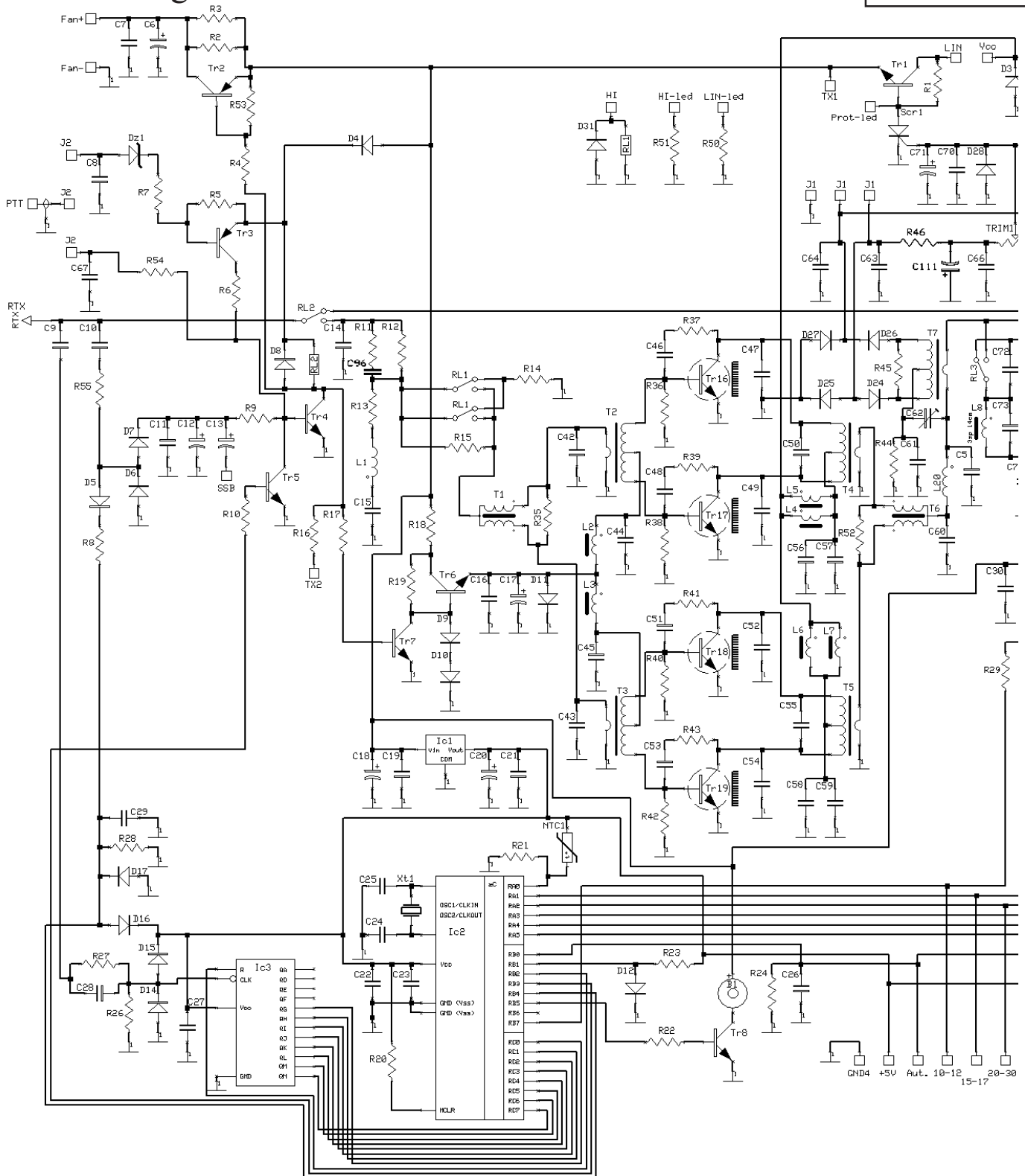
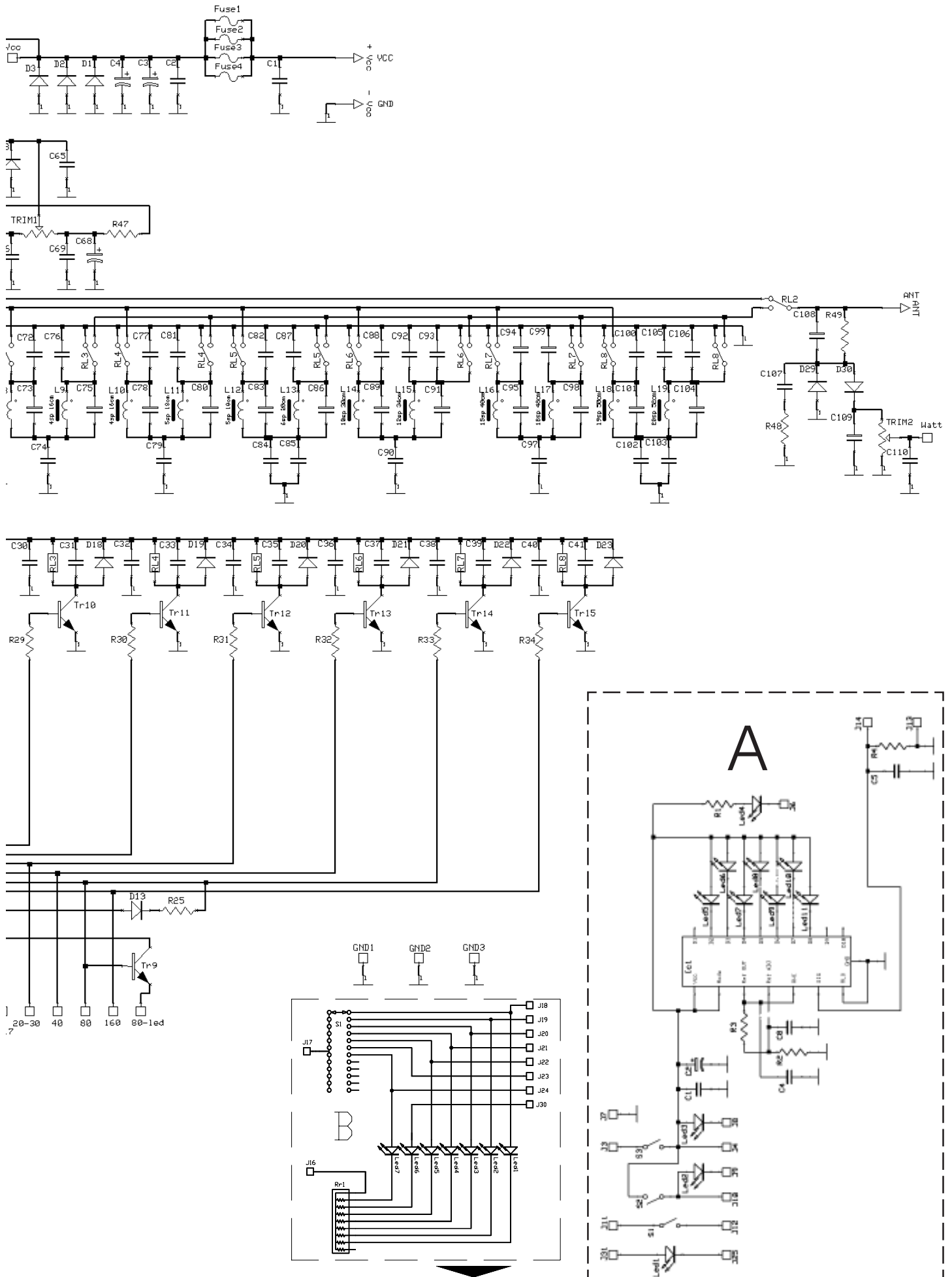


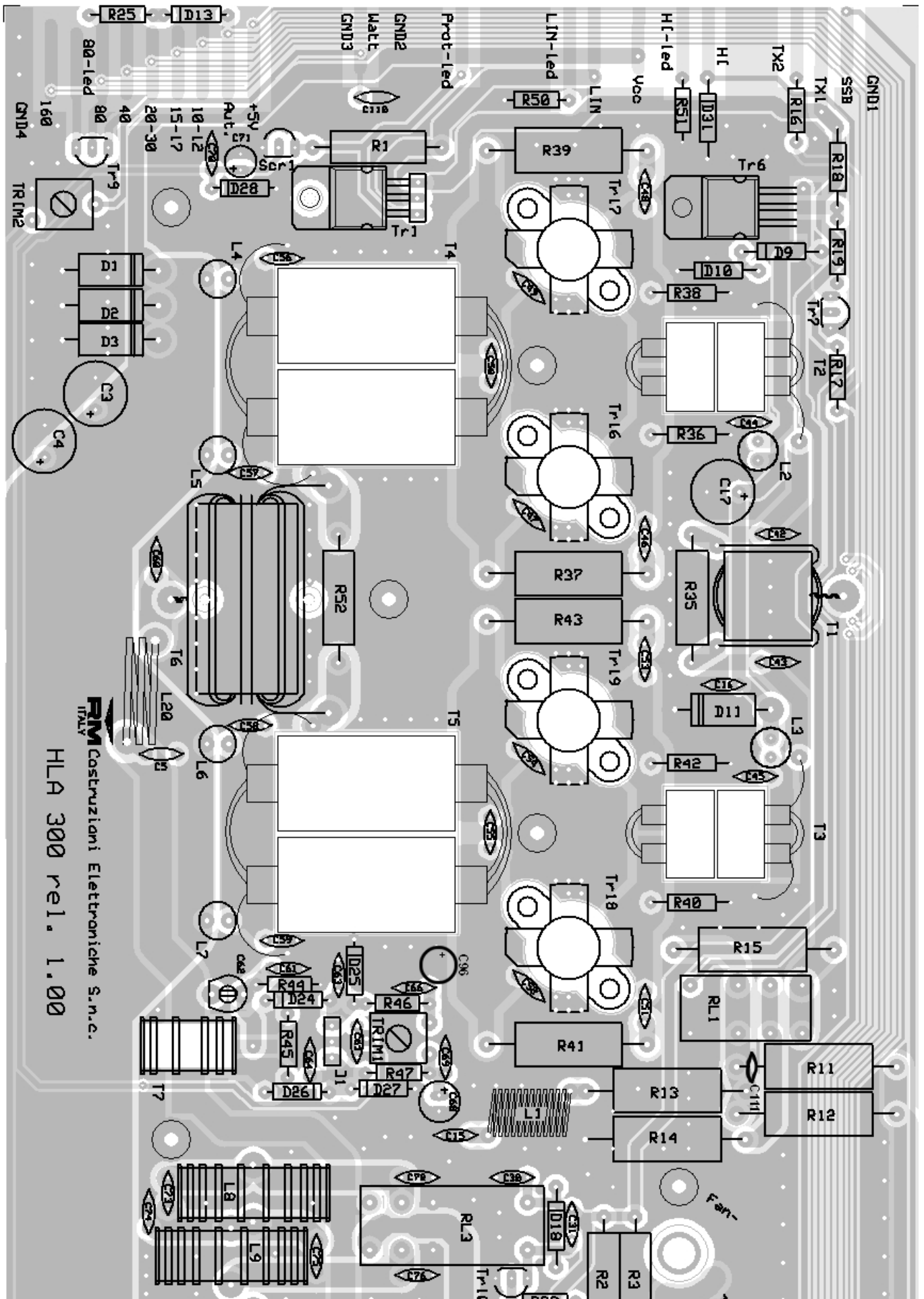
Mod. HLA 300 linear amplifier

Schematic diagram

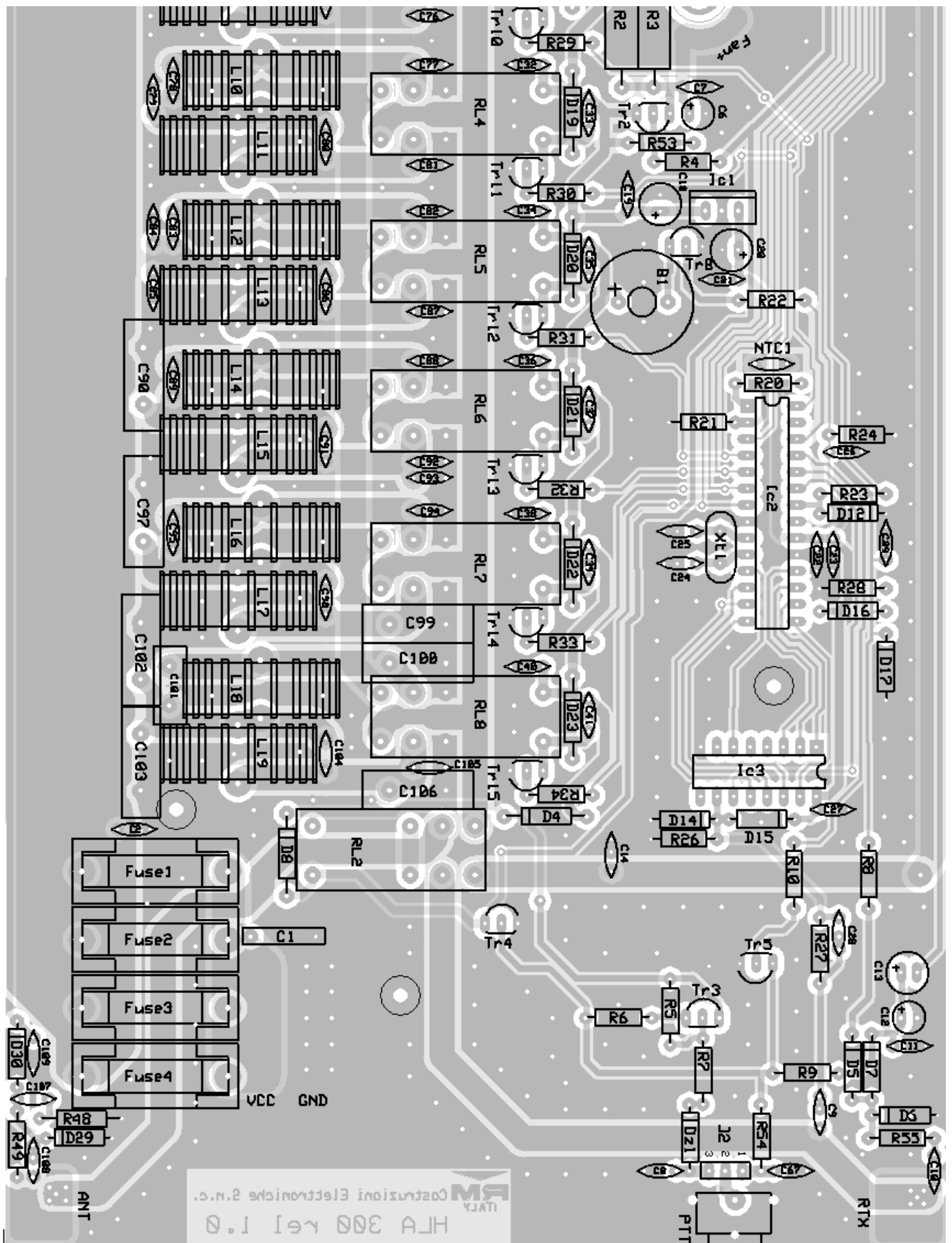
Version 1.00



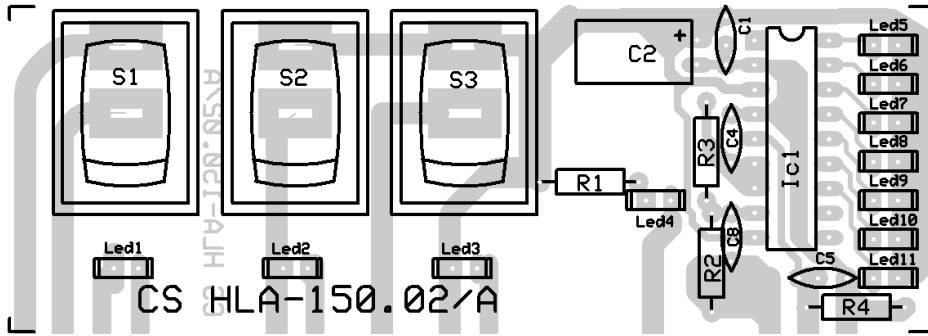




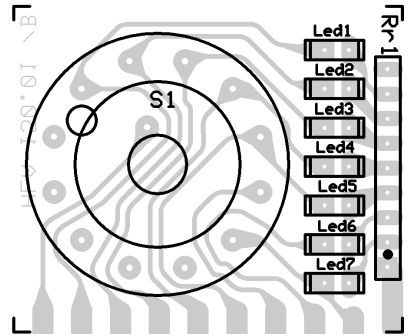
RM
ITALY
Costruzioni Elettroniche S.n.c.
HLA 300 rel. 1.00



Board A



Board B



List of components

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

C₁₁₁ = 22 μ F 25 V
 R₁ = 100 Ω 2W
 R₂ = 68 Ω 2W
 R₃ = 68 Ω 2W
 R₄ = 1,0 K Ω 1/4W
 R₅ = 2,2 K Ω 1/4W
 R₆ = 4,7 K Ω 1/4W
 R₇ = 10 K Ω 1/4W
 R₈ = 10 K Ω 1/4W
 R₉ = 2,2 K Ω 1/4W
 R₁₀ = 1,0 K Ω 1/4W
 R₁₁ = 33 Ω 5W
 R₁₂ = 33 Ω 5W
 R₁₃ = 68 Ω 5W
 R₁₄ = 150 Ω 2W
 R₁₅ = 39 Ω 2W
 R₁₆ = 1,0 K Ω 1/4W
 R₁₇ = 10 K Ω 1/4W
 R₁₈ = 1,0 Ω 1/2W
 R₁₉ = 680 Ω 1/4W
 R₂₀ to R₂₃ = 4,7 K Ω 1/4W
 R₂₄ = 10 K Ω 1/4W
 R₂₅ = 220 Ω 1/4W
 R₂₆ = 22 K Ω 1/4W
 R₂₇ = 4,7 K Ω 1/4W
 R₂₈ = 1,0 M Ω 1/4W
 R₂₉ to R₃₄ = 4,7 K Ω 1/4W
 R₃₅ = 100 Ω 2W
 R₃₆ = 10 Ω 1/2W
 R₃₇ = 68 Ω 5W
 R₃₈ = 10 Ω 1/2W
 R₃₉ = 68 Ω 5W
 R₄₀ = 10 Ω 1/2W
 R₄₁ = 68 Ω 5W
 R₄₂ = 10 Ω 1/2W
 R₄₃ = 68 Ω 5W
 R₄₄ = 1,0 K Ω 1/4W
 R₄₅ = 47 Ω 1/4W
 R₄₆ = 10 K Ω 1/4W
 R₄₇ = 1,0 K Ω 1/4W
 R₄₈ = 27 Ω 1/2W
 R₄₉ = 10 K Ω 1/4W
 R₅₀ = 1,0 K Ω 1/4W
 R₅₁ = 1,0 K Ω 1/4W
 R₅₂ = 100 Ω 2W
 R₅₃ = 1,0 K Ω 1/4W
 R₅₄ = 2,2 K Ω 1/4W
 R₅₅ = 2,2 K Ω 1/4W
 NTC₁ = 4,7 K Ω
 B₁ = Buzzer 12V ARIMB12A12
 Trim₁ = Trimmer PT10LH 10 K Ω
 Trim₂ = Trimmer PT10LH 10 K Ω
 D₁ to D₃ = 1N5400
 D₄ = 1N4007
 D₅ to D₇ = 1N4148
 D₈ to D₁₀ = 1N4007
 D₁₁ = 1N5400
 D₁₂ to D₁₇ = 1N4148
 D₁₈ to D₂₃ = 1N4007
 D₂₄ to D₂₇ = 1N4148

D₂₈ to D₃₀ = 1N4148
 D₃₁ = 1N4007
 Dz₁ = Zener 7,5 V 1/2W
 Fuse₁ to Fuse₄ = 10 A Fast
 Ic₁ = LM 7805
 Ic₂ = Micro RM3
 Ic₃ = 74HC4020
 Tr₁ = BD 241 BFP
 Tr₂ = BC 327
 Tr₃ = BC 557 B
 Tr₄ - Tr₅ = BC 547 B
 Tr₆ = BD 241 BFP
 Tr₇ - Tr₁₅ = BC 547 B
 Tr₁₆ to Tr₁₉ = SD 1446
 Xt₁ = Xtal 11.059 MHz
 Scr₁ = P0102
 Rl₁ = 30229012
 Rl₂ to Rl₈ = 41529012
 T₁ = Input Decoupler Transformer
 T₂ and T₃ = Input Transformers
 T₄ and T₅ = Output Transformers
 T₆ = Output Coupler Transformer
 T₇ = ANRA 700/12
 L₁ = ANRA 455
 L₂ and L₃ = FH002100
 L₄ to L₇ = FH002110
 L₈ = ANRA 725
 L₉ and L₁₀ = ANRA 725/1
 L₁₁ and L₁₂ = ANRA 725/2
 L₁₃ = ANRA 725/3
 L₁₄ = ANRA 725/4
 L₁₅ = ANRA 725/5
 L₁₆ = ANRA 725/6
 L₁₇ = ANRA 725/7
 L₁₈ = ANRA 725/8
 L₁₉ = ANRA 725/9
 PTT = GP305522

Board A

C₁ = 10 nF 50 V
 C₂ = 10 μ F 16 V
 C₄ = 10 nF 50 V
 C₅ = 10 nF 50 V
 C₈ = 10 nF 50 V
 R₁ = 1,0 K Ω 1/4W
 R₂ = 8,2 K Ω 1/4W
 R₃ = 1,0 K Ω 1/4W
 R₄ = 4,7 K Ω 1/4W
 Ic₁ = LM 3915
 Led₁ - Led₁₁ = LED

Board B

S₁ = Switch 1 way 7 positions
 Rr₁ = Resistor networks 7 x 220 Ω
 Led₁ - Led₇ = LED