Power

REG1
LD39200PU33R

VCC

C1 10u

IN 6
EN 5
PG 1
OUT 1
ADJ/SENSE 2
GND 3
EPAD

+3V3

C2 10u

PWR1 GR

R3 1k

GND

1.2V < EN pin voltage < 7V

EEPROM

EEPROM1
24CW1280T-I_OT

I2C1_SCL — SCL
VSS
I2C1_SDA — SDA
VCC
NC

+3V3

C19 100n

GND

I2C Addr.: 0x50

LEDs

LED_A LED_B LED_C LED_D

D1 GR   D2 RE   D3 YE   D4 BL

R9 1k   R10 1k   R11 1k   R12 2k2

GND

IMU

IMU1
BMI088

VDD 3
VDDIO 11
+3V3

+3V3 7 — PS
+3V3 14 — CSB1
CSB2 5
I2C1_SCL 8 — SCL/SCK
I2C1_SDA — SDA/SDI
+3V3 15 — SDO1
+3V3 13 — SDO2

INT1 16 — INT_ACC
INT2
INT3 12 — INT_GYR
INT4 13

C20 100n   C21 100n

GNDIO 6
GNDA 4

GND

I2C Addr.: 0x19 (ACC) 0x69 (GYR)

MAGNETOMETER

MAG1
IIS2MDCTR

I2C1_SCL 1 — SCL/SPC
NC_1 2
+3V3 3 — CS
I2C1_SDA — SDA/SDI/SDO
NC_2
GND_1

INT/DRDY 7 — INT_MAG
GND_2 8
VDD 9
VDD_IO 10
NC_2 11
NC_3 12

C22 220n

C23 100n   C24 100n   C25 10u

+3V3

GND

GND

I2C Addr.: 0x1E

MCU

Decoupling Capacitors

+3V3

C3 10u C4 100n C5 100n C6 100n C7 100n C8 100n C9 100n C10 100n C11 100n C12 100n

GND

+3V3

VDDA

NRST 7 — NRST
BOOT0 60 — BOOT0

VBAT 19
VDD 32 48 64 13
VDDA

VCAP_1 31
VCAP_2 47

C13 2u2   C14 2u2

GND

MCU1   STM32F405RGT6

PA0 14 — UART4_TX
PA1 15 — UART4_RX
PA2 16 — UART2_TX
PA3 17 — UART2_RX
PA4
PA5 — SPI1_SCK
PA6 — SPI1_MISO
PA7 — SPI1_MOSI
PA8 — I2C3_SCL
PA9
PA10
PA11
PA12
PA13 — SWDIO
PA14 — SWCLK
PA15 — TIM2_CH1

PH0 — HSE_IN
PH1 — HSE_OUT
PD2

PC0 — INT_ACC
PC1 — INT_GYR
PC2 — INT_MAG
PC3 — INT_BAR
PC4 — SPI1_CS
PC5 — FLASH_IWP
PC6
PC7
PC8
PC9 — I2C3_SDA
PC10 — UART3_TX
PC11 — UART3_RX
PC12
PC13
PC14
PC15

PB0 26
PB1
PB2 — BOOT1
PB3 — TIM2_CH2
PB4
PB5
PB6 — UART1_TX
PB7 — UART1_RX
PB8 — I2C1_SCL
PB9 — I2C1_SDA
PB10 — TIM2_CH3
PB11 — TIM2_CH4
PB12
PB13 — LED_A
PB14 — LED_B
PB15 — LED_C
LED_D

VSS 18 63 12
VSSA

GND

I2C Pull-Ups

+3V3 +3V3 +3V3 +3V3

R4 2k2   R5 2k2   R6 2k2   R7 2k2

I2C_SCL I2C_SDA I2C3_SCL I2C3_SDA

High-Speed External Crystal

HSE1 25MHz   R8 620

HSE_IN   HSE_OUT

C17 10p   C18 10p

GND

+3V3   FB1 FB_Small   VDDA

C15 1u   C16 100n

VDDA Filter

GND

BAROMETER

BAR1
BMP388

VDD 10
VDDIO

+3V3

+3V3 6 — CSB
I2C1_SCL — SCK
INT 7 — INT_BAR
I2C1_SDA — SDI
SDO

C26 100n   C27 100n

VSS 8

GND

I2C Addr.: 0x76

FLASH

+3V3

R20 10k

SPI1_MOSI 5 — DI_(IO0)
SPI1_CS — CS
SPI1_SCK — CLK
FLASH_IWP — WP_(IO2)
HOLD_(IO3) 7

R19 10k

+3V3

VCC 8

DO_(IO1) — SPI1_MISO

C30 100n

GND EP

FLASH1   W25N01GVZEIG_TR

GND

PWM DRIVER

I2C_SCL 23 — SCL
I2C_SDA 24 — SDA
EXTCLK 20
OE 22

+3V3 25 — VDD

LED0 3
LED1 4
LED2 5
LED3 6
LED4 7
LED5 8
LED6 9
LED7 10
LED8
LED9
LED10
LED11
LED12
LED13
LED14
LED15 19

PWM_SIGNAL1
Conn_01x08

C28 100n

A0 26
A1 27
A2 28
A3 3
A4 21

VSS 29
VSS 11

PWM1   PCA9685BS

GND

I2C Addr.: 0x40

VSERVO1 TestPoint   PWM_PWR1 Conn_02x08_Odd_Even

VGND1 TestPoint

JP1 Jumper_NO_Small

GND   D6 D_Schottky

VCC

USB

USB1 USB_B_Micro

F1 Fuse

VBUS
D+ — USB_CONN_D+
D- — USB_CONN_D-
ID
Shield
GND

FB2 FB_Small   D5 D_Schottky   VCC

VBUS

USB_CONN_D+ — IO1
USB_CONV_D+ — IO2
USB_CONN_D- — IO2

U1   USBLC6-2SC6

GND

C32 100n

USB_CONV_D-
USB_CONV_D+

U2 otter:CH330

UD+ 1
UD- 2
GND 3
RTS 4

V3 — GND
RXD — R13
TXD — UART3_TX
VCC — R14

C33 100n
UART3_TX
UART3_RX

+3V3

C34 100n

GND

SWITCHES

R17 10k   BOOT0 TDD01HOSB1R   +3V3

BOOT0 — C

GND

R18 10k   BOOT1 TDD01HOSB1R   +3V3

BOOT1 — C

GND

NRST   C29 100n   RESET1 SKRPANE010

GND   GND

SBUS Inverter

IC1
74LVC1G04GX4Z

UART4_RX_INV 1 — A   VCC 4 — +3V3
GND 2   Y 3 — UART4_RX

C31 100n

GND

CONNECTORS

VCC   VIN1 Conn_01x02
GND

+3V3   TELEM1 Conn_01x04
GND
UART1_TX
UART1_RX

+3V3   GPS1 Conn_01x04
GND
UART2_TX
UART2_RX

SWD1 Conn_02x05_Counter_Clockwise
+3V3 10 — SWDIO
GND 9 — SWCLK
GND
GND 6 — NRST
GND

TIM2_CH1   RC1 Conn_01x04
TIM2_CH2
TIM2_CH3
TIM2_CH4

+3V3   I2C3 Conn_01x04
GND
I2C3_SCL
I2C3_SDA

+3V3   SBUS1 Conn_01x04
GND
UART4_TX
UART4_RX_INV