

REV	REF	DATE	DRAWN BY
1.00	Release	31.1.2020	KOS

Renesas Solution Starter Kit for RX23W CPU Board Schematics

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Note:

C : Capacitor
D : Diode
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 indicated the signal direction.



Abbreviations:

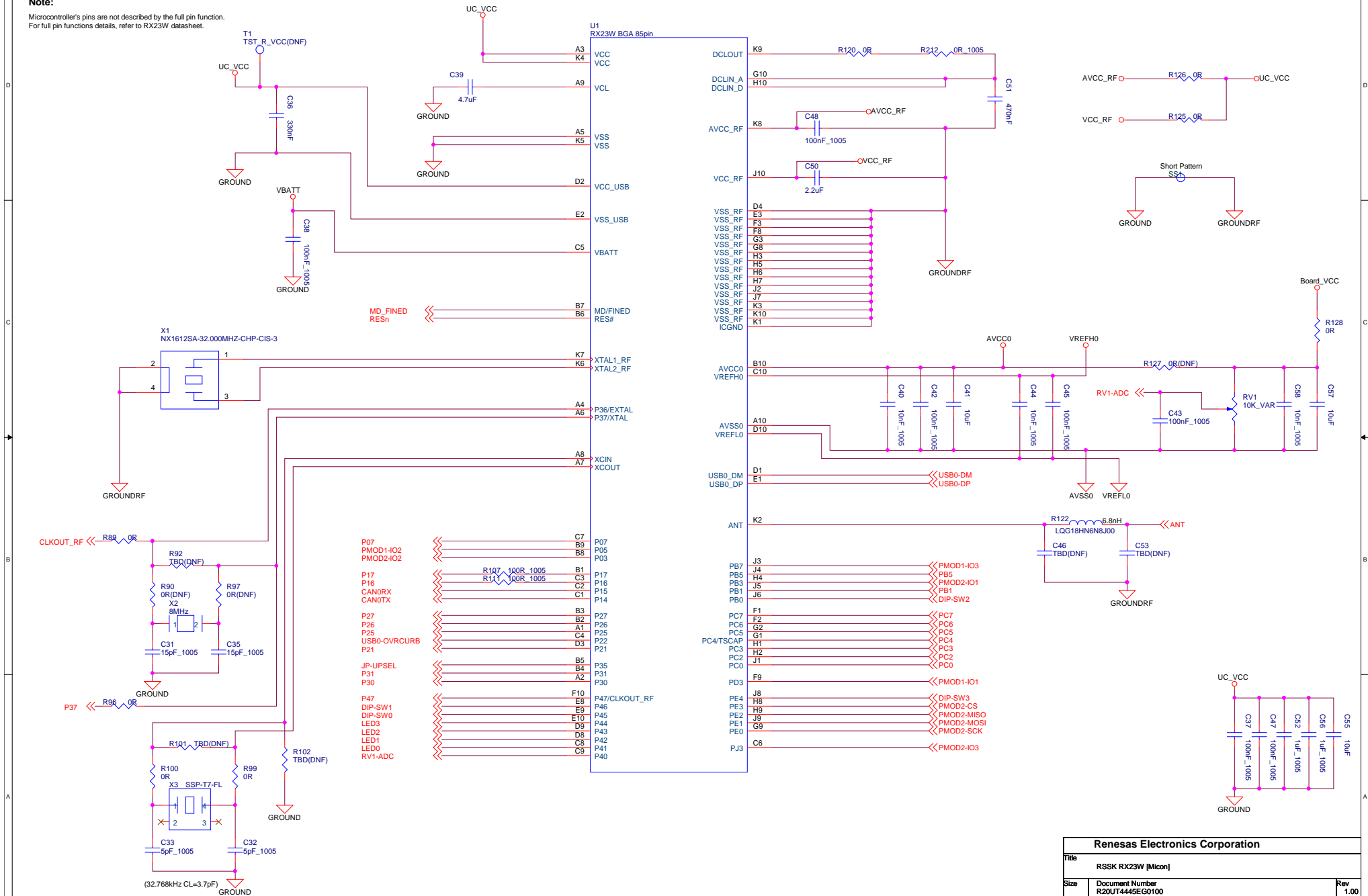
CAN : Controller Area Network
IIC : Philips(TM) Inter-Integrated Circuit Connection Bus
LED : Light Emitting Diode
MCU : Microcontroller Unit
N/A : Not Applicable
PSU : Power Supply Unit
RSSK : Renesas Solution Starter Kit
USB : Universal Serial Bus

REEL Drawing No. D016502_04

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RX23W Microcontroller

Note:
Microcontroller's pins are not described by the full pin function.
For full pin functions details, refer to RX23W datasheet.



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MCU Pin Function Select

AVCC0(PinB10)



AVSS0(PinA10)



VREFH0(PinC10)



VREFL0(PinD10)



RES#(PinB6)



MD_FINED(PinB7)



P07(PinC7)



P17(PinB1)



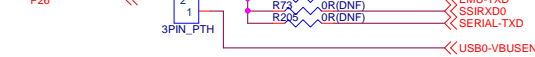
P16(PinC3)



P27(PinB3)



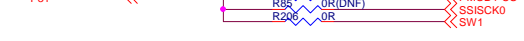
P26(PinB2)



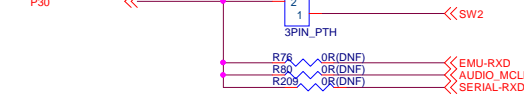
P25(PinA1)



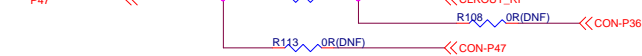
P31(PinB4)



P30(PinA2)



P47(PinF10)



PB1(PinJ5)



PB5(PinJ4)



PC7(PinF1)



PC6(PinF2)



PC5(PinG2)



PC4(PinG1)



PC3(PinH1)



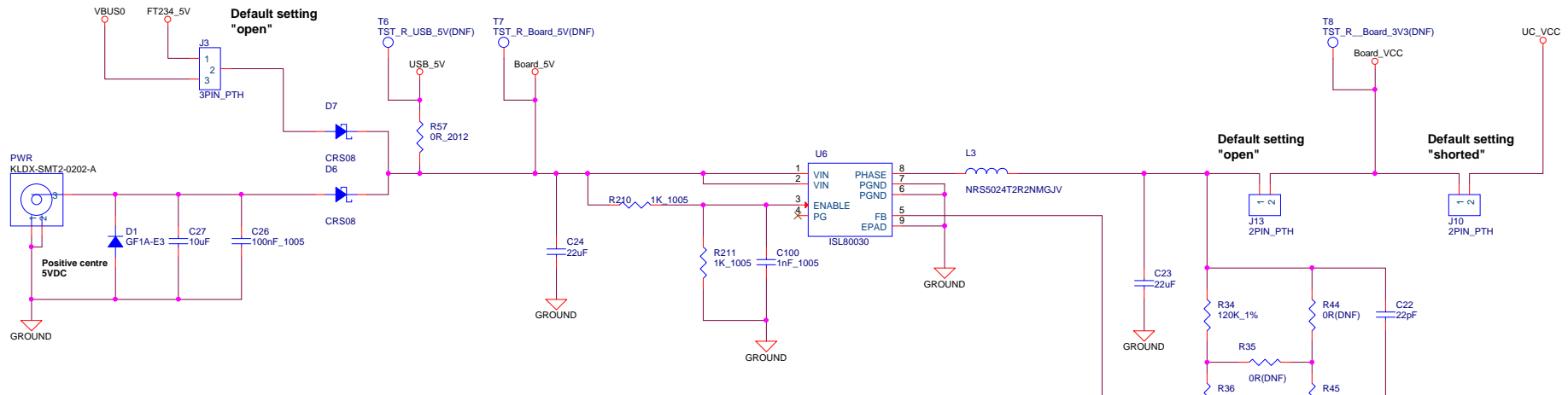
PC2(PinH2)



PC0(PinJ1)



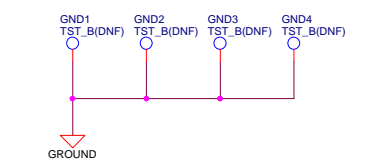
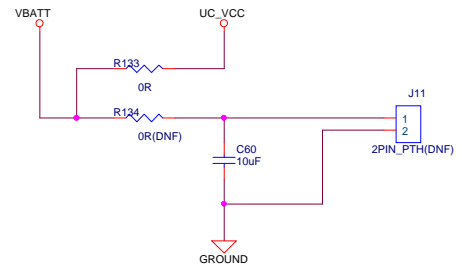
Power Supply Unit



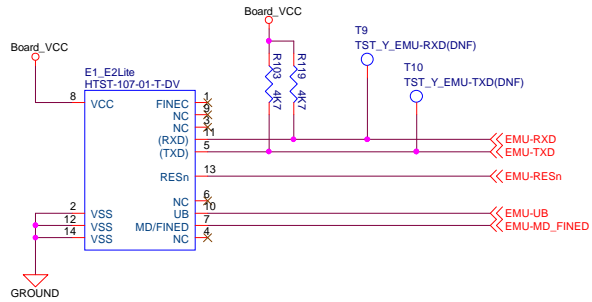
Power Supply Configuration

Power Supply Source	Conditions						Board_V5	Board_VCC	Unavailable Feature
	J3	J13	J10	J5	J4	R37			
E2 Lite / E1(3V3)	Open	Open	Shorted	1-2 Shorted	1-2 Shorted	Fit	R44	R35	USB(Host)(Function-Buspowered), CAN_5V Interface EEPROM
PWR	Open	Shorted	Shorted	2-3 Shorted	don't care	Fit	DNF	DNF	USB(Function-Buspowered)(Function-Selfpowered)
	Open	Shorted	Shorted	1-2 Shorted	1-2 Shorted	Fit	DNF	DNF	USB(Host)(Function-Buspowered)
USBD0_2	2-3 Shorted	Shorted	Shorted	don't care	don't care	DNF	Fit	DNF	USB(AH) Function_LED_PWMOD
USBCN0	1-2 Shorted	Shorted	Shorted	1-2 Shorted	2-3 Shorted	Fit	DNF	DNF	USB(Host)(Function-Selfpowered)
	1-2 Shorted	Shorted	Shorted	1-2 Shorted	1-2 Shorted	Fit	DNF	DNF	USB(Host)(Function-Buspowered)

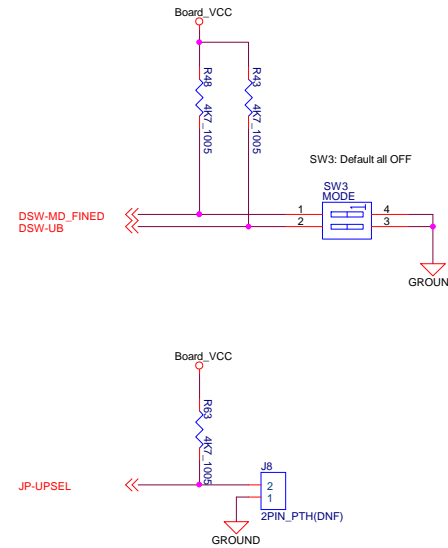
Note1: Do not use 5V Interface Pmods.
 Note2: J4, J5 Refers to page 10.



E1/E2 Lite



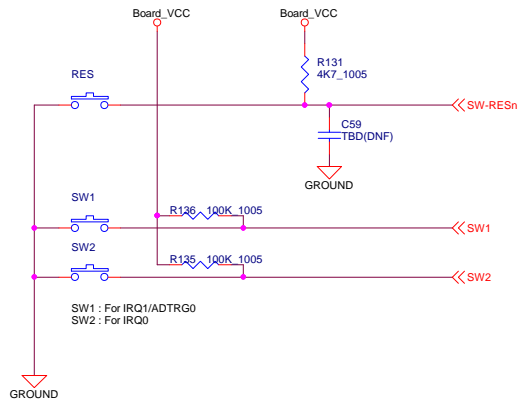
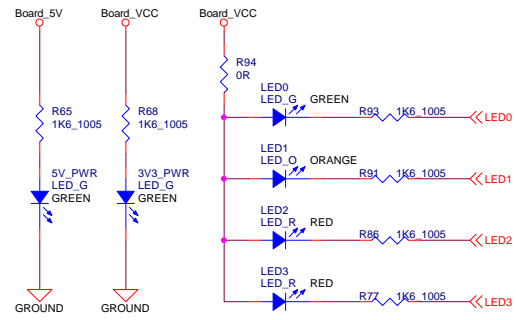
MCU & Emulator Mode Setting



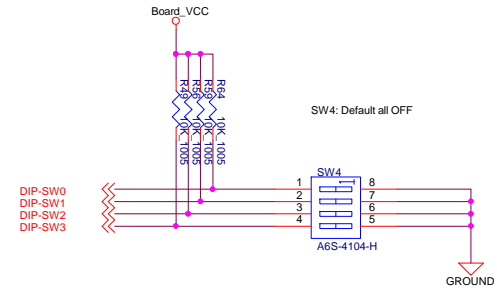
MCU Operating Mode Configuration

SW3 Pin1	SW3 Pin2	J8	Operating Mode
OFF	Don't care	Don't care	Single Chip Mode
OFF	OFF	Don't care	FINE Boot 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)

Switches, LEDs, RESET



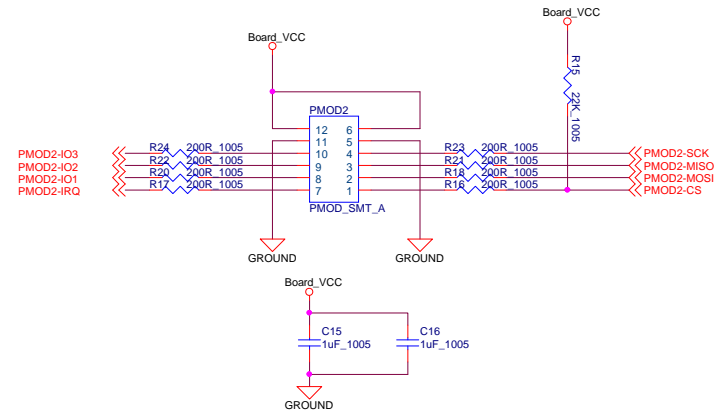
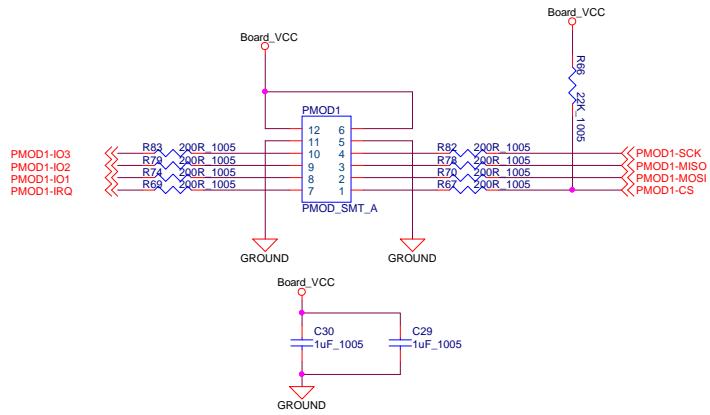
DIP-Switch



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Title RSSK RX23W [RESET, Switches, LEDs, DIP-Switch]		
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Pmod connectors

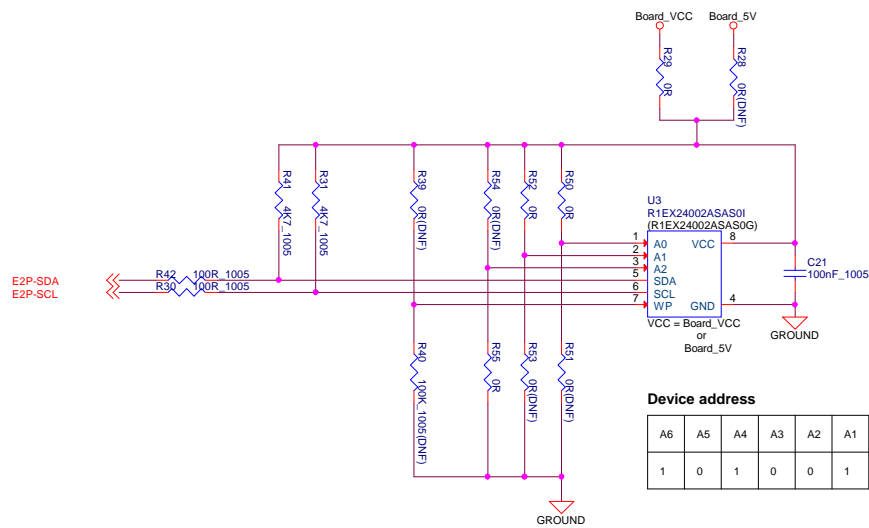
PMOD1: Angle type connector
 PMOD2: Angle type connector



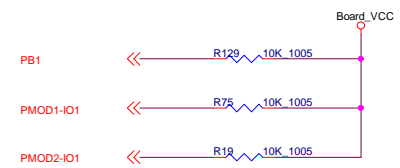
IIC EEPROM(2Kbits) - RIIC

Warning:

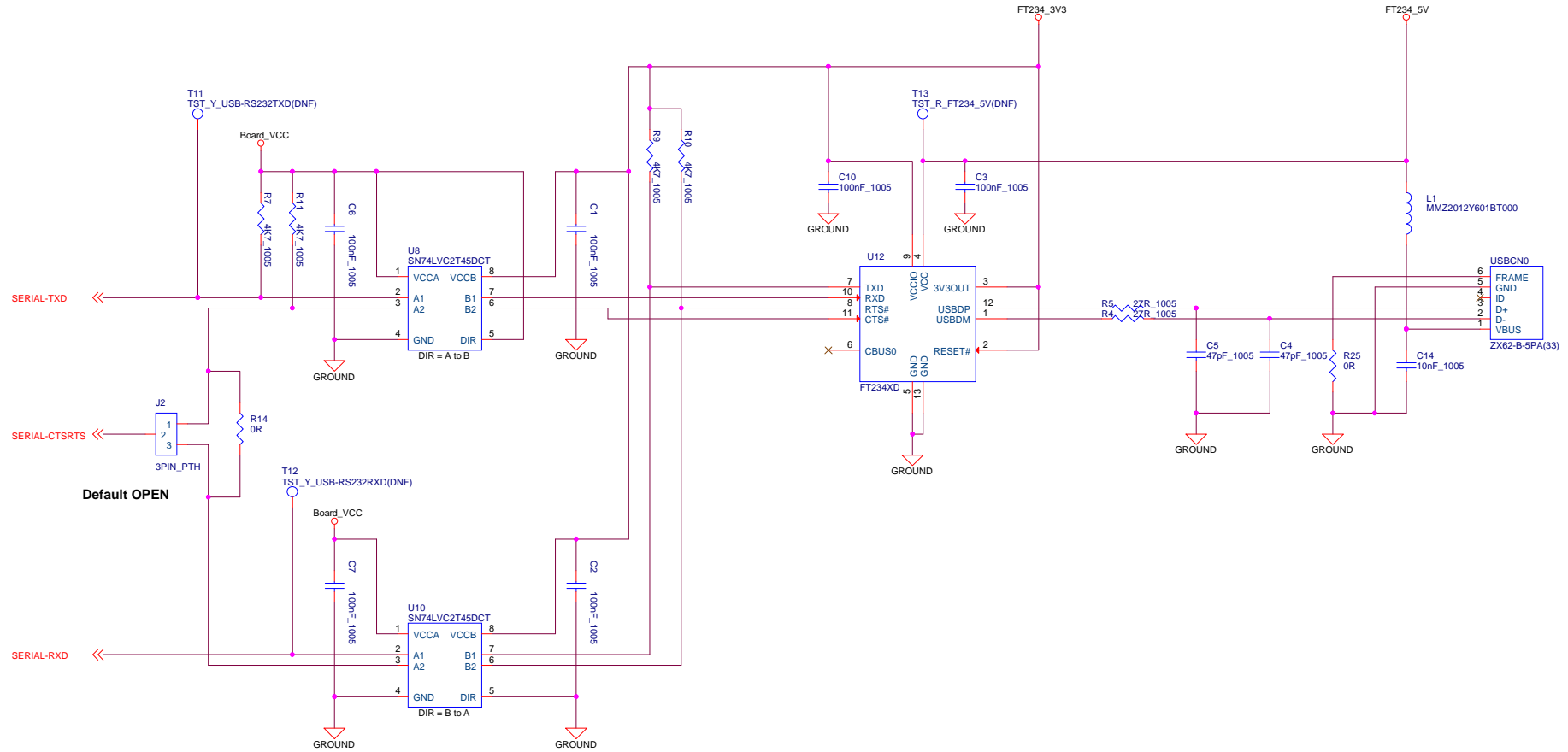
NEVER FIT R29 and R28 simultaneously.



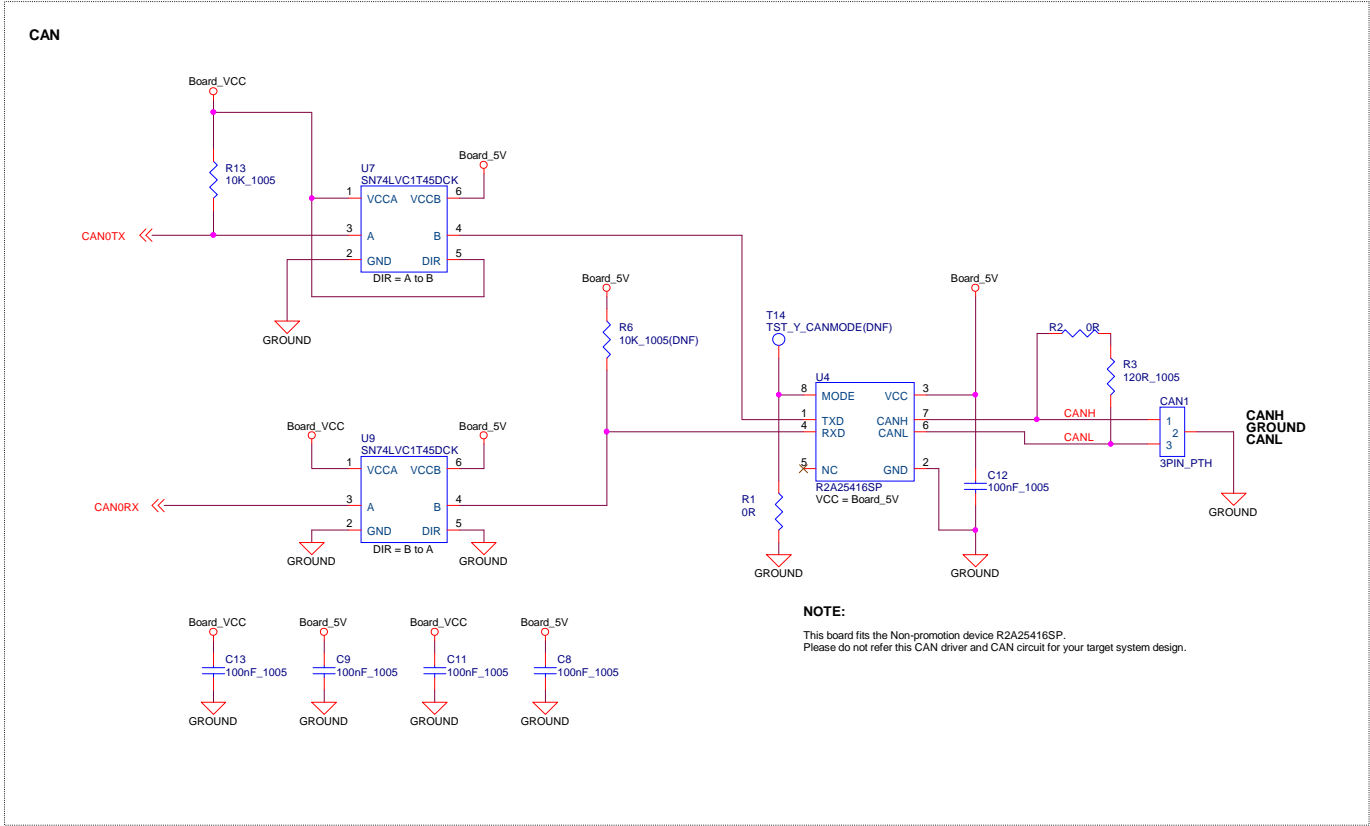
Option pull-up resistor



USB to Serial Interface



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NOTE:
 This board fits the Non-promotion device R2A25416SP.
 Please do not refer this CAN driver and CAN circuit for your target system design.

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USB0 Host/Function

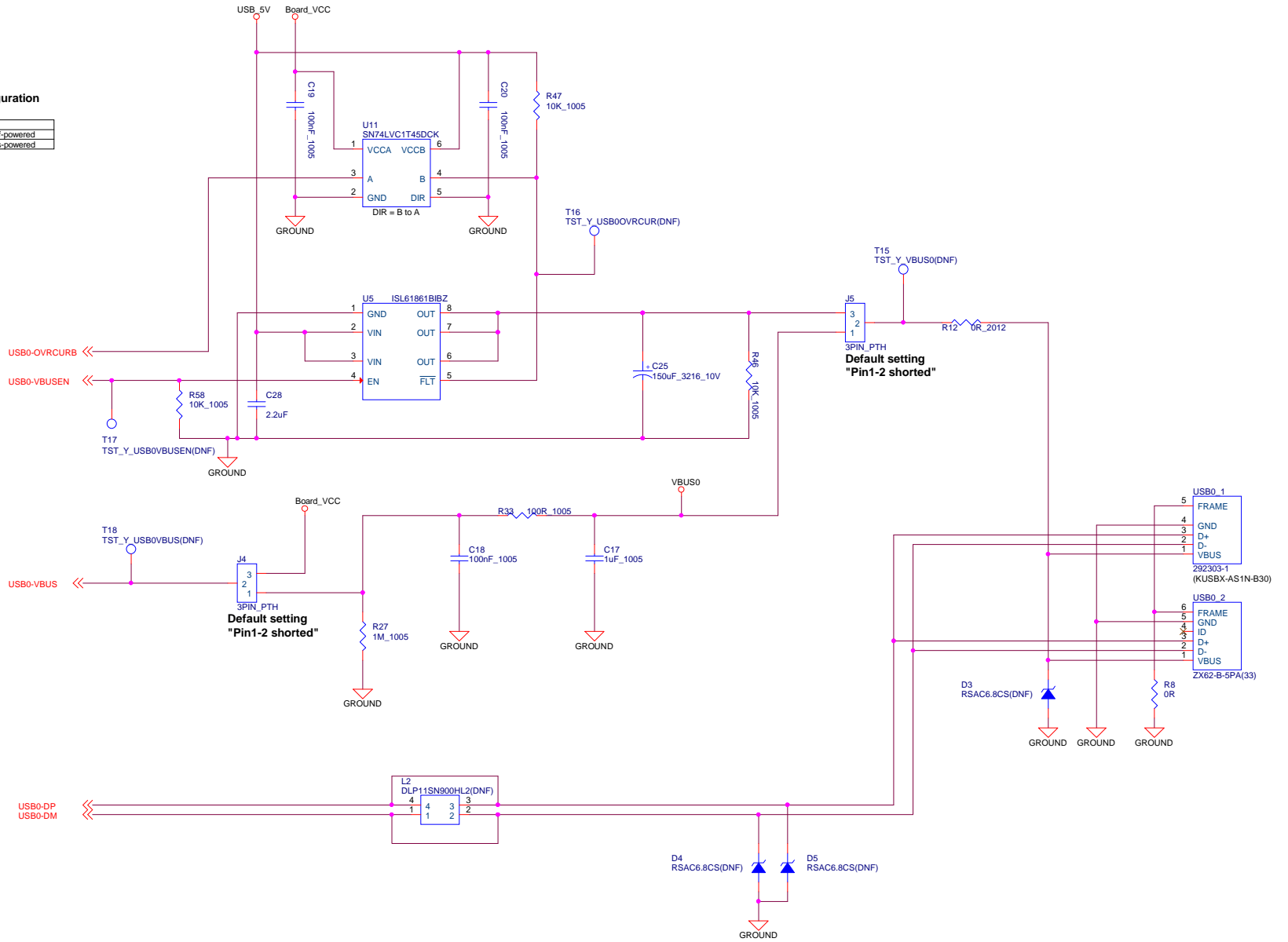
USB0 Host/Function Select

J3	Function Mode
1-2 shorted	Function Mode
2-3 shorted	Host Mode

Self-powered/Bus-powered Configuration for Function Mode

J3	J4	Self-powered
1-2 shorted or Open	1-2 shorted	Self-powered
2-3 shorted	2-3 shorted	Bus-powered

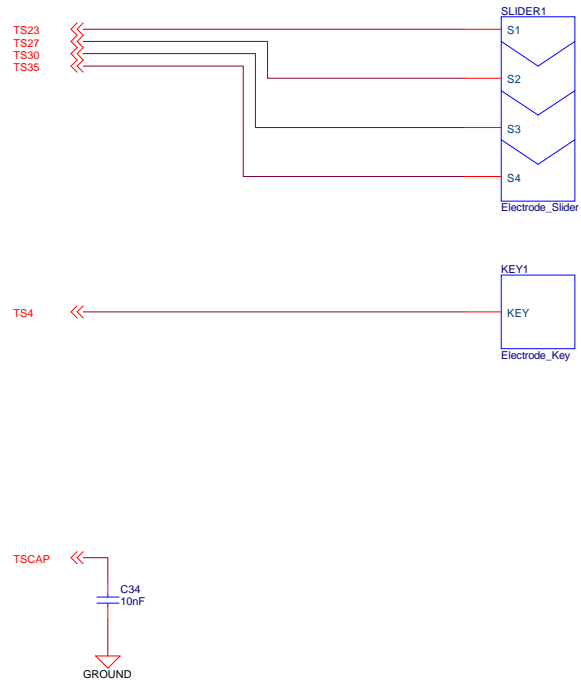
Note: J3 Refers to page4.



Touch Interface

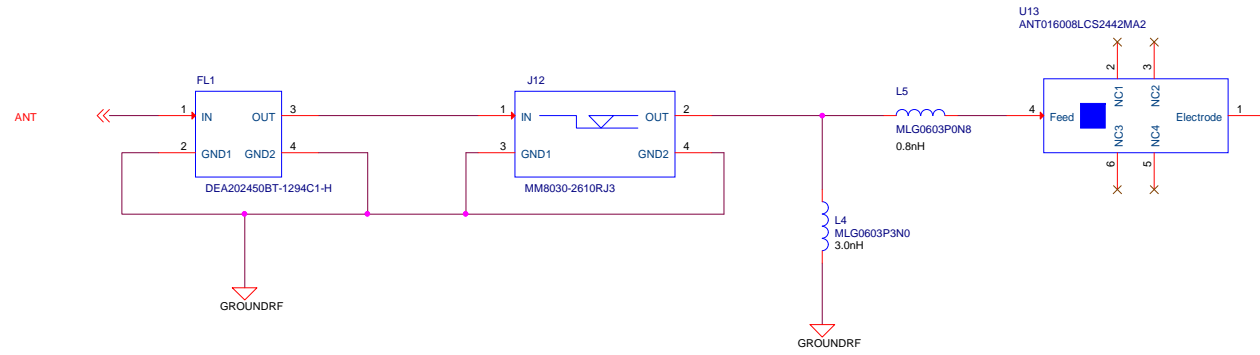
Note:

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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2.4GHz Antenna



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Microcontroller Pin Headers

P07 << P07 ⊖ C7 pin
 PMOD1-IO2 << P05 ⊖ B9 pin
 PMOD2-IO2 << P03 ⊖ B8 pin
 SSITXD0 << P17 ⊖ B1 pin
 P16 << P16 ⊖ C3 pin
 CAN0RX << P15 ⊖ C2 pin
 CAN0TX << P14 ⊖ C1 pin
 SSIWS0 << P27 ⊖ B3 pin
 SSIRXD0 << P26 ⊖ B2 pin
 CON-P25 << P25 ⊖ A1 pin
 USB0-OVRCURB << P22 ⊖ C4 pin
 P21 << P21 ⊖ D3 pin
 P37 << P37 ⊖ A6 pin
 CON-P36 << P36 ⊖ A4 pin
 JP-UPSEL << P35 ⊖ B5 pin
 SSISCK0 << P31 ⊖ B4 pin
 AUDIO_MCLK << P30 ⊖ A2 pin

CON-P47 << P47 ⊖ F10 pin
 DIP-SW1 << P46 ⊖ E8 pin
 DIP-SW0 << P45 ⊖ E9 pin
 LED3 << P44 ⊖ E10 pin
 LED2 << P43 ⊖ D9 pin
 LED1 << P42 ⊖ D8 pin
 LED0 << P41 ⊖ C8 pin
 RV1-ADC << P40 ⊖ C9 pin
 PMOD1-IO3 << PB7 ⊖ J3 pin
 PB5 << PB5 ⊖ J4 pin
 PMOD2-IO1 << PB3 ⊖ H4 pin
 PB1 << PB1 ⊖ J5 pin
 DIP-SW2 << PB0 ⊖ J6 pin
 PC7 << PC7 ⊖ F1 pin
 PC6 << PC6 ⊖ F2 pin
 CON-PC5 << PC5 ⊖ G2 pin
 CON-PC4 << PC4 ⊖ G1 pin
 CON-PC3 << PC3 ⊖ H1 pin
 CON-PC2 << PC2 ⊖ H2 pin
 CON-PC0 << PC0 ⊖ J1 pin

PMOD1-IO1 << PD3 ⊖ F9 pin
 DIP-SW3 << PE4 ⊖ J8 pin
 PMOD2-CS << PE3 ⊖ H8 pin
 PMOD2-MISO << PE2 ⊖ H9 pin
 PMOD2-MOSI << PE1 ⊖ J9 pin
 PMOD2-SCK << PE0 ⊖ G9 pin
 PMOD2-IO3 << PJ3 ⊖ C6 pin

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Revision History

REV	DATE	PAGE	DESCRIPTION
1.00	31.1.2020	---	1st release edition.

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