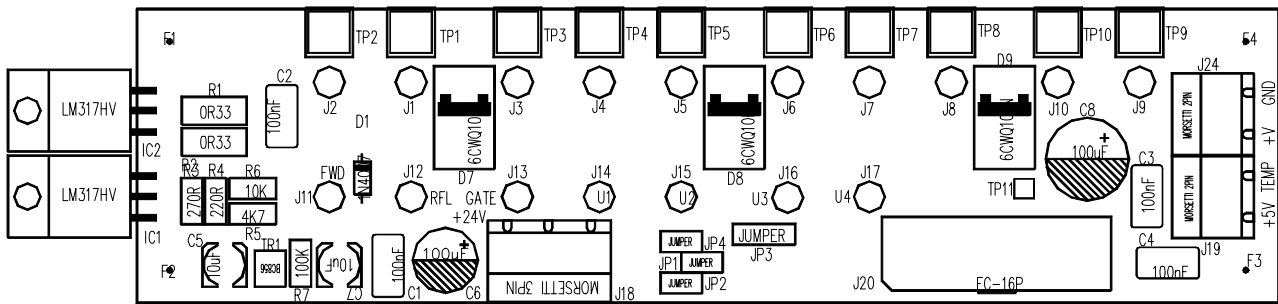
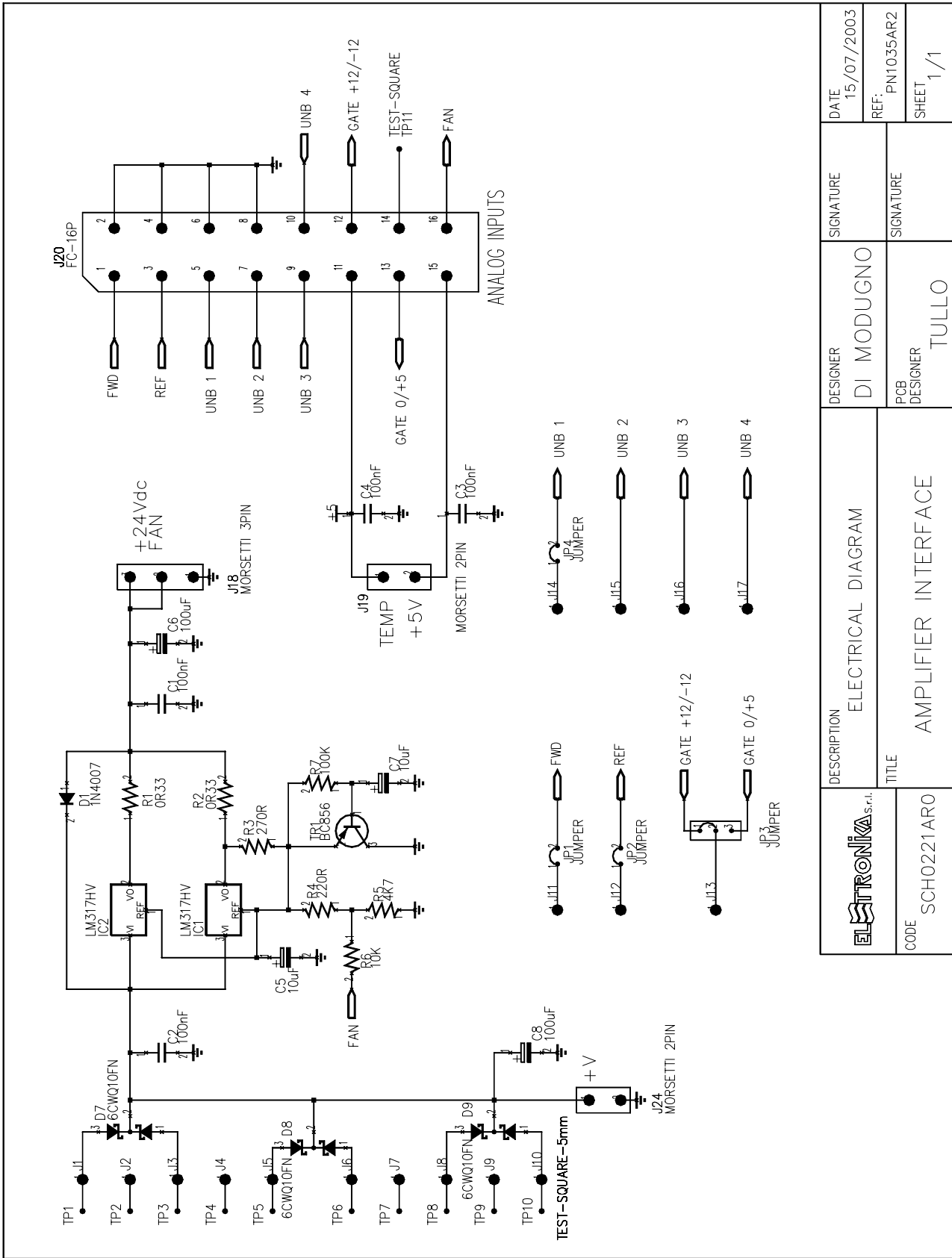


Component layout SCH0221AR0



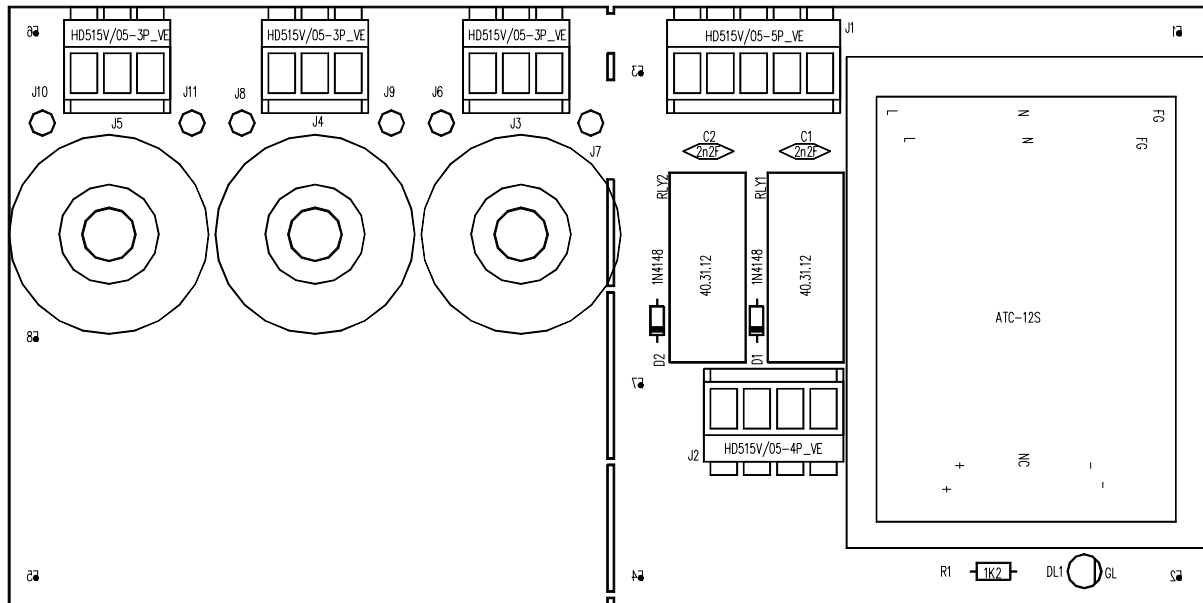
COMPONENT LIST SCH0221AR0

Part Name/Number	Description	Qty.	Comps.
CC 100nFAVX 01065A	01065A CERAMIC COND	4	C1-4
CE 100uF100V	01795B ELETT. COND.	1	C8
CE 100uF50V 01795	01795 ELETT. COND.	1	C6
CE 10uF35V-S 01778A	01778A ELETTR SMD COND	2	C5, C7
D 1N4007 03009	03009 DIODE	1	D1
D 6CWQ10FN	03026 SMD DIODE SCHOTTKY 3,5A	3	D7-9
ICLM317HV	04340A INTEG CIRCUIT	2	IC1-2
JFC-16P 02701-02700	02701+02700 PCB CONNECTOR POL	1	J20
JSCREWCONN2 02853	02853 PCB SCREW CONNECTOR	2	J19, J24
JSCREWCONN3 02860	02860 PCB SCREW CONNECTOR	1	J18
JTESTP1.3mm 07913	07913 TEST POINT	17	J1-17
JU JUMP2 02739-02742	02739+02742 MASCHIO PAN2	3	JP1-2, JP4
JU JUMP3 02707-02742	02707+02742 MASCHIO PAN3	1	JP3
R 0R33-1W-S	00380 RES 1W 5% SMD 2512	2	R1-2
R 100K-S 00065A	00065A RES 1/4W 5% SMD 1206	1	R7
R 10K-S 00053A	00053A RES 1/4W 5% SMD 1206	1	R6
R 220R-S 00033A	00033A RES 1/4W 5% SMD 1206	1	R4
R 270R-S 00034A	00034A RES 1/4W5% SMD 1206	1	R3
R 4K7-S 00049A	00049A RES 1/4W 5% SMD 1206	1	R5
TR BC856 03455	03455 PNP SMD TRANSISTOR	1	TR1



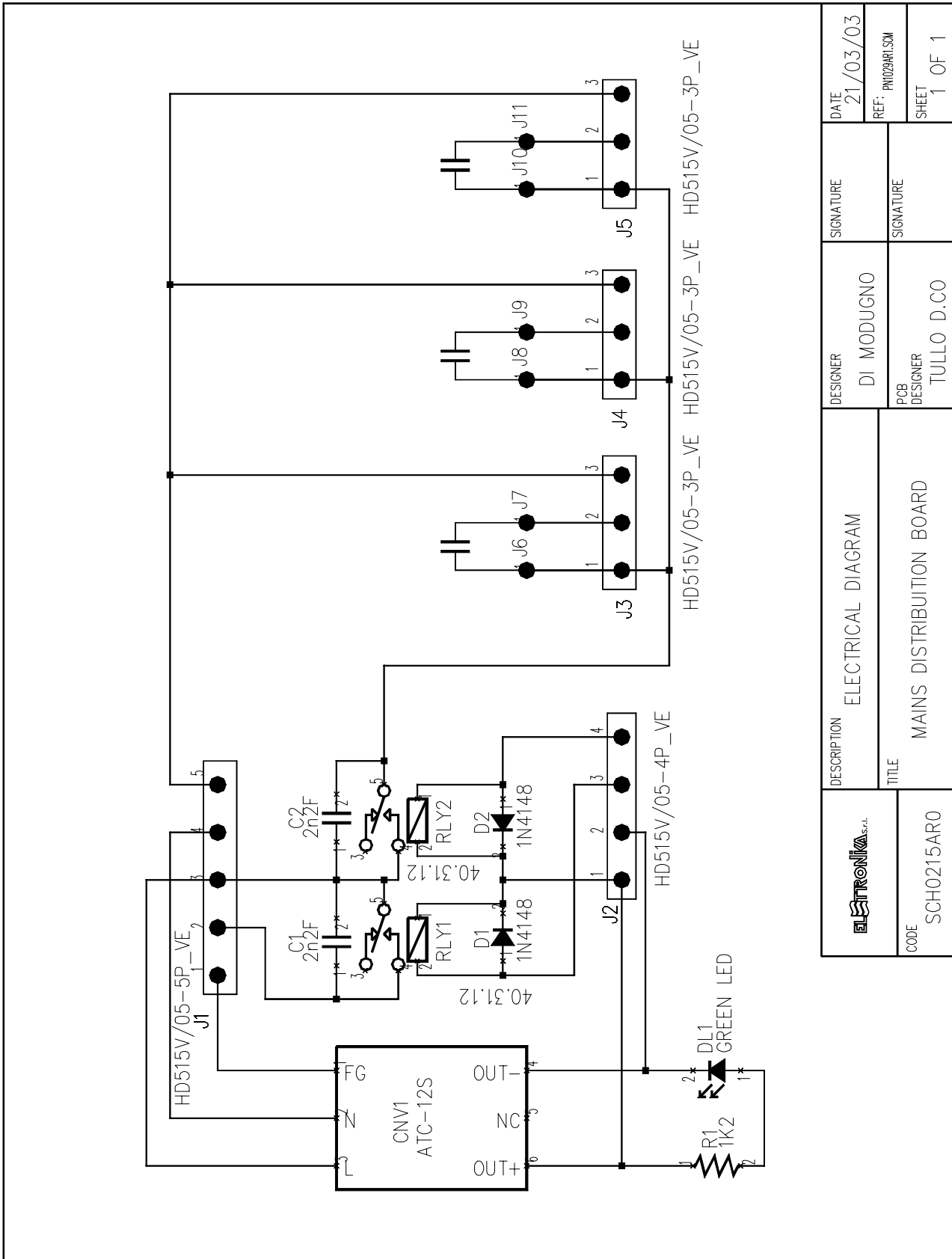
	DESCRIPTION	ELECTRICAL DIAGRAM	DESIGNER	DI MODUGNO	SIGNATURE	DATE	15/07/2003		
	TITLE	AMPLIFIER INTERFACE	PCB DESIGNER	TULLO	SIGNATURE	REF.	PN1035AR2		
CODE	SCH0221ARO							SHEET	1/1

*Component layout SCH0215AR0*



**COMPONENT LIST SCH0215AR0**

Part Name/Number	Description	Qty.	Comps.
CC 2nF2 2kV 01045A	01045A CERAMIC COND	2	C1-2
CNV AC-DC ATC-12S	AC DC CONVERTER	1	CNV1
D 1N4148 03001	03001 DIODE	2	D1-2
DL LEDG3 03053	03053 GREEN LED DIODE 3mm	1	DL1
J CON HD515V/05-3PVE	PANDUIT PCB CO	3	J3-5
J CON HD515V/05-4PVE	02881 + 02882 PANDUIT PCB CONN	1	J2
J CON HD515V/05-5PVE	PANDUIT PCB CO	1	J1
J TESTP1.3mm 07913	07913 TEST POINT	6	J6-11
R 1K2 0042	0042RES 1/4W 5%	1	R1
RL 40.31.12 07567	07567 RELE	2	RLY1-2



CODE  
SCH0215ARO

DATE 21/03/03

REF. PNT029ARI.LCM

SHEET 1 OF 1

**TECHNICAL CHARACTERISTICS**

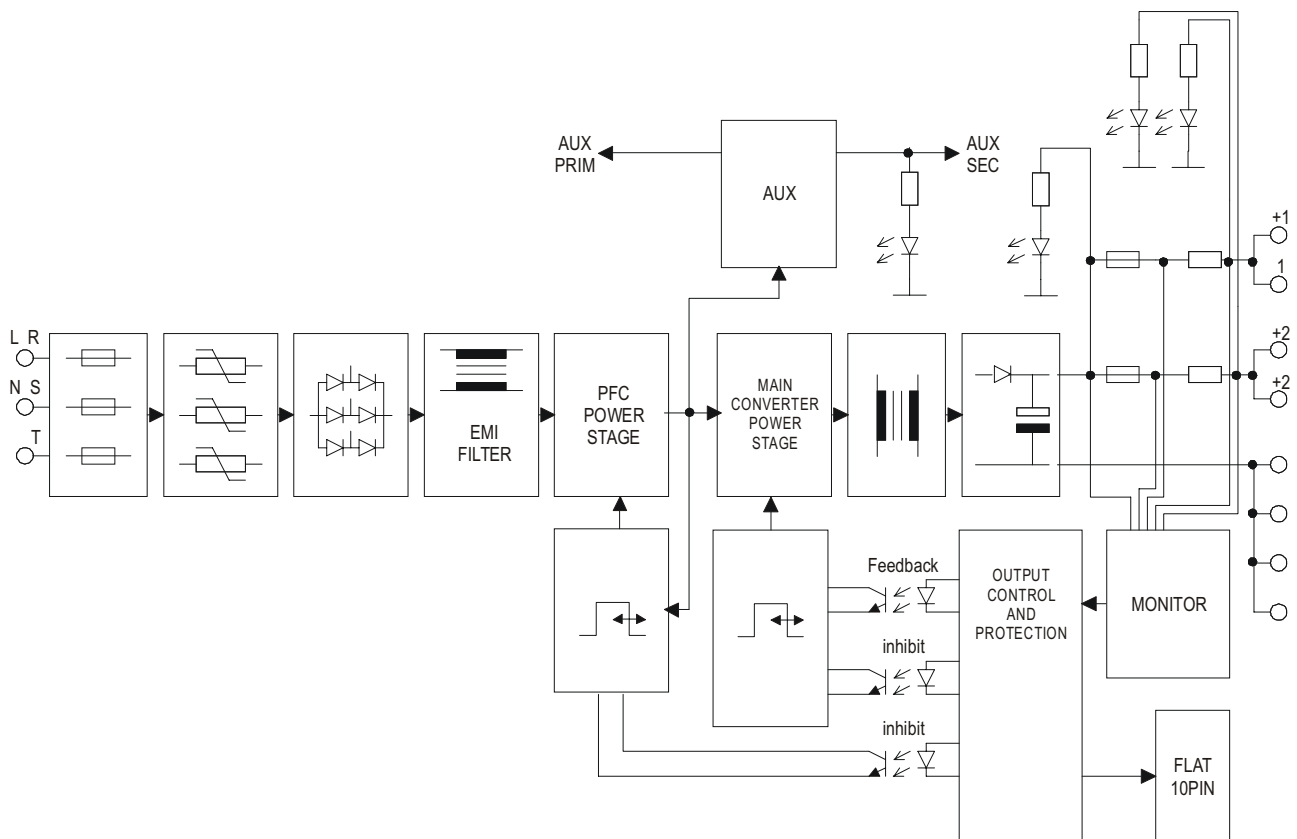
**- Input characteristics**

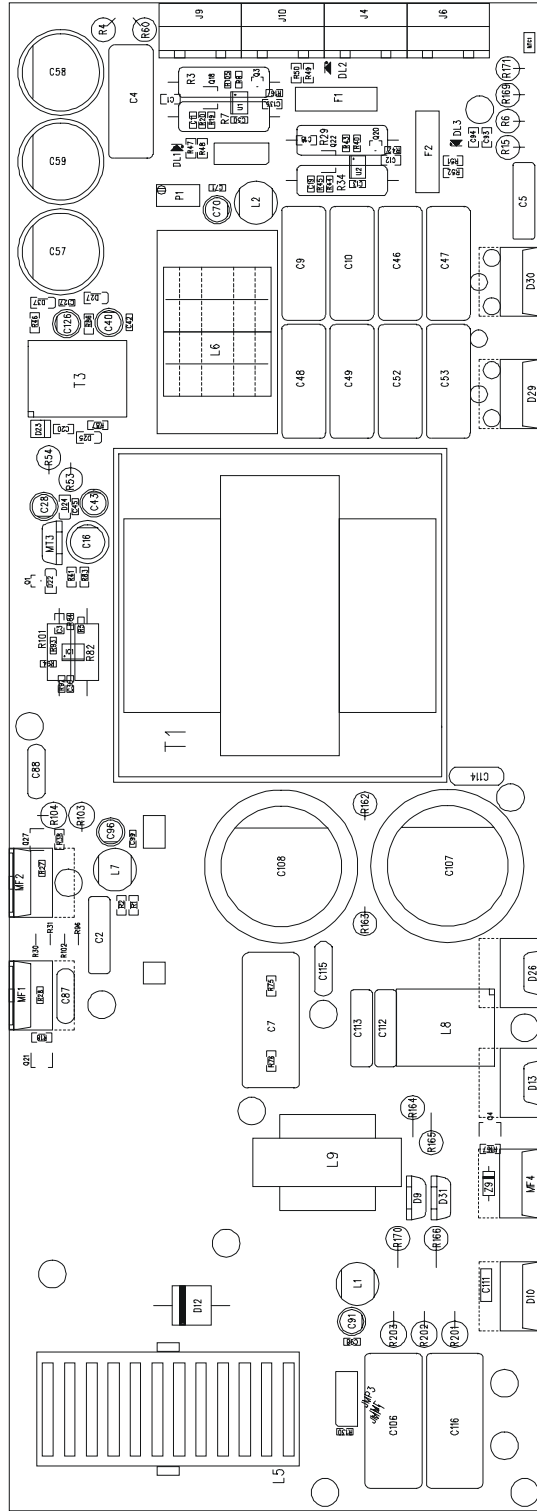
V<sub>in</sub>: 100..240Vrms  
 REND.: 80%  
 I<sub>in@FL</sub>: 16..6,5Arms  
 PF>0.95@FL (PFC)

**- Output characteristics**

P<sub>out</sub>: 1300W on 2 outputs  
 V<sub>out</sub>: 2 options a) 32Vdc 40A on 2 outputs  
 b) 52Vdc 25A on 2 outputs

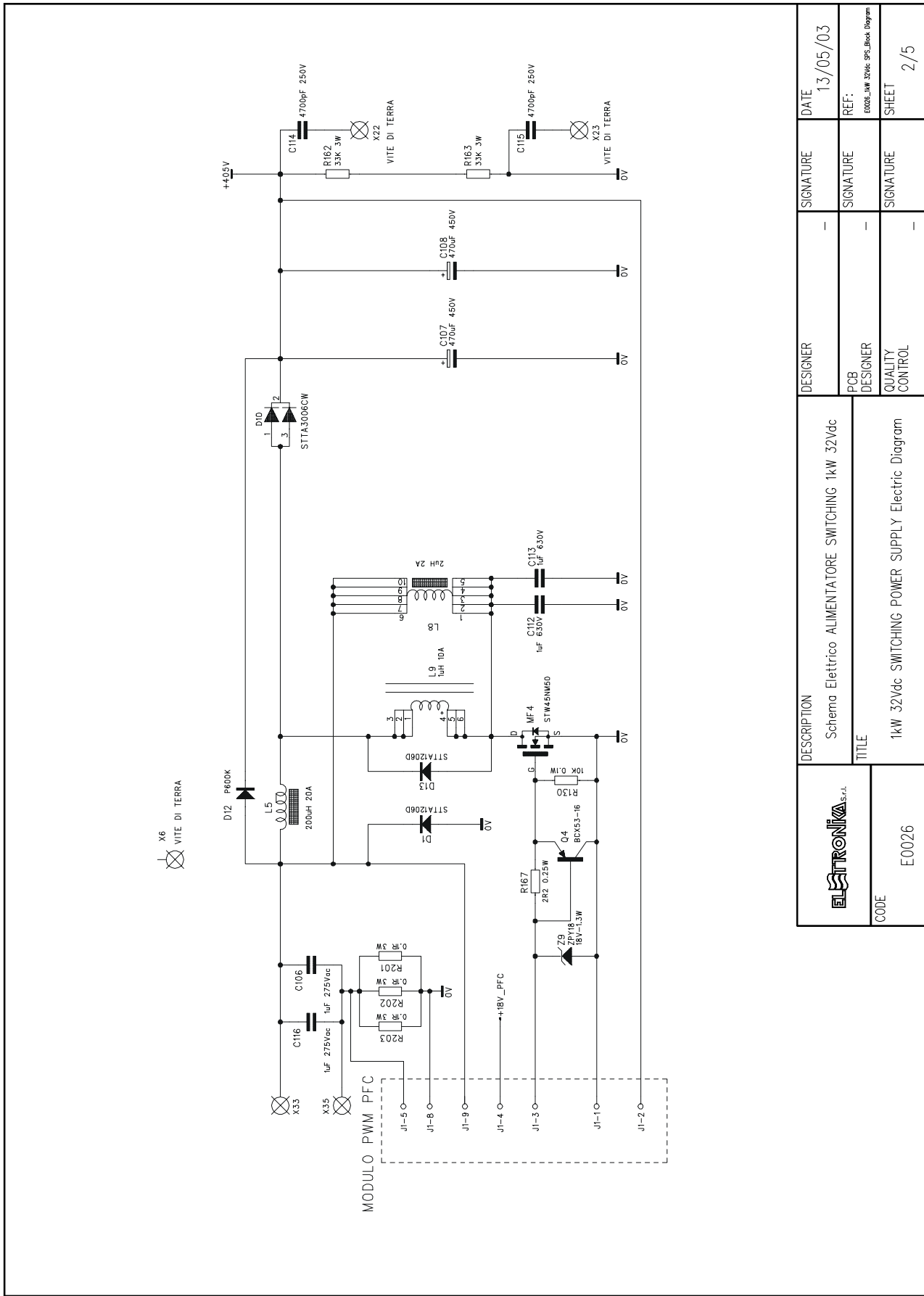
*Block Diagram*






	DESCRIPTION	DESIGNER	SIGNATURE	DATE
	TITLE	PCB DESIGNER	SIGNATURE	REF:
	CODE	QUALITY CONTROL	SIGNATURE	SHEET
E0026	1kW 32Vdc SWITCHING POWER SUPPLY Component Layout			13/05/03
				E0026_1kW_32Vdc_SPS_Break_Boards
				1/1

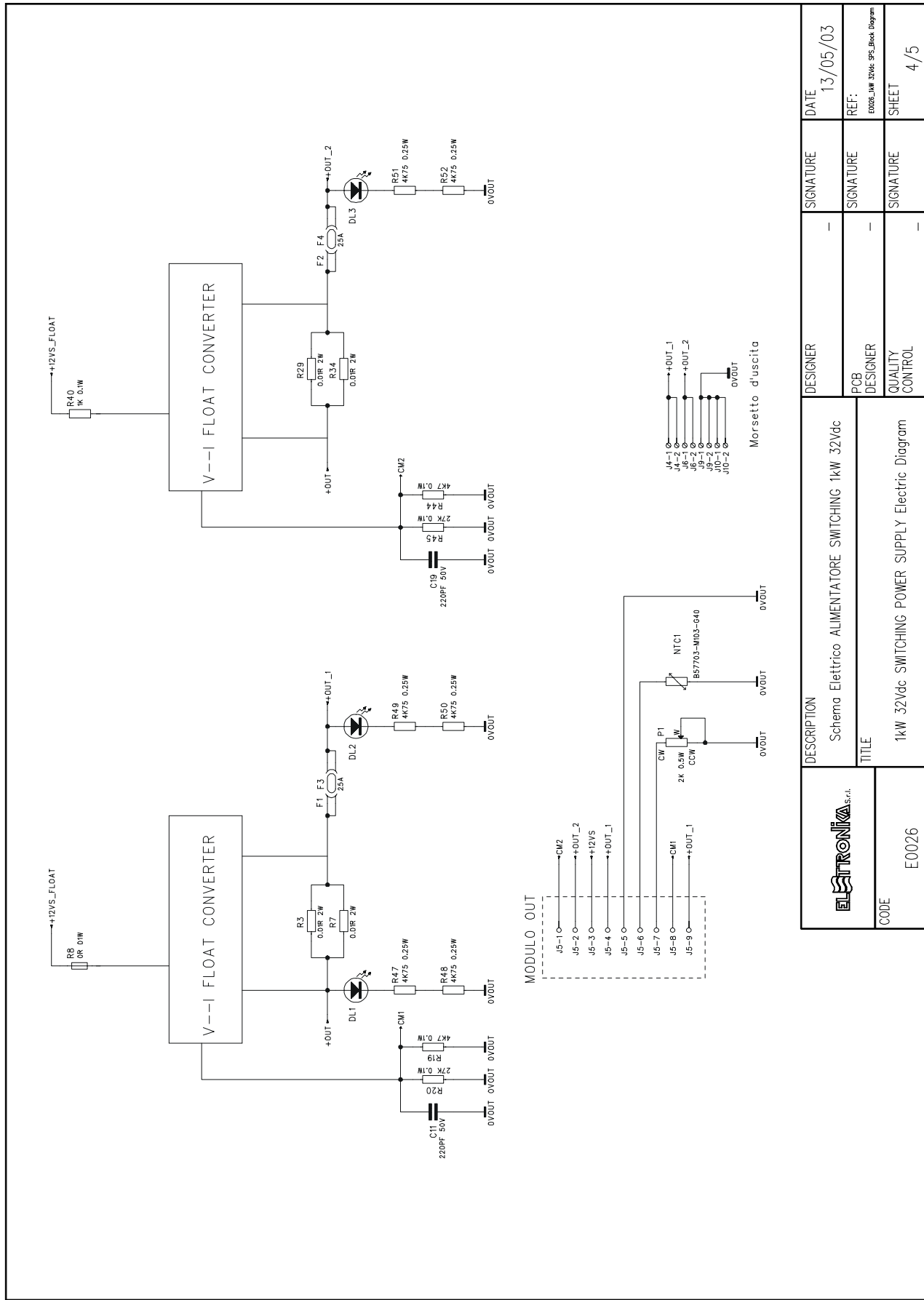




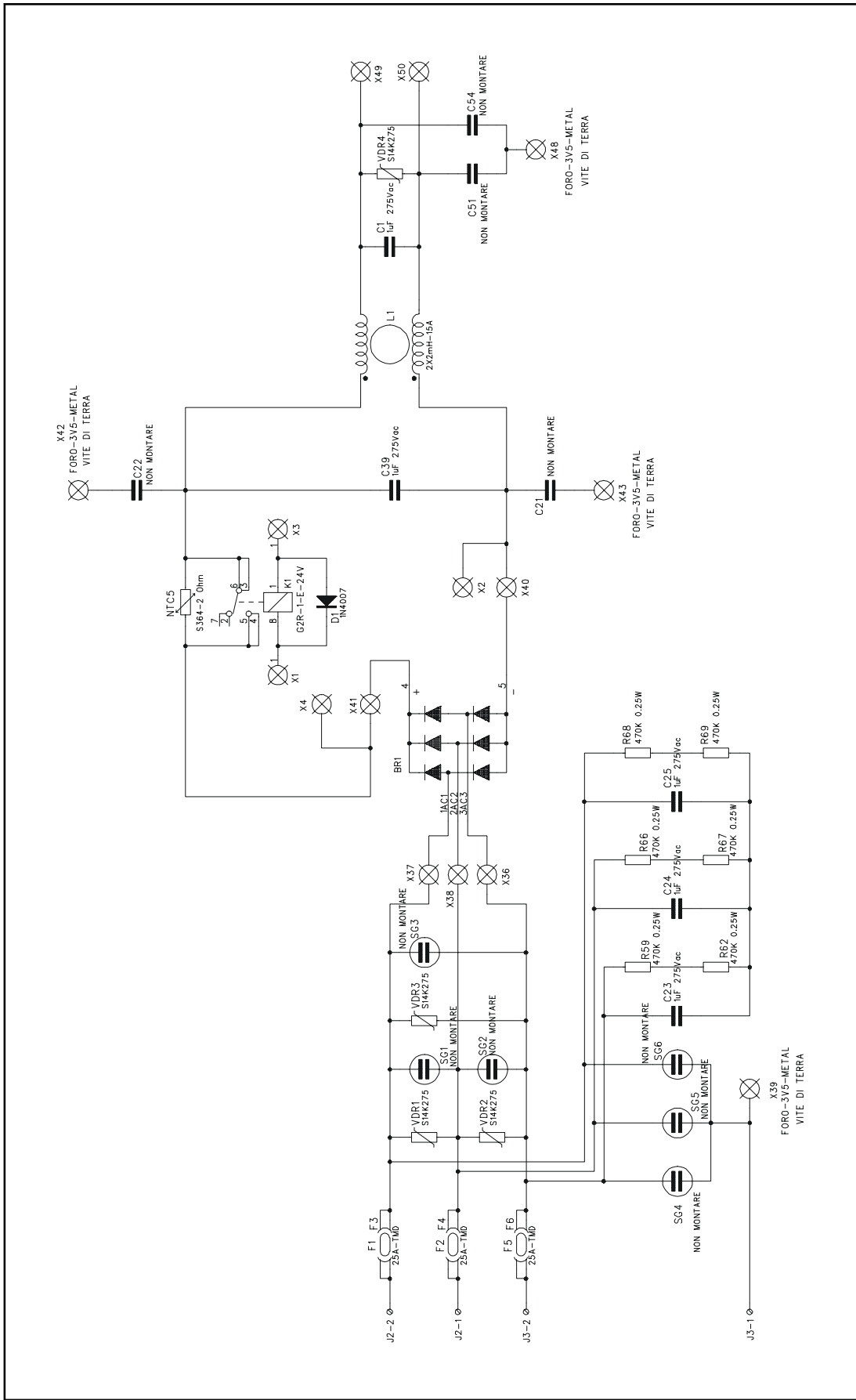
	DESCRIPTION	DESIGNER	SIGNATURE	DATE
	Schema Elettrico ALIMENTATORE SWITCHING 1kW 32Vdc	—	—	13/05/03
CODE	TITLE	PCB DESIGNER	SIGNATURE	REF:
	1kW 32Vdc SWITCHING POWER SUPPLY Electric Diagram	—	—	E0026_1kW_32Vdc_SPS_Break Diagram
	E0026	QUALITY CONTROL	SIGNATURE	SHEET
				2/5




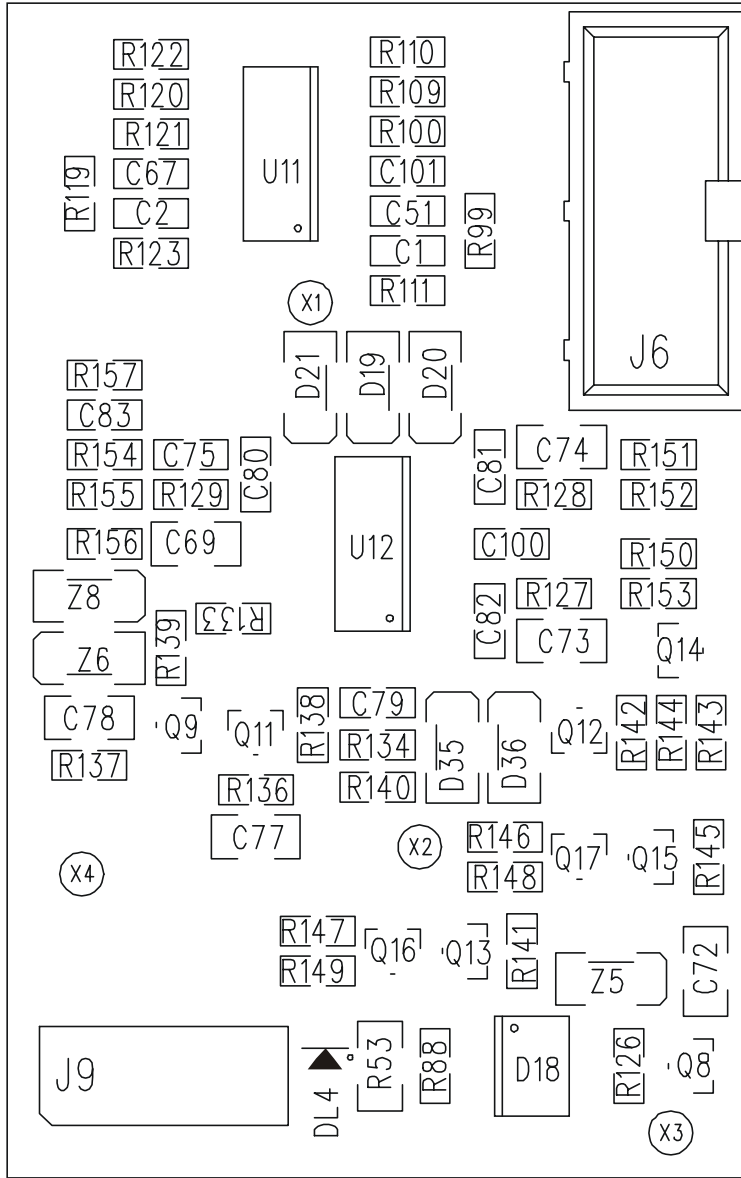





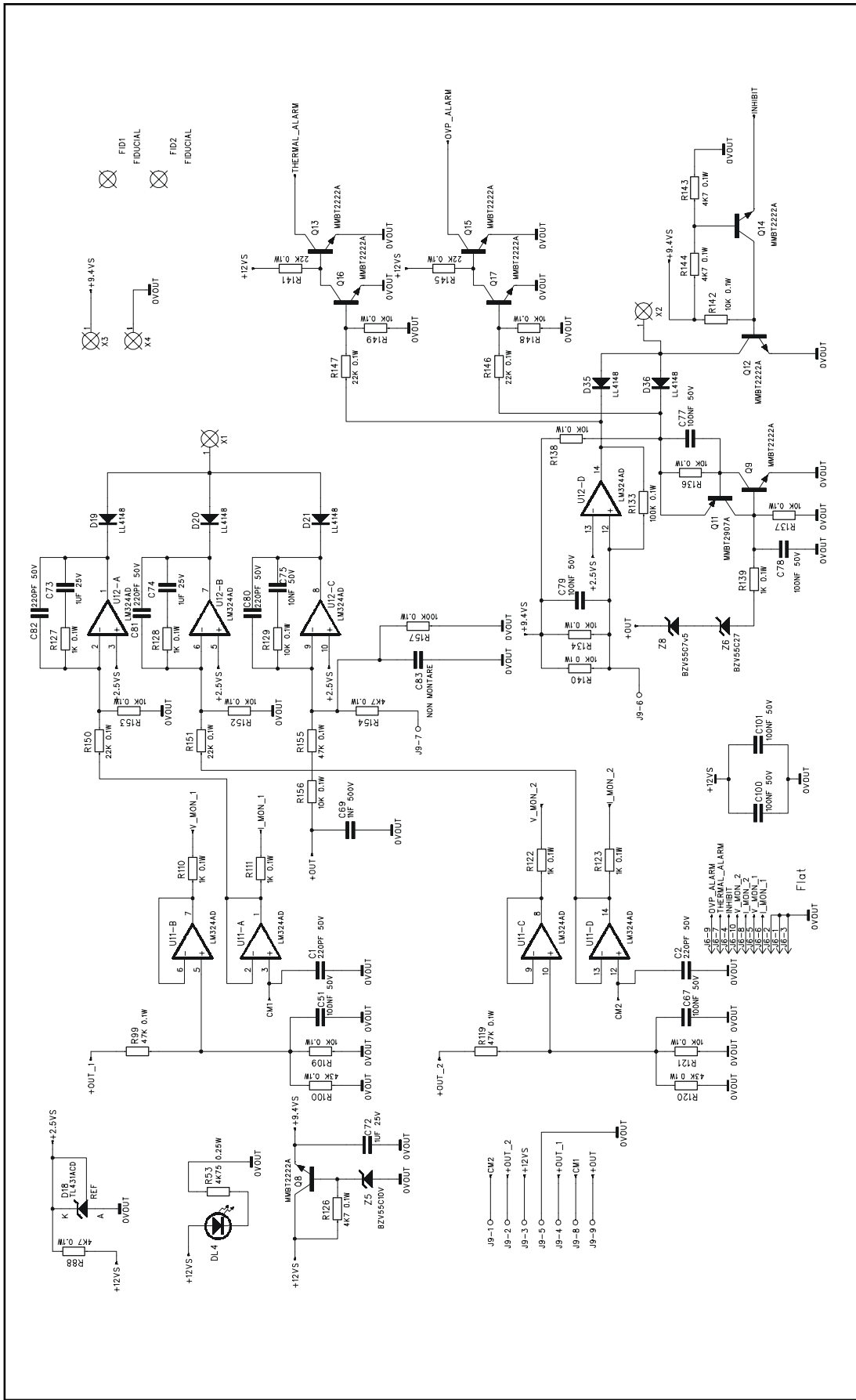
	DESCRIPTION	Schema Elettrico ALIMENTATORE SWITCHING 1kw 32Vdc			
	TITLE	1kW 32Vdc SWITCHING POWER SUPPLY Electric Diagram			
CODE	E0026	DESIGNER	—	DATE	13/05/03
		PCB DESIGNER	—	REF:	E0026_1kW_32Vdc_SPS_Bloc Diagram
		QUALITY CONTROL	—	SIGNATURE	4/5



	DESCRIPTION	DESIGNER	SIGNATURE	DATE
	Schema Elettrico ALIMENTATORE SWITCHING 1kw 32Vdc			13/05/03
CODE	TITLE	PCB DESIGNER	SIGNATURE	REF:
	E0026	QUALITY CONTROL		E0026_1kW_32Vdc_SPS_Break Diagram
	1kW 32Vdc SWITCHING POWER SUPPLY Electric Diagram		SIGNATURE	SHEET
				5/5



 CODE E0026	DESCRIPTION Piano di Montaggio ALIMENTATORE MONOFASE 1500W CON PFC 30V 50A		DESIGNER	SIGNATURE	DATE
	TITLE 1500W MONOPHASE POWER SUPPLY WITH PFC 30V 50A Component Layout		PCB DESIGNER	SIGNATURE	REF:
			QUALITY CONTROL	SIGNATURE	SHEET



	DESCRIPTION	DESIGNER	SIGNATURE	DATE
	Schema Elettrico ALIMENTATORE MONOPHASE 1500W CON PFC 30V 50A TITLE 1500W MONOPHASE POWER SUPPLY WITH PFC 30V 50A Electric Diagram	PCB DESIGNER	SIGNATURE	REF:
CODE	QUALITY CONTROL	SIGNATURE	SHEET	1/1
E0026				

## COMPONENT LIST *1kW 32Vdc Switching Power Supply*

### SMT COMPONENT

IT	QTY	STORE-CODE	DESCRIPTION	REF	Page 1/2
1	1	03.B04.0000A	CHIP RES.0805 STR.MET.0.10W 00hm 5%	R92	
2	2	03.B05.0003B	100R 1% 0.1W RES. SMD 0805 100PPM	R16, R42	
3	3	03.B05.0006B	10K 1% 0.1W RES. SMD 0805 100PPM	R27-28, R130	
4	4	03.B05.0009B	1K 1% 0.1W RES. SMD 0805 100PPM	R8, R40, R43, R105	
5	3	03.B05.0014B	27K 1% 0.1W RES. SMD 0805 100PPM	R20, R45, R93	
6	1	03.B05.0020B	47K 1% 0.1W RES. SMD 0805 100PPM	R5	
7	3	03.B05.0061B	4K7 1% 0.1W RES. SMD 0805 100PPM	R19, R44, R94	
8	1	03.B05.0150B	150R 1% 0.1W RES. SMD 0805 100PPM	R84	
9	6	03.B10.0267B	4K75 1% 1% 25W RES. SMD 1206 100PPM	R47-52	
10	9	03.B17.0003B	2R2 1% 0.25W RES. SMD MINIMELF 100PPM	R1-2, R18, R38, R41, R46, R86-87, R167	
11	2	03.B17.0010B	100K 1% 0.25W RES. SMD MINIMELF 100PPM	R75-76	
12	1	03.B25.0002A	0.01R 1% 3W RES. SMD 4527 WSR3 100PPM	R31	
13	8	03.D02.0004A	COND. CRM MSTR Z5U 100NF 50V 20% SMT-0805	C13, C42, C45, C50, C71, C98-99, C127	
14	3	03.D02.0012A	220PF 50V 5% 0805 SMD COND. CMR X7R	C11, C19, C36	
15	3	03.D04.0004A	1NF 500V 10% 1206 SMD COND. CRM MSTR	C8, C93-94	
16	5	03.D04.0007A	1uF 25V 10% 1206 SMD GRM42-6 (MURATA)	C1, C3, C12, C18, C135	
17	1	05.B02.0014A	L6565D FLYBACK QUASI-RESONANT CONTROL.	IC1	
18	2	05.B04.0010A	LMC6482AIM DUAL CMOS SOP-8 OP.AMP	UI-2	
19	2	04.D00.0001A	MMBT2222A BJT NPN 40V 1A 0.35W Hfe100-300	Q3, Q20	
20	1	04.D00.0501A	MMBT2907A BJT PNP -60V 0.8A 0.35W Hfe100-300	Q1	
21	5	04.D00.0502A	BJT PNP -80V -1A 1W Hfe 100 Ty. BCX53-16 Pk. SOT-89 (M.code: AL)	Q4, Q18, Q21-22, Q27	
22	6	04.B01.0001A	BAV103 SMD DIODO SILICIO 200MA 250V PKG. SOD80	D1, D22, D24-25, D27, D37	
23	3	04.K00.0002A	DIODO LED VERDE SMD 1206 BRIGHTLED	DL1-3	

### THT COMPONENT

IT	QTY	STORE-CODE	DESCRIPTIO	REF	Page 1/2
24	1		CIRCUITO STAMPATO D.N. D06.0203A_00R02		
25	4		Morsetto Phoenix MKDS5/2-9.5	J4, J6, J9-10	
26	1		RELAY 24VDC 16A G2R-1-E-24VDC OMRON	K1	
27	5		0,1R 5% 3W RES. OSSIDO. MET.	R103-104, R201-203	
28	2		220R 5% 3W RES. OSSIDO. MET.	R4, R60	
29	2		33KOhm 5% 3W RES. OSSIDO MET.	R162-163	
30	4		39R 5% 2W RES. OSSIDO MET. 250ppm	R6, R15, R169, R171	
31	2		100K 5% 2W RES. OSSIDO MET. 250ppm	R82, R101	

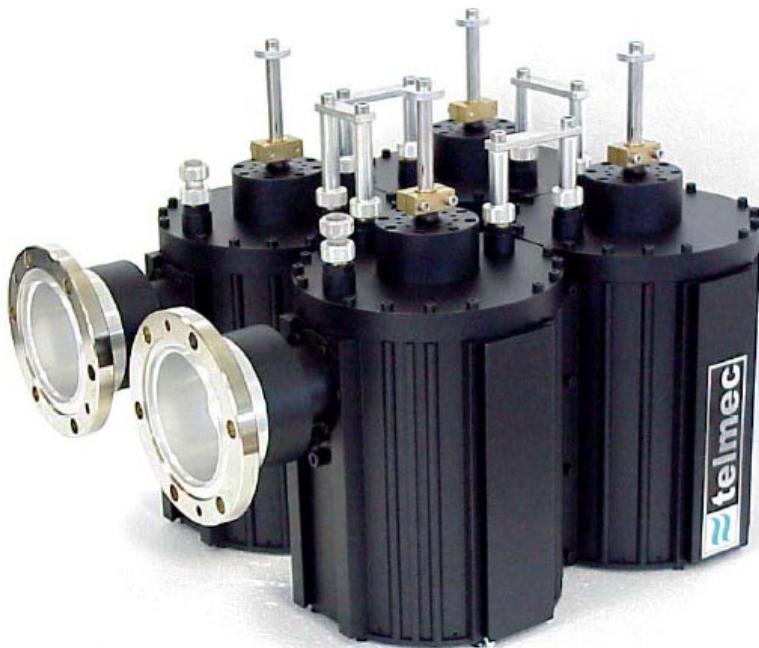
IT	QTY	STORE-CODE	DESCRIPTION	REF.	Page 2/2
32	4		RESISTORE A FILO 0,01R 2W 5%	R3, R7, R29, R34	
33	1		Potenziometro Cermet 20Giri 2KOhm 0.5W 10% 100ppm Ty: 67W	P1	
34	5		4700pF 250W COND. CRM CLASSE X1 Y2 P.7,5	C6, C15, C17, C87-88	
35	1		100nF 600V 5% Cond. film mylar scat 7.5x17.5mm P.15	C2	
36	2		1UF 275Vac X2COND. FILM. SCAT. 12.5x32.5mm P27.5	C106, C116	
37	1		COND. FILM MYLAR SCATOLINO 4.7nF 250V 10% 5x17.5 P. 15 (mm)	C5	
38	2		1uF 630V COND. FILM SCAT. 18x32.5mm P.27.5	C112-113	
39	9		10uF 63 COND. RAD. POLIES. 10% P22.5 10x25 (mm)	C4, C9-10, C46-49, C52, C53	
40	1		Condensatore FILM SCATOLINO 2.2uF 400V 10% P.27,5	C7	
41	2		470uF 450V 20% ETL SNAP-IN 20% ins. Radiale d35 / h52mm	C107-108	
42	7		COND. ETL AL 100uF 25V d6,3x11mm P.2,5	C28, C40, C43, C70, C91, C96, C126	
43	3		COND. ETL AL 220uF 63V 20% ins. Radiale d20 / h42mm P7.5	C57-59	
44	1		COND. ETL 1uF 450V 20% ins. Radiale d8 / h11.5 P.3.8 (mm)	C16	
45	3		INDUTTORE 22uH I-MAX 2A PASSO 200	L1-2, L7	
46	1		TRASF. DI POT. T0203.04R01 D.N. STT0203_04R01	T1	
47	1		TRASF. AUX T0203.05R02 D.N. STT0203_05R02	T3	
48	1		BOBINA SNUBBER PFC T0211.03R01 D.N. STT0211_03R01	L9	
49	1		BOBINA CLAMPER PFC T0211.02R02 D.N. STT0211_02R02	L8	
50	1		BOBINA PFC T0203.01R00 D.N. STT0203_01R00	L5	
51	1		BOBINA DI MODO COMUNE T0203.06R00 D.N. STT0203	L6	
52	1		NTC 10R DIAM. 9,5mm P.5 B57-235-S100M	NTC5	
53	1		NTC EPCOS B57045K0103K000	NTC1	
54	2		FUSIBILE AUTO AL 25A 32V	F3-4	
55	4		CLIP PORTAFUSIBILE PER AUTO PZ1011 (OMEGA)	F1-2	
56	1		P600K DIODO RADDRIZZ. SILICIO 6A 800V	D12	
57	1		STTA3006CW DOPPIO DIODO ULTRA FAST TO247	D10	
58	2		STT1206D TO220 D. TURBOSWITCH 600V 12A	D9, D13	
59	2		STPS80H100CY 100V 4X20 MAX TO247	D29, D30	
60	1		DIODO ZENER 1,3W 18V ZPY18 DO-41 5%	Z9	
61	1		STP6NC90Z 900V 6A ENHAN. MODE N-MOSFET	MT3	
62	3		STW45NM50 TO247 500V 45A MOSFET	MF1-2, MF4	
63	1		COND. CER. MULTISTRATO 1uF 50V P.5	C14	

Note:

within the notes:

- the 'V' prefix is for Vertical mounting

- the 'M' prefix stands for Mechanical details



Suitable for use in solid state A-AB class transmitter, in common amplification, to eliminate out of band products in all standard frequencies. Available connectors:

- EIA 1 5/8"
- RIGID LINE 1 5/8"
- EIA 3 1/8"

opposite or parallel position.

**TECHNICAL CHARACTERISTICS**

Configuration	4 Cavities
Max power output	10kW (cw)
Frequency range	470 - 860MHz
Insertion loss (Video c.)	< 0,2dB
Return loss	> 30dB
Temperature range	-10°C / +50°C
Temperature shift	< = 2kHz/K
Weight	20kg
Working position	Any
Dimensions	395x380x347mm



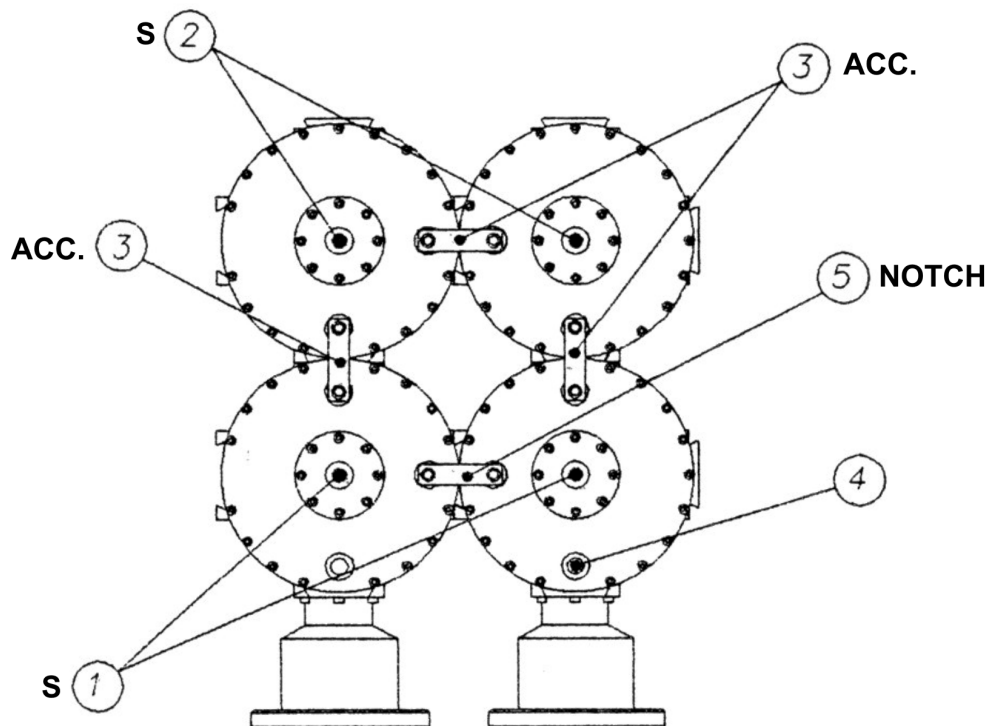
---

## CALIBRATION PROCEDURE

In order to calibrate PBN153/44, a double-track Network Analyser is needed, in order to visualize the frequency response of the passing and reflected signals.

### - Calibration procedure from 470MHz to 666MHz

1. Extract the coupling 5 (Fig. 1) until it stops.



2. Insert the couplings 3, letting about 5mm out.

3. Connect the filter to the Network Analyser marking the input. Select the frequency of the desired channel centre and set a SPAN of 50MHz.

4. Act on the tuning rods 1 and 2 until the curve of the band-pass appears in the centre of the screen, and adjust it by means of the couplings 3 to obtain a width of about 10MHz (Fig. 2).

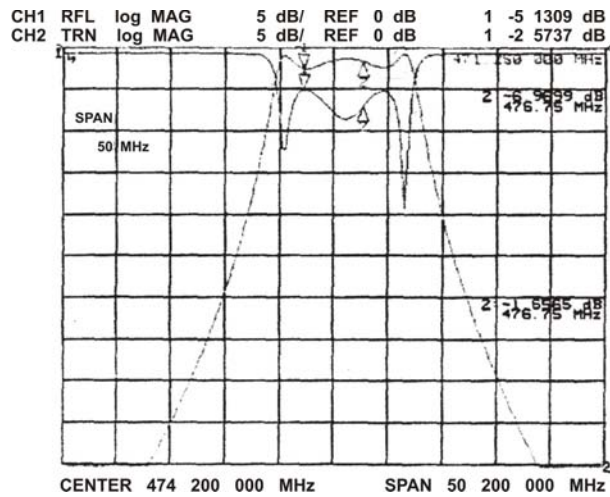


Fig. 2

5. Set a SPAN of 20MHz and act alternatively on:

- Interstage coupling **3** (rise and lower);
- IN/OUT couplings **4** (turn);
- Tuning **1** and **2** (rise and lower);

to obtain a bandwidth of 7-8MHz and an adaptation of about 25dB, composed by four peaks (Fig. 3).

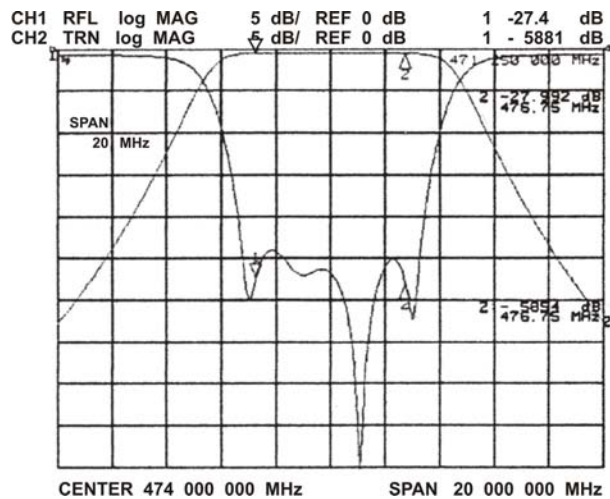


Fig. 3

6. Insert the coupling **5** (Fig. 1) to set the position of the notch attenuation on the desired frequencies (Fig. 4) (5.5MHz and +11MHz or 4-5MHz and +9MHz).

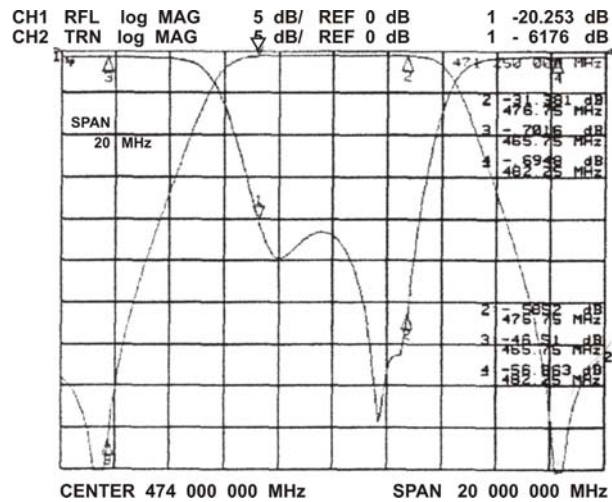


Fig. 4

7. The adaptation has moved; it can be adjusted by acting on the filter as per point 6, correcting each time the attenuation tuning by means of the coupling 5, until a frequency response like that in the example (Fig. 5) is obtained.

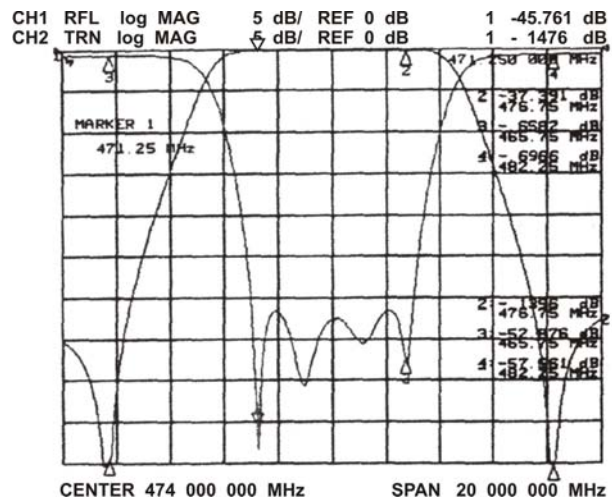


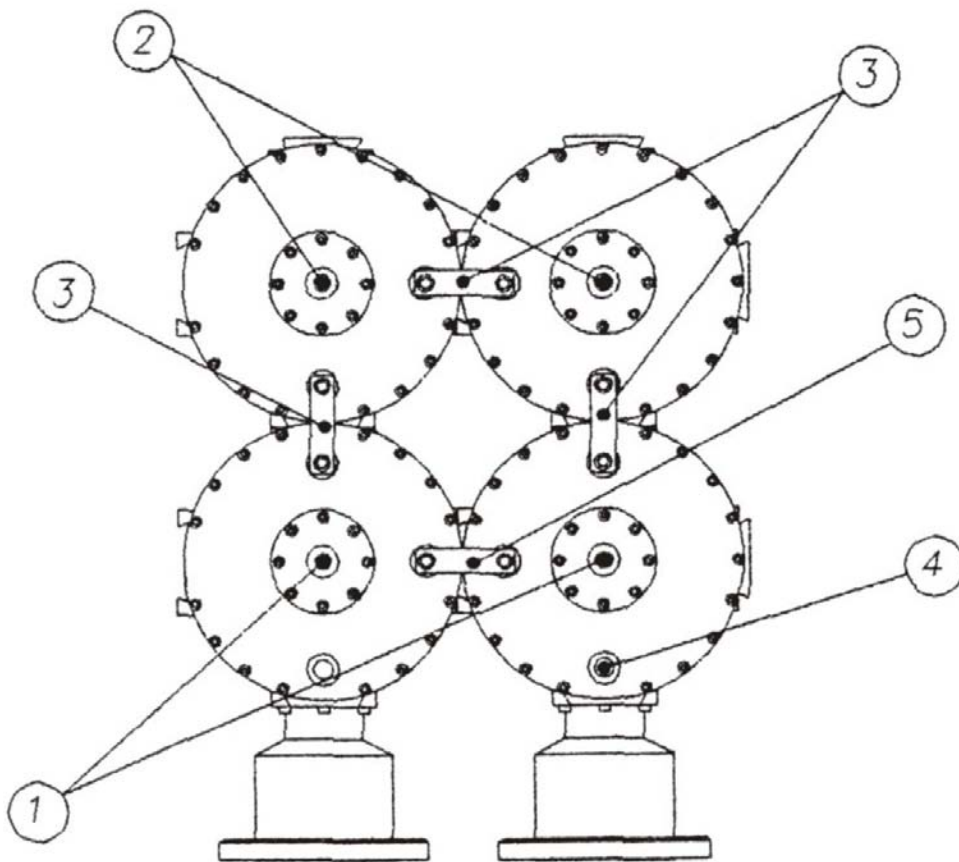
Fig. 5

8. Once the calibration is complete, the mechanical movement during the locking stage will have to be compensator for, because a variation of the adaptation may occur. It only takes to extract slightly the tuning which is being fastened.

---

**- Calibration procedure from 66MHz to 860MHz**

1. Extract the coupling **5** (Fig. 1) until it stops.



2. Extract the couplings **3** making sure not to short-circuit them.

3. Connect the filter to the Network Analyser, marking the input. Select the frequency of the desired centre channel and set a SPAN of 50MHz.

4. Act on the tuning rods **1** and **2** until the curve of the band-pass appears in the centre of the screen and adjust it by means of the coupling **3** to obtain a width of about 10MHz (Fig. 2). The tuning **2**, due to the elliptical system according to which the filter has been designed, will compose the attenuation of the notch as well as the curve of the band-pass.

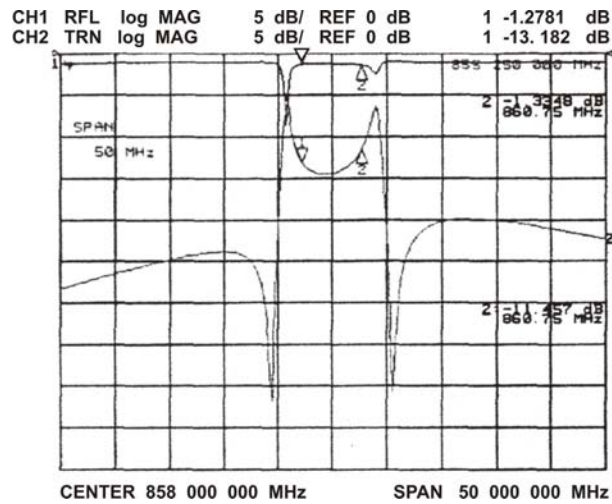


Fig. 2

5. Set a SPAN of 20MHz and act alternatively on:

- Interstage couplings **3** (rise and lower);
- IN/OUT couplings **4** (turn);
- Tuning **1** and **2** (rise and lower);

to obtain a bandwidth of 7-8MHz and an adaptation of about 25dB, composed by four peaks (Fig. 3).

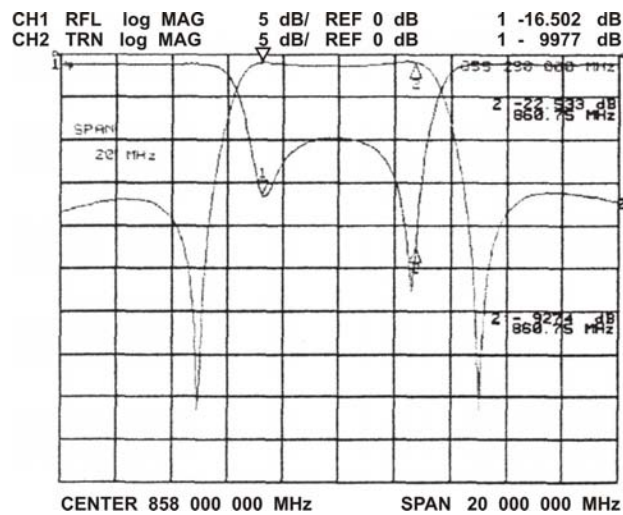


Fig. 3

6. Use the coupling **5** (Fig. 1) to set the position of the notch attenuation on the desired frequencies (Fig. 4) (5.5MHz and +11MHz or 4.5MHz and +9MHz).

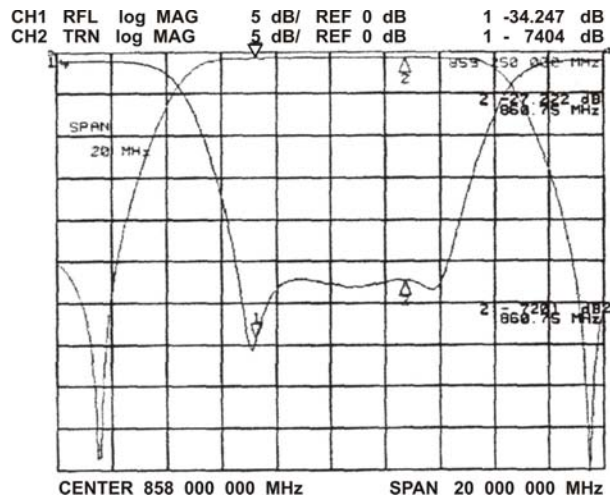


Fig. 4

7. It is possible to note that, by tuning the notch attenuation as described in point 6 above, the adaptation has moved. It can be adjusted by acting on the filter as per point 6, correcting each time the tuning of the notch attenuation by means of the coupling 5, until a frequency response like the one in the example (Fig. 5) is obtained.

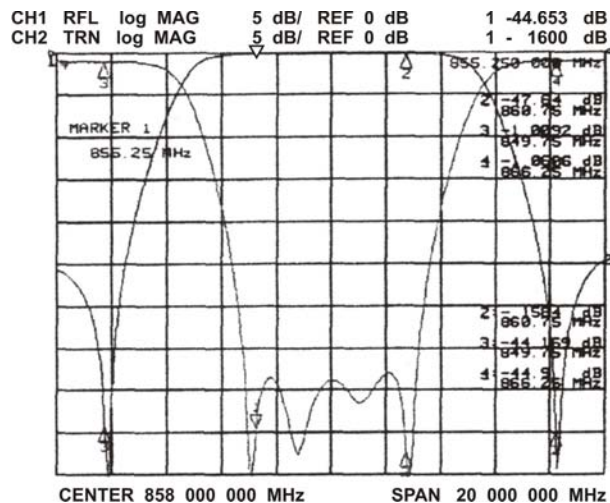


Fig. 5

8. Once the calibration is complete, the mechanical movement during the locking stage will have to be compensated for, because a variation of the adaptation may occur. It only takes to extract slightly the tuning which is being fastened.