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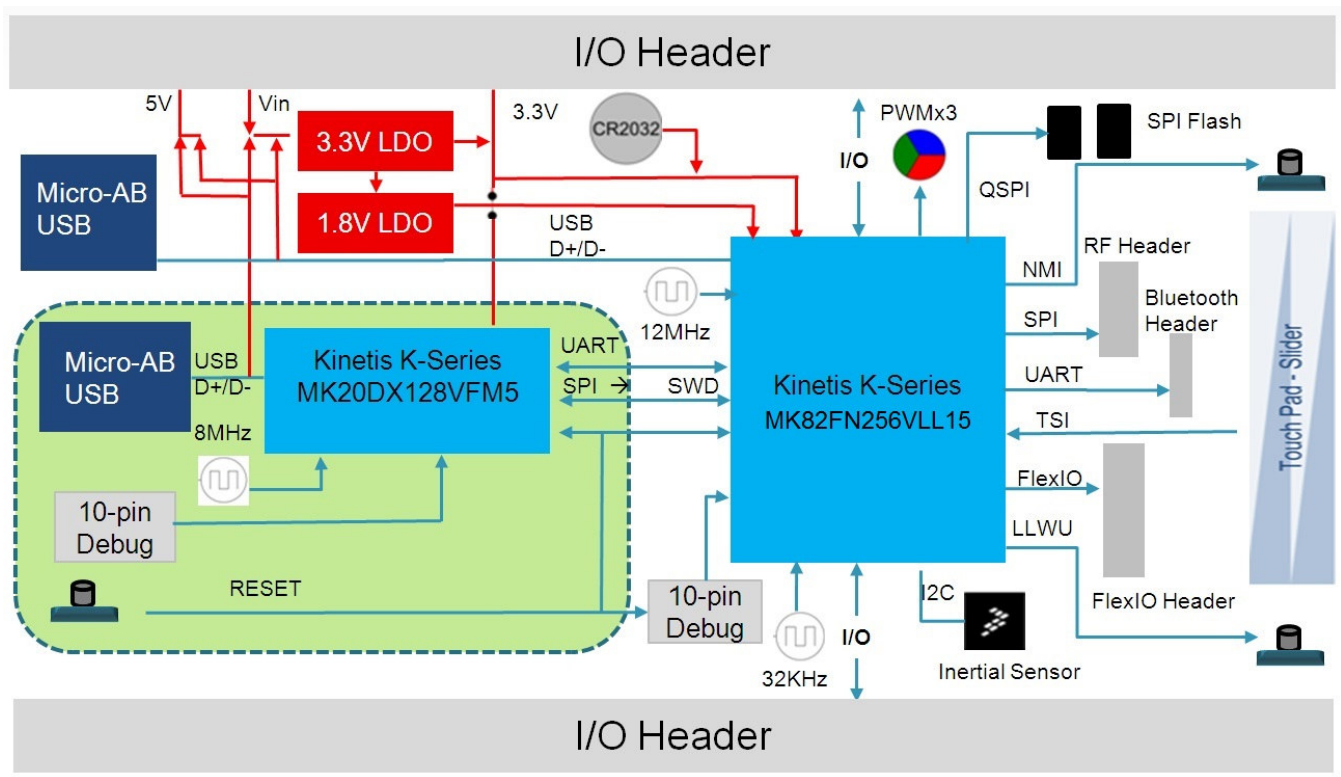
1	Title
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3	K82F MCU
4	OpenSDA INTERFACE
5	QSPI & SENSORS & Misc
6	I/O Headers & Power Supply

**Revisions & Change Log**

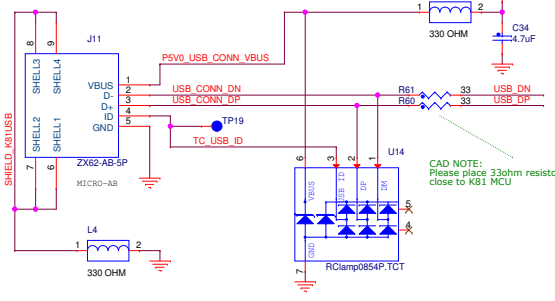
Rev	Description	Date	Approved
X1	Initial Draft	Feb 11, 2015	
A	Release	Mar 03, 2015	
A1	Change U16 to K80F Update the 5 changed signals of pins U16.26:30	Mar 14, 2015	Eric P.
B	Replace U16 with K82F. Replace J12 with 2x9 header. DNP D8 and R64. Swapped connections at J4.11 and J3.5	Jun 16, 2015	Jorge R
B1	Replace MK82FN256CLL15 with MK82FN256VLL15.	Jul 13, 2015	Jorge R
B2	DNP BT1	Aug 18, 2015	Jorge R

# FREEDOM K82F

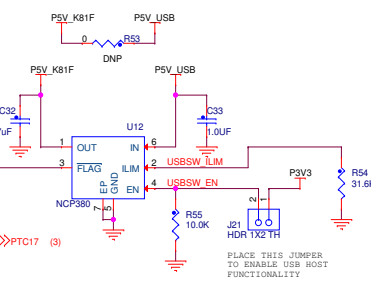
		<b>Microcontroller Product Group</b> 6501 William Cannon Drive West Austin, TX 78735-8598	
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ICAP Classification: FCP: FIUQ: X PUB:			
Designer:	Drawing Title: <b>FRDM-K82F</b>		
Drawn by:	Page Title: <b>TITLE PAGE</b>		
Approved:	Size C	Document Number SCH-28748 PDF: SPF-28748	Rev B2
Date: Tuesday, August 18, 2015 Sheet 1 of 6			



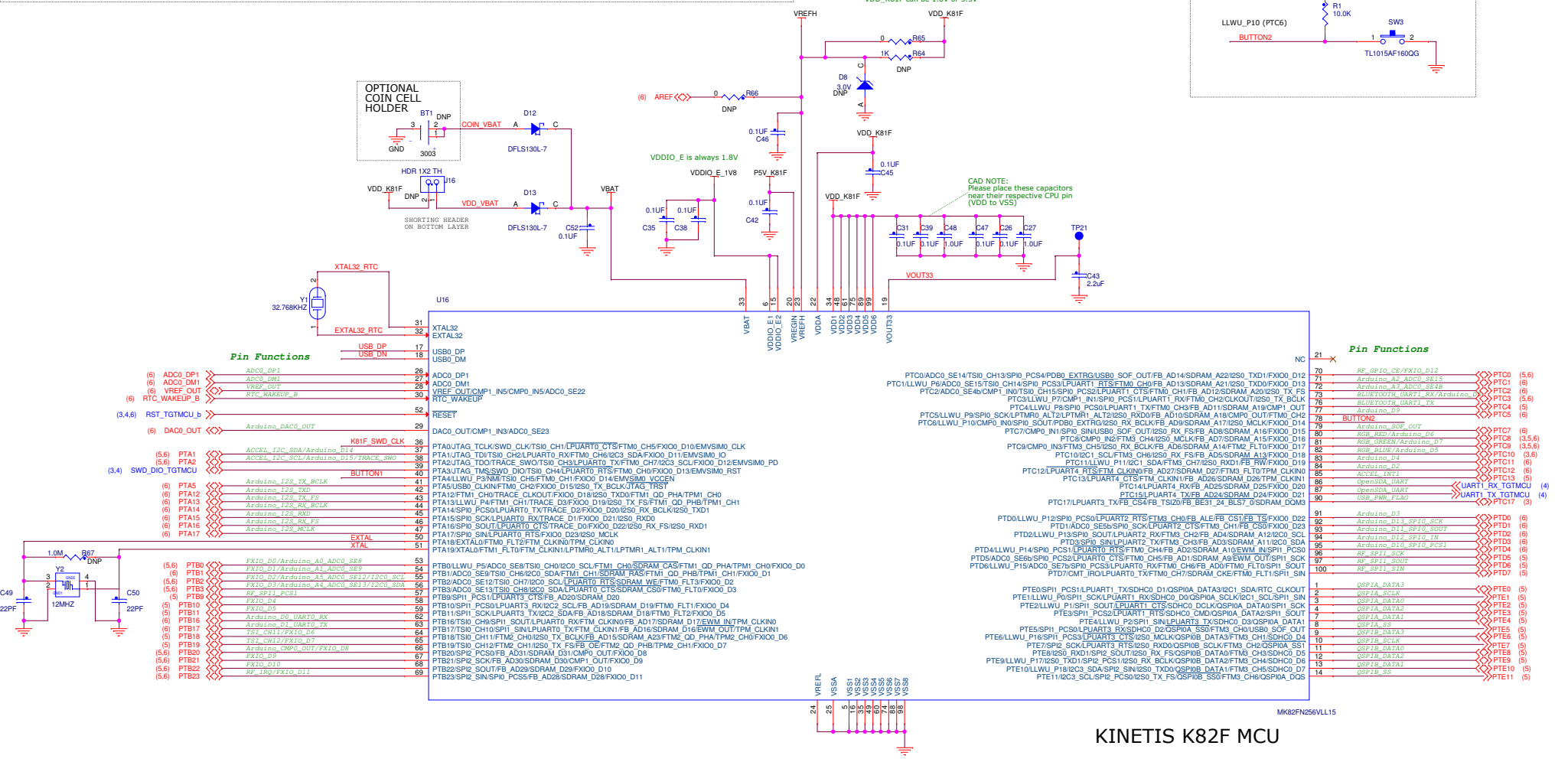
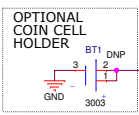
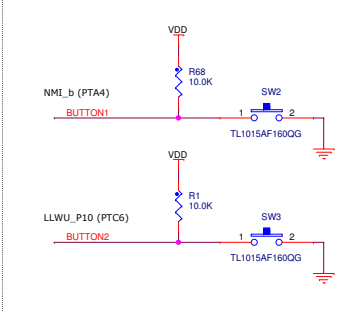
### K80F USB CONNECTOR



### USB HOST FUNCTIONALITY



### INTERRUPT PUSH BUTTONS



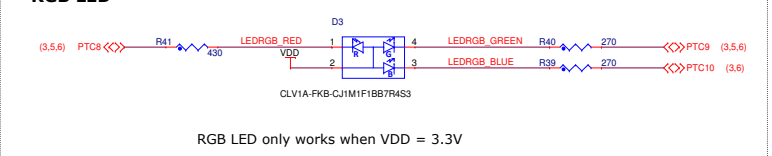
#### Pin Functions

MCU Pin	Function
(6) ADC0_DP1	ADC0_DP1
(6) ADC0_DM1	ADC0_DM1
(6) VREF_OUT	VREF_OUT
(6) RTC_WAKEUP_B	RTC_WAKEUP_B
(3,4,6) RTC_RST_TGTMCU_B	RTC_RST_TGTMCU_B
(6) DACQ_OUT	Arduino_DACQ_OUT
(6) PTA0	ACCCEL_12C_SDA/Arduino_D14
(6) PTA1	ACCCEL_12C_SCL/Arduino_D15/TRACE_SW0
(3,4) SWD_DIO_TGTMCU	SWD_DIO_TGTMCU
(6) PTA5	Arduino_12S_TX_BCLK
(6) PTA12	Arduino_12S_TX_FS
(6) PTA13	Arduino_12S_RX_BCLK
(6) PTA14	Arduino_12S_RX_FS
(6) PTA15	Arduino_12S_RX_FS
(6) PTA16	Arduino_12S_MCLK
(6) PTA17	EXTAL_XTAL
(5,6) PTB0	FXIO_D0/Arduino_A0/ADC0_SE8
(6) PTB1	FXIO_D1/Arduino_A1/ADC0_SE9
(5,6) PTB2	FXIO_D2/Arduino_A2/ADC0_SE10/TRACE_SW1
(5,6) PTB3	FXIO_D3/Arduino_A3/ADC0_SE11/TRACE_SW2
(5,6) PTB4	FXIO_D4
(5) PTB10	FXIO_D5
(6) PTB11	FXIO_D6
(6) PTB16	Arduino_D0_UART0_RX
(6) PTB17	Arduino_D1_UART0_TX
(6) PTB18	TS1_CH11/FXIO_D6
(6) PTB19	TS1_CH11/FXIO_D7
(5,6) PTB20	FXIO_D8
(5,6) PTB21	FXIO_D9
(5,6) PTB22	FXIO_D10
(5,6) PTB23	FXIO_D11
(5,6) PTB24	FXIO_D12
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(5,6) PTB43	FXIO_D31
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(5,6) PTB48	FXIO_D36
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(5,6) PTB50	FXIO_D38
(5,6) PTB51	FXIO_D39
(5,6) PTB52	FXIO_D40
(5,6) PTB53	FXIO_D41
(5,6) PTB54	FXIO_D42
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(5,6) PTB57	FXIO_D45
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(5,6) PTB59	FXIO_D47
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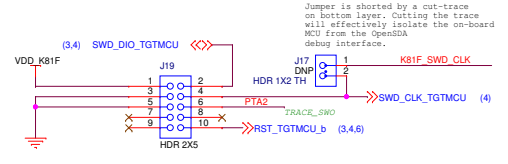
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(5,6) PTB2	FXIO_D2/Arduino_A2/ADC0_SE10/TRACE_SW1
(5,6) PTB3	FXIO_D3/Arduino_A3/ADC0_SE11/TRACE_SW2
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(5,6) PTB98	FXIO_D86
(5,6) PTB99	FXIO_D87
(5,6) PTB100	FXIO_D88

### RGB LED



### SWD CONNECTOR



## KINETIS K82F MCU

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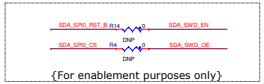
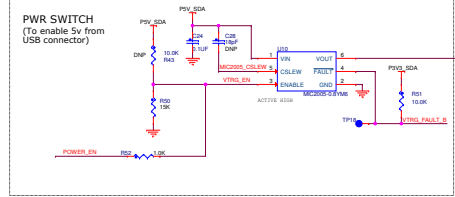
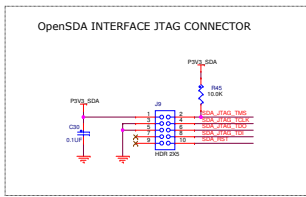
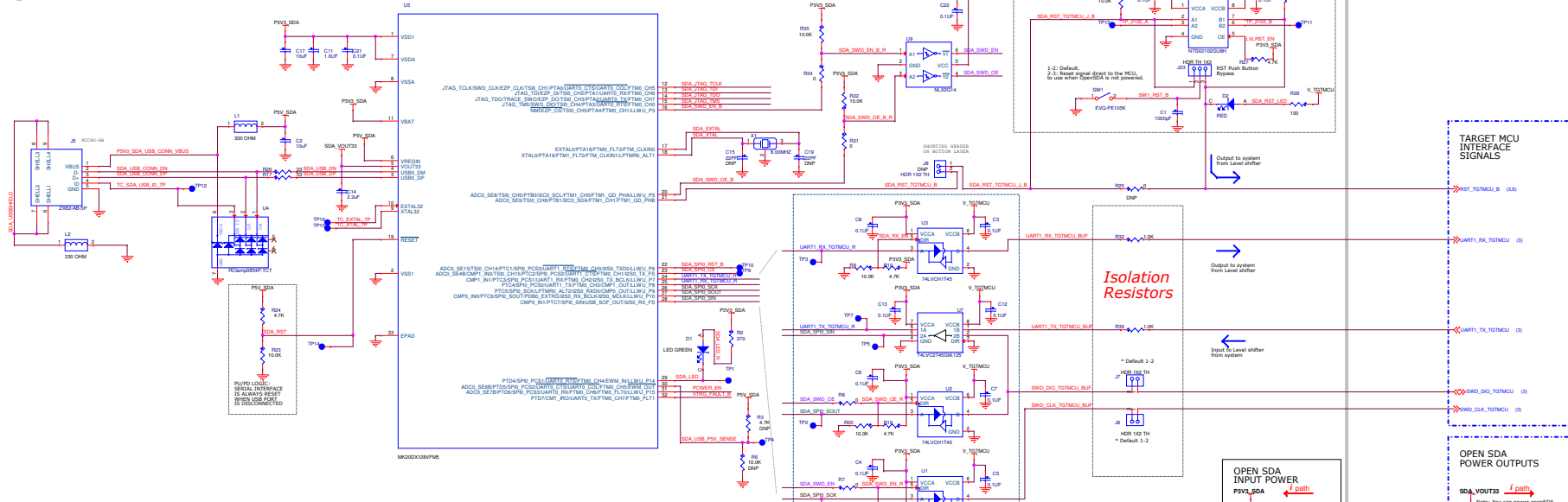
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Drawing Title: **FRDM-K82F**

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# OpenSDA Interface



Isolation and level shift stage (for 1.8 to 3V compatibility)

Isolation Resistors

**OPEN SDA INPUT POWER**  
PPSV\_SDA

3.3VDC, 10mA should be provided to this rail for the OpenSDA module.

**TARGET MCU INTERFACE SIGNALS**

**OPEN SDA POWER OUTPUTS**

PPSV\_SDA\_PSW

PPSV\_SDA\_PSW provides up to 120mA of power at 1.8V to your target.

PPSV\_SDA\_PSW provides up to 450mA (over USB spec) of power at 3.3V to your system.

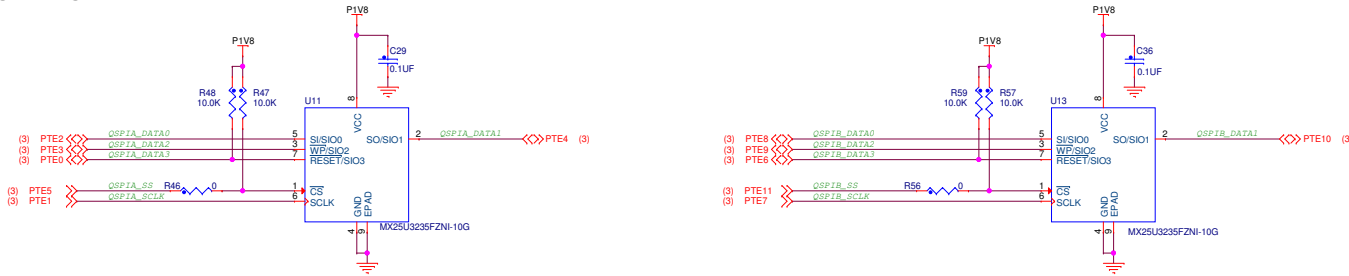
**I/O POWER INPUT**

V\_IOTMCU

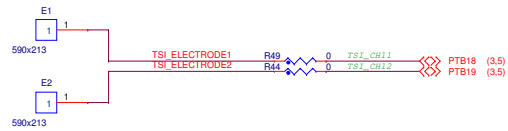
This power rail is supported from 1.8V to 3V.

Power should be provided to this rail for the target. Resistor to your target's I/O.

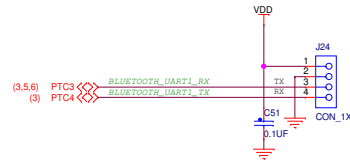
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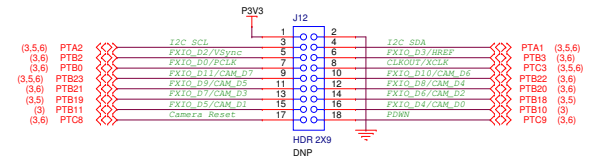
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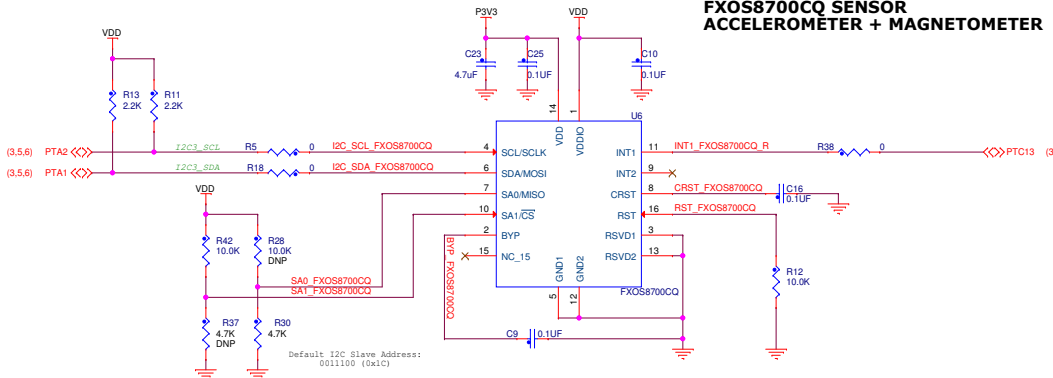
### BLUETOOTH HEADER



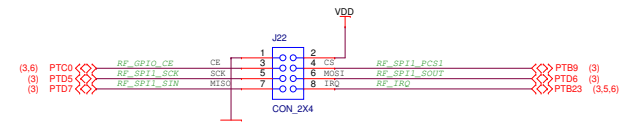
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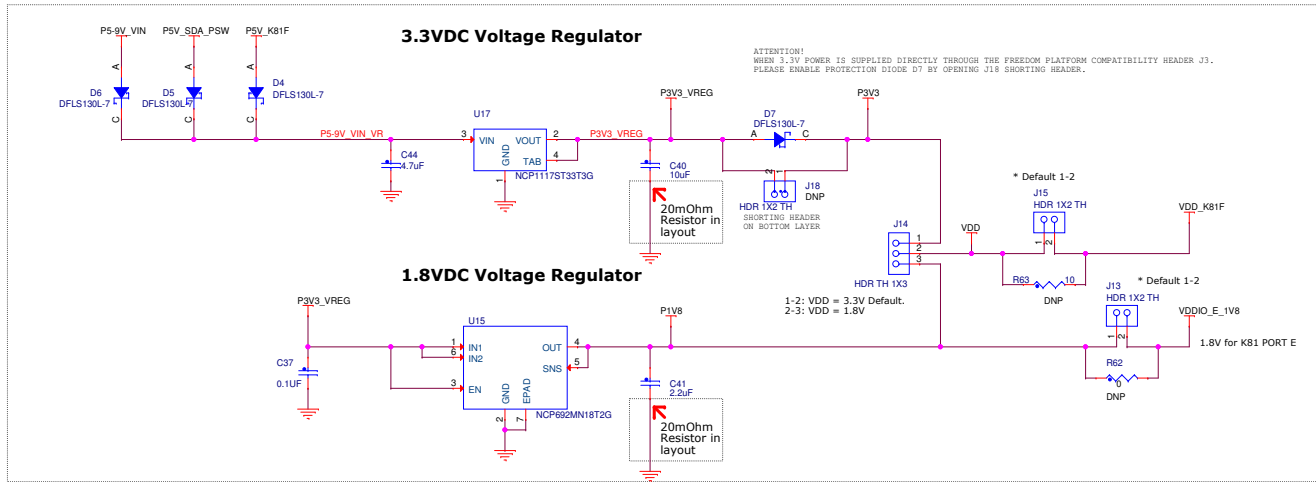


### FXOS8700Q SENSOR ACCELEROMETER + MAGNETOMETER

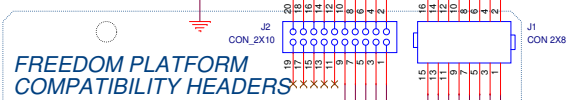


### RF HEADER

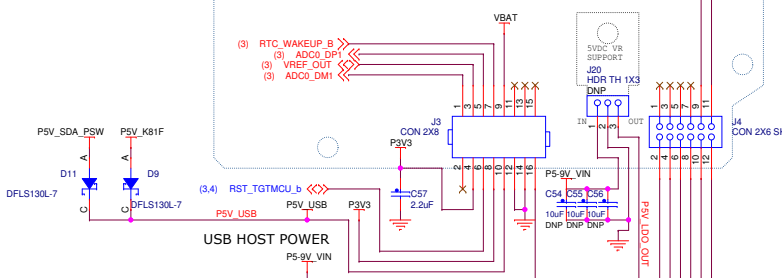
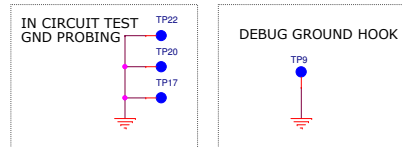




- (3) PTB16 <<> Arduino\_D0\_UART0\_RX
- (3) PTB17 <<> Arduino\_D1\_UART0\_TX
- (3) PTC12 <<> Arduino\_D2
- (3) PTC10 <<> Arduino\_D3
- (3) PTD0 <<> Arduino\_D4
- (3) PTC1 <<> RGB\_BLUE/Arduino\_D5
- (3) PTC11 <<> RGB\_RED/Arduino\_D6
- (3) PTC8 <<> RGB\_GREEN/Arduino\_D7
- (3.5) PTC9 <<>
- (3.5) PTC3 <<> BLUETOOTH\_UART1\_RX/Arduino\_D8
- (3) PTC4 <<> Arduino\_D9
- (3) PTD1 <<> Arduino\_D10\_SPI0\_FCS1
- (3) PTD2 <<> Arduino\_D11\_SPI0\_SCLK
- (3) PTD3 <<> Arduino\_D12\_SPI0\_IN
- (3) PTD4 <<> Arduino\_D13\_SPI0\_SCK
- (3) AREF <<> ACCEL\_I2C\_SDA/Arduino\_D14
- (3.5) PTA1 <<> ACCEL\_I2C\_SCL/Arduino\_D15/TRACK\_SW
- (3.5) PTA2 <<>



- (3.5) PTC0 <<> FXIO\_D12
- (3.5) PTC2 <<> FXIO\_D11
- (3.5) PTC1 <<> FXIO\_D10
- (3.5) PTC20 <<> FXIO\_D9
- (3.5.6) PTC21 <<> FXIO\_D8
- (3) PTA15 <<> Arduino\_I2S\_RXD
- (3) PTA16 <<> Arduino\_I2S\_RX\_FS
- (3) PTC7 <<> Arduino\_SOP\_OUT
- (3) PTA14 <<> Arduino\_I2S\_RX\_BCLK
- (3) PTA17 <<> Arduino\_I2S\_MCLK
- (3) PTA12 <<> Arduino\_I2S\_TXD
- (3) PTA13 <<> Arduino\_I2S\_TX\_FS
- (3) PTA5 <<> Arduino\_I2S\_TX\_BCLK
- (3) DAC0\_OUT <<> Arduino\_DAC0\_OUT
- (3.5.6) PTC20 <<> Arduino\_CMP0\_OUT/FXIO\_D8



- (3.5) PTC0 <<> FXIO\_D0/Arduino\_A0\_ADC0\_SE8
- (3) PTC1 <<> FXIO\_D1/Arduino\_A1\_ADC0\_SE9
- (3) PTC2 <<> Arduino\_A2\_ADC0\_SE13
- (3) PTC11 <<> Arduino\_A3\_ADC0\_SE14
- (3) PTC9 <<> FXIO\_D3/Arduino\_A4\_ADC0\_SE17/I2C0\_SDA
- (3.5) PTC8 <<> FXIO\_D2/Arduino\_A5\_ADC0\_SE17/I2C0\_SCL
- (3.5) PTC8 <<>

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Drawing File: **FRDM-K82F**

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