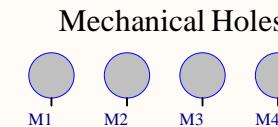
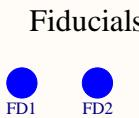


Rev	Description	Date	Author
1.0	Initial Release.	01/07/20	Yan C. de Azeredo

Revision History



PCB Elements

Semi USB Interstage Interface Panels of FloripaSat-2 2U CubeSat

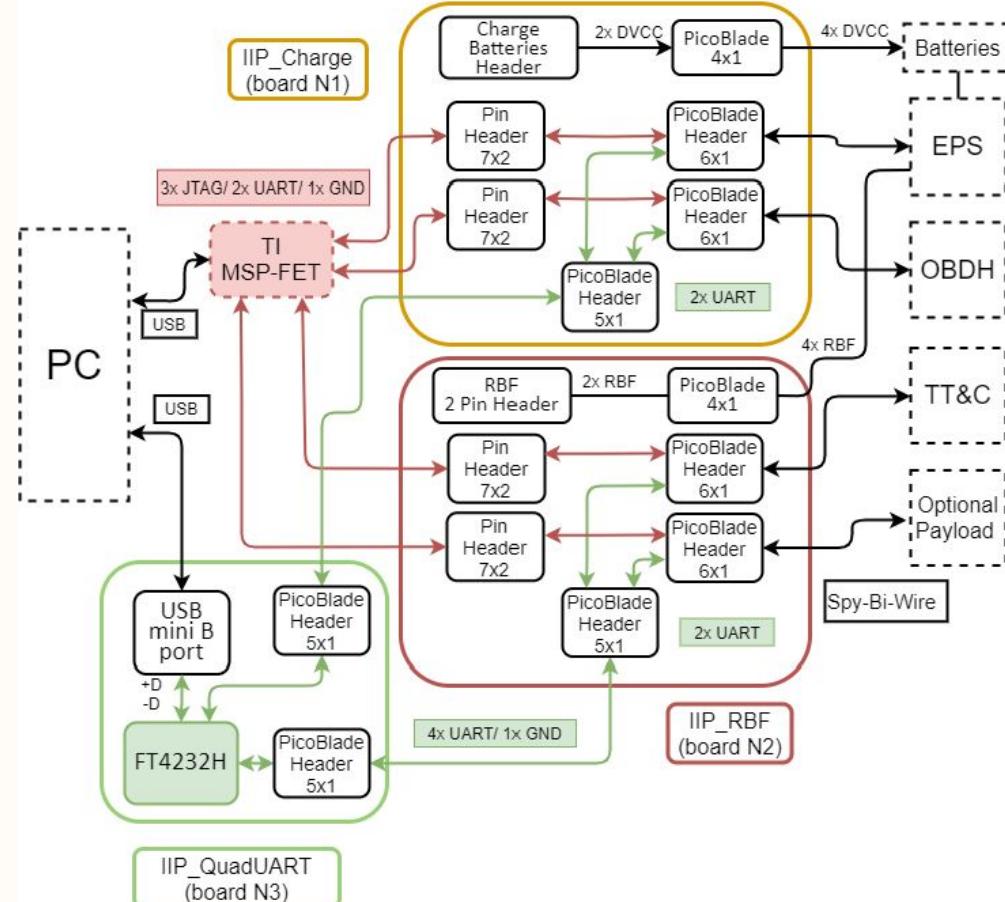
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- Drawn by: Yan Castro de Azeredo
- Reviewers: Gabriel M. Marcelino and André M. P. Mattos
- Support: Gabriel M. Marcelino, André M. P. Mattos and Kleber Gouveia
- Mechanical validation: Edemar Morsch Filho

Project Information

Semi USB Interstage Interface Panels



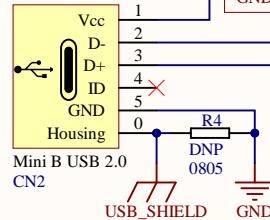
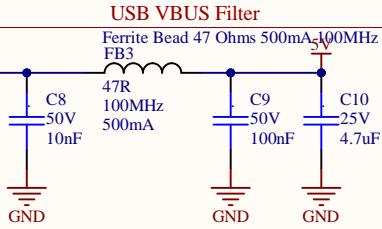
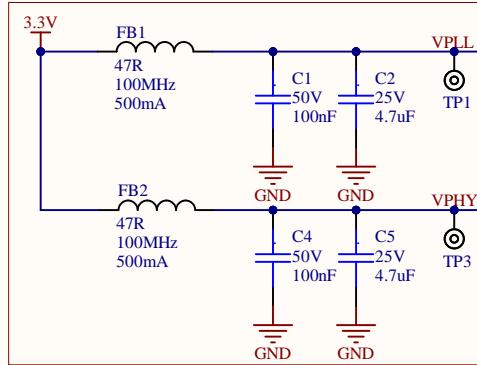
Full System Block Diagram

Title: 0_Architecture.SchDoc	Size: A4	Project: 3_IIP_QuadUART.PrjPCB	Revision: 1.0
Date: 19/07/2020	Time: 00:37:38	Sheet 1 of 2	
Drawn By: Yan Castro de Azeredo			Model: Engineering

UFSC - SpaceLab
University Campus - Trindade
Dep. of Electrical Engineering - CTC
Florianópolis, Santa Catarina, Brazil
CEP: 88040 - 900



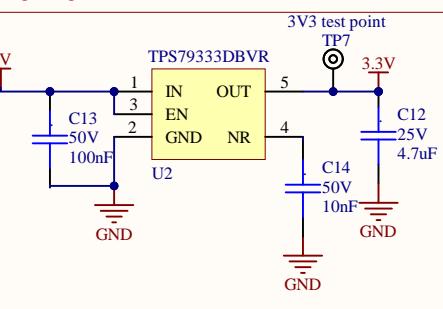
Low pass LC filters for VPLL and VPHY



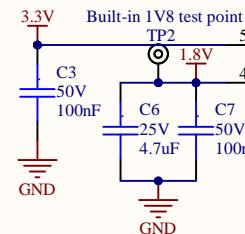
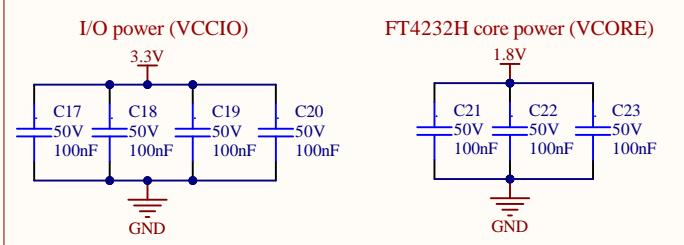
Optional zero-ohm resistor for a DC path, or capacitor for a high-frequency path between shield and signal ground to minimize signal noise and provide EMC compatibility (to be tested if required).

Linear Voltage Regulator for VREGIN (LDO)

LDO specifications:
 - DBV Package
 - Fixed configuration
 - Voltage Input (Min): 2.7 V
 - Voltage Input (Max): 5.5V
 - Voltage Output (Min): 3.3V
 - Current Output: 200mA
 - Dropout Voltage 112 mV at 200 mA
 Capacitors configuration:
 - Cin: 0.1uF (100nF)
 - Cinr: 10nF
 - Cff: 0F (fixed regulator)
 - Cout: 4.7uF (recommended >2.2uF)



Decoupling Capacitors



U1

VREGIN

VREGOUT

VPHY

VPLL

VCORE

VCORE

VCORE

VCCIO

VPLL

VPHY

1.8V

1.8V

3.3V

FT4232HL-REEL

DM

DP

REF

RESET#

TP4

C11

50V

100nF

GND

TP5

R5

10k

3.3V

R6

10k

63

EECS

EECLK

EEDATA

TP6

R7

10k

62

OSCI

XTAL1

12MHz

C15

50V

12pF

GND

C16

50V

12pF

GND

OSCO

TEST

13

AGND

TP12

10

5

11

15

25

35

47

51

GND

TP11

PWREN#

SUSPEND#

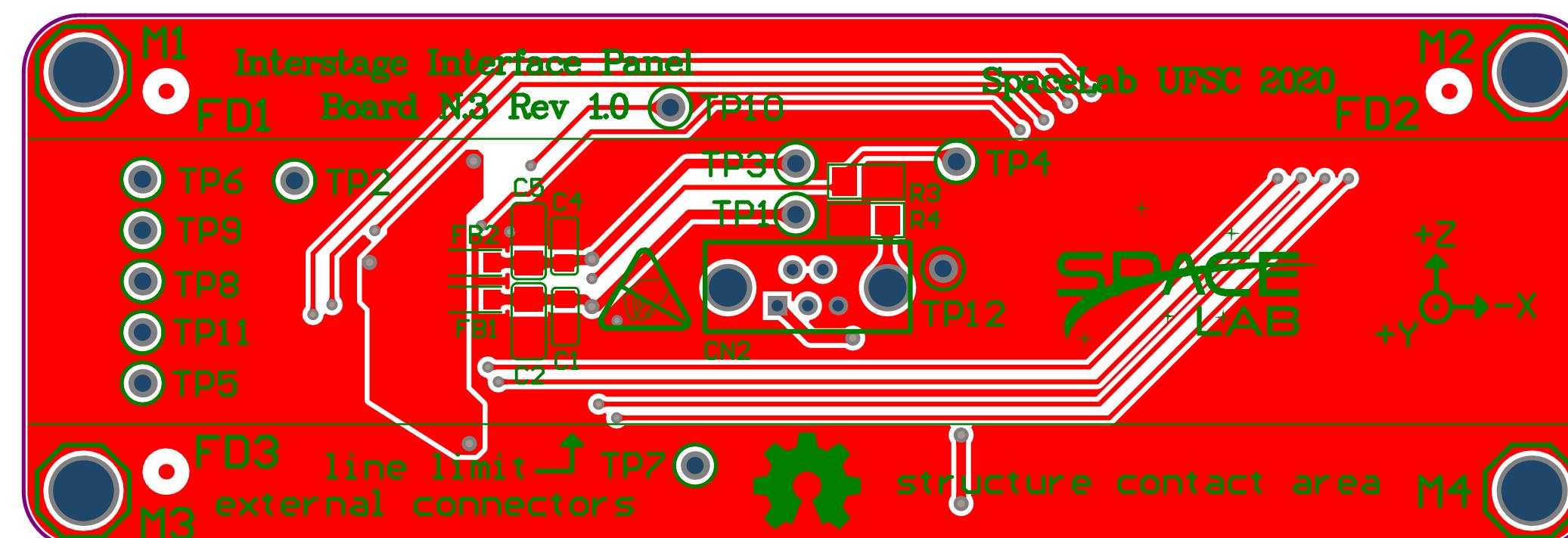
36

GND

TP10

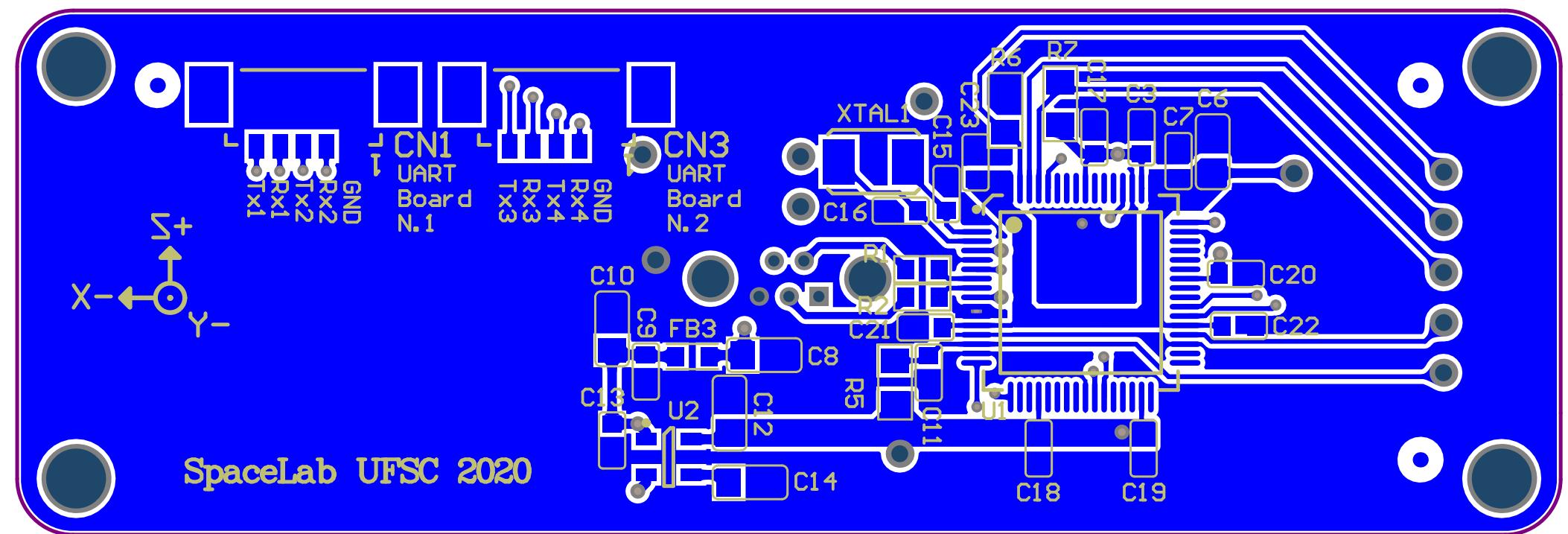
GND

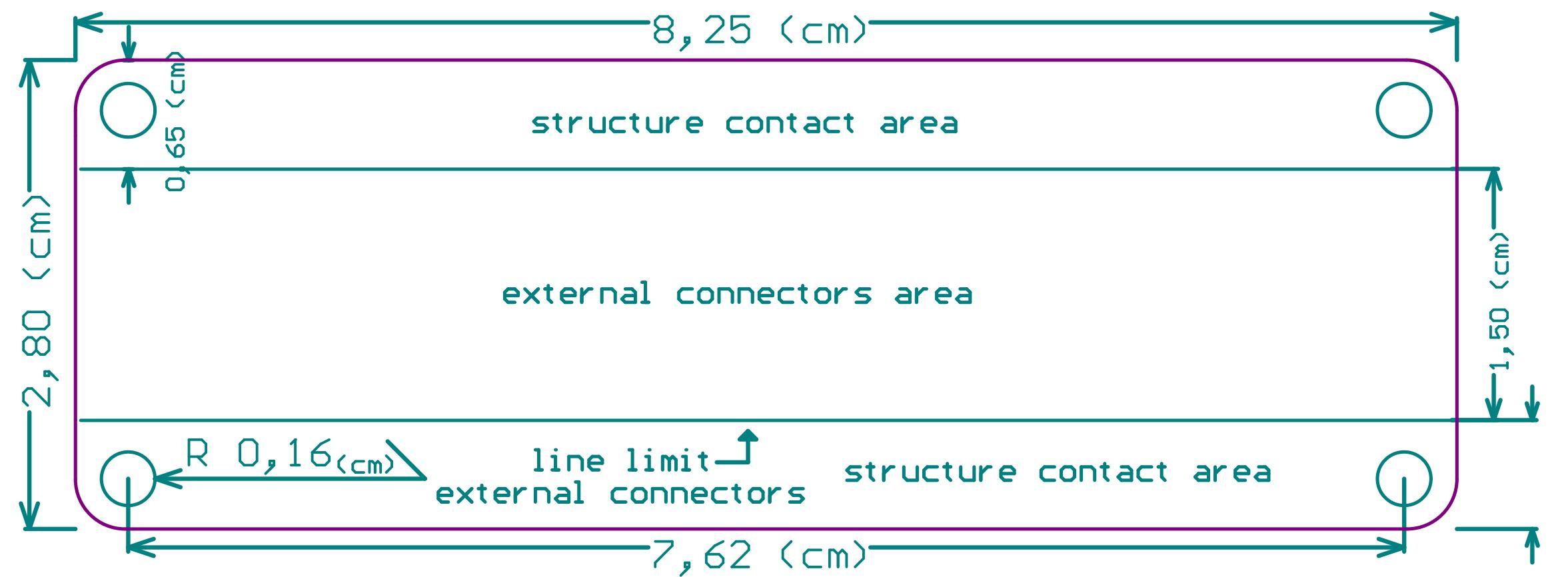
Layer	Name	Material	Thickness	Constant
	Top Overlay			
	Top Solder	Solder Resist	0,40mil	3,8
1	Top Layer	Copper	1,40mil	
	Dielectric 1	FR-4	59,06mil	4,5
2	Bottom Layer	Copper	1,40mil	
	Bottom Solder	Solder Resist	0,40mil	3,8
	Bottom Overlay			

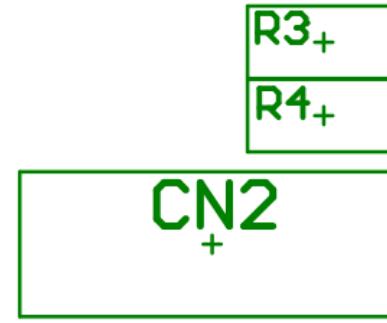
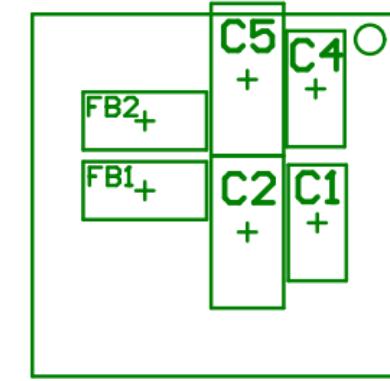


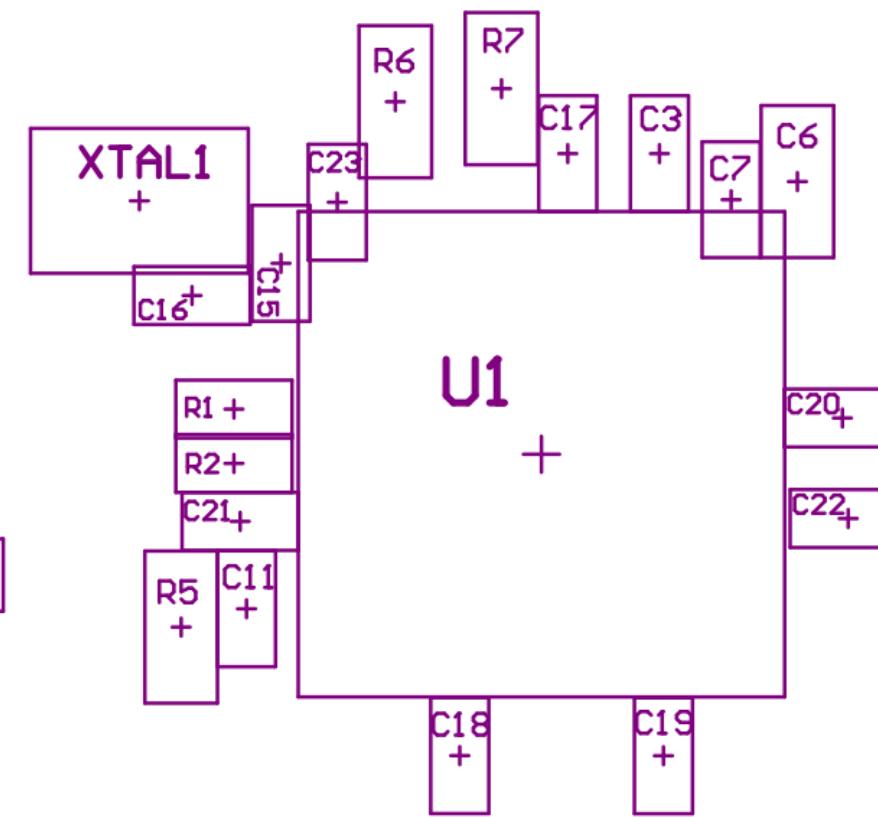
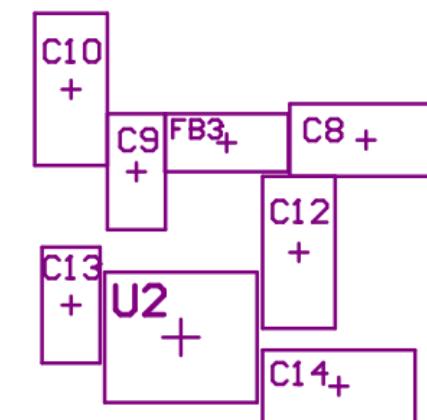
TITLE: SEMI USB N.3 BOARD		REV: 1.0	DATE: 15/07/2020
MATERIAL: FR4		Silkscreen color: white	
Board Thickness: 1.6mm		Layers: 02	
PCB Surface: HASL		Drawing: Yan C. de Azeredo	

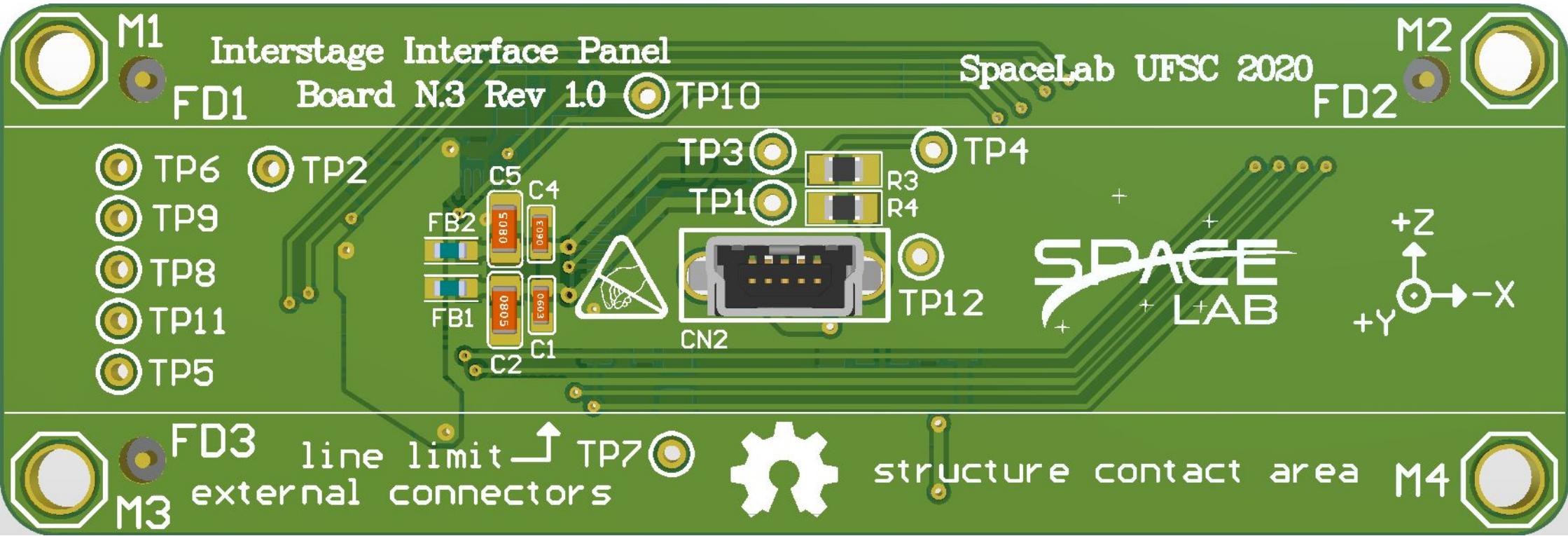
Space Technology Research Laboratory
Federal University of Santa Catarina
SpaceLab UFSC

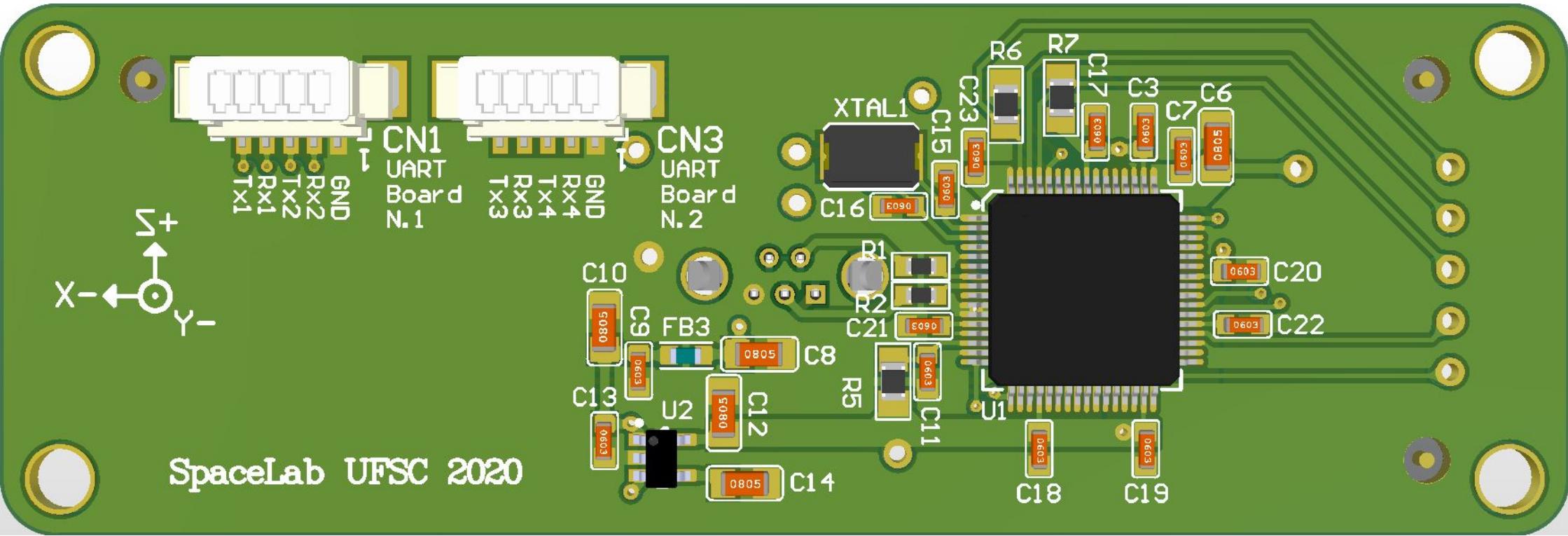














Quotation

Source Data From: 3_IIP_QuadUART.BomDoc

Project: 3_IIP_QuadUART.PrjPCB

Variant: None

Project Code: <Parameter ProductCode not found>

1

Report Date: 19/07/2020 00:37

Date: 05/01/1900 07:45

Print Date: 19/07/2020 00:37:51

Dolar: R\$ 5,3260

#	Supplier 1	Supplier Part Number 1	Manufacturer Part Number 1	Name	Description	Quantity	Designator	Supplier Unit Price 1	Percentage	Supplier Stock 1
1	Mouser	581-08055C103KAT4A	08055C103KAT4A	10000 pF, 0805 (2012 metric)	AVX - 08055C103KAT4A - SMD Multilayer Ceramic Capacitor, 10000 pF, 50 V, 0805 [2012 Metric], ± 10%, X7R	2	C8, C14	\$ 0,12	1%	88198
2	Digi-Key	1276-1254-1-ND	CL10C120JB8NNNC	12 pF, 0603 (1608 metric)	Cap Ceramic 12pF 50VDC COG 5% SMD 0603 Paper T/R	2	C15, C16	\$ 0,10	1%	256734
3	Mouser	810-C2012X7R1E475K	C2012X7R1E475K125AB	4.7 uF, 0802 (2012 metric)	Ceramic Capacitor SMD Multilayer, 0805 [2012 Metric], 4.7 uF, 25 V, 10%, X7R, C Series	5	C2, C5, C6, C10, C12	\$ 0,40	10%	132654
4	Mouser	717-AA-12.000MAGE-T	AA-12.000MAGE-T	12.000MHz 12pF	Crystals 12.000MHz 30ppm 12pF -40C to 85C	1	XTAL1	\$ 0,83	4%	4834
5	Digi-Key	768-1026-1-ND	FT4232HL-REEL	FT4232HL-REEL	FTDI - FT4232HL-REEL - USB-UART/MPSSE, 4232, QUAD, 64LOFP	1	U1	\$ 8,30	41%	8919
6	Mouser	71-CRCW0805-10K-E3	CRCW080510K0FKEA	10k ohms, 0805 (2012 metric)	RES 10.0K OHM 1/8W 1% 0805 SMD	3	R5, R6, R7	\$ 0,10	1%	1237138
7	Digi-Key	RMCF0805FT12KOCT-ND	RMCF0805FT12K0	RES 12K ohms (0805)	Resistor, SMT, 0805, 12K Ohm, +/-1%, +/-100ppm, Thk Film, T/R Marked	1	R3	\$ 0,10	0%	53842
8	Mouser	810-C1608X7R1H104K	C1608X7R1H104K	0.1 uF, 0603 (1608 metric)	TDK - C1608X7R1H104K080AA - SMD Multilayer Ceramic Capacitor, 0.1 uF, 50 V, 0603 [1608 Metric], ± 10%, X7R, C Series	14	C1, C3, C4, C7, C9, C11, C13, C17, C18, C19, C20, C21, C22, C23	\$ 0,09	6%	92946
9	Mouser	595-TPS79333DBVR	TPS79333DBVR	TPS79333DBVR	TEXAS INSTRUMENTS - TPS79333DBVR - IC, VREG, LINEAR, 0.2A, SOT-23-5	1	U2	\$ 0,73	4%	12361
10	Mouser	71-CRCW0805-0-E3	CRCW08050000Z0EA	DNP	VISHAY - CRCW08050000Z0EA - SMD Chip Resistor, Jumper, 0805 [2012 Metric], 0 ohm, CRCW e3 Series, 150 V, Thick Film, 125 mW	1	R4	\$ 0,10	0%	804872
11	Mouser	538-53398-0571	533980571	5 pin PicoBlade	Wire-To-Board Connector, Vertical, PicoBlade 53398 Series, Surface Mount, Header, 5, 1.25 mm	2	CN1, CN3	\$ 1,32	13%	50576
12	Mouser	710-651005136421	6,51005E+11	Vertical mini B USB 2.0 port	WURTH ELEKTRONIK - 651005136421 - Conector USB, Mini USB Tipo B, USB 2.0, Receptáculo, 5 Vias, Montaje de Agujero Pasante, Vertical	1	CN2	\$ 2,97	15%	4548
13	Mouser	710-742792608	742792608	Ferrite Bead 47 Ohms 500mA 100MHz	WURTH ELEKTRONIK 742792608 FERRITE BEAD, 0.1 OHM, 0.5A, 0603	3	FB1, FB2, FB3	\$ 0,17	2%	3351
14	Mouser	603-RC0603FR-0710RL	RC0603FR-0710RL	RES 10 ohms (0603)	YAGEO (PHYCOMP) - RC0603FR-0710RL - RES, THICK FILM, 10R, 1%, 0.1W, 0603	2	R1, R2	\$ 0,15	1%	176897
							TOTAL	\$ 20,45	100%	