

i.MX8M-CM

Variant: Full

21.09.2021

SVN Revision: 1482 [Locally Modified]

I2C USAGE AND ADDRESS TABLE

SEQ One step 2mS	PWR	MIN	TYP	MAX	Curr(mA)
1	NVCC_SNVS	3	3.3	3.6	2
2	VDD_SNVS	0.81	0.9	0.99	2
RTC_RESET_B					
3	VDD_SOC/VDDA_OP9	0.81	0.9	0.99	3600
4	VDD_GPU	0.81	0.9/1.0	1.1	2000
4	VDD_VPU	0.81	0.9/1.0	1.1	1000
4	VDD_DRAM	0.81	1.0	1.05	2500
4	VDD_ARM	0.81	0.9/1.0	1.1	4000
5	VDDA_1P8_xxx	1.62	1.8	1.89	250
5	VDDA_DRAM	1.71	1.8	1.89	50
6	NVCC_DRAM		1.1/1.2/1.35		2170
6	NVCC_3V3	3	3.3	3.6	100
6	NVCC_1V8	1.65	1.8	1.95	450
7	3.3V PHY	3.069	3.3	3.63	100
7	1.8V PHY	1.674	1.8	1.98	50
7	0.9V PHY	0.837	0.9	0.99	250
POR_B					

DESIGN CONSIDERATIONS

DESIGN NOTE:
Example text for informational
design notes.

DESIGN NOTE:
Example text for critical
design notes.

LAYOUT NOTE:
Example text for critical
layout guidelines.

NAME	PERIPHERAL	ADDRESS
I2C1	i.MX8-MB: USB3.0 Power Switch	(0x050<<1)+RW
	i.MX8-MB: RTC clock	(0x051<<1)+RW
	i.MX8-MB: miniPCIEe Ref. Clock	(0x6A<<1)+RW
	i.MX8-MB: Camera on CSI1	(0x3C<<1)+RW
I2C2 only on CM	i.MX8-CM: PMIC control	(0x4B<<1)+RW
	i.MX8-CM: WiFi Ref. Clock	(0x68<<1)+RW
	i.MX8-CM: EEPROM	(0x50<<1)+RW
	i.MX8-CM: Audio Codec	(0x1A<<1)+RW
	i.MX8-CM: LVDS	(0x2C<<1)+RW
I2C3	i.MX8-MB: mPCIE connector	
	i.MX8-MB: Camera on CSI2	(0x3C<<1)+RW

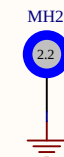
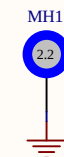
PCB1

PCB

Printed circuits board

PCB_iMX8M-CM

Mounting Holes



Mounting holes 5mm pad 2.2mm drill
BOARD MOUNTING HOLES - ONE IN EACH CORNER

Fiducials



FID1



FID2



FID3



FID4



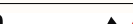
FID5



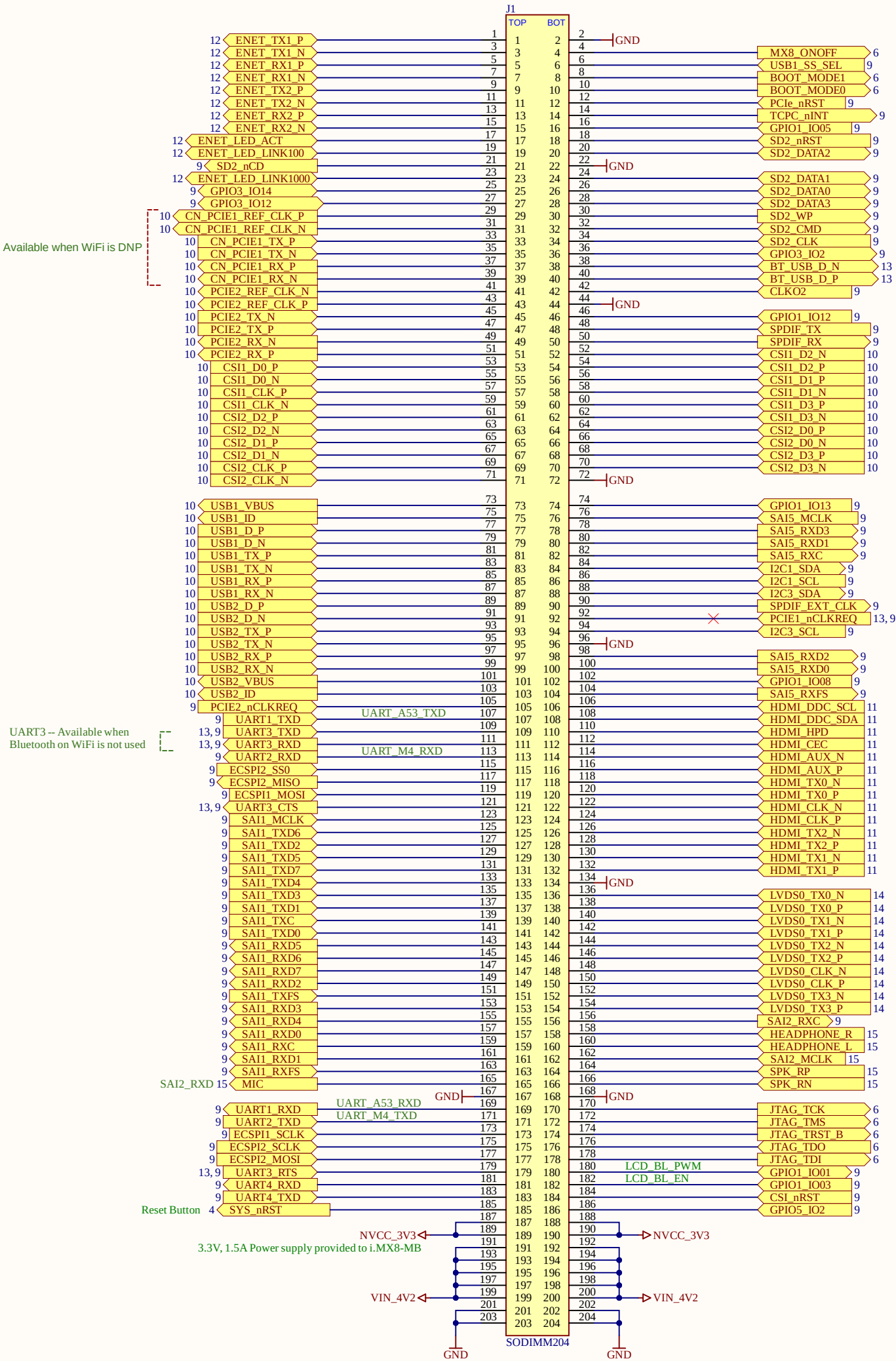
FID6

FIDICIALS 3x TOP

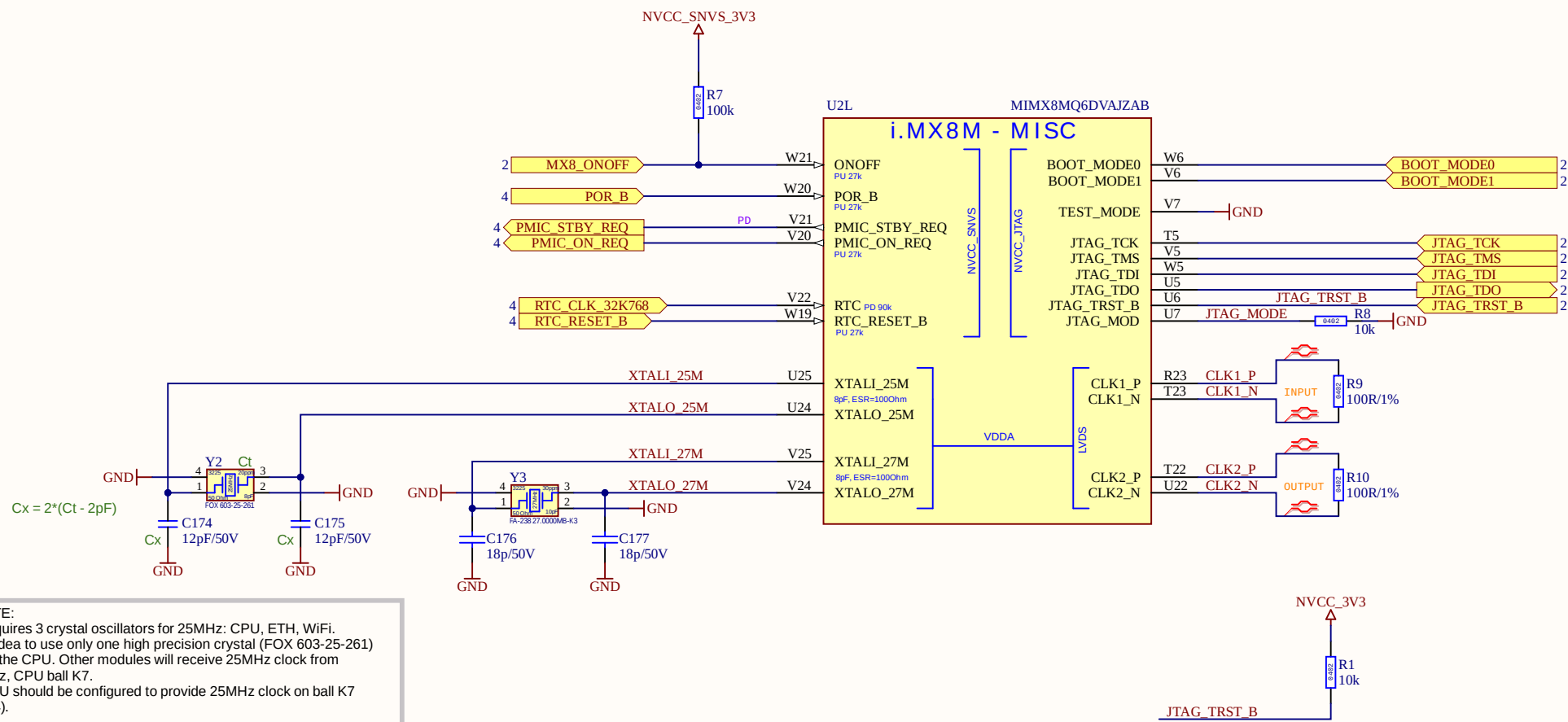
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Title COVER PAGE			Ronetix GmbH Hirschstettner Str. 19/Z110 1220 Vienna Austria	
Size: A3	Number: 1	Revision: 2.0		
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File: 01 Title Page.SchDoc				

SODIMM204

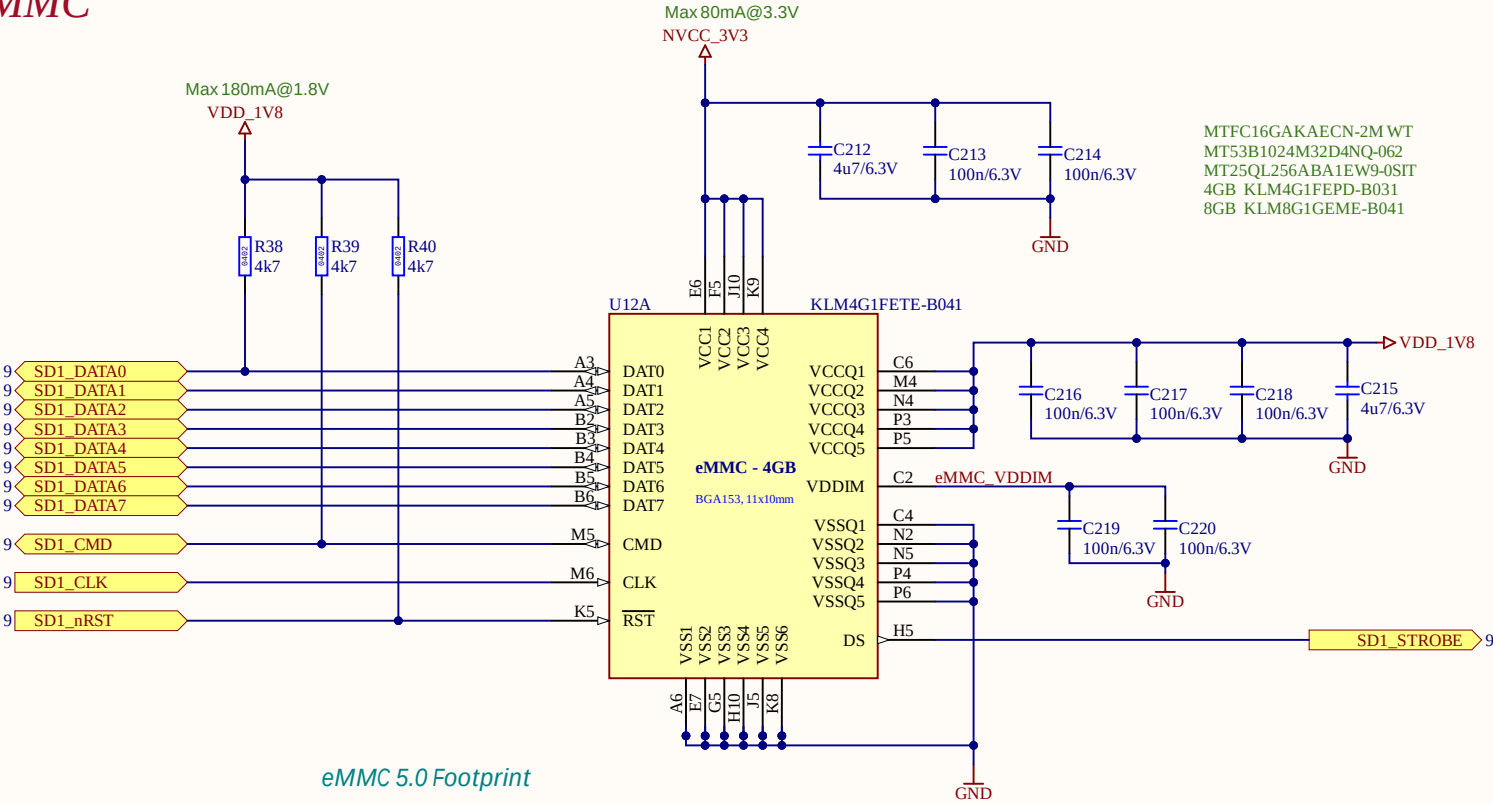


CPU Clocks, RESET

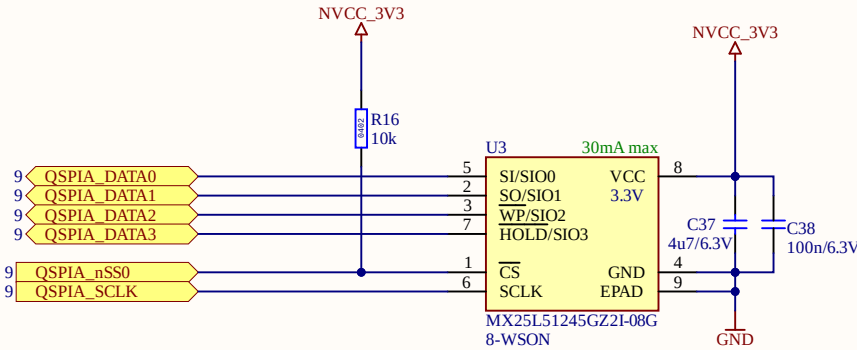


eMMC, QSPI, I2C EEPROM

eMMC



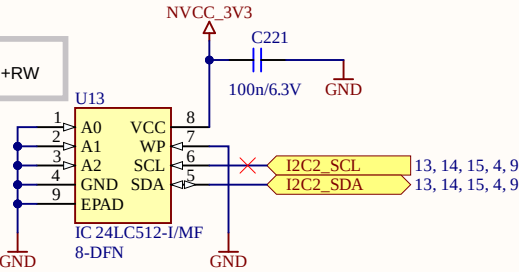
QSPI NOR FLASH - 512 MBIT



I2C EEPROM - 512 KBIT

Board ID

DESIGN NOTE:
I2C address: (0x50<<1)+RW



Title **eMMC, QSPI, I2C EEPROM**

Size: A3

Number: 8

Revision: 2.0

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Time: 15:44:28

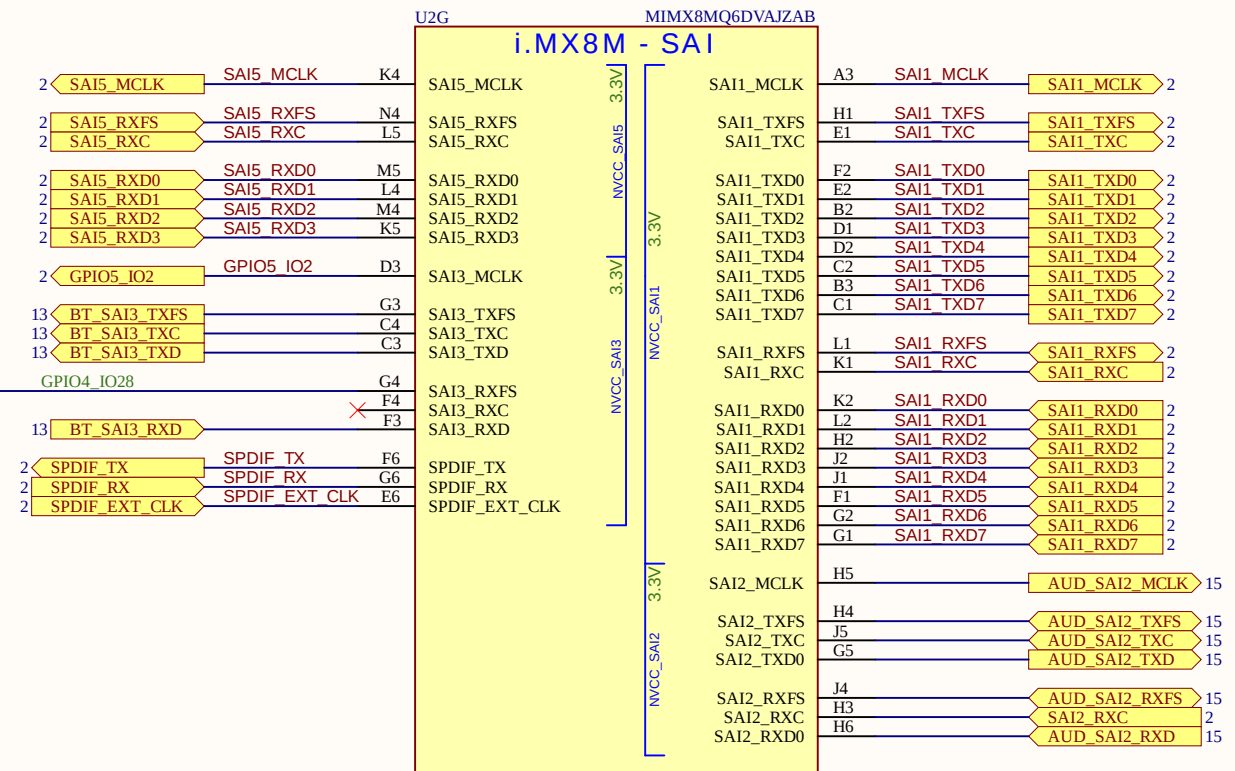
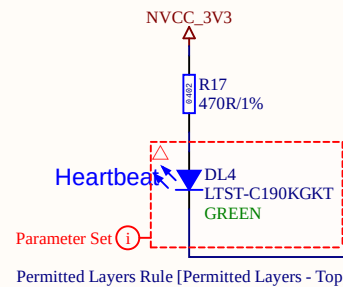
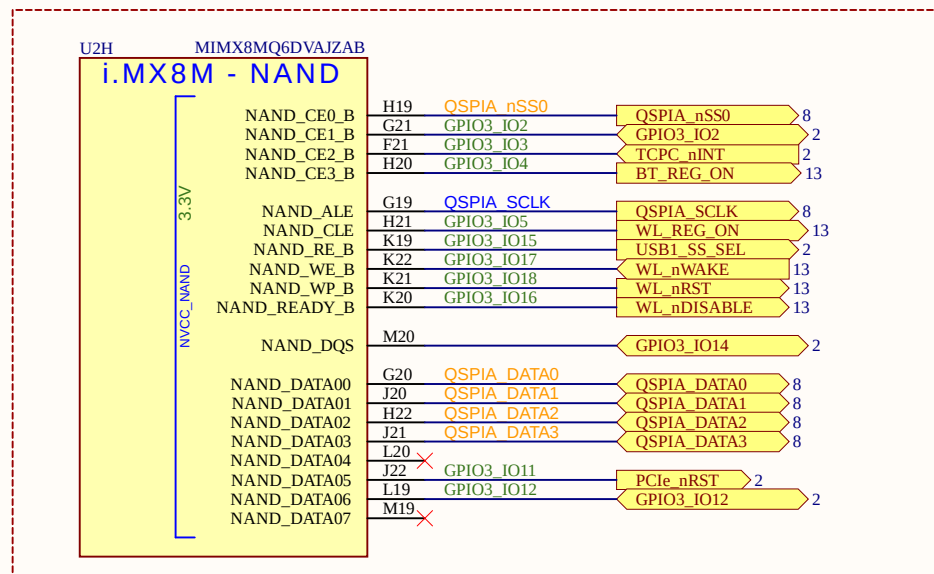
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Hirschstettner Str. 19/Z110
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Austria

RONETIX
DEVELOPMENT TOOLS

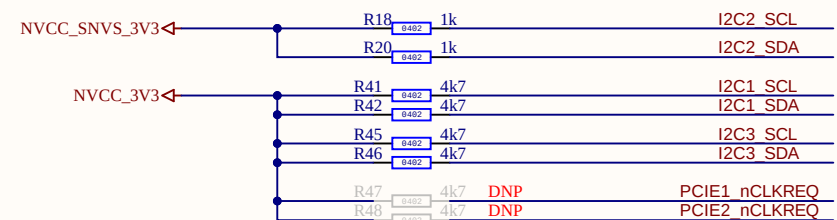
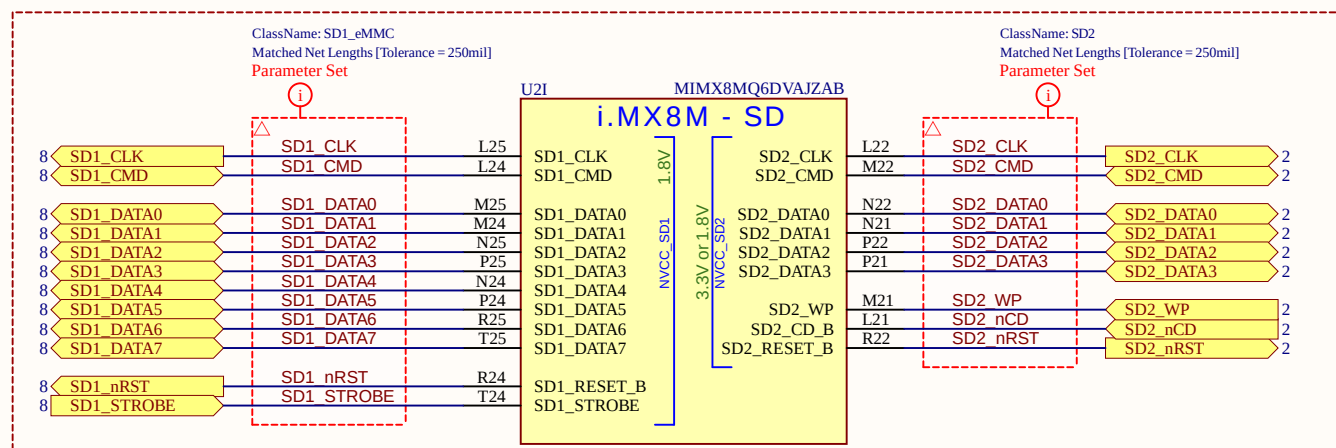
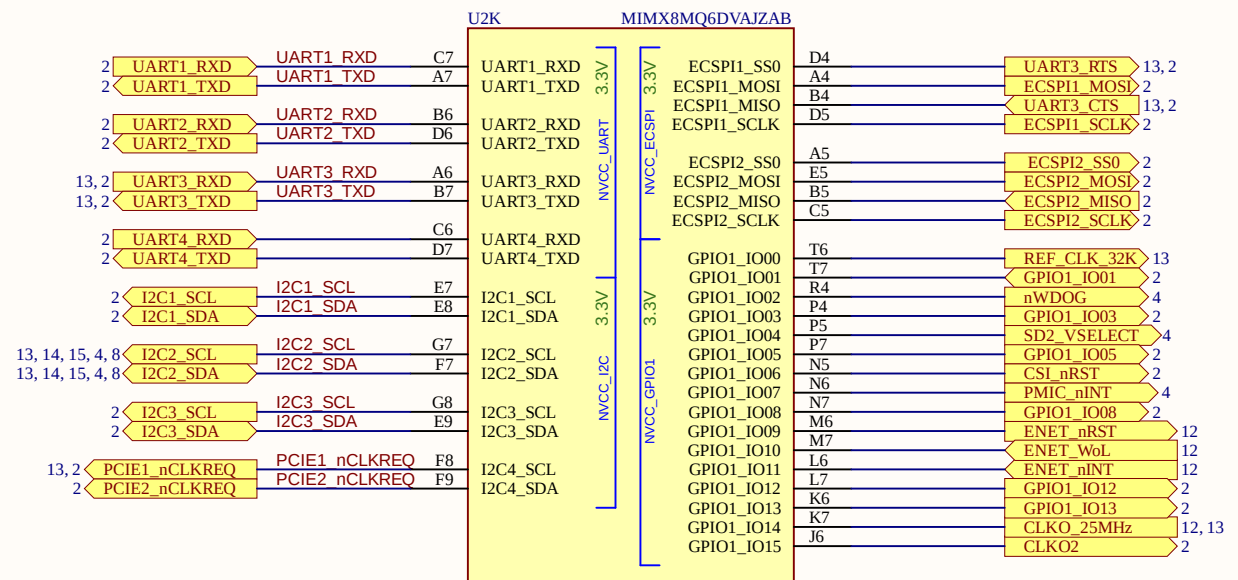
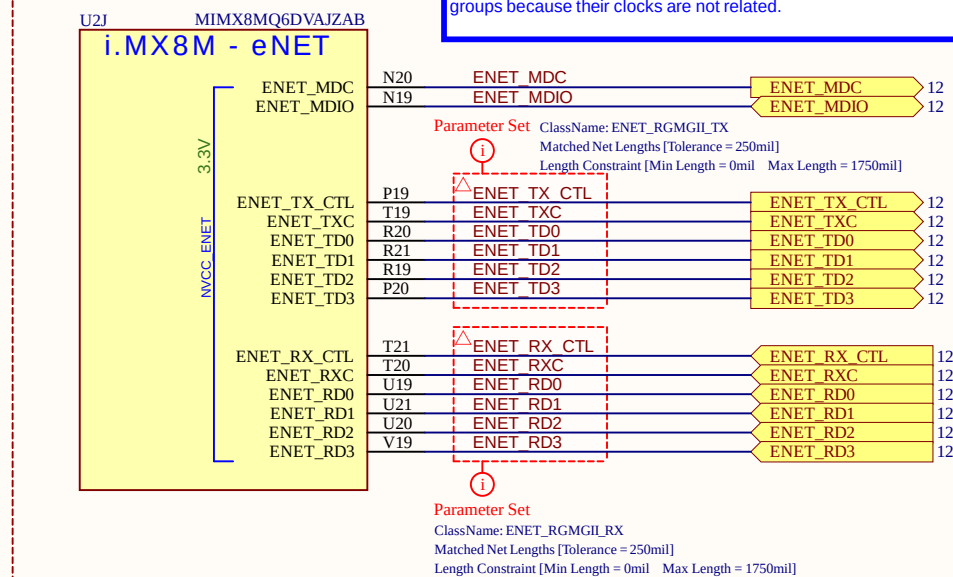
CPU - IO



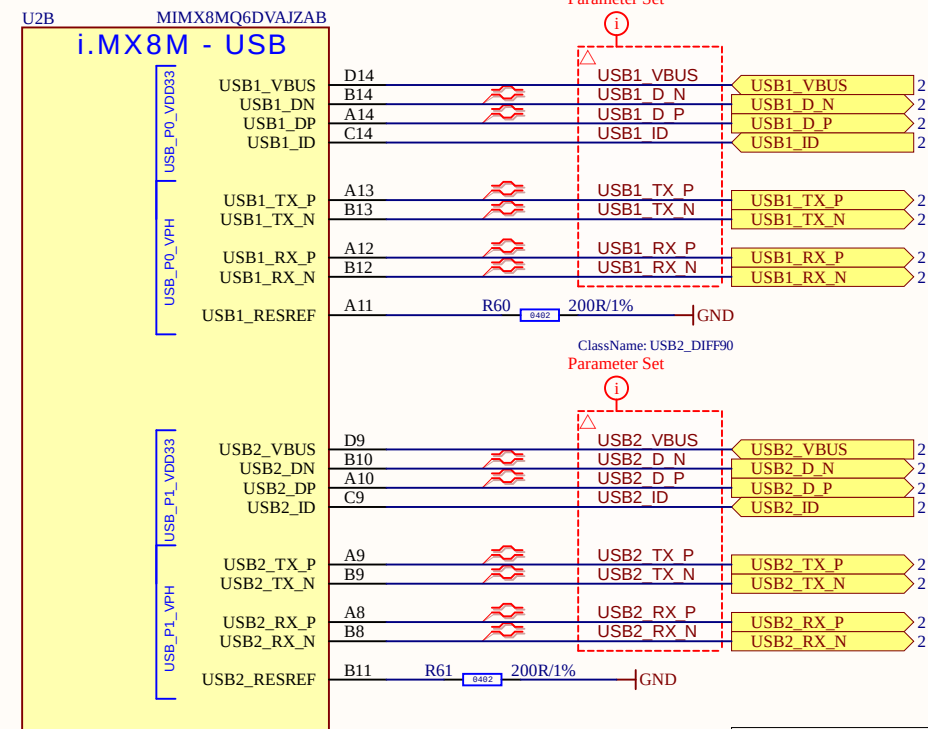
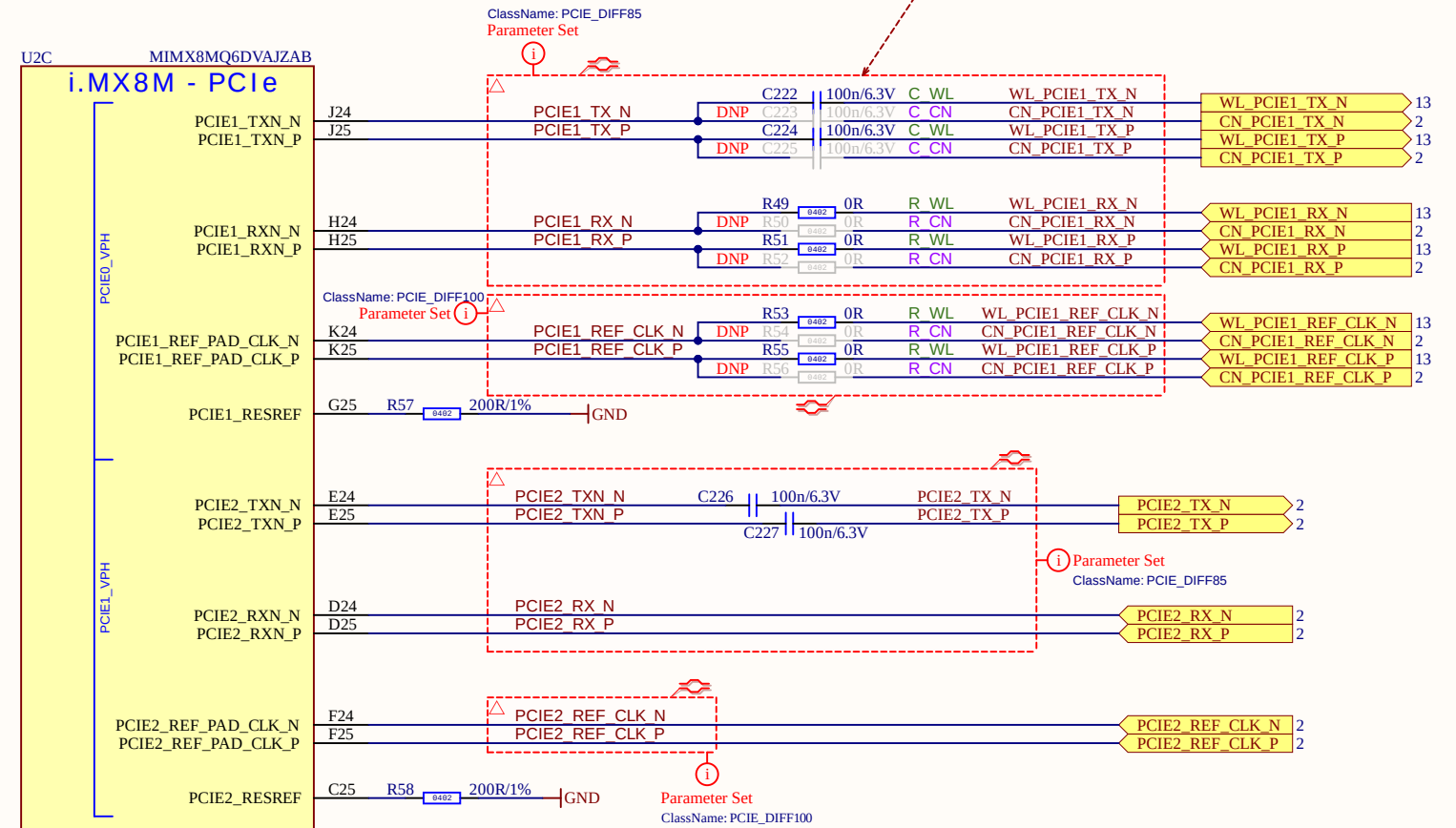
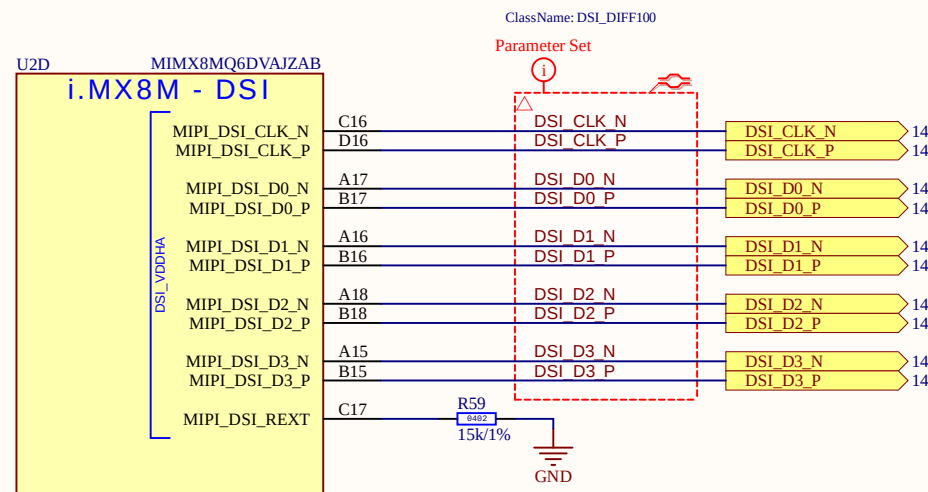
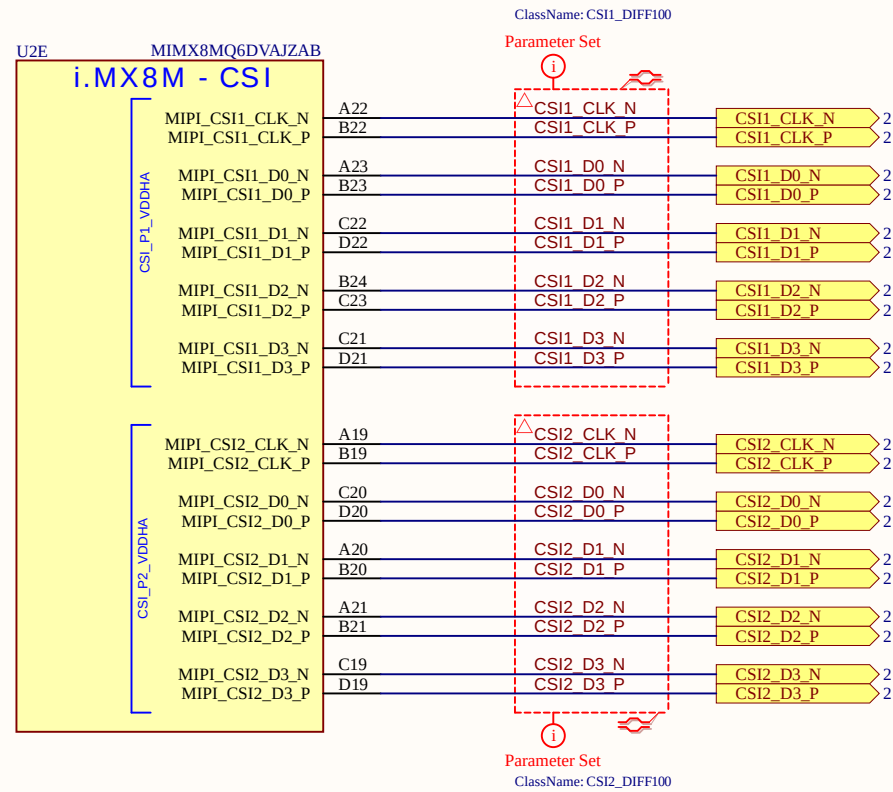
LAYOUT NOTE:

RGMII Routing Constraints (Reduced Gigabit Media Independent Interface):

The RGMII signals must be length-matched by TX and RX groups. That is, the TX group should be matched within 0.25 inch (6.35 mm), and the RX group should be matched within 0.25 inch (6.35 mm). Total length should not exceed 1.75 inch (44.5 mm). There is no requirement to match the TX and RX groups because their clocks are not related.

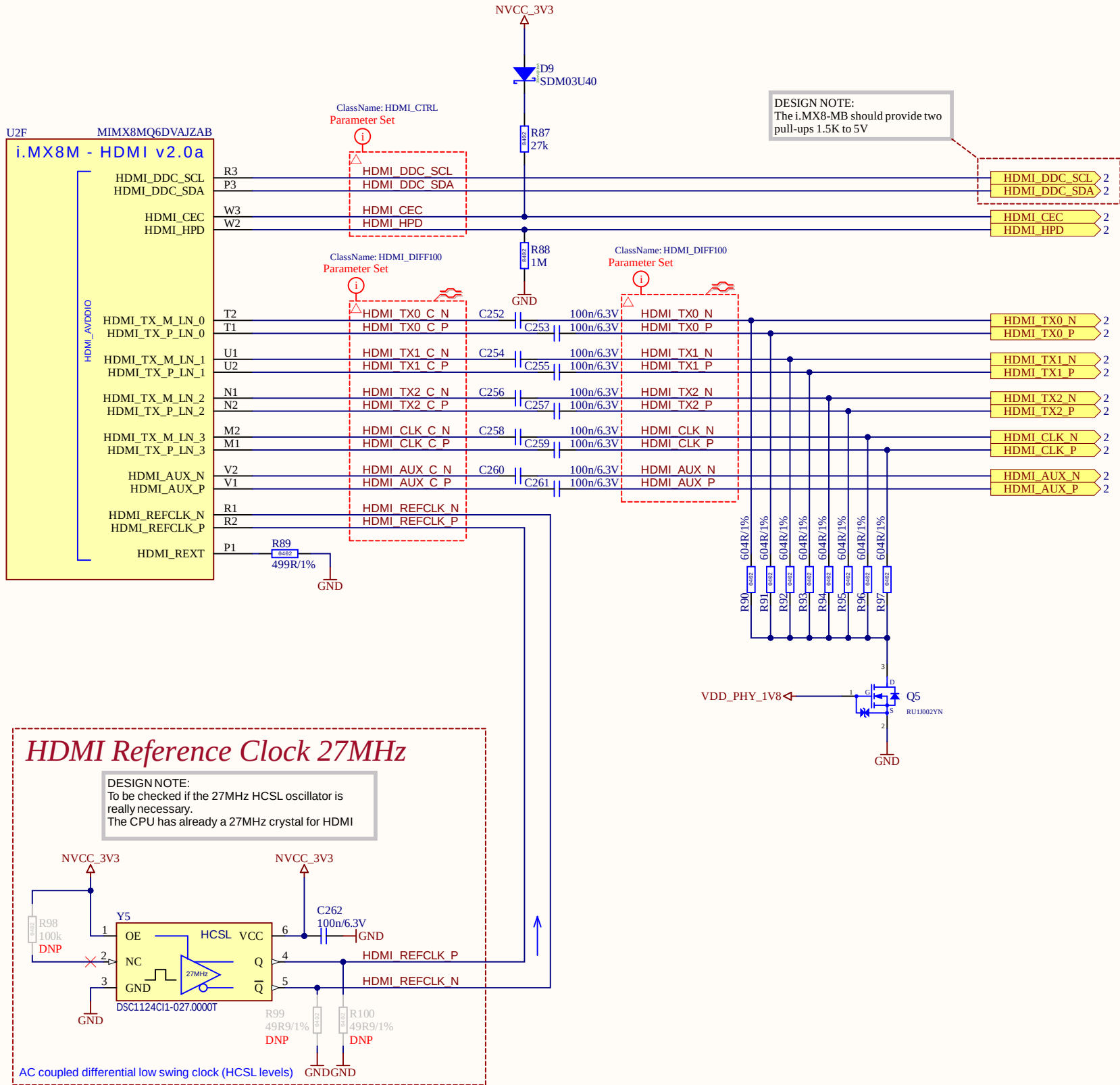


CPU - PCIe, USB, DSI, CSI



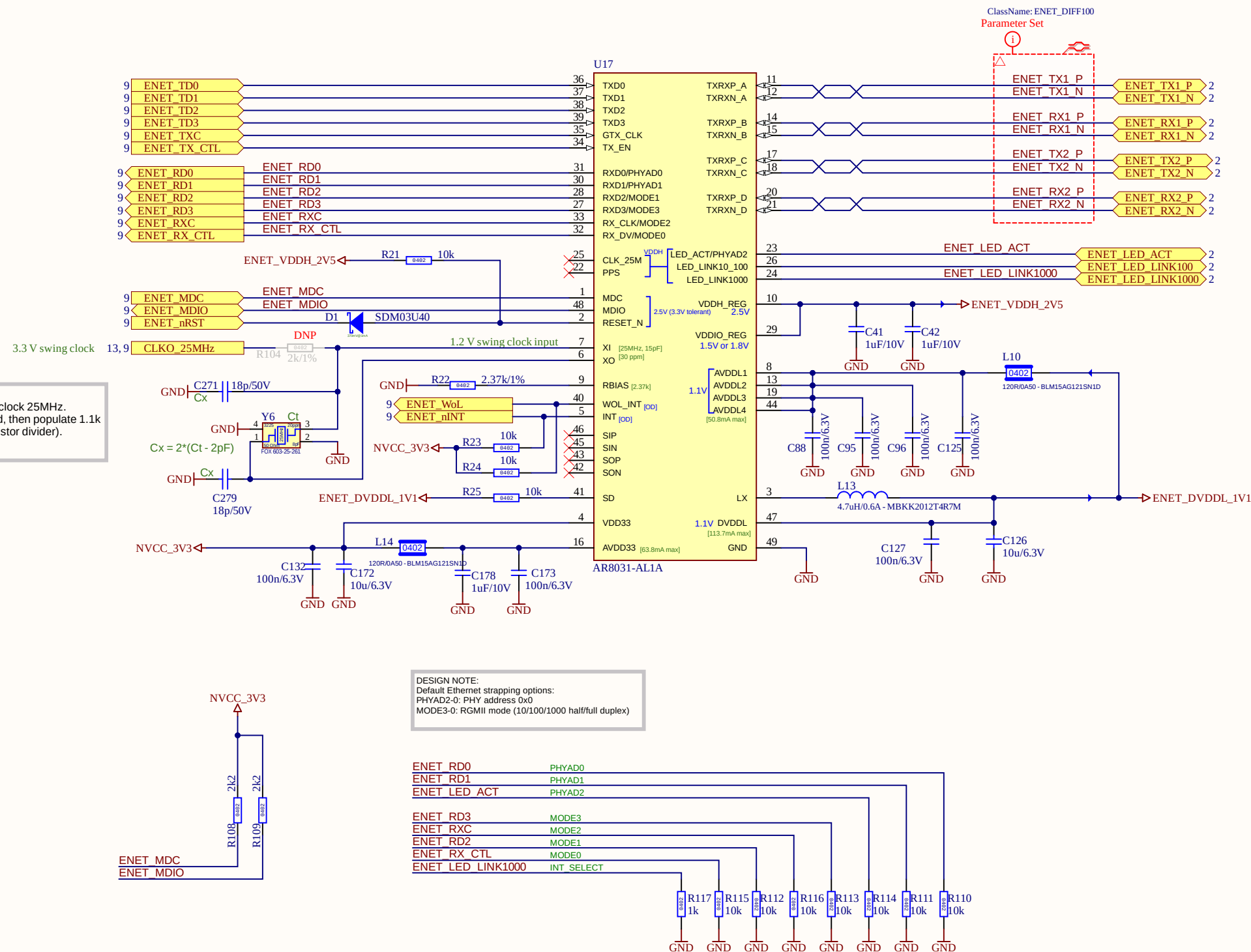
DESIGN NOTE:
Populate either C_WL/R_WL or C_CN/R_CN.
C_WL, R_WL - PCIE1 is routed to on board WiFi
C_CN, R_CN - PCIE1 is routed to SODIMM204

CPU - HDMI



Title CPU - HDMI			Ronetix GmbH Hirschstettner Str. 19/Z110 1220 Vienna Austria	 RONETIX DEVELOPMENT TOOLS
Size: A3	Number: 11	Revision: 2.0		
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Ethernet

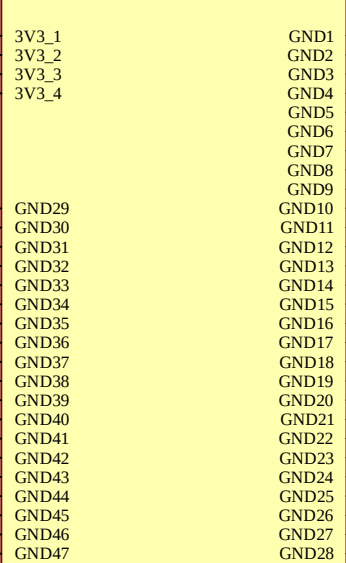


Title Ethernet			Ronetix GmbH Hirschstettner Str. 19/Z110 1220 Vienna Austria	
Size: A3	Number: 12	Revision: 2.0		
Date: 21.09.2021	Time: 15:44:29	Sheet 12 of 16		
File: 12 ETHERNET.SchDoc				

WiFi + Bluetooth

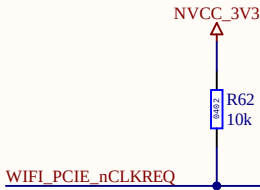
Power Consumption:
TX Mode: 610mA(avg.)
RX Mode: 285mA(avg.)

U4B WNSQ-261ACN(BT)



Atheros QCA6174A-5
WiFi 2x2 MIMO
802.11ac + BT 5.0

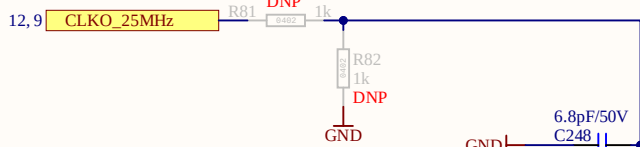
LAYOUT NOTE:
Place close to the
corresponding pins of WiFi
module



Connecting SAI to PCM

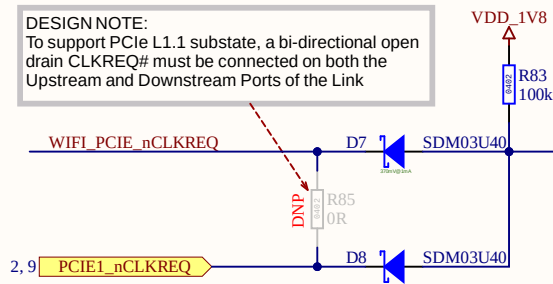
DESIGN NOTE:
WL_REG_ON = 0 - Full Power Down

DESIGN NOTE:
This component share PCB package
When use 9FGV0241 - PIN5 = GND; PIN3,7,16 = 1.8V
When use PI6CFGL201BZDIEX - PIN5 = 1.8V; PIN3,7,16 = 3.3V



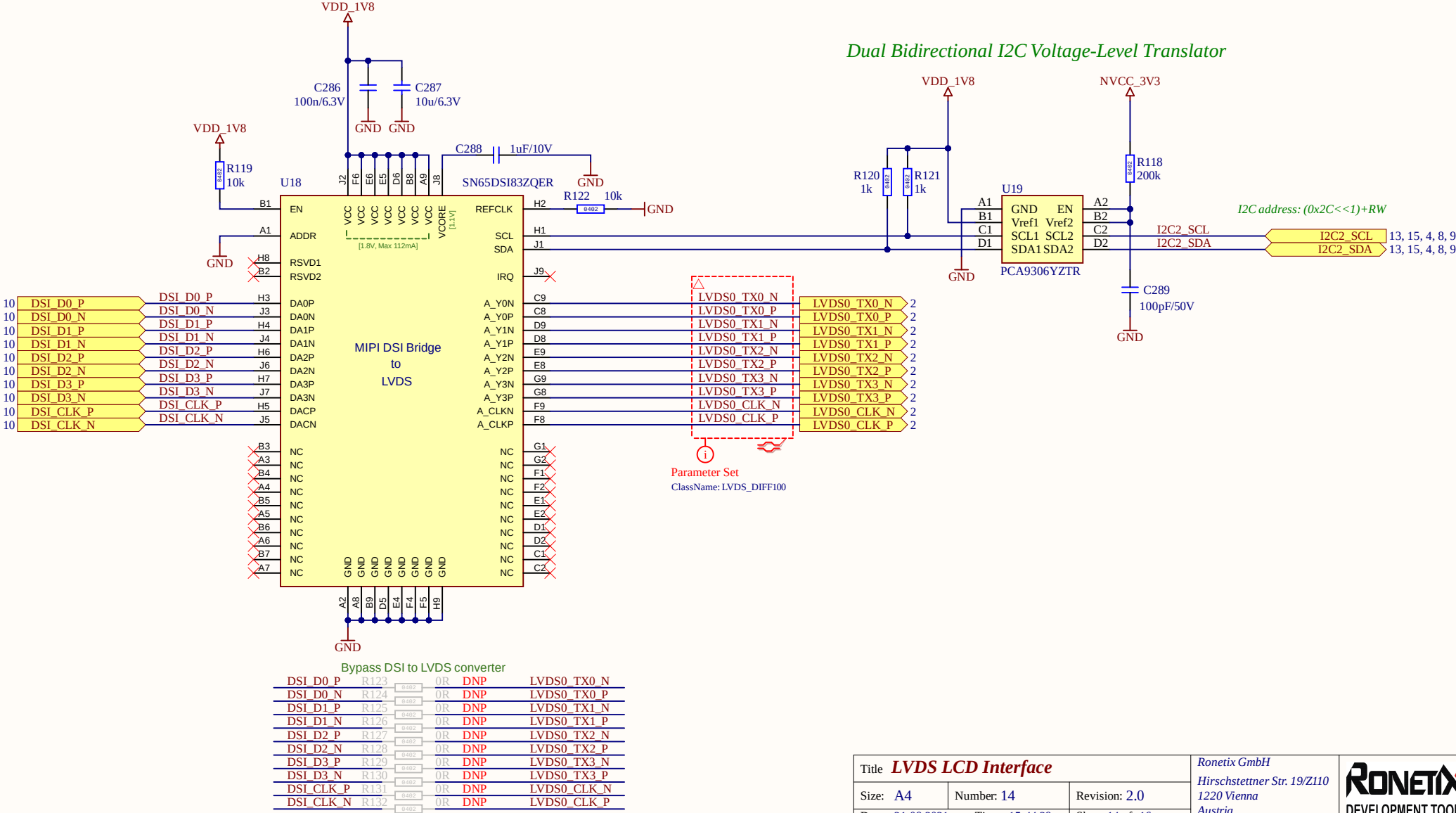
DESIGN NOTE:
I2C address:
SADDR = 0 -> (0x68<<1)+RW
SADDR = 1 -> (0x6A<<1)+RW

DESIGN NOTE:
To support PCIe L1.1 substate, a bi-directional open
drain CLKREQ# must be connected on both the
Upstream and Downstream Ports of the Link

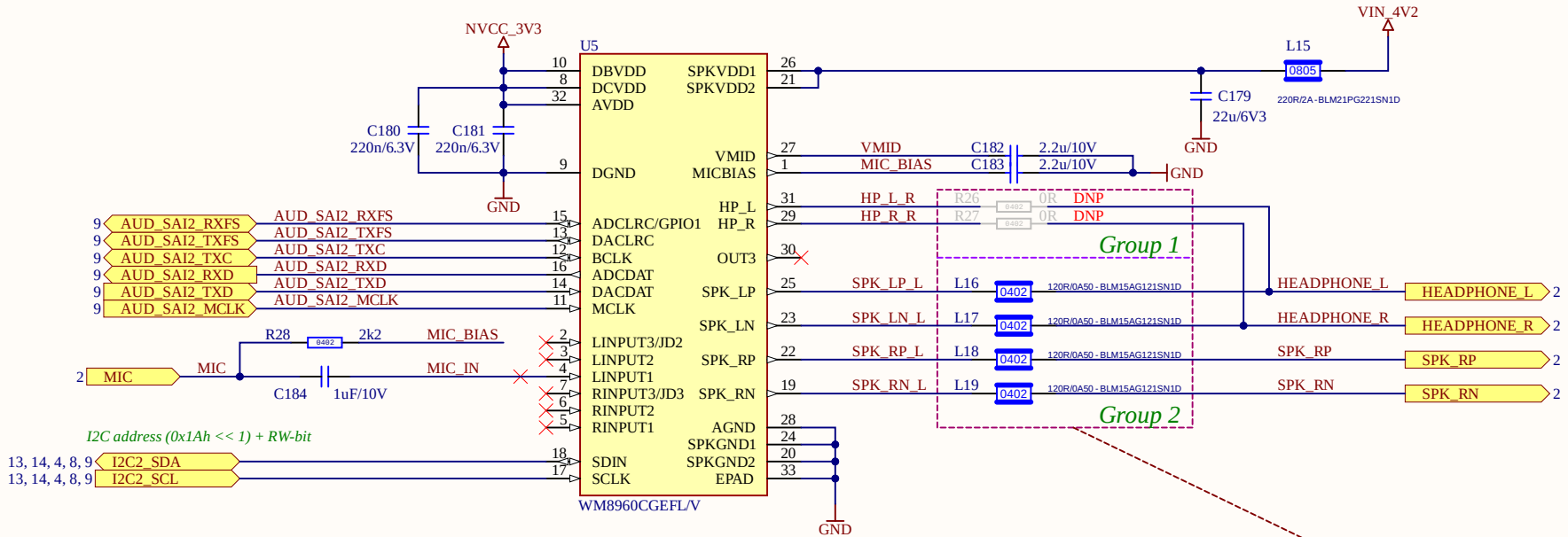


LVDS LCD Interface

Single-Channel DSI to Single-Link LVDS Bridge



Audio Codec



DESIGN NOTE:
Populate one of both groups:
Group 1 - Headphone outputs to SODIMM204
Group 2 - Speaker outputs to SODIMM204 (default)

AUD_SAI2_MCLK	DNP	R141	0R	SAI2_MCLK	2
AUD_SAI2_TXFS	DNP	R142	0R	HEADPHONE_L	
AUD_SAI2_TXD	DNP	R143	0R	HEADPHONE_R	
AUD_SAI2_RXD	DNP	R144	0R	MIC	
AUD_SAI2_RXFS	DNP	R145	0R	SPK_RP	
AUD_SAI2_TXC	DNP	R146	0R	SPK_RN	

D