

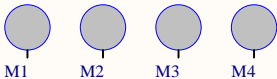
Rev	Description	Date	Author
1.0	Initial Release.	01/07/20	Yan C. de Azeredo

Revision History

Fiducials



Mechanical Holes



PCB Elements

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

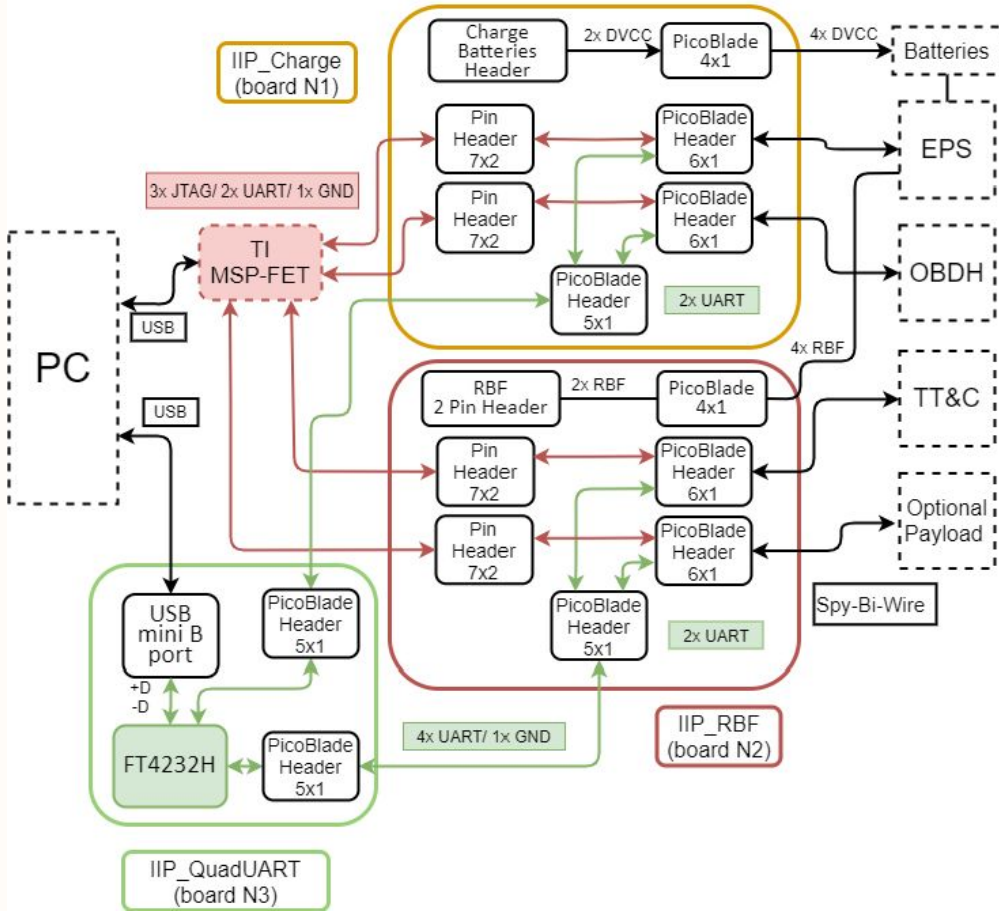
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- Drawn by: Yan Castro de Azeredo
- Reviewers: Gabriel M. Marcelino and André M. P. Mattos
- Support: Gabriel M. Marcelino, André M. P. Mattos and Kleber Gouveia
- Mechanical validation: Edemar Morsch Filho

Project Information

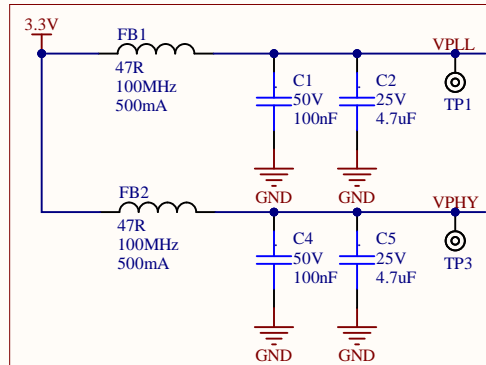
Semi USB Interstage Interface Panels



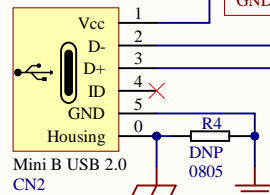
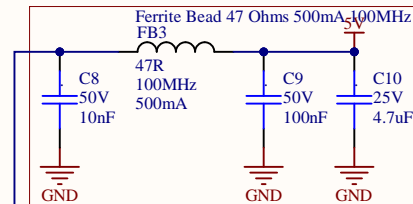
Full System Block Diagram

Title: 0_Architecture.SchDoc			UFSC - SpaceLab University Campus - Trindade Dep. of Electrical Engineering - CTC Florianópolis, Santa Catarina, Brazil CEP: 88040 - 900	
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			

Low pass LC filters for VPLL and VPHY



USB VBUS Filter



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).

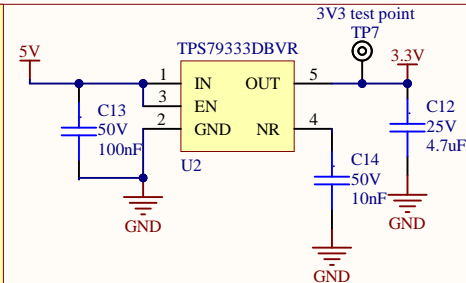
Linear Voltage Regulator for VREGIN (LDO)

LDO specifications:

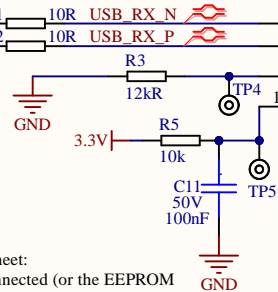
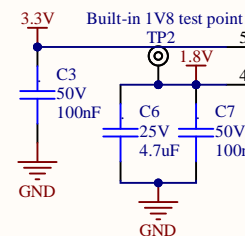
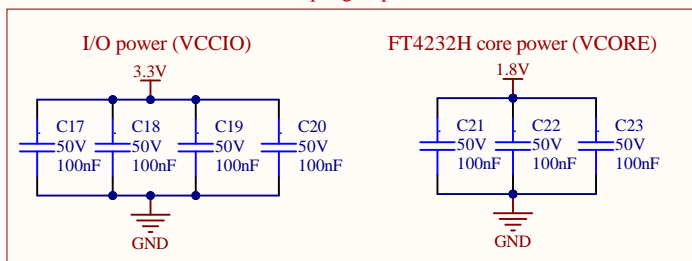
- DBV Package
- Fixed configuration
- Voltage Input (Min): 2.7 V
- Voltage Input (Max): 5.5V
- Voltage Output (Min): 3.3V
- Current Output: 200mA
- Dropout Voltage 112 mV at 200 mA

Capacitors configuration:

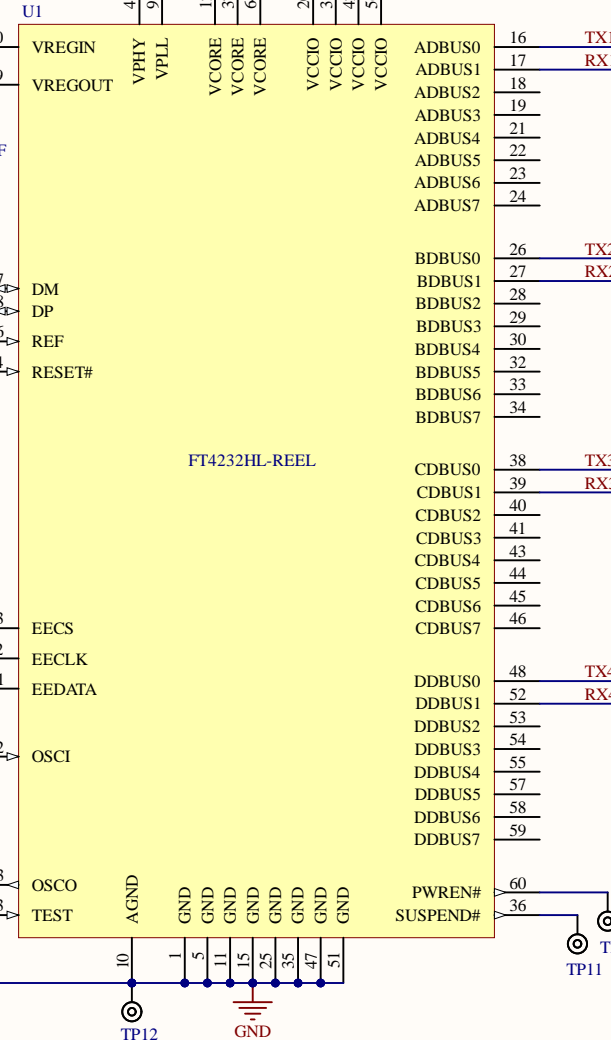
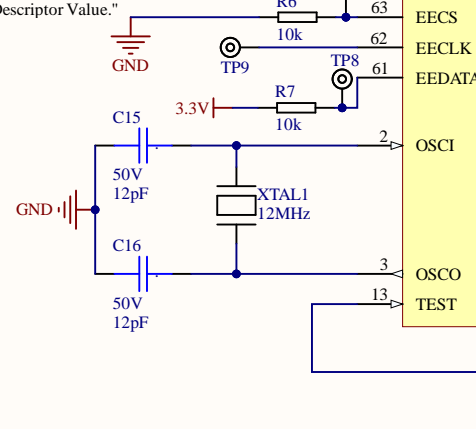
- Cin: 0.1uF (100nF)
- Cmr: 10nF
- Cff: 0F (fixed regulator)
- Cout: 4.7uF (recommended >2.2uF)



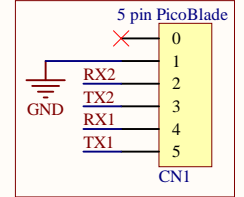
Decoupling Capacitors



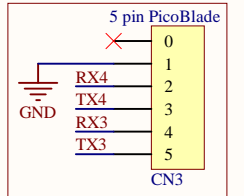
From FT4232H datasheet:
"If no EEPROM is connected (or the EEPROM is blank), the FT4232H will default to serial ports. The device uses its built-in default VID (0403), PID (6011) Product Description and Power Descriptor Value."



Picoblade header for board N.1



Picoblade header for board N.2



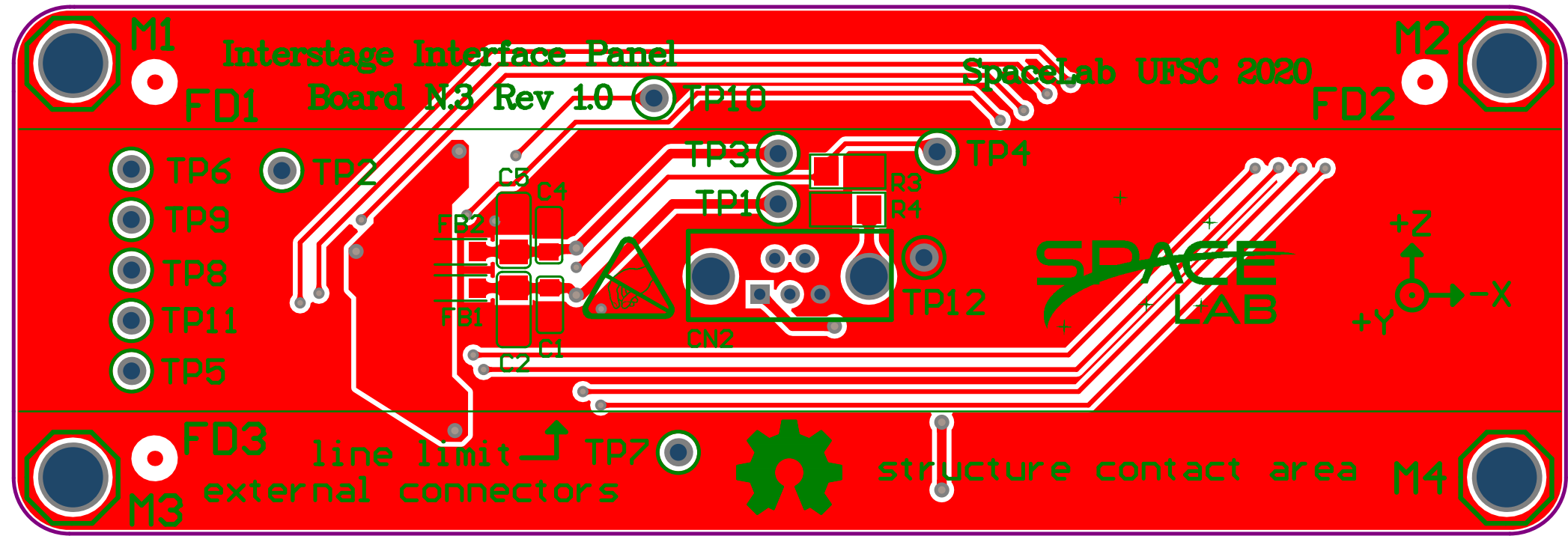
Testpoints for debugging IC
PWREN# = 0: Normal
PWREN# = 1: USB SUSPEND mode or device has not been configured.
SUSPEND#: Active low when USB is in suspend mode.

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

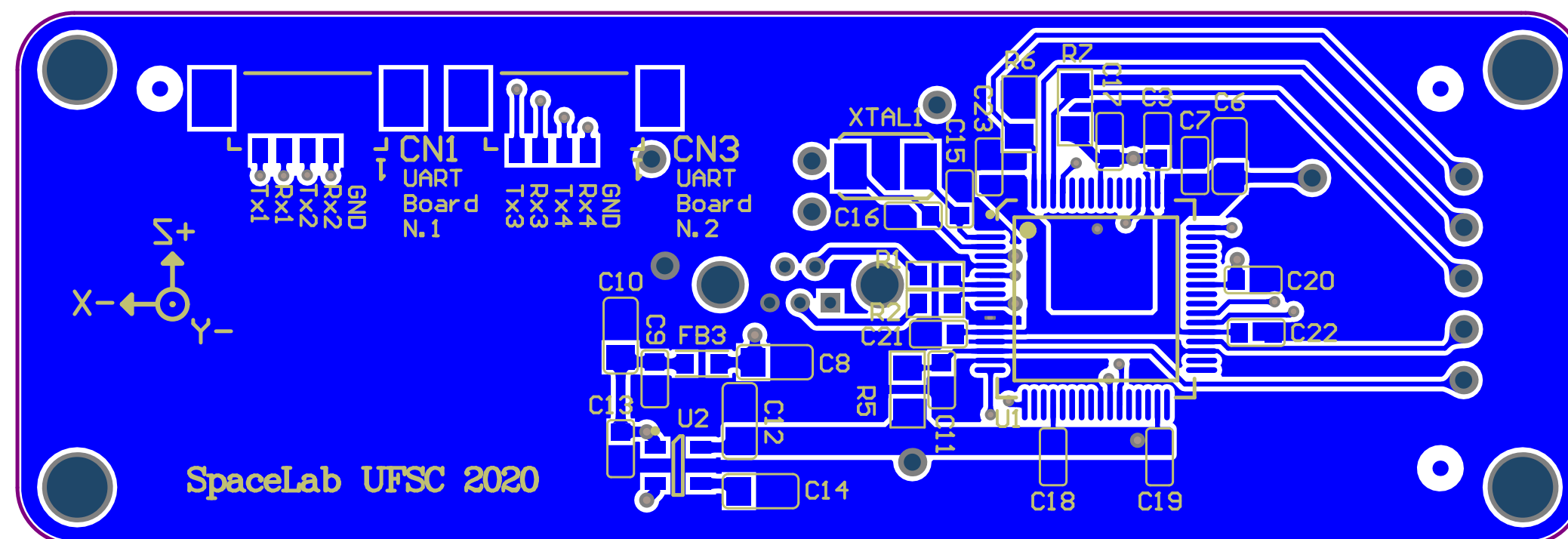
UFSC - SpaceLab
University Campus - Trindade
Dep. of Electrical Engineering - CTC
Florianópolis, Santa Catarina, Brazil
CEP: 88040 - 900

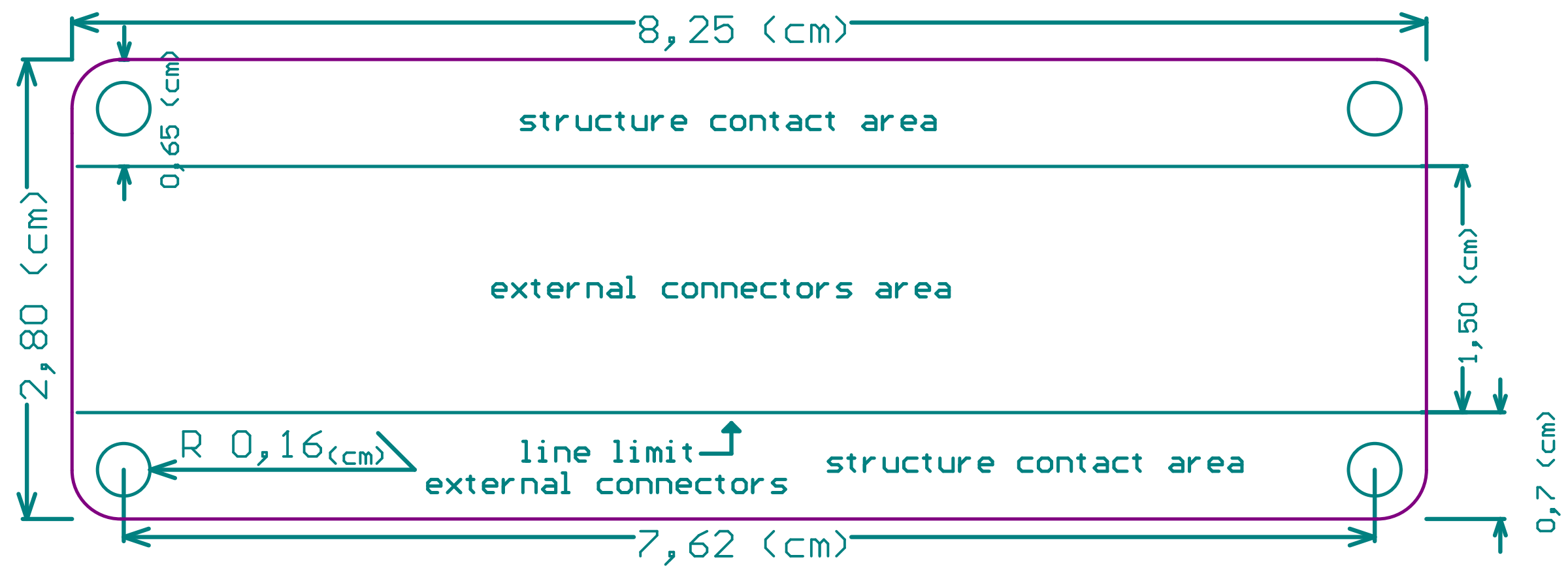


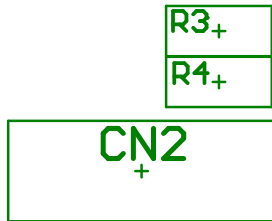
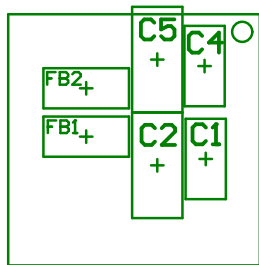
Layer	Name	Material	Thickness	Constant
	Top Overlay			
	Top Solder	Solder Resist	0,40mil	3,8
1	Top Layer	Copper	1,40mil	
	Dielectric 1	FR-4	59,06mil	4,5
2	Bottom Layer	Copper	1,40mil	
	Bottom Solder	Solder Resist	0,40mil	3,8
	Bottom Overlay			

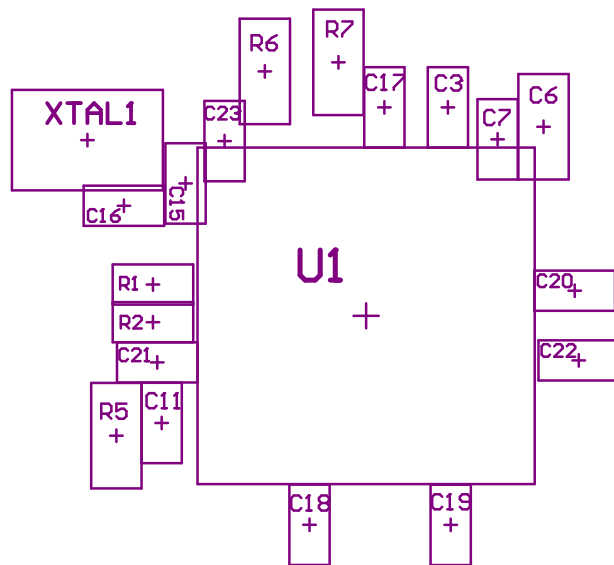
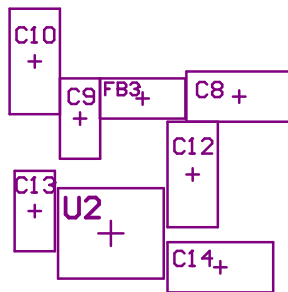


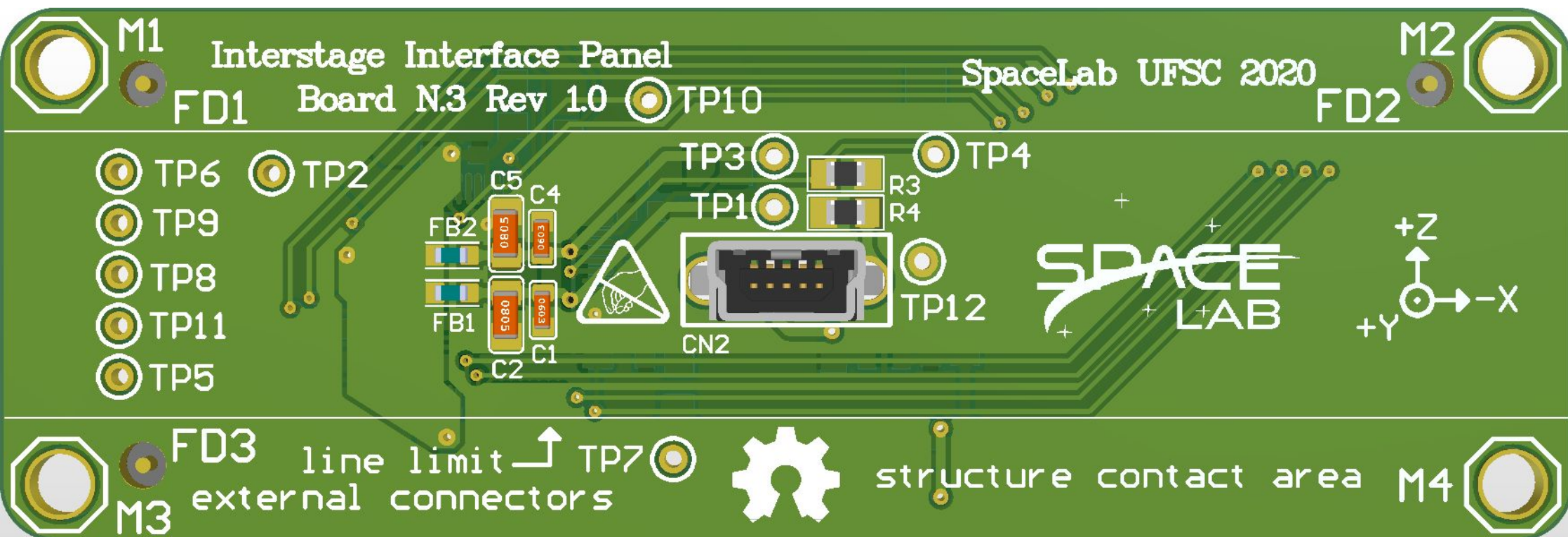
TITLE: SEMI USB N.3 BOARD		REV: 1.0	DATE: 15/07/2020
MATERIAL: FR4	Silkscreen color: white	Project: IIP FloripaSat-2	
Board Thickness: 1.6mm	Layers: 02	Space Technology Research Laboratory Federal University of Santa Catarina SpaceLab UFSC	
PCB Surface: HASL	Drawing: Yan C. de Azeredo		

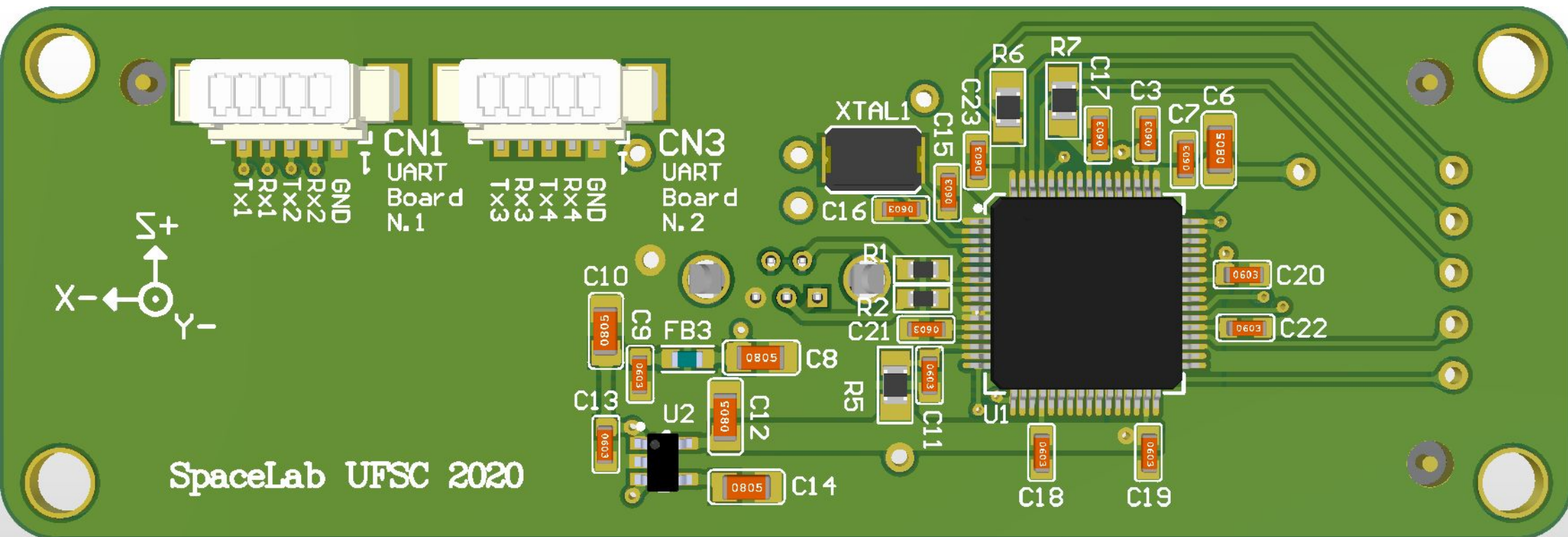














Quotation

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/MPSE, 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, V REG, 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 Vías, 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%