MIMXRT1020-EVK

Table of Content

Page 1	COVER
Page 2	BLOCK DIAGRAM
Page 3	MAIN POWER
Page 4	POWER DOMAIN
Page 5	MIMXRT1021DAG5A
Page 6	USB
Page 7	CAN
Page 8	AUDIO
Page 9	ETHERNET
Page 10	SD/FLASH
Page 11	ARDUINO/JTAG
Page 12	SDRAM
Page 13	FREELINK
Page 14	BOOT
Page 15	MISC
Page 16	
Page 17	
Page 18	
Page 19	
Page 20	
Page 21	
Page 22	
Page 23	
Page 24	
Page 25	
Page 26	
Page 26	
Page 27	
Page 28	

Revision History

Rev. Code	Date	By	Description
A1	2017-12-01	Shawn Shi	A1 Version for pilot board production
A2	2018-1-30	Shawn Shi	SD_PWEN change to GPIO_SD_B1_04 pin,DNP C141, add R314,R315 to support SPI NAND boot, Delete R48, add J37
A3	2018-4-24	Shawn Shi	Update BOM only, Change R22 from 1K to 0 ohm, DNP C6, DNP U26
B1	2018-10-17	Shawn Shi	Change K20 based OPENSDA to LPC4322 based FREELINK, change load capacitor value of 32.768 KHz OSC, Route SWO trace signal to JTAG

1. Unless Otherwise Specified:

   All resistors are in ohms, 1/16 Watt,0402
   All capacitors are in uF,0402
   All voltages are DC
   All polarized capacitors are aluminum electrolytic

2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

3. Device type number is for reference only. The number varies with the manufacturer.

4. Special signal usage:
   _B Denotes - Active-Low Signal
   <> or [] Denotes - Vectored Signals

5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

ICAP Classification: CP: __ IUO: X PUBI: __

Drawing Title: MIMXRT1020-EVK

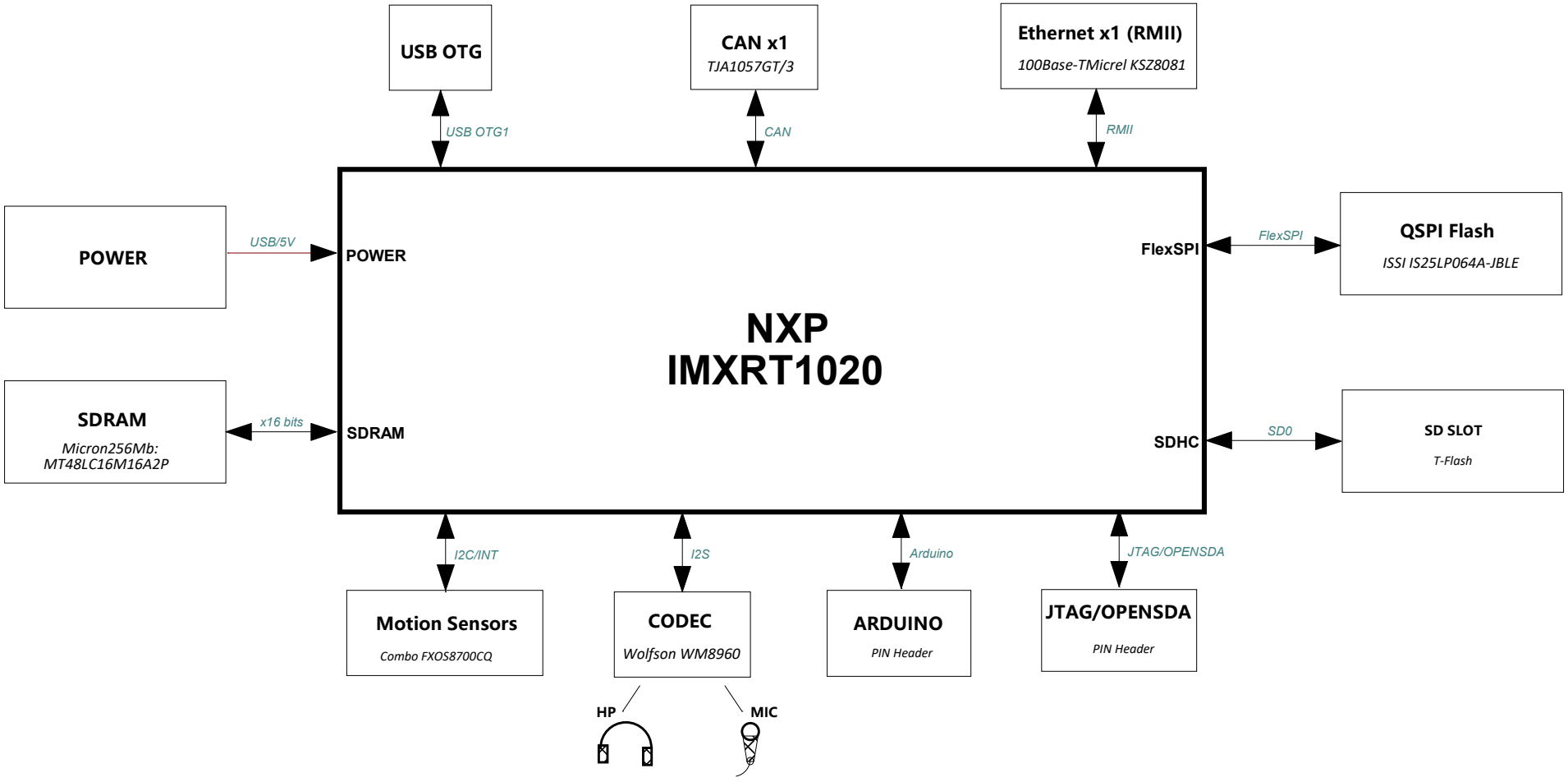
Page Title: COVER

Size	Document Number	Rev
C	SCH-29856, PDF: SPF-29856	B1

Date: Monday, October 22, 2018 Sheet 1 of 15

Blcok Diagram Rev B1

 # MIMXRT1020-EVK



ICAP Classification: CP: ___ IUO: X PUBI: ___

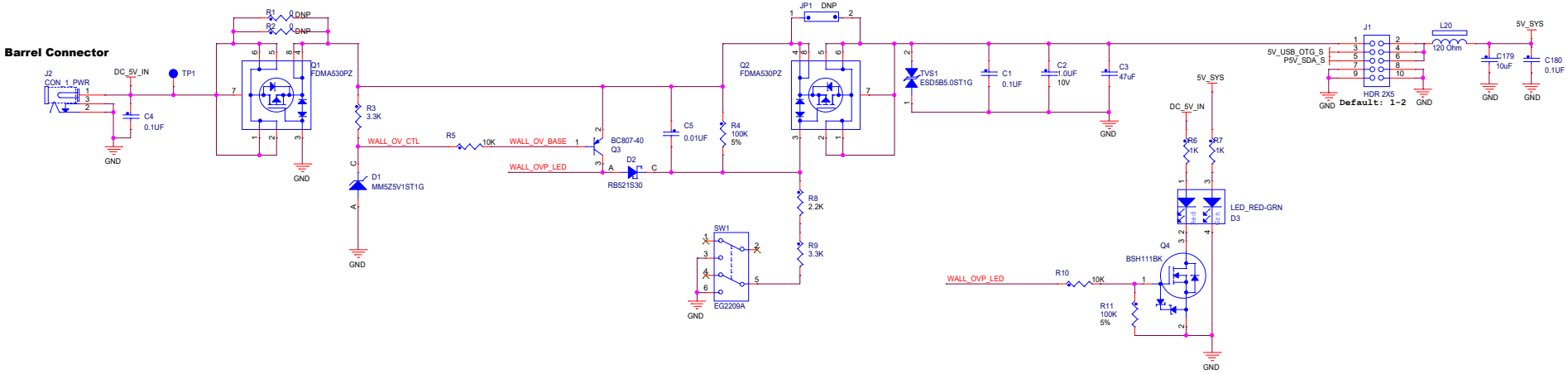
Drawing Title: MIMXRT1020-EVK

Page Title: BLOCK DIAGRAM

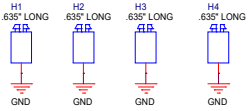
Size	Document Number	Rev
C	SCH-29856, PDF: SPF-29856	B1

Date: Monday, October 22, 2018 Sheet 2 of 15

Main Power



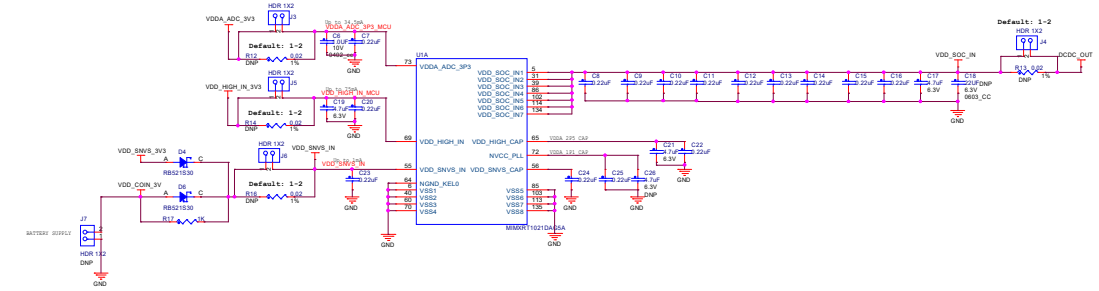
Board Mounting Holes

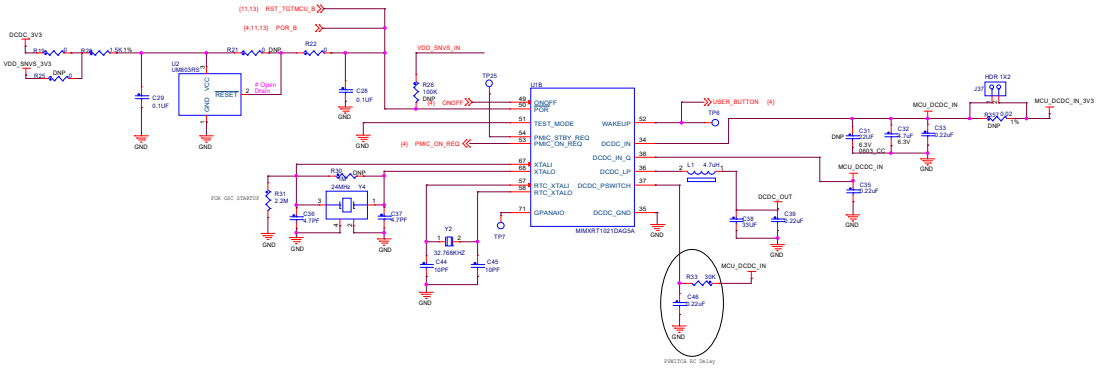


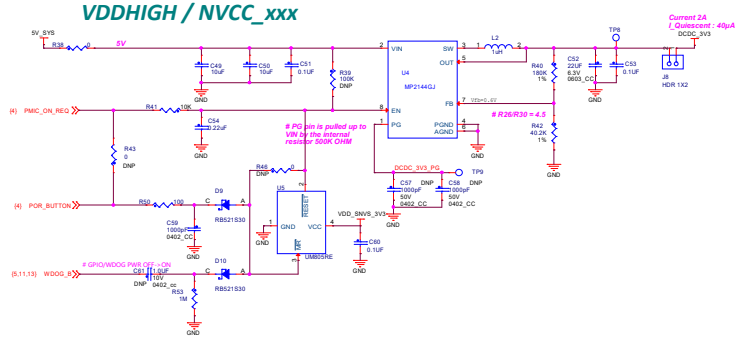
Ground TPs

Layout Note: Place Ground TPs
to assist signal measurement.

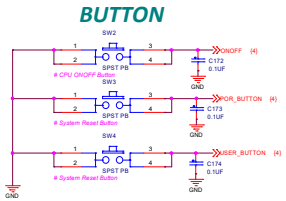
ICAP Classification:	CP: ___	IUO: X	PUBI: ___
Drawing Title:	MIMXRT1020-EVK		
Page Title:	MAIN POWER		
Size: C	Document Number: SCH-29856, PDF: SPF-29856		Rev: B1
Date: Monday, October 22, 2018	Sheet 3 of 15		



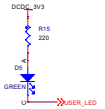




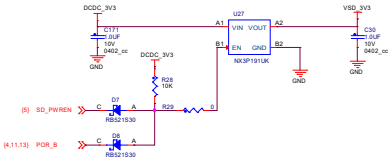
BUTTON



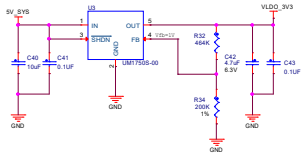
USER LED



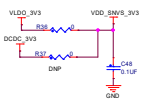
SD CARD POWER SWITCH



3V3 LDO for SNVS

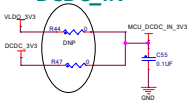


SNVS

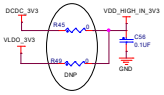


ADC

DCDC_IN

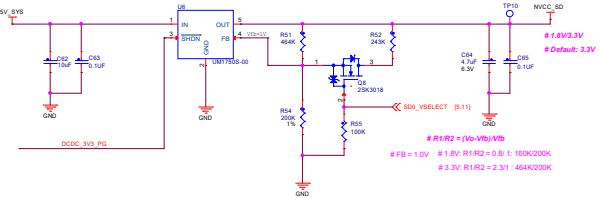


VDD_HIGH_IN

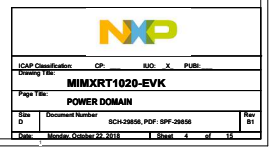


NVCC_SD <SD3.0>

MAX 350 mA



VDDHIGH / NVCC_xxx



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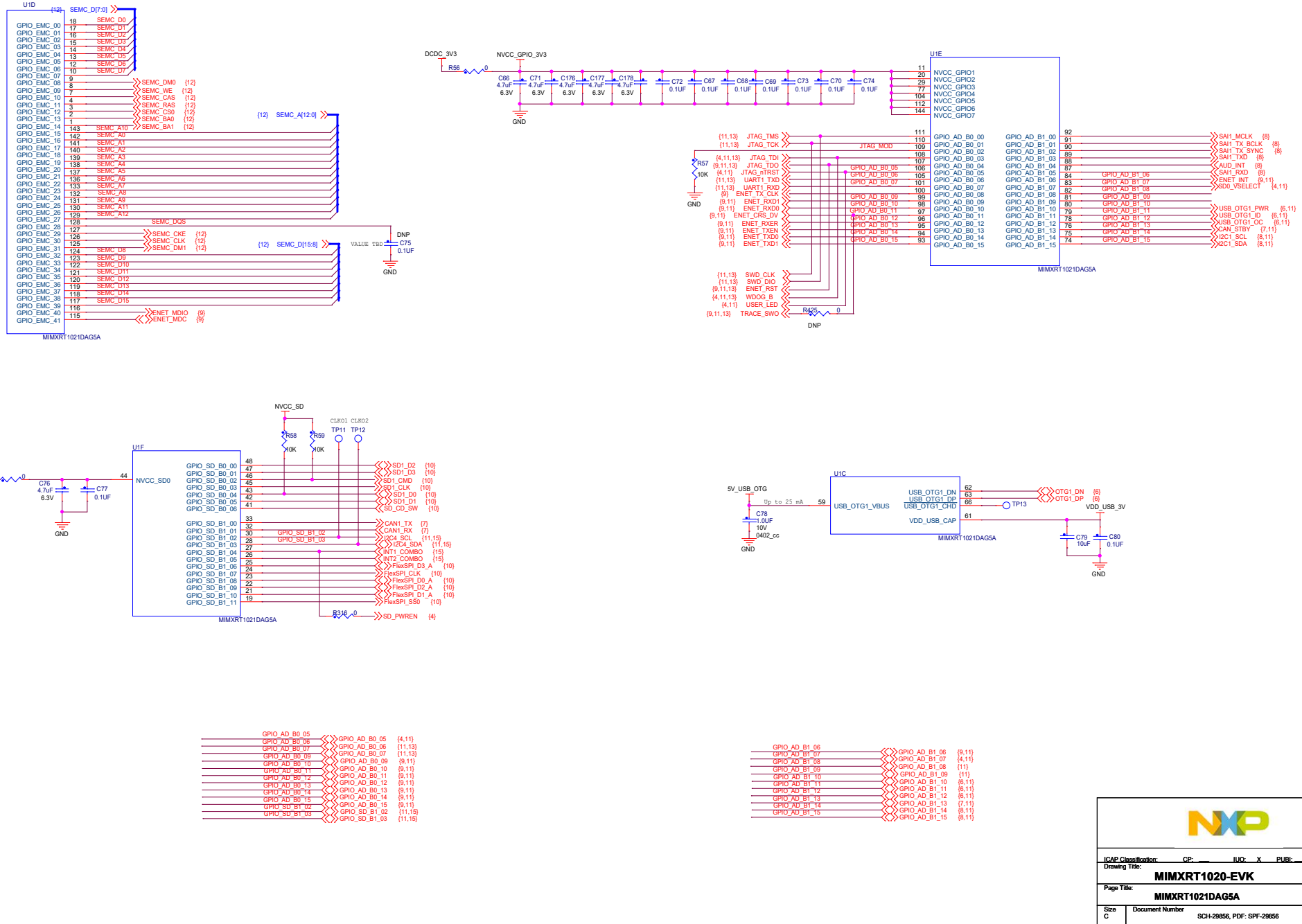
Drawing Title:	MIMXRT1020-EVK
Page Title:	POWER DOMAIN
Size: D	Document Number: SCH-29856, PDF: SPF-29856 Rev: B1
Date: Monday, October 22, 2018	Sheet 4 of 15

MCU PINOUT



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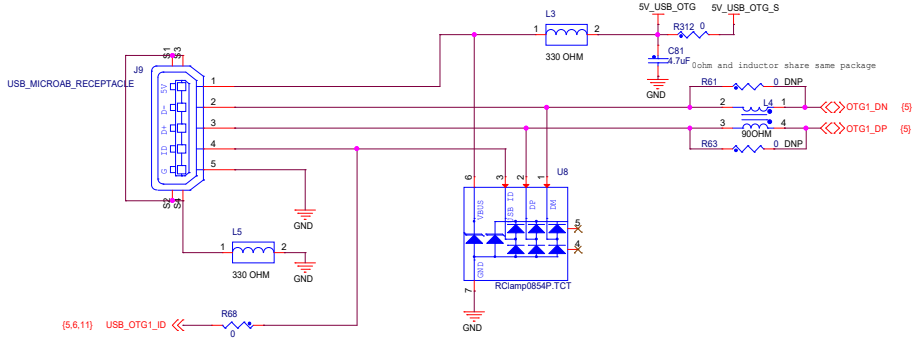
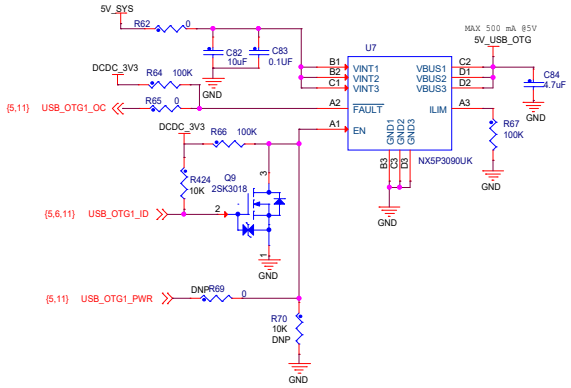
Page Title:	MIMXRT1021DAG5A		
Size: C	Document Number: SCH-29856, PDF: SPF-29856		Rev: B1
Date: Monday, October 22, 2018	Sheet 5 of 15		

USB OTG



USB POWER



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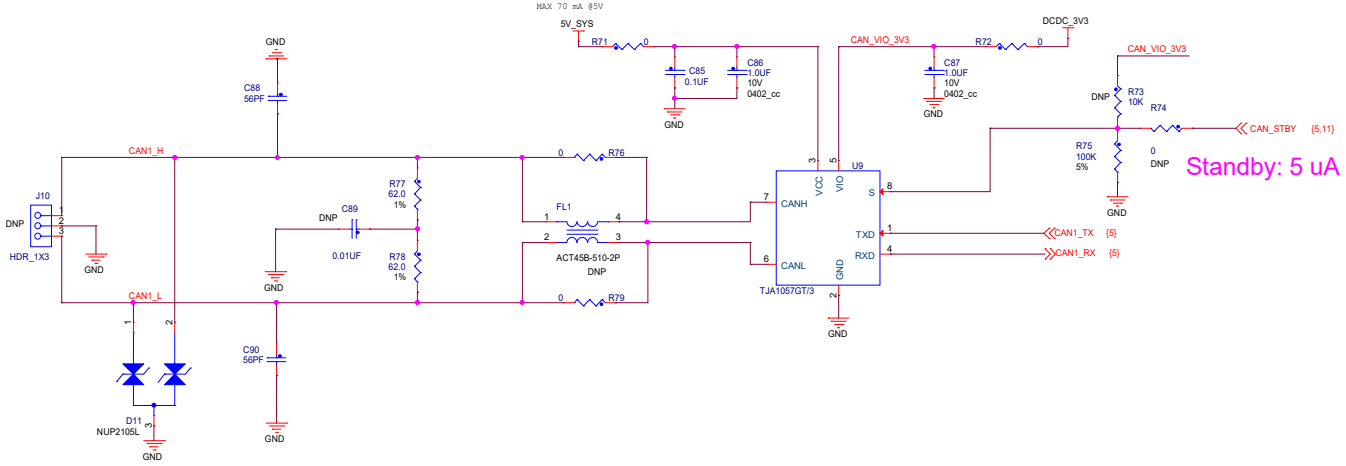
Drawing Title: **MIMXRT1020-EVK**

Page Title: **USB**

Size	Document Number	Rev
C	SCH-29856, PDF: SPF-29856	B1

Date: Monday, October 22, 2018 | Sheet 6 of 15

CAN BUS



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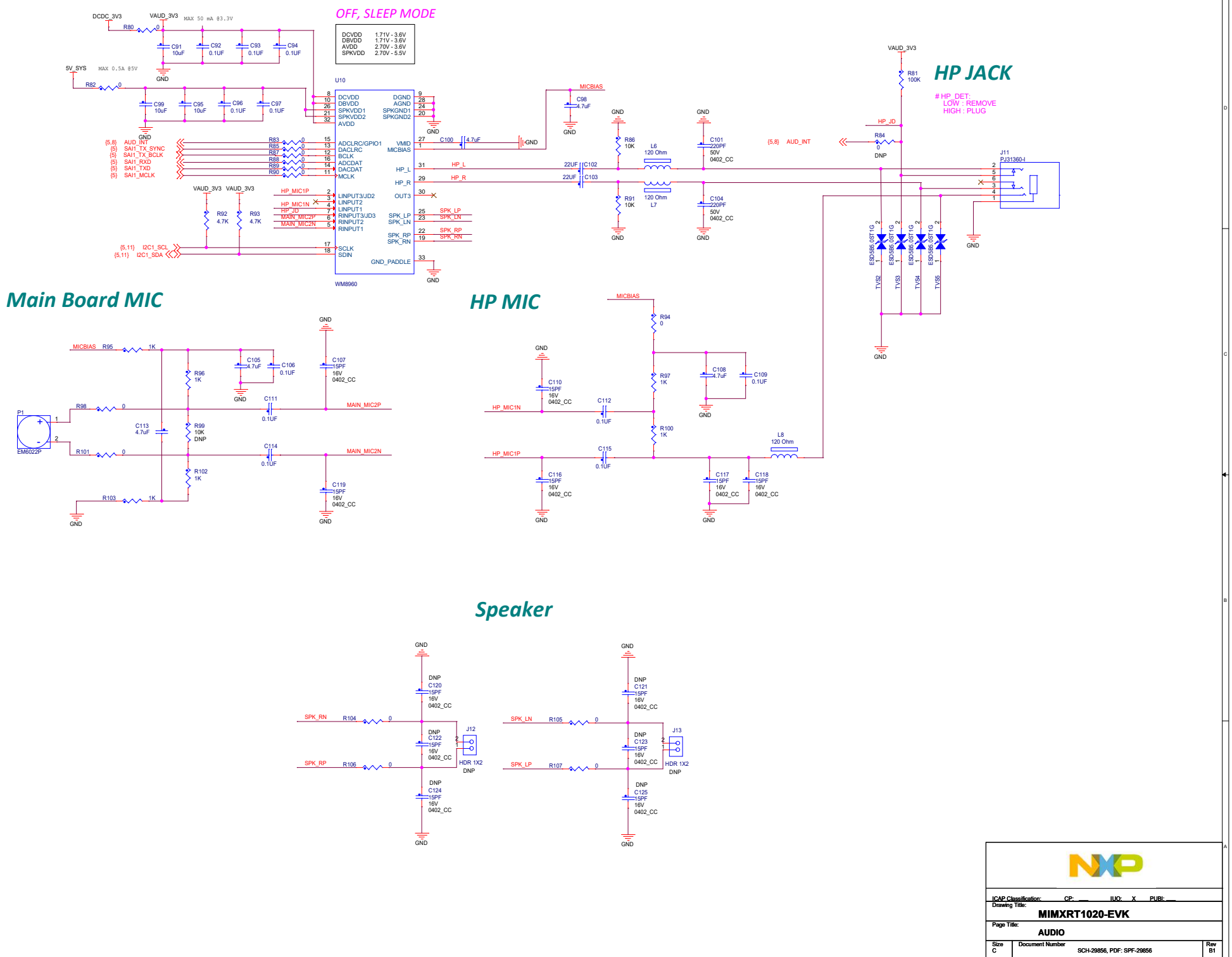
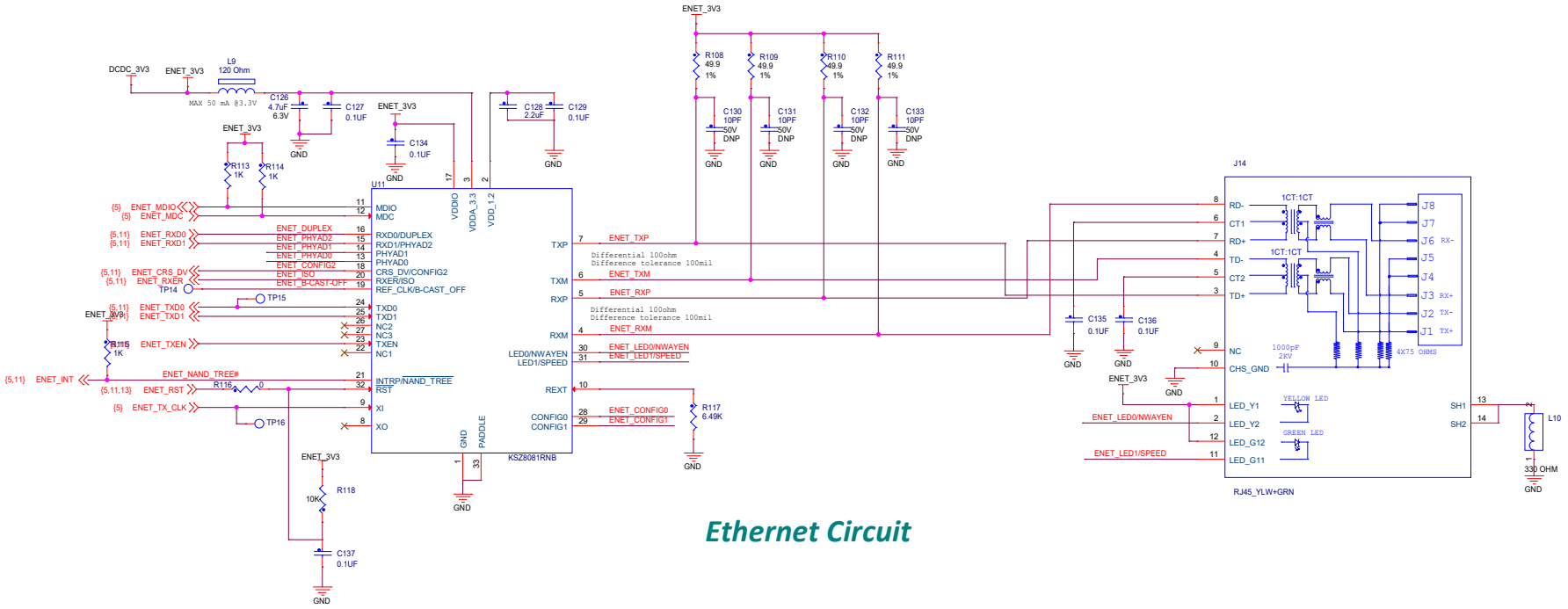
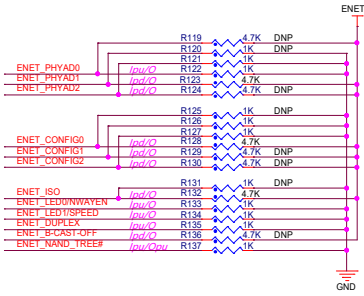
Page Title:	CAN	
Size C	Document Number SCH-29856, PDF: SPF-29856	Rev B1
Date: Monday, October 22, 2018	Sheet 7 of 15	


OFF, SLEEP MODE
DCVDD 1.71V - 3.6V
DBVDD 1.71V - 3.6V
AVDD 2.70V - 3.6V
SPKVDD 2.70V - 5.5V
U10
WM8960
HP JACK
HP_DET:
LOW : REMOVE
HIGH : PLUG
Main Board MIC
HP MIC
Speaker
ICAP Classification: CP: ___ IUO: X PUBI: ___
Drawing Title: MIMXRT1020-EVK
Page Title: AUDIO
Size C
Document Number SCH-29856, PDF: SPF-29856
Rev B1
Date: Monday, October 22, 2018
Sheet 8 of 15



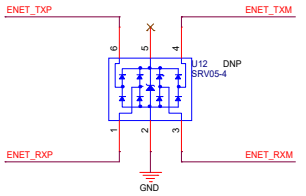
Ethernet Circuit



# CFG	Description
PHYAD[2:0]	PHY ADDR 00-XXX (00010 DEFAULT)
CONFIG[2:0]	IF MODE 001 RMII 101 RMII Back-to-Back xxx Reserved-not used
ISO	ISOLATE mode Pull-up = Enable Pull-down (default) = Disable
SPEED	SPEED mode Pull-up (default) = 100Mbps Pull-down = 10Mbps

# CFG	Description
DUPLEX	DUPLEX mode Pull-up (default) = Half Duplex Pull-down = Full Duplex
NWAYEN	Nway Auto-Negotiation Pull-up (default) = Enable Pull-down = Disable
B_CAST_OFF	Broadcast Off - for PHY Address 0 Pull-up = PHY Address 0 set as unique PHY addr Pull-down (default) = PHY Address 0 set as broadcast PHY addr
NAND_TREE#	NAND Tree Mode Pull-up (default) = Disable Pull-down = Enable

ESD PROTECTION



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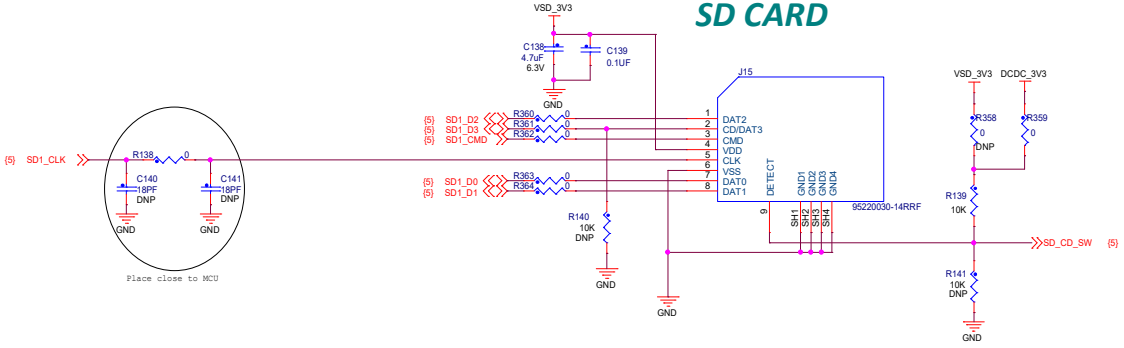
Drawing Title: **MIMXRT1020-EVK**

Page Title: **ETHERNET**

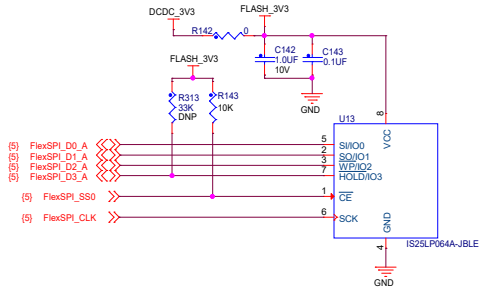
Size	Document Number	Rev
C	SCH-29856, PDF: SPF-29856	B1

Date: Monday, October 22, 2018 Sheet 9 of 15

SD CARD

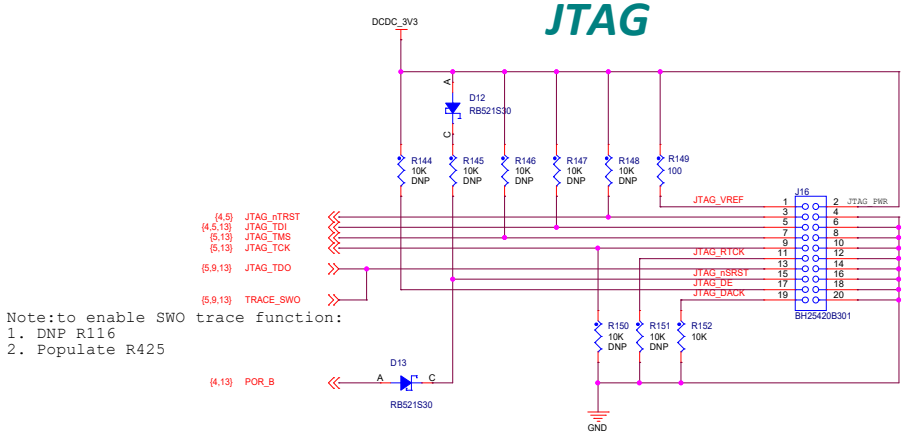


3v3 QSPI Flash



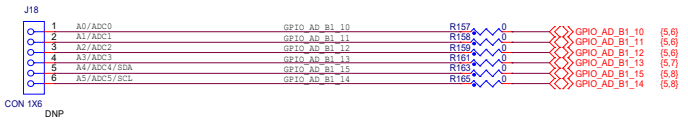
ICAP Classification:	CP: ___ IUO: X PUBI: ___	
Drawing Title:	MIMXRT1020-EVK	
Page Title:	SD/FLASH	
Size C	Document Number SCH-29856, PDF: SPF-29856	Rev B1
Date: Monday, October 22, 2018	Sheet 10 of 15	

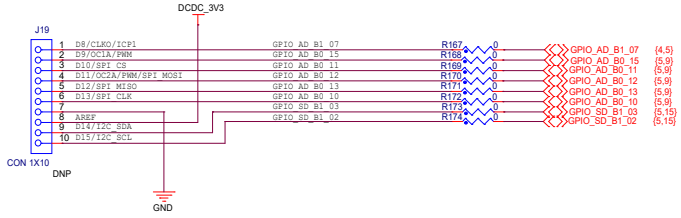
JTAG

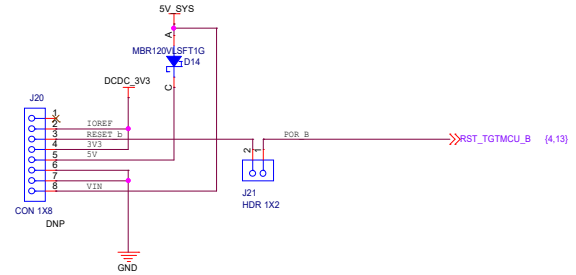


Note:to enable SWO trace function:
1. DNP R116
2. Populate R425

Arduino Interface







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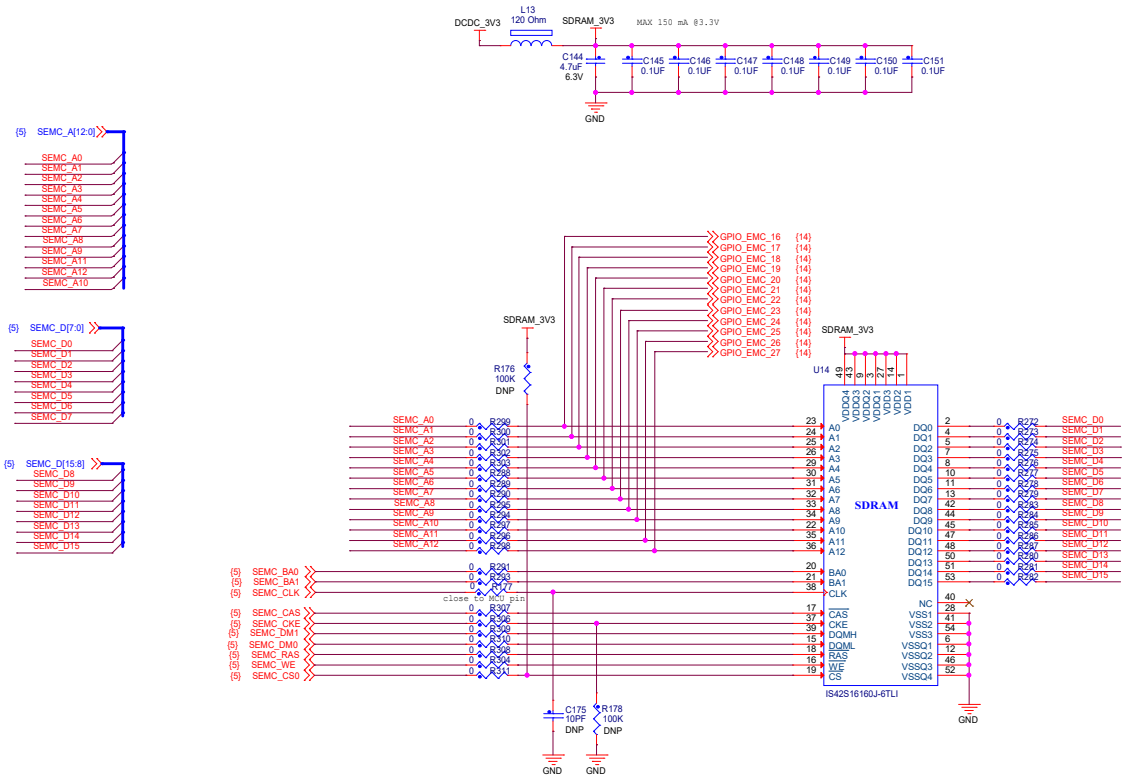
Drawing Title: **MIMXRT1020-EVK**

Page Title: **DEBUG/JTAG**

Size	Document Number	Rev
C	SCH-29856, PDF: SPF-29856	B1

Date: Monday, October 22, 2018 Sheet 11 of 15

SDRAM



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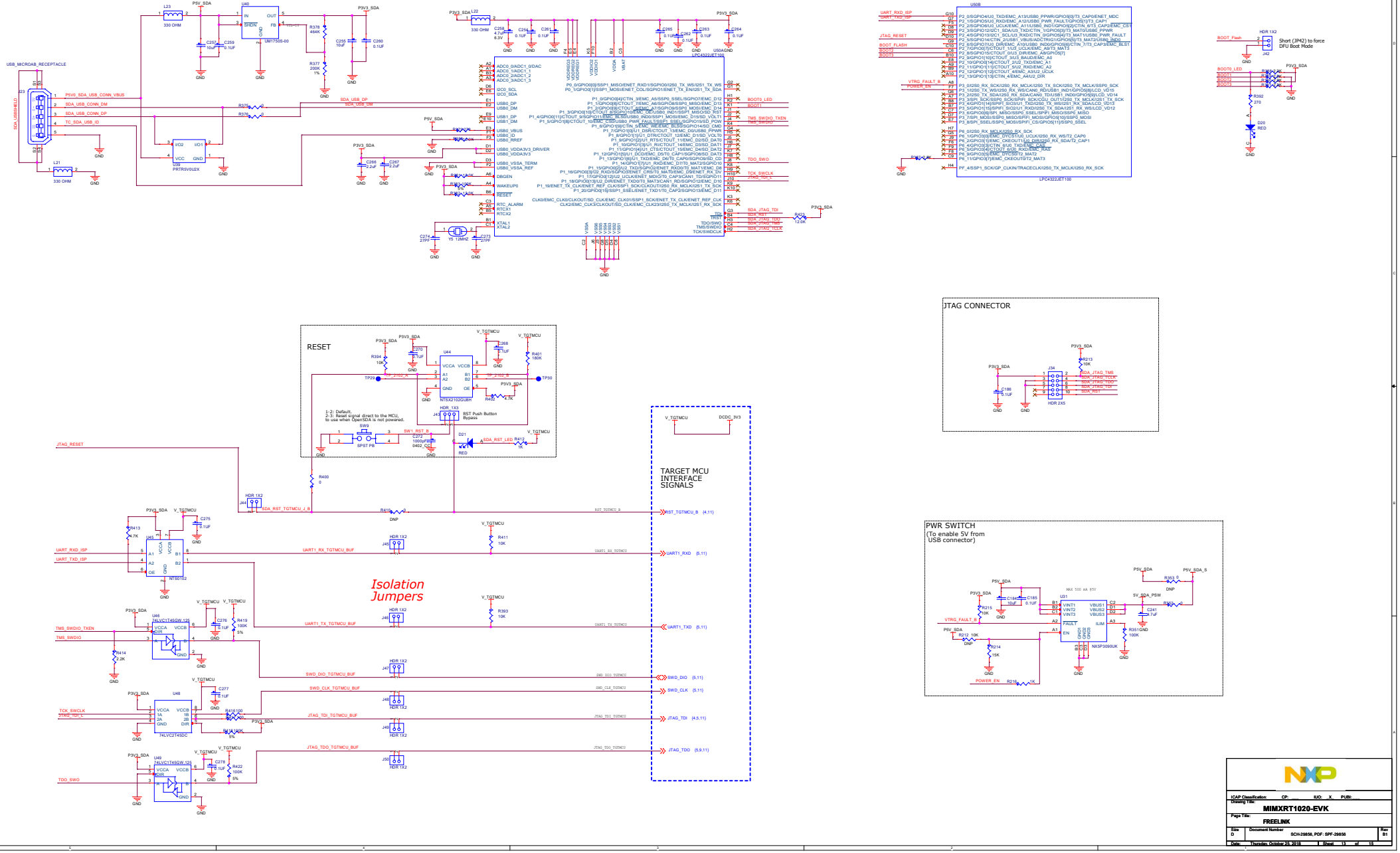
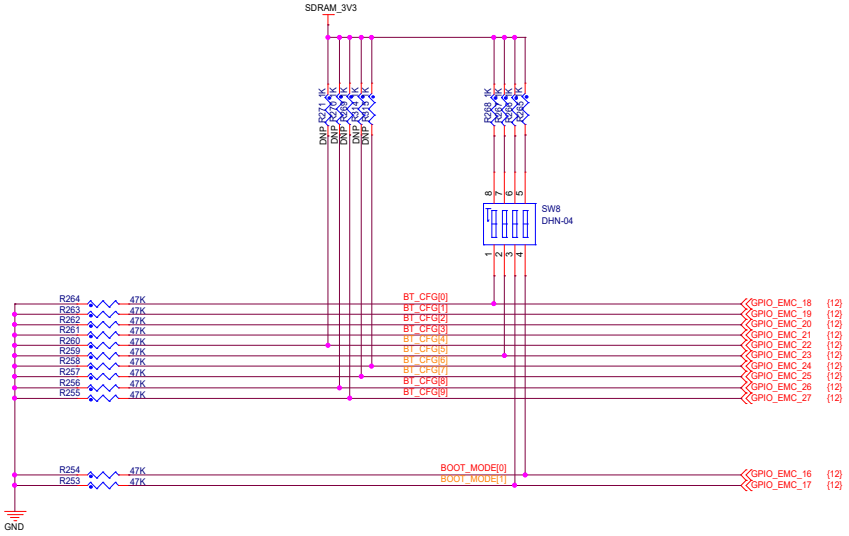
Drawing Title: MIMXRT1020-EVK
Page Title: SDRAM
Size C | Document Number SCH-29856, PDF: SPF-29856 | Rev B1
Date: Monday, October 22, 2018 | Sheet 12 of 15

Freelink Interface



FUSE MAP

	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
TYPE	**BOOT_CFG[9]**	**BOOT_CFG[8]**	**BOOT_CFG[7]**	**BOOT_CFG[6]**	**BOOT_CFG[5]**	**BOOT_CFG[4]**	**BOOT_CFG[3]**	**BOOT_CFG[2]**	**BOOT_CFG[1]**	**BOOT_CFG[0]**
FlexSPI1 - Serial NOR	*HOLD TIME: 00 - 500us 01 - 1ms 10 - 3ms 11 - 10ms*		*0*	*0*	*0*	*0*	*FLASH_TYPE: 000-Device supports 3B read by default 001-Device supports 4B read by default 010-HyperFlash 1V8 011-HyperFlash 3V3 100-MXIC Octal DDR 101 - Micron Octal DDR 111 - QSPI device supports 3B read by default (on secondary pinmux option)*			*EncryptedXIP 0 - Disabled 1- Enabled*
SD	*SD/SDXC Speed: 00 - Normal/SDR12 01 - High/SDR25 10 - SDR50 11 - SDR104*		*0*	*0*	*1*	*Bus Width: 0 - 1-bit 1 - 4-bit*	*SD Power Cycle Enable: '0' - No power cycle '1' - Enabled via USDHC_RST pad*	*SD Loopback Clock Source Sel: (for SDR50 and SDR104 only) '0' - through SD pad '1' - direct*	*Port Select: 0 - eSDHC1 1 - eSDHC2*	*Fast Boot: 0 - Regular 1 - Fast Boot*
FlexSPI1 - Serial NAND	*"CS_INTERVAL: CS de-asserted interval between two commands 0 – 100ns 1 – 200ns 2 – 400ns 3 – 50ns"*		*1*	*1*	*BOOT_SEARCH_COUNT: 0 - 1 1 - 2*	*COL_ADDRESS_WIDTH: 0 – 12bits 1 – 13bits*	*SPI NAND HOLD TIME 00 - 0 us 01 - 500us 10 - 1ms 11 - 3ms*		*BOOT_SEARCH_STRIDE: Search Stride for FCB and DBBT (in terms of pages) 0 - 64 1 - 128 2 - 256 3 - 32*	



ICAP Classification: CP: ___ IUO: X PUBI: ___

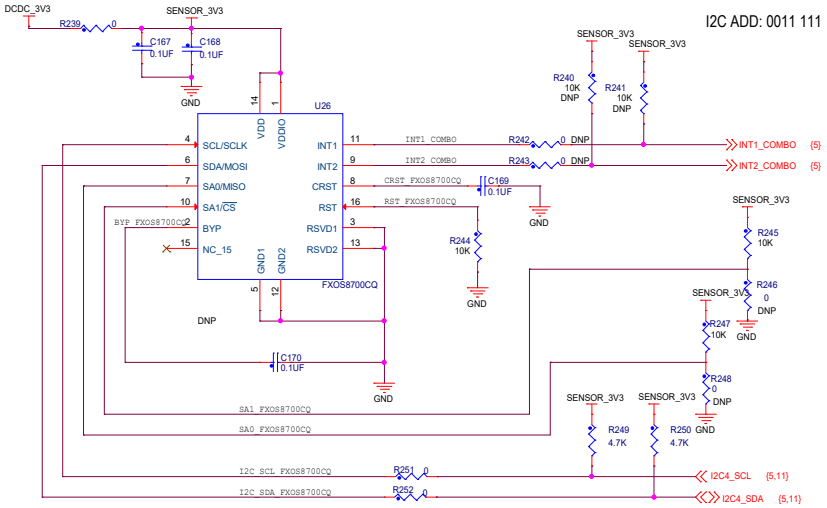
Drawing Title: **MIMXRT1020-EVK**

Page Title: **BOOT**

Size	Document Number	Rev
C	SCH-29856, PDF: SPF-29856	B1

Date: Monday, October 22, 2018 Sheet 14 of 15

COMBO SENSOR



FXOS8700CQ COMBO SENSOR

ICAP Classification: CP: ___ IUO: X PUBI: ___		
Drawing Title: MIMXRT1020-EVK		
Page Title: MISC		
Size C	Document Number SCH-29856, PDF: SPF-29856	Rev B1
Date: Monday, October 22, 2018	Sheet 15 of 15	