

R-CarM2N System Evaluation Board "GOSE"

RTP0RC7793SEB00010S

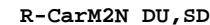
Rev.1.01

Preliminary

CONFIDENTIAL

PAGE01 : TITLE
PAGE02 : R-CarM2N_DU_SD_USB
PAGE03 : R-CarM2N_EXBUS_VIN_SATA/PCie
PAGE04 : R-CarM2N_DDR3
PAGE05 : R-CarM2N_POWER_1
PAGE06 : R-CarM2N_POWER_2
PAGE07 : DDR3_SDRAM ch0
PAGE08 : DDR3_SDRAM ch1
PAGE09 : Serial ATA
PAGE10 : PCI express
PAGE11 : USB2.0
PAGE12 : SYS_RST/MODE_SW
PAGE13 : QSPI_FLASH/FL_CN
PAGE14 : SDHI0/SDHI1/SDHI2
PAGE15 : ETHER_MAC
PAGE16 : DU1_HDMI_OUT
PAGE17 : DU0_LVDS
PAGE18 : HDMI_POWER
PAGE19 : VINO_HDMI_IN
PAGE20 : VIN1_BT656
PAGE21 : AUDIO/MLB+
PAGE22 : DEBUG_SCIF/RTC/LED
PAGE23 : EXIO_CN
PAGE24 : POWER_VSYS,D5.0V
PAGE25 : POWER_DA9210, DA9063
PAGE26 : POWER_DDR(LTC3634)

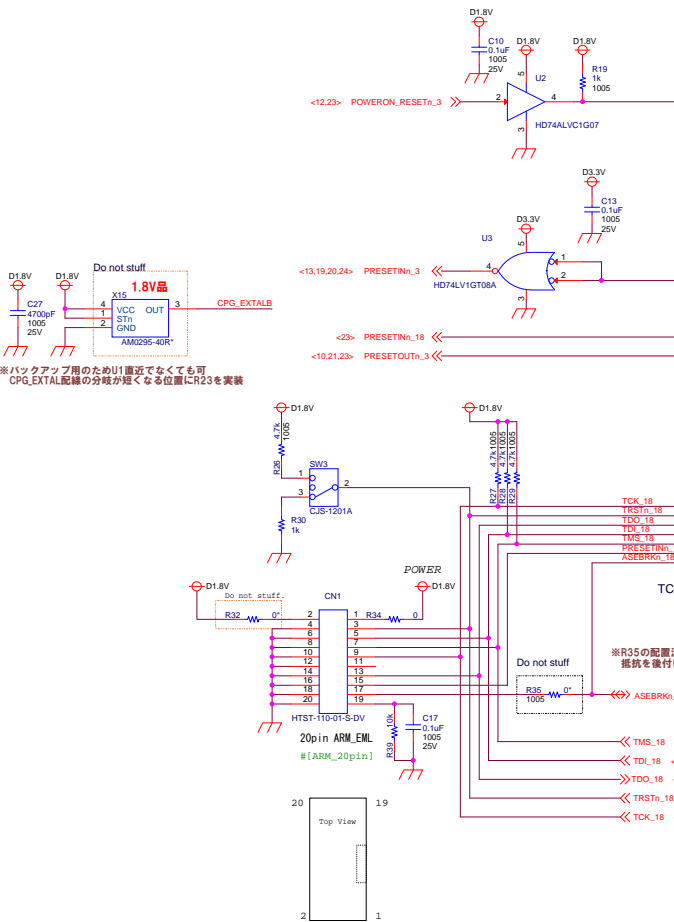
CONFIDENTIAL



Preliminary

Layout Note:
Following signals need Ground guard.

CPG_XTAL, CPG_EXTAL until X6-pin3
CLKOUT, CLKOUT_3
VINO_CLK_3, VIN1_CLK_3
GP7_7/MLB_CK_3, GP7_8/MLB_SIG_3, GP7_9/MLB_DAT_3
CPG_EXTAL until X15-pin3

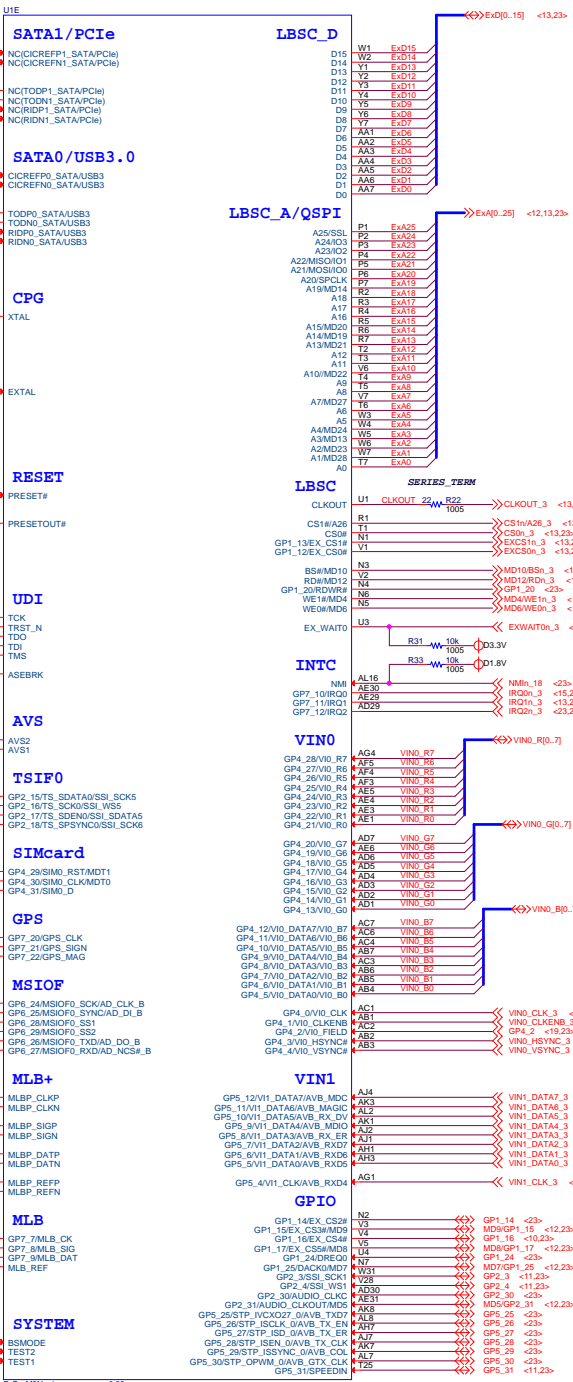
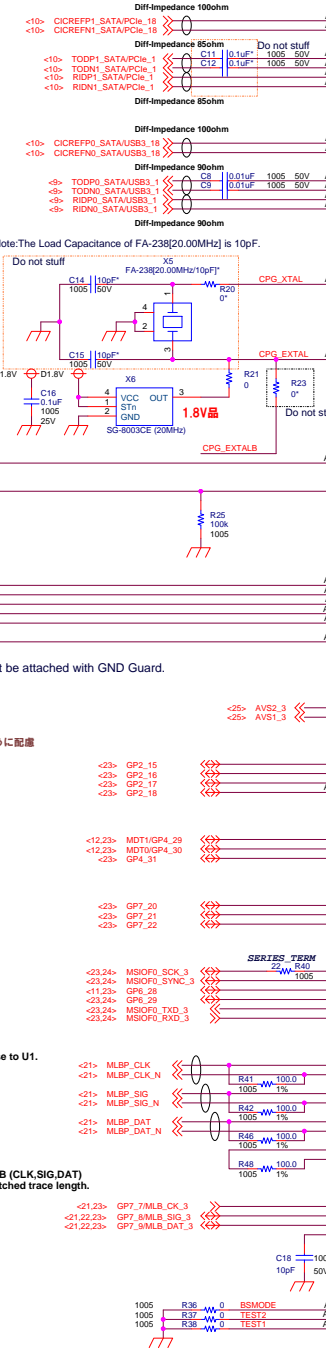


Be careful!!
See Pin Assignment.

MLBP four pairs.
Differential Impedance= 100 ohm
Matched trace length.
These resistors must be placed close to U1.

MLB (CLK,SIG,DAT)
Matched trace length.

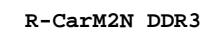
SATA1/PCIe, SATA0/USB3.0 (Each pair)
Matched trace length.



R-CarM2N EXBUS

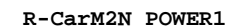
R-CarM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarM2N System Evaluation Board (GOSE)	1.01	
Date	Tuesday, February 17, 2015	Sheet	3 of 26

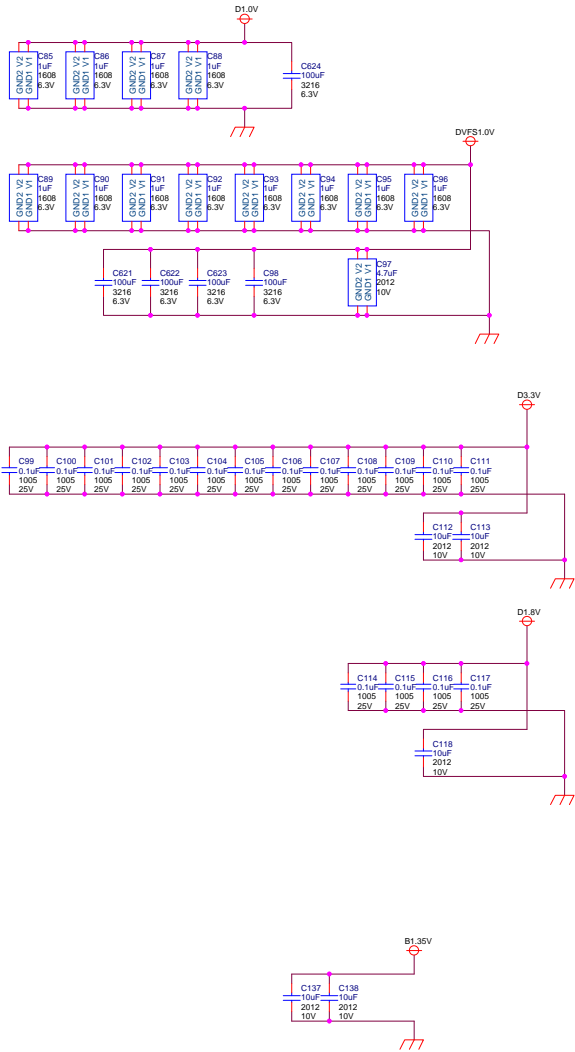
CONFIDENTIAL



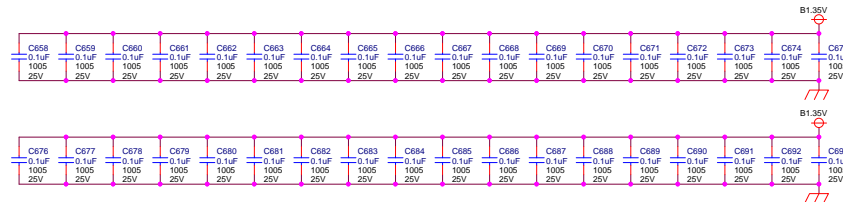
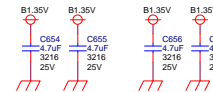
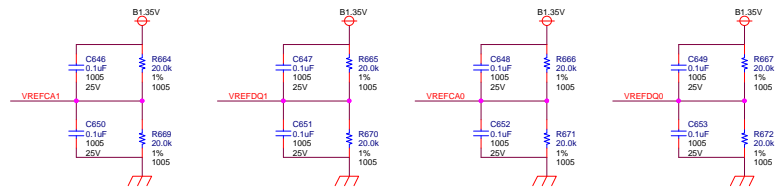
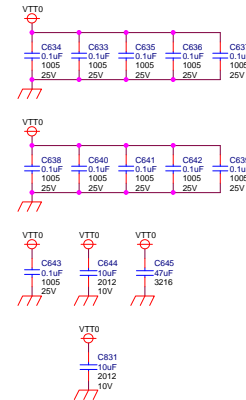
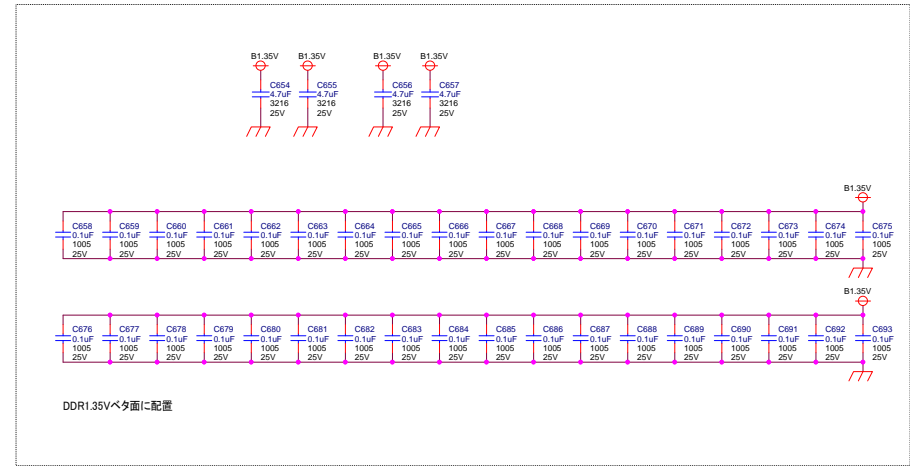
Title R-CarM2N System Evaluation Board (GOSE)			
Size A2	Document Number R-CarM2N System Evaluation Board (GOSE)		Rev 1.01
Date:	Tuesday, February 17, 2015	Sheet	4 of 28

CONFIDENTIAL





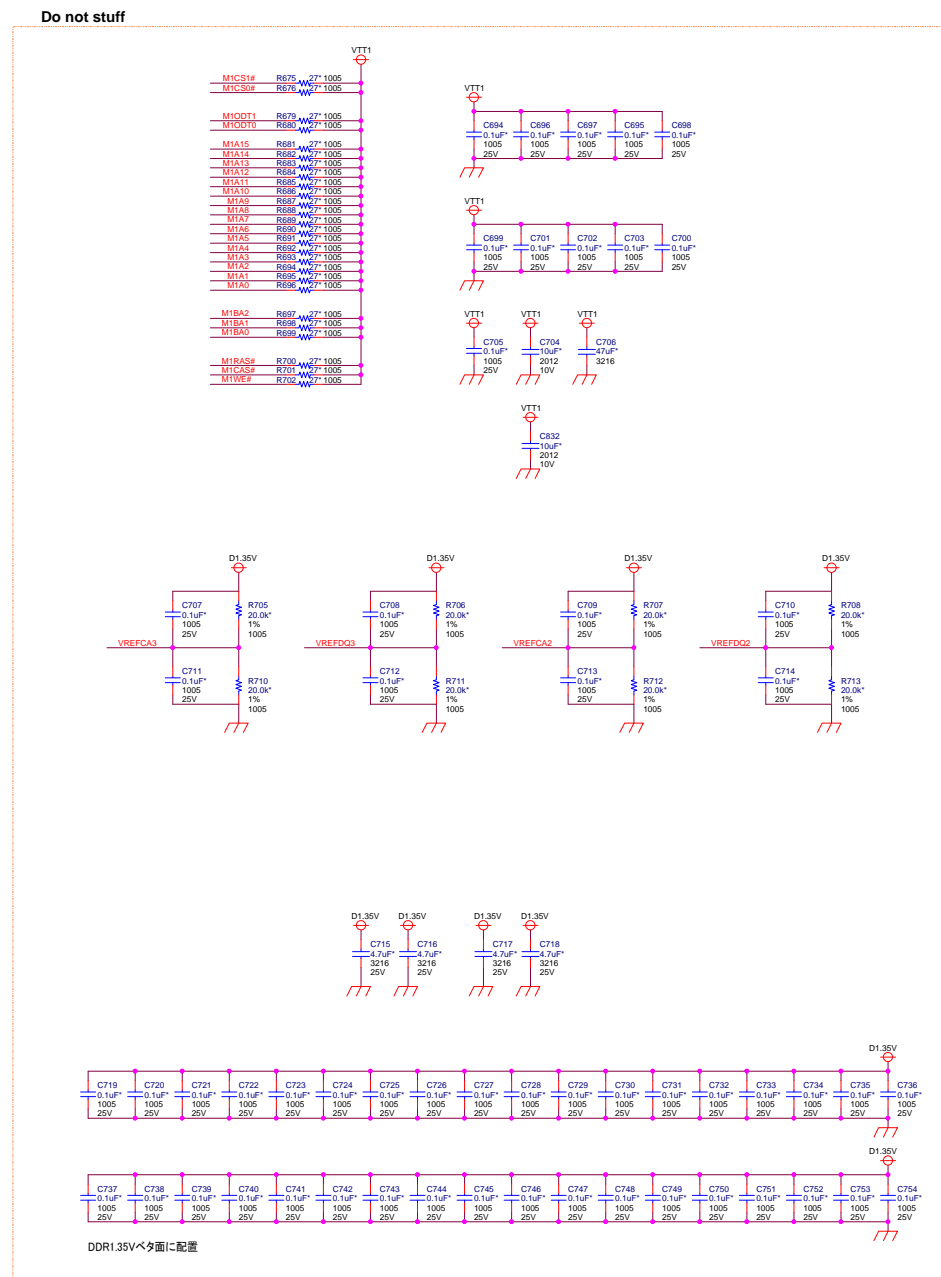
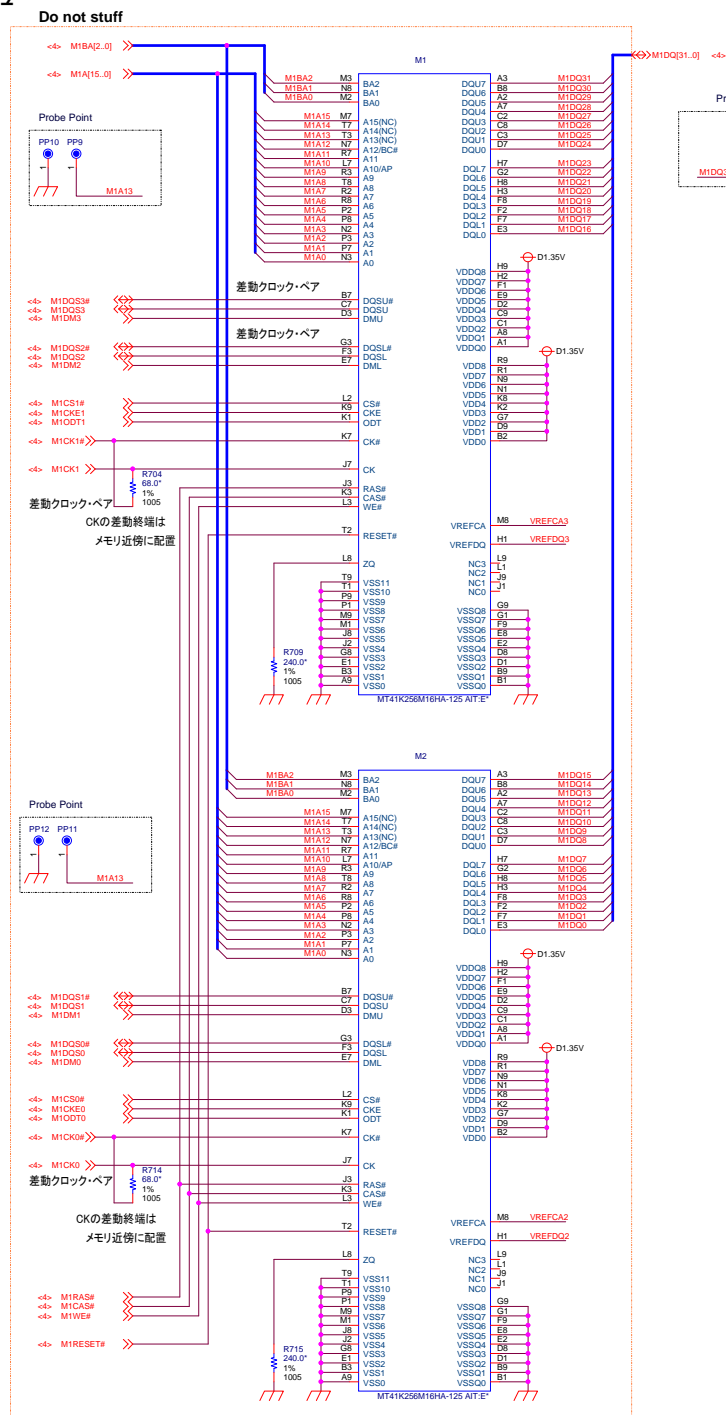
Title		
R-CarM2N System Evaluation Board (GOSE)		
Size	Document Number	Rev
A2	R-CarM2N System Evaluation Board (GOSE)	1.01
Date:	Tuesday, February 17, 2015	Sheet 6 of 26



7)

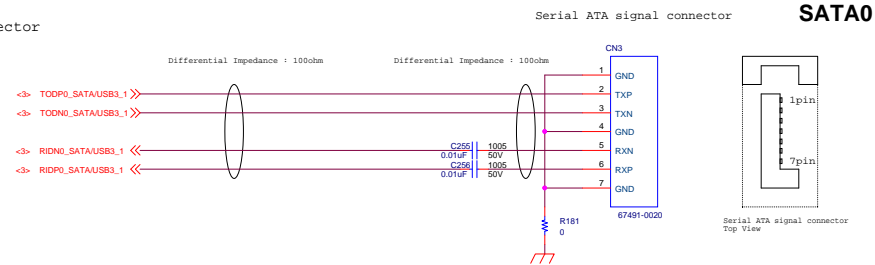
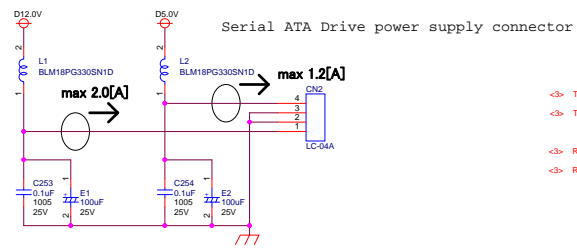
Title			
R-CarM2N System Evaluation Board (GOSE)			
Size A2	Document Number R-CarM2N System Evaluation Board (GOSE)		Rev 1.01
Date:	Tuesday, February 17, 2015	Sheet 7 of 26	

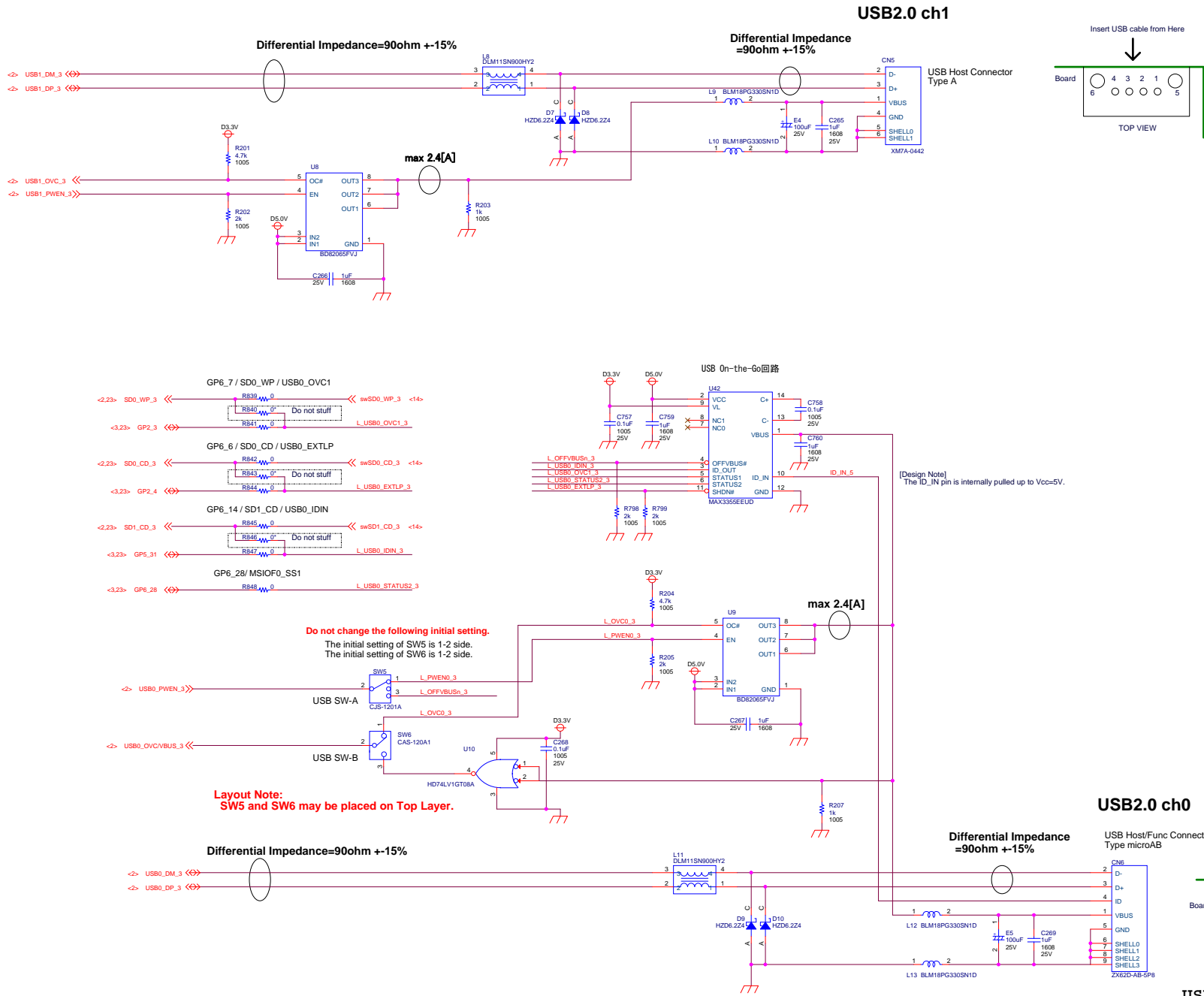
CONFIDENTIAL

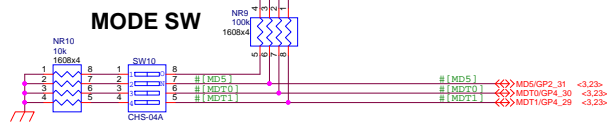
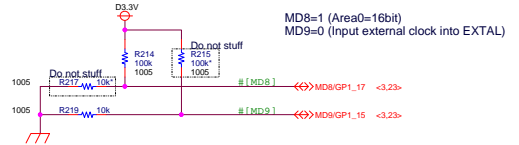
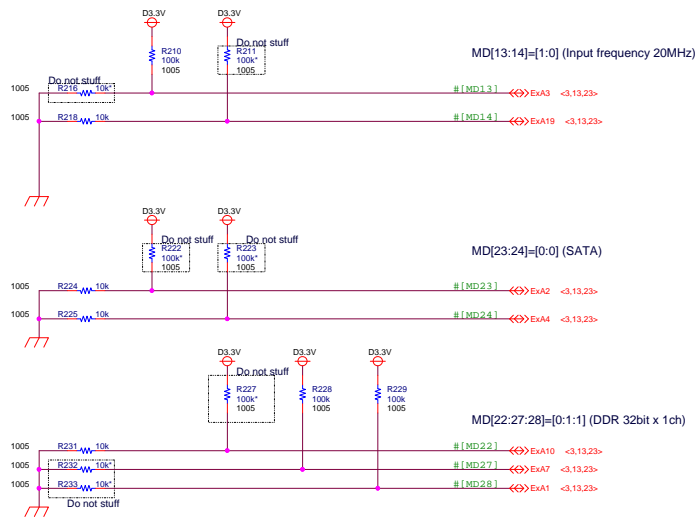
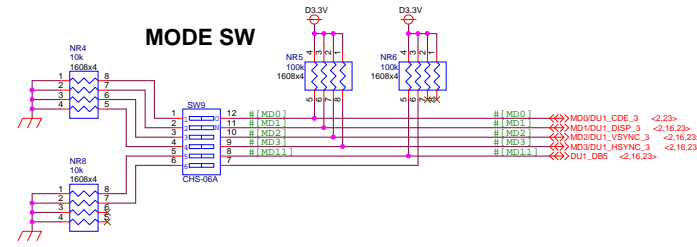
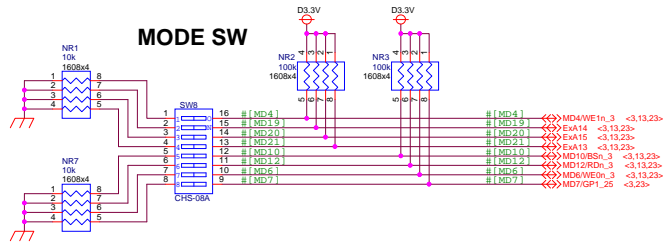
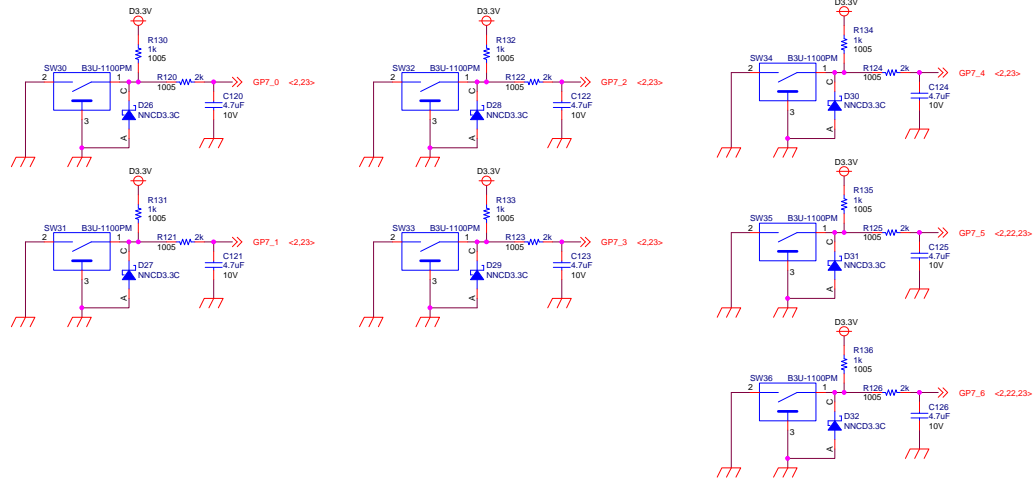
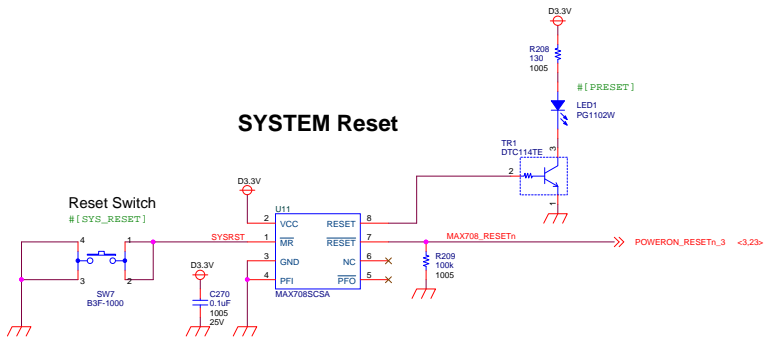


DDR3-SDRAM ch1

Title			
R-CardM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CardM2N System Evaluation Board (GOSE)	1.01	
Date:	Tuesday, February 17, 2015	Sheet	8 of 26



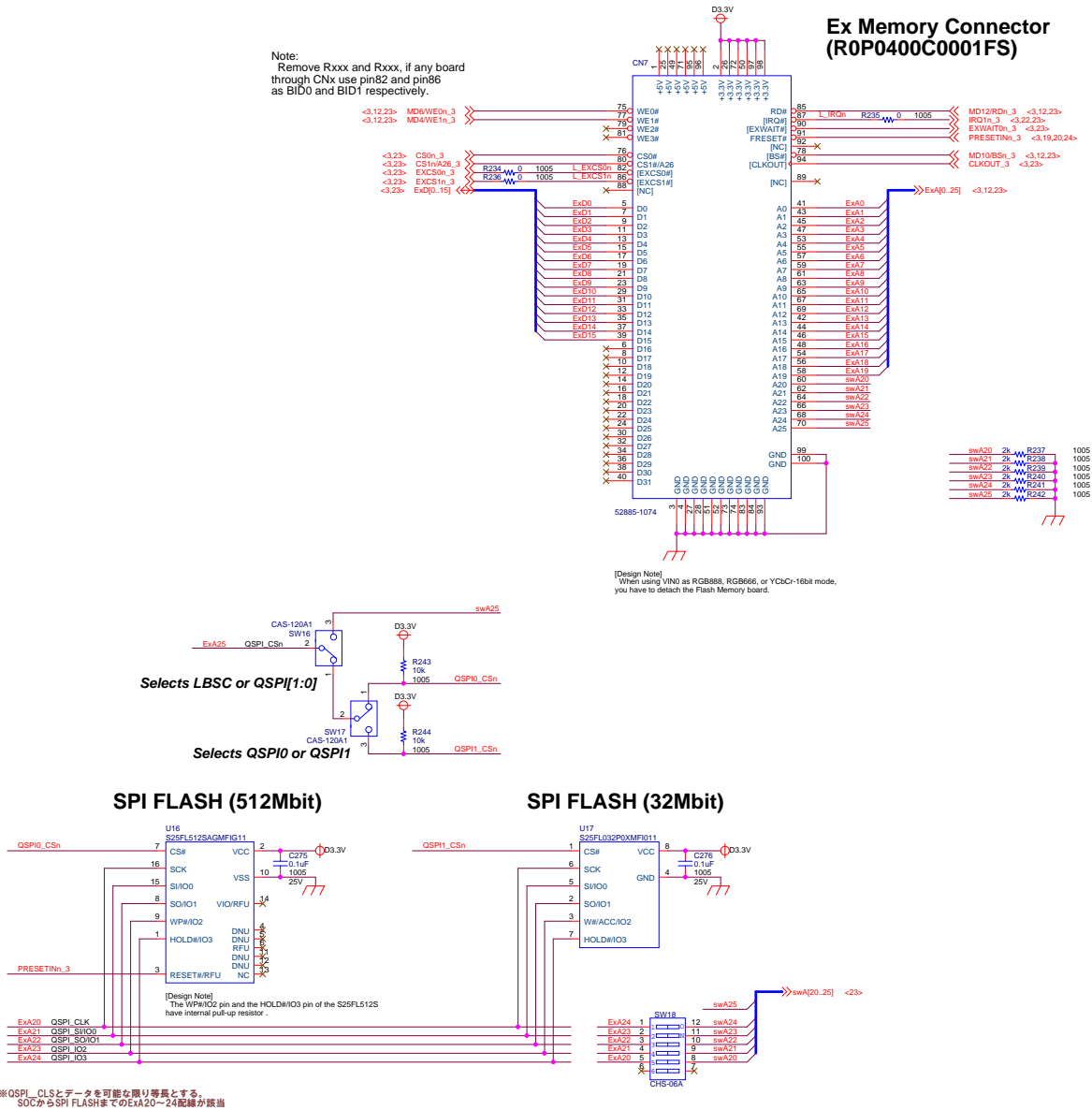




Layout Note:
Mode switches must be placed on Top Layer.

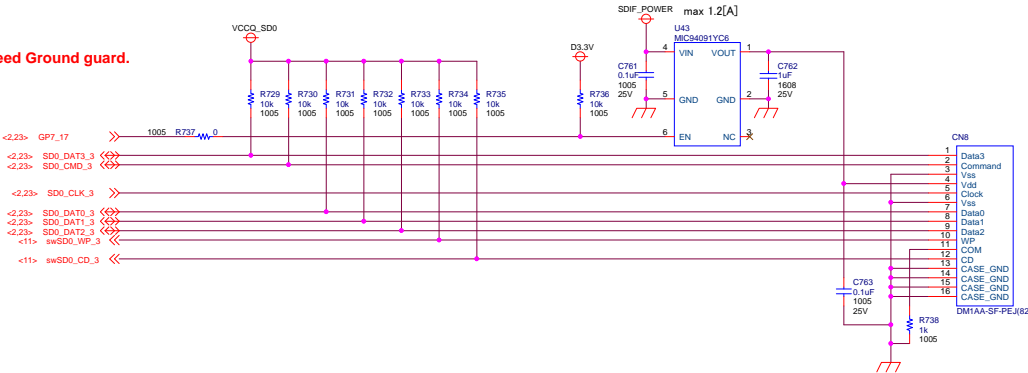
R-CarM2N System Evaluation Board (GOSE)		
Size	Document Number	Rev
A2	R-CarM2N System Evaluation Board (GOSE)	1.01
Date: Tuesday, February 17, 2015 Sheet 12 of 26		

Layout Note:
Following signals need Ground guard.
CLKOUT_3
ExA20(QSPI_CLK)

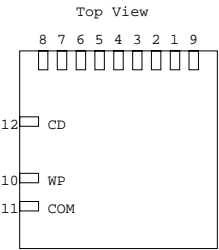


R-CarM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarM2N System Evaluation Board (GOSE)	1.01	
Date:	Tuesday, February 17, 2015	Sheet	13 of 26

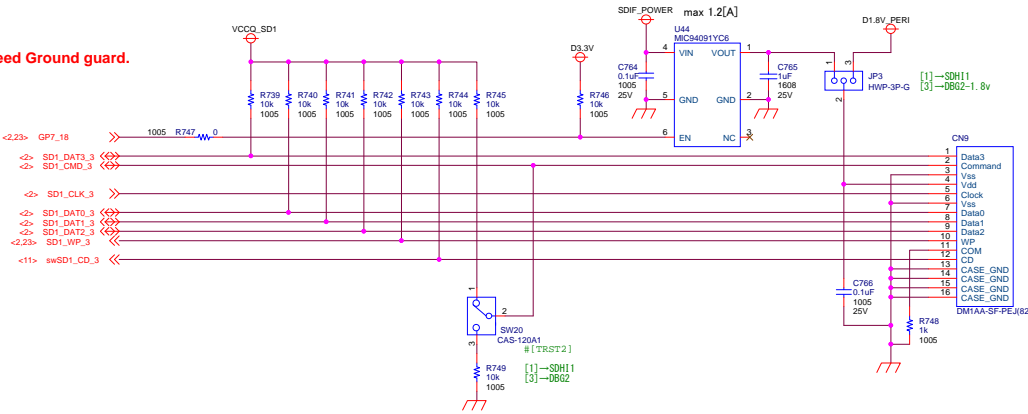
Layout Note:
Following signals need Ground guard.
SD0_CLK_3



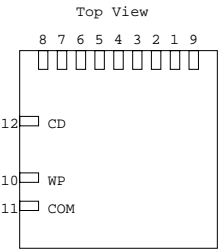
SD(CH0)



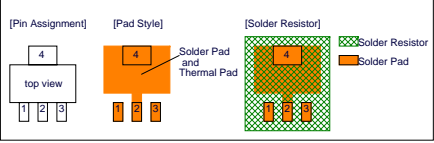
Layout Note:
Following signals need Ground guard.
SD1_CLK_3



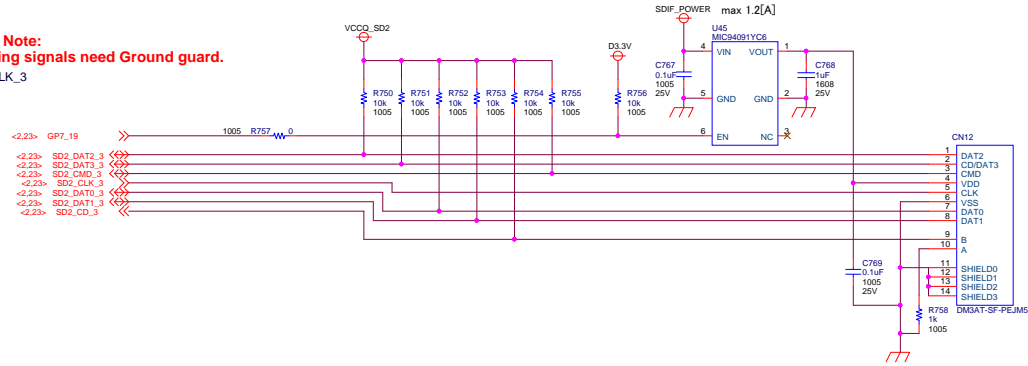
SD(CH1)



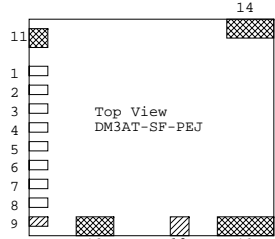
Layout Note:
Pad Configuration for ADP3339



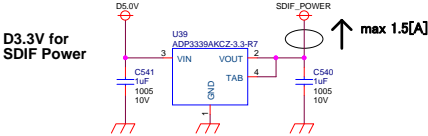
Layout Note:
Following signals need Ground guard.
SD2_CLK_3

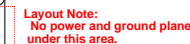


SD(CH2)



Insert microSD card from here.



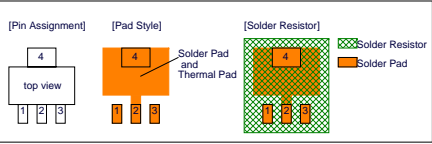


Ethernet Cable Side

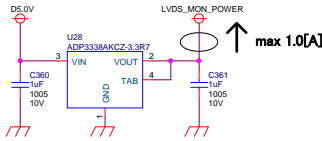
Title			
R-CarM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarM2N System Evaluation Board (GOSE)	1.0	
Date:	Tuesday, February 17, 2015	Sheet	15 of 28



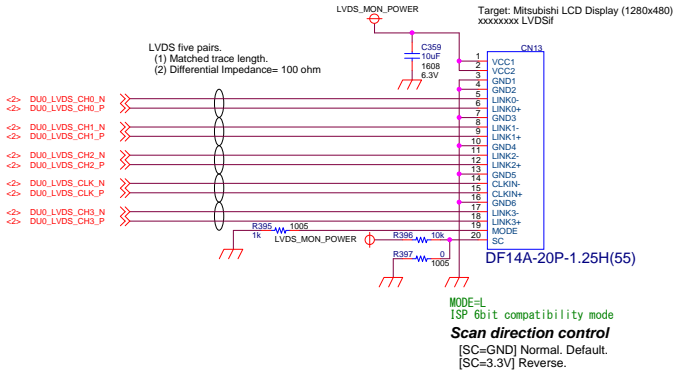
Layout Note:
Pad Configuration for ADP3338



D3.3V for
LVDS Monitor Power

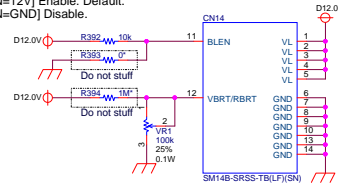


LVDSif(DU0_LVDS)

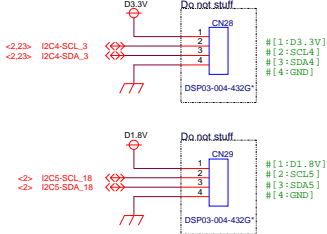


Backlight Control
[BLN=12V] Enable. Default.
[BLN=GND] Disable.

Backlight Connector
(Bottom Layer)



VR1
(Top Layer)

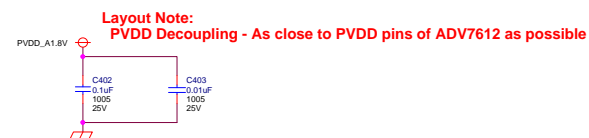
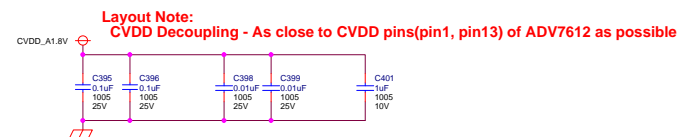
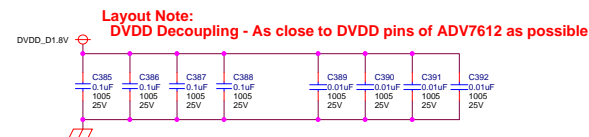
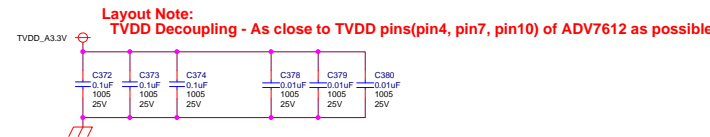
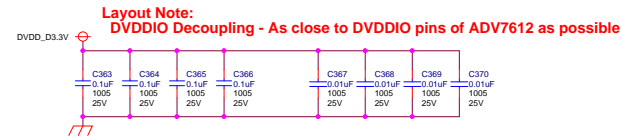
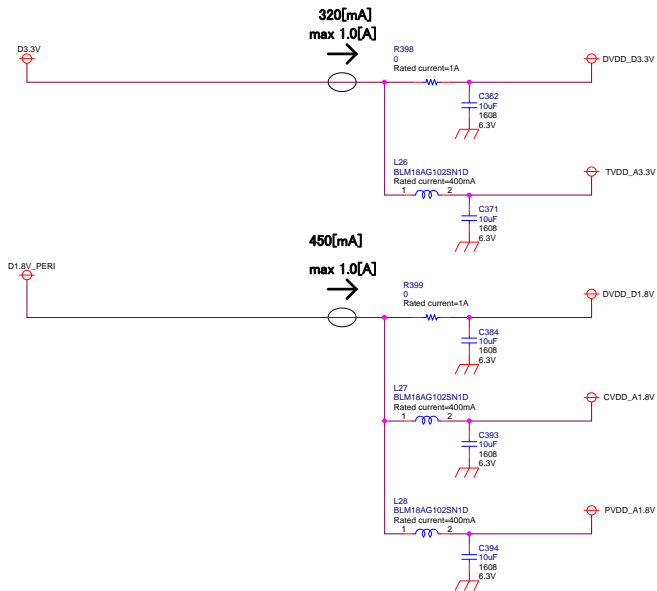


DU0 LVDS

R-CarM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarM2N System Evaluation Board (GOSE)	1.01	
Date:	Tuesday, February 17, 2015	Sheet	17 of 26

Preliminary

HDMI Power



CONFIDENTIAL

Title		
R-CarM2N System Evaluation Board (GOSE)		
Size	Document Number	Rev
A2	R-CarM2N System Evaluation Board (GOSE)	1.01
Date	Tuesday, February 17, 2015	
Sheet	18	of 26

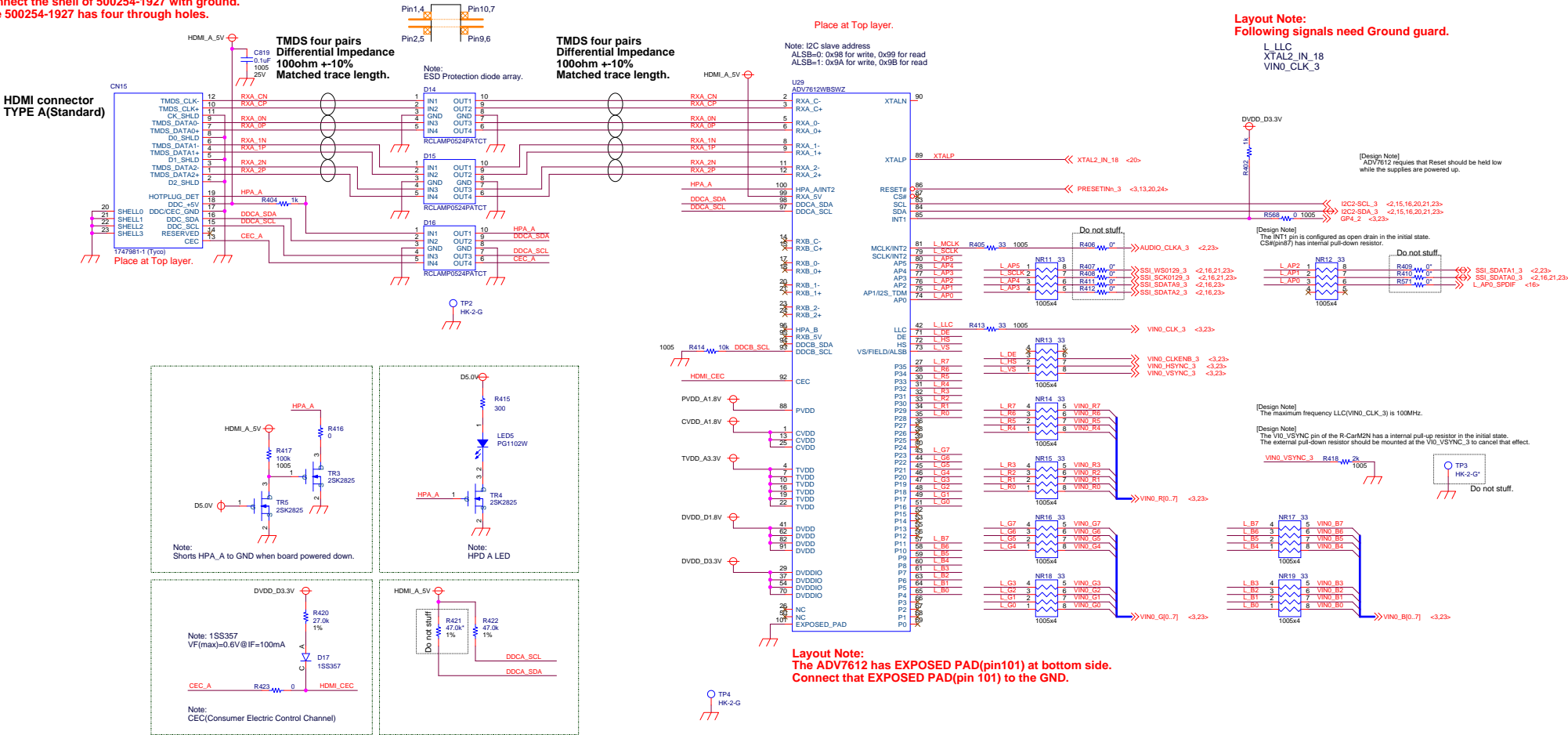
HDMI Receiver

Layout Note:
Connect the shell of 500254-1927 with ground.
The 500254-1927 has four through holes.

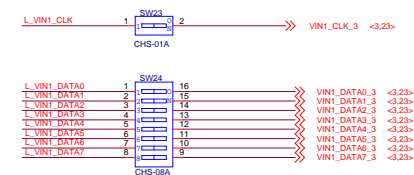
Layout Note:
Connect INx with OUTx under the RCLAMP0524. See below figure.

Place at Top layer.

Layout Note:
Following signals need Ground guard.



R-CarM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarM2N System Evaluation Board (GOSE)	1.01	
Date:	Tuesday, February 17, 2015	Sheet	19 of 26

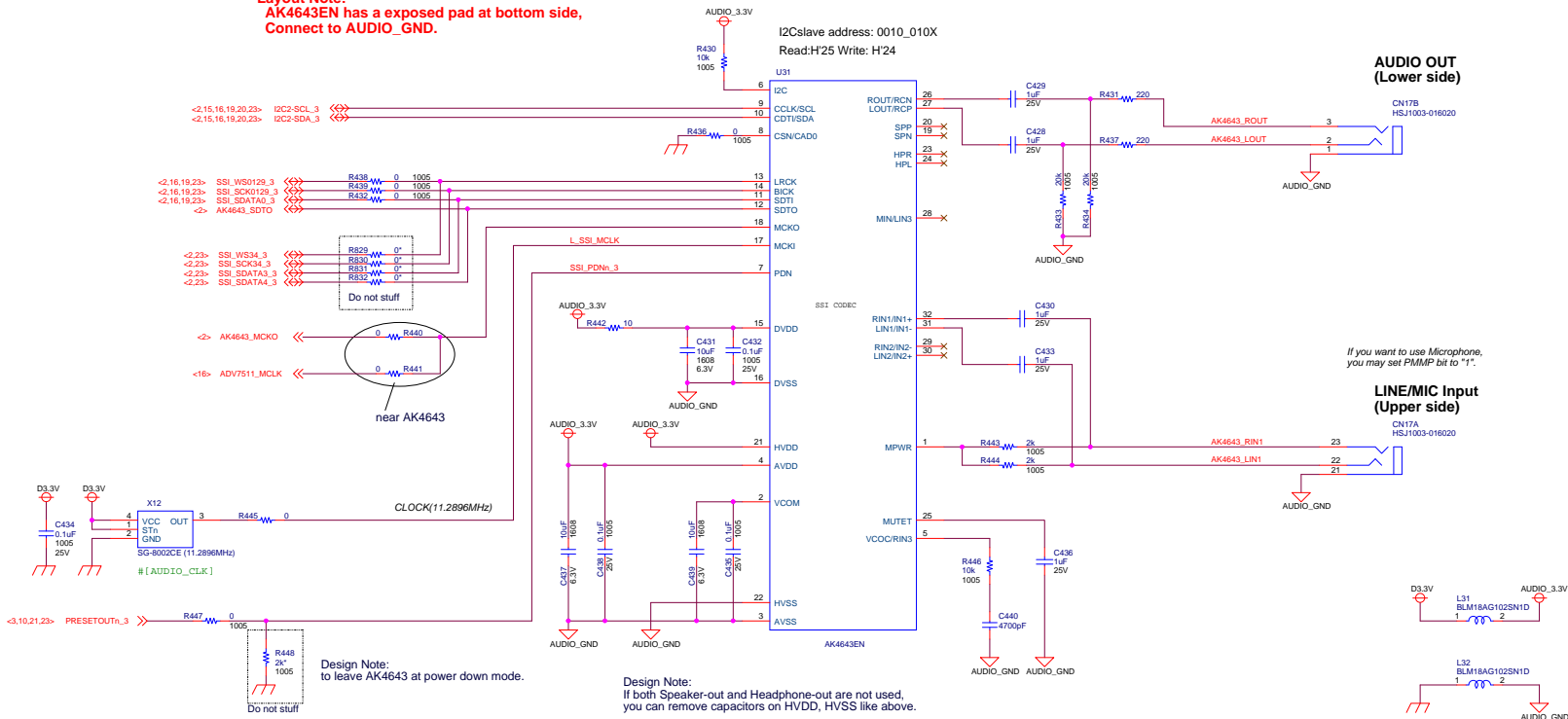


Layout Note:
Following signals need Ground guard.

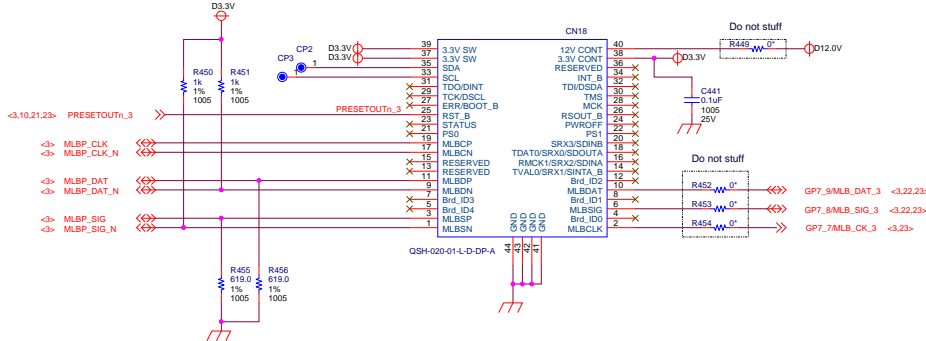
L_SSI_MCLK until X12-pin3
AK4643_MCKO (U1.V31-U31.18)
ADV7511_MCLK (U23.4-U31.18)
SSI_SCK0129_3
AK4643_ROUT until U31-pin26
AK4643_LOUT until U31-pin27
AK4643_RIN1 until U31-pin32.pin1
AK4643_LIN1 until U31-pin31.pin1

AUDIO (SSI0/1 or SSI3/4) I/F

Layout Note:
AK4643EN has a exposed pad at bottom side,
Connect to AUDIO_GND.



INIC CN(bottom)

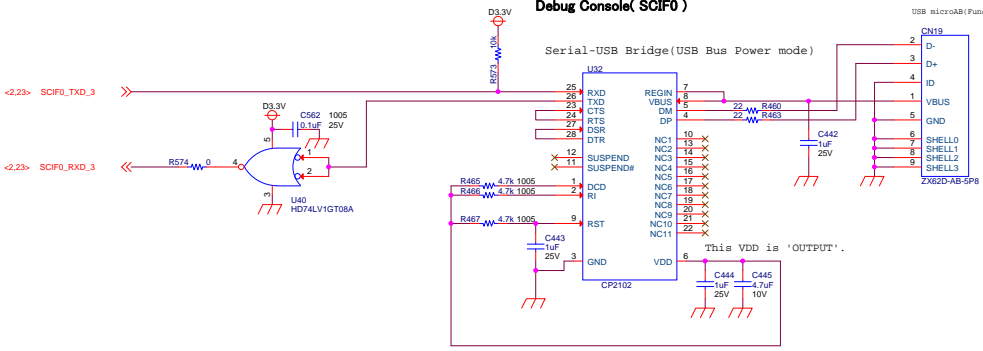


R-CarM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarM2N System Evaluation Board (GOSE)	1.01	
Date	Tuesday, February 17, 2015	Sheet	21 of 26

DEBUG SERIAL I/F(SCIF0/1)

Debug Console(SCIF0)

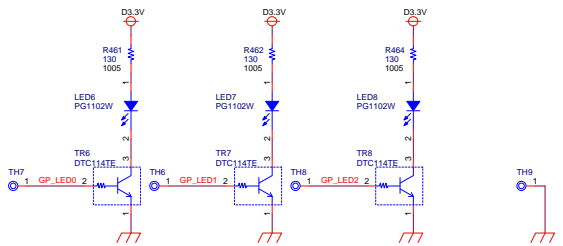
#[Console SCIF0]
USB microAB(Func)



DEBUG SERIAL0

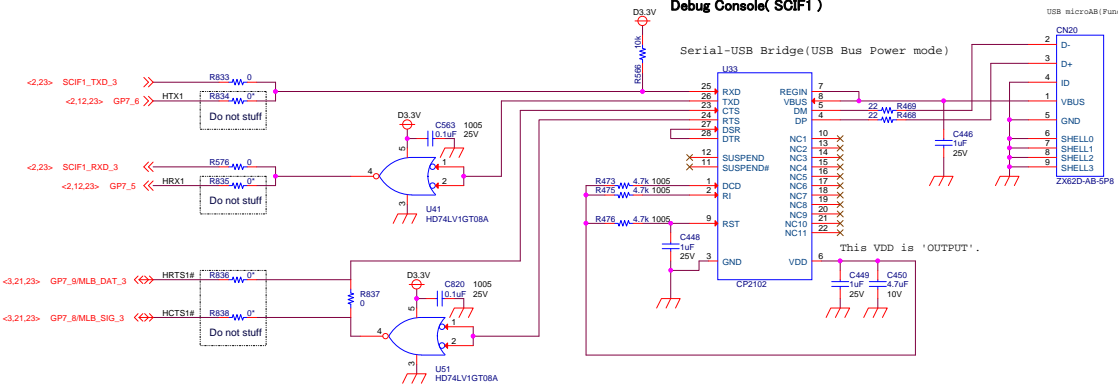
General Purpose LEDs and Switch.
Following LEDs are connected to GPIO of R-CarM2N

GP_LED0 R457 0 GP2_10 <2.23>
GP_LED1 R458 0 GP2_20 <2.23>
GP_LED2 R459 0 GP2_21 <2.23>



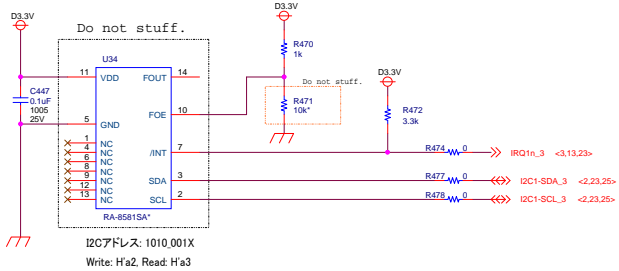
Debug Console(SCIF1)

#[Console SCIF1]
USB microAB(Func)



DEBUG SERIAL1

RTC



DEBUG_SCIF/RTC/LED

R-CarM2N System Evaluation Board (GOSE)		
Size	Document Number	Rev
A2	R-CarM2N System Evaluation Board (GOSE)	1.01
Date:	Tuesday, February 17, 2015	Sheet 22 of 26

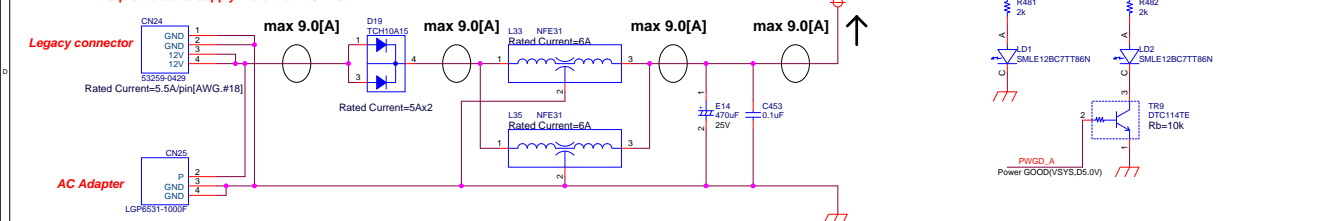
CONFIDENTIAL

Title			
R-CarlM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarlM2N System Evaluation Board (GOSE)	1.01	
Date:	Tuesday, February 17, 2015	Sheet	23 of 26

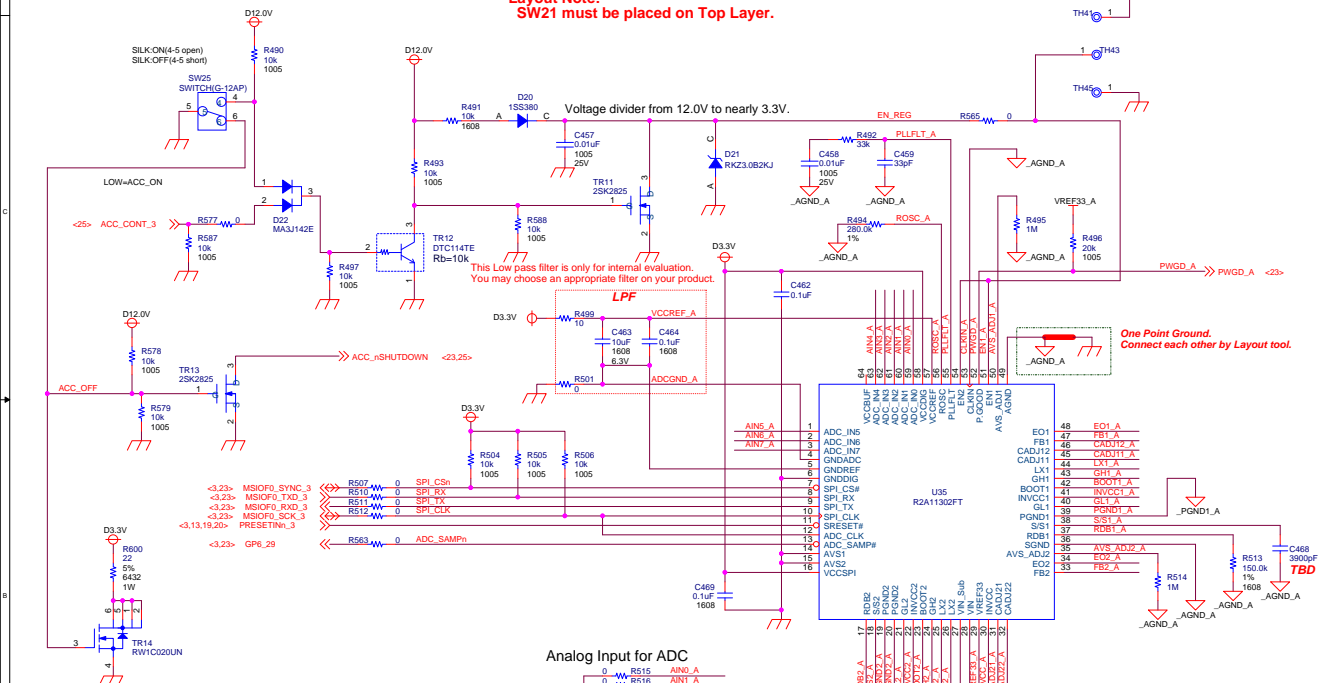
Preliminary

It is impossible to supply DC5.0V and DC3.3V through CN1.

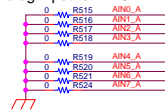
It is prohibited to supply more than DC12.0V .



Layout Note:
SW21 must be placed on Top Layer.

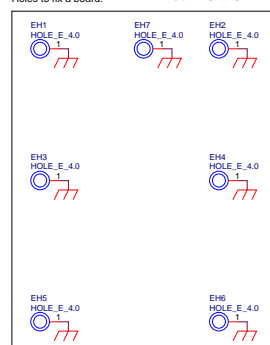


Analog Input for ADC

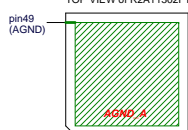


Layout Note:
R2A11302FT has a exposed pad at bottom side.
You DO NOT HAVE TO CONNECT to any GND.

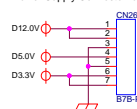
Holes to fix a board.



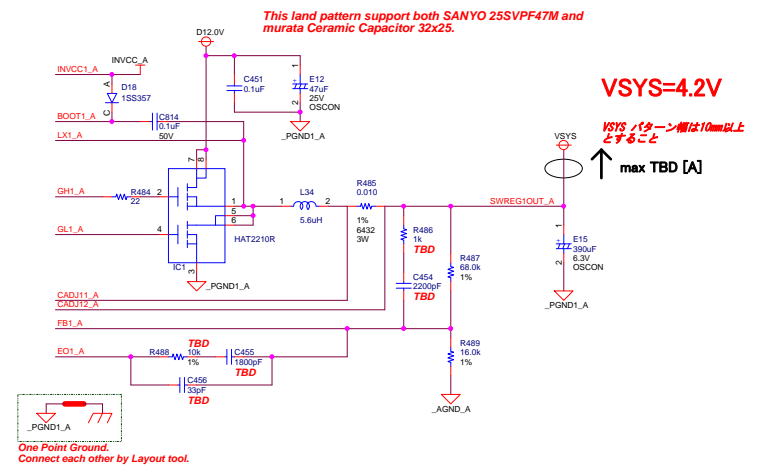
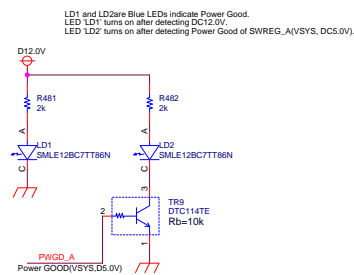
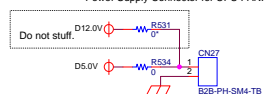
TOP VIEW of R2A11302FT



Power Supply Connector for I/O board.



Power Supply Connector for CPU FAN.

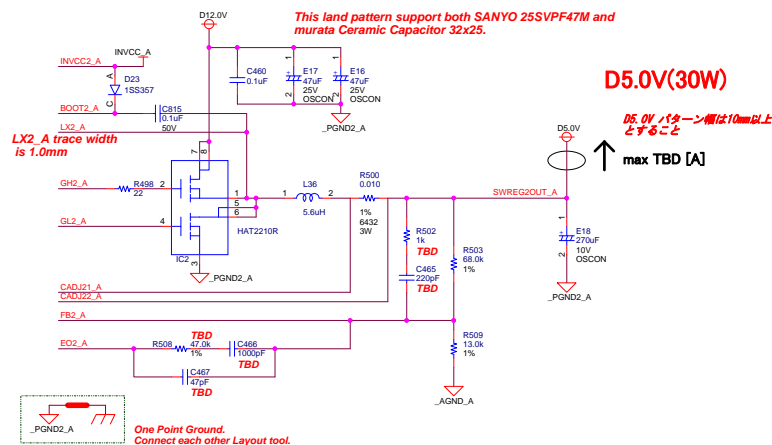


VSYS=4.2V

↑ max TBD [A]

D5.0V(30W)

↑ max TBD [A]



One Point Ground.
Connect each other Layout tool

Title			
R-CarM2N System Evaluation Board (GOSE)			
Size	Document Number	Rev	
A2	R-CarM2N System Evaluation Board (GOSE)	1.0	
Date:	Tuesday, February 17, 2015	Sheet	24 of 26

