

Renesas Starter Kit+ for RX671 CPU Board Schematics

REV	REF	DATE	DRAWN BY
1.00	Release	22.06.2021	YCI

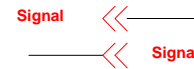
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5	MCU Pin Function Select-2
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Note:

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:

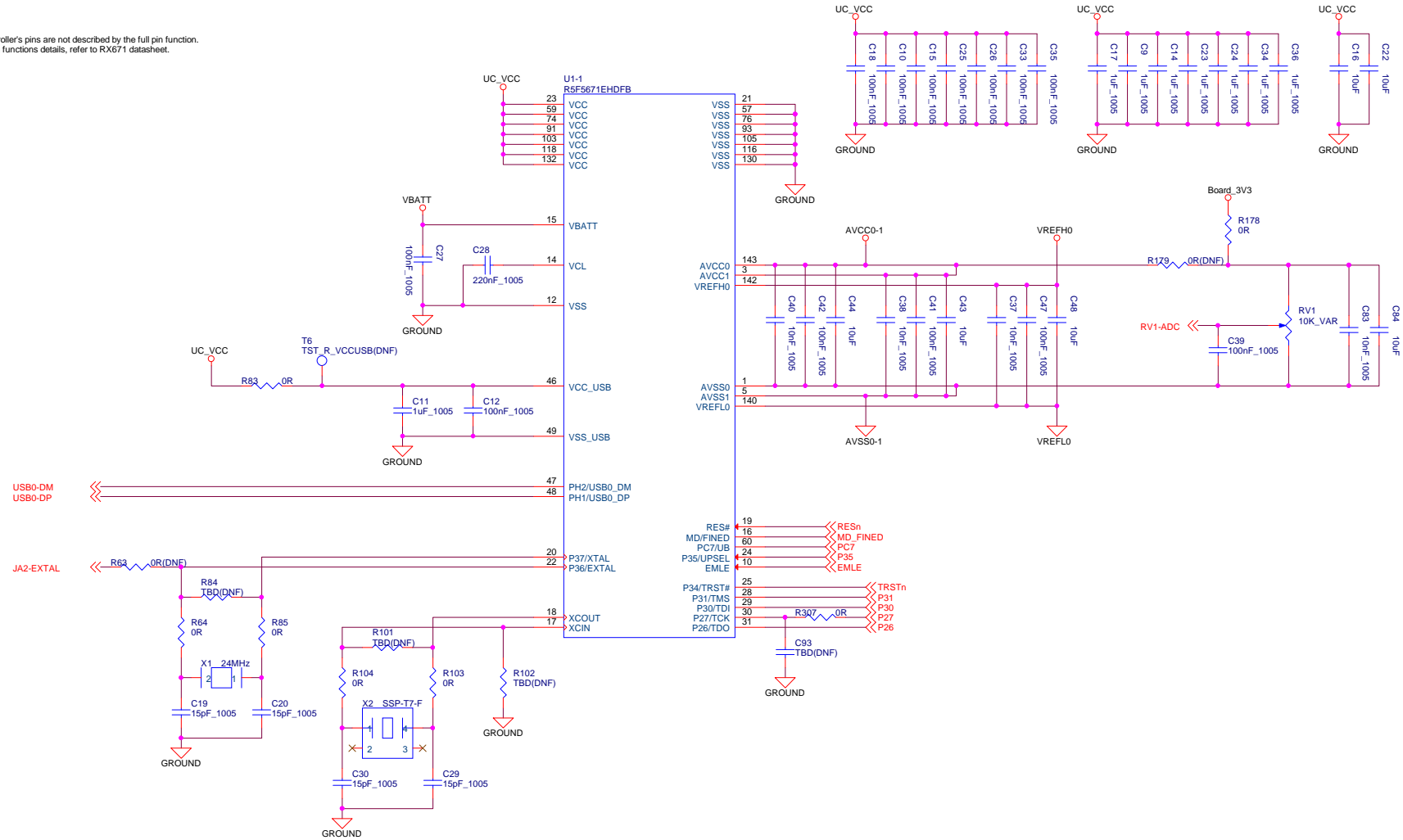
CAN : Controller Area Network
IIC : Philips(TM) Inter-Integrated Circuit Connection Bus
LED : Light Emitting Diode
MCU : Microcontroller Unit
PSU : Power Supply Unit
RSK : Renesas Starter Kit
SDHI : SD Host Interface
SSI : Serial Sound Interface
USB : Universal Serial Bus

REE Drawing No. D017772_04

Renesas Electronics Corporation			
Title RSK+RX671 [Index]			
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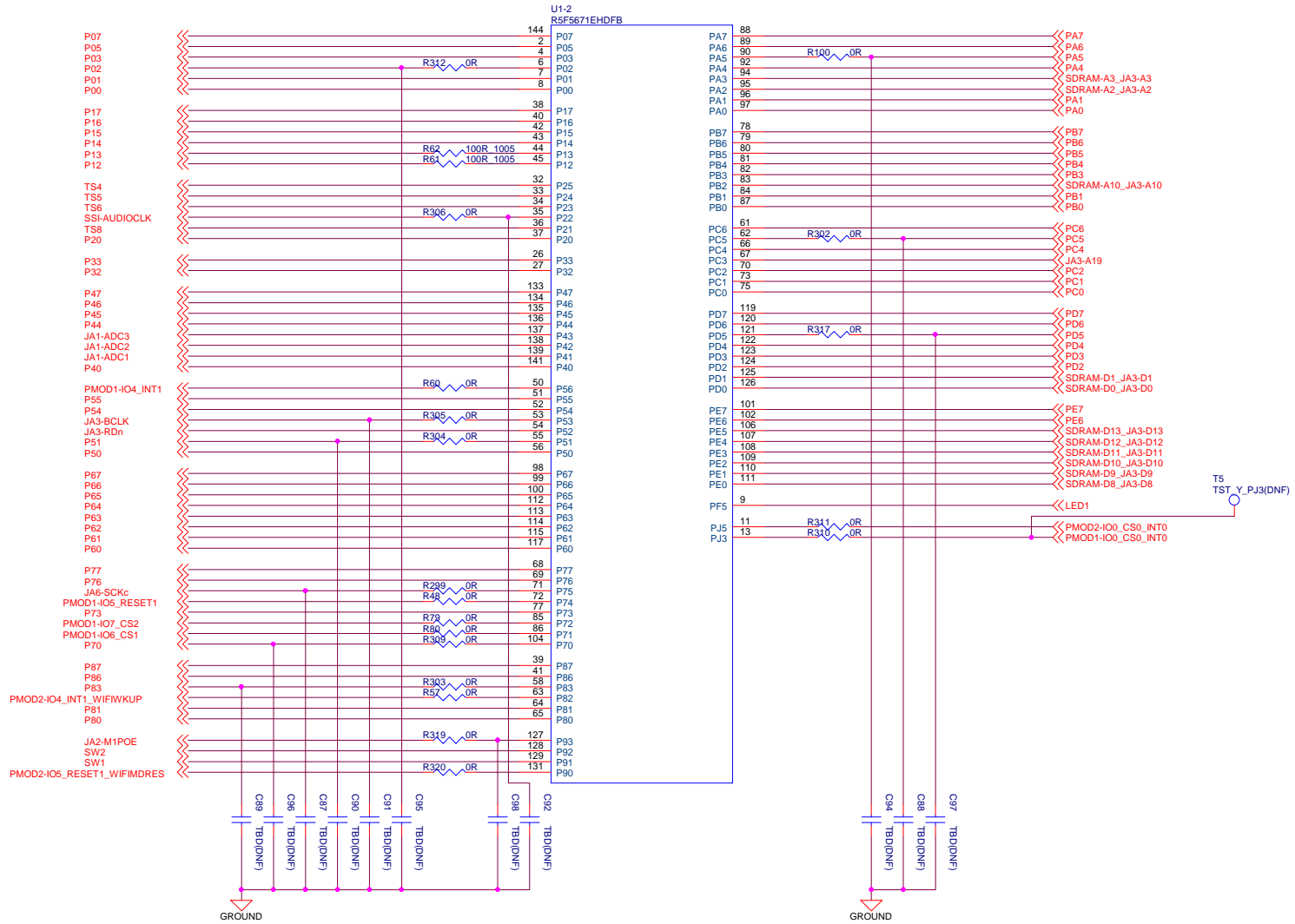
RX671 Microcontroller-1

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



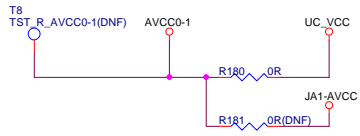
RX671 Microcontroller-2

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

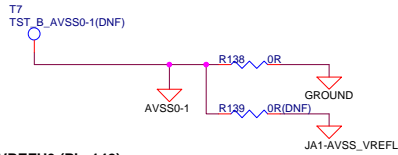


MCU Pin Function Select-1

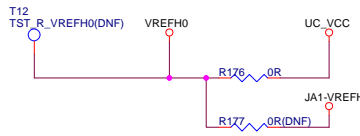
AVCC0 (Pin 143), AVCC1 (Pin 3)



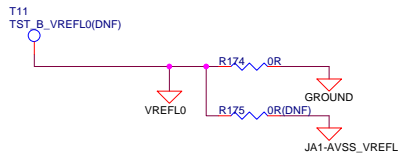
AVSS0 (Pin 1), AVSS1 (Pin 5)



VREFH0 (Pin 142)



VREFL0 (Pin 140)



P07 (Pin 144)



P05 (Pin 2)



P03 (Pin 4)



P02 (Pin 6)



P01 (Pin 7)



P00 (Pin 8)



P17 (Pin 38)



P16 (Pin 40)

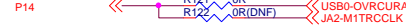


Default setting
"Pin1-2 shorted"

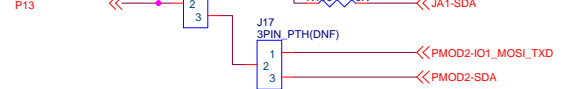
P15 (Pin 42)



P14 (Pin 43)



P13 (Pin 44)



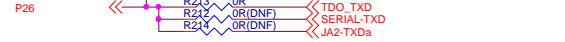
P12 (Pin 45)



P27 (Pin 30)



P26 (Pin 31)

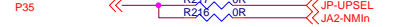


P20 (Pin 37)



Default setting
"Pin1-2 shorted"

P35 (Pin 24)



P33 (Pin 26)



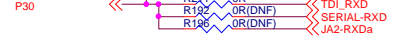
P32 (Pin 27)



P31 (Pin 28)



P30 (Pin 29)



P47 (Pin 133)



P46 (Pin 134)



P45 (Pin 135)



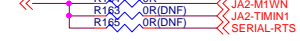
P44 (Pin 136)



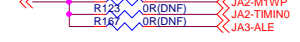
P40 (Pin 141)



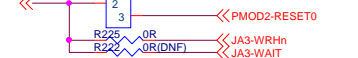
P55 (Pin 51)



P54 (Pin 52)



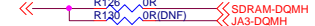
P51 (Pin 55)



P50 (Pin 56)



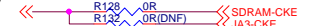
P67 (Pin 98)



P66 (Pin 99)



P65 (Pin 100)



P64 (Pin 112)



P63 (Pin 113)



P62 (Pin 114)



P61 (Pin 115)



P60 (Pin 117)



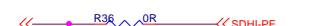
P77 (Pin 68)



P76 (Pin 69)



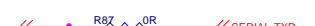
P73 (Pin 77)



P70 (Pin 104)



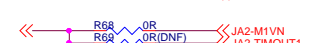
P87 (Pin 39)



P86 (Pin 41)



P83 (Pin 58)



P81 (Pin 64)



P80 (Pin 65)

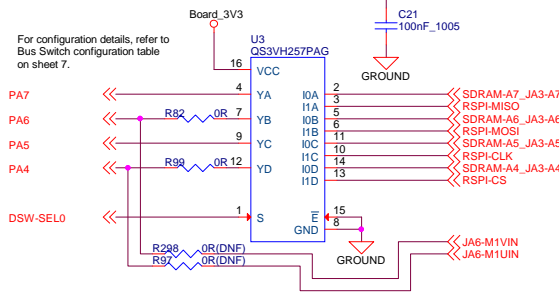


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Title RSK+RX671 [MCU Pin Function Select-1]		
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MCU Pin Function Select-2

PA7 (Pin 88), PA6 (Pin 89)
PA5 (Pin 90), PA4 (Pin 92)

For configuration details, refer to Bus Switch configuration table on sheet 7.



PA1 (Pin 96)



PA0 (Pin 97)



PB7 (Pin 78)



PB6 (Pin 79)



PB5 (Pin 80)



PB4 (Pin 81)



PB3 (Pin 82)



PB1 (Pin 84)



PB0 (Pin 87)



PC7 (Pin 60)



PC6 (Pin 61)



PC5 (Pin 62)



PC4 (Pin 66)



PC2 (Pin 70)



PC1 (Pin 73)

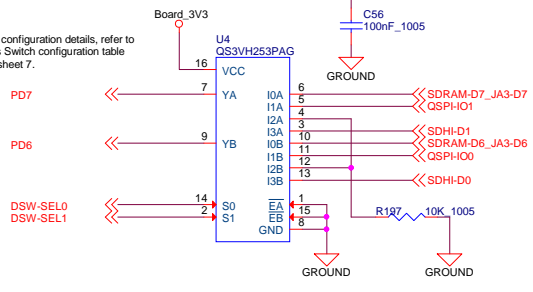


PC0 (Pin 75)



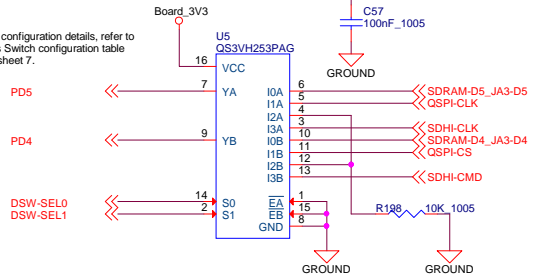
PD7 (Pin 119), PD6 (Pin 120)

For configuration details, refer to Bus Switch configuration table on sheet 7.



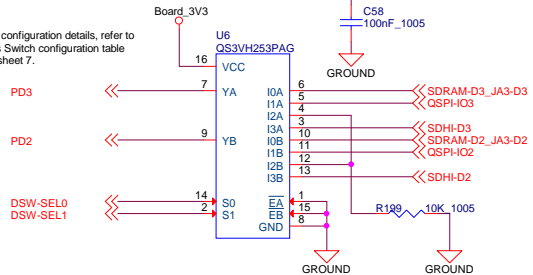
PD5 (Pin 121), PD4 (Pin 122)

For configuration details, refer to Bus Switch configuration table on sheet 7.



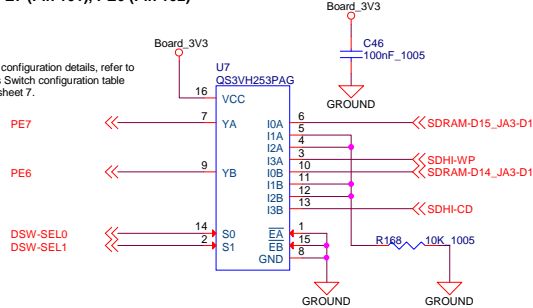
PD3 (Pin 123), PD2 (Pin 124)

For configuration details, refer to Bus Switch configuration table on sheet 7.



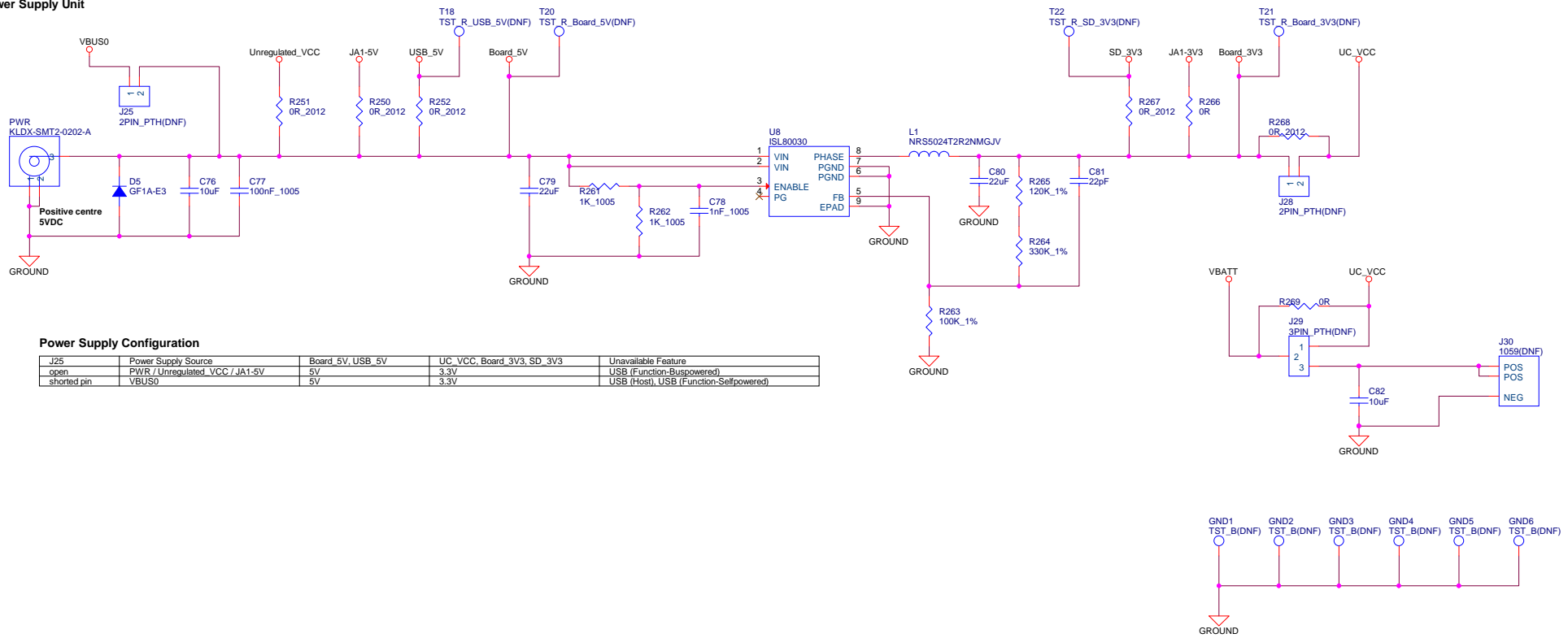
PE7 (Pin 101), PE6 (Pin 102)

For configuration details, refer to Bus Switch configuration table on sheet 7.



P50 = JA3-WRn / JA3-WRLn

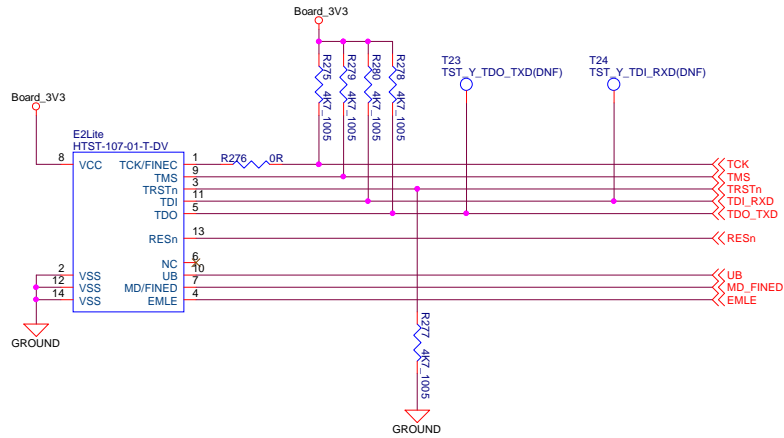
Power Supply Unit



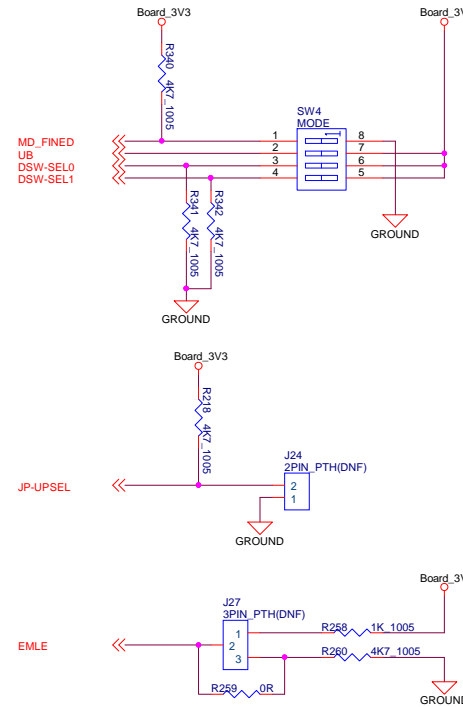
Power Supply Configuration

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)

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

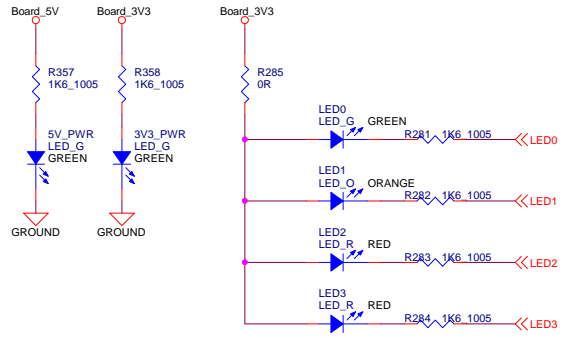
Emulator Configuration

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

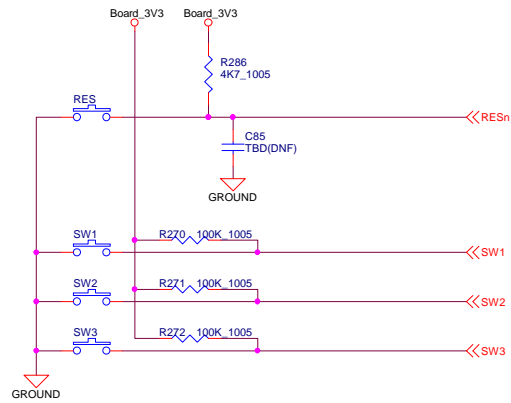
Renesas Electronics Corporation

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RSK+RX671 [E2 Lite, MCU Mode Setting]		
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LEDs

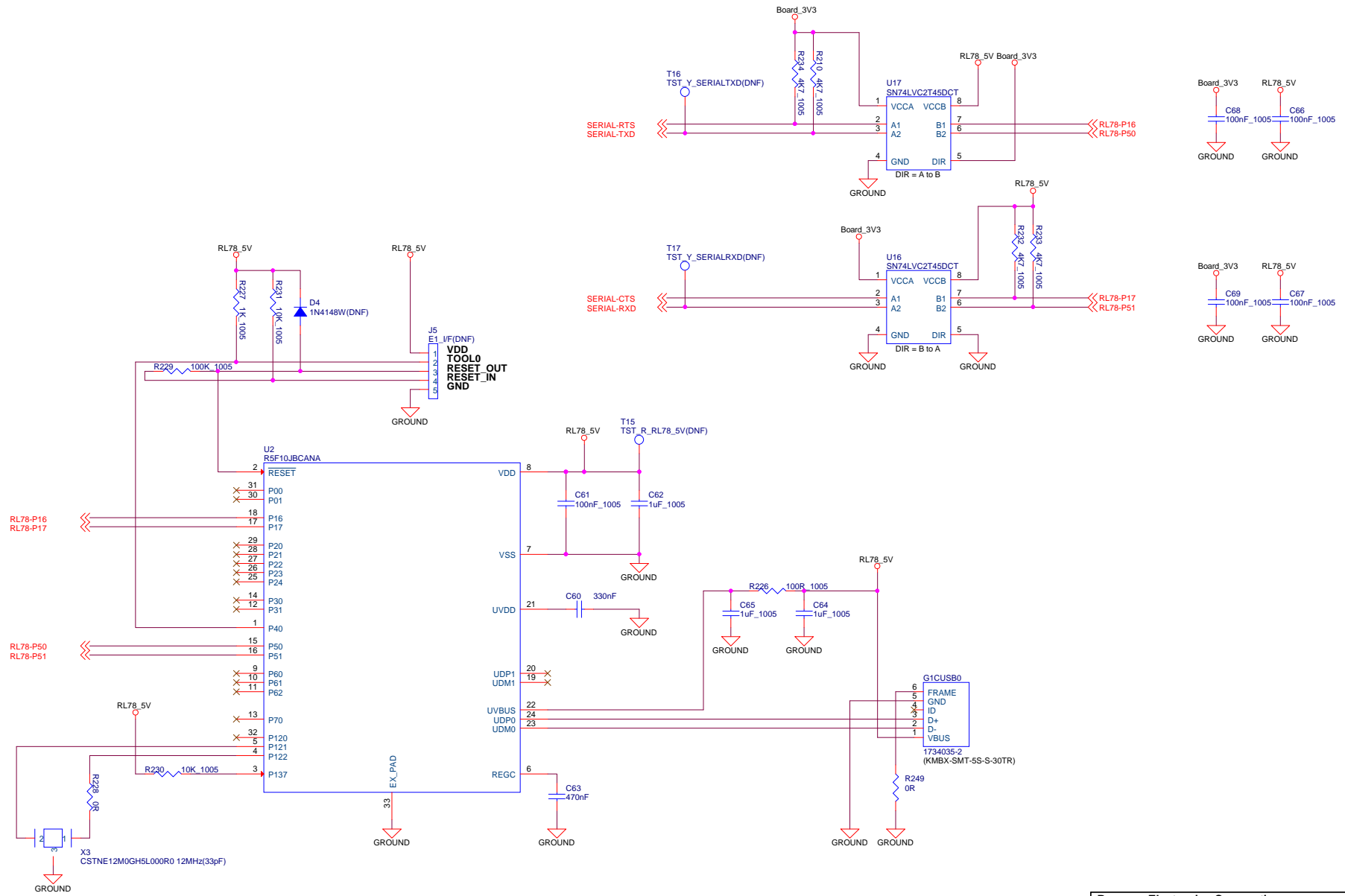


Switches, RESET



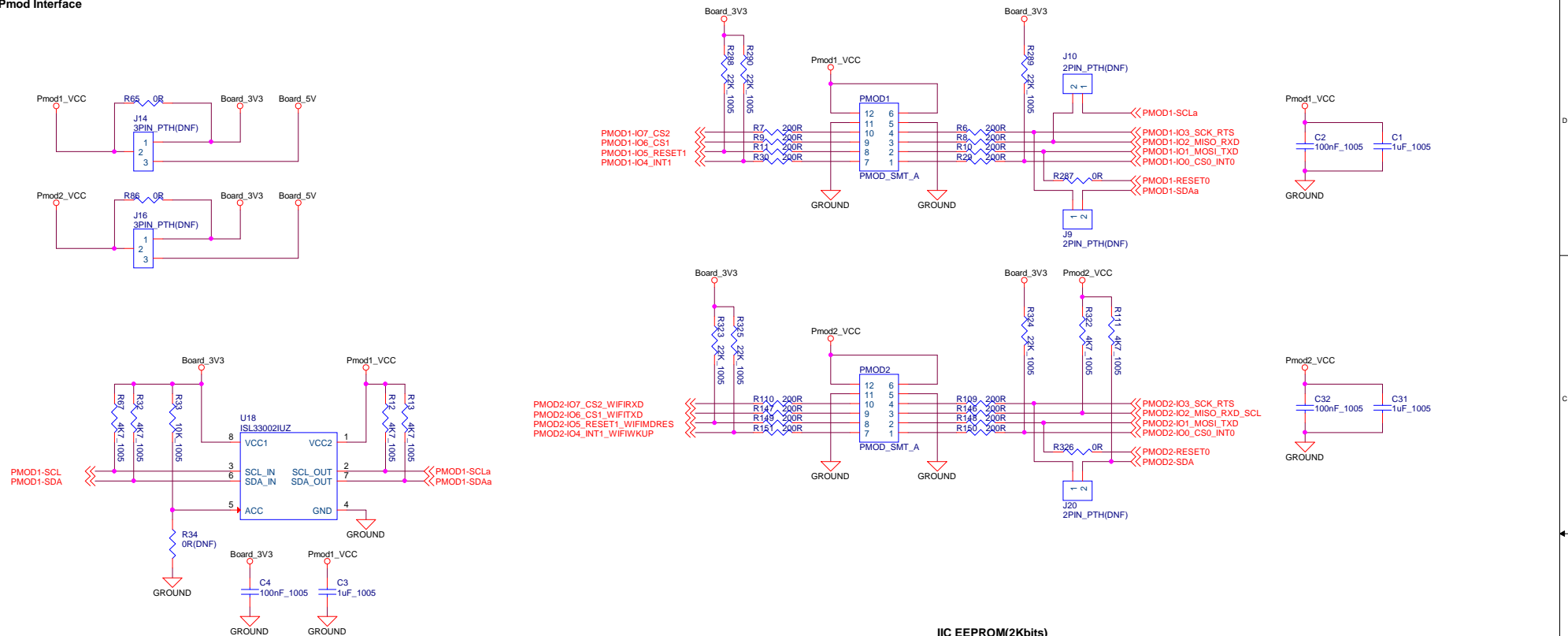
Renesas Electronics Corporation			
Title RSK+RX671 [RESET, Switches, LEDs]			
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USB to Serial Interface



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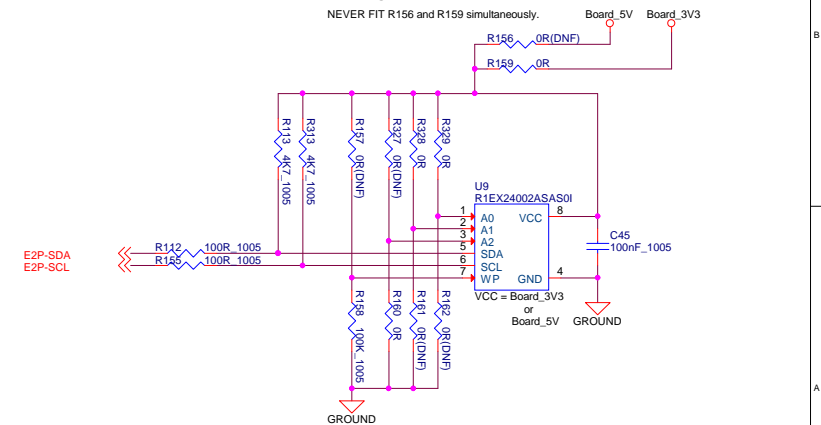
Pmod Interface



IIC EEPROM(2Kbits)

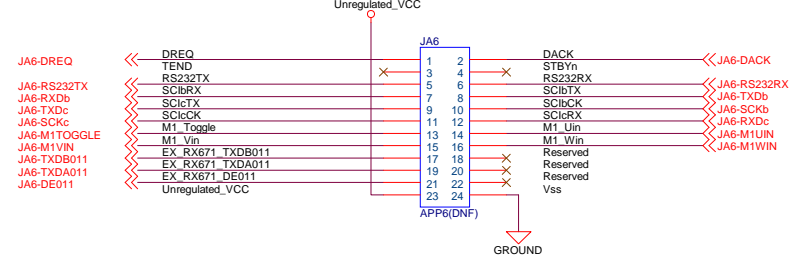
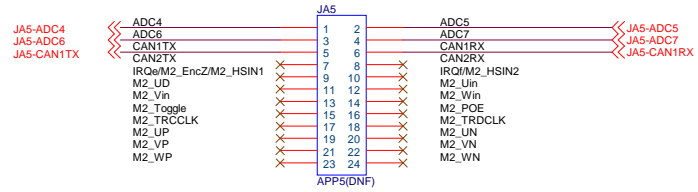
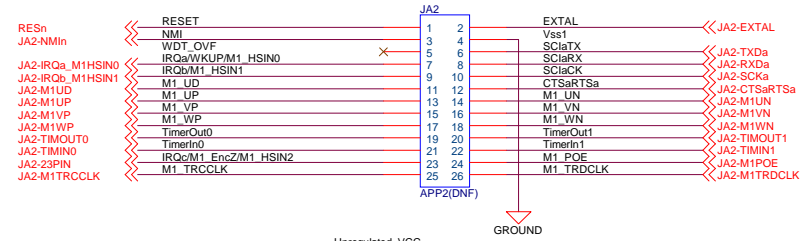
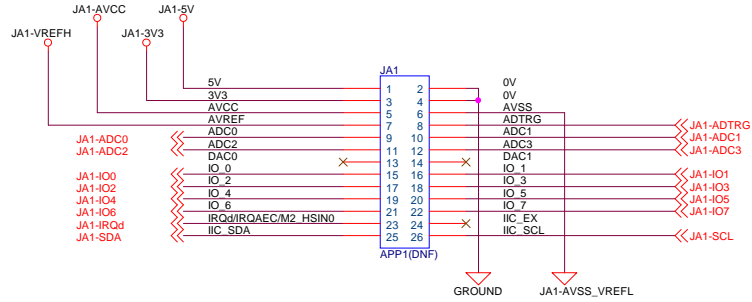
Warning:

NEVER FIT R156 and R159 simultaneously.

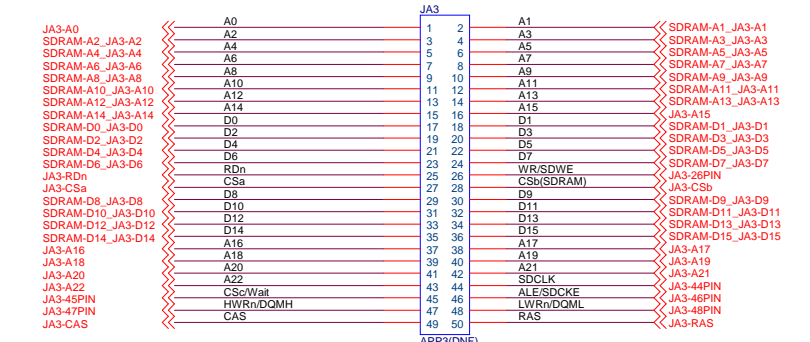
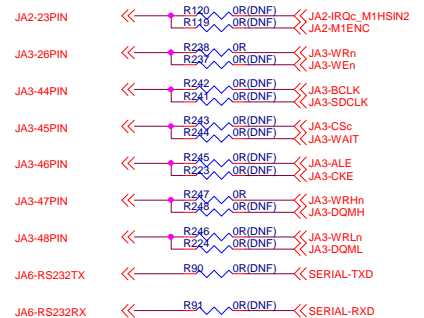


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Title: RSK+RX671 [Pmod, IIC EEPROM]			
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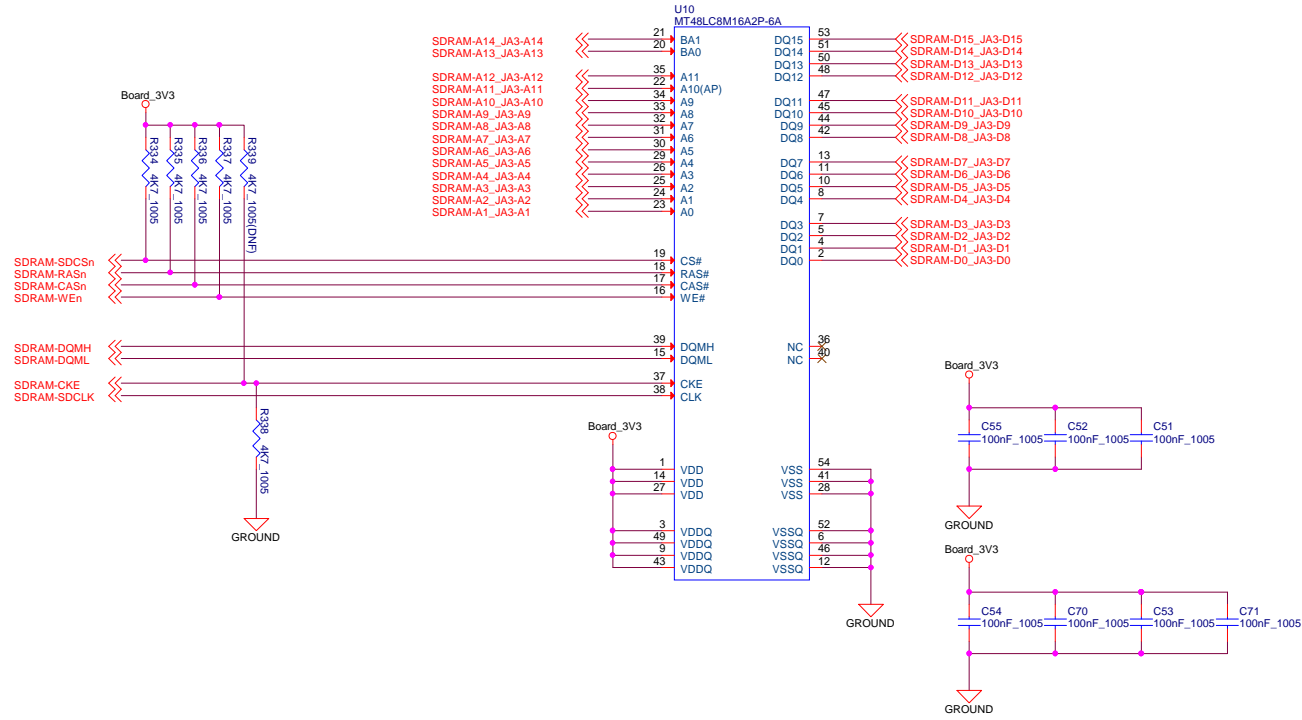
Application Headers



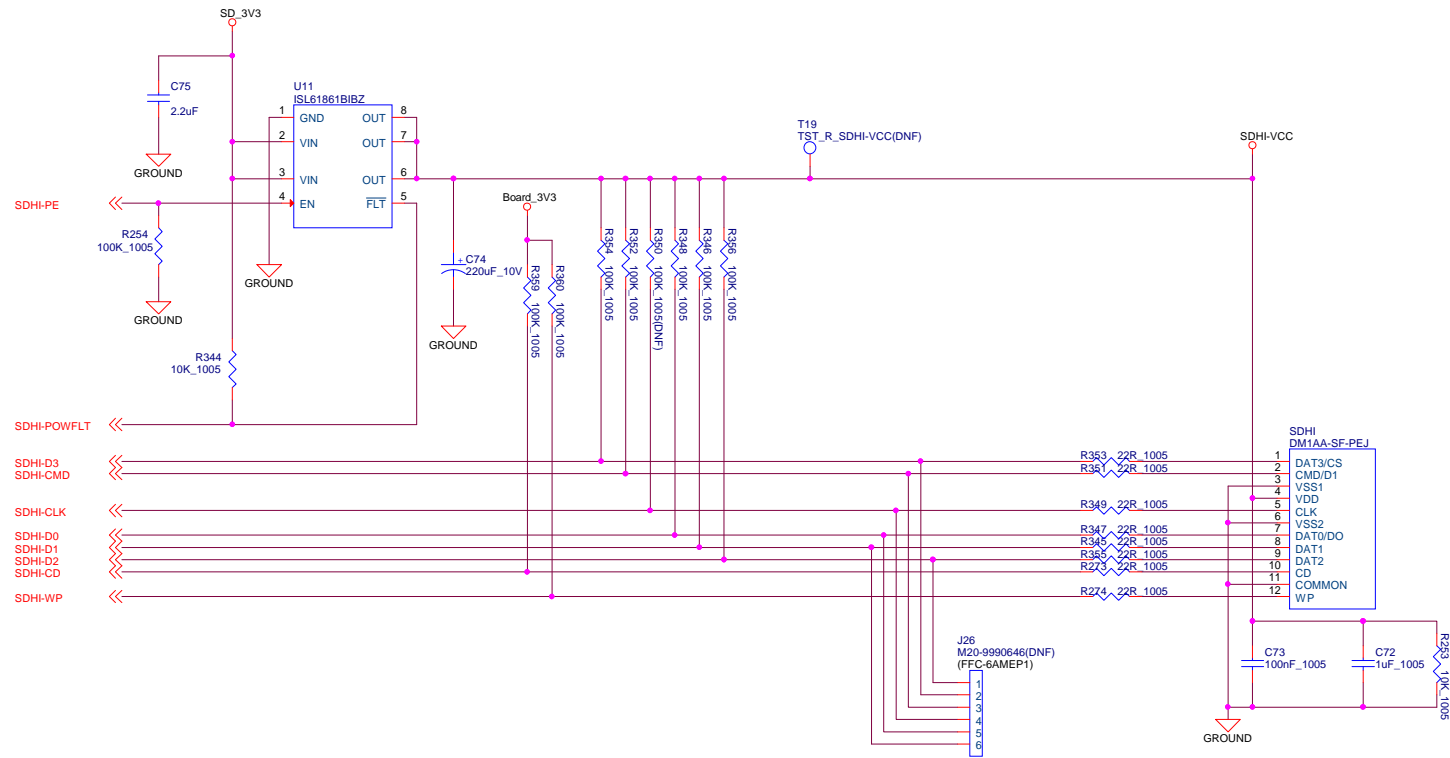
Application Header Function Select



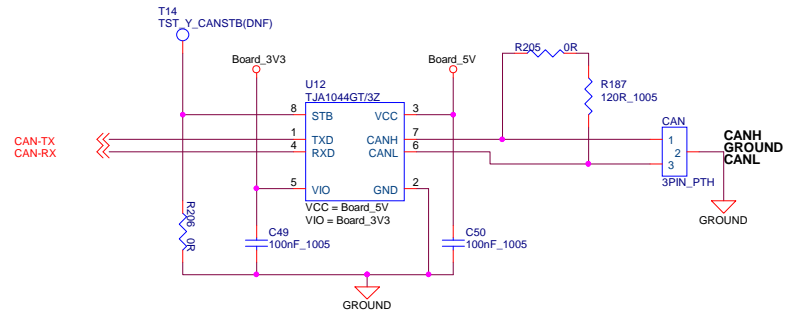
SDRAM(128Mbits)



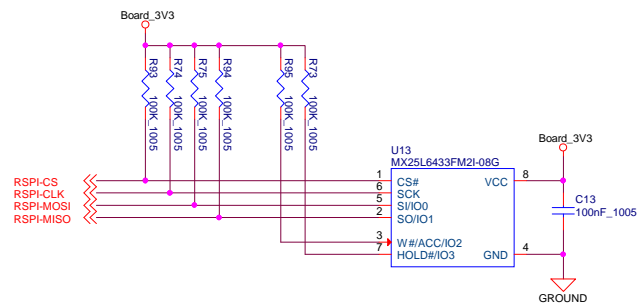
SDHI



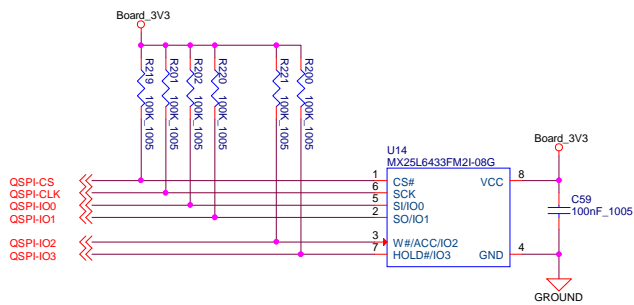
CAN



RSPI- SPI Serial Flash(64Mbits)



QSPI- SPI Serial Flash(64Mbits)



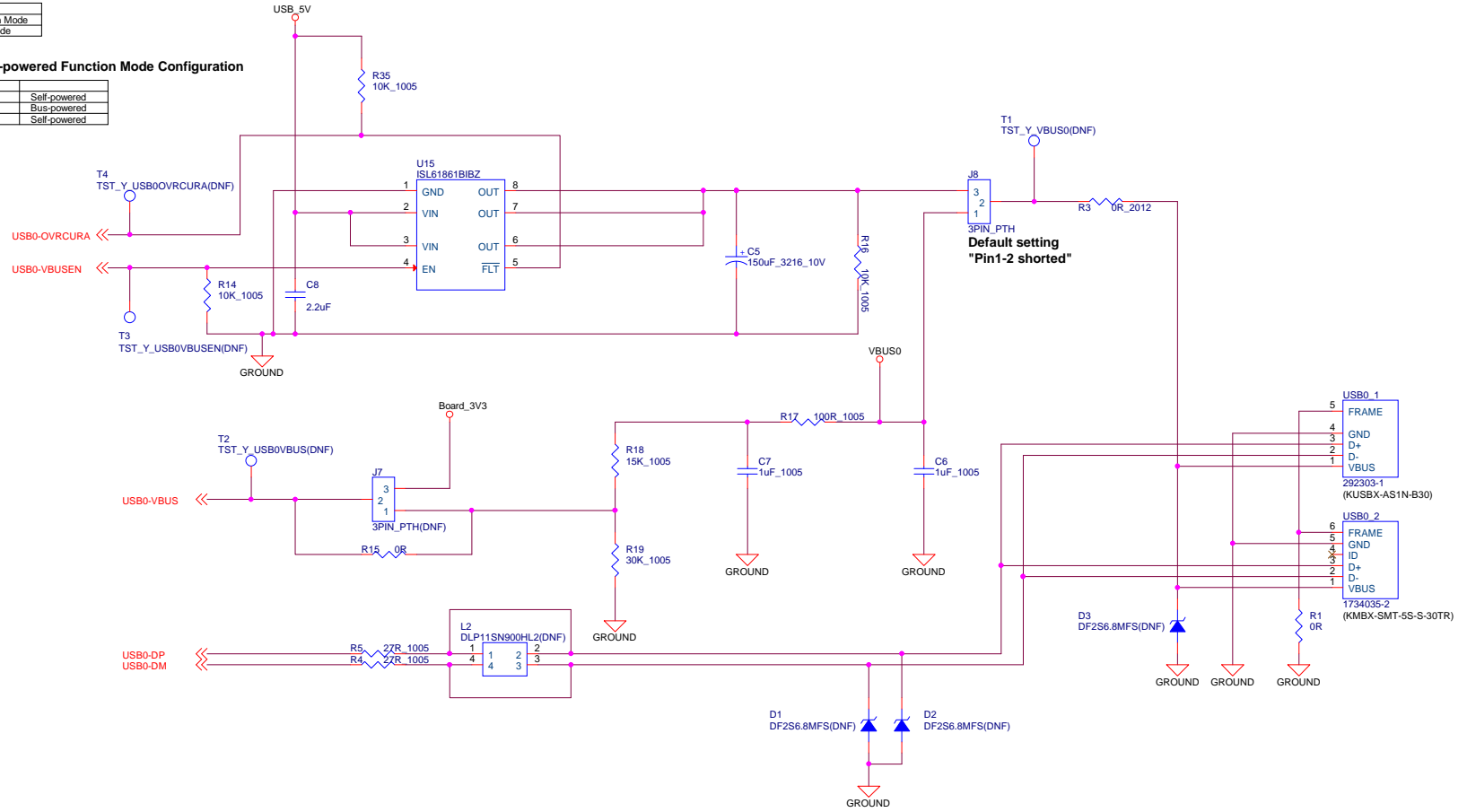
USB0 Host/Function

USB0 Host/Function Select

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

Self-powered/Bus-powered Function Mode Configuration

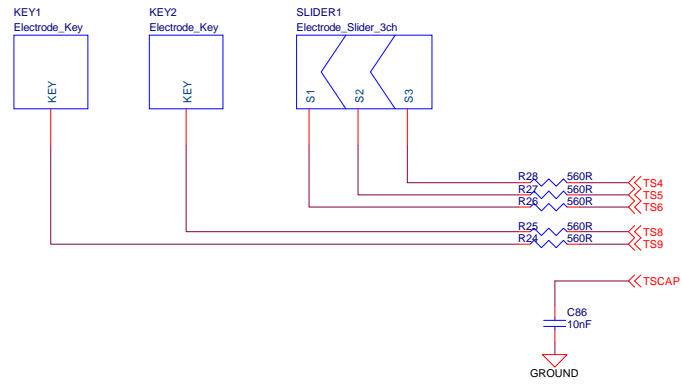
J7	R15	Self-powered
1-2 shorted	Remove	Self-powered
2-3 shorted	Remove	Bus-powered
Open	Fit	Self-powered



Touch Interface

Note:

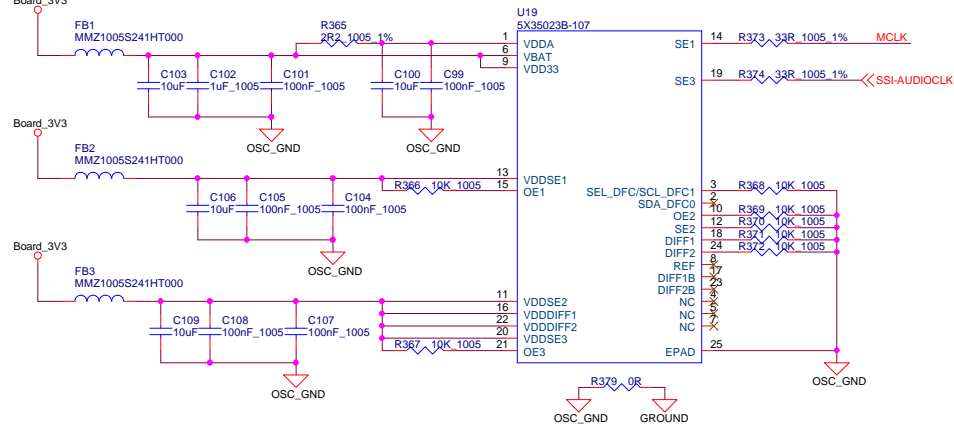
Touch signals require careful route pattern.
For technical design information, please refer to application note 'CTSU Basis of Cap touch detection' (R30AN0218EJ).



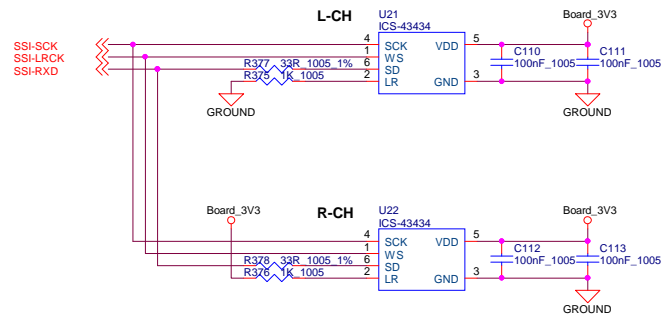
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SSI, Audio Interface

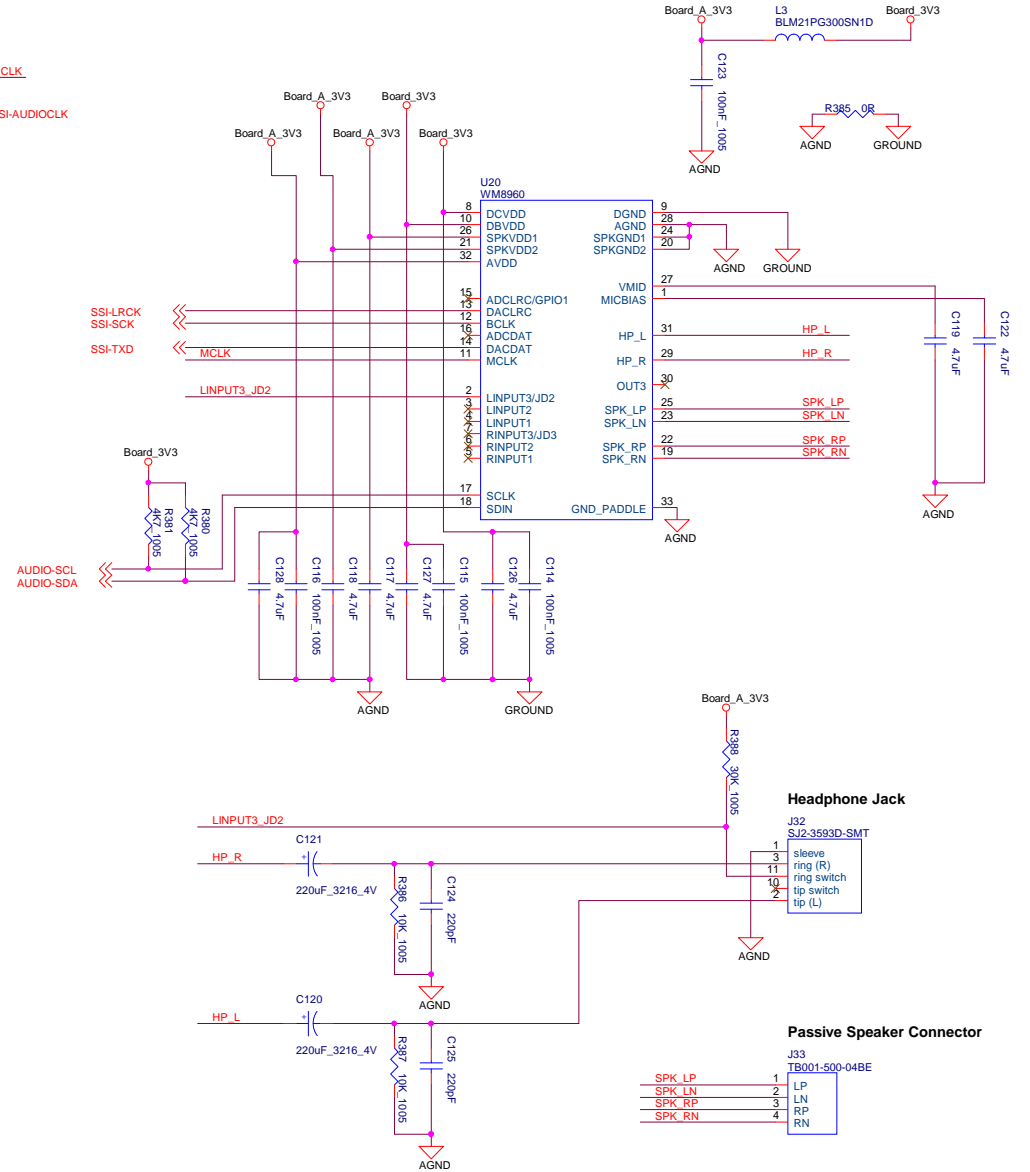
Clock Generator



Microphone



Audio codec



Revision History

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

Renesas Electronics Corporation			
Title RSK+RX671 [Revision History]			
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