

Renesas Starter Kit for RX140

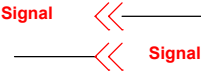
CPU Board Schematics

SHEET	DESCRIPTION
1	Index
2	RX140 Microcontroller
3	MCU Pin Function Select
4	PSU
5	E2 Lite, MCU Mode Setting
6	Reset, Switches, LEDs
7	USB to Serial Interface
8	Pmod Interface, IIC EEPROM
9	Application Headers
10	Microcontroller Pin Headers
11	Touch Interface
12	LIN, CAN

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:

RTK551406BC00000BE : RSKRX140 MP Board (Encryption version)

Abbreviations:

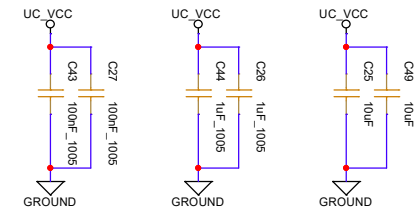
- CAN : Controller Area Network
- IIC : Philips(TM) Inter-Integrated Circuit Connection Bus
- LED : Light Emitting Diode
- LIN : Local Interconnect Network
- MCU : Microcontroller Unit
- PSU : Power Supply Unit
- RSK : Renesas Starter Kit
- USB : Universal Serial Bus

REV	REF	DATE	DRAWN BY
1.00	Release	07.12.2021	YOI

REE Drawing No. D018232_04

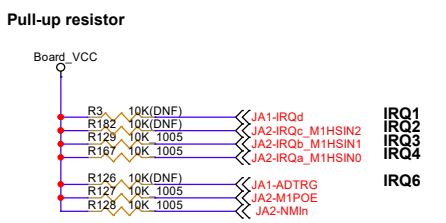
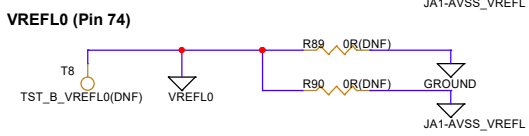
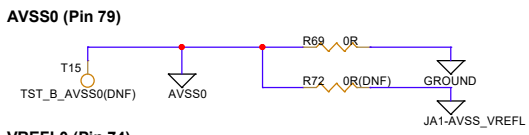
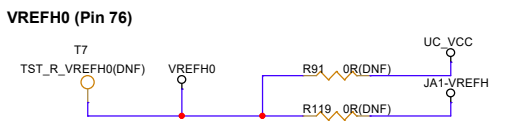
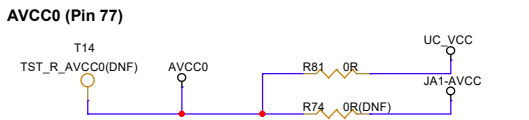
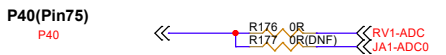
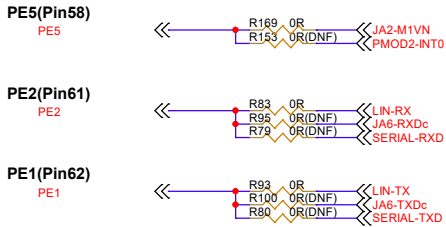
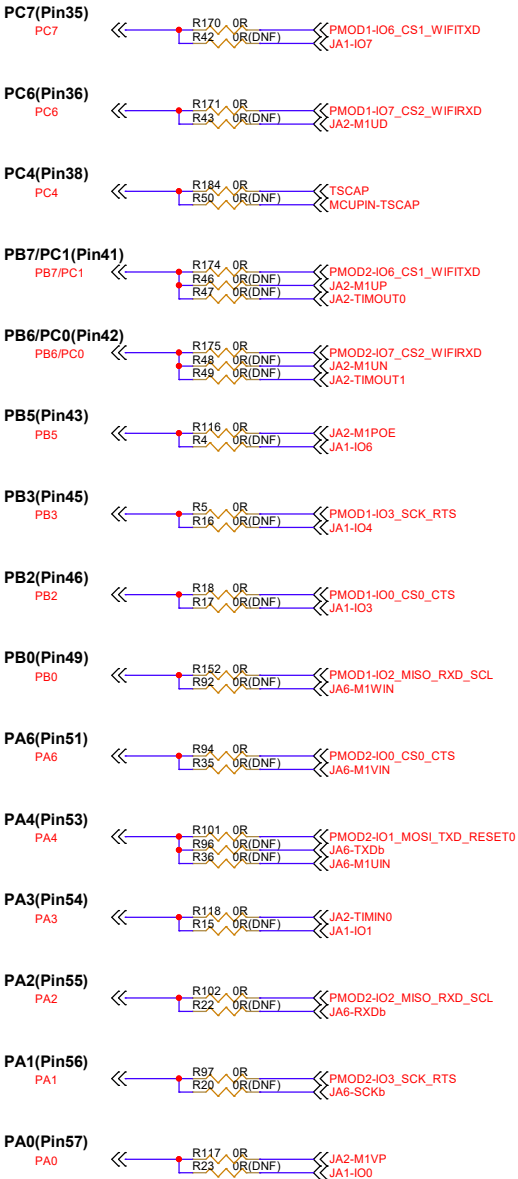
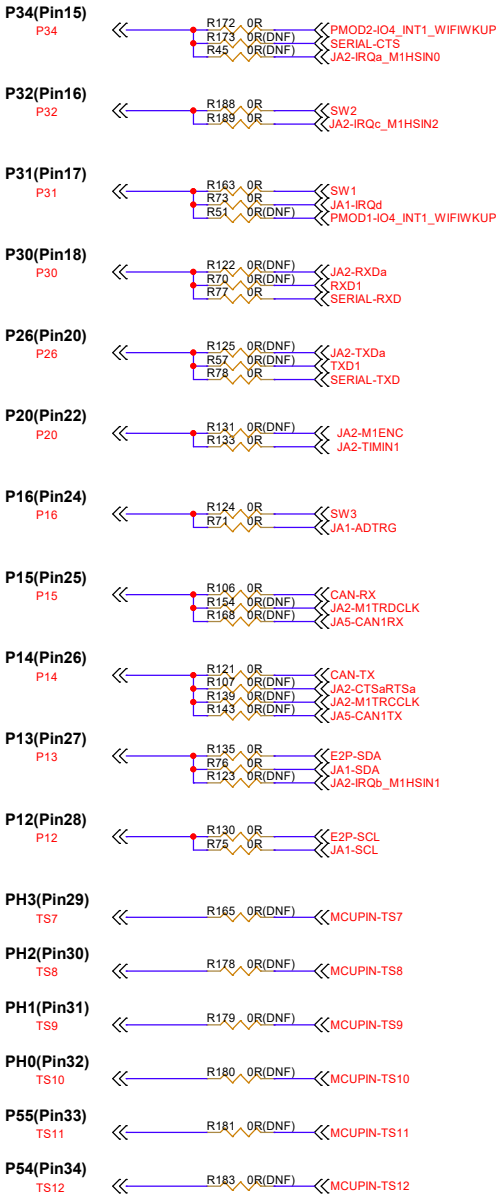
Renesas Electronics Corporation			
Title	RSKRX140 [Index]		
Size	Document Number	Rev	
	R20UT5025EG0100	1.00	
Date:	Tuesday, December 07, 2021	Sheet	1 of 12

Microcontroller's pins are not described by the full pin function. For full pin functions details, refer to RX140 datasheet.

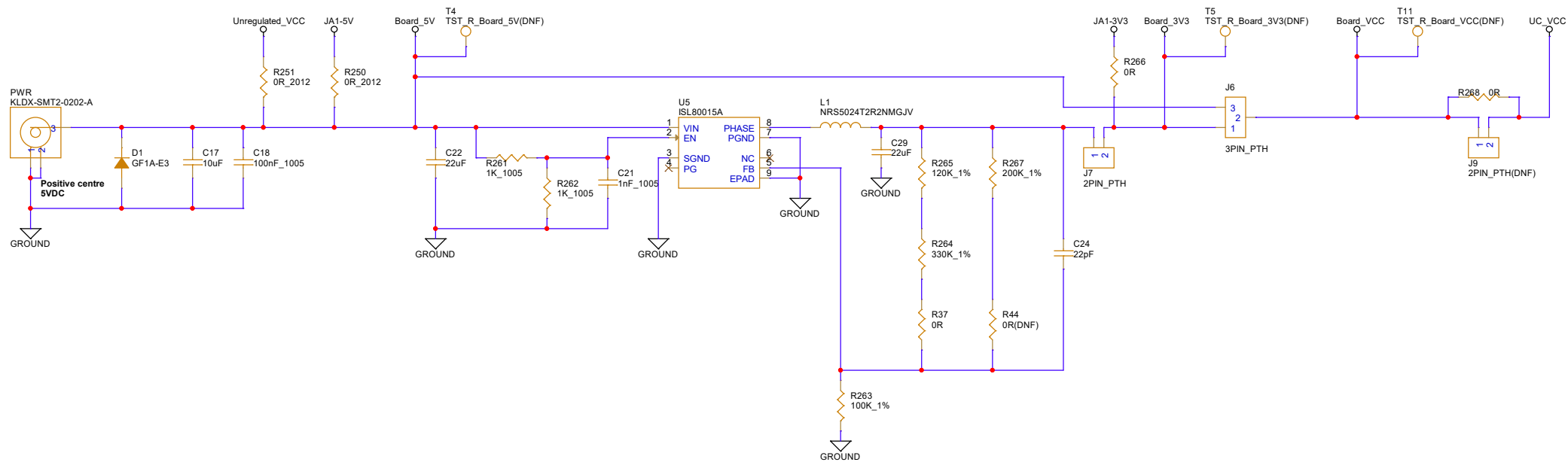


Renesas Electronics Corporation			
Title			
RSKRX140 [Micon]			
Size	Document Number R20UT502SEGO100		Rev 1.00
Date:	Tuesday, December 07, 2021	Sheet	2 of 12

MCU Pin Function Select



Power Supply Unit

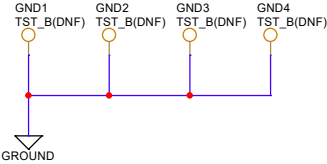


Power Supply Configuration

J6	J7	R37	R44	Power Supply Source	Board_VCC UC_VCC	Unavailable Feature
1-2 shorted	Open	Don't care	Don't care	E2 Lite(3V3)/JA1-3V3	3V3	LIN, CAN, 5V Interface Pmods
1-2 shorted	1-2 shorted	Fit	DNF	PWR/Unregulated_VCC/JA1-5V	3V3	5V Interface Pmods
1-2 shorted	1-2 shorted	DNF	Fit	PWR/Unregulated_VCC/JA1-5V	1V8	Pmods, LED, LIN, CAN
2-3 shorted	1-2 shorted	Don't care	Don't care	PWR/Unregulated_VCC/JA1-5V	5V	Pmod LCD and other 3V3 Interface Pmods

Note1: JA1-3V3 and Board_3V3 become 1.8V when 1.8V is output with J6 = 1-2 and J7 = 1-2.

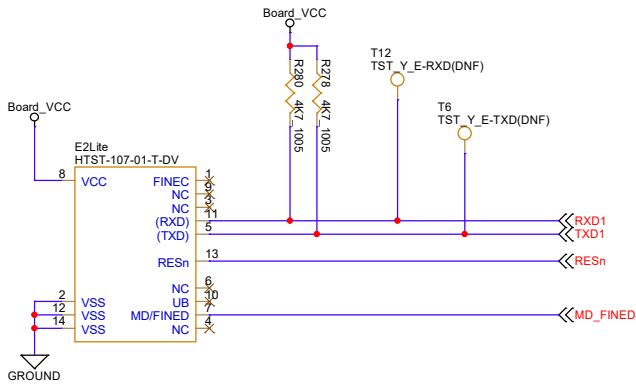
<- Default Settings



Renesas Electronics Corporation

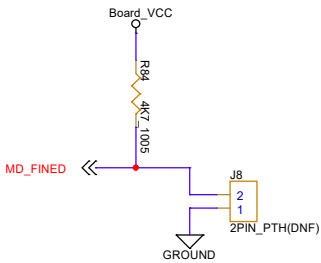
Title			RSKR140 [PSU]
Size			Document Number R20UT5025EG0100
Date:			Tuesday, December 07, 2021
Sheet			4 of 12
Rev			1.00

E2 Lite Emulator Interface

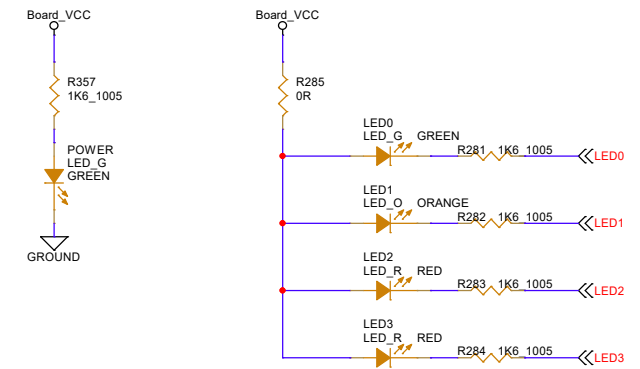


MCU Operating Mode Configuration

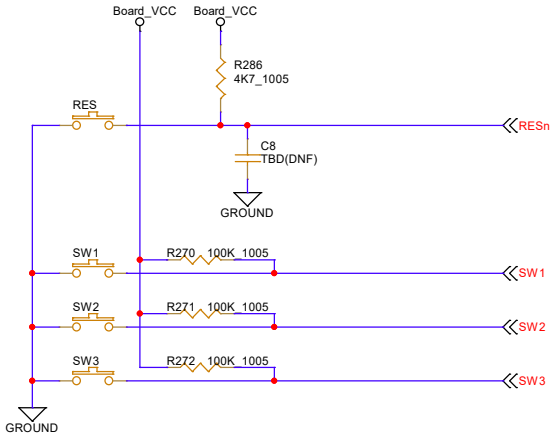
J8	Operating Mode
Open/DNF	Single Chip Mode
Shorted Pin	Boot Mode (SCI)



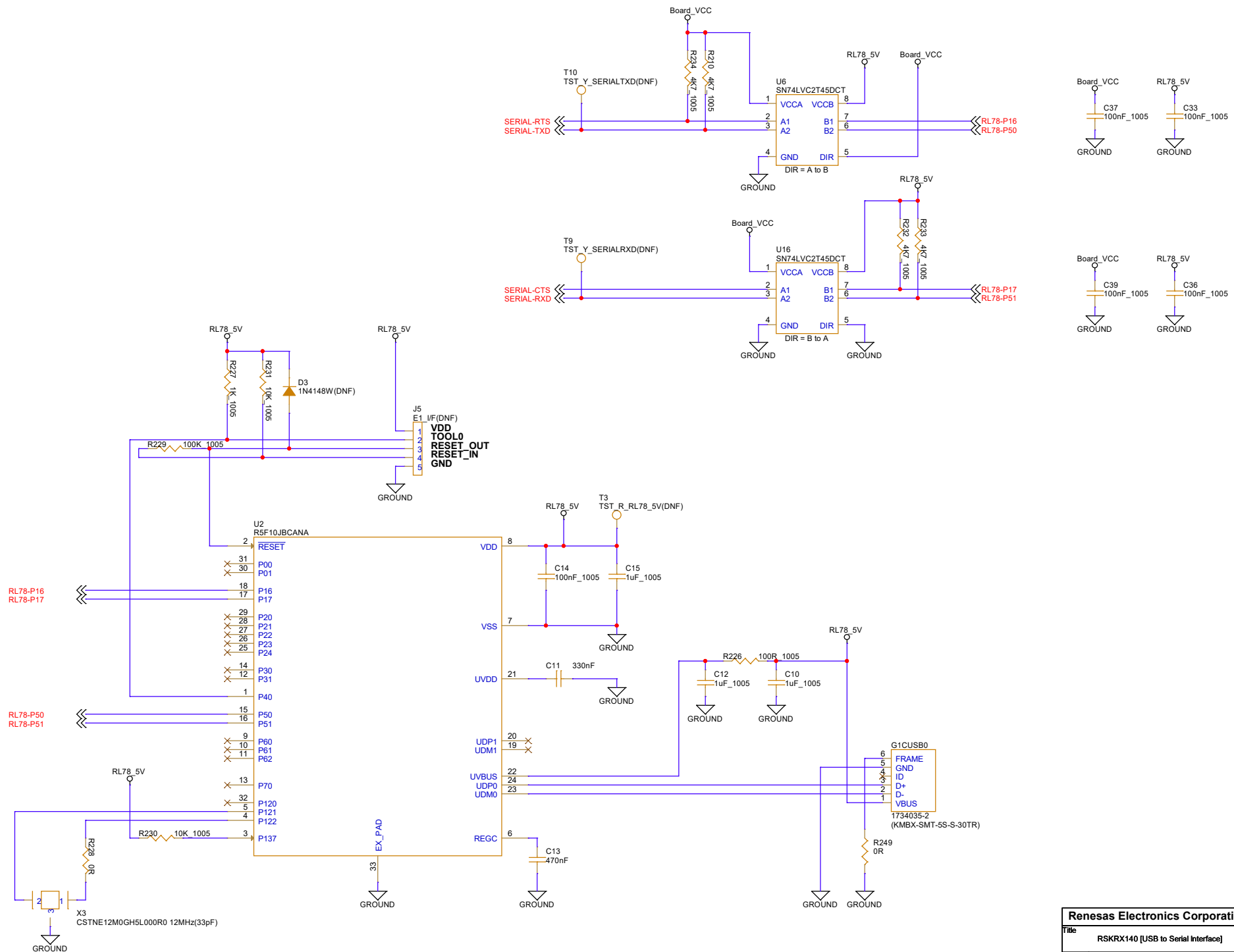
LEDs



Switches, RESET

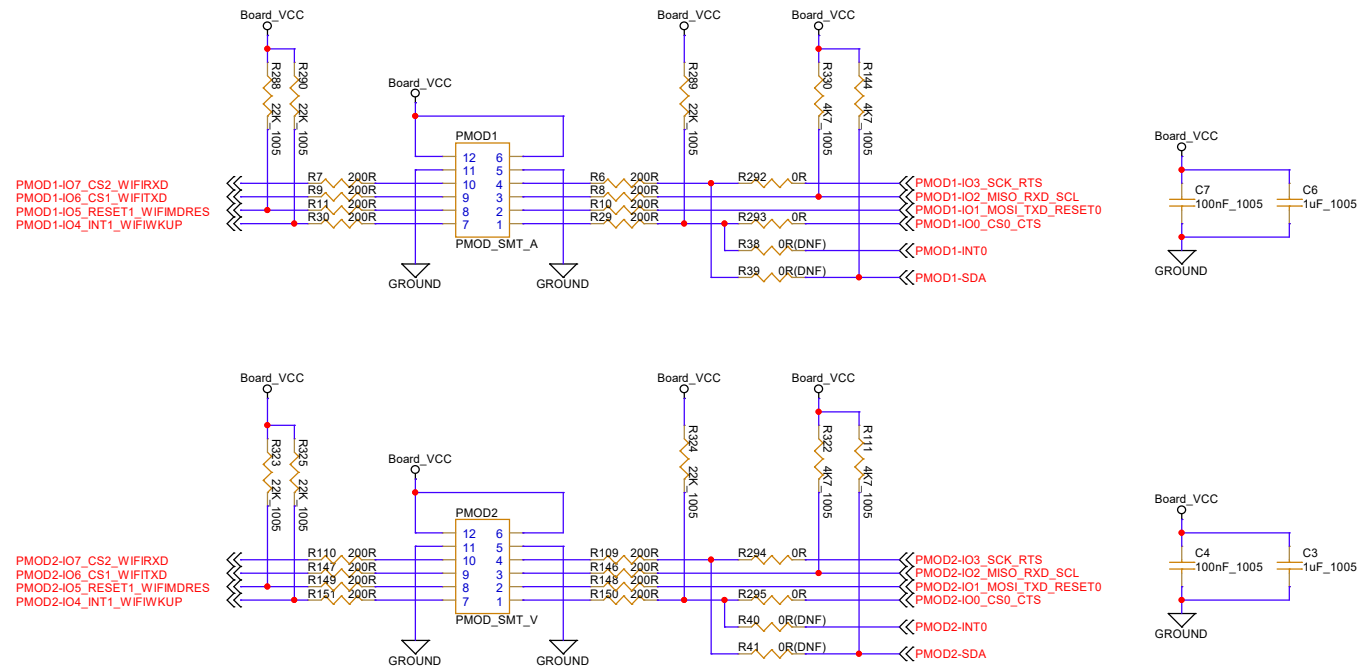


USB to Serial Interface



Renesas Electronics Corporation			
Title RSKRX140 [USB to Serial Interface]			
Size	Document Number R20UT5025EG0100		Rev 1.00
Date:	Tuesday, December 07, 2021	Sheet	7 of 12

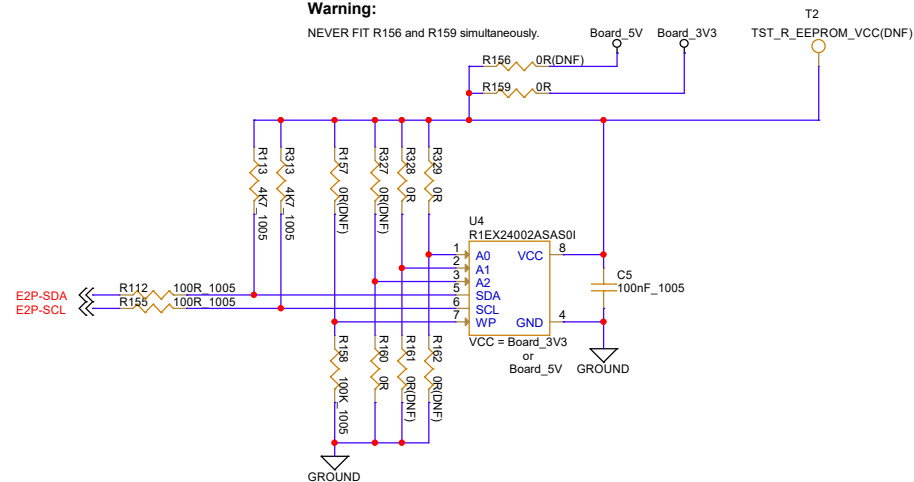
Pmod Interface



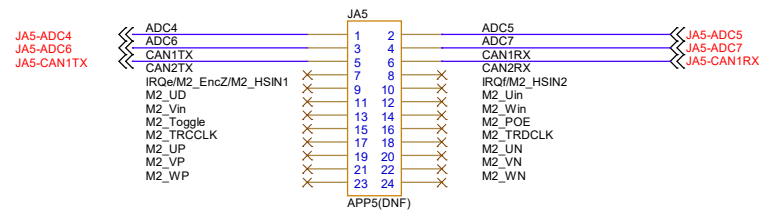
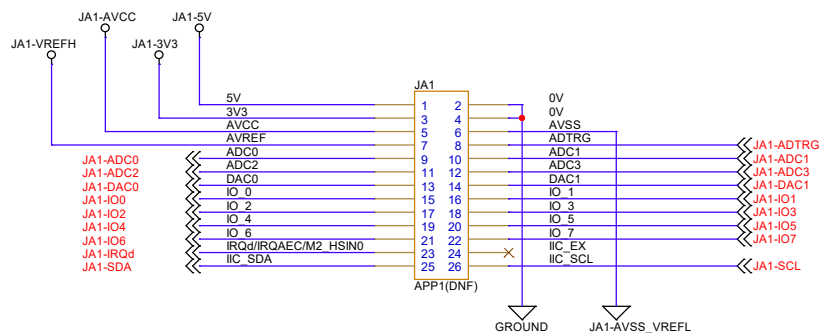
IIC EEPROM(2Kbits)

Warning:

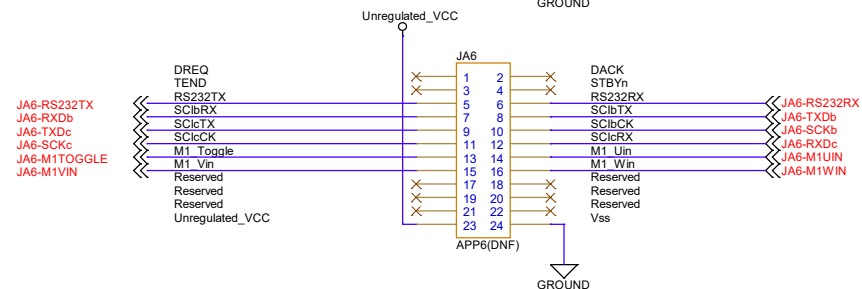
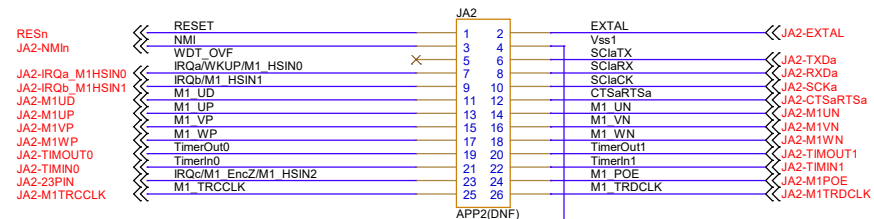
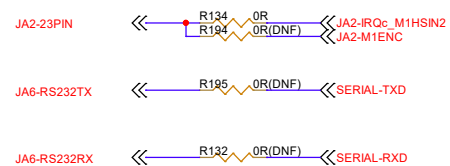
NEVER FIT R156 and R159 simultaneously.



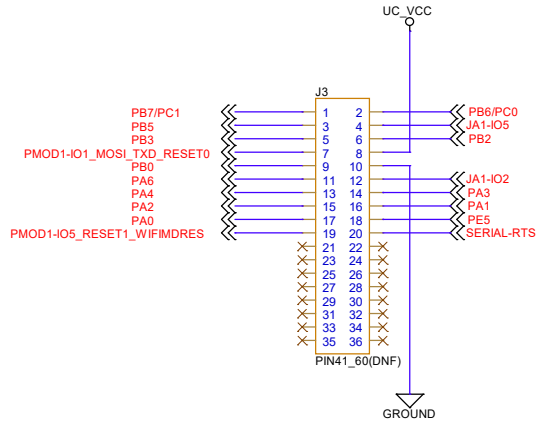
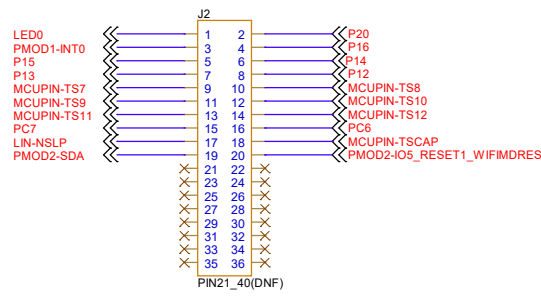
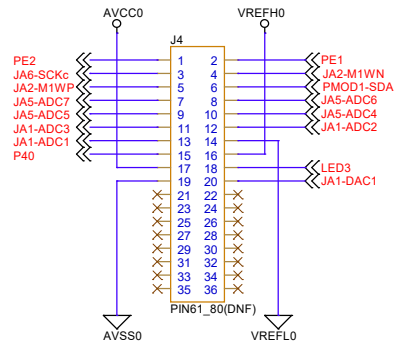
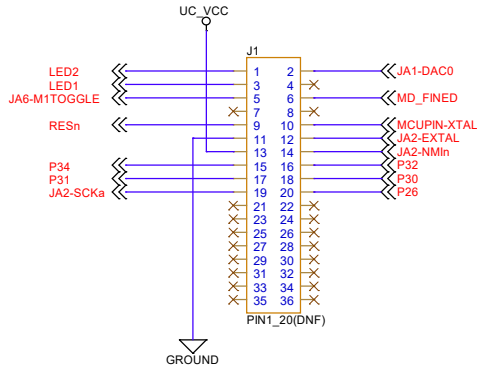
Application Headers



Application Header Function Select



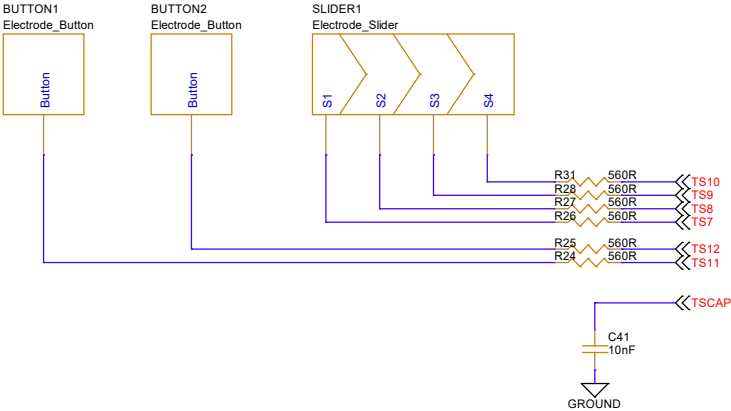
Microcontroller Pin Headers



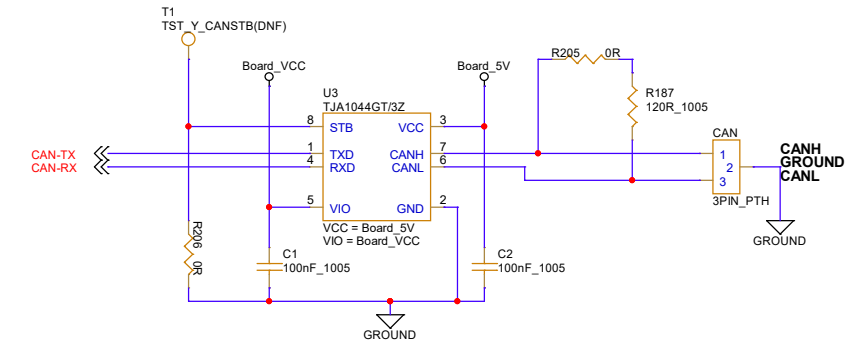
Touch Interface

Note:

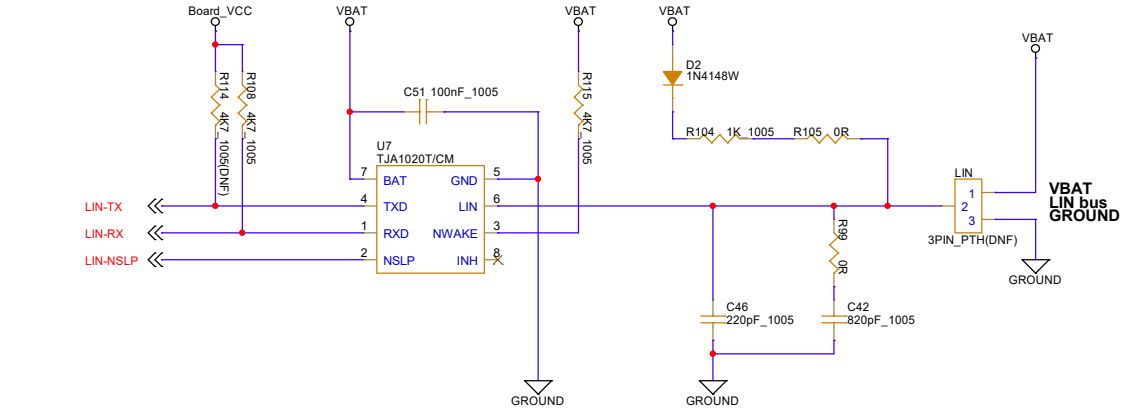
Touch signals require careful route pattern.
For technical design information, please refer to application note 'CTSU Basis of Cap touch detection' (R30AN0218EJ).



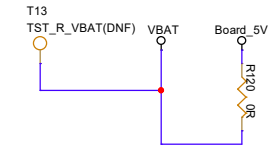
CAN



LIN



VBAT Supply



LIN Mode Configuration

	Fit	Remove
Master	R99, R105	---
Slave	---	R99, R105

Revision History

REV	DATE	SHEET	DESCRIPTION
1.00	07.12.2021	---	1st release edition.