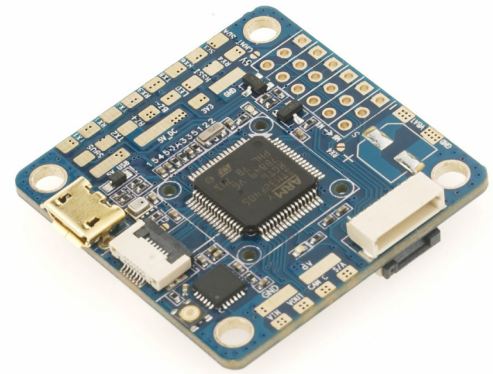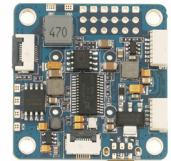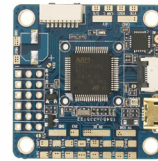# 80107

OMNIBUS F4 V6

F405 / 5VBEC / 8VBEC / Camera control / 5x UART / Flash / Baro

The Omnibus F4 V6 flight controller uses the MPU6000 over SPI for the stable flight performance.Also onboard are a barometer and AB7456 OSD chip for the BetaFlight integrated OSD.

Omnibus F4 V6 using same target as Omnibus Fireworks supports 3-6s LIPO direct input, has 5x Hardware UARTs.

- Firmware, please use Fireworks v2, but set gyro to use as 1(second)
- In order to use ext. ICM gyro, please set gyro to use as 0(first)

Modifications on v6:

- Tantalum Capacitors added for noiseless gyro reading
- Solder pads added for SmartAudio and Camera Control (next to Video pads)
- Added an 8v BEC and LC Filter for the camera and VTX power
- This board now has 5 UART ports
- New style layout

Features:

- STM32 F405 MCU, Runs Betaflight firmware(supported from v3.2)
- MPU6000 Over SPI Bus in damping box.
- 20x20 mm Mounting holes
- Supports Lipo direct plugin (3-6S)
- Supports 5V 1A BEC output (Buck)
- Supports 8V 1A BEC with LC filter output for the camera and VTX(Buck)
- STM32 controls OSD chip over SPI in DMA mode (Betaflight OSD)
- More caps to reduce gyro power noise.

Resources:

Function	Solder Pad Silk screen	Resouces	MCU Pin	Notes
SBUS	RC	UART1	PA10	Build-in inverter
DSM2	TX1	UART1	PA9	CLI serialrx_halfduplex set to ON
Smart Audio VTX	S/A	UART2	PA2	
Smartport	TX1	Software serial	PA9	Invalid when using DSM2 RX
ESC Telemetry	RX4	UART4	PA1	
Camera Control	CAM_C		PB9	
IIC2_SDA	RX3	UART3	PB11	
IIC2_SCL	TX3	UART3	PB10	
GPS	RX6/TX6	UART6	PC7/PC6	
WS2812B LED	LED		PB6	
Buzzer	Bz-/Bz+		PB4	

Pinmap

Top Board

Ext. Gyro Socket

BOOT / SW1 — J3 — USB1

Vin
Vout
CAM_C
S/A(TX1)

GND
8V

4in1 socket: S4, S3, S2, S1, NC, GND, RX4, VBAT

EC1
U1
J2

5V USB
5V_DC
3V3
GND
5V

SBUS
TX2
BZ+
BZ-
LED
RSSI
RX4
CRNT

TX1
RX1
TX3
RX3
TX6
RX6
SCL
SDA

5V_DC
5V_BEC
3.3V
GND

SBUS		S.Port	
TX2		RX1	
Buzzer +		TX3	
Buzzer -		RX3	
LED		TX6	
RSSI		RX6	
RX4		SCL	
Current		SDA	

GND / VBAT

S6 S5 S4 S3 S2 S1
RX5 RX5 BEC BEC BEC BEC
GND GND GND GND GND GND

Motor1+2 — Servo 1-4

Bottom Board

VBUS D- D+
3.3V-MCU SWD SWC

SPI3 + TX2(5V Power)
GND 5V CS SCK MISO MOSI TX2

VBUS / D- / D+ / SWD / SWC / 3V3

Graupner RX: TX3, TX6, SBUS, 5V_USB, GND

GPS: SDA, SCL, 5V_USB, GND, TX6, RX6

J4

VIN
VOUT
CAM C
S/A

Vin
Vout
CAM_C
S/A(TX1)

4in1 socket: VBAT, RX4, GND, NC, S1, S2, S3, S4

VBAT / GND

VBAT GND