


Project Title: <b><i>FEES_CUBESAT_MAIN_BOARD_RevC</i></b>			<b><u>LASER NAVIGATION SRL</u></b>  Via Giacomo Matteotti, 34 24054, Calcio (BG) Italy Ph/Fax: 0363968520 / 969244 Web: <a href="http://www.radionav.it">www.radionav.it</a> E-Mail: <a href="mailto:info@radionav.it">info@radionav.it</a> © All rights reserved	
Sheet Title: <b>Power Supply</b>				
Doc Rev: 1.0.1	Date:24/04/2018	Sheet: 2 of: 10		
Prj File: <i>FEES_CUBESAT_MAIN_BOARD_RevD.PrjPcb</i>				

A

OBJ5  
RF\_SHIELD\_LASER\_55x30x3

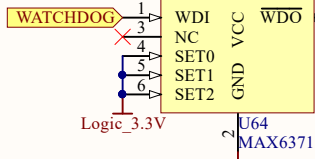
C132  
100nF-50V-10%-X7R

VBACKUP

100nF-50V-10%-X7R

Logic\_3.3V  
C5  
2.2uF-6V3-10%-X5R

C134  
100nF-50V-10%-X7R Logic\_3.3V



Logic\_3.3V

tDELAY = 60Sec - tWD = 60Sec

SELEZIONE TEMPI DA INSERIRE. Se maggiore 10 secondi da cambiare con 60/70

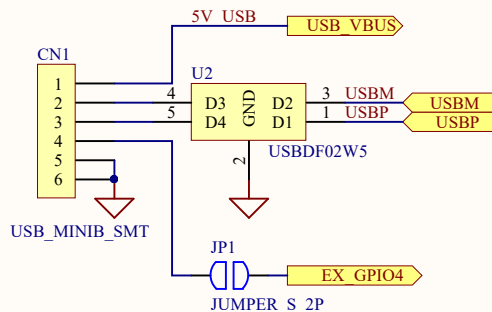
CONSOLE\_JTAG

1 Logic\_3.3V  
2 CONS SER TX  
3 CONS SER RX  
4 JTAG TCK  
5 JTAG TMS  
6

PICO-6P-1.25V

C

D



USB\_MINIB\_SMT

JUPMER\_S\_2P

A

B

C

D

IC1

VDDA

VREF+

VREF-

VSSA

VBAT

VDD\_1

VDD\_2

VDD\_3

VDD\_4

VDD\_5

VSS\_3

VSS\_1

VSS\_2

VSS\_4

VSS\_5

NRST

BOOT0

PE0

PE1

PE2

PE3

PE4

PE5

PE6

PE7

PE8

PE9

PE10

PE11

PE12

PE13

PE14

PE15

PD0

PD1

PD2

PD3

PD4

PD5

PD6

PD7

PD8

PD9

PD10

PD11

PD12

PD13

PD14

PD15

PD0(CAN1\_RX)

PD1(CAN1\_TX)

PD2(UART5\_RX/SDIO\_CMD)

PD3

PD4

PD5(USART2\_TX)

PD6(USART2\_RX)

PD7

PD8(USART3\_TX)

PD9(USART3\_RX)

PD10

PD11

PD12(TIM4\_CH1)

PD13(TIM4\_CH2)

PD14(TIM4\_CH3)

PD15(TIM4\_CH4)

STM32L476VGT6

PA0 (ADC12\_IN0/TIM2\_CH1\_ETR/UART4\_TX)  
PA1 (ADC12\_IN1/TIM2\_CH2/UART4\_RX)  
PA2 (ADC12\_IN2/USART2\_TX/TIM2\_CH3)  
PA3 (ADC12\_IN3/USART2\_RX/TIM2\_CH4)  
PA4 (ADC12\_IN4)  
PA5 (ADC12\_IN5/SPI1\_SCK)  
PA6 (ADC12\_IN6/SPI1\_MISO/TIM3\_CH1)  
PA7 (ADC12\_IN7/SPI1\_MOSI/TIM3\_CH2)  
PA8 (TIM1\_CH1/MCO)  
PA9 (USART1\_TX/TIM1\_CH2)  
PA10 (USART1\_RX/TIM1\_CH3)  
PA11 (USBDM/TIM1\_CH4)  
PA12 (USBDP/TIM1\_ETR)  
PA13 (JTMS\_SWDAT)  
PA14 (JTCK\_SWCLK)  
PA15 (TIM2\_CH1\_ETR/JTDI)

PA0 PWM X COIL  
PA1 PWM Y COIL  
PA2 PWM Z COIL  
PA3 EX GPIO3  
PA4 CS RADFET  
PA5 SPI1\_SCK  
PA6 SPI1\_MISO  
PA7 SPI1\_MOSI  
PA8 PGOOD  
PA9 USB VBUS  
PA10 EX GPIO4  
PA11 USBM  
PA12 USBP  
PA13 JTAG TMS  
PA14 JTAG TCK  
PA15

PB0 (ADC12\_IN8/TIM3\_CH3)  
PB1 (ADC12\_IN9/TIM3\_CH4)  
PB2 (BOOT1)  
PB3 (JTDO/TIM2\_CH2)  
PB4 (JTRST/TIM3\_CH1)  
PB5 (TIM3\_CH2)  
PB6 (I2C1\_SCL/TIM4\_CH1/UART1\_TX)  
PB7 (I2C1\_SDA/TIM4\_CH2/UART1\_RX)  
PB8 (I2C1\_SCL/CAN1\_RX/TIM4\_CH3)  
PB9 (I2C1\_SDA/CAN1\_TX/TIM4\_CH4)  
PB10 (I2C2\_SCL/TIM2\_CH3)  
PB11 (I2C2\_SDA/TIM2\_CH4)  
PB12 (TIM1\_BKIN)  
PB13 (SPI2\_SCK/TIM1\_CH1N)  
PB14 (SPI2\_MISO/TIM1\_CH2N)  
PB15 (SPI2\_MOSI/TIM1\_CH3N)

PB0 RSBY KEEP EN  
PB1 EX GPIO1  
PB2  
PB3  
PB4  
PB5 WATCHDOG  
PB6 GPS SER TX  
PB7 GPS SER RX  
PB8 SCL2  
PB9 SDA2  
PB10 SCL  
PB11 SDA  
PB12 EX GPIO2  
PB13 SPI2\_SCK  
PB14 SPI2\_MISO  
PB15 SPI2\_MOSI

PC0 (ADC12\_IN10)  
PC1 (ADC12\_IN11)  
PC2 (ADC12\_IN12)  
PC3 (ADC12\_IN13)  
PC4 (ADC12\_IN14)  
PC5 (ADC12\_IN15)  
PC6 (TIM8\_CH1/UART6\_TX)  
PC7 (TIM8\_CH2/UART6\_RX)  
PC8 (TIM8\_CH3/SDIO\_D0)  
PC9 (TIM8\_CH4/SDIO\_D1)  
PC10 (UART4\_TX/SDIO\_D2)  
PC11 (UART4\_RX/SDIO\_D3)  
PC12 (UART5\_TX/SDIO\_CK)  
PC13-TAMP-RTC  
PC14-OSC32\_IN  
PC15-OSC32\_OUT

PC0 PSD1\_SEL1  
PC1 PSD1\_SEL0  
PC2 PSD2\_SEL1  
PC3 PSD2\_SEL0  
PC4 PSD1\_AMP\_CS  
PC5 PSD2\_AMP\_CS  
PC6 SDR SER TX  
PC7 SDR SER RX  
PC8 PWM HEATER  
PC9 EX SPI EN  
PC10 SPI3\_SCK  
PC11 SPI3\_MISO  
PC12 SPI3\_MOSI  
PC13 UHF RESET  
PC14 RADFET\_OWB  
PC15 RAD RESET

VDDUSB  
OSC\_IN  
OSC\_OUT

ARM 7

PIN	L4	F4
19	GND	VCC
49	GND	2.2uF 6V3
73	VCC	2.2uF 6V3

Da implementare con jumper solder la possibilità di poter montare uP F4 o L4

Project Title:

FEES\_CUBESAT\_MAIN\_BOARD\_RevC

Sheet Title:

Microcontroller

Doc Rev: 1.0.1

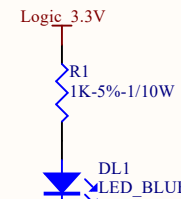
Date: 24/04/2018

Sheet: 3 of: 10

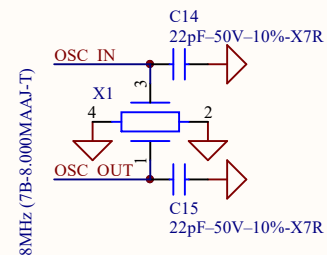
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TMTC MCU WD



1

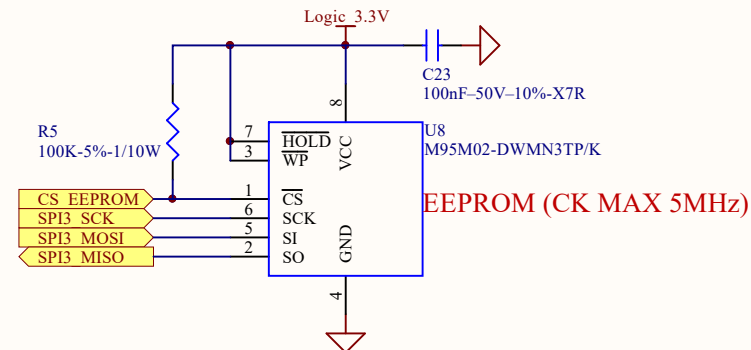
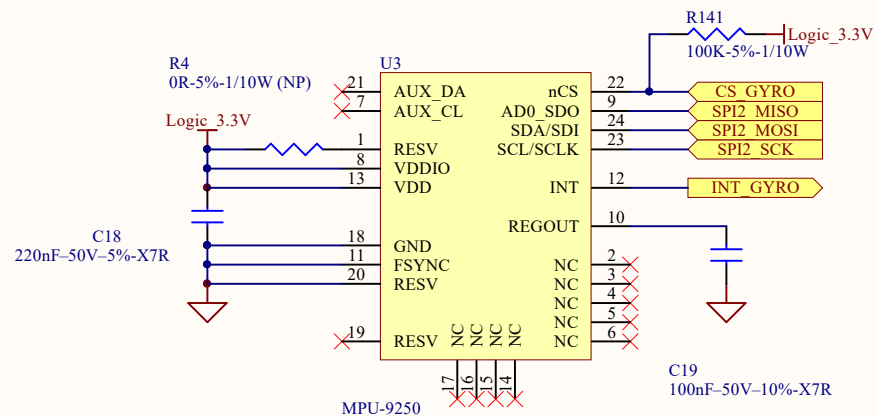
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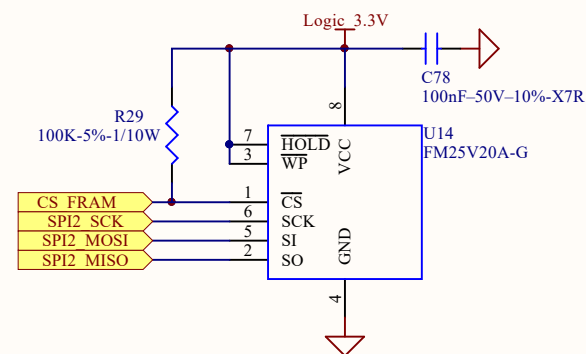
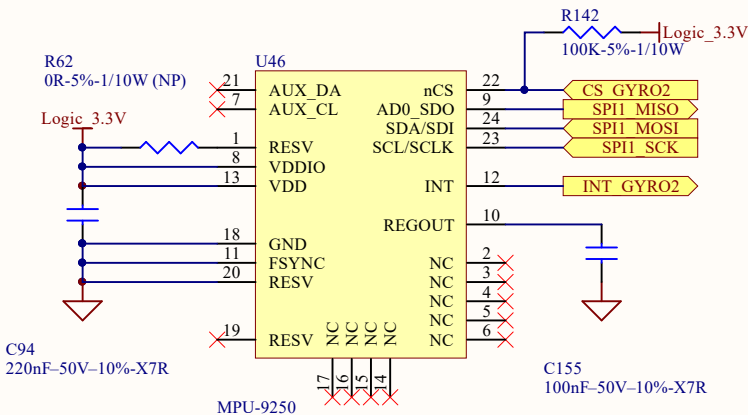
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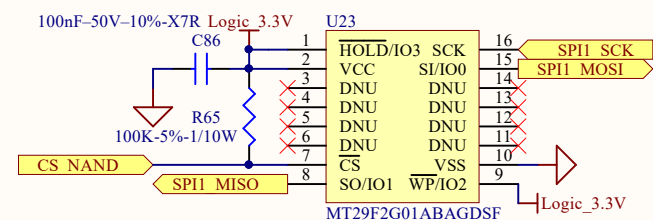
B

B



C

C

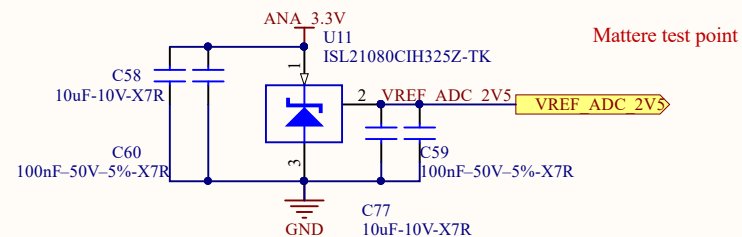
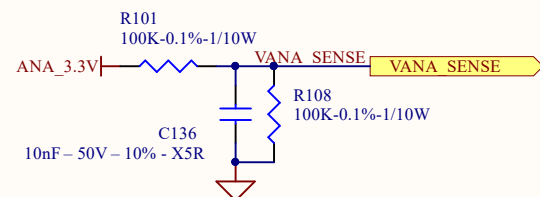
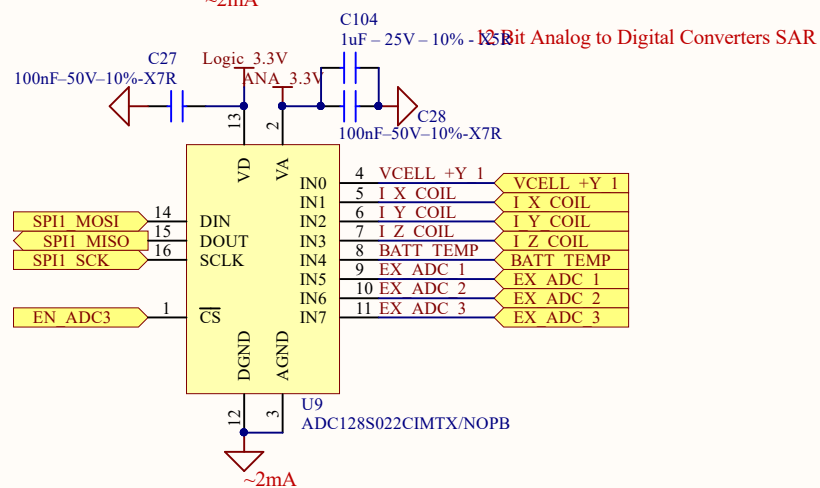
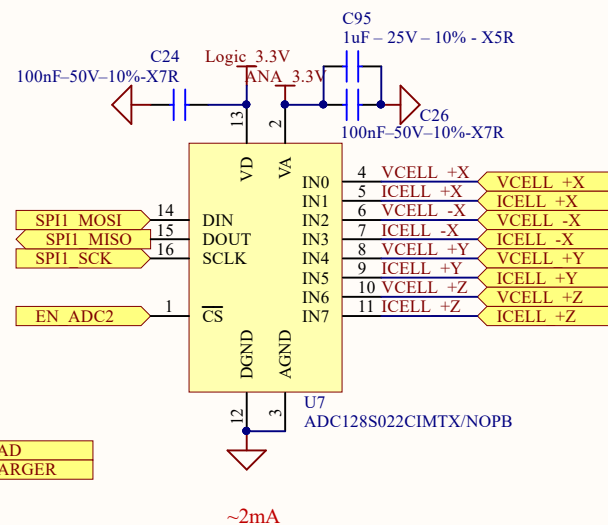
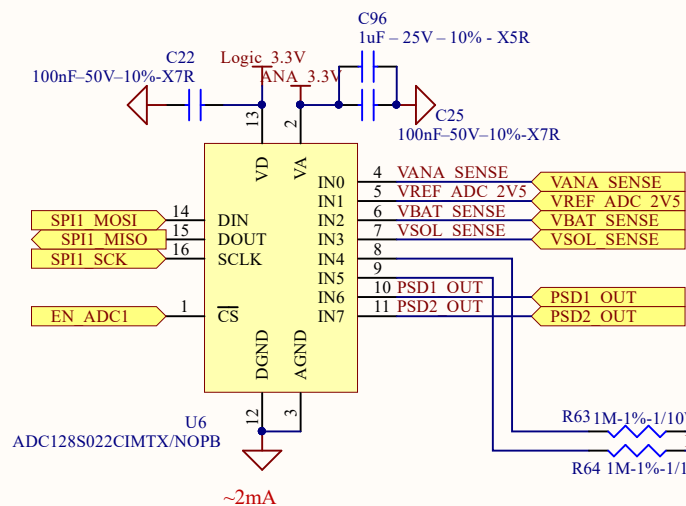


D

D

Project Title: <b>FEES_CUBESAT_MAIN_BOARD_RevC</b>			<b>LASER NAVIGATION SRL</b>	
Sheet Title: <b>Memories &amp; Sensors</b>			Via Giacomo Matteotti, 34 24054, Calcio (BG) Italy Ph/Fax: 0363968520 / 969244 Web: www.radionav.it E-Mail: info@radionav.it	
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Project Title: <b>FEES_CUBESAT_MAIN_BOARD_RevC</b>		
Sheet Title: <b>ADC</b>		
Doc Rev: 1.0.1	Date: 24/04/2018	Sheet: 5 of: 10
Prj File: FEES_CUBESAT_MAIN_BOARD_RevD.PrjPcb		

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1

2

3

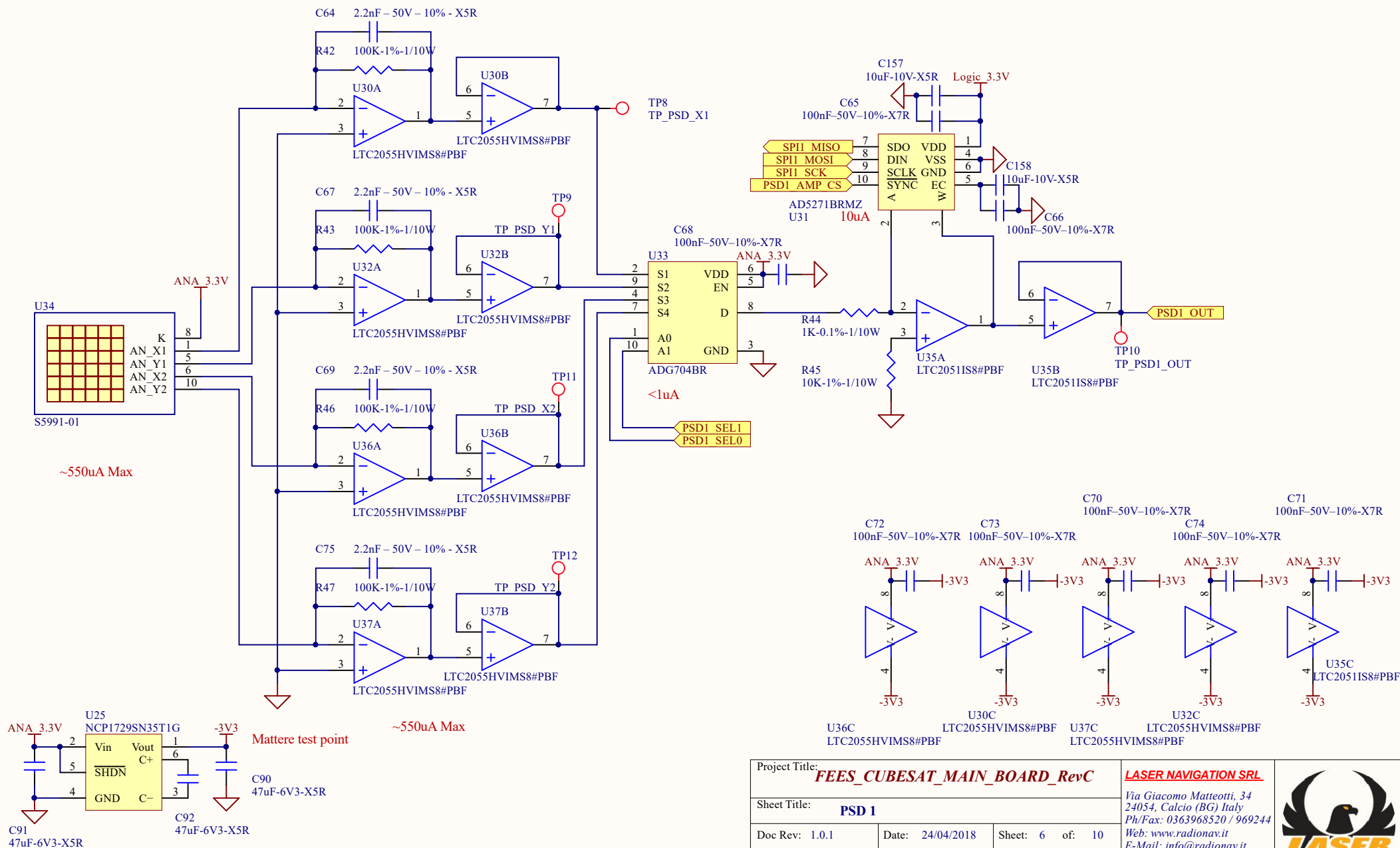
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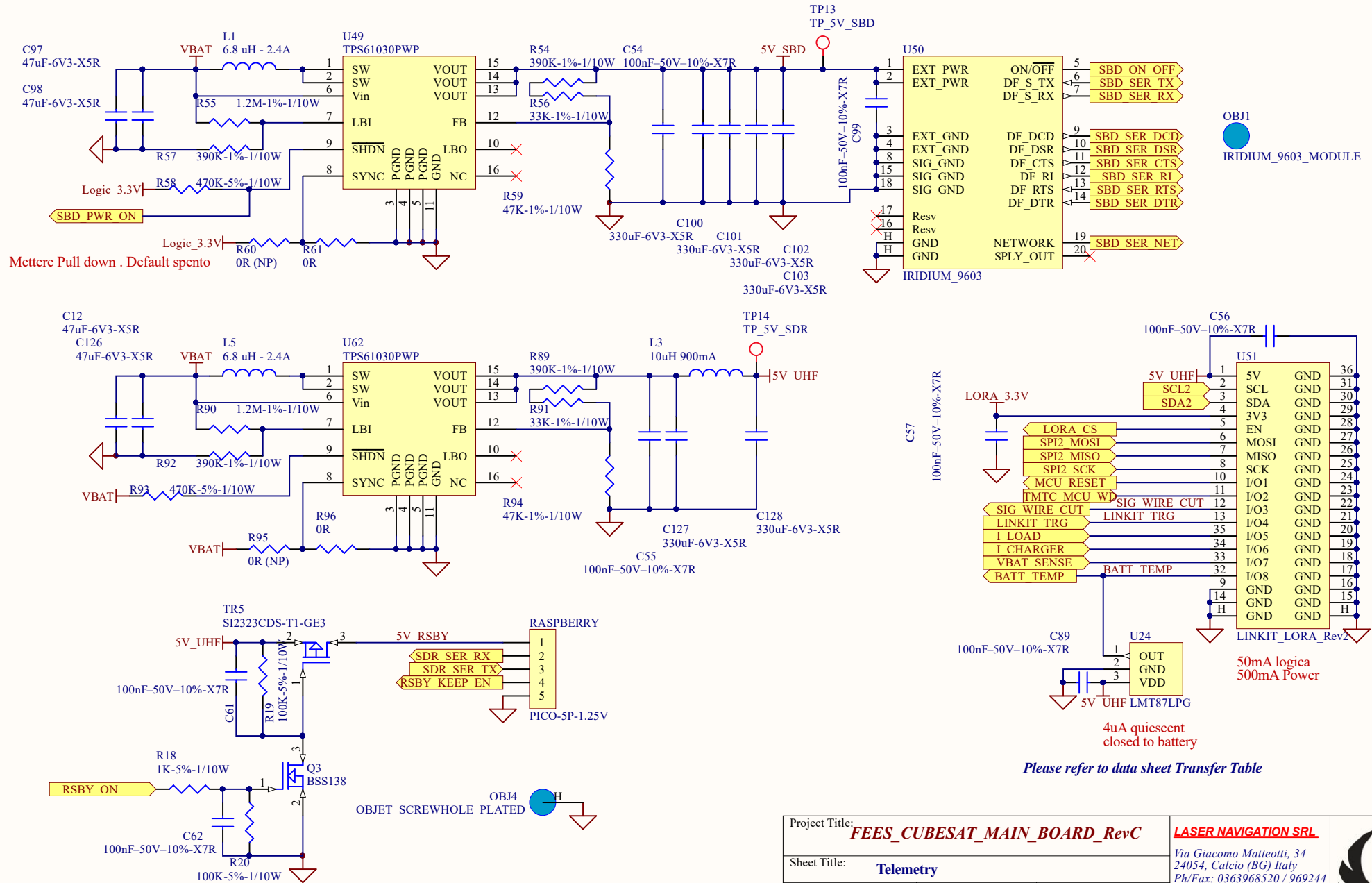
B


C

D



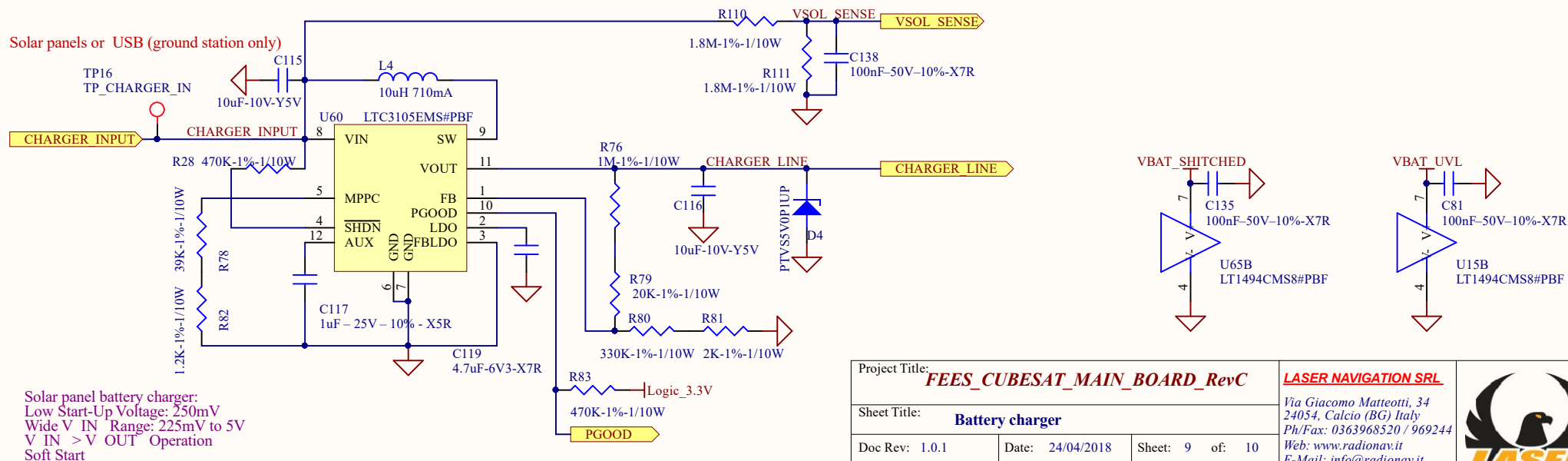
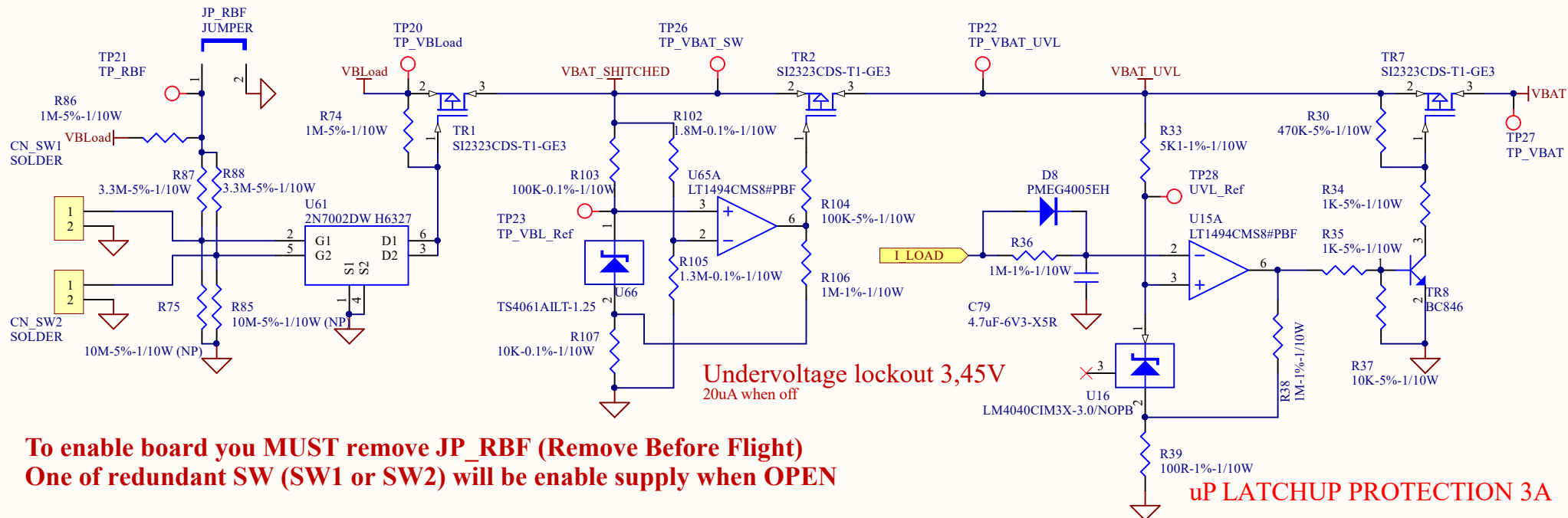
Project Title: <b>FEES_CUBESAT_MAIN_BOARD_RevC</b>			<b>LASER NAVIGATION SRL</b>	
Sheet Title: <b>PSD 1</b>			Via Giacomo Matteotti, 34 24054, Calcio (BG) Italy Ph/Fax: 0363968520 / 969244 Web: www.radionav.it E-Mail: info@radionav.it	
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Sheet Title: <b>Telemetry</b>			Via Giacomo Matteotti, 34 24054, Calcio (BG) Italy Ph/Fax: 0363968520 / 969244 Web: www.radionav.it E-Mail: info@radionav.it	
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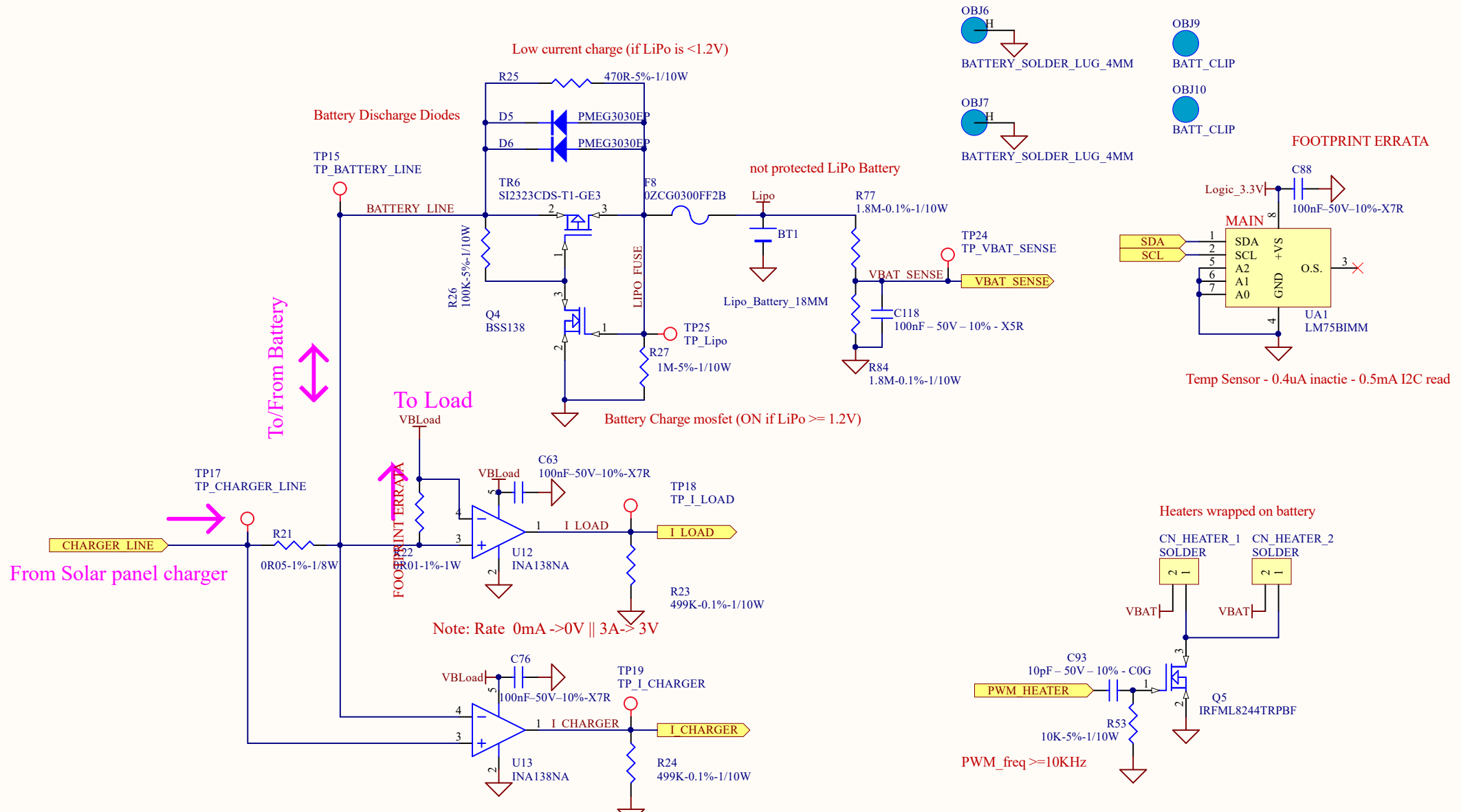





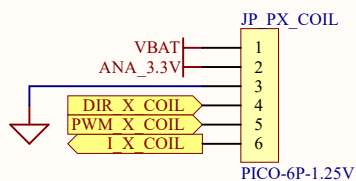
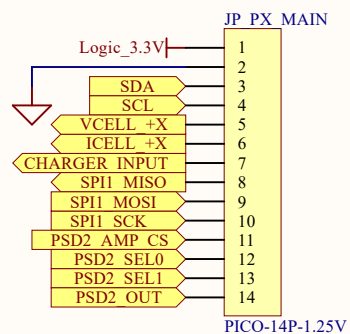


Project Title: <b><i>FEES_CUBESAT_MAIN_BOARD_RevC</i></b>			<b><u>LASER NAVIGATION SRL</u></b>		
Sheet Title: <b>Battery charger</b>			Via Giacomo Matteotti, 34 24054, Calcio (BG) Italy Ph/Fax: 0363968520 / 969244		
Doc Rev: 1.0.1	Date: 24/04/2018	Sheet: 9 of: 10	Web: <a href="http://www.radionav.it">www.radionav.it</a> E-Mail: <a href="mailto:info@radionav.it">info@radionav.it</a>		
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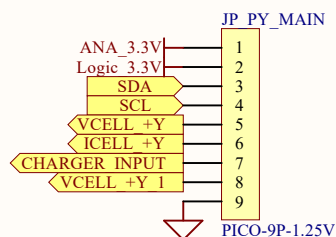




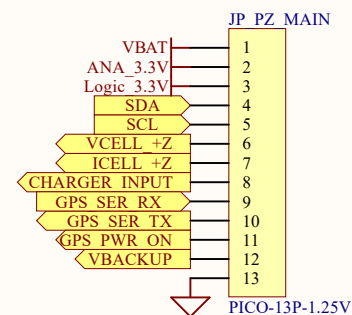
Project Title: <b>FEES_CUBESAT_MAIN_BOARD_RevC</b>				<b><u>LASER NAVIGATION SRL</u></b>		
Sheet Title: <b>Battery Protection</b>				Via Giacomo Matteotti, 34 24054, Calcio (BG) Italy Ph/Fax: 0363968520 / 969244		
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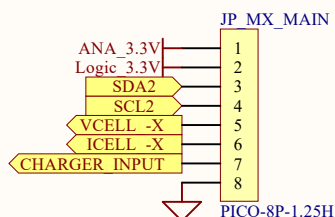
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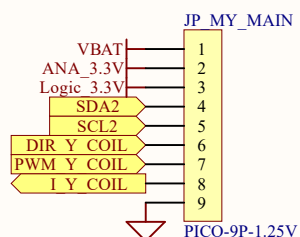
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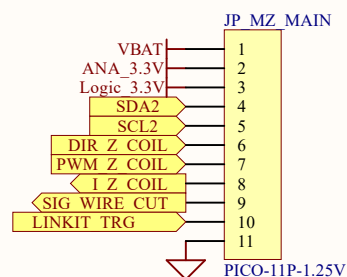
FACE\_PZ



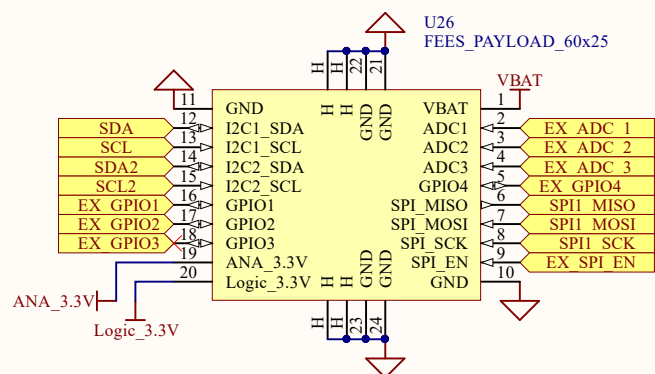
FACE\_MX



FACE\_MY



FACE\_MZ



Project Title:

**FEES\_CUBESAT\_MAIN\_BOARD\_RevC**

Sheet Title:

**Connectors**

Doc Rev: 1.0.1

Date: 24/04/2018

Sheet: 10 of: 10

Prj File: FEES\_CUBESAT\_MAIN\_BOARD\_RevD.PrjPcb

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1

2

3

4

A

B

C

D

A

B

C

D

Name  
01)Power\_Supply.SchDoc



Name  
02)Microcontroller.SchDoc



Name  
03)Memories&Sensors.SchDoc



Name  
04)ADC.SchDoc



Name  
05)PSD1.SchDoc



Name  
06)Telemetry.SchDoc



Name  
07)RADEX.SchDoc



Name  
08)Battery\_Charger.SchDoc



Name  
09)Battery\_Protection.SchDoc



Name  
10)Connectors.SchDoc



Welding with lead less than 3%  
Use Solder Paste

OBJ2



LOGO\_VR

OBJ8



LOGO\_GP

OBJ3



TEMPLATE

FID1



FIDUCIAL

OBJ11  
H



SCREW\_HOLE\_2MM

OBJ12  
H



SCREW\_HOLE\_2MM

OBJ13  
H



SCREW\_HOLE\_2MM

OBJ14  
H



SCREW\_HOLE\_2MM

Project Title: **FEES\_CUBESAT\_MAIN\_BOARD\_RevC**

Sheet Title: **Block Diagram**

Doc Rev: 1.0.1 Date: 24/04/2018 Sheet: 1 of: 10

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