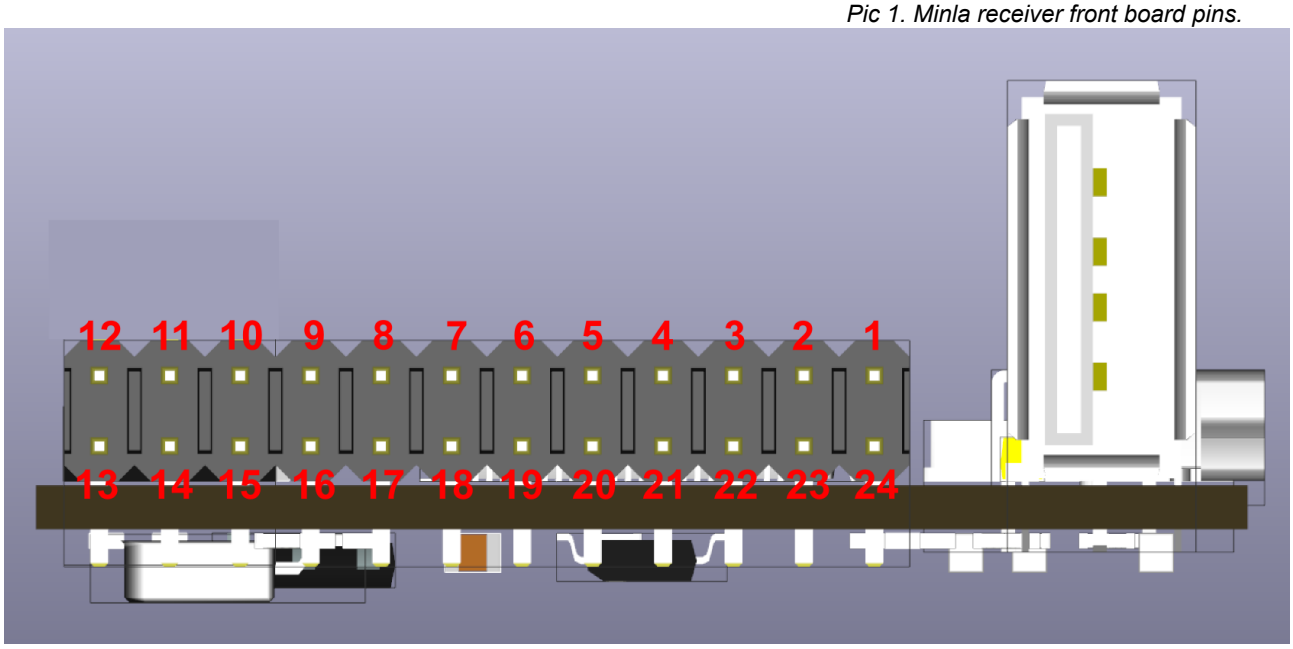
1. MINLA receiver board pinout functional description.

Pic 1. Minla receiver front board pins.

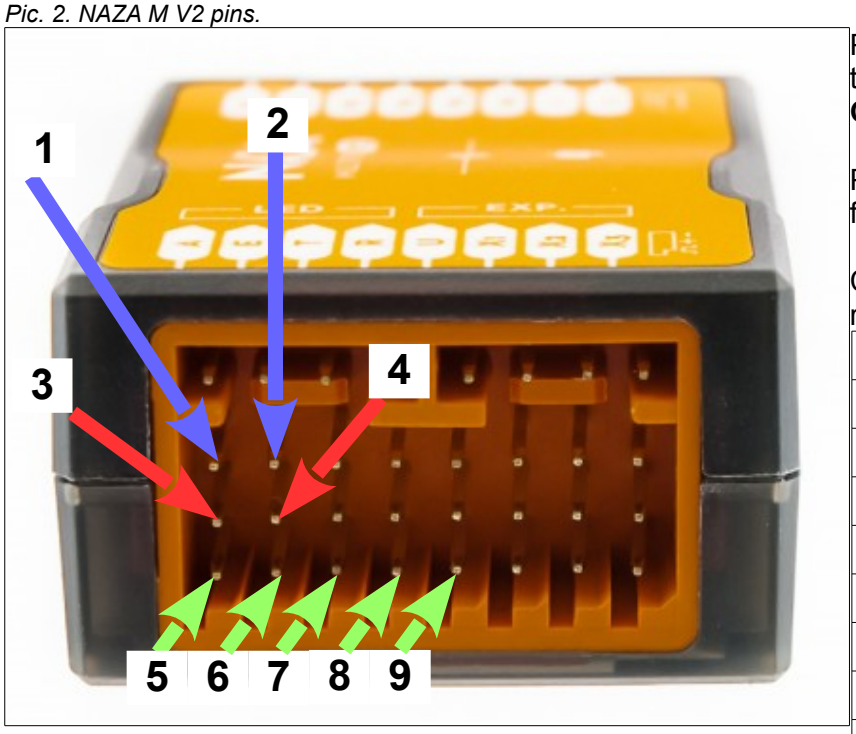


Pin number	Function
1	+5V (Power input). *Recommended supply current ~ 850 mA.*
2	GND
3	+5V (Power input/output). May be used to power other devices.
4	GPS UART RX – data input from NAZA GPS / U-BLOX GPS
5	GPS UART TX – data output to U-BLOX GPS
6	GND
7	I2C SDA
8	I2C SCL
9	FIRMWARE UPGRADE JMP
10	FIRMWARE UPGRADE JMP
11	LiPo 4S (voltage level measurement for LiPo 4S battery). DC 16.8 V max.
12	LiPo 3S (voltage level measurement for LiPo 3S battery). DC 12.6 V max.
13*	PWM CH1 (connect to Naza channel “A” - ROLL control channel)
14*	PWM CH2 (connect to Naza channel “E” - PITCH control channel)
15*	PWM CH3 (connect to Naza channel “T” - THROTTLE control channel)
16*	PWM CH4 (connect to Naza channel “R” - YAW control channel)
17*	PWM CH5 (connect to Naza channel “U” - flight mode selection – GPS/ATTI/Manual)
18*	PWM CH6. General purpose PWM output.
19*	PWM CH7. General purpose PWM output.
20*	PWM CH8. General purpose PWM output.
21*	PWM CH9. General purpose PWM output.
22	PPM IN (backup PPM receiver input)
23	GND (backup, optional)
24	+5V (Power input backup, optional). *Recommended supply current ~ 850 mA.*

** PWM spec. described below in chapter 4.*

2. Naza M V2 to Minla receiver connection scheme.

Pic. 2. NAZA M V2 pins.



Please note that all pins on the 3rd row from the bottom of NAZA flight controller are all **GND**.

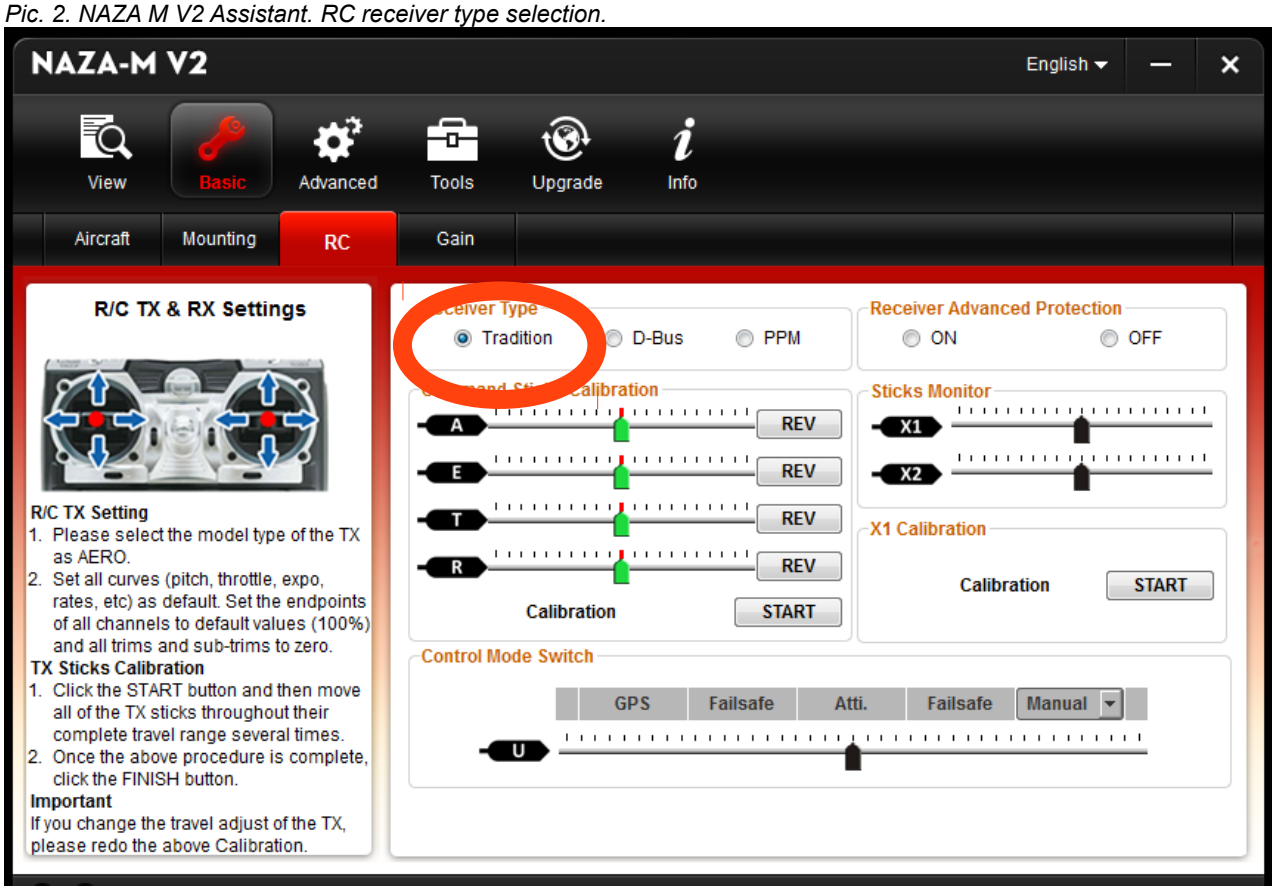
Pins on 2nd row from the bottom of NAZA flight controller are all **+5V power output.**

Connect NAZA flight controller to MINLA receiver board as follows:

NAZA pin number	MINLA pin number
1	2
2	23
3	1
4	24
5	13
6	14
7	15
8	16
9	17

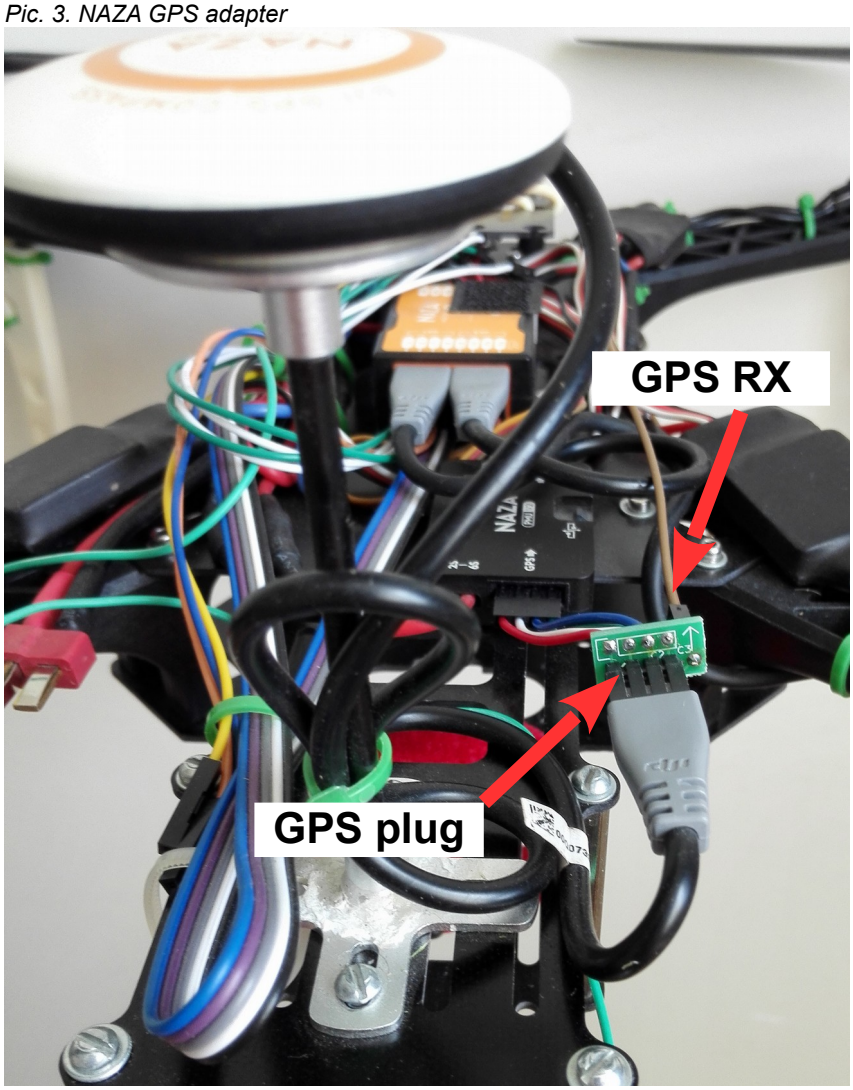
In this setup NAZA works as a power source to MINLA receiver. MINLA receiver works as a **Tradition** receiver (see pic 3.), so keep this in mind when you will select receiver type in NAZA configuration software.

Pic. 2. NAZA M V2 Assistant. RC receiver type selection.



3. GPS connection.
In minimal setup Minla reciever can work without any GPS data. But if you want to see drone position on the map in control panel (recommended), you will need to connect NAZA GPS module to NAZA flight controller via plug adapter, see pic. 3.

Pic. 3. NAZA GPS adapter



Connection is straightforward. Orient NAZA GPS cable connector as if you would connect it to NAZA itself, and connect it via special plug adapter to NAZA module. Make sure that wire that comes out of plug adapter is on the right side relative to NAZA GPS connector (as shown on pic.3).
Connect **GPS RX wire** (see pic.3) to MINLA receiver pin number 4.

4. PWM servo output.
Minla produce PWM output at pins 13-21 to external servo as described in pic. 4 below.

If connected to flight controller:
1 ms - channel's minimum value (zero).
1.5 ms – channel's half max. value.
2 ms – channel's max. value.

Voltage levels:
Logic high – 3.3 V ± 0.2 V
Logic low – 0V + 0.1V

Pic. 4. PWM servo output