

Renesas Starter Kit for RX140 CPU Board Schematics

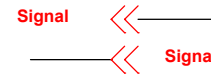
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Note:

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:

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

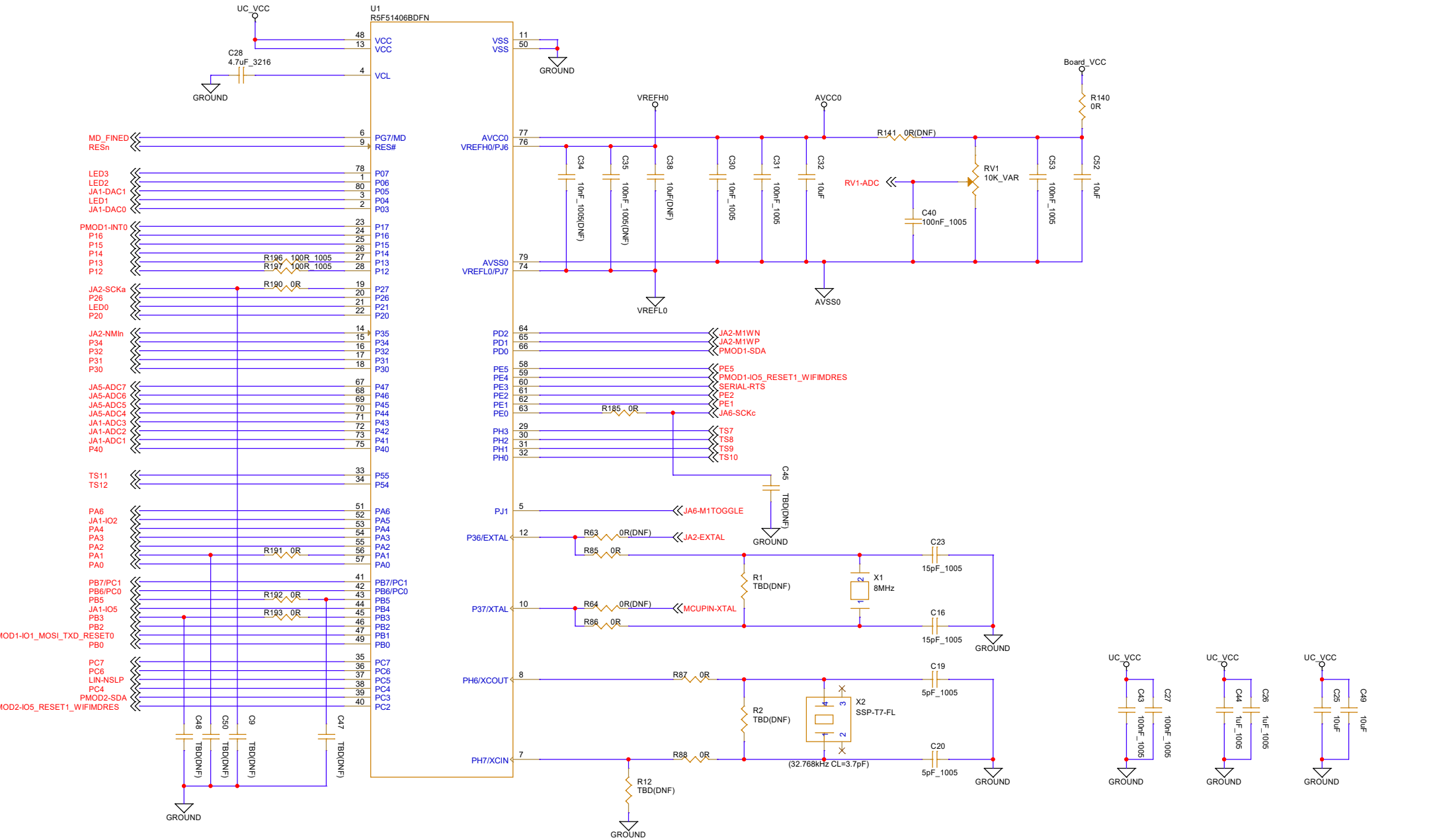
REE Drawing No. D018232_04

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

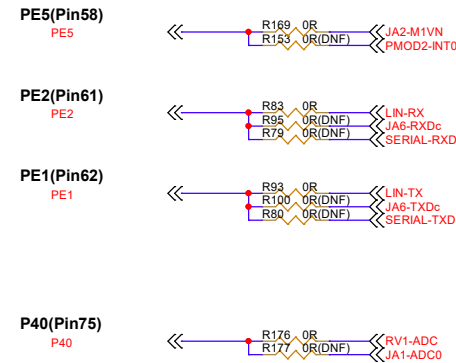
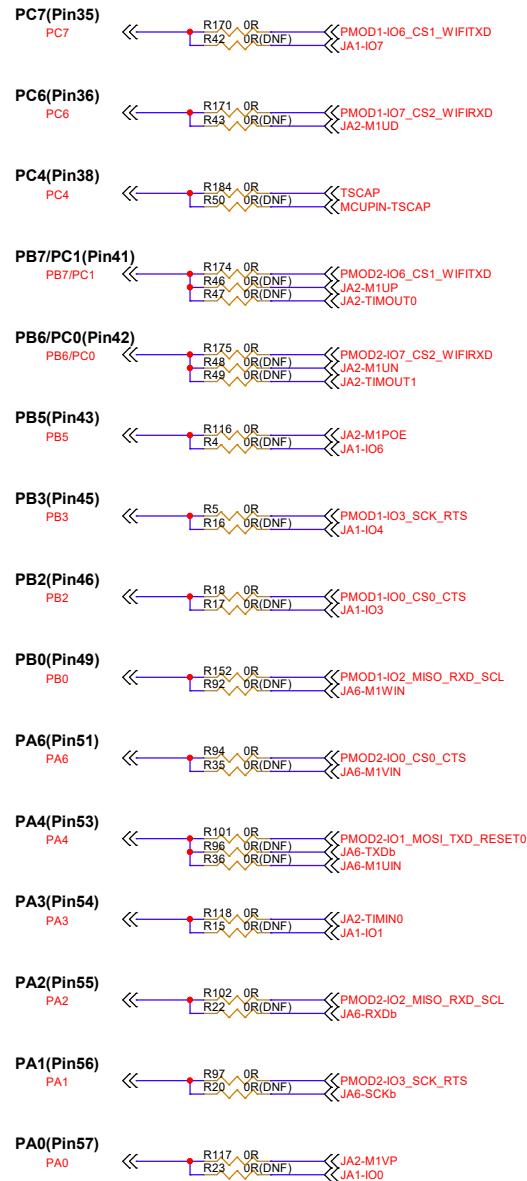
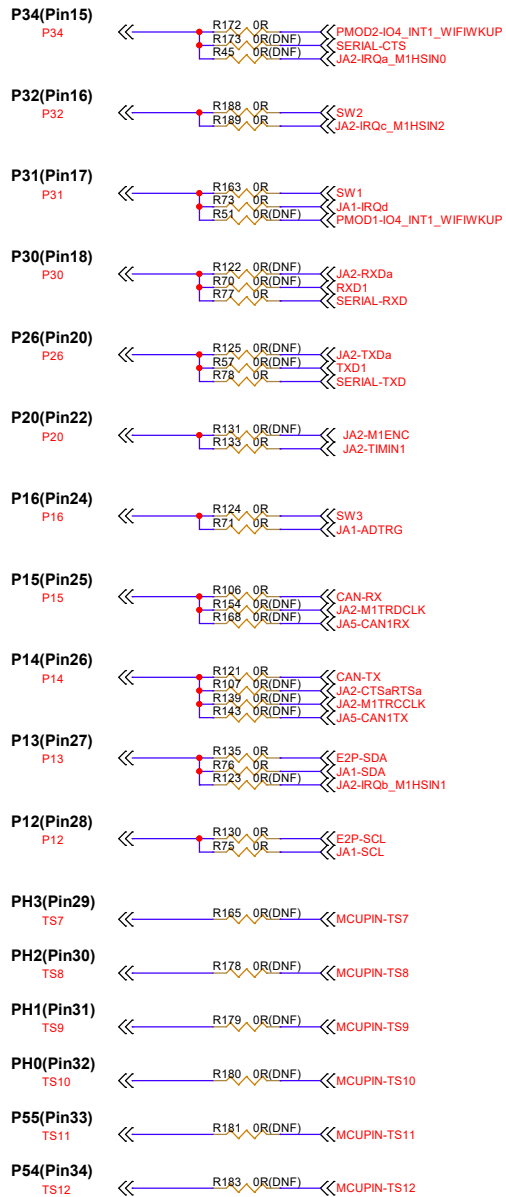
RX140 Microcontroller

Note:

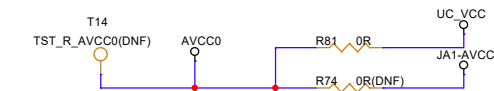
Microcontroller's pins are not described by the full pin function.
For full pin functions details, refer to RX140 datasheet.



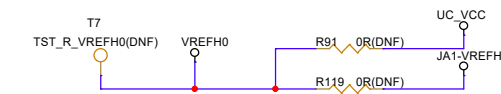
MCU Pin Function Select



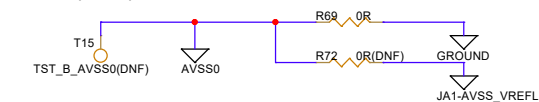
AVCC0 (Pin 77)



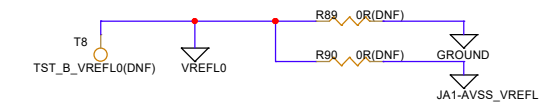
VREFH0 (Pin 76)



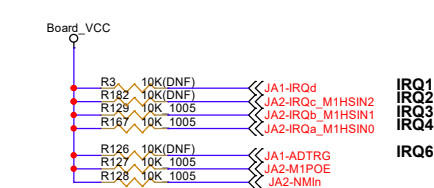
AVSS0 (Pin 79)



VREFL0 (Pin 74)

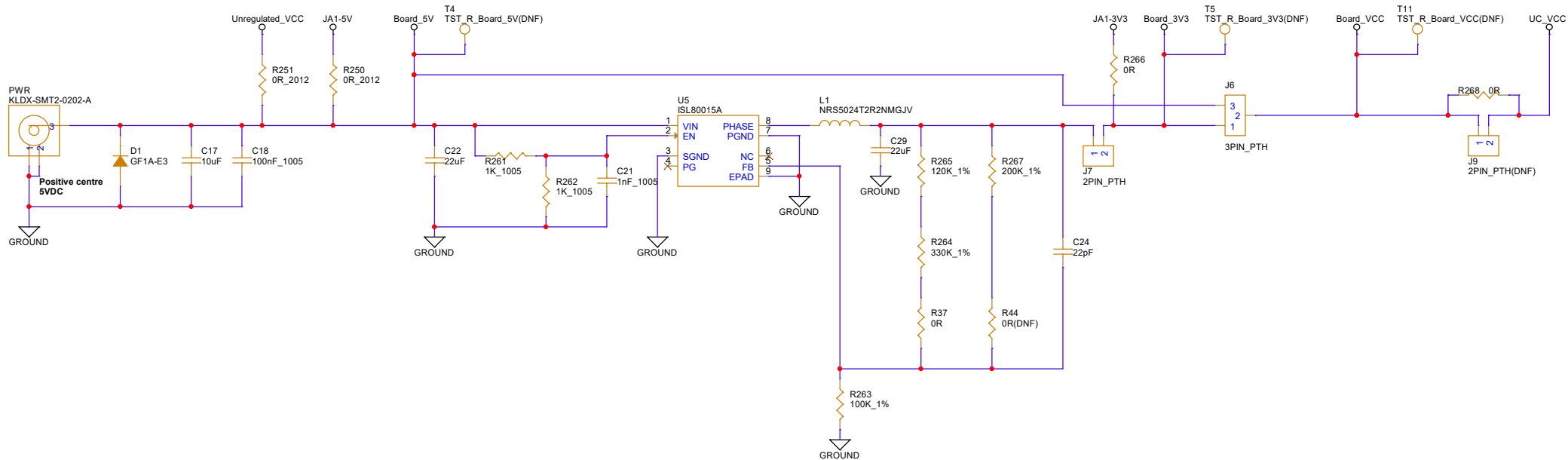


Pull-up resistor



IRQ1
IRQ2
IRQ3
IRQ4
IRQ6

Power Supply Unit

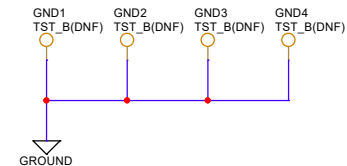


Power Supply Configuration

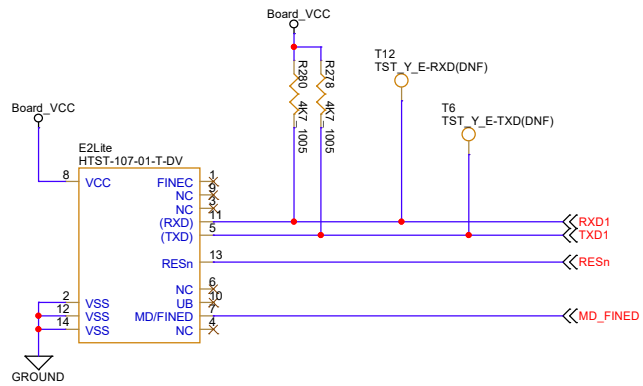
| J6 | J7 | R37 | R44 | Power Supply Source | Board_VCC UC_VCC | Unavailable Feature |
|-------------|-------------|------------|------------|----------------------------|---------------------|--|
| 1-2 shorted | Open | Don't care | Don't care | E2 Lite(3V3)/JA1-3V3 | 3V3 | LIN, CAN, 5V Interface Pmods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

<- Default Settings

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

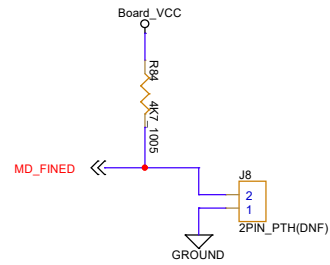


E2 Lite Emulator Interface

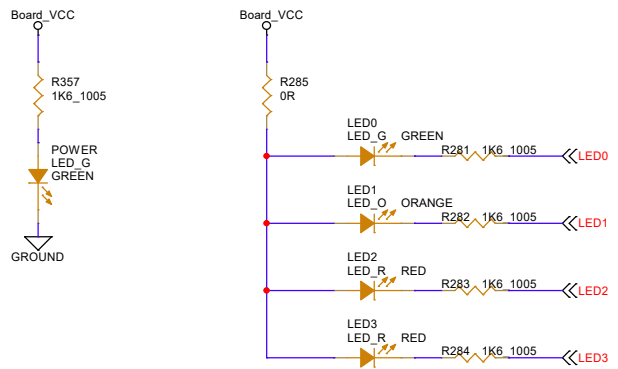


MCU Operating Mode Configuration

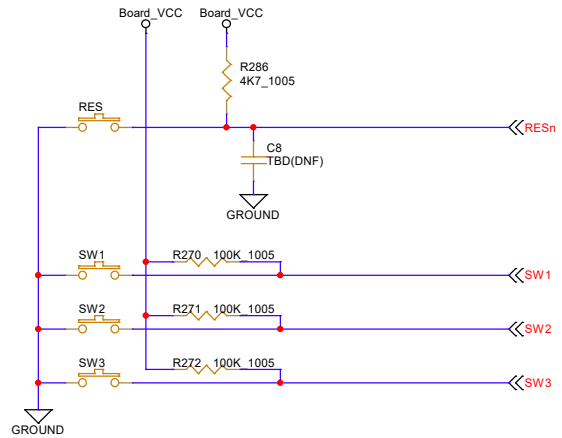
| J8 | Operating Mode |
|-------------|------------------|
| Open/DNF | Single Chip Mode |
| Shorted Pin | Boot Mode (SCI) |



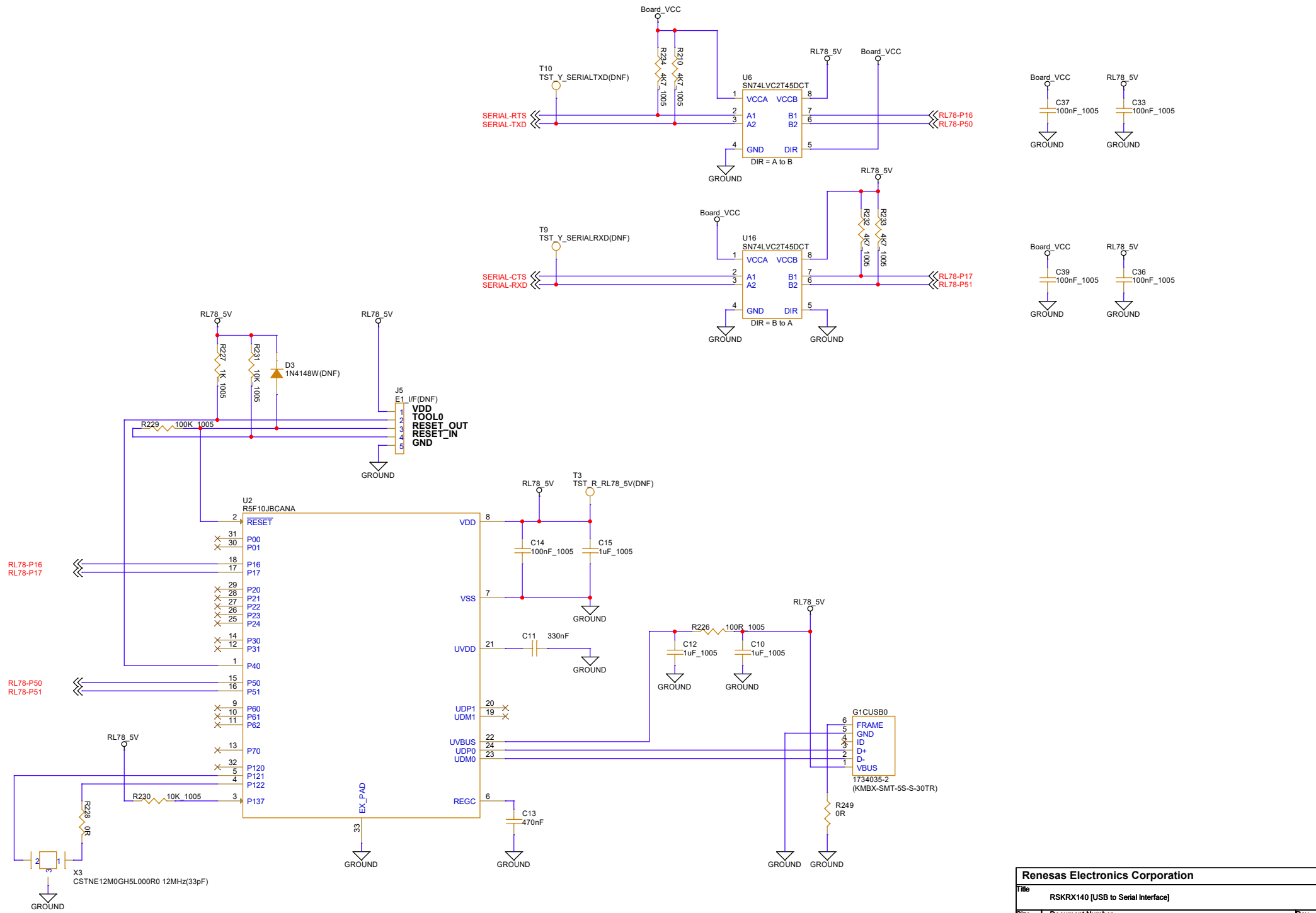
LEDs



Switches, RESET

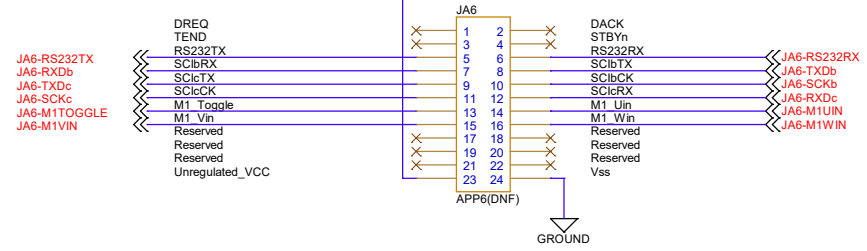
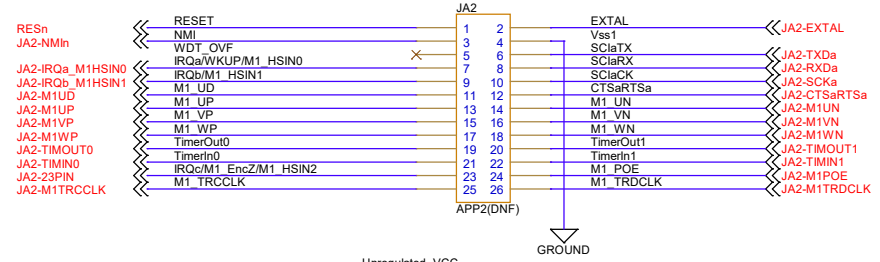
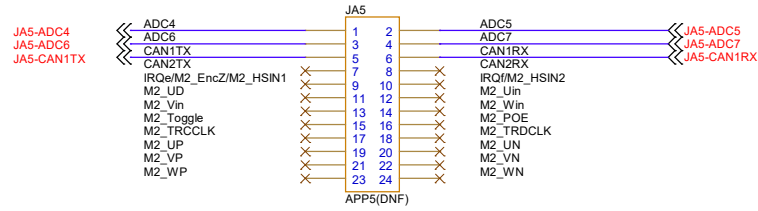
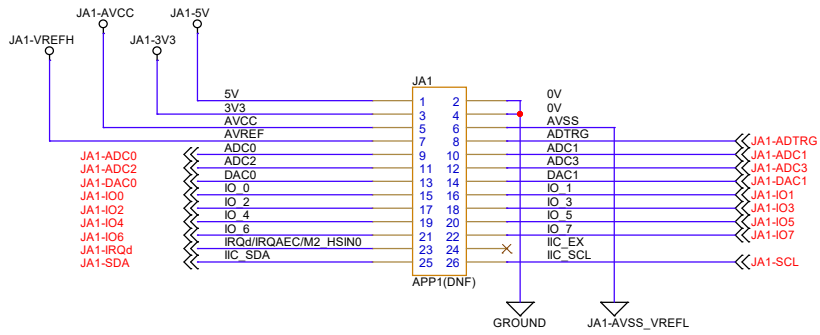


USB to Serial Interface

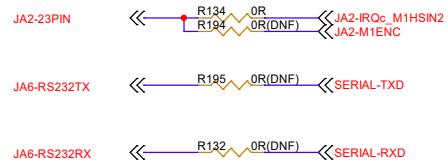


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| Renesas Electronics Corporation | | |
| Title | RSKRX140 [USB to Serial Interface] | |
| Size | Document Number R20UT5025EG0100 | Rev 1.00 |
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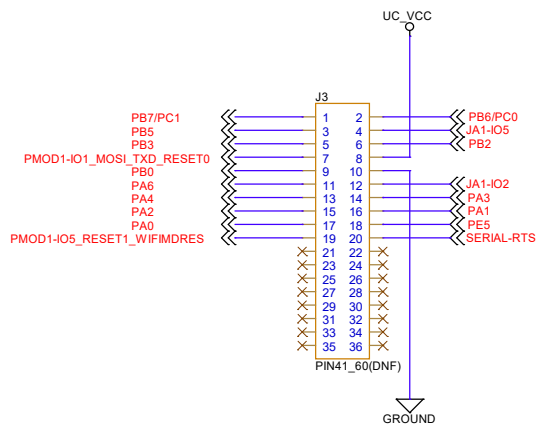
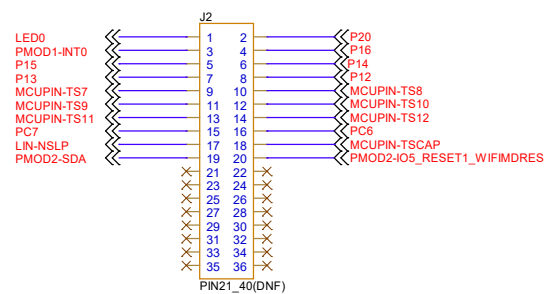
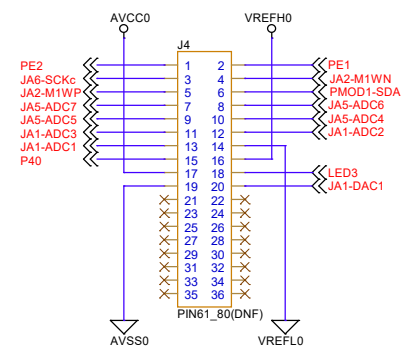
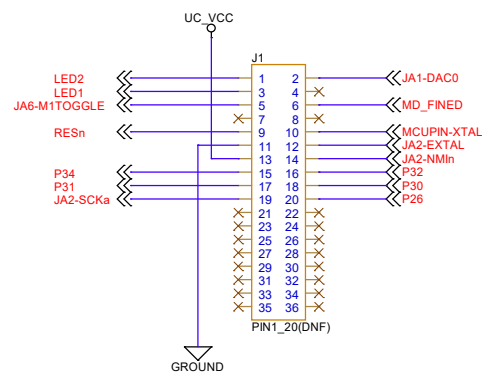
Application Headers



Application Header Function Select



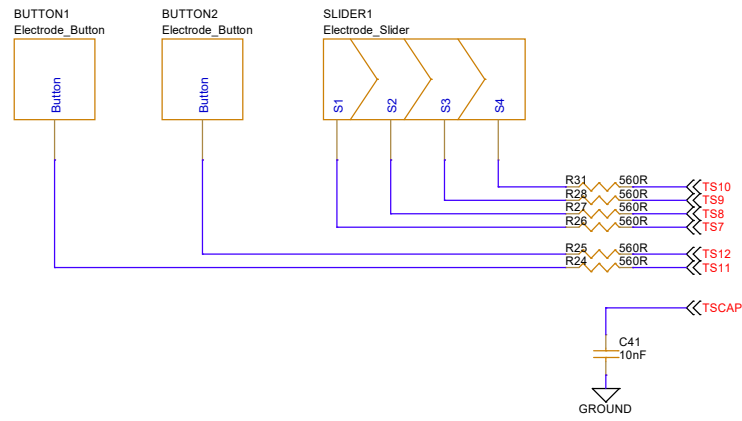
Microcontroller Pin Headers

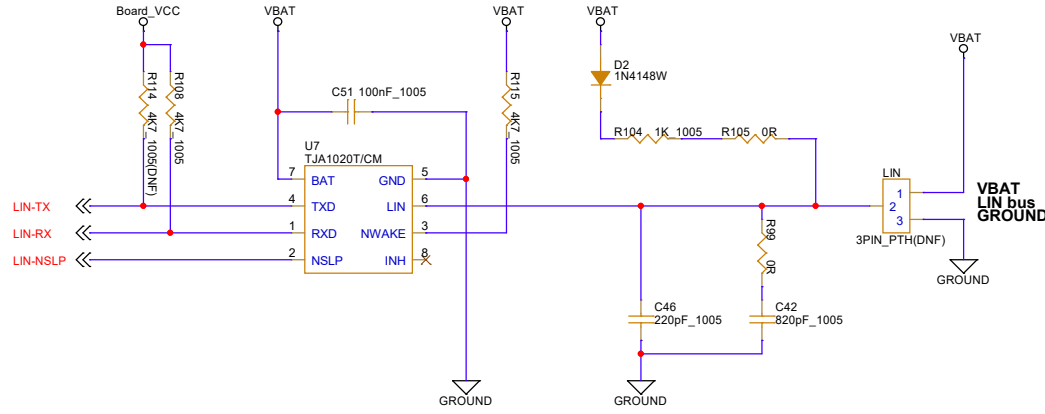
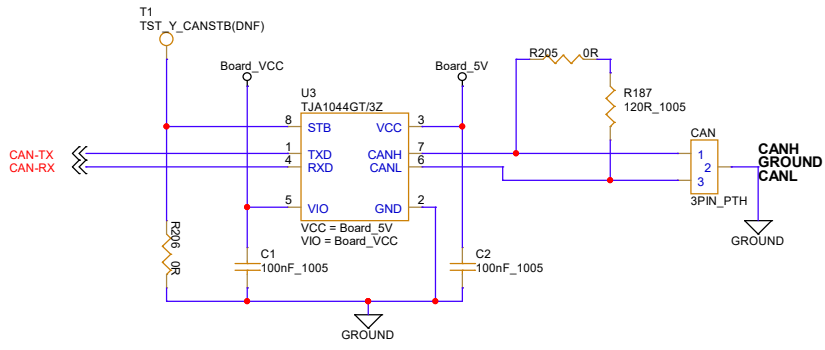


Touch Interface

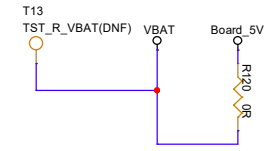
Note:

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





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. |

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| Renesas Electronics Corporation | | | |
| Title | | | |
| RSKRX140 [Revision History] | | | |
| Size | | | |
| Document Number | | Rev | |
| R20UT5025EG0100 | | 1.00 | |
| Date: Tuesday, December 07, 2021 | | | |
| Sheet | | X of X | |
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