

MAVERICK

EMI

MSC-4516-BL ESC MSC-6016-BL ESC Manual

Thank you for selecting this Maverick RC product!
HAVE FUN! But please read this first !!

We know you will have great fun with your model, but to get the best from your purchase please read this information BEFORE you operate the model.

Additional Information

If your transmitter was bundled with a car, then information on the car operation can be found in the relevant manual.

QS

Quick Start Guide



+



TG

Technical Guide



+



SG

Startup Guide



RMI

Transmitter Manual



EMI

This Guide



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EMI 1-1

NOTE - This refers to the relevant guide (as above) and the relevant section. In this example, Section 1-1 of the ESC Manual.

MVK

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1 ESC OPERATION

1-1 ESC Connections

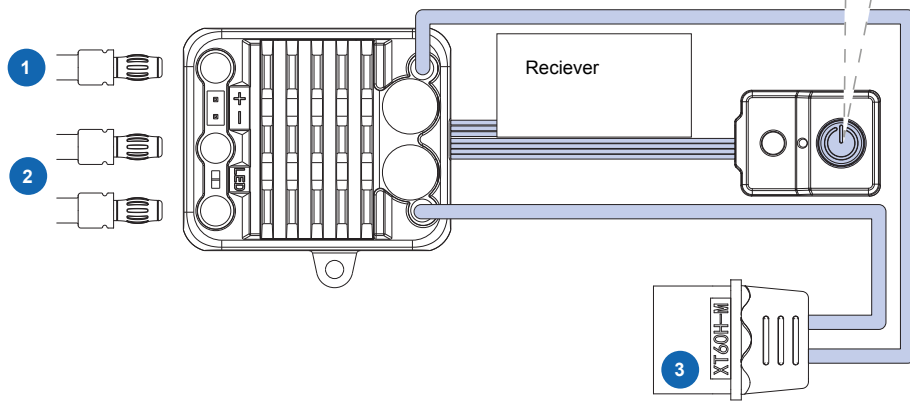
This ESC and receiver manage motor power, steering control, and accessory outputs such as lights and fans.

Connections

1. ESC Fan – Supplies cooling power to the motor or ESC (if equipped).
2. Motor Input – Connects to the motor leads.
3. Power Input – Connects to the main drive battery.

Power Switch

1. Press and hold (up to 2 seconds) to turn ON the power.
2. Short press (within 1 second) to turn OFF the power.



Tip

Always double-check connections before switching on to avoid short circuits or reversed polarity.

1-2 ESC Specifications

Model:	MSC-4516-BL ESC	MSC-6016-BL ESC
RF Standard:	2.4GHz	2.4GHz
Input Power:	2-3S (7.4V-11.1V)	2-3S (7.4V-11.1V)
Rated current:	45A	60A
Size:	39.7×21×33mm	39.7×21×33mm
Power Connector:	XT60	XT60
Motor Limit:	2-3S, LiPo	2-3S, LiPo
Motor Connector:	3.5mm banana connector	3.5mm banana connector

2 ESC PROGRAMMABLE SETTINGS

2-1 Available Parameters

The following ESC parameters can be programmed.

2-1-1 Running Mode

F/R

This mode is used for Rock Crawlers. It will allow instant switching from forward to reverse for quick car control. Please set the Drag Brake Force to 100% if the Rock Crawler mode is used.

F/R/B

This mode offers Forward, Brake and Reverse. Note, The Reverse function uses a soft start "Double click" function which will only allow reverse to be activated once the motor has stopped moving forward.

2-1-2 Battery Voltage Protection Value

Defines the lowest voltage at which the ESC cuts power to the motor in order to prevent over-discharge. For LiPo batteries, highest value is recommended to maintain battery health. For NiMH batteries, this should be switched off.

2-1-3 Motor Rotation

This setting is used to change the rotation direction of the motor.

2-1-4 Max Brake Force

This mode sets the brakes force that may be applied when the throttle is at full brake. A very large brake force may slow the car quickly, but be aware it can also do damage to the cars drivetrain.

2-1-5 Max Reverse Force

Defines how much power is applied in reverse. High reverse force is generally discouraged, as it can damage gears if used aggressively, especially in high-torque setups. The recommended setting the max reverse force to 25% or 50% for safety and better control, rather than 100%.

2-1-6 Punch

Punch can be used to control overall motor response in relation to the throttle input. The higher the set value, the faster the acceleration. Lower punch settings are advised for softer starts, lower traction, or to help with motor hesitations or stuttering when throttle is applied rapidly.

2-1-7 Drag Brake

This mode allows the setting of an automatic drag brake when the throttle stick is returned to neutral, simulating the slight braking effect of a brushed motor while coasting.

2-1-8 Timing

Adjusting the timing on an RC car's motor has a similar effect to changing gearing. Increasing (or advancing) a motor's timing results in a higher top speed (higher RPM), but Reduced Torque (less pulling power / slower acceleration). A higher timing also leads to shorter run times per battery charge, and the motor will run hotter.

Decreasing a motor's timing results in the following: faster acceleration, more torque / more pulling power and lower maximum speed (useful for small, technical tracks, off road, bumpy terrain etc.). Additionally, the motor will run cooler and the lower timing allows for longer run times per battery charge.

2-1-9 Brake Type

Synchronous is recommended, as it is more efficient and runs cooler. However Asynchronous is an option if you prefer the feel of it during driving, or it is what you are used to from older RC cars.

2-2 Programming the ESC

2-2-1 General Programming instructions

The Maverick MSC-4516-BL / MSC-6016-BL ESCs are programmed using the optional Programming Card #151108.

1. With the ESC powered off, hold the "SET" button (located below the power switch), then turn on the ESC. The LED will stay on and a beep will sound, indicating that the ESC has entered programming mode.
2. While in programming mode, continue holding the "SET" button. Release it when the beep pattern matches the desired programming item from the programming table. (Each beep pattern will repeat four times before proceeding to the next item.)
3. After releasing the "SET" button within the selected parameter item, the ESC will begin cycling through the available values, indicated by synchronized LED flashes and beeps. Each value will repeat four times before moving to the next.
4. Press the "SET" button again to confirm your selection. The ESC will reboot and resume normal operation.

Refer to the **Section 2-2-4** for settings.



2-2-2 Throttle Calibration Mode

Throttle Calibration Mode is used to teach the ESC what the transmitter's minimum, maximum, and neutral throttle signals are, so it can control your motor correctly.

Before you begin this procedure, make sure your Transmitter has the TH D/R set to 100%.

1. Move the throttle trigger to full throttle, the ESC will beep once
2. Then move the throttle trigger to full brake, the ESC will beep twice.
3. Then release the throttle trigger to the neutral position, the ESC will beep three times.
4. Power off the ESC to save the calibration settings.

2-2-3 Brake Mode

Linear: Braking force is fixed at Max Brake Force value regardless of the motor speed.

Proportional: Braking force is proportional to the motor speed. E.g. at 50% max. Motor RPM, 50% Max Brake Force value is applied. At 100% max. motor RPM, 100% Max Brake Force value is applied.

2-2-4 Default Settings/Options

Programming Item	Beep Sound	Number of LED Flashes								
		LED Flash 1x	LED Flash 2x	LED Flash 3x	LED Flash 4x	LED Flash 5x	LED Flash 6x	LED Flash 7x	LED Flash 8x	LED Flash 9x
1 Running Mode	Short "beep" x2	Forward with brake	P F Reverse/ Forward with brake							
2 Low Voltage Cutoff	Short "beep" x3	No Protection	2.8V	F P 3.0V	3.2V					
3 Motor Rotation Direction	Short "beep" x4	CCW	P F CW							
4 Max Brake Force	Long "beep"	20%	30%	40%	50%	F 60%	70%	P 80%	90%	100%
5 Max Reverse Force	Long "beep", Short "beep"	P 15%	25%	F 50%	100%					
6 Punch	Long "beep", Short "beep" x2	Level 1	F Level 2	Level 3	P Level 4					
7 Drag Brake Force	Long "beep", Short "beep" x3	P F 2%	4%	7%	10%	14%				
8 Motor Timing	Long "beep", Short "beep" x4	2°	4°	F 8°	15°	22°	P 30°			
9 Brake Mode	Long "beep", Short "beep" x5	F P Linear	Proportional							
Restore Factory Defaults	Long "beep", Short "beep" x6	Restore Factory Defaults								

P QByte Pro Factory setting

F QByte Flux Factory setting

Note: Using "Restore Factory Defaults" will reset the ESC to the original settings applied during manufacturing. These factory settings have been optimized specifically for this car. Therefore, if you use the Restore Factory Defaults function, you must review the parameters and compare them with the table above to ensure they match the original factory configuration.

3 AFTER USE

3-1 Switching Off

IMPORTANT: Always power OFF the ESC/Receiver before the transmitter.

1. Remove the car body
2. Switch off the vehicle's ESC/Receiver (short press ≤ 1 second) power and disconnect the battery.
3. Turn off the transmitter power
4. Remove the battery when not using the car.



Attention

Always power OFF the ESC/Receiver before the transmitter to prevent loss of control.



Caution

Disconnect the battery whenever the model is not in use.
If left connected, the vehicle may start unexpectedly or the battery may overheat and cause a fire.

FCC COMPLIANCE STATEMENT

This device transmits in the range 2.4 to 2.4835 GHz and has been tested to comply with the limits for a Part 15 Class B device of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Any change or modification to the device not expressly approved by the manufacturer may void the user's authority to operate the equipment. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Canada Compliance Statement:

This Class B digital apparatus complies with Canadian ICES-003. (Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.) This equipment complies with the FCC/IC radiation exposure limits set forth for FCC and Industry Canada portable transmitting devices operation in an uncontrolled environment. The equipment should only be used or installed at locations where there is normally at least a 20cm separation between the antenna and all persons. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

CE Compliance statement

The radio equipment type in this product transmits in the frequency range 2.4 to 2.4835 GHz with a maximum power of 18dBm and is in compliance with EU Directive 2014/53/EU. The full text of the Declaration of Conformity is available at www.hpiracing.com/ce

Cet appareil transmet dans la gamme de fréquence de 2,4 à 2.4835 GHz avec une puissance de 18dBm et est conforme à la Directive UE 2014/53 / UE.

Le texte intégral de la Déclaration de conformité est disponible sur www.hpiracing.com/ce

El tipo de equipo de radio en este producto transmite en el rango de frecuencia de 2.4 a 2.4835 GHz con una potencia máxima de 18dBm y cumple con la Directiva de la UE 2014/53/UE. El texto completo de la Declaración de conformidad está disponible en www.hpiracing.com/ce