



Automatic Antenna Tuner

FC-30

Technical Supplement

©2002 VERTEX STANDARD CO., LTD. Printed in Japan.

VERTEX STANDARD CO., LTD.
4-8-8 Nakameguro, Meguro-Ku, Tokyo 153-8644, Japan

VERTEX STANDARD

US Headquarters

10900 Walker Street, Cypress, CA 90630, U.S.A.

International Division

8350 N.W. 52nd Terrace, Suite 201, Miami, FL 33166, U.S.A.

YAESU EUROPE B.V.

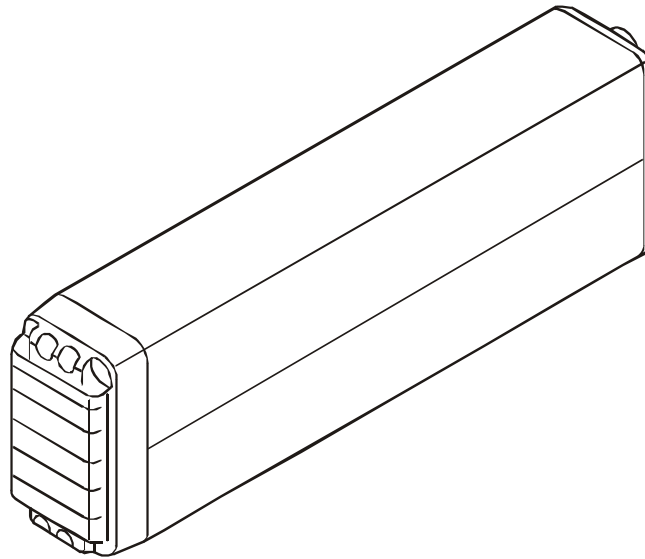
P.O. Box 75525, 1118 ZN Schiphol, The Netherlands

YAESU UK LTD.

Unit 12, Sun Valley Business Park, Winnall Close
Winchester, Hampshire, SO23 0LB, U.K.

VERTEX STANDARD HK LTD.

Unit 5, 20/F., Seaview Centre, 139-141 Hoi Bun Road,
Kwun Tong, Kowloon, Hong Kong



Introduction

This manual provides technical information necessary for servicing the FC-30 Automatic Antenna Tuner.

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.

While we believe the technical information in this manual to be correct, VERTEX STANDARD 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

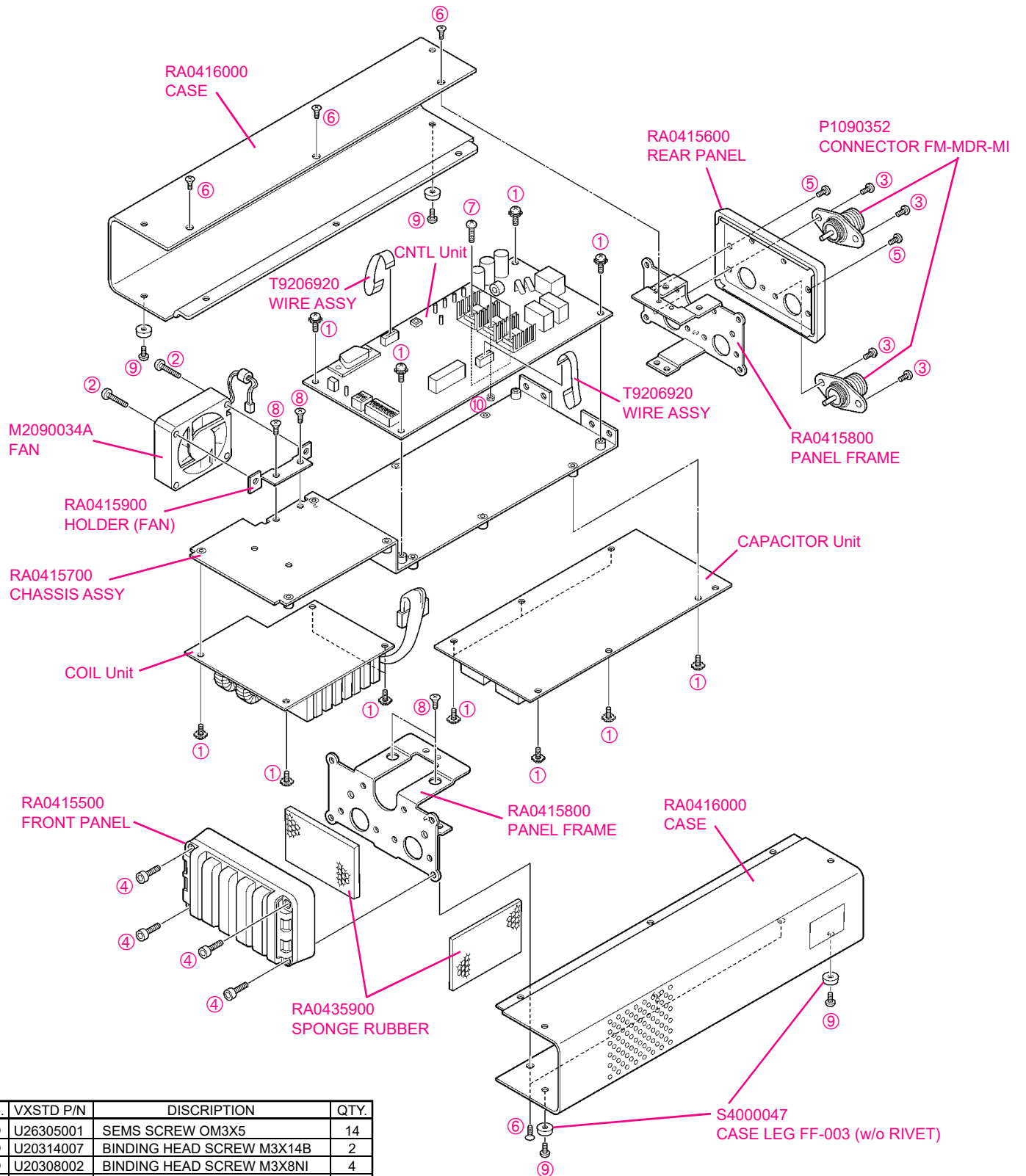
Specifications	2
Exploded View & Miscellaneous Parts	3
Board Unit (Schematics, Layouts & Parts)	
CNTL Unit	5
CAPACITOR Unit	13
COIL Unit	19

Specifications

Frequency Range:	1.8 ~ 30 MHz, 50 ~ 54 MHz
Input Impedance:	50-ohm
Maximum Power:	100 Watts
Matched SWR:	1.5:1 or less
Tune-up Power:	4 W ~ 60 W
Tune-up Time:	5 seconds or less
Impedance Matching Range:	1.8 ~ 30MHz, 50 ~ 54 MHz: 16.5 ~ 150-ohm
Impedance Matching Memories:	100 channels
Input Voltage Requirement:	13.8 V \pm 15% (supplied from transceiver)
Operating Temperature Range:	14°F ~ 122°F (-10°C ~ +50°C)
Case Size (WxHxD):	3.1" x 1.8" x 10.2" (80 x 45 x 260 mm)
Weight (Approx.):	2.2 lb. (1 kg)

Specifications subject to change without notice of obligation.

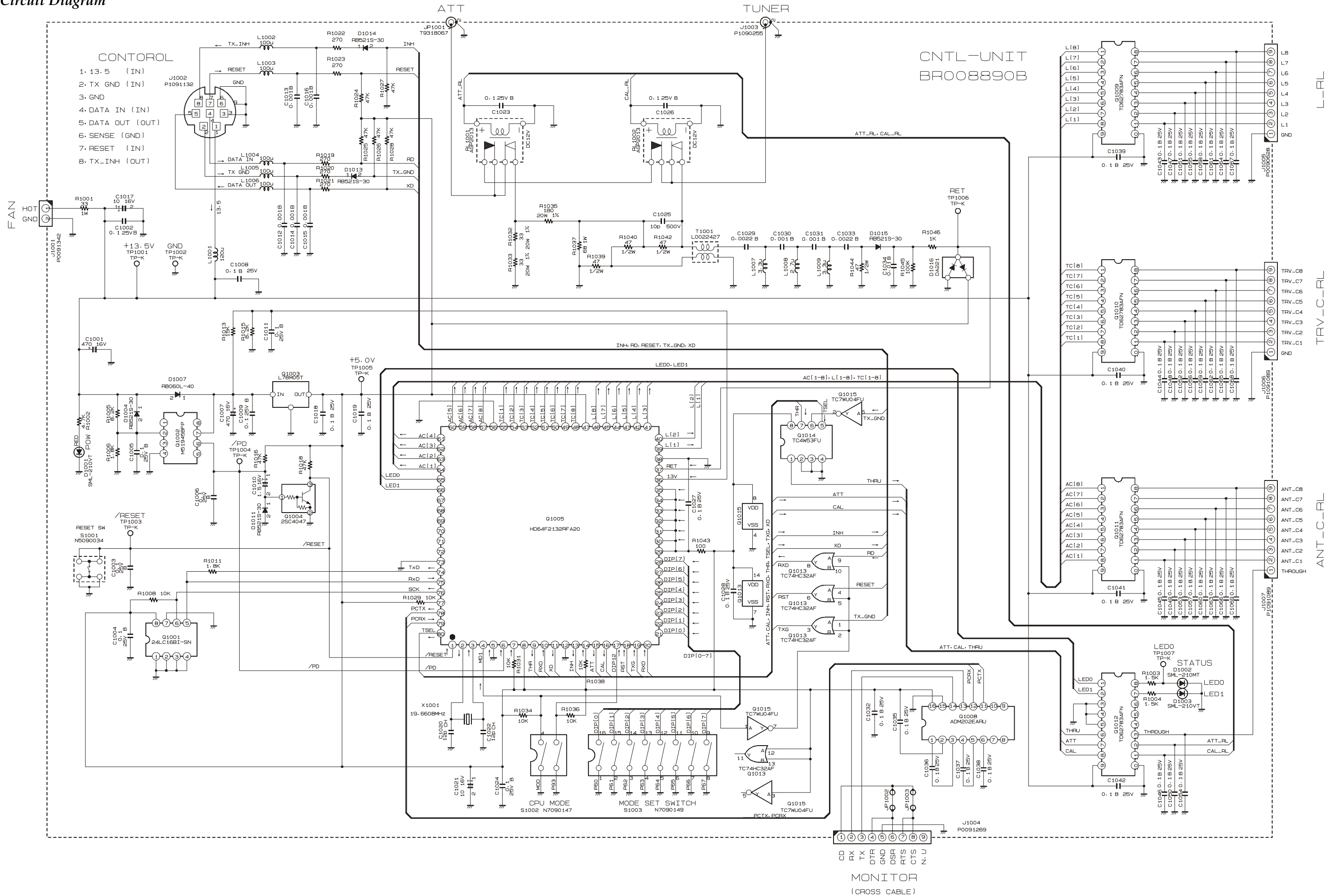
Exploded View & Miscellaneous Parts



No.	VXSTD P/N	DISCRIPTION	QTY.
①	U26305001	SEMS SCREW OM3X5	14
②	U20314007	BINDING HEAD SCREW M3X14B	2
③	U20308002	BINDING HEAD SCREW M3X8NI	4
④	U51305007	HEX SOCKET HEAD BOLT M3X5B	4
⑤	U20305007	BINDING HEAD SCREW M3X5B	2
⑥	U31204007	OVAL HEAD SCREW M2.6X4B	6
⑦	U03308001	SEMS SCREW ASM3X8	3
⑧	U30204001	FLAT HEAD SCREW M2.6X4	4
⑨	U9900144	BINDING HEAD SCREW M3X7B	4
⑩	R0102810	NUT BOARD	3

Note:

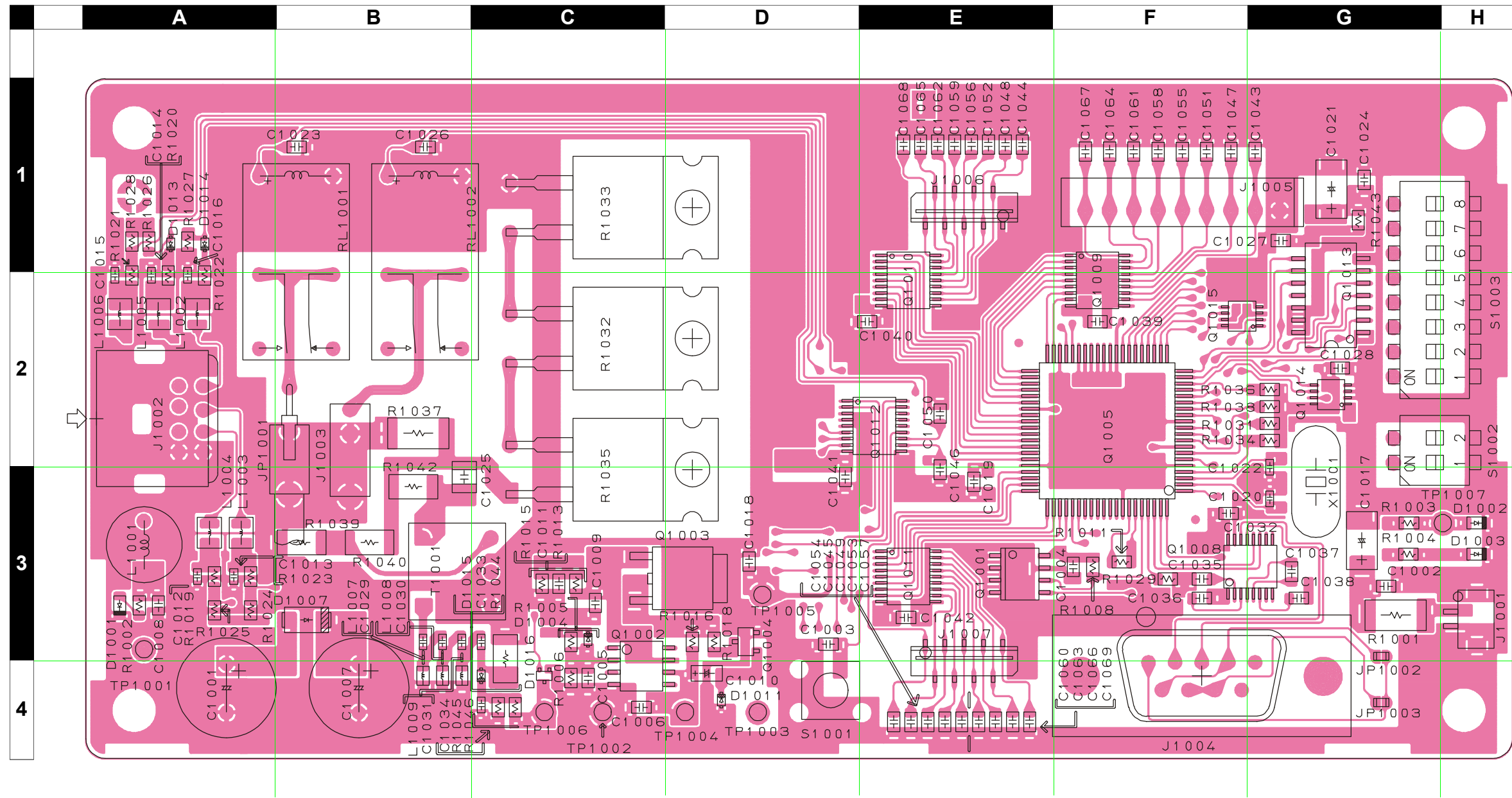
Circuit Diagram



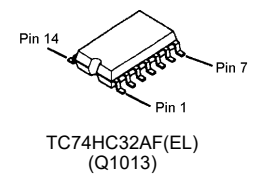
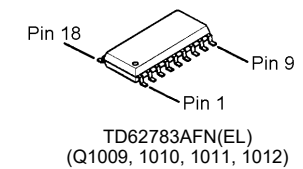
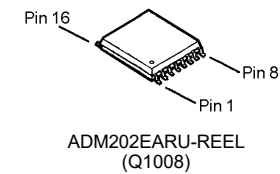
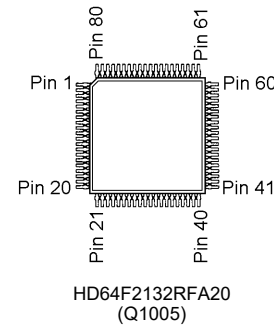
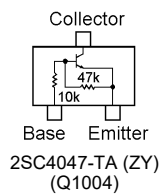
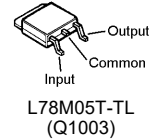
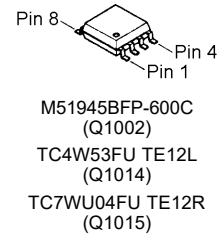
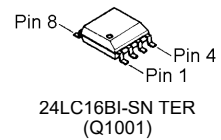
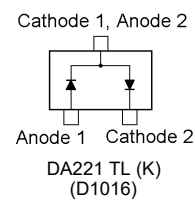
CNTL Unit

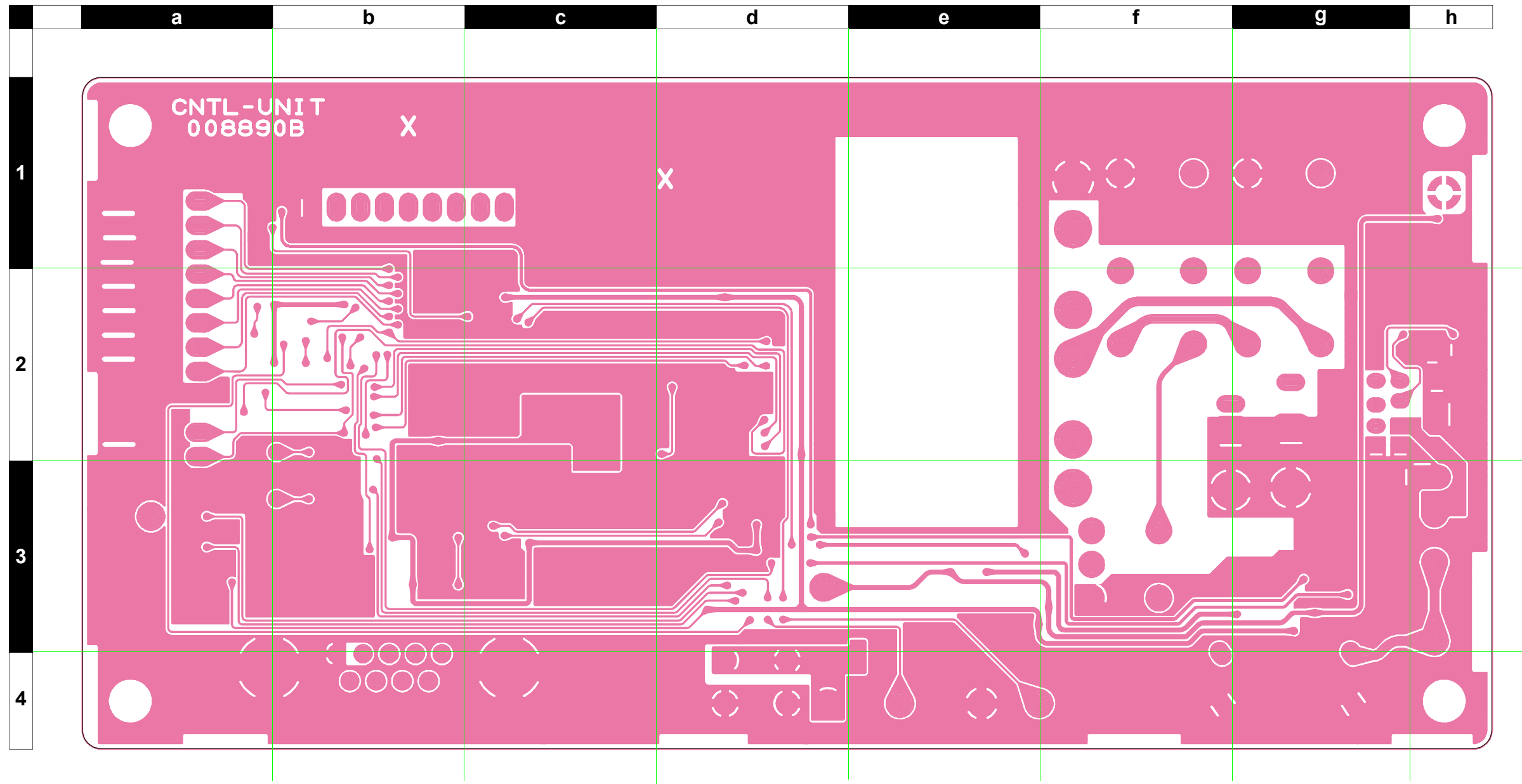
Note:

Parts Layout



Side A





Side B

Parts List

REF.	DESCRIPTION	VALUE	WV	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR.
PCB with Component										
Printed Circuit Board								1-		
C 1001	AL.ELECTRO.CAP.	470uF	16V		RE2-16V471MM-T2	K46120003		1-	A	A4
C 1002	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	G3
C 1003	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	D3
C 1004	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F3
C 1005	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	C4
C 1006	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	C4
C 1007	AL.ELECTRO.CAP.	470uF	16V		RE2-16V471MM-T2	K46120003		1-	A	B4
C 1008	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	A3
C 1009	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	C3
C 1010	CHIP TA.CAP.	1.5uF	16V		TESVA1C155M1-8R	K78120020		1-	A	D4
C 1011	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	C3
C 1012	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A3
C 1013	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A3
C 1014	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A2
C 1015	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A2
C 1016	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	A2
C 1017	CHIP TA.CAP.	10uF	16V		TESVC1C106M12R	K78120011		1-	A	G3
C 1018	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	D3
C 1019	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E3
C 1020	CHIP CAP.	12pF	50V	CH	GRM39CH120J50PT	K22174213		1-	A	G3
C 1021	CHIP TA.CAP.	10uF	16V		TESVC1C106M12R	K78120011		1-	A	G1
C 1022	CHIP CAP.	12pF	50V	CH	GRM39CH120J50PT	K22174213		1-	A	G3
C 1023	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	B1
C 1024	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	G1
C 1025	FILM CAP.	10pF	500V		UC232H0100D-T	K33279019		1-	A	B3
C 1026	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	B1
C 1027	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	G1
C 1028	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	G2
C 1029	CHIP CAP.	0.0022uF	50V	B	GRM39B222K50PT	K22174822		1-	A	B3
C 1030	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	B3
C 1031	CHIP CAP.	0.001uF	50V	B	GRM39B102K50PT	K22174821		1-	A	B3
C 1032	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F3
C 1033	CHIP CAP.	0.0022uF	50V	B	GRM39B222K50PT	K22174822		1-	A	C3
C 1034	CHIP CAP.	0.01uF	50V	B	GRM39B103M50PT	K22174823		1-	A	C4
C 1035	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F3
C 1036	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F3
C 1037	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	G3
C 1038	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	G3
C 1039	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F2
C 1040	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E2
C 1041	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	D3
C 1042	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E3
C 1043	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	G1
C 1044	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1045	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1046	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E3
C 1047	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F1
C 1048	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1049	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1050	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E2
C 1051	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F1
C 1052	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1053	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1054	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1055	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F1

CNTL Unit

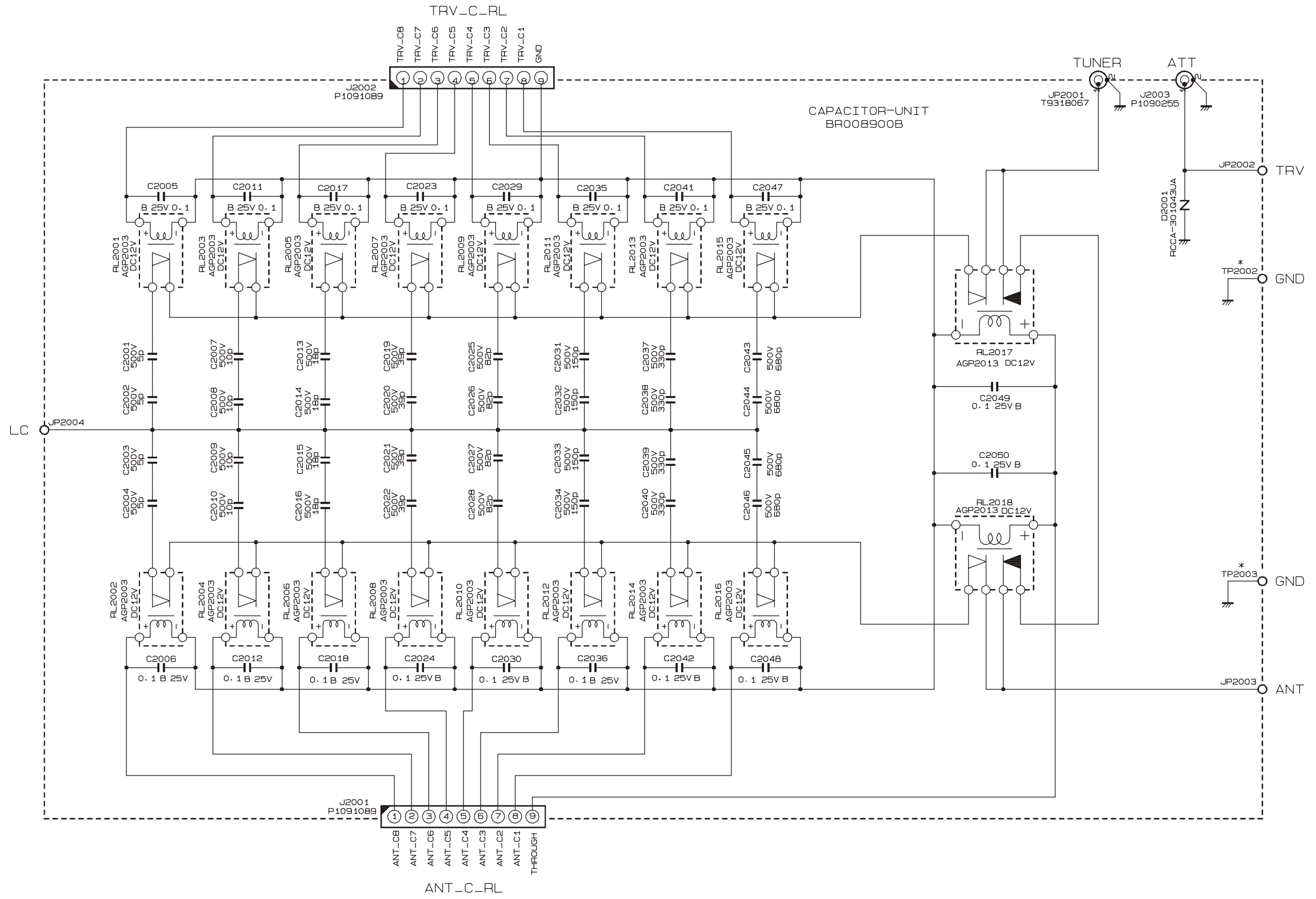
REF.	DESCRIPTION	VALUE	WV	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE.	LAY ADR.
C 1056	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1057	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1058	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F1
C 1059	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1060	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1061	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F1
C 1062	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1063	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1064	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F1
C 1065	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1066	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
C 1067	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	F1
C 1068	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E1
C 1069	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	E4
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
D 1015	DIODE				RB521S-30 TE61	G2070642		1-	A	C4
D 1016	DIODE				DA221 TL	G2070178		1-	A	C4
J 1001	CONNECTOR				B2B-ZR-SM3-TFT	P0091342		1-	A	H3
J 1002	CONNECTOR				M50-08-30-434S R41-0599F	P1091132		1-	A	A2
J 1003	CONNECTOR				TMP-J01X-A2	P1090255		1-	A	B2
J 1004	CONNECTOR				JES-9P-2A3F	P0091269		1-	A	F4
J 1005	CONNECTOR				SC25-09WS	P0090628		1-	A	G1
J 1006	CONNECTOR				09FMN-BMTTN-TFT	P1091089		1-	A	E1
J 1007	CONNECTOR				09FMN-BMTTN-TFT	P1091089		1-	A	E4
JP1001	WIRE ASSY				YEL 120 TMP/TMP(B1)	T9318067		1-	A	B2
L 1001	M.RFC	120uH			RCH-875 121K	L1190396		1-	A	A3
L 1002	CHIP COIL	100uH			LQH3N101K02M00-	L1690099		1-	A	A2
L 1003	CHIP COIL	100uH			LQH3N101K02M00-	L1690099		1-	A	A3
L 1004	CHIP COIL	100uH			LQH3N101K02M00-	L1690099		1-	A	A3
L 1005	CHIP COIL	100uH			LQH3N101K02M00-	L1690099		1-	A	A2
L 1006	CHIP COIL	100uH			LQH3N101K02M00-	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				24LC16BI-SN TER	G1091852		1-	A	E3
Q 1002	IC				M51945BFP-600C	G1091990		1-	A	C4
Q 1003	IC				L78M05T-TL	G1091731		1-	A	D3
Q 1004	TRANSISTOR				2SC4047-TA	G3340477		1-	A	D3
Q 1005	IC				HD64F2132RFA20(FLASH)	G1093150		1-	A	F2
Q 1008	IC				ADM202EARU-REEL	G1092958		1-	A	G3
Q 1009	IC				TD62783AFN(EL)	G1092700		1-	A	F2
Q 1010	IC				TD62783AFN(EL)	G1092700		1-	A	E2
Q 1011	IC				TD62783AFN(EL)	G1092700		1-	A	E3
Q 1012	IC				TD62783AFN(EL)	G1092700		1-	A	E2
Q 1013	IC				TC74HC32AF(EL)	G1093500		1-	A	G2
Q 1014	IC				TC4W53FU TE12L	G1091675		1-	A	G2
Q 1015	IC				TC7WU04FU TE12R	G1091942		1-	A	F2
R 1001	CHIP RES.	33	1W	5%	RMC1 330JTE	J24305330		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

REF.	DESCRIPTION	VALUE	WV	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR.
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
RL1001	RELAY		DC12V		AGP2013 DC12V	M1190069		1-	A	B2
RL1002	RELAY		DC12V		AGP2013 DC12V	M1190069		1-	A	B2
S 1001	TACT SWITCH				SKHHAR	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
TP1001	TERMINAL				TP-K IPS-1136	Q5000050		1-	A	A3
TP1002	TERMINAL				TP-K IPS-1136	Q5000050		1-	A	C4
TP1003	TERMINAL				TP-K IPS-1136	Q5000050		1-	A	D4
TP1004	TERMINAL				TP-K IPS-1136	Q5000050		1-	A	D4
TP1005	TERMINAL				TP-K IPS-1136	Q5000050		1-	A	D3
TP1006	TERMINAL				TP-K IPS-1136	Q5000050		1-	A	C4
TP1007	TERMINAL				TP-K IPS-1136	Q5000050		1-	A	G3
X 1001	XTAL HC-49U/4	19.6608MHz			19.6608MHZ	H0103052		1-	A	G3
	HEAT SINK				SP141K	S5000229		1-		

CNTL Unit

Note:

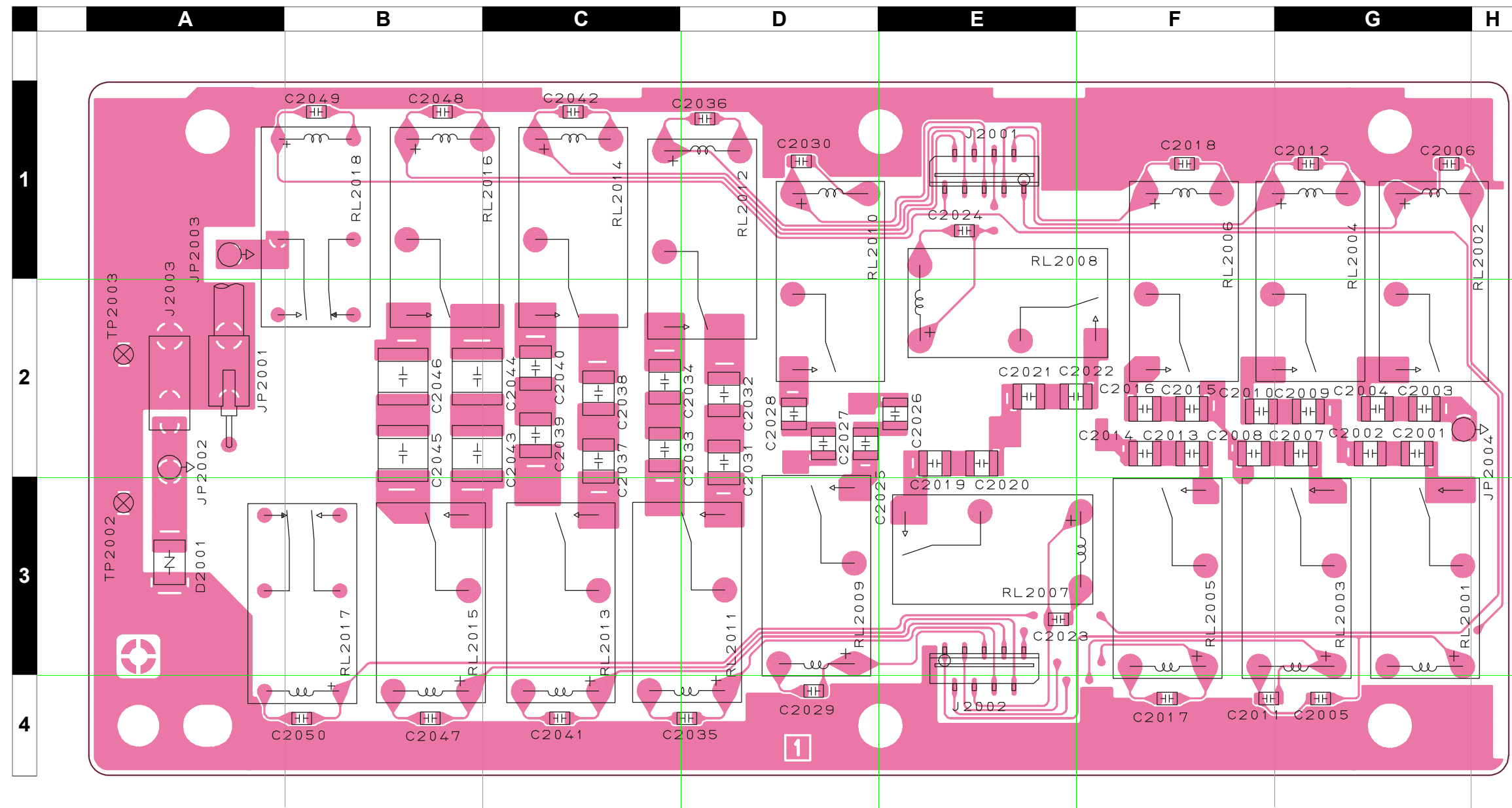
Circuit Diagram



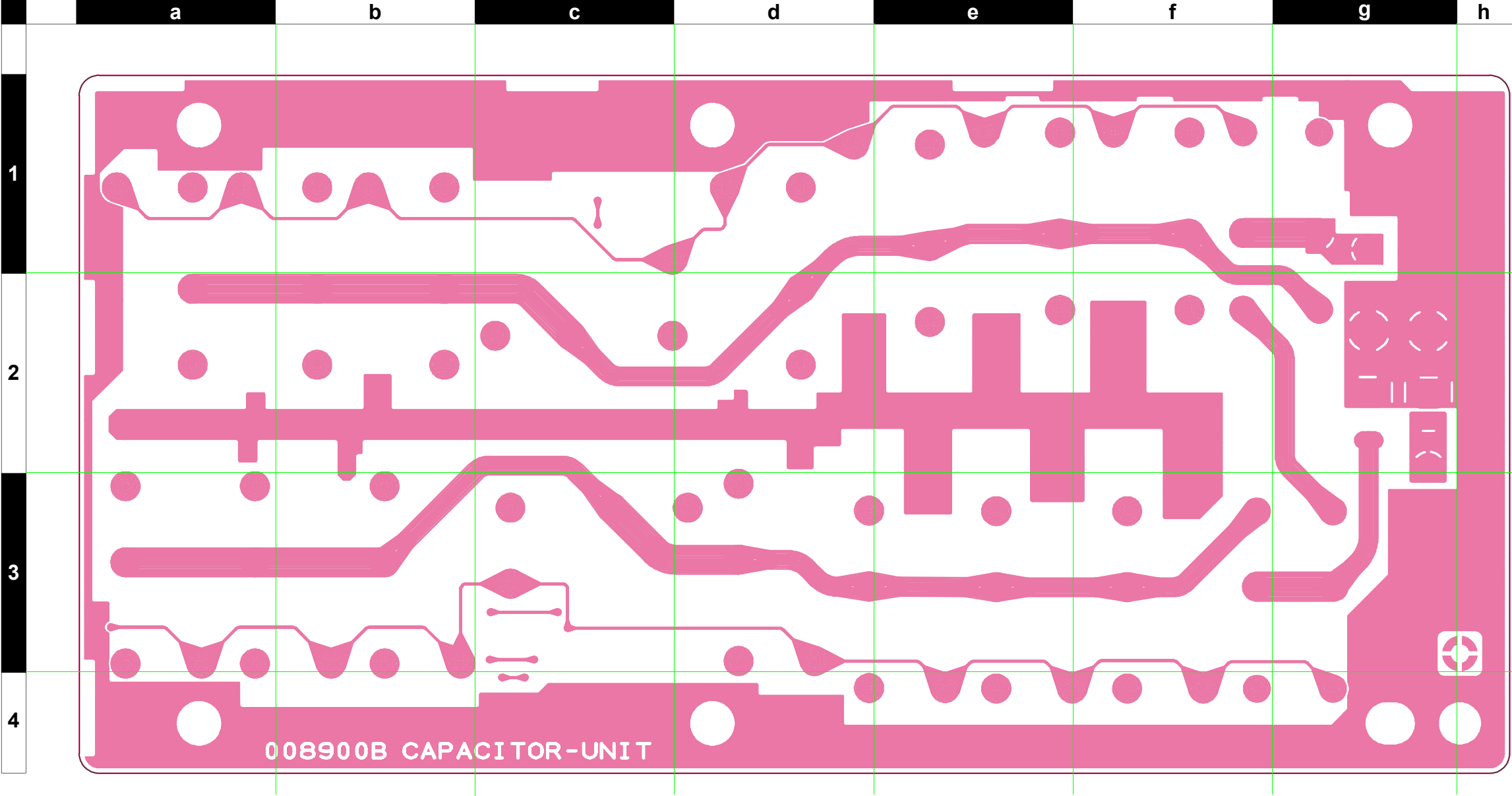
CAPACITOR Unit

Note:

Parts Layout



Side A



Side B

CAPACITOR Unit

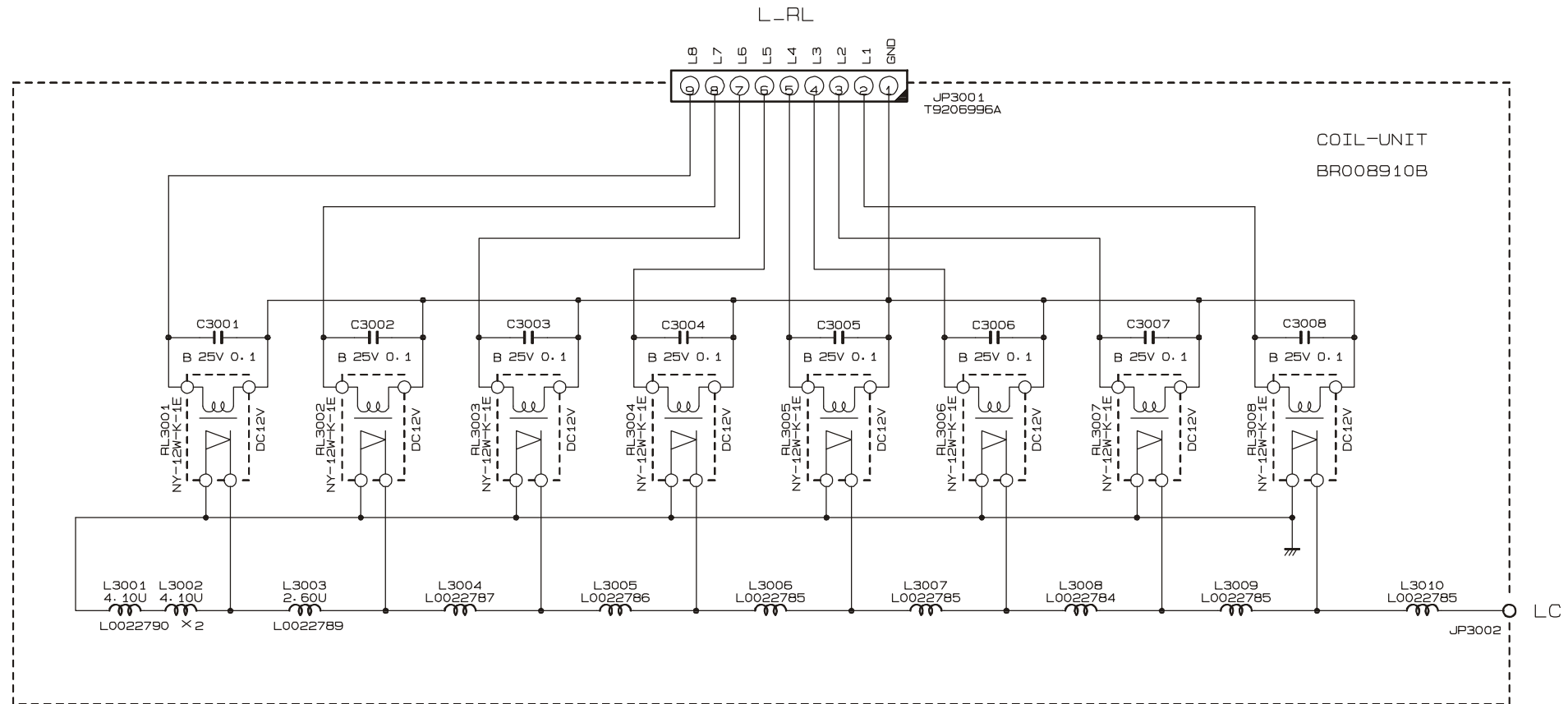
Parts List

REF.	DESCRIPTION	VALUE	WV	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR.
	PCB with Component									
	Printed Circuit Board					FR008900B		1-		
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	GRM40B104M25PT	K22140811		1-	A	G4
C 2006	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	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	GRM40B104M25PT	K22140811		1-	A	F4
C 2012	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	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	GRM40B104M25PT	K22140811		1-	A	F4
C 2018	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	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	GRM40B104M25PT	K22140811		1-	A	E3
C 2024	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	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	GRM40B104M25PT	K22140811		1-	A	D4
C 2030	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	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	GRM40B104M25PT	K22140811		1-	A	D4
C 2036	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	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	GRM40B104M25PT	K22140811		1-	A	C4
C 2042	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	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	GRM40B104M25PT	K22140811		1-	A	B4
C 2048	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	B1
C 2049	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	B1
C 2050	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	B4
D 2001	SURGE ABSORBER				RCCA-301Q43UA	Q9000756		1-	A	A3
J 2001	CONNECTOR				09FMN-BMTTN-TFT	P1091089		1-	A	E1
J 2002	CONNECTOR				09FMN-BMTTN-TFT	P1091089		1-	A	E3
J 2003	CONNECTOR				TMP-J01X-A2	P1090255		1-	A	A2
JP2001	WIRE ASSY				YEL 120 TMP/TMP(B1)	T9318067		1-	A	A2

CAPACITOR Unit

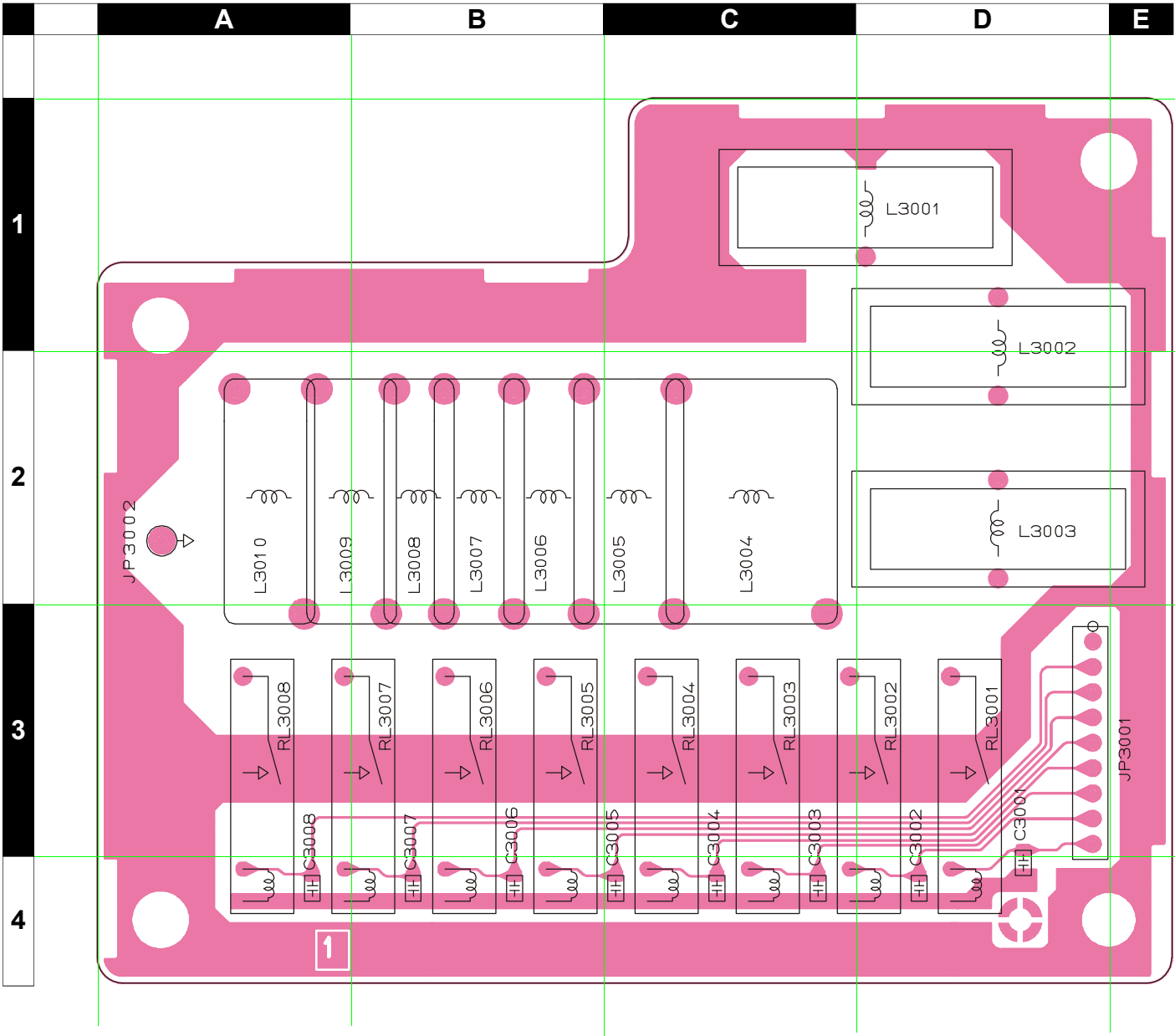
REF.	DESCRIPTION	VALUE	WV	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE.	LAY ADR.
P 2001	WIRE ASSY				VIO 45 <5>/<5>	T9318188		1-		
P 2002	WIRE ASSY				VIO 30 <5>/<5>	T9318189		1-		
P 2003	WIRE ASSY				VIO 30 <5>/<5>	T9318189		1-		
RL2001	RELAY		DC12V		AGP2003 DC12V	M1190075		1-	A	G3
RL2002	RELAY		DC12V		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
RL2017	RELAY		DC12V		AGP2013 DC12V	M1190069		1-	A	A3
RL2018	RELAY		DC12V		AGP2013 DC12V	M1190069		1-	A	B2

Circuit Diagram

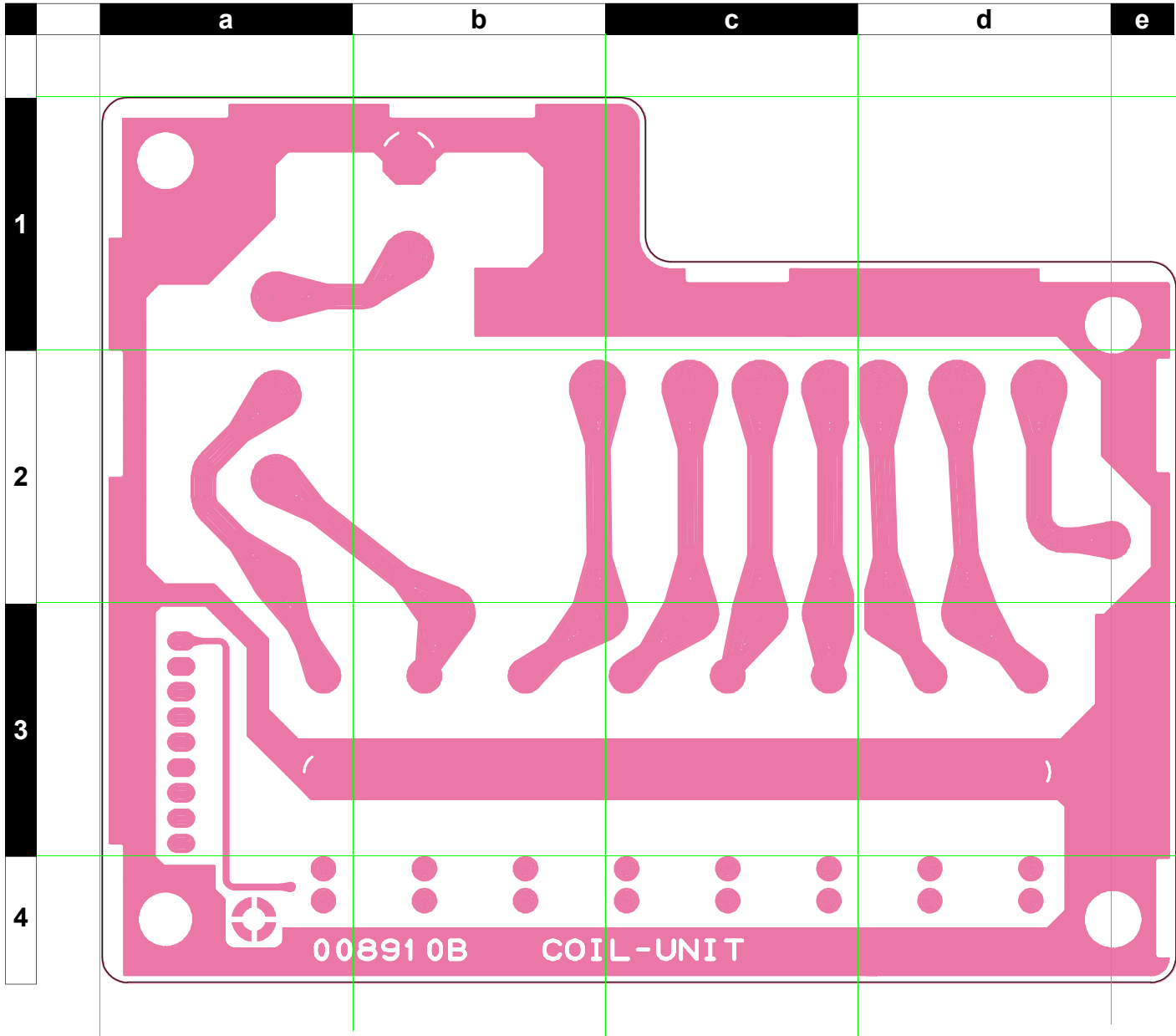


COIL Unit

Parts Layout



Side A



Side B

Parts List

REF.	DESCRIPTION	VALUE	WV	TOL.	MFR'S DESIG	VXSTD P/N	VERS.	LOT.	SIDE	LAY ADR.
PCB with Component										
Printed Circuit Board						FR008910B		1-		
C 3001	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	D4
C 3002	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	D4
C 3003	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	C4
C 3004	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	C4
C 3005	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	C4
C 3006	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	B4
C 3007	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	B4
C 3008	CHIP CAP.	0.1uF	25V	B	GRM40B104M25PT	K22140811		1-	A	A4
JP3001	WIRE ASSY				AAC86X	T9206996A		1-	A	D3
L 3001	TOROIDAL COIL	4.1uH			4.10U T80-2	L0022790		1-	A	D1
L 3002	TOROIDAL COIL	4.1uH			4.10U T80-2	L0022790		1-	A	D1
L 3003	TOROIDAL COIL	2.6uH			2.60U T80-6	L0022789		1-	A	D2
L 3004	COIL A1				6.5T16D1.6PEW R	L0022787		1-	A	C2
L 3005	COIL A1				3.5T16D1.6PEW R	L0022786		1-	A	B2
L 3006	COIL A1				2.5T16D1.6PEW R	L0022785		1-	A	B2
L 3007	COIL A1				2.5T16D1.6PEW R	L0022785		1-	A	B2
L 3008	COIL A1				1.5T16D1.6PEW R	L0022784		1-	A	B2
L 3009	COIL A1				2.5T16D1.6PEW R	L0022785		1-	A	A2
L 3010	COIL A1				2.5T16D1.6PEW R	L0022785		1-	A	A2
RL3001	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	D3
RL3002	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	C3
RL3003	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	C3
RL3004	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	C3
RL3005	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	B3
RL3006	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	B3
RL3007	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	A3
RL3008	RELAY		DC12V		NY-12W-K-IE DC12V	M1190168		1-	A	A3

COIL Unit

Note:



Copyright 2002
VERTEX STANDARD CO., LTD.
All rights reserved

No portion of this manual
may be reproduced without
the permission of
VERTEX STANDARD CO., LTD.

Printed in Japan.