U_NAVIGATION-PHERIPHERAL
NAVIGATION-PHERIPHERAL.SchDoc

U_NAVIGATION - MCU
NAVIGATION - MCU.SchDoc

U_NAVIGATION - SERVO
NAVIGATION - SERVO.SchDoc

SERVO — SERVO

JTAG3 — JTAG3

JTAG1 — JTAG1
USB2 — USB2
JTAG2 — JTAG2
ICM-42688-P — ICM-42688-P
USB — USB
LIS3ML — LIS3ML
NEO-M8 — NEO-M8
BAROMETER — BAROMETER
SDCARD — SDCARD
RF MODULE — RF MODULE
RESET_RF — RESET_RF
RESET_GPS — RESET_GPS
NRST — NRST
NRST2 — NRST2
NRST1 — NRST1

U_COVER PAGE
COVER PAGE.SchDoc

U_-HISTORY
-HISTORY.SchDoc

U_NAVIGATION - POWER
NAVIGATION - POWER.SchDoc

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NAVIGATION

Variant: No variant

DRAFT 06-11-2025

DESIGN NOTE:
Example text for debug notes.

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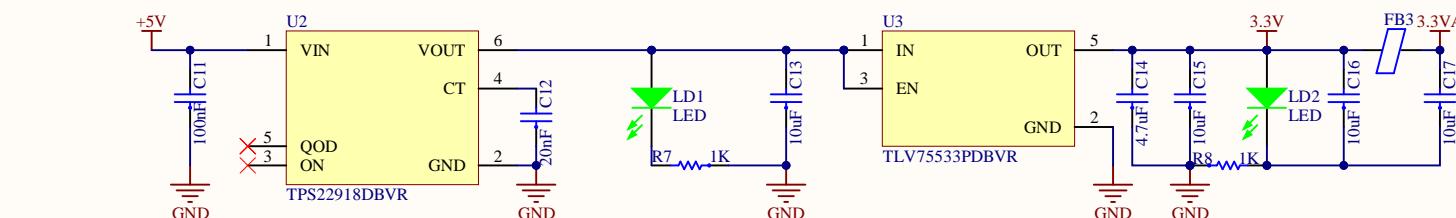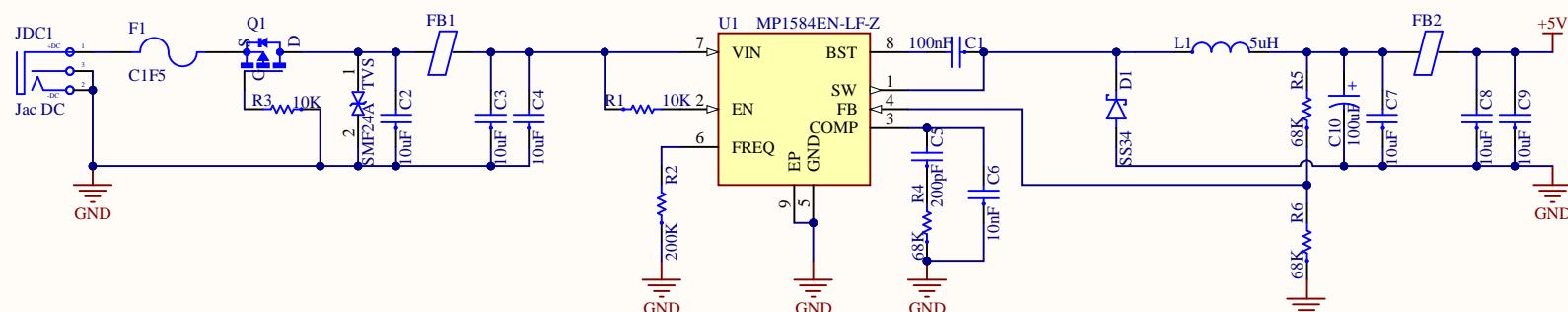
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design notes.

DESIGN NOTE:
Example text for critical
**design notes.**
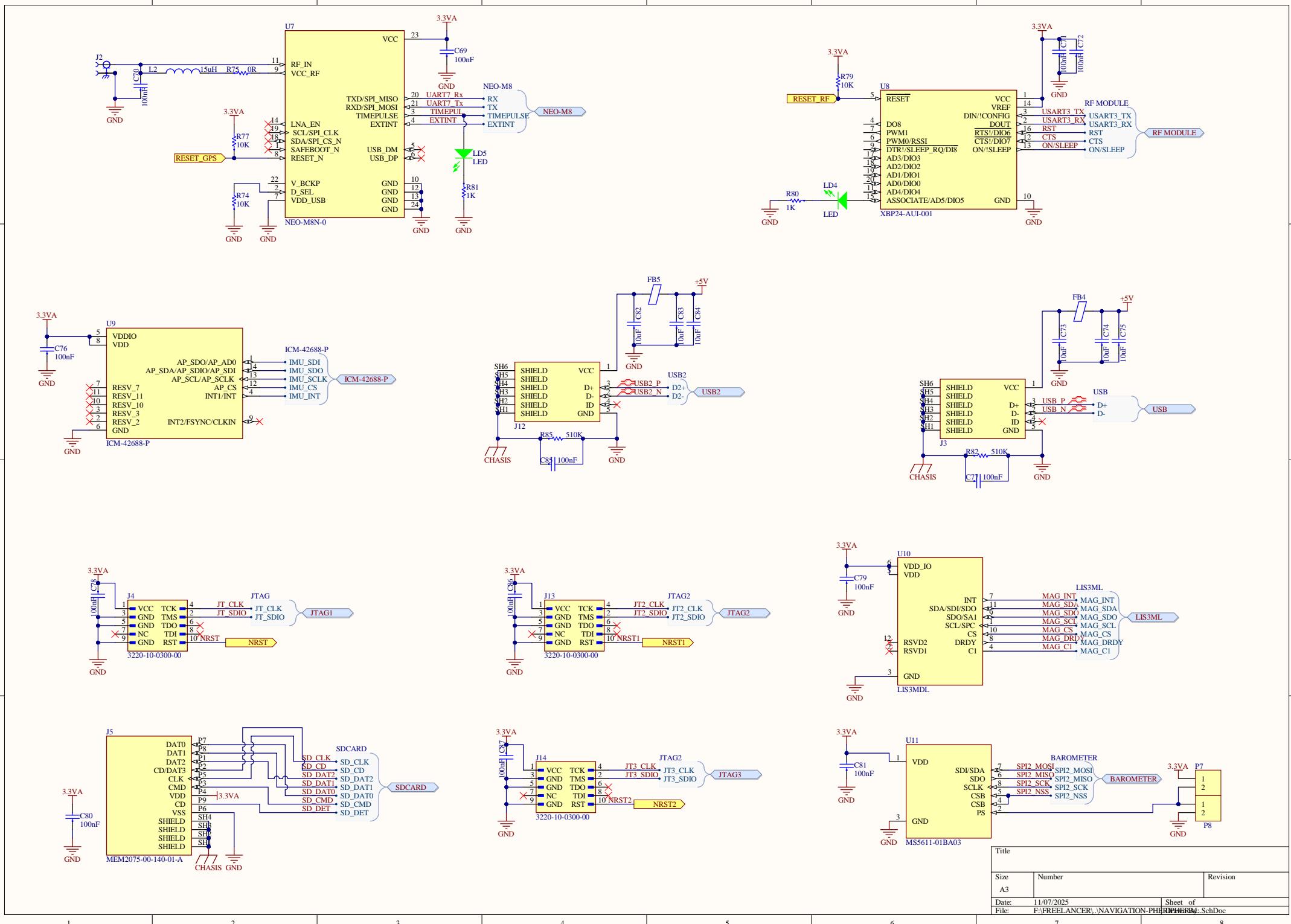
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design notes.

LAYOUT NOTE:
Example text for critical
layout guidelines.
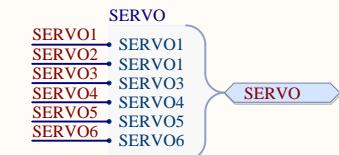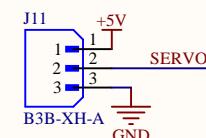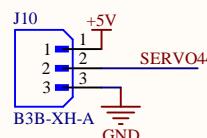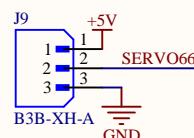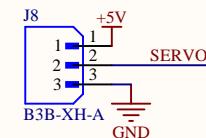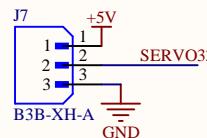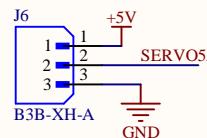
Title		
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A3		
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A

JDC1
F1
C1F5
Jac DC
GND

Q1
S D
G
R3 10K
SMF24A TVS
C2 10uF
C3 10uF
C4 10uF
FB1

R1 10K
R2 200K
GND

U1 MP1584EN-LF-Z
7 VIN BST 8
EN SW 1
FREQ FB 4
COMP 3
EP GND
9 5

100nF C1
GND

R4 68K
200pF C5
C6 10nF
GND

D1 SS34

L1 5uH

R5 68K
C10 100uF +
C7 10uF
GND

FB2
C8 10uF
C9 10uF
+5V
GND

R6 68K
GND

B

C

+5V
C11 100nF
GND

U2
1 VIN VOUT 6
CT 4
5 QOD
3 ON GND 2
TPS22918DBVR
GND

C12 20nF
GND

LD1 LED
R7 1K
GND

C13 10uF
GND

U3
1 IN OUT 5
3 EN
GND 2
TLV75533PDBVR
GND

C14 4.7uF
C15 10uF
R8 1K
GND

3.3V
LD2 LED
GND

FB3 3.3VA
C16 10uF
C17 10uF
GND

D

U7 — NEO-M8N-0 (GPS)
- VCC — 23 — 3.3VA
- C69 100nF
- RF_IN — 11
- VCC_RF — 9
- L2 15uH, R75 0R, C70 100nF
- J2
- TXD/SPI_MISO — 20 — UART7_Rx — RX
- RXD/SPI_MOSI — 21 — UART7_Tx — TX
- TIMEPULSE — 3 — TIMEPULSE
- EXTINT — 4 — EXTINT — NEO-M8
- LNA_EN — 14
- SCL/SPI_CLK — 19
- SDA/SPI_CS_N — 18
- SAFEBOOT_N — 16
- RESET_N — 15 — RESET_GPS
- R77 10K
- USB_DM — 5
- USB_DP — 6
- LD5 LED
- R81 1K
- V_BCKP — 22
- D_SEL — 2
- VDD_USB — 7
- R74 10K
- GND — 10, 12, 13, 24

U8 — XBP24-AUI-001 (RF MODULE)
- RESET — 5 — RESET_RF
- R79 10K — 3.3VA
- VCC — 1 — 3.3VA
- VREF — 14
- C71 100nF, C72 100nF
- DO8 — 4
- PWM1 — 7
- PWM0/RSSI — 6
- DIN/!CONFIG — 3 — USART3_TX
- DOUT — 2 — USART3_RX
- DTR!/SLEEP_RQ/DI8 — 9
- RTS!/DIO6 — 16 — RST
- CTS!/DIO7 — 12 — CTS
- ON/!SLEEP — 13 — ON/SLEEP
- AD3/DIO3 — 17
- AD2/DIO2 — 18
- AD1/DIO1 — 19
- AD0/DIO0 — 20
- AD4/DIO4 — 11
- ASSOCIATE/AD5/DIO5 — 15
- R80 1K, LD4 LED
- GND — 10
- RF MODULE: USART3_TX, USART3_RX, RST, CTS, ON/SLEEP

U9 — ICM-42688-P (IMU)
- VDDIO — 5 — 3.3VA
- VDD — 8
- C76 100nF
- AP_SDO/AP_AD0 — 1 — IMU_SDI
- AP_SDA/AP_SDIO/AP_SDI — 14 — IMU_SDO
- AP_SCL/AP_SCLK — 13 — IMU_SCLK
- AP_CS — 12 — IMU_CS
- INT1/INT — 4 — IMU_INT
- RESV_7 — 7
- RESV_11 — 10
- RESV_10 — 3
- RESV_3 — 2
- RESV_2 — 6
- INT2/FSYNC/CLKIN — 9
- GND — ICM-42688-P

J12 — USB2
- FB5 — +5V
- C82 10uF, C83 10uF, C84 10uF
- SHIELD, SHIELD, SHIELD, SHIELD, SHIELD — SH6, SH5, SH4, SH3, SH2, SH1
- VCC — 1
- D+ — 3 — USB2_P — D2+
- D- — 2 — USB2_N — D2-
- ID — 4
- GND — 5
- R85 510K
- C85 100nF
- CHASIS, GND
- USB2

J3 — USB
- FB4 — +5V
- C73 10uF, C74 10uF, C75 10uF
- SHIELD, SHIELD, SHIELD, SHIELD, SHIELD — SH6, SH5, SH4, SH3, SH2, SH1
- VCC — 1
- D+ — 3 — USB_P — D+
- D- — 2 — USB_N — D-
- ID — 4
- GND — 5
- R82 510K
- C77 100nF
- CHASIS, GND
- USB

J4 — 3220-10-0300-00 (JTAG1)
- 3.3VA
- C78 100nF
- VCC — 1
- GND — 3
- GND — 5
- NC — 7
- GND — 9
- TCK — 2 — JT_CLK
- TMS — 4 — JT_SDIO
- TDO — 6
- TDI — 8
- RST — 10 — NRST
- JTAG: JT_CLK, JT_SDIO
- NRST

J13 — 3220-10-0300-00 (JTAG2)
- 3.3VA
- C86 100nF
- VCC — 1
- GND — 3
- GND — 5
- NC — 7
- GND — 9
- TCK — 2 — JT2_CLK
- TMS — 4 — JT2_SDIO
- TDO — 6
- TDI — 8
- RST — 10 — NRST1
- JTAG2: JT2_CLK, JT2_SDIO
- NRST1

U10 — LIS3MDL (LIS3ML)
- VDD_IO — 6 — 3.3VA
- VDD — 5
- C79 100nF
- INT — 7 — MAG_INT
- SDA/SDI/SDO — 11 — MAG_SDA
- SDO/SA1 — 9 — MAG_SDO
- SCL/SPC — 10 — MAG_SCL
- CS — 8 — MAG_CS
- DRDY — 2 — MAG_DRDY
- C1 — 4 — MAG_C1
- RSVD2 — 12
- RSVD1 — 1
- GND — 3
- LIS3ML: MAG_INT, MAG_SDA, MAG_SDO, MAG_SCL, MAG_CS, MAG_DRDY, MAG_C1

J5 — MEM2075-00-140-01-A (SDCARD)
- DAT0 — P7
- DAT1 — P8
- DAT2 — P1
- CD/DAT3 — P2
- CLK — P5 — SD_CLK
- CMD — P3
- VDD — P4 — 3.3VA
- CD — P9
- VSS — P6
- SHIELD, SHIELD, SHIELD, SHIELD — SH4, SH3, SH2, SH1
- 3.3VA, C80 100nF
- SD_CLK, SD_CD, SD_DAT2, SD_DAT1, SD_DAT0, SD_CMD, SD_DET
- SDCARD
- CHASIS, GND

J14 — 3220-10-0300-00 (JTAG3)
- 3.3VA
- C87 100nF
- VCC — 1
- GND — 3
- GND — 5
- NC — 7
- GND — 9
- TCK — 2 — JT3_CLK
- TMS — 4 — JT3_SDIO
- TDO — 6
- TDI — 8
- RST — 10 — NRST2
- JTAG2: JT3_CLK, JT3_SDIO
- NRST2

U11 — MS5611-01BA03 (BAROMETER)
- VDD — 1 — 3.3VA
- C81 100nF
- SDI/SDA — 7 — SPI2_MOSI
- SDO — 6 — SPI2_MISO
- SCLK — 8 — SPI2_SCK
- CSB — 2 — SPI2_NSS
- CSB — 3
- PS — 4
- GND — 3
- BAROMETER: SPI2_MOSI, SPI2_MISO, SPI2_SCK, SPI2_NSS
- P7, P8
- 3.3VA
- GND

Title Block
Title		
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J6
1
2
3
B3B-XH-A

+5V
1
2
3
SERVO55
GND

J7
1
2
3
B3B-XH-A

+5V
1
2
3
SERVO33
GND

J8
1
2
3
B3B-XH-A

+5V
1
2
3
SERVO11
GND

J9
1
2
3
B3B-XH-A

+5V
1
2
3
SERVO66
GND

J10
1
2
3
B3B-XH-A

+5V
1
2
3
SERVO44
GND

J11
1
2
3
B3B-XH-A

+5V
1
2
3
SERVO22
GND

SERVO
SERVO1
SERVO2
SERVO3
SERVO4
SERVO5
SERVO6

SERVO1
SERVO1
SERVO3
SERVO4
SERVO5
SERVO6

SERVO

U12
+5V
20
VCC

GND
1
$\overline{OE1}$
19
$\overline{OE2}$
SERVO1
2
A1
SERVO2
3
A2
SERVO3
4
A3
SERVO4
5
A4
SERVO5
6
A5
SERVO6
7
A6
8
A7
9
A8
10
GND
GND

18
Y1
SERVO11
17
Y2
SERVO22
16
Y3
SERVO33
15
Y4
SERVO44
14
Y5
SERVO55
13
Y6
SERVO66
12
Y7
11
Y8

SN74HCT541PWR

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U4B STM32F427VIT6

VDD VDD VDD VDD VDD VDD VDDA VBAT VREF+ VCAP_1 VCAP_2 VSSA VSS VSS VSS VSS
3.3VA
100nF 100nF 100nF 100nF 100nF 100nF 100nF 100nF 1uF
GND
STM32F427VIT6

U4D STM32F427VIT6

PE7 PE8 PE9 PE10 — R11 22R UART7_RX RX / R12 22R UART7_TX TX / R13 22R TIMEPULSE TIMEPULSE / R14 22R EXTINT EXTINT — **NEO-M8**

RF MODULE
PD8 PD9 PD10 PD11 PD12 — R15 22R USART3_TX USART3_TX / R16 22R USART3_RX USART3_RX / R17 22R RST RST / R18 22R CTS CTS / R19 22R ON/SLEEP ON/SLEEP — **RF MODULE**

ICM-42688-P
PA7 PA6 PA5 PA4 PC4 — R20 22R IMU_SDIO IMU_SDI / R21 22R IMU_SDO IMU_SDO / R22 22R IMU_SCLK IMU_SCLK / R23 22R IMU_CS IMU_CS / R24 22R IMU_INT IMU_INT — **ICM-42688-P**

COM_UART
PA10 PA9 — R25 22R USART1_RX RX1 / R26 22R USART1_TX TX1 — **COM_UART**

USB
PA12 PA11 — R27 22R USB_P D+ / R28 22R USB_N D- — **USB**

JTAG
PA14(JTCK-SWCLK) PA13(JTMS-SWDIO) — R29 22R JT_CLK JT_CLK / R30 22R JT_SDIO JT_SDIO — **JTAG1**

LIS3ML
PB7 PB5 PB4(NJTRST) PB3(JTDO/TRACESWO) PB2-BOOT1 — R31 22R MAG_INT MAG_INT / R32 22R MAG_SDA MAG_SDA / R33 22R MAG_SDO MAG_SDO / R34 22R MAG_SCL MAG_SCL / R35 22R MAG_CS MAG_CS / MAG_DRDY / MAG_C1 — **LIS3ML**

SD CARD
PC12 PC11 PC10 PC9 PC8 PD2 PC13 — R36 22R SD_CLK SD_CLK / R37 22R SD_CD SD_CD / R38 22R SD_DAT3 SD_DAT3 / R39 22R SD_DAT2 SD_DAT2 / R40 22R SD_DAT1 SD_DAT1 / R41 22R SD_DAT0 SD_DAT0 / R43 22R SD_CMD SD_CMD / R44 22R SD_DET SD_DET — **SDCARD**

BAROMETER
PB15 PB14 PB13 PB12 — R42 22R SPI2_MOSI SPI2_MOSI / R45 22R SPI2_MISO SPI2_MISO / R46 22R SPI2_SCK SPI2_SCK / R47 22R SPI2_NSS SPI2_NSS — **BAROMETER**

STM32F427VIT6

U5D STM32F427VIT6

PE7 PE8 PE9 PE10
PD8 PD9 PD10 PD11 PD12 — LD3 LED R61 1K GND
PA7 PA6 PA5 PA4 PC4
PA10 PA9 — R53 22R USART1_TX RX1 / R54 22R USART1_RX TX1 — **COM_UART**
USB2
PA12 PA11 — R51 22R USB2_P D2+ / R52 22R USB2_N D2- — **USB2**
JTAG2
PA14(JTCK-SWCLK) PA13(JTMS-SWDIO) — R49 22R JT2_CLK JT2_CLK / R50 22R JT2_SDIO JT2_SDIO — **JTAG2**
PB7 PB5 PB4(NJTRST) PB3(JTDO/TRACESWO) PB2-BOOT1 — R55 22R PI_RX PI_RX / R56 22R PI_SCK PI_SCK / R57 22R PI_MOSI PI_MOSI / R58 22R PI_MISO PI_MISO
PC12 PC11 PC10 PC9 PC8 PC13
PB15 PB14 PB13 PB12 — R59 22R PI_NSS PI_NSS

U6D STM32F427VIT6

PE7 PE8 PE9 PE10
PD8 PD9 PD10 PD11 PD12
PA7 PA6 PA5 PA4 PC4 — R65 22R SERVO4 / R66 22R SERVO6
PA10 PA9
PA12 PA11
JTAG3
PA14(JTCK-SWCLK) PA13(JTMS-SWDIO) — R86 22R JT3_CLK JT3_CLK / R87 22R JT3_SDIO JT3_SDIO — **JTAG3**
PB7 PB5 PB4(NJTRST) PB3(JTDO/TRACESWO) PB2-BOOT1 — R70 22R SERVO4
PC12 PC11 PC10 PC9 PC8 PC13
PB15 PB14 PB13 PB12

U5B STM32F427VIT6

VDD VDD VDD VDD VDD VDD VDDA VBAT VREF+ VCAP_1 VCAP_2 VSSA VSS VSS VSS VSS
3.3VA
100nF 100nF 100nF 100nF 100nF 100nF 100nF 100nF 1uF
GND

U5C STM32F427VIT6
NRST — R57 1K 3.3VA GND — 14 NRST — **NRST** — C47 10uF — C48 8pF GND — Y3 C3E-8MHz GND — C49 8pF GND
PH0-OSC_IN PH1-OSC_OUT
PC15-OSC32_OUT PC14-OSC32_IN — C50 6pF — 3.3VA P3 — Y4 — C51 6pF GND — P4
BOOT0 — R8 1K GND
STM32F427VIT6

U4C STM32F427VIT6
NRST1 — R9 1K 3.3VA GND — 14 NRST1 — **NRST1** — C30 10uF — C33 8pF GND — Y1 C3E-8MHz GND — C34 8pF GND
PH0-OSC_IN PH1-OSC_OUT
PC15-OSC32_OUT PC14-OSC32_IN — C31 6pF — 3.3VA P1 — Y2 — C32 6pF GND — P2
BOOT0 — R7 1K GND
STM32F427VIT6

U6C STM32F427VIT6
NRST2 — R62 1K 3.3VA GND — 14 NRST2 — **NRST2** — C64 10uF — C65 8pF GND — Y5 C3E-8MHz GND — C66 8pF GND
PH0-OSC_IN PH1-OSC_OUT
PC15-OSC32_OUT PC14-OSC32_IN — C67 6pF — 3.3VA P5 — Y6 — C68 6pF GND — P6
BOOT0 — R? 1K GND
STM32F427VIT6

U6B STM32F427VIT6

VDD VDD VDD VDD VDD VDD VDDA VBAT VREF+ VCAP_1 VCAP_2 VSSA VSS VSS VSS VSS
3.3VA
100nF 100nF 100nF 100nF 100nF 100nF 100nF 100nF 1uF
GND

U4A STM32F427VIT6
RESET_GPS — R76 22R / RESET_RF — R85 22R
PA0-WKUP PA1 PA2 PA3 PA8 PA15(JTDI) PB0 PB1 PB6 PB8 PB9 PB10 PB11
MAG_DRDY — R83 22R / MAG_C1 — R84 22R
PD0 PD1 PD3 PD4 PD5 PD6 PD7 PD14 PD15 PE0 PE1 PE3 PE4 PE5 PE6
PC0 PC1 PC2 PC3 PC5 PC6 PC7
PE11 PE12 PE13 PE14 PE15
STM32F427VIT6

U5A STM32F427VIT6
PA0-WKUP PA1 PA2 PA3 PA8 PA15(JTDI) PB0 PB1 PB6 PB8 PB9 PB10 PB11
PI_TX — R60 22R
SCL — R64 22R / SDA — R66 22R
PD0 PD1 PD3 PD4 PD5 PD6 PD7 PD14 PD15 PE0 PE1 PE3 PE4 PE5 PE6
PC0 PC1 PC2 PC3 PC5 PC6 PC7
PE11 PE12 PE13 PE14 PE15
STM32F427VIT6

U6A STM32F427VIT6
PA0-WKUP PA1 PA2 PA3 PA8 PA15(JTDI) PB0 PB1 PB6 PB8 PB9 PB10 PB11
SERVO1 — R71 22R / SERVO2 — R72 22R / SERVO3 — R73 22R / SCL — R68 22R / SDA — R69 22R
PD0 PD1 PD3 PD4 PD5 PD6 PD7 PD14 PD15 PE0 PE1 PE3 PE4 PE5 PE6
PC0 PC1 PC2 PC3 PC5 PC6 PC7
PE11 PE12 PE13 PE14 PE15
STM32F427VIT6

J1
PI_RX 1 / PI_SCK 2 / PI_MOSI 3 / PI_MISO 4 / PI_NSS 5 / PI_TX 6
S1 SHIELD1 / S2 SHIELD2
2035590607
GND

SERVO
SERVO1 SERVO1 / SERVO2 SERVO1 / SERVO3 SERVO3 / SERVO4 SERVO4 / SERVO5 SERVO5 / SERVO6 SERVO6 — **SERVO**

Comment	Description	Designator	Footprint	LibRef	Quantity
100nF	CAP CER 100nF 10% 50V X7R 0402 SMD	C1, C18, C19, C20, C21, C22, C23, C24, C25, C27, C28, C29, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C69, C70, C71, C72, C76, C78, C79, C80, C81, C86, C87	CAP-CER0402-0.5H	CAPCER0013 100nF 10% 50V X7R 0402 SMD	45
10uF	CAP CER 10uF 20% 6.3V X5R 0402 SMD	C2, C3, C4, C7, C8, C9, C13, C15, C16, C17, C26, C30, C46, C47, C63, C64, C73, C74, C75, C82, C83, C84	CAP-CER0402-20mil	CAPCER0040 10uF 20% 6.3V X5R 0402 SMD	22
200pF	CAP CER 10nF 10% 25V X7R 0402 SMD	C5	CAP-CER0402-0.5H	CAPCER0045 10nF 10% 25V X7R 0402 SMD	1
10nF	CAP CER 10nF 10% 25V X7R 0402 SMD	C6	CAP-CER0402-0.5H	CAPCER0045 10nF 10% 25V X7R 0402 SMD	1
100uF	Cap Aluminum Lytic 100uF 35V 20% (6.3 X 7.7mm) SMD 300mA 2000h 105C T/R	C10	Cap Aluminum Lytic 100uF 35V 20%	Cap Aluminum Lytic 100uF 35V 20%	1
100nF	CAP CER 10uF 20% 6.3V X5R 0402 SMD	C11	CAP-CER0402-20mil	CAPCER0040 10uF 20% 6.3V X5R 0402 SMD	1
20nF	CAP CER 10uF 20% 6.3V X5R 0402 SMD	C12	CAP-CER0402-20mil	CAPCER0040 10uF 20% 6.3V X5R 0402 SMD	1
4.7uF	CAP CER 10uF 20% 6.3V X5R 0402 SMD	C14	CAP-CER0402-20mil	CAPCER0040 10uF 20% 6.3V X5R 0402 SMD	1
6pF	CAP CER 100nF 10% 50V X7R 0402 SMD	C31, C32, C50, C51, C67, C68	CAP-CER0402-0.5H	CAPCER0013 100nF 10% 50V X7R 0402 SMD	6
8pF	CAP CER 100nF 10% 50V X7R 0402 SMD	C33, C34, C48, C49, C65, C66	CAP-CER0402-0.5H	CAPCER0013 100nF 10% 50V X7R 0402 SMD	6
100nF	CAP CER 100nF 10% 50V X7R 0603 SMD	C77, C85	CAP-CER0603-0.8H	CAPCER0001 100nF 10% 50V X7R 0603 SMD	2
SS34	3A, 40V, Schottky Rectifier	D1	DIO_SS34	SS34	1
C1FS	Fuse Chip Fast Acting 5A 125V SMD Solder Pad 120x3.2 X 1.58 X 0.63mm	F1	FUSE C1FS	C1FS	1
100MHz 2A 50mOhm	Ferrite Beads Multi-Layer 1200hm 25% 100MHz 2A 50mOhm DCR 0603 Paper T/R	FB1, FB2, FB3, FB4, FB5	FB 0603	BLM18PG121SN1D	5
2035590607		J1	MOLEX_2035590607	2035590607	1
CONUFL001-SMD		J2	LINX_CONUFL001-SMD	CONUFL001-SMD	1
MICRO B		J3, J12	MICRO USB B	MICRO USB B	2
3220-10-0300-00	Connector Header Surface Mount 10 position 0.050 (1.27mm)	J4, J13, J14	CNC_3220-10-0300-00	3220-10-0300-00	3
MEM2075-00-140-01-A	9 (8 + 1) Position Card Connector microSD Surface Mount, Right Angle Gold	J5	GCT_MEM2075-00-140-01-A	MEM2075-00-140-01-A	1
B3B-XH-A	Connector Header Through Hole 3 position 0.098 (2.50mm)	J6, J7, J8, J9, J10, J11	JST_B3B-XH-A	B3B-XH-A	6
Jac DC	Jac DC input	JDC1	DC0	DCIN	1
5uH	IND MOI 1W2T 1.5uH 20% 14A 0630 SMD	L1	IND-06030-1uH	INDMOI0013 1W2T 1.5uH 20% 14A 0630 SMD	1
15uH		L2	INDC1106X70N	LCW15DN100M00D	1
LED	LED IND GRE CLR 2.4V 20mA 0402 SMD	LD1, LD2, LD3, LD4, LD5	LED-IND0402-GRE-0.4H	LEDIND0005 GRE CLR 2.4V 20mA 0402 SMD	5
Header 2	Header, 2-Pin	P1, P2, P3, P4, P5, P6, P7, P8	HDR1X2	Header 2	8
Pfet	Mosfet, P Channel, 30V, -1.6A, SOT-23	Q1	ZXMP3A13FTA	ZXMP3A13FTA	1
10K	RES CHP 10K 1% 1/16W 0402 SMD, RES CHP 100K 1% 1/16W 0402 SMD	R1, R3, R74, R77, R79	RES-CHP0402-0.35H	RESCHP0073 10K 1% 0402 SMD, RESCHP0097 100K 1% 0402 SMD	5
200K	RES CHP 100K 1% 1/16W 0402 SMD	R2	RES-CHP0402-0.35H	RESCHP0097 100K 1% 0402 SMD	1
68K	RES CHP 100K 1% 1/16W 0402 SMD	R4, R5, R6	RES-CHP0402-0.35H	RESCHP0097 100K 1% 0402 SMD	3
1K	RES CHP 100K 1% 1/16W 0402 SMD	R7, R8, R9, R10, R47, R48, R61, R62, R63, R80, R81	RES-CHP0402-0.35H	RESCHP0097 100K 1% 0402 SMD	11
22R	RES CHP 100K 1% 1/16W 0402 SMD	R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R76, R78, R83, R84, R86, R87	RES-CHP0402-0.35H	RESCHP0097 100K 1% 0402 SMD	64
0R	RES CHP 10K 1% 1/16W 0402 SMD	R75	RES-CHP0402-0.35H	RESCHP0073 10K 1% 0402 SMD	1
510K	RES CHP 510K 1% 1/16W 0402 SMD	R82, R85	RES-CHP0402-0.35H	RESCHP0114 510K 1% 0402 SMD	2
SMF24A	TVS DIODE 24VWM 38.9VC SOD123F	TVS	TVS24V	SMF24A	1
MP1584EN-LF-Z	Buck Switching Regulator IC Positive Adjustable 0.8V 1 Output 3A 8-SOIC (0.154, 3.90mm Width) Exposed Pad	U1	SOIC127P600X170-9N	MP1584EN-LF-Z	1
TPS22918DBVR	5.5-V, 2-A, 52-mΩ load switch with adj. rise time and adj. output discharge	U2	SOT95P280X145-6N	TPS22918DBVR	1
TLV75533PDBVR	500-mA High-PSRR Low-IQ-Tief-Dropout-Spannungsregler mitabldem	U3	SOT95P280X145-5N	TLV75533PDBVR	1
STM32F427VIT6	ARMÂ® CortexÂ®-M4 STM32F4 Microcontroller IC 32-Bit Single-Core 180MHz 2MB (2M x 8) FLASH 100-LQFP (14x14)	U4, U5, U6	QFP50P1600X1600X160-100N	STM32F427VIT6	3
NEO-M8N-0	series RF Receiver BeiDou, Galileo, GLONASS, GNSS, GPS 1.575GHz -167dBm - -	U7	XCVR_NEO-M8N-0	NEO-M8N-0	1
XBP24-AUI-001	Xbee-Pro 802.15.4, 63mw, Wire Antenna, 250000 Bps Higher Tran	U8	XBP24-AUI-001	XBP24-AUI-001	1
ICM-42688-P	Accelerometer, Gyroscope, 6 Axis Sensor Output	U9	PQFN50P300X250X97-14N	ICM-42688-P	1
LIS3MDL	Magnetoresistive Sensor X, Y, Z Axis 12-LGA (2x2)	U10	XDCR_LIS3MDL	LIS3MDL	1
MS5611-01BA03	Pressure Sensor 0.15PSI - 17.4PSI (1kPa - 120kPa) Absolute - 24 b 8-SMD	U11	SON125P500X300X10 0-8N	MS5e11-01BA03	1
SN74HCT541PWR		U12	SOP65P640X120-20N	SN74HCT541PWR	1
C3E-8Mhz		Y1, Y3, Y5	XTAL_C3E-8.000-8-1015-R	C3E-8.000-8-1015-R	3
ABS07-120-32.768KHZ-T	32.768kHz Â±20ppm Crystal 4pF 55 kOhms 2-SMD, No Lead	Y2, Y4, Y6	XTAL_ABS07-120-32.768KHZ-T	ABS07-120-32.768KHZ-T	3