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Revisions			
Rev	Description	Date	Approved
X1	Original Release	12/14/2020	Jonson Chen
A	Release	03/02/2021	Jonson Chen
AX1	U12 : DNP J7, J10, J13, J16: SHORTING HEADER ON BOTTOM LAYER MC_BEMF A: PTD6/ADC0_SE11 MC_CUR_DCB: PTC2/ADC0_SE15/ACMP0	05/31/2021 IN5	Jonson Chen
B	Release	05/31/2021	Jonson Chen

FREEDOM KE17Z



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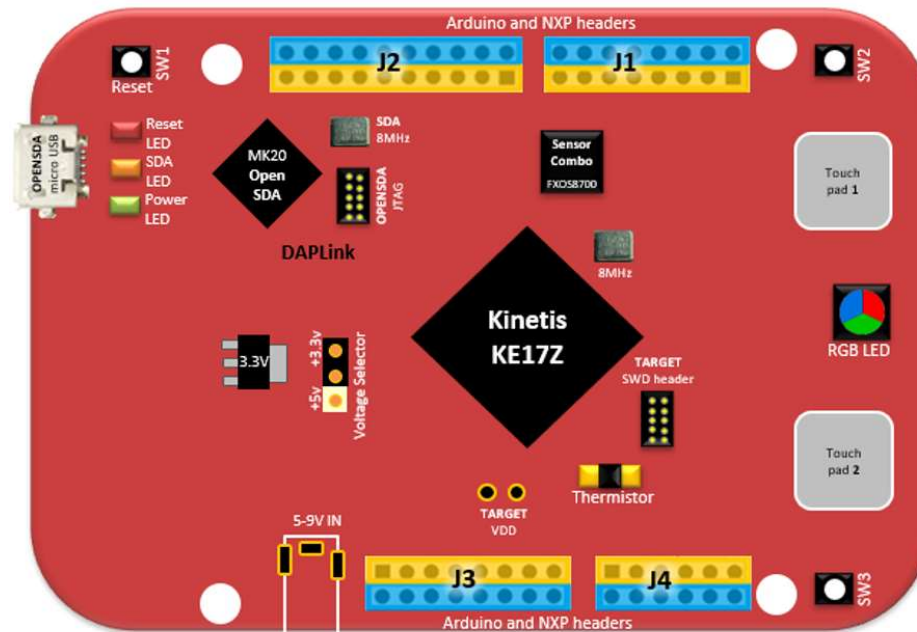
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Drawing Title: **FRDM-KE17Z**

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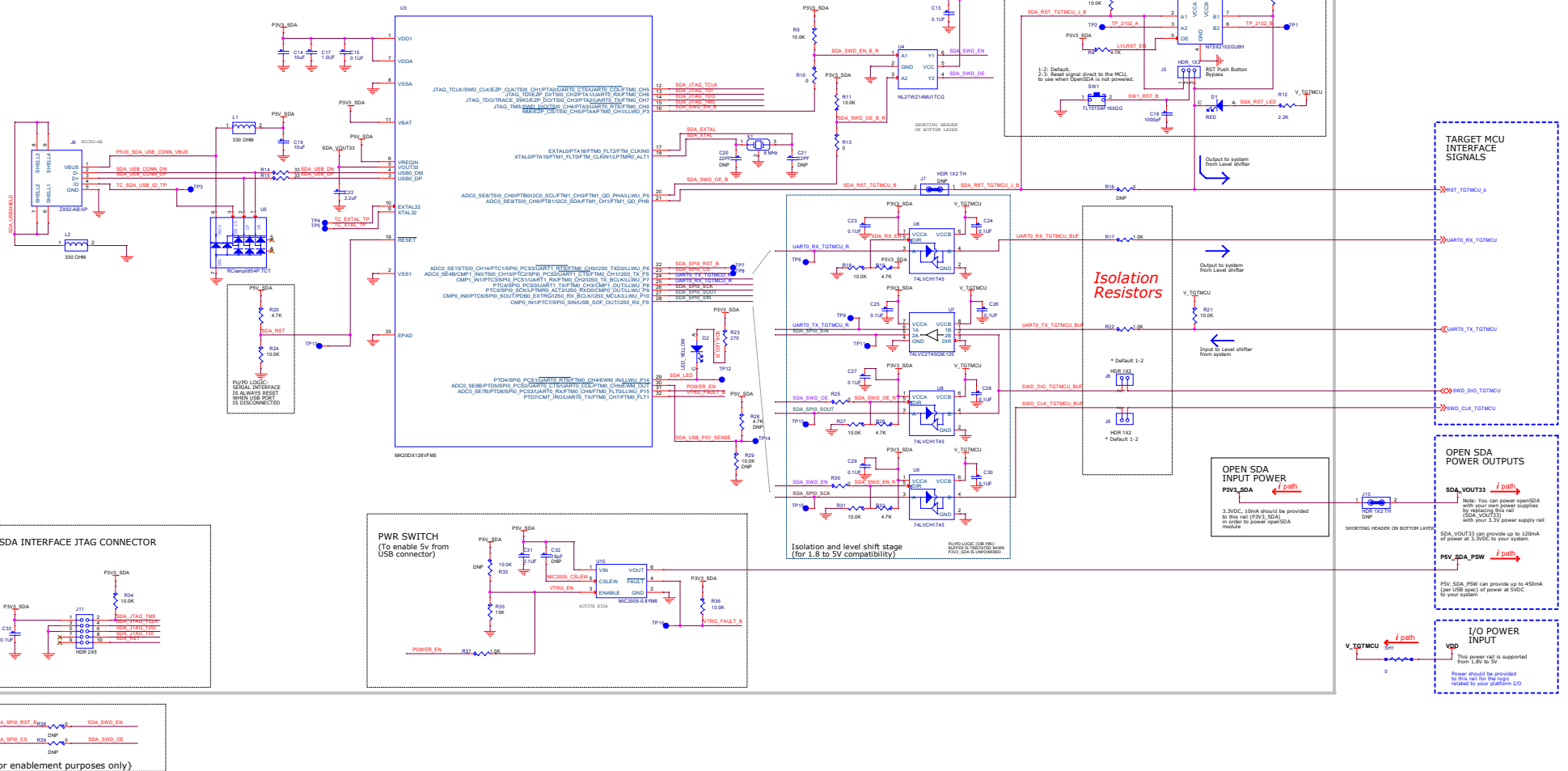
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Rev B

OpenSDA Interface



RGB LED

PTD10/RGB_RED <-> RGB_RED R41 <-> LEDRGB_RED 1 <-> LEDRGB_GREEN 4 <-> RGB_GREEN PTD11/RGB_GREEN

VDD 2 <-> LEDRGB_BLUE 3 <-> RGB_BLUE PTD12/RGB_BLUE

CLV1A-FKB-CK1v1r1d1B87C3C3

THERMISTOR

90C to -20C

Vdiff ~ 0.372V to 2.879V
(Ta=25C 1.650V)

Open this jumper for MCU current consumption test

* Default 1-2

HDR 1x2

J12 VDDA

R40 4.99K

R44 100

R46 100

C35 0.1UF

C36 2200PF

C38 2200PF

RT1 10K

R47 4.99K

THER_A

THER_B

PTC1/THERM_0 THERM_0

PTC0/THERM_1 THERM_1

External Crystal

The diagram illustrates the external crystal circuit for the PT6B/PT8B module. It features a crystal Y1 (8MHz) connected to pins 4 and 2. Pin 4 is connected to Crystal18M_XTAL and Pin 2 is connected to Crystal18M_EXTAL. Both XTAL and EXTAL pins are also connected to PTB6/Crystal8M_XTAL and PTB7/Crystal8M_EXTAL respectively. Two 22pF capacitors, C34 and C37, are connected from pins 4 and 2 to ground. A 1MΩ resistor, R45, is connected from the EXTAL line to ground.

TSI TOUCH PAD

The diagram illustrates the electrical connection for the TSI Touch Pad. Two 5mmx5mm electrodes (E1, E2) are connected to a TSI Electrode driver circuit. The driver circuit includes resistors R45 and R46, and capacitors C39 and C40. The output of the driver is connected to the PTC5/TouchPad_0 and PTC15/TouchPad_1 inputs.

SWD CONNECTOR

Jumper is shorted by a cut-trace on bottom layer. Cutting the trace will effectively isolate the on-board MCU from the OpenSDA debug interface.

The diagram illustrates the SWD connector setup. It shows a cut-trace jumper on the bottom layer of the PCB, which isolates the on-board MCU from the OpenSDA debug interface. The connector pins are labeled 1 through 10, and the header is labeled HDR 2X5. The VDD_KE17Z is connected to pin 1. The SWD_DIO_TGTMCU signal is connected to pin 2. The RST_TGTMCU_b signal is connected to pin 9. The SWD_CLK_TGTMCU signal is connected to pin 10. The HDR 2X5 header is connected to the SWD connector pins.

**FXOS8700CQ SENSOR
ACCELEROMETER + MAGNETOMETER**

The left diagram illustrates the full sensor assembly. The FXOS8700CQ is connected to a P3V3 supply. The I2C interface is configured with SCL (pin 4) and SDA (pin 6) connected to the P3V3 supply through 4.7k pull-up resistors (R56, R57). The RST pin (pin 16) is connected to the P3V3 supply through a 4.7k resistor (R62). The sensor is also connected to a GND pin (pin 12) and a VDD pin (pin 1). The right diagram shows the voltage level-shifting circuit for the INT and RST pins. The INT pin (pin 11) is connected to the P3V3 supply through a 4.7k resistor (R52). The RST pin (pin 16) is connected to the P3V3 supply through a 4.7k resistor (R58). The sensor is also connected to a GND pin (pin 12) and a VDD pin (pin 1). The voltage level-shifting circuit uses NTSX2102UG8H transistors to interface with 5V and 3.3V logic levels.

Voltage level-shift to be compatible with 5V and 3.3V

The right diagram shows the voltage level-shifting circuit for the INT and RST pins. The INT pin (pin 11) is connected to the P3V3 supply through a 4.7k resistor (R52). The RST pin (pin 16) is connected to the P3V3 supply through a 4.7k resistor (R58). The sensor is also connected to a GND pin (pin 12) and a VDD pin (pin 1). The voltage level-shifting circuit uses NTSX2102UG8H transistors to interface with 5V and 3.3V logic levels.

Voltage level-shift to be compatible with 5V and 3.3V

