

Renesas Starter Kit+ for RX71M

CPU Board Schematics

REV	REF	DATE	DRAWN BY
1.00	Release	05.03.2015	YOI

PAGE	DESCRIPTION
1	INDEX
2	RX71M Microcontroller-1
3	RX71M Microcontroller-2
4	MCU Pin Function Select-1
5	MCU Pin Function Select-2
6	MCU & Emulator Mode Setting
7	PSU, RESET, Switches, LEDs
8	On-board Memory
9	E1 Emulator, USB to Serial Interface
10	SD Slot, RCAN, PDC & SSI Interface
11	Application Headers
12	LCD Direct Drive Header (TFT), Pmod
13	USB0
14	USBA
15	Ethernet (RX71M - PHY)
16	Ethernet (RJ45)

Note:

C : Capacitor

D : Diode

R : Fixed Resistor

RV : Potentiometer

L : Inductor

U : Integrated Circuit

X : Crystal, Oscillator

RES : Reset Switch

SW : Switch

LED : Light Emitting Diode

PWR : Power Jack

J : Connector, Jumper

* "DNF" marking means that component
is not fitted by default.

Board Code:

R0K50571MC000BE: MP Board

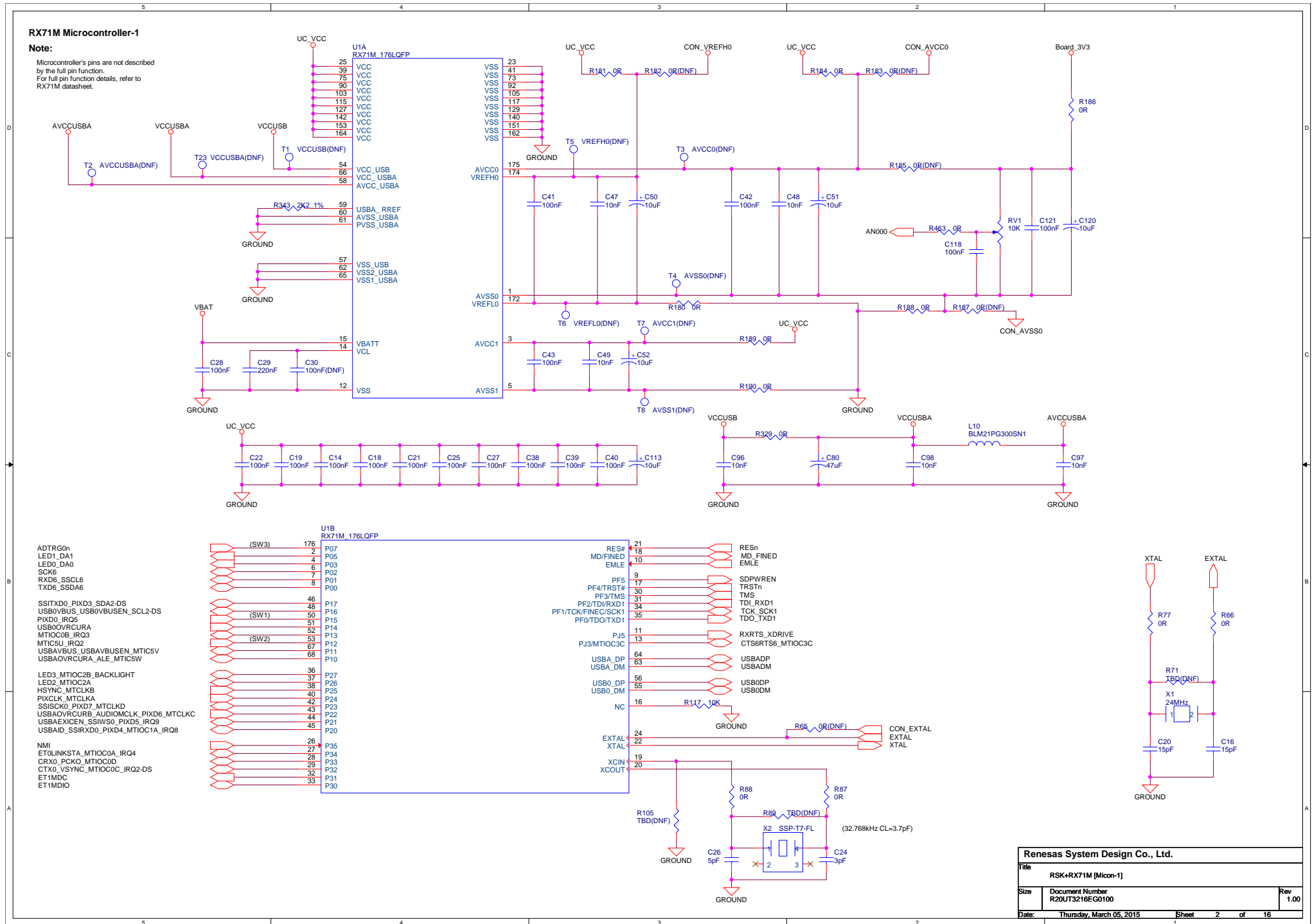
REEL Drawing No. D013292_04

Renesas System Design Co., Ltd.			
Title RSK+RX71M [Index]			
Size	Document Number R20UT3216EG0100		Rev 1.00
Date:	Thursday, March 05, 2015		Sheet 1 of 16

RX71M Microcontroller-1

Note:

Microcontroller's pins are not described by the full pin function.
For full pin function details, refer to RX71M datasheet.



MCU Pin Function Select-1

Default setting of DIP Switches.

SW5	Default
Pin1	ON
Pin2	ON
Pin3	OFF
Pin4	ON
Pin5	OFF
Pin6	ON
Pin7	OFF
Pin8	OFF
Pin9	ON
Pin10	OFF

SW6	Default
Pin1	ON
Pin2	ON
Pin3	ON
Pin4	OFF
Pin5	ON
Pin6	OFF
Pin7	ON
Pin8	OFF
Pin9	ON
Pin10	OFF

SW7	Default
Pin1	ON
Pin2	OFF
Pin3	OFF
Pin4	ON
Pin5	OFF
Pin6	OFF
Pin7	ON
Pin8	OFF
Pin9	ON
Pin10	OFF

SW8	Default
Pin1	ON
Pin2	OFF
Pin3	ON
Pin4	OFF
Pin5	ON
Pin6	OFF
Pin7	ON
Pin8	OFF
Pin9	ON
Pin10	OFF

SW9	Default
Pin1	ON
Pin2	OFF
Pin3	ON
Pin4	OFF
Pin5	OFF
Pin6	OFF
Pin7	ON
Pin8	OFF
Pin9	OFF
Pin10	OFF

PC0(Pin91)

A16_ET0ERXD3_SSLA1-A

Default setting "Pin2-3 shorted"



PC5(Pin78)

A21_ET0ETXD2_RSPCKA-A

Default setting "Pin2-3 shorted"



PC6(Pin77)

A22_ET0ETXD3_MOSIA-A

Default setting "Pin2-3 shorted"



PC7(Pin76)

ET0COL_MISQA-A_PC7

Default setting "Pin2-3 shorted"



PC0(Pin91)

A16_ET0ERXD3

PC1(Pin89)

A17_ET0ERXD2_MTI0C3A

PC2(Pin86)

A18_ET0RXDV_MTI0C4B

PC3(Pin83)

A19_ET0TXER_QIO0-A_MTI0C4D

PC4(Pin82)

A20_ET0TXCLK_QIO1-A_POE0n

PC5(Pin78)

A21_ET0ETXD2

PC6(Pin77)

A22_ET0ETXD3

PC7(Pin76)

ET0COL_PC7

P34(Pin27)

ET0LINKSTA_MTI0C0A_IRQ4

P74(Pin88)

ET0ERXD1_RMII0RXD1_CS4n

P77(Pin84)

ET0RXER_RMII0RXER_QSPCLK-A

P80(Pin81)

ET0TXEN_RMII0TXDEN_QIO2-A_MTI0C3B

P81(Pin80)

ET0ETXD0_RMII0TXD0_QIO3-A_MTI0C3D

P82(Pin79)

ET0ETXD1_RMII0TXD1_MTI0C4A_EDREQ1

P83(Pin74)

ET0CRS_RMII0CRSDV_MTI0C4C_EDACK1

PD2(Pin154)

D2_SDHID2-B

PD3(Pin150)

D3_SDHID3-B

PD4(Pin148)

D4_SDHICMD-B

PD5(Pin147)

D5_SDHICLK-B

PD6(Pin145)

D6_SDHID0-B

PD7(Pin143)

D7_SDHID1-B

PE6(Pin126)

D14_SDHICD-B_MTI0C6C_I06

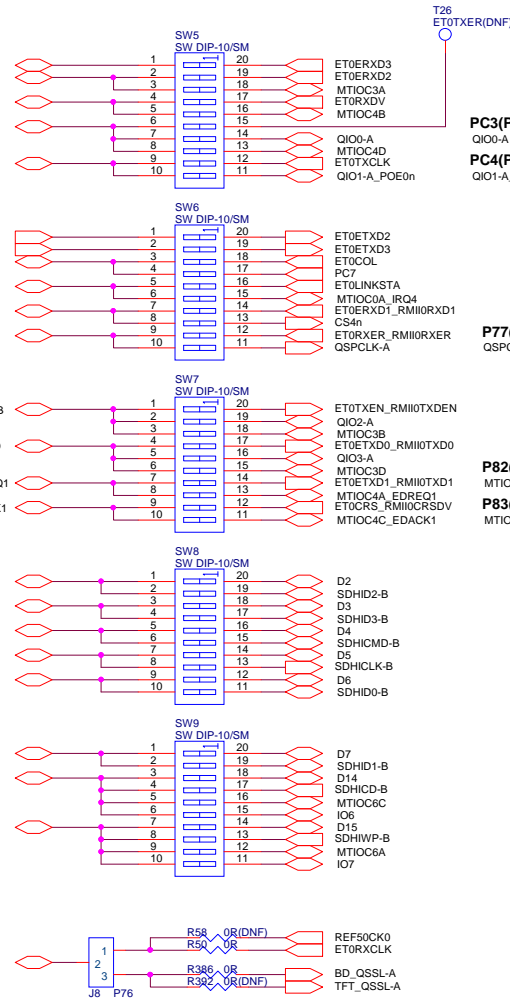
PE7(Pin125)

D15_SDHIWP-B_MTI0C6A_I07

P76(Pin85)

ET0RXCLK_REF50CK0_QSSL-A

Default setting "Pin1-2 shorted"





SW4 Pin1	SW4 Pin2	Operating Mode
OFF	Don't care	Single Chip Mode
ON	ON	Boot Mode (SCI)
ON	OFF	User Boot Mode USB Boot Mode

SW4 Pin3	Power Configuration
OFF	Bus Powered
ON	Self Powered

SW4	Default
Pin1	OFF
Pin2	OFF
Pin3	OFF
Pin4	OFF

J19	Emulator Configuration
Shorted Pin1-2	E1 debugging with Hot plug-in
Shorted Pin2-3	E1 normal debugging
	Microcontroller single operation (without E1/E20)
all open	DO NOT SET

ADTRG0n R245 10K(DNF)

MTIOC0B_IRQ2-DS R160 10K(DNF)

MTIOC0B_IRQ3 R180 10K(DNF)

MTIOC0A_IRQ4 R403 10K(DNF)

IRQ5 R489 10K(DNF)

IRQ8 R321 10K

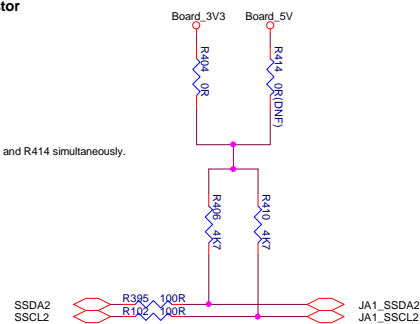
IRQ9 R318 10K

IRQ10-DS R425 10K

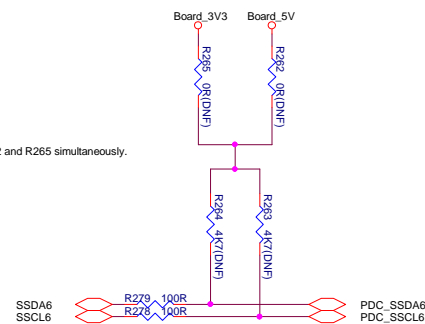
IRQ11-DS R423 10K

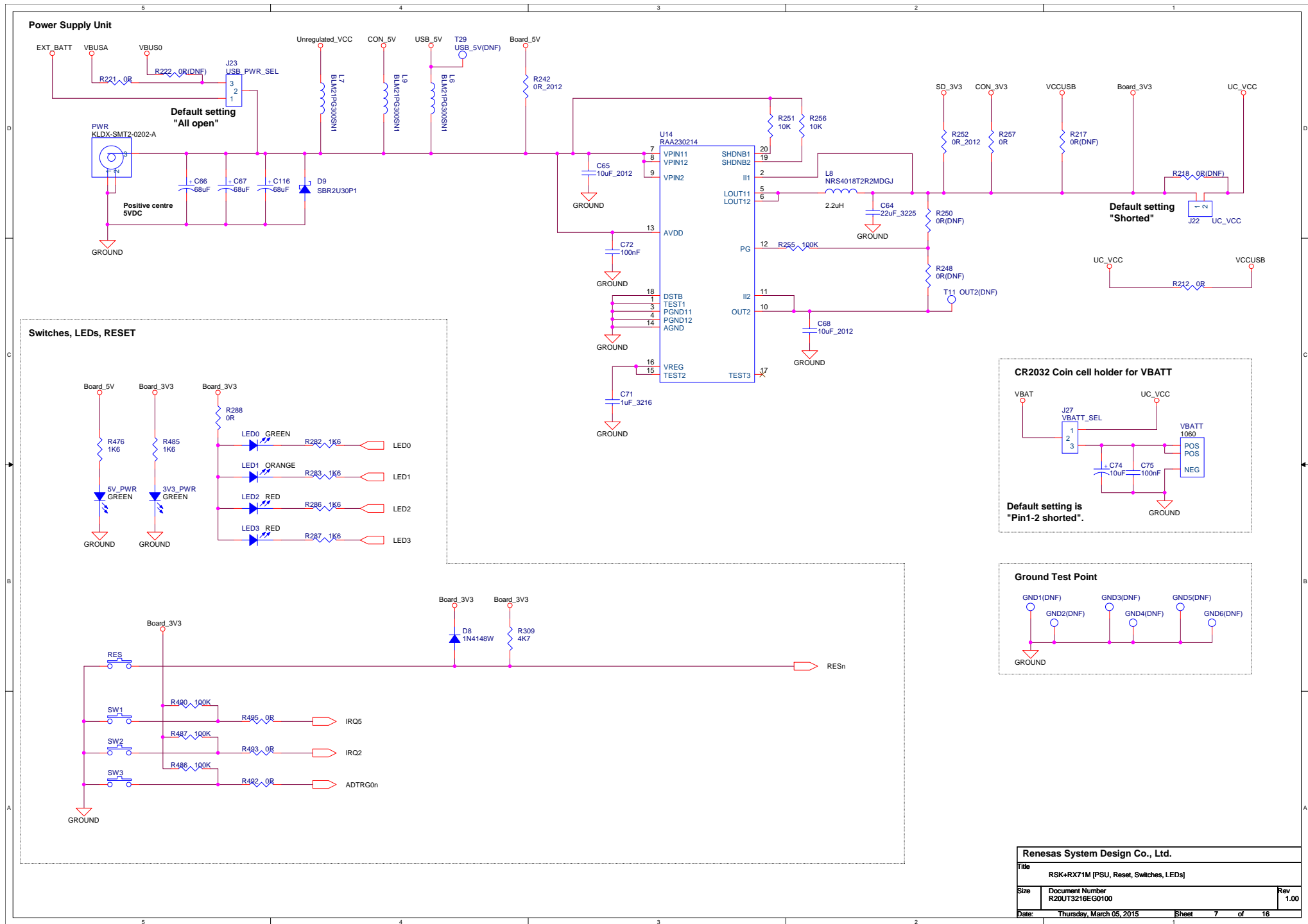
The schematic diagram illustrates a 10T1R1C1 crossbar array architecture. It features a grid of horizontal wordlines and vertical bitlines. The bitlines on the left are labeled EDREO1, EDACK1, WRn, WR0n, WR1n, RDn, CON_SDCSn, CS4n, WAITn, and TFT_QSSL-A. The wordlines on the right are labeled R224, R223, R379, R427, R428, R376, R399, R481, R482, and R391. Red rectangles represent the devices at each intersection. Specific intersections are highlighted with labels such as 1K(DNF) and 1K.

Warning:
NEVER FIT R404 and R414 simultaneously.



Warning:
NEVER FIT R262 and R265 simultaneously.





A vertical bar divided into four segments labeled A, B, C, and D from bottom to top. Segment B contains a right-pointing arrow.



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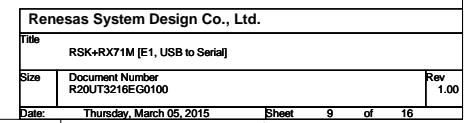
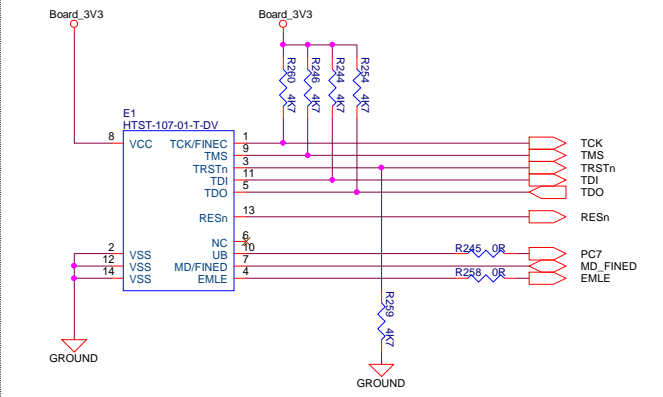
A vertical bar divided into four segments labeled A, B, C, and D from bottom to top. Segment B contains a right-pointing arrow.

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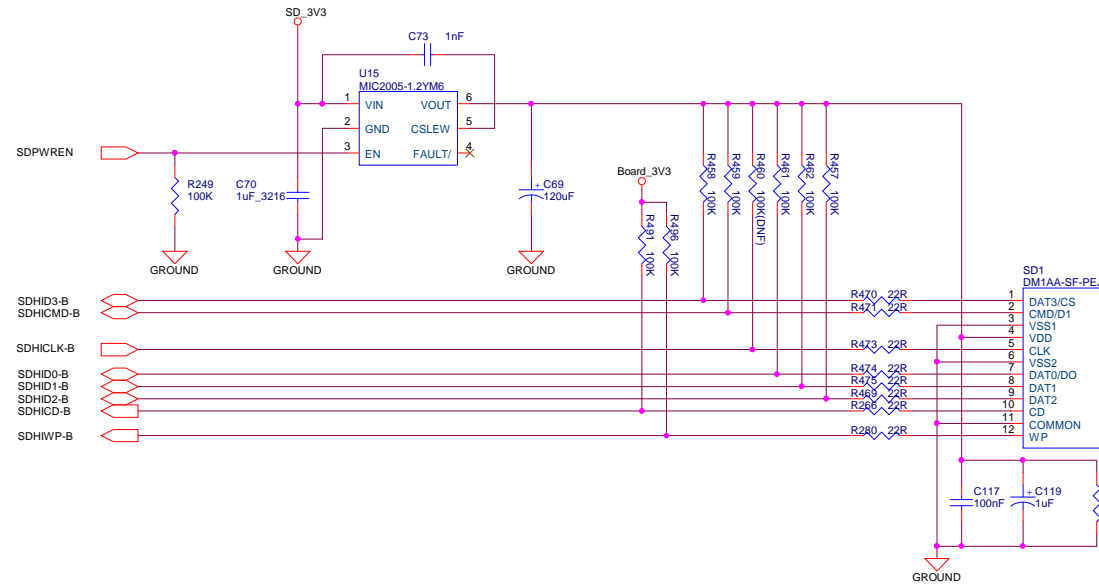
A vertical bar divided into four segments labeled A, B, C, and D from bottom to top. Segment B contains a right-pointing arrow.

A vertical bar divided into four segments labeled A, B, C, and D from bottom to top. Segment B contains a right-pointing arrow.

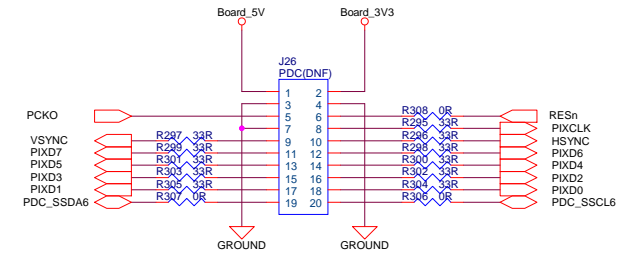




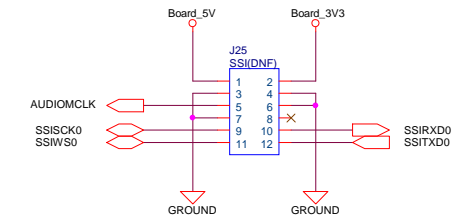
SD Slot



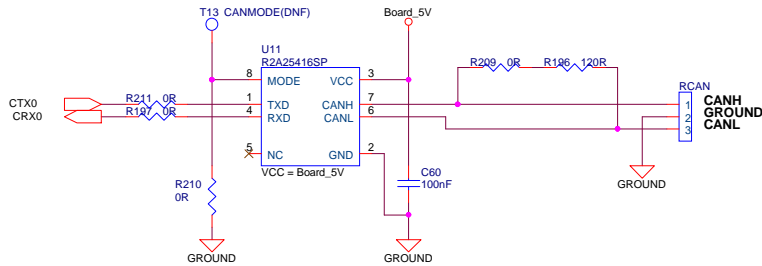
PDC



SSI



RCAN



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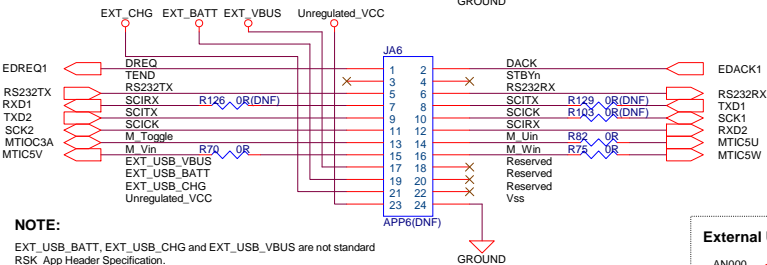
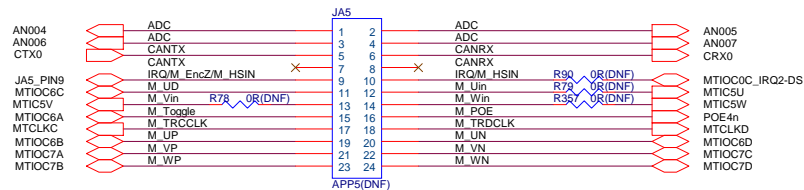
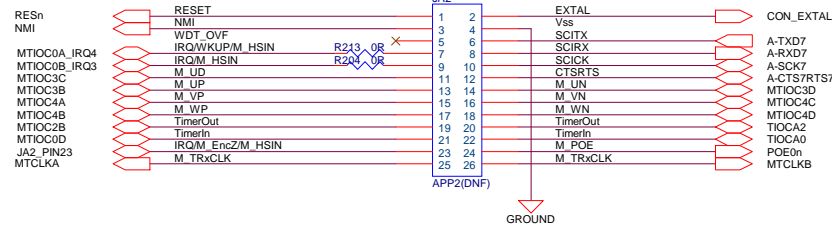
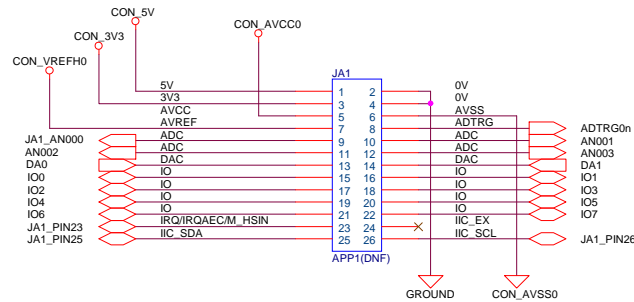
Title RSK+RX71M [SD Slot, RCAN, PDC & SSI Interface]

Size Document Number R20UT3216EG0100

Rev 1.00

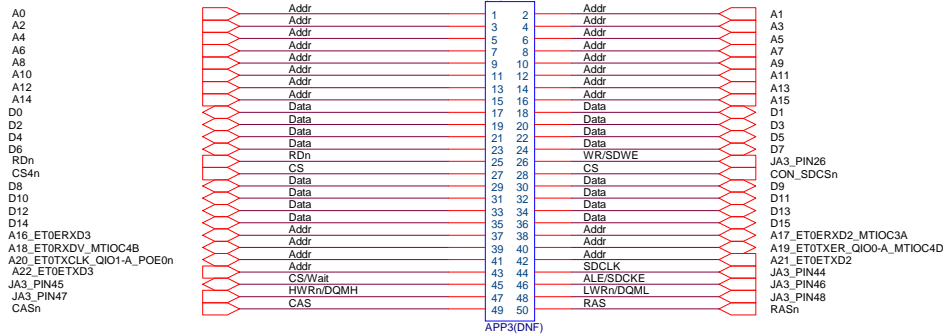
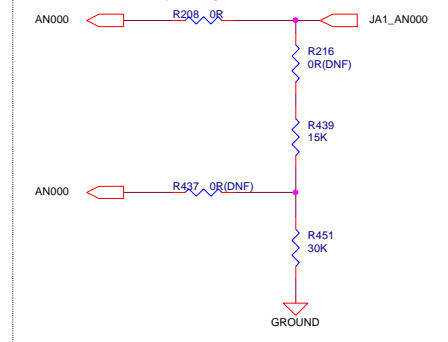
Date: Thursday, March 05, 2015 Sheet 10 of 16

Application Headers

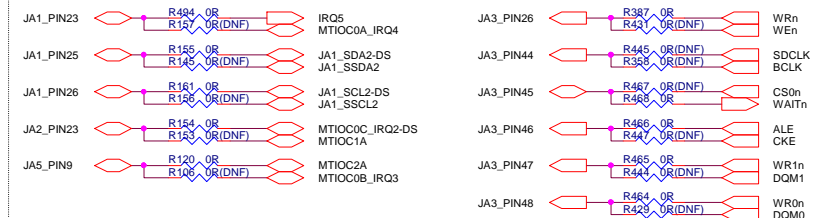


NOTE:
EXT_USB_BATT, EXT_USB_CHG and EXT_USB_VBUS are not standard RSK App Header Specification.
These headers are special function for USB Battery Charge.

External USB Battery Charge IC Monitor



Application Header Function Select



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Title			RSK+RX71M [Application Headers]
Size	Document Number	Rev	
	R20UT3216EG0100	1.00	
Date:	Thursday, March 05, 2015	Sheet	11 of 16

The diagram illustrates the pinout for the LCD Direct Drive Header (TFT). It shows two identical TFT modules connected to a central header. The header pins are numbered 1 to 50. The connections are as follows:

- Power Supply:**
 - Board 5V and Board 3V3 are connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50.
- Signal Connections:**
 - D0-D15:** Data bus lines for both TFT modules.
 - MTIOC3C, MTIOC3A, EDREQ, SSI, SD_DOTCLK:** Control signals for the TFT modules.
 - X DRIVE, X INPUT, Y DRIVE, Y INPUT:** Drive and input signals for the TFT modules.
 - Reserved:** Pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50 are reserved.
- Ground Connections:** Ground symbols are shown at the bottom of the diagram, connected to pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50.

Pmod connectors

PMOD1: Angle type connector

Board_3V3

GROUND

PMOD1

12 6
11 5
10 4
9 3
8 2
7 1

R324 200R
R325 200R
R312 200R
R320 200R

SCK6
RXD6
TXD6
PMOD1_PIN1

LCD

Board_3V3

GROUND

C77 100nF
C78 100nF

PMOD2: Vertical type connector (spare)

Board_3V3

GROUND

PMOD2

12 6
11 5
10 4
9 3
8 2
7 1

R166 200R
R174 200R
R172 200R
R178 200R

P97
P96
IRQ11-DS
IRQ10-DS

SPARE

Board_3V3

GROUND

C45 100nF
C46 100nF

P-SCK7
P-RXD7
P-TXD7
P-CTS7/RTS7

PMOD Function Select

PMOD1_PIN1

R1
R426

OR(DNF)
OR

CTS6RTS6
P45

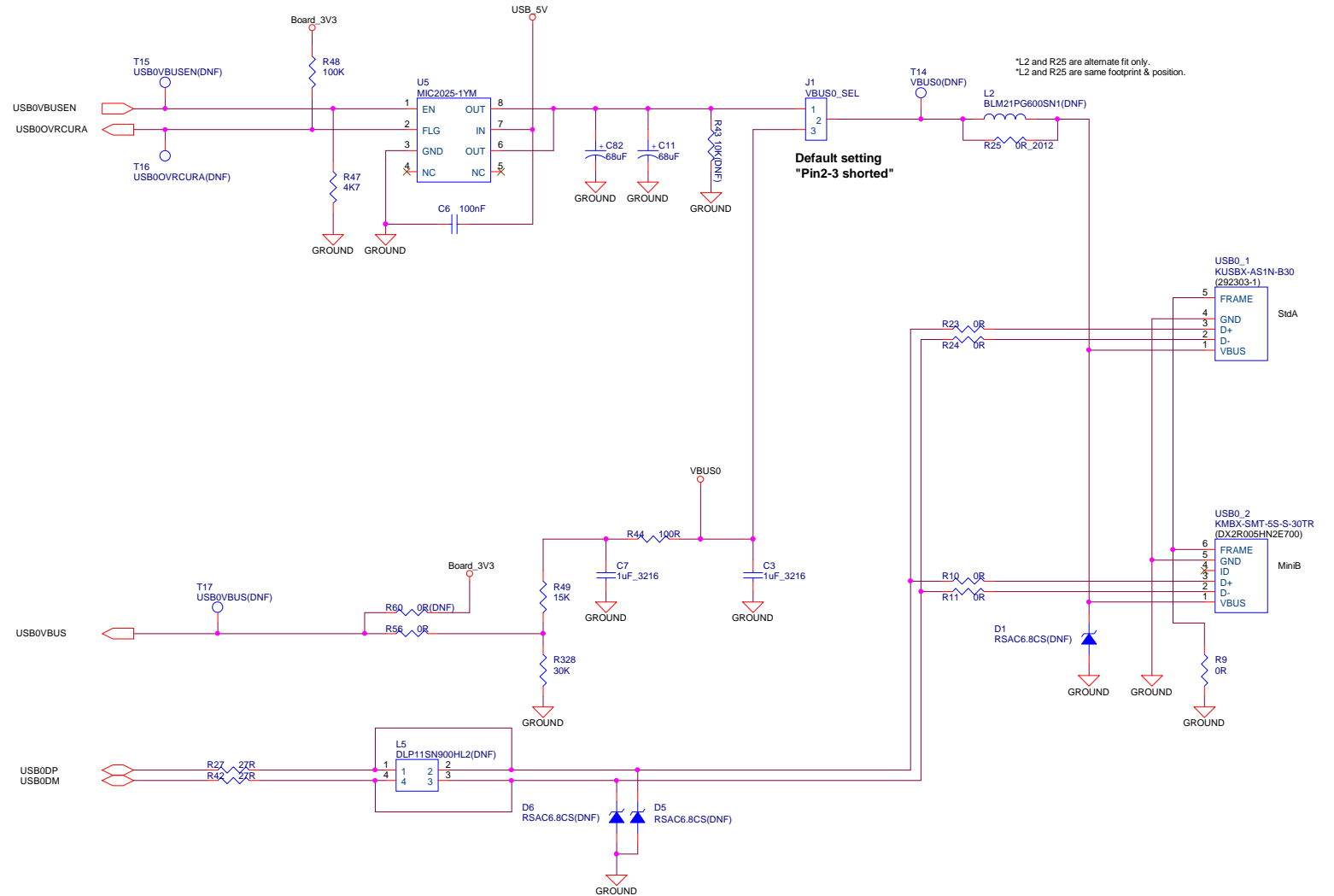
USB0 Host/Function

Self-powered/Bus-powered Configuration for Function Mode

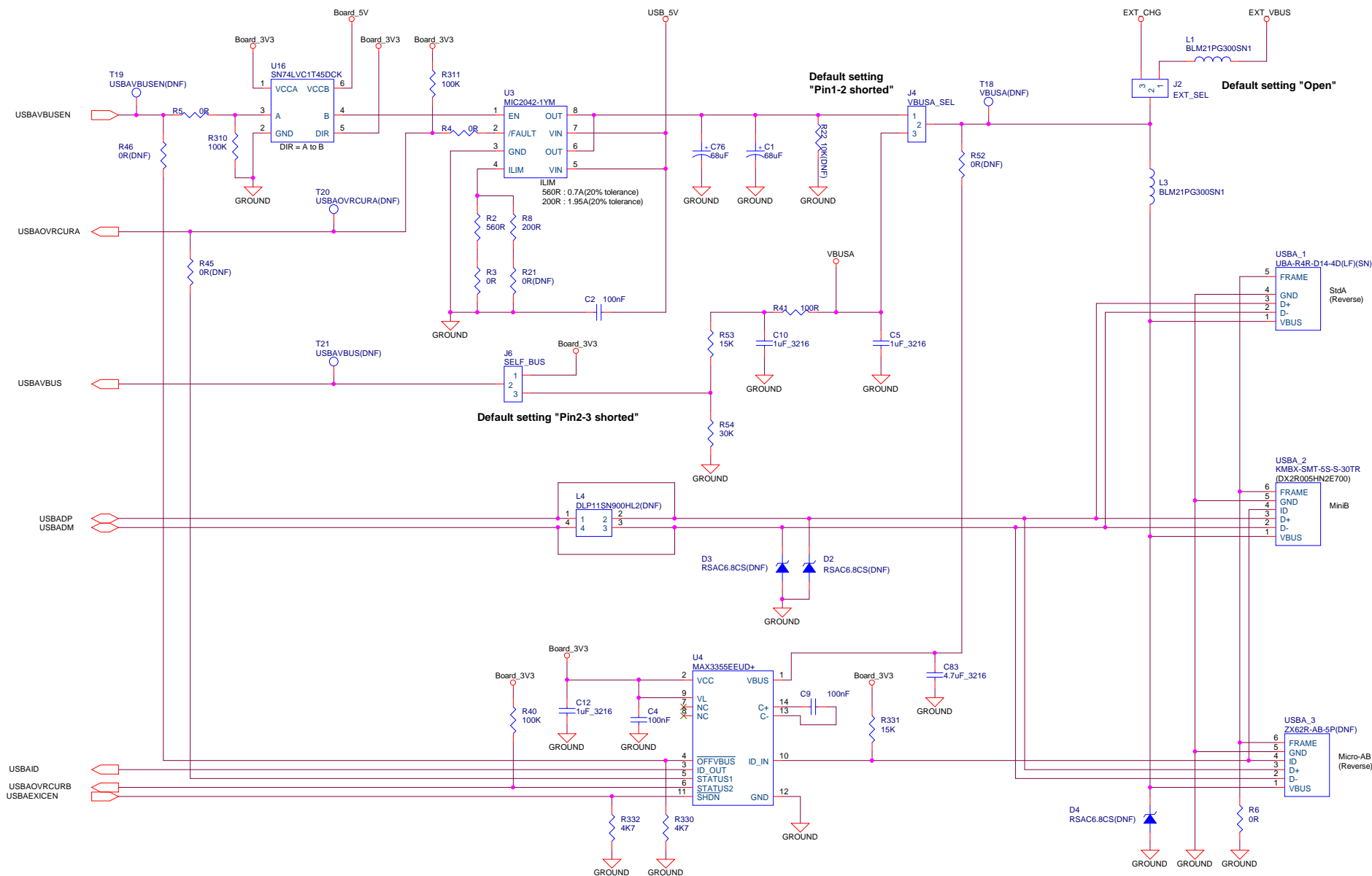
R56	R60	Self-powered
Fit	Remove	Fit
Remove	Fit	Bus-powered

USB0 Host/Function Select

J1	Host Mode
1-2 shorted	Function Mode
2-3 shorted	



USB Host/Function/OTG



USB Host/Function/OTG Select

J4	R52	
1-2 shorted	Remove	Host Mode
2-3 shorted	Remove	Function Mode
All open	Fit	OTG Mode

Self/Bus Power Configuration for Function Mode

J6		
1-2 shorted	Bus-powered	
2-3 shorted	Self-powered	

USB AOVR CURA Select

R4	R45	
Fit	Remove	Host Mode
Remove	Fit	OTG Mode

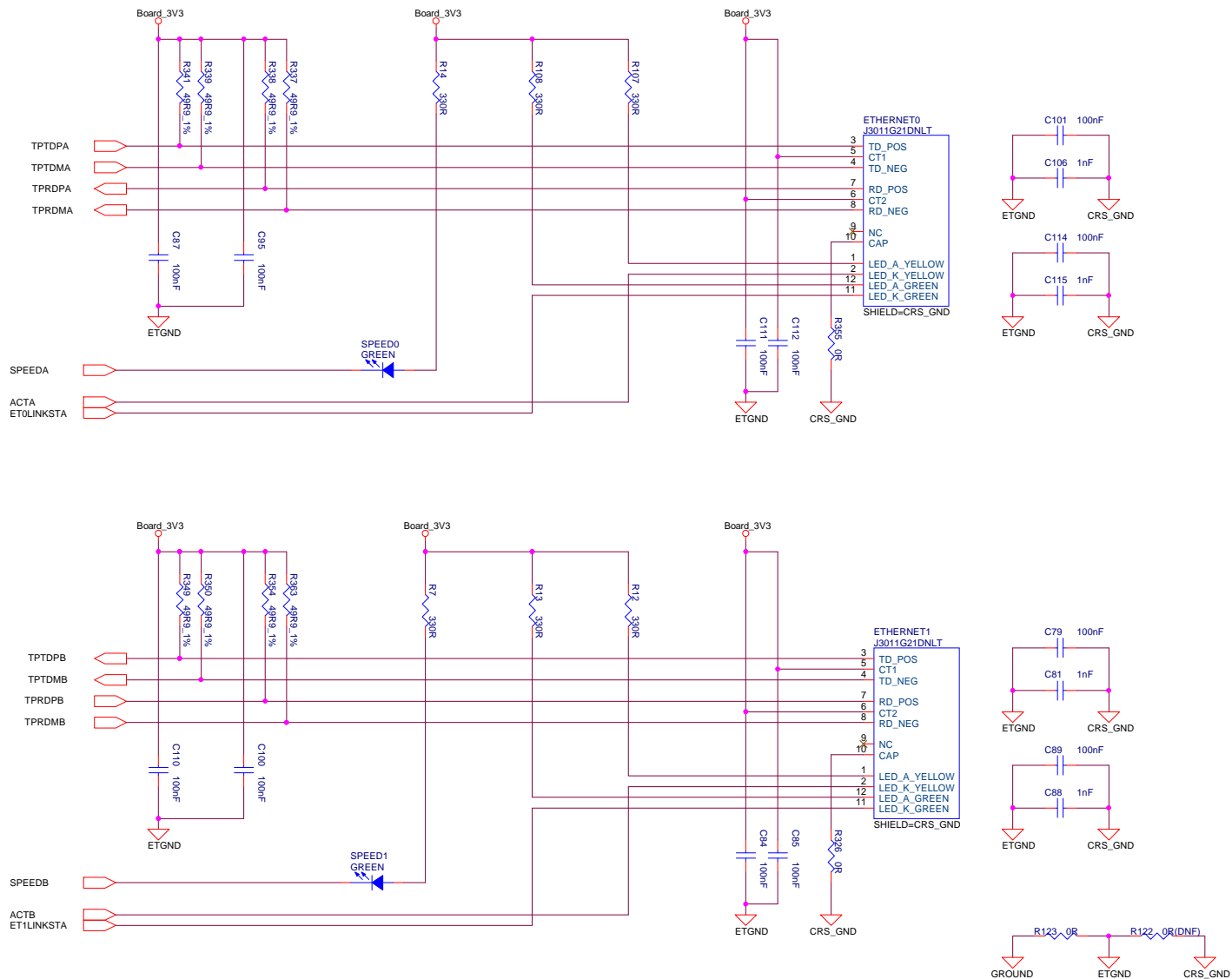
USB AVBUSEN Select

R5	R46	
Fit	Remove	Host Mode
Remove	Fit	OTG Mode

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Title			RSK+RX71M [USB]
Size	Document Number	Rev	
	R20UT3216EG0100	1.00	
Date:	Thursday, March 05, 2015	Sheet	14 of 16

Ethernet RJ45



Revision History

REV	DATE	PAGE	DESCRIPTION
1.00	05.03.2015	---	1st release edition.

Renesas System Design Co., Ltd.			
Title			
RSK+RX71M [Revision History]			
Size	Document Number		Rev
	R20UT3216EG0100		1.00
Date:	Thursday, March 05, 2015		Sheet X of X