Renesas Starter Kit+ for RX671
CPU Board Schematics

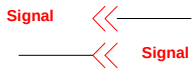
REV	REF	DATE	DRAWN BY
1.00	Release	22.06.2021	YOI

SHEET	DESCRIPTION
1	INDEX
2	RX671 Microcontroller-1
3	RX671 Microcontroller-2
4	MCU Pin Function Select-1
5	MCU Pin Function Select-2
6	PSU
7	E2 Lite Emulator, MCU Mode Setting
8	Reset, Switches, LEDs
9	USB to Serial Interface
10	Pmod Interface, IIC EEPROM
11	Application Headers
12	SDRAM
13	SDHI
14	CAN, RSPI, QSPI
15	USB (Host / Function)
16	Touch Interface
17	SSI, Audio Interface

Note:

C : Capacitor
D : Diode
FB : Ferrite Beads
J : Connector, Jumper
L : Inductor
LED : Light Emitting Diode
MR : Resistor Array
PWR : Power Jack
R : Fixed Resistor
RES : Reset Switch
RV : Potentiometer
SW : Switch
T : Test Point
U : Integrated Circuit
X : Crystal, Oscillator

* "DNF" marking means that component is not fitted by default.
**The following off-page connectors used in this schematics do not indicate the signal direction.



Board Code:

RTK55671EHC00000BE : RSK+RX671 MP Board (Encryption version)

Abbreviations:

CAN : Controller Area Network
IIC : Philips(TM) Inter-Integrated Circuit Connection Bus
LED : Light Emitting Diode
MCU : Microcontroller Unit
PSU : Power Supply Unit
RSK : Renesas Starter Kit
SDHI : SD Host Interface
SSI : Serial Sound Interace
USB : Universal Serial Bus

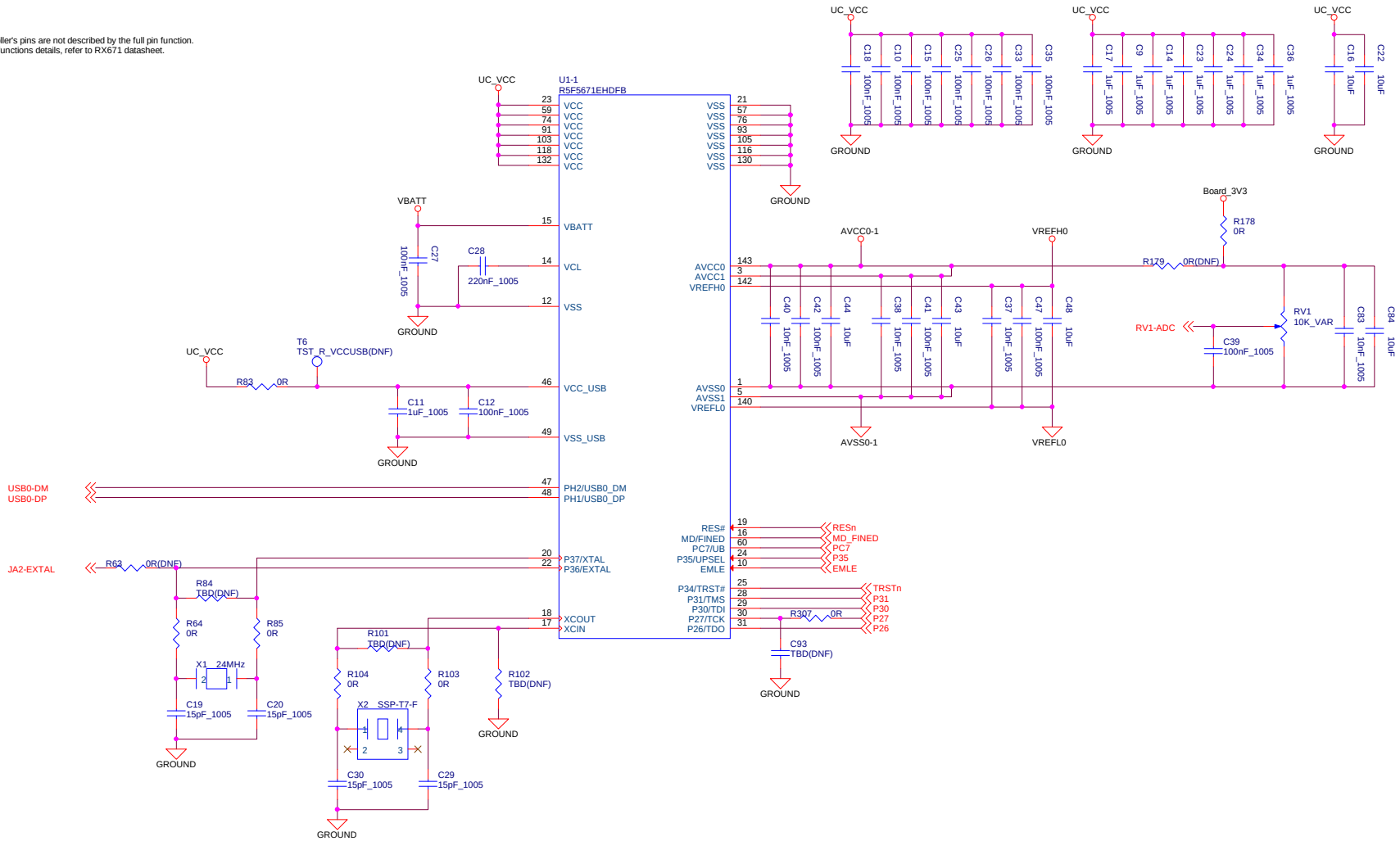
REE Drawing No. D017772_04

Renesas Electronics Corporation		
Title: RSK+RX671 [Index]		
Size	Document Number R20UT4878EG0100	Rev 1.00
Date: Tuesday, June 22, 2021	Sheet 1 of 17	

RX671 Microcontroller-1

Note:

Microcontroller's pins are not described by the full pin function.
For full pin functions details, refer to RX671 datasheet.

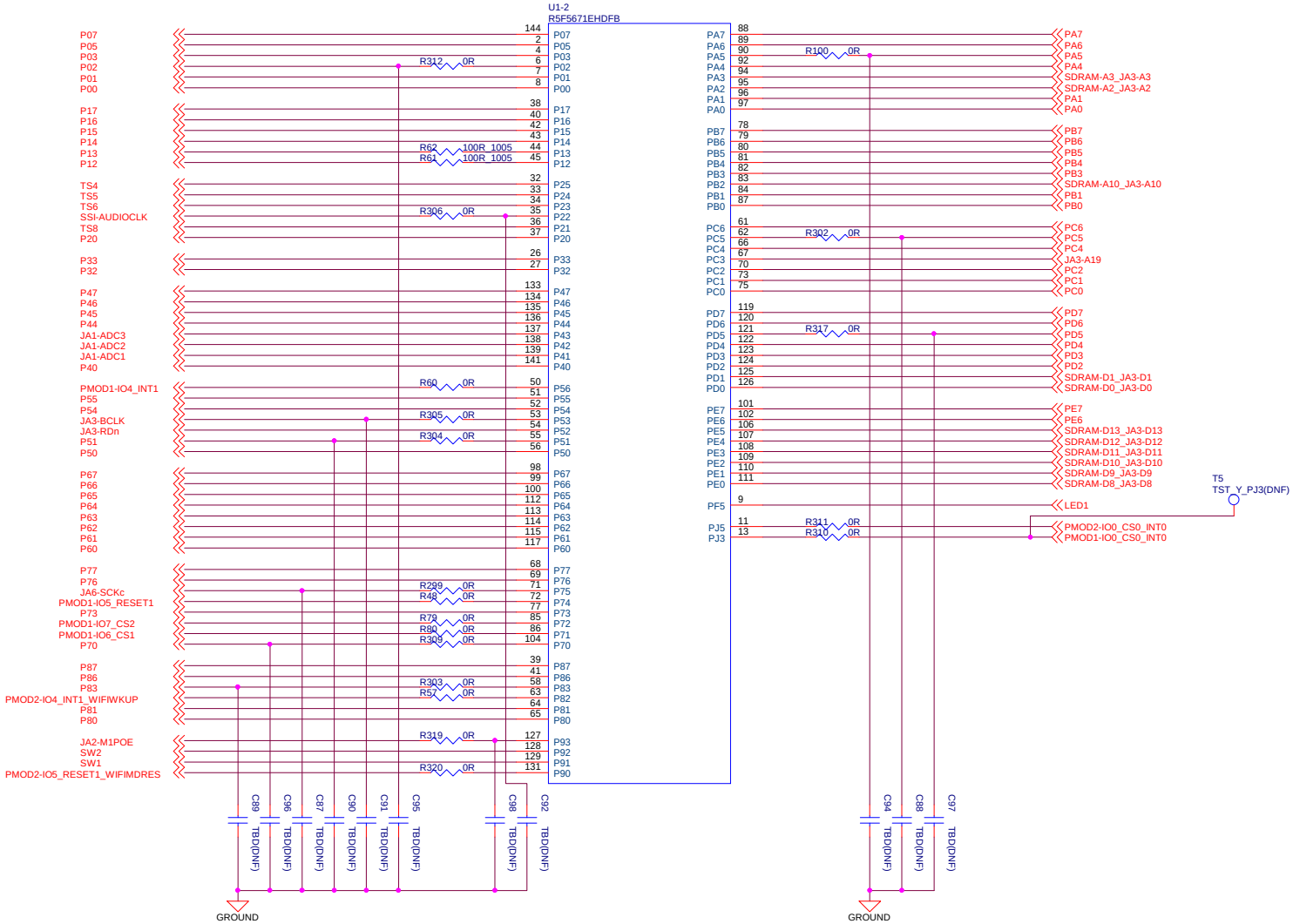


Renesas Electronics Corporation		
Title: RSK+RX671 [Micon-1]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 2 of 17	

RX671 Microcontroller-2

Note:

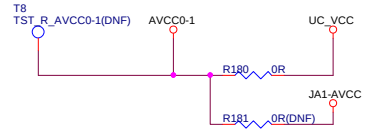
Microcontroller's pins are not described by the full pin function.
For full pin functions details, refer to RX671 datasheet.



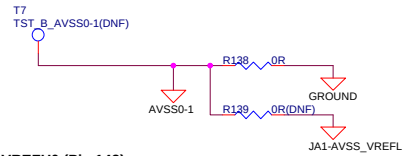
Renesas Electronics Corporation		
Title: RSK+RX671 [Micon-2]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 3 of 17	

MCU Pin Function Select-1

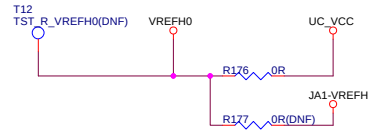
AVCC0 (Pin 143), AVCC1 (Pin 3)



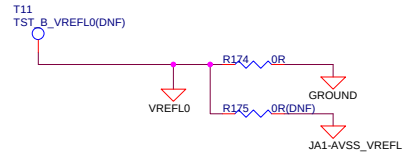
AVSS0 (Pin 1), AVSS1 (Pin 5)



VREFH0 (Pin 142)

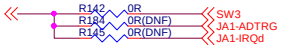


VREFL0 (Pin 140)



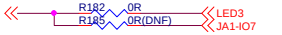
P07 (Pin 144)

P07



P05 (Pin 2)

P05



P03 (Pin 4)

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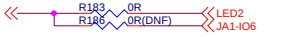
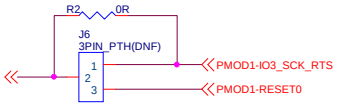


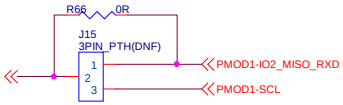
P02 (Pin 6)

P02



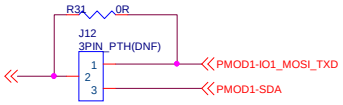
P01 (Pin 7)

P01



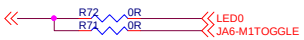
P00 (Pin 8)

P00



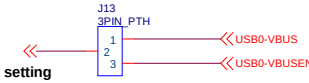
P17 (Pin 38)

P17



P16 (Pin 40)

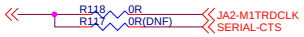
P16



Default setting
"Pin1-2 shorted"

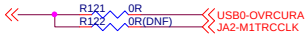
P15 (Pin 42)

P15



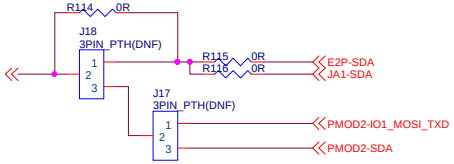
P14 (Pin 43)

P14



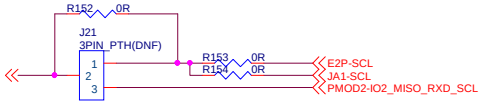
P13 (Pin 44)

P13



P12 (Pin 45)

P12



P27 (Pin 30)

P27

P26 (Pin 31)

P26

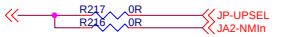
P20 (Pin 37)

P20

Default setting
"Pin1-2 shorted"

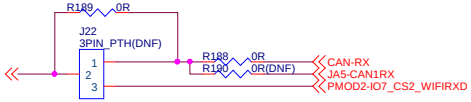
P35 (Pin 24)

P35



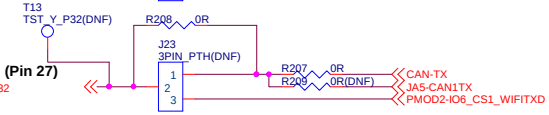
P33 (Pin 26)

P33



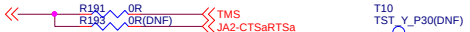
P32 (Pin 27)

P32



P31 (Pin 28)

P31

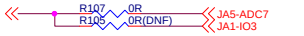


P30 (Pin 29)

P30

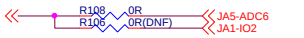
P47 (Pin 133)

P47



P46 (Pin 134)

P46



P45 (Pin 135)

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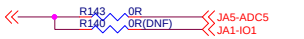

P44 (Pin 136)

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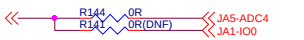

P40 (Pin 141)

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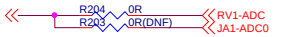

P55 (Pin 51)

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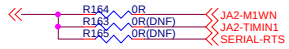

P54 (Pin 52)

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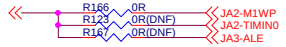

P51 (Pin 55)

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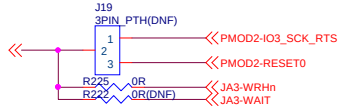
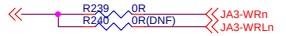


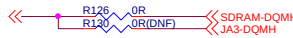
P50 (Pin 56)

P50



P67 (Pin 98)

P67



P66 (Pin 99)

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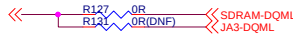
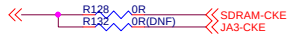


P65 (Pin 100)

P65



P64 (Pin 112)

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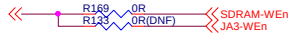

P63 (Pin 113)

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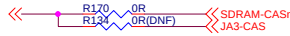

P62 (Pin 114)

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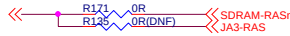
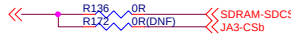


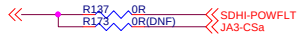
P61 (Pin 115)

P61



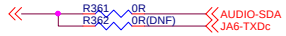
P60 (Pin 117)

P60



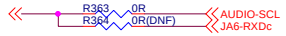
P77 (Pin 68)

P77



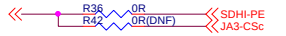
P76 (Pin 69)

P76



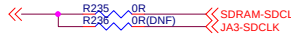
P73 (Pin 77)

P73



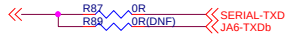
P70 (Pin 104)

P70



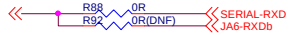
P87 (Pin 39)

P87



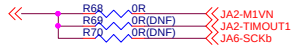
P86 (Pin 41)

P86



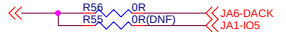
P83 (Pin 58)

P83



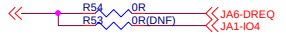
P81 (Pin 64)

P81



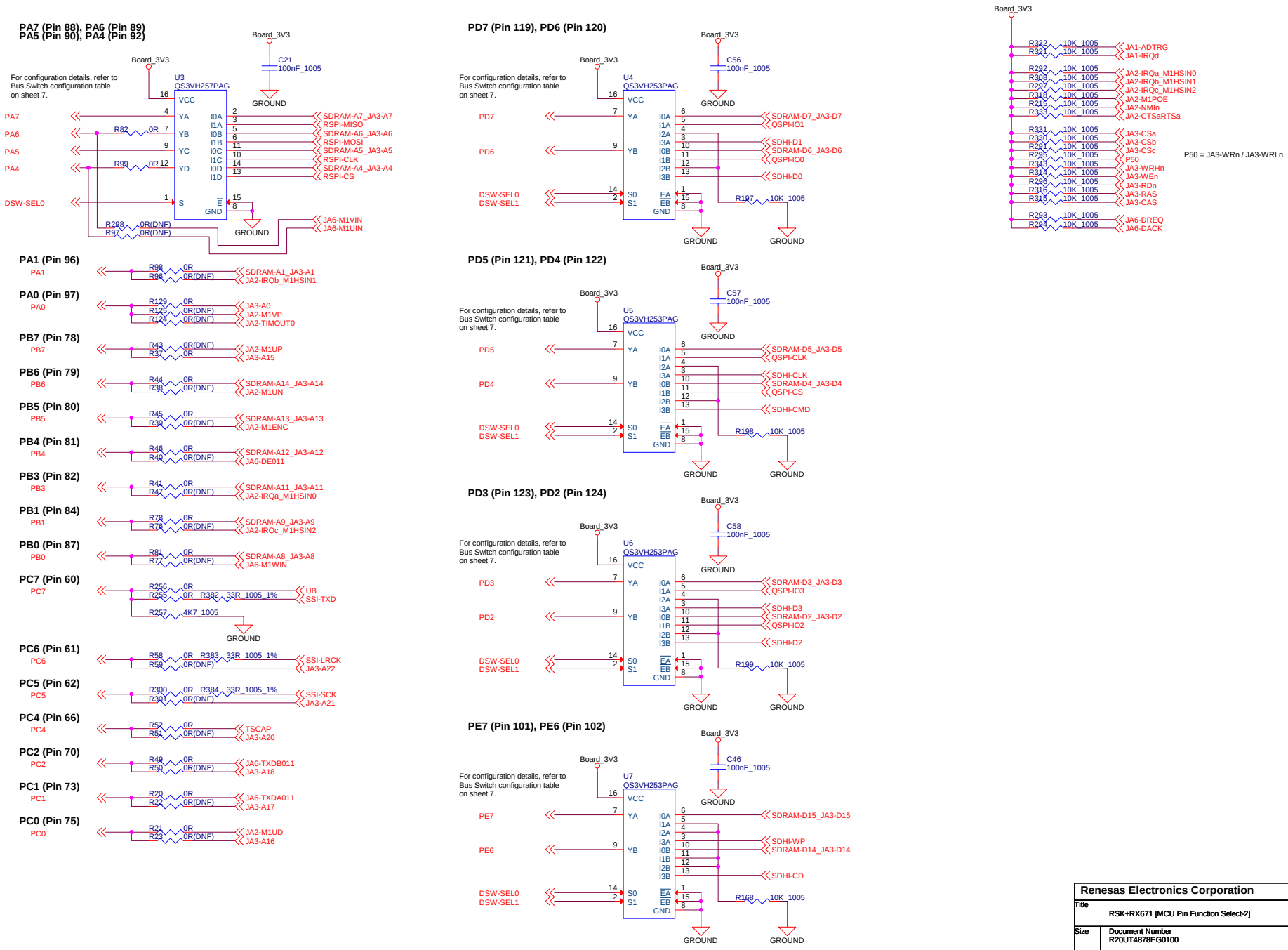
P80 (Pin 65)

P80



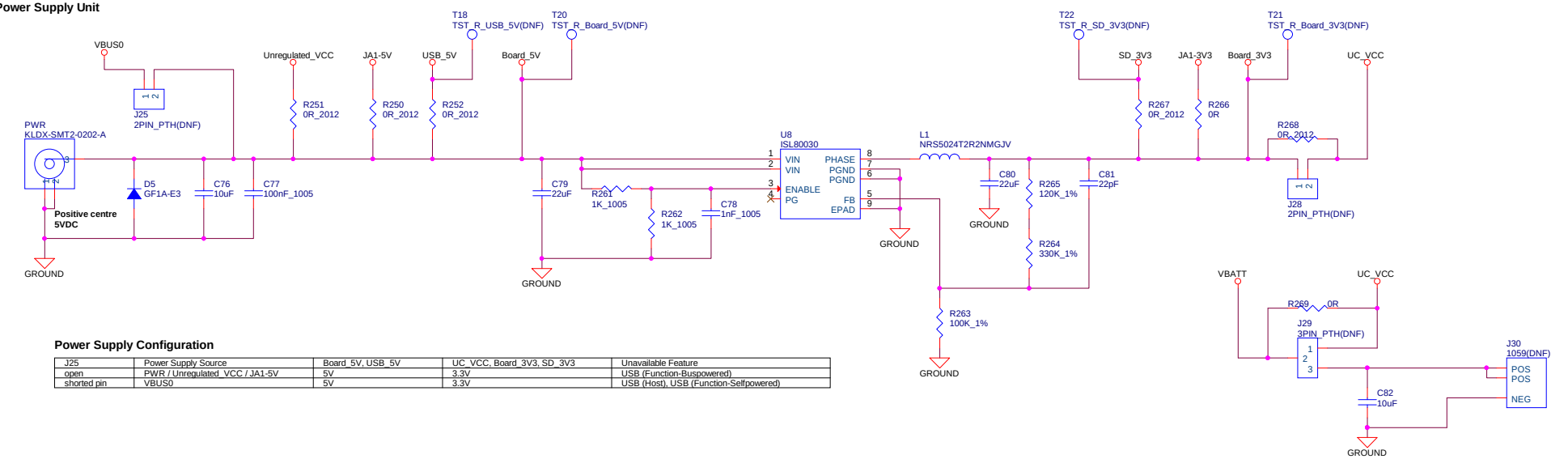
Renesas Electronics Corporation	
Title	RSK+RX671 [MCU Pin Function Select-1]
Size	Document Number R20UT4878EG0100 — Rev 1.00
Date: Tuesday, June 22, 2021	Sheet 4 of 17

MCU Pin Function Select-2



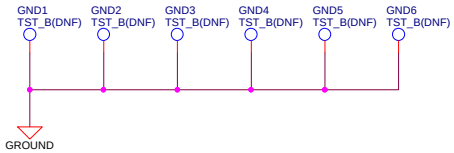
Renesas Electronics Corporation		
Title: RSK+RX671 [MCU Pin Function Select-2]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 5 of 17	

Power Supply Unit



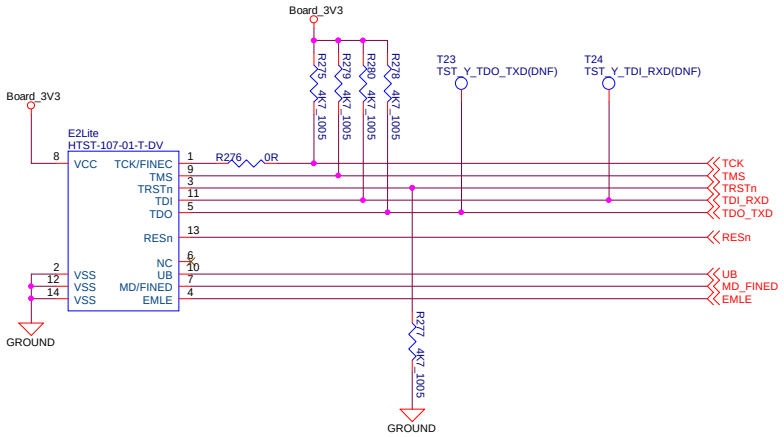
Power Supply Configuration

J25	Power Supply Source	Board_5V, USB_5V	UC_VCC, Board_3V3, SD_3V3	Unavailable Feature
open	PWR / Unregulated_VCC / JA1-5V	5V	3.3V	USB (Function-Buspowered)
shorted pin	VBUS0	5V	3.3V	USB (Host), USB (Function-Selfpowered)

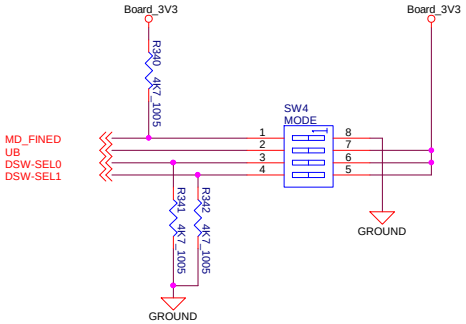


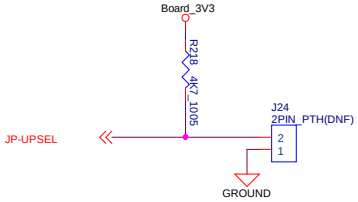
Renesas Electronics Corporation		
Title: RSK+RX671 [PSU]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 6 of 17	

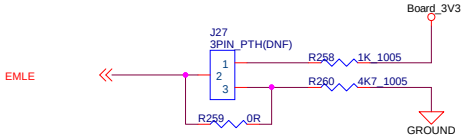
E2 Lite Emulator Interface



MCU Mode Setting







Default setting of SW4: all OFF

MCU Operating Mode Configuration

SW4 Pin1	SW4 Pin2	J24	Operating Mode
OFF	Don't care	Don't care	Single Chip Mode
ON	OFF	Don't care	SCI Boot Mode
ON	ON	Open	USB Boot Mode (Bus Powered)
ON	ON	Shorted Pin	USB Boot Mode (Self Powered)

Bus Switch Select Configuration

SW4 Pin3	SW4 Pin4	Available Feature
OFF	OFF	SDRAM
ON	OFF	RSPI, QSPI
OFF	ON	N/A (DO NOT SELECT)
ON	ON	RSPI, SDHI

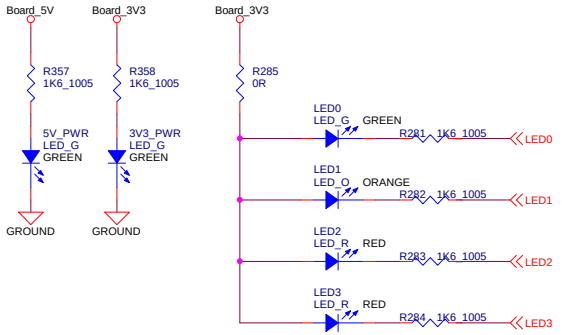
Emulator Configuration

J27	Emulator Configuration
Shorted Pin1-2	E2 Lite debugging with Hot plug-in
Shorted Pin2-3	E2 Lite normal debugging Microcontroller single operation (without emulator)
All open	DO NOT SET

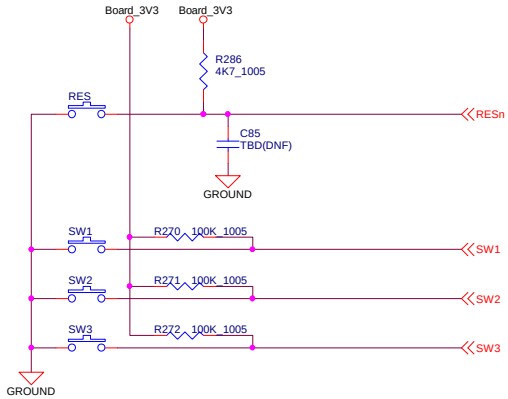
Renesas Electronics Corporation

Title	RSK+RX671 [E2 Lite, MCU Mode Setting]	
Size	Document Number R20UT4878EG0100	Rev 1.00
Date: Tuesday, June 22, 2021	Sheet 7 of 17	

LEDs

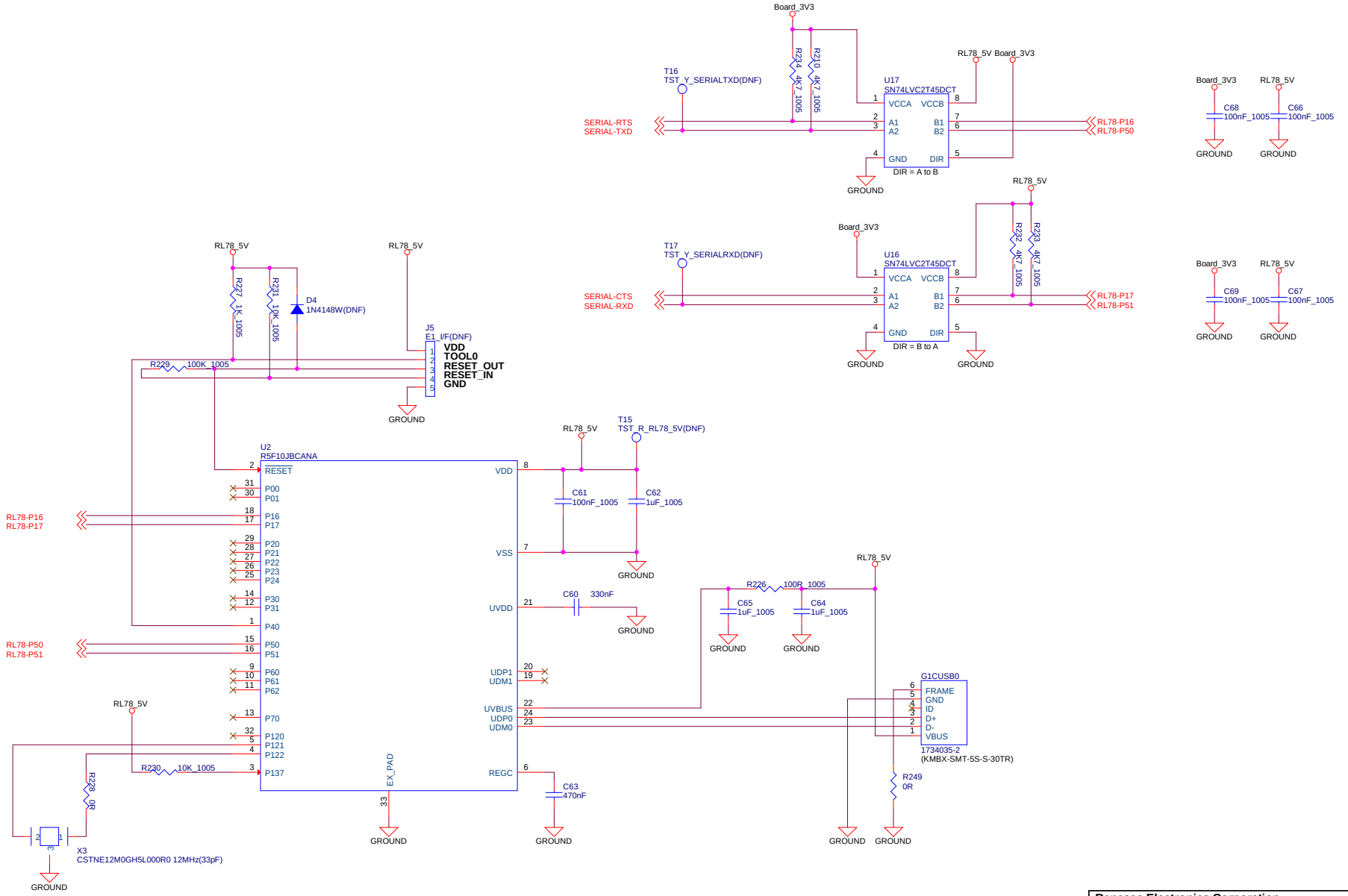


Switches, RESET



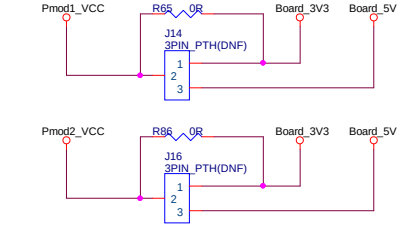
Renesas Electronics Corporation		
Title: RSK+RX671 [RESET, Switches, LEDs]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 8 of 17	

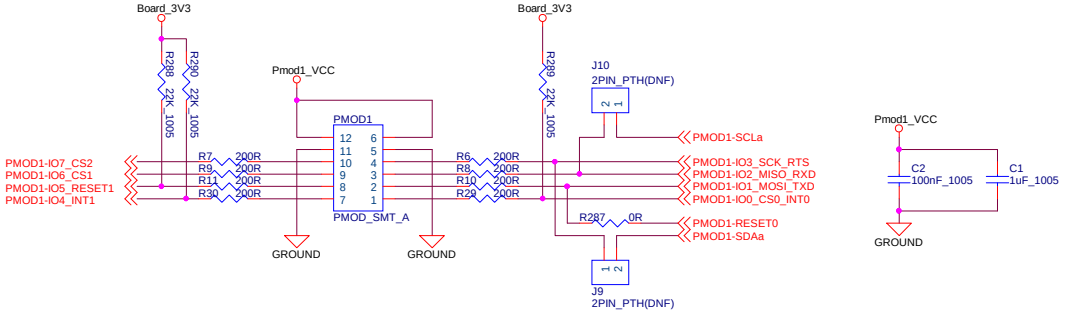
USB to Serial Interface

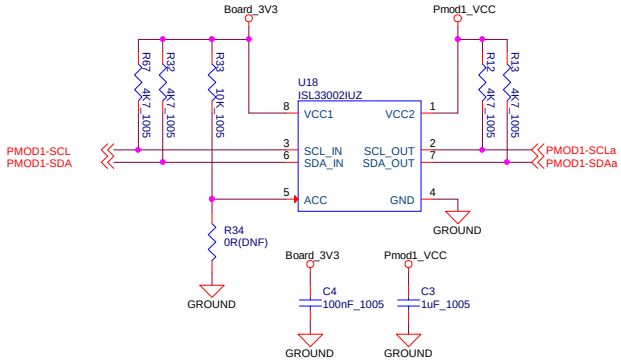


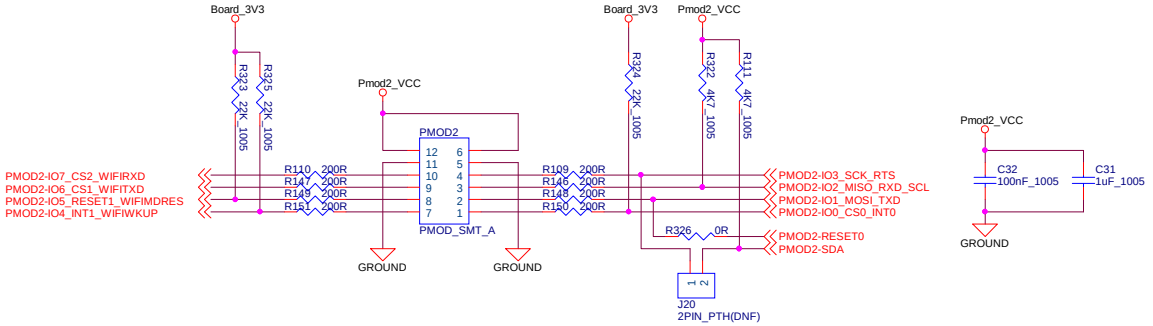
Renesas Electronics Corporation		
Title: RSK+RX671 [USB to Serial Interface]		
Size	Document Number R20UT4878EG0100	Rev 1.00
Date: Tuesday, June 22, 2021	Sheet 9 of 17	

Pmod Interface





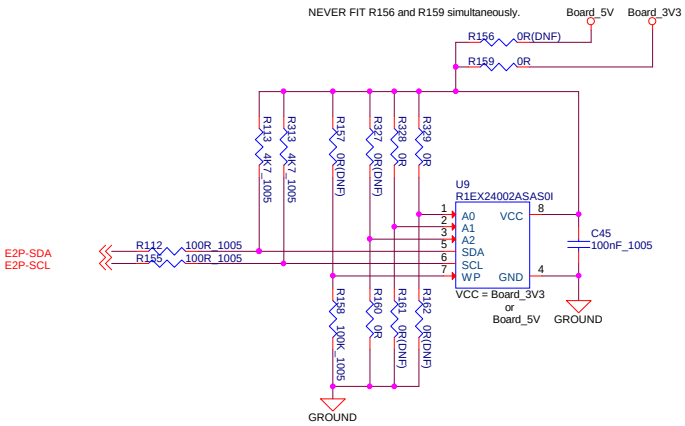




IIC EEPROM(2Kbits)

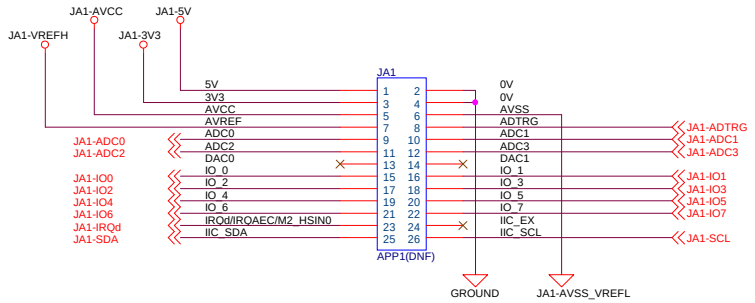
Warning:

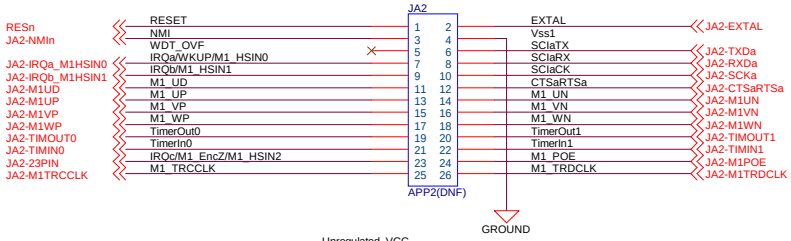
NEVER FIT R156 and R159 simultaneously.

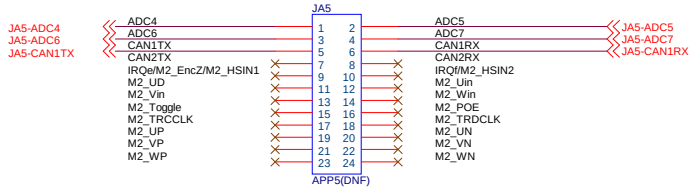


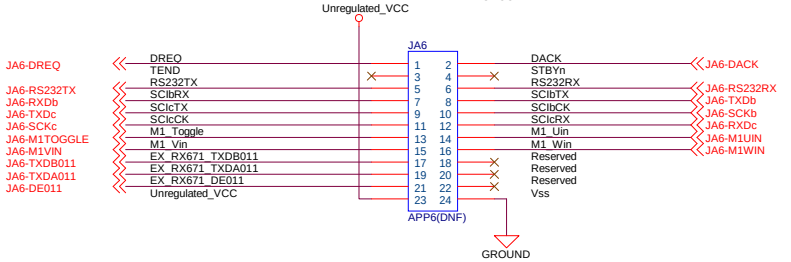
Renesas Electronics Corporation		
Title: RSK+RX671 [Pmod, IIC EEPROM]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 10 of 17	

Application Headers

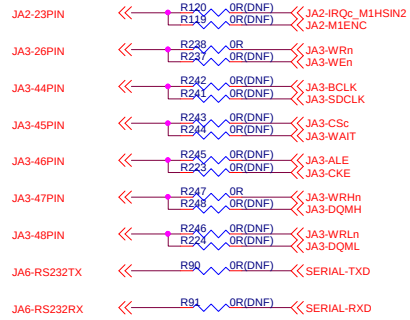


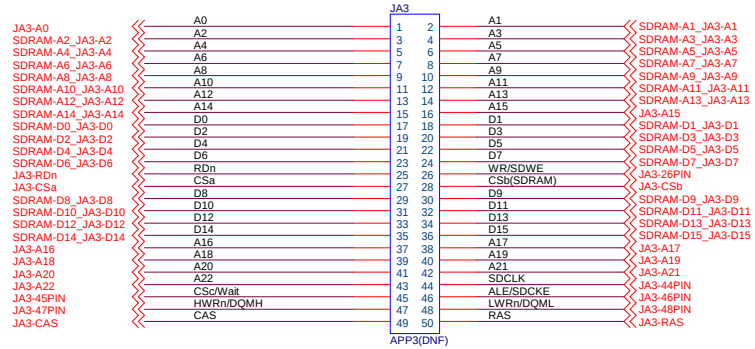






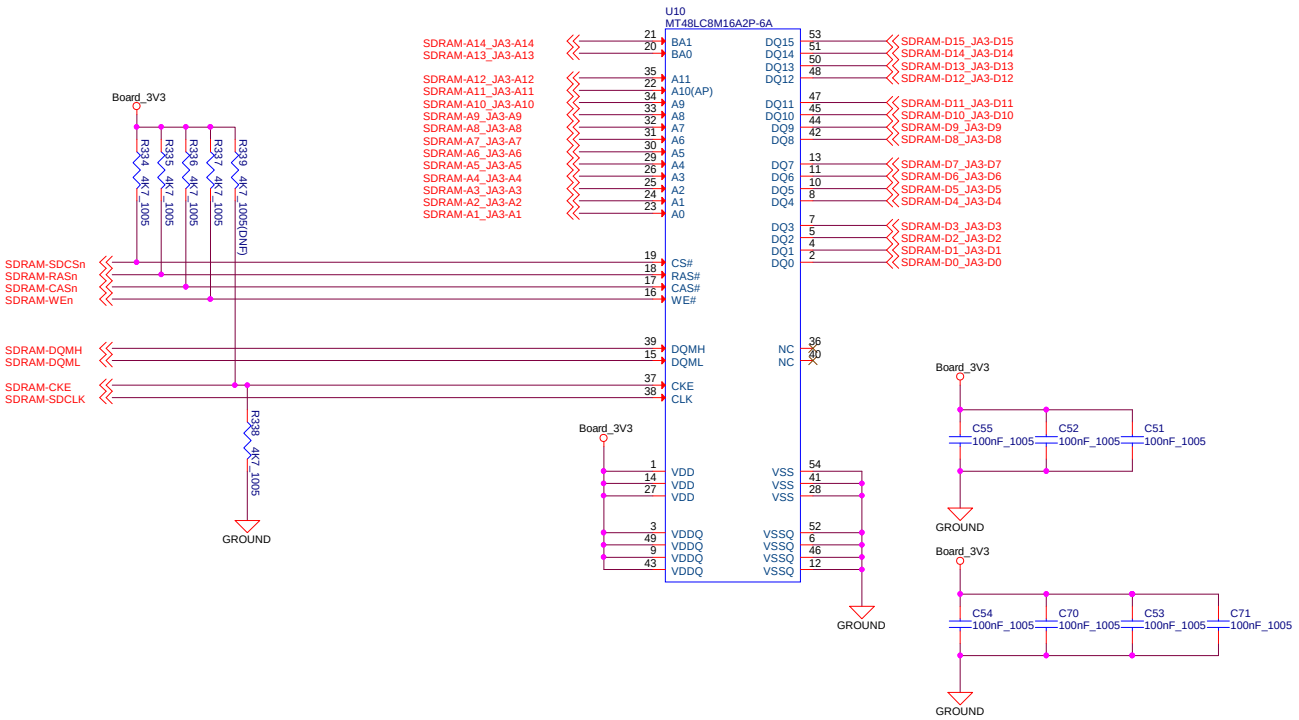
Application Header Function Select





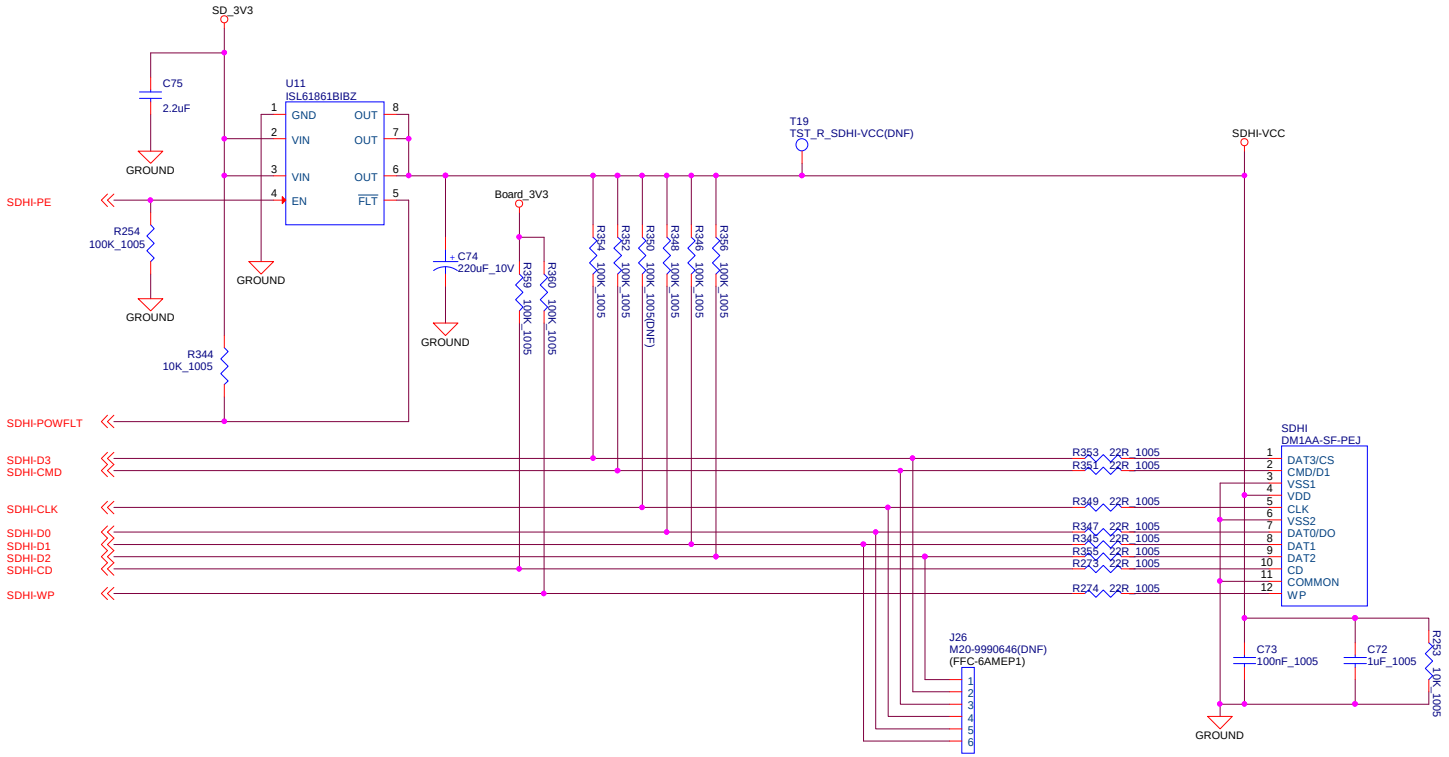
Renesas Electronics Corporation		
Title: RSK+RX671 [Application Headers]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 11 of 17	

SDRAM(128Mbits)



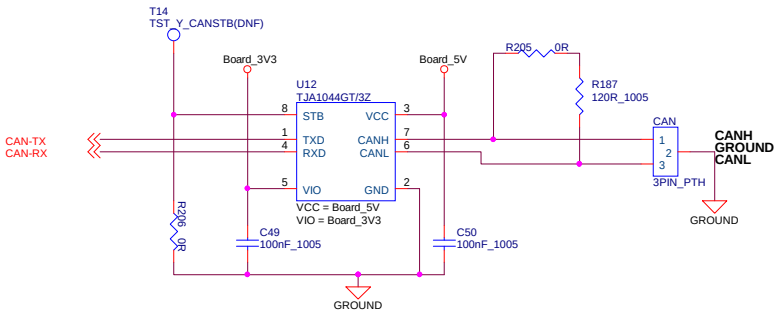
Renesas Electronics Corporation		
Title: RSK+RX671 [SDRAM]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 12 of 17	

SDHI

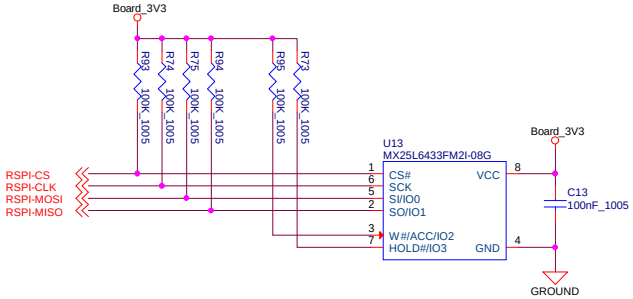


Renesas Electronics Corporation		
Title: RSK+RX671 [SDHI]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 13 of 17	

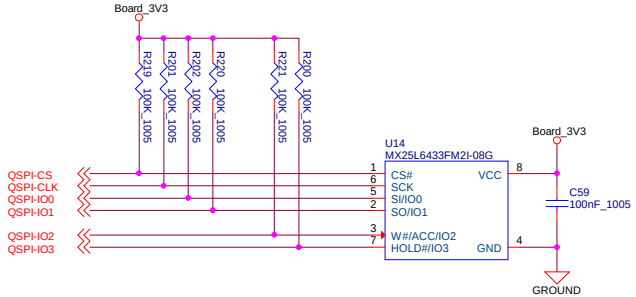
CAN



RSPI- SPI Serial Flash(64Mbits)



QSPI- SPI Serial Flash(64Mbits)



Renesas Electronics Corporation		
Title: RSK+RX671 [CAN, RSPI, QSPI]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 14 of 17	

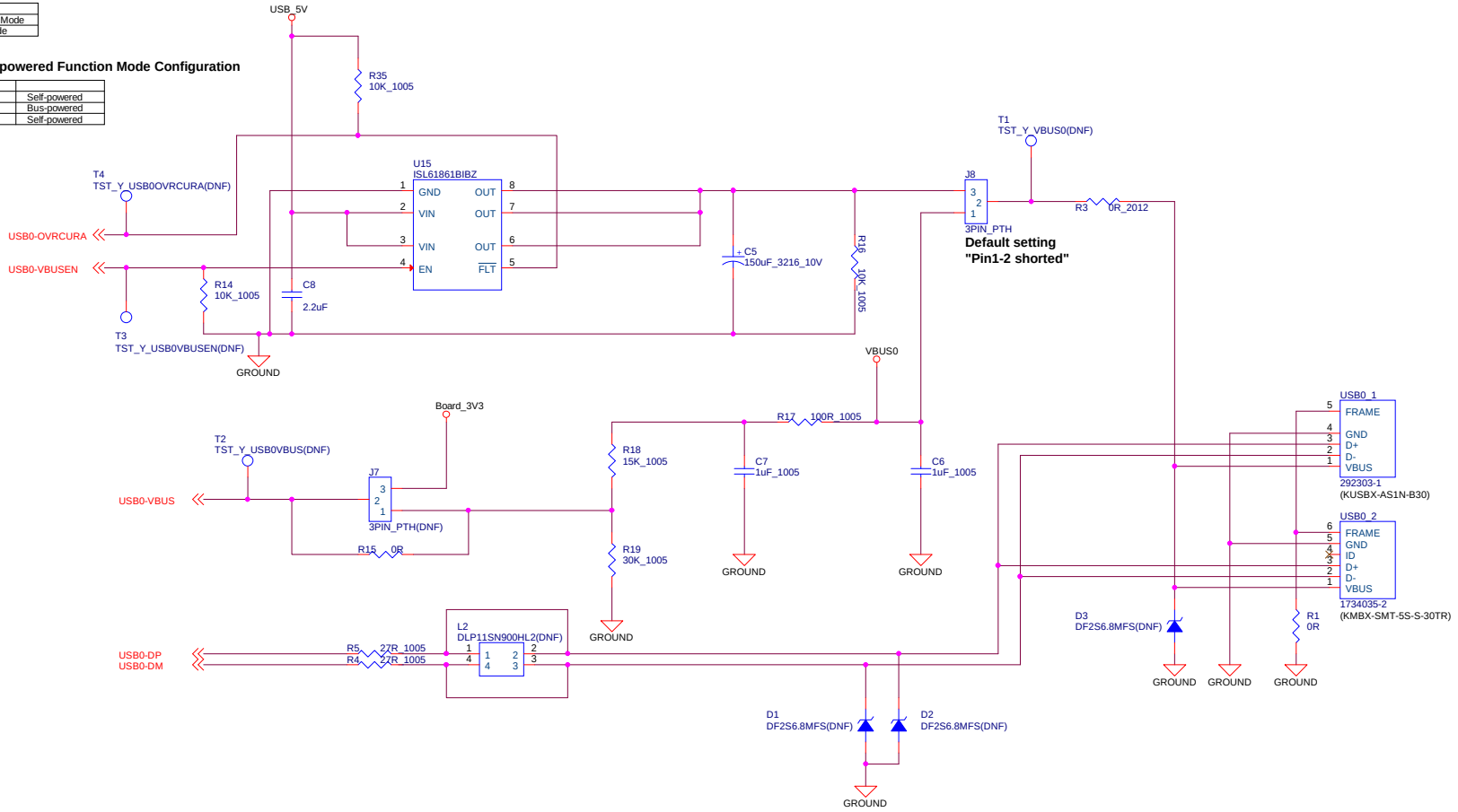
USB0 Host/Function

USB0 Host/Function Select

J8	
1-2 shorted	Function Mode
2-3 shorted	Host Mode

Self-powered/Bus-powered Function Mode Configuration

J7	R15	
1-2 shorted	Remove	Self-powered
2-3 shorted	Remove	Bus-powered
Open	Fit	Self-powered

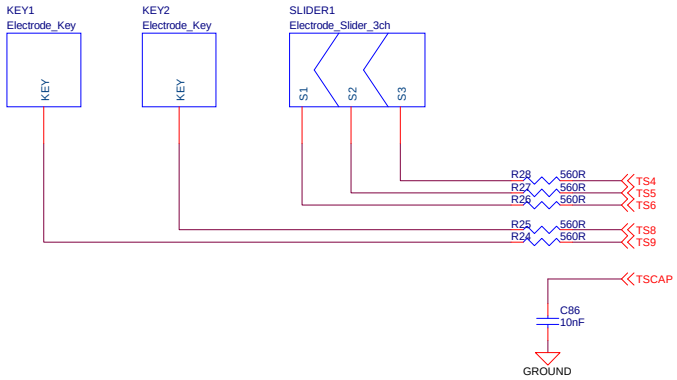


Renesas Electronics Corporation		
Title: RSK+RX671 [USB0 Host/Function]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 15 of 17	

Touch Interface

Note:

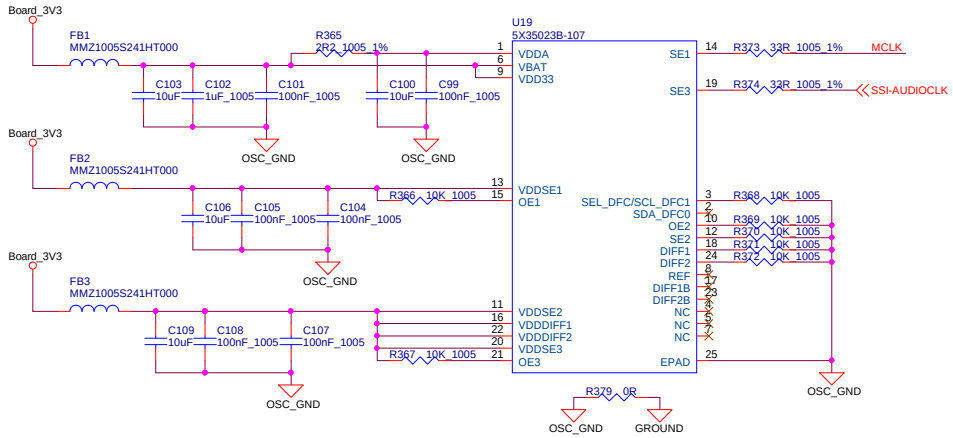
Touch signals require careful route pattern.
For technical design information, please refer to application note 'CTSU Basis of Cap touch detection' (R30AN0218EJ).



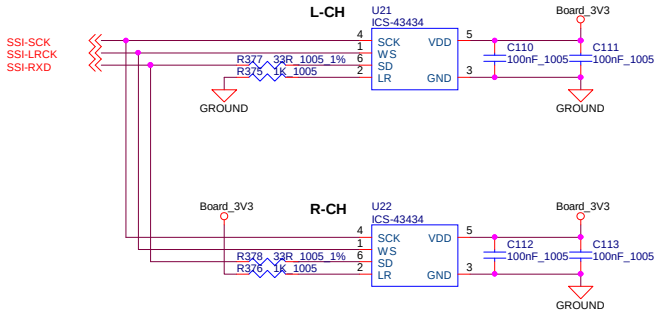
Renesas Electronics Corporation		
Title: RSK+RX671 [Touch Interface]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 16 of 17	

SSI, Audio Interface

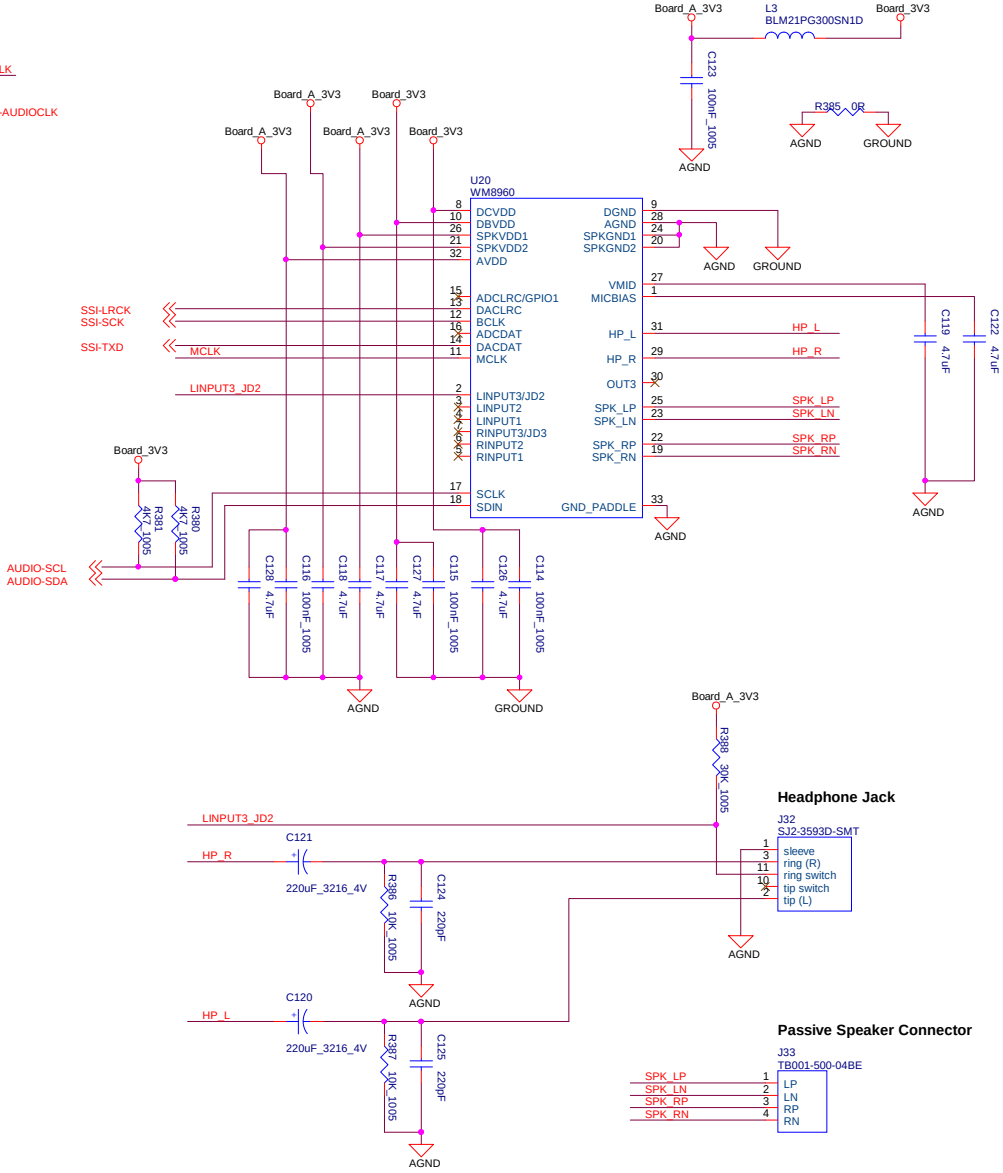
Clock Generator



Microphone



Audio codec



Headphone Jack

Passive Speaker Connector

Renesas Electronics Corporation		
Title: RSK+RX671 [SSI, Audio Interface]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet 17 of 17	

Revision History

REV	DATE	SHEET	DESCRIPTION
1.00	22.06.2021	---	1st release edition.

Renesas Electronics Corporation		
Title: RSK+RX671 [Revision History]		
Size	Document Number: R20UT4878EG0100	Rev: 1.00
Date: Tuesday, June 22, 2021	Sheet X of X	