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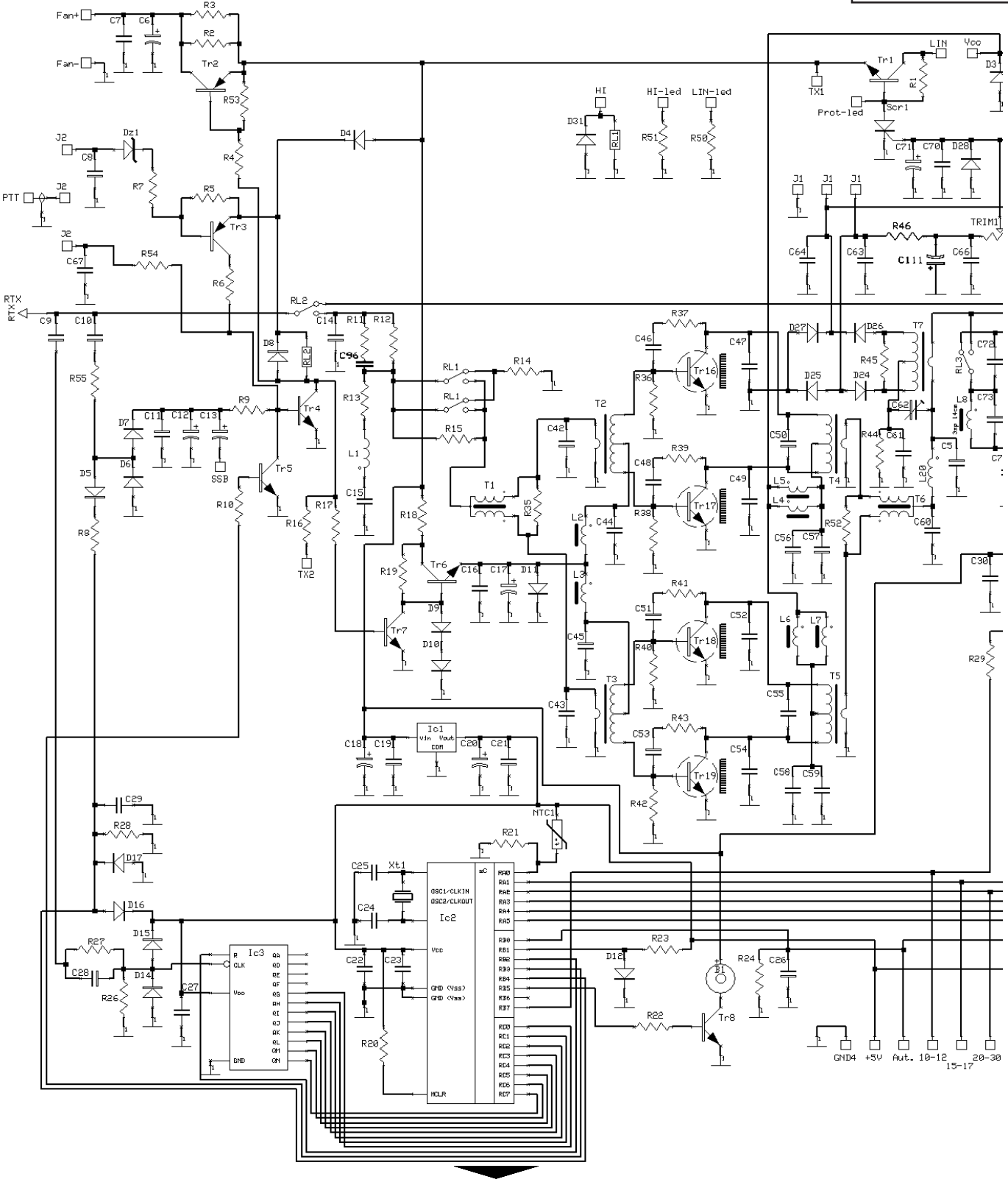
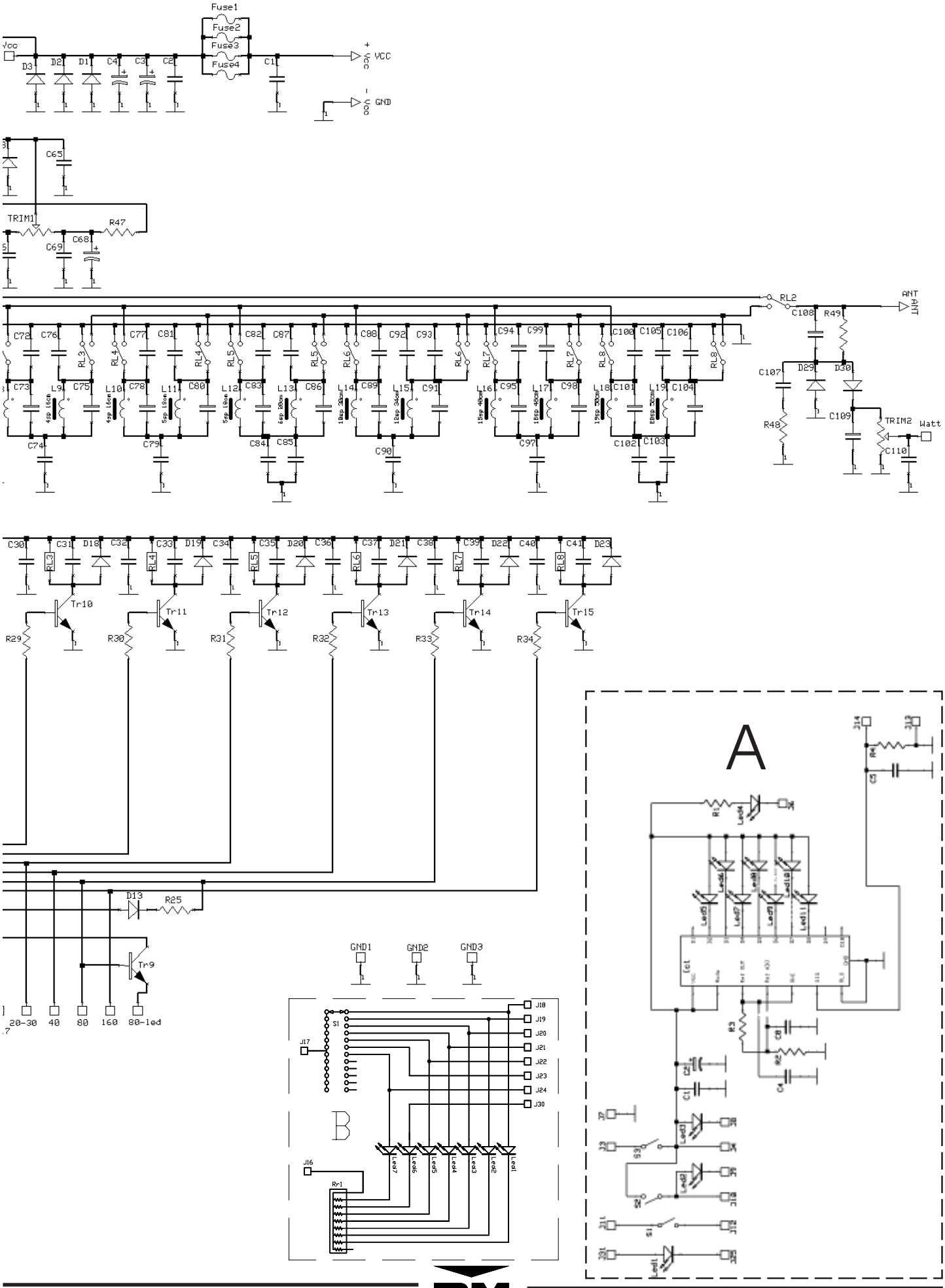
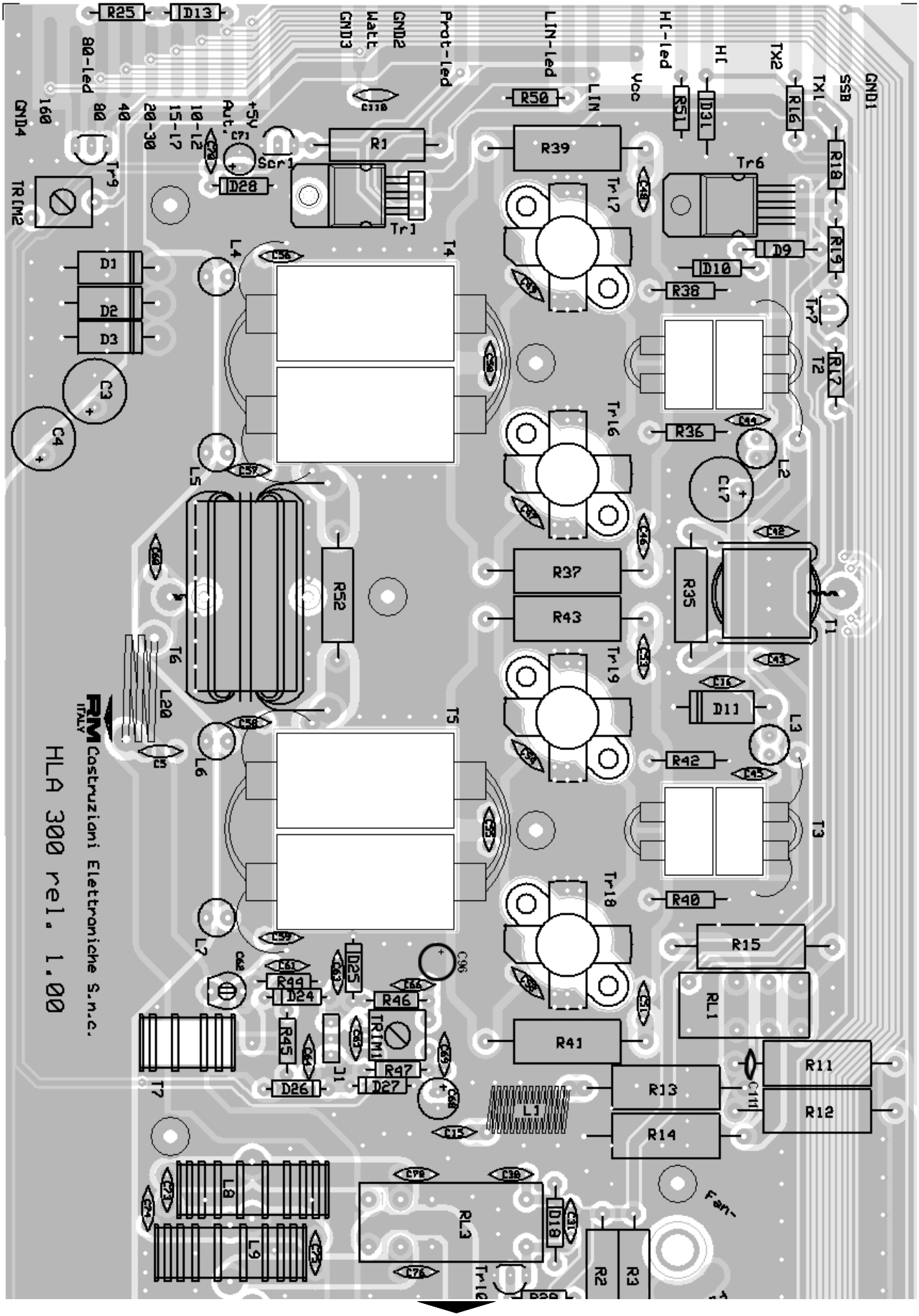
Mod. HLA 300 linear amplifier

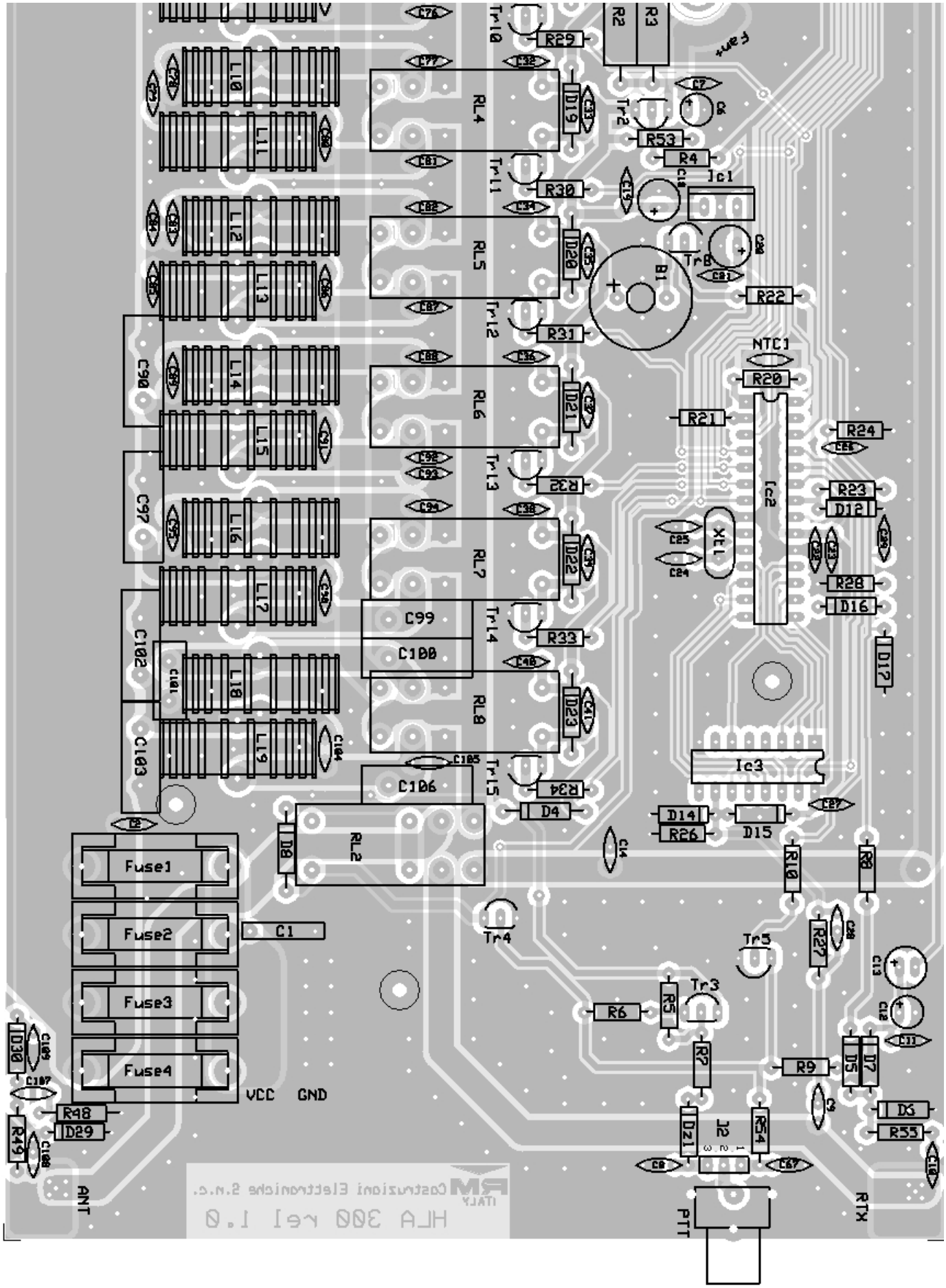
Schematic diagram

Version 1.00

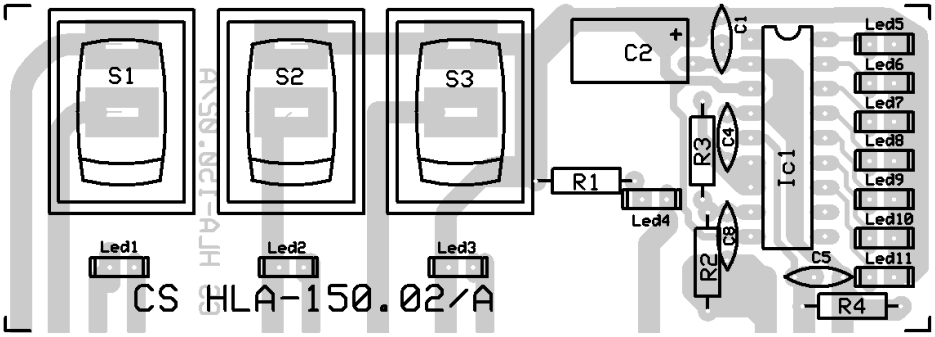



Fuse1
Fuse2
Fuse3
Fuse4
VCC
GND
TRIM1
TRIM2
ANT
Watt
Tr10
Tr11
Tr12
Tr13
Tr14
Tr15
Tr9
D13
R25
20-30
40
80
160
80-led
GND1
GND2
GND3
A
B

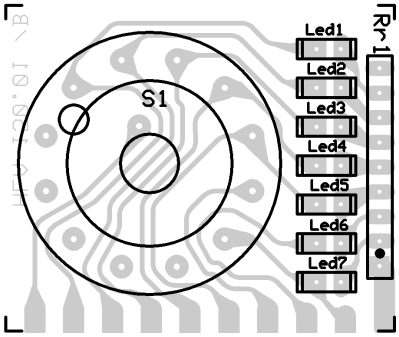

HLA 300 rel. 1.00
RM Costruzioni Elettroniche S.n.c.
ITALY
GND1
SSB
TX1
TX2
HI
HI-led
Vcc
LIN
LIN-led
Prot-led
Watt
GND2
GND3
GND4
160
80
40
20-30
15-17
10-12
Aut.
+5V
80-led
TRIM2
Fan
R1
R2
R3
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R25
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R50
R51
R52
D1
D2
D3
D9
D10
D11
D13
D18
D24
D25
D26
D27
D28
D31
C3
C4
C17
C71
C96
C111
C118
L1
L2
L3
L4
L5
L6
L7
L8
L9
L20
T1
T2
T3
T4
T5
T6
T7
Tr1
Tr2
Tr6
Tr16
Tr17
Tr18
Tr19
RL1
RL3
TRIM1
J1
Scr1
Tr9


Fuse1
Fuse2
Fuse3
Fuse4
VCC
GND
ANT
PTT
RTX
RL2
RL4
RL5
RL6
RL7
RL8
C99
C100
C106
C90
C92
C102
C103
L10
L11
L12
L13
L14
L15
L16
L17
L18
L19
Tr10
Tr11
Tr12
Tr13
Tr14
Tr15
Tr2
Tr8
Tr4
Tr5
Tr3
R29
R30
R31
R32
R33
R34
R53
R4
R22
R20
R21
R24
R23
R28
R26
R10
R8
R27
R6
R5
R7
R9
R54
R55
D19
D20
D21
D22
D23
D4
D10
D12
D16
D17
D14
D15
D5
D7
D6
D11
D30
D29
R48
R49
Ic1
Ic2
Ic3
Xtl
B1
NTC1
J2

Board A



Board B



List of components

C 1	= 470 nF	63 V	Polyester
C 2	= 100 nF	50 V	
C 3	= 470 µF	25 V	
C 4	= 470 µF	25 V	
C 5	= 22 pF	500 V	NP0
C 6	= 22 µF	25 V	
C 7	= 100 nF	50 V	
C 8	= 100 nF	50 V	
C 9	= 15 pF	50 V	NP0
C 10	= 2,2 nF	50V	
C 11	= 100 nF	50 V	
C 12	= 2,2 µF	25 V	
C 13	= 33 µF	25 V	
C 14	= Not present		
C 15	= 10 nF	50 V	
C 16	= 100 nF	50 V	
C 17	= 470 µF	25 V	
C 18	= 10 µF	25 V	
C 19	= 100 nF	50 V	
C 20	= 22 µF	25 V	
C 21	= 100 nF	50 V	
C 22	= 220 nF	50 V	Multilayer
C 23	= 100 nF	50 V	
C 24	= 27 pF	50 V	NP0
C 25	= 27 pF	50 V	NP0
C 26	= 100 nF	50 V	
C 27	= 100 nF	50 V	
C 28	= 4,7 pF	50 V	NP0
C 29	= 10 nF	50 V	
C 30 to C 41	= 100 nF	50 V	
C 42	= 100 pF	50 V	NP0
C 43	= 100 pF	50 V	NP0
C 44	= 100 nF	50 V	
C 45	= 100 nF	50 V	
C 46	= 47 nF	50 V	
C 47	= 180 pF	500 V	NP0
C 48	= 47 nF	50 V	
C 49	= 180 pF	500 V	NP0
C 50	= 620 + 390 pF	500V	Silveredmica
C 51	= 47 nF	50 V	
C 52	= 180 pF	500 V	NP0
C 53	= 47 nF	50 V	
C 54	= 180 pF	500 V	NP0
C 55	= 620 + 390 pF	500V	Silveredmica
C 56 to C 59	= 100 nF	50 V	
C 60	= 82 pF	500 V	NP0
C 61	= 470 pF	50 V	N750
C 62	= HCU06C100 3-10 pF		
C 63 to C 67	= 100 nF	50 V	
C 68	= 33 µF	25 V	
C 69	= 100 nF	50 V	
C 70	= 100 nF	50 V	
C 71	= 10 µF	25 V	
C 72	= 8,2 pF	500 V	NP0
C 73	= 33 pF	500 V	NP0
C 74	= 150 pF	500 V	NP0
C 75	= 12 pF	500 V	NP0
C 76	= 100 pF	500 V	NP0
C 77	= 47 pF	500 V	NP0
C 78	= 33 pF	500 V	NP0
C 79	= 220 pF	500 V	NP0
C 80	= 15 pF	500 V	NP0
C 81	= 100 pF	500 V	NP0
C 82	= 82 pF	500 V	NP0
C 83	= 82 pF	500 V	NP0
C 84	= 100 pF	500 V	NP0
C 85	= 220 pF	500 V	NP0
C 86	= 56 pF	500 V	NP0
C 87	= 150 pF	500 V	NP0
C 88	= 180 pF	500 V	NP0
C 89	= 100 pF	500 V	NP0
C 90	= 620 pF	500 V	Silveredmica
C 91	= 33 pF	500 V	NP0
C 92	= 220 pF	500 V	NP0
C 93	= 100 pF	500 V	NP0
C 94	= 220 pF	500 V	NP0
C 95	= 150 pF	500 V	NP0
C 96	= 22 pF	500 V	NP0
C 97	= 1300 pF	500 V	Silveredmica
C 98	= 82 pF	500 V	NP0
C 99	= 620 pF	500 V	Silveredmica
C 100	= 1100 pF	500 V	Silveredmica
C 101	= 390 pF	500 V	Silveredmica
C 102	= 1600 pF	500 V	Silveredmica
C 103	= 560 pF	500 V	Silveredmica
C 104	= 150 pF	500 V	NP0
C 105	= 390 pF	500 V	Silveredmica
C 106	= 620 pF	500 V	Silveredmica
C 107	= 33 pF	50 V	NP0
C 108	= 2,2 pF	50 V	NP0
C 109	= 100 nF	50 V	
C 110	= 10 nF	50 V	

C 111 = 22 µF 25 V
R 1 = 330 Ω 2W
R 2 = 68 Ω 2W
R 3 = 68 Ω 2W
R 4 = 1,0 KΩ ¼W
R 5 = 2,2 KΩ ¼W
R 6 = 4,7 KΩ ¼W
R 7 = 10 KΩ ¼W
R 8 = 10 KΩ ¼W
R 9 = 2,2 KΩ ¼W
R 10 = 1,0 KΩ ¼W
R 11 = 33 Ω 5W
R 12 = 33 Ω 5W
R 13 = 68Ω 5W
R 14 = 150 Ω 2W
R 15 = 39 Ω 2W
R 16 = 1,0 KΩ ¼W
R 17 = 10 KΩ ¼W
R 18 = 1,0 Ω ½W
R 19 = 680 Ω ¼W
R 20 to R 23 = 4,7 KΩ ¼W
R 24 = 10 KΩ ¼W
R 25 = 220 Ω ¼W
R 26 = 22 KΩ ¼W
R 27 = 4,7 KΩ ¼W
R 28 = 1,0 MΩ ¼W
R 29 to R 34 = 4,7 KΩ ¼W
R 35 = 100 Ω 2W
R 36 = 10 Ω ½W
R 37 = 68 Ω 5W
R 38 = 10 Ω ½W
R 39 = 68 Ω 5W
R 40 = 10 Ω ½W
R 41 = 68 Ω 5W
R 42 = 10 Ω ½W
R 43 = 68 Ω 5W
R 44 = 1,0 KΩ ¼W
R 45 = 47 Ω ¼W
R 46 = 10 KΩ ¼W
R 47 = 1,0 KΩ ¼W
R 48 = 27 Ω ½W
R 49 = 10 KΩ ¼W
R 50 = 1,0 KΩ ¼W
R 51 = 1,0 KΩ ¼W
R 52 = 100 Ω 2W
R 53 = 1,0 KΩ ¼W
R 54 = 2,2 KΩ ¼W
R 55 = 2,2 KΩ ¼W
NTC 1 = 4,7 KΩ
B 1 = Buzzer 12V ARIMB12A12
Trim 1 = Trimmer PT10LH 10 KΩ
Trim 2 = Trimmer PT10LH 10 KΩ
D 1 to D 3 = 1N5400
D 4 = 1N4007
D 5 to D 7 = 1N4148
D 8 to D 10 = 1N4007
D 11 = 1N5400
D 12 = not present
D 13 to D 17 = 1N4148
D 18 to D 23 = 1N4007
D 24 to D 30 = 1N4148
D 31 = 1N4007
Dz 1 = Zener 7,5 V ½W
Fuse 1 to Fuse 4 = 10 A Fast
Ic 1 = LM 7805
Ic 2 = Micro RM3
Ic 3 = 74HC4020
Tr 1 = BDX 53 BFP
Tr 2 = BC 327
Tr 3 = BC 557 B
Tr 4 - Tr 5 = BC 547 B
Tr 6 = BD 241 BFP
Tr 7 - Tr 15 = BC 547 B
Tr 16 to Tr 19 = SD 1446
Xt 1 = Xtal 11.059 MHz
Scr 1 = P0102
Rl 1 = 30229012
Rl 2 to Rl 8 = 41529012
T 1 = Input Decoupler Transformer
T 2 and T 3 = Input Transformers
T 4 and T 5 = Output Transformers
T 6 = Output Coupler Transformer
T 7 = ANRA 700/12
L 1 = ANRA 455
L 2 and L 3 = FH002100
L 4 to L 7 = FH002110
L 8 = ANRA 725
L 9 and L 10 = ANRA 725/1
L 11 and L 12 = ANRA 725/2
L 13 = ANRA 725/3
L 14 = ANRA 725/4
L 15 = ANRA 725/5
L 16 = ANRA 725/6
L 17 = ANRA 725/7
L 18 = ANRA 725/8
L 19 = ANRA 725/9
L 20 = 3 turn wire ø 2 mm on ø 13 mm
PTT = GP305522

Board A

C 1 = 10 nF 50 V
C 2 = 10 µF 16 V
C 4 = 10 nF 50 V
C 5 = 10 nF 50 V
C 8 = 10 nF 50 V
R 1 = 1,0 KΩ ¼W
R 2 = 8,2 KΩ ¼W
R 3 = 1,0 KΩ ¼W
R 4 = 4,7 KΩ ¼W
Ic 1 = LM 3915
Led 1 - Led 11 = LED

Board B

S 1 = Switch 1 way 7 positions
Rr 1 = Resistor networks 7 x 220 Ω
Led 1 - Led 7 = LED