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RDDRONE-FMUK66

Revisions

Rev	Description	Date	Approved
X1	First Release	14FEB18	IAIN GALLOWAY
X2	Project Rename & A7102CH IC	SEP18	IAIN GALLOWAY
B	Reference Designator are sync with NXP_NXPhlite 3.0RC18	23OCT18	IAIN GALLOWAY
BX1		11NOV18	IAIN GALLOWAY
BX2			IAIN GALLOWAY
BX3			IAIN GALLOWAY
BX4			IAIN GALLOWAY
BX5	-Added J28 for external sensors -Added PX4FMU baro sensor	14NOV18	IAIN GALLOWAY
BX6			IAIN GALLOWAY
BX7		23NOV18	IAIN GALLOWAY
BX8	-Added ESD diodes	24NOV18	IAIN GALLOWAY
BX9	- Added MS621FE-FL11E Batery - BMM150 SPI to I2C mode	28NOV18	IAIN GALLOWAY
BX10	- Removed duplicate pullup / down resistors from I2C1_SDA_INTERNAL & I2C1_SCL_INTERNAL - On-Board sensors moved to 'SENSORS' page	03DEC18	IAIN GALLOWAY
C	Diagram added/A085 release	18DEC18	IAIN GALLOWAY
C1	BOM updated	21JAN19	IAIN GALLOWAY
CX1	NTB0104GU12 OE pin pull up./ D50 to DNP /J4.1 to GND / Obsolete components updated.	21JAN19	IAIN GALLOWAY
D	Release A085	30 JUL 19	IAIN GALLOWAY

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Page Title: **TITLE, TOC & REV**

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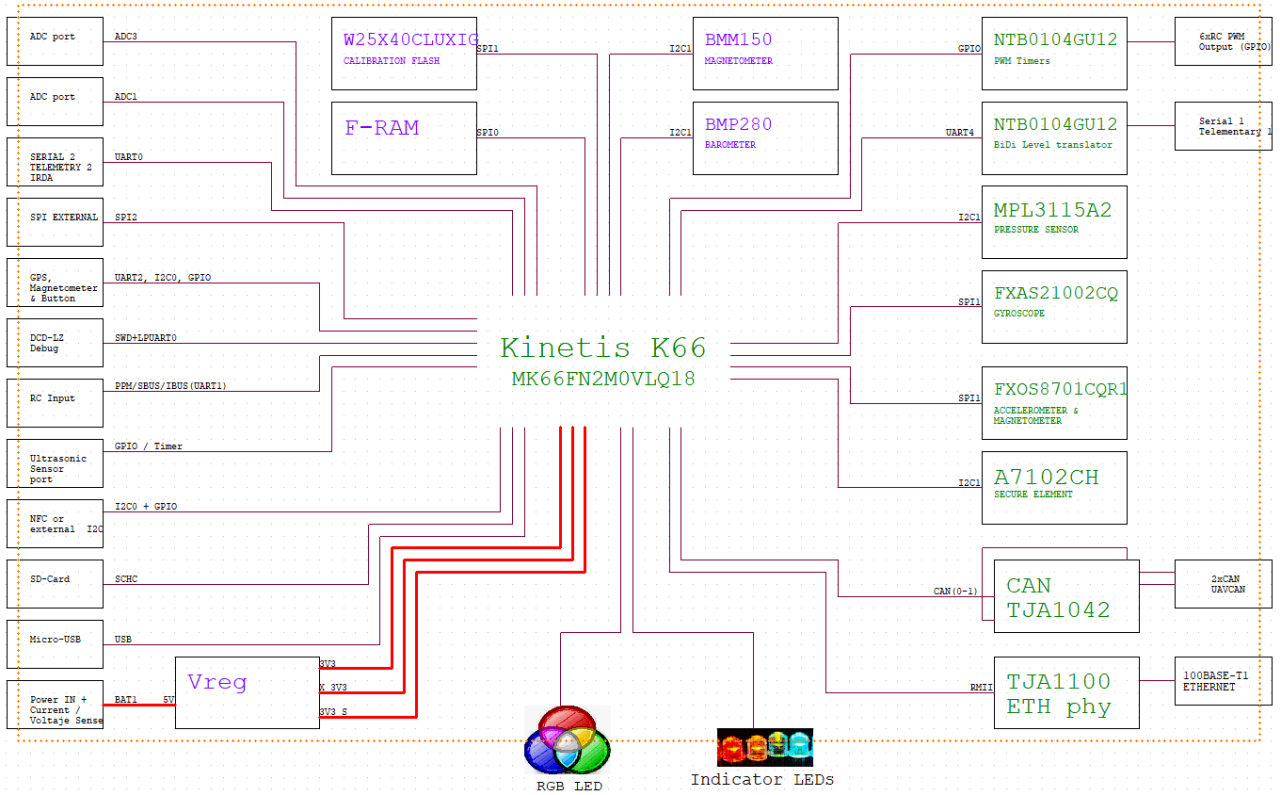
REF DES	ASSY_OPT	PAGE NAME
R61,R60,R114,R115,C103,R121	DNP	3. MCU
R77	DNP	4. POWER
R45,R128	DNP	5. CONNECTORS
R65,R132,R134,R64,R133,R131	DNP	6. SENSORS
R111,C108,R120	DNP	7. SDCARD & MEMORY

RDDRONE-FMUK66 Modular and flexible Drone development platform



NXP part

Non-NXP part

Interface

Power

Signal

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Page Title: BLOCK DIAGRAM

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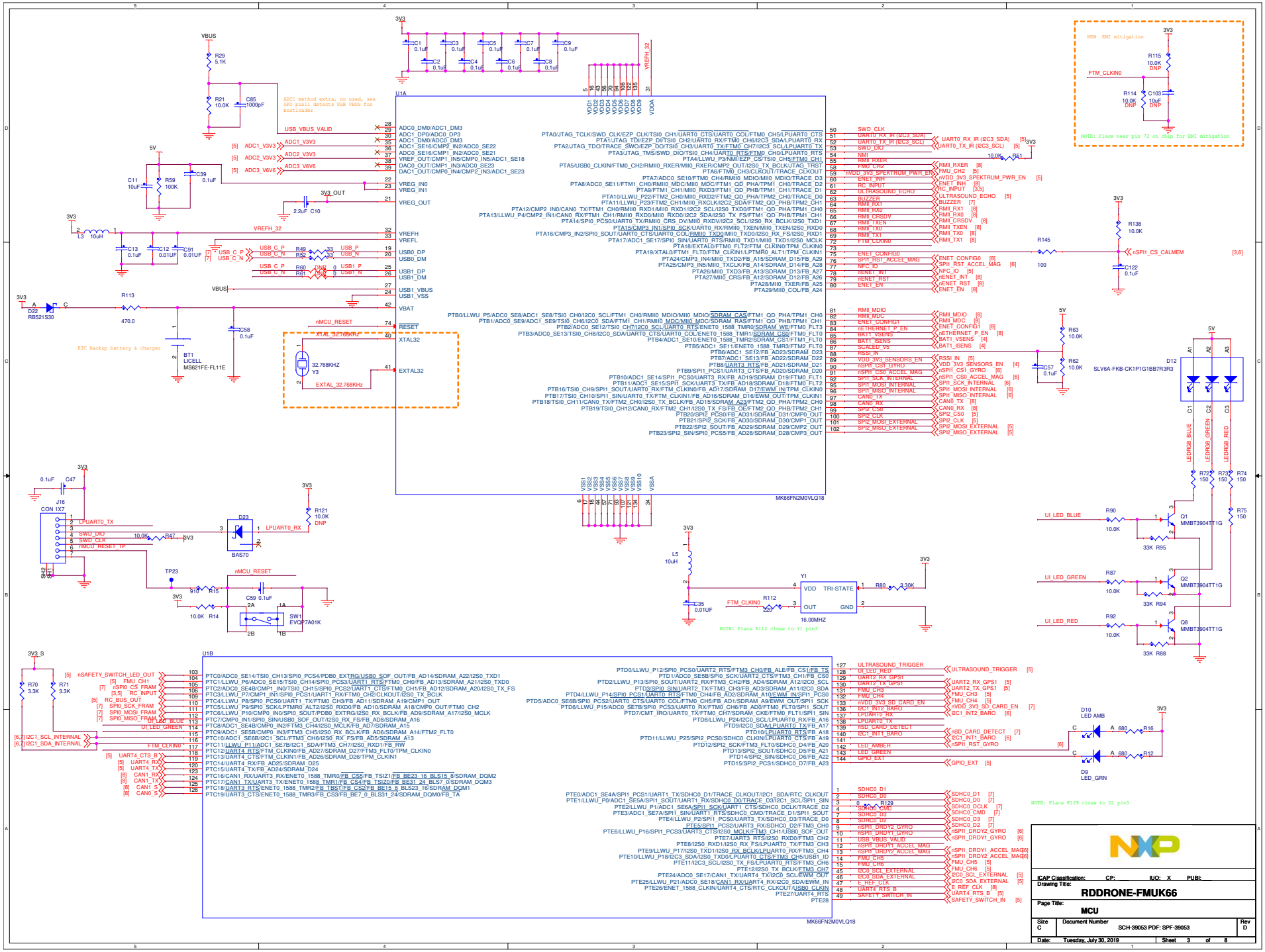
U1A
MK66FN2M0VLQ18
U1B
MK66FN2M0VLQ18
ADC1 method extra, no used, see GPO pin1 detects USB VBUS for bootloader
NEW EMI mitigation
NOTE: Place near pin 72 on chip for EMI mitigation
RTC backup battery & charger
NOTE: Place R112 close to Y1 pin3
NOTE: Place R129 close to U1 pin3
ICAP Classification:
CP:
IUO: X
PUBI:
Drawing Title:
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Page Title:
MCU
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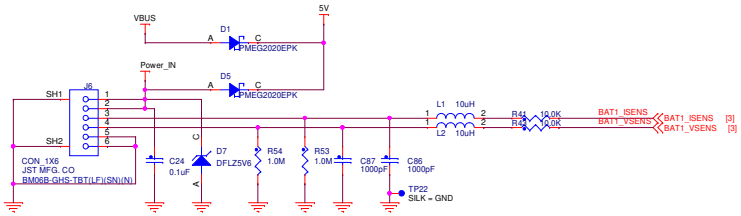
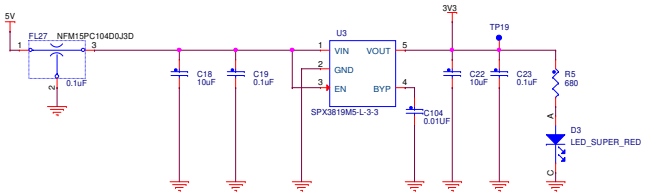
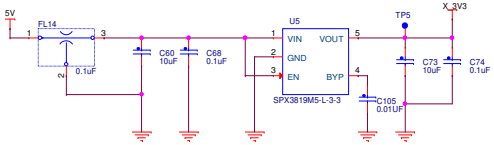
Power_IN



VCC to 3.3V for MCU

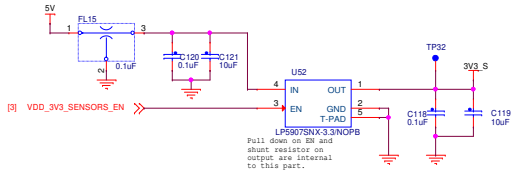


VCC to 3.3V for Ethernet, CAN, FRAM, SDCARD



VCC to 3.3V for Sensors / "Extra low noise"

NOTE: Extra Low Noise



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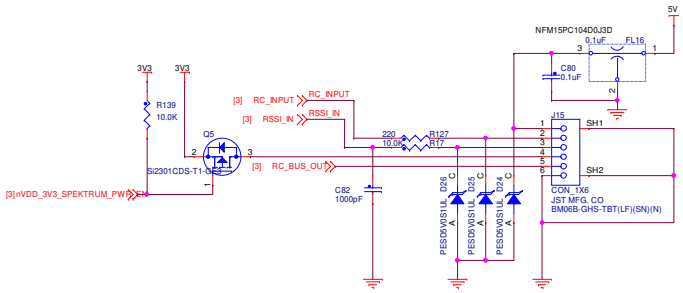
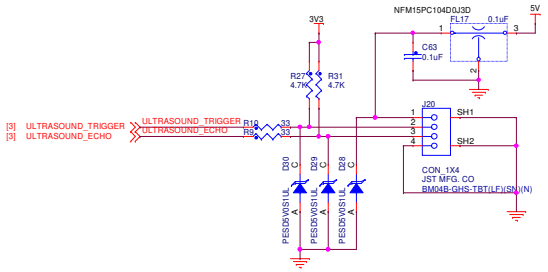
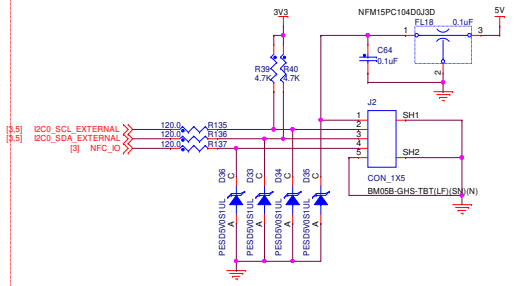
PPM-RSSI-SBUS-SPEKTRUM SERIAL4/FrSky



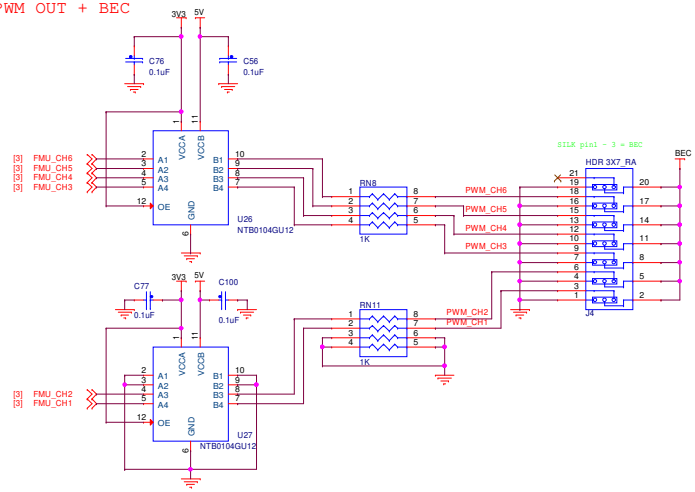
Ultrasonic Sensor



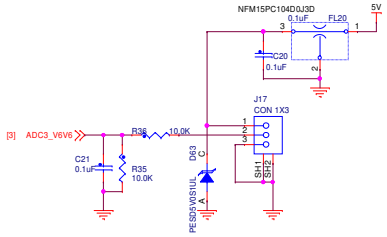
I2C0. Also for NTAG+ NFC Tag or NFC Controller



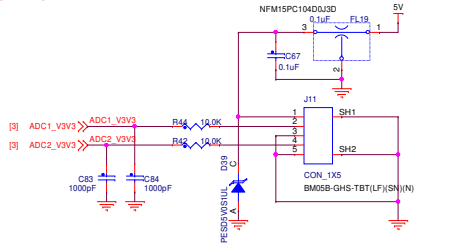
PWM OUT + BEC



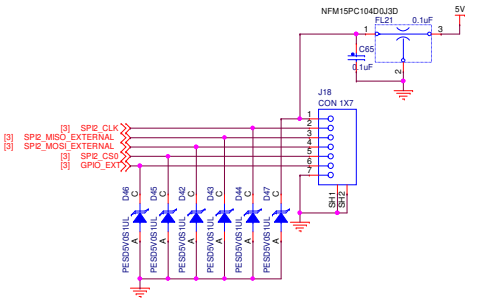
ADC3 PORT



ADC1 PORT

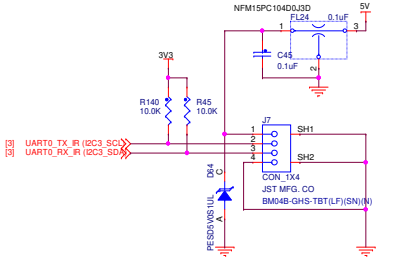


SPI EXTERNAL



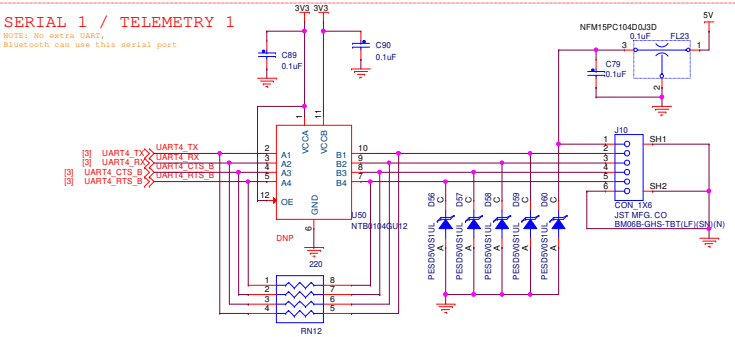
SERIAL 2 / TELEMETRY 2 / IRDA

NOTE: UART0, Capable of IRDA IR Comm. IR TX/RX.
Alternate function I2C3



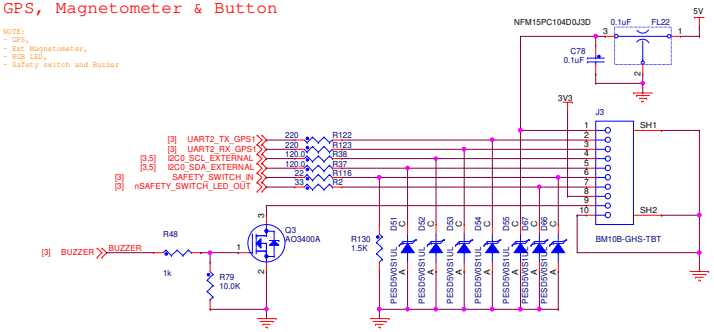
SERIAL 1 / TELEMETRY 1

NOTE: No extra UART,
Bluetooth can use this serial port



GPS, Magnetometer & Button

NOTE:
- GPS,
- Ext Magnetometer,
- RGB LED,
- Safety switch and Buzzer



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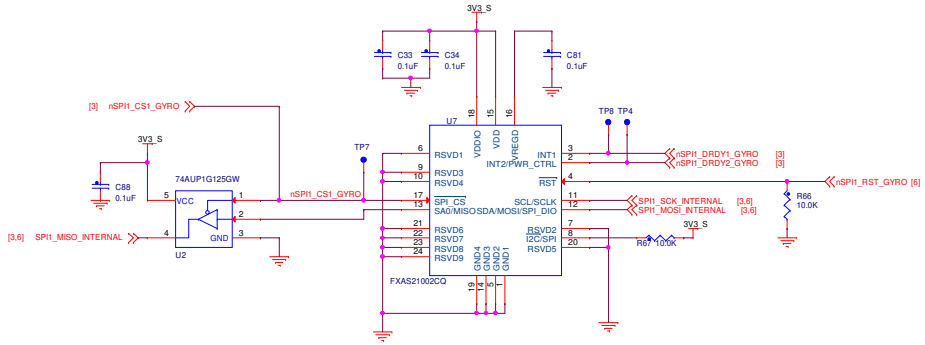
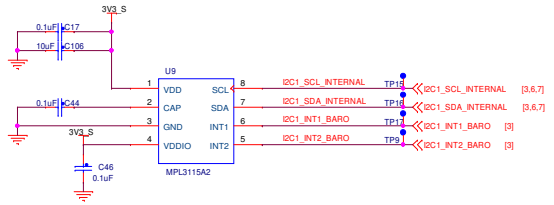
GYROSCOPE

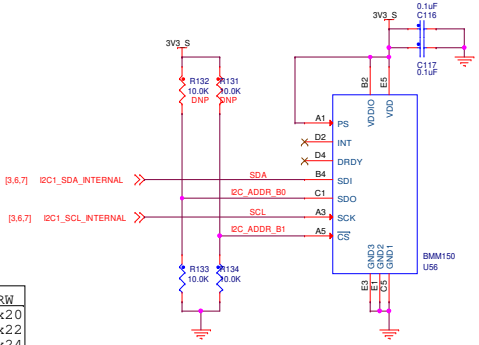


PRESSURE SENSOR



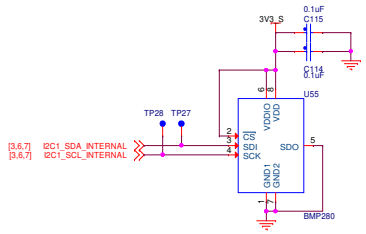
	I2C	RW
110 0 000n	0x70	0xC0

MAGNETOMETER BMM150



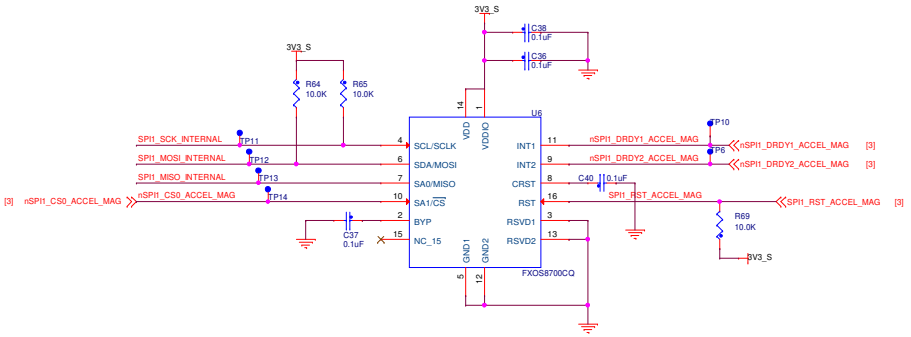
B1/B0	001	0	0XXn	I2C Addr	RW
L L	001	0	000n	0x10	0x20
L H	001	0	001n	0x11	0x22
H L	001	0	010n	0x12	0x24
H H	001	0	011n	0x13	0x26

BAROMETER BMP280

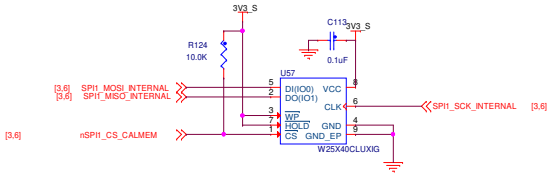


SDO	111 0 11Xn	I2C	RW
L	111 0 110n	0x76	0xEC
H	111 0 111n	0x77	0xEE

ACCELEROMETER & MAGNETOMETER



SENSOR CALIBRATION FLASH



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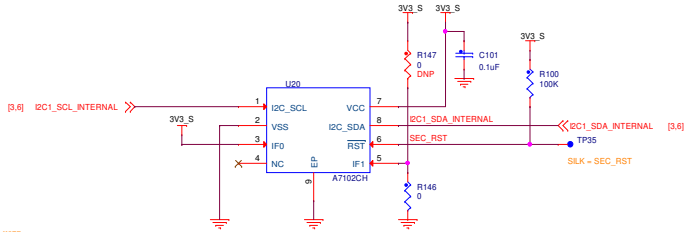
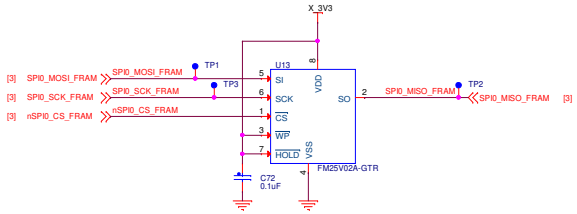
SECURE ELEMENT

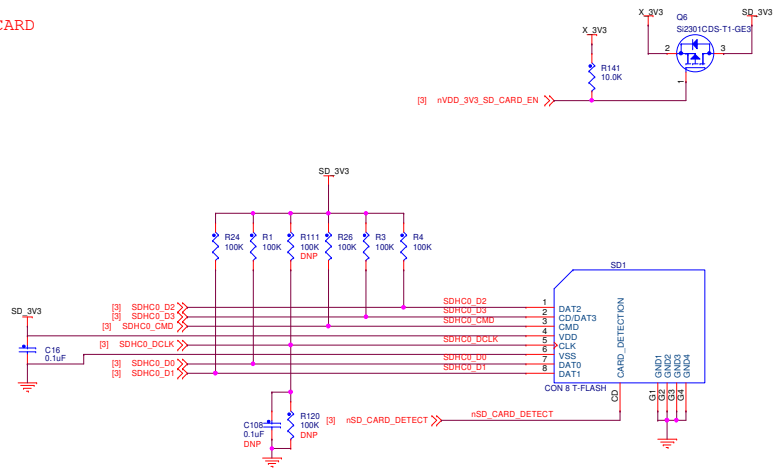


IF1	000 0 00Xn	I2C	RW
L	100 1 000n	0x48	0x90
H	100 1 001n	0x49	0x92

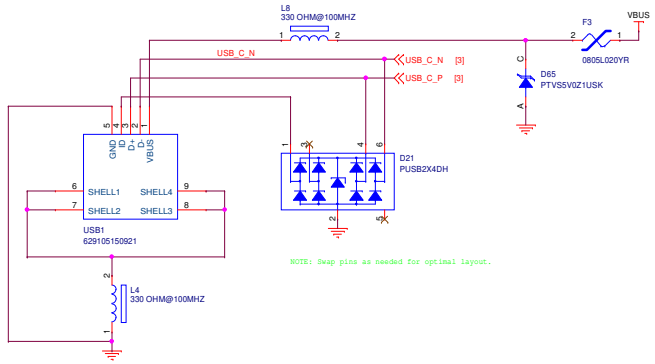
FRAM



SD CARD



MICRO USB



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Page Title: **SD CARD & MEMORY**

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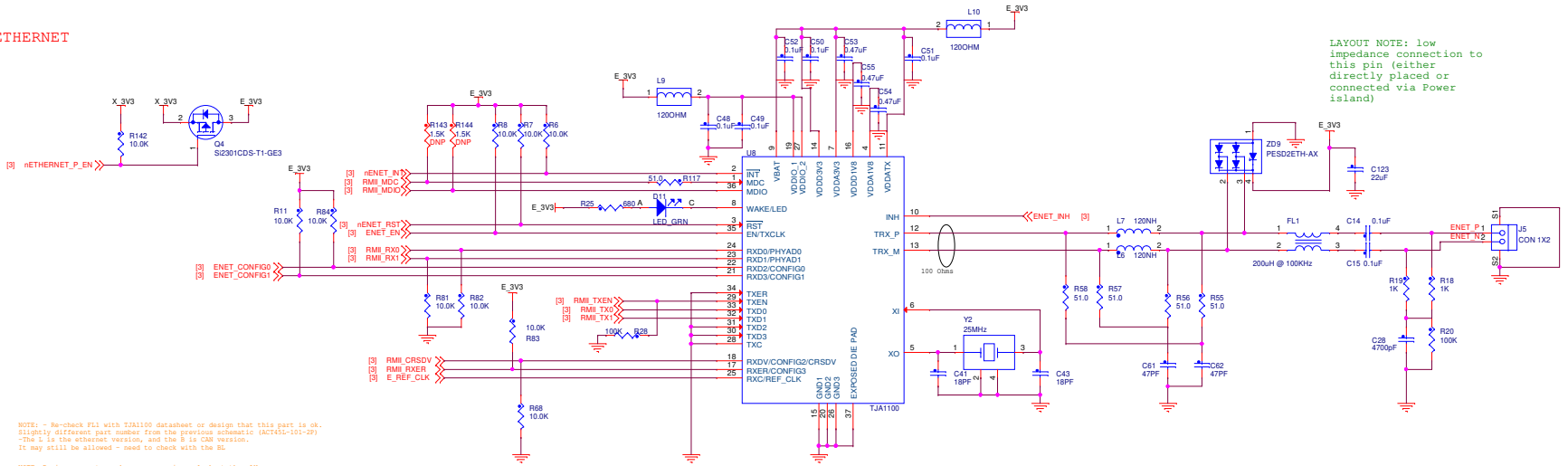
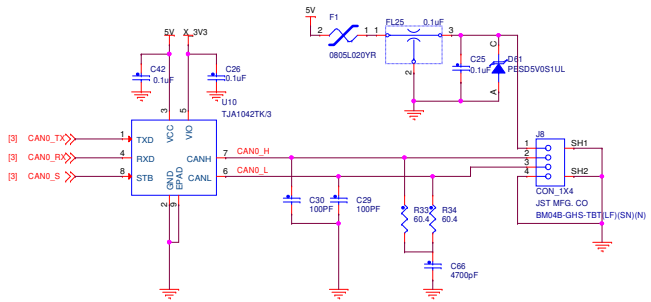
ETHERNET

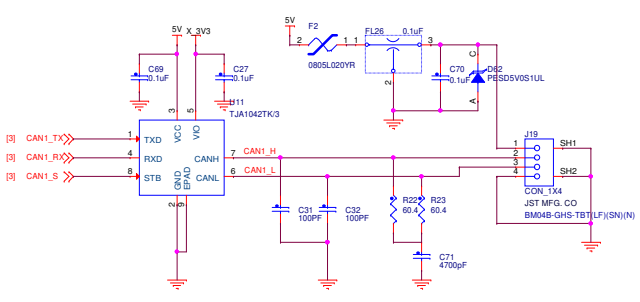


CAN

CAN_0 TRANSCEIVER



CAN_1 TRANSEIVER



LAYOUT NOTE: Mounting holes 96mil PLATE (top-bottom)

BH1 MOUNTING HOLE
BH2 MOUNTING HOLE
BH3 MOUNTING HOLE
BH4 MOUNTING HOLE

ICAP Classification:	CP:	IUO: X	PUBI:
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