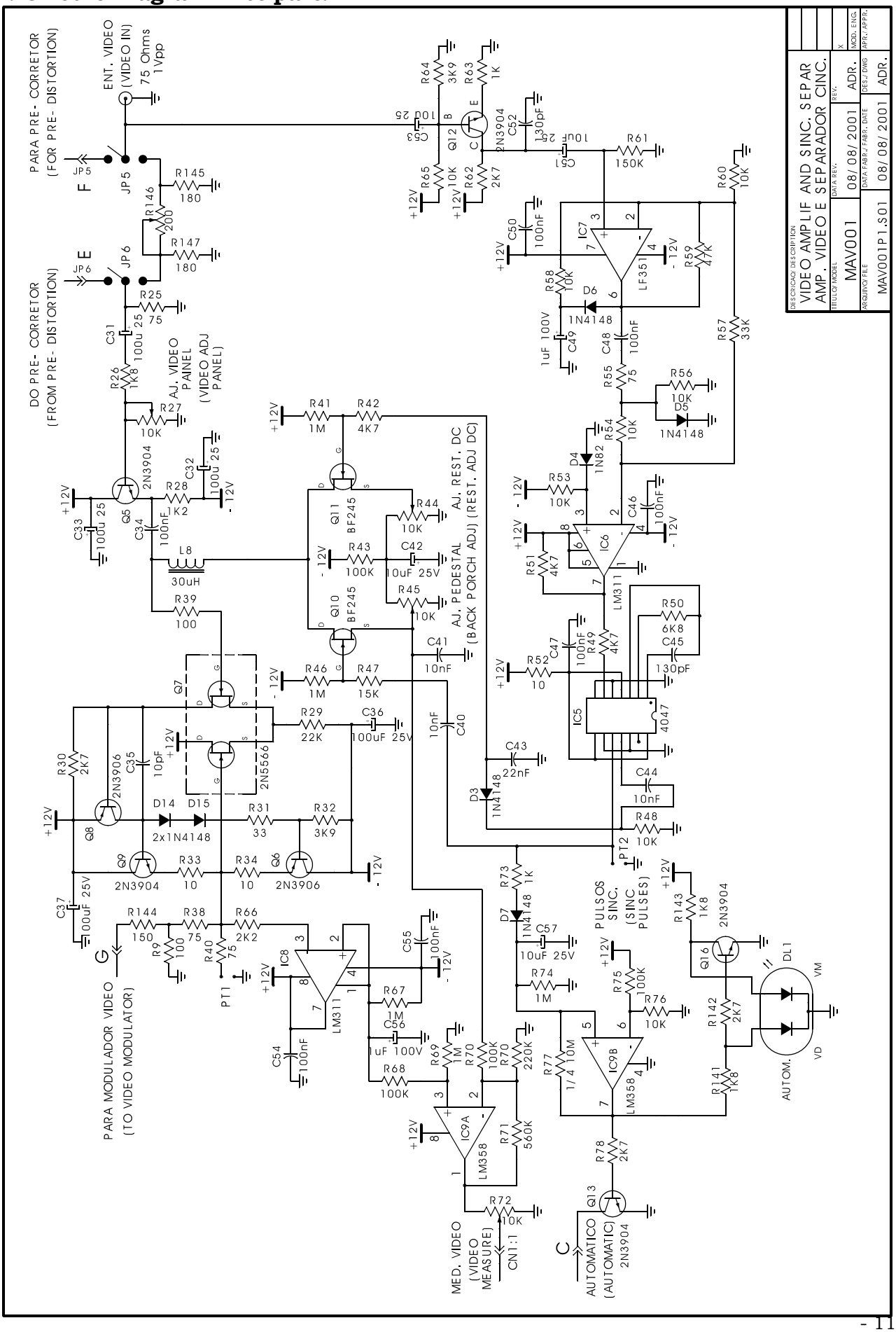
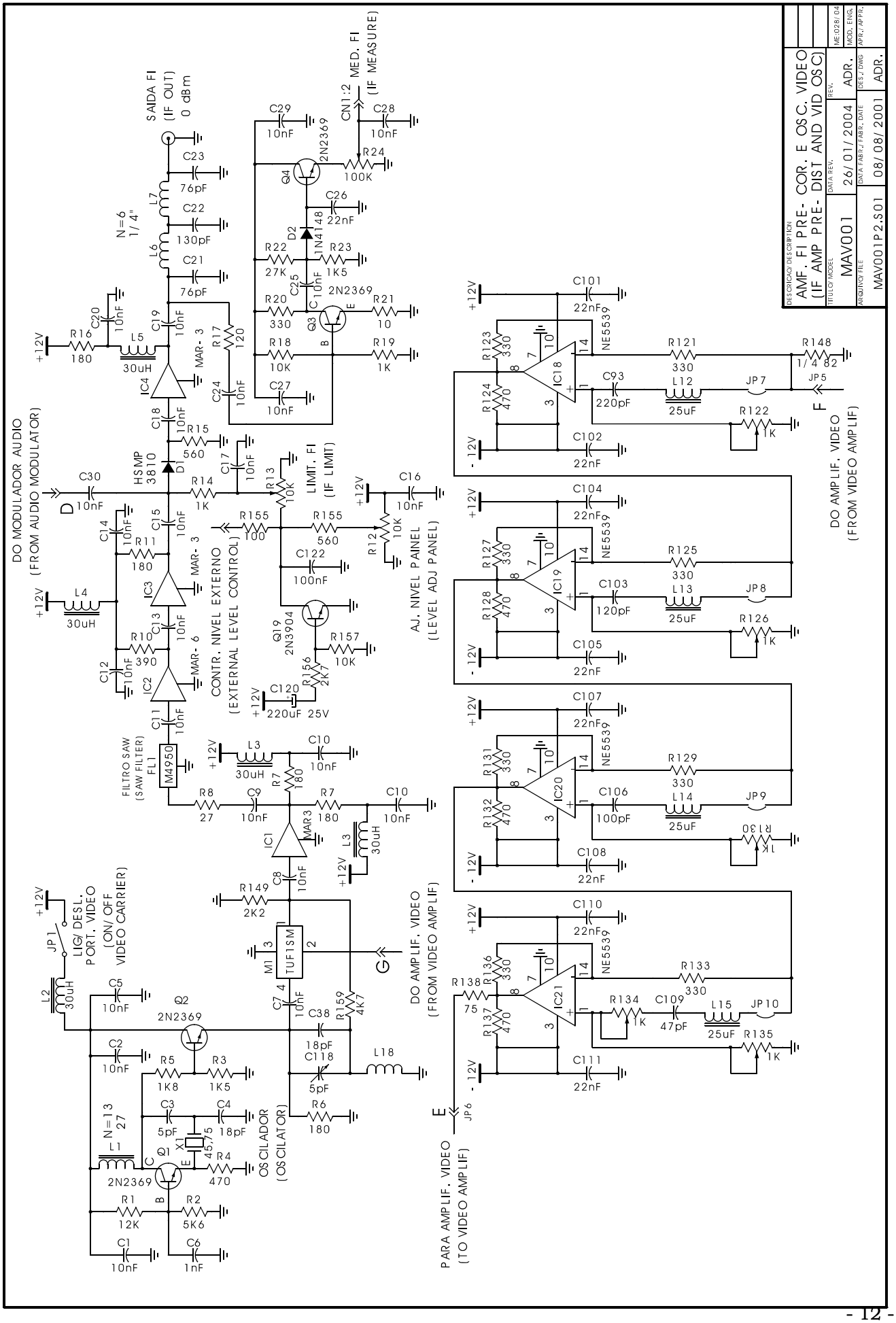
5. Circuit Diagram MAV001:

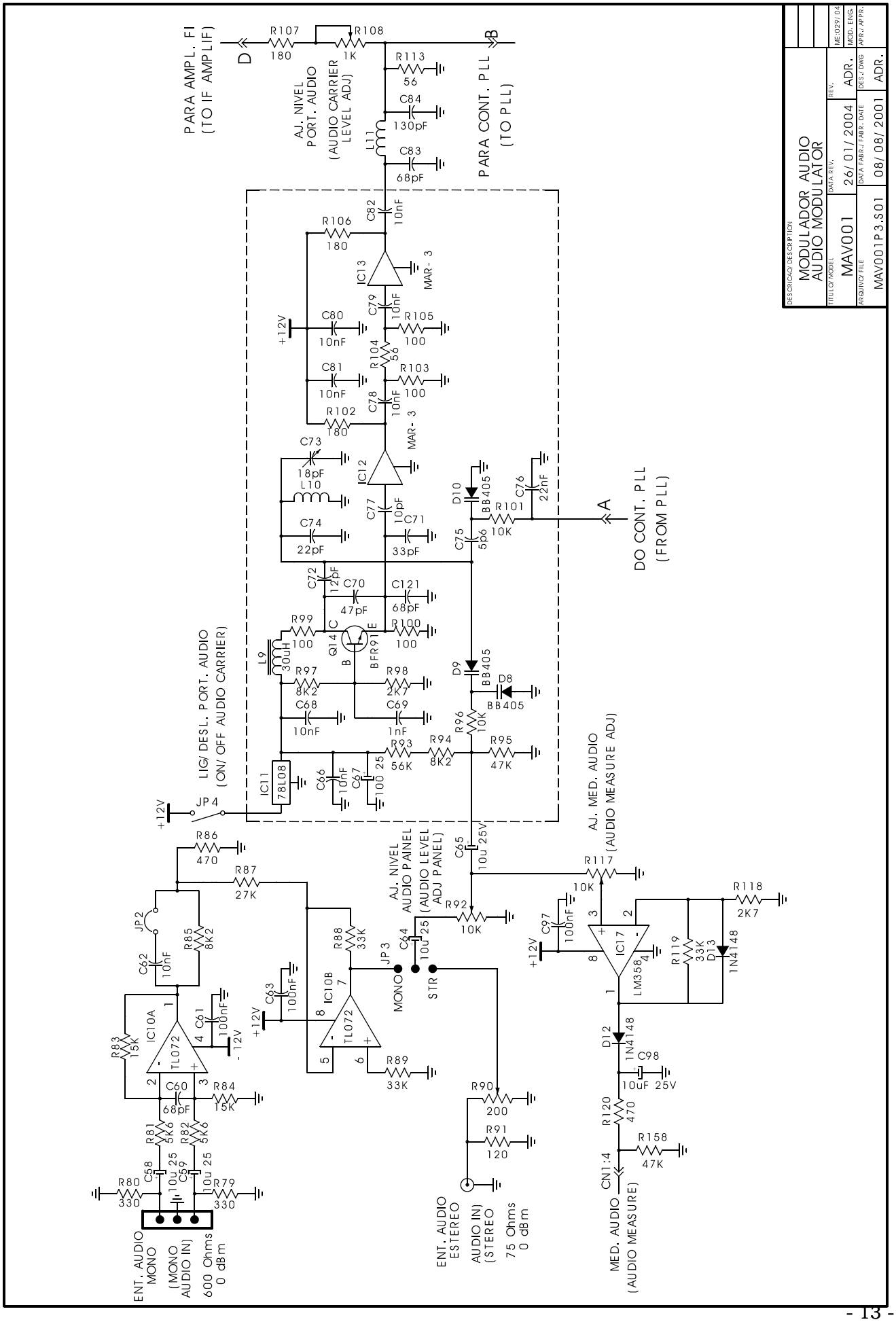
5.1. Circuit Diagram first part:



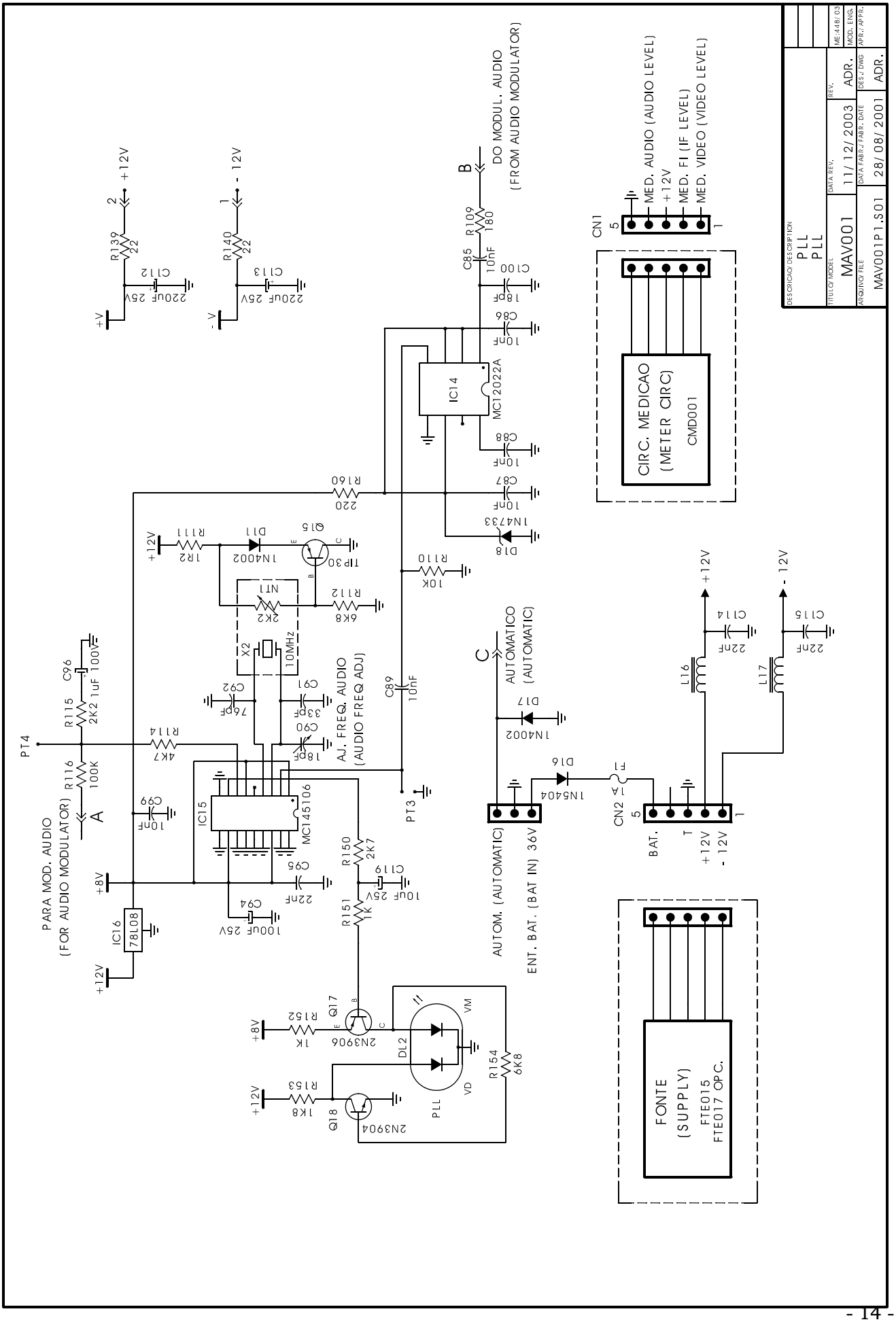
5.2 Circuit Diagram second part:



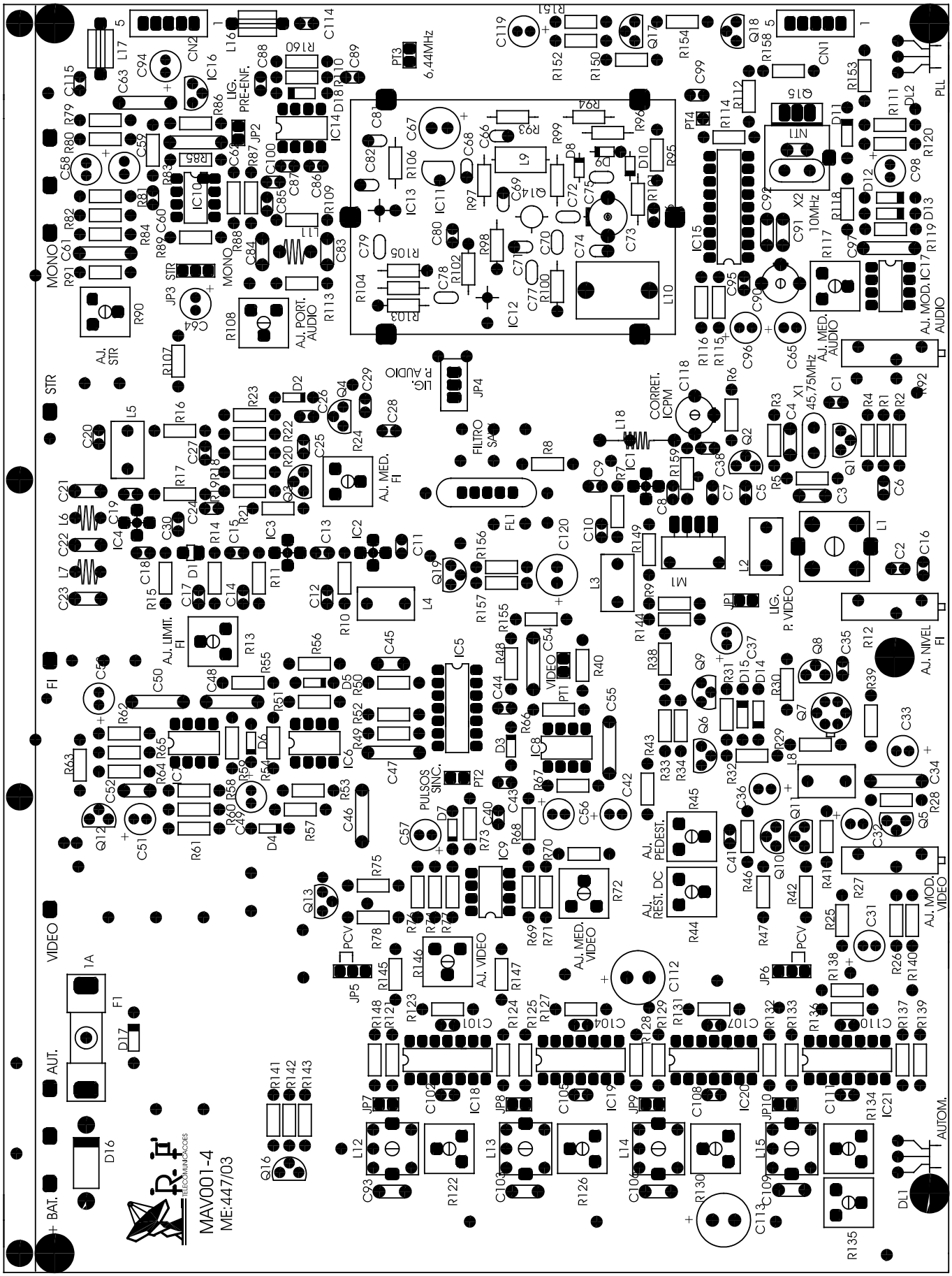
5.3. Circuit Diagram third part:



5.4. Circuit Diagram fourth part:



6. Layout MAV001:



7. Parts list MAV001:

Quant.	Description	Position	Code
1	CRYSTAL 10.000,00 HC49/U	X2	45023
1	CRYSTAL 45.750,00 HC49/U	X1	45026
6	INDUCTOR 30 µH	L1, L2, L3, L4, L5, L6	50001
1	INTEGRATED CIRCUIT LF 351 N	IC7	60003
1	INTEGRATED CIRCUIT CD 4047 AE	IC5	60039
2	INTEGRATED CIRCUIT LM 311 P	IC6, IC8	60049
2	INTEGRATED CIRCUIT LM 358	IC9, IC17	60052
1	INTEGRATED CIRCUIT TL 072 CDP	IC1	60066
1	INTEGRATED CIRCUIT MC 145106 P	IC15	60067
7	CAPACITOR ELCO. RADIAL 100µF 25V	C31, C32, C33, C36, C37, C94	74010
3	CAPACITOR. ELCO. RADIAL 220µF 25V	C112, C113, C120	74013
3	CAPACITOR ELCO. RADIAL 1µF 100V	C49, C56, C96	74026
10	CAPACITOR ELCO. RADIAL 100µF 25V	C42, C51, C53, C58, C59, C64, C65, C67, C98,C119	74028
1	CAPACITOR POL. METAL. 10ηF	C62	75001
10	CAPACITOR POL. METAL. 100ηF	C34, C46, C47, C48, C50, C54, C55, C61,	75004
1	CAPACITOR POL. METAL. 100ηF 63V	C122 C63,C97	75019
2	CAPACITOR CER.MULTI LAYER 1ηF	C9,C69	76044
13	CAPACITOR CER.MULTI LAYER. 22ηF	C26,C43,C95,C101,C102,C104,C105, C107,C108,C110,C111,C114,C115	76045
38	CAPACITOR CER.MULTI LAYER 10ηF	C1,C2,C5,C7,C8,C9,C10,C11,C12,C13,C14 C15,C16,C17,C18,C19,C20,C24,C25,C27, C28,C29,C30,C40,C41,C44,C51,C66,C68, C78,C79,C80,C81,C85,C86,C87,C88,C89	76046
1	CAPACITOR PLATE 5 p 6	C75	79505
1	CAPACITOR PLATE 10ρF	C35	79506
1	CAPACITOR PLATE 22ρF	C74	79507
1	CAPACITOR PLATE 12ρF	C72	79514
2	CAPACITOR PLATE 18ρF	C38, C100	79515
1	CAPACITOR PLATE 47ρF	C70	79518
4	CAPACITOR PLATE 68ρF	C60, C71, C83, C84	79521
5	CAPACITOR MICA CMO 76ρF	C21, C23,C92 ,C106, C109	79909
3	CAPACITOR MICA CMO 130ρF	C22, C45, C52	79911
2	CAPACITOR MICA CMO 33ρF	C4, C91	79914
1	CAPACITOR MICA CMO 5ρF	C3	79917
1	CAPACITOR MICA CMO 270ρF	C93	79924
1	CAPACITOR MICA CMO 220ρF	C103	79943
2	DIODE 1N 4002	C11, C17	82001
1	DIODE 1N 5404	D16	82008
9	DIODE 1N 4148	D2,D3,D5,D6,D7,D12,D13,D14,D15	82011

2	DIODE LED BICOLOR	DL1,DL2	82091
2	CAPACITOR TRIMMER 22ρF	C73,C90	85002
1	FUSE 500mA	F1	86018
5	TRIMPOT 1 K	R108,R122,R126,R130,R135	90002
3	TRIMPOT 200 Ohms	R90,R134,R146	90003
3	TRIMPOT 10 K	R13,R44,R45	90005
3	TRIMPOT 100 K	R24,R72,R117	90011
3	TRIMPOT DALE 10 K	R12,R27,R92	90015
4	COIL 25μH	L12,L13,L14,L15	95003
1	COIL BOB002	L10	95034
4	RESISTOR 1/8W 10 Ohms	R21,R33,R34,R52	100008
2	RESISTOR 1/8W 22 Ohms	R139,R140	100010
1	RESISTOR 1/8W 27 Ohms	R8	100011
1	RESISTOR 1/8W 33 Ohms	R31	100012
2	RESISTOR 1/8W 56 Ohms	R104,R113	100014
5	RESISTOR 1/8W 75 Ohms	R25,R38,R40,R55,R138	100016
7	RESISTOR 1/8W 100 Ohms	R9,R39,R99,R100,R105,R108,R155	100017
2	RESISTOR 1/8W 120 Ohms	R17,R91	100018
11	RESISTOR 1/8W 180 Ohms	R6,R7,R11,R16,R102,R106,R107,R109, R144,R145,R147	100020
11	RESISTOR 1/8W 330 Ohms	R20,R79,R80,R121,R123,R127,R125, R129,R131,R133,R136	100023
1	RESISTOR 1/8W 390 Ohms	R10	100024
7	RESISTOR 1/8W 470 Ohms	R4,R86,R120,R124,R128,R132,R137	100025
3	RESISTOR 1/8W 560 Ohms	R14,R15,R155	100026
6	RESISTOR 1/8W 1 K	R19,R23,R63,R73,R151,R152	100028
1	RESISTOR 1/8W 1 K 2	R28	100029
1	RESISTOR 1/8W 1 K 5	R3	100030
5	RESISTOR 1/8W 1 K 8	R5,R26,R141,R143,R153	100031
3	RESISTOR 1/8W 2 K 2	R66,R115,R149	100032
8	RESISTOR 1/8W 2 K 7	R30,R62,R78,R98,R118,R142,R150,R156	100033
2	RESISTOR 1/8W 3 K 9	R32,R64	100036
4	RESISTOR 1/8W 4 K 7	R42,R49,R51,R114,R159	100037
3	RESISTOR 1/8W 5 K 6	R2,R81,R82	100038
3	RESISTOR 1/8W 6 K 8	R50,R112,R154	100039
2	RESISTOR 1/8W 8 K 2	R94,R97	100040
13	RESISTOR 1/8W 10 K	R18,R48,R53,R54,R56,R58,R60,R65,R76, R96,R101,R110,R157	100041
1	RESISTOR 1/8W 12 K	R1	100042
3	RESISTOR 1/8W 15 K	R47,R83,R84	100043
1	RESISTOR 1/8W 22 K	R29	100045

2	RESISTOR 1/8W 27 K	R22,R87	100046
4	RESISTOR 1/8W 33 K	R57,R88,R89,R119	100047
3	RESISTOR 1/8W 47 K	R59,R93,R158	100048
5	RESISTOR 1/8W 100 K	R68,R70,R75,R116,R143	100051
1	RESISTOR 1/8W 150 K	R61	100053
6	RESISTOR 1/8W 1 M	R41,R67,R69,R71,R74,R146	100059
1	RESISTOR 1/8W 56 K	R95	100066
1	RESISTOR 1/4W 82 Ohms	R148	101006
1	RESISTOR 1/4W 10 M	R77	101036
1	RESISTOR 1/2W 1 R 2	R111	102039
1	THERMISTOR NTC 2 K 2	NT1	111001
4	TRANSISTOR 2N 2369 A	Q1,Q2,Q3,Q4	120022
1	TRANSISTOR TIP 30 A	Q15	126004
2	VOLTAGE REGULATOR UA 78L08	IC11,IC16	126025
7	TRANSISTOR 2N 3904	Q5,Q9,Q12,Q13,Q16,Q18,Q19	127012
3	TRANSISTOR 2N 3906	Q6,Q8,Q17	127013
2	TRANSISTOR BF 245 C	Q10,Q11	128012
1	CAPACITOR TRIMMER 5ρF	C118	130006
3	CONNECTOR FEMALE BNC	CN3,CN4,CN5	800200
1	CONNECTOR FEMALE MULTIP. 3 P	JP4	800805
2	CONNECTOR FEMALE MULTIP. 5 P	CN1, CN2	800806
1	INTEGRATED CIRCUIT MAR 6	IC2	IMPCI0019
5	INTEGRATED CIRCUIT MAR 3	IC1, IC3, IC4, IC12, IC13	IMPCI0022
4	INTEGRATED CIRCUIT NE 5539 N	IC18, IC19, IC20, IC21	IMPCI0037
1	INTEGRATED CIRCUIT NC 12022 P	IC17	IMPCI0034
1	DIODE 1N 82	D4	IMPD00002
3	DIODE BB 405 B	D8,D9,D10	IMPD00030
1	DIODE HSMP 3810	D1	IMPD00038
1	OFWM SAW FILTER 4950	FL1	IMPF00006
1	MIXER TUF 1SM	M1	IMPM00010
1	TRANSISTOR BFR 90/BFR 91 A	Q14	IMPT00014
1	TRANSISTOR 2N 5566	Q7	IMPT00116
1	PCB AUDIO AND VIDEO MODULATOR	PCI1	PCIMAV001

8. Power Supply:

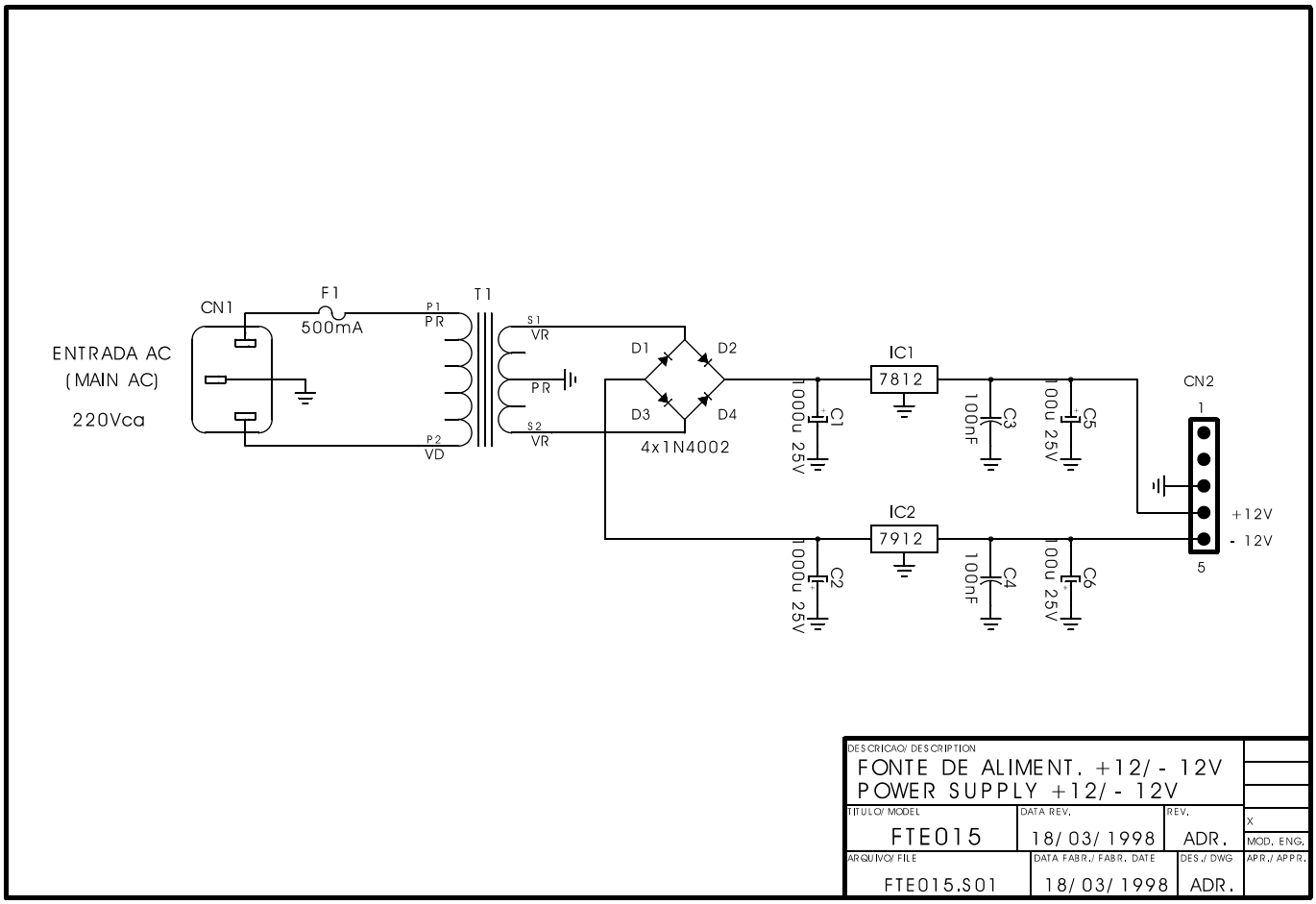
8.1. Function:

The power supply function is to generate +12V and -12V voltage suitable to supply the modulator.

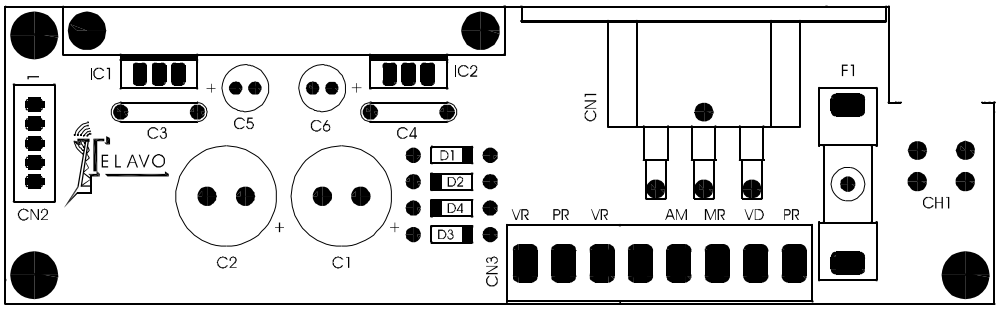
8.2. Technical Description:

The transformer T1 reduces the input voltage for the rectifiers D1 to D4. The positive and negative voltage obtained after the rectification and filtering through C1 and C2 are regulated through IC1 and IC2 to obtain +12V and -12V voltage to supply the Modulator.

8.3. Circuit Diagram FTE015:



8.4. Layout FTE015:



8.5. Parts List FTE015:

Quant.	Description	Position	Code
2	CAPACITOR ELCO. RADIAL 100µF 25V	C5,C6	74010
2	CAPACITOR ELCO. RADIAL 1000µF 25V	C1,C2	74021
2	CAPACITOR POL. METAL. 100nF	C3,C4	75004
4	DIODE 1N 4002	D1,D2,D3,D4	82001
1	FUSE 500mA	F1	86018
1	VOLTAGE REGULATOR 7912	IC2	126006
1	VOLTAGE REGULATOR 7812	IC1	126019
1	CONNECTOR AC MALE R332	IC1	800208
1	CONNECTOR MUL. MALE 5P BURDY	CN2	800818
1	CONNECTOR BORNE KRE-8	CN3	800212
1	PCB POWER SUPPLY +12/-12V	PCI1	PCIFTE015

9. Power Supply (optional):

9.1. Function:

The switched power supply has the function to generate +12V and -12V voltages from the input voltages AC or from the +36V battery (opc).

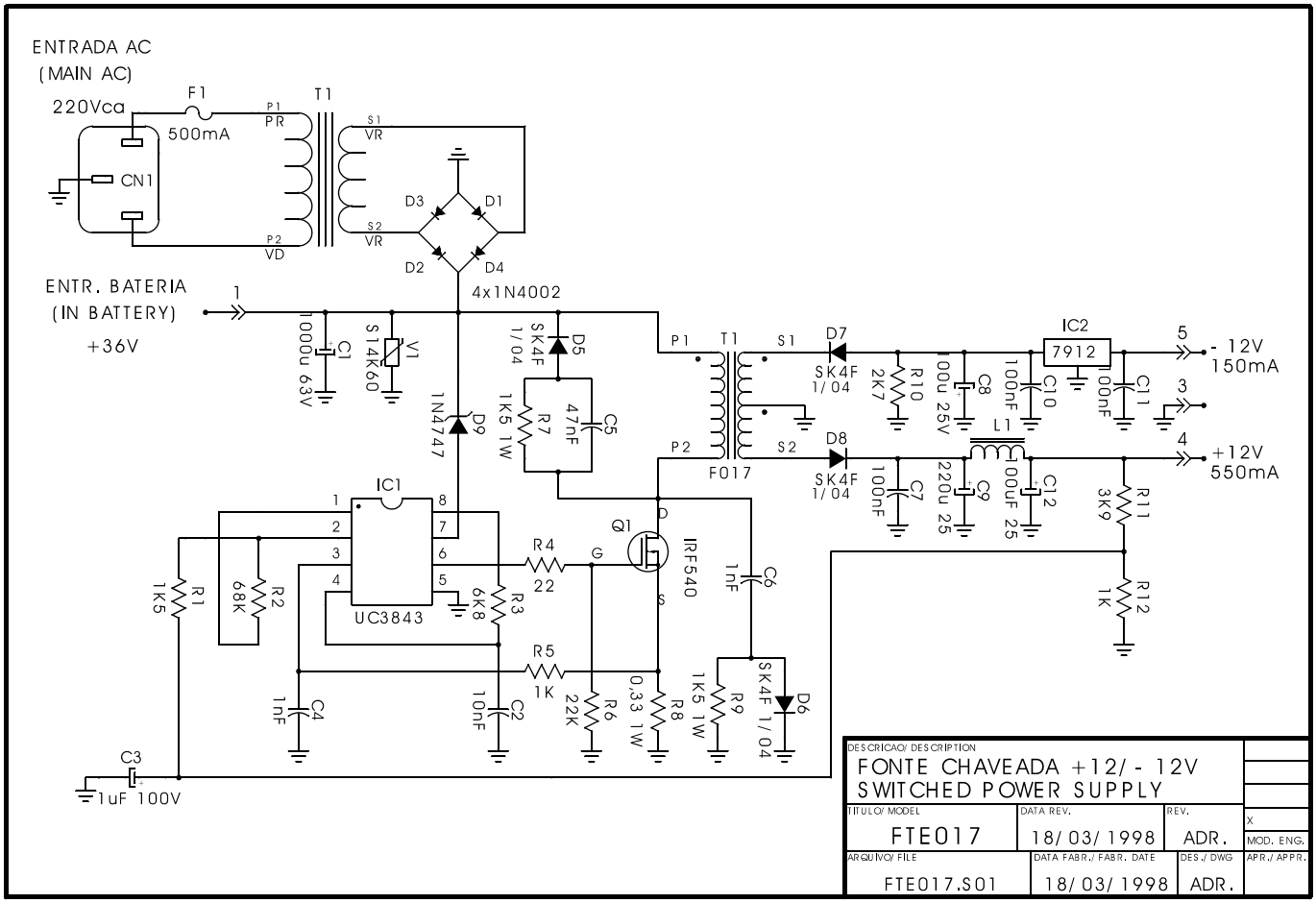
9.2. Technical Description:

The input voltage, after transformer T2 and diodes D1 and D4, supplies the PWM IC1. If there is no AC the battery voltage supplies the circuit.

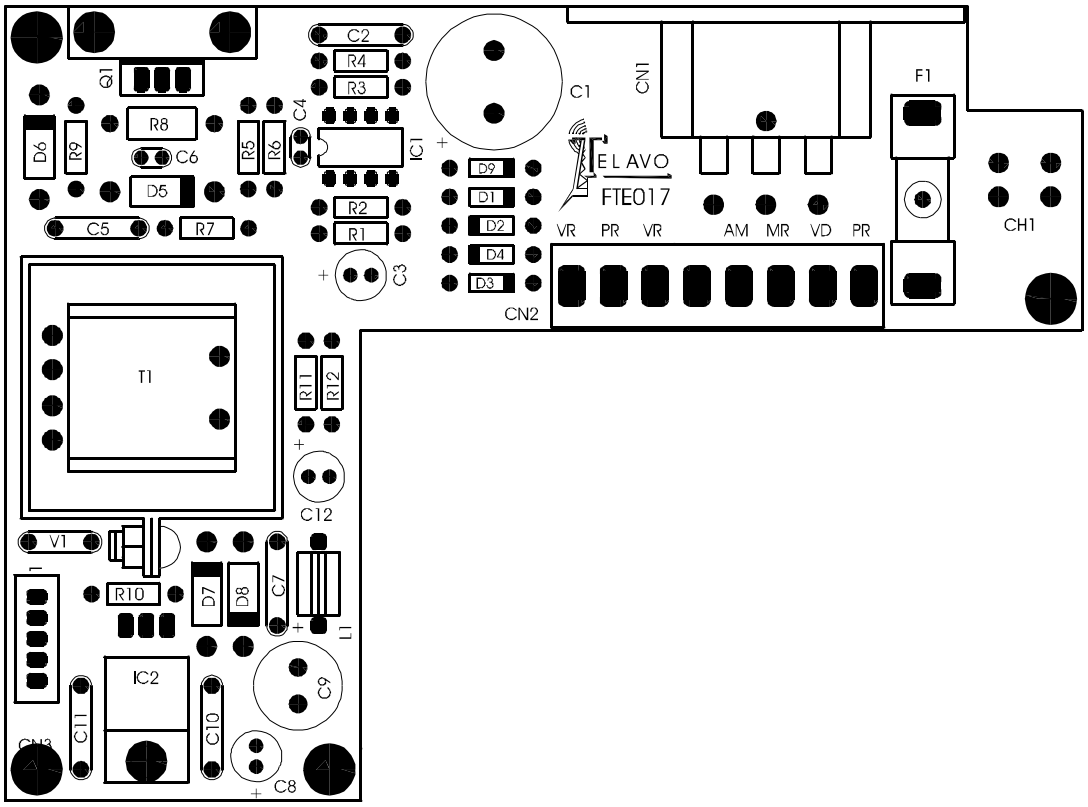
The pulses generated by IC1 commute the transistor Q1 and switch the voltage over the primary T1 at 25 KHz frequency.

The induced pulses that are in the secondary are rectified by D7 and D8 and filtered by C8 e C9. The regulator IC2 assures the -12V regulated voltage. A voltage sample after L1 supplies the IC1 control input, through the divider R11 and R12. The pulses that are generated for IC1 have their width changed in function of the received sample, canceling, in this manner, any variation in the +12V voltage. The resistor R9 supplies a sampled voltage related to the current which circulates in the output to the IC1, pin 3. This input protects the over current, reducing the +12V voltage.

9.3. Circuit diagram FTE017:



9.4. Layout FTE017:



9.5. Parts list FTE017:

Quant.	Description	Position	Code
1	CAPACITOR ELCO. RADIAL 1000µF 63V	C1	71027
1	VARISTOR S14K60	V1	71037
2	CAPACITOR ELCO. RADIAL 100µF 25V	C8,C12	74010
1	CAPACITOR ELCO. RADIAL 220µF 25V	C9	74013
1	CAPACITOR ELCO. RADIAL 1µF 100V	C3	74026
1	CAPACITOR POL. METAL. 10nF	C2	74001
1	CAPACITOR POL. METAL. 47nF	C5	75003
3	CAPACITOR POL. METAL. 100nF	C7,C10,C11	75004
2	CAPACITOR CER. MULT. CAMADAS 1nF	C4,C6	76044
4	DIODE 1N 4002	D1,D2,D3,D4	82001
4	DIODE SK4F 1/02	D4,D6,D7,D8	82033
1	DIODE 1N 4747 A 20V	D9	82056
1	FUSE 500mA	F1	86018
1	RESISTOR 1/8W 22 Ohms	R4	100010
2	RESISTOR 1/8W 1 K	R5,R12	100028
1	RESISTOR 1/8W 1 K 5	R1	100030

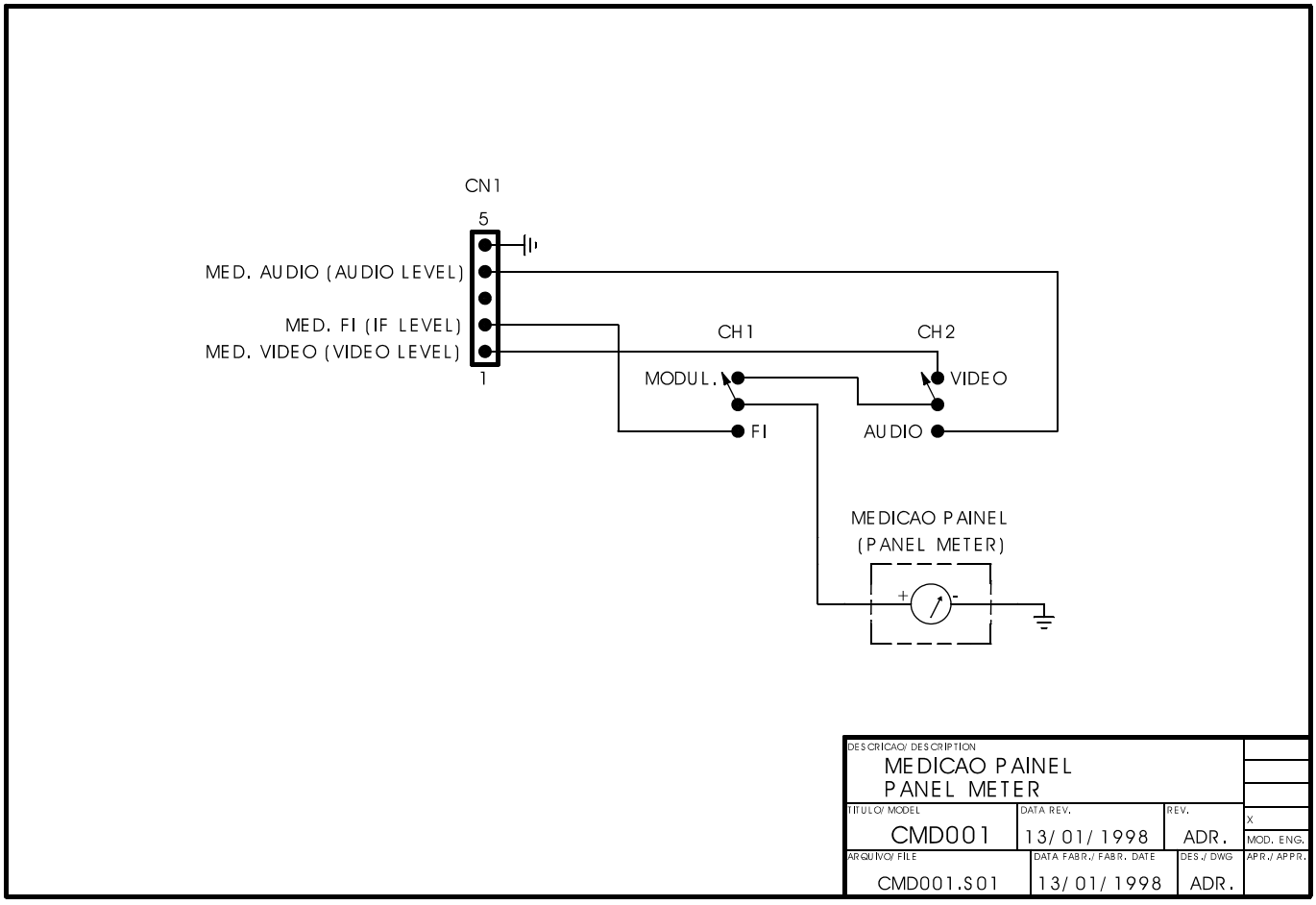
1	RESISTOR 1/8W 2 K 7	R10	100033
1	RESISTOR 1/8W 3 K 9	R11	100036
1	RESISTOR 1/8W 6 K 8	R3	100039
1	RESISTOR 1/8W 22 K	R6	100045
1	RESISTOR 1/8W 68 K	R2	100049
2	RESISTOR 1W 1 K 5	R7,R9	103015
1	RESISTOR 1W 0,33 Ohms	R8	103037
1	TRANSFORMER F017	T1	118129
1	VOLTAGE REGULATOR 7912	IC2	126006
1	CONNECTOR BORNE KRE-8	CN2	800212
1	INTEGRATED CIRCUIT UC 3843	IC1	IMPCI0012
1	TRANSISTOR FET IRF 540	Q1	IMPT00107
1	PCB POWER SUPPLY +12/-12V	PCI1	PCIFTE017

10. Meter Circuit:

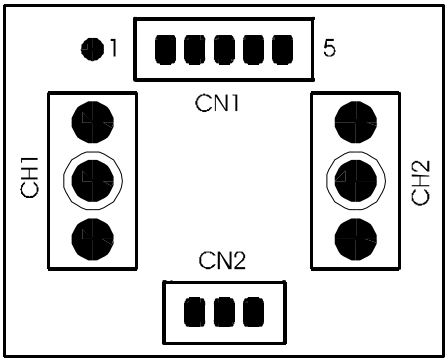
10.1. Function:

The meter circuit allows, through the selector switches and meter, the measurements of the video modulation, audio modulation and the IF level.

10.2. Circuit diagram CMD001:



10.3. Layout CMD001:



10.4. Parts List CMD001:

Quant.	Description	Position	Code
2	SWITCH JOTO 7101 SIMPLE	CH1, CH2	41026
1	CONNECTOR MUL. MALE 5P BURDY	CN1	800818
1	PCB METER CIRCUIT	PCI1	PCICMD001