



# TEX30LCD/S

TECHNICAL ANNEX  
VOLUME 2



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Member of CISQ Federation



CERTIFIED MANAGEMENT SYSTEM  
ISO 9001



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Manufactured by R.V.R. ELETTRONICA S.r.l. Italy



## Appendix A Piani di montaggio, schemi elettrici, liste componenti / *Component layouts, schematics, bills of material*

Questa parte del manuale contiene i dettagli tecnici riguardanti la costruzione delle singole schede componenti il TEX30LCD/S. L'appendice è composta dalle seguenti sezioni:

*This part of the manual contains the technical details about the different boards of the TEX30LCD/S. This appendix is composed of the following sections:*

Description	RVR Code	Vers.	Pages
Wiring Diagrams	/	4.3	1
Main Board	SLMA0383R02V01	1.1	3
Stereo Coder Card	SLCTC30V03	1.2	8
15kHz Audio Filter Card	SLAU0469R01V02	1.0	11
PA RF Power Supply	SLPS0468R01V01	1.0	14
Power Amplifier	SLRF0408R03V01	1.5	16
Panel Card	SLPC0436R01V01	1.1	20
Power Supply	KPSL2804V01B	1.0	23
Telemetry Card	SLTL0509R01V01	1.1	26

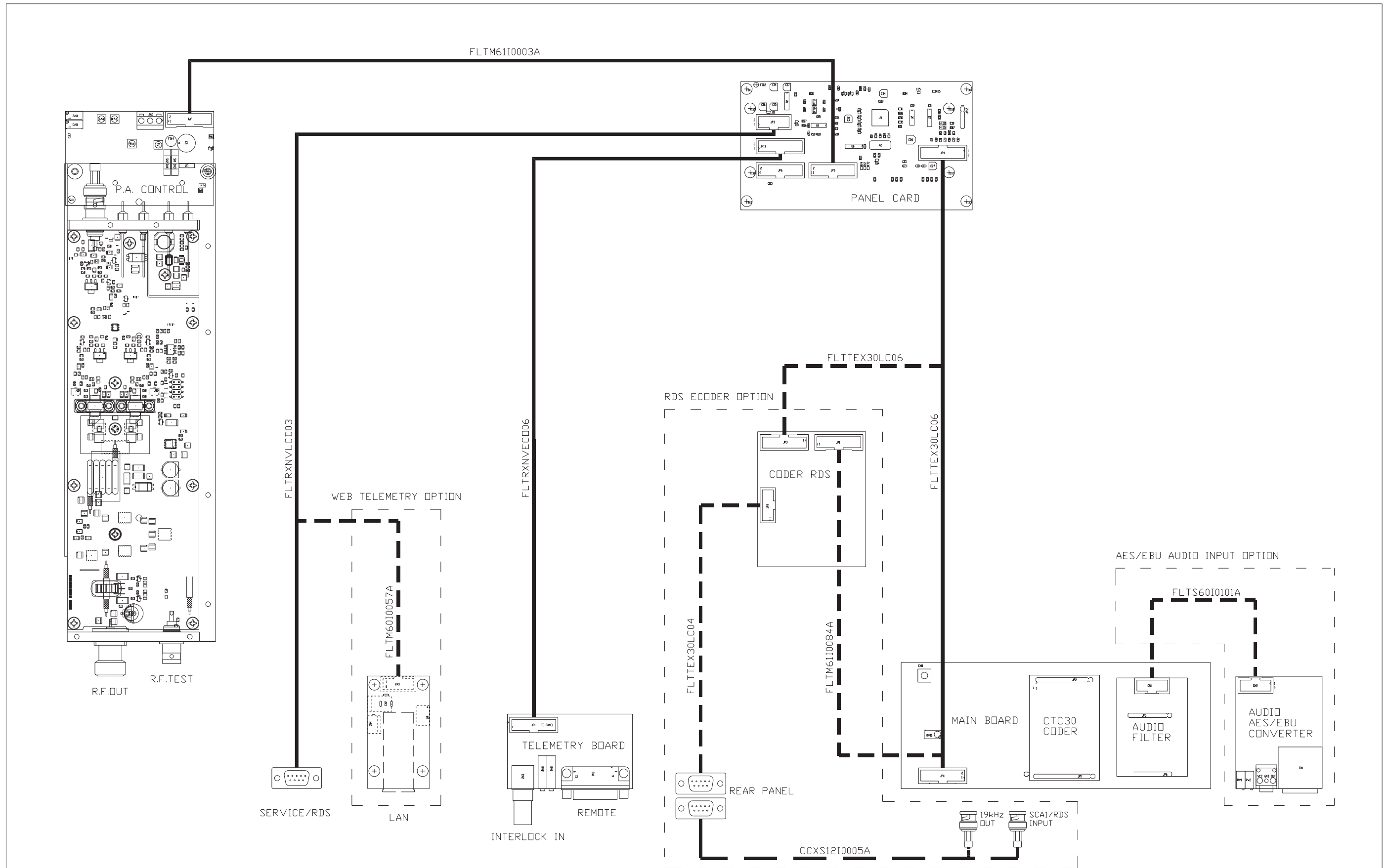
### Document History

Date	Version	Reason	Code	Editor
02/09/2018	2.0	First Release (Version 2)	/	J.H. Berti
26/06/2019	2.1	SLMA0383R01V01, SLRF0408R03V01 & SLCNTMOS07.50 upgrade	/	J.H. Berti
10/03/2023	2.2	SLMA0383R02V01, SLRF0408R03V01 & SLTL0509R01V01 upgrade	/	J.H. Berti

TEX30LCD/S

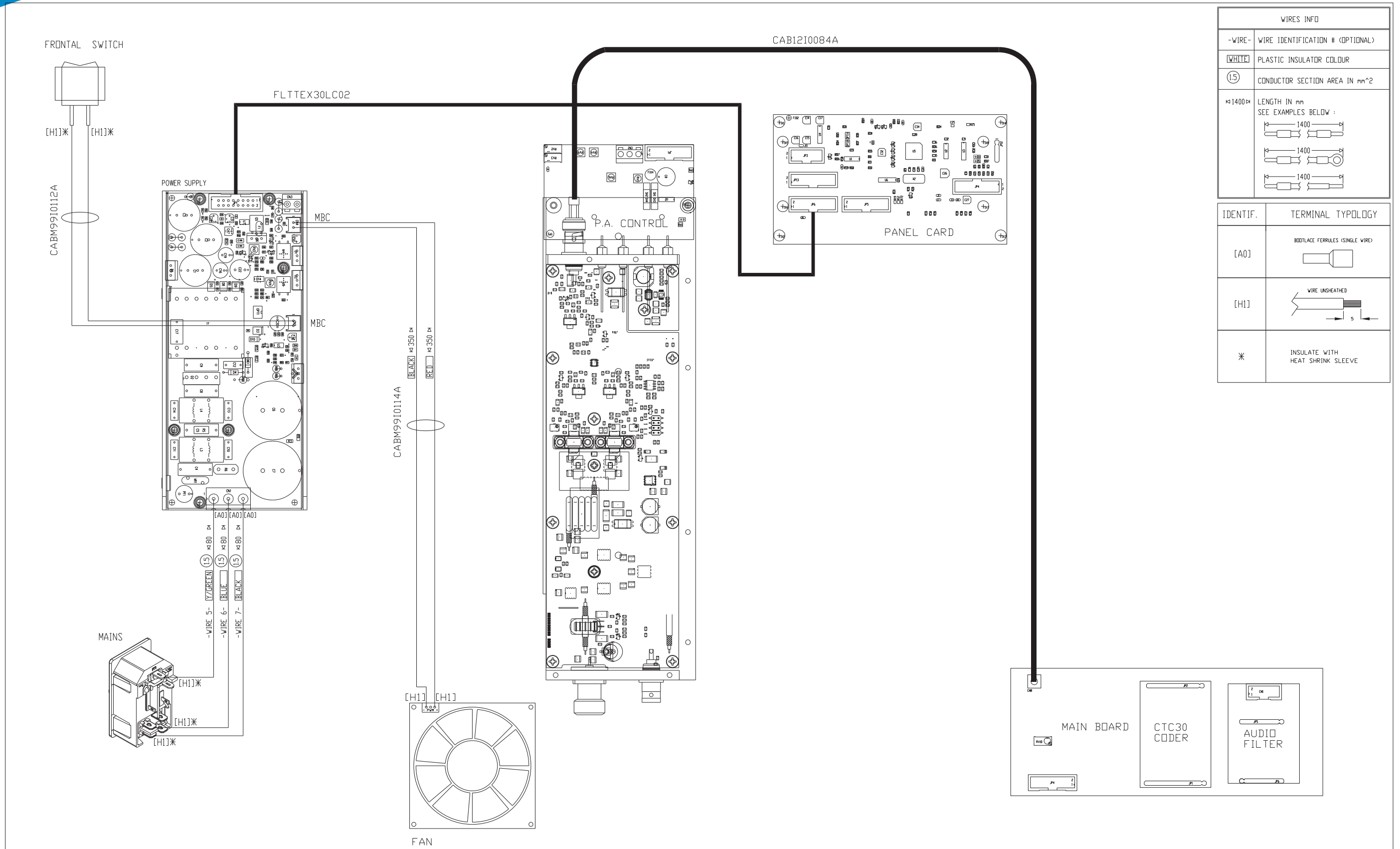
Spare Parts Name	Spare Parts Code
Switching power supply	KPSL2804V01B + SP-SRG085A
Mosfet with plate	KKTRNMRFE6VS25A
RF final section	SP-FIN085A
Main audio card + PLL + VCO	SP-MBD175A
CPU panel & Display	SP-PAN175A
Telemetry	SP-TLM175A
Fan	VTL9A0824G402





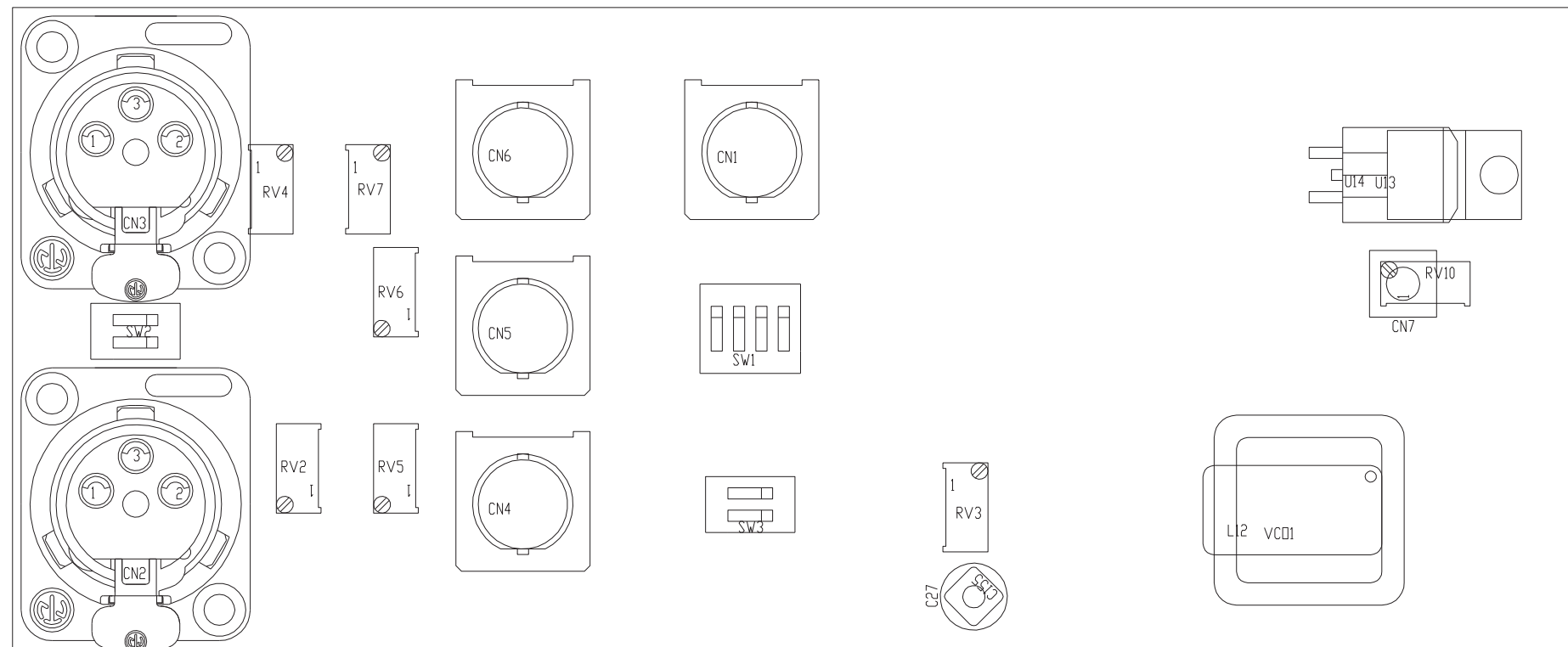
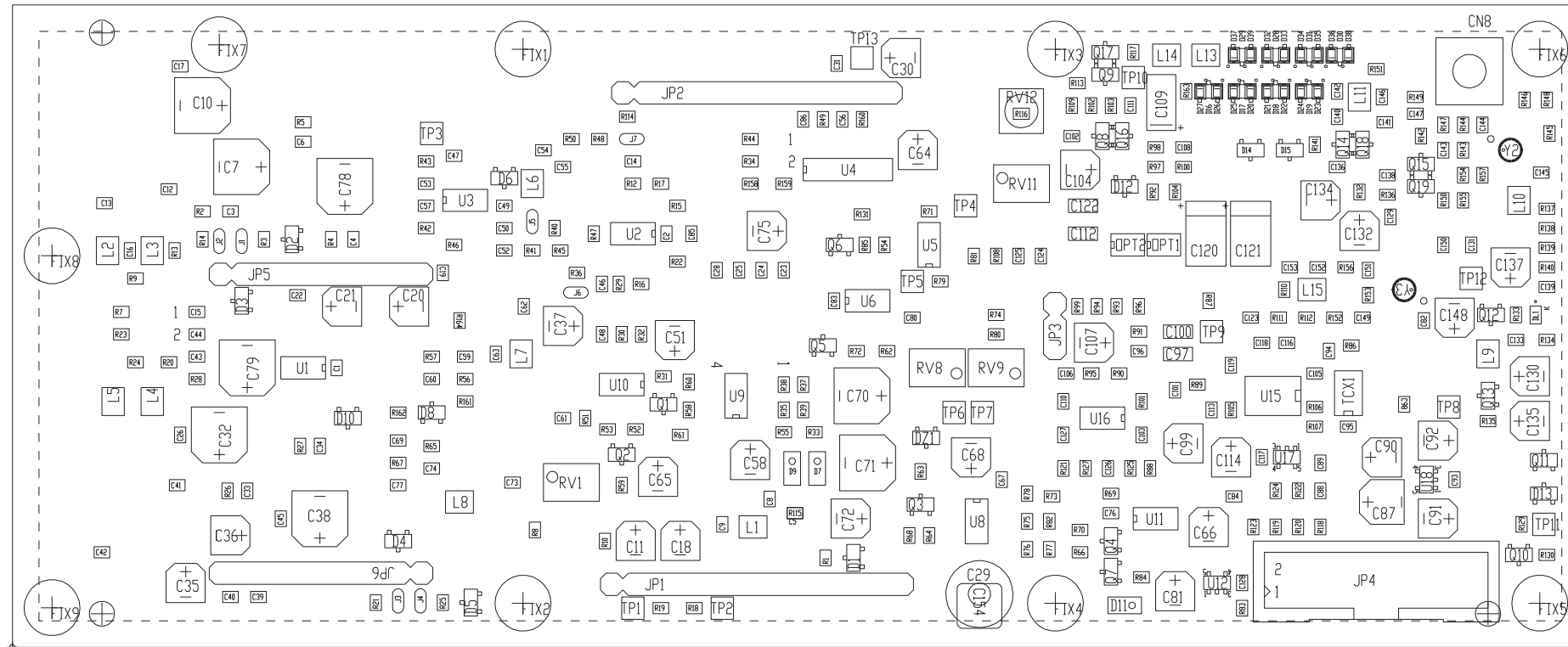
	PRODUCT NAME :	TEX30LCD-TEX50LCD	PART NAME :	WIRING DIAGRAM TEX30LCD, TEX50LCD
	DESIGNER :	G. DE DONNO	DATE :	14-01-20
ARCHIVING :	"RVRUT" SERVER, "RILASCIATI" FOLDER	PROJECT CODE :	085	DOCUMENT CODE : /
		REVISION :	4.3	SCALE : /
		SIZE :	A3	PAGE : 1 DI 2



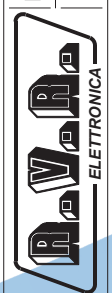


WIRES INFO	
-WIRE-	WIRE IDENTIFICATION # (OPTIONAL)
[WHITE]	PLASTIC INSULATOR COLOUR
(1.5)	CONDUCTOR SECTION AREA IN mm <sup>2</sup>
≅1400≳	LENGTH IN mm SEE EXAMPLES BELOW :
IDENTIF.	TERMINAL TYPOLOGY
[A0]	BOOTLACE FERRULES (SINGLE WIRE) 
[H1]	WIRE UNSHEATHED 
*	INSULATE WITH HEAT SHRINK SLEEVE

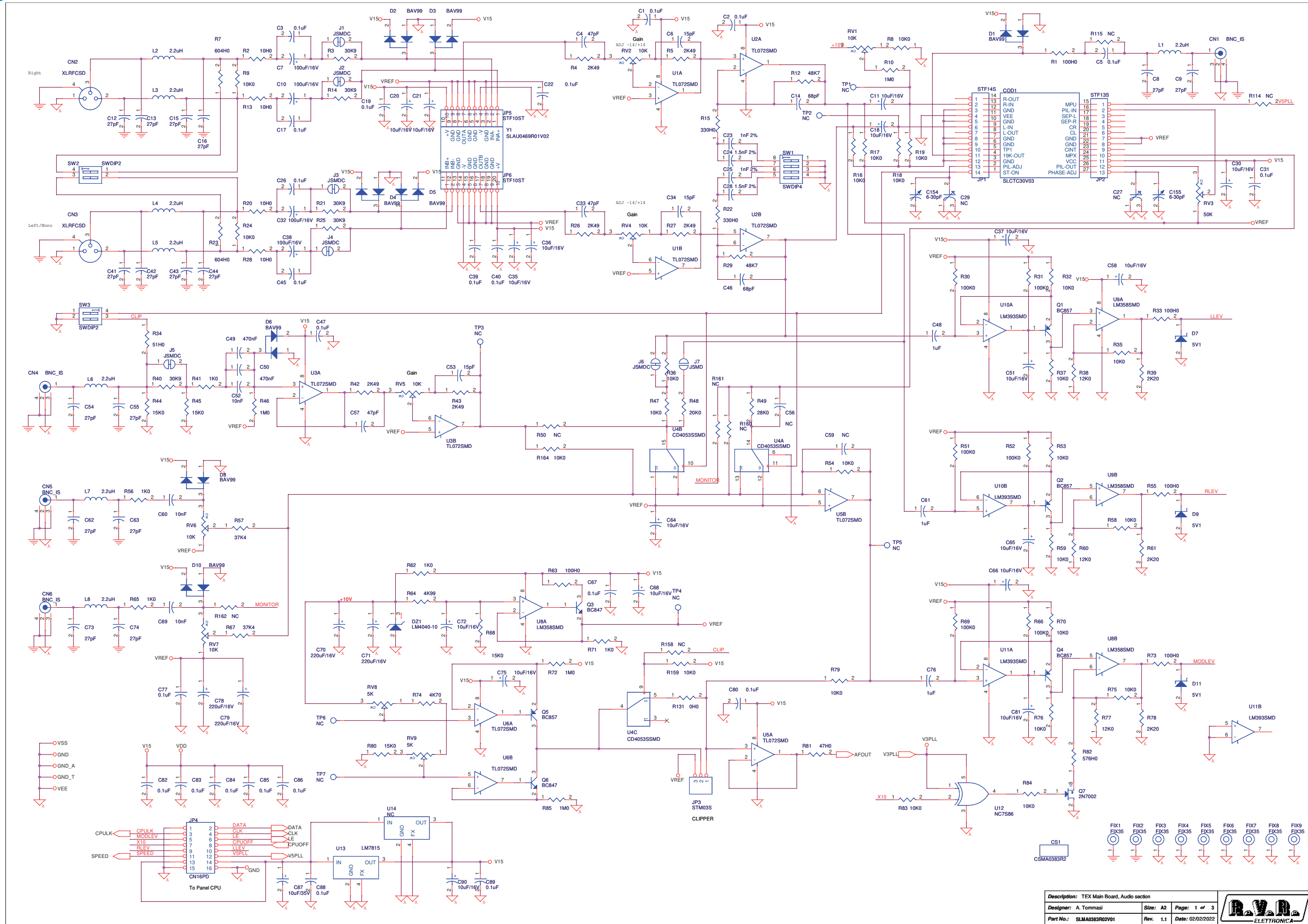
	PRODUCT NAME :	TEX30LCD-TEX50LCD	PART NAME :	WIRING DIAGRAM TEX30LCD
	DESIGNER :	G. DE DONNO	DATE :	14-01-20
ARCHIVING :	"RVRUT" SERVER, "RILASCIATI" FOLDER	PROJECT CODE :	085	DOCUMENT CODE : /
			REVISION :	4.3
			SCALE :	/
			SIZE :	A3
			PAGE :	2 DI 2



PRODUCT NAME : TEX-LCD	PART NAME : MAIN CARD
DESIGNER : A. TOMMASI	DATE : 18/08/21
ARCHIVING : "RVRUT" SERVER, "RILASCIATI" FOLDER	REVISION : 1.0
	SCALE : 1:1
	SIZE : A4
	PAGE : 1
	DI : 1
	DOCUMENT CODE : SLMA0383R02V01



SLMA0383R02V01

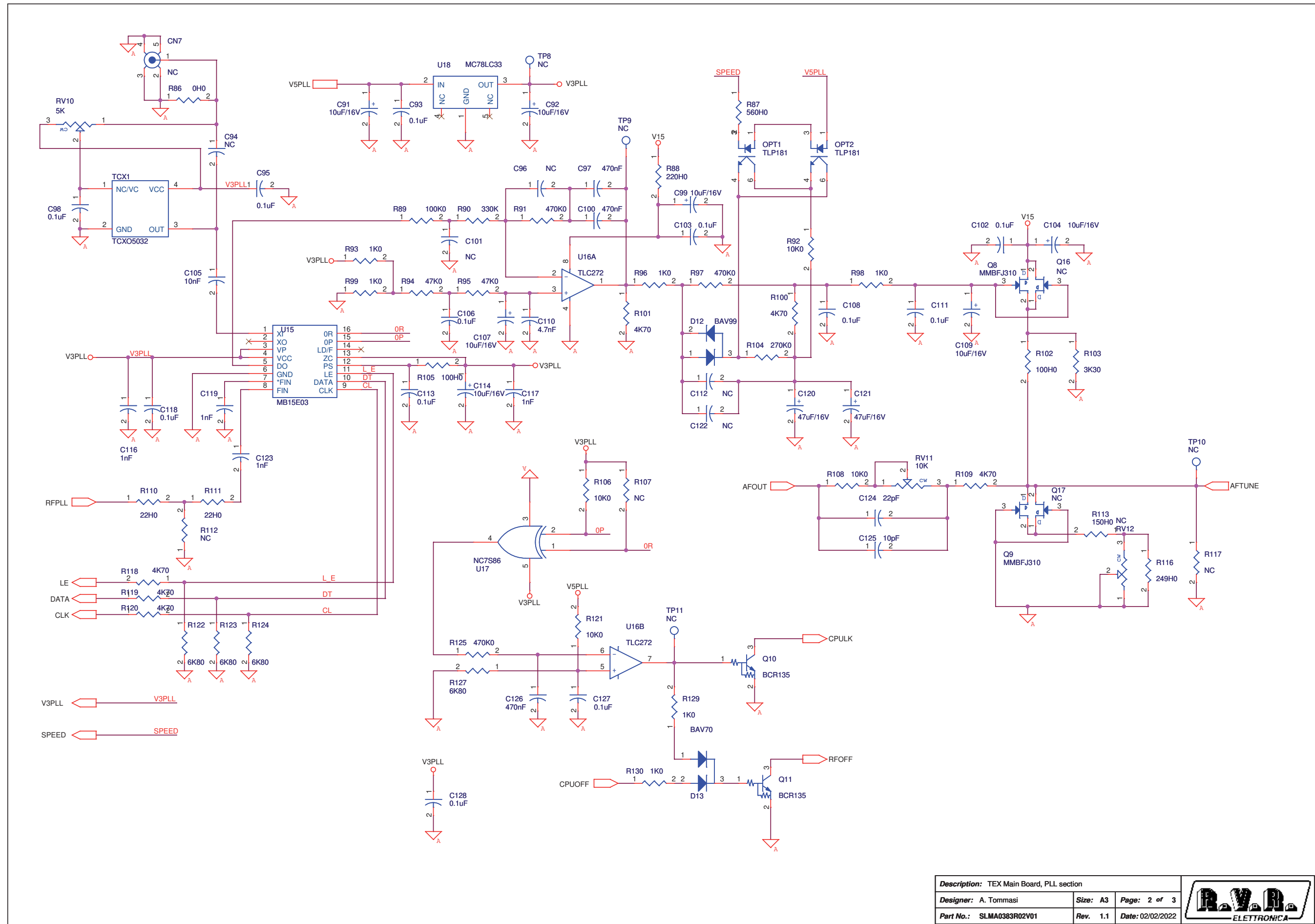


Description: TEX Main Board, Audio section		
Designer: A. Tommasi	Size: A2	Page: 1 of 3
Part No.: SLMA0383R02V01	Rev. 1.1	Date: 02/02/2022



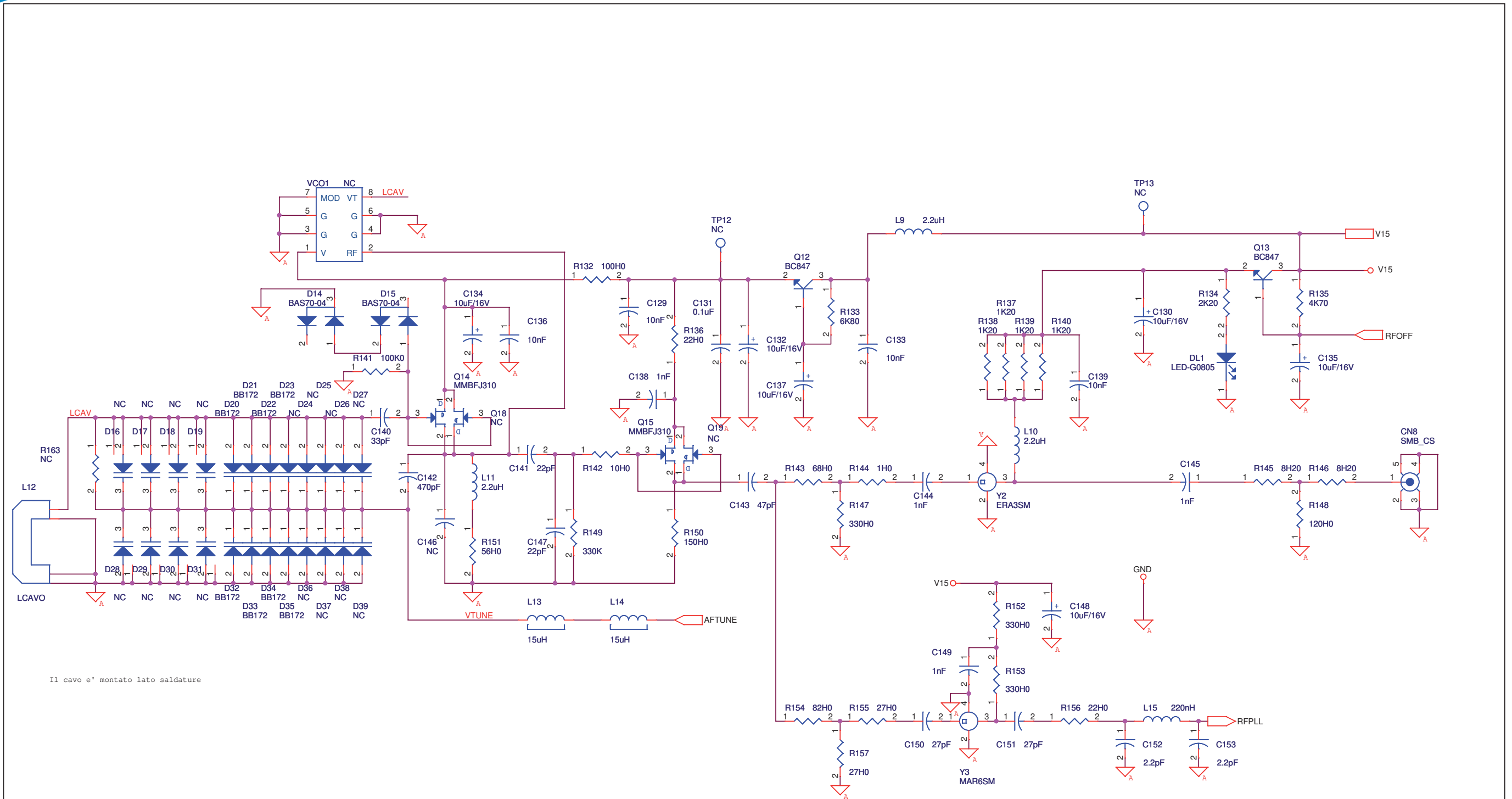


SLMA0383R02V01



<b>Description:</b> TEX Main Board, PLL section		
<b>Designer:</b> A. Tommasi	<b>Size:</b> A3	<b>Page:</b> 2 of 3
<b>Part No.:</b> SLMA0383R02V01	<b>Rev.</b> 1.1	<b>Date:</b> 02/02/2022





Il cavo e' montato lato saldature

Description: TEX Main Board, VCO section		
Designer: A. Tommasi	Size: A3	Page: 3 of 3
Part No.: SLMA0383R02V01	Rev. 1.1	Date: 02/02/2022

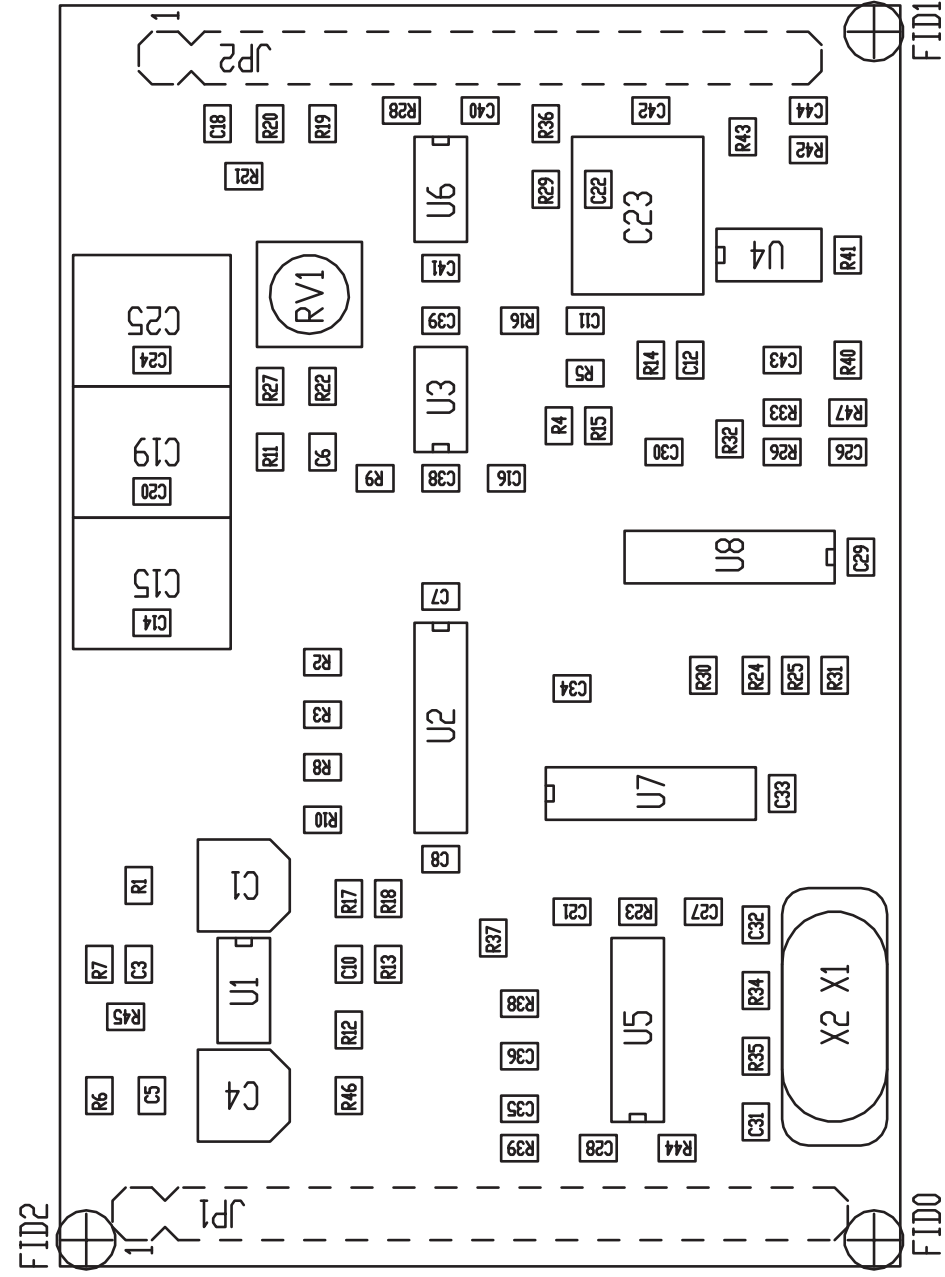


## SLMA0383R02V01

TEX Main Board Revised: 02/02/2022  
 SLMA0383R02V01 Revision: 1.1  
 A. Tommasi

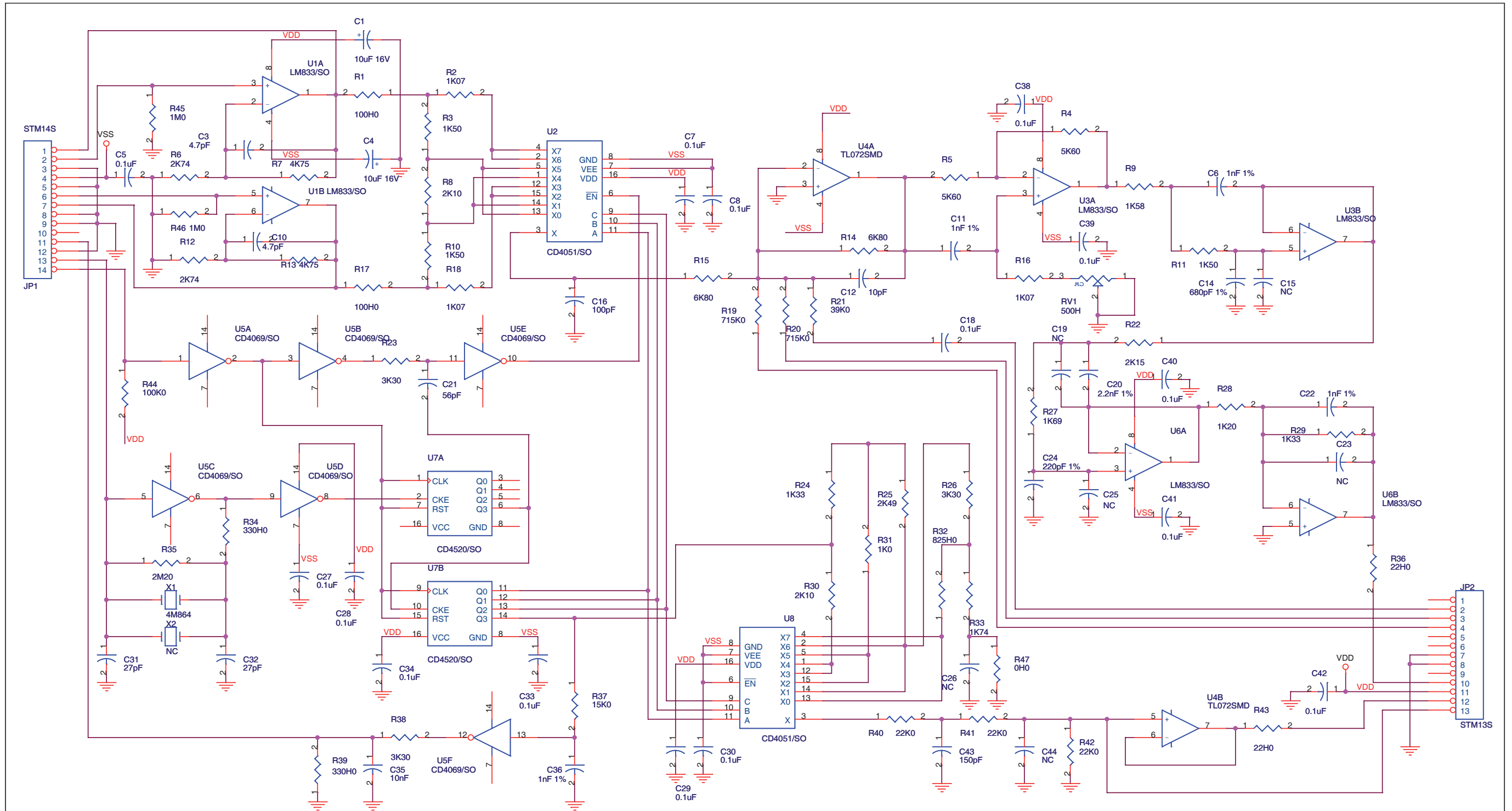
Item	Quantity	Reference	Part	Description
1	4	CN1, CN4, CN5, CN6	BNC_IS	BNC conn. 10x10 PCB
2	2	CN2, CN3	XLRFCS	XLR fem. PCB conn.
3	1	CN7	NC	SMB pcb conn.
4	1	CN8	SMB_CS	SMB pcb conn.
5	1	COD1	SLCTC30V03	Stereo coder CTC30
6	1	CS1	CSMA0383R2	PCB
7	36	C1, C2, C3, C5, C17, C19, C22, C26, C31, C39, C40, C45, C47, C67, C77, C80, C82, C83, C84, C85, C86, C88, C89, C93, C95, C98, C102, C103, C106, C108, C111, C113, C118, C127, C128, C131	0.1uF	0805 SMD capacitor
8	4	C4, C33, C57, C143	47pF	0805 SMD capacitor
9	3	C6, C34, C53	15pF	0805 SMD capacitor
10	4	C7, C10, C32, C38	100uF/16V	SMD electr. cap. 6.3mm
11	18	C8, C9, C12, C13, C15, C16, C41, C42, C43, C44, C54, C55, C62, C63, C73, C74, C150, C151	27pF	0805 SMD capacitor
12	30	C11, C18, C20, C21, C30, C35, C36, C37, C51, C58, C64, C65, C66, C68, C72, C75, C81, C90, C91, C92, C99, C104, C107, C114, C130, C132, C134, C135, C137, C148	10uF/16V	Cond. Elett. SMD d. 4mm
13	2	C14, C46	68pF	0805 SMD capacitor
14	2	C23, C25	1nF 2%	0805 SMD capacitor COG
15	2	C24, C28	1.5nF 2%	0805 SMD capacitor COG
16	2	C27, C29	NC	Ceramic comp. dia. 7mm
17	3	C48, C61, C76	1uF	0805 SMD capacitor
18	3	C49, C50, C126	470nF	0805 SMD capacitor
19	8	C52, C60, C69, C105, C129, C133, C136, C139	10nF	0805 SMD capacitor
20	6	C56, C59, C94, C96, C101, C146	NC	0805 SMD capacitor
21	4	C70, C71, C78, C79	220uF/16V	SMD electr. cap. 6.3mm
22	1	C87	10uF/35V	SMD electr. cap. 5mm
23	2	C97, C100	470nF	1206 SMD capacitor
24	1	C109	10uF/16V	SMD tantalum cap. size C
25	1	C110	4.7nF	0805 SMD capacitor
26	2	C112, C122	NC	1206 SMD capacitor
27	8	C116, C117, C119, C123, C138, C144, C145, C149	1nF	0805 SMD capacitor
28	2	C120, C121	47uF/16V	SMD tantalum cap. size D
29	3	C124, C141, C147	22pF	0805 SMD capacitor
30	1	C125	10pF	0805 SMD capacitor
31	1	C140	33pF	0805 SMD capacitor
32	1	C142	470pF	0805 SMD capacitor
33	2	C152, C153	2.2pF	0805 SMD capacitor
34	2	C154, C155	6-30pF	Var. comp. Murata TZB4A
35	1	DL1	LED-G0805	SMD 0805 green led
36	1	DZ1	LM4040-10	SMD SOT23 precision Zener
37	9	D1, D2, D3, D4, D5, D6, D8, D10, D12	BAV99	Dual diode SMD SOT23
38	3	D7, D9, D11	5V1	MINIMELF SMD Zener Diode
39	1	D13	BAV70	Dual diode SMD SOT23
40	2	D14, D15	BA570-04	Dual diode SMD SOT23
41	8	D16, D17, D18, D19, D28, D29, D30, D31	NC	Dual diode Varicap SMD SOT23
42	8	D20, D21, D22, D23, D32, D33, D34, D35	BB172	Varicap diode SOD323
43	8	D24, D25, D26, D27, D36, D37, D38, D39	NC	Varicap diode SOD323
44	9	FIX1, FIX2, FIX3, FIX4, FIX5, FIX6, FIX7, FIX8, FIX9	FIX35	Fixing hole 3.5mm
45	1	JP1	STF145	Female strip 14 pin
46	1	JP2	STF135	Female strip 13 pin
47	1	JP3	STM035	Male strip 3 pin
48	1	JP4	CN16PD	16 way pcb conn. with holder
49	2	JP5, JP6	STF10ST	Male strip 10 pin turned
50	6	J1, J2, J3, J4, J5, J6	JSMDC	2 pad SMD jumper half closed
51	1	J7	JSMC	pad SMD jumper
52	11	L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11	2.2uH	SMD inductor 3225 (1210)
53	1	L12	LCAVO	Induttanza a cavo RG
54	2	L13, L14	15uH	SMD inductor 3225 (1210) shielded
55	1	L15	220nH	SMD inductor 3225 (1210)
56	2	OPT1, OPT2	TLP181	Optocoupler SMD SO6
57	4	Q1, Q2, Q4, Q5	BC857	PNP trans. SOT23
58	4	Q3, Q6, Q12, Q13	BC847	NPN trans. SOT23
59	1	Q7	2N7002	Trans. FET SOT23
60	4	Q8, Q9, Q14, Q15	MMBFJ310	Trans. FET SOT23
61	2	Q10, Q11	BCR135	Digital NPN trans. SOT23
62	4	Q16, Q17, Q18, Q19	NC	Trans. FET SOT23
63	2	RV1, RV11	10K	Trimmer Rg V 3269W SMD
64	5	RV2, RV4, RV5, RV6, RV7	10K	Trimmer Rg V 3296W
65	1	RV3	50K	Trimmer Rg V 3296W
66	2	RV8, RV9	5K	Trimmer Rg V 3269W SMD
67	1	RV10	5K	Trimmer Rg V 3296W
68	1	RV12	NC	Trimmer SMD

Item	Quantity	Reference	Part	Description
69	8	R1, R33, R55, R63, R73, R102, R105, R132	100H0	0805 SMD res.
70	5	R2, R13, R20, R28, R142	10H0	0805 SMD res.
71	5	R3, R14, R21, R25, R40	30K9	0805 SMD res.
72	6	R4, R5, R26, R27, R42, R43	2K49	0805 SMD res.
73	2	R7, R23	604H0	0805 SMD res.
74	28	R8, R9, R16, R17, R18, R19, R24, R32, R35, R36, R37, R47, R53, R54, R58, R59, R70, R75, R76, R79, R83, R84, R92, R106, R108, R121, R159, R164	10K0	0805 SMD res.
75	4	R10, R46, R72, R85	1M0	0805 SMD res.
76	2	R12, R29	48K7	0805 SMD res.
77	5	R15, R22, R147, R152, R153	330H0	0805 SMD res.
78	8	R30, R31, R51, R52, R66, R69, R89, R141	100K0	0805 SMD res.
79	1	R34	51H0	0805 SMD res.
80	3	R38, R60, R77	12K0	0805 SMD res.
81	4	R39, R61, R78, R134	2K20	0805 SMD res.
82	11	R41, R56, R62, R65, R71, R93, R96, R98, R99, R129, R130	1K0	0805 SMD res.
83	4	R44, R45, R68, R80	15K0	0805 SMD res.
84	1	R48	20K0	0805 SMD res.
85	1	R49	28K0	0805 SMD res.
86	11	R50, R107, R112, R114, R115, R117, R158, R160, R161, R162, R163	NC	0805 SMD res.
87	2	R57, R67	37K4	0805 SMD res.
88	1	R64	4K99	0805 SMD res.
89	8	R74, R100, R101, R109, R118, R119, R120, R135	4K70	0805 SMD res.
90	1	R81	47H0	0805 SMD res.
91	1	R82	576H0	0805 SMD res.
92	2	R86, R131	0H0	0805 SMD res.
93	1	R87	560H0	0805 SMD res.
94	1	R88	220H0	0805 SMD res.
95	2	R90, R149	330K0	0805 SMD res.
96	3	R91, R97, R125	470K0	0805 SMD res.
97	2	R94, R95	47K0	0805 SMD res.
98	1	R103	3K30	0805 SMD res.
99	1	R104	270K0	0805 SMD res.
100	4	R110, R111, R136, R156	22H0	0805 SMD res.
101	2	R113, R150	150H0	0805 SMD res.
102	1	R116	249H0	0805 SMD res.
103	5	R122, R123, R124, R127, R133	6K80	0805 SMD res.
104	4	R137, R138, R139, R140	1K20	0805 SMD res.
105	1	R143	68H0	0805 SMD res.
106	1	R144	1H0	0805 SMD res.
107	2	R145, R146	8H20	0805 SMD res.
108	1	R148	120H0	0805 SMD res.
109	1	R151	56H0	0805 SMD res.
110	1	R154	82H0	0805 SMD res.
111	2	R155, R157	27H0	0805 SMD res.
112	1	SW1	SWDIP4	4 ways switch slide dip
113	2	SW2, SW3	SWDIP2	2 ways switch slide dip
114	1	TCX1	10MHz	TCXO SMD 5x3.2mm
115	13	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13	NC	Test point
116	5	U1, U2, U3, U5, U6	TL072SMD	Dual Op. SMD SO8
117	1	U4	CD4053SMD	Analog Switch SMD SO16
118	2	U8, U9	LM358SMD	Dual Op. SMD SO8
119	2	U10, U11	LM393SMD	Dual Comp. SMD SO8
120	2	U12, U17	NC7S86	XOR Port
121	1	U13	LM7815	Voltage reg. TO220
122	1	U14	NC	Voltage reg. SMD D2PAK
123	1	U15	MB15E03	Integrated PLL
124	1	U16	TLC272	Dual Op. SMD SO8
125	1	U18	MC78LC33	SOT23-5 voltage regulator"
126	1	VCO1	NC	VCO SKY 8 pin FVC7MD
127	1	Y1	SLAU0469R01V02	Audio stereo filter
128	1	Y2	ERA3SM	Hybrid MAR/ERA
129	1	Y3	MAR6SM	Hybrid MAR/ERA



NOME PROGETTO: PTX-LCD	NOME PARTE: CODER CARD
AUTORE: A. TOMMASI	DATA: 08/04/2004
ARCHIVIAZIONE ELETTRONICA: \\VRUT1	REVISIONE: 1.0
MATERIALE:	SCALA: 2:1
TRATTAMENTO:	SIZE: A4
PROFILO:	PAGINA: 1 DI 1
STATO: ESECUTIVO	CODICE PROGETTO: 011
	CODICE DISEGNO: SLCTC30V03

SLCTC30V03



CS1  
CSCTC30V03

Description: Coder Card		
Designer: A. Tommasi	Size: A3	Page: 1 of 1
Part No.: SLCTC30V03	Rev. 1.2	Date: 26/01/2015



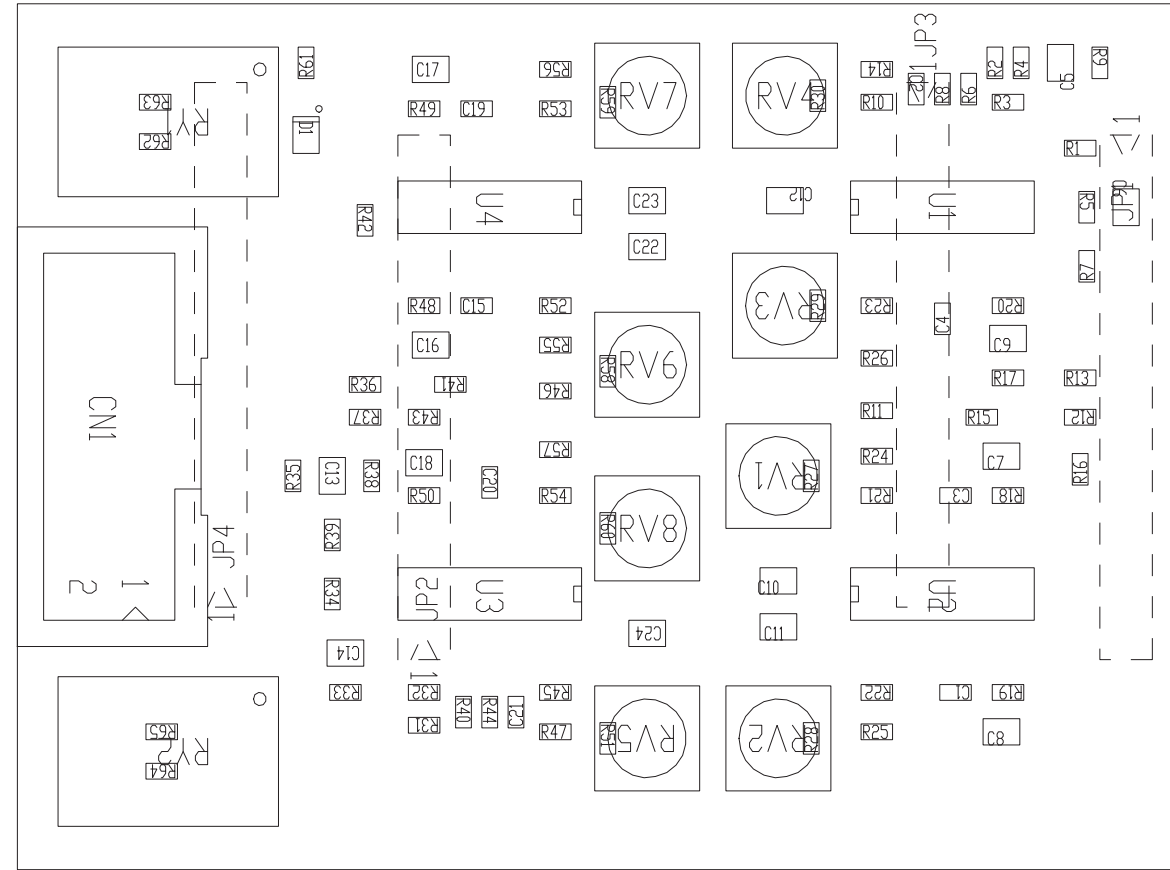


SLCTC30V03

Coder Card Revised: 26/01/2015  
 SLCTC30V03 Revision: 1.2  
 A. Tommasi

Item	Q.ty	Reference	Part	Description
1	1	CS1	CSCCTC30V03	Circuito stampato
2	2	C1, C4	10uF 16V	Cond. Elett. SMD d. 4mm
3	2	C3, C10	4.7pF	Cond. SMD 0805
4	15	C5, C7, C8, C18, C27, C28, C29, C30, C33, C34, C38, C39, C40, C41, C42	0.1uF	Cond. SMD 0805
5	4	C6, C11, C22, C36	1nF 1%	Cond. SMD 0805 COG
6	1	C12	10pF	Cond. SMD 0805
7	1	C14	680pF 1%	Cond. SMD 0805 COG
8	4	C15, C19, C23, C25	NC	Cond. Poliestere p 5mm (5*7mm)
9	1	C16	100pF	Cond. SMD 0805
10	1	C20	2.2nF 1%	Cond. SMD 0805 COG
11	1	C21	56pF	Cond. SMD 0805
12	1	C24	220pF 1%	Cond. SMD 0805 COG
13	1	C26	NC	Cond. SMD 0805
14	2	C31, C32	27pF	Cond. SMD 0805
15	1	C35	10nF	Cond. SMD 0805
16	1	C43	150pF	Cond. SMD 0805
17	1	C44	NC	Cond. SMD 0805
18	1	JP1	STM14S	Strip maschio 14 pin
19	1	JP2	STM13S	Strip maschio 13 pin
20	1	RV1	500H	Trimmer SMD
21	2	R1, R17	100H0	Res. SMD 0805
22	3	R2, R16, R18	1K07	Res. SMD 0805
23	3	R3, R10, R11	1K50	Res. SMD 0805
24	2	R4, R5	5K60	Res. SMD 0805
25	2	R6, R12	2K74	Res. SMD 0805
26	2	R7, R13	4K75	Res. SMD 0805
27	2	R8, R30	2K10	Res. SMD 0805
28	1	R9	1K58	Res. SMD 0805
29	2	R14, R15	6K80	Res. SMD 0805
30	2	R19, R20	715K0	Res. SMD 0805
31	1	R21	39K0	Res. SMD 0805
32	1	R22	2K15	Res. SMD 0805
33	3	R23, R26, R38	3K30	Res. SMD 0805
34	2	R24, R29	1K33	Res. SMD 0805
35	1	R25	2K49	Res. SMD 0805
36	1	R27	1K69	Res. SMD 0805
37	1	R28	1K20	Res. SMD 0805
38	1	R31	1K0	Res. SMD 0805
39	1	R32	825H0	Res. SMD 0805
40	1	R33	1K74	Res. SMD 0805
41	2	R34, R39	330H0	Res. SMD 0805
42	1	R35	2M20	Res. SMD 0805
43	2	R36, R43	22H0	Res. SMD 0805
44	1	R37	15K0	Res. SMD 0805
45	3	R40, R41, R42	22K0	Res. SMD 0805
46	1	R44	100K0	Res. SMD 0805
47	2	R45, R46	1M0	Res. SMD 0805
48	1	R47	0H0	Res. SMD 0805
49	3	U1, U3, U6	LM833/SO	Dual Op. SMD SO8
50	2	U2, U8	CD4051/SO	Analog Switch SMD SO16
51	1	U4	TL072SMD	Dual Op. SMD SO8
52	1	U5	CD4069/SO	Hex inverter SO14
53	1	U7	CD4520/SO	Dual binary counter
54	1	X1	4M864	Quarzo SMD HC49SMD
55	1	X2	NC	Quarzo HC18

SLAU0469R01V02



PRODUCT NAME : TEX-LCD

DESIGNER : FRANCESCHI A.

ARCHIVING : "RVRUT" SERVER, "RILASCIATI" FOLDER

PART NAME : AUDIO FILTER 15KHZ

DATE : 03/05/17

REVISION : 1.0 SCALE : 2:1

SIZE : A4

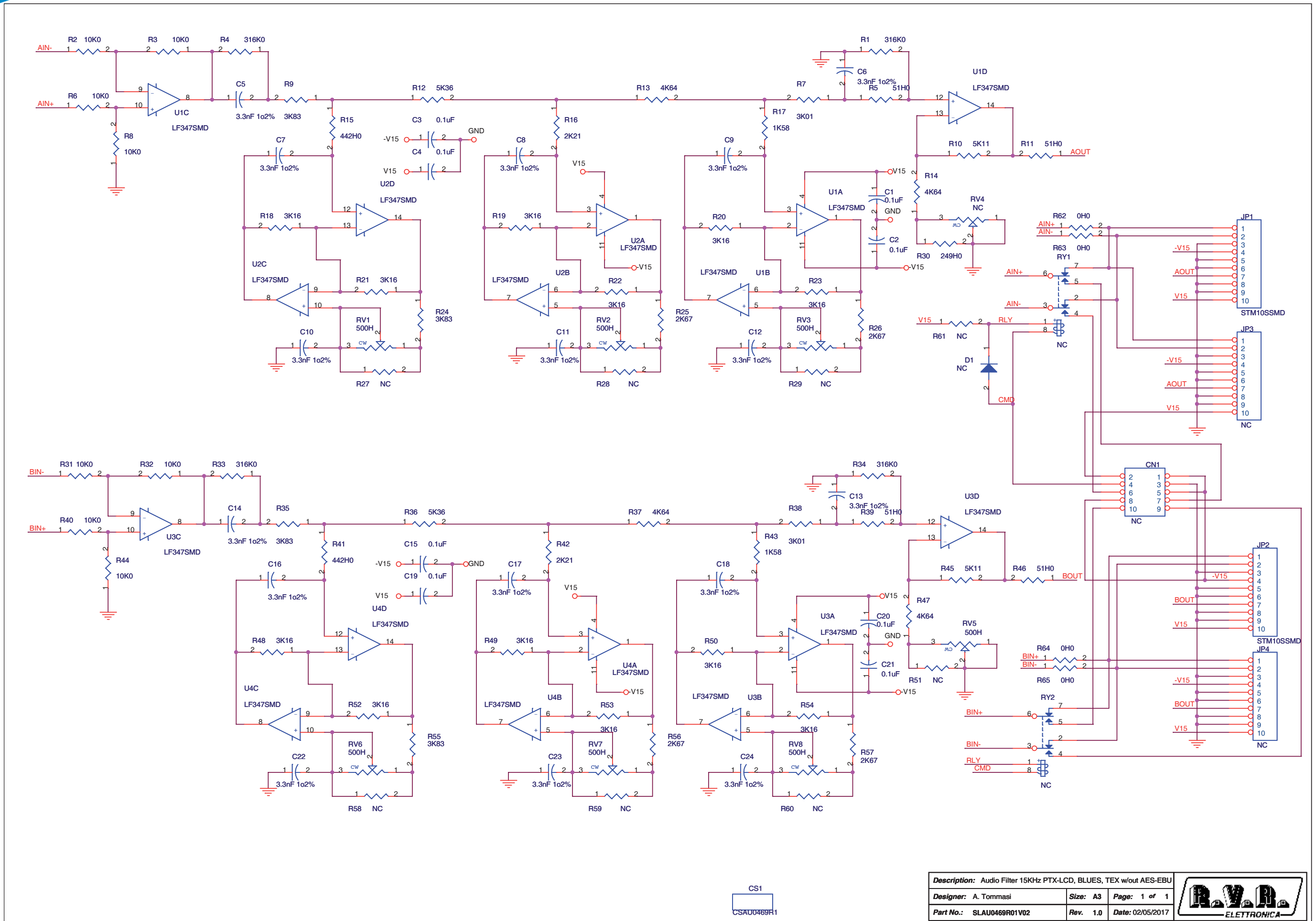
PAGE : 1

DI 1

DOCUMENT CODE : SLAU0469R01V\*\*

PROJECT CODE : 057

SLAU0469R01V02



Description: Audio Filter 15KHz PTX-LCD, BLUES, TEX w/out AES-EBU		
Designer: A. Tommasi	Size: A3	Page: 1 of 1
Part No.: SLAU0469R01V02	Rev. 1.0	Date: 02/05/2017

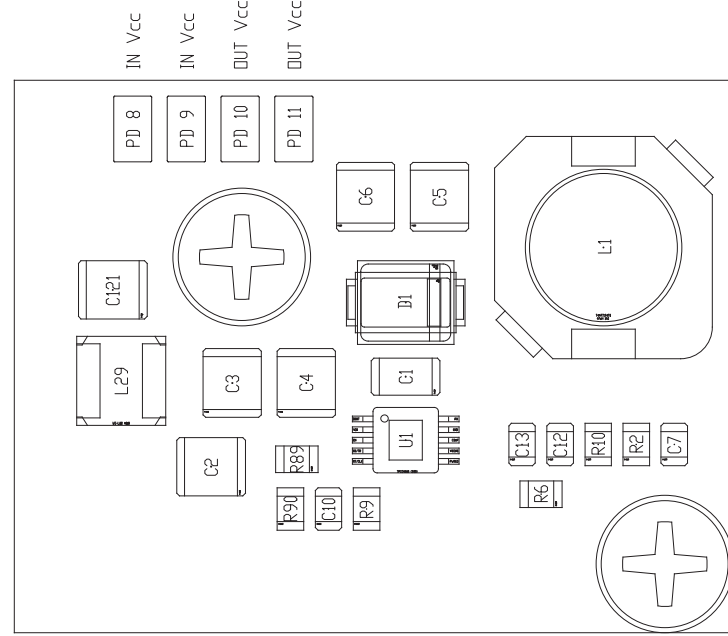


SLAU0469R01V02

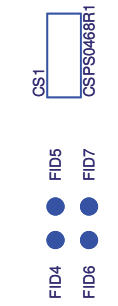
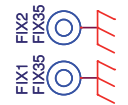
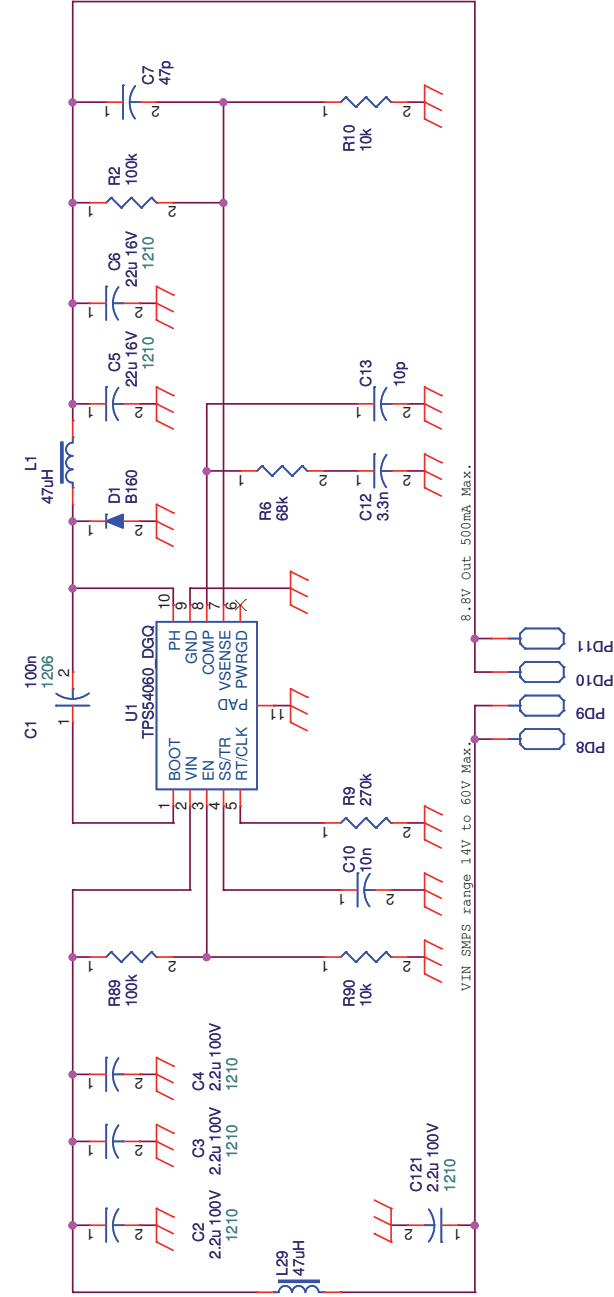
Audio Filter 15KHz PTX-LCD, BLUES, TEX w/out AES-EBU Revised: 02/05/2017  
 SLAU0469R01V02 Revision: 1.0  
 A. Tommasi

Item	Quantity	Reference	Part	Description
1	1	CN1	NC	Conn. 10 poli Flat cs con alette
2	1	CS1	CSAU0469R1	Circuito stampato
3	8	C1, C2, C3, C4, C15, C19, C20, C21	0.1uF	Cond. SMD 0603
4	16	C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C16, C17, C18, C22, C23, C24	3.3nF 1o2%	Cond. SMD 0805 COG
5	1	D1	NC	SOD323 SMD Diode
6	2	JP1, JP2	STM10SSMD	Male strip 10 pin SMD
7	2	JP3, JP4	NC	Male strip 10 pin SMD
8	7	RV1, RV2, RV3, RV5, RV6, RV7, RV8	500H	Trimmer SMD V 3314
9	1	RV4	NC	Trimmer SMD V 3314
10	2	RY1, RY2	NC	Rele' FTR-B3G
11	4	R1, R4, R33, R34	316K0	Res. SMD 0603
12	8	R2, R3, R6, R8, R31, R32, R40, R44	10K0	Res. SMD 0603
13	4	R5, R11, R39, R46	51H0	Res. SMD 0603
14	2	R7, R38	3K01	Res. SMD 0603
15	4	R9, R24, R35, R55	3K83	Res. SMD 0603
16	2	R10, R45	5K11	Res. SMD 0603
17	2	R12, R36	5K36	Res. SMD 0603
18	4	R13, R14, R37, R47	4K64	Res. SMD 0603
19	2	R15, R41	442H0	Res. SMD 0603
20	2	R16, R42	2K21	Res. SMD 0603
21	2	R17, R43	1K58	Res. SMD 0603
22	12	R18, R19, R20, R21, R22, R23, R48, R49, R50, R52, R53, R54	3K16	Res. SMD 0603
23	4	R25, R26, R56, R57	2K67	Res. SMD 0603
24	8	R27, R28, R29, R51, R58, R59, R60, R61	NC	Res. SMD 0603
25	1	R30	249H0	Res. SMD 0603
26	4	R62, R63, R64, R65	0H0	Res. SMD 0603
27	4	U1, U2, U3, U4	LF347SMD	Quad Op. SMD SO14

SLPS0468R01V01



DESCRIPTION : POWER SUPPLY PA RF 50W 50V	PART CODE : SLPS0468R01V**
DESIGNER : FRANCESCHI A.	DATE: 19/04/2017
	REVISION: 1.0
	SCALE: 3:1
	SIZE: A4
	PAGINA: 1 DI 1



Description: POWER SUPPLY PA RF 50W 50V	Page: 1 of 1
Designer: Franceschi A.	Size: A4
Part No.: SLPS0468R01V01	Rev. 1.0
	Date: 19/04/2017





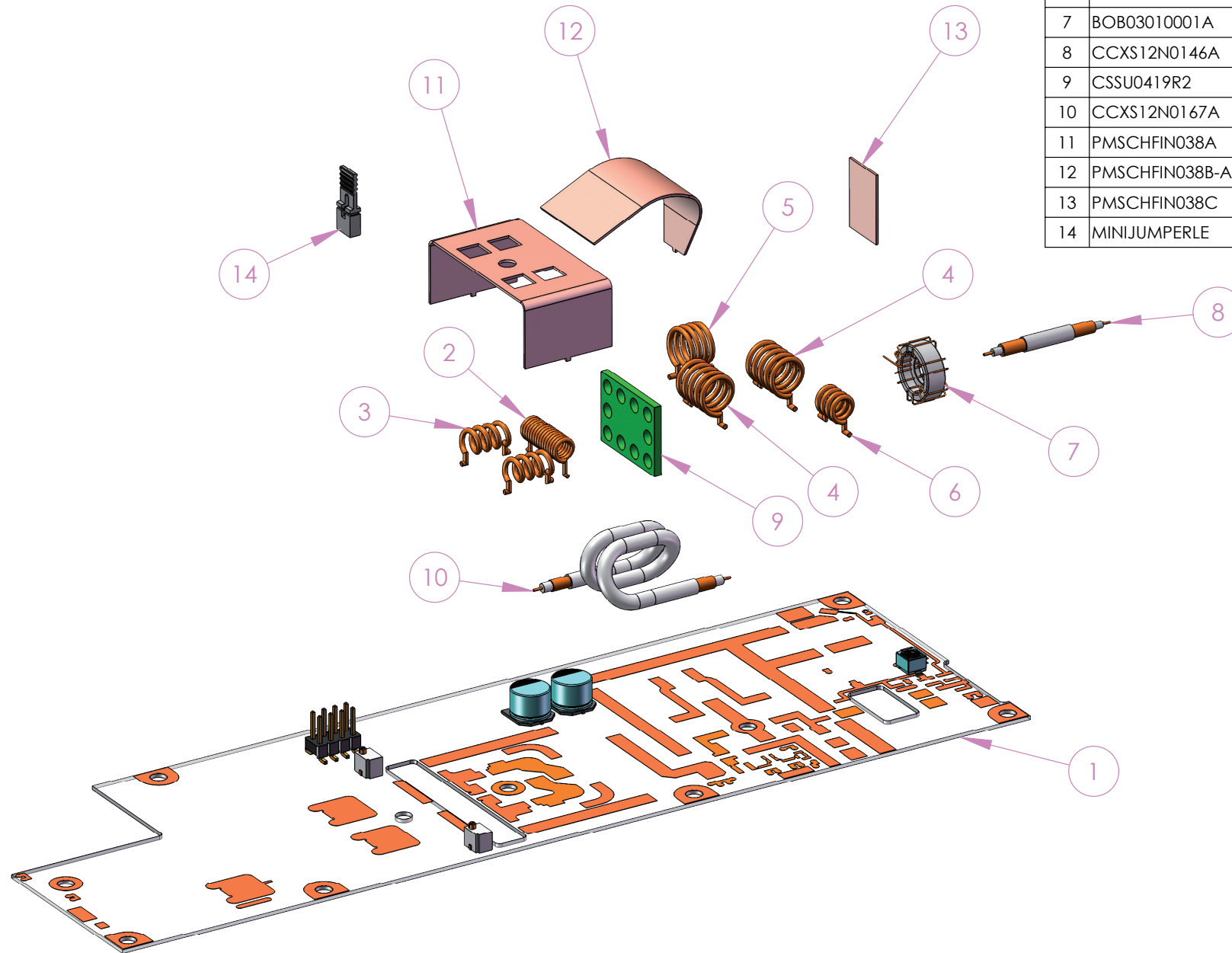
SLPS0468R01V01

POWER SUPPLY PA RF 50W 50V  
 SLPS0468R01V01  
 Revision: 1.0  
 Franceschi A.  
 19/04/2017

Item	Quantity	Reference	Part	Description
3	1	CS1	CSPS0468R1	Circuito stampato PA
5	1	C1	100n	Cond. SMD 1206
6	4	C2,C3,C4,C121	2.2u 100V	Capacitor SMD 1210 MLCC X7R 100V
7	2	C5,C6	22u 16V	Capacitor SMD 1210 MLCC X7R 16V
8	1	C7	47p	Cond. SMD 0805 COG
9	1	C10	10n	SMD 0805 MLCC X7R
11	1	C12	3.3n	SMD 0805 MLCC X7R
12	1	C13	10p	Cond. SMD 0805 COG
45	1	D1	B160	SMA Size SCHOTTKY Diode
51	4	FID4,FID5,FID6,FID7	FID	Fiducial CS
52	2	FIX1,FIX2	FIX35	
57	1	L1	47uH	PWR Ind Wurth E 7447713470
73	1	L29	47uH	PWR Ind WE 74404042470
75	4	PD8,PD9,PD10,PD11	PAD	Pad for connection
84	2	R2,R89	100k	Res. SMD 0805
88	1	R6	68k	Res. SMD 0805
91	1	R9	270k	Res. SMD 0805
92	2	R10,R90	10k	Res. SMD 0805
130	1	U1	TPS54060_DGQ	Step-Down DC2DC Converter

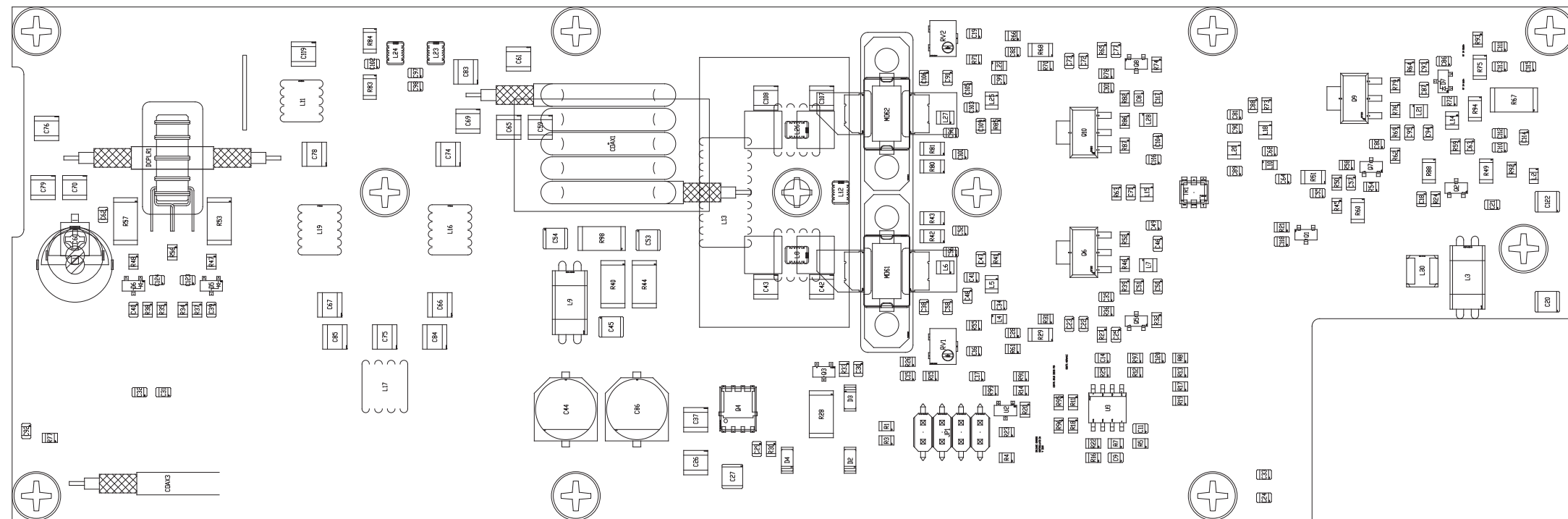
SLRF0408R03V01

Nr	Codice	Descrizione	Qta.
1	SLRF0408R03V01s	SEM.SCH.FINALE TEX30LCD/BLUES30NV_pcb	1
2	BOB01010026A	15 spire filo 0.8mm R. Smaltato avvolte su D.3.5 in modo compatto	1
3	BOB01020163A	BOBINA	2
4	BOB01020165A	BOB.IN ARIA RAME ARG. SP.1 SU D.6.5	2
5	BOB01020166A	BOBINA	1
6	BOB01020167A	BOBINA	1
7	BOB03010001A	BOB. SU NUCLEO KITFTR1010SP	1
8	CCXS12N0146A	CAVO RG316/50 NON INTESTATO 30MM	1
9	CSSU0419R2	CIRC.STAMP. SUPPORTO CAVO RG316	1
10	CCXS12N0167A	CAVO RG316/50 NON INTESTATO 133MM	1
11	PMSCHFIN038A	Schermo RF	1
12	PMSCHFIN038B-A	Schermo RF B1	1
13	PMSCHFIN038C	Schermo RF	1
14	MINIJUMPERLE	PONT.JUMPER CON LEVETTA	1



	PROFILE:	DESCRIPTION:	SEM.SCH. PA RF 50W 50V FM		
	MATERIAL:	CODE:	SLRF0408R03V01	AUTHOR:	
GENERAL TOLERANCE UNI ISO 2768-f	TREATMENT:	DATE:	13/03/2020	PROJECT N°:	TYPE:
		SCALE:	1:1	FORMAT:	A3
		PAGE:	1/1		

SLRF0408R03V01



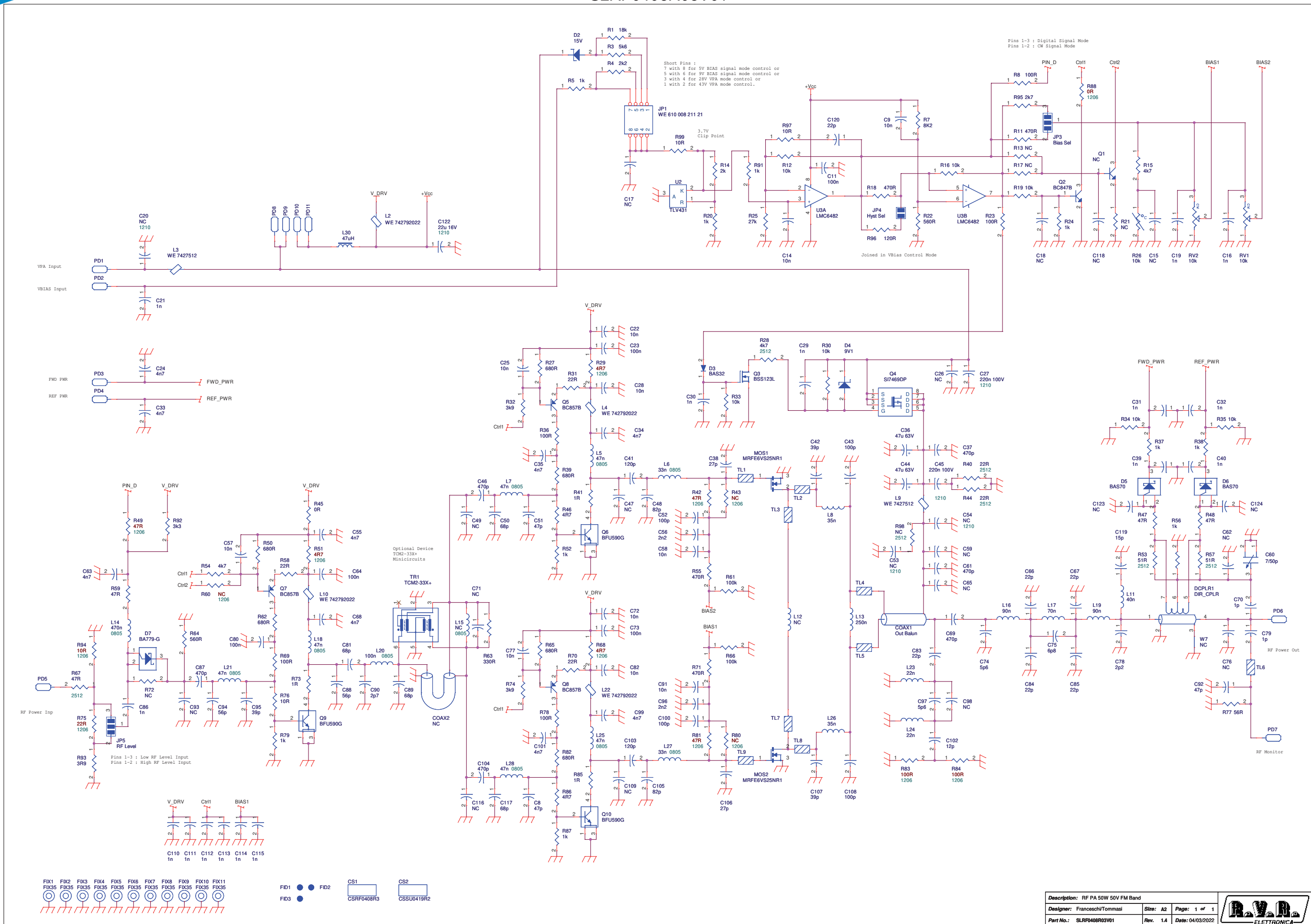
DESCRIPTION : RF PA 50W 50V FM BAND

PART CODE : SLRF0408R03V01

DESIGNER : FRANCESCHI A.

DATE: 19/04/2017 | REVISION: 1.0 | SCALE: 1:1 | SIZE: A4 | PAGINA: 1 DI 1

SLRF0408R03V01



Description: RF PA 50W 50V FM Band	Size: A2	Page: 1 of 1
Designer: Franceschi/Tommasi	Rev. 1.4	Date: 04/03/2022
Part No.: SLRF0408R03V01		

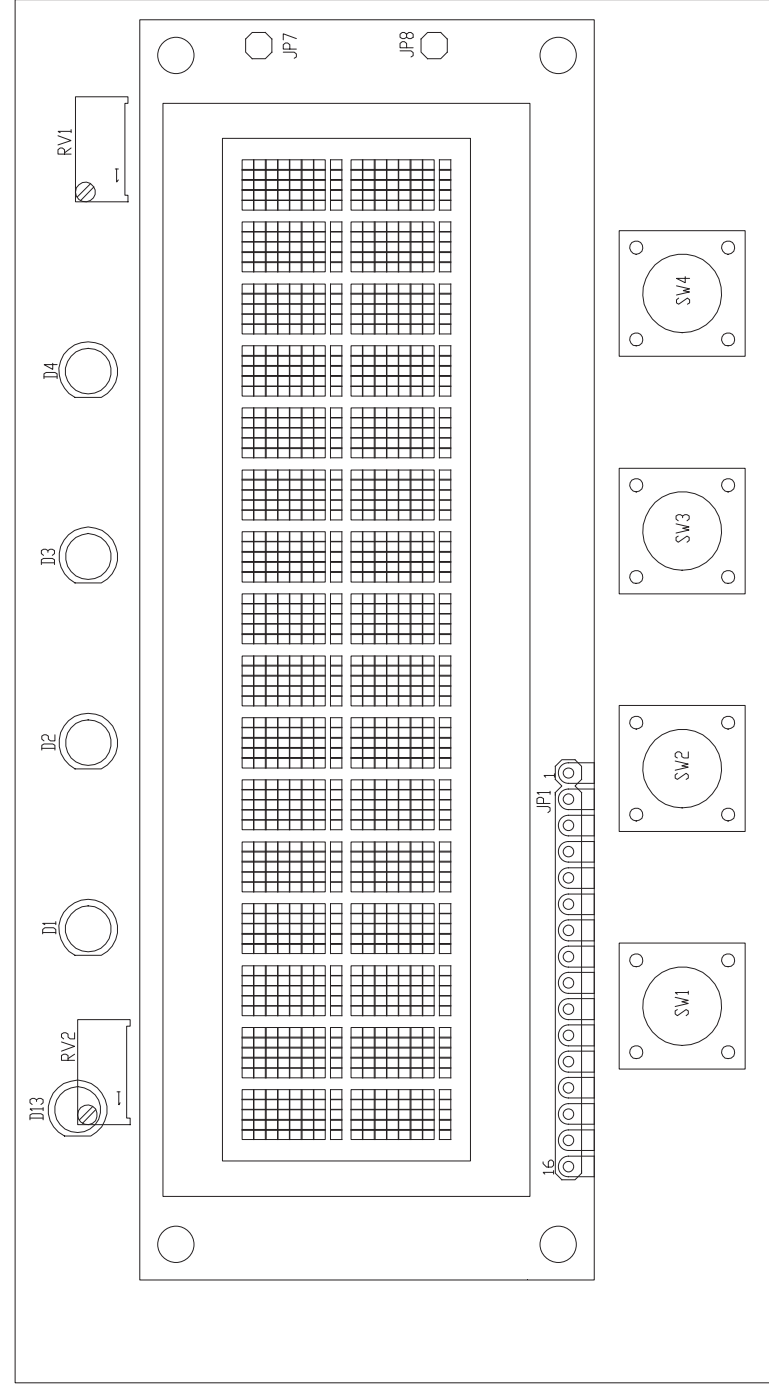
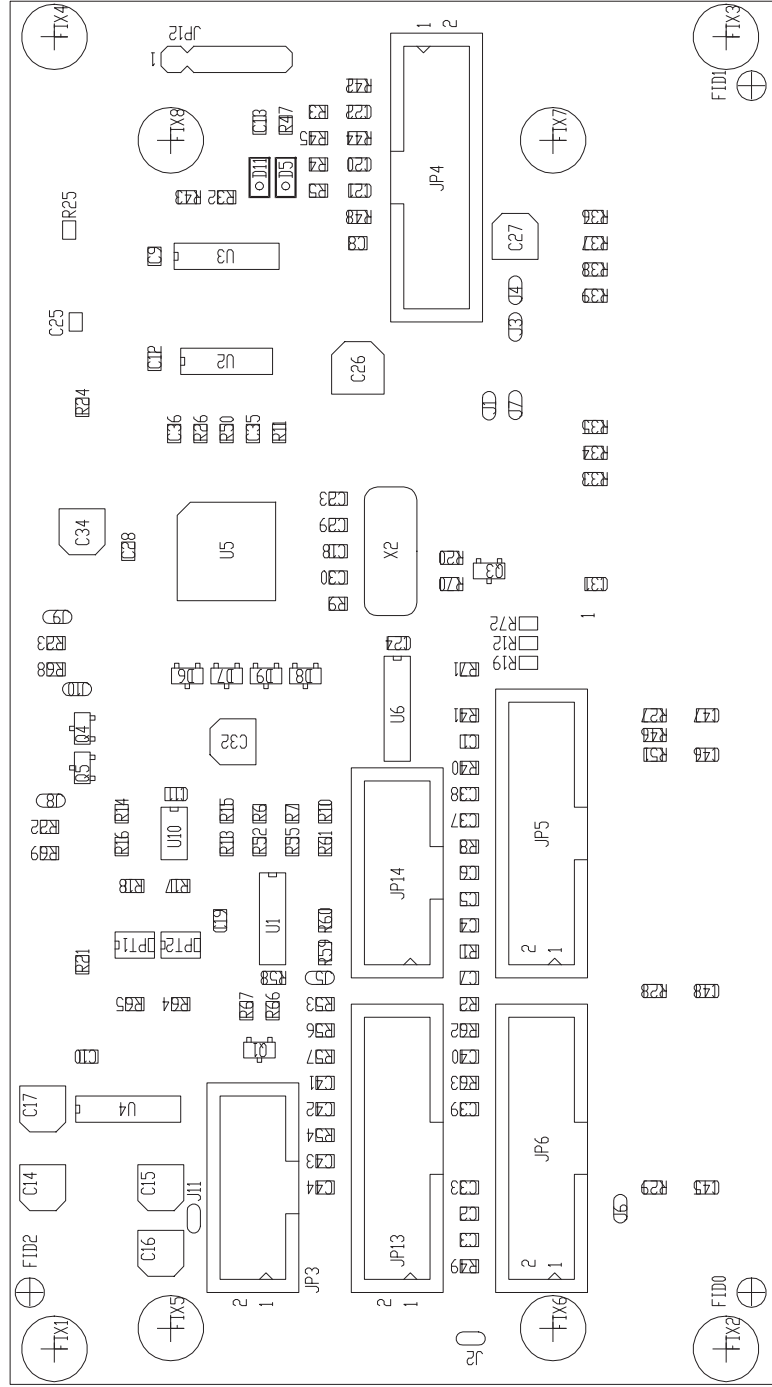
## SLRF0408R03V01

RF PA 50W 50V FM Band Revised: 04/03/2022  
 SLRF0408R03V01 Revision: 1.5  
 Franceschi/Tommasi

Item	Quantity	Reference	Part	Description
1	1	COAX1	Out Balun	Coax Cable RG316 50-Ohm Length 125mm Shield to Shield
2	1	COAX2	NC	Coax Cable RG178 Length 125mm Shield to Shield Wrapped a
3	1	CS1	CSRF0408R3	Circuito stampato PA
4	1	CS2	CSSU0419R2	Circuito stampato Balun RG316-50
5	3	C8, C51, C92	47p	Cond. SMD 0805 COG
6	11	C9, C14, C22, C25, C28, C57, C58, C72, C77, C82, C91	10n	SMD 0805 MLCC X7R
7	5	C11, C23, C64, C73, C80	100n	SMD 0805 MLCC X7R
8	13	C15, C17, C18, C47, C49, C62, C71, C93, C109, C116, C118, C123, C124	NC	Cond. SMD 0805 COG
9	16	C16, C19, C21, C29, C30, C31, C32, C39, C40, C86, C110, C111, C112, C113, C114, C115	1n	Cond. SMD 0805 COG
10	3	C20, C53, C54	NC	Capacitor SMD 1210 MLCC X7R 100V
11	9	C24, C33, C34, C35, C55, C63, C68, C99, C101	4n7	SMD 0805 MLCC X7R
12	4	C26, C59, C65, C76	NC	Cond. SMD 1212 HQ
13	2	C27, C45	220n 100V	Capacitor SMD 1210 MLCC X7R 100V
14	2	C36, C44	47u 63V	Cond. Elett. SMD d. 8mm
15	3	C37, C61, C69	470p	Cond. SMD 1212 HQ
16	2	C38, C106	27p	Cond. SMD 0805 COG
17	2	C41, C103	120p	Cond. SMD 0805 COG
18	2	C42, C107	39p	Cond. SMD 1212 HQ
19	2	C43, C108	100p	Cond. SMD 1212 HQ
20	3	C46, C87, C104	470p	Cond. SMD 0805 COG
21	2	C48, C105	82p	Cond. SMD 0805 COG
22	4	C50, C81, C89, C117	68p	Cond. SMD 0805 COG
23	2	C52, C100	100p	Cond. SMD 0805 COG
24	2	C56, C96	2n2	SMD 0805 MLCC X7R
25	1	C60	7/50p	Adj. Cap 7 / 50pF
26	5	C66, C67, C83, C84, C85	22p	Cond. SMD 1212 HQ
27	2	C70, C79	1p	Cond. SMD 1212 HQ
28	1	C74	5p6	Cond. SMD 1212 HQ
29	1	C75	6p8	Cond. SMD 1212 HQ
30	1	C78	2p2	Cond. SMD 1212 HQ
31	2	C88, C94	56p	Cond. SMD 0805 COG
32	1	C90	2p7	Cond. SMD 0805 COG
33	1	C95	39p	Cond. SMD 0805 COG
34	1	C97	5p6	Cond. SMD 0805 COG
35	1	C98	NC	Cond. SMD 0805 COG
36	1	C102	12p	Cond. SMD 0805 COG
37	1	C119	15p	Cond. SMD 1212 HQ
38	1	C120	22p	Cond. SMD 0805 COG
39	1	C122	22u 16V	Capacitor SMD 1210 MLCC X7R 16V
40	1	DCPLR1	DIR_CPLR	Toroidal Directional Coupler
41	1	D2	15V	MINIMELF SMD Zener Diode
42	1	D3	BAS32	Minimelf Diode
43	1	D4	9V1	MINIMELF SMD Zener Diode
44	2	D5, D6	BAS70	Hot Carrier Schottky Diode
45	1	D7	BA779-G	SOT23 Pin Diode
46	3	FID1, FID2, FID3	FID	Fiducial CS
47	11	FIX1, FIX2, FIX3, FIX4, FIX5, FIX6, FIX7, FIX8, FIX9, FIX10, FIX11	FIX35	
48	1	JP1	WE 610 008 211 21	2.54mm DUAL SMT PIN HEADER (4+4)
49	1	JP3	Bias Sel	
50	1	JP4	Hyst Sel	
51	1	JP5	RF Level	
52	4	L2, L4, L10, L22	WE 742792022	Ferrite Bead
53	2	L3, L9	WE 7427512	Ferrite Bead
54	6	L5, L7, L18, L21, L25, L28	47n	Induttanza SMD HQ 2012 Wirewound (0805)
55	2	L6, L27	33n	Induttanza SMD HQ 2012 Wirewound (0805)
56	2	L8, L26	35n	4 spire filo 1mm R.Arg avvolte su D.3.5 lungh 9 mm
57	1	L11	40n	4 spire filo 1mm R.Arg avvolte su D.4 lungh 5.5 mm
58	1	L12	NC	Induttanza cilindrica
59	1	L13	250n	15 spire filo 0.8mm R. Smaltato avvolte su D.3.5 in modo co
60	1	L14	470n	Induttanza SMD HQ 2012 Wirewound (0805)
61	1	L15	NC	Induttanza SMD HQ 2012 (0805)

Item	Quantity	Reference	Part	Description
62	2	L16, L19	90n	5 Spire Filo D. 1mm Rame Arg. avvolte su D. 6.5 lungh. 11 mm
63	1	L17	70n	4 Spire Filo D. 1mm Rame Arg. avvolte su D. 6.5 lungh. 6 mm
64	1	L20	100n	Induttanza SMD HQ 2012 Wirewound (0805)
65	2	L23, L24	22n	Coilcraft Square Air Core Inductor 09085Q-22N
66	1	L30	47uH	PWR Ind WE 74404042470
67	2	MOS1, MOS2	MRFE6VS25NR1	Single LDMOS
68	11	PD1, PD2, PD3, PD4, PD5, PD6, PD7, PD8, PD9, PD10, PD11	PAD	Pad for connection
69	1	Q1	NC	Trans. NPN SOT23
70	1	Q2	BC847B	Trans. NPN SOT23
71	1	Q3	BSS123L	SOT23 NMOS
72	1	Q4	SI7469DP	Power PMOS
73	3	Q5, Q7, Q8	BC857B	Trans. PNP SOT23
74	3	Q6, Q9, Q10	BFU590G	Trans. NPN SOT223
75	2	RV1, RV2	10k	Trimmer SMD
76	1	R1	18k	Res. SMD 0805
77	1	R3	5k6	Res. SMD 0805
78	1	R4	2k2	Res. SMD 0805
79	10	R5, R20, R24, R37, R38, R52, R56, R79, R87, R91	1k	Res. SMD 0805
80	1	R7	8k2	Res. SMD 0805
81	5	R8, R23, R36, R69, R78	100R	Res. SMD 0805
82	4	R11, R18, R55, R71	470R	Res. SMD 0805
83	7	R12, R16, R19, R30, R33, R34, R35	10k	Res. SMD 0805
84	4	R13, R17, R21, R72	NC	Res. SMD 0805
85	1	R14	2k	Res. SMD 0805
86	2	R15, R54	4k7	Res. SMD 0805
87	2	R22, R64	560R	Res. SMD 0805
88	1	R25	27k	Res. SMD 0805
89	1	R26	10k	Res. NTC SMD 0805
90	6	R27, R39, R50, R62, R65, R82	680R	Res. SMD 0805
91	1	R28	4k7	Res. SMD 2512 1%
92	3	R29, R51, R68	4R7	Res. SMD 1206
93	3	R31, R58, R70	22R	Res. SMD 0805
94	2	R32, R74	3k9	Res. SMD 0805
95	2	R40, R44	22R	Res. SMD 2512 1%
96	3	R41, R73, R85	1R	Res. SMD 0805
97	3	R42, R49, R81	47R	Res. SMD 1206
98	3	R43, R60, R80	NC	Res. SMD 1206
99	1	R45	0R	Res. SMD 0805
100	2	R46, R86	4R7	Res. SMD 0805
101	3	R47, R48, R59	47R	Res. SMD 0805
102	2	R53, R57	51R	Res. SMD 2512 1%
103	2	R61, R66	100k	Res. SMD 0805
104	1	R63	330R	Res. SMD 0805
105	1	R67	47R	Res. SMD 2512 1%
106	1	R75	22R	Res. SMD 1206
107	3	R76, R97, R99	10R	Res. SMD 0805
108	1	R77	56R	Res. SMD 0805
109	2	R83, R84	100R	Res. SMD 1206
110	1	R88	0R	Res. SMD 1206
111	1	R92	3k3	Res. SMD 0805
112	1	R93	3R9	Res. SMD 0805
113	1	R94	10R	Res. SMD 1206
114	1	R95	2k7	Res. SMD 0805
115	1	R96	120R	Res. SMD 0805
116	1	R98	NC	Res. SMD 2512 1%
117	9	TL1, TL2, TL3, TL4, TL5, TL6, TL7, TL8, TL9	TLINE_S	Linea strip CS
118	1	TR1	TCM2-33X+	Minicircuits SMT RF Balun
119	1	U2	TLV431	Low Volt. Adj. Shunt Reg 1.24Vref
120	1	U3	LMC6482	Rail to Rail Dual Op. SMD SO8
121	1	W7	NC	





PRODUCT NAME : TEX-LCD, P-J-LCD, LINK, URP | PART NAME : SEM.SCH.PANEL CARD PIC18F452

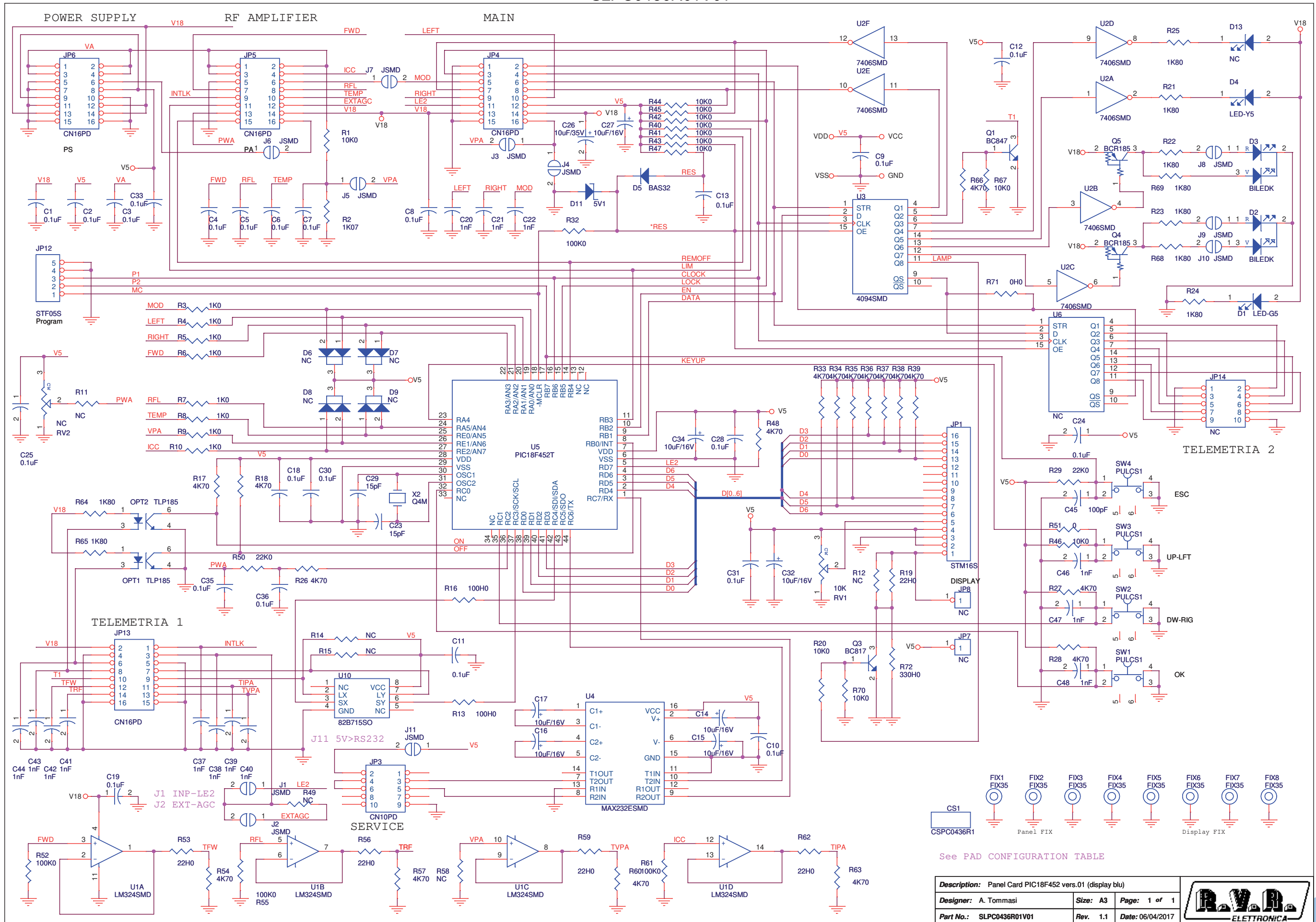
DESIGNER : A. TOMMASI

DATE : 03/09/15 | REVISION : 1.0 | SCALE : 1:1 | SIZE : A4 | PAGE : 1 | DI : 1

ARCHIVING : "RVRUT" SERVER, "RILASCIATI" FOLDER | PROJECT CODE : <>

DOCUMENT CODE : SLPC0436R01Vxx

SLPC0436R01V01



See PAD CONFIGURATION TABLE

<b>Description:</b> Panel Card PIC18F452 vers.01 (display blu)		
<b>Designer:</b> A. Tommasi	<b>Size:</b> A3	<b>Page:</b> 1 of 1
<b>Part No.:</b> SLPC0436R01V01	<b>Rev.:</b> 1.1	<b>Date:</b> 06/04/2017

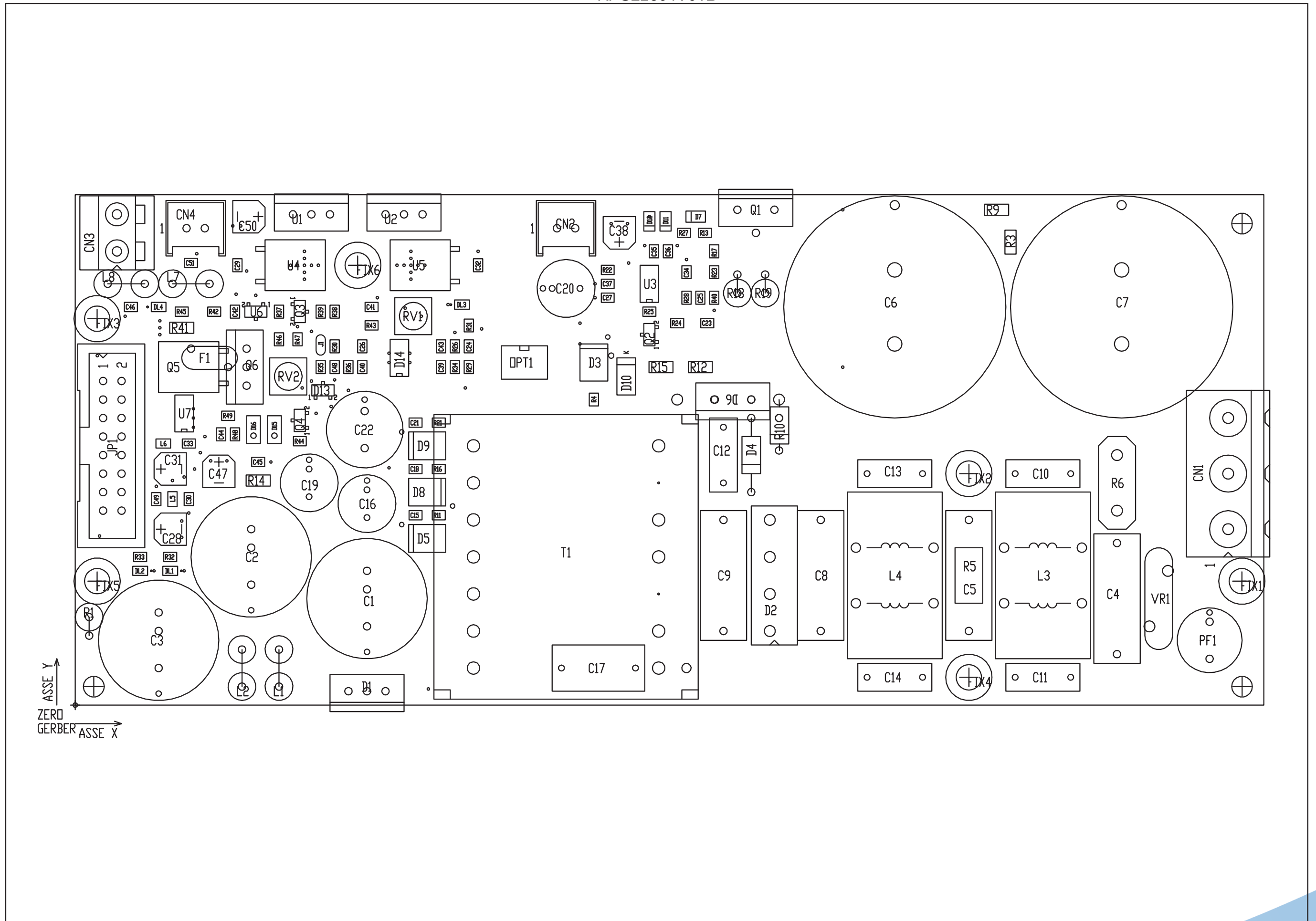


SLPC0436R01V01

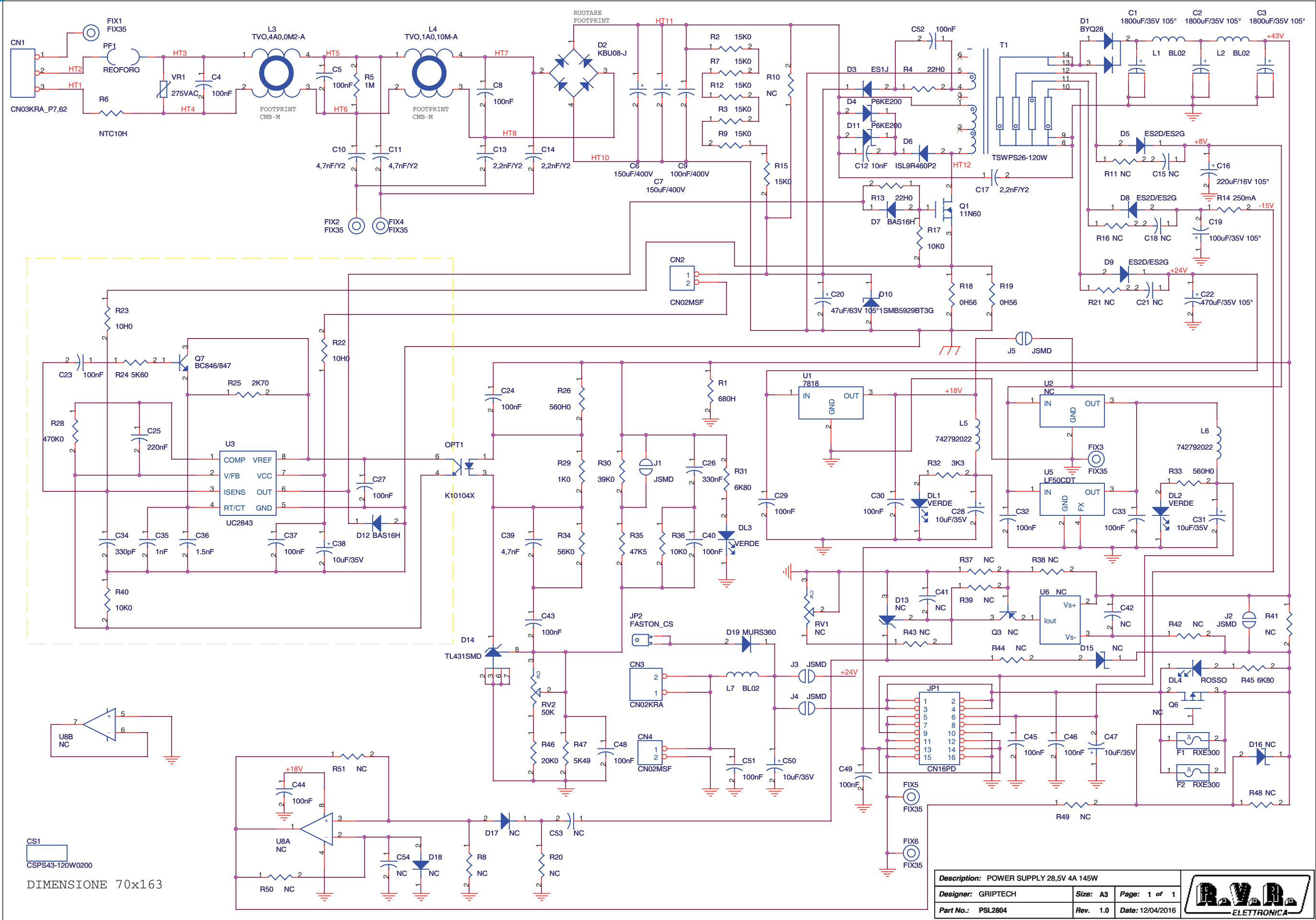
Panel Card PIC18F452 vers.01 (display blu)  
 SLPC0436R01V01 Revision: 1.1  
 06/04/2017  
 A. Tommasi

Item	Quantity	Reference	Part	Description
1	1	CS1	CSPC0436R1	Circuito stampato
2	23	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C18,C19,C24,C25,C28,C30,C31,C33,C35,C36	0.1uF	Cond. SMD 0805
3	7	C14,C15,C16,C17,C27,C32,C34	10uF/16V	Cond. Elett. SMD d. 4mm
4	14	C20,C21,C22,C37,C38,C39,C40,C41,C42,C43,C44,C46,C47,C48	1nF	Cond. SMD 0805
5	2	C23,C29	15pF	Cond. SMD 0805
6	1	C26	10uF/35V	Cond. Elett. SMD d. 5mm
7	1	C45	100pF	Cond. SMD 0805
8	1	D1	LED-G5	LED Verde dia. 5mm
9	2	D2,D3	BILEDK	Doppio led V-R 5mm Catodo com.
10	1	D4	LED-Y5	LED Giallo dia. 5mm
11	1	D5	BAS32	MINIMELF SMD Diode
12	4	D6,D7,D8,D9	NC	Doppio Diodo SMD SOT23
13	1	D11	5V1	MINIMELF SMD Zener Diode
14	1	D13	NC	LED Giallo dia. 5mm
15	8	FIX1,FIX2,FIX3,FIX4,FIX5,FIX6,FIX7,FIX8	FIX35	Foro fissaggio 3.5mm
16	1	JP1	STM16S	Strip femmina 16 pin
17	1	JP3	CN10PD	Connettore 10 poli Flat cs
18	4	JP4,JP5,JP6,JP13	CN16PD	Connettore 16 poli Flat cs
19	2	JP7,JP8	NC	Strip femmina 1 pin
20	1	JP12	STF05S	Strip femmina o 5 pin
21	1	JP14	NC	Connettore 10 poli Flat cs
22	11	J1,J2,J3,J4,J5,J6,J7,J8,J9,J10,J11	JSMD	Pad SMD a saldare
23	2	OPT1,OPT2	TLP185	Optoisolatore SMD SO6
24	1	Q1	BC847	Trans. NPN SOT23
25	1	Q3	BC817	Trans. NPN SOT23
26	2	Q4,Q5	BCR185	Trans./Res. PNP SOT23
27	1	RV1	10K	Trimmer Rg O 3386X
28	1	RV2	NC	Trimmer Rg V 3296W
29	12	R1,R20,R40,R41,R42,R43,R44,R45,R46,R47,R67,R70	10K0	Res. SMD 0805 1%
30	1	R2	1K07	Res. SMD 0805 1%
31	8	R3,R4,R5,R6,R7,R8,R9,R10	1K0	Res. SMD 0805 1%
32	6	R11,R12,R14,R15,R49,R58	NC	Res. SMD 0805 1%
33	2	R13,R16	100H0	Res. SMD 0805 1%
34	18	R17,R18,R26,R27,R28,R33,R34,R35,R36,R37,R38,R39,R48,R54,R57,R60,R63,R66	4K70	Res. SMD 0805 1%
35	5	R19,R53,R56,R59,R62	22H0	Res. SMD 0805 1%
36	9	R21,R22,R23,R24,R25,R64,R65,R68,R69	1K80	Res. SMD 0805 1%
37	2	R29,R50	22K0	Res. SMD 0805 1%
38	4	R32,R52,R55,R61	100K0	Res. SMD 0805 1%
39	2	R51,R71	0H0	Res. SMD 0805 1%
40	1	R72	330H0	Res. SMD 0805 1%
41	4	SW1,SW2,SW3,SW4	PULCS1	Pulsante cs
42	1	U1	LM324SMD	Quad Op. SMD SO14
43	1	U2	7406SMD	Hex inv OC SMD SO14
44	1	U3	4094SMD	Shift Reg. SMD SO16
45	1	U4	MAX232ESMD	RS232 Driver SMD SO16
46	1	U5	PIC18F452T	TQFP44 SMD Microprocessor
47	1	U6	NC	Shift Reg. SMD SO16
48	1	U10	82B715SO	IIC Bus driver SMD SO8
49	1	X2	Q4M	Quarzo SMD HC49SMD

KPSL2804V01B



KPSL2804V01B



DIMENSIONE 70x163

<b>Description:</b> POWER SUPPLY 28,5V 4A 145W			
<b>Designer:</b> GRIPTECH	<b>Size:</b> A3	<b>Page:</b> 1 of 1	
<b>Part No.:</b> PSL2804	<b>Rev.:</b> 1.0	<b>Date:</b> 12/04/2016	



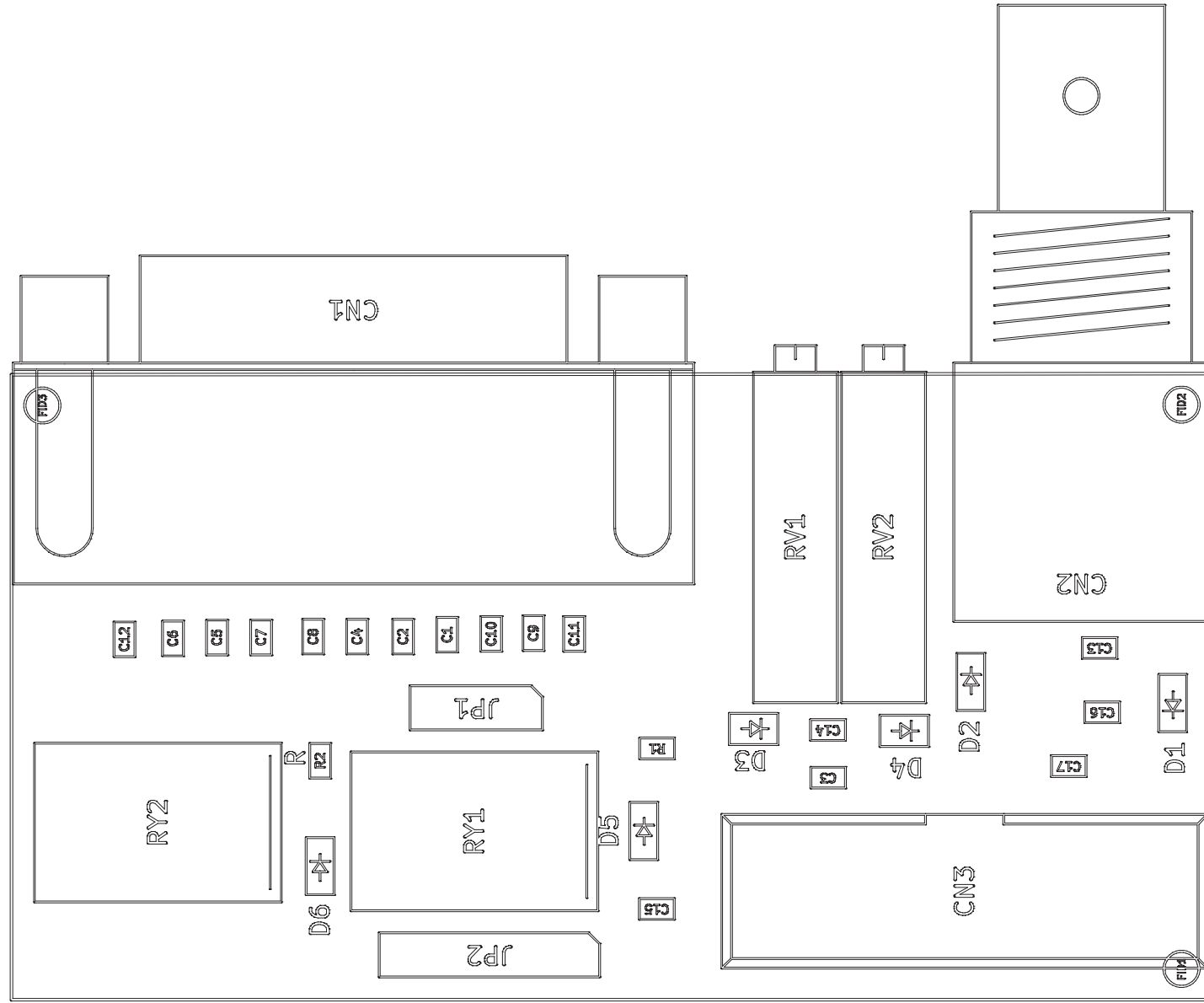


## KPSL2804V01B

POWER SUPPLY 28.5V 4A 145W  
PSL2804  
12/04/2016 REV.1.0

Item	Quantity	Reference	Part	(description)
1	1	CN1	CN03KRA P7,62	Conn. tipo KRA a 3 poli
2	2	CN2, CN4	CN02MSF	Connettore 2 poli Lumberg MSF p 2.5mm
3	1	CN3	CN02KRA	Conn. tipo KRA a 2 poli
4	1	CS1	CSPS43-120W0200	Circuito stampato
5	3	C1, C2, C3	1800uF/35V 105°	Cond. Elettr. Dia 16 105°C
6	3	C4, C5, C8	100nF	Cond. Poliestere p 15mm
7	2	C7, C6	150uF/400V	Cond. Elettr. Dia 30 P10
8	1	C9	100nF/400V	Cond. Poliestere p 15mm
9	2	C11, C10	4,7nF/Y2	Cond. ceramico p 7mm Y2
10	1	C12	10nF	Cond. ceramico p 7mm Y2
11	3	C13, C14, C17	2,2nF/Y2	Cond. ceramico p 7mm Y2
12	7	C15, C18, C21, C41, C42, C53, C54	NC	Cond. SMD 0805
13	1	C16	220uF/16V 105°	Cond. Elettr. Dia 8 P3
14	1	C19	100uF/35V 105°	Cond. Elettr. Dia 8 P3
15	1	C20	47uF/63V 105°	Cond. Elettr. Dia 8 P3
16	1	C22	470uF/35V 105°	Cond. Elettr. Dia 10 P5.08
17	17	C23, C24, C27, C29, C30, C32, C33, C37, C40, C43, C44, C45, C46, C48, C49, C51, C52	100nF	Cond. SMD 0805
18	1	C25	220nF	Cond. SMD 0805
19	1	C26	330nF	Cond. SMD 0805
20	5	C28, C31, C38, C50, C47	10uF/35V	Cond. Elett. SMD d. 4mm
21	1	C34	330pF	Cond. SMD 0805
22	1	C35	1nF	Cond. SMD 0805
23	1	C36	1.5nF	Cond. SMD 0805
24	1	C39	4,7nF	Cond. SMD 0805
25	3	DL1, DL2, DL3	VERDE	LED Verde SMD 0805
26	1	DL4	ROSSO	LED Verde SMD 0805
27	1	D1	BYQ28	Doppio diodo TO220
28	1	D2	KBU08-J	Ponte diodi KBL/KBU
29	1	D3	ES1J	Diodo SMD cont. SMA
30	2	D11, D4	P6KE200	1W Zener Diode
31	3	D5, D8, D9	ES2D/ES2G	Diodo SMD cont. SMB
32	1	D6	ISL9R460P2	Diodo TO220
33	1	D12	BAS16H	Diodo SMD SOD123F
34	1	D10	1SMB5929BT3G	Diodo SMD cont. SMB
35	4	U6, Q6, U8, D13	NC	
36	1	D14	TL431SMD	SO8 Reference
37	2	D15, D16	NC	MINIMELF SMD Zener Diode
38	2	D17, D18	NC	Diodo SMD SOD123F
39	1	D19	MURS360	Diodo SMD cont. SMC
40	6	FIX1, FIX2, FIX3, FIX4, FIX5, FIX6	FIX35	Foro fissaggio 3.5mm
41	2	F2, F1	RXE300	Fusibile autoripristinante
42	1	JP1	CN16PD	Conn.M.C.S.Dritto 16P alette.
43	1	JP2	FASTON CS	
44	1	J1	J5MD	Pad SMD a saldare
45	4	J2, J3, J4, J5	J5MD	Pad SMD a saldare
46	3	L1, L2, L7	BL02	Induttanza cilindrica
47	1	L3	TVO 4A0,0M2-A	Ind. toroidale modo comune
48	1	L4	TVO 1A0,10M-A	Ind. toroidale modo comune
49	2	L6, L5	742792022	Induttanza SMD 2012 (0805)
50	1	OPT1	K10104X	Optoisolatore SMD SO6
51	1	PF1	REOFORO	Fusibile Bussmann LET
52	1	Q1	11N60	Trans. FET N TO220
53	1	Q3	NC	Trans. PNP SOT23
54	1	Q7	BC846/847	Trans. NPN SOT23
55	1	RV1	NC	Trimmer SMD
56	1	RV2	50K	Trimmer SMD
57	1	R1	680H	Res. strato 2W
58	6	R2, R3, R7, R9, R12, R15	15K0	Res. SMD 1206
59	1	R4	22H0	Res. SMD 0805
60	1	R5	1M	Res. SMD 2512 1%
61	1	R6	NTC10H	Res. 1/4W 1%
62	15	R8, R11, R16, R20, R21, R37, R38, R39, R42, R43, R44, R48, R49, R50, R51	NC	Res. SMD 0805
63	1	R10	NC	Res. strato 2W
64	1	R13	22H0	Res. SMD 1206
65	1	R14	250mA	Fus. SMD 1206
66	3	R17, R36, R40	10K0	Res. SMD 0805
67	2	R18, R19	0H56	Res. strato 2W
68	2	R22, R23	10H0	Res. SMD 0805
69	1	R24	5K60	Res. SMD 0805
70	1	R25	2K70	Res. SMD 0805
71	2	R33, R26	560H0	Res. SMD 0805
72	1	R28	470K0	Res. SMD 0805
73	1	R29	1K0	Res. SMD 0805
74	1	R30	39K0	Res. SMD 0805
75	2	R31, R45	6K80	Res. SMD 0805
76	1	R32	3K3	Res. SMD 0805
77	1	R34	56K0	Res. SMD 0805
78	1	R35	47K5	Res. SMD 0805
79	1	R41	NC	Res. SMD 1206
80	1	R46	20K0	Res. SMD 0805
81	1	R47	5K49	Res. SMD 0805
82	1	T1	TSWPS26-120W	Trasformatore
83	1	U1	7818	Stabilizzatore TO220
84	1	U2	NC	Stabilizzatore TO220

Item	Quantity	Reference	Part	(description)
85	1	U3	UC2843	Reg. switching
86	1	U5	LF50CDT	Stabilizzatore SMD DPAK
87	1	VR1	275VAC	Varistor dia. 7mm
88	1	D7	BAS16H	Diodo SMD SOD323



PRODUCT NAME : TEX-TFT

DESIGNER : FRANCESCHI A.

ARCHIVING : 'RVPUT' SERVER, 'RILASCIATI' FOLDER

PART NAME : TELEMETRY CARD

DATE : 22/06/20

REVISION : 1.0

SCALE : 2:1

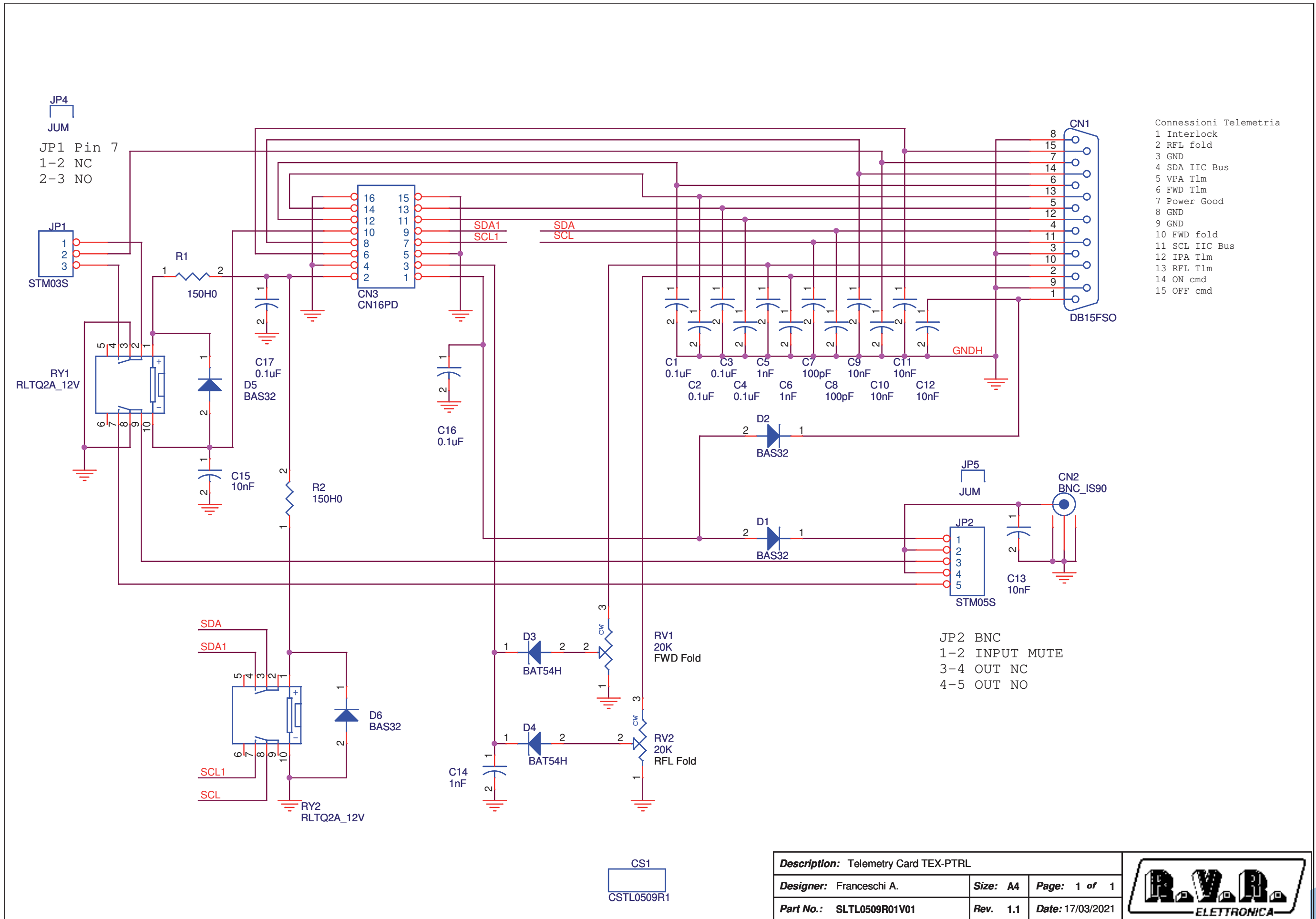
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SLTL0509R01V01



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Telemetry Card TEX-PTRL Revised: 17/03/2021  
 SLTL0509R01V01 Revision: 1.1  
 Franceschi A.

Item	Quantity	Reference	Part	Description
1	1	CN1	DB15FSO	DB15 fem. PCB 90° conn.
2	1	CN2	BNC_IS90	Metal BNC conn. 90°
3	1	CN3	CN16PD	16 way pcb conn. with holder
4	1	CS1	CSTL0509R1	Printed Circuit board
5	6	C1, C2, C3, C4, C16, C17	0.1uF	0805 SMD capacitor
6	3	C5, C6, C14	1nF	0805 SMD capacitor
7	2	C7, C8	100pF	0805 SMD capacitor
8	6	C9, C10, C11, C12, C13, C15	10nF	0805 SMD capacitor
9	4	D1, D2, D5, D6	BAS32	MINIMELF SMD Diode
10	2	D3, D4	BAT54H	SOD123F SMD Diode
11	1	JP1	STM03S	Male strip 3 pin
12	1	JP2	STM05S	Male strip 5 pin
13	2	JP4, JP5	JUM	Jumper
14	2	RV1, RV2	20K	Trimmer Rg H 3006
15	2	RY1, RY2	RLTQ2A_12V	TQ2 relay
16	2	R1, R2	150H0	0805 SMD res.