Flight Controller

Connecters

Pins

- VOUT — TP_VOUT
- VIN — TP_VIN
- UART1_TX — TP_TX1
- SBUS — TP_SBUS
- UART2_TX — TP_TX2
- UART2_TR — TP_TR2
- UART3_TX — TP_TX3
- UART3_TR — TP_TR3
- UART4_TX — TP_TX4
- UART4_TR — TP_TR4
- UART5_TX — TP_TX5
- UART5_TR — TP_TR5
- S1 — TP_S1
- S2 — TP_S2
- S3 — TP_S3
- S4 — TP_S4
- S5 — TP_S5
- S6 — TP_S6
- SCL — TP_SCL
- SDA — TP_SDA
- Buz — TP_Buz
- Rssi — TP_Rssi
- Curr — TP_Curr
- Vcc — TP_Vcc
- LED_Out — TP_LED

USB C

P1
USB_C_Plug_USB2.0

- VBUS — A4 — 5V_USB
- CC — A5 — R4_USB 5.1k
- VCONN — B5 — R3_USB 5.1k
- D- — A7 — R2_USB 22 — D-
- D+ — A6 — R1_USB 22 — D+
- SHIELD — S1
- GND — A1

SD Card

Micro_SD_Card J1

- 9 SHIELD
- 8 DAT1 — SPI1_MISO
- 7 DAT0 — GND
- 6 VSS
- 5 CLK — SPI1_SCLK
- 4 VDD — +3.3V
- 3 CMD — SPI1_MOSI
- 2 DAT3/CD — SD_CS
- 1 DAT2

SBUS Inverter

+5V

R1_SBUS 10k
UART1_RX

SBUS — R2_SBUS 4.7k — Q1 BC817W

LED Stat

- LED D1_LED — R1_LED 1k — LED1
- LED D2_LED — R2_LED 1k — LED2

Power Supply

Decoupling Cap

+3.3V

- C1_Dec 10u
- C2_Dec 100n
- C3_Dec 100n
- C4_Dec 100n
- C5_Dec 100n
- C6_Dec 100n
- C7_Dec 100n

5V Swtiching reg

U2
LM2575-5.0BU

- 1 VIN
- 5 ON/OFF
- 3 GND
- 2 OUT
- 4 FB

C1_5R 100u
D1 1N5819
L1 330u
C2_5R 330u

R1_5R 10 — +5VA

- C3_5R 47u
- C4_5R 47u
- C5_5R 47u
- C6_5R 47u

+5V

3.3V reg

D2 BAT54C
5V_USB

U1
NCP1117-3.3_SOT223

- 3 VI
- 1 GND
- 2 VO

+5V

C1_3R 10u

+3.3V

C2_3R 10u

U1 STM32F405RGTx

- VBAT 1
- VDD 19
- VDD 32
- VDD 48
- VDD 64
- VDDA 13
- NRST 7
- BOOT0 60
- PH0 5
- PH1 6
- PD2
- PC0 8
- PC1 2
- PC2 10
- PC3 11
- PC4 24
- PC5 25
- PC6 37
- PC7 38
- PC8 39
- PC9 40
- PC10 51
- PC11 52
- PC12 53
- PC13 3
- PC14 4
- PC15 5
- VCAP_1 31
- VCAP_2 47
- VSS 18
- VSSA 12

- PA0 14
- PA1 15
- PA2 16 UART2_TX
- PA3 17 UART2_RX
- PA4 20 Gyro_CS
- PA5 21 SPI1_SCLK
- PA6 22 SPI1_MISO
- PA7 23 SPI1_MOSI
- PA8 41 S1
- PA9 42 S2
- PA10 43 UART1_RX
- PA11 44 D-
- PA12 45 D+
- PA13 46
- PA14 49
- PA15 50 Buz

- PB0 26
- PB1 27
- PB2 28
- PB3 55 LED_Out
- PB4 56 LED1
- PB5 57 LED2
- PB6 58 UART1_TX
- PB7 59 SDA
- PB8 61 SCL
- PB9 62
- PB10 29 UART3_TX
- PB11 30 UART3_RX
- PB12 33
- PB13 34 SPI2_SCLK
- PB14 35
- PB15 36

SW2 +3.3V
Resonator Y1
C5 100n +3.3V

Y1 resonator — PH0 5, PH1 6, UART5_RX 54

R1 10k / R2 10k — 5V_USB
SPI2_MISO 10
SPI2_MOSI 11
INT 24
S3 37 / S4 38 / S5 39 / S6 40
UART4_TX 51 / UART4_RX 52 / UART5_TX 53

C1 100n / C2 100n
GND

Sensors

Baro

U3 BMP280

- C3 100n
- C4 100n
- +3.3V
- 8 VDD — GND 7
- 6 VDDIO — GND 5
- 4 SCK — SPI1_SCLK
- 3 SDI — SPI1_MOSI
- 2 SDO — SPI1_MISO
- 1 CSB — Baro_CS

Gyro

IC1 ICM-20689

- 25 NC / 24 SPI1_MOSI / 23 SPI1_SCLK / 22 Gyro_CS / 21 NC / 20 NC / 19 NC
- EP
- SDA/SDI
- SCL/SCLK
- NCS
- 1 NC_1 / 2 NC_2 / 3 NC_3 / 4 NC_4 / 5 NC_5 / 6 NC_6
- GND 18
- NC_11 17
- NC_10 16
- NC_9 15
- NC_8 14
- VDD 13
- NC_7 7
- VDDIO 8
- ADD/SDO 9
- REGOUT 10
- FSYNC 11
- INT 12

+3.3V
C4_G 2.2u / 0.1u
C3_G 2.2u
C2_G 10n / C1_G 0.47u
SPI1_MISO

OSD

IC2 AT7456E

+5V
C1_OSD 0.1u
Y_OSD 27MHz

- 1 N.C._1
- 2 N.C._2
- 3 DVDD
- 4 DGND
- 5 CLKIN
- 6 XFB
- 7 CLKOUT
- 8 CS — OSD_CS
- 9 SDIN — SPI1_MOSI
- 10 SCLK — SPI1_SCLK
- 11 SDOUT — SPI1_MISO
- 12 LOS
- 13 SYNC_IN
- 14 N.C._3

- 28 N.C._7
- 27 N.C._6
- 26 VOUT
- 25 SAG
- 24 PVDD
- 23 PGND
- 22 VIN
- 21 AVDD
- 20 AGND
- 19 RESET
- 18 HSYNC
- 17 VSYNC
- 16 N.C._5
- 15 N.C._4

29 THERMALPAD

C2_OSD 10u — R1_OSD 75 — VOUT
C3_OSD 10u
C4_OSD 0.1u — +5VA
C5_OSD 0.1u — VIN
C6_OSD 0.1u — R2_OSD 75
+5VA
R3_OSD 1k / R4_OSD 1k / R5_OSD 1k
HS / VS / LOS
+5VA

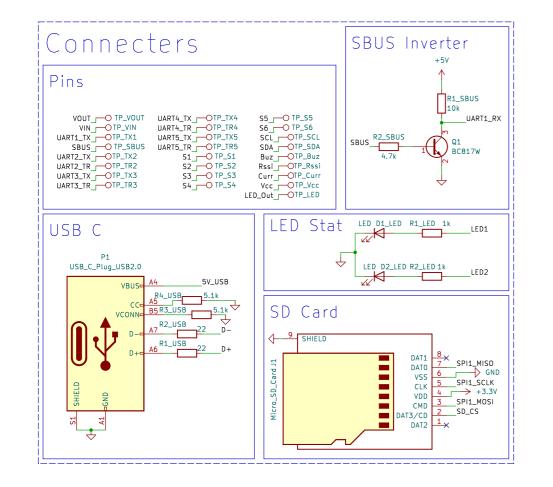
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