SUPPO™ Speed Controller **Programming Instructions**

For Advance programmable (Heli version)

H70A/H100A Parameters:

ESC for Helicoptor	Cons–Current	**Max Current**	BEC	Input	TIMING	PWM	Governor mode	Cut-off Voltage	Weight
H70A	70A	80A	5V 5A UBEC	6-18NimH ~2-6 LiPo	Programmable – 1/7/15/30	Programmable – 8/16K	Programmable	Nimh: 60% of staring vol; Lipo: 2.8V per cell	75g
H100A	100A	125A	5V 5A UBEC	6-18NimH ~2-6 LiPo	Programmable – 1/7/15/30	Programmable – 8/16K	programmable		120g

Other features:

*Soft star

* Governor mode programmable (4 options: Disable, 2-4 poles, 6-10 poles, 12-14 poles motor)

* ESC slow down at 3V per cell lipo and Cut –off voltage at 2.8V per cell

• **Phrases 1 Enter programming Mode**

1. Connect your motor and receiver to the speed controller, but do not connect the battery yet.
2. Turn on your transmitter and move the throttle stick to the full throttle position (full up). Please Note: Most Futaba transmitters have the throttle channel reversed by default.
3. Connect your battery and the controller will initialize with a musical tone.

• **Phrases 2 Programming**

After 3 seconds, the controller will start beeping a sequence of tones – a musical tone followed by one or more beeps. Each sequence represents a parameter that you can program and is repeated 3 times. The parameters are:

♪—	Music Tone + 1 Beep	Options 1. Cell Type and No. of Cells
♪— —	Music Tone + 2 Beeps	Options 2. Throttle Setting
♪— — —	Music Tone + 3 Beeps	Options 3. Throttle type
♪— — — —	Music Tone + 4 Beeps	Options 4. Direction and Cutoff Type
♪— — — — —	Music Tone + 5 Beeps	Option 5. Timing Mode
♪— — — — — —	Music Tone + 6 Beeps	Option 6. PWM setting

Step 1. Starting, Enter Sub-optins. When you hear the sequence for the parameter you wish to program, move the throttle stick to the **Center Position to Enter Sub-options**.
The controller will then **start beeping a Morse code sequence** of short and long beeps representing the possible options you may choose for the selected parameter. See table 2 for a list of all programmable options. Each option sequence is repeated 3 times.

Step 2. Select and save, the select the option, move the **throttle stick** back to **the Full-up-position**., When you hear the sequence for the option you wish to select. The controller will then save the selected option, and **sound a long beep as a confirmation.** It then goes back to the beginning of the programming sequence (phrases 2).

Step 3. Complete programming and save options. Setup all the parameters you need to change. When complete, move the throttle stick to the **Lowest (Down) Position**. The controller will save all options and re-initialize in normal running mode so you can start your motor.

The table below summarizes the various programming options for each parameter:

Option 1 (2S-6S)-ESC Cell Type and Number of Cells　　♪—	H70A/H100A (2-6s Lipo)
• — 1 Short + 1 Long	NiMh/NiCD Auto Cell Count - 0.8V/Cell Cutoff Voltage
• — — 1 Short + 2 Long	6S Li-Po (22.2V) –16.8V Cutoff Voltage
• — — — 1 Short + 3 Long	5S Li-Po (18.5V) – 14V Cutoff Voltage
• — — — — 1 Short + 4 Long	4S Li-Po (14.8V) – 11.2V Cutoff Voltage
• — — — — —1 Short + 5 Long	3S Li-Po (11.1V) – 8.4V Cutoff Voltage
• — — — — — — 1 Short + 6 Long	2S Li-Po (7.4V) – 5.6V Cutoff Voltage

Option 2.　Throttle Setting　♪— —	
•• — 2 Short + 1 Long	Auto Throttle Range *
•• — — 2 Short + 2 Long	1.1ms to 1.8ms
•• — — — 2 Short + 3 Long	Hard Acc*
•• — — — — 2 Short + 4 Long	Soft Acc

Option 3.　Throttle Type　♪— — —	
••• — 3 Short + 1 Long	Normal　（Disable Governor Mode）*
••• — — 3 Short + 2 Long	Governor Mode with 2-4 poles motors
••• — — — 3 Short + 3 Long	Governor Mode with 6-10 poles motors
••• — — — — 3 Short + 4 Long	Governor Mode with 12-14 poles motors

Option 4. Direction and Cutoff Type ♪— — — —	
•••• — 4 Short + 1 Long	Clockwise Rotation *
•••• — — 4 Short + 2 Long	Counterclockwise Rotation
•••• — — — 4 Short + 3 Long	Soft Cutoff
•••• — — — — 4 Short + 4 Long	Hard Cutoff *

Option 5. Timing Mode Setting ♪— — — — —	
••••• — 5 Short + 1 Long	1º - For 2-4 Pole Inrunner Motors *
••••• — — 5 Short + 2 Long	7º - For 6-8 Pole Motors
••••• — — — 5 Short + 3 Long	15º- For 10-14 Pole Outrunner Motors
••••• — — — — 5 Short + 4 Long	30º - For 10-14 Pole High-RPM Outrunner Motors

Option 6. Pulse Width Modulation(PWM) Setting ♪— — — — — —	
•••••• — 6 Short + 1 Long 8KHz	– For low RPM and low pole count motors *
•••••• — — 6 Short + 2 Long 16KHz	– For most out runner motors

* is Default Setting