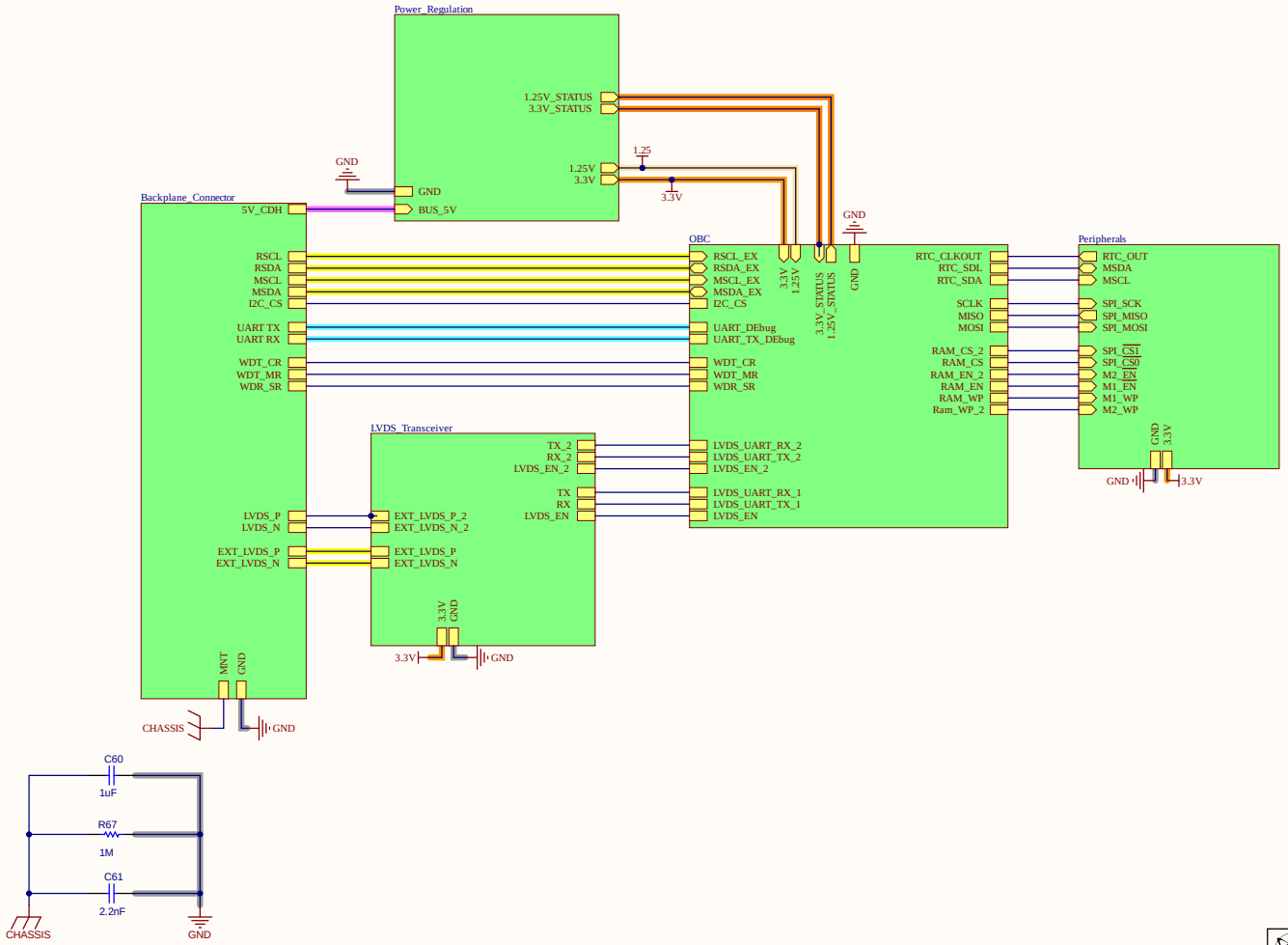

SPACE CONCORDIA

TITLE
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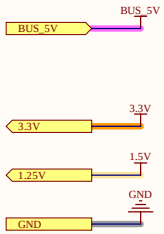
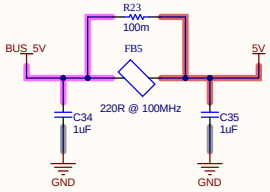
CIRCUIT
CDH BOARD

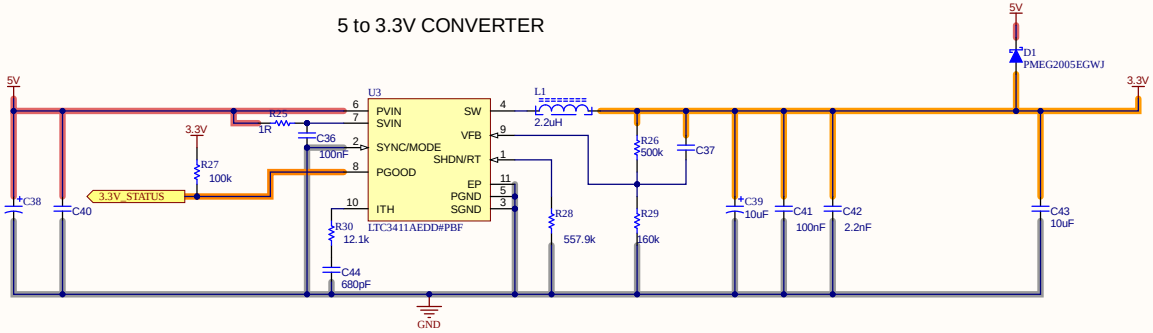
SIZE B | REV A | SHEET 2 /8



EMI FILTER



5 to 3.3V CONVERTER



If ESR <40 mOhm for bulk cap, ripple is below 20 mVrms

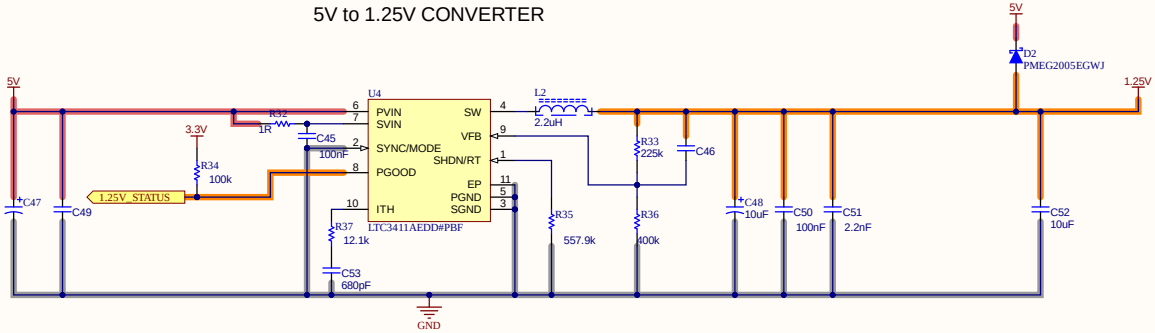
fo = 1 MHz with Rt = 557.9k

Vout = 0.8V (1 + Rtop/Rbot)

3.3V = 0.8V (1 + Rtop/Rbot)
3.3V = 0.8V (1 + 500k/160k)

1.25V = 0.8V (1 + Rtop/Rbot)
1.25V = 0.8V (1 + 225k/400k)

5V to 1.25V CONVERTER



SPACE CONCORDIA

TITLE
*

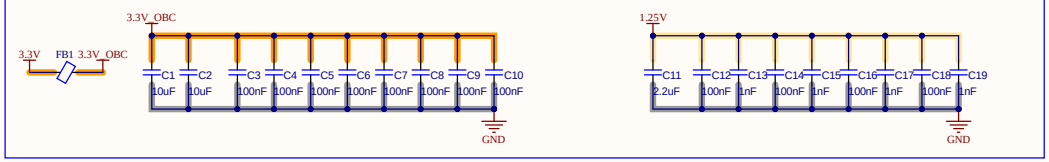
CIRCUIT
CDH BOARD

SIZE B | REV A | SHEET 3 / 8

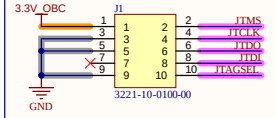
SAMV71 MCU

Things to connect:
- Power and GND
- 2x I2C
- Single SPI line for MRAM

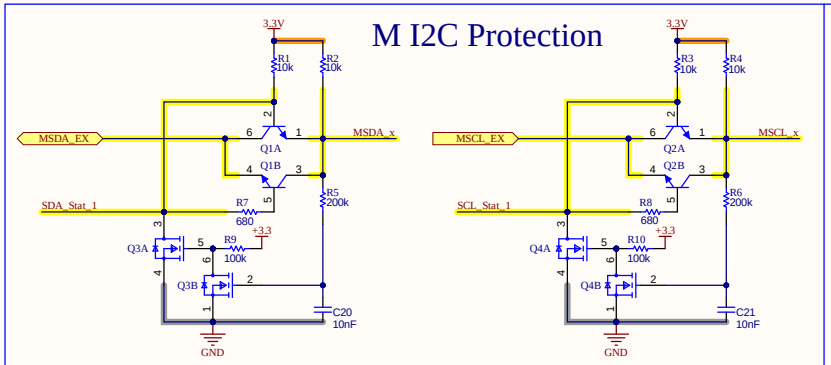
MCU DECOUPLING



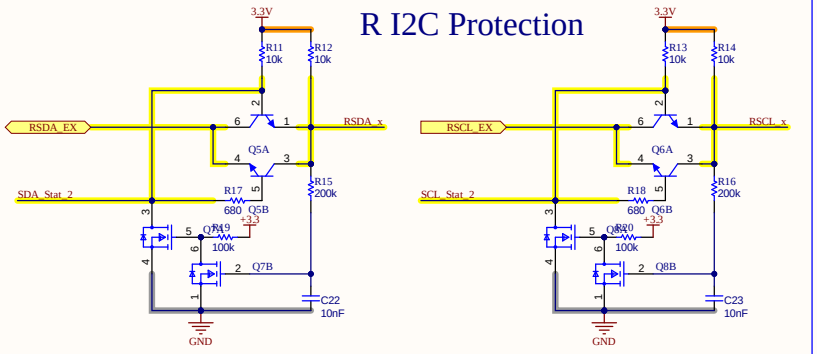
JTAG



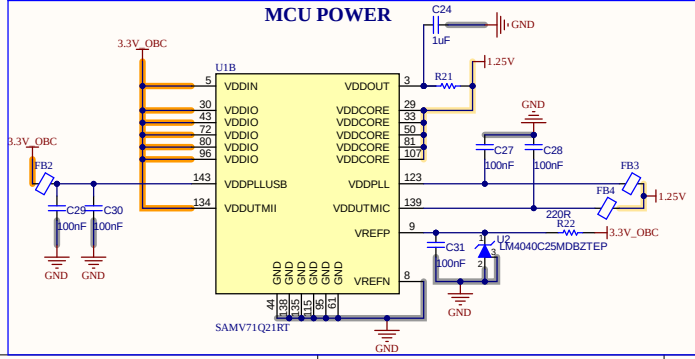
M I2C Protection

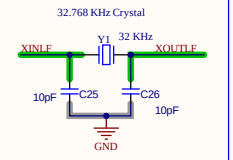


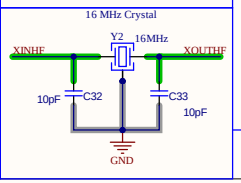
R I2C Protection



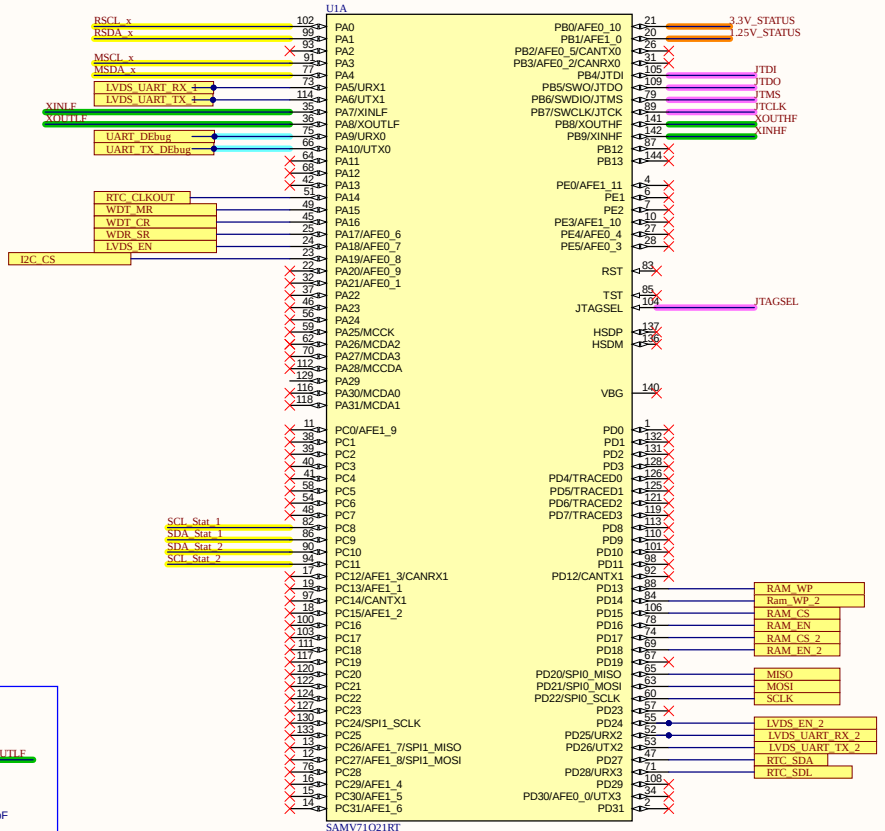
MCU POWER

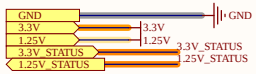






SAMV71





SPACE CONCORDIA

TITLE
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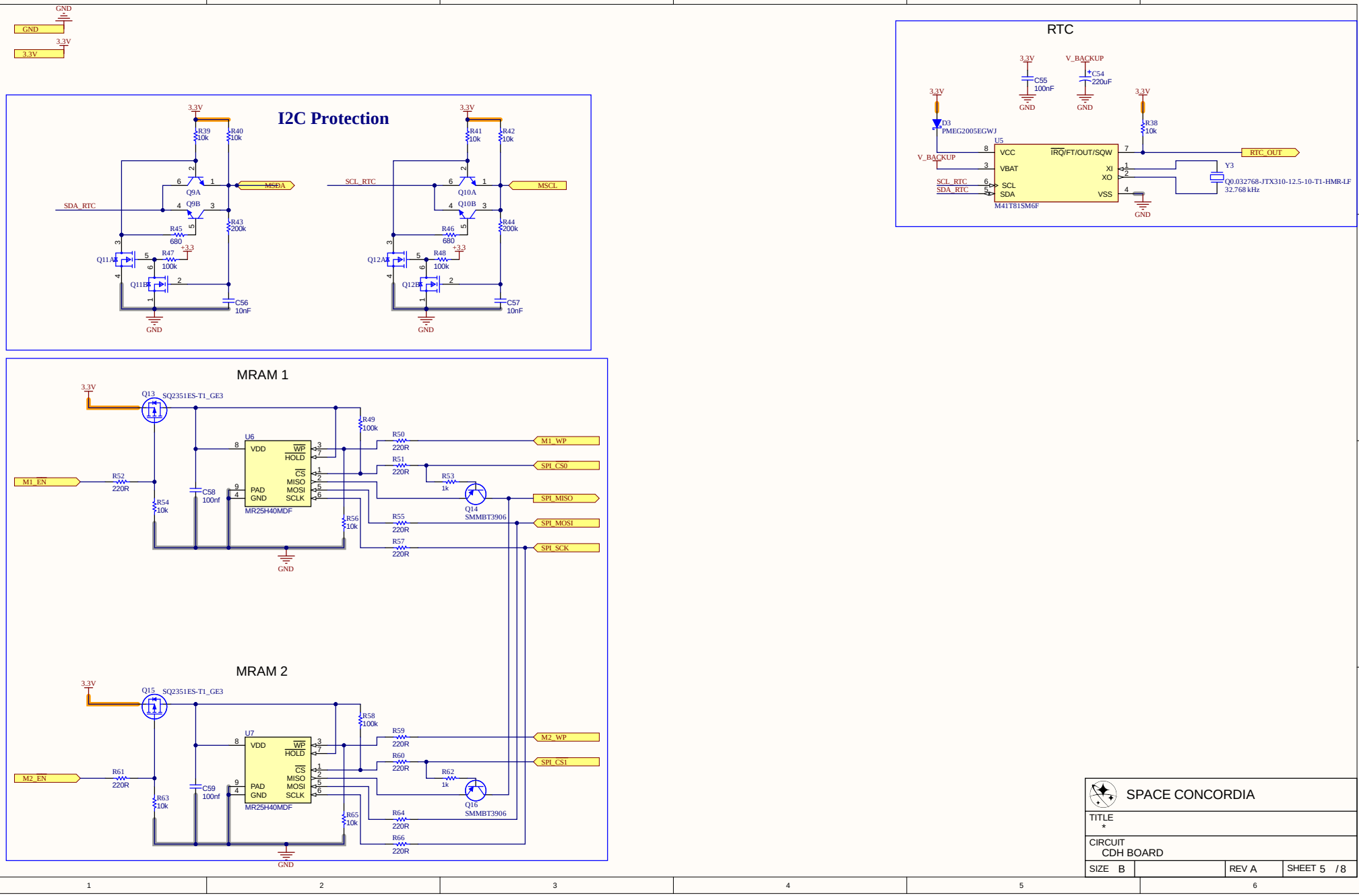
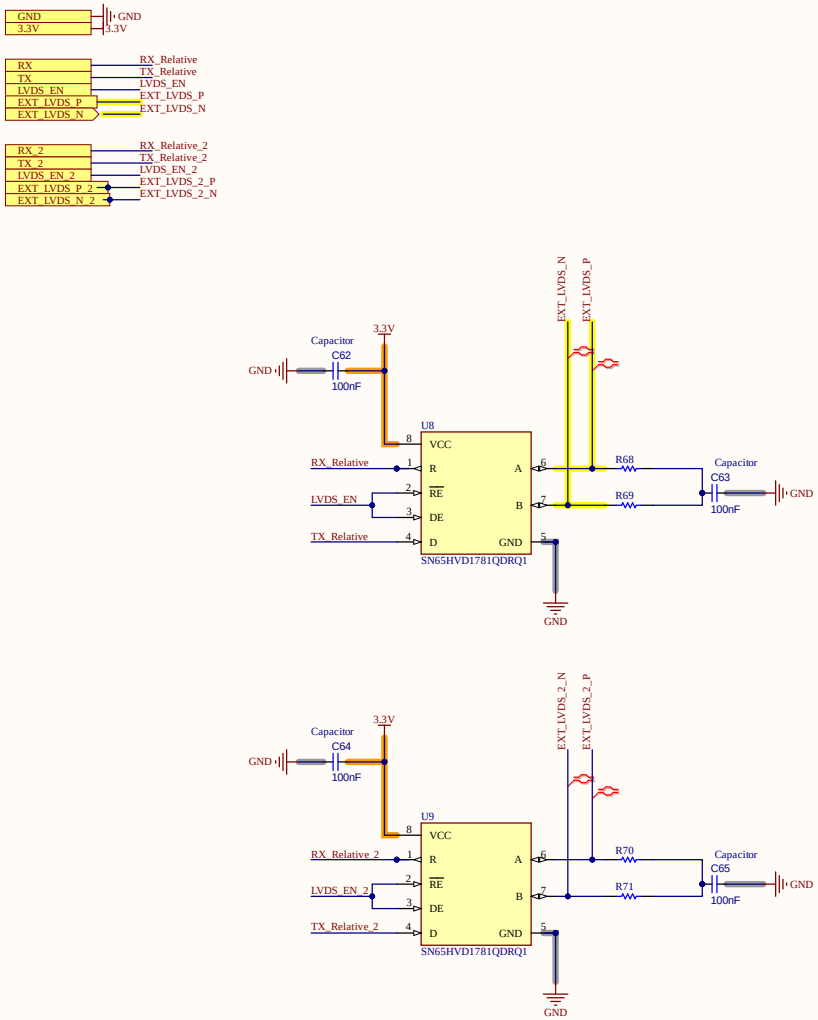
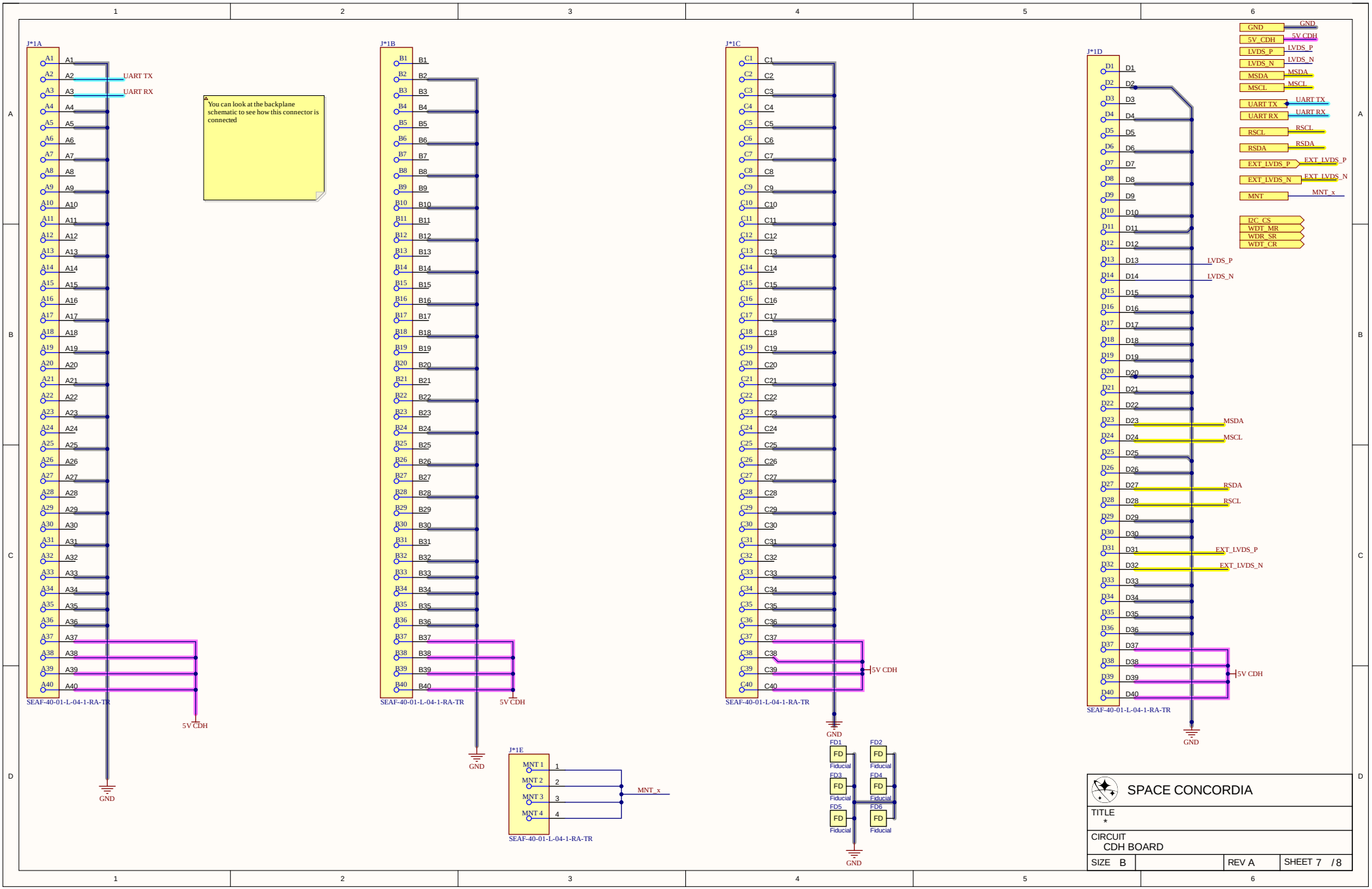
CIRCUIT
CDH BOARD

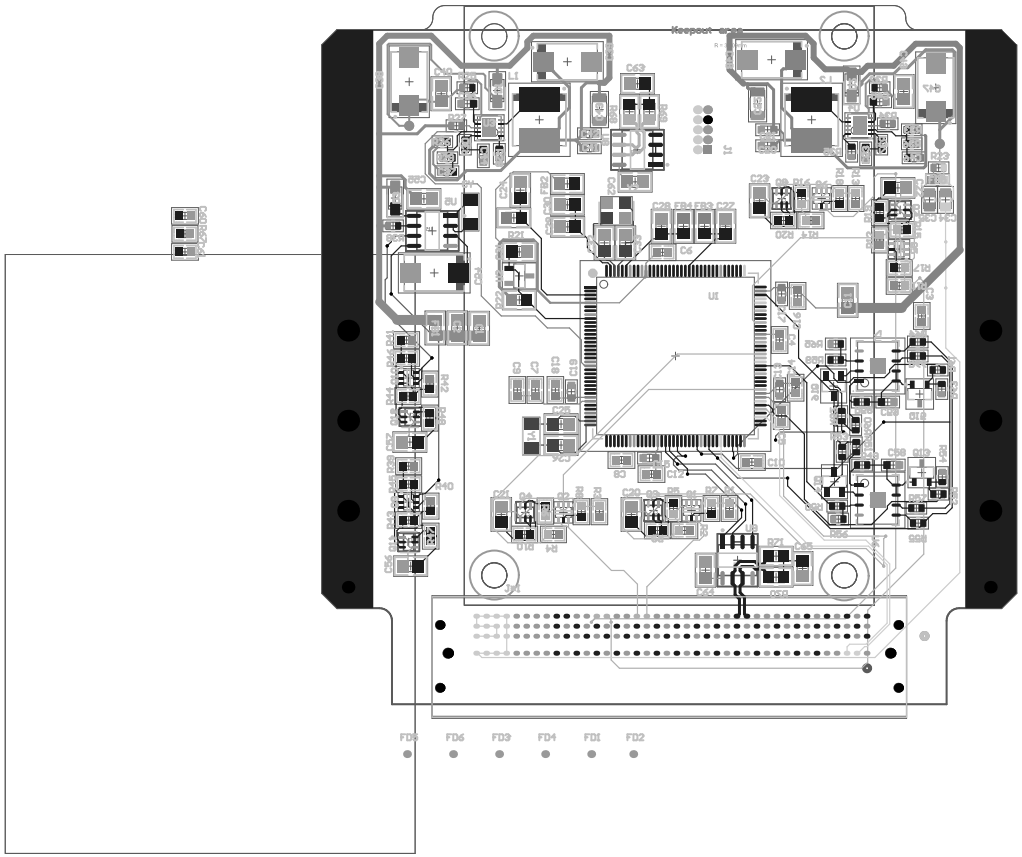
SIZE B | REV A | SHEET 4 /8

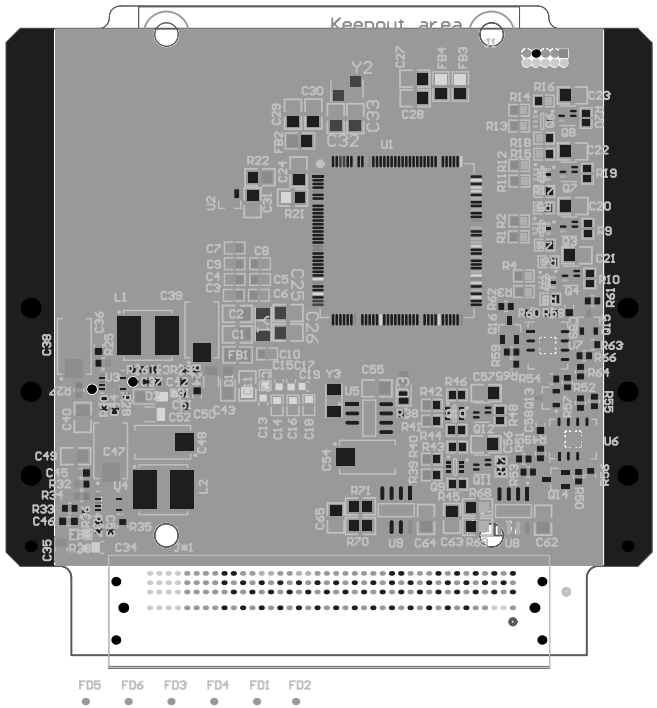

GND
3.3V
I2C Protection
SDA_RTC
SCL_RTC
MSDA
MSCL
Q9A
Q9B
Q10A
Q10B
Q11A
Q11B
Q12A
Q12B
R39 10k
R40 10k
R41 10k
R42 10k
R43 200k
R44 200k
R45 680
R46 680
R47 100k
R48 100k
+3.3
C56 10nF
C57 10nF
RTC
V_BACKUP
C55 100nF
C54 220uF
D3
PMEG2005EGWJ
R38 10k
U5
VCC
VBAT
SCL
SDA
IRQ/FT/OUT/SQW
XI
XO
VSS
M41T81SM6F
RTC_OUT
Y3
Q0.032768-JTX310-12.5-10-T1-HMR-LF
32.768 kHz
MRAM 1
Q13
SQ2351ES-T1_GE3
U6
VDD
WP
HOLD
CS
MISO
MOSI
SCLK
PAD
GND
MR25H40MDF
M1_EN
M1_WP
SPI_CS0
SPI_MISO
SPI_MOSI
SPI_SCK
R49 100k
R50 220R
R51 220R
R52 220R
R53 1k
R54 10k
R55 220R
R56 10k
R57 220R
C58 100nf
Q14
SMMBT3906
MRAM 2
Q15
SQ2351ES-T1_GE3
U7
M2_EN
M2_WP
SPI_CS1
R58 100k
R59 220R
R60 220R
R61 220R
R62 1k
R63 10k
R64 220R
R65 10k
R66 220R
C59 100nf
Q16
SMMBT3906
SPACE CONCORDIA
TITLE
*
CIRCUIT
CDH BOARD
SIZE B
REV A
SHEET 5 /8

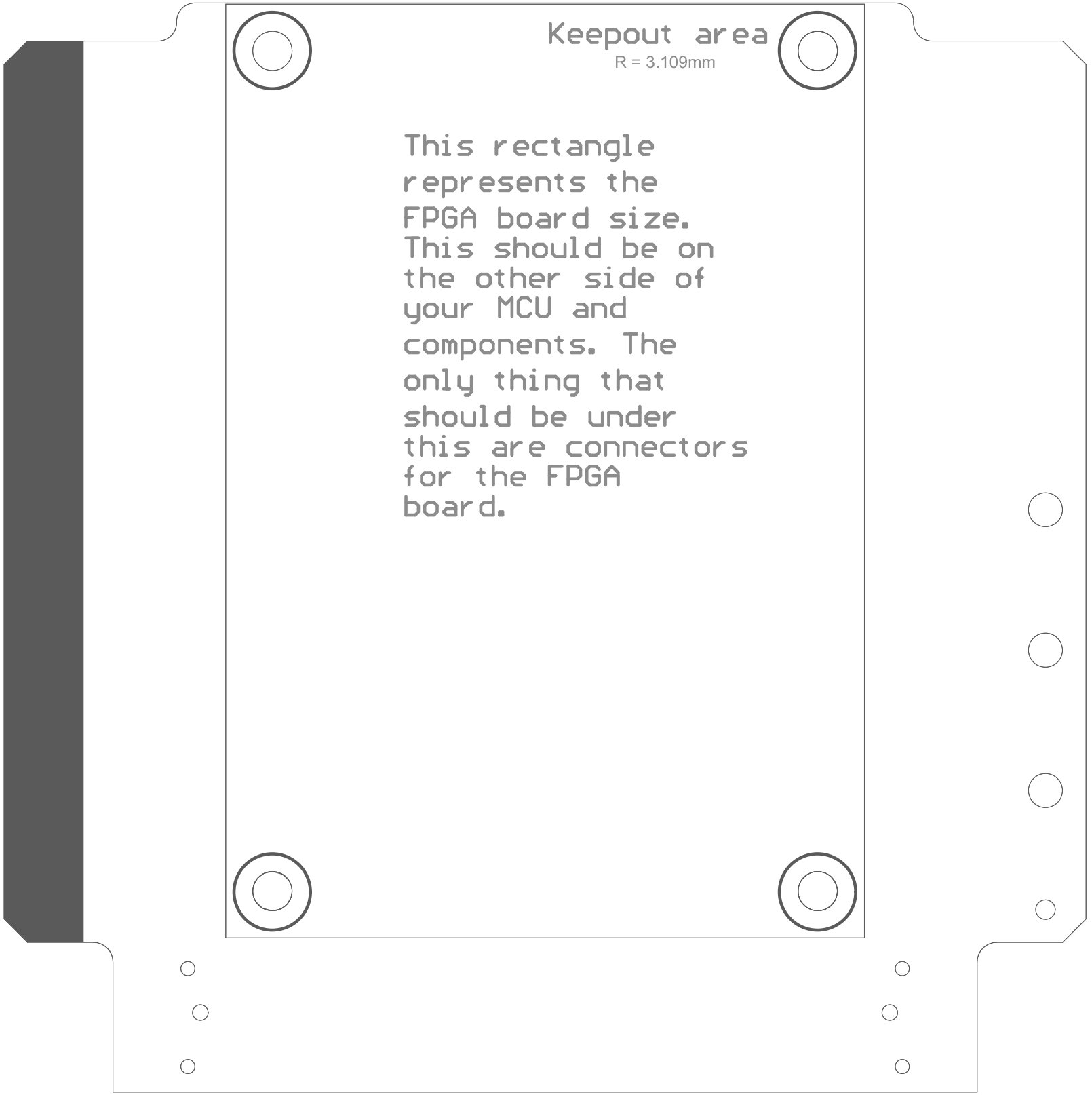


SPACE CONCORDIA			
TITLE *			
CIRCUIT CDH BOARD			
SIZE B		REV A	SHEET 6 / 8


J*1A
SEAF-40-01-L-04-1-RA-TR
UART TX
UART RX
5V CDH
GND
You can look at the backplane schematic to see how this connector is connected
J*1B
SEAF-40-01-L-04-1-RA-TR
5V CDH
GND
J*1C
SEAF-40-01-L-04-1-RA-TR
5V CDH
GND
J*1D
SEAF-40-01-L-04-1-RA-TR
GND
5V CDH
LVDS_P
LVDS_N
MSDA
MSCL
RSDA
RSCL
EXT_LVDS_P
EXT_LVDS_N
J*1E
SEAF-40-01-L-04-1-RA-TR
MNT_x
MNT 1
MNT 2
MNT 3
MNT 4
FD1
FD2
FD3
FD4
FD5
FD6
Fiducial
GND
5V CDH
LVDS_P
LVDS_N
MSDA
MSCL
UART TX
UART RX
RSCL
RSDA
EXT_LVDS_P
EXT_LVDS_N
MNT_x
I2C_CS
WDT_MR
WDR_SR
WDT_CR
SPACE CONCORDIA
TITLE
*
CIRCUIT
CDH BOARD
SIZE B
REV A
SHEET 7 /8


Keepout
U1
J1
J2
FD5
FD6
FD3
FD4
FD1
FD2


Keepout area
Y2
U1
U2
L1
L2
Y3
U3
U4
U5
U6
U8
U9
FD5
FD6
FD3
FD4
FD1
FD2


Keepout area
R = 3.109mm
This rectangle represents the FPGA board size. This should be on the other side of your MCU and components. The only thing that should be under this are connectors for the FPGA board.