

Renesas Starter Kit for RX660 CPU Board Schematics

REV	REF	DATE	DRAWN BY
1.00	Release	14.02.2022	YOI

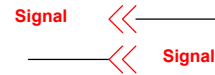
SHEET	DESCRIPTION
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Note:

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:

RTK556609HC00000BE : RSKRX660 MP Board

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
REMC : Remote Control Signal Receiver
RSK : Renesas Starter Kit
USB : Universal Serial Bus

REE Drawing No. D018252_04

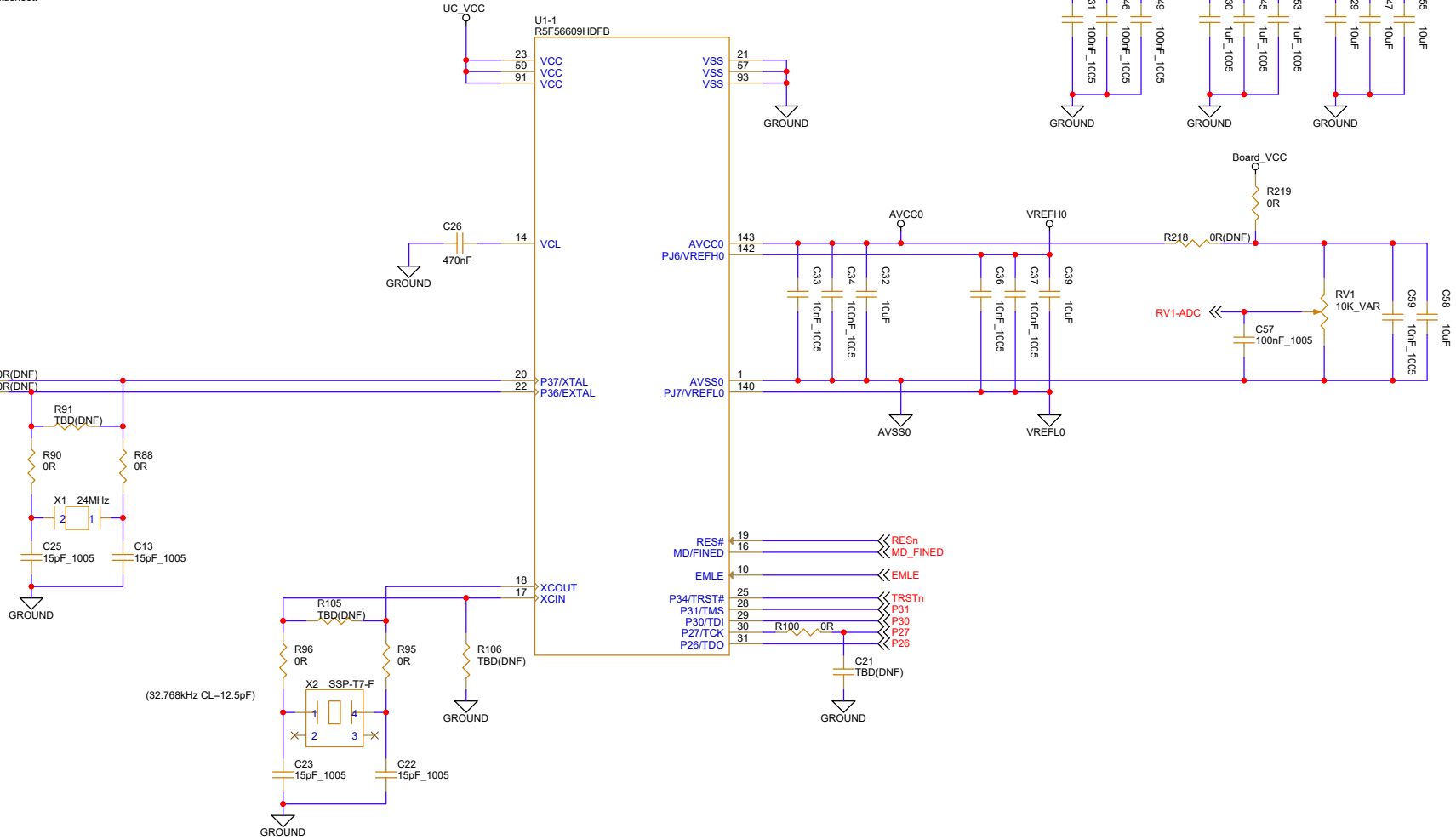
Renesas Electronics Corporation		
Title	RSKRX660 [Index]	
Size	Document Number R20UT5016EG0100	Rev 1.00
Date:	Monday, February 14, 2022	Sheet 1 of 12

RX660 Microcontroller-1

Note:

Microcontroller's pins are not described by the full pin function.
For full pin functions details, refer to RX660 datasheet.

J1-20
JA2-EXTAL

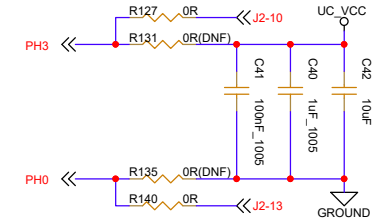
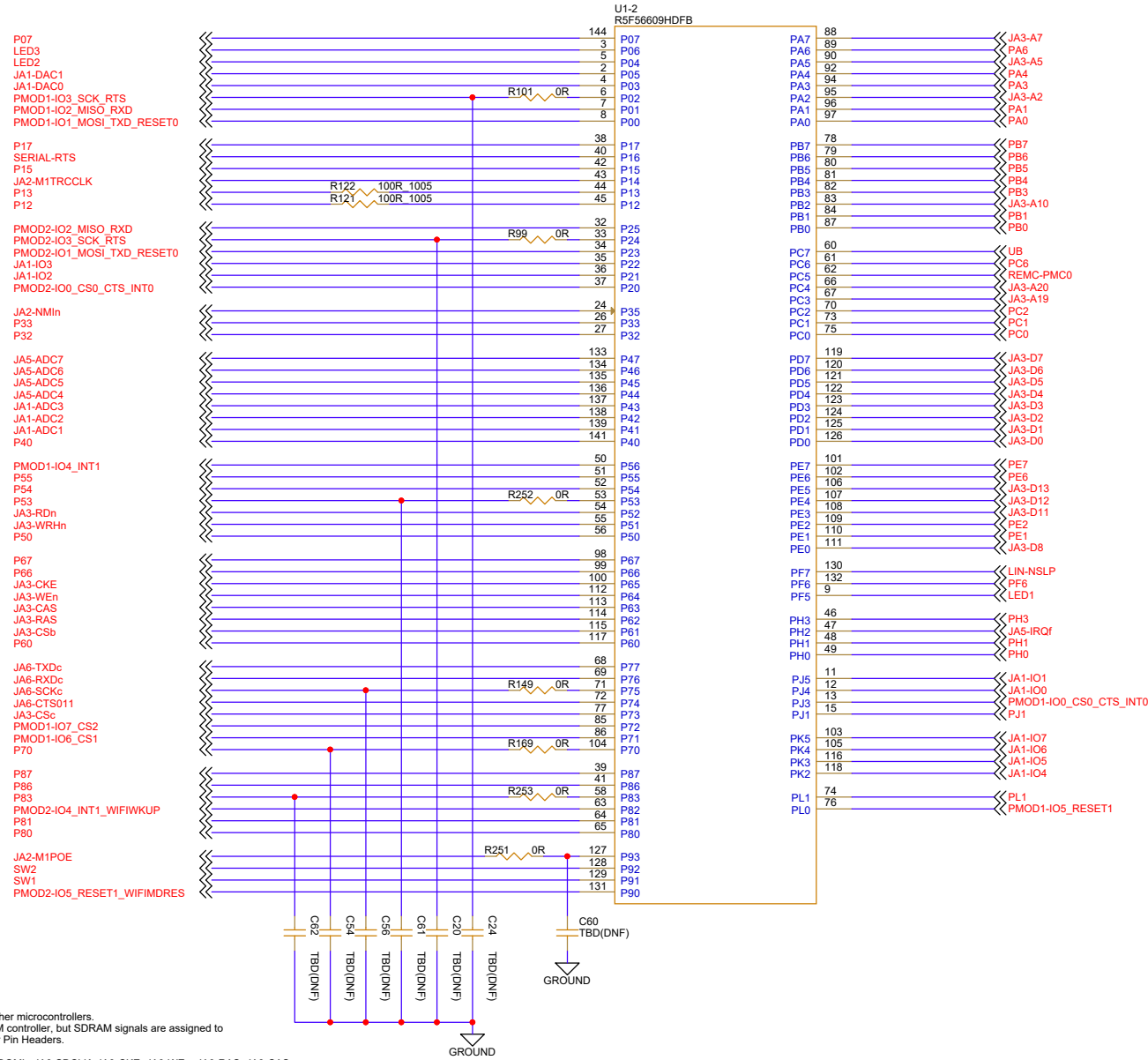


Renesas Electronics Corporation		
Title	RSKRX660 [Micon-1]	
Size	Document Number R20UT5016EG0100	Rev 1.00
Date:	Monday, February 14, 2022	Sheet 2 of 12

RX660 Microcontroller-2

Note:

Microcontroller's pins are not described by the full pin function.
For full pin functions details, refer to RX660 datasheet.



Note:

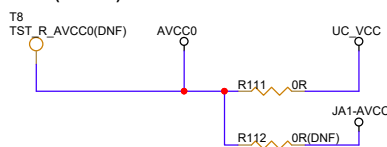
This board is designed to be shared with other microcontrollers.
Therefore, RX660 does not support SDRAM controller, but SDRAM signals are assigned to Application Pin Header JA3 and Microcontroller Pin Headers.

The affected signals are: JA3-DQMH, JA3-DQML, JA3-SDCLK, JA3-CKE, JA3-WEn, JA3-RAS, JA3-CAS

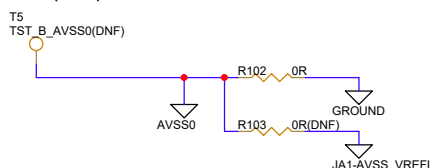
Renesas Electronics Corporation		
Title	RSKRX660 [Micon-2]	
Size	Document Number R20UT5016EG0100	Rev 1.00
Date:	Monday, February 14, 2022	Sheet 3 of 12

MCU Pin Function Select

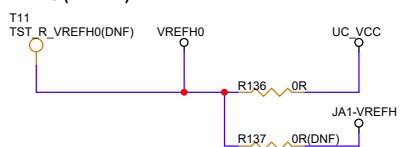
AVCC0 (Pin 143)



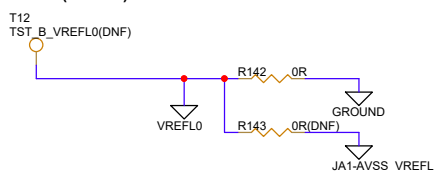
AVSS0 (Pin 1)



VREFH0 (Pin 142)



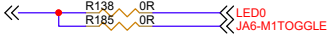
VREFL0 (Pin 140)



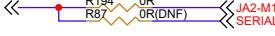
P07 (Pin 144)



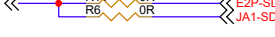
P17 (Pin 38)



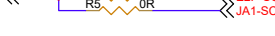
P15 (Pin 42)



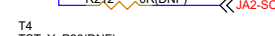
P13 (Pin 44)



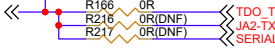
P12 (Pin 45)



P27 (Pin 30)



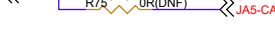
P26 (Pin 31)



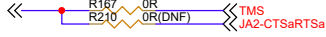
P33 (Pin 26)



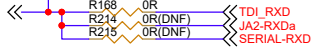
P32 (Pin 27)



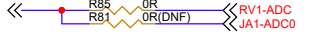
P31 (Pin 28)



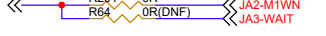
P30 (Pin 29)



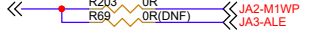
P40 (Pin 141)



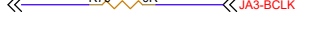
P55 (Pin 51)



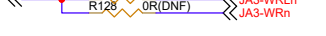
P54 (Pin 52)



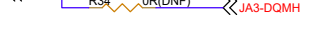
P53 (Pin 53)



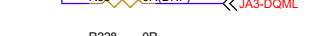
P50 (Pin 56)



P67 (Pin 98)



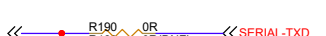
P66 (Pin 99)



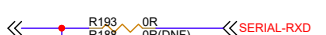
P60 (Pin 117)



P70 (Pin 104)



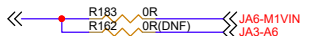
P87 (Pin 39)



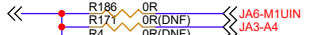
P86 (Pin 41)



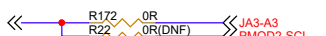
P83 (Pin 58)



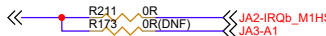
PA6 (Pin 89)



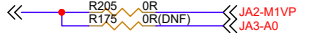
PA4 (Pin 92)



PA3 (Pin 94)



PA1 (Pin 96)



PA0 (Pin 97)

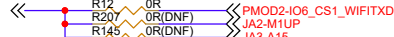


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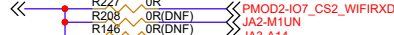
This board is designed to be shared with other microcontrollers. Therefore, RX660 does not support SDRAM controller, but SDRAM signals are assigned to Application Header JA3 and Microcontroller Pin Headers.

The affected signals are: JA3-DQMH, JA3-DQML, JA3-SDCLK, JA3-CKE, JA3-WEn, JA3-RAS, JA3-CAS

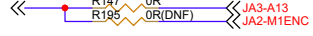
PB7 (Pin 78)



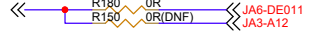
PB6 (Pin 79)



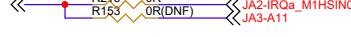
PB5 (Pin 80)



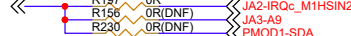
PB4 (Pin 81)



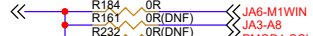
PB3 (Pin 82)



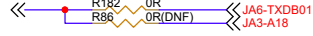
PB1 (Pin 84)



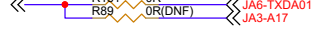
PB0 (Pin 87)



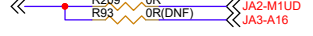
PC2 (Pin 70)



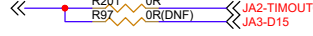
PC1 (Pin 73)



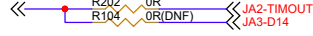
PC0 (Pin 75)



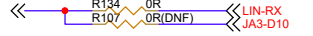
PE7 (Pin 101)



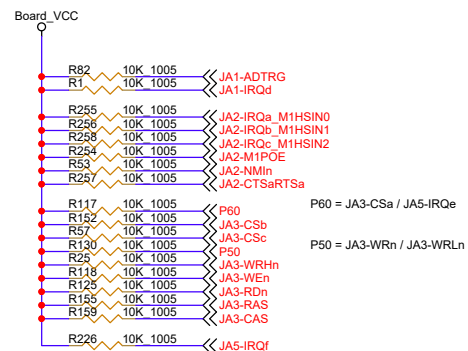
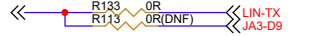
PE6 (Pin 102)



PE2 (Pin 109)

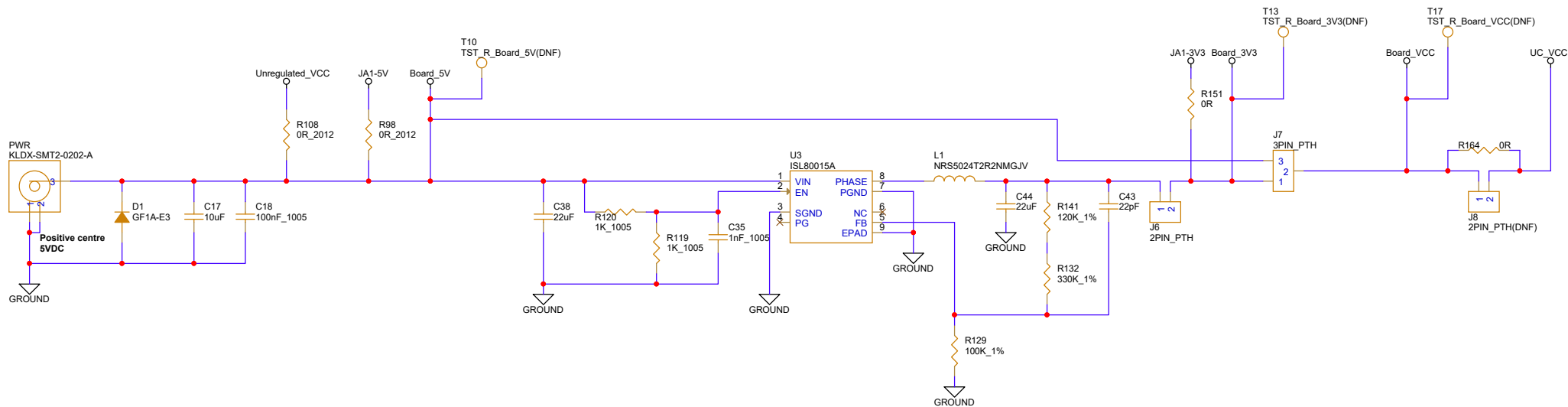


PE1 (Pin 110)



P60 = JA3-CSa / JA5-IRQe
P50 = JA3-WRn / JA3-WRLn

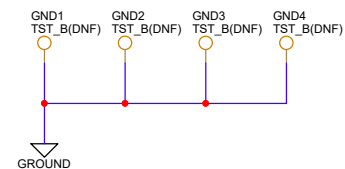
Power Supply Unit



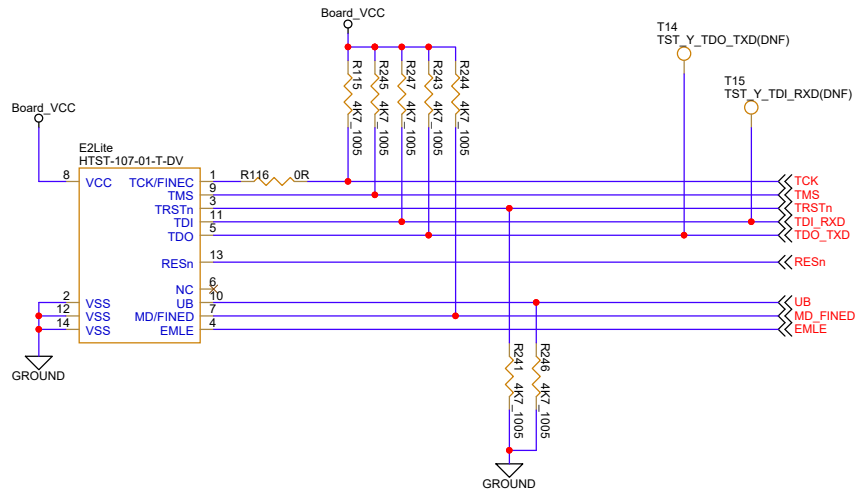
Power Supply Configuration

J7	J6	Power Supply Source	Board_VCC	Unavailable Feature
1-2 shorted	Open	E2 Lite(3V3)/JA1-3V3	3V3	LIN, CAN, 5V Interface Pmods
1-2 shorted	1-2 shorted	PWR/Unregulated_VCC/JA1-5V	3V3	5V Interface Pmods
2-3 shorted	1-2 shorted	PWR/Unregulated_VCC/JA1-5V	5V	Pmod LCD and other 3V3 Interface Pmods

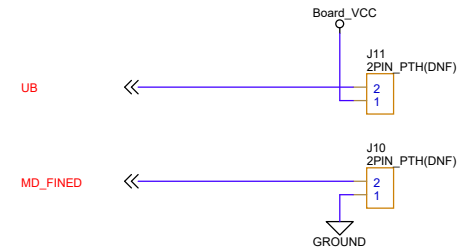
<- Default Settings



E2 Lite Emulator Interface

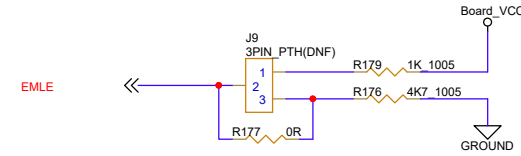


MCU Mode Setting



MCU Operating Mode Configuration

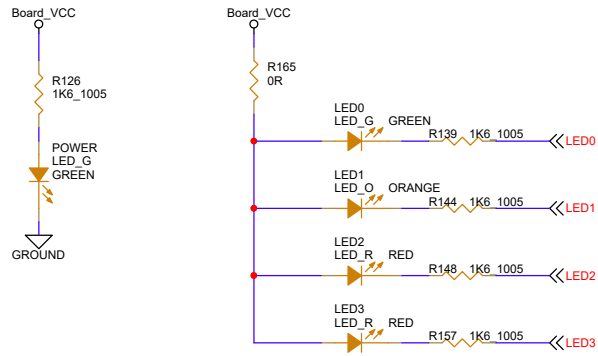
J10	J11	Operating Mode
Open	Don't care	Single Chip Mode
1-2 shorted	Open	SCI Boot Mode
1-2 shorted	1-2 shorted	User Boot Mode



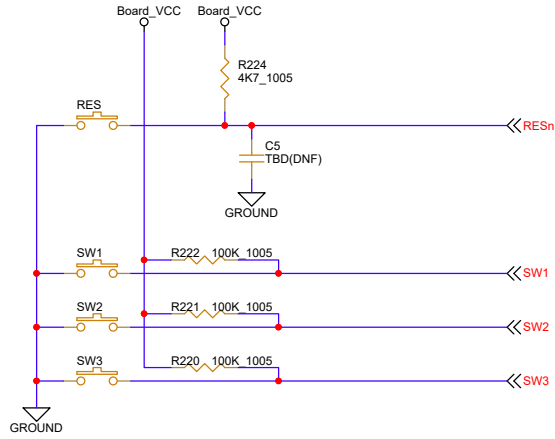
Emulator Configuration

J9	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)
All open	DO NOT SET

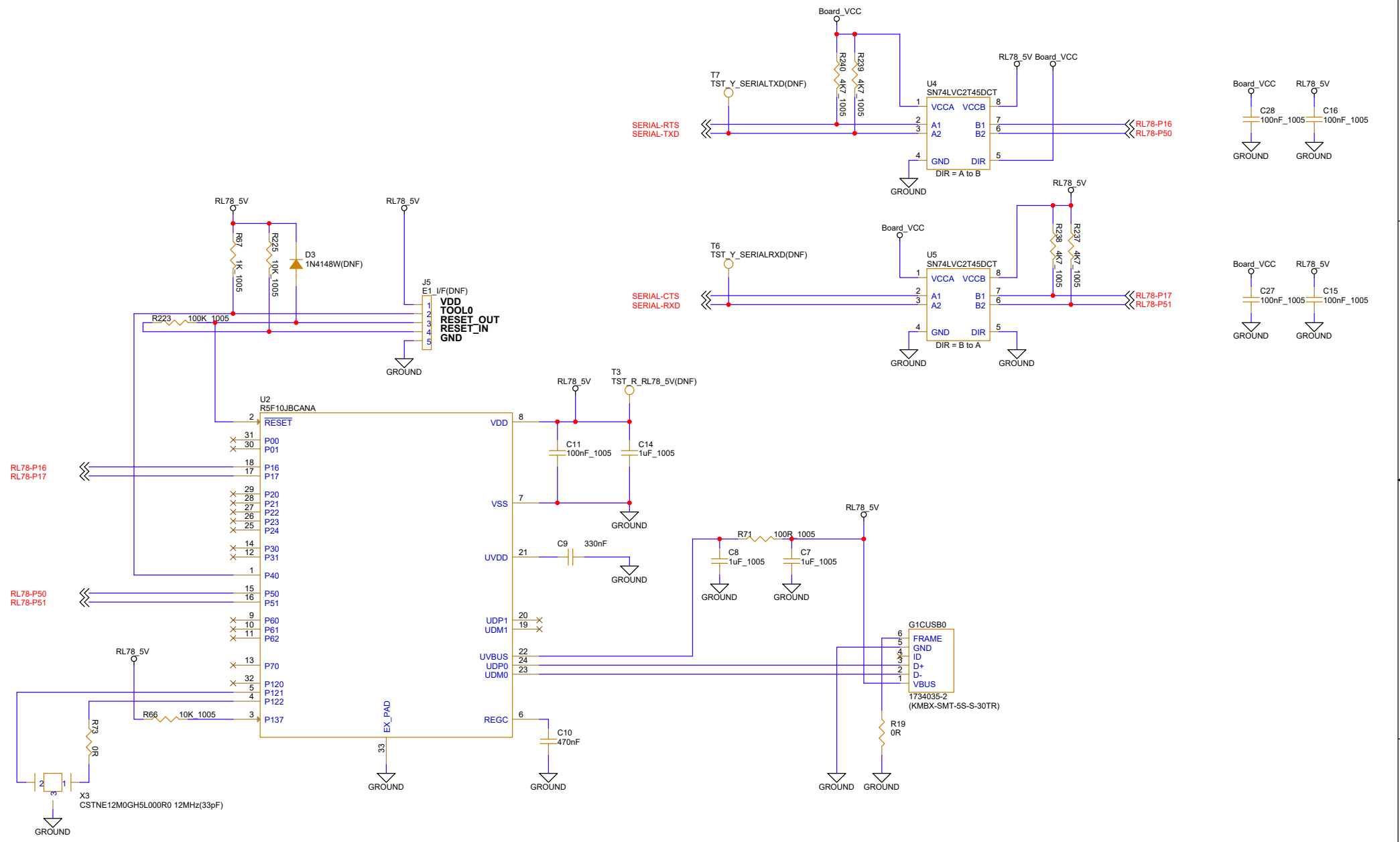
LEDs



Switches, RESET



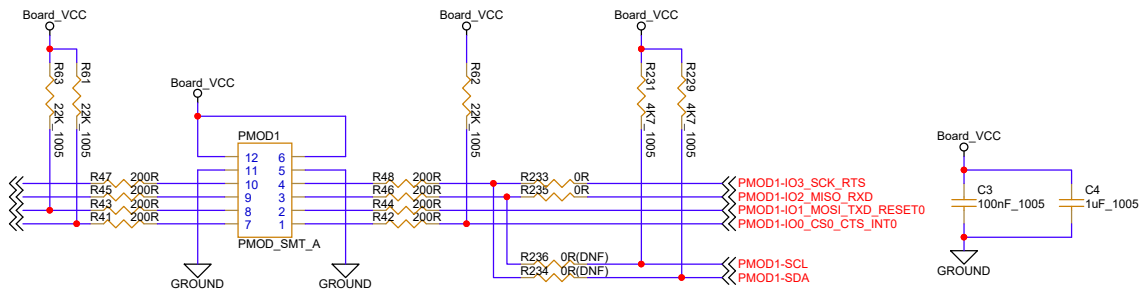
USB to Serial Interface



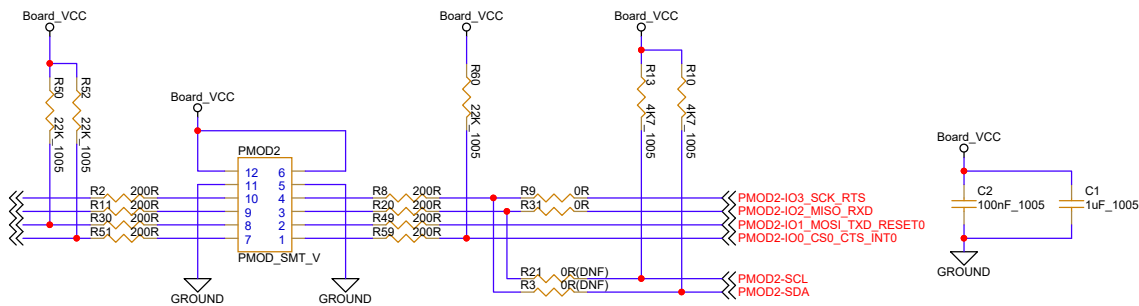
Renesas Electronics Corporation		
Title: RSKRX660 [USB to Serial Interface]		
Size: Document Number	Rev 1.00	
R20UT5016EG0100		
Date: Monday, February 14, 2022	Sheet 8	of 12

Pmod Interface

PMOD1-I07_CS2
 PMOD1-I06_CS1
 PMOD1-I05_RESET1
 PMOD1-I04_INT1



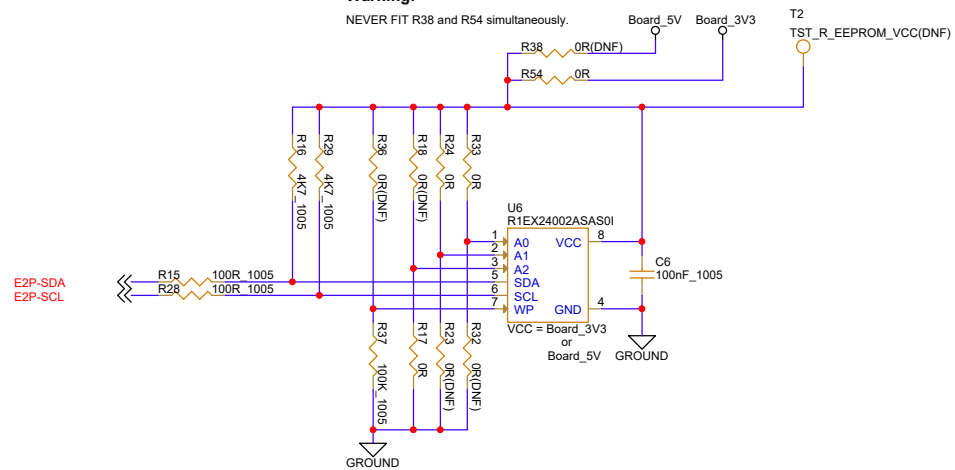
PMOD2-I07_CS2_WIFIRXD
 PMOD2-I06_CS1_WIFITXD
 PMOD2-I05_RESET1_WIFINDRES
 PMOD2-I04_INT1_WIFIWKUP



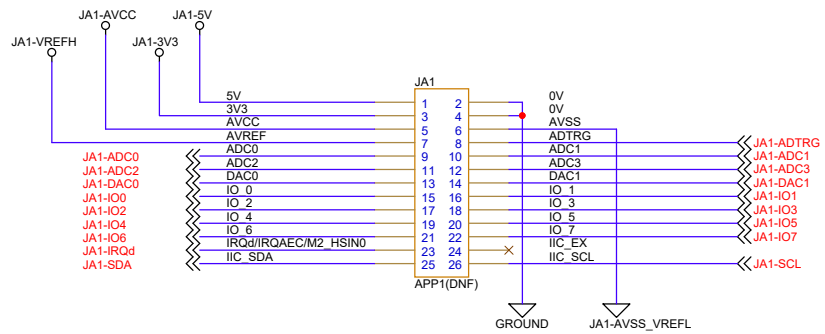
IIC EEPROM(2Kbits)

Warning:

NEVER FIT R38 and R54 simultaneously.



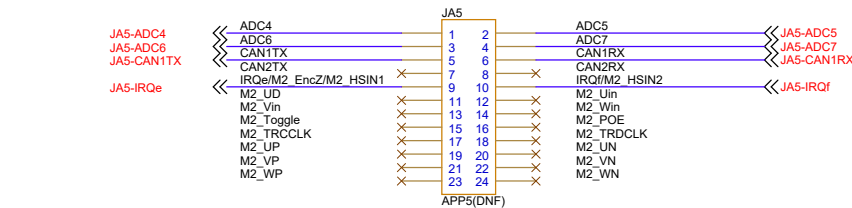
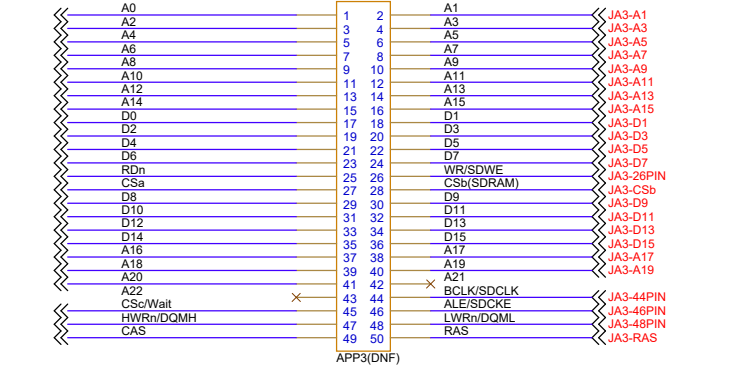
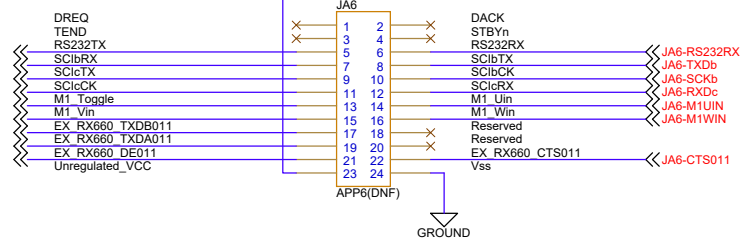
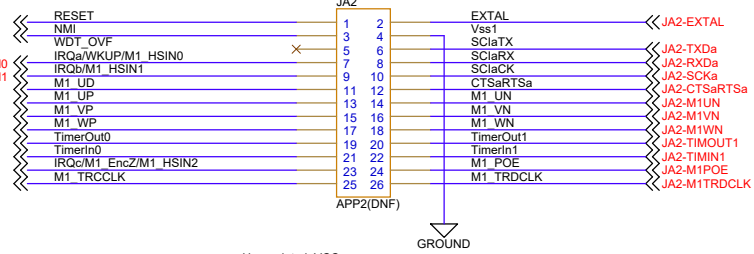
Application Headers



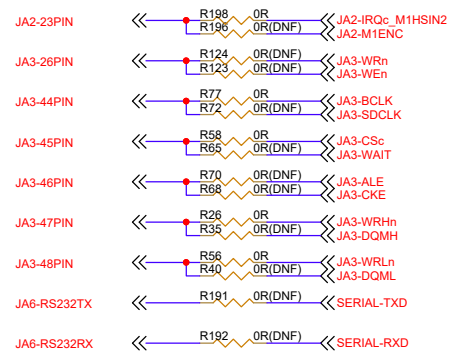
RESn
JA2-NMIn
JA2-IRQa_M1HSIN0
JA2-IRQb_M1HSIN1
JA2-IM1UD
JA2-M1UP
JA2-M1VP
JA2-M1WP
JA2-TIMOUT0
JA2-TIMIN0
JA2-23PIN
JA2-M1TRCCLK

JA6-RS232TX
JA6-RXD0
JA6-TXDc
JA6-SCKe
JA6-M1TOGGLE
JA6-M1VIN
JA6-TXDB011
JA6-TXDA011
JA6-DE011

JA3-A0
JA3-A2
JA3-A4
JA3-A6
JA3-A8
JA3-A10
JA3-A12
JA3-A14
JA3-D0
JA3-D2
JA3-D4
JA3-D6
JA3-RDn
JA3-CSa
JA3-D8
JA3-D10
JA3-D12
JA3-D14
JA3-D16
JA3-A18
JA3-A20
JA3-45PIN
JA3-47PIN
JA3-CAS



Application Header Function Select



Note:

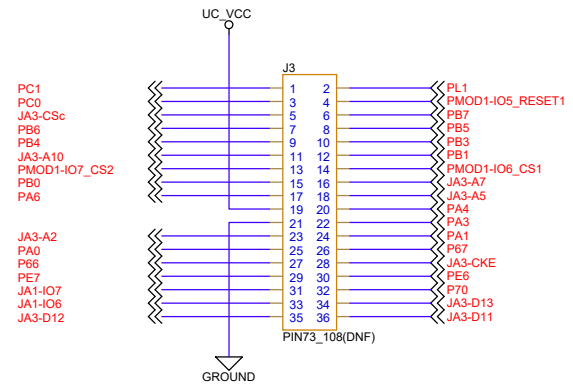
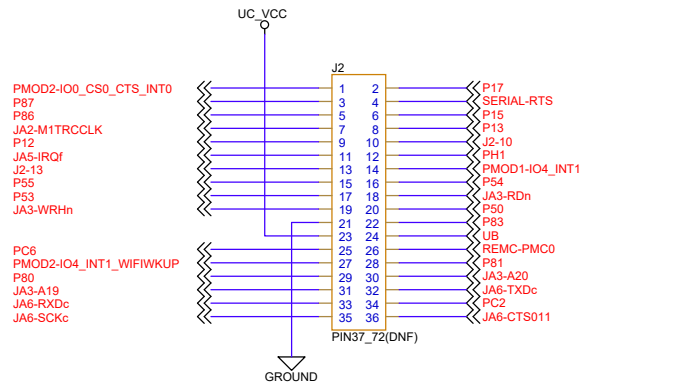
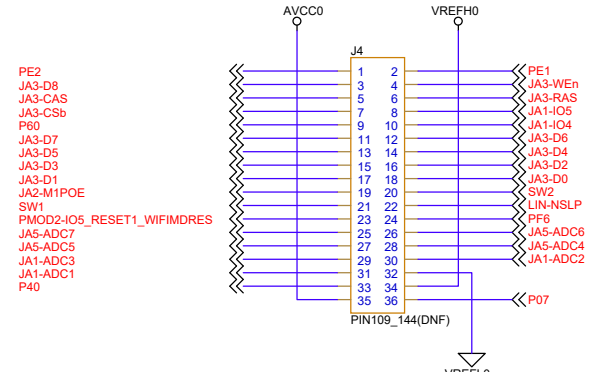
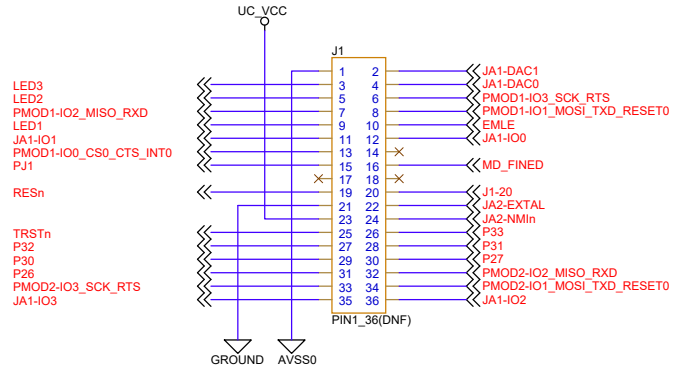
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Microcontroller Pin Headers

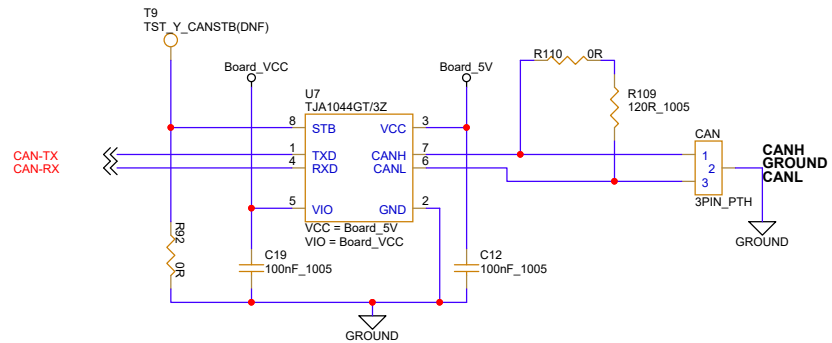
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This board is designed to be shared with other microcontrollers. Therefore, RX660 does not support SDRAM controller, but SDRAM signals are assigned to Application Header JA3 and Microcontroller Pin Headers.

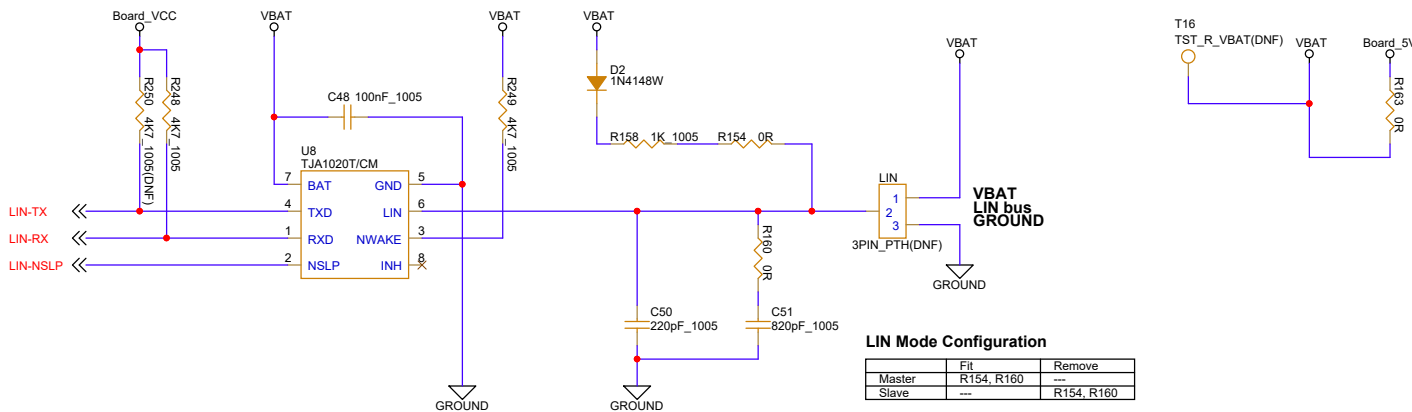
The affected signals are: JA3-DQMH, JA3-DQML, JA3-SDCLK, JA3-CKE, JA3-WEn, JA3-RAS, JA3-CAS



CAN



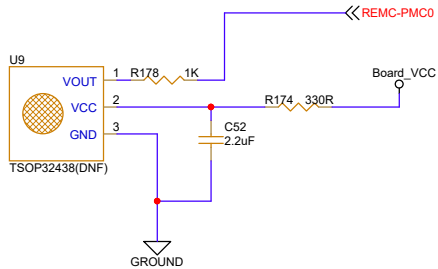
LIN



LIN Mode Configuration

	Fit	Remove
Master	R154, R160	---
Slave	---	R154, R160

REMC



Revision History

REV	DATE	SHEET	DESCRIPTION
1.00	14.02.2022	---	1st release edition.

Renesas Electronics Corporation			
Title		RSKRX660 [Revision History]	
Size	Document Number		Rev
	R20UT5016EG0100		1.00
Date:	Monday, February 14, 2022	Sheet	X of X