

## ESC manual setting options (including power straight version)

### 50A/60A/70A/80A/100A/125A/200A

#### • How to enter the option set mode:

- 1 Connect Motor and ESC and Receiver, but be careful not to connect the battery and the ESC's power cables.
- 2 Switch on transmitter, and have the throttle to the highest position (full throttle). (Note: most of Futaba transmitter's throttle position is reversed.)
- 3 Connect ESC and battery power cable, ESC will control the motor to sound with some rhythm beep sounds.

#### • How to setting option:

After entering option mode, the motor will sound some regular tweet sounds: one or more short sounds (depending on different specifications, see Table 1.1 and Table 1.2). These sounds are the current options of the ESC program tone, each tone will be repeated three times, after that, will change to the next option, the sound can be set before the end of the command input. Menu option is cyclic, if missed, could once again reach such a tone, it just takes some time. Options beep meanings as follows:

Table 1.1

Prompt Beep Sound	Beep sound's Meaning
♪ -	short music + 1 short beep Main Option 1: battery type and number of batteries
♪ --	short music + 2 short beeps Main Option 2: the throttle settings
♪ ---	short music + 3 short beeps Main Option 3: Brake (Standard fixed-wing version of the ESC) / Mode of operation (E-helicopter version)
♪ ----	short music + 4 short beeps Main options 4: the direction and protection mode
♪ -----	short music + 5 short beeps Main options 5: PWM Setting

**The first step**, select the main options menu and enter the sub-options. As Table 1.1, when heard the main options prompt tone appears, because the tone is repeated 3 times, it recommended to watch the first tone, when the second tone comes, to review and select operations: flip the throttle stick to the middle position (half throttle), this represents to select the current main option and enter sub-menu.

Because already entered the second-level menu, and now the motor sound will have some changes, in order to distinguish the main options menu. The main option's "short-high beep" will change to "long-low beep", to hint current sub-option (prompt one or more of the main options short of high-ming + prompt one or more sub-option length Diming). You can check the second and the third pages for the sub-options' list. Tone each sub-option is repeated three times and then into the next sub-option and cycle.

**The second step**, select the sub-options and save. When you hear the sub-options' tone which you want to set, because the tone is repeated three times, it's recommended to listen carefully in the first time, at the second time to review and selection operations: move the throttle to the top position (full throttle), this indicates the current sub-options and select save. At this time the motor will be issued a special long-Ming to represent the current operation finished. After that ESC will return to the top step of the main options menu to wait for next command (to set or exit).

**The third step** is to end the set and ready to start the motor. When finished setting the options, move the throttle pole in the end (off the throttle / bottom), the ESC will reboot (because at this time throttle is at normal position for the normal operation mode, it will no longer enter option mode) to verify all new set of options will take effect ( please note, exit operation without any saving, just means out of setup mode and restart ESC. But for above the second step data that already being saved, so exit setup mode will not interfere with the data has been saved), and this time you can wait for the beep to secure the motor started.

**Following list summarizes the different specifications/different versions of ESC of their sub-options mean:**

<b>Sub-option 1.1 Battery type and battery number</b> ♪ -		<b>effective only in 50ALV/60ALV/80ALV/125ALV</b> <b>(LV refers to the 2-7 lithium batteries)</b>
• -	1 short-high + 1 long-low	NiMH / NiCd automatic detection - 0.8 V / cell protection voltage
• - -	1 Short-high + 2 long-low	7 cells Li-Po battery (25.9V) - 21V voltage protection **
• - - -	1 short-high + 3 long-low	6 cells Li-Po batteries (22.2V) - 18V voltage protection
• - - - -	1 short-high+ 4 long-low	5 cells Li-Po battery (18.5V) - 15V voltage protection
• - - - - -	1 short-high + 5 long-low	4 cells Li-Po batteries (14.8V) - 12V voltage protection
• - - - - - -	1 short-high + 6 long-low	3 cells Li-Po batteries (11.1V) - 9V voltage protection
• - - - - - - -	1 short-high + 7 long-low	2 cells Li-Po batteries (7.4V) - 6V voltage protection ***

<b>Sub-option 1.2. Battery type and battery number</b> ♪ -		<b>only effective in 70AMV</b>
• -	1 short-high + 1 long-low	NiMH / NiCd automatic detection - 0.8 V / cell
• - -	1 Short-high + 2 long-low	8 cells Li-Po battery (29.6V) - 24V voltage protection
• - - -	1 short-high + 3 long-low	7 cells Li-Po battery (25.9V) - 21V voltage protection
• - - - -	1 short-high+ 4 long-low	6 cells Li-Po batteries (22.2V) - 18V voltage protection
• - - - - -	1 short-high + 5 long-low	5 cells Li-Po battery (18.5V) - 15V voltage protection
• - - - - - -	1 short-high + 6 long-low	4 cells Li-Po batteries (14.8V) - 12V voltage protection

<b>Sub-option 1.3. Battery type and battery number</b> ♪ -		<b>only effective in 70AMV</b>
• -	1 short-high + 1 long-low	NiMH / NiCd automatic detection - 0.8 V / cell
• - -	1 Short-high + 2 long-low	10 cells Li-Po battery (37V) - 30V voltage protection
• - - -	1 short-high + 3 long-low	9 cells Li-Po battery (33.3V) - 27V voltage protection
• - - - -	1 short-high+ 4 long-low	8 cells Li-Po battery (29.6V) - 24V voltage protection
• - - - - -	1 short-high + 5 long-low	7 cells Li-Po battery (25.9V) - 21V voltage protection
• - - - - - -	1 short-high + 6 long-low	6 cells Li-Po batteries (22.2V) - 18V voltage protection***

<b>Sub-option 1.4. Battery type and battery number</b> ♪ -		<b>(UV refers to the 8-12 Li-Po batteries)</b>
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• -	1 short-high + 1 long-low	NiMH / NiCd automatic detection - 0.8 V / cell
• - -	1 Short-high + 2 long-low	12 cells Li-Po battery (44.4V) - 39V voltage protection
• - - -	1 short-high + 3 long-low	11 cells Li-Po battery (40.7V) - 33V voltage protection
• - - - -	1 short-high+ 4 long-low	10 cells Li-Po battery (37V) - 30V voltage protection
• - - - - -	1 short-high + 5 long-low	9 cells Li-Po battery (33.3V) - 27V voltage protection
• - - - - - -	1 short-high + 6 long-low	8 cells Li-Po battery (29.6V) - 24V voltage protection

<b>Sub-option 2. throttle settings ♪ - -</b>		<b>All</b>
• • -	2 short-high + 1 long-low	automatically adapt to the throttle rang *
• • - -	2 short-high + 2 long-low	lower limit = 1.1ms, upper limit = 1.8ms
• • - - -	2 short-high + 3 long-low	High acceleration*
• • - - - -	2 short-high + 4 long-low	Low acceleration

<b>Sub-option 3.1. brake set ♪ - - -</b>		<b>only effected in fixed-wing, boat</b>
• • • -	3 short-high + 1 long-low	no brake
• • • - -	3 short-high + 2 long-low	soft brake*
• • • - - -	3 short-high + 3 long-low	medium brake
• • • - - - -	3 short-high + 4 long-low	hard brake

<b>Sub-option 3.2. Operation Mode ♪ - - -</b>		<b>Specially for Helicopters version (helicopter version without Brake)</b>
• • • -	3 short-high + 1 long-low	no brake
• • • - -	3 short-high + 2 long-low	soft brake*
• • • - - -	3 short-high + 3 long-low	medium brake
• • • - - - -	3 short-high + 4 long-low	hard brake

<b>Sub-option 4. motor rotation direction and cut-off mode</b>		<b>All</b>
• • • • -	4 short-high + 1 long-low	clockwise rotation *
• • • • - -	4 short-high + 2 long-low	counter-clockwise rotation
• • • • - - -	4 short-high + 3 long-low	soft protection ( to limit the maximum output when reached to protection voltage) *
• • • • - - - -	4 short-high + 4 long-low	hard protection ( to cut-off the power supply when reached to protection voltage)

<b>Sub-option 5. timing mode setting ♪ - - - - -</b>		<b>All</b>
• • • • • -	5 short-high + 1 long-low	1 ° - For 2-4 poles inner runner motor *
• • • • • - -	5 short-high + 2 long-low	7 ° - For 6-8 poles motor
• • • • • - - -	5 short-high + 3 long-low	15 ° - for 10-14 poles outer runner motor

•••••---	5 short-high + 4 long-low	30 ° - for 10-14 poles high speed outer runner motor
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<b>Sub-option 6. PWM (pulse width modulation) setting</b>		<b>All</b>
•••••-	6 short-high + 1 long-low	8KHz - for lower speed, fewer poles motor
•••••--	6 short-high + 2 long-low	16KHz - suitable for most outer runner motor

\* This option is the factory / default.

\*\* H50ALV (Helicopter 50A 2S-6S) without this option, other options on the sequential shift.  
The other options are AutoNimh/6/5/4/3/2

\*\*\* H80ALV (Helicopter 80A 3S-7S) without this option, other options remain unchanged.  
The other options are AutoNimh/7/6/5/4/3

\*\*\*\* H50AHV (Helicopter 50A 5S-10S) added a 5 cells Li-Po battery option, other options remain unchanged.  
The other options are AutoNimh/10/9/8/7/6/5

Remarks:

- 1, Helicopter will be abbreviated as Heli, or H.
- 2, LV means low voltage, refers 2S-7S.
- 3, MV means medium voltage, refers to 4S-8S.
- 4, HV means High Voltage, refers 6S-10S.
- 5, UV means the very high voltage, refers 8S-12S.