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Link do produktu: https://www.nobshop.pl/kontroler-lotu-do-samolotu-fc-matek-f405-wing-v2-flight-controller-p-4884.html

Kontroler lotu do samolotu FC MATEK F405-WING V2 Flight Controller

Cena brutto	**249,99 zł**
Cena netto	**203,24 zł**
Dostępność	**Aktualnie niedostępny**
Czas wysyłki	**1 - 3 dni**
Kod producenta	**MTFCF405WV2**
Producent	**Matek Systems**

Opis produktu

Kontroler lotu do samolotu FC MATEK F405-WING V2 Flight Controller

FC Specifications

- MCU: STM32F405RGT6, 168MHz , 1MB Flash
- IMU: ICM42688-P
- Baro: DPS310
- OSD: AT7456E
- Blackbox: MicroSD card slot
- 6x UARTs, 1x Softserial_Tx option(INAV)
- 10x PWM outputs
- 2x I2C
- 3x ADC (VBAT, Current, RSSI)
- Built in inverter for SBUS input
- USB Type-C(USB2.0)

FC Firmware

- **ArduPilot: MatekF405-Wing (ArduPlane 4.4 or newer)**
- **INAV: MATEKF405SE (INAV 6.0 or newer)**

PDB

- Input voltage range: 9~30V (3~6S LiPo) w/TVS protection
- Current Senor: 220A, 3.3V ADC **(INAV scale 150, ArduPilot 66.7A/V)**
- Sense resistor: 100A continuous, 220A peak
- Battery Voltage divider 1K:10K (Scale 1100 in INAV, BATT_VOLT_MULT 11.0 in ArduPilot)

BEC 5V output

- Designed for Flight controller, Receiver, OSD, Camera, Buzzer, 2812 LED_Strip, Buzzer, GPS module, AirSpeed

- Continuous current: 2 Amps

BEC 9V /12V output

- Designed for Video Transmitter, Camera, Gimbal ect.
- Continuous current: 2 Amps
- 12V option with Jumper pad
- for stable 9V/12V output, input voltage should > output voltage +1V

BEC Vx output

- Designed for Servos
- Voltage adjustable, 5V Default, 6V or 7.2V options
- Continuous current: 5 Amps, 6A Peak
- for stable Vx output, input voltage should > Vx voltage +1V

BEC 3.3V output

- Designed for external 3.3V peripherals
- Linear Regulator
- Continuous current: 200mA

Physical

- Mounting: 30.5 x 30.5mm, Φ4mm with Grommets Φ3mm
- Dimensions: 54 x 36 x 13 mm
- Weight: 25g

Including

- 1x F405-Wing-V2
- 1x 20cm JST-GH-4P to JST-GH-4P cable for I2C port
- Dupont 2.54 pins **(Board is shipped unsoldered)**

INAV mapping

INAV Tips:

- **INAV firmware “MATEKF405SE” must be 6.0.0 or newer version.**
- Current sensor scale 150
- 5x Vx2 pads on S5~S9 rails are dead pins, If powering servos of S5~S9 rails with the built-in Vx BEC, bridge Vx2 to Vx pad with a drop of tin. If powering servos of S5~S9 rails with an external BEC, keep the gap open, you may connect external BEC to any pair of Vx2/G.
- **Softserial_tx1 is enabled on Tx2 pad by default for Frsky SmartPort telemetry. If using CRSF protocol receiver(TBS, ELRS etc), CPU based serial port(softserial) should be disable in INAV configurator.**
- GPS / DJI OSD and other digital video systems / CRSF protocol receiver can work with anyyyyyyy spare UART_TX & RX.
- Airspeed sensor MS4525 works on I2C2 bus only.

		INAV		INAV MultiRotor	INAV Plane
PWM	S1	5 V tolerant I/O	TIM4_CH2	Motor	Motor
	S2	5 V tolerant I/O	TIM4_CH1	Motor	Motor
	S3	5 V tolerant I/O	TIM3_CH3	Motor	Servo
	S4	5 V tolerant I/O	TIM3_CH4	Motor	Servo
	S5	5 V tolerant I/O	TIM8_CH3	Motor	Servo
	S6	5 V tolerant I/O	TIM8_CH4	Motor	Servo
	S7	5 V tolerant I/O	TIM12_CH1	Motor, No DShot	Servo
	S8	5 V tolerant I/O	TIM12_CH2	Motor, No DShot	Servo
	S9	5 V tolerant I/O	TIM1_CH1	Servo	Servo
	LED	5 V tolerant I/O	TIM2_CH1	2812LED	2812LED

ADC	Vbat ADC	0~30V	ADC_CHANNEL_1	scale 1100
	current ADC	0~3.3V	ADC_CHANNEL_2	**scale 150 (220A)**
	RSSI pad	0~3.3V	ADC_CHANNEL_3	Analog RSSI

I2C	I2C1	5V tolerant I/O	onboard Baro DPS310, Address 0x76
	DA1, CL1		OLED 0.96″
	I2C2	5V tolerant I/O	I2C Magnetometer, Rangefinder, Temperature sensor
	DA2, CL2		Digital Airspeed sensor MS4525

UART	USB		USB		
5V tolerant I/O	TX1 RX1	5V tolerant I/O	UART1	USER	
	TX3 RX3		UART3	USER	
	TX4 RX4		UART4	USER	
	TX5 RX5		UART5	USER	
	TX6 RX6		UART6	USER	
	TX2 RX2 SBUS	5V tolerant I/O	UART2 Sbus pad	RC input/Receiver for SBUS receiver, Sbus pad = RX2+inverter	
			RX2 pad	IBUS/DSM	
			TX2 & RX2	CRSF	disable Softserial_Tx1
			TX2 pad	uninverted FPort (hacked)	disable Softserial_Tx1
			TX2 pad	SRXL2	disable Softserial_Tx1
			TX2 pad	SmartPort Telemetry	enable Softserial_Tx1

Ardupilot mapping

ArduPilot Tips:

- **ArduPlane firmware “MatekF405-WING” must be 4.4.0 or newer version.**
- BATT_AMP_PERVLT 66.7
- Use 5V active buzzer on “Buz-” and 5V pads, Tone alarm is not supported.
- 5x Vx2 pads on S5~S9 rails are dead pins, If powering servos of S5~S9 rails with the built-in Vx BEC, bridge Vx2 to Vx pad with a drop of tin. If powering servos of S5~S9 rails with an external BEC, keep the gap open, you may connect external BEC to any pair of Vx2/G.
- non-inverted (hacked) S.Port signal is required for FPort or Smartport telemetry.
- If sending highspeed serial data (eg. 921600 baud) to the board, use USART1(Serial1) .

			ArduPilot		
PWM	S1	PWM1 GPIO50	TIM4_CH2	DMA/DShot	Group1
5V tolerant	S2	PWM2 GPIO51	TIM4_CH1	DMA/DShot	
I/O	S3	PWM3 GPIO52	TIM3_CH3	DMA/DShot	Group2
	S4	PWM4 GPIO53	TIM3_CH4	DMA/DShot	
	S5	PWM5 GPIO54	TIM8_CH3	DMA/DShot	Gourp3
	S6	PWM6 GPIO55	TIM8_CH4	DMA/DShot	
	S7	PWM7 GPIO56	TIM1_CH2N	DMA/DShot	Gourp4
	S8	PWM8 GPIO57	TIM1_CH3N	DMA/DShot	
	S9	PWM9 GPIO58	TIM1_CH1	DMA/DShot	
	LED pad	PWM10 GPIO59	TIM2_CH1	DMA/DShot	Gourp5
		SERVO10_FUNCTION 120, NTF_LED_TYPES neopixel			

Mixing Dshot and normal PWM operation for outputs is restricted into groups, ie. enabling Dshot for an output in a group requires that ALL outputs in that group be configured and used as Dshot, rather than PWM outputs.

If servo and motor are mixed in same group, make sure this group run lowest PWM frequency according to the servo specification. ie. Servo supports Max. 50Hz, ESC must run at 50Hz in this group.

ADC	Vbat ADC	onboard battery voltage	1K:10K divider, 0~30V	BATT_MONITOR	4
				BATT_VOLT_PIN	10
				BATT_VOLT_MULT	11.0
	current ADC	onboard current sense	0~3.3V	BATT_CURR_PIN	11
				BATT_AMP_PERVLT	**66.7**
	RSSI ADC	Analog RSSI	0~3.3V	RSSI_ANA_PIN	15
				RSSI_TYPE	2
I2C	I2C1	5V tolerant I/O	onboard Baro DPS310	Address	0x76
	DA1, CL1		Digital Airspeed I2C	ARSPD_BUS	0
	I2C2	5V tolerant I/O	Magnetometer	COMPASS_AUTODE	1

	DA2, CL2			C	
			Digital Airspeed I2C	ARSPD_BUS	1
UART	USB	USB		console	SERIAL0
5V tolerant	TX1 RX1	USART1	with DMA	telem1	SERIAL1
I/O	TX3 RX3	USART3	NO DMA	GPS1	SERIAL3
	TX4 RX4	UART4	NO DMA	GPS2	SERIAL4
	TX5 RX5	UART5	NO DMA	USER	SERIAL5
	TX6 RX6	USART6	NO DMA	USER	SERIAL6
	TX2 RX2	USART2	NO DMA	RC input/Receiver	SERIAL7
	SBUS	RX2	IBUS/DSM	BRD_ALT_CONFIG 0	
		Sbus pad	SBUS	Default	
		TX2 & RX2	CRSF	BRD_ALT_CONFIG 1	SERIAL7_OPTIONS 0
		TX2	uninverted FPort (hacked)	SERIAL7_PROTOCOL 23	SERIAL7_OPTIONS 4
		TX2	SRXL2		SERIAL7_OPTIONS 4

Difference from V1

	F405-WING V2	F405-WING (V1)
	New layout	
USB	USB Type-C	Micro USB
IMU	ICM42688P	MPU6000
Baro	DPS310	BMP280
Current sensor	100A continuous, 220A Peak	60A continuous, 104A Peak
Current scale	INAV 150 ArduPilot BATT_AMP_PERVLT= 66.7	INAV 317 ArduPilot BATT_AMP_PERVLT= 31.5
Size	54 * 36 * 13mm	56 * 36 * 13mm
INAV	MatekF405SE, **6.0 or newer**	MatekF405SE
ArduPilot	MatekF405-Wing, **4.4 or newer**	MatekF405-Wing

Uwaga towar do zaawansowanego użytku dla elektroników i konstruktorów BSP. Nieprawidłowe użytkowanie grozi uszkodzeniem sprzętu oraz użytkowników!!!