

## Ma-RX42-X V2.3 Series Receiver Manual

Thank you for choosing the CROSSOCER-RX brand receiver. Please read this document carefully before use!

Ma-RX42-X V2.3 series receivers are upgraded from the previous generation (2022). The V2.3 version is the same size as the previous generation. It still provides 4 independent output interfaces and a built-in 5A/1S brush ESC, but with new CH5, PPM and SBUS functions.

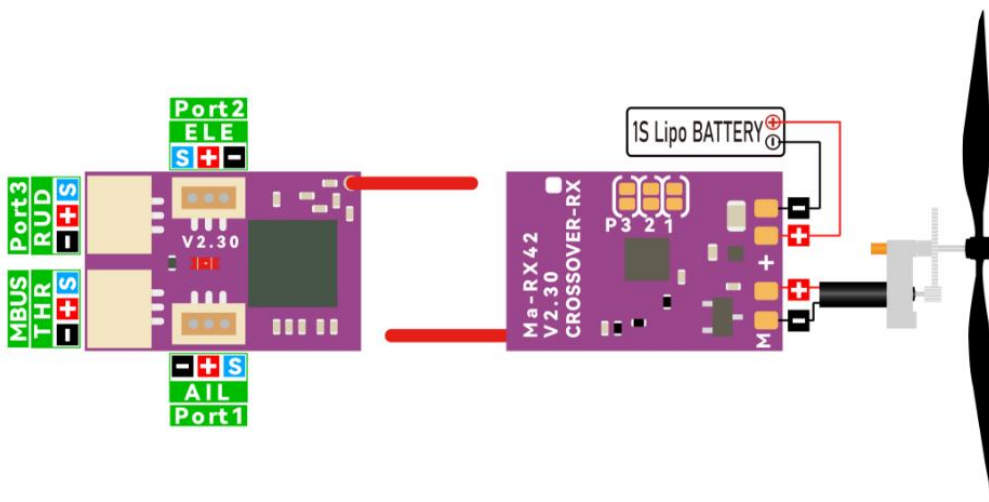
This series of receivers currently offers a total of 10 versions.

### Features:

- Ultra-small size: 18.5\*12.0\*6.5mm (excluding antenna);
- Ultra light weight: 0.9g (including antenna);
- Operating voltage: 3.0~5.0V;
- Built-in 5A/1S brushed ESC (with start lock function);
- Supports external brush or brushless ESC;
- Supports brushless ESCs above 2S (requires BEC output 5V);
- Automatic BIND;
- Three-way functional programming IO (P1, P2, P3);
- Support CH5 output;
- Support CH5 delay output (for landing gear retraction);
- Support PPM output;
- Supports SBUS normal phase and inverting output (Note 1);
- Support TELEM function (only supported by advanced version);
- Support GUI function setting;

Note 1: D and D+ versions only support inverted output.

### Interface & Wiring Reference:



### Automatic BIND:

In order to solve the problem of being unable to press the BIND switch after the receiver is installed inside the RC aircraft, we developed the automatic BIND function. When the receiver does not receive a signal within 10 seconds after powering on, the receiver will automatically enter the BIND mode (the LED on the receiver changes from slow flashing to fast flashing), and then complete the binding according to the BIND operation of the transmitter.

### TELEM Function (only supported by D+, F2+, F3+ and A2+ versions):

The TELEM function can realize real-time monitoring of battery voltage, receiver working voltage, receiver signal strength and receiver working temperature, allowing users to grasp the receiver working status and battery discharge in real time to avoid flying out of the remote control distance and battery over-discharge. (If you need to monitor brushless motor speed or flight altitude, please choose a more advanced model of receiver).

Note: The effective distance of the TELEM function is related to the transmitter itself. It may happen that the working distance of the receiver is much higher than the effective distance of the TELEM function --- this situation is normal.

### Built-in Brushed ESC (M1) Locking Function:

The built-in brush ESC lock function is to prevent the brush motor from starting accidentally. After adding this function, the brush motor will not start due to the change of the position of the throttle lever on the transmitter after the receiver is powered on. After the receiver is powered on and receives a signal, when the throttle lever on the transmitter is held at the lowest position for about 2 seconds for the first time (at this time, the LED on the receiver dims for about 2 seconds and then brightens again), the built-in brush ESC lock will be released. You can then push the throttle lever to start the brushed motor.

### Programming IO(P1,P2,P3):

There are three IOs on the back of the Ma-RX42-X V2.3 series receiver for programming the RX function: P1, P2, P3. These three programming IOs are used to set various additional functions of RX, as shown in the following table:

RX Function	P1,P2,P3 Status (Note2)			Directions
	P1	P2	P3	
Normal Mode	O	O	O	MBUS port output THR
CH5 Delay Output	S	O	O	MBUS port outputs CH5, CH5 slowly outputs
CH5 Normal Output	O	S	O	MBUS port outputs CH5, CH5 outputs normally
Dual Aileron	S	S	O	MBUS port output AIL
PPM Output	O	O	S	The MBUS port outputs PPM, and other ports have no output.
SBUS Output(Note3)	S	O	S	PORT3 outputs SBUS, and other ports output normally.
SBUS REV Output	O	S	S	PORT3 outputs inverted SBUS, other ports output normally.
SBUS REV Output +CH5 Delay Output	S	S	S	PORT3 outputs inverted SBUS, MBUS port outputs CH5 (CH5 outputs slowly), and other ports output normally

Note 2: O->Open Circuit, S->Short Circuit;

3: D/D+ version does not support SBUS output. When the user sets the D/D+ version to SBUS output, RX is actually the SBUS inverting output.

### CH5 Delay Output:

CH5 delay output is for RC aircraft landing gear applications. When this function is turned on, the movement of the servo connected to CH5 will become slower. The time it takes for the servo arm to move from one end (1000ms) to the other end (2000ms) is about 2 seconds.

### Dual Aileron Mode:

For some aircraft that require two aileron servos, we have developed the dual aileron (AIL) mode. Using this mode simplifies servo wiring and remote control settings. If you need the two aileron (AIL) channel outputs to be opposite, you need to use the GUI to set PORT1 (AIL) to the inverted output.

### PPM Output:

When the user sets RX to PPM output, the MBUS port outputs the 8CH PPM signal, and other ports no longer output signals. When the user's remote control channel number is less than 8CH or RX does not support 8CH, the PPM multi-output channel data will remain unchanged at 1500.

The channel sequence of the PPM signal is: AIL-ELE-THR-RUD-AUX1-AUX2-AUX3-AUX4.

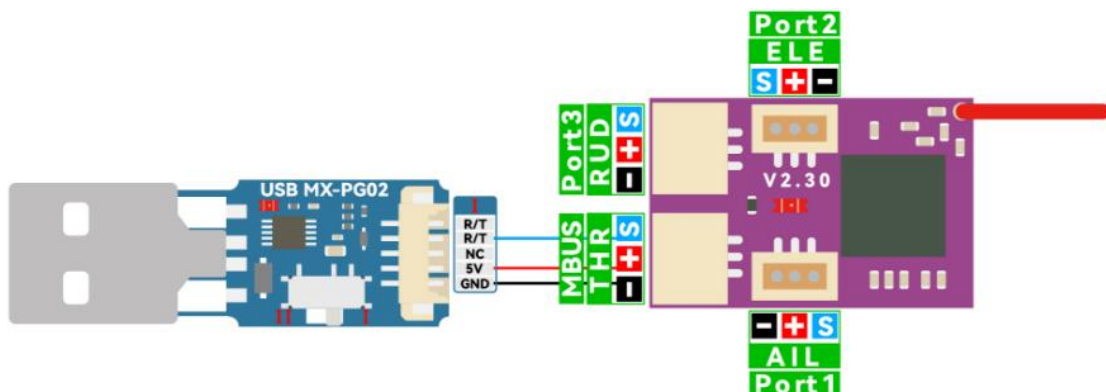
### SBUS Output:

When the user sets RX to normal phase or inverted SBUS output, PORT3 outputs the normal phase or inverted 16CH SBUS signal, and other ports output normally. When the user's remote control channel number is less than 16CH or RX does not support 16CH, the SBUS multi-output channel data will remain unchanged at 1500.

The channel sequence of the SBUS signal is: AIL-ELE-THR-RUD-AUX1-AUX2-AUX3-AUX4-AUX5-----AUX11-AUX12.

### How to connect RX to GUI software:

Before using the GUI software to configure the receiver function, the user needs a USB programmer (USB MX-PG02, set the switch on the programmer to the **I** position when used on Mi-RX32M-X V3), and connect one end of the USB programmer's cable. Connect the M.BUS interface of the receiver to the PC, open the GUI software and select the correct port. Click "Connect" and then each configurable function module on the receiver will load and display the current setting information of the receiver.



GUI download address: <https://store.mxo-rc.com/download-gui>

### Parameter Settings (using CrossOver-RX Tool GUI software)::

Compared with the previous generation, the V3 version of Mi-RX32M-X supports channel configuration, which makes it more flexible to use. Before using this function, users need to prepare MX USB-PG02, download and install the GUI software.

Please refer to "About RX function setting instructions" for details.

### Product Model List:

	Model	Compatible protocol	Built-in brushed ESC(5A/1S)	TELEM	Parameter Settings
<b>Basic version</b>	Ma-RX42-D V2.30	DSMX/2	✓	X	✓
	Ma-RX42-S V2.30	SFHSS	✓	X	✓
	Ma-RX42-F1 V2.30	FRSKY-D8	✓	X	✓
	Ma-RX42-F2 V2.30	FRSKY-D16 V1	✓	X	✓
	Ma-RX42-F3 V2.30	ACCST-D16 V2	✓	X	✓
	Ma-RX42-A2 V2.30	AFHDS-2A	✓	X	✓
<b>Advanced version</b>	Ma-RX42-D+ V2.30	DSMX/2	✓	✓	✓
	Ma-RX42-F2+ V2.30	FRSKY-D16 V1	✓	✓	✓
	Ma-RX42-F3+ V2.30	ACCST-D16 V2	✓	✓	✓
	Ma-RX42-A2+ V2.30	AFHDS-2A	✓	✓	✓

**If you have any feedback or suggestions please contact us!**

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