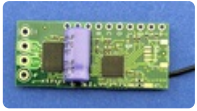


# Micron MR603c DSM2/DSMX 20V Receiver with 3A Bi-Directional ESC



MR603c Top

## Overview:

MR603c is the 3rd version of MR603, a 2.4GHz DSM2/DSMX receiver which includes one integrated 3A reversible controller for brushed motors (ESC) plus 10 [auxiliary outputs](#) (4xF, 6xP) for lighting, sound trigger, couplers, etc. It can be used with any Spektrum DSM2/DSMX compatible transmitter; this includes all of the Micron [model rail transmitters](#) or a stick model aircraft type transmitter.

MR603c is 36.75x16x10mm and weighs 3.6g without leads. The voltage range is 5V to 20V and the 3A motor current rating makes it suitable for Gauges 0 and 1 plus 16mm narrow gauge. MR603c is available as board-only for you to add wiring or with a range of pre-wired leads / connectors. The standard output configuration is described on the [outputs](#) tab. If the wiring or configuration options do not meet your needs, please [contact us](#) to discuss your requirements.

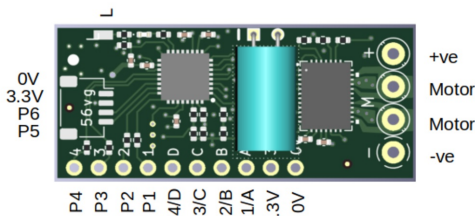
An enormous range of programming [features](#) are provided to enable you to customise the operation of MR603c to suit your model. The current firmware version is 1.9.1. See [MR603 Programming](#) (v1.9.1) for full details of the available functionality or the [user manual](#) for brief details. Access to programming is either via a stick type transmitter or one of the Micron [model rail transmitters](#). A stand-alone programmer with web interface is in development.

## Specification:

Size:	36.75 x 16 x 10mm
Weight:	3.6g without leads
Protocol:	Spektrum DSM2/DSMX
Voltage:	5V - 20V
Motor Current:	3A max continuous
P outputs:	6 (P1..P6), 0V when off, 3.3V when on, max 20mA
F switches:	4 (F1..F4 or A..D) open when off, closed to negative when on

## Outputs & Wiring:

The MR603c has 1 x H, 6 x P and 4 x F outputs.



**H:** MR603c is intended for surface vehicles which require forward and reverse motor control. For brushed motors this is achieved with an H-Bridge - the H outputs. H outputs have 256 step resolution in both directions (512 total). They control speed with pulse width modulation (PWM) which, by default, is set to its fastest (quietest) 16kHz setting.

Each H output can handle up to 3A current. The main constraint with current is heat in the receiver. Higher currents may be possible if heat sinks are added or the PWM frequency is reduced. MR603c has one integrated ESC (H1). How the outputs are used has to be set with programming. Receivers are provided 'pre-programmed'. The default settings are shown on the instructions pages for each variant.

**P:** 'P' outputs are 'pads' with 'logic' type outputs. Pads are simply solder points for controlling external things. Logic outputs are either on or off (also known as high/low and 3.3V/0V in voltage terms). The action can be inverted so 'On' can mean 0V or 3.3V. P outputs are used to provide servo signals direct to the white/yellow lead on a servo. P outputs may also be used to drive LEDs and need a resistor to limit current to no more than 20mA.

If a P output is connected to another system (e.g. sound card) with an open-circuit voltage > 3.3V, a series resistor is required to ensure the 'pull-up' current is less than 50uA. A 4k7 ohms resistor is suitable when connecting to a MyLocoSound trigger input. A F output does not need the resistor as it is a switch to battery negative when on. P outputs **can not** be connected to a Mtroniks trigger input as the required current is too high, F outputs must be used instead.

**F:** 'F' outputs are 'buffered' P outputs capable of controlling up to 2A. The buffer is a FET (Field Effect Transistor) which provides a path to ground (0v) when on and is floating (disconnected) when off. Technically they are called 'open drain' (the equivalent with a transistor which is more widely known is called 'open collector'). The MR603c main board provides 4 x 'F' outputs, labelled A, B, C and D. When programming, the F outputs are numbered 7 though 10. F outputs are often used to control sound cards and lights that require more than 20mA.

If an installation requires more than 4 F outputs, a P can be converted to an F using one or more [FET Buffers](#).

When wiring options are selected, these colours will be used:

P1	orange or yellow	Optional 4 pin JST-SH:	
P2	turquoise or green	P5	yellow
P3	brown	P6	white
P4	purple		3.3V red
A/F1	blue		0V black
B/F2	green		
C/F3	pink		
D/F4	white		
L	grey		

## Configuration:

The pre-loaded configurations are shown below. Unless otherwise specified when the receiver was ordered, config 1 is enabled by default. The other loaded configurations can be selected using a power-on configuration change (aka 'paper-clip change') or by [programming](#) (v1.9.1). The throttle type can be toggled between Centre-Off and Low-Off using a power-on configuration change.

## Configurations

This configuration table is for firmware version 1.9. For other versions, refer to [mrxxx version](#).

The pre-loaded configurations are shown below. Unless otherwise specified when the receiver was ordered, config 1 is enabled by default. The other loaded configurations can be selected using a power-on configuration change or by programming.

Port	1: Centre-off throttle	2: MyLocoSound triggers on A-D (Tx22)	3: MyLocoSound triggers on A-D (Tx20)	4: Road Vehicle
H1	Centre-Off ch1	Centre-Off ch1	Centre-Off ch1	Centre-Off ch3
P1	Forward Light on H1 (LED2)	Forward Light on H1 (LED2)	Forward Light on H1 (LED2)	Servo on ch2 Steering
P2	Reverse Light on H1	Reverse Light on H1	Reverse Light on H1	Left indicator activate=ch4, steer=ch2 (LED2)
P3	Momentary on ch3, low 3.3V	Momentary on ch3, low 3.3V	Momentary on ch3, low 3.3V	Right indicator
P4	Momentary on ch3, high 3.3V	Momentary on ch3, high 3.3V	Momentary on ch3, high 3.3V	Brake Light on H1
P5	Momentary on ch5, low 3.3V	Momentary on ch5, low 3.3V	Momentary on ch5, low 3.3V	Reverse Light on H1
P6	Momentary on ch5, low 0V	Momentary on ch5, low 0V	Momentary on ch5, low 0V	Momentary on ch1, high 3.3V Driving lights

Port	1: Centre-off throttle	2: MyLocoSound triggers on A-D (Tx22)	3: MyLocoSound triggers on A-D (Tx20)	4: Road Vehicle
F1/A/P7	Forward Light on H1	Momentary on ch3, high closed	Momentary on ch2, low closed	Momentary on ch3, high closed
F2/B/P8	Reverse Light on H1	Momentary on ch3, low closed	Momentary on ch4, low closed	Momentary on ch3, low closed
F3/C/P9	Momentary on ch5, low closed	Momentary on ch5, low closed	Momentary on ch5, low closed	Momentary on ch5, low closed
F4/D/P10	Latch on ch5, start open, toggle low	Latch on ch5, start open, toggle low	Latch on ch5, start open, toggle low	Latch on ch5, start open, toggle low
<a href="#">LED2</a>	P1	P1	P1	P2
<a href="#">Selecta</a>	Enabled	Enabled	Disabled	Disabled
<a href="#">LVC</a>	Enabled	Enabled	Enabled	Enabled
<a href="#">Sleep time</a>	1 hour	1 hour	1 hour	1 hour
<a href="#">Cruise</a>	Enabled	Enabled	Enabled	Enabled

Other configurations are available to special order or you can configure yourself by [programming](#) (v1.9.1).

The receiver is normally supplied as a bare board, with wiring options as specified in the menus below. The MR603c is available with either a short wire aerial or a extended aerial (100mm and 150mm) for use in metal bodied vehicles; when using the extended aerial, it should be mounted so that the last 30mm of the aerial can 'see' the transmitter.

The default behaviour of the P outputs and F switches are defined on the [Configuration](#) tab. F switches are best used for sound card triggers - select configuration #2 or #3 to match your transmitter controls. Other setups are available; [contact](#) Micron to discuss if none of the standard configurations or wiring options matches your need.

Price: from £42.00