en/FlightCtrl_ME_2_5

18

LotharF
MikroKopter.de

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1 Flight Ctrl V2.5

The !Flight-Ctrl V2.5 is now equipped with a new pressure sensor and a more powerful ACC sensor. Now we have a significantly better height control and flights are possible up to 5000mtr.
The FlightCtrl V2.5 is shipped with:

- already assembled cables for:
- a PPM Sum signal receiver
- and a Telemetry connection
- already installed with the latest software
- fully tested for functionality

INFO:
You can use the FlightCtrl V2.5 only with the MikroKopter Software since Version V2.00d !

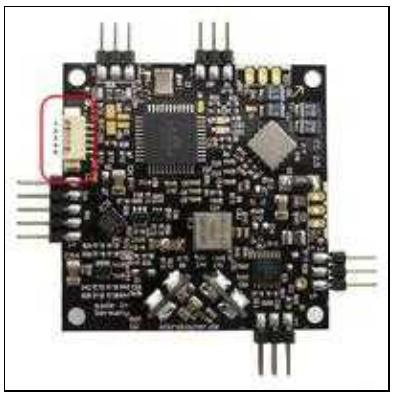
TIPP:
Below you can download a finished setting for the FlightCtrl where all functions are already set.

New thing on the FlightCtrl V2.5:

- new Air pressure sensor (with light / wind protection)
- new ACC-Sensor
- better altitude control
- less sensitive to vibrations (all Axis)
- Altitude sensor work now up to 5000m
- LEDs on the switching outputs
- Voltage up to 7S (30V)
- Protection resistors to the servo outputs
- 400uF for better voltage regulation on the power supply
- Note: Not compatible with older firmware versions!

2 Connections

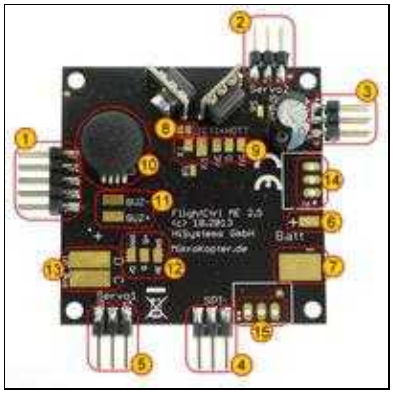
2.1 connections Top



Molex connector:

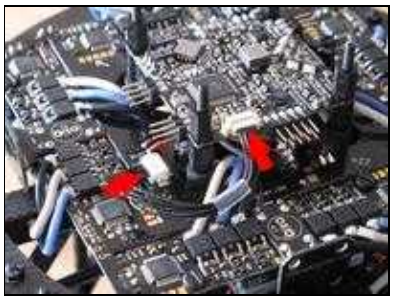
1. GND (FC und Summer)
2. + Buzzer
3. I2C Bus (D)
4. I2C Bus (C)
5. +12V (battery voltage)

2.2 connections Bottom



1. 10-pol connection strip (for MK-USB or to connect NaviCtrl)
2. 6-pol connection strip (Servo2 / Servo3)
3. 6-pol connection strip (Servo4 / Servo5)
4. 6-pol connection strip (SPI to NaviCtrl)
5. 6-pol connection strip (Servo1 / switching outputs Out1/Out2)
6. Connection Lipo (Plus) (not needed if you use the Molex connection)
7. Connection Lipo (Minus) (not needed if you use the Molex connection)
8. JETI+HOTT - Solder bridge. To send the telemetry data to a HoTT or Jeti transmitter. (Factory default)
9. Solder pads Tx, Rx, 3V, G (GND), 5V (See "Receiver Connections")
10. Air pressure sensor (with light / wind protection)
11. Connection Buzzer (BUZ-/BUZ+) (not needed if you use the Molex connection)
12. Connection PPM Sum signal receiver (GN=brown, +5=red, PPM=orange)
13. I2C connection (D/C) for BL-Ctrl (not needed if you use the Molex connection)
14. DC/DC converter 5V Recom (supply FlightCtrl) (Factory default)
15. DC/DC converter 5V Recom (supply Servos) (Factory default)

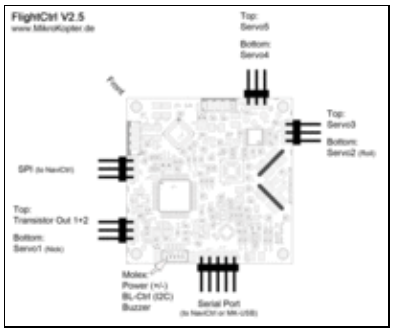
2.3 Connecting Molex

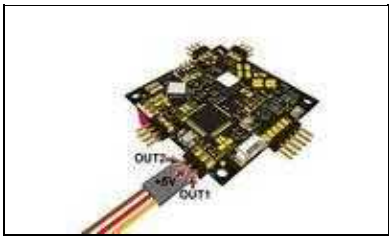


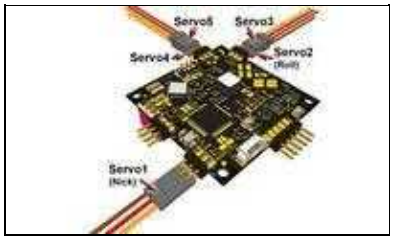
suitable Molex connector for "XL" power distributor in the shop
suitable Molex cable for "XL" power distributor in the shop

INFO: MK is switched on by connecting in the Lipo.

3 Connection Diagram







3.1 Connection Serial Port (SV1)

3.2 Connection SV2

Top row (outputs OUT1/OUT2)

Pin1: 100mA switching output NPN Open Collector e.g. for Shuttercable. Programmable in KopterTool with OUT1.

Pin3: +5 Volt

Pin5: 100mA switching output NPN Open Collector e.g. for LEDs. Programmable in KopterTool with OUT2.

Bottom row: Nick servo output

Pin2: Servo1 output (for Nick-Servo camera mount) (Setting KopterTool)

Pin4: +5 Volt

Pin6: GND / Minus

Note: The servo outputs are activated only after the gyros are calibrated (Throttle up + yaw left).

3.3 Connection SV3

Top row (Servo 3)

Pin1: Servo3 output

Pin3: +5 Volt

Pin5: GND / Minus

Bottom row: Roll servo output

Pin2: Servo2 output (Setting KopterTool)

Pin4: +5 Volt

Pin6: GND / Minus

3.4 Connection SV4

Top row (Servo 5)

Pin1: Servo5 output

Pin3: +5 Volt

Pin5: GND / Minus

Bottom row (Servo 4)

Pin2: Servo5 output

Pin4: +5 Volt

Pin6: GND / Minus

4 Receiver Connections

Please be sure that the correct receiver is set in the settings under "Channels".

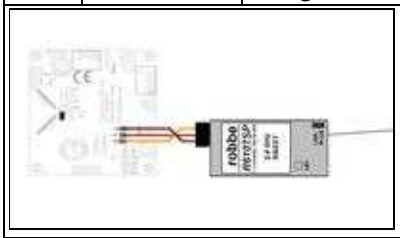
4.1 Standard PPM receiver

z.B.

- DSL4TOP (35/40MHz)
- R6107SP Futaba 2,4GHz

Connection:

PPM - Sum signal		
Pad	**Function**	**cable collor**
GN	GND/Minus	black or brown
+5	Plus 5V	red
PPM	data line	orange

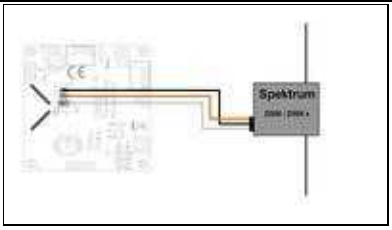


To enlarge - click the image

4.2 Spektrum Satellit receiver

Connection:

Connection to 2nd serial interface		
Pad	**Function**	**cable collor**
G	GND/Minus	black
3V	Plus 3V	orange
RX	data line	gray

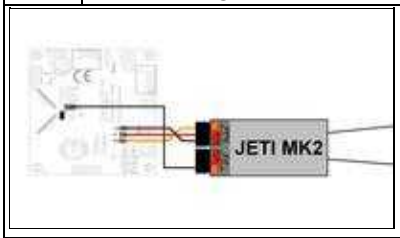


To enlarge - click the image

Siehe auch: Spektrum

4.3 Jeti receiver

Connection:

PPM - Sum signal + Telemetry connection		
Pad	**Function**	**cable collor**
GN	GND/Minus	black or brown
+5	Plus 5V	Rot
PPM	data line	orange
RX	Telemetry connection	arbitrarily
JET	Solder bridge for Telemetry	-
		
To enlarge - click the image		

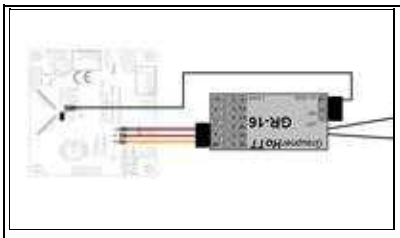
See also: JetiDuplex

4.4 HoTT receiver

The HoTT receiver is also connected to the PPM and the RX pad. To send the telemetry data to the transmitter, the solder bride "JETI+HoTT" have to be closed.
More information how to connect, set and use a HoTT Transmitter/receiver can be found here: **HoTT**

Connection:

PPM - Summensignal + Telemetrieanschluss		
Pad	**Funktion**	**cable collor**
GN	GND/Minus	black or brown
+5	Plus 5V	red
PPM	Datenleitung	orange
RX	Telemetrieanschluss	arbitrarily
JET	Solder bridge for Telemetry	-



To enlarge - click the image

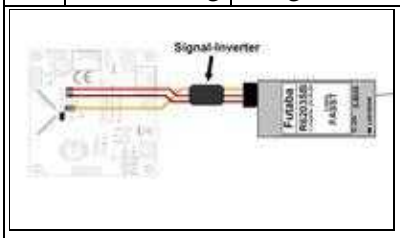
4.5 Futaba S.Bus receiver

You can connect a S.Bus receiver with a Signal-Inverter on the FlightCtrl.
Here you can order the needed inverter: **Shoplink**

⚠ Please set the receiver to **"normal" mode** (The LED of the receiver will be short red if you power up the receiver), **do not** set to "High-Speed" (Receiver LED is Green/Red (or orange) if you power up the receiver)

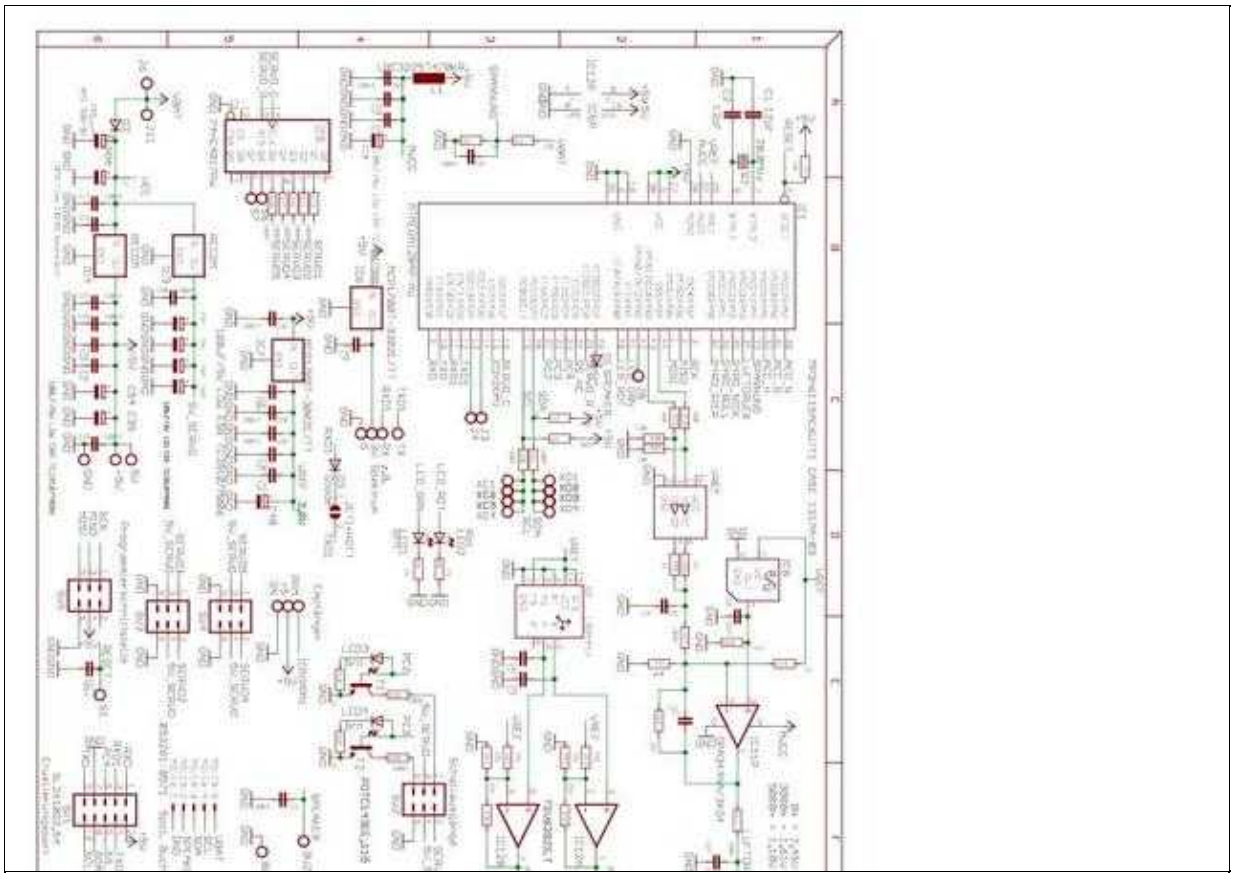
Connection:

Connection to 2nd serial interface		
Pad	**Funktion**	**cable collor**
5V	Plus 5V	red
G	GND/Minus	black or Brown
RX	Datenleitung	orange



To enlarge - click the image

5 Circuit diagram



⚠ The use of the MikroKopter software is only allowed on original hardware.

6 Other

- The Bootloader of the FC2.5 is not for free.
- If you have damage the Atmega you can buy a new one include bootloader here: **here**
- Please do not use a ISP programmer to upgrade the FlightCtrl. This can clear the Bootloader.

7 Settings

Here you can download the latest SW Version and a setting for the FlightCtrl where all is set: Download.

Here you can see the channel setting:

(To enlarge -> click on image)

8 Specifications

- 3S-6S
- 2 adjustable outputs with LED indicator on FlightCtrl
- 5 Servo output
- Connections for Set Navigation
- Altitude sensor (up to 5000m)

- KategorieMK-Baugruppe/de