

## Eovan GT Carbon Pro - Motor & PPM Settings

### My Boards defaults

Motor Current Max	100.00 A
Motor Current Max Brake	-60.00 A
Absolute Maximum Current	150.00 A
Slow ABS Current Limit	True
Max Current Scale	100 %
Min Current Scale	100 %
Battery Current Max	30.00 A
Battery Current Max Regen	-60.00 A

Reduced **Motor Current Max** from **100A** to **60A**

Change **Battery Current Max Regen** from **-60A** to **-20A**

Change the **Wheel Diameter** from **108mm** to **120mm** (CloudWheels)

Enable **Current Smart Reverse**, which allows to slowly reverse

Change the **Throttle Curve** from **50% polynomial** to **38% natural**.

Reduced **PPM Ramping Time** from **0.45 pos** and **0.15 neg**, to **0.20** and **0.10**

Power suddenly cuts off when starting to accelerate from stop

### Setting location

[General, Motor, Current, Motor Cur Max]

[General, Motor, Current, Batt Max Regen]

[General, Motor, Additional Info, Wheel Dia]

[PPM, APP, General, Control Type]

[PPM, APP, General, Throttle Curve]

[PPM, APP, General, Ramping]

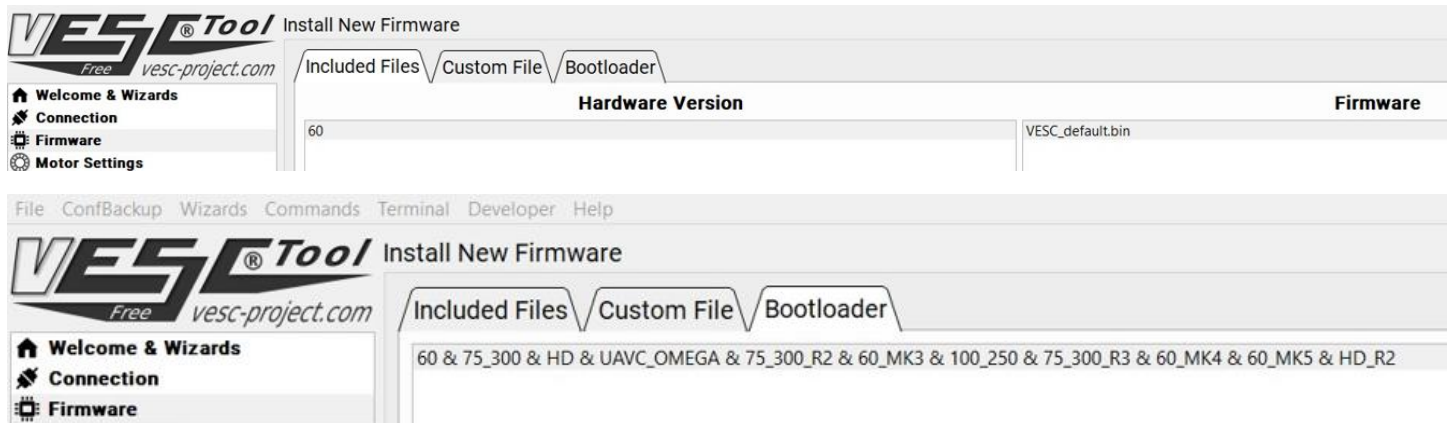
don't know what to change

	Battery	Motor & Gears
Cell Brand	Panasonic 21700	6368 Dual Belt Motor 170KV
Cells in Series & Parallel	12S4P	3600W maximum motor power
Capacity	14.4 Ah/19.2 Ah	Motor Gear 15 Tooth
Watt-hour	852.5wh	Wheel Pulley 50 Tooth
Nominal Capacity	4800mah/cell	120 mm CloudWheels
Nominal Voltage:	3.7v	ESC based on Dual Vesc 6
Maximum Voltage:	4.2V	Rider 200lbs
Charging voltage	50.4v	Riding style 25-28mph

### Using VESC® Tool 2.06

Default settings in VESC

Firmware



Motor General

File ConfBackup Wizards Commands Terminal Developer Help

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General Current Voltage RPM Wattage Temperature Advanced

Motor Type	FOC
Invert Motor Direction	False
Sensor Port Mode	Hall Sensors
ABI Encoder Counts	8192

Welcome & Wizards  
 Connection  
 Firmware  
 Motor Settings  
 General **MOTOR**  
 FOC **MOTOR**  
 PID Controllers **MOTOR**  
 Additional Info **MOTOR**  
 Experiments **MOTOR**

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**VESC® Tool** Free vesc-project.com

General Current Voltage RPM Wattage Temperature Advanced

**Motor**

Motor Current Max	100.00 A
Motor Current Max Brake	-60.00 A
Absolute Maximum Current	150.00 A
Slow ABS Current Limit	True
Max Current Scale	100 % 1.00
Min Current Scale	100 % 1.00

**Battery**

Battery Current Max	30.00 A
Battery Current Max Regen	-60.00 A

**DRV8301**

DRV8301 OC Mode	Current Limit
DRV8301 OC Adjustment	16

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 General **APP**  
 PPM **APP**  
 UART **APP**  
 Nrf **APP**  
 IMU **APP**

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General Current Voltage RPM Wattage Temperature Advanced

Battery Voltage Cutoff Start	40.80 V
Battery Voltage Cutoff End	36.00 V

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General Current Voltage RPM Wattage Temperature Advanced

Max ERPM	100000.00
Max ERPM Reverse	-100000.00
ERPM Limit Start	80 % 0.80

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General Current Voltage RPM Wattage Temperature Advanced

Maximum Wattage	1500000.0 W
Maximum Braking Wattage	-1500000.0 W

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General | Current | Voltage | RPM | Wattage | Temperature | Advanced

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**General**

Acceleration Temperature Decrease	15 %	15 %
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**MOSFET**

MOSFET Temp Cutoff Start	85.0 °C	85.0 °C
MOSFET Temp Cutoff End	100.0 °C	100.0 °C

**Motor**

Motor Temp Cutoff Start	85.0 °C	85.0 °C
Motor Temp Cutoff End	100.0 °C	100.0 °C

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**General**

Minimum Input Voltage	8.00 V	
Maximum Input Voltage	57.00 V	
Minimum Duty Cycle	0.5 %	0.5 %
Maximum Duty Cycle	40.0 %	40.0 %
Minimum Current	0.10 A	
Fault Stop Time	500 ms	
Auxiliary Output Mode	Off	
Motor Temperature Sensor Type	NTC 10K at 25°C	
Beta Value for Motor Thermistor	3380.0 K	
Coefficient for PTC Motor Thermistor	0.610 %/K	
Duty Cycle Current Limit Start	100 %	1.00

FOC

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General | Sensorless | Hall Sensors | Encoder | HFI | Advanced

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**Hall Sensors**

Sensor Mode	Hall Sensors
Motor Resistance (R)	14.1 mΩ
Motor Inductance (L)	6.88 μH
Motor Flux Linkage (λ)	4.862 mWb
Current KP	0.0069
Current KI	14.07
Observer Gain (x1M)	42.30

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General | Sensorless | Hall Sensors | Encoder | HFI | Advanced

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**Openloop**

Openloop ERPM	700.00
Openloop Hysteresis	0.10 S
Openloop Time	0.10 S
Stator Saturation Compensation	0 %
Temp Comp	False
Temp Comp Base Temp	25.0 °C

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General | Sensorless | Hall Sensors | Encoder | HFI | Advanced

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**Sensorless**

Sensorless ERPM	2000.00
Hall Table [0]	255
Hall Table [1]	104
Hall Table [2]	172
Hall Table [3]	143
Hall Table [4]	40
Hall Table [5]	69
Hall Table [6]	4
Hall Table [7]	255





## Additional Info

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**Setup** Motor General Description Quality

Motor Poles	7
Gear Ratio	2.667
Wheel Diameter	108.00 mm
Battery Type	BATTERY_TYPE_LIION_3_0_4_2
Battery Cells Series	12
Battery Capacity	19.200 Ah

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PID Controllers MOTOR  
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**Setup** Motor General Description Quality

Motor Brand	Unnamed
Motor Model	Not Specified
Motor Weight	0.00 g
Motor Poles	14
Position Sensor	No sensor
Motor Loss Torque	0.03 nm

**Welcome & Wizards**  
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## App General

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**VESC® Tool**  
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**APP to Use** PPM and UART

**VESC ID** 44

**Timeout** 1000 ms

**Timeout Brake Current** 0.00 A

**Can Status Message Mode** CAN\_STATUS\_1\_2\_3\_4

**Can Status Rate** 50 Hz

**CAN Baud Rate** CAN\_BAUD\_500K

**Pairing Done** False

**Enable Permanent UART** True

**Shutdown Mode** OFF\_AFTER\_30M

**CAN Mode** VESC

**UAVCAN ESC Index** 0

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**App Settings**  
General APP  
PPM APP

## PPM


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**General** Mapping Throttle Curve

Control Type	Current No Reverse With Brake
Median Filter	True
Safe Start	True
PID Max ERPM	15000.00
Positive Ramping Time	0.40 s
Negative Ramping Time	0.20 s
Max ERPM for direction switch	4000.00
Smart Reverse Max Duty Cycle	7 %
Smart Reverse Ramp Time	3.00 s

**Welcome & Wizards**  
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**App Settings**  
General APP  
PPM APP  
UART APP  
Nrf APP  
IMU APP

**Multiple VESCs over CAN**  
Multiple VESCs Over CAN True  
Traction Control False  
TC Max ERPM Difference 3000.00

Terminal Developer Help	
General Mapping Throttling	Off
	Current
	Current No Reverse
Control Type	Current No Reverse With Brake
Median Filter	Duty Cycle
Safe Start	Duty Cycle No Reverse
PID Max ERPM	PID Speed Control
Positive Ramping Time	PID Speed Control No Reverse
Negative Ramping Time	Current Hyst Reverse With Brake
Max ERPM for direction switch	Current Smart Reverse
Smart Reverse Max Duty Cycle	7 % 
Smart Reverse Ramp Time	3.00 s

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General Mapping Throttle Curve

App Settings  
General APP  
PPM APP

Pulselength Start	0.8420 ms
Pulselength End	2.0720 ms
Pulselength Center	1.5020 ms
Input Deadband	5 %

5 %

The screenshot shows the VESC Tool software interface. The top bar has three tabs: 'General', 'Mapping', and 'Throttle Curve', with 'Throttle Curve' being the active tab. On the left, there is a sidebar with 'App Settings' and two sub-panels: 'General' and 'PPM', both with 'APP' buttons. The main area displays the 'Throttle Curve' configuration. It includes three rows: 'Throttle Expo' set to 50% with a value of 2.50, 'Throttle Expo Brake' set to 50% with a value of 2.50, and 'Throttle Expo Mode' set to Polynomial. Each row has a corresponding horizontal bar graph showing the curve's shape.

Parameter	Value	Graph
Throttle Expo	50 %	2.50
Throttle Expo Brake	50 %	2.50
Throttle Expo Mode	Polynomial	

## IMU

The screenshot displays the VESC Tool application window. The top menu bar includes 'File', 'ConfBackup', 'Wizards', 'Commands', 'Terminal', 'Developer', and 'Help'. The main window is titled 'VESC Tool' with the subtitle 'Free vesc-project.com'. On the left, the 'App Settings' sidebar is visible, with 'IMU' selected. The main content area shows the 'IMU' settings, which are organized into two sections: 'Filters' and 'Rotation'. The 'Filters' section includes settings for 'IMU Type' (set to 'IMU\_TYPE\_INTERNAL'), 'Sample Rate' (set to '200 Hz'), 'IMU AHRS Mode' (set to 'AHRS\_MODE\_MADGWICK'), 'Accelerometer Confidence Decay' (set to '1.000'), 'Mahony KP' (set to '0.300'), 'Mahony KI' (set to '0.000'), and 'Madgwick Beta' (set to '0.100'). The 'Rotation' section includes settings for 'Imu Rotation Roll' (set to '0.000 °'), 'Imu Rotation Pitch' (set to '0.000 °'), and 'Imu Rotation Yaw' (set to '0.000 °'). Each setting has a corresponding 'APP' button next to it.