

## Automatic Antenna Tuner

# FC-50

EBA53X90A

©2017 YAESU MUSEN CO., LTD.

### *Introduction*

This manual provides the technical information necessary for servicing the FC-50 Automatic Antenna Tuner.

Servicing this equipment requires expertise in handling surface-mount chip components. Attempts by non-qualified persons to service this equipment may result in permanent damage not covered by the warranty, and may be illegal in some countries.

Two PCB layout diagrams provided for each double-sided board in this transceiver. Each side of the board is referred to by the type of the majority of components installed on that side ("Side A" or "Side B"). In most cases one side has only chip components, and the other has either a mixture of both chip and leaded components (trimmers, coils, electrolytic capacitors, ICs, etc.), or leaded components only.

While we believe the information in this manual to be correct, YAESU assumes no liability for damage that may occur as a result of typographical or other errors that may be present. Your cooperation in pointing out any inconsistencies in the technical information would be appreciated.

## Contents

- Specifications
- Exploded View & Miscellaneous Parts
- Block Diagram
- Connection Diagram
- Board Unit (Schematics, Layouts & Parts)
  - CNTL Unit
  - CAPACITOR Unit
  - COIL Unit

### **Important Note**

This antenna tuner was assembled using Pb (lead) free solder, based on the RoHS specification.

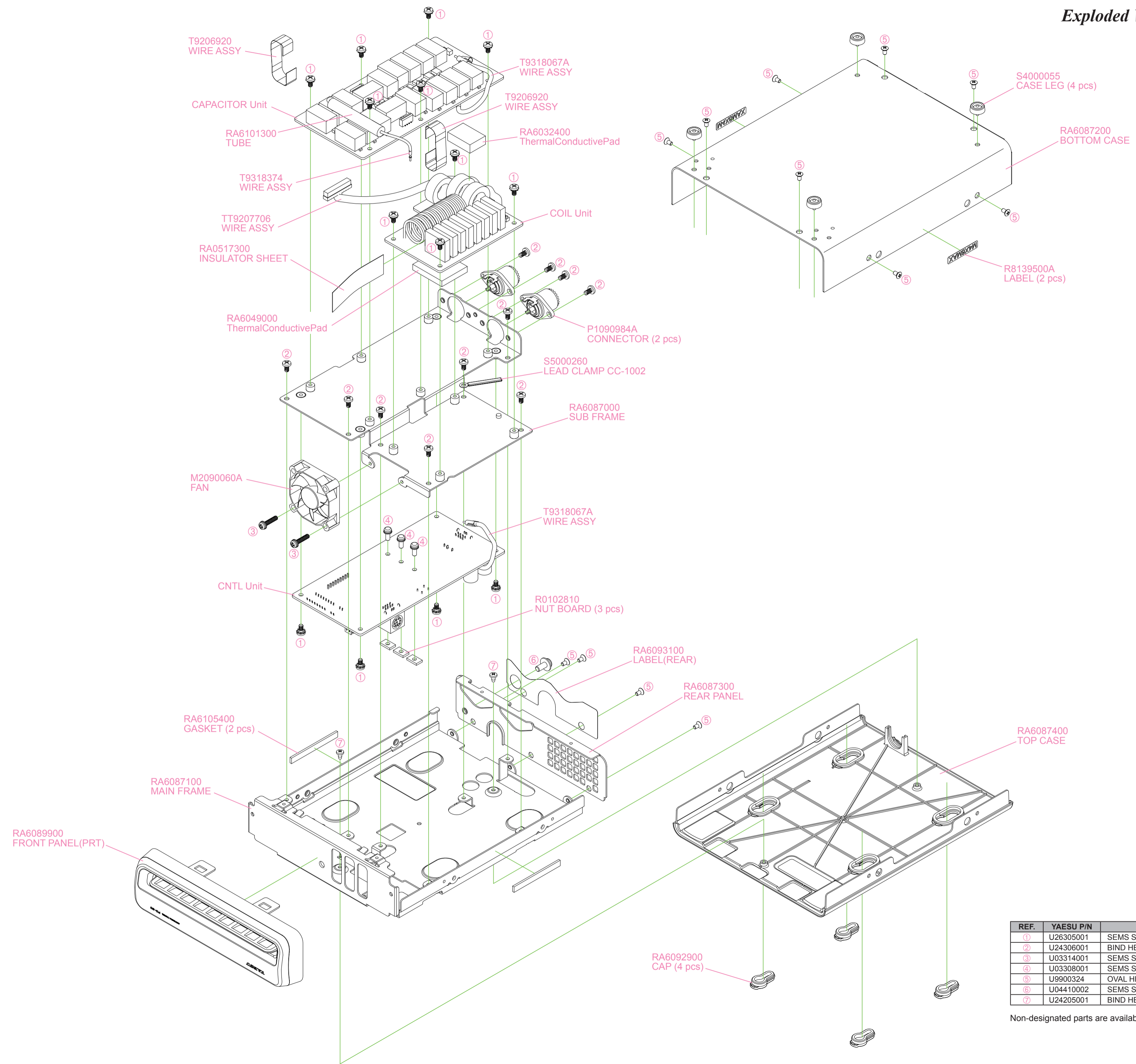
Only lead-free solder (Alloy Composition: Sn-3.0Ag-0.5Cu) should be used for repairs performed on this apparatus. The solder stated above utilizes the alloy composition required for compliance with the lead-free specification, and any solder with the above alloy composition may be used.

## *Specifications*

<b>Frequency Range:</b>	1.8 MHz - 29.7 MHz, 50 MHz - 54 MHz
<b>Input Impedance:</b>	50 $\Omega$
<b>Maximum Power:</b>	100 Watts
<b>Tune-up Power:</b>	4 W - 60 W
<b>Tune-up Time:</b>	5 seconds or less
<b>Impedance Matching Range:</b>	1.8 - 29.7 MHz = 16 $\Omega$ - 150 $\Omega$ 50 - 54 MHz = 25 $\Omega$ - 100 $\Omega$
<b>Impedance Matching Memories:</b>	100 channels
<b>Input Voltage Requirement:</b>	13.8 V $\pm$ 15% (supplied from transceiver)
<b>Operating Temperature Range:</b>	14 $^{\circ}$ F to +122 $^{\circ}$ F (-10 $^{\circ}$ C to +50 $^{\circ}$ C)
<b>Case Size (W x H x D):</b>	6.1" x 1.8" x 8.3" (155 x 45 x 210.5 mm)
<b>Weight (Approx.):</b>	3 lbs (1.35 kg)

**Specifications subject to change without notice or obligation.**

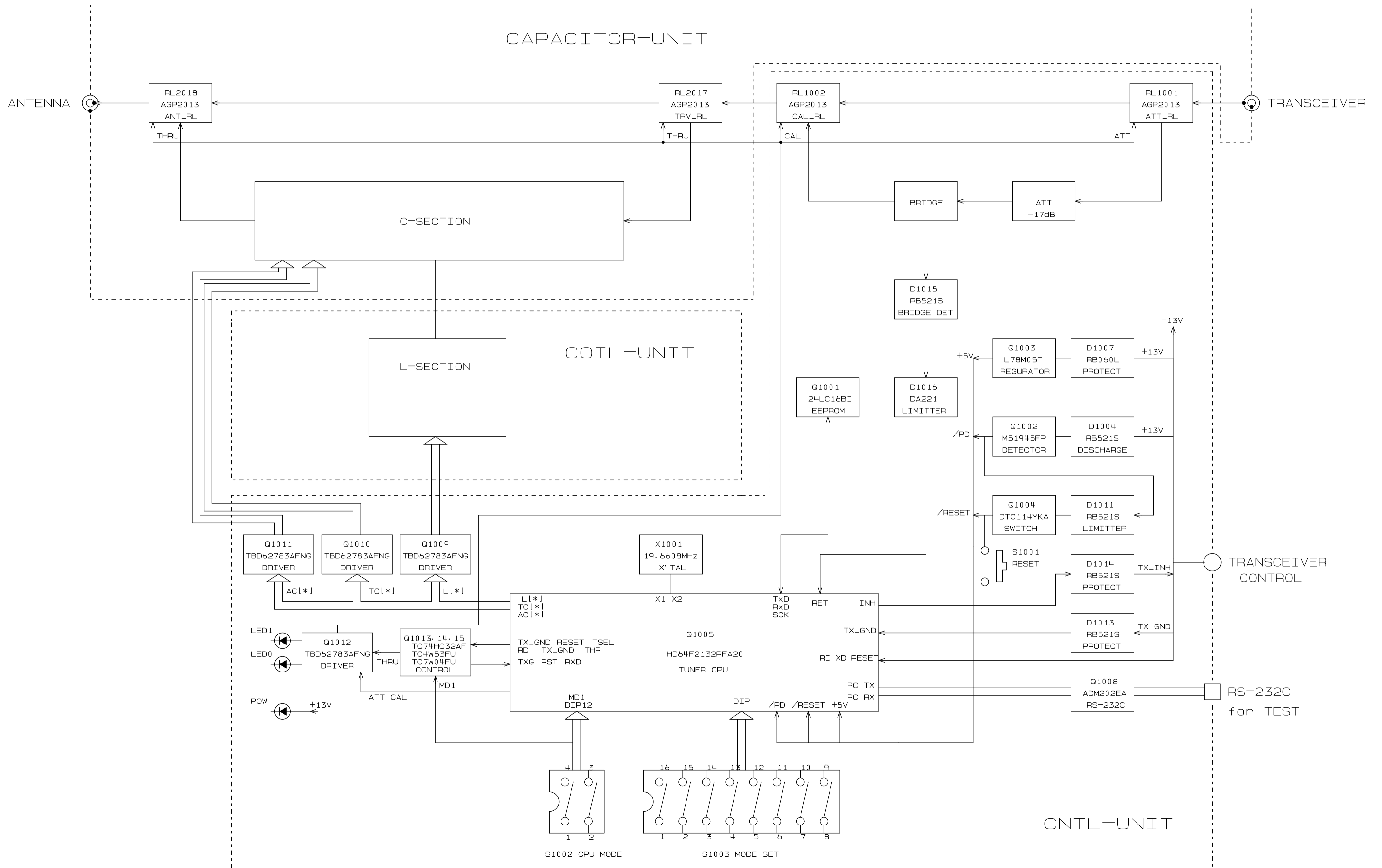
Exploded View & Miscellaneous Parts



REF.	YAESU P/N	Description	Qty.
①	U26305001	SEMS SCREW OM3X5	14
②	U24306001	BIND HEAD TAPTITE-B M3X6	11
③	U03314001	SEMS SCREW ASM3X14	2
④	U03308001	SEMS SCREW ASM3X8	3
⑤	U9900324	OVAL HEAD SCREW:M2.6X5B(ALOCK)	12
⑥	U04410002	SEMS SCREW HSM4X10NI	1
⑦	U24205001	BIND HEAD TAPTITE-B M2.6X5	2

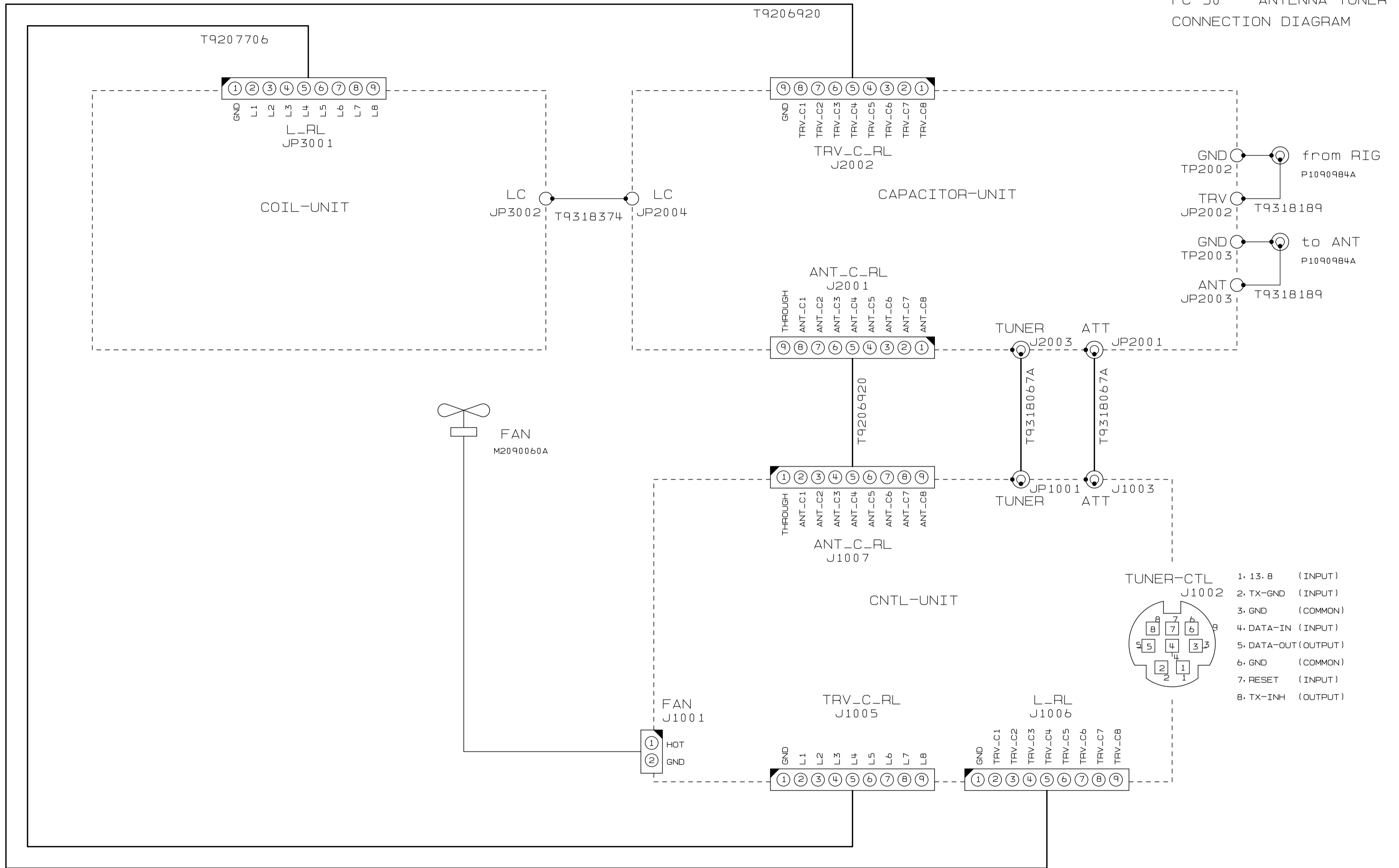
Non-designated parts are available only as parts of a designated assembly.

# FC-50 BLOCK-DIAGRAM

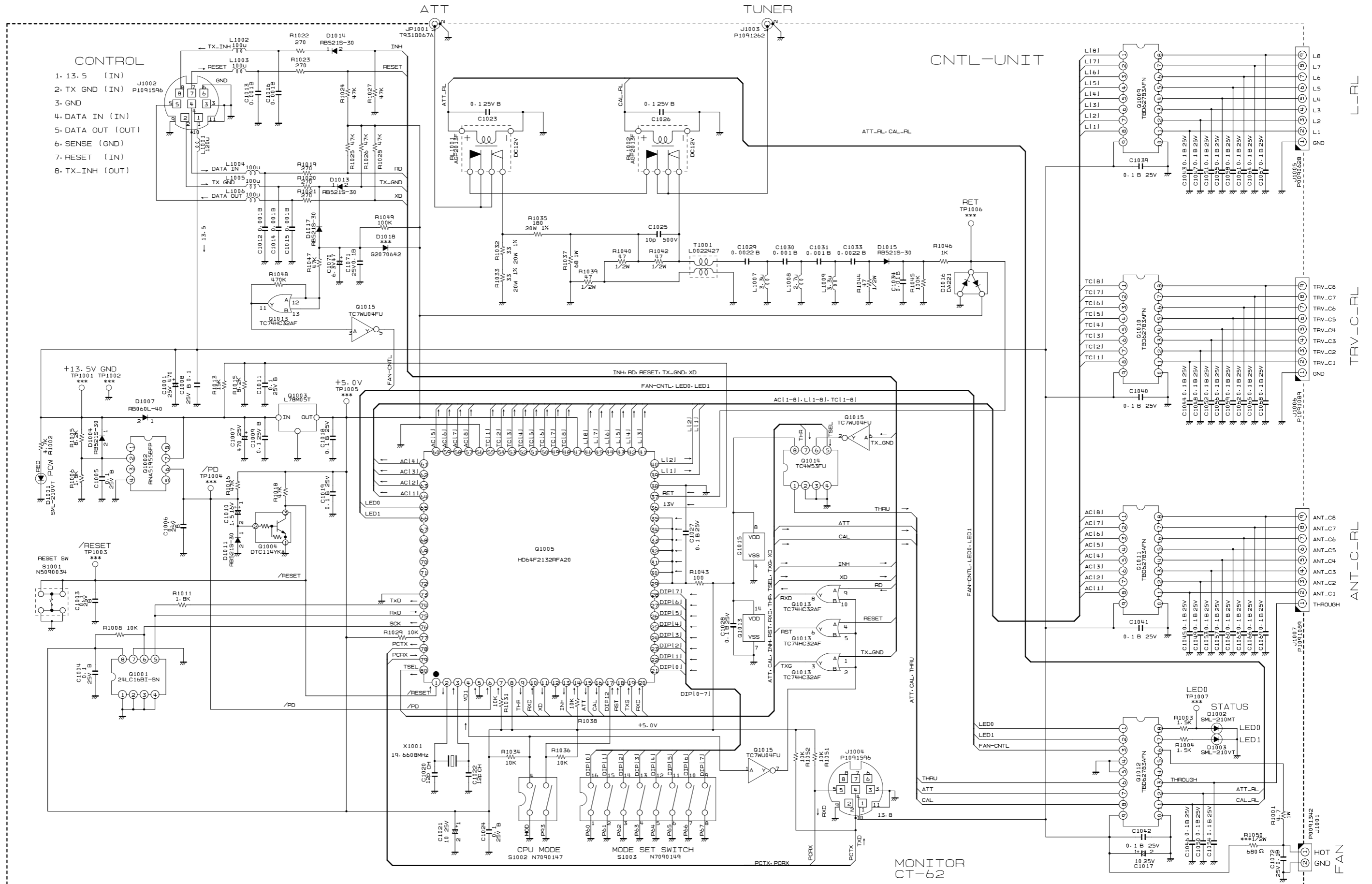


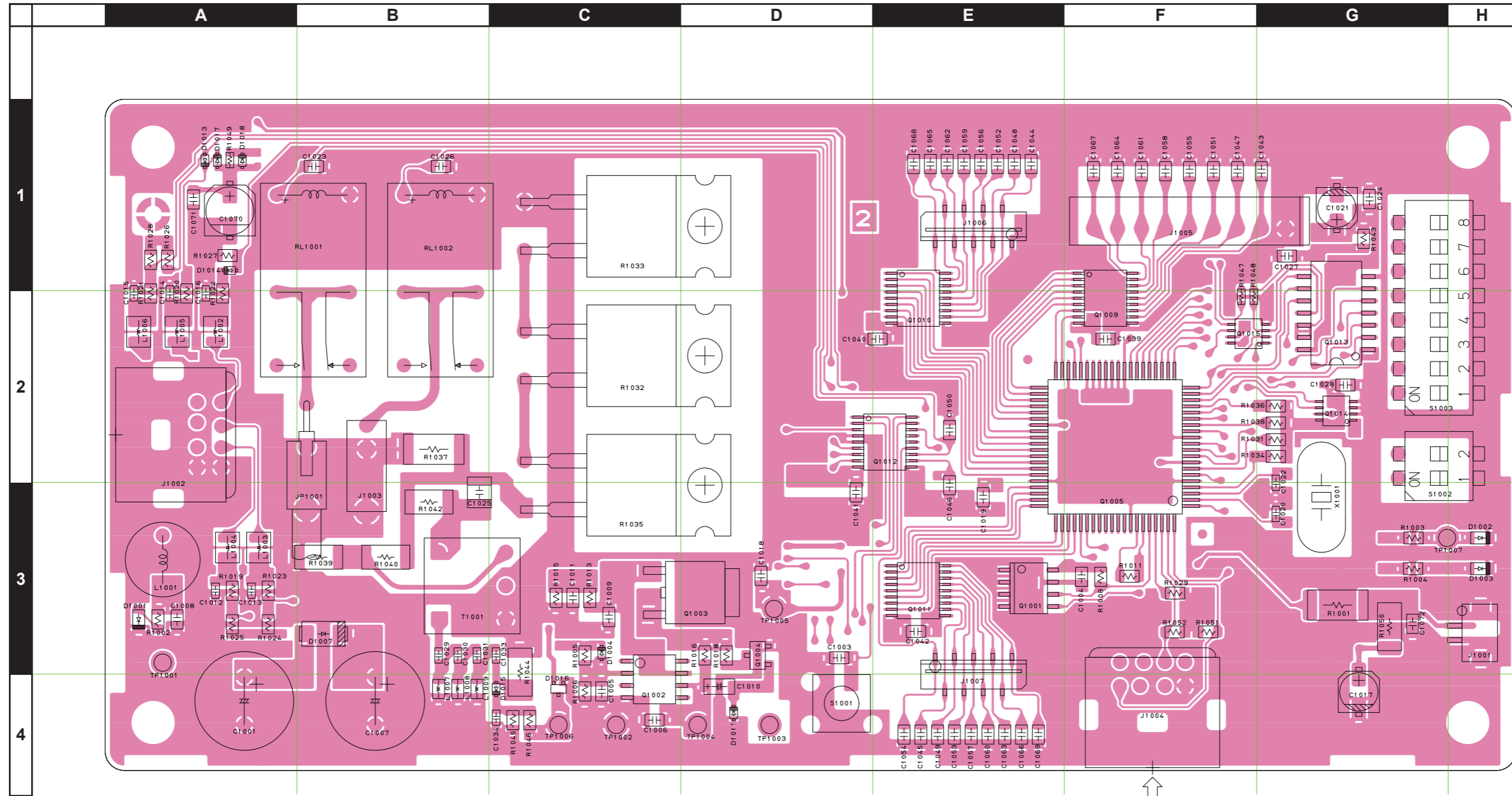
BLOCK DIAGRAM-1

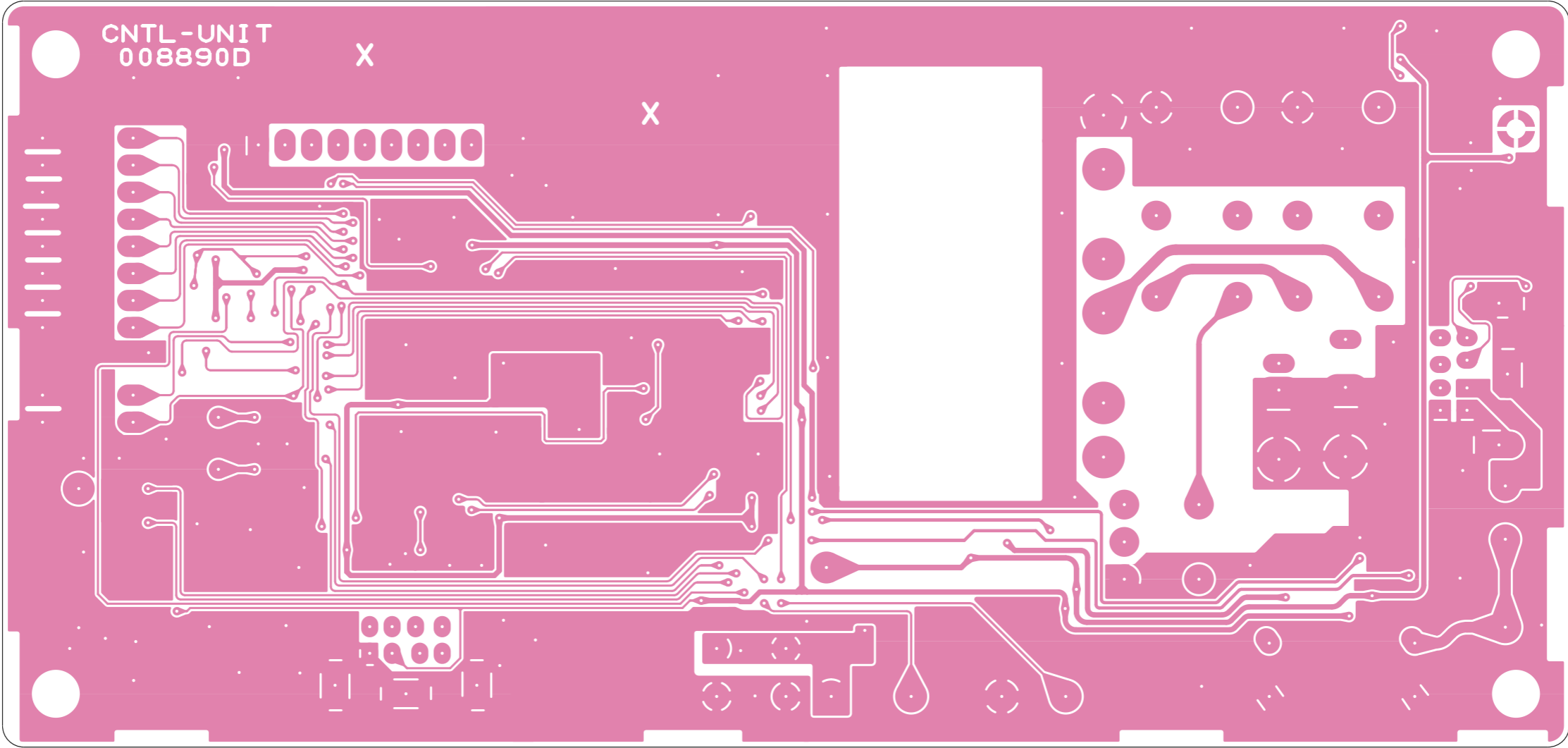
FC-50 ANTENNA TUNER  
CONNECTION DIAGRAM



# CNTL Unit Circuit Diagram









# CNTL Unit

## Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT	SIDE	LAY ADR	
	PCB with Components						CS2473701*				
C 1001	AL.ELECTRO.CAP.	470uF	25V		RE3-25V471MH3#	K40149044		1-	A	A4	
C 1003	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	D3	
C 1004	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F3	
C 1005	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	C4	
C 1006	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	C4	
C 1007	AL.ELECTRO.CAP.	470uF	25V		RE3-25V471MH3#	K40149044		1-	A	B4	
C 1008	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	A3	
C 1009	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	C3	
C 1010	CHIP TA.CAP.	1.5uF	16V		TMCMA1C155MTRF	K78120020		1-	A	D4	
C 1011	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	C3	
C 1012	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	A3	
C 1013	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	A3	
C 1014	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	A2	
C 1015	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	A2	
C 1016	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	A2	
C 1017	AL.ELECTRO.CAP.	10uF	25V		EMVA250ADA100MD55G	K48140014		1-	A	G4	
C 1018	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	D3	
C 1019	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E3	
C 1020	CHIP CAP.	12pF	50V	CH	GRM1882C1H120JA01D	K22174213		1-	A	G3	
C 1021	AL.ELECTRO.CAP.	10uF	25V		EMVA250ADA100MD55G	K48140014		1-	A	G1	
C 1022	CHIP CAP.	12pF	50V	CH	GRM1882C1H120JA01D	K22174213		1-	A	G3	
C 1023	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	B1	
C 1024	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G1	
C 1025	FILM CAP.	10pF	500V		UC232H0100D-T	K33279019		1-	A	B3	
C 1026	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	B1	
C 1027	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G1	
C 1028	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G2	
C 1029	CHIP CAP.	0.0022uF	50V	B	GRM188B11H222KA01D	K22174822		1-	A	B3	
C 1030	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	B3	
C 1031	CHIP CAP.	0.001uF	50V	B	GRM188B11H102KA01D	K22174821		1-	A	B3	
C 1033	CHIP CAP.	0.0022uF	50V	B	GRM188B11H222KA01D	K22174822		1-	A	C3	
C 1034	CHIP CAP.	0.01uF	50V	B	GRM188B11H103KA01D	K22174823		1-	A	C4	
C 1039	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F2	
C 1040	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E2	
C 1041	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	D3	
C 1042	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E3	
C 1043	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G1	
C 1044	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1045	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1046	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E3	
C 1047	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 1048	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1049	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1050	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E2	
C 1051	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 1052	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1053	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1054	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1055	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 1056	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1057	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1058	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 1059	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1060	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1061	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 1062	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1063	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1064	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 1065	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1066	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1067	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 1068	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 1069	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E4	
C 1070	AL.ELECTRO.CAP.	47uF	6.3V		RV2-6V470MU-R	K48080004		1-	A	A1	
C 1071	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	A1	
C 1072	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G3	
D 1001	LED				SML-210VTT86	G2070768		1-	A	A3	
D 1002	LED				SML-210MTT86	G2070524		1-	A	H3	
D 1003	LED				SML-210VTT86	G2070768		1-	A	H3	
D 1004	DIODE				RB521S-30 TE61	G2070642		1-	A	C3	
D 1007	DIODE				RB060L-40 TE25	G2070744		1-	A	B3	
D 1011	DIODE				RB521S-30 TE61	G2070642		1-	A	D4	
D 1013	DIODE				RB521S-30 TE61	G2070642		1-	A	A1	
D 1014	DIODE				RB521S-30 TE61	G2070642		1-	A	A1	

\* Please contact YAESU when replacing the CNTL-UNIT.

CNTL-4

FC-50 Technical Supplement

# CNTL Unit

## Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT	SIDE	LAY ADR
D 1015	DIODE				RB521S-30 TE61	G2070642		1-	A	C4
D 1016	DIODE				DA221 TL	G2070178		1-	A	C4
D 1017	DIODE				RB521S-30 TE61	G2070642		1-	A	A1
J 1001	CONNECTOR				B2B-ZR-SM4-TFT(LF)(SN)	P0091342		1-	A	H3
J 1002	CONNECTOR				LNB0508BC-8-05A	P1091596		1-	A	A2
J 1003	CONNECTOR				SJ070010	P1091262		1-	A	B2
J 1004	CONNECTOR				LNB0508BC-8-05A	P1091596		1-	A	F4
J 1005	CONNECTOR				SC25-09WS	P0090628		1-	A	G1
J 1006	CONNECTOR				09FMN-BMTTN-TFT(LF)(SN)	P1091089		1-	A	E1
J 1007	CONNECTOR				09FMN-BMTTN-TFT(LF)(SN)	P1091089		1-	A	E4
JP1001	WIRE ASSY				YEL 120 TMP/TMP(B1)	T9318067A		1-	A	B2
L 1001	M.RFC	120uH			RCH-875 121K	L1190396		1-	A	A3
L 1002	CHIP COIL	100uH			LQH32MN101K23L	L1690099		1-	A	A2
L 1003	CHIP COIL	100uH			LQH32MN101K23L	L1690099		1-	A	A3
L 1004	CHIP COIL	100uH			LQH32MN101K23L	L1690099		1-	A	A3
L 1005	CHIP COIL	100uH			LQH32MN101K23L	L1690099		1-	A	A2
L 1006	CHIP COIL	100uH			LQH32MN101K23L	L1690099		1-	A	A2
L 1007	M.RFC	3.3uH			LK2125 3R3K-T	L1690325		1-	A	B4
L 1008	M.RFC	2.7uH			LK2125 2R7K-T	L1690324		1-	A	B4
L 1009	M.RFC	3.3uH			LK2125 3R3K-T	L1690325		1-	A	B4
Q 1001	IC				24LC16BT-I/SN	G1091852		1-	A	E3
Q 1002	IC				RNA51955BFPH0	G1095445		1-	A	C4
Q 1003	IC				L78M05T-TL	G1091731		1-	A	D3
Q 1004	TRANSISTOR				DTC114YKA T146	G3070514		1-	A	D3
Q 1005	IC				HD64F2132RFA20(FLASH)	✖		1-	A	F2
Q 1009	IC				TBD62783AFNG	G1095302		1-	A	F2
Q 1010	IC				TBD62783AFNG	G1095302		1-	A	E2
Q 1011	IC				TBD62783AFNG	G1095302		1-	A	E3
Q 1012	IC				TBD62783AFNG	G1095302		1-	A	E2
Q 1013	IC				TC74HC32AF(EL)	G1093500		1-	A	G2
Q 1014	IC				TC4W53FU(TE12L_F)	G1091675		1-	A	G2
Q 1015	IC				TC7WU04FU (TE12L.F)	G1091942		1-	A	F2
R 1001	CHIP RES.	4.7	1W	5%	RMC1 4R7JTE	J24305479		1-	A	G3
R 1002	CHIP RES.	4.7k	1/10W	5%	RMC1/10T 472J	J24205472		1-	A	A3
R 1003	CHIP RES.	1.5k	1/10W	5%	RMC1/10T 152J	J24205152		1-	A	G3
R 1004	CHIP RES.	1.5k	1/10W	5%	RMC1/10T 152J	J24205152		1-	A	G3
R 1005	CHIP RES.	8.2k	1/10W	5%	RMC1/10T 822J	J24205822		1-	A	C3
R 1006	CHIP RES.	1.8k	1/10W	5%	RMC1/10T 182J	J24205182		1-	A	C4
R 1008	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	F3
R 1011	CHIP RES.	1.8k	1/10W	5%	RMC1/10T 182J	J24205182		1-	A	F3
R 1013	CHIP RES.	15k	1/10W	5%	RMC1/10T 153J	J24205153		1-	A	C3
R 1015	CHIP RES.	8.2k	1/10W	5%	RMC1/10T 822J	J24205822		1-	A	C3
R 1016	CHIP RES.	47k	1/10W	5%	RMC1/10T 473J	J24205473		1-	A	D3
R 1018	CHIP RES.	47k	1/10W	5%	RMC1/10T 473J	J24205473		1-	A	D3
R 1019	CHIP RES.	270	1/10W	5%	RMC1/10T 271J	J24205271		1-	A	A3
R 1020	CHIP RES.	270	1/10W	5%	RMC1/10T 271J	J24205271		1-	A	A2
R 1021	CHIP RES.	270	1/10W	5%	RMC1/10T 271J	J24205271		1-	A	A2
R 1022	CHIP RES.	270	1/10W	5%	RMC1/10T 271J	J24205271		1-	A	A2
R 1023	CHIP RES.	270	1/10W	5%	RMC1/10T 271J	J24205271		1-	A	A3
R 1024	CHIP RES.	47k	1/10W	5%	RMC1/10T 473J	J24205473		1-	A	A3
R 1025	CHIP RES.	47k	1/10W	5%	RMC1/10T 473J	J24205473		1-	A	A3
R 1026	CHIP RES.	47k	1/10W	5%	RMC1/10T 473J	J24205473		1-	A	A1
R 1027	CHIP RES.	47k	1/10W	5%	RMC1/10T 473J	J24205473		1-	A	A1
R 1028	CHIP RES.	47k	1/10W	5%	RMC1/10T 473J	J24205473		1-	A	A1
R 1029	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	F3
R 1031	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	G2
R 1032	METAL FILM RES.	33	20W	1%	RNP-20S C330F 33	J22439011		1-	A	D2
R 1033	METAL FILM RES.	33	20W	1%	RNP-20S C330F 33	J22439011		1-	A	D1
R 1034	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	G2
R 1035	METAL FILM RES.	180	20W	1%	RNP-20S C181F 180	J22439013		1-	A	D3
R 1036	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	G2
R 1037	CHIP RES.	68	1W	5%	RMC1 680JTE	J24305680		1-	A	B2
R 1038	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	G2
R 1039	CHIP RES.	47	1/2W	5%	RMC1/2 470JCTP	J24275470		1-	A	B3
R 1040	CHIP RES.	47	1/2W	5%	RMC1/2 470JCTP	J24275470		1-	A	B3
R 1042	CHIP RES.	47	1/2W	5%	RMC1/2 470JCTP	J24275470		1-	A	B3
R 1043	CHIP RES.	100	1/10W	5%	RMC1/10T 101J	J24205101		1-	A	G1
R 1044	CHIP RES.	47	1/2W	5%	RMC1/2 470JCTP	J24275470		1-	A	C3
R 1045	CHIP RES.	100k	1/10W	5%	RMC1/10T 104J	J24205104		1-	A	C4
R 1046	CHIP RES.	1k	1/10W	5%	RMC1/10T 102J	J24205102		1-	A	C4
R 1047	CHIP RES.	47k	1/16W	5%	RMC1/16 473JATP	J24185473		1-	A	F2
R 1048	CHIP RES.	470k	1/16W	5%	RMC1/16 474JATP	J24185474		1-	A	F2
R 1049	CHIP RES.	100k	1/16W	5%	RMC1/16 104JATP	J24185104		1-	A	A1
R 1051	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	F3
R 1052	CHIP RES.	10k	1/10W	5%	RMC1/10T 103J	J24205103		1-	A	F3

✖ Please contact YAESU when replacing this part.

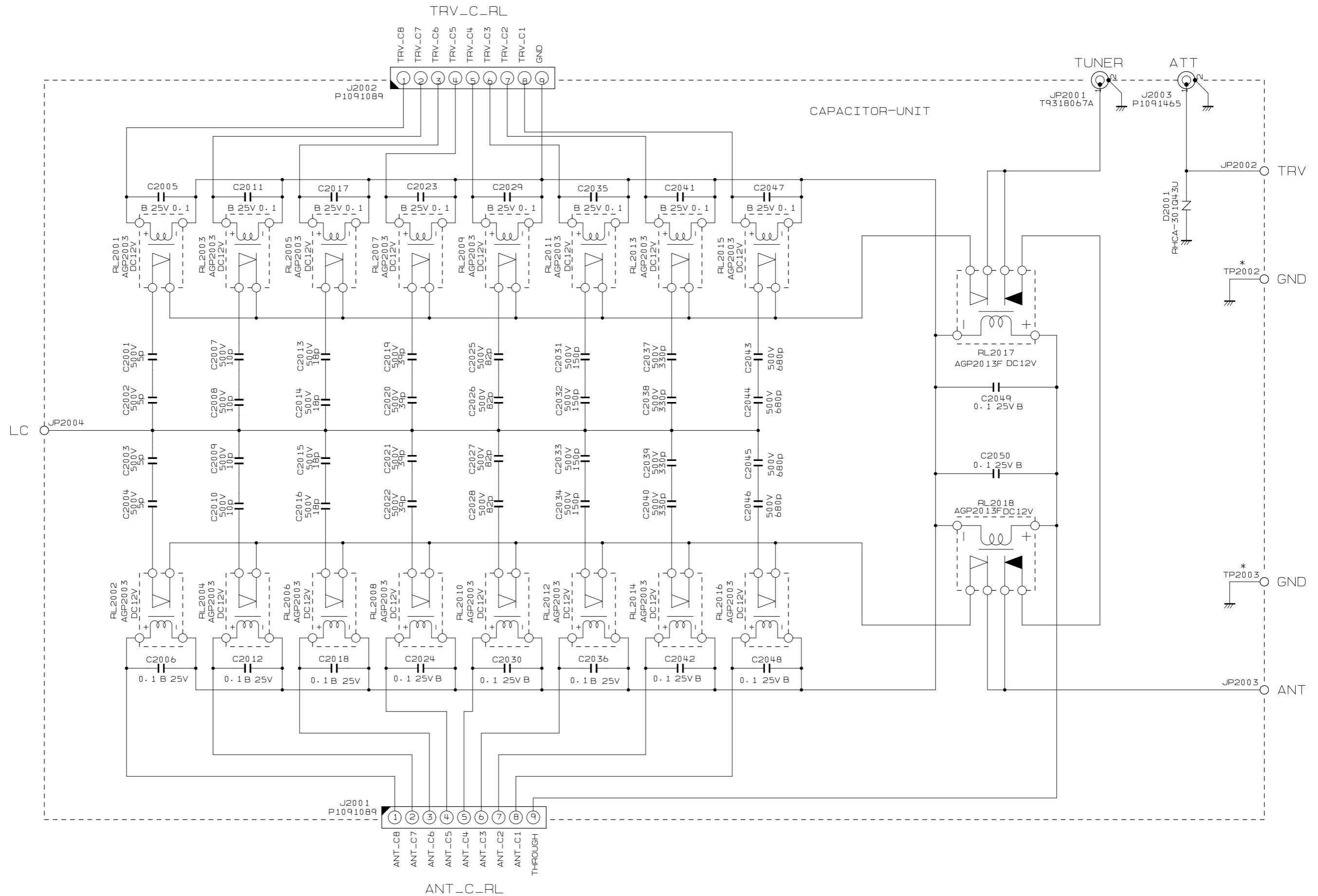
# CNTL Unit

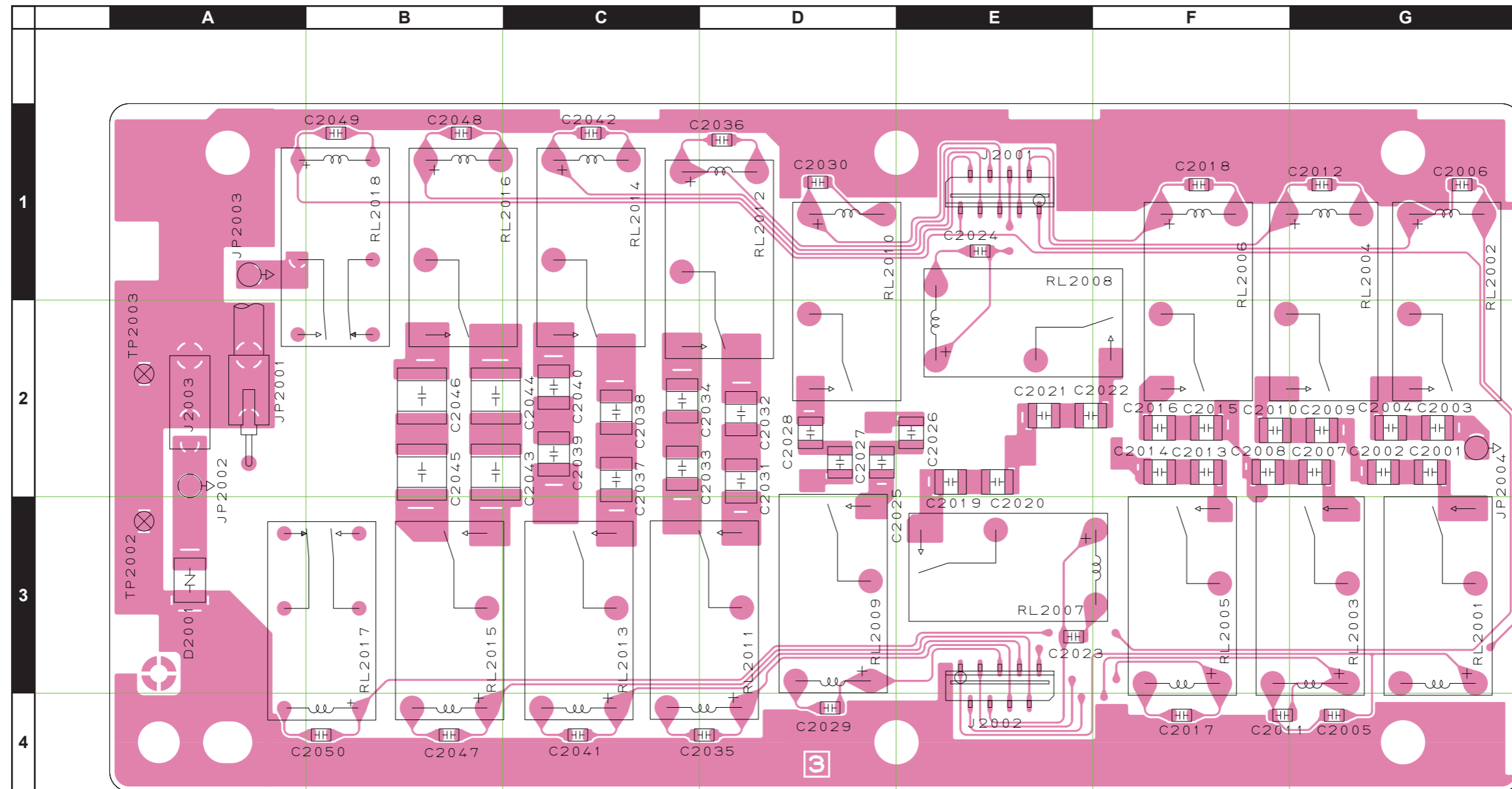
## Parts List

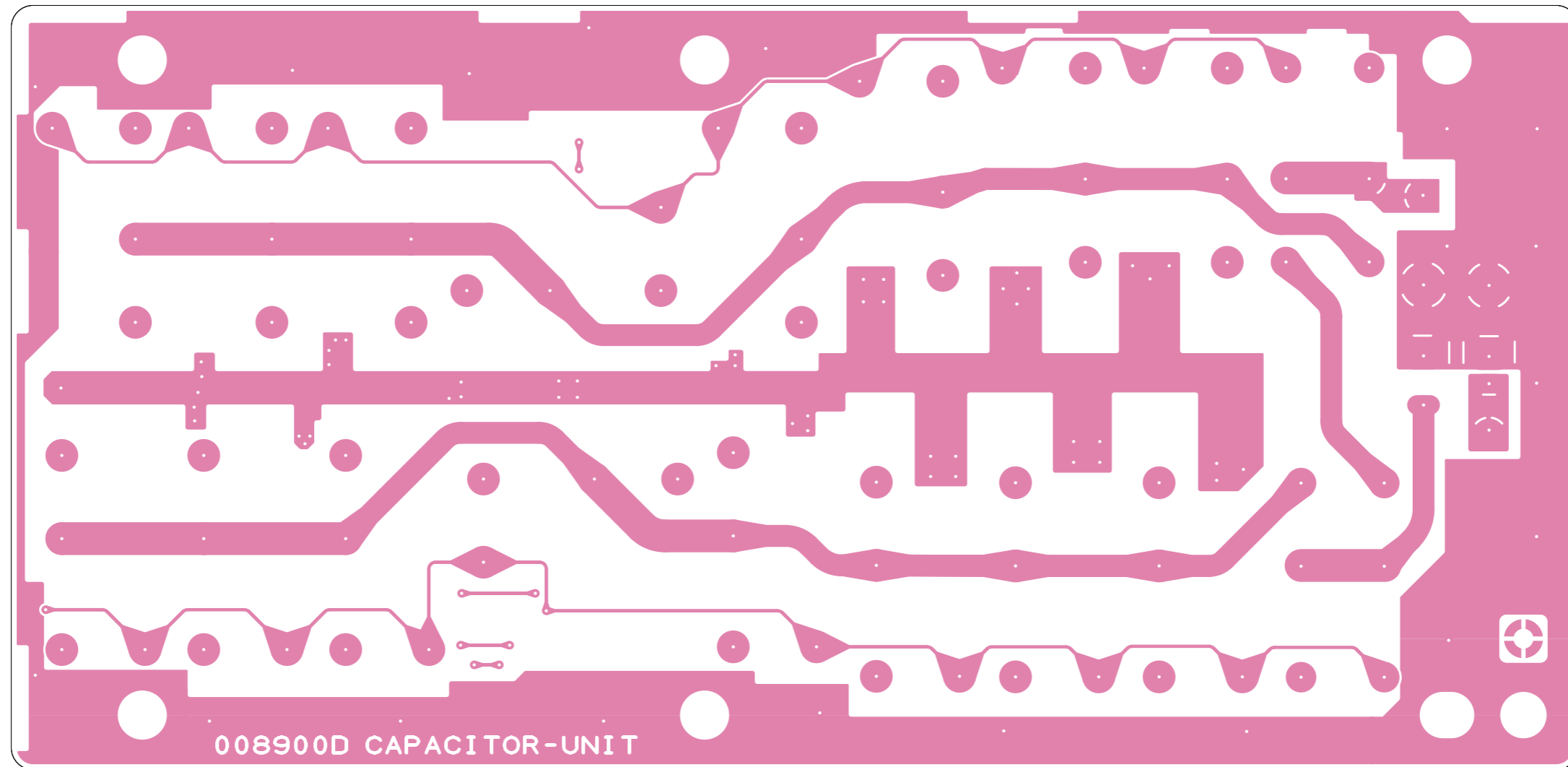
REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT	SIDE	LAY ADR
RL1001	RELAY		DC12V		AGP2013F DC12V	M1190198		1-	A	B2
RL1002	RELAY		DC12V		AGP2013F DC12V	M1190198		1-	A	B2
S 1001	TACT SWITCH				SKHHARA010	N5090034		1-	A	D4
S 1002	DIP SWITCH				SSGM120100	N7090147		1-	A	G2
S 1003	DIP SWITCH				SSGM180100	N7090149		1-	A	G2
T 1001	COIL 10WIDE				1-1 FB801-43	L0022427		1-	A	C3
X 1001	XTAL HC-49U/4	19.6608MHz			19.6608MHZ	H0103342		1-	A	G3
	HEAT SINK				SP141K	S5000229		1-		

# CAPACITOR Unit

## Circuit Diagram







# CAPACITOR Unit

## Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT	SIDE	LAY ADR	
	PCB with Components					CS2476701					
C 2001	FILM CAP.	5pF	500V		UC232H0050D-T	K33279010		1-	A	G2	
C 2002	FILM CAP.	5pF	500V		UC232H0050D-T	K33279010		1-	A	G2	
C 2003	FILM CAP.	5pF	500V		UC232H0050D-T	K33279010		1-	A	G2	
C 2004	FILM CAP.	5pF	500V		UC232H0050D-T	K33279010		1-	A	G2	
C 2005	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G4	
C 2006	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G1	
C 2007	FILM CAP.	10pF	500V		UC232H0100D-T	K33279019		1-	A	G2	
C 2008	FILM CAP.	10pF	500V		UC232H0100D-T	K33279019		1-	A	F2	
C 2009	FILM CAP.	10pF	500V		UC232H0100D-T	K33279019		1-	A	G2	
C 2010	FILM CAP.	10pF	500V		UC232H0100D-T	K33279019		1-	A	F2	
C 2011	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F4	
C 2012	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	G1	
C 2013	FILM CAP.	18pF	500V		UC232H0180J-T	K33279029		1-	A	F2	
C 2014	FILM CAP.	18pF	500V		UC232H0180J-T	K33279029		1-	A	F2	
C 2015	FILM CAP.	18pF	500V		UC232H0180J-T	K33279029		1-	A	F2	
C 2016	FILM CAP.	18pF	500V		UC232H0180J-T	K33279029		1-	A	F2	
C 2017	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F4	
C 2018	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	F1	
C 2019	FILM CAP.	39pF	500V		UC232H0390J-T	K33279038		1-	A	E2	
C 2020	FILM CAP.	39pF	500V		UC232H0390J-T	K33279038		1-	A	E2	
C 2021	FILM CAP.	39pF	500V		UC232H0390J-T	K33279038		1-	A	E2	
C 2022	FILM CAP.	39pF	500V		UC232H0390J-T	K33279038		1-	A	E2	
C 2023	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E3	
C 2024	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	E1	
C 2025	FILM CAP.	82pF	500V		UC232H0820J-T	K33279033		1-	A	D2	
C 2026	FILM CAP.	82pF	500V		UC232H0820J-T	K33279033		1-	A	E2	
C 2027	FILM CAP.	82pF	500V		UC232H0820J-T	K33279033		1-	A	D2	
C 2028	FILM CAP.	82pF	500V		UC232H0820J-T	K33279033		1-	A	D2	
C 2029	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	D4	
C 2030	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	D1	
C 2031	FILM CAP.	150pF	500V		UC342H1500J-T	K33279012		1-	A	D2	
C 2032	FILM CAP.	150pF	500V		UC342H1500J-T	K33279012		1-	A	D2	
C 2033	FILM CAP.	150pF	500V		UC342H1500J-T	K33279012		1-	A	C2	
C 2034	FILM CAP.	150pF	500V		UC342H1500J-T	K33279012		1-	A	C2	
C 2035	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	D4	
C 2036	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	D1	
C 2037	FILM CAP.	330pF	500V		UC342H3300J-T	K33279014		1-	A	C2	
C 2038	FILM CAP.	330pF	500V		UC342H3300J-T	K33279014		1-	A	C2	
C 2039	FILM CAP.	330pF	500V		UC342H3300J-T	K33279014		1-	A	C2	
C 2040	FILM CAP.	330pF	500V		UC342H3300J-T	K33279014		1-	A	C2	
C 2041	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	C4	
C 2042	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	C1	
C 2043	FILM CAP.	680pF	500V		UC552H6800J-T	K33279042		1-	A	B2	
C 2044	FILM CAP.	680pF	500V		UC552H6800J-T	K33279042		1-	A	B2	
C 2045	FILM CAP.	680pF	500V		UC552H6800J-T	K33279042		1-	A	B2	
C 2046	FILM CAP.	680pF	500V		UC552H6800J-T	K33279042		1-	A	B2	
C 2047	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	B4	
C 2048	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	B1	
C 2049	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	B1	
C 2050	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-	A	B4	
D 2001	SURGE ABSORBER					RHCA-301Q43U	Q9000827		1-	A	A3
J 2001	CONNECTOR					09FMN-BMTTN-TFT(LF)(SN)	P1091089		1-	A	E1
J 2002	CONNECTOR					09FMN-BMTTN-TFT(LF)(SN)	P1091089		1-	A	E3
J 2003	CONNECTOR					SJ060010	P1091465		1-	A	A2
JP2001	WIRE ASSY					YEL 120 TMP/TMP(B1)	T9318067A		1-	A	A2
P 2001	WIRE ASSY					VIO 105<5>/<5>	T9318374		1-		
P 2002	WIRE ASSY					VIO 30 <5>/<5>	T9318189		1-		
P 2003	WIRE ASSY					VIO 30 <5>/<5>	T9318189		1-		
RL2001	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	G3	
RL2002	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	G1	
RL2003	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	F3	
RL2004	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	G1	
RL2005	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	F3	
RL2006	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	F1	
RL2007	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	F3	
RL2008	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	E1	
RL2009	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	D3	
RL2010	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	D1	
RL2011	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	C4	
RL2012	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	D1	
RL2013	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	C4	
RL2014	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	C1	
RL2015	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	B4	
RL2016	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	B1	

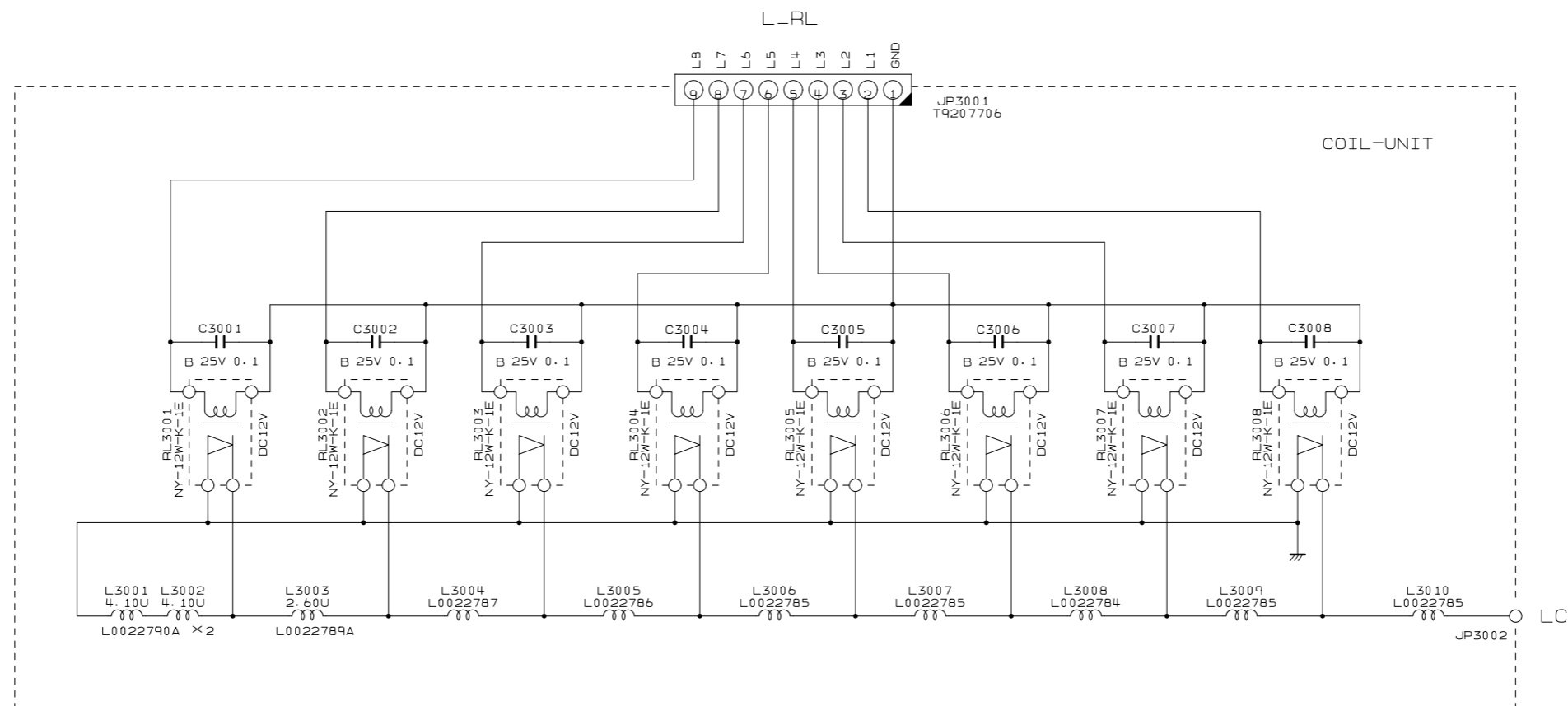
# CAPACITOR Unit

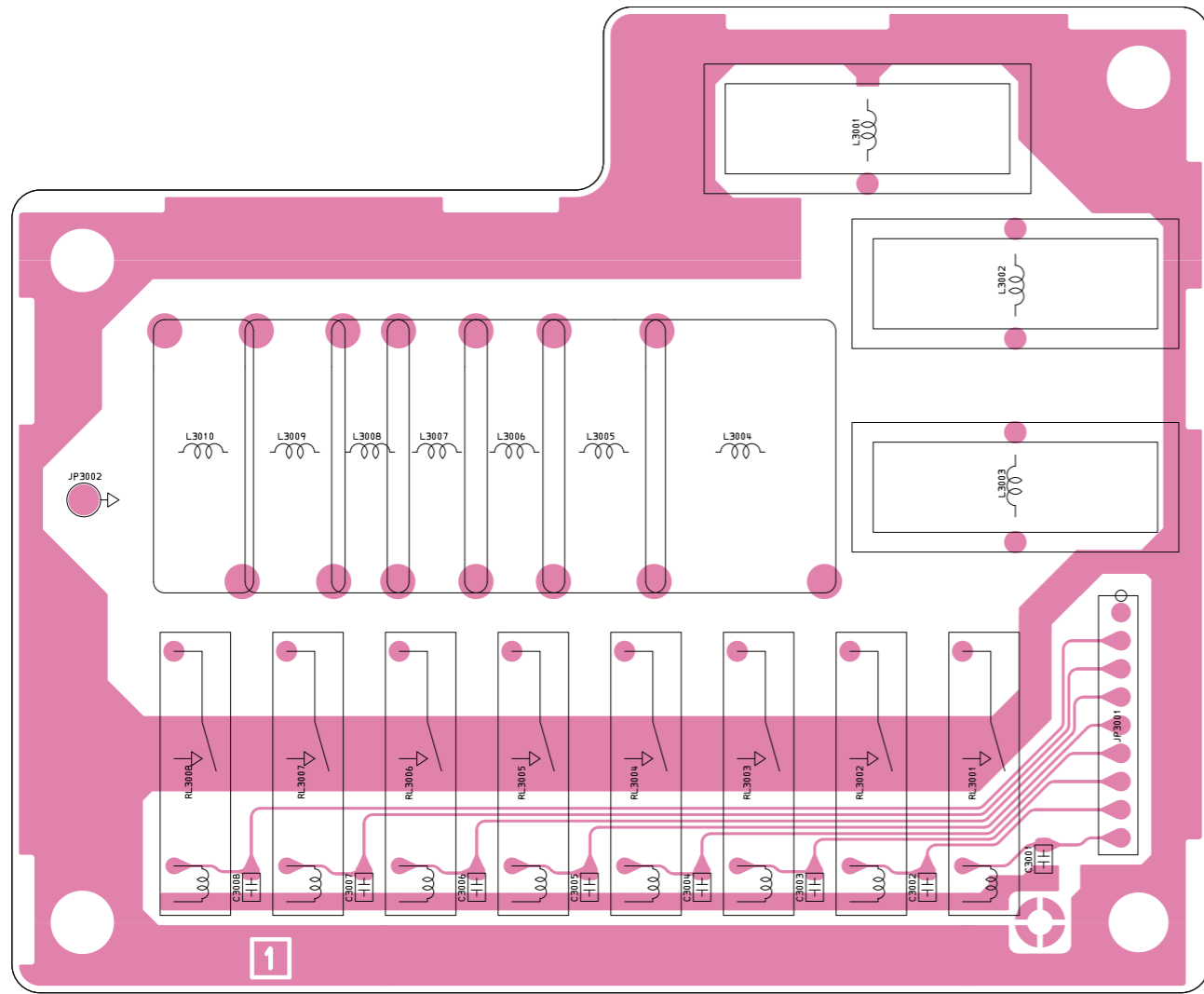
## Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT	SIDE	LAY ADR
RL2017	RELAY		DC12V		AGP2013F DC12V	M1190198		1-	A	A3
RL2018	RELAY		DC12V		AGP2013F DC12V	M1190198		1-	A	B2

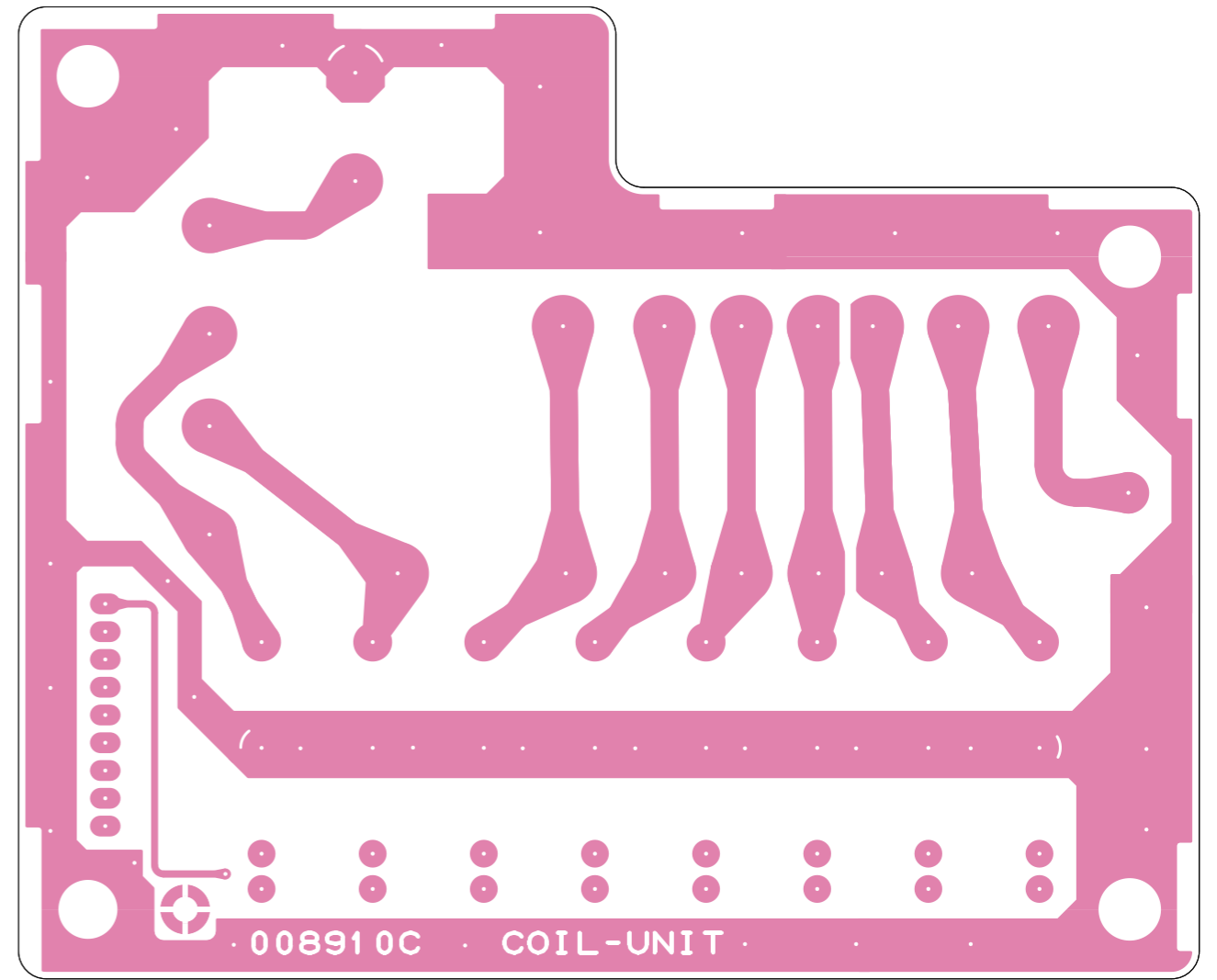


**COIL Unit**  
Circuit Diagram





Side A



Side B

# COIL Unit

## Parts List

REF	DESCRIPTION	VALUE	V/W	TOL.	MFR'S DESIG	YAESU P/N	VERS.	LOT	SIDE	LAY ADR
	PCB with Components					CS2479701				
C 3001	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
C 3002	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
C 3003	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
C 3004	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
C 3005	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
C 3006	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
C 3007	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
C 3008	CHIP CAP.	0.1uF	25V	B	GRM21BB11E104KA01L	K22140811		1-		
JP3001	WIRE ASSY				ABA53X 200MM9P	T9207706		1-		
L 3001	TOROIDAL COIL	4.1uH			4.10U T80-2	L0022790A		1-		
L 3002	TOROIDAL COIL	4.1uH			4.10U T80-2	L0022790A		1-		
L 3003	TOROIDAL COIL	2.6uH			2.60U T80-6	L0022789A		1-		
L 3004	COIL A1				6.5T16D1.6PEW R	L0022787		1-		
L 3005	COIL A1				3.5T16D1.6PEW R	L0022786		1-		
L 3006	COIL A1				2.5T16D1.6PEW R	L0022785		1-		
L 3007	COIL A1				2.5T16D1.6PEW R	L0022785		1-		
L 3008	COIL A1				1.5T16D1.6PEW R	L0022784		1-		
L 3009	COIL A1				2.5T16D1.6PEW R	L0022785		1-		
L 3010	COIL A1				2.5T16D1.6PEW R	L0022785		1-		
RL3001	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		
RL3002	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		
RL3003	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		
RL3004	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		
RL3005	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		
RL3006	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		
RL3007	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		
RL3008	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-		

***YAESU***  
***The radio***

Copyright 2017  
YAESU MUSEN CO., LTD.  
All rights reserved

No portion of this manual may be  
reproduced without the permission of  
YAESU MUSEN CO., LTD.