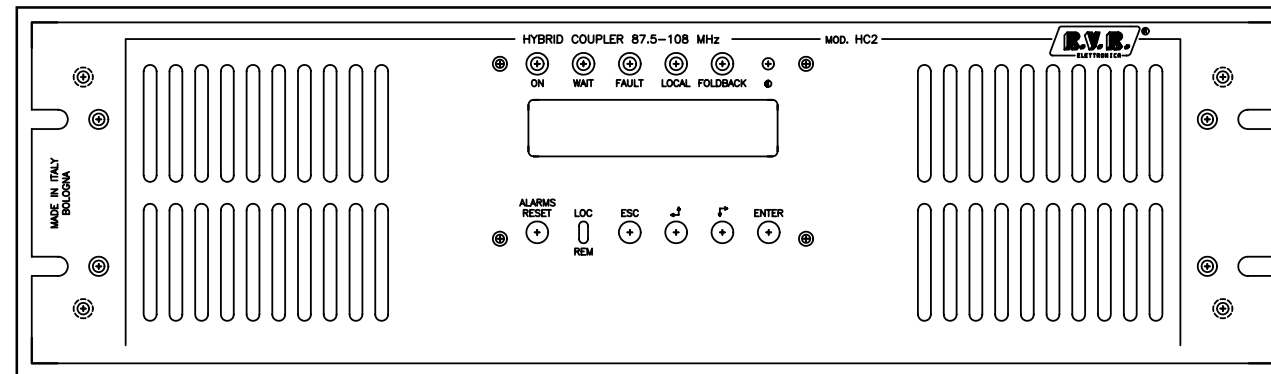


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# HC2 LCD



## User Manual

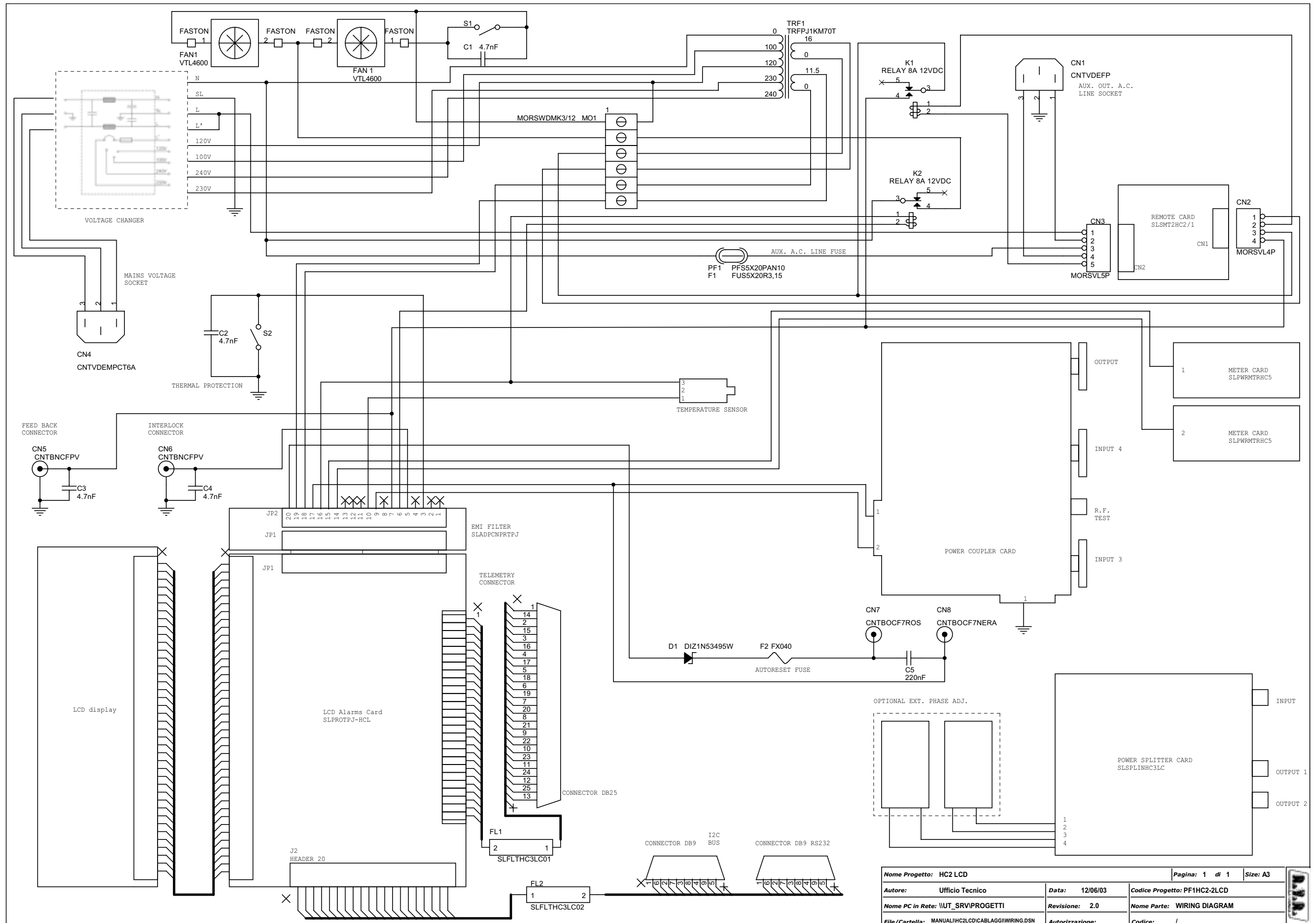
### Volume 2: Technical Appendix

## 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 HC2 LCD. L'appendice è composta dalle seguenti sezioni:

*This part of the manual contains the technical details about the different boards of the HC2 LCD. This appendix is composed of the following sections:*

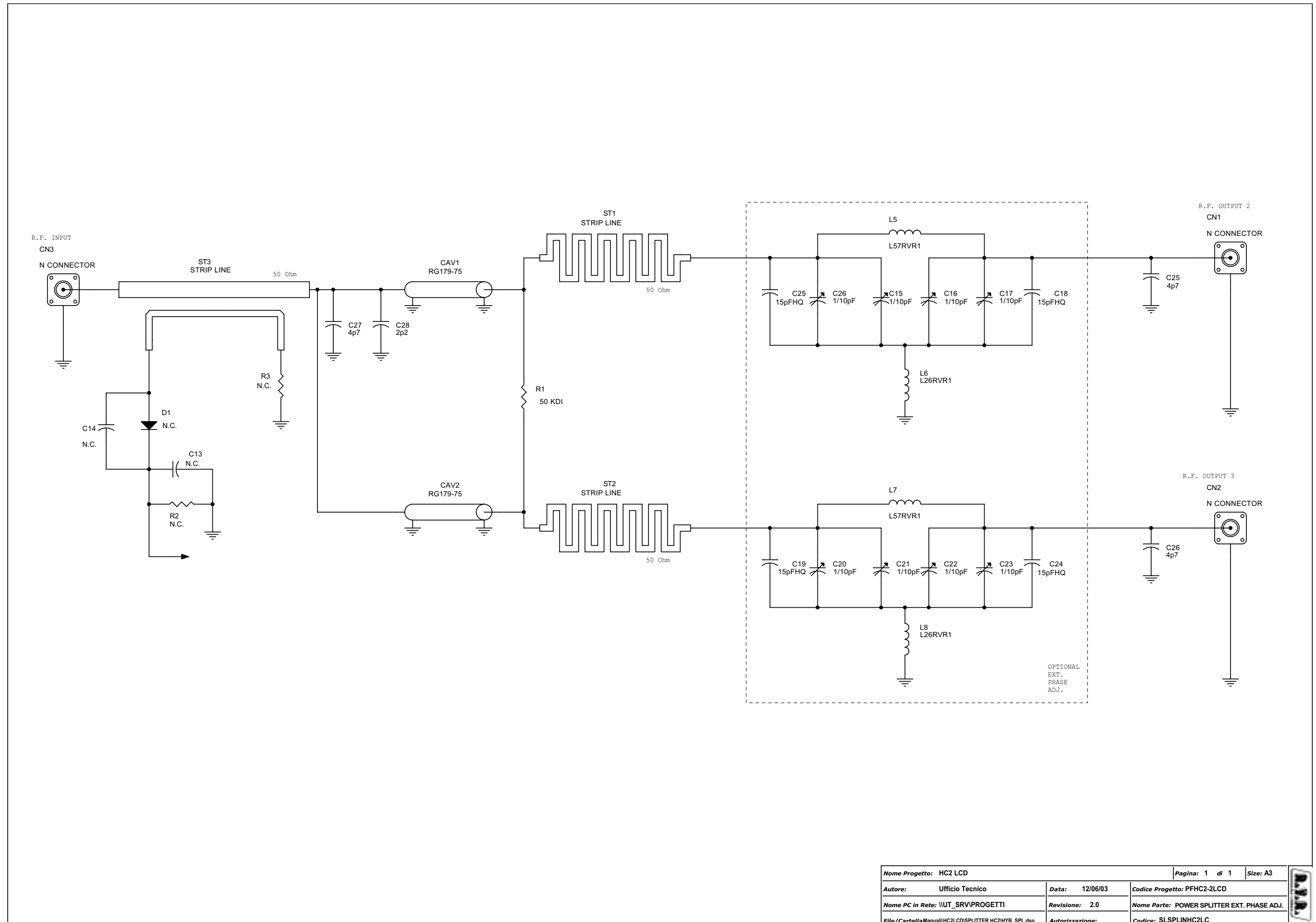
Description	RVR Code	Vers.	Page
Wiring diagrams		2.0	1
Power Splitter & Ext. Phase Adj.	SLSPLINHC2LC	2.0	3
Power Combiner	CSHYBPWRCL/B	2.0	6
LCD & Alarms Card	SLPROTPJ-HCL	2.0	9
Remote Card	SLSMT2HC2/1	2.0	15
EMI Filter	SLADPCNPRTPJ	2.0	17
Power Meter Card	SLPWRMTRHC5	2.0	19

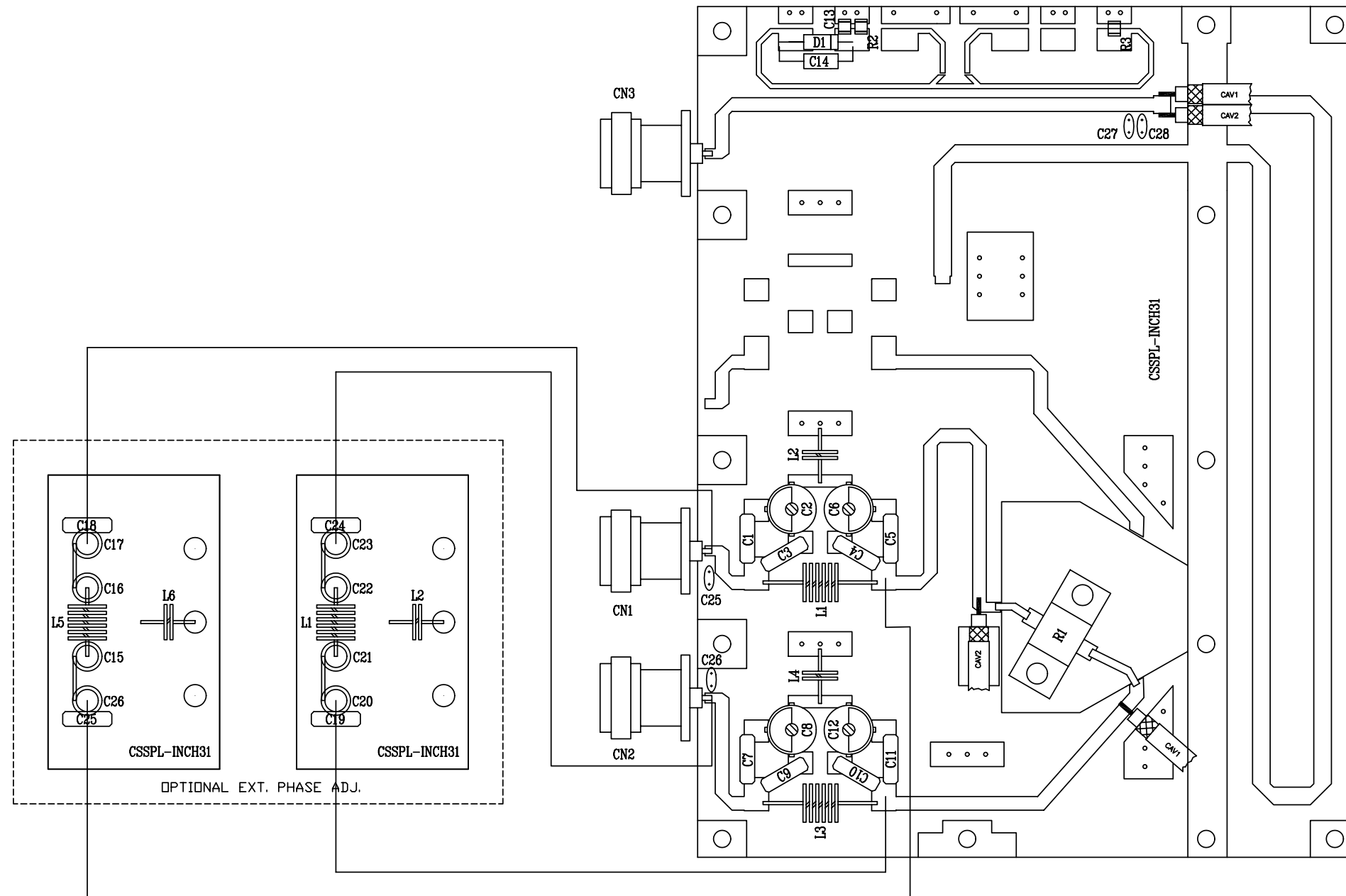


Nome Progetto: HC2 LCD		Pagina: 1 di 1	Size: A3
Autore: Ufficio Tecnico	Data: 12/06/03	Codice Progetto: PF1HC2-2LCD	
Nome PC in Rete: \UT_SRPVPROGETTI	Revisione: 2.0	Nome Parte: WIRING DIAGRAM	
File/Cartella: MANUALIHC2LCD\CABLAGGIWIRING.DSN	Autorizzazione:	Codice: /	

WIRING DIAGRAM - Bill Of Materials

Item	Quantity	Reference	Part
1	1	CN1	CNTVDEFP
2	1	CN2	MORSVL4P
3	1	CN3	MORSVL5P
4	1	CN4	CNTVDEMPCT6A
5	2	CN6,CN5	CNTBNCFPV
6	1	CN7	CNTBOCF7ROS
7	1	CN8	CNTBOCF7NERA
8	4	C1,C2,C3,C4	4.7nF
9	1	C5	220nF
10	1	D1	DIZ1N53495W
11	2	FAN1,FAN 1	VTL4600
12	1	FL1	SLFLTHC3LC01
13	1	FL2	SLFLTHC3LC02
14	1	F1	FUS5X20R3,15
15	1	F2	FX040
16	2	K2,K1	RELAY 8A 12VDC
17	1	MO1	MORSWDMK3/12
18	1	PF1	PFS5X20PAN10
19	2	S2,S1	SW SPST
20	1	TRF1	TRFPJ1KM70T





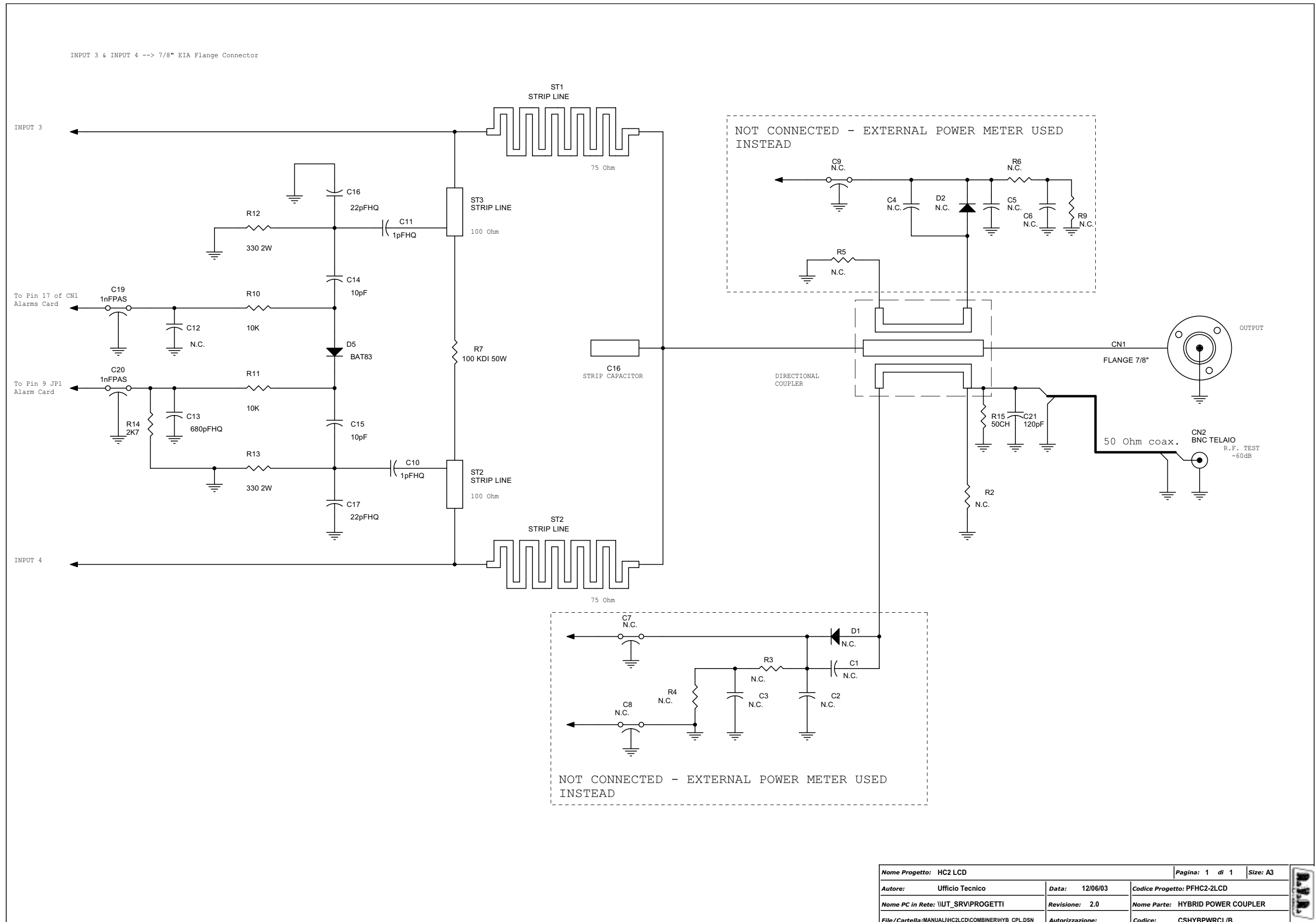
THE COMPONENTS L1, L2, L3, L4, C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11 C12 ARE NOT CONNECTED

Nome Progetto: HC2 LCD		Pagina: 1 di 1	Size: A3
Autore: Ufficio Tecnico		Data: 12/06/03	Codice Progetto: PFHC2-2LCD
Nome PC in Rete: \\UT_SRV\PROGETTI		Revisione: 2.0	Nome Parte: POWER SPLITTER W. EXT. PHASE ADJ.
File/Cartella: Manual\HC2LCD\SPLITTER HC2\LAYSPL2_2.dwg		Autorizzazione:	Codice: SLSPLINHC2LC
Scala: /	Materiale: /	Trattamento: /	Profilo: /

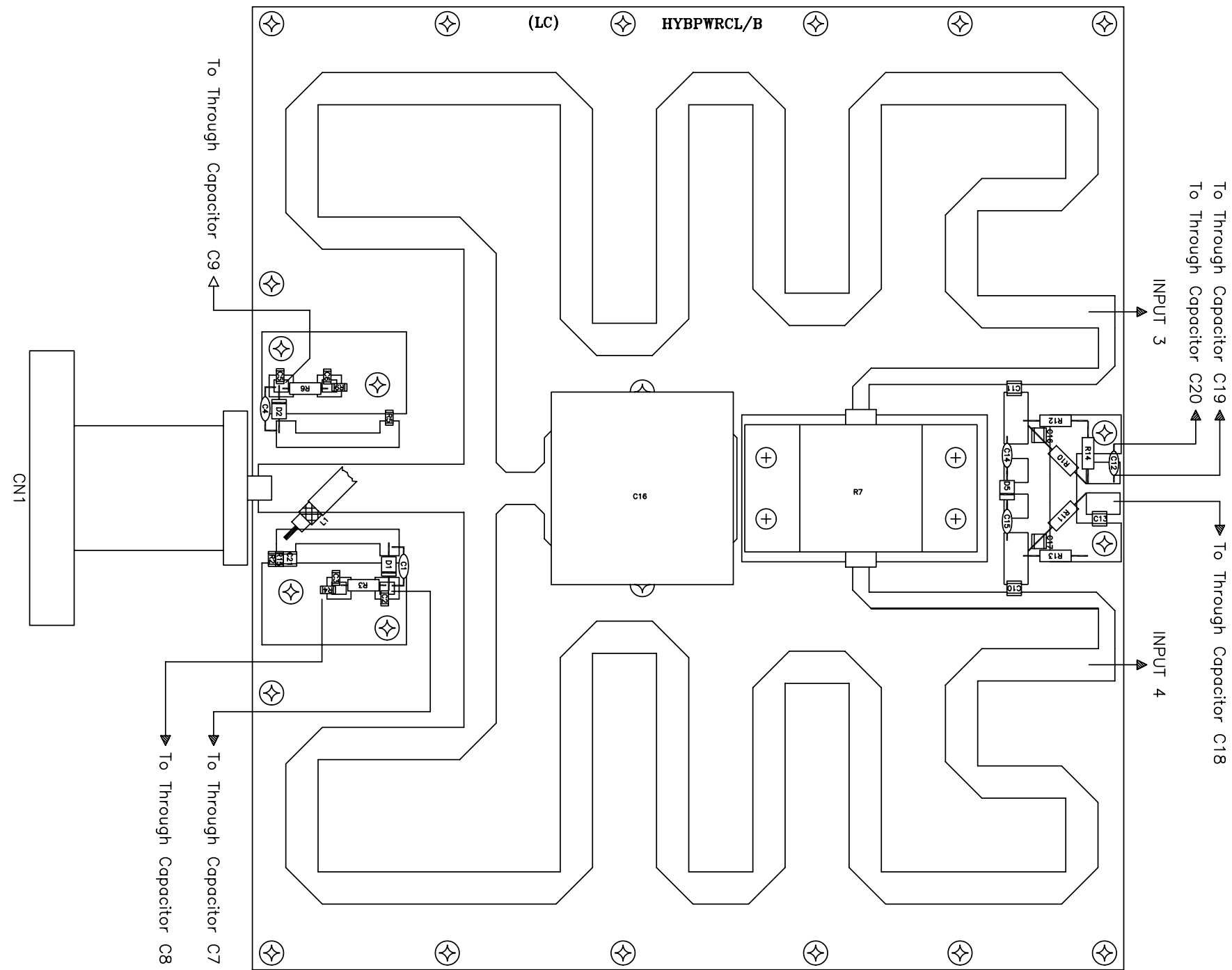



Power Splitter & Ext. Phase Adj. - Bill Of Materials

Item	Q.ty	Reference	Part
1	2	CAV2,CAV1	RG179-75
2	3	CN1,CN2,CN3	N CONNECTOR
3	5	D1,R2,R3,C13,C14	N.C.
4	4	C18,C19,C24,C25	15pFHQ
5	8	C15,C16,C17,C20,C21,C22, C23,C22,C23,C26	1/10pF
6	3	C25,C26,C27	4p7
7	1	C28	2p2
8	2	L7,L5	L57RVR1
9	2	L6,L8	L26RVR1
10	1	R1	50 KDI
11	3	ST1,ST2,ST3	STRIP LINE



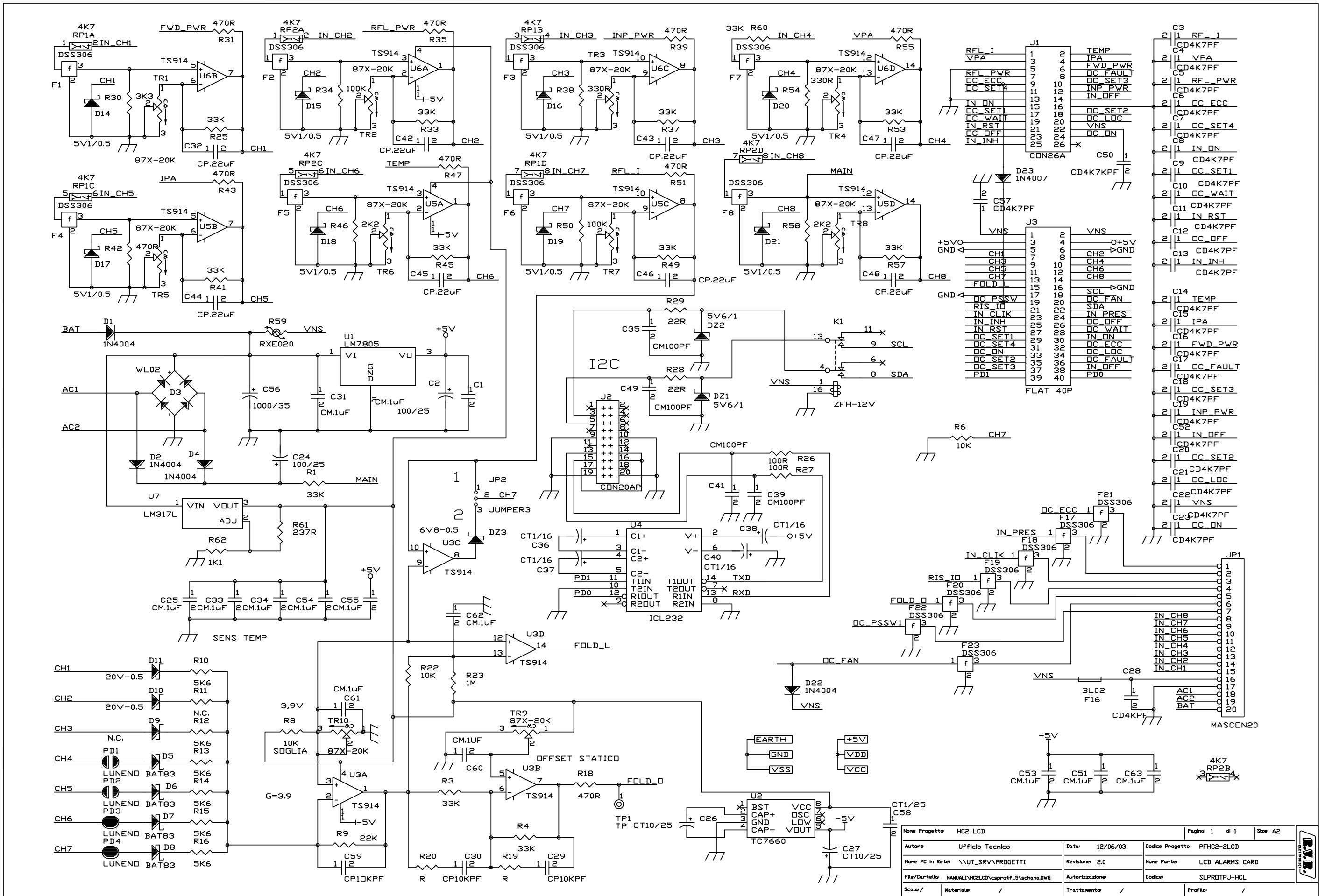


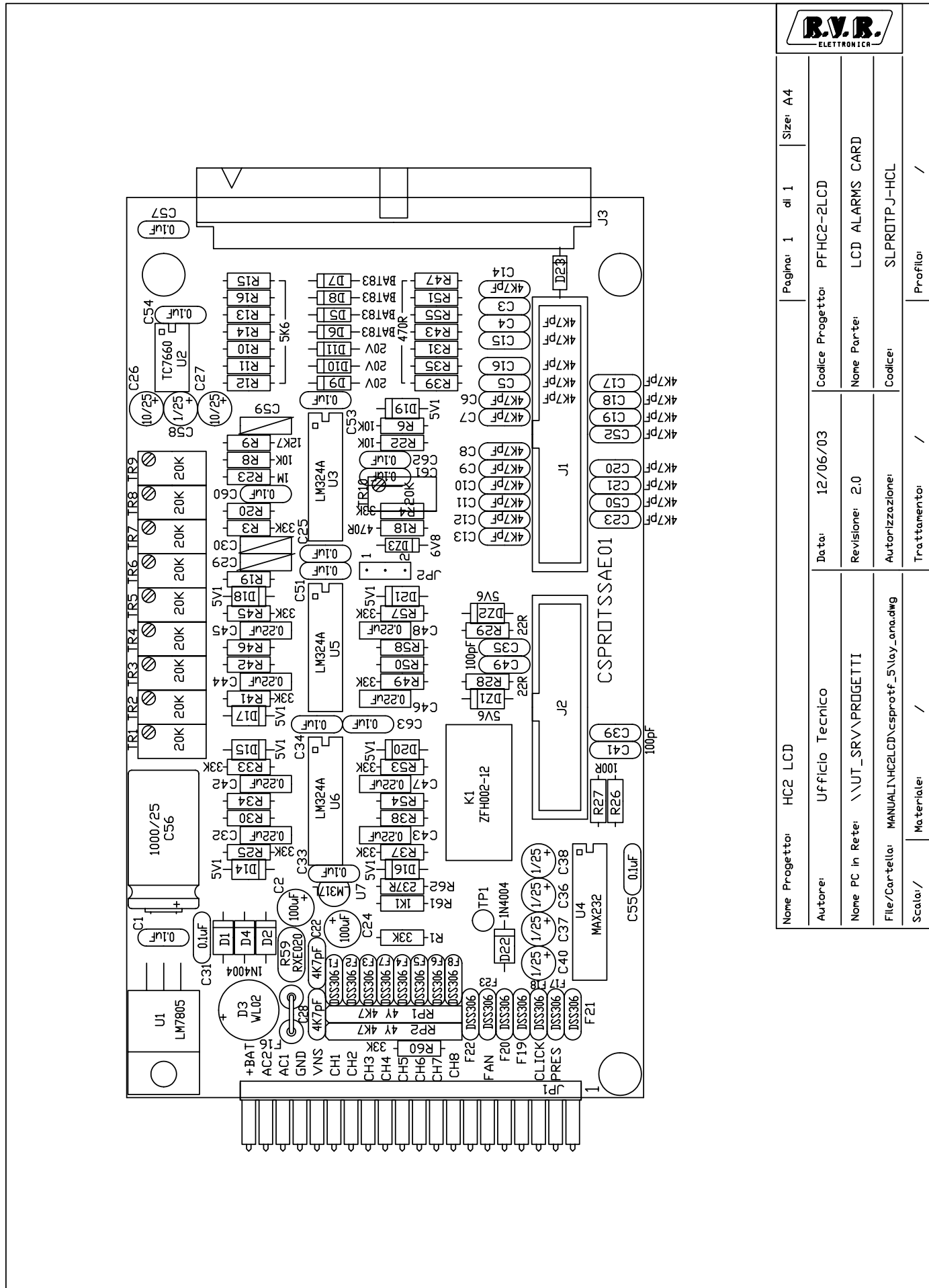


Nome Progetto: HC2 LCD		Pagina: 1 di 1	Size: A3
Autore: Ufficio Tecnico	Data: 12/06/03	Codice Progetto: PFHC2-2LCD	
Nome PC in Rete: \\UT_SRV\PROGETTI	Revisione: 2.0	Nome Parte: HYBRID POWER COUPLER	
File/Cartella: MANUALI\HC2LCD\COMBINER\LAYHYBCP.DWG	Autorizzazione:	Codice: CSHYBWRCL/B	
Scala: /	Materiale: /	Trattamento: /	Profilo: /

HYBRID POWER COUPLER - Bill Of Materials

Item	Q.ty	Reference	Part
1	1	CN1	FLANGE 7/8"
2	1	CN2	BNC TELAIO
3	18	D1,C1,R2,D2,C2,R3,C3,R4, C4,R5,C5,R6,C6,C7,C8,R9, C9,C12	N.C.
4	2	C11,C10	1pFHQ
5	1	C13	680pFHQ
6	2	C14,C15	10pF
7	2	C16,C17	22pFHQ
8	2	C19,C20	1nFPAS
9	1	C21	120pF
10	1	D5	BAT83
11	1	R7	100 KDI 50W
12	2	R11,R10	10K
13	2	R13,R12	330 2W
14	1	R14	2K7
15	1	R15	50CH
16	4	ST1,ST2,ST3,ST10	STRIP LINE



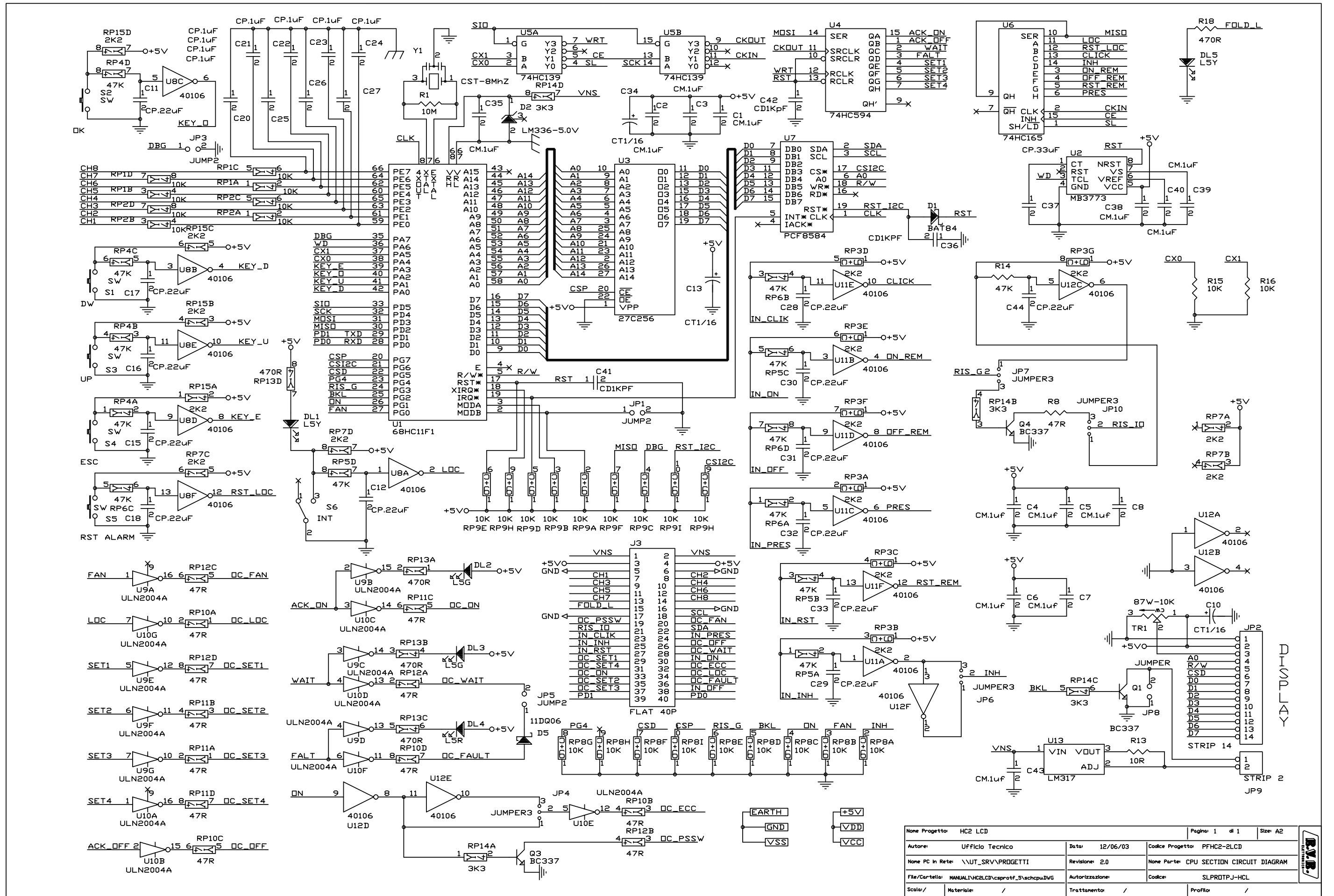


Nome Progetto:	HC2 LCD
Autore:	Ufficio Tecnico
Nome PC in Rete:	\\UT_SRV\PROGETTI
File/Cartella:	MANUAL\HC2LCD\csprotf_5\lay_ana.dwg
Scala:	Materiale: /
Data:	12/06/03
Revisione:	2.0
Autorizzazione:	
Trattamento:	/
Codice Progetto:	PFHC2-2LCD
Nome Parte:	LCD ALARMS CARD
Codice:	SLPRDTPJ-HCL
Profilo:	/
Pagina:	1 di 1
Size:	A4

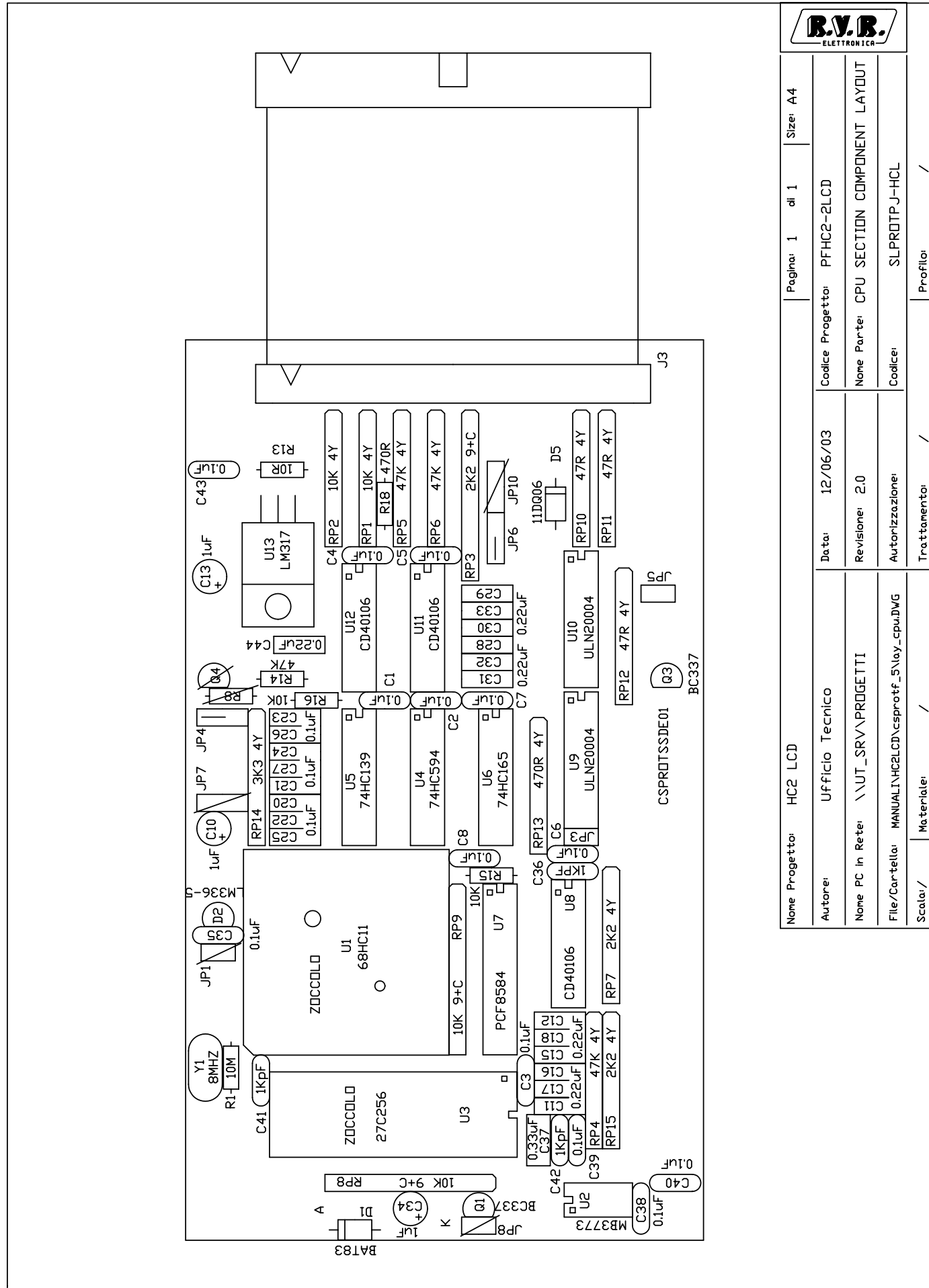
CPU Analog Section - Bill Of Materials

Item	Q.ty	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	22	C3,C4,C5,C6, C7,C8,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	2	DZ1,DZ2	5V6/1
15	1	DZ3	6V8-0.5
16	4	D1,D2,D4,D22	1N4004
17	1	D3	WL02
18	4	D5,D6,D7,D8	BAT83
19	3	D9,D10,D11	20V-0.5
20	8	D14,D15,D16, D17,D18,D19, D20,D21	5V1/0.5
21	15	F1,F2,F3,F4, F5,F6,F7,F8, F17,F18,F19, F20,F21,F22, F23	DSS306
22	1	F16	BL02
23	1	JP1	MASCON20
24	1	JP2	JUMPER3
25	1	J1	CON26A
26	1	J2	CON20AP
27	1	J3	FLAT 40P
28	1	K1	ZFH-12V
29	4	PD1,PD2,PD3, PD4	LUNENO
30	2	RP1,RP2	4K7
31	12	R1,R3,R4,R25, 33K R33,R37,R41, R45,R49,R53,	

		R57,R60	
32	3	R6,R8,R22	10K
33	1	R9	22K
34	6	R10,R11, R13,R14,R15, R16	5K6
35	9	R18,R31,R35, R39,R42,R43, R47,R51,R55	470R
36	2	R19,R20	R
37	1	R23	1M
38	2	R26,R27	100R
39	2	R28,R29	22R
40	1	R30	3K3
41	2	R34,R50	100K
42	2	R38,R54	330R
43	2	R46,R58	2K2
44	1	R59	RXE020
45	1	R61	237R
46	1	R62	1K1
47	1	TP1	TP
48	10	TR1,TR2,TR3, TR4,TR5,TR6, TR7,TR8,TR9, TR10	87X-20K
49	1	U1	LM7805
50	1	U2	TC7660
51	3	U3,U5,U6	TS914
52	1	U4	ICL232
53	1	U7	LM317L
54	2	R12,D9	N.C.
55	1	D23	1N4007



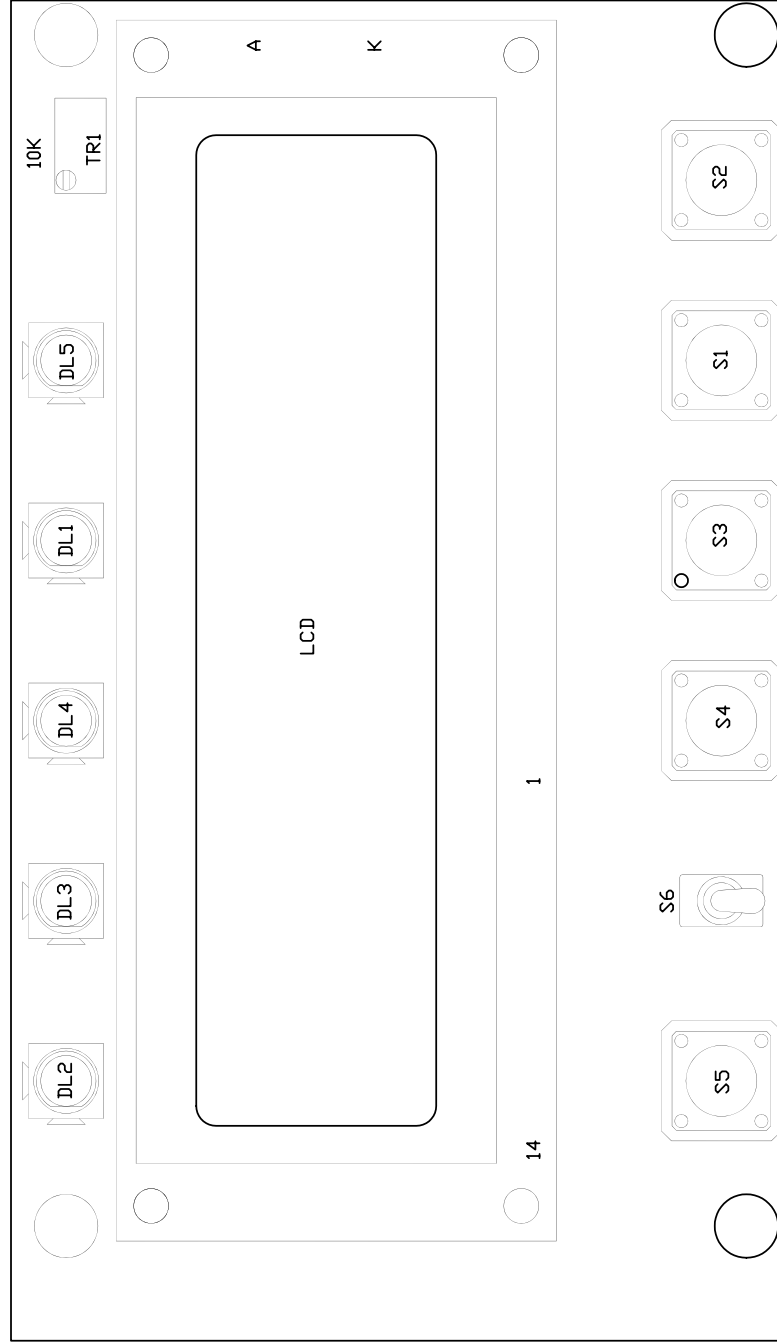
None Progettore: HC2 LCD		Pagina: 1 di 1		Size: A2	
Autore: Ufficio Tecnico		Data: 12/06/03		Codice Progetto: PFHC2-2LCD	
None PC in Rete: \\UT_SRV\PROGETTI		Revisione: 2.0		None Parte: CPU SECTION CIRCUIT DIAGRAM	
File/Cartella: MANUAL\HC2LCD\csprof_5\schcpu\DIVG		Autorizzazione:		Codice: SLPROTPJ-HCL	
Scala: /		Materiale: /		Trattamento: /	
				Profilo: /	



<b>R.V.B.</b> ELETTRONICA	
Nome Progetto: HC2 LCD	Size: A4
Autore: Ufficio Tecnico	Pagina: 1 di 1
Nome PC in Rete: \\\NUT_SRV\PROGETTI	Codice Progetto: PFHC2-2LCD
File/Cartella: MANUALI\HC2LCD\csprotf_5\lay_cpu.dwg	Nome Parte: CPU SECTION COMPONENT LAYOUT
Scala: /	Codice: SLPROTPJ-HCL
Materiali: /	Profilo: /
Trattamento: /	
Data: 12/06/03	
Revisione: 2.0	
Autorizzazione:	

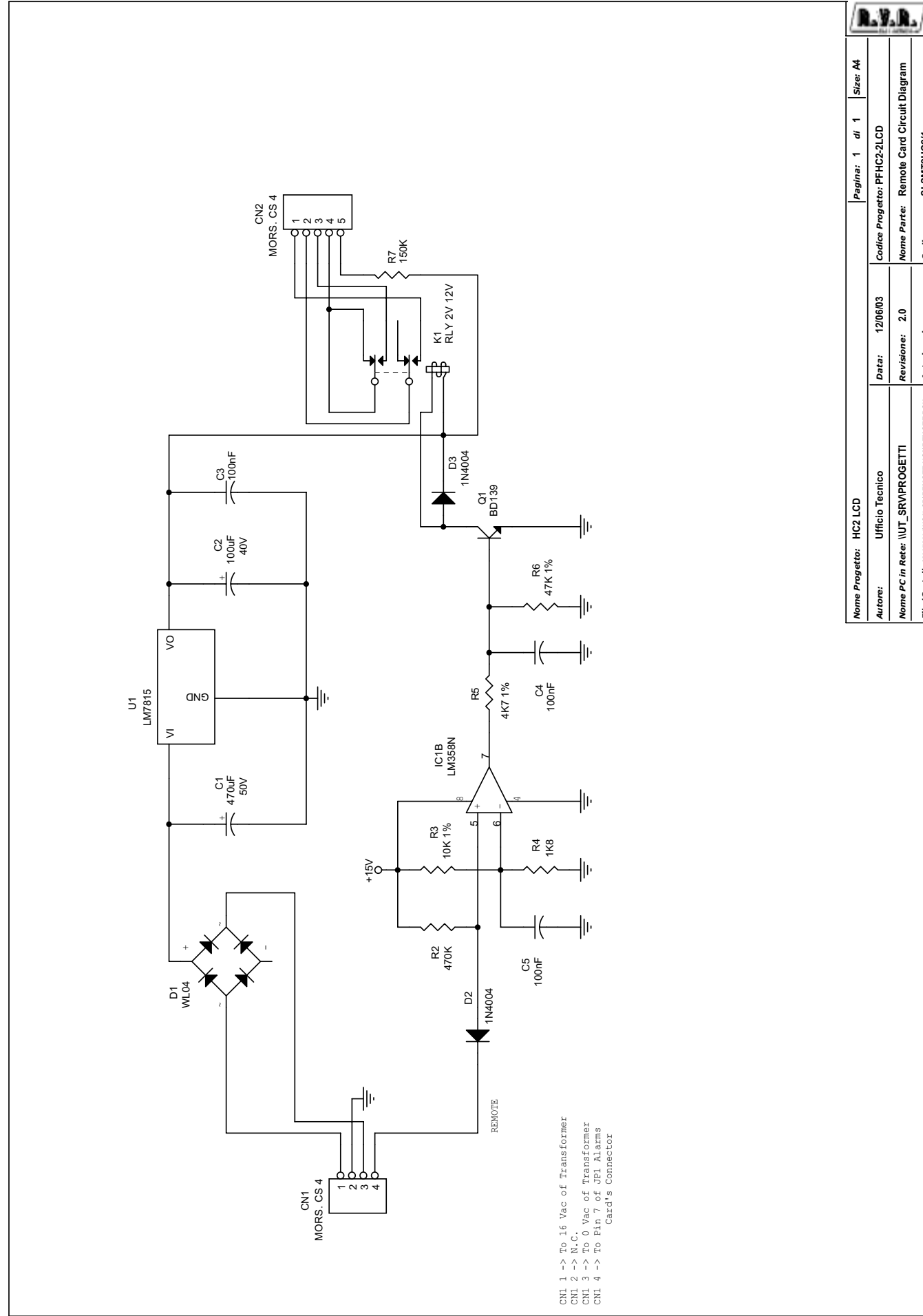
Scheda CPU - Bill Of Materials

Item	Q.ty	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	2	DL1,DL5	L5Y
8	2	DL2,DL3	L5G
9	1	DL4	L5R
10	1	D1	BAT84
11	1	D2	LM336-5.0V
12	1	D5	11DQ06
13	3	JP1,JP3,JP5	JUMP2
14	1	JP2	STRIP 14
15	4	JP4,JP6,JP7, JP10	JUMPER3
16	1	JP8	JUMPER
17	1	JP9	STRIP 2
18	1	J3	FLAT 40P
19	3	Q1,Q3,Q4	BC337
20	6	RP1,RP2,RP8 RP9,R15,R16	10K
21	3	RP3,RP7,RP15 2K2	
22	4	RP4,RP5,RP6, R14	47K
23	4	R8,RP10,RP11, RP12	47R
24	2	RP13,R18	470R
25	1	RP14	3K3
26	1	R1	10M
27	1	R13	10R
28	5	S1,S2,S3,S4, S5	SW
29	1	S6	INT
30	1	TR1	87W-10K
31	1	U1	68HC11F1
32	1	U2	MB3773
33	1	U3	27C256
34	1	U4	74HC594
35	1	U5	74HC139
36	1	U6	74HC165
37	1	U7	PCF8584
38	3	U8,U11,U12	40106
39	2	U9,U10	ULN2004A
40	1	U13	LM317
41	1	Y1	CST-8MHZ

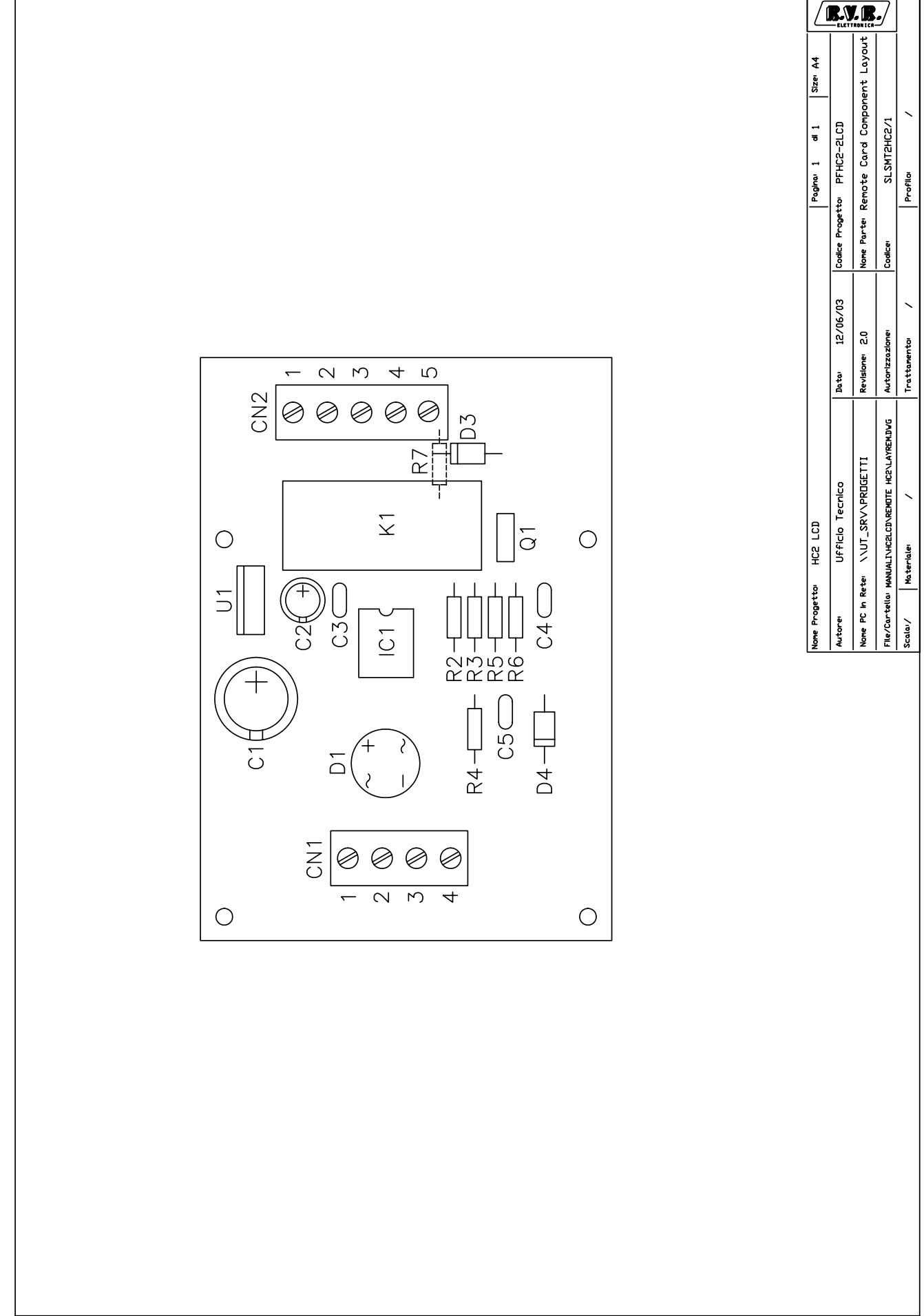


		Pagina: 1	di 1	Size: A4	
Nome Progetto:	HC2 LCD	Data:	12/06/03	Codice Progetto:	PFHC2-2LCD
Autore:	Ufficio Tecnico	Revisione:	2.0	Nome Parte:	CPU DISPLAY SECTION COMPONENT LAYOUT
Nome PC in Rete:	\\UT_SRV\PROGETTI	Autorizzazione:		Codice:	SLPR0TPJ-HCL
File/Car-tella:	MANUALI\HC2LCD\csprof_5\lay_dsp.DWG	Trattamento:	/	Profilo:	/
Scala:	/	Materiale:	/		





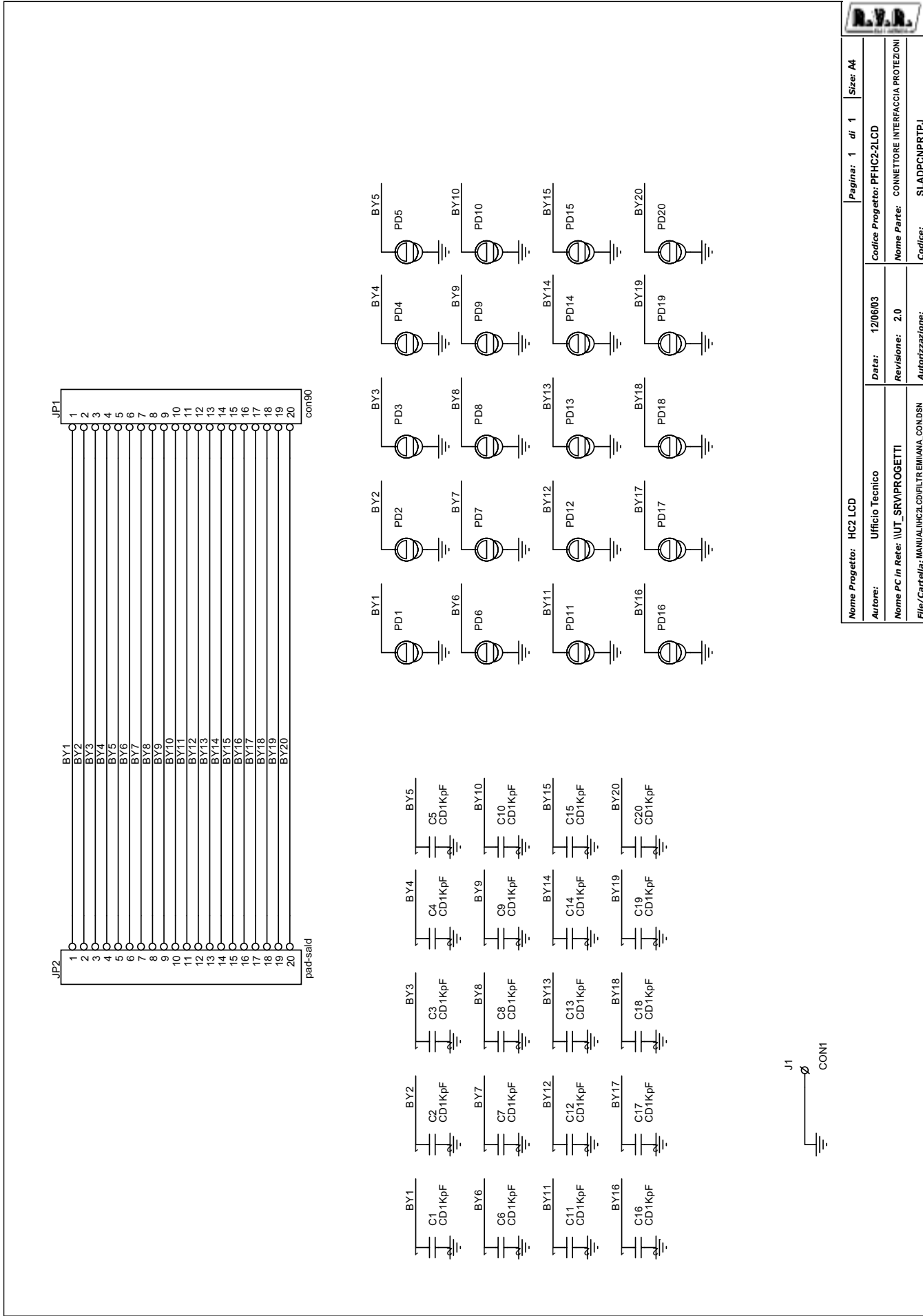
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Autore: Ufficio Tecnico	Data: 12/06/03
Nome PC in Rete: \\UT_SRV\PROGETTI	Codice Progetto: PFHC2-2LCD
File/Cartella:MANUAL\HC2LCD\REMOTE LCD\REMOTEDSN	Revisione: 2.0
	Nome Parte: Remote Card Circuit Diagram
	Codice: SLSMT2HC2/1
	Autore: /
	Trattamento: /
	Profilo: /



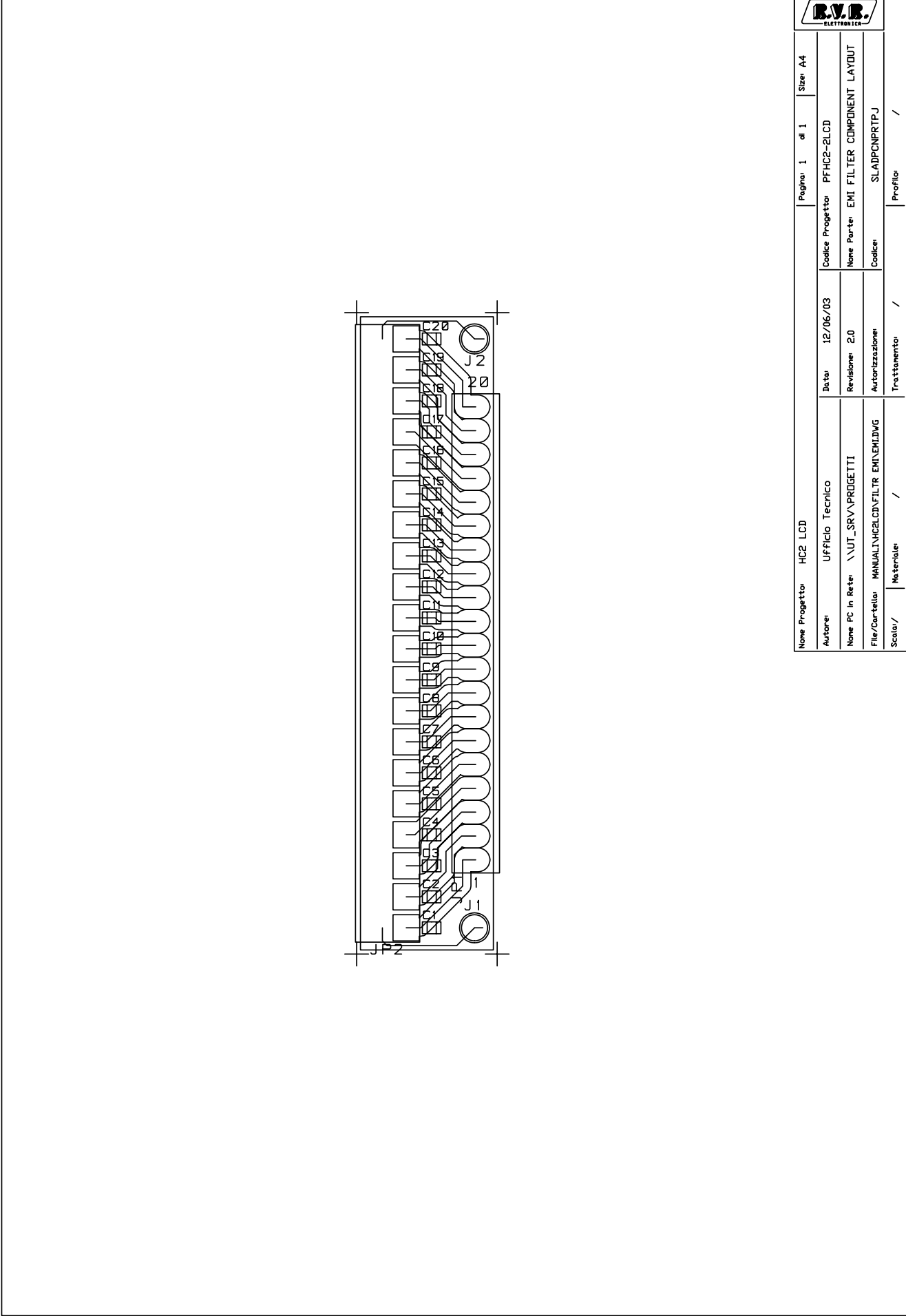
Nome Progetto: HC2 LCD	Pagina: 1 di 1 Size: A4
Autore: Ufficio Tecnico	Data: 12/06/03
Nome PC in Rete: \\UT_SRV\PROGETTI	Codice Progetto: PFHC2-2LCD
File/Cartella:MANUAL\HC2LCD\REMOTE LCD\LAYRENDVG	Revisione: 2.0
	Nome Parte: Remote Card Component Layout
	Codice: SLSMT2HC2/1
	Autore: /
	Trattamento: /
	Profilo: /

Remote Card - Circuit Diagram

Item	Quantity	Reference	Part	DESCRIPTION
1	1	R4	1K8	RESISTOR 1/4W 5%
2	1	R5	4K7 1%	RESISTOR 1/4W 1%
3	1	R3	10K 1%	RESISTOR 1/4W 1%
4	1	R6	47K 1%	RESISTOR 1/4W 1%
5	1	R2	470K	RESISTOR 1/4W 5%
6	1	R7	150K	RESISTOR 1/4W 5%
7	3	C3,C4,C5	100NF	CERAMIC CAPACITOR
8	1	C2	100UF	ELECTROLYTIC CAPACITOR
9	1	C1	470UF	ELECTROLYTIC CAPACITOR
10	2	CN1,CN2	MORS. CS 4	MORS. C.S. 4 CONT.
11	1	K1	RLY 2V 12V	RELAY 2 VIE 12V
12	2	D2,D3	1N4004	SILICON DIODE 400V
13	1	D1	WL04	DIODE BRIDGE 1.5A
14	1	U1	LM7815	POS. STABILIZER
15	1	Q1	BD139	NPN TRANSISTOR
16	1	IC1	LM358N	DOUBLE OP. AMP.



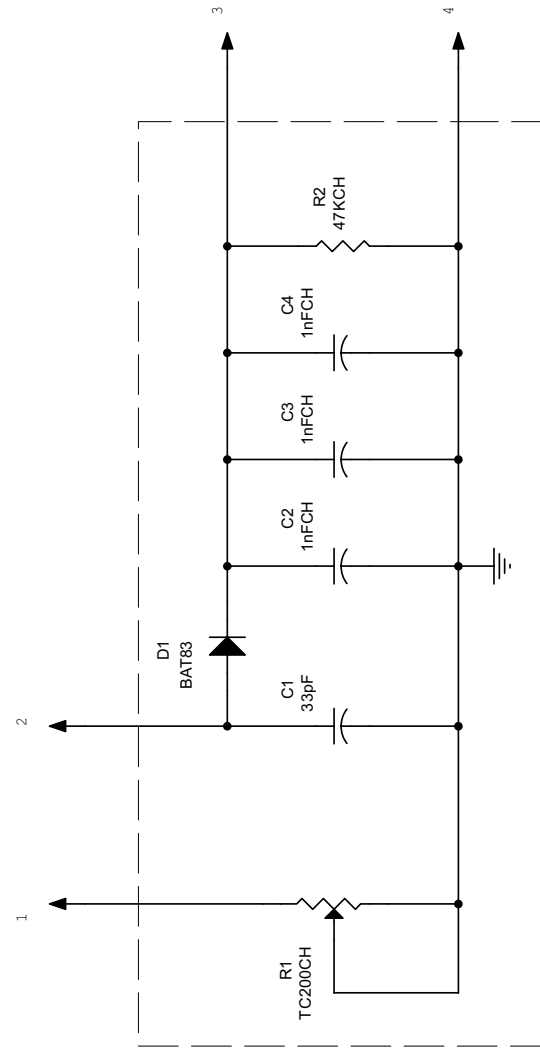
<b>Nome Progetto:</b> HC2 LCD <b>Autore:</b> Ufficio Tecnico <b>Nome PC in Rete:</b> \\\UT_SRV\PROGETTI <b>File/Car-tella:</b> MANUAL\HC2\FILTR\EMIANA.CON.DSN		<b>Data:</b> 12/06/03 <b>Revisione:</b> 2.0 <b>Autorizzazione:</b>	<b>Pagina:</b> 1 di 1 <b>Size:</b> A4
<b>Codice Progetto:</b> PFHC2-2LCD <b>Nome Parte:</b> CONNETTORE INTERFACCIA PROTEZIONI <b>Codice:</b> SLADPCNRPJPJ			



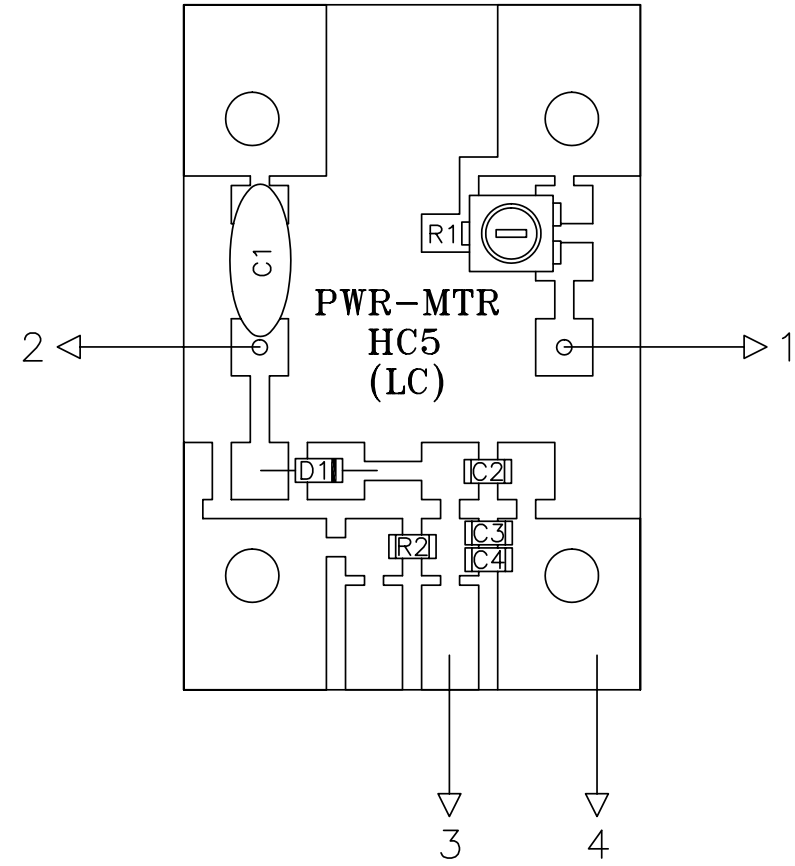
<b>Nome Progetto:</b> HC2 LCD <b>Autore:</b> Ufficio Tecnico <b>Nome PC in Rete:</b> \\\UT_SRV\PROGETTI <b>File/Car-tella:</b> MANUAL\HC2\FILTR\EMANA.CON.DSN		<b>Data:</b> 12/06/03 <b>Revisione:</b> 2.0 <b>Autorizzazione:</b>	<b>Pagina:</b> 1 di 1 <b>Size:</b> A4
<b>Codice Progetto:</b> PFHC2-2LCD <b>Nome Parte:</b> EMI FILTER COMPONENT LAYOUT <b>Codice:</b> SLADPCNRPJPJ			
<b>Scalari:</b> / <b>Materiali:</b> / <b>Trattamento:</b> / <b>Profilo:</b> /			

EMI Filter - Bill Of Materials

Item	Quantity	Reference	Part
1	20	C1,C2,C3,C4,C5,C6,C7,C8, C9,C10,C11,C12,C13,C14, C15,C16,C17,C18,C19,C20	CD1KpF
2	1	JP1	con90
3	1	JP2	pad-sald
4	1	J1	CON1
5	20	PD1,PD2,PD3,PD4,PD5,PD6, PD7,PD8,PD9,PD10,PD11, PD12,PD13,PD14,PD15,PD16, PD17,PD18,PD19,PD20	



Nome Progetto: HC2 LCD		Pagina: 1 di 1		Size: A
Autore: Ufficio Tecnico		Data: 12/06/03	Codice Progetto: PFHC2-2LCD	
Nome PC in Rete: \\\UT_SRV\PROGETTI		Revisione: 2.0	Nome Parte: POWER METER CARD	
File/Carrello/Manuali\HC2LCD\METER\PWR_MTR.dsn		Autorizzazione: Codice: SLPWRMTRHC5		



Nome Progetto: HC2 LCD		Pagina: 1 di 1		Size: A4
Autore: Ufficio Tecnico		Data: 12/06/03	Codice Progetto: PFHC2-2LCD	
Nome PC in Rete: \\\UT_SRV\PROGETTI		Revisione: 2.0	Nome Parte: POWER METER CARD	
File/Carrello: MANUALI\HC2LCD\METER\LAYOUT\PWR.MTR.DWG		Autorizzazione: Codice: SLPWRMTRHC5		
Scala: /	Metriolo: /	Trattamento: /	Profilo: /	

POWER METER CARD - Bill Of Materials

Item	Q.ty	Reference	Part	DESCRIPTION
1	1	R2	47KCH	CHIP RESISTOR
2	1	R1	TC200CH	TRIM. REG. VERT. CERMET SMD
3	1	C1	33PF	CERAMIC CAPACITOR NP0
4	3	C2,C3,C4	1NFCH	CERAMIC CHIP CAPACITOR
5	1	D1	BAT83	HOT CARRIER DIODE