thr Cut (Sw E) is active, and Stabilizer (Sw B) is on “SAFE Mode”, the radio checks their position prior to activating the radio. If these switches are not set appropriately, you get a warning on the radio screen and cannot proceed until the error condition is corrected i.e. until you set the switches to expected position. See IMPORTANT note re switch allocation at the start of this document.

Set this first

2 - Inputs – BEST IF ORDER IS “AETR” for page consistency.

I1:Ail	Ail Weight(+100%) Expo(40%) Switch(SF↑) [Hi Rat] Ail Weight(+80%) Expo(40%) Switch(SF↓) [Lo Rat]
I2:Ele	Ele Weight(+100%) Expo(40%) Switch(SF↑) [Hi Rat] Ele Weight(+80%) Expo(40%) Switch(SF↓) [Lo Rat]
I3:Thr	Thr Weight(+100%)
I4:Rud	Rud Weight(+100%) Expo(40%) Switch(SF↑) [Hi Rat] Rud Weight(+80%) Expo(40%) Switch(SF↓) [Lo Rat]
I5	
I6	

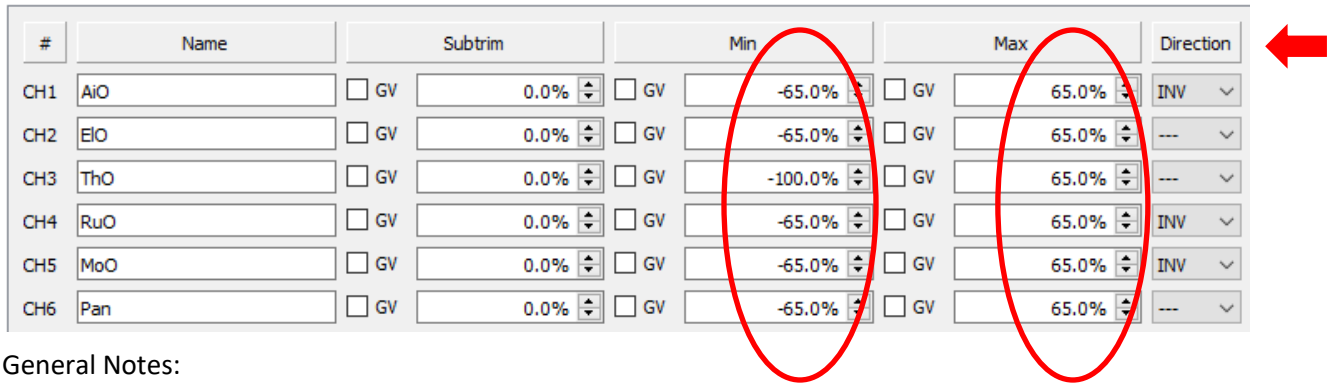
See IMPORTANT note re switch allocation at the start of this document.

See appendix 1 for example of the set up of a single line from above.

Set this next.

3 - Outputs – ORDER MUST BE ‘AETR’.

The multiprotocol unit will rearrange the order to suit the particular protocol/receiver selected.



#	Name	Subtrim	Min	Max	Direction
CH1	AiO	GV 0.0%	GV -65.0%	GV 65.0%	INV
CH2	ElO	GV 0.0%	GV -65.0%	GV 65.0%	---
CH3	ThO	GV 0.0%	GV -100.0%	GV 65.0%	---
CH4	RuO	GV 0.0%	GV -65.0%	GV 65.0%	INV
CH5	MoO	GV 0.0%	GV -65.0%	GV 65.0%	INV
CH6	Pan	GV 0.0%	GV -65.0%	GV 65.0%	---

General Notes:

1. “AiO” is “Aileron **O**utput” & the rest of the labels follow suit.
2. “MpO” label is “ModeOutput” i.e. set SAFE/Stabilizer mode.
3. If any output goes the wrong way, e.g. elevator moves the wrong direction when you move the elevator stick, then change the direction on this screen.

VERY IMPORTANT - Model specific notes:

- Be careful to set all the Min and Max to -65% & 65%s as per the pic above.
- The exception is the -100% for the throttle.
- The +/-65% will give you ***full throws*** on all the servos. For this particular receiver, if you leave it at the default -100% and 100%, then you are trying to push the servo further that it can physically go. The servo will keep trying to go beyond it limits but cannot. So, it can heat up and potentially get damaged if held at more than +/- 65% for any length of time.
- Set “direction” to INV (inverted) on the channels indicated above. Otherwise, the control surfaces will move in the wrong direction.

Cont’d over

Now set this

4 - Mixes

```
CH1:AiO        I1:Ail Weight(+100%)
CH2:ElO        I2:Ele Weight(+100%)
CH3:ThO        I3:Thr Weight(+100%)
            := MAX Weight(-100%) Switch(SE↑) [Cut]
CH4:RuO        I4:Rud Weight(+100%)
CH5:MoO        SB Weight(+100%) [SAFE]
CH6:Pan        SA Weight(+100%) [Pan]
CH7
```

See appendix 2 for an examples of a single line from the above.

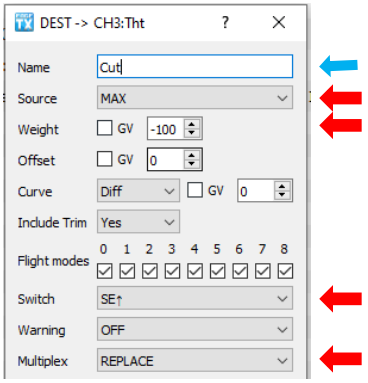
Notes:

":=MAX Wt (-100%) Sw (SE^) [Cut]" - this is a simple Thr cut switch set up.

It is added as an extra line immediately below CH3 Throttle.

This is *not essential* but is a VERY desirable safety feature.

Make sure to set all 4 items marked below with red arrows. The blue one is optional.



See **IMPORTANT** note re switch allocation at the start of this document.

Model specific Note: re channels 5 and 6.

From the Sports Cub manual.

To operate the SAFE system in this aircraft. (I.e. stabilization system)

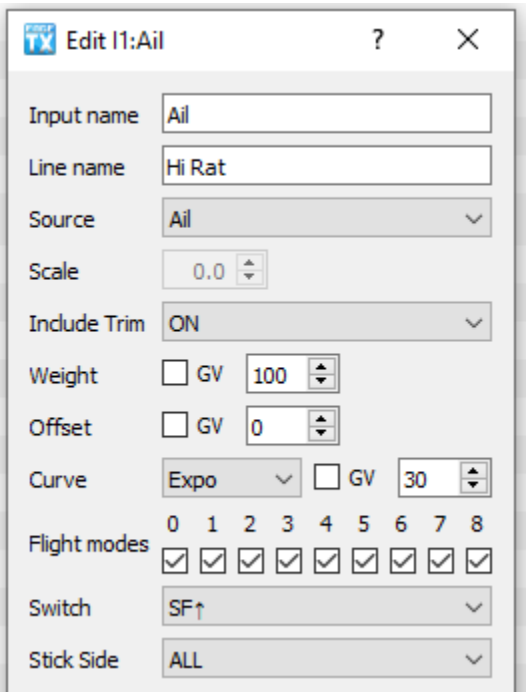
- *SAFE Flight mode is selected using Channel 5 signal (high, middle, low) – so needs 3 position switch.*
- *Panic Recovery mode is selected with Channel 6 signal (high, low) – so needs 2 position switch.*

5 - Logical Switches Not used

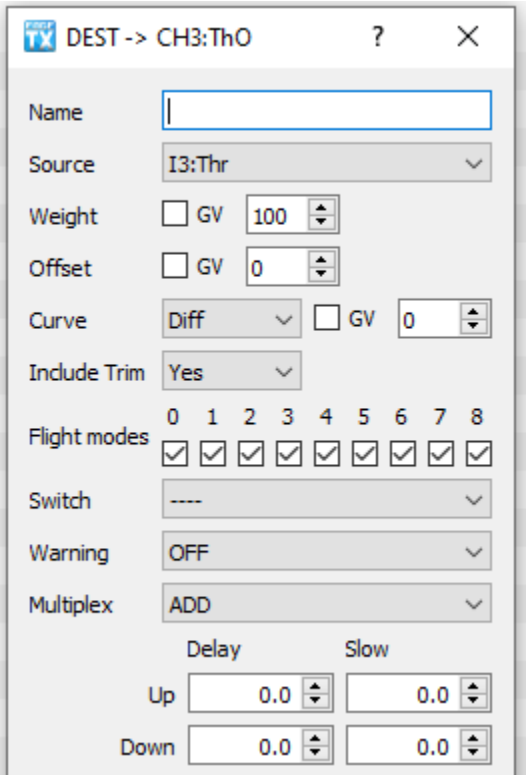
6 - Special Functions Not Used

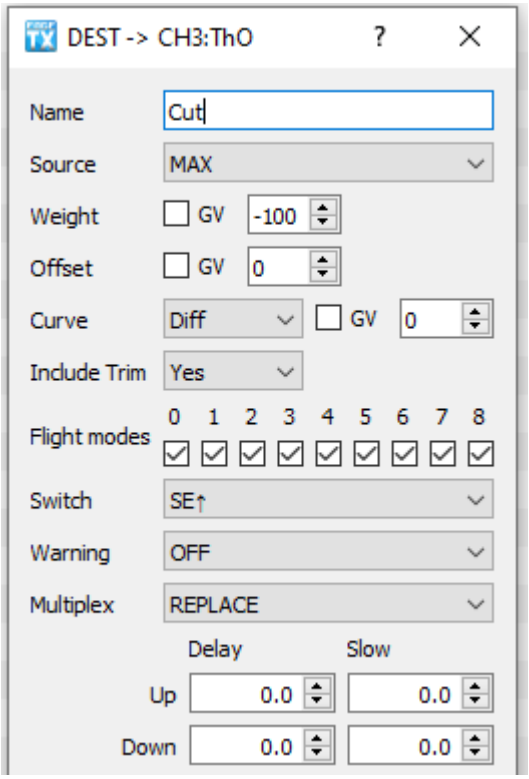
Cont'd over

Appendix 1 – Sample aileron **INPUT** set up as used above.



Appendix 2 – sample throttle and throttle cut **MIX** set ups used above.





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