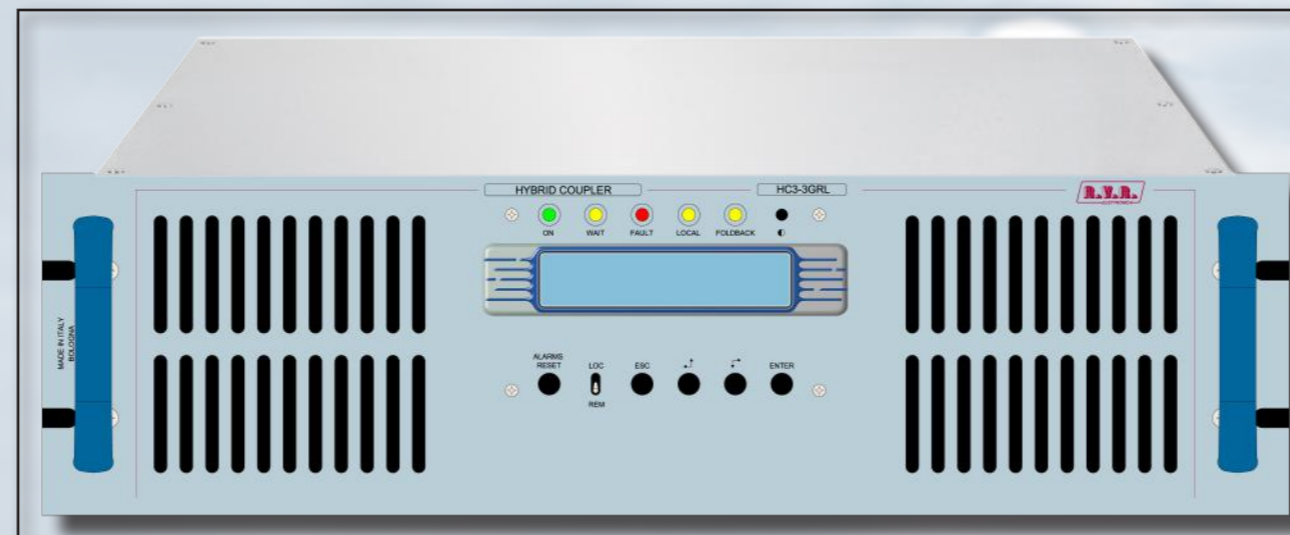




# HC3-3GRL

TECHNICAL ANNEX  
VOLUME 2



**R.V.R. Elettronica**  
Via del Fonditore, 2 / 2c  
Zona Industriale Roveri · 40138 Bologna · Italy  
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Member of CISQ Federation



CERTIFIED MANAGEMENT SYSTEM  
ISO 9001



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Manufactured by R.V.R. ELETTRONICA 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 HC3-3GRL. L'appendice è composta dalle seguenti sezioni:

*This part of the manual contains the technical details about the different Cards of the HC3-3GRL. This appendix is composed of the following sections:*

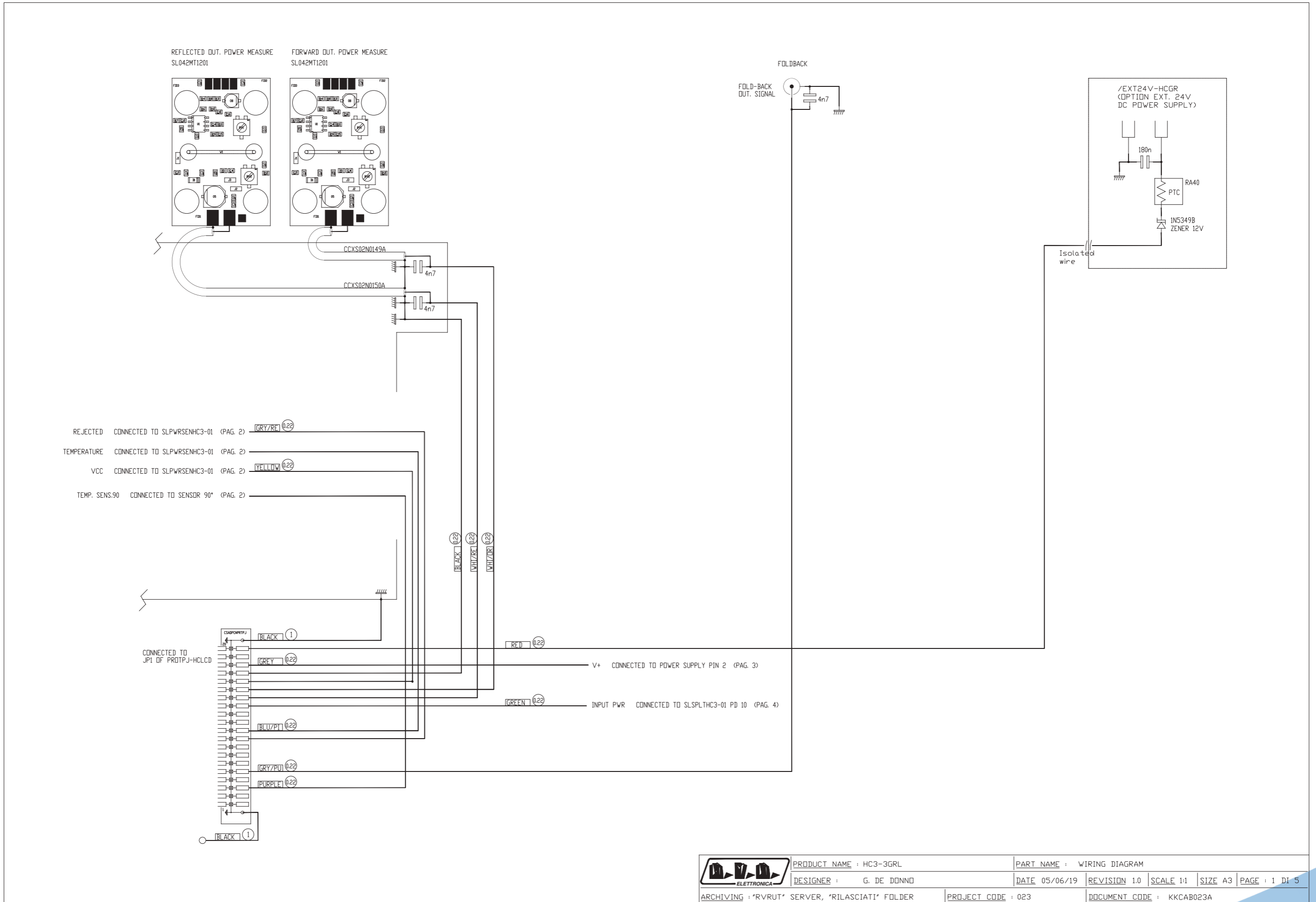
Description	RVR Code	Vers.	Page
Wiring Diagram	KKCAB023A	1.0	1
Phase Shifter Card	SLPHSHHC3-12	1.0	6
Power Splitter Card	SLSPLTHC3-01	1.1	8
Power Combiner Card	SLCMBOUT2HC3	1.1	11
CPU Card	PROTPJ-HCLCD	3.1	12
CPU Adapter Card	SLADPCNP RTPJ	2.1	19
Power Supply	PSSWEPP10024	1.0	21
PROT-F Interface Add-On Card	SLIN0411R02V01	1.2	22
Meter Card	SL042MT1001	1.1	25
Absorber & Measure Circuit Card	SLPWRSENHC3-01	1.3	27

Description	Spare Parts
Fan	VTL9GL1224J
CPU panel & Display	SP-PAN021A
Switching power supply	PSSWEPP10024
Power Meter Section	SP-MTR023A

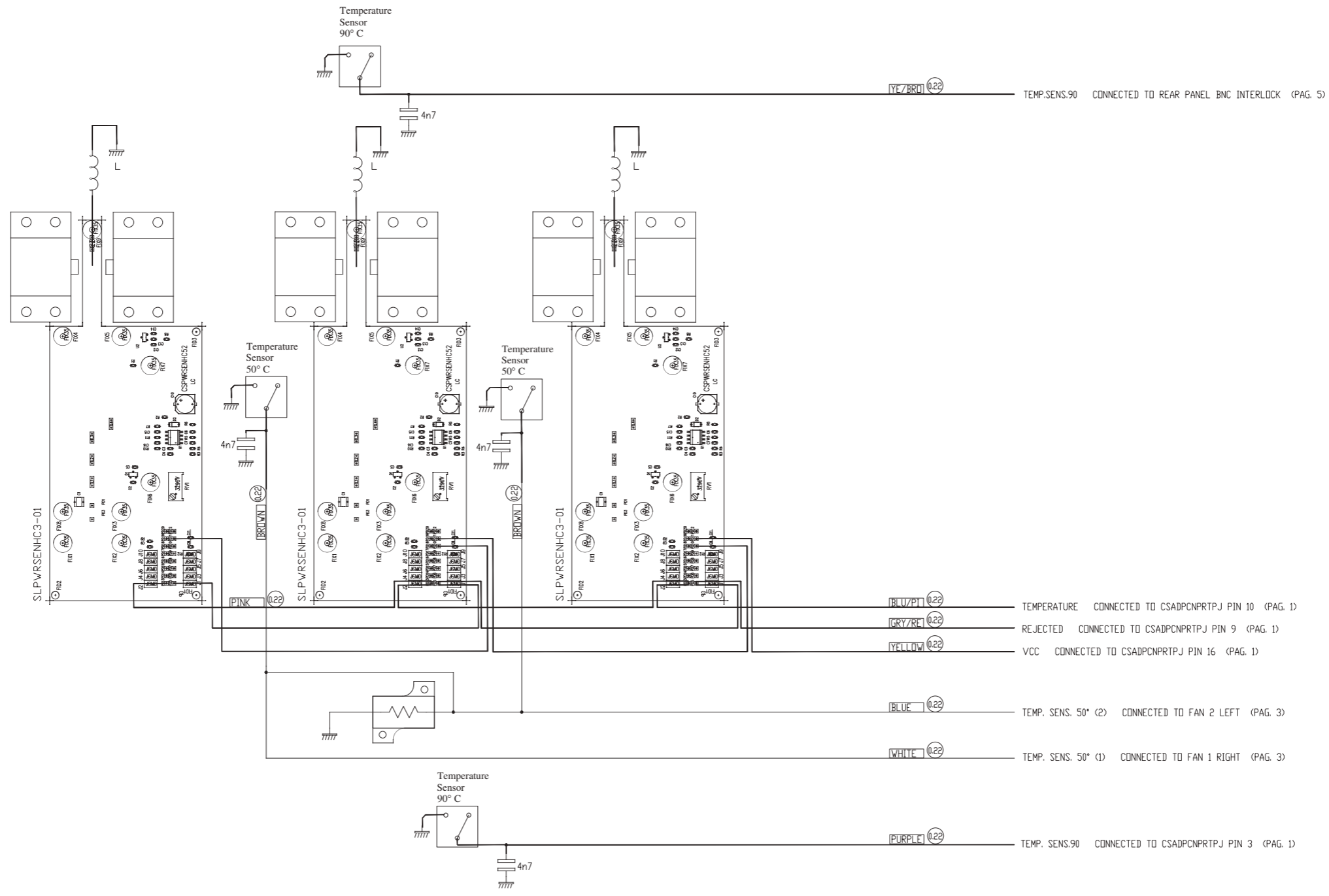
### Document History

Date	Version	Reason	Code	Editor
29/11/2019	1.0	First Release	/	J.H. Berti

**KKCAB023A**

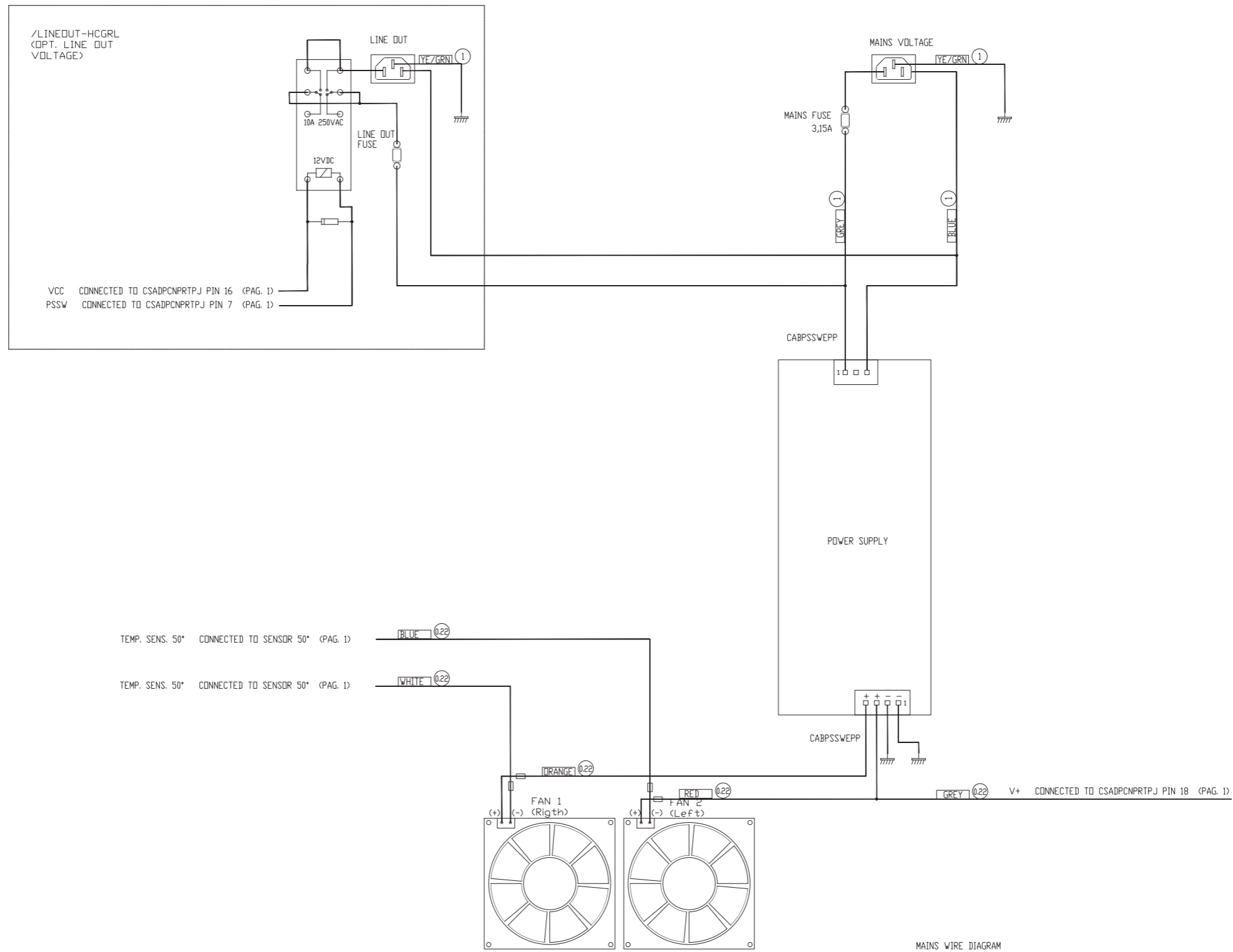


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	DESIGNER : G. DE DONNO	DATE 05/06/19	REVISION 1.0	SCALE 1:1	SIZE A3
ARCHIVING : 'RVRTU' SERVER, 'RILASCIATI' FOLDER	PROJECT CODE : 023	DOCUMENT CODE : KKCAB023A			

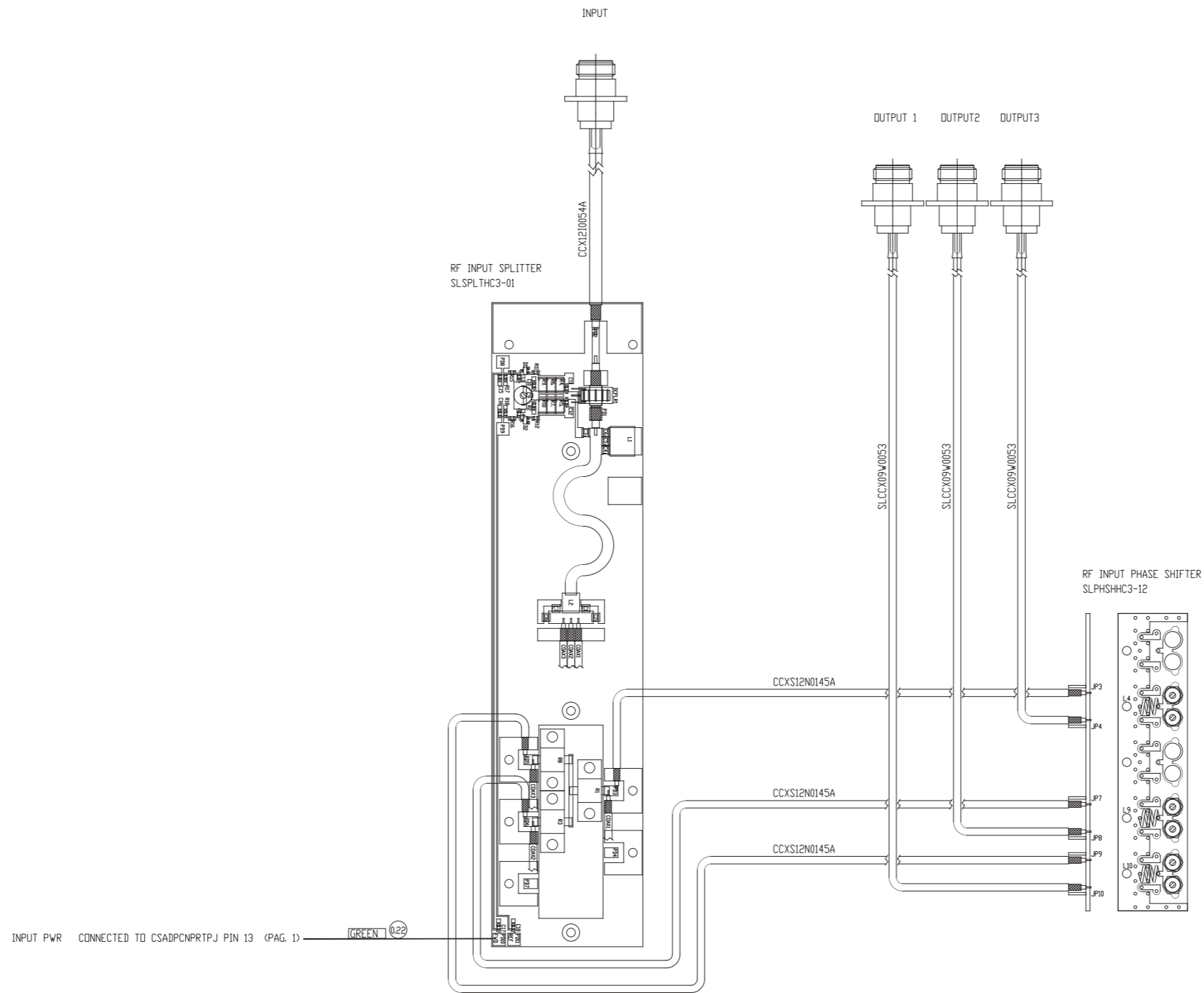


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KKCAB023A

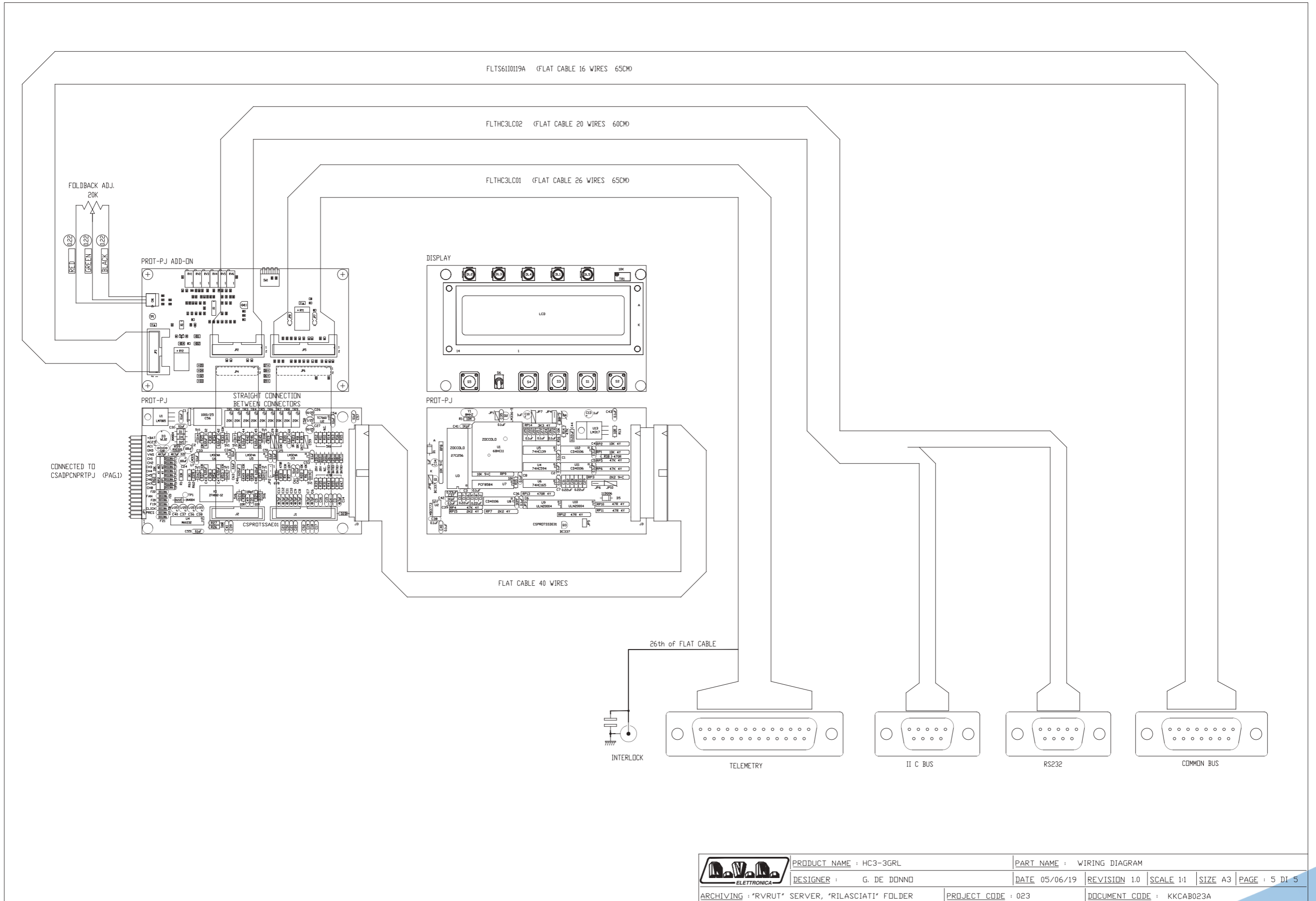


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	DESIGNER : G. DE DONNO	DATE 05/06/19	REVISION 1.0	SCALE 1:1   SIZE A3   PAGE : 3 DI 5
ARCHIVING : 'RVTRUT' SERVER, 'RILASCIATI' FOLDER		PROJECT CODE : 023	DOCUMENT CODE : KKCAB023A	



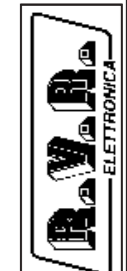
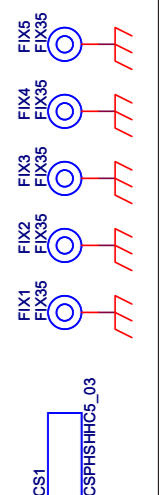
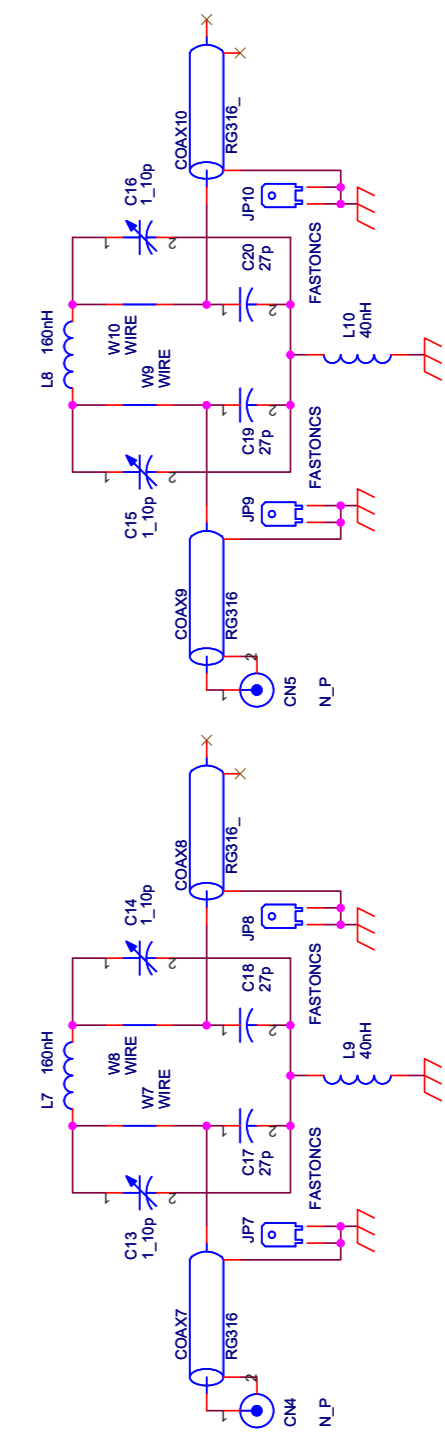
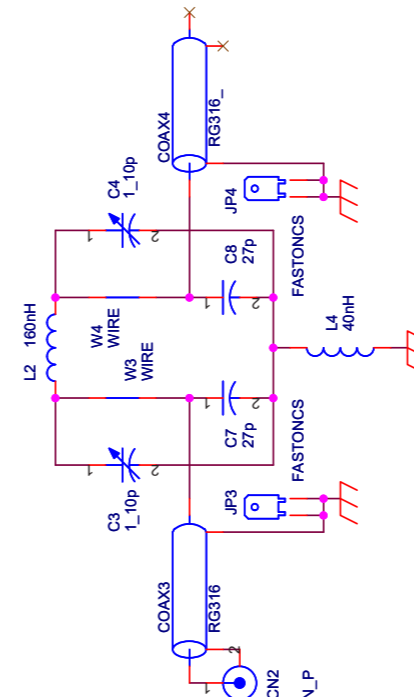
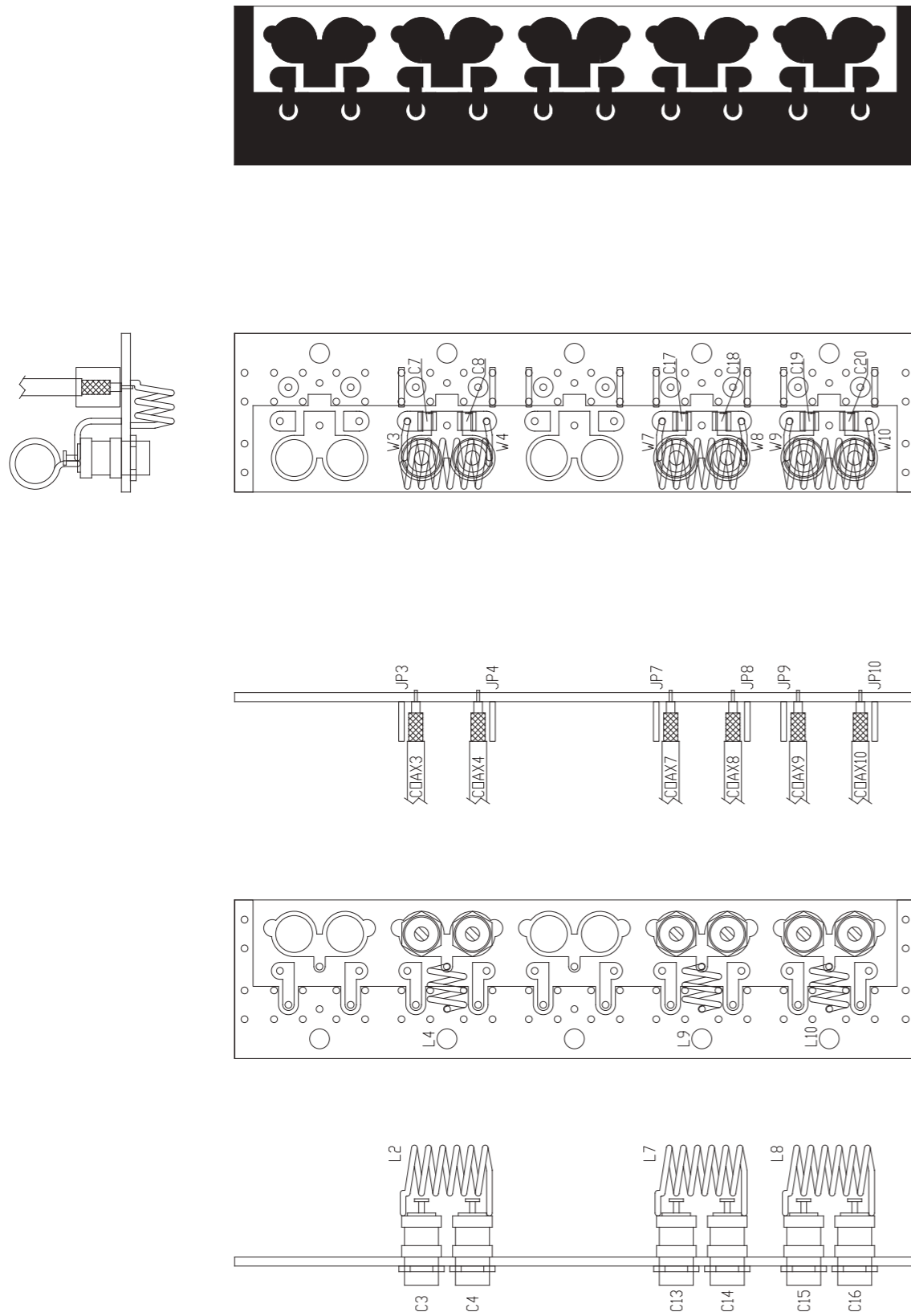
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ARCHIVING : 'RVRUT' SERVER, 'RILASCIATI' FOLDER		PROJECT CODE : 023	DOCUMENT CODE : KKCAB023A		

**KKCAB023A**



	PRODUCT NAME : HC3-3GRL	PART NAME : WIRING DIAGRAM			
	DESIGNER : G. DE DONNO	DATE 05/06/19	REVISION 1.0	SCALE 1:1	SIZE A3
ARCHIVING : 'RVROT' SERVER, 'RILASCIATI' FOLDER	PROJECT CODE : 023	DOCUMENT CODE : KKCAB023A			

SLPHSHHC3-12



Description: Phase Shifter for HC3-3 V2	
Designer: Mauro Ucelli	Size: A4
Part No.: SLPHSHHC3-12	Page: 1 of 1
Rev. 1.0	Date: 10/01/07

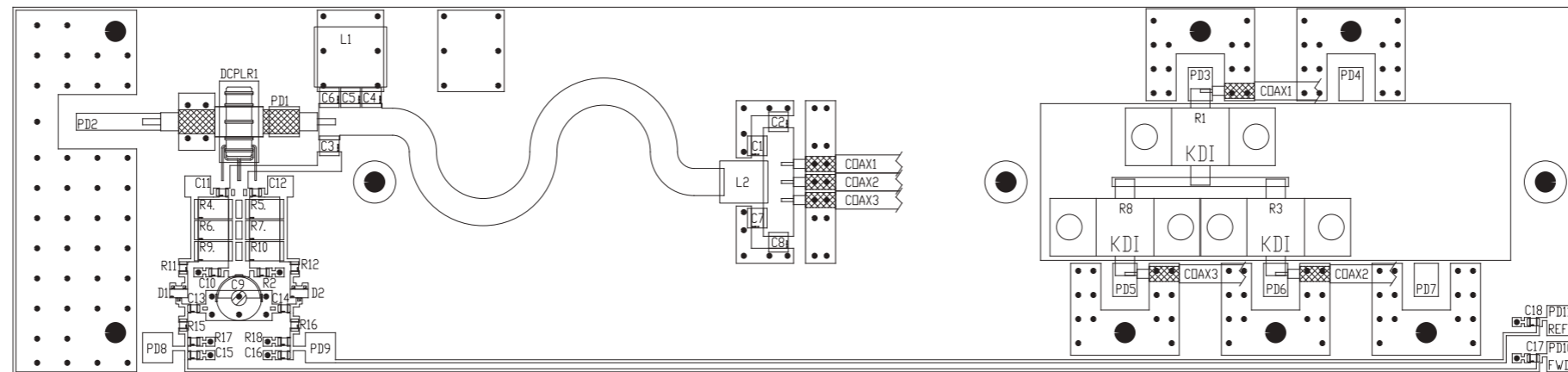
	PRODUCT NAME : HC3-3 V2	PART NAME : Phase shifter Card				
	DESIGNER : M. UCELLI	DATE : 10/01/07	REVISION : 1.0	SCALE : 1:1	SIZE : A4	PAGE : 1 DI 1
ARCHIVING : 'RVRRUT' SERVER, 'RILASCIATI' FOLDER	PROJECT CODE : 017	DOCUMENT CODE : SLPHSHHC3-12				



SLPHSHHC3-12

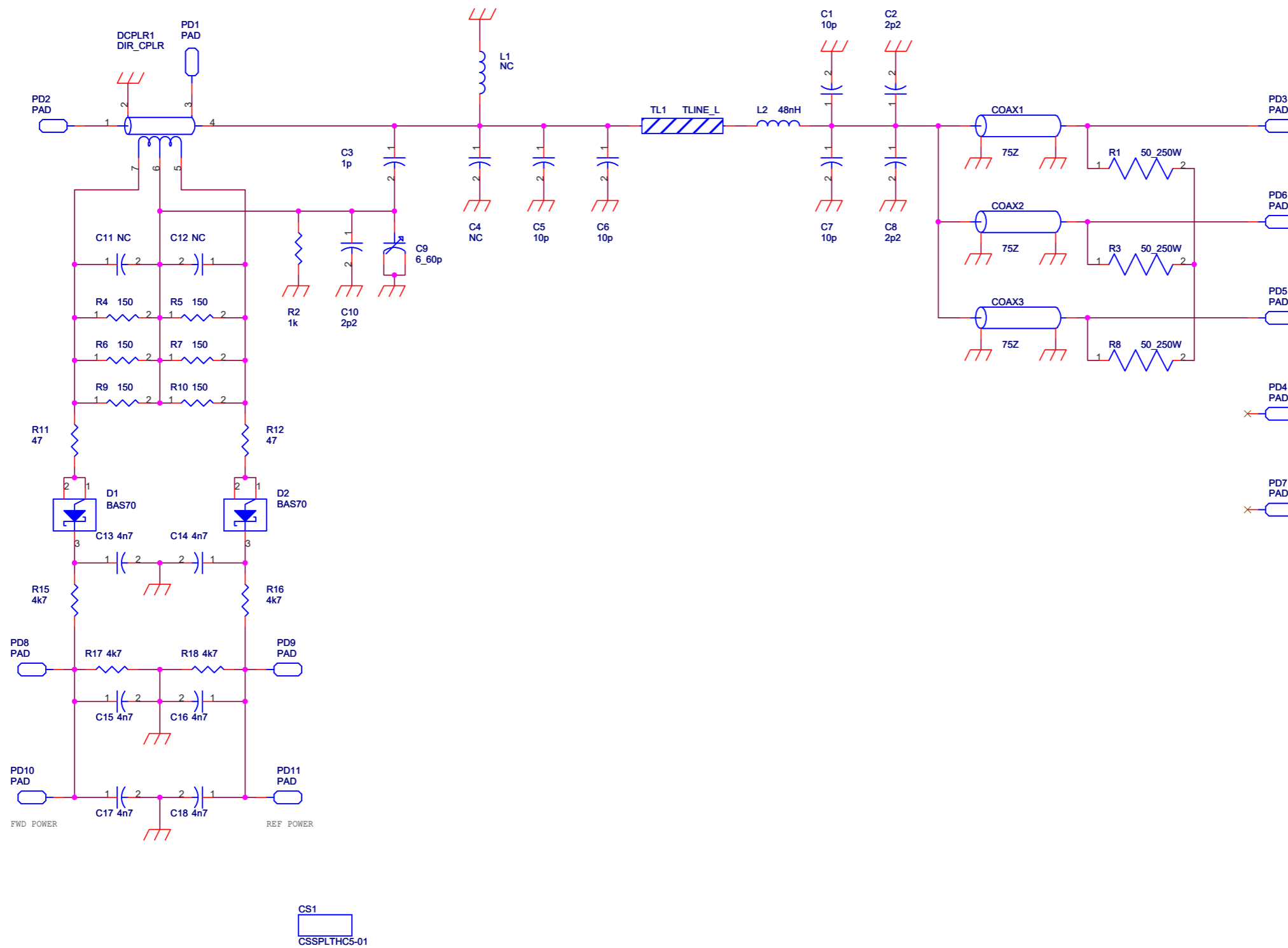
Phase Shifter for HC3-3 V2  
 SLPHSHHC3-12 Revision: 1.0  
 HC3-3 V2  
 10/01/07  
 Mauro Ucelli

Item	Quantity	Reference	Part	Description
1	3	CN2, CN4, CN5	N_P	N panel connector for RG316 cable
2	3	COAX3, COAX7, COAX9	RG316	Coax cable
3	3	COAX4, COAX8, COAX10	RG316_	Coax cable
4	1	CS1	CSPHSHHC5_03	Printed circuit board
5	6	C3, C4, C13, C14, C15, C16	1_10p	Air static VAR compensator Tekelec 6mm
6	6	C7, C8, C17, C18, C19, C20	27p	SMD capacitor 1212 HQ
7	5	FIX1, FIX2, FIX3, FIX4, FIX5	FIX35	Fixing hole 3.5mm
8	6	JP1, JP2, JP3, JP4, JP5, JP6	FASTONCS	Printed circuit faston p. 5.08
9	3	L2, L7, L8	160nH	Cylindrical inductor
10	3	L4, L9, L10	40nH	Cylindrical inductor
11	6	W3, W4, W7, W8, W9, W10	WIRE	Solder wire



	PRODUCT NAME : HC3-6	PART NAME : SPLITTER CARD
	DESIGNER : M. UCELLI	DATE 19/04/04 REVIS. : 1.0 SCALE 1:1 SIZE A3 PAGE :1 DI 1
ARCHIVING : "RVRUT" SERVER, "RILASCIATI" FOLDER PROJECT CODE : 017		DOCUMENT CODE : SLSPALTHC3-01

**SLSPLTHC3-01**



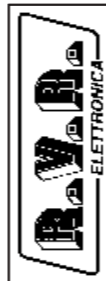
<b>Description:</b> 3 Ways Input Splitter			
<b>Designer:</b> Mauro Ucelli	<b>Size:</b> A3	<b>Page:</b> 1 of 1	
<b>Part No.:</b> SLSPLTHC3-01	<b>Rev.:</b> 1.1	<b>Date:</b> 26/04/2019	

SLSPLTHC3-01

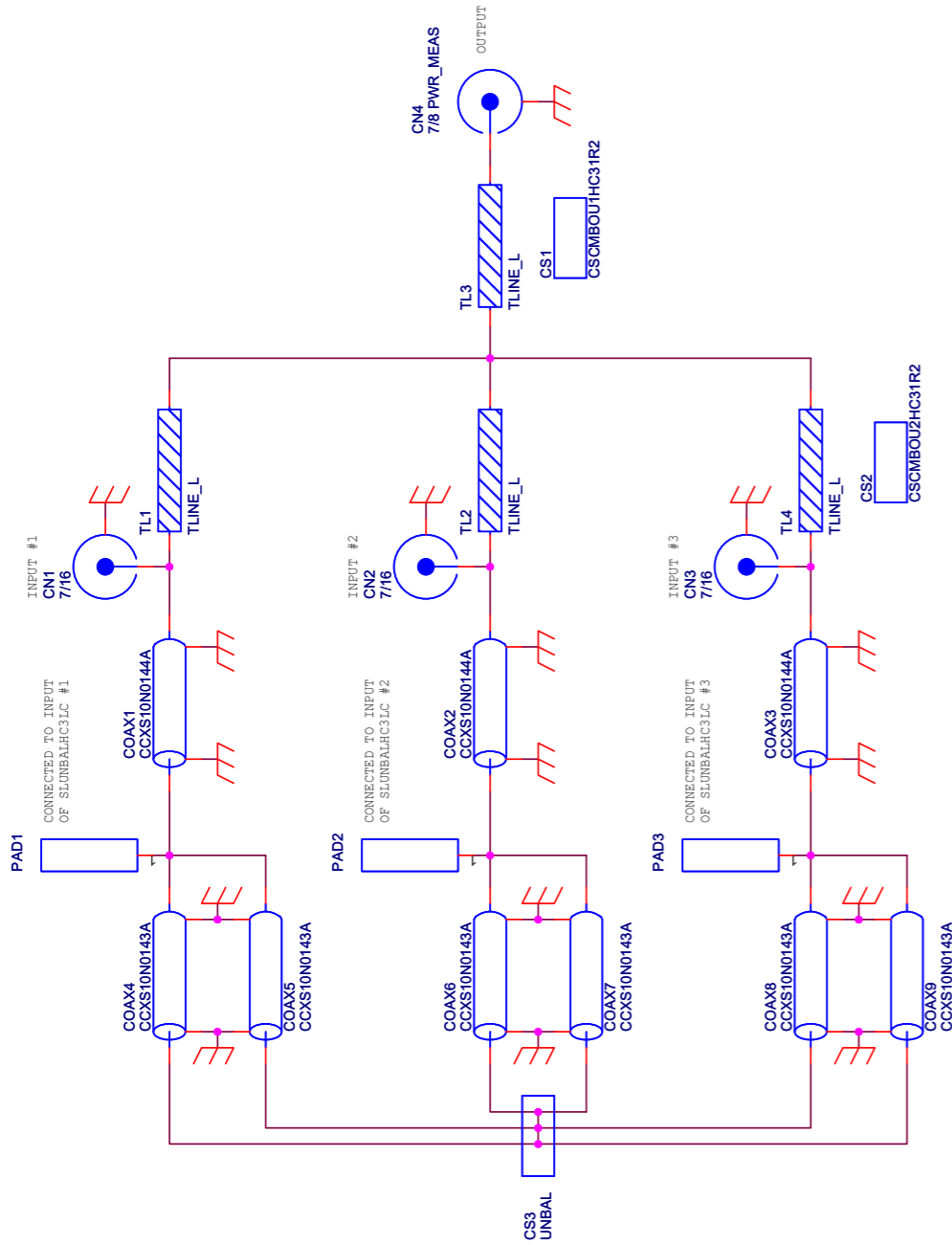
3 Ways Input Splitter Revised: 26/04/2019  
 SLSPLTHC3-01 Revision: 1.1  
 HC3-6  
 HC3-6  
 Mauro Ucelli

Item	Quantity	Reference	Part
1	3	COAX1, COAX2, COAX3	75Z
2	1	CS1	CSSPLTHC5-01
3	4	C1, C5, C6, C7	10p
4	2	C8, C2	2p2
5	1	C3	1p
6	1	C4	NC
7	1	C9	6_60p
8	1	C10	2p2
9	2	C12, C11	NC
10	6	C13, C14, C15, C16, C17, C18	4n7
11	1	DCPLR1	DIR_CPLR
12	2	D1, D2	BAS70
13	1	L1	NC
14	1	L2	48nH
15	11	PD1, PD2, PD3, PD4, PD5, PD6, PD7, PD8, PD9, PD10, PD11	PAD
16	3	R1, R3, R8	50_250W
17	1	R2	1k
18	6	R4, R5, R6, R7, R9, R10	150
19	2	R12, R11	47
20	4	R15, R16, R17, R18	4k7
21	1	TL1	TLINE_L

SLCMBOUT2HC3



Description: 3 Ways combiner	
Designer: Mauro Ucelli	Page: 1 of 1
Size: A4	Rev. 1.1
Part No.: SLCMBOUT2HC3	Date: 05/06/2013



3 Ways combiner Revised: Wednesday, June 05, 2013  
 SLCMBOUT2HC3 Revision: 1.1

HC3-3  
 HC3-3  
 \  
 Mauro Ucelli  
 05/06/2013

Bill Of Materia Page1

Item	Quantity	Reference	Part	Description
1	3	CN1,CN2,CN3	lug-16	
2	1	CN4	7/8 PWR_MEAS	
3	3	COAX1,COAX2,COAX3	CCXS10N0144A	Coax cable
4	6	COAX4,COAX5,COAX6,COAX7,COAX8,COAX9	CCXS10N0143A	Coax cable
5	1	CS1	CSCMBOU1HC31R2	Printed circuit board
6	1	CS2	CSCMBOU2HC31R2	Printed circuit board
7	1	CS3	UNBAL	Printed circuit board
8	3	PAD1,PAD2,PAD3	PAD	
9	4	TL1,TL2,TL3,TL4	TLINE_L	Printed circuit strip line

PROTPJ-HCLCD

ARCHIVING : "RVPUT" SERVER, "RILASCIATI" FOLDER

DESIGNER : GP - Rev: J. Berti

PRODUCT NAME : HCS-10

PART NAME : Analogic Section Component Layout

DATE : 14/03/07

REVISION : 3.1

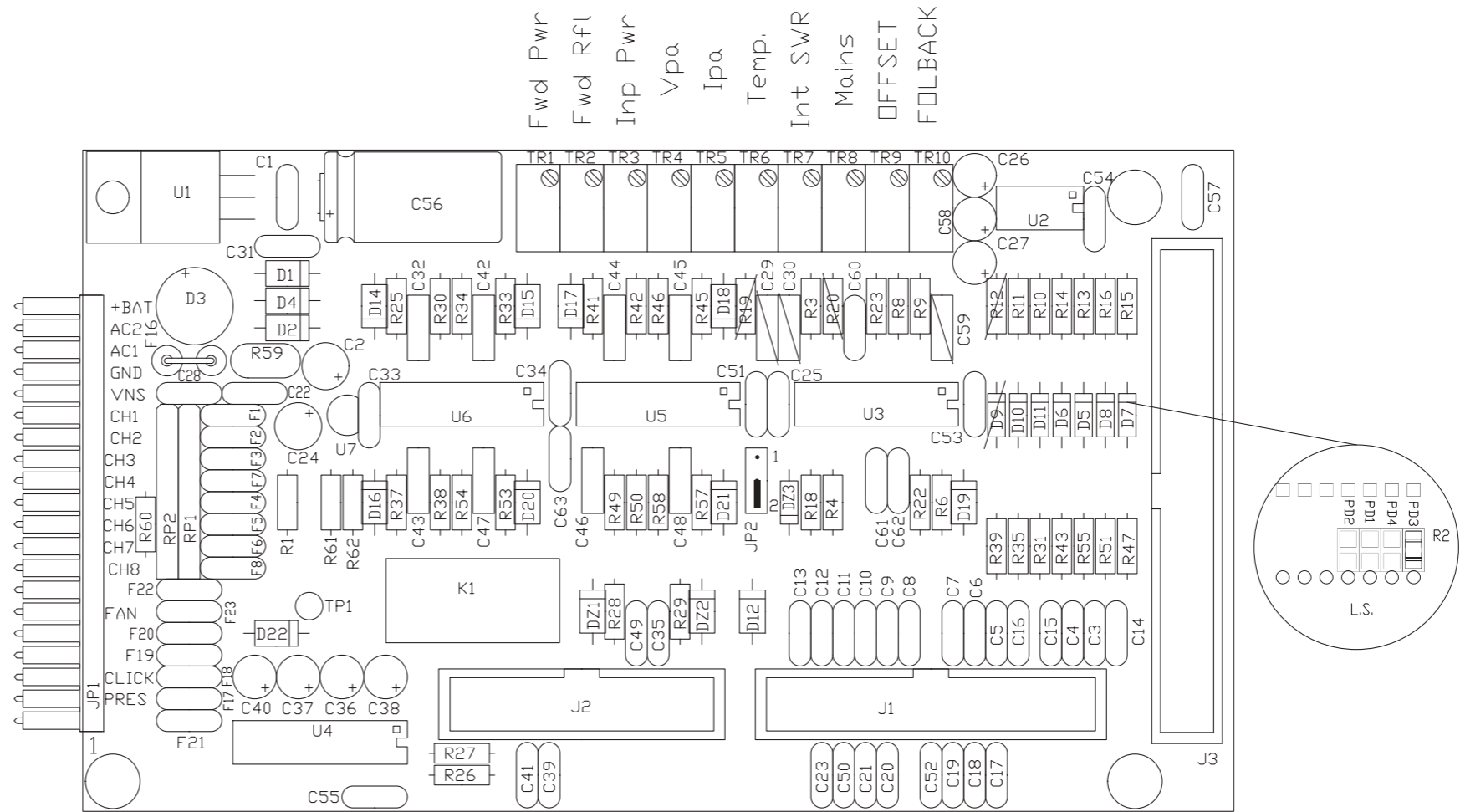
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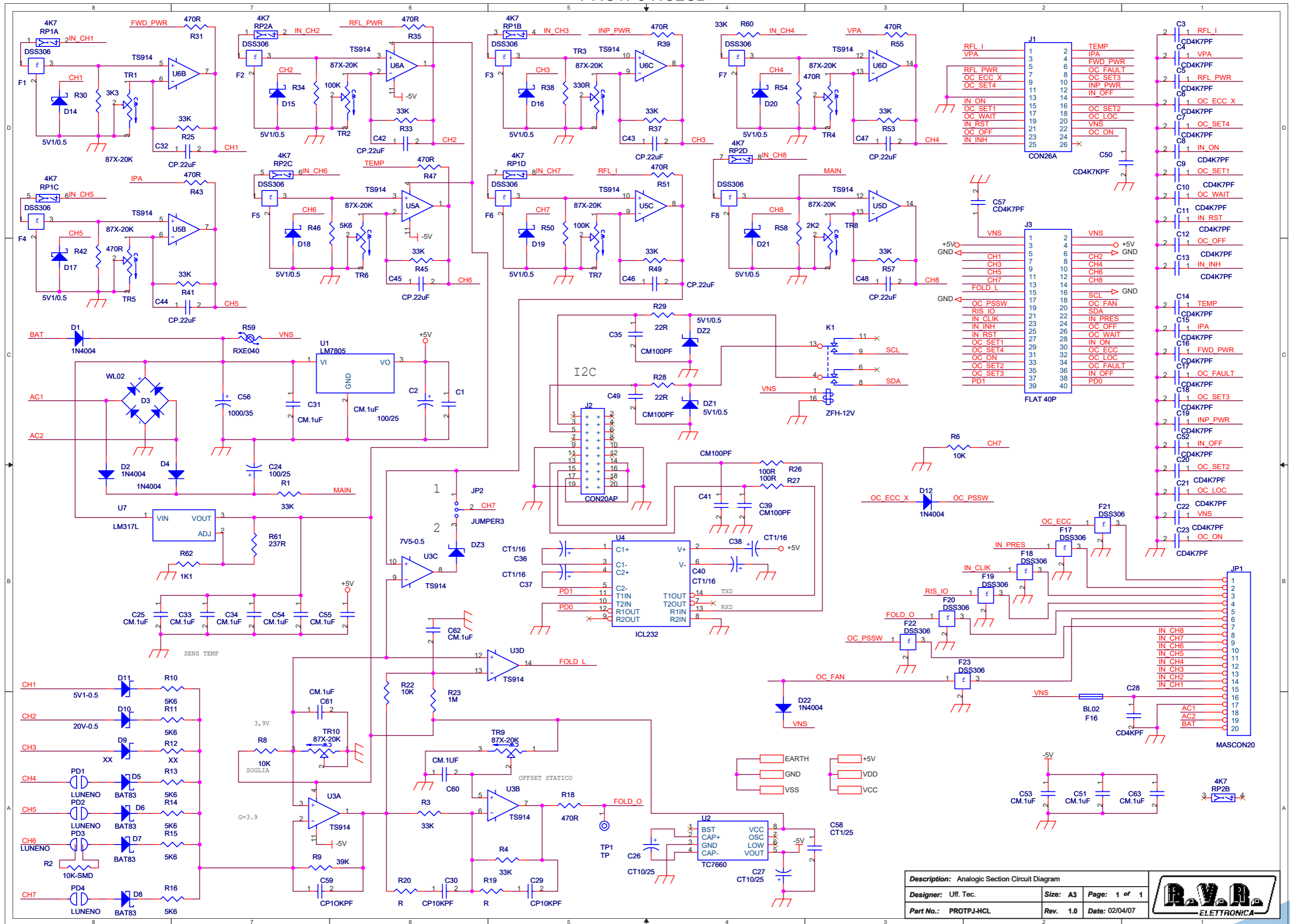
PAGE : 1 DI 1

PROJECT CODE : 014

DOCUMENT CODE : PROTPJ-HCLCD



## PROTPJ-HCLCD



<b>Description:</b> Analogic Section Circuit Diagram		
<b>Designer:</b> Uff. Tec.	<b>Size:</b> A3	<b>Page:</b> 1 of 1
<b>Part No.:</b> PROTPJ-HCL	<b>Rev.</b> 1.0	<b>Date:</b> 02/04/07



PROTPJ-HCLCD

Revised: Thursday, January 08, 2009  
Revision:

Item	Quantity	Reference	Part
1	13	C1, C25, C31, C33, C34, C51, C53, C54, C55, C60, C61, C62, C63	CM.1uF
2	2	C2, C24	100/25
3	23	C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C52, C57	CD4K7PF
4	2	C26, C27	CT10/25
5	1	C28	CD4KPF
6	2	C29, C30	CP10KPF
7	8	C32, C42, C43, C44, C45, C46, C47, C48	CP.22uF
8	4	C35, C39, C41, C49	CM100PF
9	4	C36, C37, C38, C40	CT1/16
10	1	C50	CD4K7KPF
11	1	C56	1000/35
12	1	C58	CT1/25
13	1	C59	CP10KPF
14	10	DZ1, DZ2, D14, D15, D16, D17, D18, D19, D20, D21	5V1/0.5
15	1	DZ3	7V5-0.5
16	5	D1, D2, D4, D12, D22	1N4004
17	1	D3	WL02
18	4	D5, D6, D7, D8	BAT83
19	2	D9, R12	XX
20	1	D10	20V-0.5
21	1	D11	5V1-0.5
22	15	F1, F2, F3, F4, F5, F6, F7, F8, F17, F18, F19, F20, F21, F22, F23	DSS306
23	1	F16	BL02
24	1	JP1	MASCON20
25	1	JP2	JUMPER3
26	1	J1	CON26A
27	1	J2	CON20AP
28	1	J3	FLAT 40P
29	1	K1	ZFH-12V
30	4	PD1, PD2, PD3, PD4	LUNENO
31	2	RP1, RP2	4K7
32	12	R1, R3, R4, R25, R33, R37, R41, R45, R49, R53, R57, R60	33K
33	1	R2	10K-SMD
34	3	R6, R8, R22	10K
35	1	R9	39K
36	7	R10, R11, R13, R14, R15, R16, R46	5K6
37	10	R18, R31, R35, R39, R42, R43, R47, R51, R54, R55	470R
38	2	R19, R20	R
39	1	R23	1M
40	2	R26, R27	100R
41	2	R28, R29	22R
42	1	R30	3K3
43	2	R34, R50	100K
44	1	R38	330R
45	1	R58	2K2
46	1	R59	RXE040
47	1	R61	237R
48	1	R62	1K1
49	1	TP1	TP
50	10	TR1, TR2, TR3, TR4, TR5, TR6, TR7, TR8, TR9, TR10	87X-20K
51	1	U1	LM7805
52	1	U2	TC7660
53	3	U3, U5, U6	TS914
54	1	U4	ICL232
55	1	U7	LM317L

Revised: Thursday, January 08, 2009  
Revision:

Item	Quantity	Reference	Part
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2	2	C2, C24	100/25
3	23	C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C52, C57	CD4K7PF
4	2	C26, C27	CT10/25
5	1	C28	CD4KPF
6	2	C29, C30	CP10KPF
7	8	C32, C42, C43, C44, C45, C46, C47, C48	CP.22uF
8	4	C35, C39, C41, C49	CM100PF
9	4	C36, C37, C38, C40	CT1/16
10	1	C50	CD4K7KPF
11	1	C56	1000/35
12	1	C58	CT1/25
13	1	C59	CP10KPF
14	10	DZ1, DZ2, D14, D15, D16, D17, D18, D19, D20, D21	5V1/0.5
15	1	DZ3	7V5-0.5
16	5	D1, D2, D4, D12, D22	1N4004
17	1	D3	WL02
18	4	D5, D6, D7, D8	BAT83
19	2	D9, R12	XX
20	1	D10	20V-0.5
21	1	D11	5V1-0.5
22	15	F1, F2, F3, F4, F5, F6, F7, F8, F17, F18, F19, F20, F21, F22, F23	DSS306
23	1	F16	BL02
24	1	JP1	MASCON20
25	1	JP2	JUMPER3
26	1	J1	CON26A
27	1	J2	CON20AP
28	1	J3	FLAT 40P
29	1	K1	ZFH-12V
30	4	PD1, PD2, PD3, PD4	LUNENO
31	2	RP1, RP2	4K7
32	12	R1, R3, R4, R25, R33, R37, R41, R45, R49, R53, R57, R60	33K
33	1	R2	10K-SMD
34	3	R6, R8, R22	10K
35	1	R9	39K
36	7	R10, R11, R13, R14, R15, R16, R46	5K6
37	10	R18, R31, R35, R39, R42, R43, R47, R51, R54, R55	470R
38	2	R19, R20	R
39	1	R23	1M
40	2	R26, R27	100R
41	2	R28, R29	22R
42	1	R30	3K3
43	2	R34, R50	100K
44	1	R38	330R
45	1	R58	2K2
46	1	R59	RXE040
47	1	R61	237R
48	1	R62	1K1
49	1	TP1	TP
50	10	TR1, TR2, TR3, TR4, TR5, TR6, TR7, TR8, TR9, TR10	87X-20K
51	1	U1	LM7805
52	1	U2	TC7660
53	3	U3, U5, U6	TS914
54	1	U4	ICL232
55	1	U7	LM317L



PROTPJ-HCLCD

ARCHIVING : "RVVUT" SERVER, "RILASCIATI" FOLDER

PRODUCT NAME : HCS-10

DESIGNER : GP - Rev: J. Berti

PART NAME : LCD Alarms Card Layout

DATE : 30/10/08

REVISION : 1.1

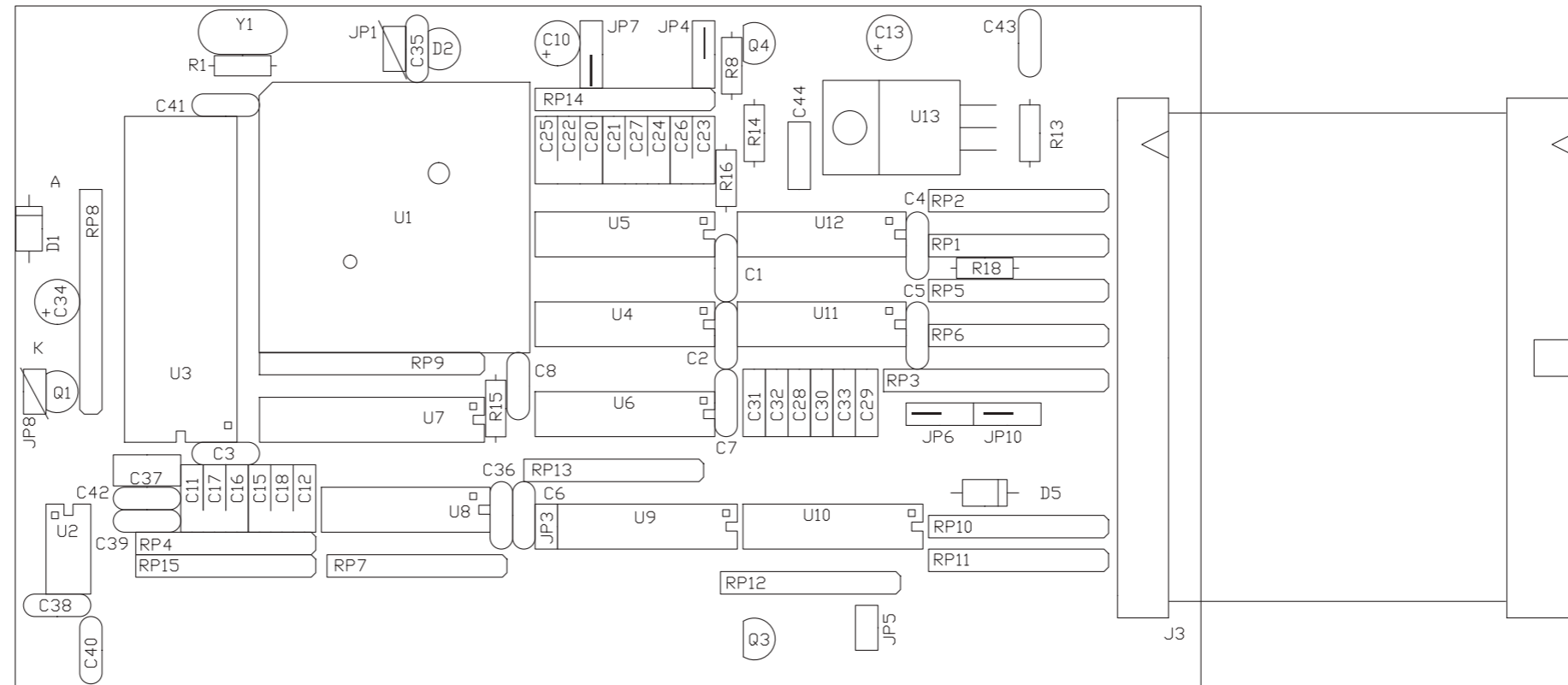
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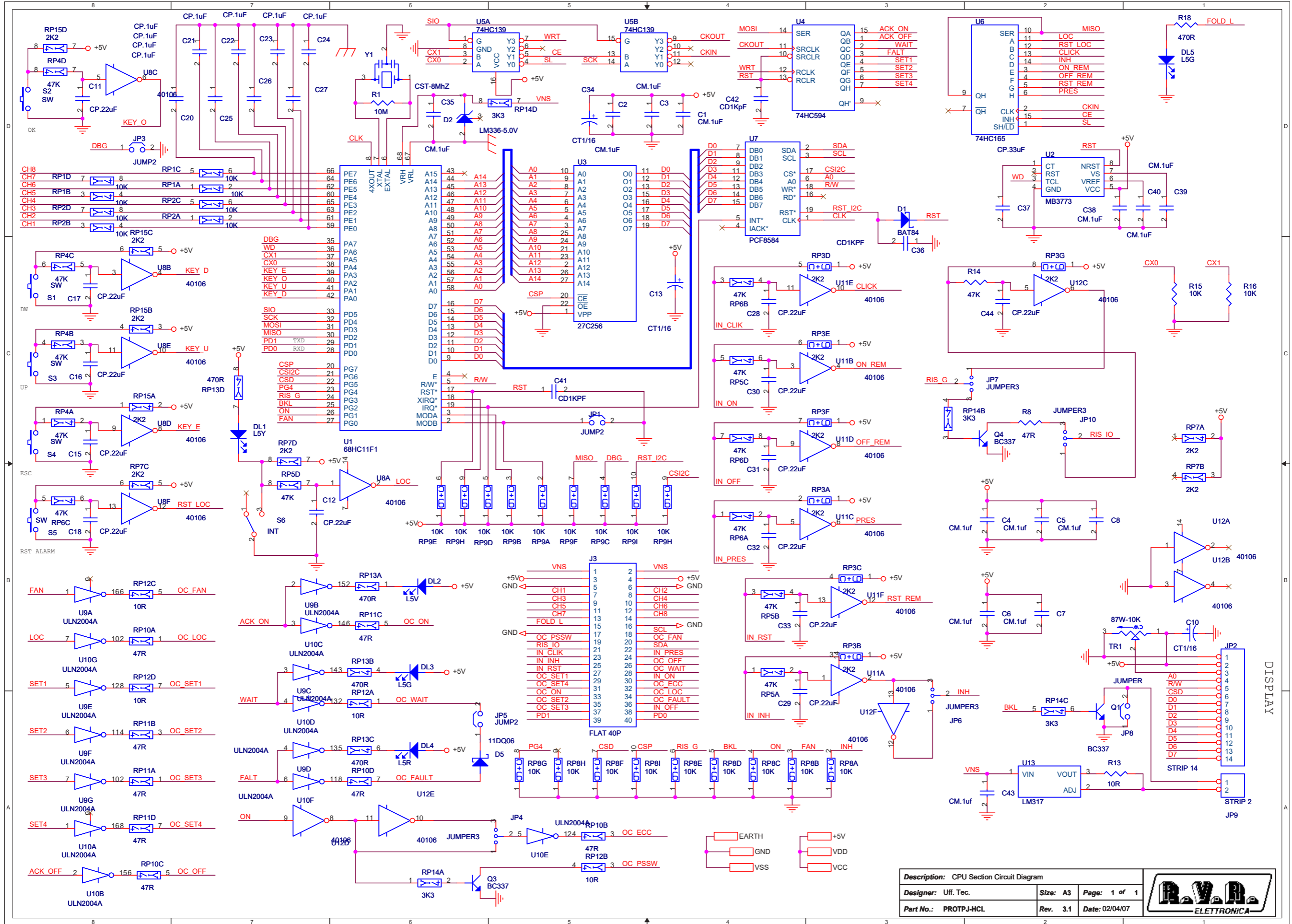
PAGE : 1 DI 1

PROJECT CODE : 014

DOCUMENT CODE : PROTPJ-HCLCD



PROTPJ-HCLCD



Description: CPU Section Circuit Diagram  
 Designer: Uff. Tec. Size: A3 Page: 1 of 1  
 Part No.: PROTPJ-HCL Rev. 3.1 Date: 02/04/07



PROTPJ-HCLCD

Revised: Thursday, January 08, 2009  
Revision:

Item	Quantity	Reference	Part
1	13	C1, C2, C3, C4, C5, C6, C7, C8, C35, C38, C39, C40, C43	CM.1uf
2	3	C10, C13, C34	CT1/16
3	13	C11, C12, C15, C16, C17, C18, C28, C29, C30, C31, C32, C33, C44	CP.22uF
4	8	C20, C21, C22, C23, C24, C25, C26, C27	CP.1uF
5	3	C36, C41, C42	CD1KpF
6	1	C37	CP.33uF
7	1	DL1	L5Y
8	1	DL2	L5V
9	2	DL3, DL5	L5G
10	1	DL4	L5R
11	1	D1	BAT84
12	1	D2	LM336-5.0V
13	1	D5	11DQ06
14	3	JP1, JP3, JP5	JUMP2
15	1	JP2	STRIP 14
16	4	JP4, JP6, JP7, JP10	JUMPER3
17	1	JP8	JUMPER
18	1	JP9	STRIP 2
19	1	J3	FLAT 40P
20	3	Q1, Q3, Q4	BC337
21	6	RP1, RP2, RP8, RP9, R15, R16	10K
22	3	RP3, RP7, RP15	2K2
23	4	RP4, RP5, RP6, R14	47K
24	3	R8, RP10, RP11	47R
25	2	RP12, R13	10R
26	2	RP13, R18	470R
27	1	RP14	3K3
28	1	R1	10M
29	5	S1, S2, S3, S4, S5	SW
30	1	S6	INT
31	1	TR1	87W-10K
32	1	U1	68HC11F1
33	1	U2	MB3773
34	1	U3	27C256
35	1	U4	74HC594
36	1	U5	74HC139
37	1	U6	74HC165
38	1	U7	PCF8584
39	3	U8, U11, U12	40106
40	2	U9, U10	ULN2004A
41	1	U13	LM317
42	1	Y1	CST-8MhZ

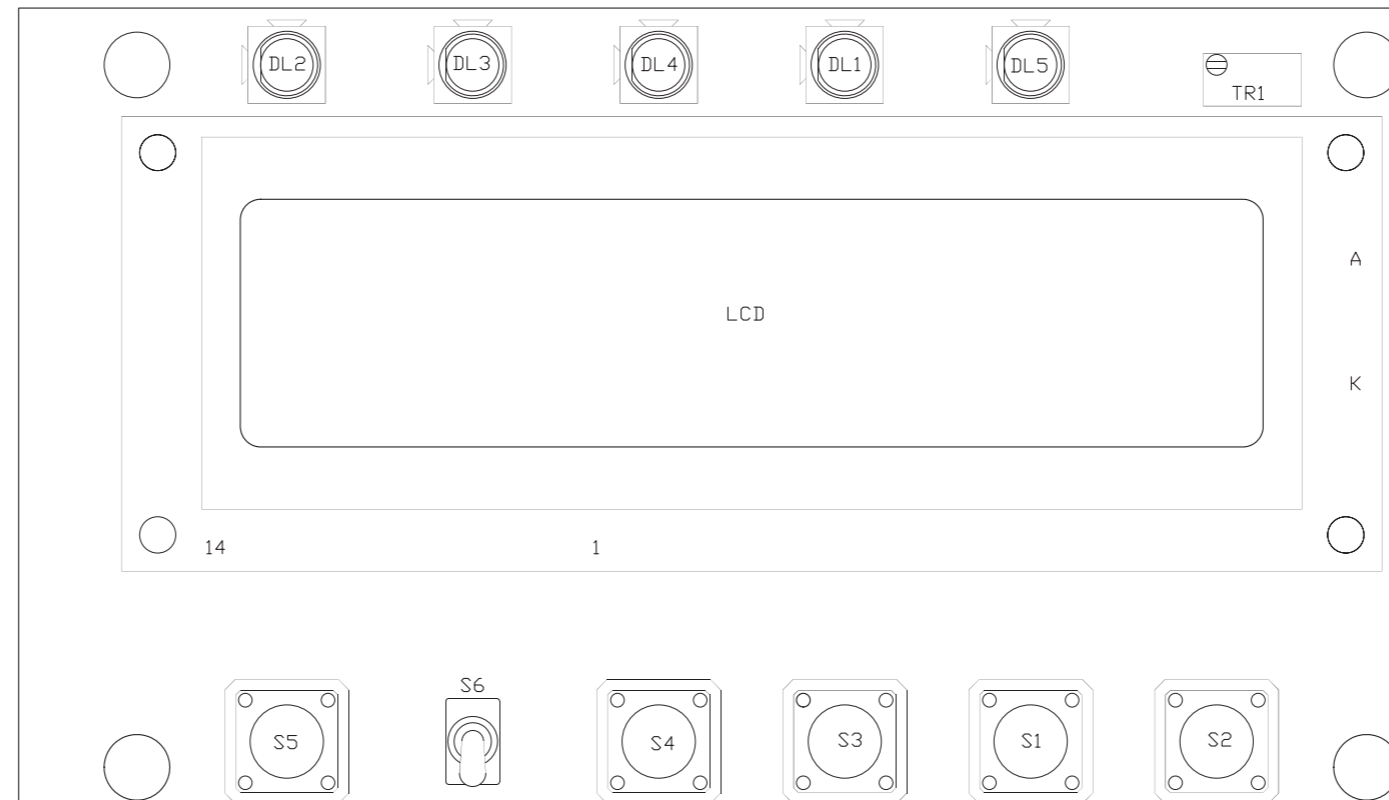
PROTPJ-HCLCD



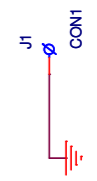
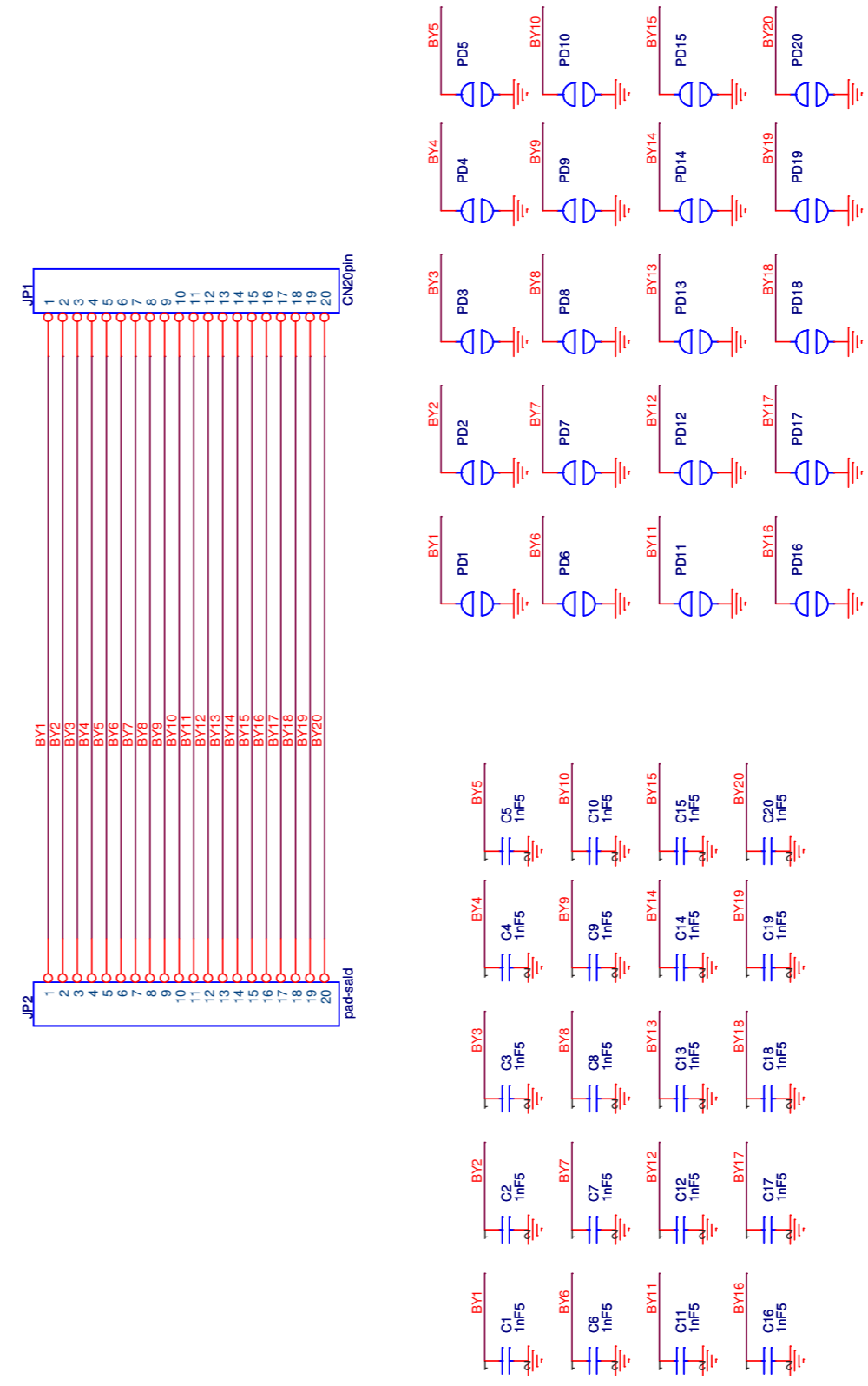
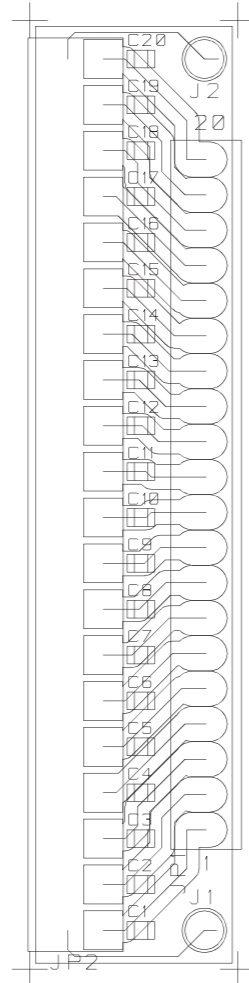
ARCHIVING : 'RVPUT' SERVER, 'RILASCIATI' FOLDER | PROJECT CODE : 014 | DOCUMENT CODE : PROTPJ-HCLCD

PRODUCT NAME : HCS-10 | PART NAME : CPU Display Section Component Layout

DESIGNER : GP - Rev.: J. Berti | DATE : 11/02/04 | REVISION : 2.0 | SCALE : 1:1 | SIZE : A4 | PAGE : 1 DI 1



SLADPCNPRTPJ



CS1  
CSADPCNPRTPJ



Description: CPU Adapter card	
Designer: UT	Page: 1 of 1
Size: A4	Rev. 2.1
Part No.: SLADPCNPRTPJ	Date: 11/03/2005

	PRODUCT NAME : PJ / HC	PART NAME : CPU Adapter card			
	DESIGNER : UT	DATE : 11/03/05	REVISION : 2.1	SCALE : 1:1	SIZE : A4
ARCHIVING : *RVRUT* SERVER, *RILASCIATI* FOLDER	PROJECT CODE : <>	DOCUMENT CODE : SLADPCNPRTPJ			

SLADPCNPRTPJ

CPU Adapter card Revised: Friday, March 11, 2005  
 SLADPCNPRTPJ Revision: 2.1  
 UT

Item	Quantity	Reference	Part	Description
1	1	CS1	CSADPCNPRTPJ	Printed circuit board
2	20	C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20	1nF5	Ceramic capacitor 0805 X7R
3	1	JP1	CN20pin	stripped female connector 20pin turned
4	1	JP2	pad-sald	Solder pad
5	1	J1	CON1	Solder pad
6	20	PD1, PD2, PD3, PD4, PD5, PD6, PD7, PD8, PD9, PD10, PD11, PD12, PD13, PD14, PD15, PD16, PD17, PD18, PD19, PD20		Solder pad



100W Single Output with PFC Function

**EPP-100 series**



- Features :
  - 4"x2" Compact size
  - Universal AC input / Full range
  - Built-in active PFC function
  - High efficiency up to 92.5%
  - Protections: Short circuit / Overload / Over voltage/Over temperature
  - 75W free air convection, 100W with 20CFM forced air
  - LED indicator for power on
  - No load power consumption<0.5W
  - Built-in 12V/0.3A auxiliary output
  - 3 years warranty



**SPECIFICATION**

MODEL	EPP-100-12	EPP-100-15	EPP-100-24	EPP-100-27	EPP-100-48	
OUTPUT	DC VOLTAGE	12V	15V	24V	27V	48V
	RATED CURRENT (convection)	6.3A	5A	3.2A	2.8A	1.6A
	RATED CURRENT (20CFM FAN)	8.5A	6.67A	4.2A	3.71A	2.1A
	CURRENT RANGE (convection)	0 ~ 6.3A	0 ~ 5A	0 ~ 3.2A	0 ~ 2.8A	0 ~ 1.6A
	CURRENT RANGE (20CFM FAN)	0 ~ 8.5A	0 ~ 6.67A	0 ~ 4.2A	0 ~ 3.71A	0 ~ 2.1A
	RATED POWER (convection)	75.6W	75W	76.8W	75.6W	76.8W
	RATED POWER (20CFM FAN)	102W	100.05W	100.8W	100.17W	100.8W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	150mVp-p	240mVp-p	240mVp-p	300mVp-p
	VOLTAGE ADJ. RANGE	11.76 ~ 12.6V	14.7 ~ 15.75V	23.52 ~ 25.2V	26.46 ~ 28.35V	47.04 ~ 50.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%
LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
SETUP, RISE TIME	1000ms, 30ms/230VAC		2000ms, 30ms/115VAC at full load			
HOLD UP TIME (Typ.)	16ms/230VAC	16ms/115VAC at full load				
INPUT	VOLTAGE RANGE Note.5	90 ~ 264VAC	127 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz				
	POWER FACTOR (Typ.)	PF>0.95/230VAC		PF>0.98/115VAC at full load		
	EFFICIENCY (Typ.)	91%	91%	92%	92.5%	92.5%
	AC CURRENT (Typ.)	1.4A/115VAC		0.7A/230VAC		
	INRUSH CURRENT (Typ.)	COLD START 70A/230VAC				
	LEAKAGE CURRENT	<2mA/240VAC				
PROTECTION	OVER LOAD	105 ~ 145% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	13.2 ~ 15.6V	16.83 ~ 19.5V	27.7 ~ 31.5V	30.2 ~ 34.05V	51.3 ~ 62.7V
	OVER TEMPERATURE	110°C ± 10°C (RTH2), 110°C ± 5°C (TSW2) Protection type : Shut down o/p voltage, re-power on to recover				
FUNCTION	AUXILIARY POWER(AUX)	12V@0.3A for driving a fan, tolerance ± 10% at main output 100% load				
	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")				
ENVIRONMENT	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 45°C)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 500VDC / 25°C / 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3				
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, heavy industry level, criteria A				
	MTBF	249.6Khrs min. MIL-HDBK-217F (25°C)				
NOTE	DIMENSION	101.6*50.8*29mm (L*W*H)				
	PACKING	0.2Kg; 72pcs/15.4Kg/0.82CUFT				

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.  
 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.  
 3. Tolerance : includes set up tolerance, line regulation and load regulation.  
 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.  
 5. Derating may be needed under low input voltages. Please check the derating curve for more details.

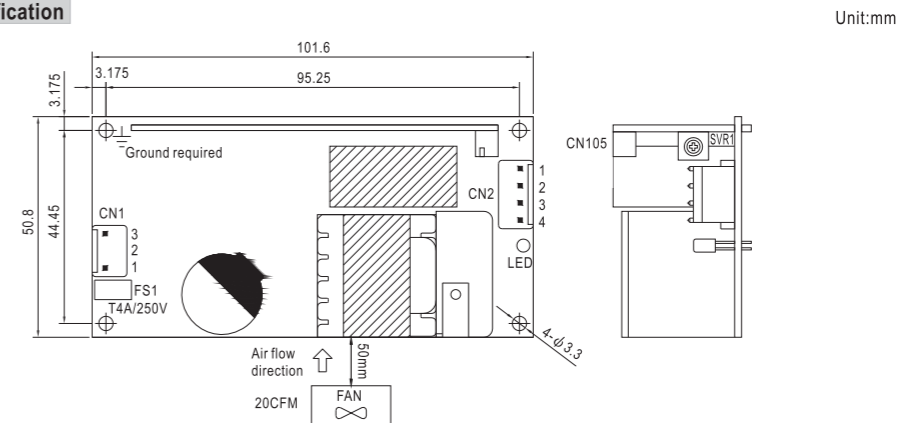
File Name:EPP-100-SPEC 2012-09-10



100W Single Output with PFC Function

**EPP-100 series**

■ Mechanical Specification



AC Input Connector (CN1) : JST B3P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	No Pin		
3	AC/N		

DC Output Connector (CN2) : JST B4P-VH or equivalent

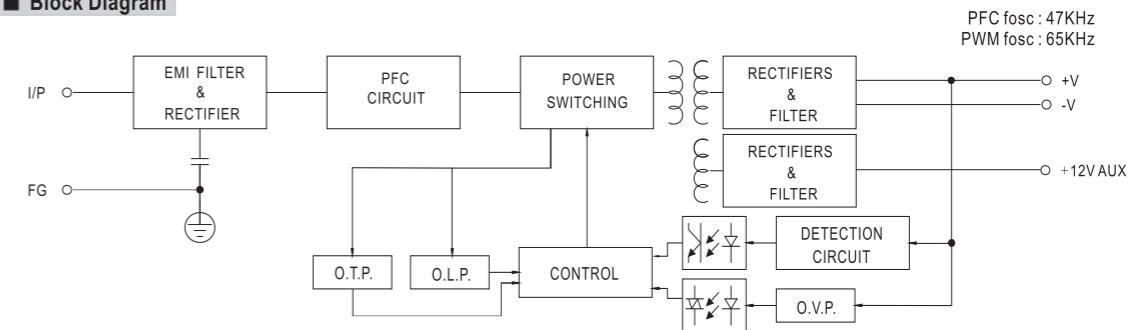
Pin No.	Assignment	Mating Housing	Terminal
1,2	DC COM	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3,4	+V		

FAN Connector(CN105) : JST B2B-PH-K-S or equivalent

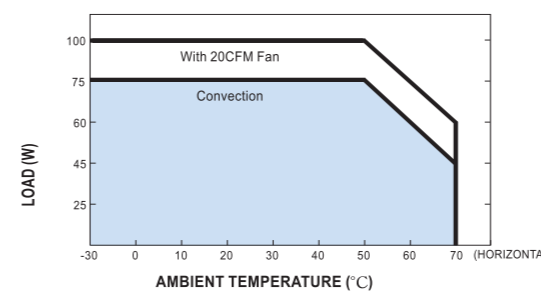
Pin No.	Assignment	Mating Housing	Terminal
1	+12V	JST PHR-2 or equivalent	JST SPH-002T-P0.5S or equivalent
2	DC COM		

⊕ : Grounding required

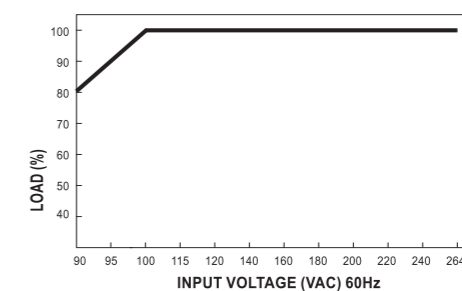
■ Block Diagram



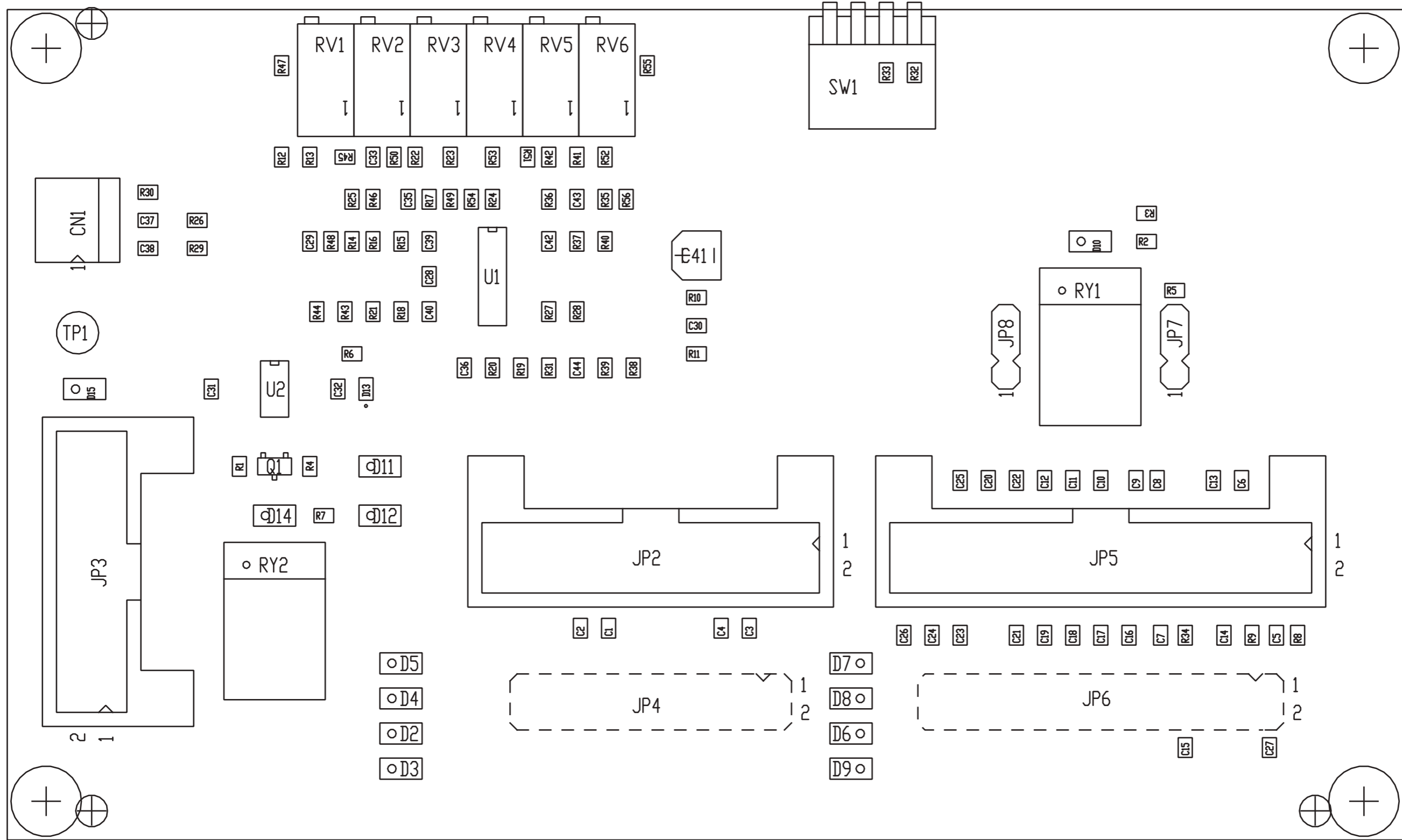
■ Output Derating



■ Output Derating VS Input Voltage



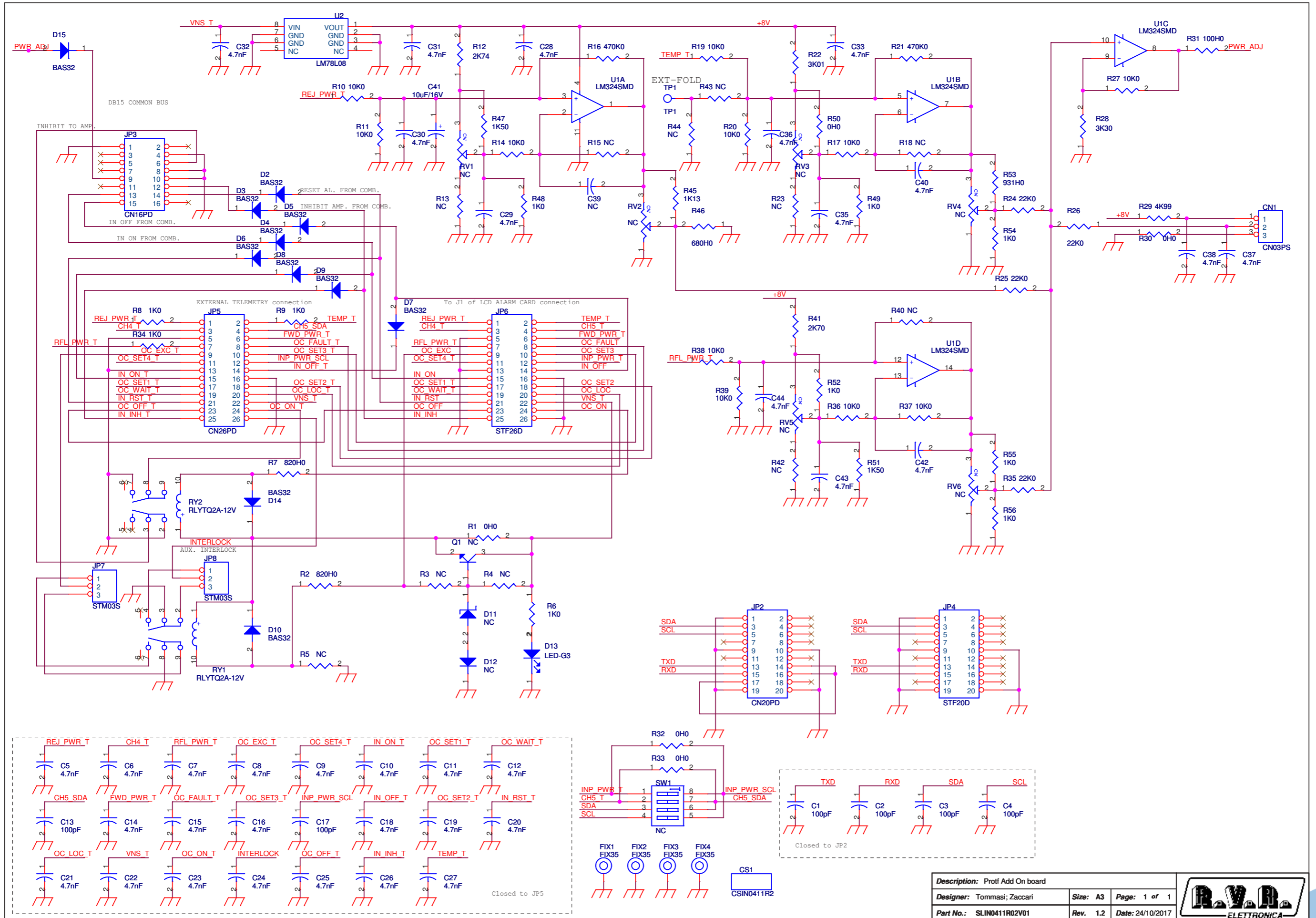
File Name:EPP-100-SPEC 2012-09-10



PRODUCT NAME : HC2-5GRL	PART NAME : INTERFACE PROT-F ADD-ON
DESIGNER : A. Tommasi	DATE : 23/03/15
ARCHIVING : "RVRUT" SERVER, "RILASCIATI" FOLDER	REVISION : 1.0
	SCALE : 2:1
	SIZE : A4
	PAGE : 1
	DI : 1
	DOCUMENT CODE : SLIN0411R02V01
	PROJECT CODE : 021



SLIN0411R02V01



<b>Description:</b> Protif Add On board			
<b>Designer:</b> Tommasi, Zaccari	<b>Size:</b> A3	<b>Page:</b> 1 of 1	
<b>Part No.:</b> SLIN0411R02V01	<b>Rev.:</b> 1.2	<b>Date:</b> 24/10/2017	

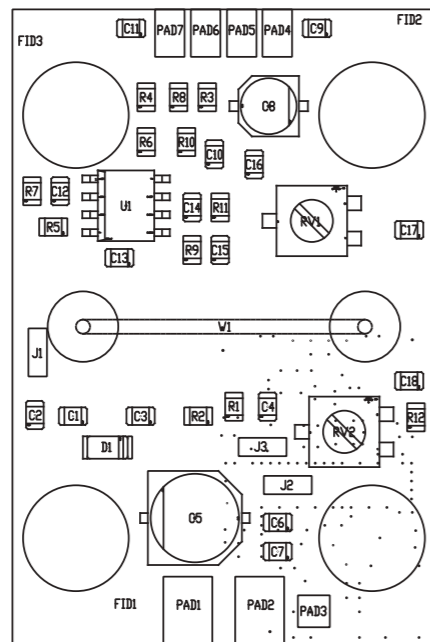
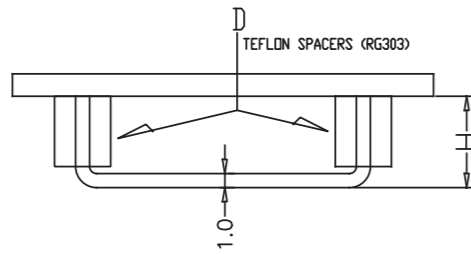
SLIN0411R02V01

Protf Add On board Revised: 24/10/2017  
 SLIN0411R02V01 Revision: 1.2  
 Tommasi; Zaccari

Item	Quantity	Reference	Part	Description
1	1	CN1	CN03PS	3 poles Mascon connector
2	1	CS1	CSIN0411R2	Printed circuit board
3	6	C1, C2, C3, C4, C13, C17	100pF	SMD capacitor 0805
4	35	C5, C6, C7, C8, C9, C10, C11, C12, C14, C15, C16, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C35, C36, C37, C38, C40, C42, C43, C44	4.7nF	SMD capacitor 0805
5	1	C39	NC	SMD capacitor 0805
6	1	C41	10uF/16V	SMD electrolytic capacitor d. 4mm
7	11	D2, D3, D4, D5, D6, D7, D8, D9, D10, D14, D15	BAS32	MINIMELF SMD Diode
8	1	D11	NC	MINIMELF SMD Zener Diode
9	1	D12	NC	MINIMELF SMD Diode
10	1	D13	LED-G3	LED SMD 0805
11	4	FIX1, FIX2, FIX3, FIX4	FIX35	fixing hole 3.5mm
12	1	JP2	CN20PD	20 poles connectors Flat pc
13	1	JP3	CN16PD	16 poles connectors Flat pc
14	1	JP4	STF20D	Female strip 10+10 pin
15	1	JP5	CN26PD	26 poles connector Flat pc
16	1	JP6	STF26D	Female strip 13+13 pin
17	2	JP7, JP8	STM03S	Male strip 3 pin
18	1	Q1	NC	Trans. NPN SOT23
19	6	RV1, RV2, RV3, RV4, RV5, RV6	NC	Trimmer Rg H 3296X
20	2	RY1, RY2	RLYTQ2A-12V	Relay TQ2
21	5	R1, R30, R32, R33, R50	0H0	SMD resistor 0805
22	2	R2, R7	820H0	SMD resistor 0805
23	11	R3, R4, R5, R13, R15, R18, R23, R40, R42, R43, R44	NC	SMD resistor 0805
24	10	R6, R8, R9, R34, R48, R49, R52, R54, R55, R56	1K0	SMD resistor 0805
25	11	R10, R11, R14, R17, R19, R20, R27, R36, R37, R38, R39	10K0	SMD resistor 0805
26	1	R12	2K74	SMD resistor 0805
27	2	R16, R21	470K0	SMD resistor 0805
28	1	R22	3K01	SMD resistor 0805
29	4	R24, R25, R26, R35	22K0	SMD resistor 0805
30	1	R28	3K30	SMD resistor 0805
31	1	R29	4K99	SMD resistor 0805
32	1	R31	100H0	SMD resistor 0805
33	1	R41	2K70	SMD resistor 0805
34	1	R45	1K13	SMD resistor 0805
35	1	R46	680H0	SMD resistor 0805
36	2	R47, R51	1K50	SMD resistor 0805
37	1	R53	931H0	SMD resistor 0805
38	1	SW1	NC	Dip switch 4 way
39	1	TP1	TP1	Test point
40	1	U1	LM324SMD	Quad Op. SMD SO14
41	1	U2	LM78L08	SMD stabilizer SO8

SL042MT1001

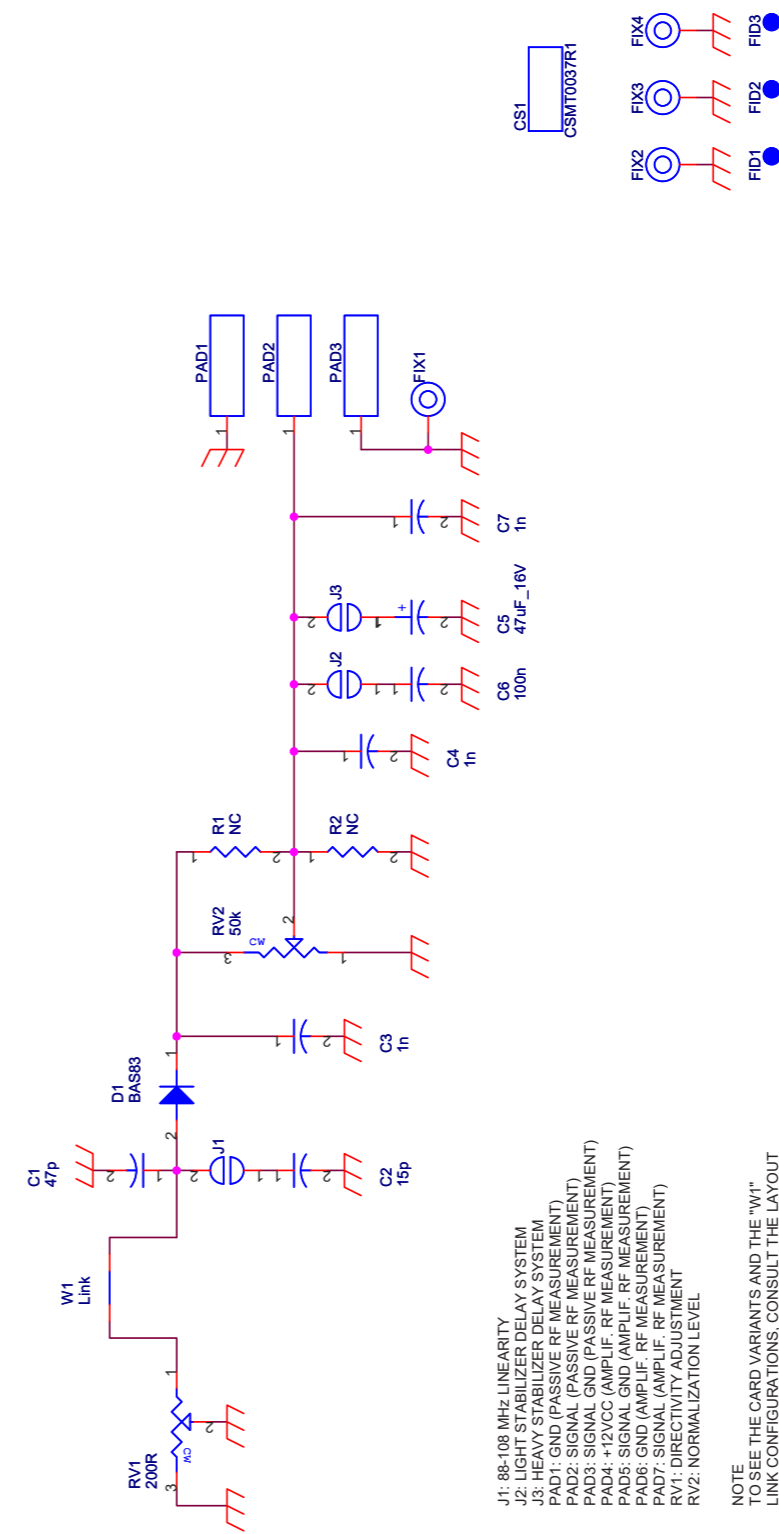
W1 LINK CONFIGURATION



- J1: 88-108 MHz LINEARITY
- J2: LIGHT STABILIZER DELAY SYSTEM
- J3: HEAVY STABILIZER DELAY SYSTEM
- PAD1: GND (PASSIVE RF MEASUREMENT)
- PAD2: SIGNAL (PASSIVE RF MEASUREMENT)
- PAD3: SIGNAL GND (PASSIVE RF MEASUREMENT)
- PAD4: +12VCC (AMPLIF. RF MEASUREMENT)
- PAD5: SIGNAL GND (AMPLIF. RF MEASUREMENT)
- PAD6: GND (AMPLIF. RF MEASUREMENT)
- PAD7: SIGNAL (AMPLIF. RF MEASUREMENT)
- RV1: DIRECTIVITY ADJUSTMENT
- RV2: NORMALIZATION LEVEL

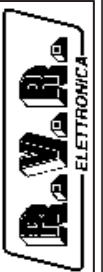
CONFIGURATIONS DETAIL

CARD CODE	H link W1 (mm)	W1 code AS400	D spacers W1	Jumper J1	Jumper J2	Jumper J3
SL042MT1001		none				
SL042MT1101	5.3	BOB10020001A		X		
SL042MT1201	4	BOB10020002A		X		
SL042MT1301	7.6	BOB10020003A		X		
SL042MT1401	8.5	BOB10020004A	X	X		X
SL042MT1501	4.5	BOB10020005A		X		
SL042MT1601	5.5	BOB10020006A	X	X		X



- J1: 88-108 MHz LINEARITY
- J2: LIGHT STABILIZER DELAY SYSTEM
- J3: HEAVY STABILIZER DELAY SYSTEM
- PAD1: GND (PASSIVE RF MEASUREMENT)
- PAD2: SIGNAL (PASSIVE RF MEASUREMENT)
- PAD3: SIGNAL GND (PASSIVE RF MEASUREMENT)
- PAD4: +12VCC (AMPLIF. RF MEASUREMENT)
- PAD5: SIGNAL GND (AMPLIF. RF MEASUREMENT)
- PAD6: GND (AMPLIF. RF MEASUREMENT)
- PAD7: SIGNAL (AMPLIF. RF MEASUREMENT)
- RV1: DIRECTIVITY ADJUSTMENT
- RV2: NORMALIZATION LEVEL

NOTE  
TO SEE THE CARD VARIANTS AND THE "W1"  
LINK CONFIGURATIONS, CONSULT THE LAYOUT  
(SL042MT1001-DWG)



Description: Generic RF PWR Measurement  
Designer: Mauro Ucelli  
Part No.: SL042MT1001  
Page: 1 of 1  
Size: A4  
Rev: 1.1  
Date: 17/04/2006

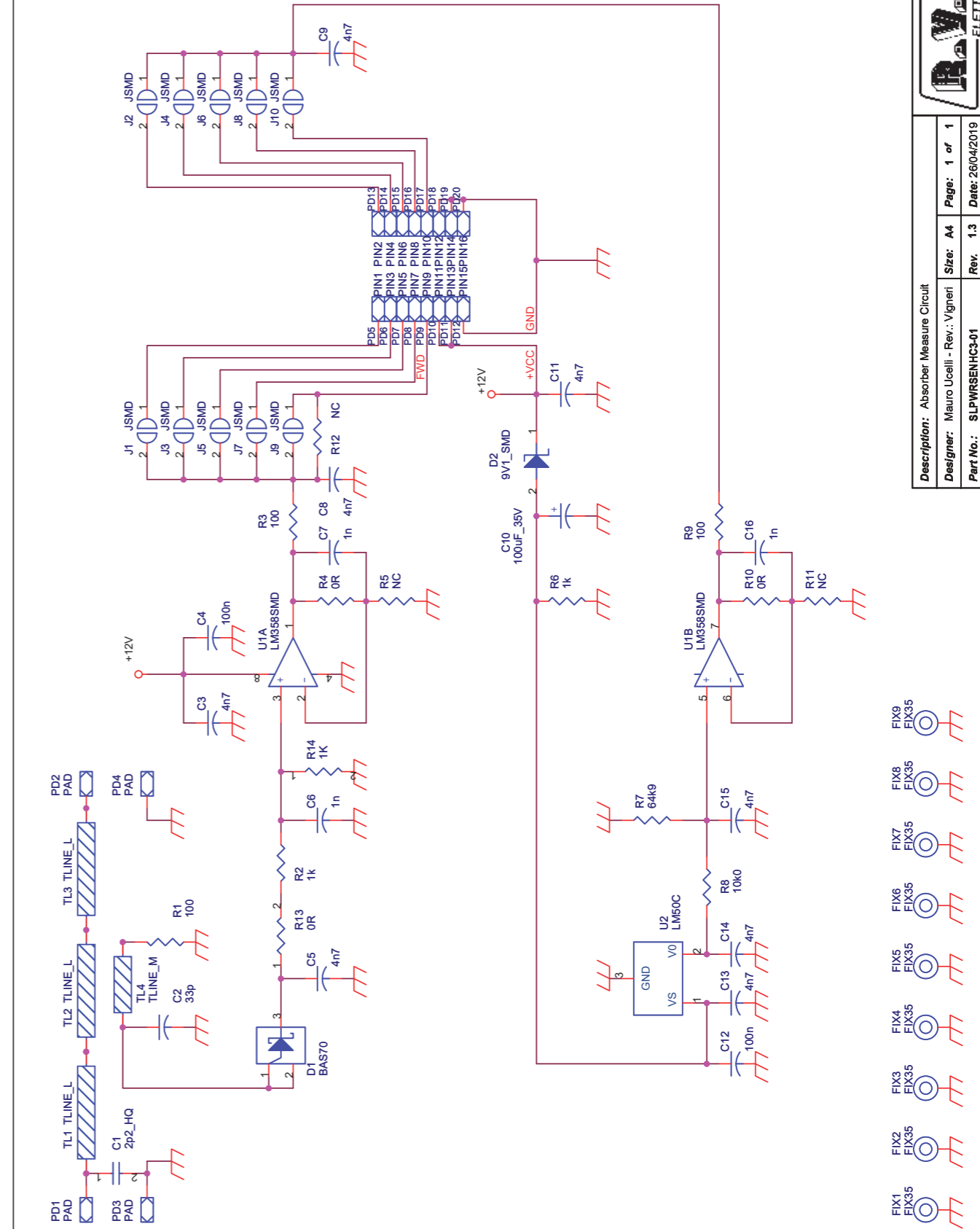
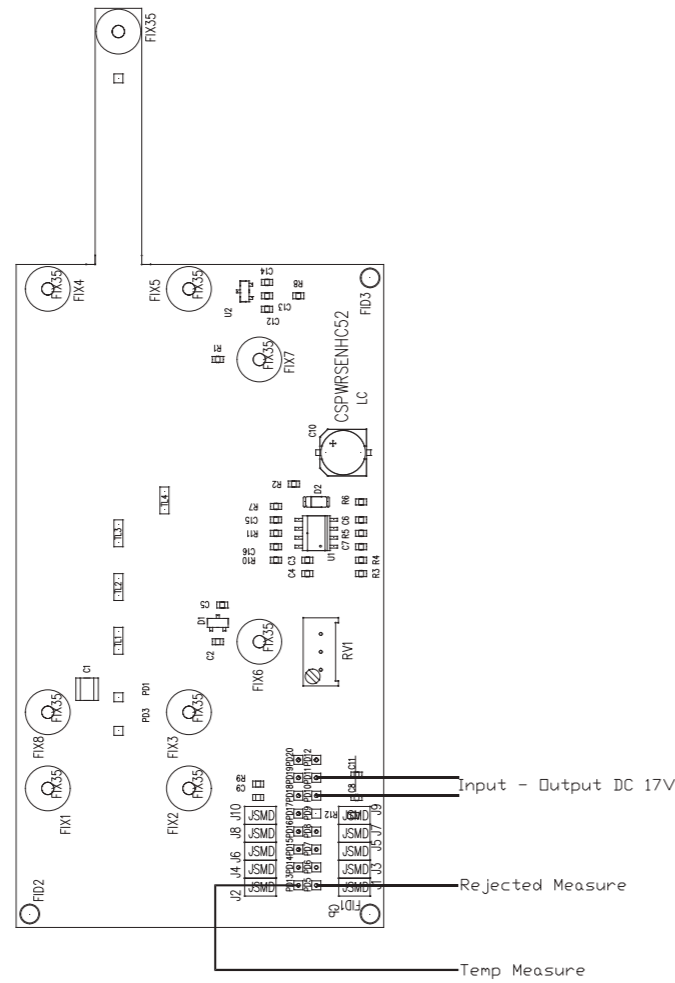
	PRODUCT NAME : HC2/2	PART NAME : POWER METER			
	DESIGNER : M. UCELLI	DATE : 27/09/11	REVISION : 1.0	SCALE : 2:1	SIZE : A4
ARCHIVING : 'RV RUT' SERVER, 'RILASCIATI' FOLDER	PROJECT CODE : 042	DOCUMENT CODE : SL042MT1001			

SL042MT1001

RF Power measure board  
 SL042MT1001  
 Revision: 1.1  
 Generic RF PWR Measurement  
 042  
 Mauro Ucelli  
 17/04/2008

Item	Quantity	Reference	Part	Description
1	1	CS1	CSMT0037R1	Printed Circuit Board
2	1	C1	47p	SMD 0805 COG Capacitor
3	1	C2	15p	SMD 0805 COG Capacitor
4	3	C3,C4,C7	1n	SMD 0805 Capacitor
5	1	C5	47uF 16V	Elect. SMD d. 6.3mm Cap.
6	1	C6	100n	SMD 0805 Capacitor
7	1	D1	BAS83	MINIMELF SMD Diode
8	3	FID1,FID2,FID3	FID	
9	4	FIX1,FIX2,FIX3,FIX4	FIX35	Fixing Hole 3.5mm
10	3	J1,J2,J3	JSMD	SMD Pad to solder
11	3	PAD1,PAD2,PAD3	PAD	
12	1	RV1	200R	Trimmer SMD
13	1	RV2	50k	Trimmer SMD
14	2	R1,R2	NC	SMD 0805 Res.
15	1	W1	Link	Wire to solder

SLPWRSEHC3-01



Description: Absorber Measure Circuit	
Designer: Mauro Ucelli - Rev.: Vigneri	Page: 1 of 1
Rev. 1.3	Date: 26/04/2019
Part No.: SLPWRSEHC3-01	

	PRODUCT NAME : HC3/3-V3	PART NAME : ABSORBER MEASURE CARD				
	DESIGNER : UFFICIO TECNICO	DATE : 16/05/13	REVISION : 1.2	SCALE : 1:1	SIZE : A4	PAGE : 1 DI 1
ARCHIVING : 'RVVUT' SERVER, 'RILASCIATI' FOLDER	PROJECT CODE : 022	DOCUMENT CODE : SLPWRSEHC3-01				

SLPWRSENHC3-01

Absorber Measure Circuit HC3/3-V3  
 SLPWRSENHC3-01 Revision: 1.3  
 26/04/2019  
 \_022  
 M. Ucelli - Rev.: A. Vigneri

Item	Quantity	Reference	Part
1	1	C1	2p2 HQ (CSMD HQ): High Q chip 2.2pF
2	1	C2	33p (0805/0603): SMT capacitor 33pF 0805 o 0603
3	8	C3, C5, C8, C9, C11, C13, C14, C15	4n7 (0805/0603): SMT capacitor 4.7nF 0805 o 0603
4	2	C4, C12	100n (0805/0603): SMT capacitor 100nF 0805 o 0603
5	3	C6, C7, C16	1n (0805/0603): SMT capacitor 1nF 0805 o 0603
6	1	C10	100uF 35V (CES6.3X8): Aluminum electrolytic capacitor SMT 100uF 35V
7	1	D1	BAS70 (SOT-23): SMT Diode BAS70
8	1	D2	9V1 SMD (MINIMELF): Zener diode SMT 9.1V
9	9	FIX1, FIX2, FIX3, FIX4, FIX5, FIX6, FIX7, FIX8, FIX9	FIX35 (FIX35): It is not a component
10	10	J1, J2, J3, J4, J5, J6, J7, J8, J9, J10	J5MD (J5MD): It is not a component
11	4	PD1, PD2, PD3, PD4	PAD (PD): It is not a component
12	1	PD5	PIN1 (PD): It is not a component
13	1	PD6	PIN2 (PD): It is not a component
14	1	PD7	PIN3 (PD): It is not a component
15	1	PD8	PIN4 (PD): It is not a component
16	1	PD9	PIN5 (PD): It is not a component
17	1	PD10	PIN6 (PD): It is not a component
18	1	PD11	PIN7 (PD): It is not a component
19	1	PD12	PIN8 (PD): It is not a component
20	1	PD13	PIN9 (PD): It is not a component
21	1	PD14	PIN10 (PD): It is not a component
22	1	PD15	PIN11 (PD): It is not a component
23	1	PD16	PIN12 (PD): It is not a component
24	1	PD17	PIN13 (PD): It is not a component
25	1	PD18	PIN14 (PD): It is not a component
26	1	PD19	PIN15 (PD): It is not a component
27	1	PD20	PIN16 (PD): It is not a component
28	1	RV1	NC (3296V): Multi-turn resistive trimmer screw in head
29	3	R1, R3, R9	100 (0805/0603): SMT resistor 100 Ohm 1%
30	2	R2, R6, R14	1k (0805/0603): SMT resistor 1k 1%
31	1	R4, R10, R13	0R (0805/0603): SMT resistor 0 Ohm
32	2	R12	NC
33	1	R7	64k9 (0805/0603): SMT resistor 64.9k 1%
34	2	R8	10k0 (0805/0603): SMT resistor 10k 1%
35	1	R5, R11	NC
36	3	TL1, TL2, TL3	TLINE L
37	1	TL4	TLINE M
38	1	U1	LM358SMD (SO-8): IC SMT LM358
39	1	U2	LM50C (SOT-23): IC SMT LM50C
40	1	CS1	CS