

Page 2: Powering

Page 3: OEM board connector, pin 1-100

Page 4: OEM board connector, pin 101-200

Page 5: Push-buttons and LEDs

Page 6: JTAG Debug Interface

Page 7: USB Interfaces

Page 8: CAN Transceiver

Page 9: SD card interface

Page 10: LCD interface

Page 11: Ethernet Interface

Page 12: UART-to-USB bridge interface

Page 13: Audio Codec

Updates for i.MX RT1052 silicon revision A1

R25 removed (to set VIN_ALWAYS ON to 3.3V).


Q7 removed and replaced with a short between pin 1 and 3.

J5 in default position 1-2.

R74 changed to 100K ohm. J27 in default position 1-2.

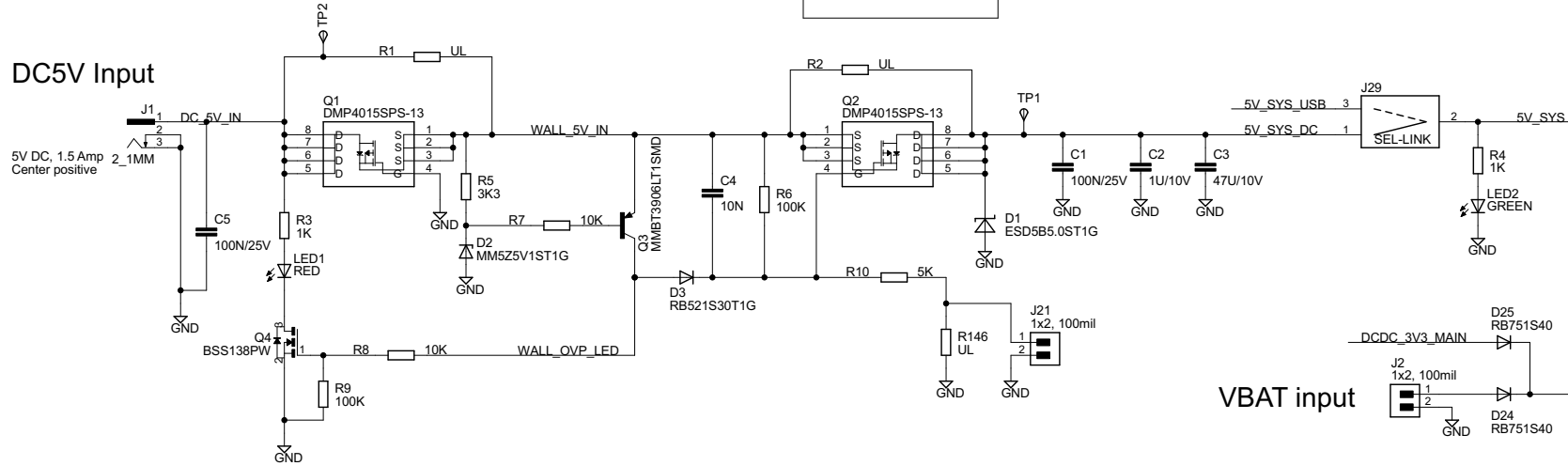
UL = UnLoaded = normally not mounted component.

Default jumper settings are indicated in the schematic.
However, always check jumper positions on actual boards
since there is no guarantee that all jumpers are in default place.

Rev A Added R147-R158, SJ1, and JP7-JP8. Change LED3 and LED9 to green. R146 UL. R49 UL. Added C95, R159-R160, TP201-TP203, U14.	
Rev PA1-PA3 First revision	
 <div style="text-align: right;">(C) Embedded Artists AB</div>	
TITLE: iMX OEM Carrier Board rev A update	
Document Number:	
Date: 2018-05-06 21:36:46	Sheet: 1/13

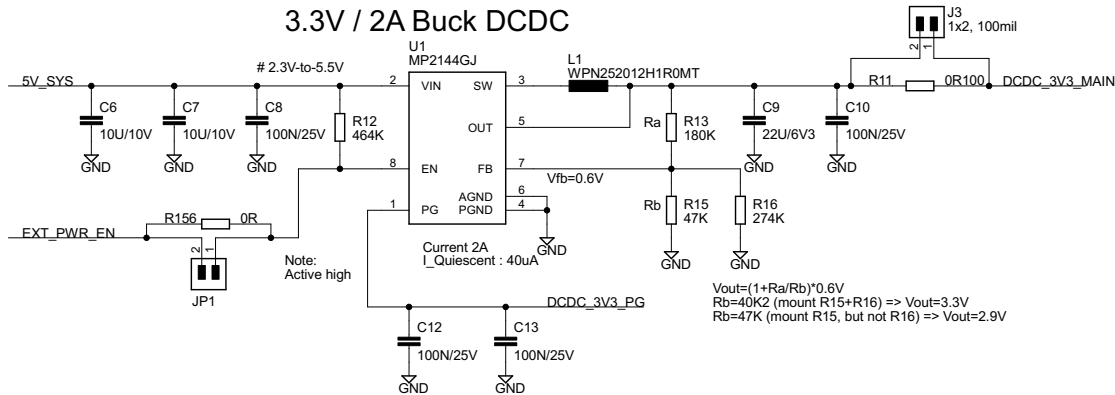
Powering

DC5V Input

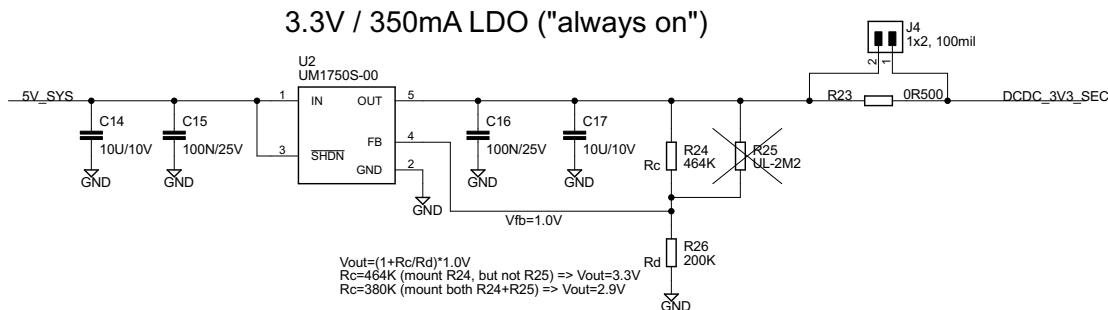


VBAT input

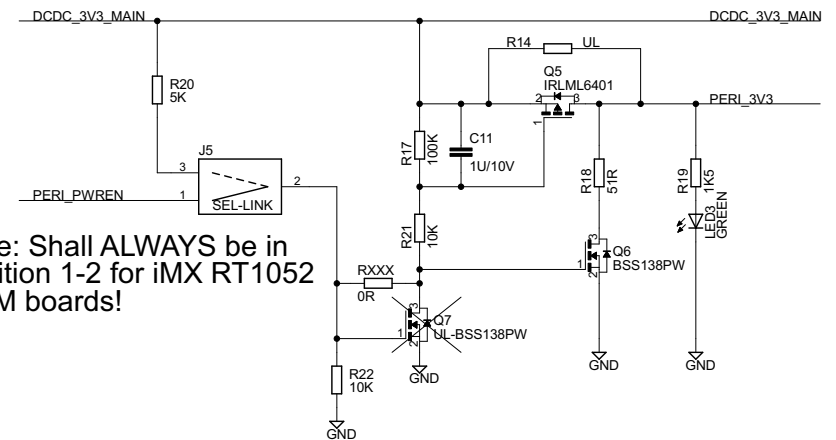
3.3V / 2A Buck DCDC



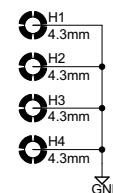
3.3V / 350mA LDO ("always on")



Peripheral Voltage Control



Note: Shall ALWAYS be in position 1-2 for iMX RT1052 OEM boards!



GND connectors (Keystone 5016K)



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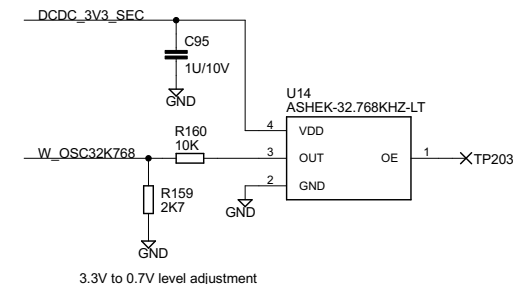
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Sheet: 2/13

		iMX RT1052	LPC2478/1788	LPC3250	LPC4088	LPC4357
TP92X		GND	GND	GND	GND	GND
TP93X		GND	GND	GND	GND	GND
TP94X	GPIO_AD_B1_14-SAI1_TX_BCLK	GPIO_AD_B1_14 NC	GPIO_AD_B1_14 NC	I2S1TX_CLK NC	P3_0	P3_0
TP95X	GPIO_AD_B1_13-SAI1_TXD	GPIO_AD_B1_13 NC	GPIO_AD_B1_13 NC	I2S1TX_SDA NC	PC_12	PC_12
TP96X	GPIO_AD_B1_15-SAI1_TX_SYNC	GPIO_AD_B1_15 NC	GPIO_AD_B1_15 NC	I2S1TX_WS NC	PC_13	PC_13
TP97X		NC	NC	P0_0	NC	P6_0
TP98X	GPIO_SD_B1_04-FLEXSPI_CLK_B	GPIO_SD_B1_04 NC/P5.4	GPIO_SD_B1_04 NC/P5.4	P0.1	P5.4	P6_1
TP99X	GPIO_AD_B1_12-SAI1_RXD	GPIO_AD_B1_12 NC/P5.3	GPIO_AD_B1_12 NC/P5.3	GPI_00	P5.3	P6_2
TP100X	POR_B	NC/P5.2	NC/P5.2	POR_B	P5.2	WAKEUP3
TP101X	Q100E	NC	NC	I2C2_SCL	NC	WAKEUP2
TP102X	OTG1_CHD	OTG1_CHD NC/P1.16	OTG1_CHD NC	GPI_04	P1.16	WAKEUP1
TP103X	WAKEUP	WAKEUP NC	WAKEUP NC	GPI_06	NC	WAKEUP0
TP104X		NC/BCS1	NC/BCS1	USB_CONN_IDBCS1	USB0_ID	USB0_ID
TP105X		NC/P4.30	NC/P4.30	POWER_ON	P4.30	SAMPLE
TP106X	GPIO_AD_B1_09-SAI1_MCLK	GPIO_AD_B1_09 NC/P1.16	GPIO_AD_B1_09 NC/P1.16	TST_CLK2	P1.16	CLK2_OUT
TP107X	PMIC_ON_REQ	PMIC_ON_REQ P2.14	PMIC_ON_REQ P2.14	P2.7	P2.14	P9_2
TP108X	EXT_PWR_EN	EXT_PWR_EN P2.15	EXT_PWR_EN P2.15	GPIO_00	P2.15	P8_1
TP109X	PERI_PWREN	PERI_PWREN P2.19	PERI_PWREN P2.19	GPIO_01	P2.19	P8_2
TP110X	GPIO_B1_13-WDOG_B	GPIO_B1_13 P2.21	GPIO_B1_13 P2.21	GPI_07	P2.21	PC_2
TP111X	GPIO_AD_B1_02	GPIO_AD_B1_02 P2.22	GPIO_AD_B1_02 P2.22	P2.0	P2.22	PA_1
TP112X	GPIO_AD_B1_03	GPIO_AD_B1_03 P2.23	GPIO_AD_B1_03 P2.23	P2.1	P2.23	PA_2
TP113X	GPIO_AD_B1_04	GPIO_AD_B1_04 P2.25	GPIO_AD_B1_04 P2.25	P2.2	P2.25	PA_3
TP114X	GPIO_AD_B1_05	GPIO_AD_B1_05 P2.26	GPIO_AD_B1_05 P2.26	P2.3	P2.26	P9_0
TP115X	GPIO_AD_B1_06	GPIO_AD_B1_06 P2.27	GPIO_AD_B1_06 P2.27	P2.4	P2.27	P9_1
TP116X	GPIO_AD_B1_07	GPIO_AD_B1_07 P2.30	GPIO_AD_B1_07 P2.30	P2.5	P2.30	PF_8
TP117X	CCM_CLK1_N	CCM_CLK1_N P2.31	CCM_CLK1_N P2.31	P2.6	P2.31	PF_9
TP118X		P4.28	P4.28	GPO_07	P4.28	P4_3
TP119X	CCM_CLK1_P	CCM_CLK1_P P4.29	CCM_CLK1_P P4.29	GPO_21	P4.29	P4_2
TP120X		GND	GND	GND	GND	GND
TP121X		GND	GND	GND	GND	GND
TP122X		GND	GND	GND	GND	GND
TP123X		-/SEMC_DQS	BA15	BA15	BA15	BA15
TP124X		-/SEMC_DM1	BDQM1/BCS2	BCS3	BCS2	BCS2
TP125X		-/SEMC_CLK	BA14	BA14	BA14	BA14
TP126X		-/SEMC_DM0	BDQM0/BCS0	BCS2	BCS0	BCS0
TP127X		-/SEMC_CKE	BA13	BA13	BA13	BA13
TP128X		-/SEMC_CAS	BCAS/BBL3	BCS1	BBL3	BBL3
TP129X		-/SEMC_A12	BA12	BA12	BA12	BA12
TP130X		-/SEMC_RAS	BRAS/BBL2	BCS0	BBL2	BBL2
TP131X		-/SEMC_A11	BA11	BA11	BA11	BA11
TP132X		-/SEMC_BA1	BBL1	BBL1	BBL1	BBL1
TP133X		-/SEMC_A10	BA10	BA10	BA10	BA10
TP134X		-/SEMC_BA0	BBL0	BBL0	BBL0	BBL0
TP135X		-/SEMC_A9	BA9	BA9	BA9	BA9
TP136X		-/SEMC_WE	BWE	BWE	BWE	BWE
TP137X		-/SEMC_A8	BA8	BA8	BA8	BA8
TP138X		-/SEMC_CS0	BOE	BOE	BOE	BOE
TP139X	GPIO_EMC_41	-/SEMC_A7	BA7	BA7	BA7	BA7
TP140X	GPIO_EMC_40	-/SEMC_A6	BA6	BA6	BA6	BA6
TP141X		GPIO_EMC_40	BA22	BA22	BA22	BA22
TP142X		-/SEMC_A5	BA5	BA5	BA5	BA5
TP143X	GPIO_B1_04	GPIO_B1_04	BA21	BA21	BA21	BA21
TP144X		-/SEMC_A4	BA4	BA4	BA4	BA4
TP145X	GPIO_B1_05	GPIO_B1_05	BA20	BA20	BA20	BA20
TP146X	GPIO_B1_06	-/SEMC_A3	BA3	BA3	BA3	BA3
TP147X		GPIO_B1_06	BA19	BA19	BA19	BA19
TP148X	GPIO_B1_07	-/SEMC_A2	BA2	BA2	BA2	BA2
TP149X		GPIO_B1_07	BA18	BA18	BA18	BA18
TP150X	GPIO_B1_08	-/SEMC_A1	BA1	BA1	BA1	BA1
TP151X		GPIO_B1_08	BA17	BA17	BA17	BA17
TP152X	GPIO_B1_09	-/SEMC_A0	BA0	BA0	BA0	BA0
TP153X	GPIO_B1_11	GPIO_B1_09	BA16	BA16	BA16	BA16
TP154X	GPIO_B1_10	GPIO_B1_11	DBUS_EN/BCS3	BCS3	BCS3	BCS3
TP155X	DCDC_3V3_ALWAYS_ON	GPIO_B1_10	ABUF_EN(NC)	ABUF_EN	(P0_1)	VCC
TP156X		GND	GND	VDD_EXT	GND	VCC
TP157X		-/SEMC_D15	BD15	BD15	BD15	BD15
TP158X			BD31/P3.31	GPI_08	BD31/P3.31	BD31
TP159X		-/SEMC_D14	BD14	BD14	BD14	BD14
TP160X	W_GPIO_25	W_GPIO_25	BD30/P3.30	GPI_23	BD30/P3.30	BD30
TP161X	W_GPIO_32	-/SEMC_D13	BD13	BD13	BD13	BD13
TP162X	W_GPIO_36	W_GPIO_32	BD29/P3.29	GPI_09	BD29/P3.29	BD29
TP163X		-/SEMC_D12	BD12	BD12	BD12	BD12
TP164X	W_GPIO_36	W_GPIO_36	BD28/P3.28	GPI_19	BD28/P3.28	BD28
TP165X	W_SW2	-/SEMC_D11	BD11	BD11	BD11	BD11
TP166X	W_BOOT	W_SW2	BD27/P3.27	BD27	BD27/P3.27	BD27
TP167X	W_UART_DTR	-/SEMC_D10	BD10	BD10	BD10	BD10
TP168X	W_UART_DSR	W_BOOT	BD26/P3.26	BD26	BD26/P3.26	BD26
TP169X	W_UART_RTS	-/SEMC_D9	BD9	BD9	BD9	BD9
TP170X	W_UART_CTS	W_UART_DTR	BD25/P3.25	P2_10	BD25/P3.25	BD25
TP171X	W_UART_TXD	-/SEMC_D8	BD8	BD8	BD8	BD8
TP172X	W_UART_RXD	W_UART_DSR	BD24/P3.24	P2_11	BD24/P3.24	BD24
TP173X	WLED_RED	-/SEMC_D7	BD7	BD7	BD7	BD7
TP174X	WLED_GREEN	W_UART_RTS	BD23/P3.23	P2_12	BD23/P3.23	BD23
TP175X	WLED_BLUE	-/SEMC_D6	BD6	BD6	BD6	BD6
TP176X		W_UART_CTS	BD22/P3.22	GPI_28	BD22/P3.22	BD22
TP177X		-/SEMC_D5	BD5	BD5	BD5	BD5
TP178X		W_UART_TXD	BD21/P3.21	U2_TX	BD21/P3.21	BD21
TP179X		-/SEMC_D4	BD4	BD4	BD4	BD4
TP180X		W_UART_RXD	BD20/P3.20	U2_RX	BD20/P3.20	BD20
TP181X		-/SEMC_D3	BD3	BD3	BD3	BD3
TP182X		WLED_RED	BD19/P3.19	GPI_05	BD19/P3.19	BD19
TP183X		-/SEMC_D2	BD2	BD2	BD2	BD2
TP184X		WLED_GREEN	BD18/P3.18	U2_CTS	BD18/P3.18	BD18
TP185X		-/SEMC_D1	BD1	BD1	BD1	BD1
TP186X		WLED_BLUE	BD17/P3.17	U3_RX	BD17/P3.17	BD17
TP187X		-/SEMC_D0	BD0	BD0	BD0	BD0
TP188X		W_OSC32K768	BD16/P3.16	U3_TX	BD16/P3.16	BD16
TP189X	DCDC_3V3_ALWAYS_ON	xxx	VCC	VDD_EXT	VCC	VCC
TP190X		GND	GND	GND	GND	GND
TP191X						

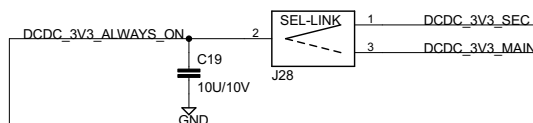
OEM board connector, pin 101-200
(200 pos SODIMM, 1V8 key)

Optional 32.768kHz oscillator for Wi-Fi module



U14 not mounted

Note: Shall ALWAYS be in position 1-2 for iMX RT1052 OEM boards!



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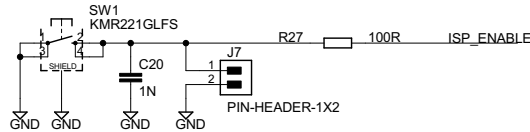
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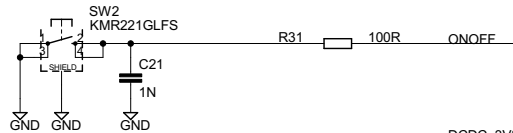
Sheet: 4/13

Push-buttons and LEDs

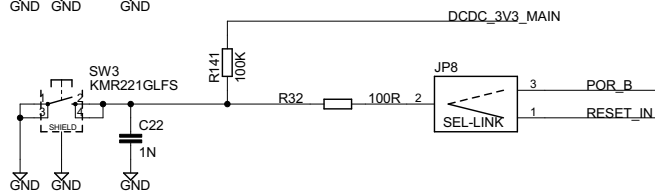
ISP Enable Key and jumper



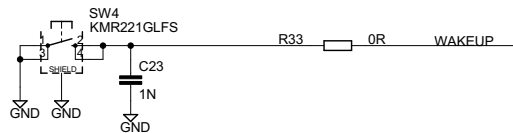
ON/OFF Key



Reset Key



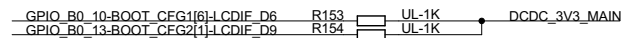
Detect Switch



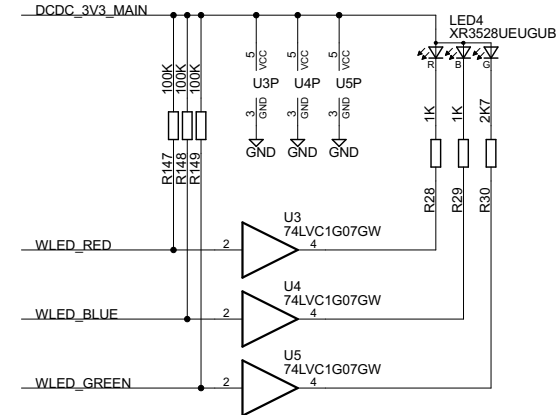
Watchdog control



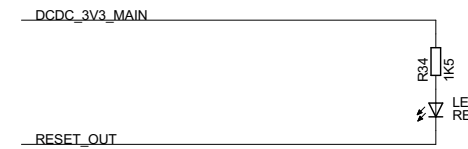
Optional i.MX RT1052 boot control



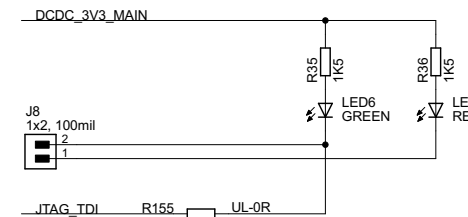
RGB-LED for RF-module



Reset LED



User LEDs



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TITLE: iMX OEM Carrier Board rev A update

Document Number:

Date: 2018-05-06 21:36:46

Sheet: 5/13

JTAG Debug Interface

ARM 10-pin interface Serial Wire Mode

1-VCC	2-SWDIO
3-GND	4-SWCLK
5-GND	6-SWO
7-N/U	8-N/U
9-GND	10-RESET

ARM 10-pin interface JTAG Mode

1-VCC	2-TMS
3-GND	4-TCLK
5-GND	6-TDO
7-RTCK	8-TDI
9-GND	10-RESET

10 pos (50 mil pitch) connector

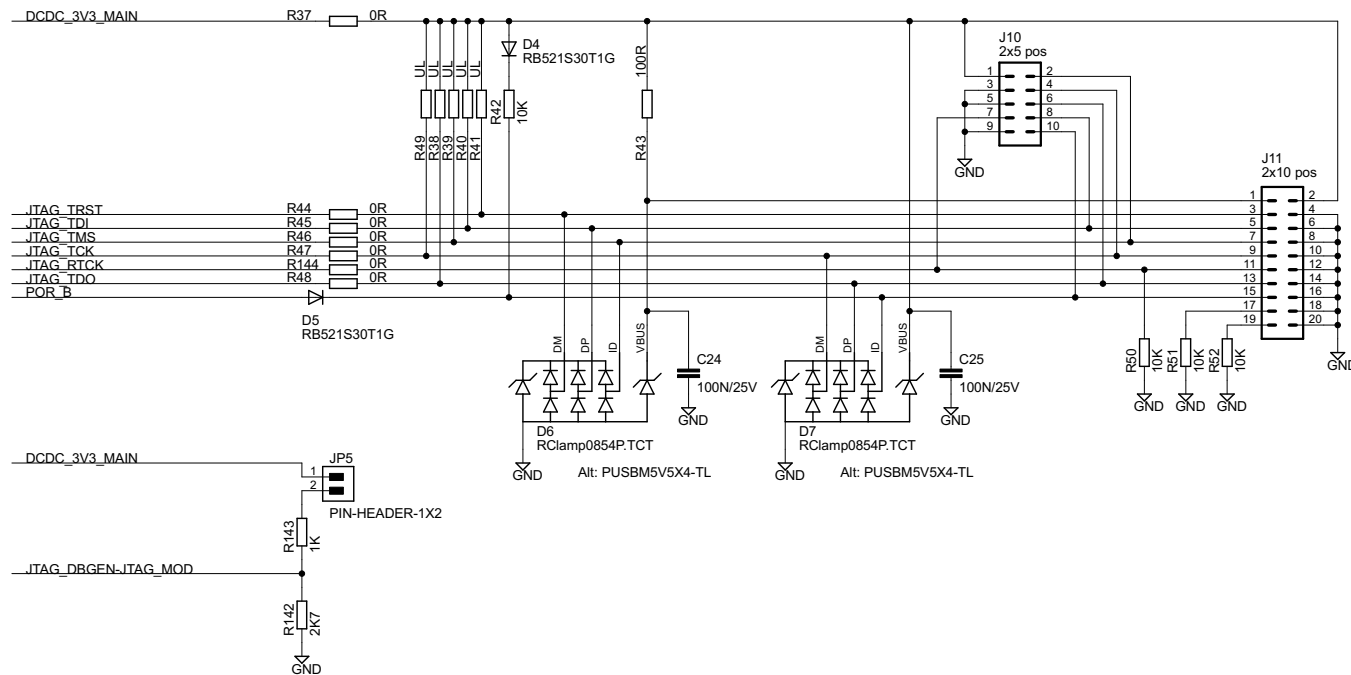
20 pos (100 mil pitch) connector

ARM 20-pin interface Serial Wire Mode

1-VCC (Vtref)	2-Optional VCC (Vtref)
3-N/U	4-GND
5-N/U	6-GND
7-SWDIO	8-GND
9-SWCLK	10-GND
11-N/U	12-GND
13-SWO	14-GND
15-RESET	16-GND
17-N/C	18-GND
19-N/C	20-GND

ARM 20-pin interface JTAG Mode

1-VCC (Vtref)	2-Optional VCC (Vtref)
3-N/C (TRST)	4-GND
5-TDI	6-GND
7-TMS	8-GND
9-TCLK	10-GND
11-RTCK	12-GND
13-TDO	14-GND
15-RESET	16-GND
17-N/C	18-GND
19-N/C	20-GND



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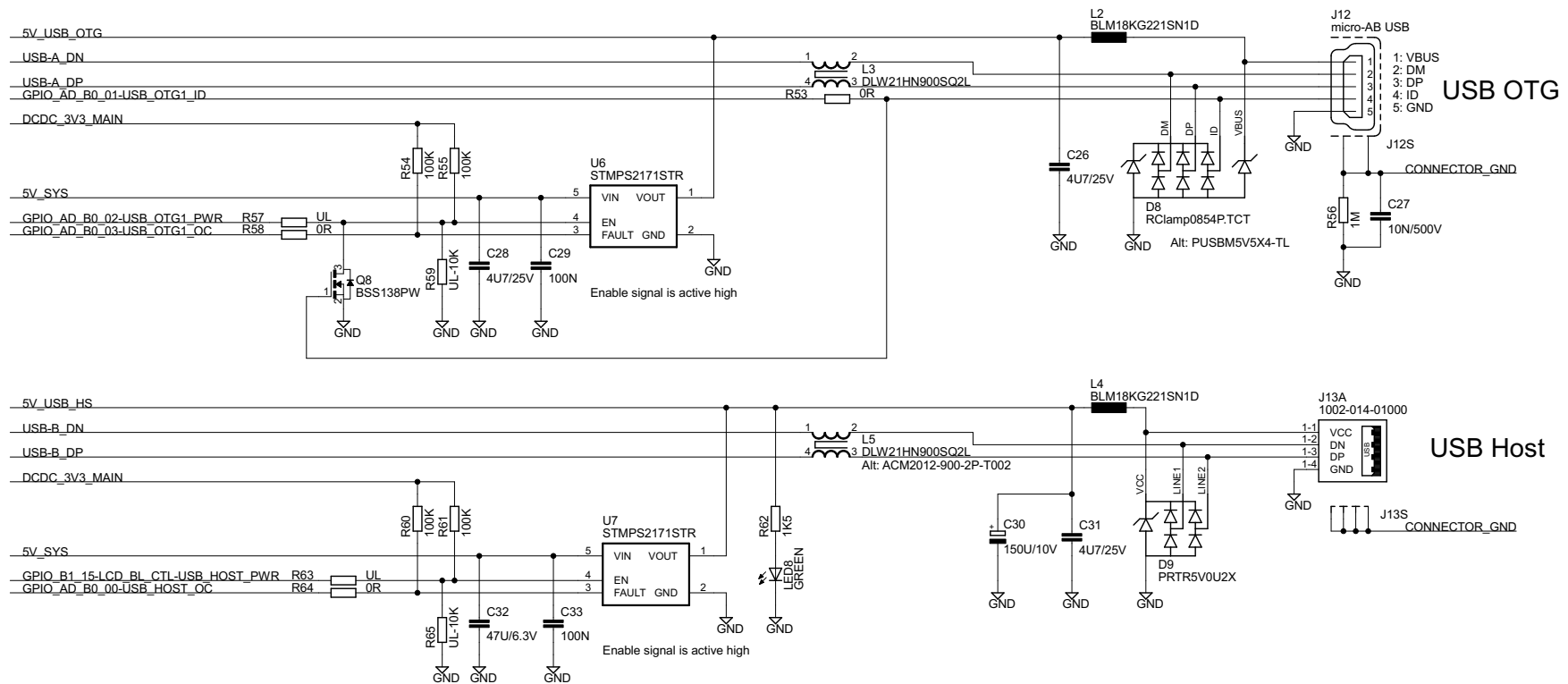
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Sheet: 6/13

USB interface on i.MX/LPC

USB Interfaces

OEM Board	USB-A OTG or Device	USB-B Host
iMX RT1052	OTG1	OTG2
LPC1788	USB-2	USB-1
LPC2478	USB-2	USB-1
LPC3250	USB	Not connected
LPC4088	USB-2	USB-1
LPC4357	USB0	USB1



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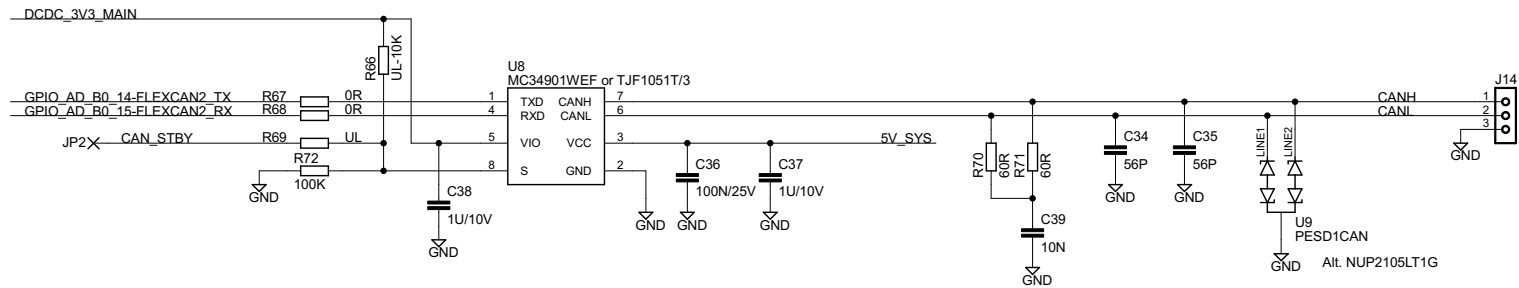
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Document Number:

Date: 2018-05-06 21:36:46

Sheet: 7/13

CAN Transceiver



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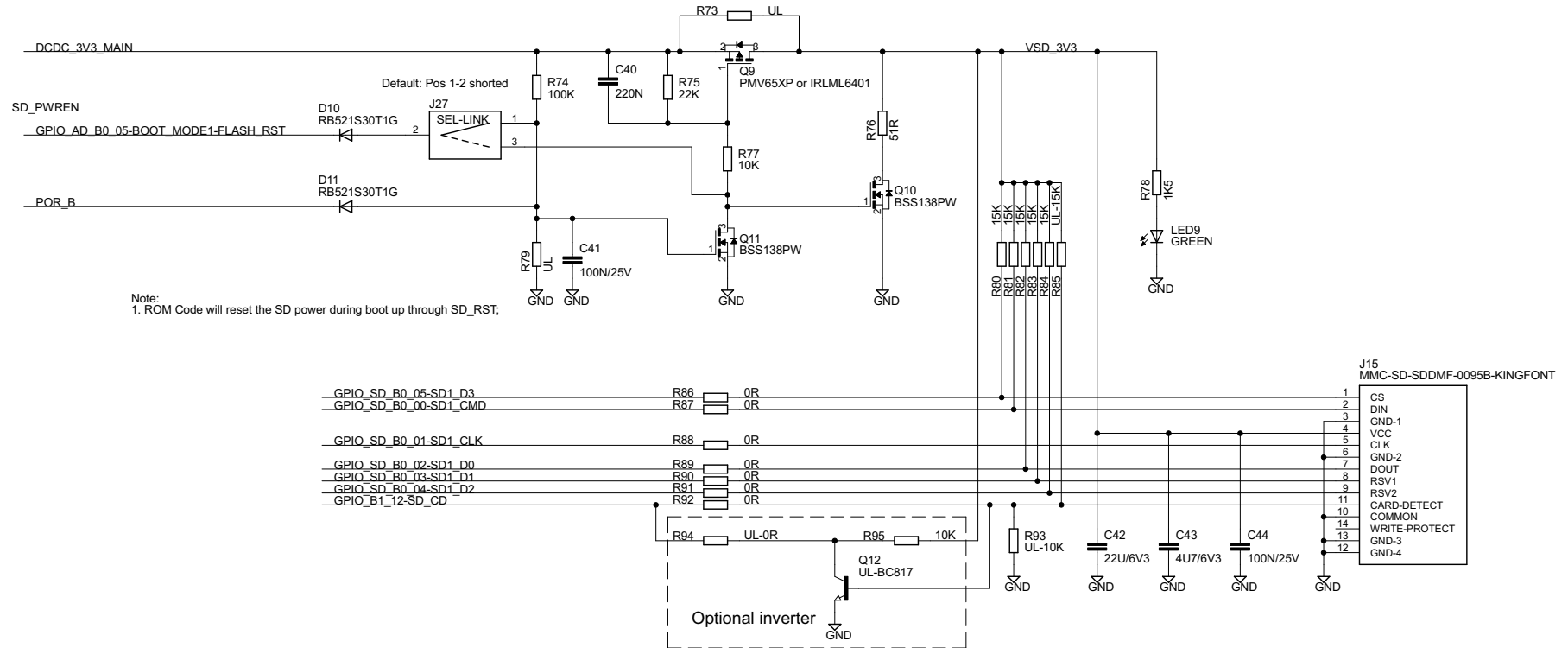
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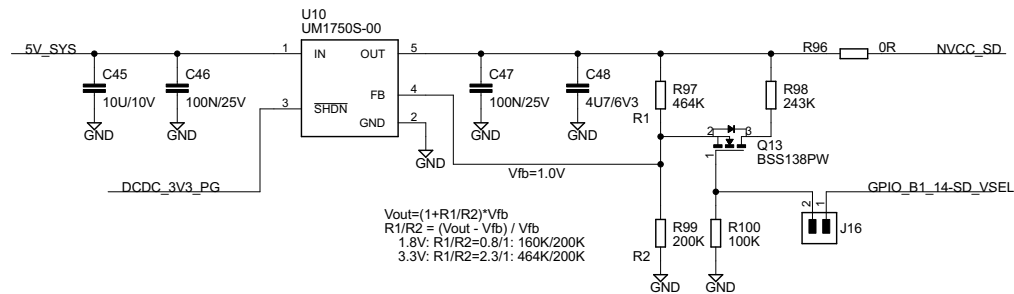
Sheet: 8/13

SD card interface

Power Switch for SD3.0



3.3V/1.8V NVCC Control



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TITLE: iMX OEM Carrier Board rev A update

Document Number:

Date: 2018-05-06 21:36:46

Sheet: 9/13

LCD interface



Touch controller



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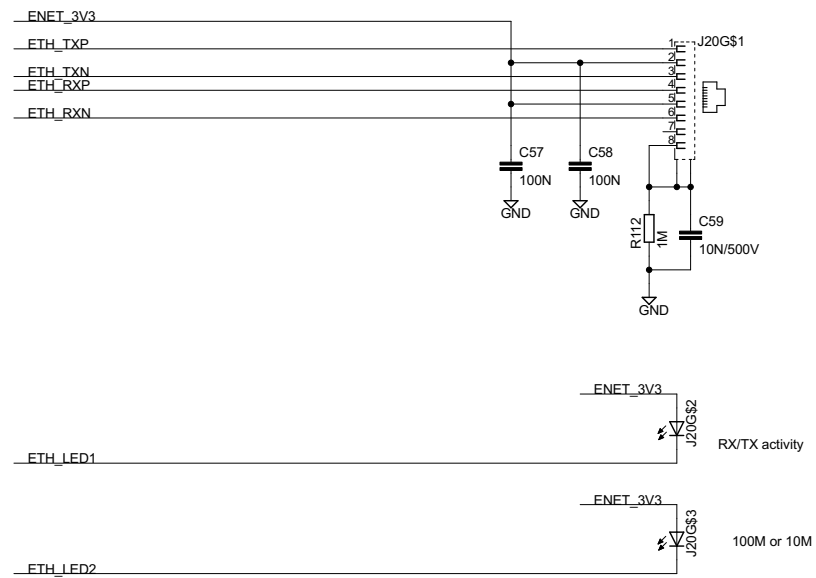
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Sheet: 10/13

Ethernet Interface

RJ45 Connector with integrated magnetics



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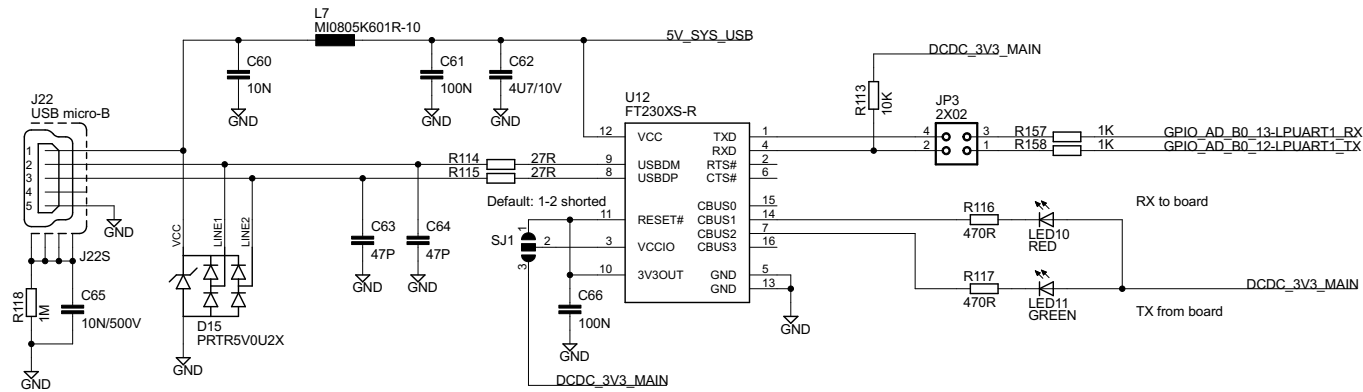
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Date: 2018-05-06 21:36:46

Sheet: 11/13

UART-to-USB bridge interface



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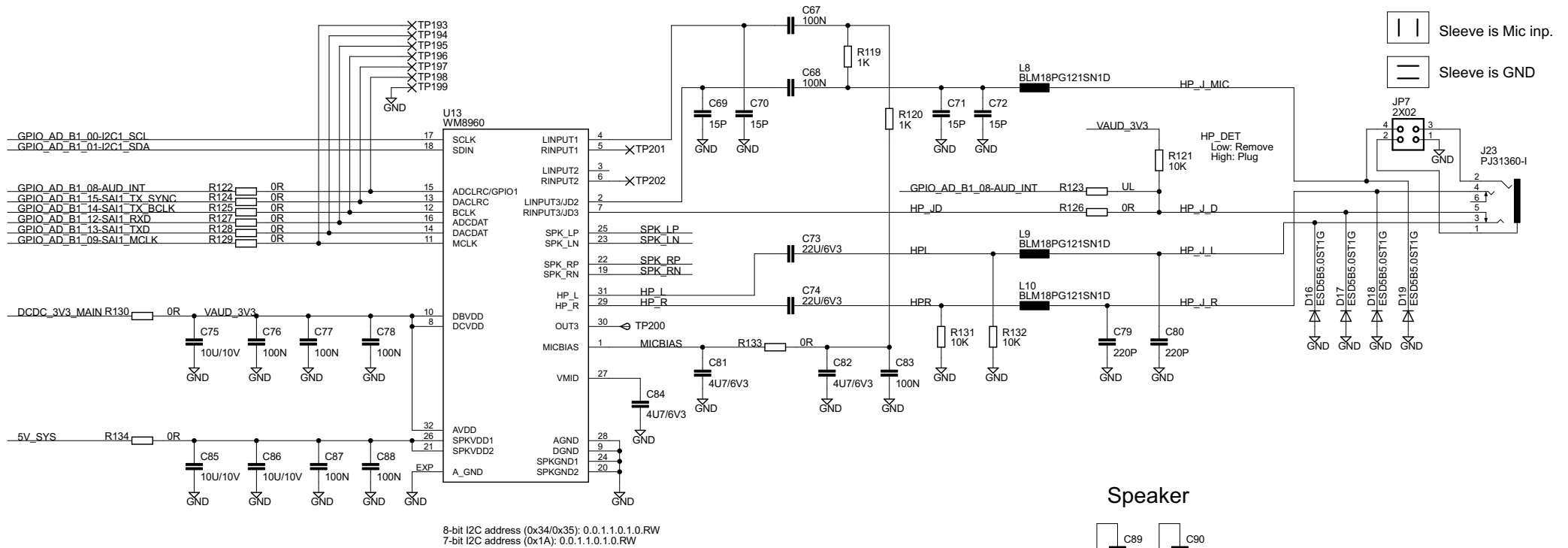
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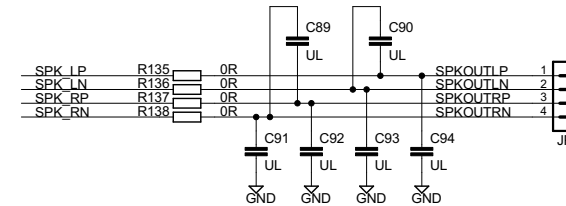
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Sheet: 12/13

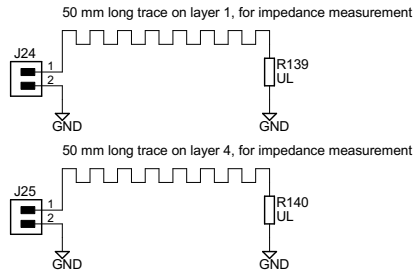
Audio Codec



Speaker



Impedance control



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Document Number:

Date: 2018-05-06 21:36:46

Sheet: 13/13