









REV	COMMENT	DATE	DRAWN BY
1.00	Release	18/08/2014	MIF
2.00	Release	17/02/2014	MIF
3.00	Release	18/082014	MIF

RSK+RZA1H Board Schematics

Page	Description
2	MCU 1/3 Pin Out
3	MCU Port Functions 1/2
4	MCU Port Functions 2/2
5	Address Bus
6	Data Bus
7	MCU Pin Multiplexing
8	Port Expander, Potentiometer
9	RZA1H MCU-C Decoupling
10	RZA1H MCU-B Crystals/Oscillators, RCA Video Input
11	SPDIF, SD/MMC, SIMCARD
12	SDRAM, NOR Flash, NAND Flash, SPI Flash
13	Power Supply
14	CAN, USB
15	Ethernet, EEPROM
16	Switches, LEDs, Reset
17	DLINK2, ETM Connectors
18	RL78G1C USB-to-Serial
19	Audio Codec, Audio Connectors
20	LVDS Connector
21	TFT Panel / DV Input Multiplexing / PMOD
22	CMOS Camera, DV Input
23	Application Headers
24	TFT LCD Panel Connector
25	Option Links

Note:

-  Digital Ground
-  Analog Ground
- POWER_IN Digital 12V (System Power)
- BOARD_5V Digital 5V
- BOARD_VCC Digital 3.3V
- MCU_PVCC 3.3V for CPU I/O
- CORE_VCC 1.18V for CPU core
- PLLvcc Digital 1.18V for PLL
- USBAPVcc Analog 3.3V for USB
- USBAVcc Analog 1.18V for USB
- AVCC Analog 3.3V
- AVREF 3.3V ADC reference
- DNF Do Not Fit
- R Resistor
- C Capacitor
- L Inductor
- MR Resistor Array

- 1 -  TP39
Fiducial_3mm_1mm midpoint
- 1 -  TP40
Fiducial_3mm_1mm midpoint
- 1 -  TP42
Fiducial_3mm_1mm midpoint
- 1 -  TP43
Fiducial_3mm_1mm midpoint
- 1 -  TP44
Fiducial_3mm_1mm midpoint
- 1 -  TP45
Fiducial_3mm_1mm midpoint

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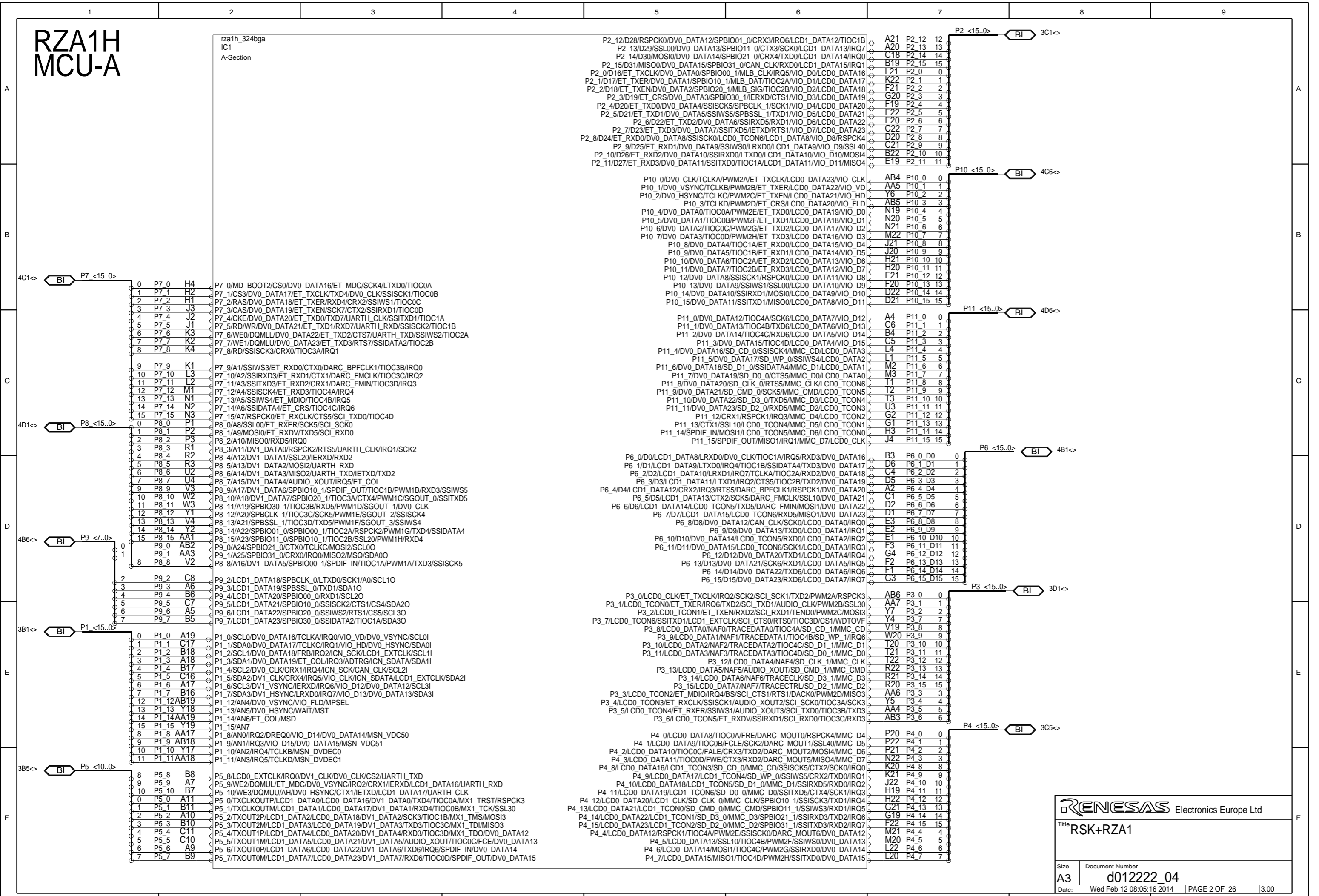
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Date: **Mon Aug 18 13:10:43 2014** | PAGE 1 OF 26 | 3.00

RZA1H MCU-A

rza1h_324bga
IC1
A-Section



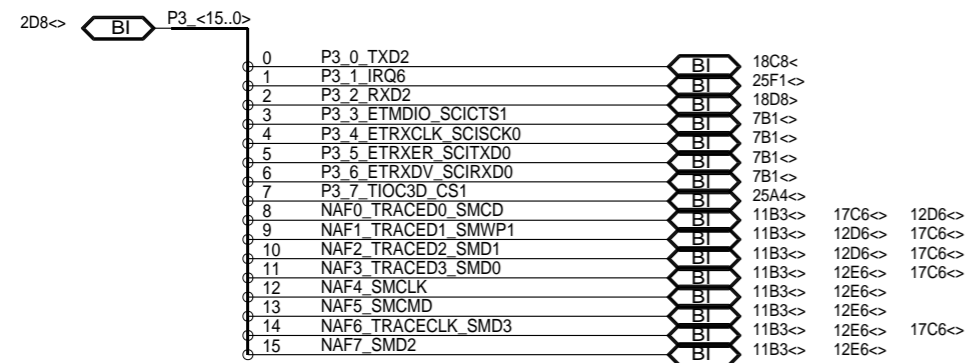
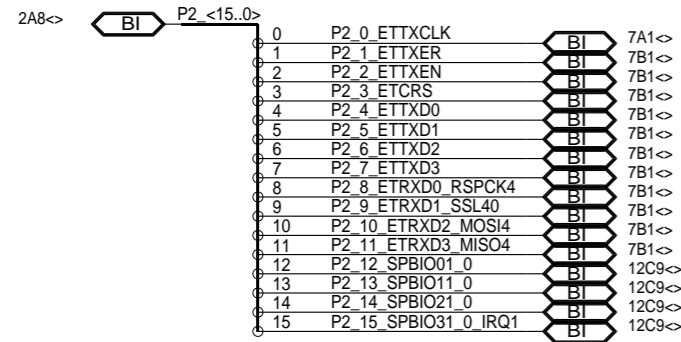
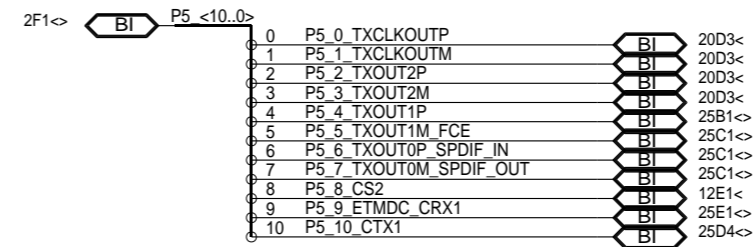
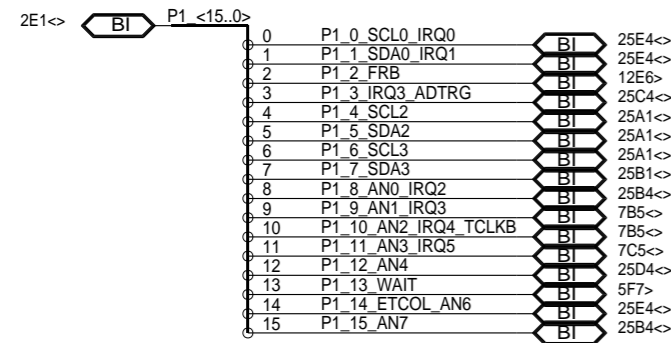
RENESAS Electronics Europe Ltd

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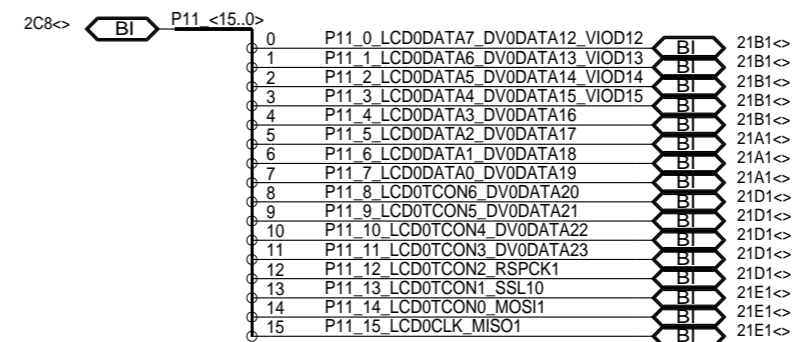
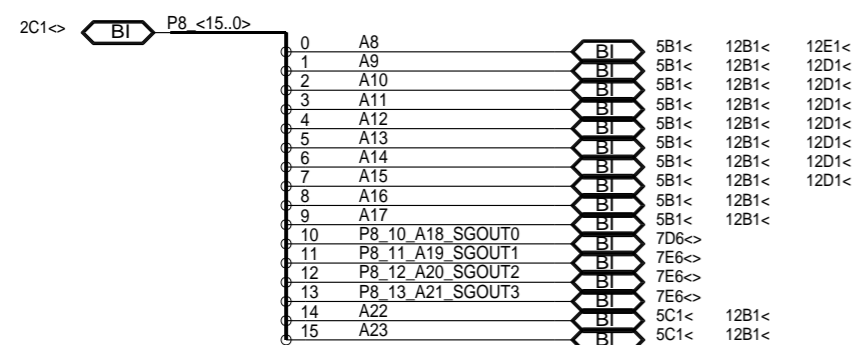
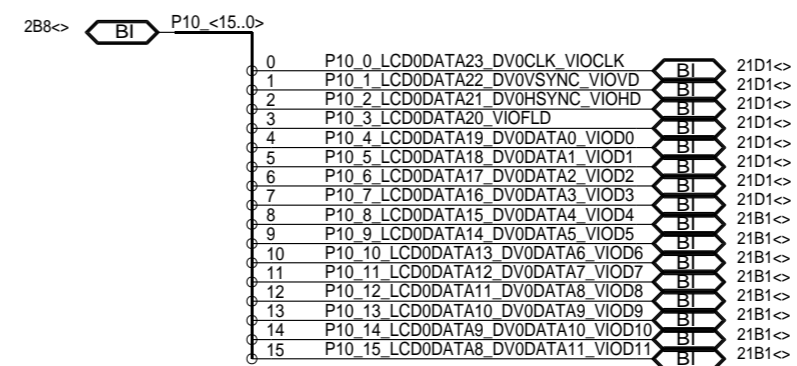
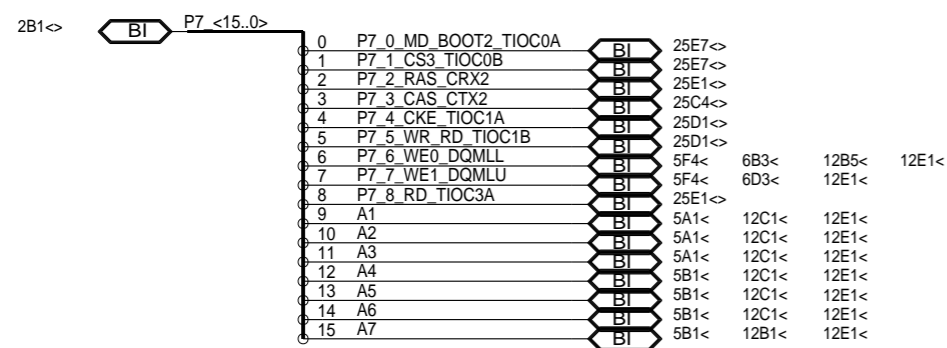
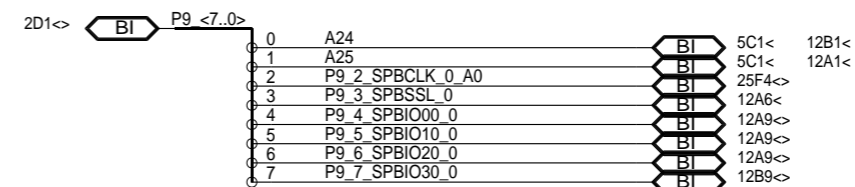
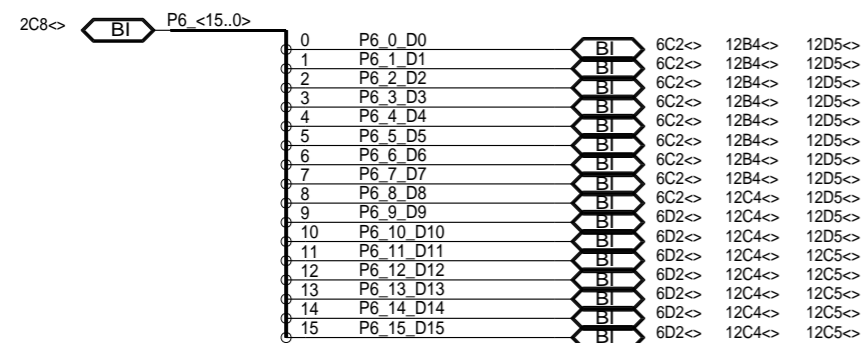
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Date: **Wed Feb 12 08:05:16 2014** PAGE 2 OF 26 3.00

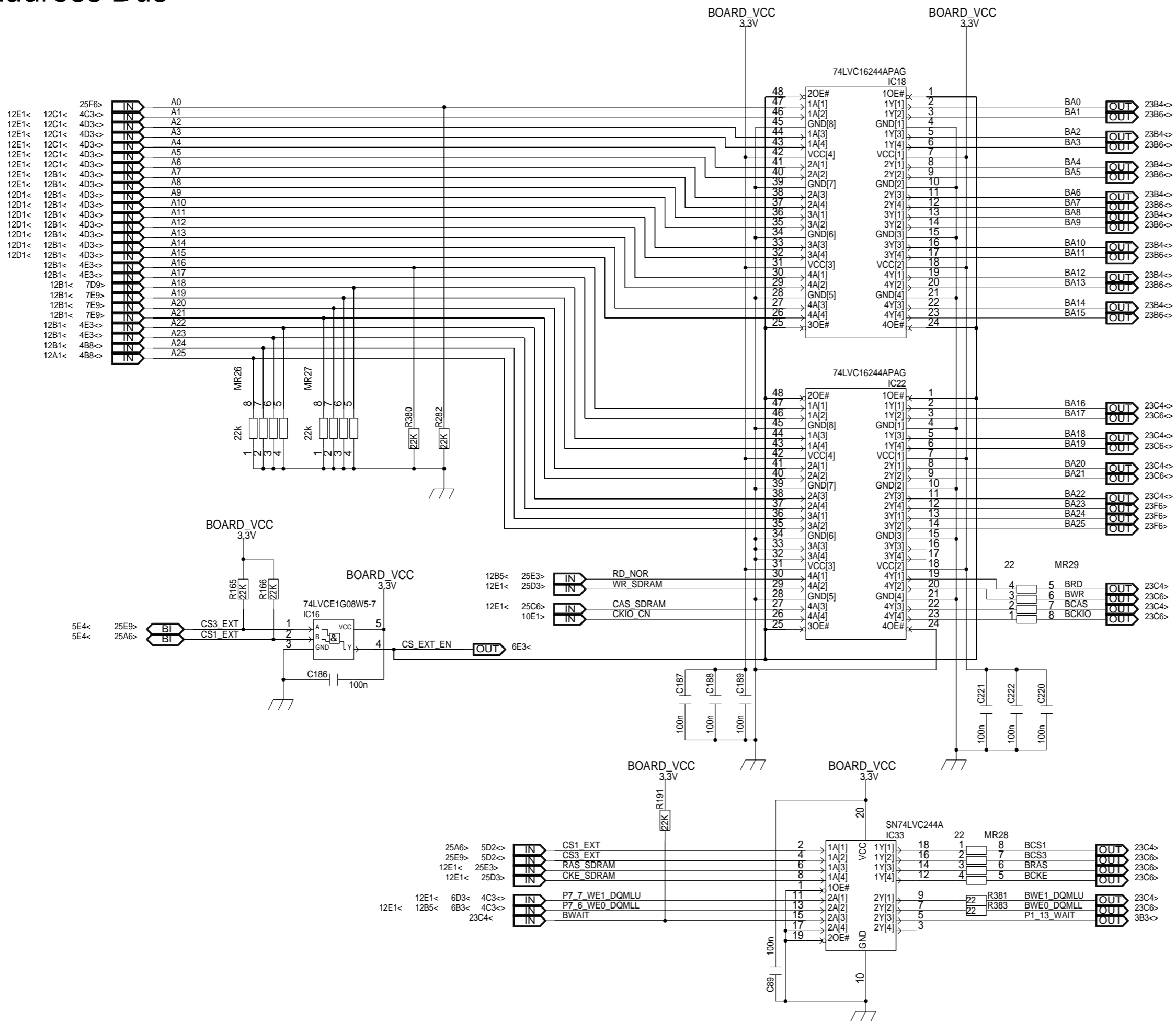
MCU Port Functions 1/2



MCU Port Functions 2/2

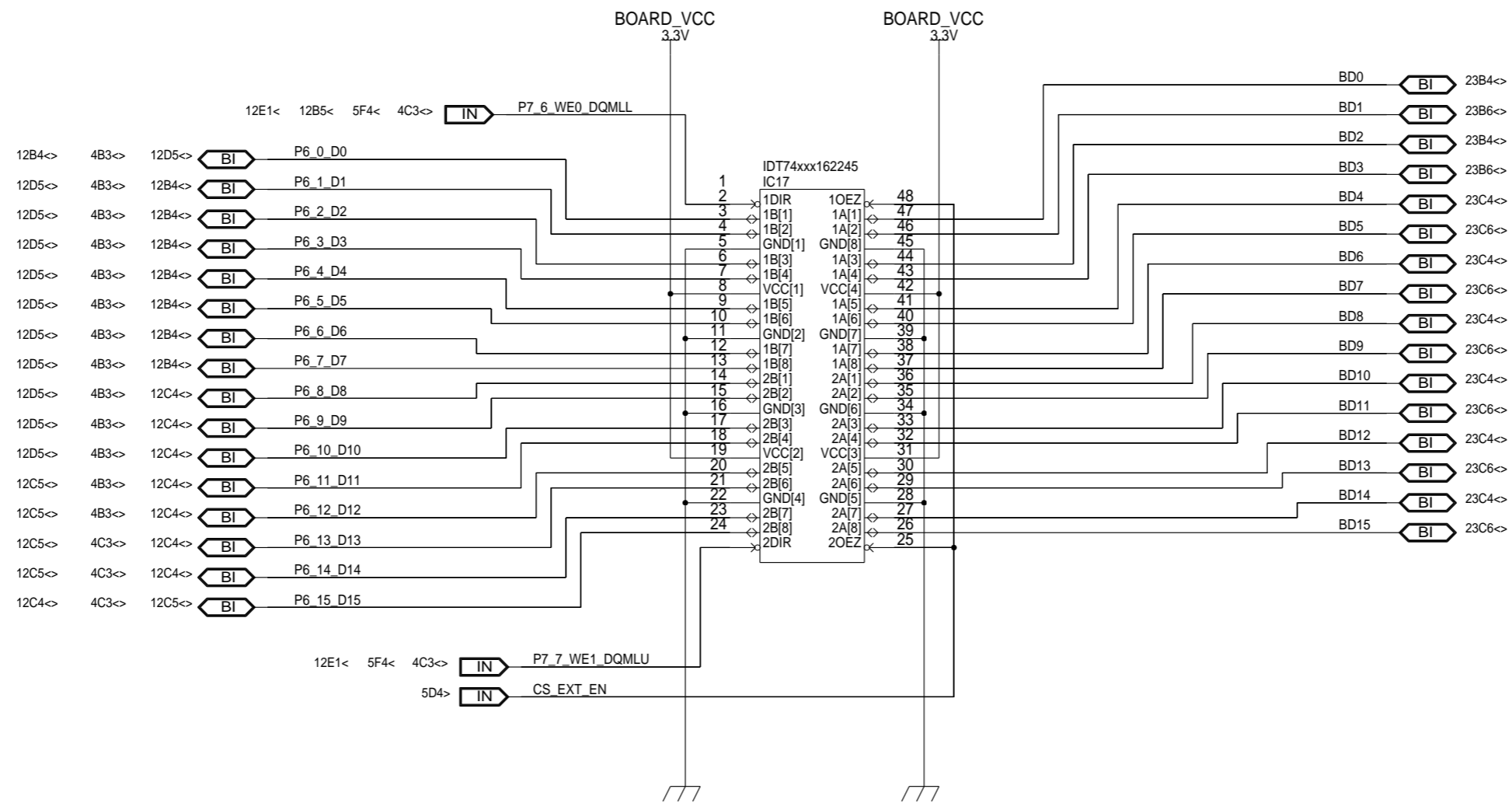


Address Bus

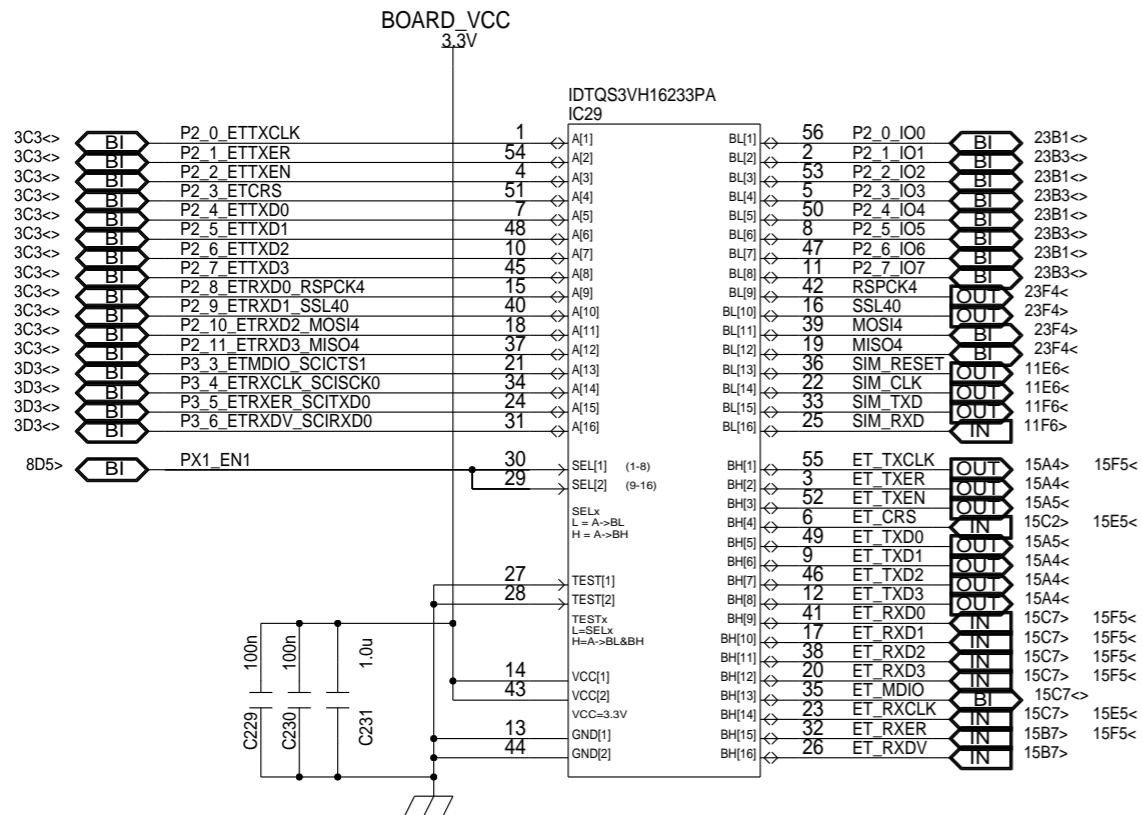


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 Date: Wed Feb 12 08:05:11 2014 PAGE 5 OF 26 3.00

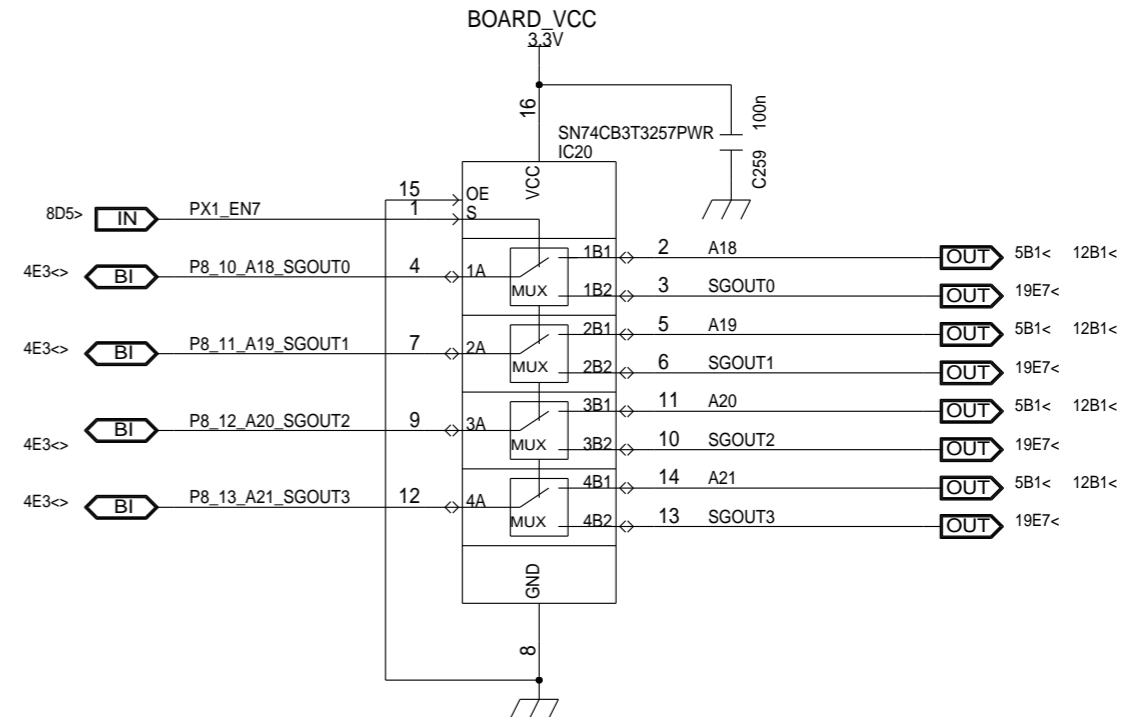
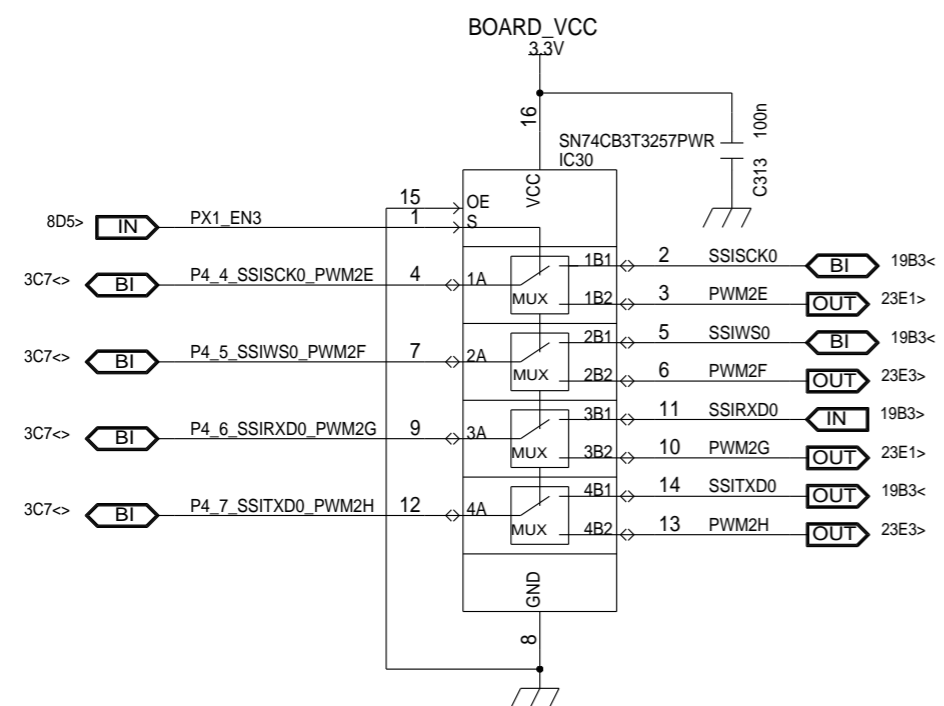
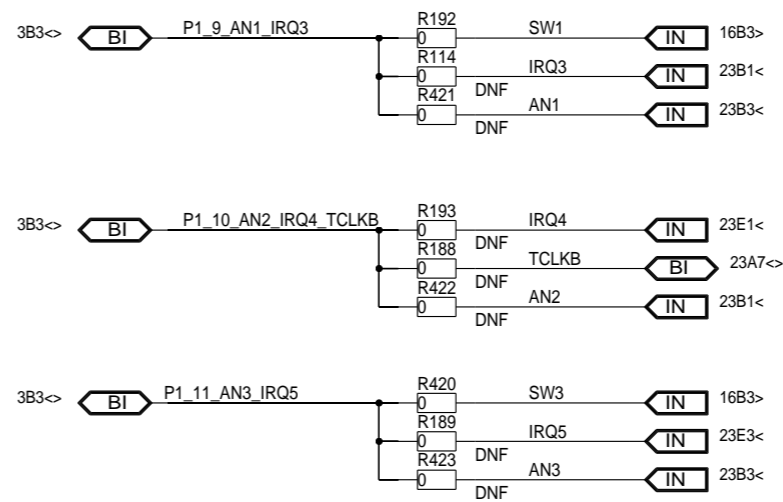
Data Bus



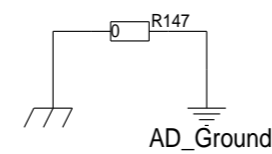
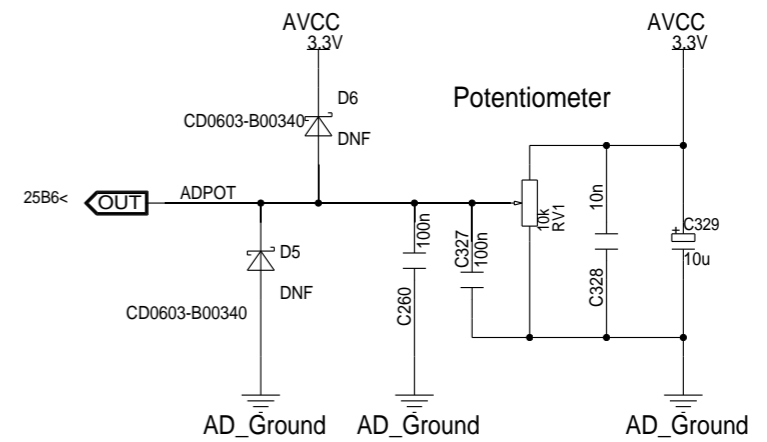
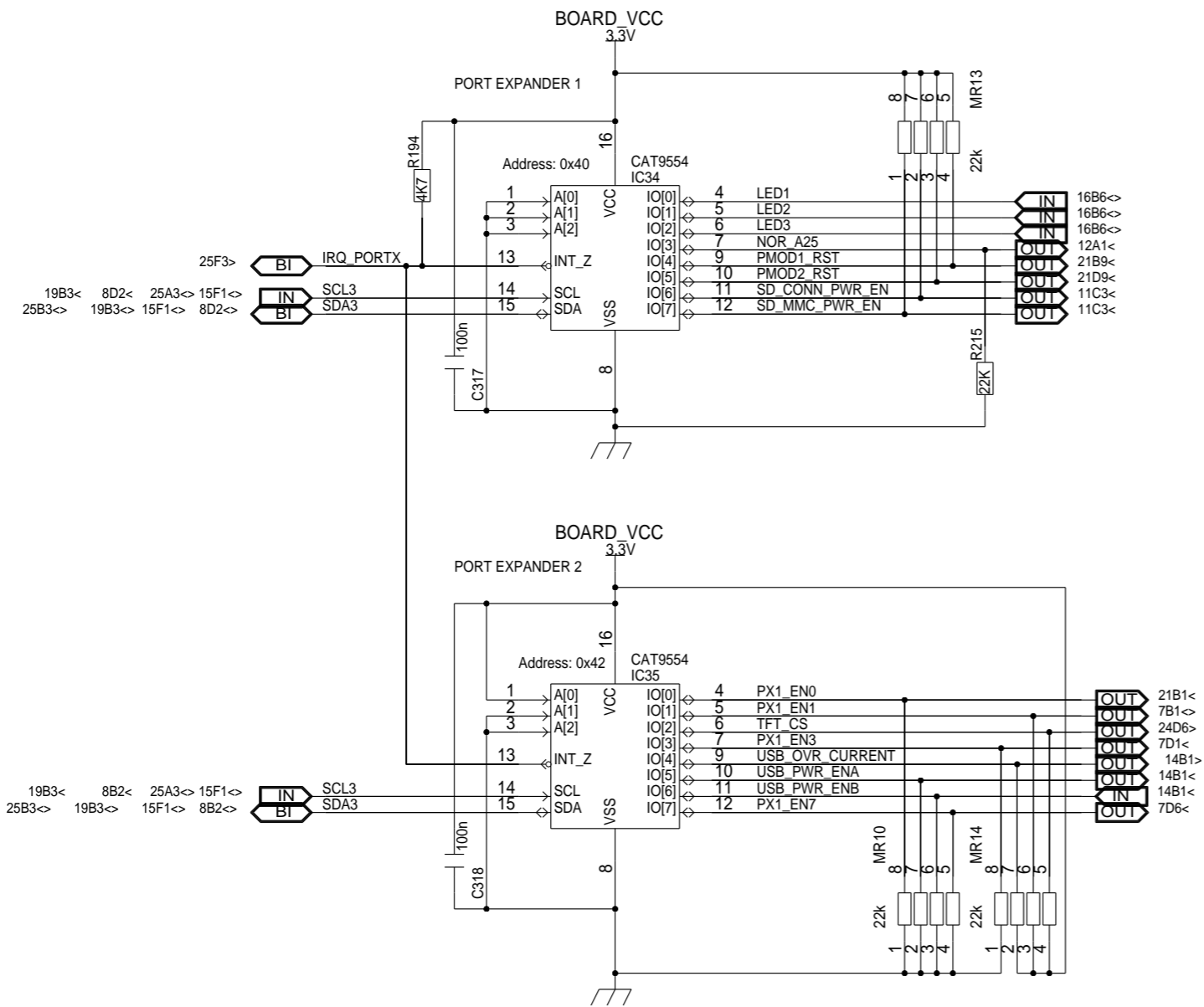
MCU Pin Multiplexing



Note:
Do not fit R192, R114 or R421 together with R193, R188 or R422

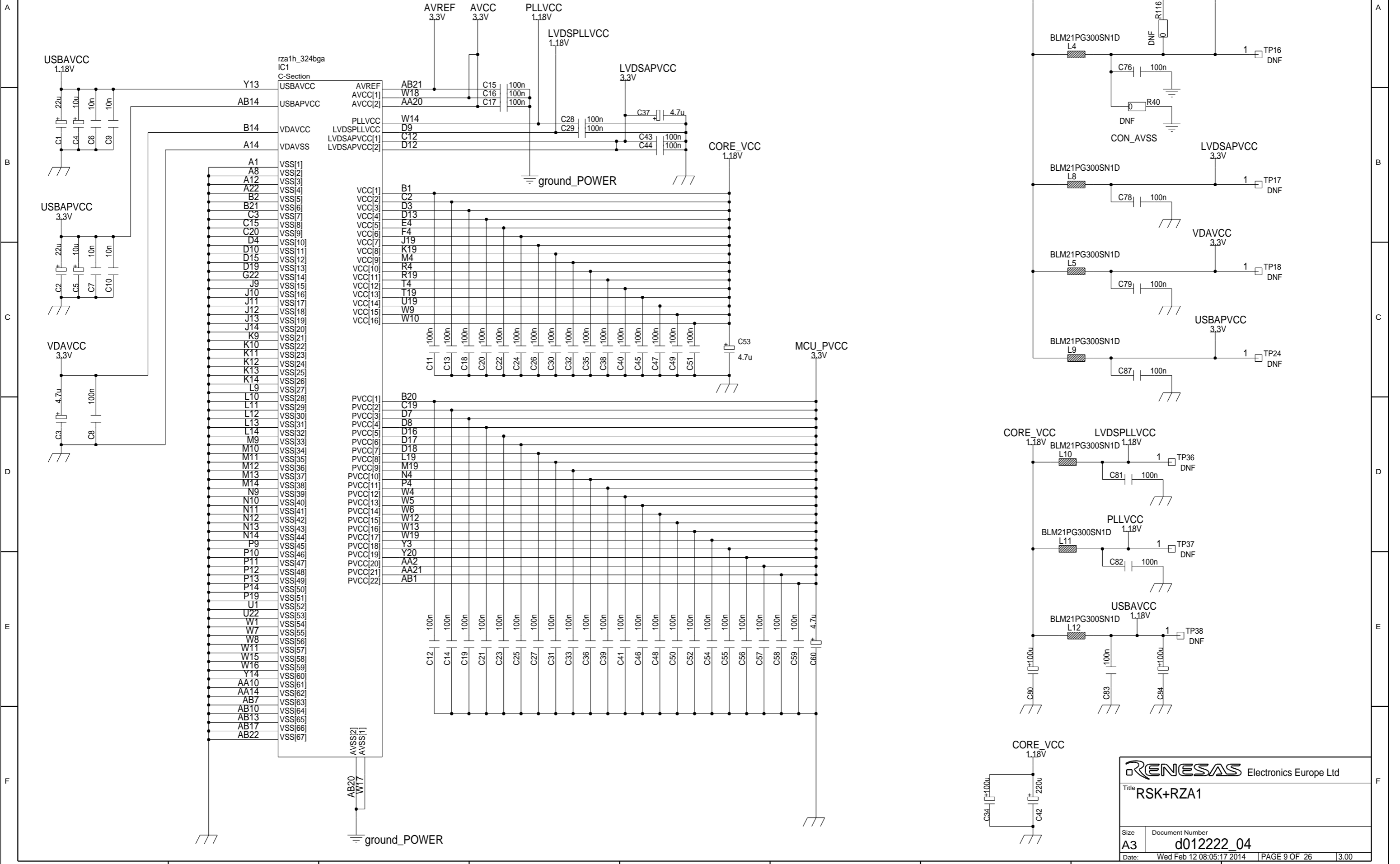


Port Expanders, Potentiometer



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 Title: RSK+RZA1
 Size: A3 Document Number: d012222_04
 Date: Mon Aug 18 13:20:15 2014 PAGE 8 OF 26 3.00

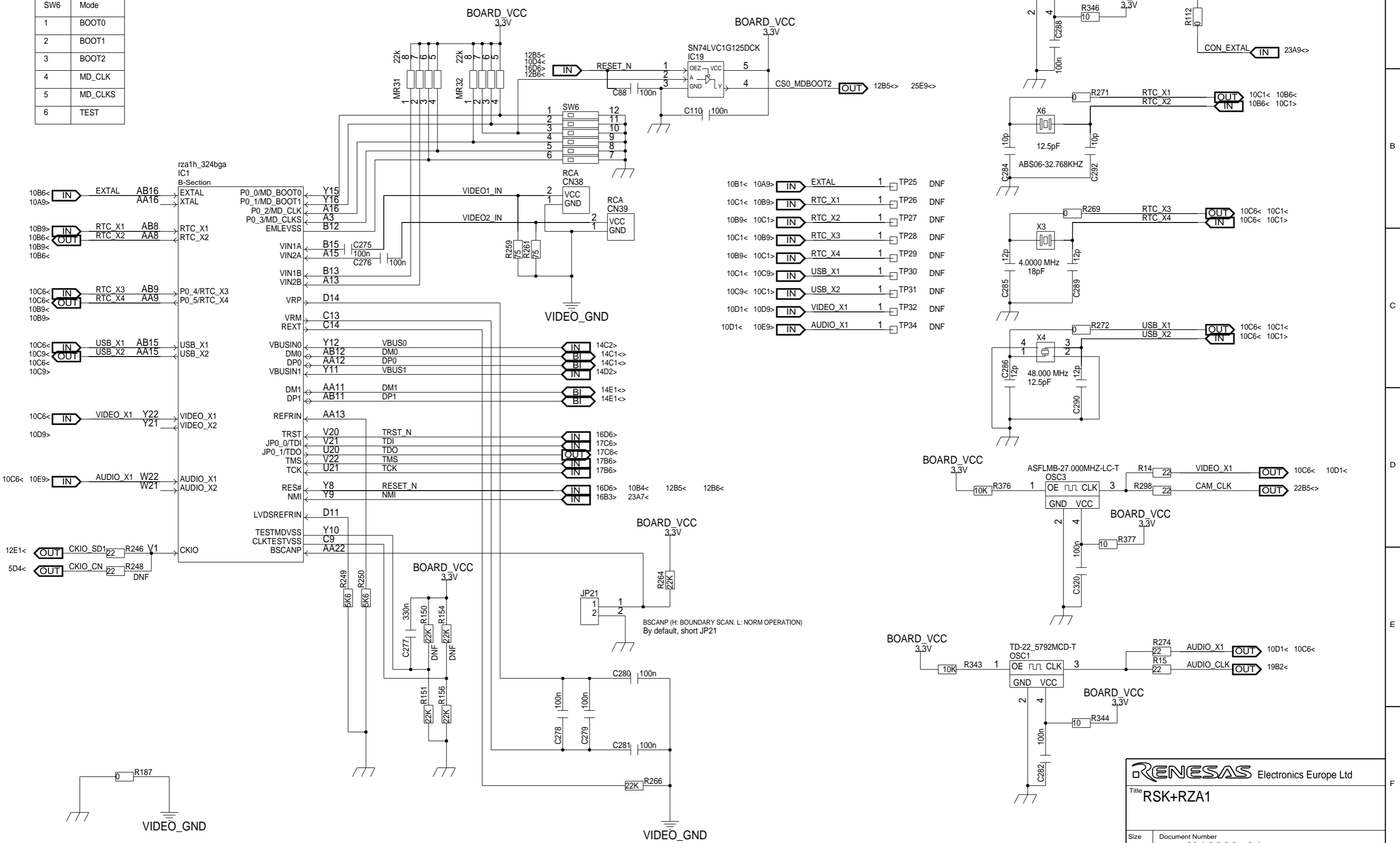
MCU 2/3 Decoupling



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 Title: RSK+RZA1
 Size: A3 Document Number: d012222_04
 Date: Wed Feb 12 08:05:17 2014 PAGE 9 OF 26 3.00

MCU Crsytal/Oscillators, RCA Video Input

SW6	Mode
1	BOOT0
2	BOOT1
3	BOOT2
4	MD_CLK
5	MD_CLKS
6	TEST



- 10B1< 10A9> IN EXTAL 1 TP25 DNF
- 10C1< 10B9> IN RTC_X1 1 TP26 DNF
- 10B9< 10C1> IN RTC_X2 1 TP27 DNF
- 10C1< 10B9> IN RTC_X3 1 TP28 DNF
- 10B9< 10C1> IN RTC_X4 1 TP29 DNF
- 10C1< 10C9> IN USB_X1 1 TP30 DNF
- 10C9< 10C1> IN USB_X2 1 TP31 DNF
- 10D1< 10D9> IN VIDEO_X1 1 TP32 DNF
- 10D1< 10E9> IN AUDIO_X1 1 TP34 DNF

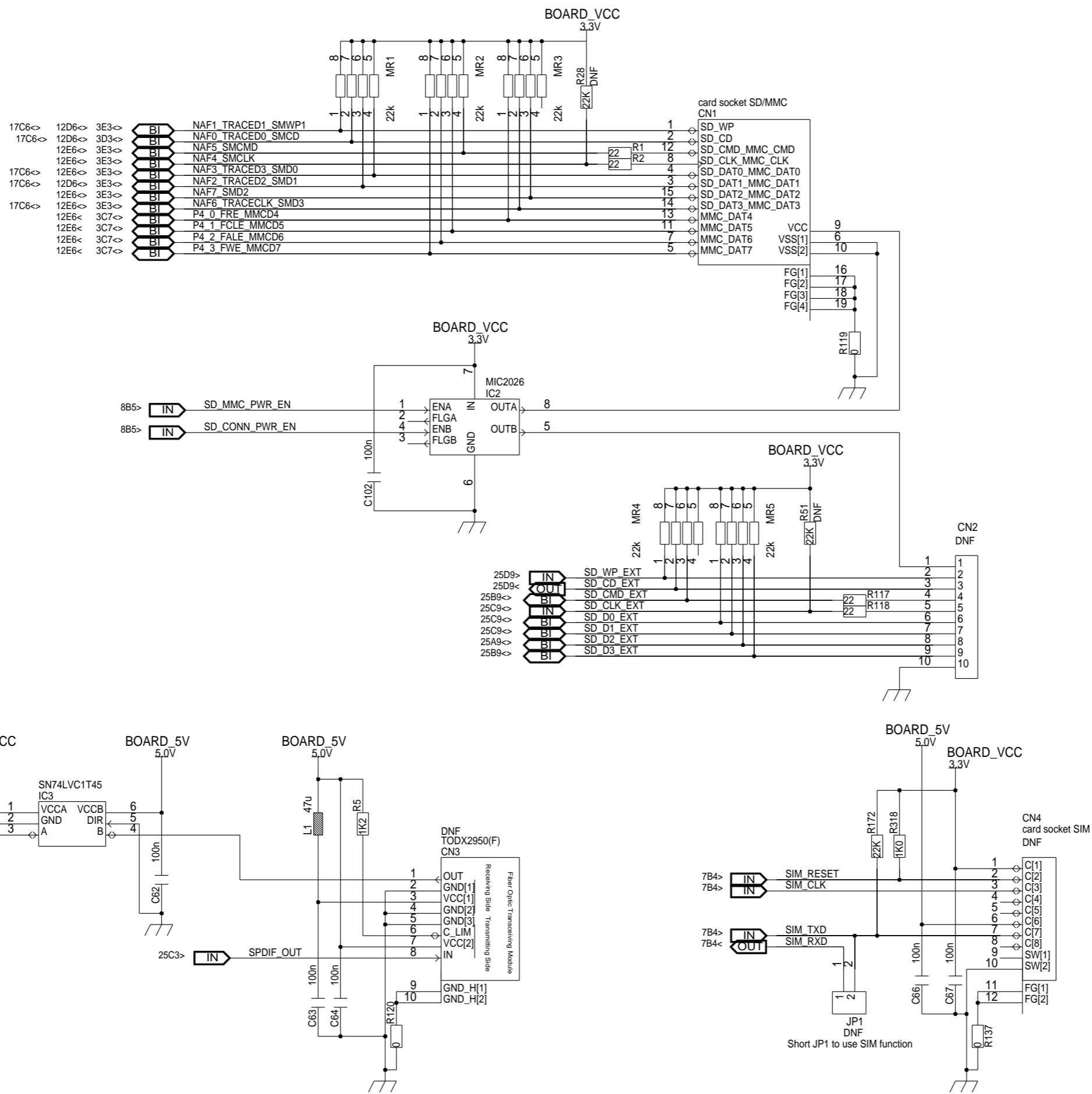
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Title: **RSK+RZA1**

Size: A3 Document Number: **d012222_04**

Date: Wed Feb 12 12:51:49 2014 PAGE 10 OF 26 3.00

SPDIF, SD/MMC, SIMCARD



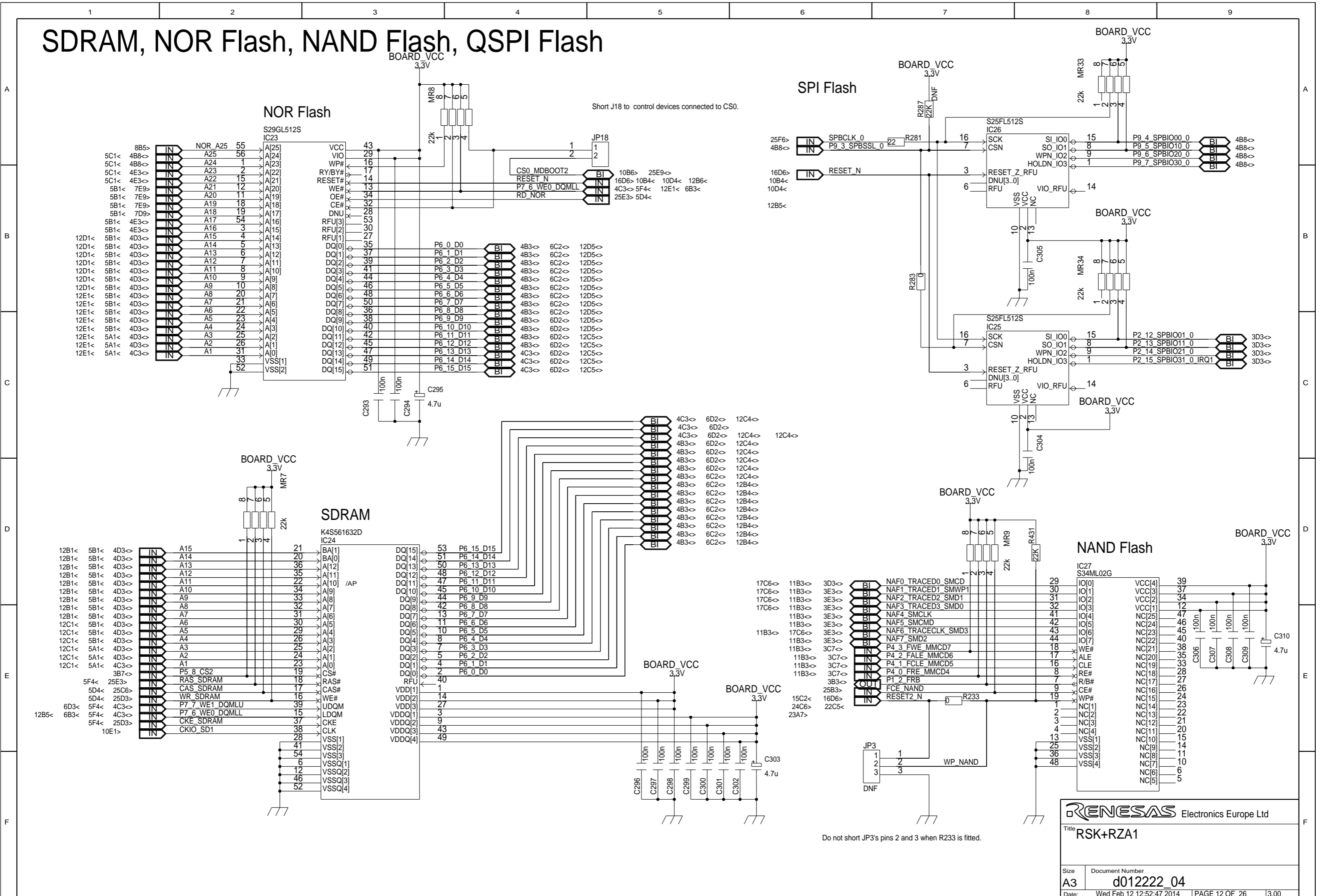
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Date: **Mon Feb 17 15:22:38 2014** | PAGE 11 OF 26 | 3.00

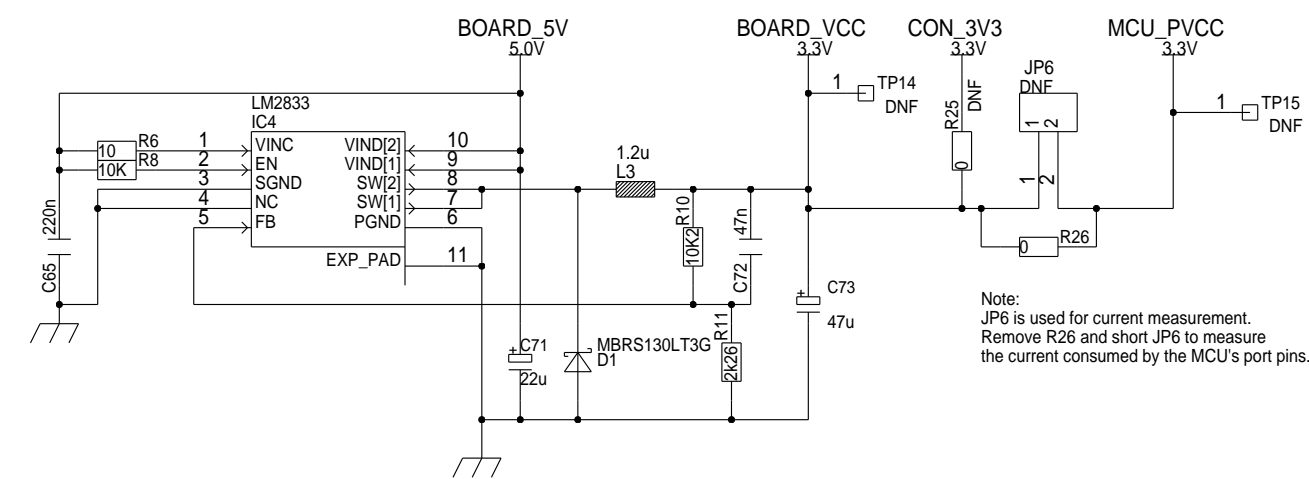
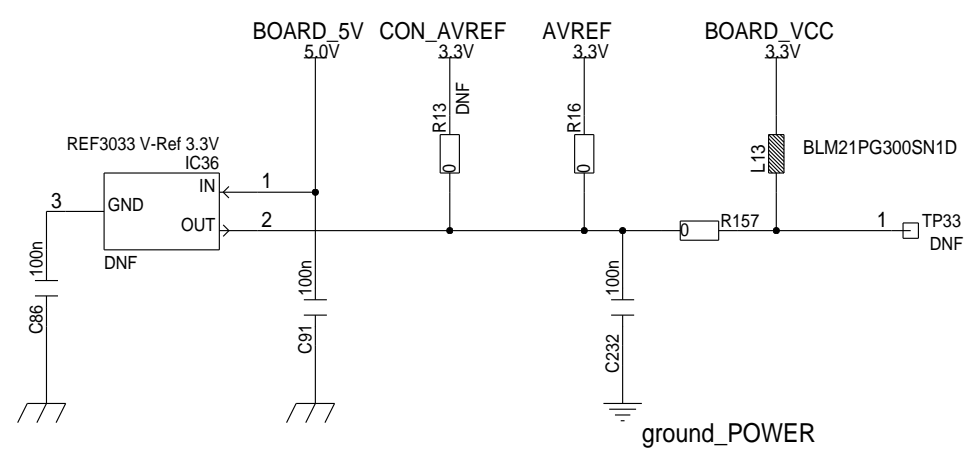
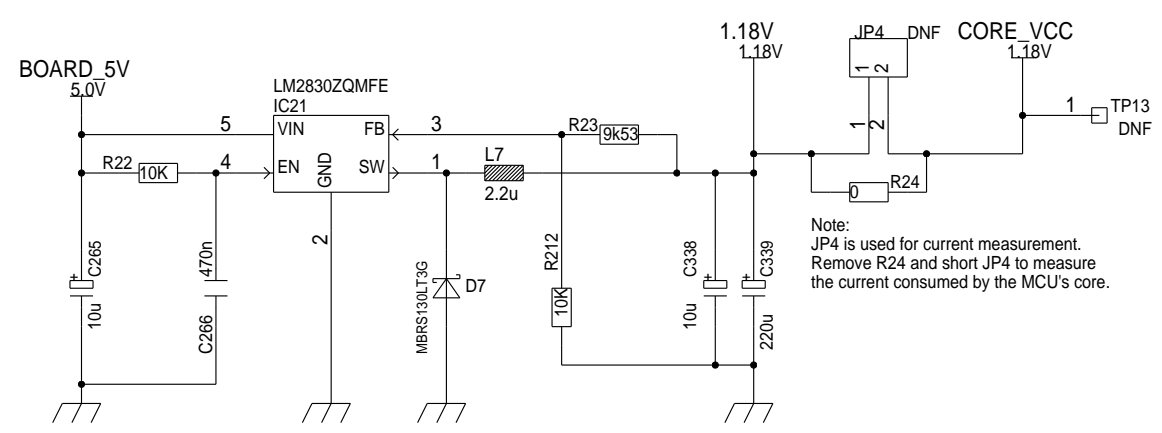
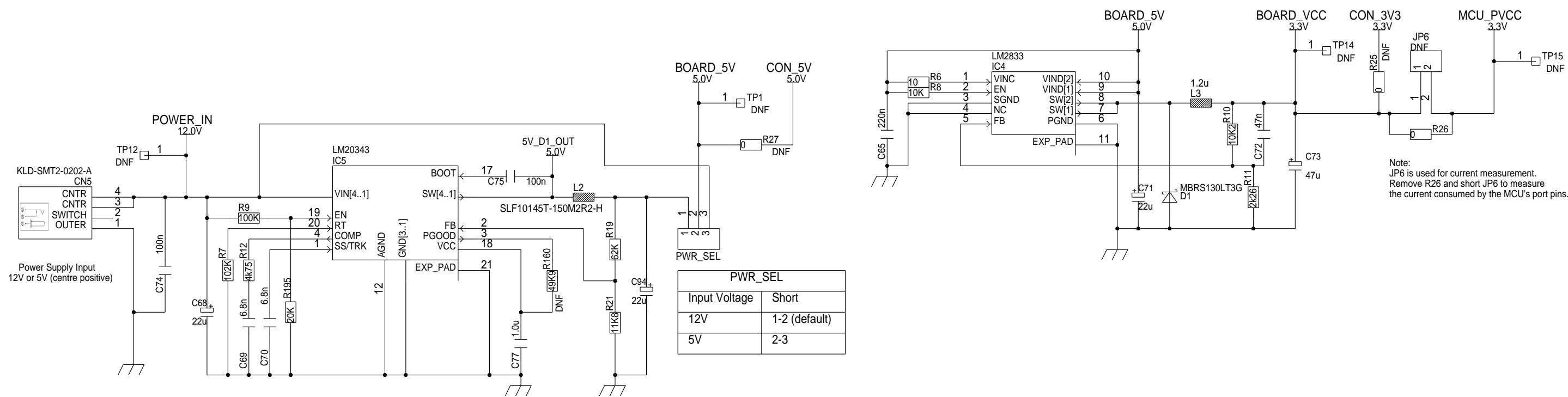
SDRAM, NOR Flash, NAND Flash, QSPI Flash



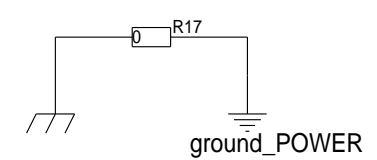
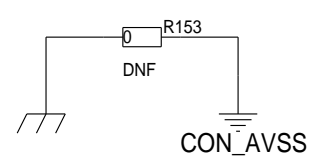
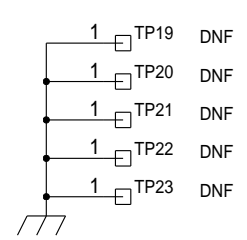
RENEASAS Electronics Europe Ltd
 Title: **RSK+RZA1**
 Size: A3 | Document Number: **d012222_04**
 Date: Wed Feb 12 12:52:47 2014 | PAGE 12 OF 26 | 3.00

Do not short JP3's pins 2 and 3 when R233 is fitted.

Power Supply



Note:
JP6 is used for current measurement.
Remove R26 and short JP6 to measure
the current consumed by the MCU's port pins.



- 1 - TP2 Fiducial_1mm
- 1 - TP3 Fiducial_1mm
- 1 - TP4 Fiducial_1mm
- 1 - TP5 Fiducial_1mm
- 1 - TP6 Fiducial_1mm
- 1 - TP7 Fiducial_1mm

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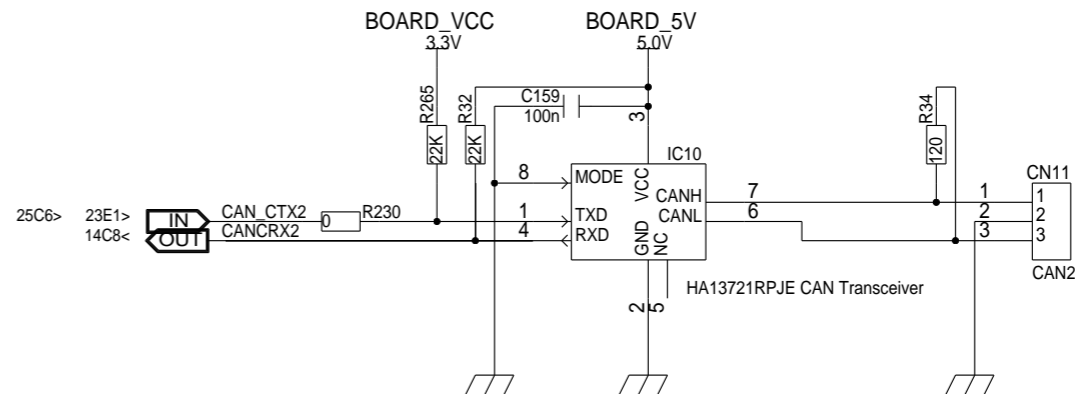
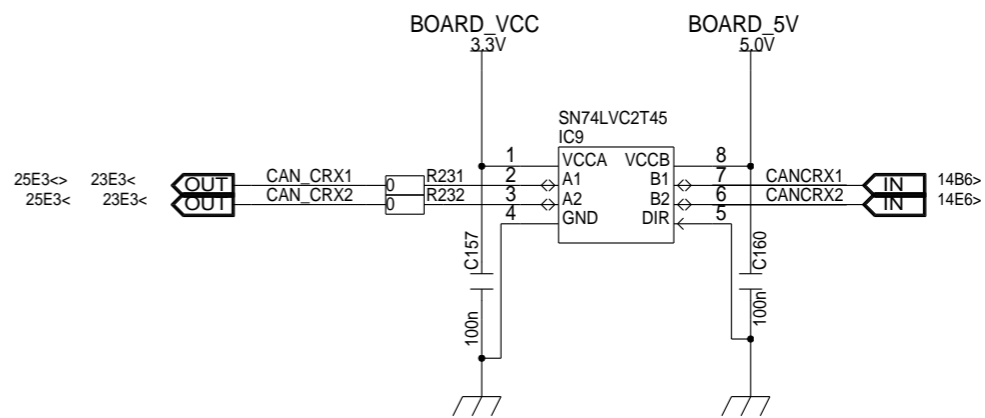
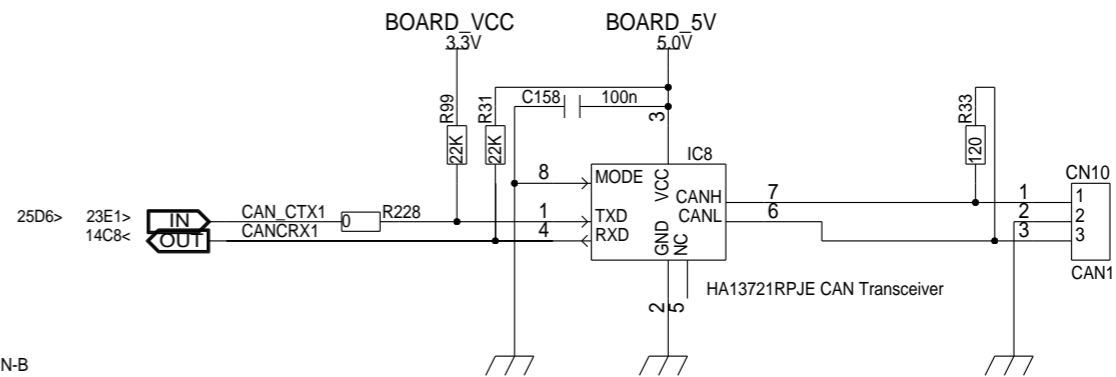
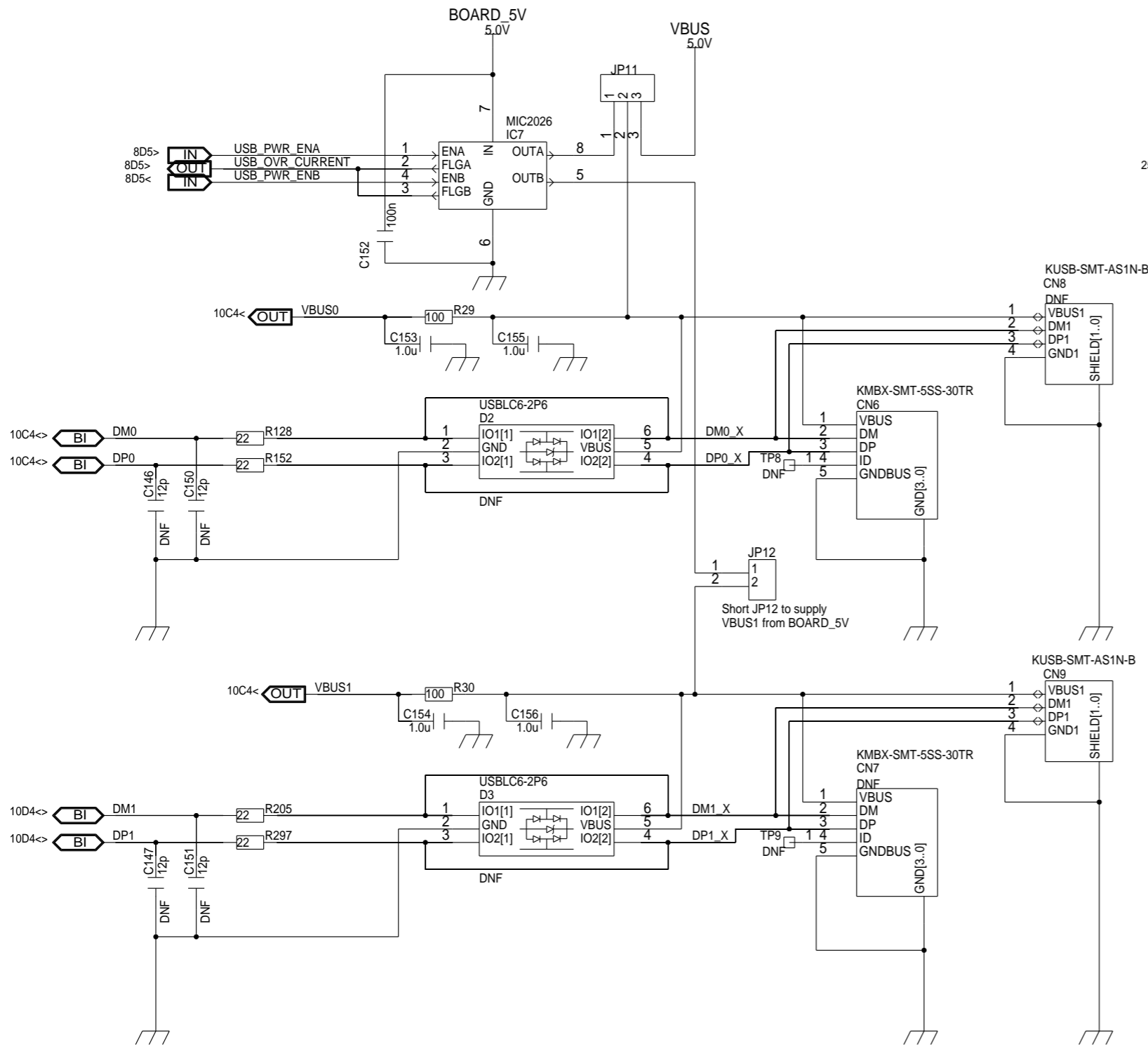
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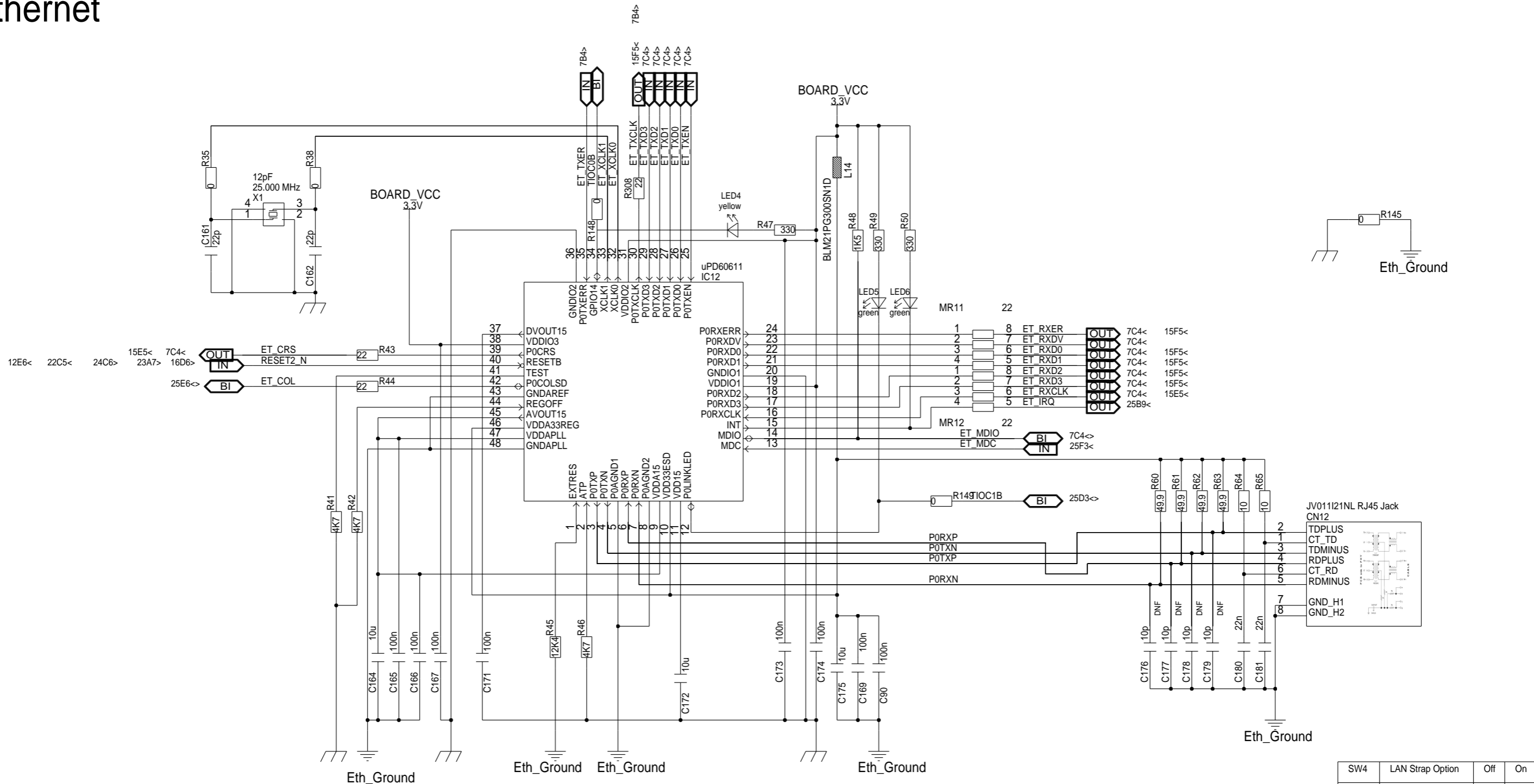
Date: **Wed Feb 12 08:05:07 2014** | PAGE 13 OF 26 | 3.00

CAN, USB

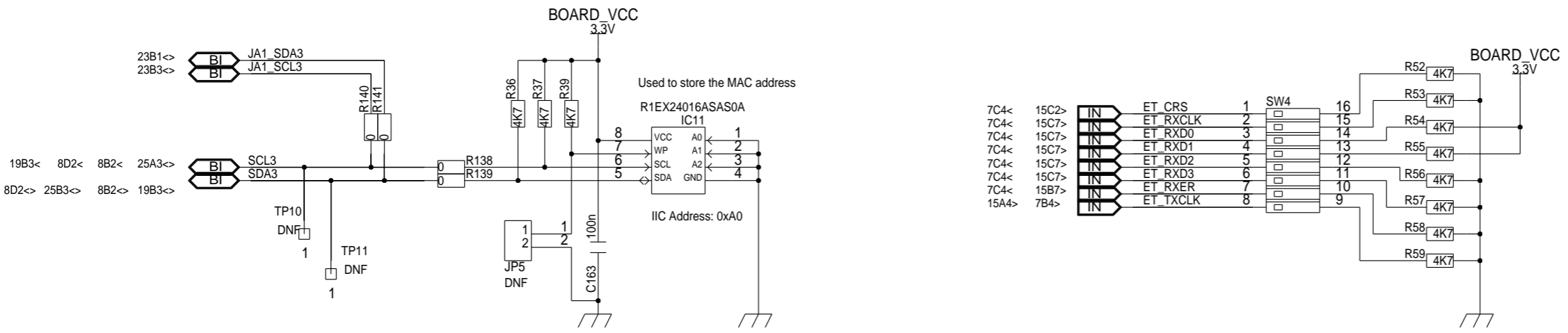
JP11	USB VBUS Power
1-2 (default)	BOARD_5V
2-3	VBUS



Ethernet



SW4	LAN Strap Option	Off	On
1	Auto MDI-X En	1	0
2	Q-Autoneg EN	1	0
3	Phy Adr0	0	1
4	Phy Adr1	0	1
5	Full/Half #	1	0
6	Autoneg EN	1	0
7	MI/RMII #	1	0
8	Fast (J) / Std (JK)	1	0

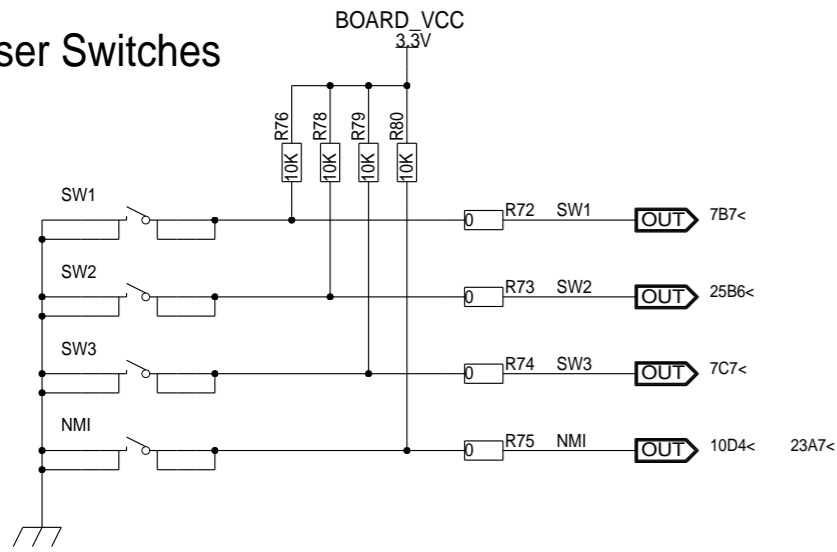


Short JP5 to disable the EEPROM's write protection.

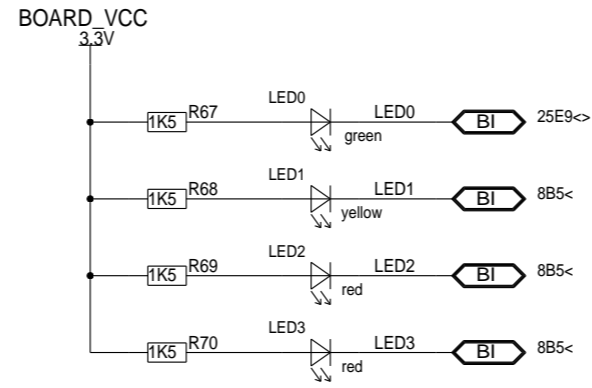
RENESAS Electronics Europe Ltd
 Title: **RSK+RZA1**
 Size: **A3** Document Number: **d012222_04**
 Date: **Wed Feb 12 12:53:53 2014** PAGE 15 OF 26 3.00

Switches, LEDs & Reset

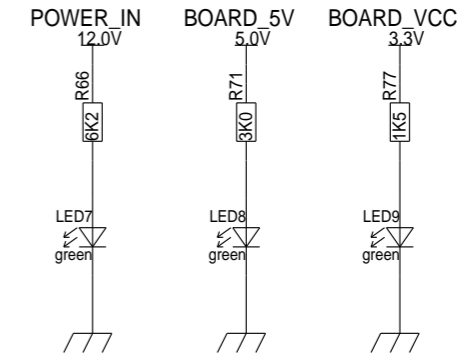
User Switches



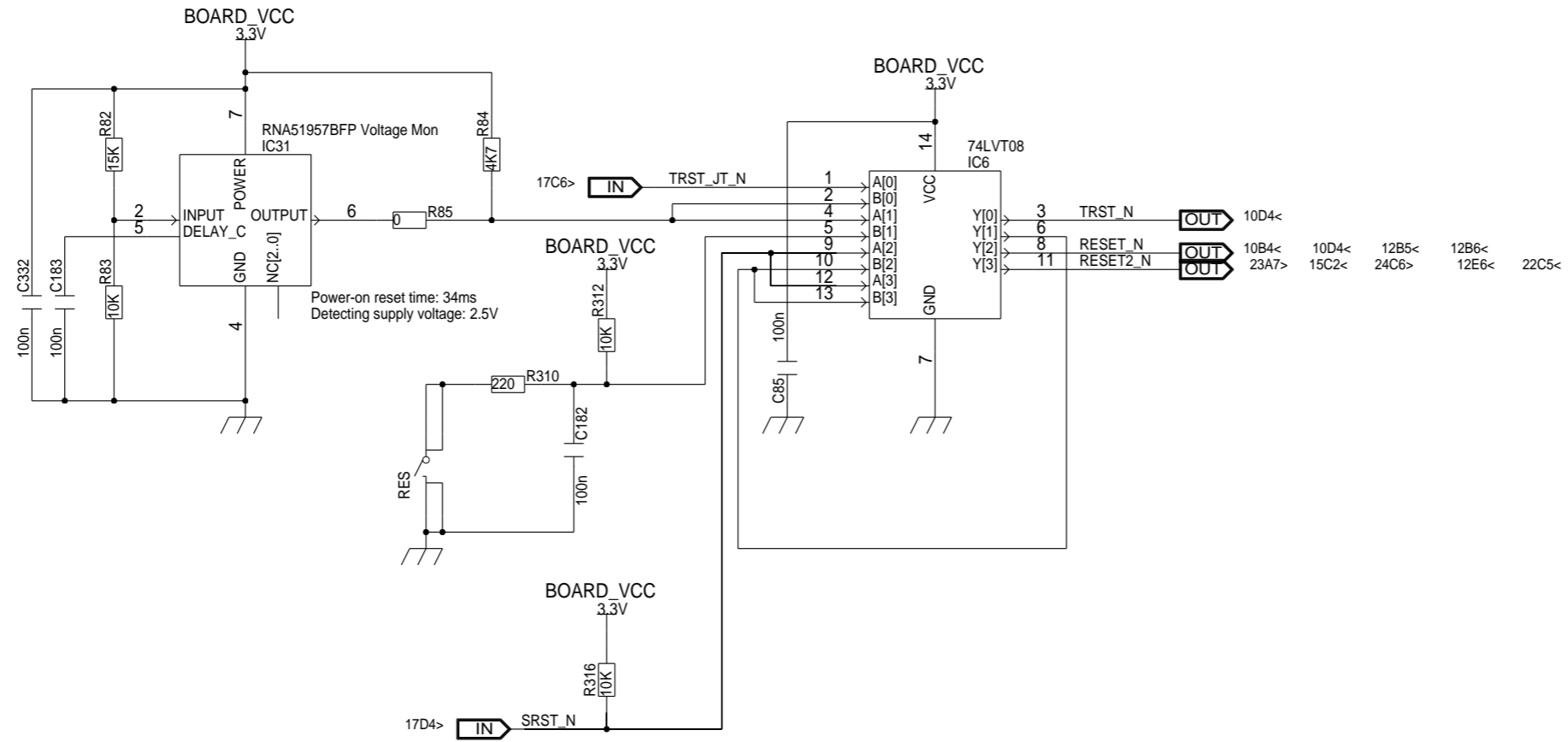
User LEDs



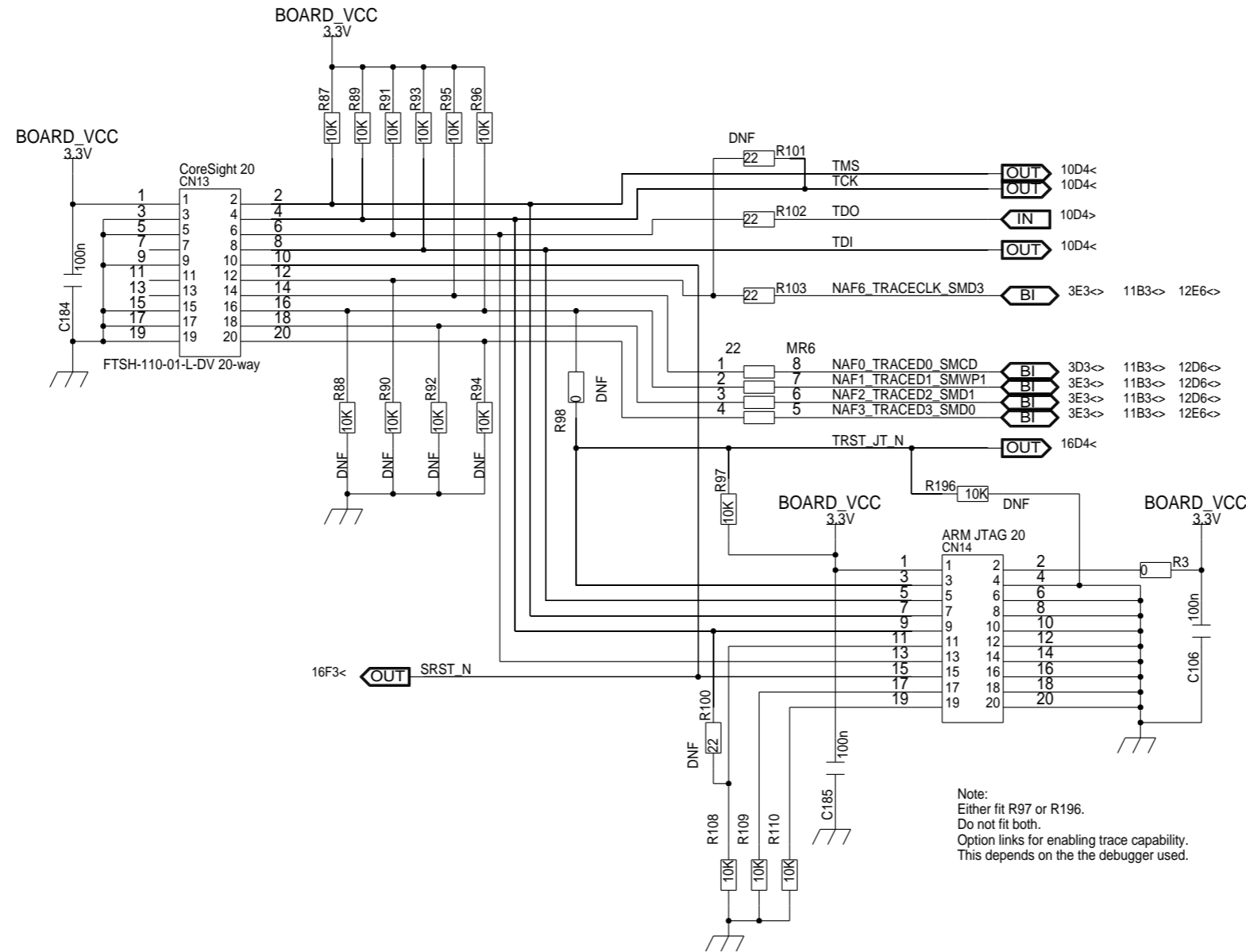
Power LEDs



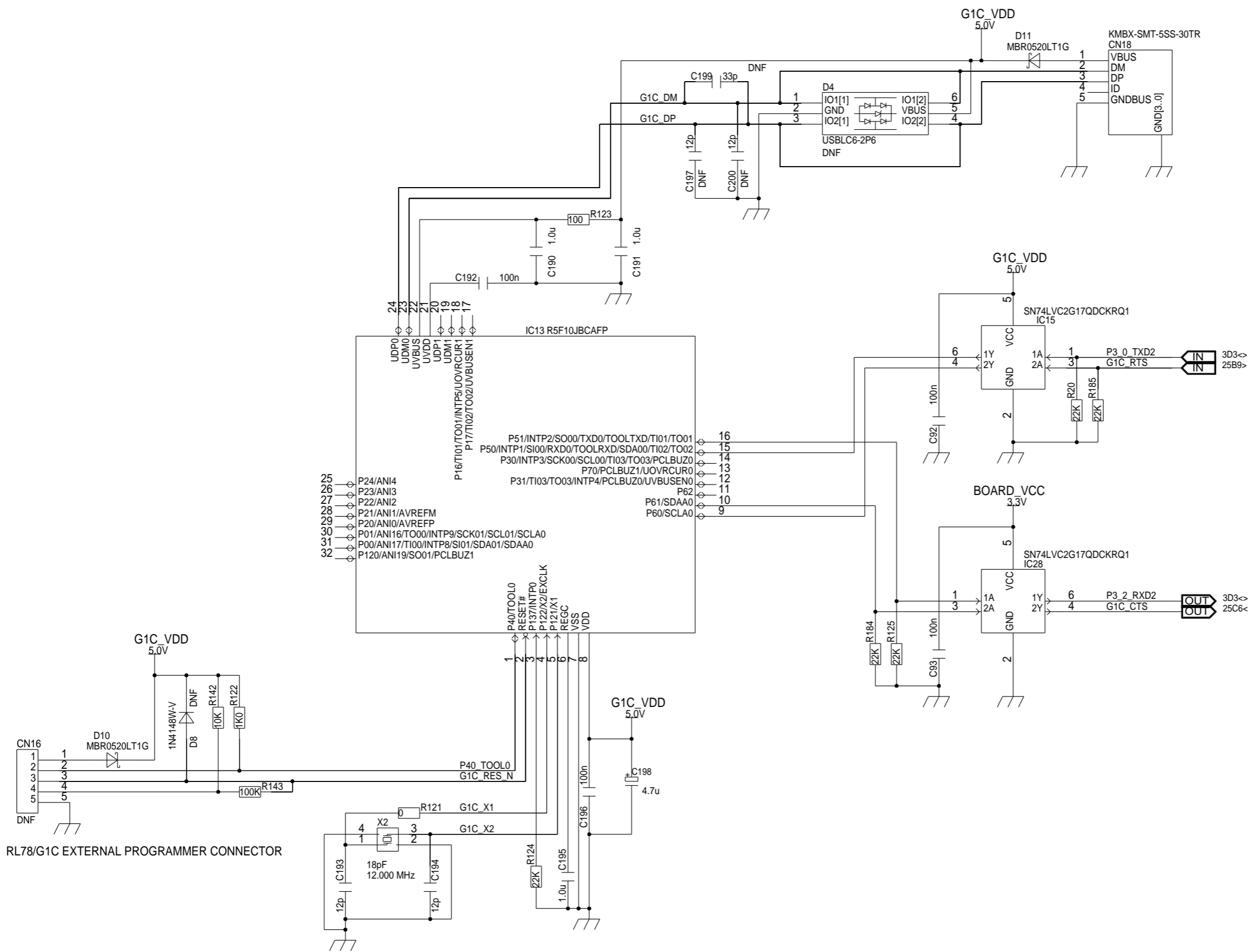
Reset Circuit



DLINK2 and ETM Connectors



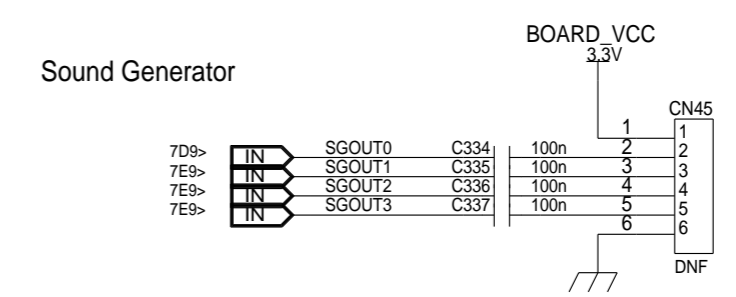
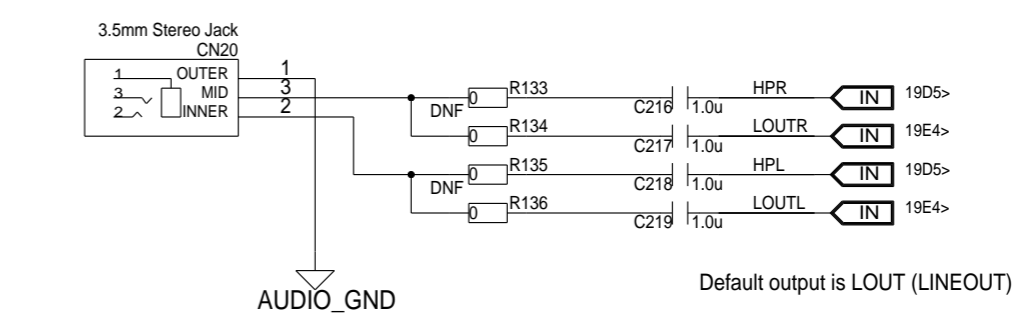
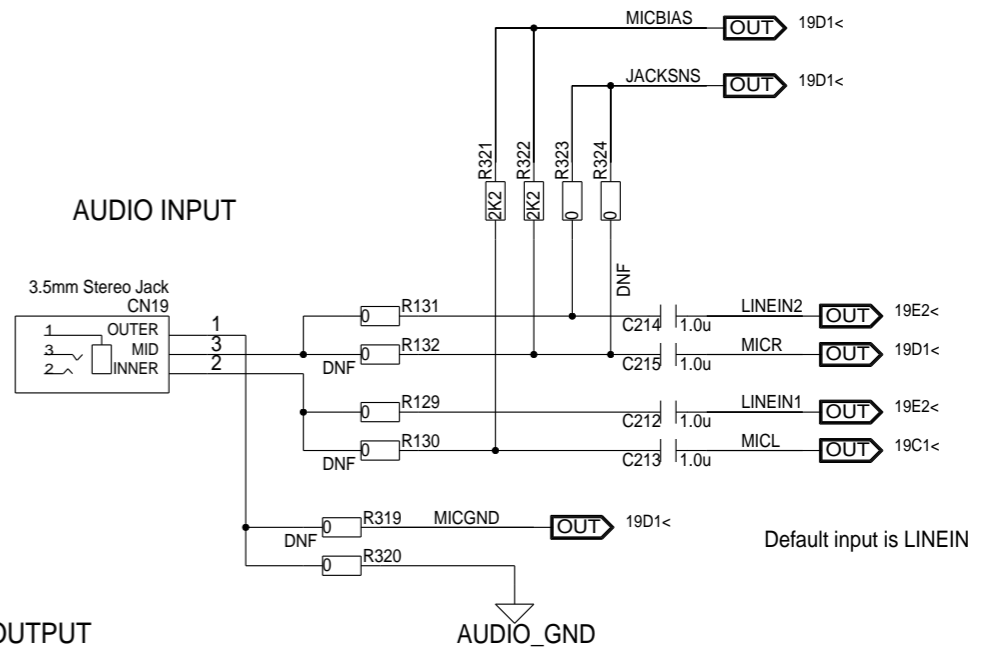
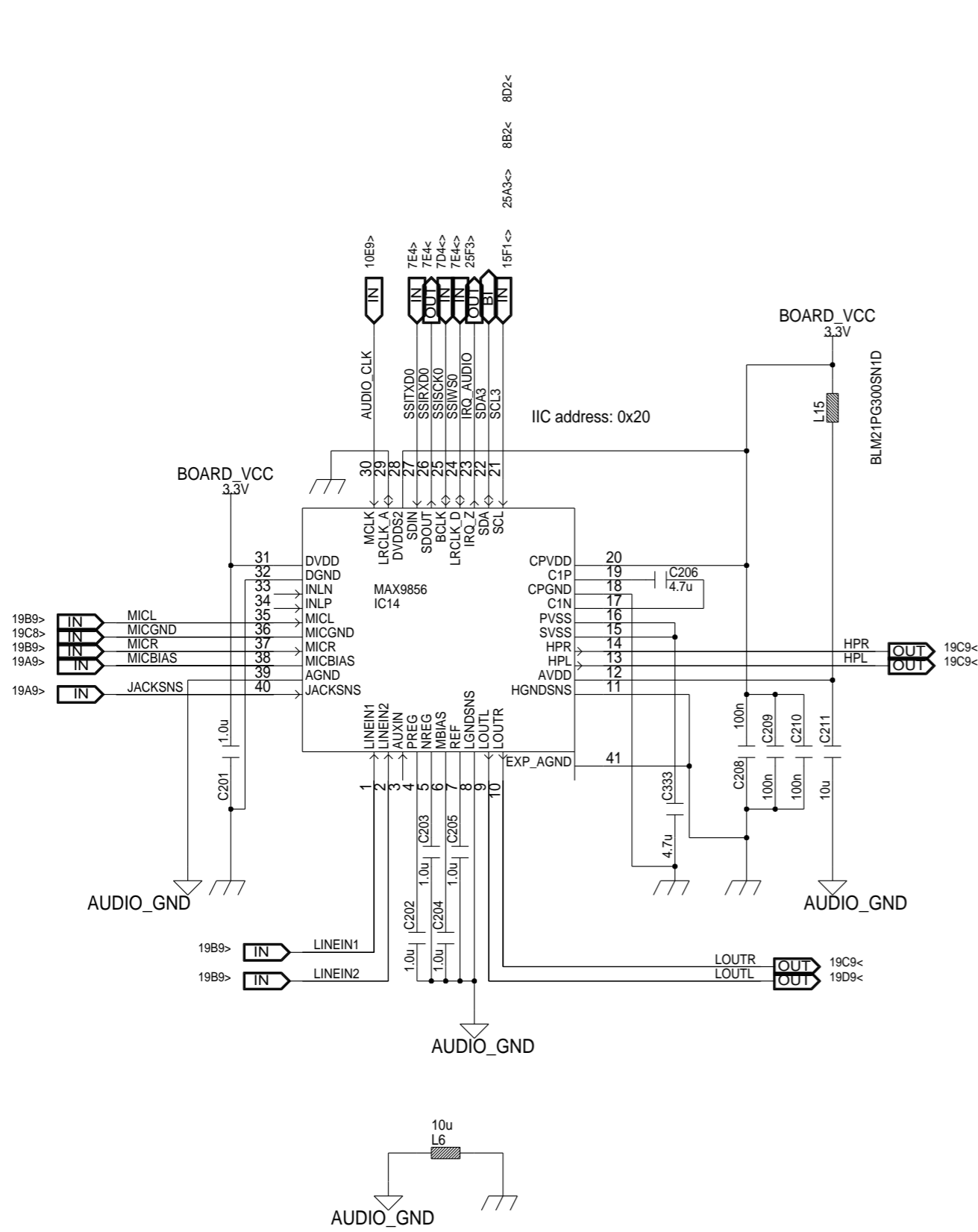
RL78G1C USB to Serial



RL78/G1C EXTERNAL PROGRAMMER CONNECTOR

Title: RSK+RZA1	
Size: A3	Document Number: d012222_04
Date: Wed Feb 12 08:05:01 2014 PAGE 18 OF 26 3.00	

Audio Codec, Audio Connectors



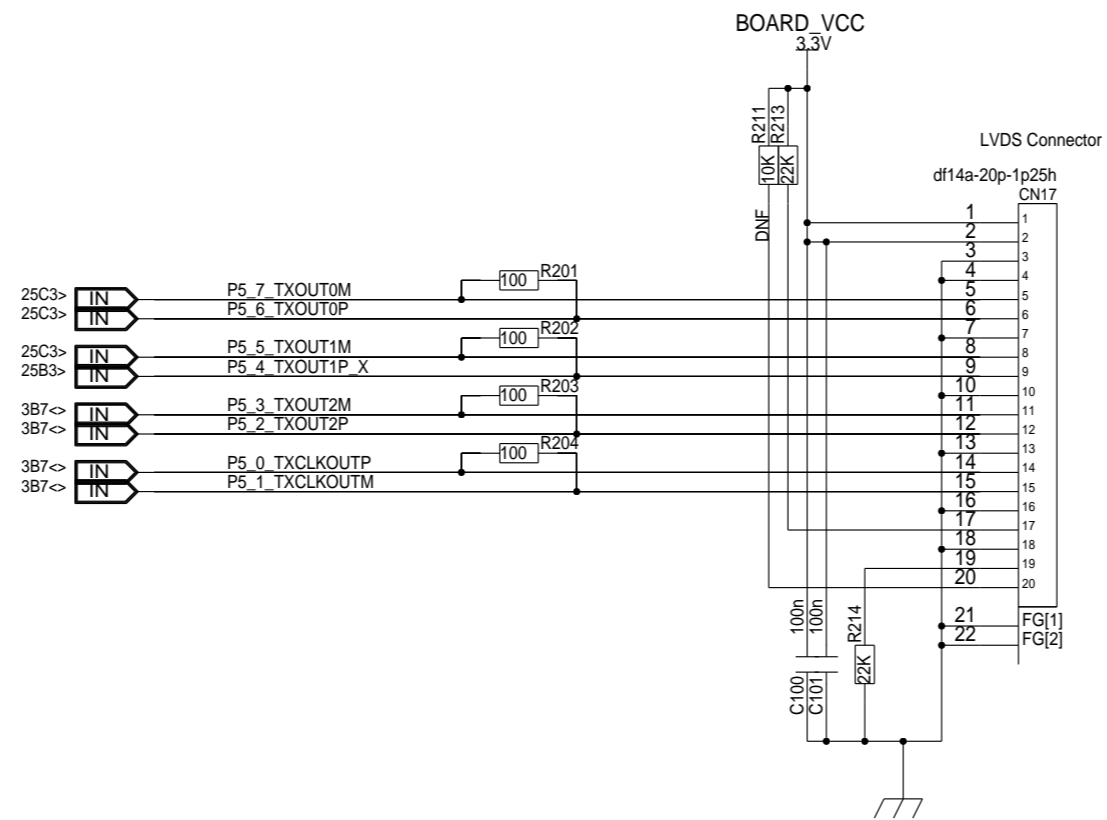
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Title: **RSK+RZA1**

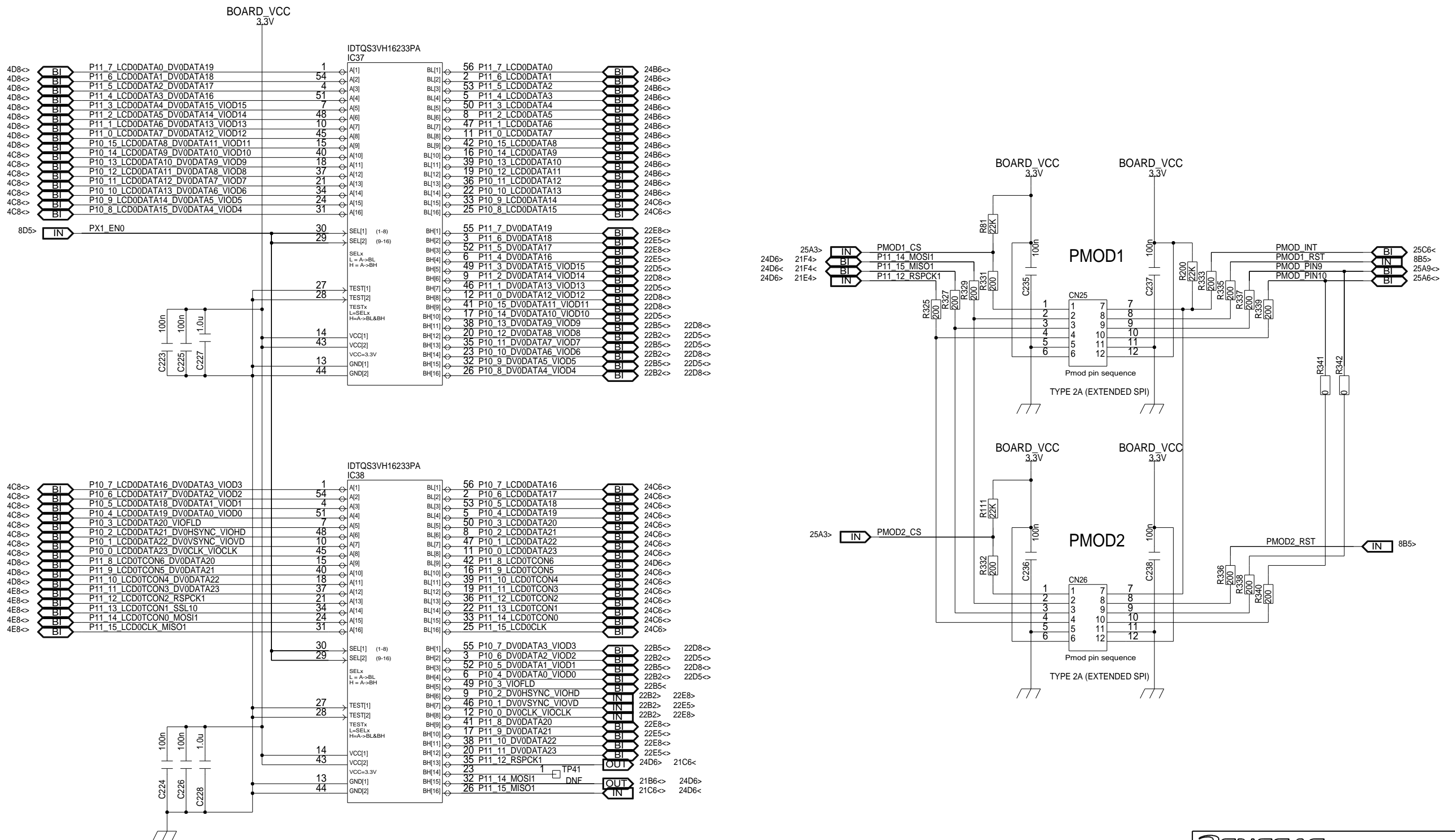
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LVDS Connector



TFT Panel / DV Input Multiplexing / PMOD



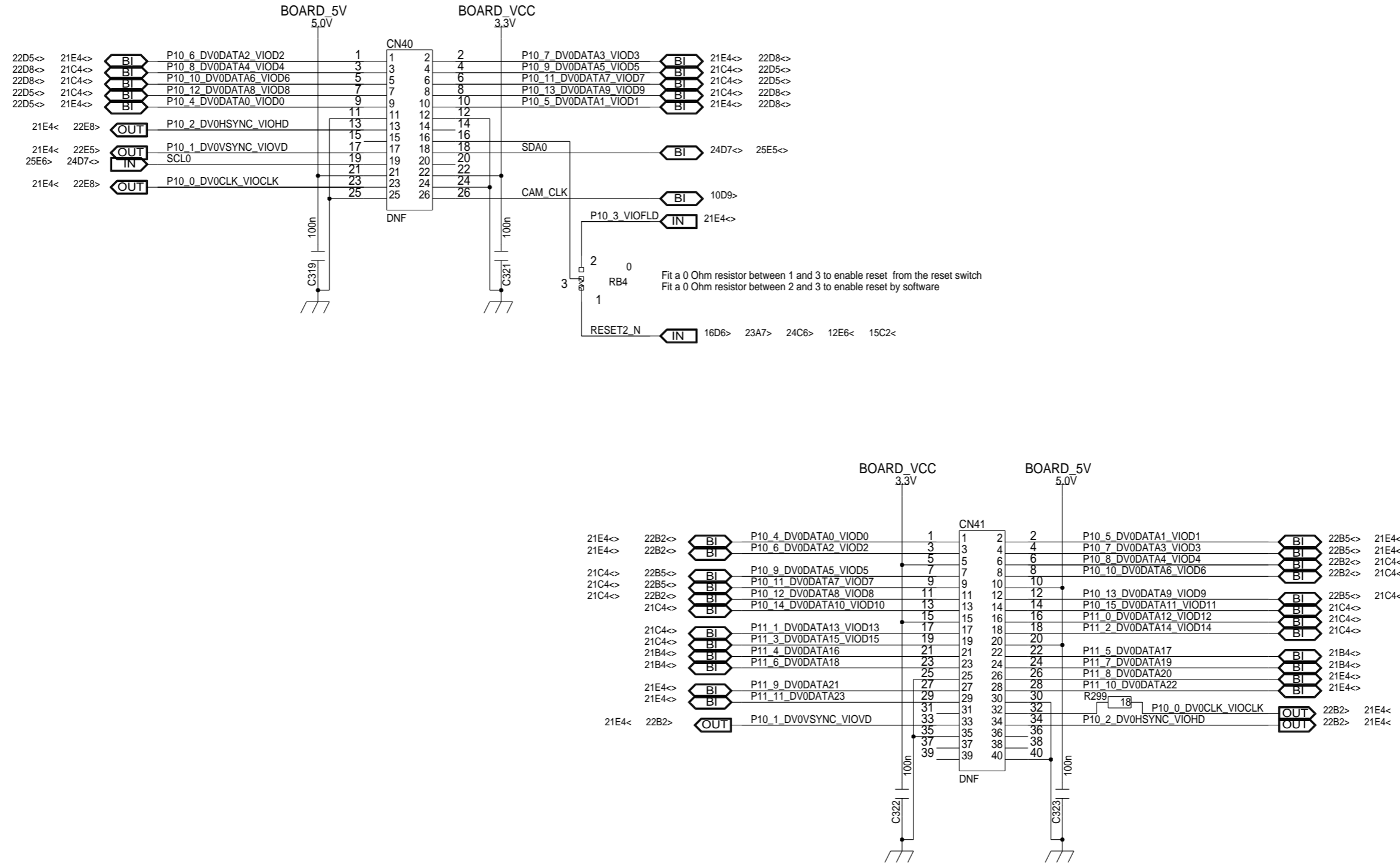
RENESAS Electronics Europe Ltd

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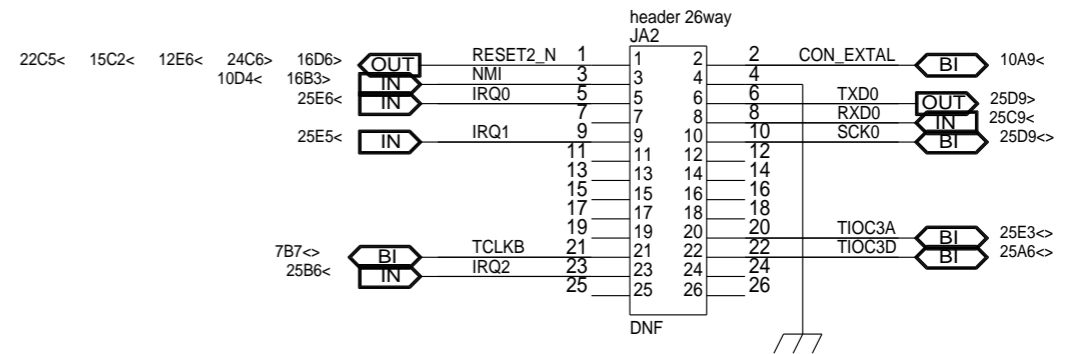
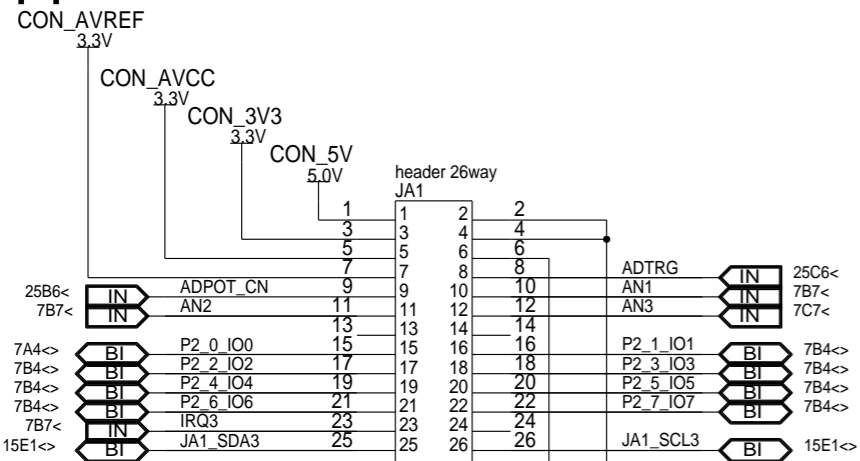
Date: **Wed Feb 12 08:05:09 2014** | PAGE 21 OF 26 | 3.00

CMOS Camera, DV Input

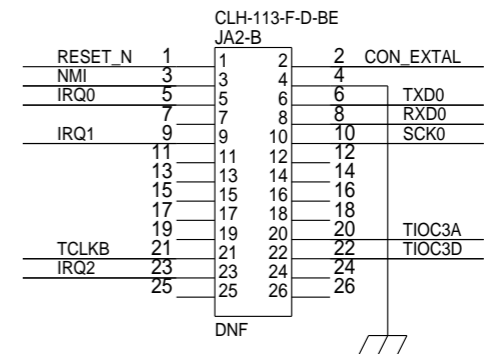
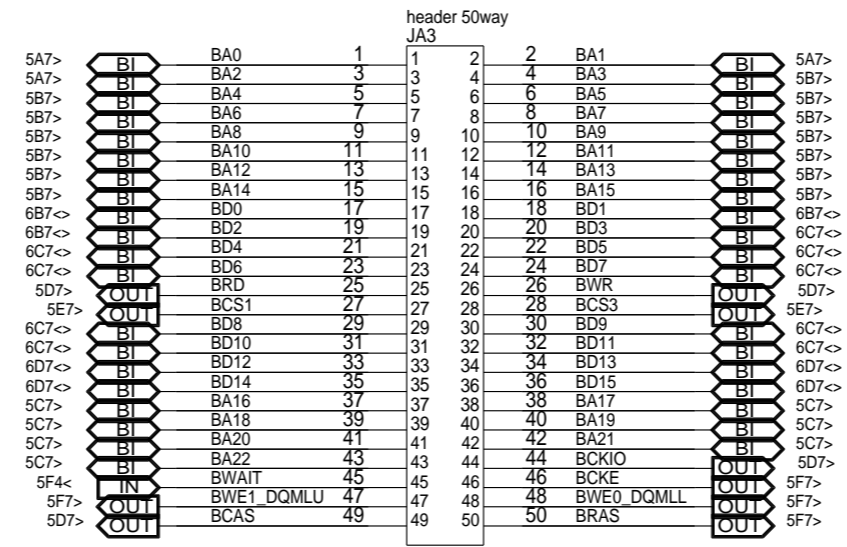
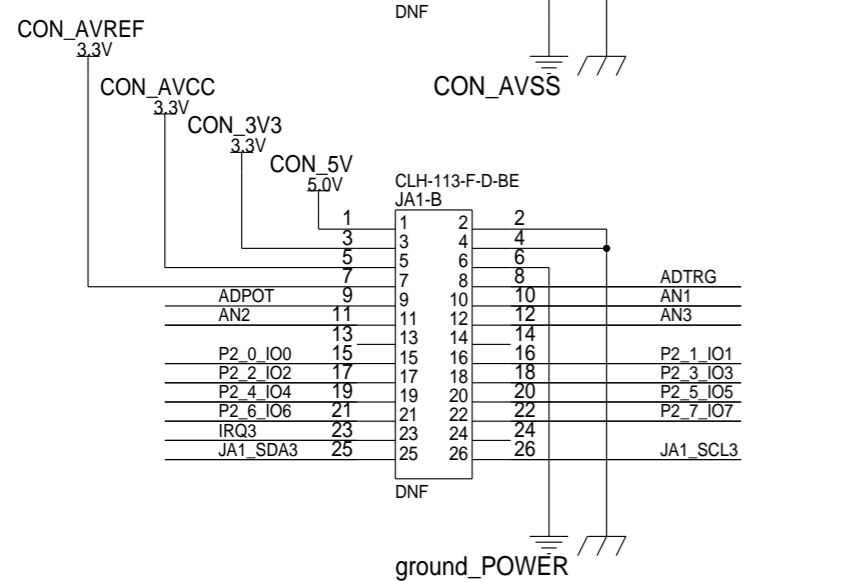


Application Headers

A

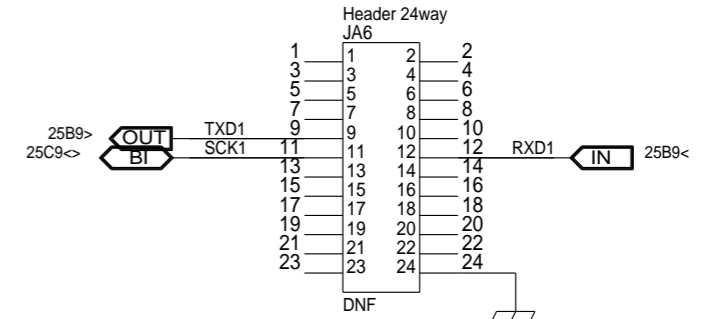
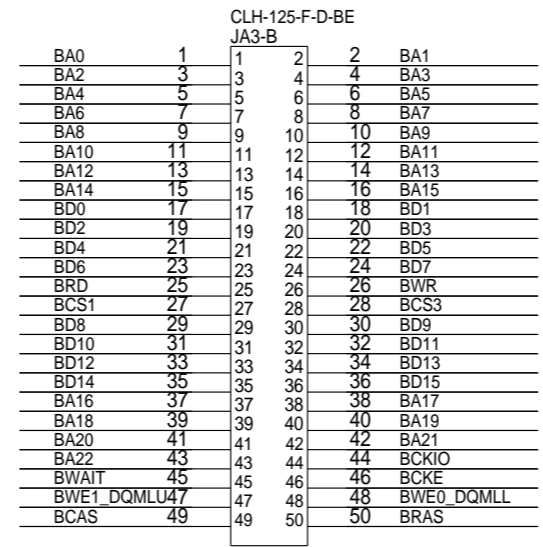


B



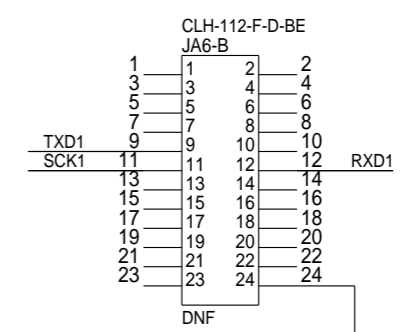
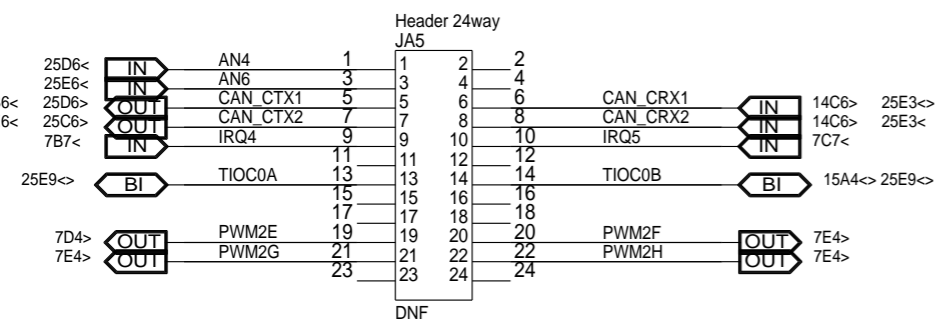
C

D

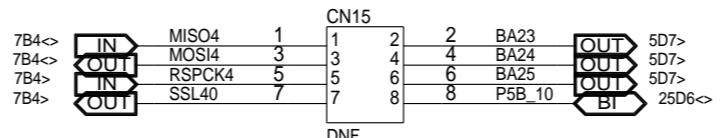


E

F



Misc. Connector



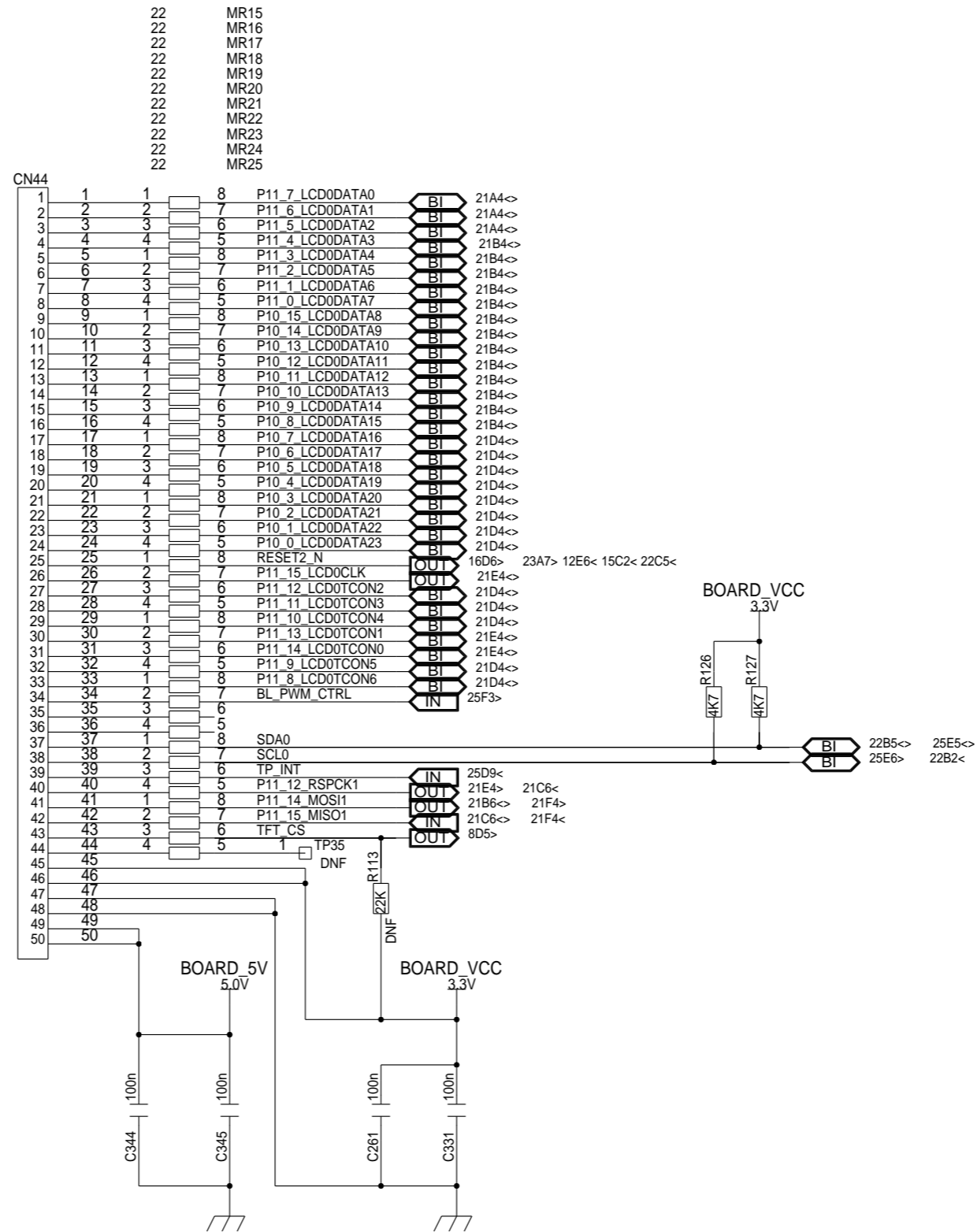
RENESAS Electronics Europe Ltd

Title: **RSK+RZA1**

Size: **A3** Document Number: **d012222_04**

Date: **Wed Feb 12 08:05:21 2014** PAGE 23 OF 26 3.00

TFT LCD Panel Connector



Rubber Foot d=11.1mm/h=5mm black

MP1



Rubber Foot d=11.1mm/h=5mm black

MP2



Rubber Foot d=11.1mm/h=5mm black

MP3



Rubber Foot d=11.1mm/h=5mm black

MP4



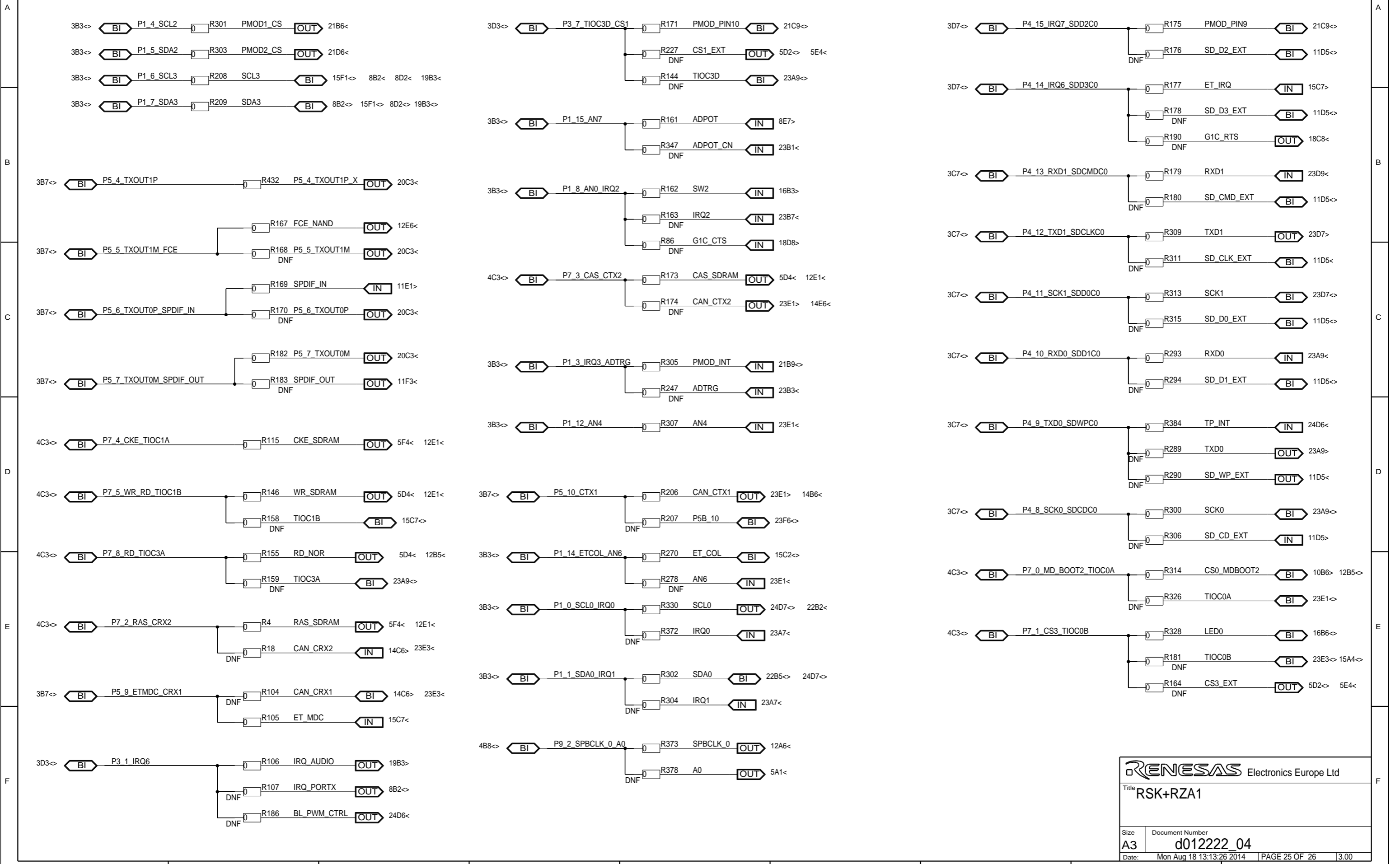
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Option Links



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Revision History

Rev	Date	Page	Description
1.00	06.11.2013	--	1st edition.
2.00	12.02.2014	1	Added 6 fiducials (TPx)
		5	IC18 and IC22 changed from 74LVCH16244APAG to 74LVC16244APAG IC33 changed from SN74LVCH244A to SN74LVC244A
		17	Added R196 between pin 3 and 4 of CN14.
	17.02.2014	26	Added Change History page.
3.00	18.08.2014	8	Address of Port Expander 2 (IC35) changed from 0x41 to 0x42.
		25	R104 is fitted by default instead of R105. This selects Ethernet signal ET_MDC instead of CAN_CRX1.