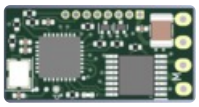
Micron MR601a DSM2/DSMX 13V Receiver with 1.2A Bi-Directional ESC


MR601a Top

Overview:

MR601a is a 2.4GHz DSM2/DSMX receiver which includes one integrated 1.2A reversable controller for brushed motors (ESC) plus 5 auxiliary outputs (2xF, 3xP) 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.

MR601a is 22.5 x 11 x 5 and weighs 0.9g without leads. The voltage range is 2.7V to 13v and the 1.2A motor current rating makes it suitable for 00/H0, 7mm narrow gauge and smaller Gauge 0 locos. MR601a is available as board-only for you to add wiring or with a range of pre-wired leads. 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 provide to enable you to customise the operation of MR601a to suit your model. The current firmware version is 1.9.1. See MR601 Programming (v1.9.1) for full details or the user manual for brief information. 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:	22.5 x 11 x 5mm
Weight:	0.9g without leads
Protocol:	Spektrum DSM2/DSMX
Voltage:	2.7V - 13V
Motor Current:	1.2A max continuous
P outputs:	3 (P1..P3), 0V when off, 3.3V when on, max 20mA
F switches:	2 (F1..F2 or A..B) open when off, closed to negative when on

The default speed controller PWM frequency is 16kHz which works well for small and coreless motors. Larger motors may exhibit a reduced throttle response at this high frequency and will benefit from lowering to 1kHz or 500Hz - experience with Re280 type motors shows that 500Hz or 250Hz works best. The PWM frequency may be set using power-on programming changes (from v1.7, ident 'I') or by programming MR601a, which requires a transmitter capable of programming receivers (e.g. Tx20, Tx22, Tx24 - not Tx10 or Tx21).

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 & B (Tx22)	3: MyLocoSound triggers on A & B	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

Port	1: Centre-off throttle	2: MyLocoSound triggers on A & B (Tx22)	3: MyLocoSound triggers on A & B	4: Road Vehicle
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
F1/A/P4	Forward Light on H1	Momentary on ch3, high closed	Momentary on ch2, low closed	Brake Light on H1
F2/B/P5	Reverse Light on H1	Momentary on ch5, low closed	Momentary on ch4, low closed	Reverse Light on H1
LED2	P1	P1	P1	P2
Selecta	Enabled	Enabled	Disabled	Disabled
LVC	Enabled	Enabled	Enabled	Enabled
Sleep time	1 hour	1 hour	1 hour	1 hour
Cruise	Enabled	Enabled	Enabled	Enabled

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

Power-On Configuration Changes

A few configuration changes can be made without programming. A simple link across 2 of the auxiliary P pads is used to action the change. This is easily achieved using some needle nose tweezers and, if they are sharp pointed, can penetrate the receiver's heatshrink cover. A change is made by:

- connecting the appropriate P pads with the receiver off,
- switching the receiver on and observing the LED flash pattern,
- waiting until the flash pattern corresponds to the value you want to set
- removing the connection,
    - if the flash pattern is different to the setting before you started, the change is confirmed by a continuous rapid LED flash; you need to switch off and back on again
    - if you have not changed a setting, MR601a goes directly into receive mode

The changes all toggle (or cycle) the parameter value each time the process is performed. The LED flash indicates the new state of the configuration parameter. The receiver has to be switched off after the change as it will be stuck in the rapid flash mode to indicate that the change has been made. **If you switch off before removing the P connection, the configuration is not changed.**

This is a summary of the configuration changes that can be made using a jumper across 2 of the P pads.

Change	Pads	LED indication
Reset, Backup & Programming	P1/P2	n-flash where 'n' is: 1: do nothing 2: reset 3: backup 4: disable/enable ch2/ch4 programming 5: enter programming mode
Selecta	P1/P3	1-flash - disabled 2-flash = enabled
Cruise Control	P1/P4	1-flash = disabled, stop in 4s after signal loss 2-flash = enabled

Change	Pads	LED indication
ESC Throttle Mode	P2/P3	1-flash = centre-off 2-flash = low-off
Configuration Select	F2/P1	n-flash where 'n' is the configuration number
LVC	F2/P2	1-flash = disabled 2-flash = enabled with battery voltage auto-detect
PWM Freq	F2/P3	1-flash = 16kHz, 2-flash = 8kHz, 3-flash = 4kHz, 4-flash = 2kHz 5-flash = 1kHz, 6-flash = 500Hz, 7-flash = 250Hz, 8-flash = 120Hz

Each flash count is repeated twice and then increments to the next, cycling back to 1 when the max is reached.

- The flash count for 'Reset, Backup & Programming' always starts at 1,
- all others start at the currently configured value - e.g. if Selecta is currently enabled, the flash count for Selecta mode will start at 2

Remove the connection when the flash count is the value you want. To avoid hesitation inadvertenly causing the count to skip on to the next value, remove the connection when you see the first showing of the LED flashes.

Note:

- when changing the configuration number, any previous programming or power-on configuration changes (e.g. LVC or throttle centre/low off) will be over-written and will need to be done again.
- after making any programming or power-on changes, always make a backup (P1/P2 or 4,12 program) so that, should you later perform a P1/P2 reset, the receiver is restored to the setup you made and not the factory state.

The receiver is supplied either as a bare board or with wiring options and heatshrink covering as specified in the menus below. MR601a is available only with a short wire arial. If the receiver is to be used with a metal bodied vehicle, it should be mounted so that the aerial wire can be fed through a small hole to the outside of the body or into the cab space.

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. If you need more than 2 x F switches, a selection of small FET buffers are available to convert P into F. The MR601a side connection pads for F and P are small and close together. If you are not confident of micro soldering, please order MR601a with one of the wiring options or, contact Micron if none of these match your need.

Price: from £34.00