

# Super Star 4900B Service Manual



This is a on going project to document the Superstar 4900B. I started working on this manual Dec 2000. You can display and print it but publication on the web and commercial use are not allowed.

If you have test equipment and a 4900B or can help in technical writing and/or research and would like to help on this project go to the CBTricks Message Board and look for the Superstar documentation Discussion Group.

This manual is by no way complete.

## Rev. History

### Rev. # 1.0

- (a) Put up on the site

### Rev. # 1.1

- (a) Worked on the Alignment hook-up diagrams.
- (b) Put the parts lists with the board layouts
- (c) Made a change to alignment layout
- (d) Put a picture of the radio on first page.
- (e) Schematic of the ASC PCB.

### Rev. #1.2

- (a) Schematic of MIC PCB
- (b) Board Layouts MIC PCB
- (c) AMC Mod Information

Next I need to work on the following sections.

Alignment Procedure

Export Frequency Modification

Parts List

Circuit descriptions

Semiconductor Information

Index page and index all the pages

## SPECIFICATIONS

### GENERAL

FREQUENCY COVERAGE	28.000 TO 29.690 MHz (10 METER BAND) 23.000 TO 29.600MHz (10 METER EXPENDED.) 26.965 TO 27.405MHz (CITIZEN BAND) 23.815 TO 30.555MHZ (600CHANNEL CB BAND)
FREQUENCY GENERATION	BY MEANS OF PLL SYNTHESIZER
FREQUENCY STABILITY	±0.001%
OPERATING TEMPERATURE	-10C TO +55C
POWER SOURCE REQUIREMENTS	AC 120V/50Hz or DC 16V
ANTENNA IMPEDANCE	50 ohm Unbalanced
MIC IMPEDANCE	2000 OHM

### RECEIVER SECTION

CIRCUIT TYPE	DUAL CONVERSION SUPERHETERODYNE
IF FREQUENCY	1st IF: 10.695MHz, 2'nd IF : 455KHz
SENSITIVITY	FM: 0.5uV FOR 20dB SINAD, With CCITT FILTER AM: 0.7uV FOR 10dB NQ SSB:0.15uV FOR 10dB NQ
SPURIOUS & IMAGE REJECTION	60dB Mm.
INTER MODULATION DISTORTION	54dB Mm.
S/N RATIO	40dB
AUDIO OUTPUT @10%THD	2.0 W

### TRANSMITTER SECTION

POWER OUTPUT	SSB (A3J): 20Watts PEP input AM (A3E): 15Watts FM (F3E): 15Watts
MODULATION	FM : 2KHZ, AM : 85%
HARMONIC OUTPUT	More than 40 dB below peak power output
S/N RATIO	40dB

## Semiconductors And Function

### IC COMPLEMENT

FUNCTION	REF.NO	TYPE	MANUFACTURER
MIC AMP	IC-4	KIA4558F	KEC
RESET	IC-13	KIA7045F	KEC
SQ COMPARATOR	IC-2	NJM324 (M)	JRC
DTMF DECODER	IC-5	KS58015	SAM SUNG
DTMF ENCODER	IC-6	KT3170	SAM SUNG
BALANCE MODULATOR	IC-12	TDA6130-5	SGS
IF DEMODULATOR	IC-1	MC3361	MOTOROLA
ASC COMPARATOR	IC-1 ASC BD	KIA324F (SMD)	KEC
CPU	IC-7	TMP87CM21DF	TOSHIBA
PLL	IC-9	LC7152M	SANYO
LCD DRIVER	IC-401	LC75854W	SANYO
10V REGULATOR	IC-14	KIA7810 (TO-220)	KEC
BALANCE MIXER	IC-3	UPC1037AH	SGS
EEPROM	IC-8	X24C02F	PRO-CHIPS
5V REGULATOR	IC-10	78L05 SOT-89	KEC
AUDIO POWER AMP	IC-11	KIA7217AP	KEC

### Transistor & Diode Complement

FUNCTION	REF.NO	TYPE	MANUFACTURER
CLARIFIER B+ SW	Q404	KRA102S	KEC
B+ SW FOR USA & LSB	Q403	KRC102S	KEC
SW FOR ANT 1 LED	Q406	KRC112S	KEC
SW FOR ANT 2 LED	Q405	KRC112S	KEC
SW FOR LCD BACKLIGHT	Q401	KTC200, TO-92	KEC
SW FOR LCD BACKLIGHT	Q402	KTC200, TO-92	KEC
FINAL PA	Q73	25C1969 (CH)	MITSUBISHI
FINAL PA	Q74	25C1969 (CH)	MITSUBISHI
DRIVER	Q72	25C2166	MITSUBISHI
AVR SWITCH	Q65	KTA1940	KEC
NB B+ SWITCHING	Q1	KRA104	KEC
NB B+ SWITCHING	Q2	KRC110S	KEC
NB SIGNAL MUTE	Q7	KRC110S	KEC
NB NOISE AMP	Q5	KRC112S	KEC
NB B+ DRIVER	Q6	KTA1504	KEC
AMC DRIVER	Q43	KTA1504S	KEC
FM LIMITTER B+ SWITCH	Q50	KRA102S	KEC
RX DET LEVEL SWITCH	Q29	KRC110S	KEC
SSB MOD MUTE	Q41A	KRC110S	KEC
AM MOD MUTE	Q59	KRC110S	KEC
AUDIO MUTE	Q62	KRC110S	KEC
RX MUTE	Q18	KTC3880S	KEC
RX 1st AMP	Q19	KTC3880S	KEC
RX I'ST MIXER	Q22	KTC3880S	KEC
RX AMP	Q23	KTC3880S	KEC
10.2417 OSC	Q32	KTC3880S	KEC
FIN BUFFER	Q36	KTC3880S	KEC
VCO OSC	Q37	KTC3880S	KEC
VCO BUFFER	Q38	KTC3880S	KEC
2nd MIXER OSC	Q53	KTC3880S	KEC
SQ IN	Q14	KRC102S	KEC
FM B+ SW FOR MIC AMP	Q39	KRC102S	KEC
SWITCH FOR HI-CUT	Q45	KRC102S	KEC
SWITCH FOR HI-CUT	Q46	KRC102S	KEC
SWITCH FOR HI-CUT	Q47	KRC102S	KEC
SWITCH FOR HI-CUT	Q48	KRC102S	KEC
SWITCH FOR METER	Q60	KRC102S	KEC
SSB AGC CONTROL	Q16	KRC102S	KEC
AMC DRIVER	Q44	KTC3875S	KEC
AM ALC DRIVER	Q64	KTC3875S	KEC
AM / FM POWER DRIVER	Q68	KTC3875S	KEC

AUDIO PRE AMP	Q17	KTC3875S	KEC
AUDIO PRE AMP	Q63	KTC3875S	KEC
RF GAIN DRIVER	Q21	KRC112S	KEC
SWITCH FORANL	Q31	KRC112S	KEC
RX / TX SWITCH	Q57	KRC112S	KEC
SWR SWITCH	Q603	KRC112S	KEC
NB AMP	Q3	KTC3878	KEC
NB AMP	Q4	KTC3878	KEC
TX IF AMP	Q24	KTC3878	KEC
IF AMP	Q25	KTC3878	KEC
IF AMP	Q26	KTC3878	KEC
IF AMP	Q27	KTC3878	KEC
IF AMP	Q28	KTC3878	KEC
SSB POWER SW	Q42	KTC3878	KEC
TX PRE DRIVER	Q75	KTC3879	KEC
TX BUFFER AMP	Q69	KTC3879	KEC
RX / TX SWITCHING	Q611	KRC107	KEC
SWR SWITCHING	Q602	2SJ144	TOSHIBA
CAL SWITCHING	Q604	2SJ144	TOSHIBA
MOD METER SWITCHING	Q607	2SJ144	TOSHIBA
RX B+ SWITCH	Q55	KTC200	KEC
SSB B+ SWITCH	Q67	KTC200	KEC
TX B+ SWITCH	Q58	KTA200	KEC
MAIN B+ SWITCH	Q66	KTA200	KEC
9V REG B+ SWITCH	Q61	KTC3205	KEC
PRE DRIVER	Q71	2SC2314	SANYO
BIAS	D75	1N4001	KEC
BIAS	D74	1N4001	KEC
NB DC DETECT	D1	1N60	KEC
NB DC DETECT	D2	1N60	KEC
CAL / SWR METER DETECT	D77	1N60	KEC
RX SIGNAL METER DET.	D7	1N60	KEC
RX AM / SSB DET.	D23	1N60	KEC
RX AM / SSB DET.	D24	1N60	KEC
RX SIGNAL METER DET.	D83	1N60	KEC
CAL / SWR METER DET.	D101	1N60	KEC
RELAY RECTIFIER	D78A	1N4148	KEC
9.1V REG ZENER	D103	UZ9.1B	KEC
ANT 1 ON LED	D411	DKL30RD	EVER GREEN
ANT 2 ON LED	D412	DKL30RD	EVER GREEN
RX / TX INDICATOR LED	D407	209EGW/S209	EVER GREEN
BRIDGE RECTIFIER	BD1	KBPC606	PYUNG CHANG
RX EXPENDER	D13	KDV251S	KEC
RX EXPENDER	D14	KDV251S	KEC
VARICAP FOR CLR	D28	KDV251S	KEC
VCO EXPENDER	D29	KDV251S	KEC
VCO EXPENDER	D31	KDV251S	KEC
TX EXPENDER	D68	KDV251S	KEC
TX EXPENDER	D69	KDV251S	KEC
TX EXPENDER	D71	KDV251S	KEC
RX EXPENDER	D30	KDV251S	KEC

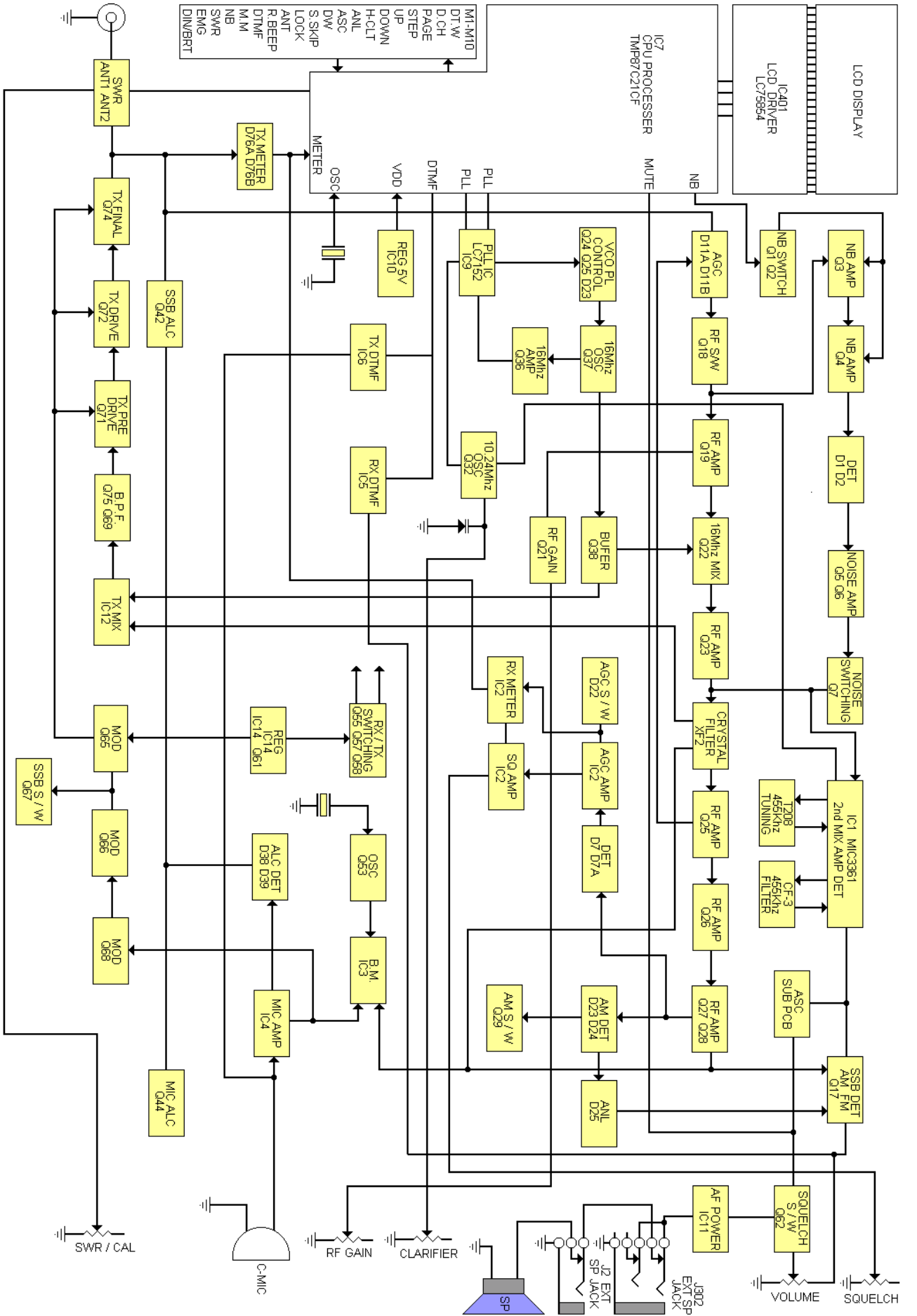
**Manufacturers.**

KEC : KOREA ELECTRONICS CO., LTD.  
JRC JAPAN RADIO COMPANY.  
SANYO TOKYO SANYO ELECTRNIC CO., LTD.  
TOKO JAPAN TOKO ELECTRNIC CO.,LTD

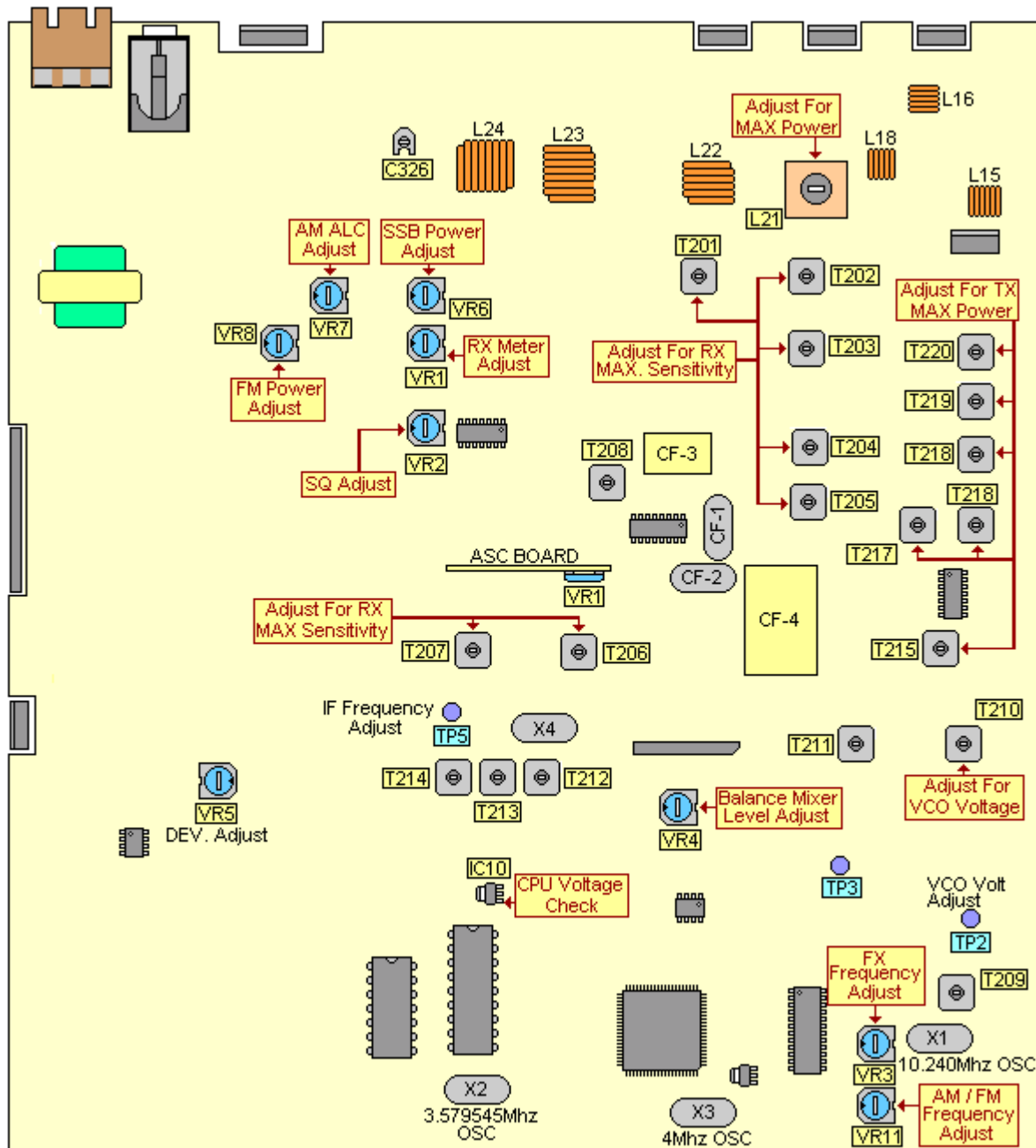
PYUNG CHANG: PYUNG CHANG CO.,LTD

EVER GREEN: HONG KONG EVER GREEN CO.,LTD

# SS4900 Block Diagram



# SS4900 Adjustment Locations



Super Star 4900B Adjustment Locations

## Test Equipment Required

### 1) CPU and Phase Locked Loop Section

- 1 Frequency Counter
- 2 DC Power Supply
- 3 DC Volt Meter
- 4 Oscilloscope

### 2) Transmitter Section

- 1 RF Power Meter (RF SSVM)
- 2 50Ω Load (non-inductive)
- 3 RF Attenuator
- 4 Oscilloscope
- 5 Audio Generator
- 6 DC Power Supply
- 7 Spectrum Analyzer
- 8 Frequency Counter
- 9 Coupler

### 3) Receiver Section

- 1 RF Signal Generator
- 2 RF Power Meter
- 3 Distortion Meter
- 4 DC Power Supply

## Alignment Procedure

### 1) Phase Looked Loop And CPU Section

STEP	SETTING	CONNECTION	ADJUST	ADJUST FOR
1	<b>Frequency Adjustment;</b> Mode: Receive Volume: Optional Squelch : Optional CH Selector: 1 FM ANT1	Frequency counter to output pin 3, 4 of IC-7. (Figure-1)		4MHZ ± 100Hz
2	<b>CPU Voltage Check;</b> Mode: Receive Volume: Optional Squelch : Optional CH Selector: Optional FM ANT1	Connect DC volt. meter to PIN 3 of IC-10. (Figure-2)		Indication on DC voltmeter must be 5.0 - 6volt.

## 2) Transmitter Section

STEP	SETTING	CONNECTION	ADJUST	ADJUST FOR
1	<b>RF Driver Stage;</b> Mode : Transmit Volume: Optional Squelch : Optional CH Selector:19 AM ANT1 Without modulation	Connect oscilloscope probe to base of Q72 (Figure-3)	T216 T217 T218 T219 T220	Adjust for Maximum waveform on the oscilloscope.
2	<b>RF Power Stage; ANT1</b> Mode : Transmit ANT 1 selected Volume: Optional Squelch : Optional CH Selector:19 AM Without modulation	Connect dummy load and RF power meter to the external ANT1 Jack on the set (Figure-4)	L21 Power volume max.	Adjust for max. Indication on the power meter.
3	<b>RF Power Stage; ANT2</b> Mode : Transmit ANT 2 selected Volume: Optional Squelch : Optional CH Selector:19 AM Without modulation	Connect dummy load and RF power meter to the external ANT2 Jack on the set (Figure-4)		Check for the same output as in step 2
4	<b>Second harmonic Check;</b> Mode: Transmit ANT 1 selected Volume: Optional Squelch : Optional CH Selector: 19 AM Without modulation	Connect RF power meter with dummy load to spectrum analyzer through coupler/-40dB atten. to EXT-ANT 1 Jack on the set (Figure-5).		At no modulation, Compare the level of fundamental freq-spectrum to the level of harmonic freq-spectrum. Suppression of the 2nd harmonic Freq. level must be lower than -60dB. Check for the other channel's
5	<b>Frequency Check;</b> Mode : Transmit ANT 1 selected Volume: Optional Squelch : Optional CH Selector: 19 FM ANT1	Connect dummy load and frequency counter through coupler to RF power meter. Also connect power meter to ANT1 jack on the set. (Figure-6)	RV3 T214	Make sure that the Indication of the Transmitter freq. Is 27.965 [Mhz] $\pm$ 300Hz on the frequency counter.
6	<b>MAX Deviation Check;</b> Mode : Transmit ANT 1 selected Volume: Optional Squelch : Optional CH Selector: 19 ANT1 Change: FM OR AM	Connect dummy load and modulation meter through coupler to RF power meter. Also connect power meter to EXT-ANT 1 Jack on the set. (Figure-7)	VR401 RV7  RV5 VR850	Adjust RV7 so that the indication of the modulation analyzer is 90% with $\pm$ 5% tolerance at high power mode.  Adjust RV5 so that the indication of the deviation analyzer is 2.0KHz $\pm$ 0.2KHz tolerance at high power mode



### 3) Receiver Section

STEP	SETTING	CONNECTION	ADJUST	ADJUST FOR
1	<b>RX Sensitivity;</b> Mode: Receiver Volume: Fully clockwise Squelch: Turn to counterclockwise CH Selector:19 SSG : 27.185MHz,1KHz, 1uV(-107dBm) (AM) 60% MOD (FM) 1.2kHz 0EV	Connect RF signal generator to external ANT. Jack. Connect SSVM, Sinadder, Oscilloscope and distortion meter across EXT-Speaker out jack with 8Ω dummy load (Figure-8)	(FM) T201 T202 T203 T204 T205 (AM) T206 T207  T208	Adjust the parts of tuning circuitry with observing ADM(Automatic Distortion Meter) indicates 20dB SINAD in AM mode, and adjust output level of RF-SSG until speaker out level reaches about 500 miliwatt (2.0Volt)  Adjust for Maximum indication on SSVM
2	<b>Squelch Adjustment;</b> Mode: Receiver Volume: 500mW (2.0V) Squelch : TIGHT CH Selector:19 SSG: 27.185MHz, 1KHz <Tight> 1 mV(-47dBm) (AM) 60% MOD (FM) 1.2kHz DEV	Connect RF signal generator to external ANT. Jack. Connect RF power meter and distortion meter Across EXT-Speaker out jack with 8Ω dummy load (Figure-8)	RV2	At each mode, Adjust the point until the audio output appeared on oscilloscope.
3	<b>Signal Meter Adjustment;</b> Mode: Receiver Volume: 500mW (2.0V) Squelch: Turn to counterclockwise CH Selector: 19 SSG : 27.185MHz, 1KHz, 1.2KHz DEV 100uV (-67dBm)	Connect RF signal generator to external ANT. Jack. Connect RF power meter and distortion meter across EXT-Speaker out jack with 8Ω dummy load (Figure-8)	RV1	Adjust so that the 9th LCD Bar display on the LCD
4	<b>ASC Adjustment;</b> Mode: Receiver Volume: 500mW (2.0V) Squelch: Turn to counterclockwise CH Selector:19 SSG : 27.185MHz, 1KHz, 1.2KHz DEV. 0.5 μV (-113dBm)	Connect RF signal generator to external ANT. Jack. Connect SSVM, Sinadder, Oscilloscope and distortion meter across EXT-Speaker out jack with 8Ω dummy load (Figure-8)	Inside on the ASC BD	At each mode, Adjust the point until the audio output appeared on oscilloscope.

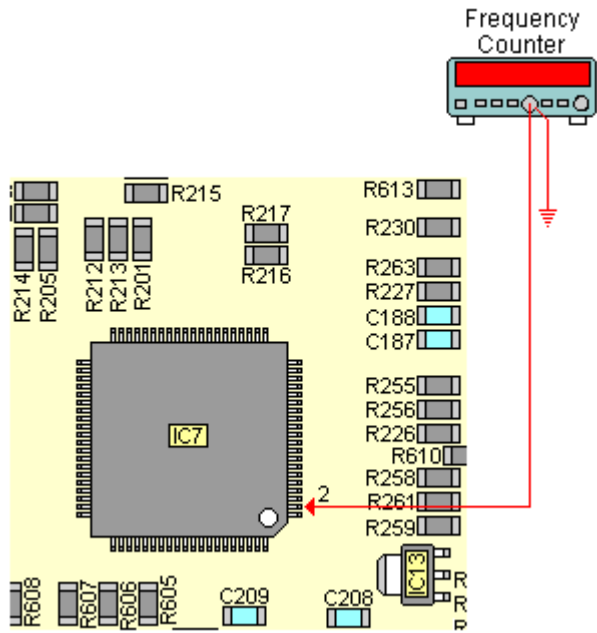


Figure 1

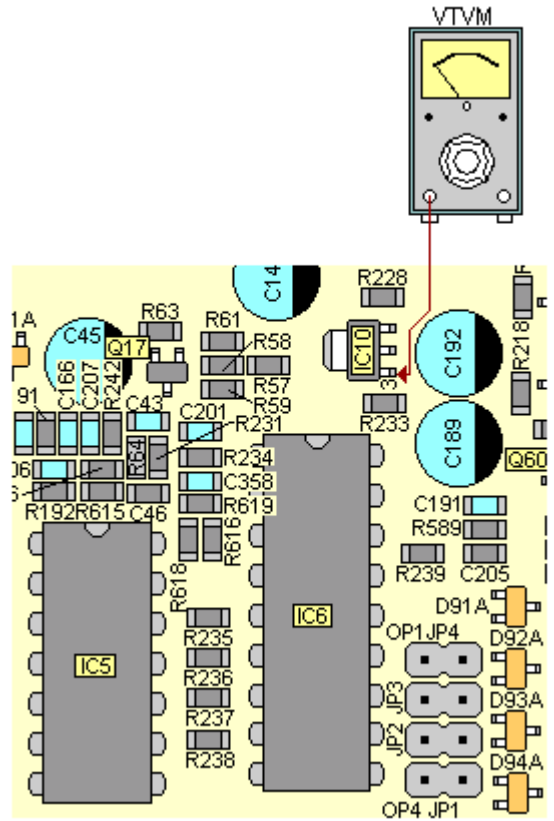


Figure 2

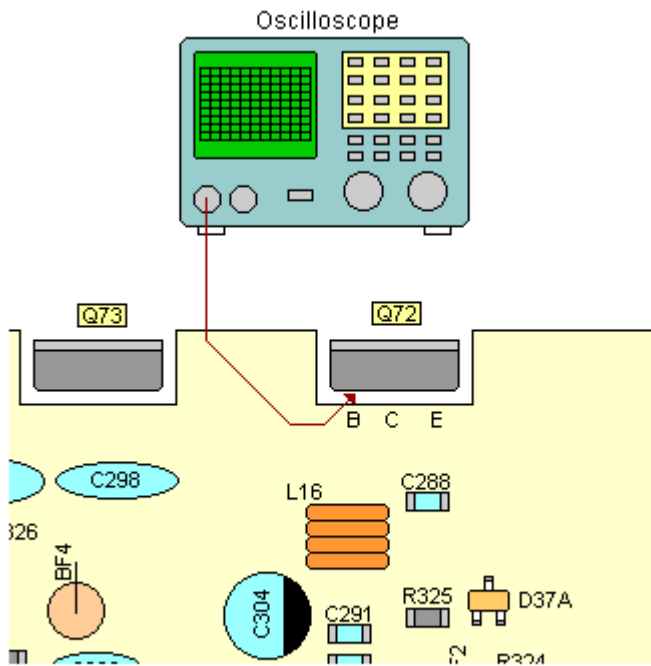
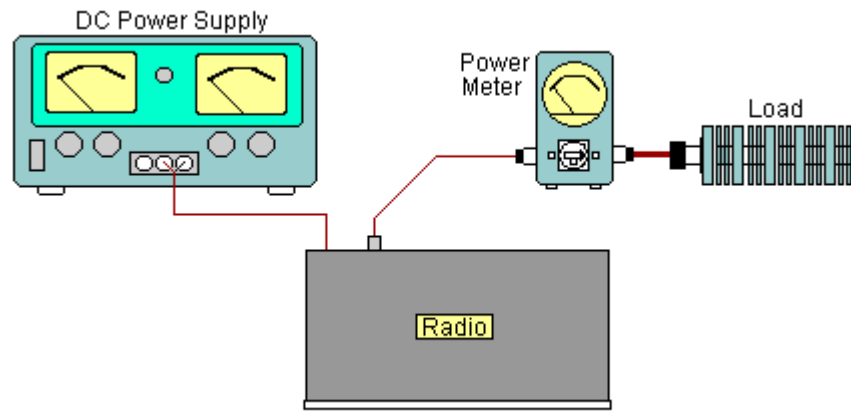
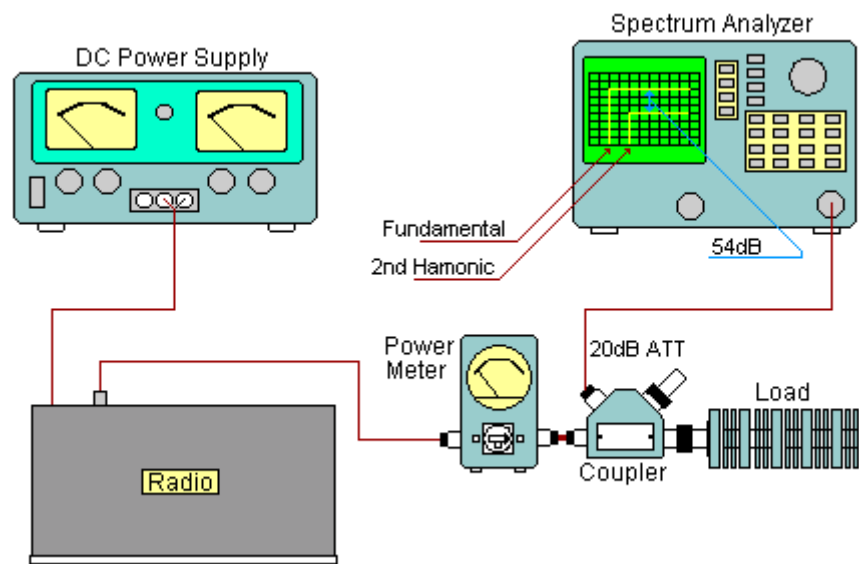


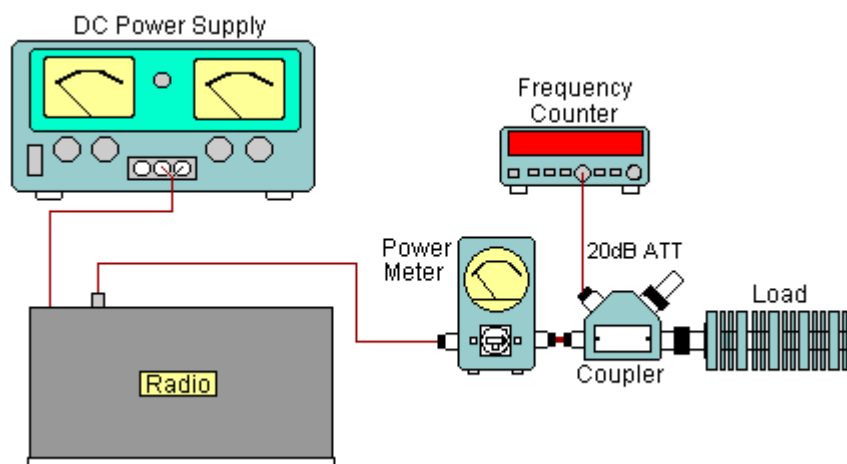
Figure 3



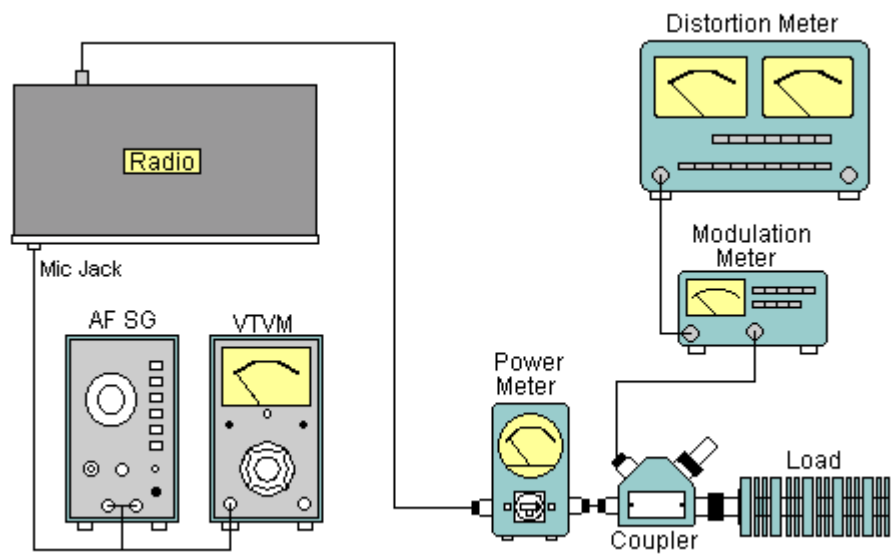
**Figure 4**



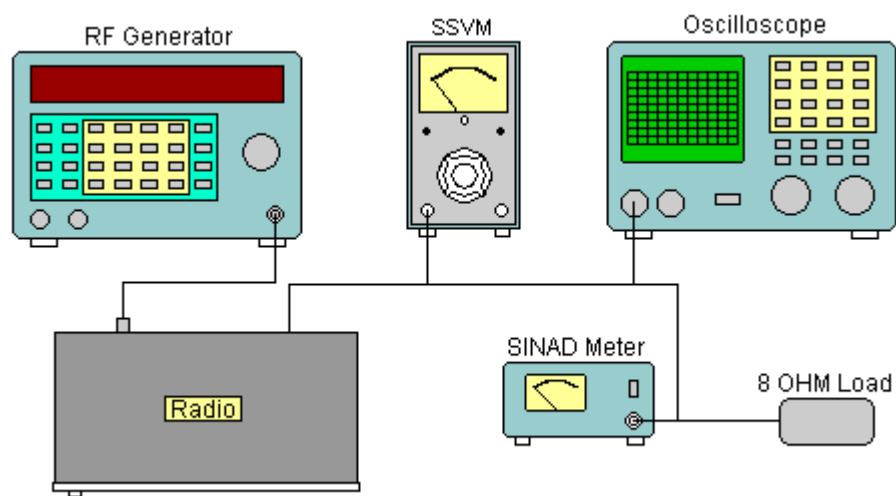
**Figure 5**



**Figure 6**

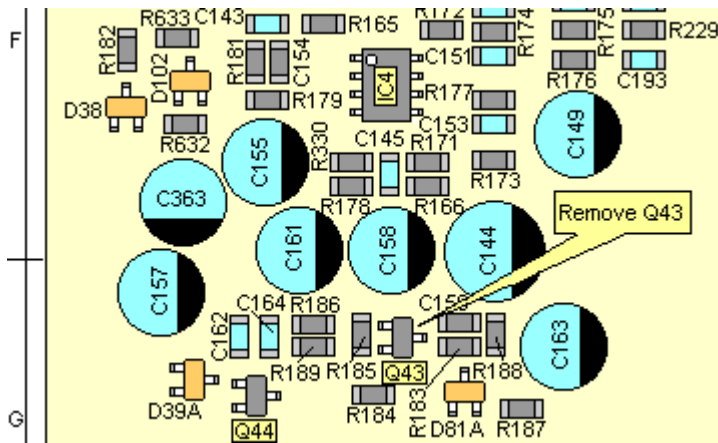


**Figure 7**



**Figure 8**

## SS4900 AMC Limiter Modification



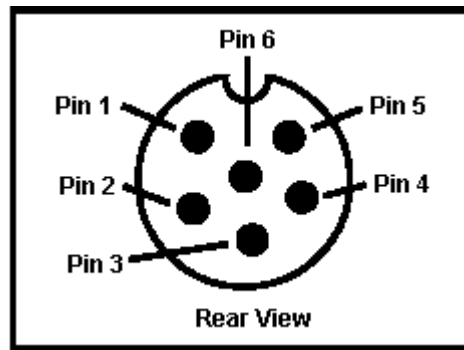
To open the AMC (Automatic Modulation Control) circuit, locate Q43 (SMD) in grid location G1 on the main PCB. Carefully unsolder and lift the center pin up from the PCB, or remove the part entirely.

## Export Frequency Modification

## Microphone Wiring Information:

### Original Microphone Wiring Diagram:

Pin #	Description
(1)	Mic Audio (White)
(2)	Receive (Black)
(3)	Transmit (Red)
(4)	Ch Down/Ch Up (Blue)
(5)	Ground (Shield)
(6)	+ 13.8 VDC (Green) (See Note Below)



### Warning:

When wiring alternative microphones to this unit, Do Not short pin 6 to any other pins on the connector or damage to the unit may occur. Many service techs often short these pins to determine the mic wiring config. Shorting the 13.8VDC on pin 6 to other pins such as pin 4 may result in damage to the Microprocessor or Power Supply in the unit.

### Astatic TUG9D104 Wiring:

Pin #	Description
(1)	White
(2)	Black
(3)	Red
(4)	N/C
(5)	Blue & Shield
(6)	N/C Yellow N/C



### Cobra CA-72 Power Desk Mic Wiring:

Pin #	Description
(1)	Red
(2)	Blue
(3)	White
(4)	N/C
(5)	Black & Shield
(6)	N/C



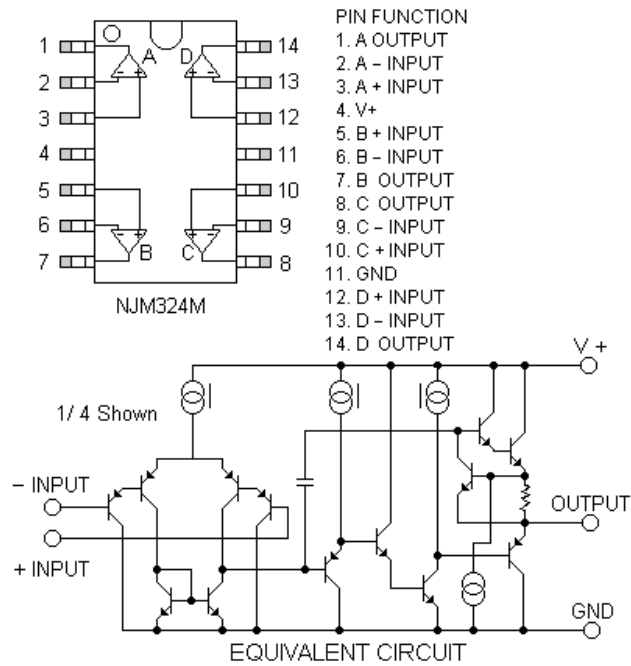
### Sure 526T Base Mic Wiring:

Pin #	Description
(1)	White
(2)	Black
(3)	Red
(4)	N/C
(5)	Blue & Shield
(6)	N/C Yellow N/C

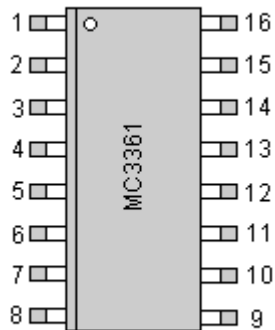


## Semiconductor Lead Identification And Internal Diagrams IC's

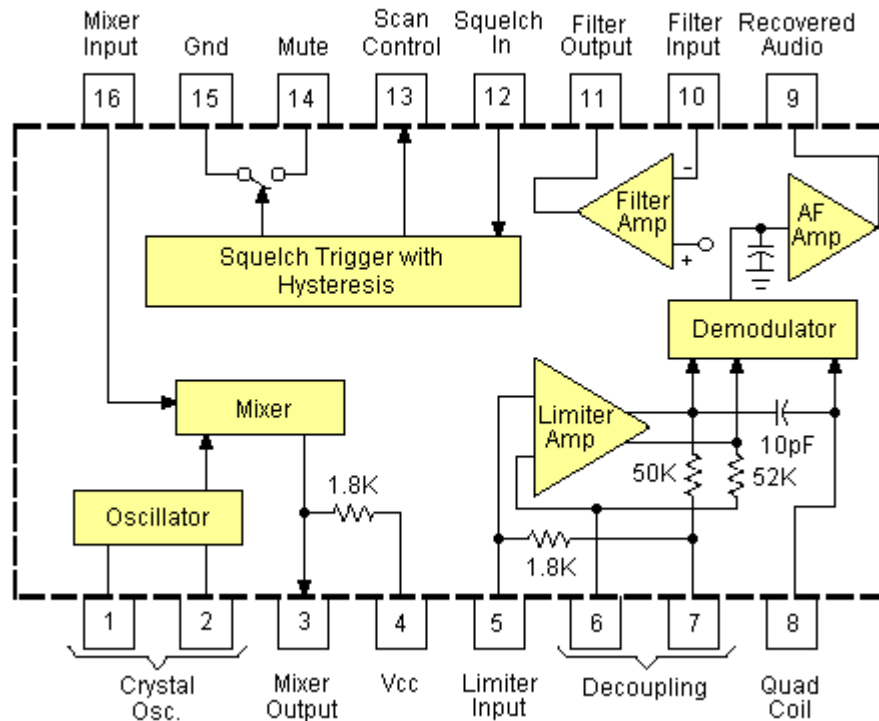
ASC PCB  
IC-1  
NJM324 M



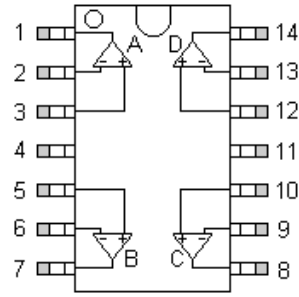
Main PCB  
IC-1  
MC3361 (SMD)



### Block Diagram



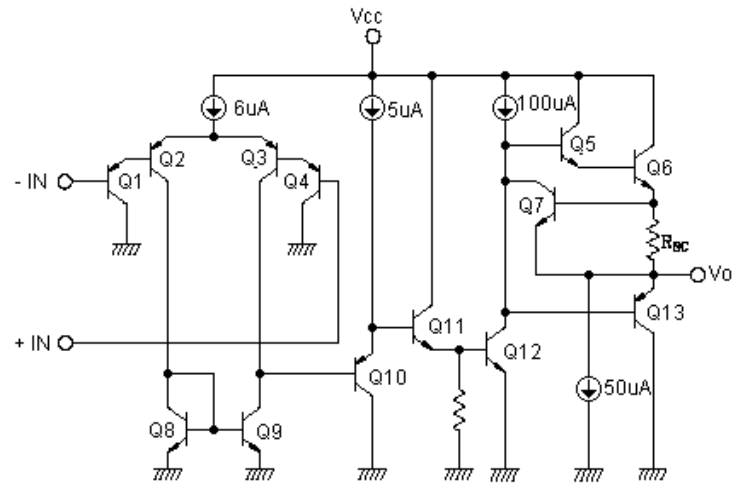
**Main PCB  
IC-2  
KIA324F**



KIA324F

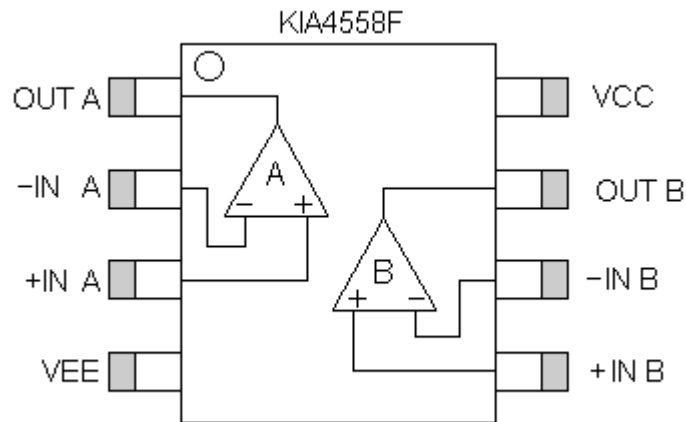
**PIN FUNCTION**

- 1. A OUTPUT
- 2. A - INPUT
- 3. A + INPUT
- 4. V+
- 5. B + INPUT
- 6. B - INPUT
- 7. B OUTPUT
- 8. C - INPUT
- 9. C + INPUT
- 10. C + INPUT
- 11. GND
- 12. D + INPUT
- 13. D - INPUT
- 14. D OUTPUT



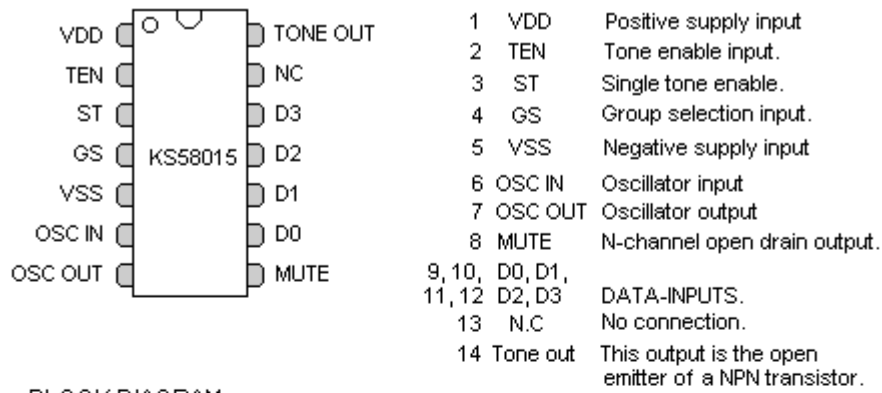
EQUIVALENT CIRCUIT

**Main PCB  
IC-4**

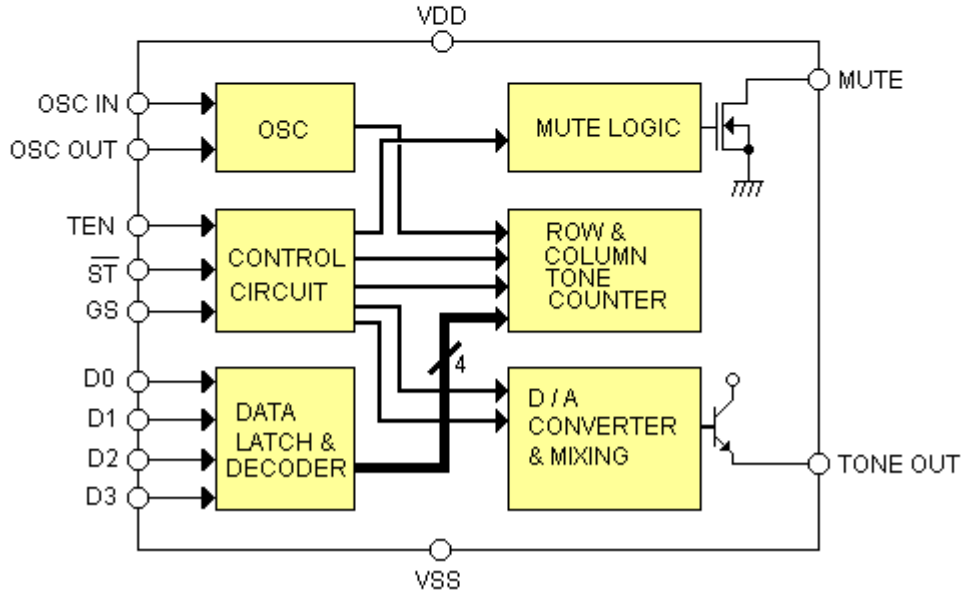




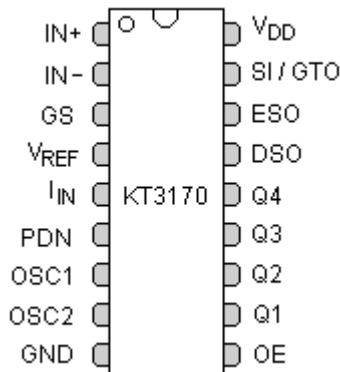
**Main PCB  
IC-5**



BLOCK DIAGRAM

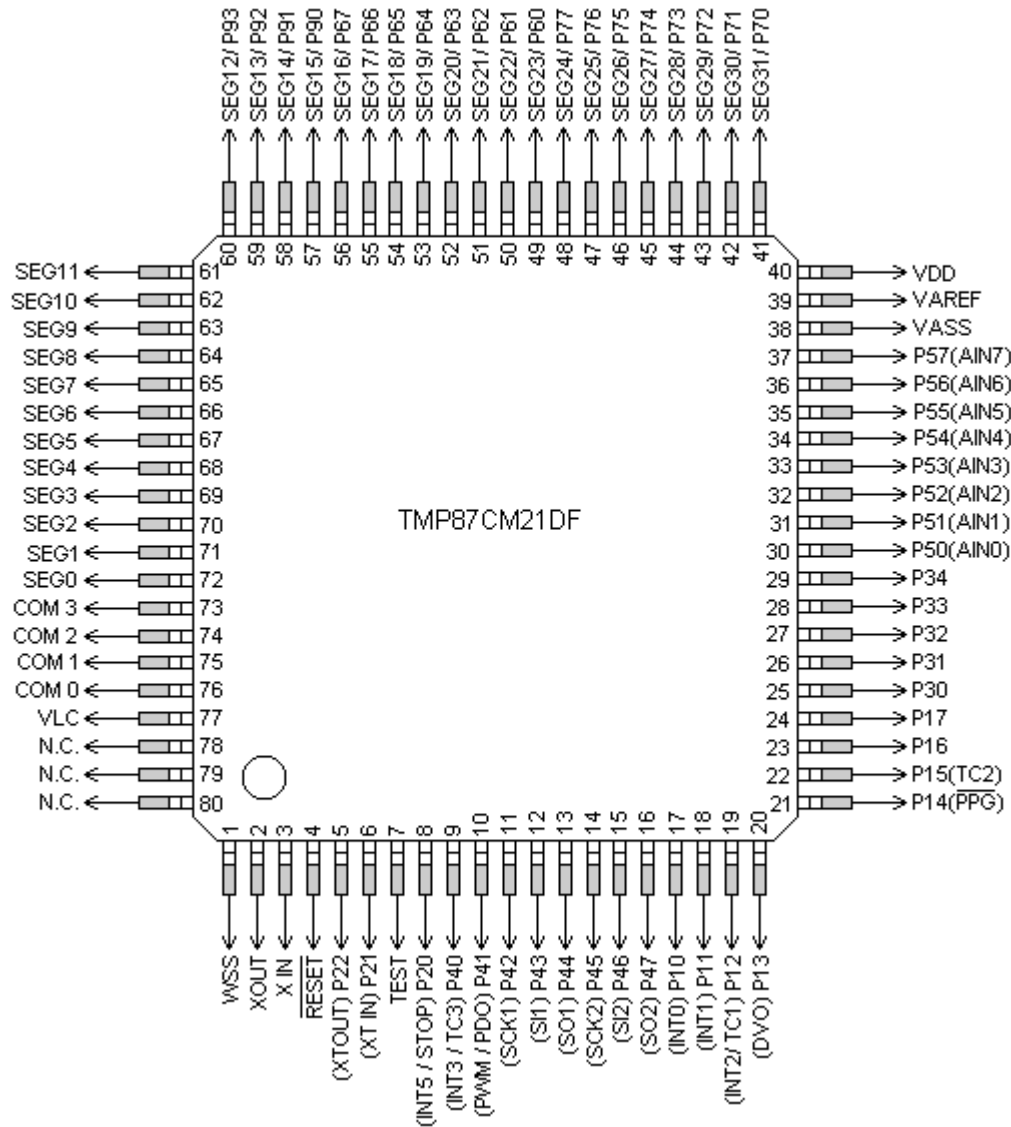


**Main PCB  
IC-6  
KT3170**



1	IN +	Non inverting input of the op amp.
2	IN -	Inverting input of the op amp.
3	GS	Gain Select.
4	VREF	Reference Voltage output
5	IIN	Input inhibit
6	PDN	Control input for the stand-by power down mode.
7, 8	OSC1 OSC2	Clock input/output.
9	GND	Ground pin.
10	OE	Output Enable input.
11 - 14	Q1 - Q4	Three state data output.
15	DSO	Delayed Steering Output
16	ESO	Early Steering Outputs
17	SI / GTO	Steering Input/Guard Time Output
18	VDD	Power Supply

**Main PCB  
IC-7  
TMP87CM21DF**

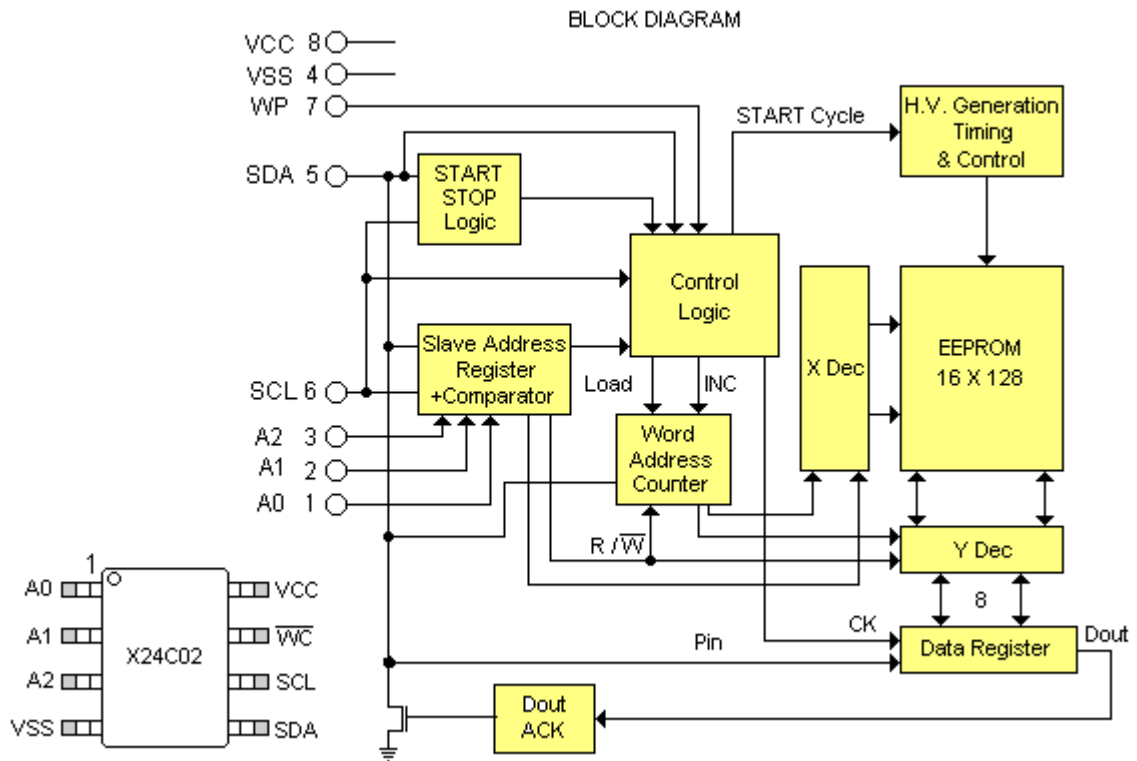


**CPU Pin Assignment**

NO.	PIN NAME	REMARK	DESCRIPTION	ACTIVE
1	VSS		GROUND	
2	XOUT	4.0MHz	HIGH FREQUENCY CLOCK OUT	
3	XIN	4.0MHz	HIGH FREQUENCY CLOCK IN	
4	RESET		RESET INPUT	HIGH
5	P22 (XOUT)	OPEN DRAIN	DIMMER OUT1	
6	P21 (XTIN)	OPEN DRAIN	DIMMER OUT2	
7	TEST		FOXED TO LOW (GROUND)	
8	P20 (INT5/STOP)	OPEN DRAIN	MODE IN (IN)	
9	P40 (INT3/TC3)	TRI STATE	N.C	
10	P41 (PWM/PDO)	TRI STATE	BEEP TONE OUT FOR 1750HZ(OUT)	
11	P42 (SCK1)	TRI STATE	SQ OUT (OUT)	HIGH: SQ ON
12	P43 (S11)	TRI STATE	ASC CONTROL (OUT)	HIGH: ASC ON
13	P44 (S01)	TRI STATE	ANL CONTROL (OUT)	ACTIVE "H"
14	P45 (SCK2)	TRI STATE	NB CONTROL (OUT)	ACTIVE "H"
15	P46 (S12)	TRI STATE	MODE IN (IN)	
16	P47 (S02)	TRI STATE	DTMF ENCODER ENABLE (OUT)	
17	P10 (INT0)	TRI STATE	ROTARY CHANNEL UP (IN)	ACTIVE "L"
18	P11 (INT1)	TRI STATE	ROTARY CHANNEL DN (IN)	ACTIVE "L"
19	P12 (INT2/TC1)	TRI STATE	DTMF ENCODER ENABLE (OUT)	

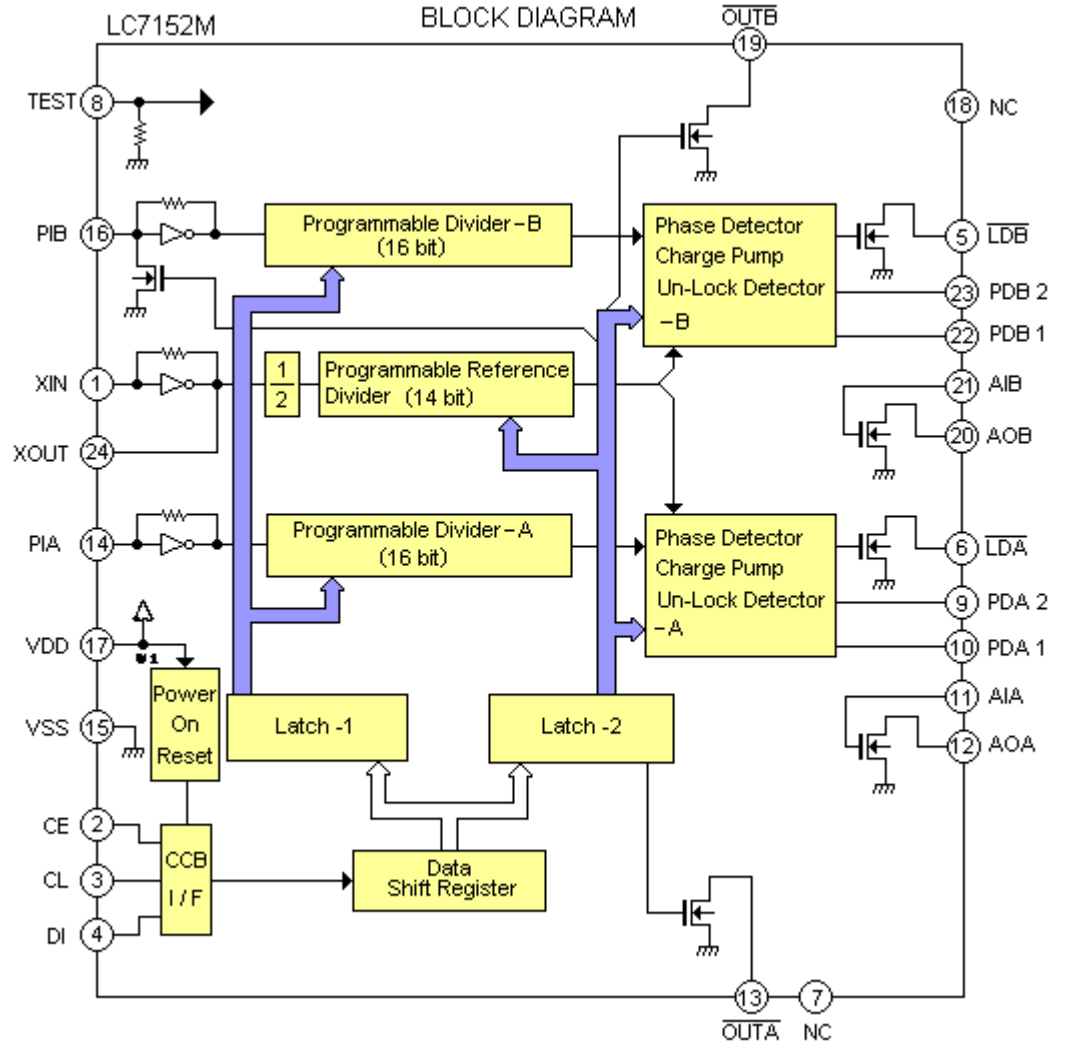
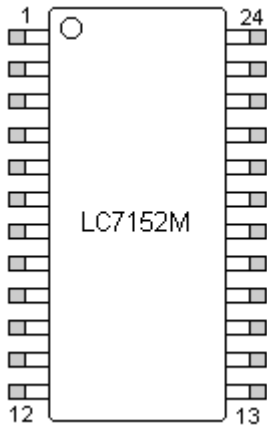
20	P13 (DVO)	TRI STATE	TX OUT (OUT)	ACTIVE "H"
21	P14 (PPG)	TRI STATE	LC7152 DI (OUT)	
22	P15 (TC2)	TRI STATE	LC162 CLK (OUT)	
23	P16	TRI STATE	LC7152 ENABLE (OUT)	
24	P17	TRI STATE	LC7152 LDA (OUT)	
25	P30	OPEN DRAIN	EEPROM DATA	
26	P31	OPEN DRAIN	EEPROM CLOCK	
27	P32	OPEN DRAIN	FREQUENCY SHIFT 0.5KHz (OUT)	ACTIVE "H"
28	P33	OPEN DRAIN	FREQUENCY SHIFT 1KHz (OUT)	ACTIVE "H"
29	P34	OPEN DRAIN	FREQUENCY SHIFT 2KHz (OUT)	ACTIVE "H"
30	P50 (AIN0)	TRI STATE	MODULATION LEVEL IN (A/D) (IN)	
31	P51 (AIN1)	TRI STATE	SIGNAL LEVEL IN (A/D) (IN)	ACTIVE "H"
32	P52 (AIN2)	TRI STATE	SWR LEVEL IN (A/D) (IN)	
33	P53 (AIN3)	TRI STATE	AC LEVEL IN (IN)	
34	P54 (AIN4)	TRI STATE	N.C	
35	P55 (AIN5)	TRI STATE	MIC (PTT, UP, DN) (A/D) (IN)	
36	P56 (AIN6)	TRI STATE	MIC (MON,P1, P2, P3) (IN)	TABLE
37	P57 (AIN7)	TRI STATE	EMG SELECTOR (IN)	"H": EMG 19 "L": EMG 9
38	VASS	ANALOG INPUT	MODEL SELECTOR 3 IN (IN)	
39	VAREF	ANALOG INPUT	AD REFERENCE HIGH VILTAGE	
40	VDD	ANALOG INPUT	VDD	
41	P70 (SEG31)	OPEN DRAIN	LC7584 DATA OUT (OUT)	
42	P71 (SEG30)	OPEN DRAIN	LC7584 DATA IN (OUT)	
43	P72 (SEG29)	OPEN DRAIN	LC7584 CLOCK (OUT)	
44	P73 (SEG28)	OPEN DRAIN	LC7584 CHIP ENABLE (OUT)	
45	P74 (SEG27)	OPEN DRAIN	MODE IN	TABLE
46	P75 (SEG26)	OPEN DRAIN	MODE IN	TABLE
47	P76 (SEG25)	OPEN DRAIN	MODE IN	TABLE
48	P77 (SEG24)	OPEN DRAIN	MODE IN	TABLE
49	SEG23 (P60)		DTMF IN/OUT	
50	SEG22 (P61)		DTMF IN/OUT	
51	SEG21 (P62)		DTMF IN/OUT	
52	SEG20 (P63)		DTMF IN/OUT	
53	SEG19 (P64)		ANT SELECTOR (OUT)	"L" ANT 1 "H" ANT2
54	SEG18 (P65)		MOD OUT (OUT)	ACTIVE "H"
55	SEG17 (P66)		N.C	
56	SEG16 (P67)		N.C	
57	SEG15 (P90)		HI-CUT OUTOUT (1) (OUT)	
58	SEG14 (P91)		HI-CUT OUTOUT (2) (OUT)	
59	SEG13 (P92)		HI-CUT OUTOUT (4) (OUT)	
60	SEG12 (P93)		HI-CUT OUTOUT (8) (OUT)	
61	SEG11		N.C	
62	SEG10		N.C	
63	SEG9		N.C	
64	SEG8		N.C	
65	SEG7		N.C	
67	SEG5		N.C	
68	SEG4		N.C	
69	SEG3		N.C	
70	SEG2		N.C	
71	SEG1		N.C	
72	SEG0		N.C	
73	COM 3		N.C	
74	COM 2		N.C	
75	COM 1		N.C	
76	COM 0		N.C	
77	VLC		N.C	
78	N.C		N.C	
79	N.C		N.C	
80	N.C		N.C	

**Main PCB  
IC-8  
X24C02**



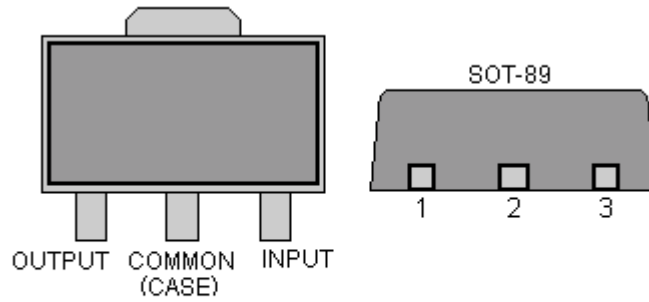
PIN	DESCRIPTION
A0 A1 A2	Address Inputs
SDA	Serial Data
SCL	Serial Clock
WC	Write Control
VSS	Ground
VCC	Supply Voltage

Main PCB  
IC-9  
LC7152M



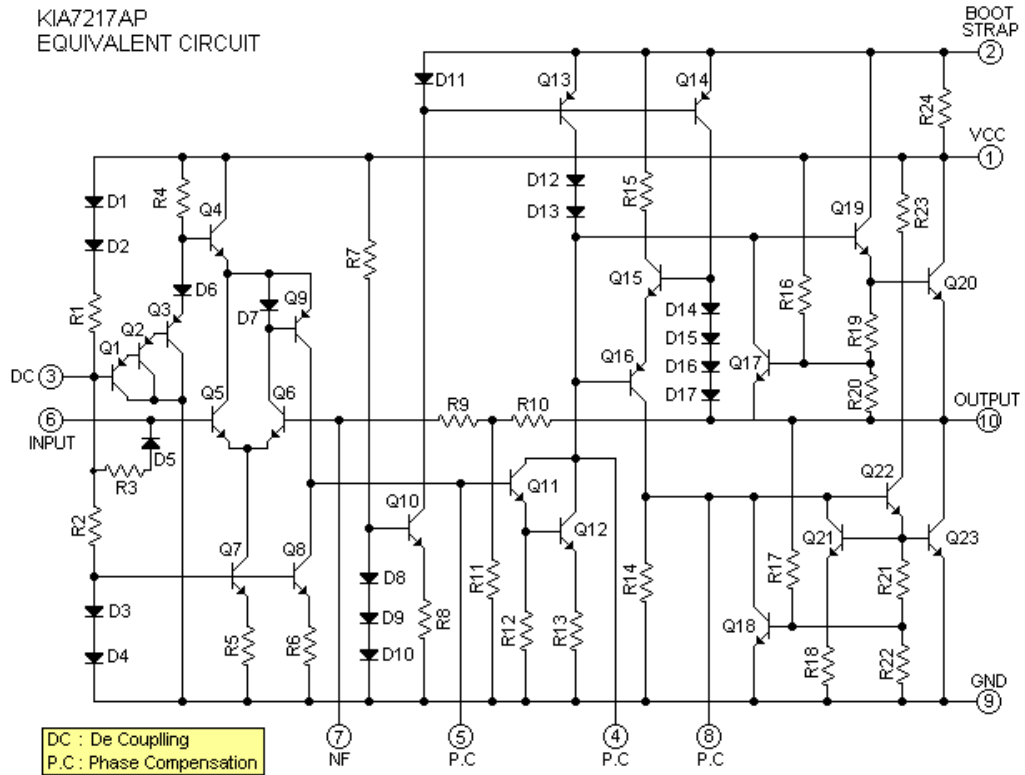
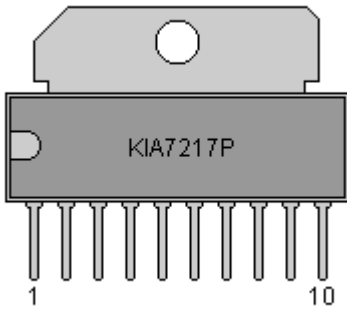
Symbol	PIN	Function	Symbol	PIN	Function	
PIB	16	Side-B oscillator signal input	PDB2	23	Sub charge pump	
XIN	1	Crystal oscillator	PDB1	22	Main charge pump	
XOUT	24		AIB	21	Low-pass filter transistors	
PIA	14	Side-A oscillator signal output	AOB	20		
VDD	17	Power supply	OUTB	19	General-purpose output port	
VSS	15	Ground	LDA	6	Side-A unlock detection	
CE	2	Serial data input	PDA2	9	Sub charge pump	
CL	3		Clock	PDA1	10	Main charge pump
DI	4		Data	AIA	11	Low-pass filter transistors
TEST	8	IC Test	AOA	12		
NC	7, 18	No connections	OUTA	13	General-purpose output port	
LDB	5	Side-B unlock detection				

**Main PCB  
IC-10  
78L05 (SOT-89)**



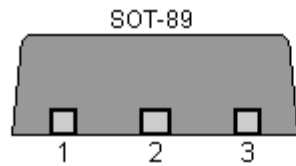
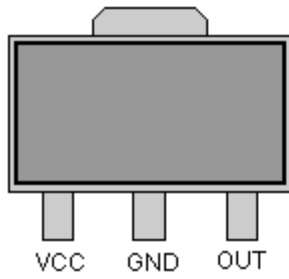
	MARKING
KIA78L05F	8A

**Main PCB  
IC-11  
KIA7217AP**

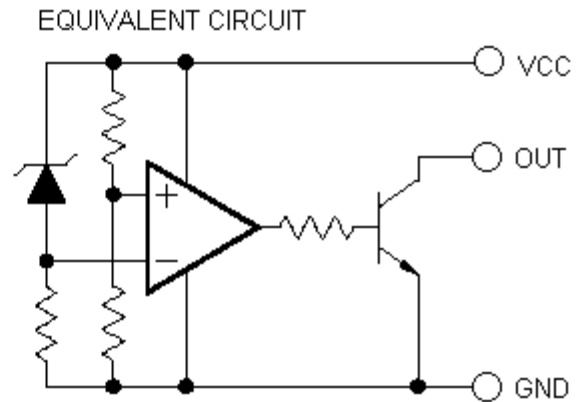


Main PCB  
IC-12  
TDA6130-5

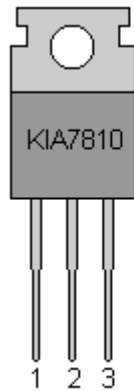
Main PCB  
IC-13  
KIA7045F



	MARKING
KIA7045F	6R

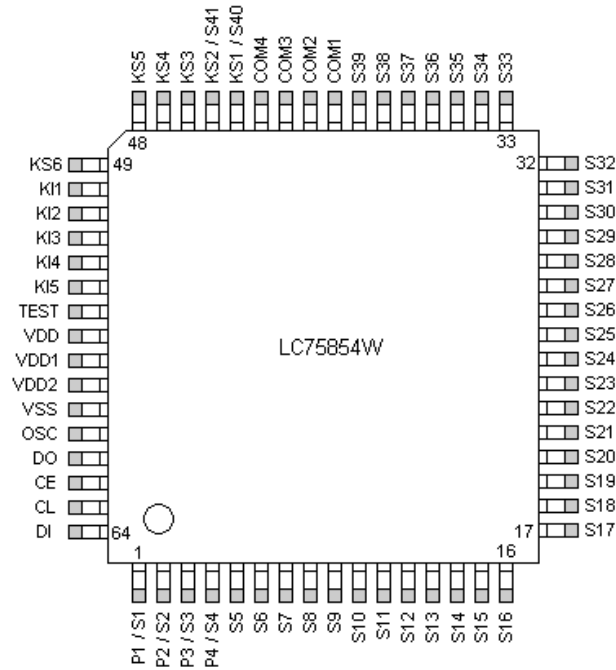


Main PCB  
IC-14  
KIA7810 (TO-220)

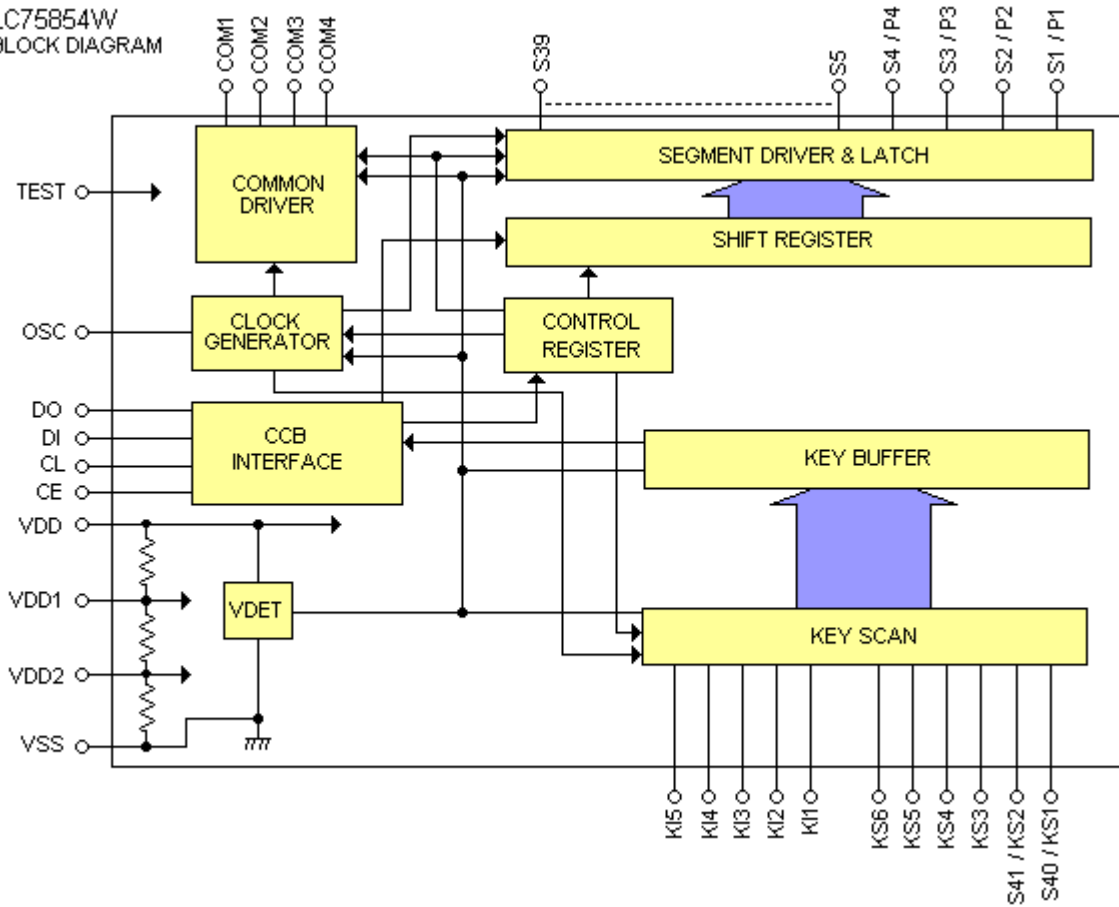


1. INPUT
2. COMMON (CASE)
3. OUTPUT

Front PCB  
 IC-401  
 LC75854W



LC75854W  
 BLOCK DIAGRAM



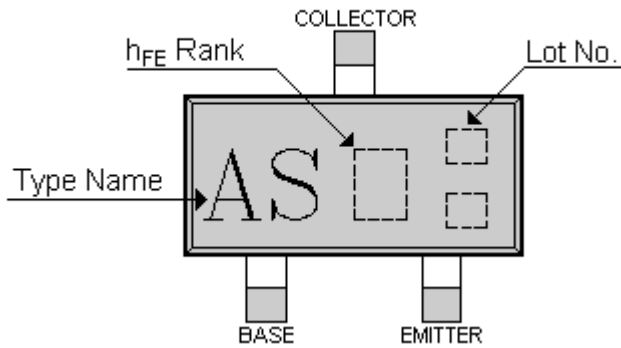


# Semiconductor Lead Identification And Internal Diagrams Transistors

## SMT Transistors (SOT23)

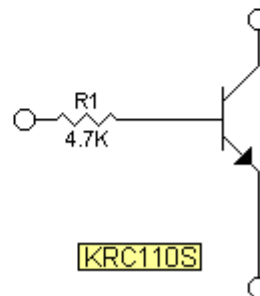
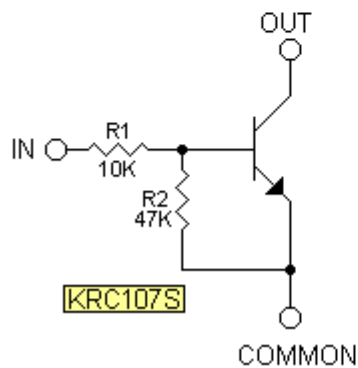
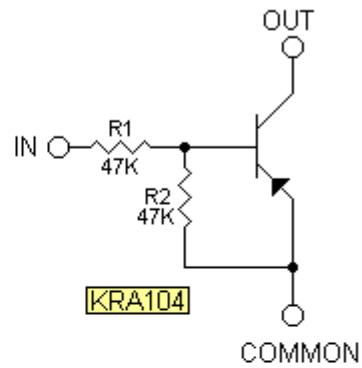
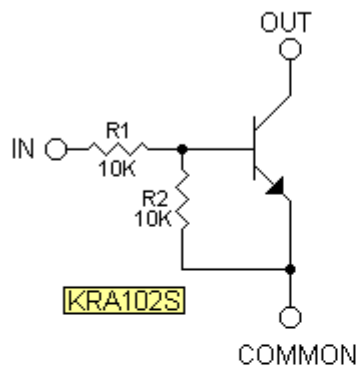
NPN	PNP
KRC107	KRA102S
KRC110S	KRA104
KTC3878	KTA1504S
KTC3879	
KTC3880S	

### Markings



Device	Mark
<b>PNP</b>	
KRA102S	PB
KRA104	PD
KTA1504S	AS
<b>NPN</b>	
KRC107	NH
KRC110S	NK
KTC3878	F
KTC3879	R
KTC3880S	AQ

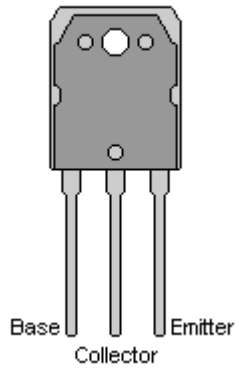
NOTE THE FOLLOWING EQUIVALENT CIRCUITS



## Transistors

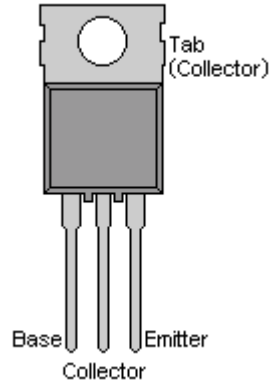
**KTA1940**

TO-3P (N)

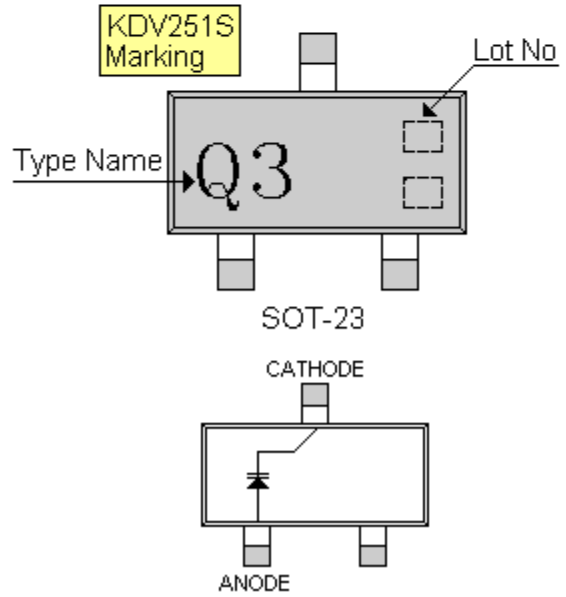
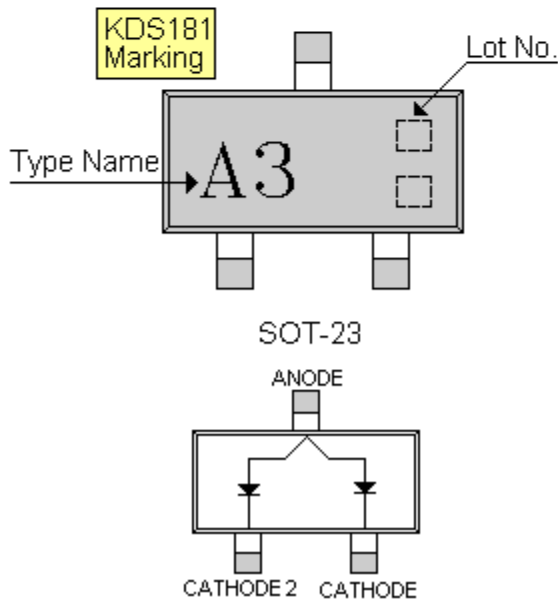
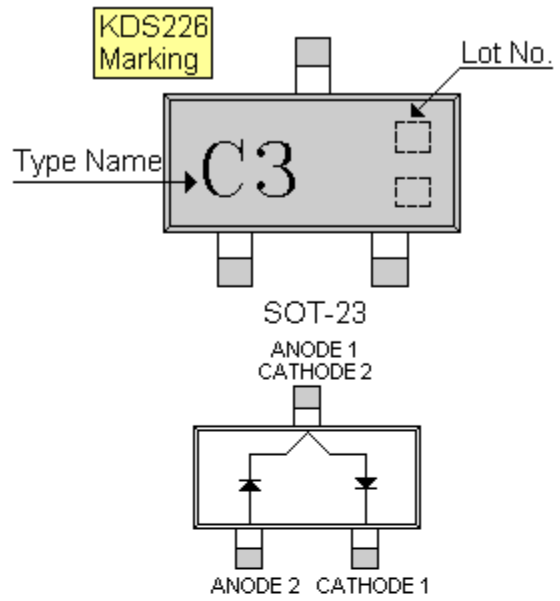
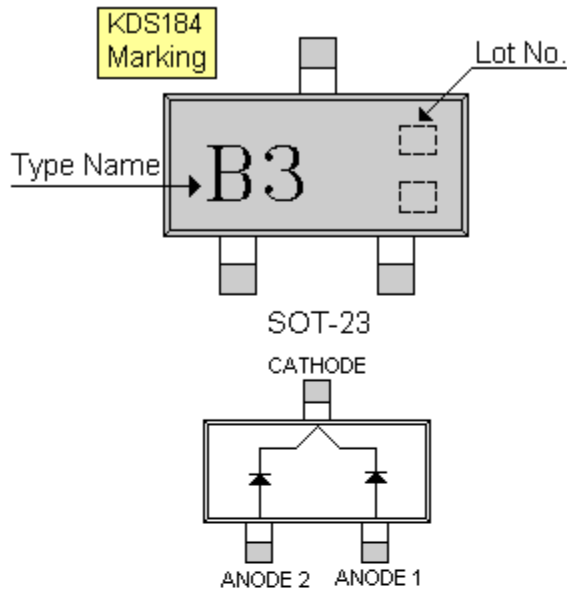


**2SC 1969(CH) 2SC 2166**

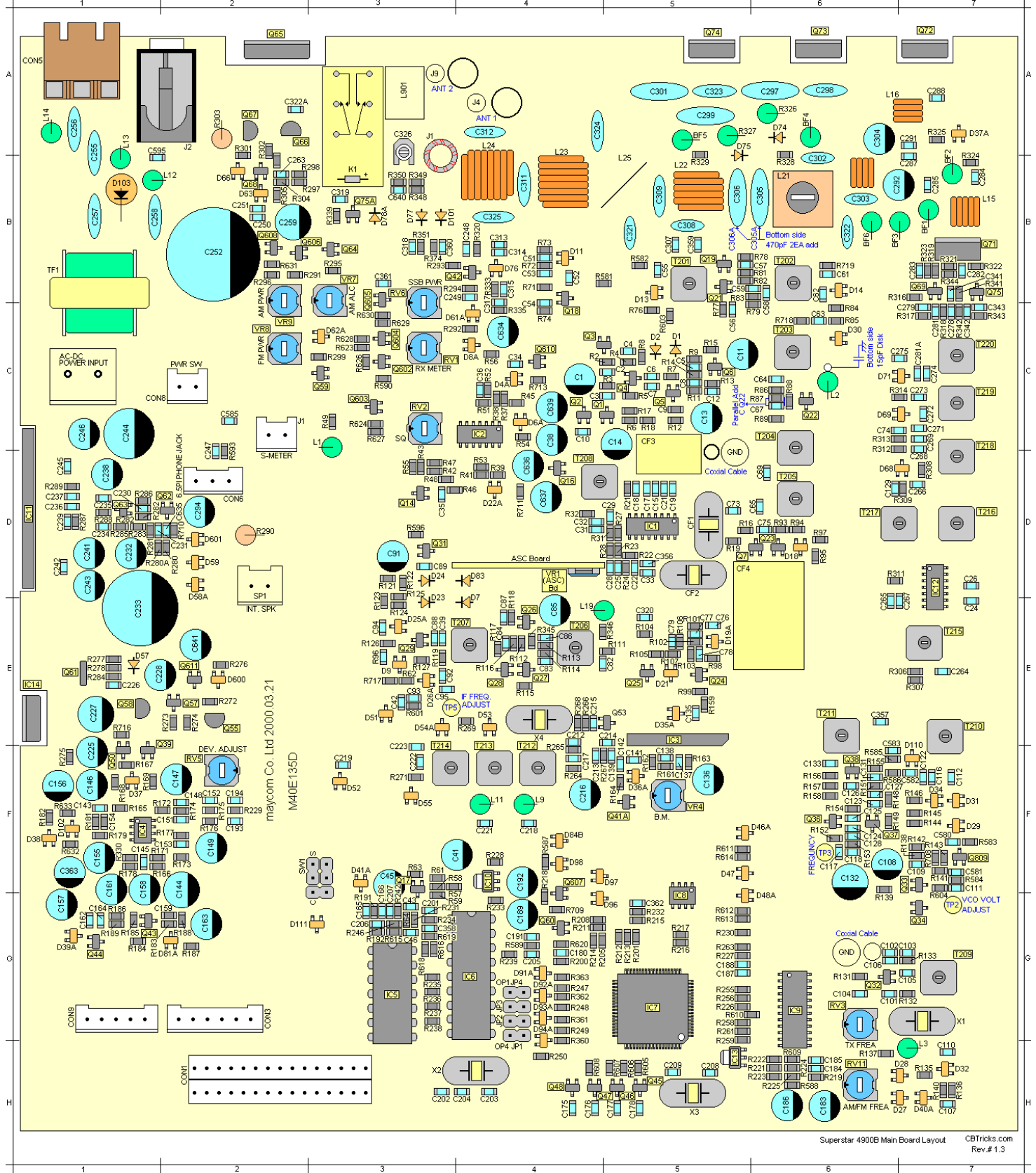
T-30



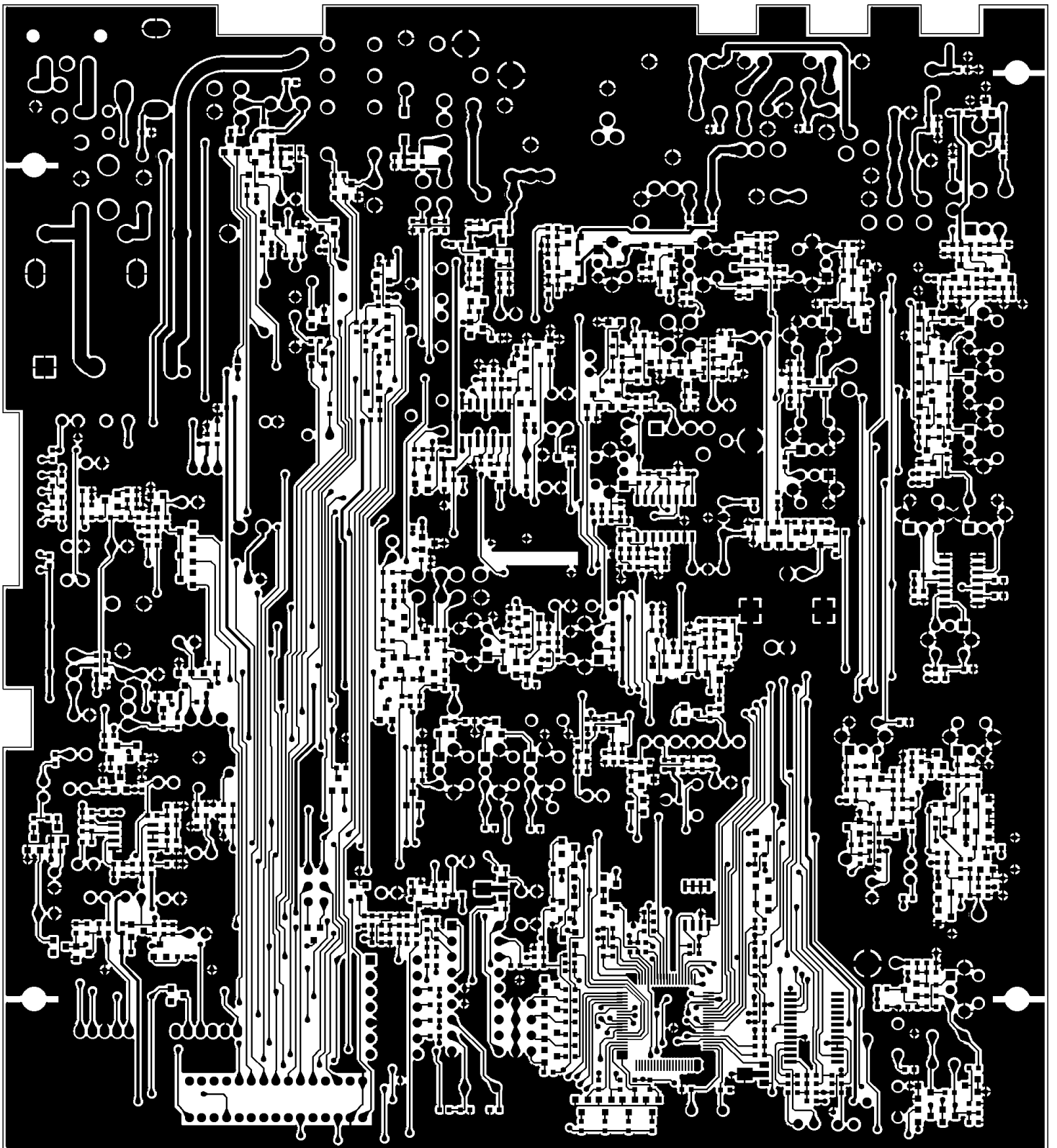
# Semiconductor Lead Identification And Internal Diagrams Diodes



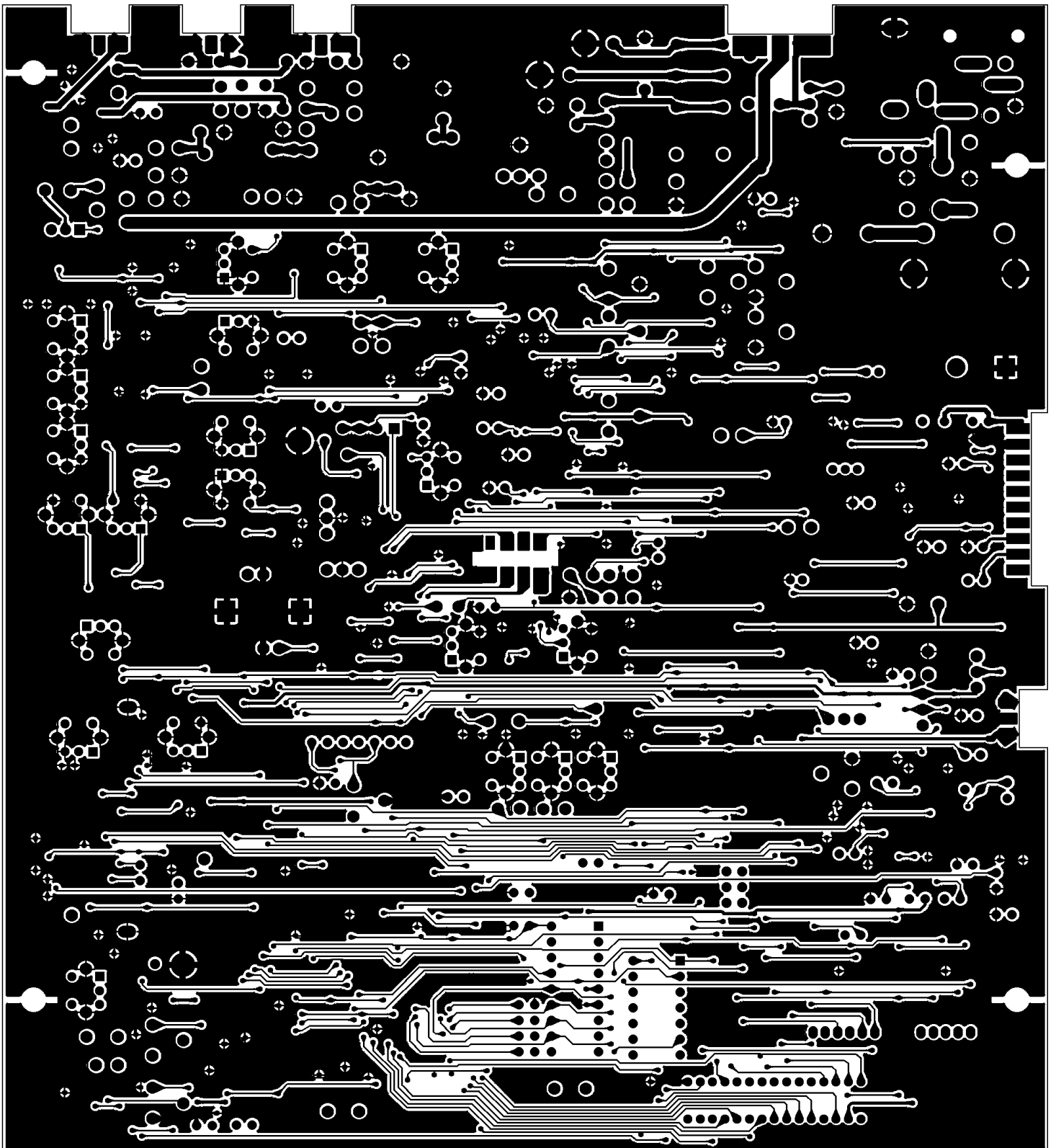
# SS4900 Main PCB Component Layout



SS4900 Main PCB Top Pattern



SS4900 Main PCB Bottom Pattern



**MAIN PCB**

8022902S  
80229028

ASSY MAIN B'D 1  
ASSY MAIN SMD 1

REF.	LOC	DESCRIPTION	SPECIFICATION	CODE NO.
IC-1	D5	IC	MC3361 (SMD)	11610044
IC-2	C4	IC	KIA324F (SMD)	1161004S
IC-3	E5	IC	UPC1037AH	11610050
IC-4	F1	IC	OP-AMP KIA4558F	11610003
IC-5	G3	IC	K558015	11610041
IC-6	G4	IC	KT3170	11610042
IC-7	G5	IC	TMP87CM21DF	11610046
IC-8	G5	IC- EEPROM	X24C02F 2KBIT SMD	11620002
IC-9	G6	IC	LC7152M	11610047
IC-10	F4	IC- REGULATOR	78L05,SOT-89	11710002
IC-11	D1	IC-AUDIO	KIA7217P	11720002
IC-12	D7	IC	TDA6130-5	11610043
IC-13	H5	IC RESET	KIA704SF	11610005
IC-14	E1	IC	KIA7810 (TO-220)	11610049

REF.	LOC	DESCRIPTION	SPECIFICATION	CODE NO.
Q1	C5	TR-PNP	KRA102S	13010005
Q2	C4	TR-NPN	KRC102S	13210006
Q3	C5	TRASISTOR	KTC3878	13210044
Q4	C5	TRASISTOR	KTC3878	13210044
Q5	C5	TR-FET	KTK211GR	13410001
Q6	C5	TR-PNP	KTA1504S	13010004
Q7	D6	TR-NPN	KTC3880S	13210002
Q14	D3	TR-NPN	KRC102S	13210006
Q16	D4	TR-NPN	KRC102S	13210006
Q17	F3	TR-NPN	KTC3875S	13210009
Q18	B4	TR-NPN	KTC3880S	13210002
Q19	B5	TR-NPN	KTC3880S	13210002
Q21	B5	TR-NPN	KRC112S	13210011
Q22	C6	TR-NPN	KTC3880S	13210002
Q23	D6	TR-NPN	KTC3880S	13210002
Q24	E5	TRASISTOR	KTC3878	13210044
Q25	E5	TRASISTOR	KTC3878	13210044
Q26	E4	TRASISTOR	KTC3878	13210044
Q27	E4	TRASISTOR	KTC3878	13210044
Q28	E4	TRASISTOR	KTC3878	13210044
Q29	E3	TR-NPN	KRC110S	13210001
Q31	D3	TR-NPN	KRC112S	13210011
Q32	G6	TR-NPN	KTC3880S	13210002
Q36	F6	TR-NPN	KTC3880S	13210002
Q37	F6	TR-NPN	KTC3880S	13210002
Q38	F6	TR-NPN	KTC3880S	13210002
Q39	F1	TR-NPN	KRC102S	13210006
Q41A	F5	TR-NPN	KRC110S	13210001
Q42	B4	TRASISTOR	KTC3878	13210044
Q43	G1	TR-PNP	KTA1504S	13010004
Q44	G1	TR-NPN	KTC3875S	13210009
Q45	H5	TR-NPN	KRC102S	13210006
Q46	H5	TR-NPN	KRC102S	13210006
Q47	H4	TR-NPN	KRC102S	13210006
Q48	H4	TR-NPN	KRC102S	13210006
Q50	F1	TR-PNP	KRA102S	13010005
Q53	E5	TR-NPN	KTC3880S	13210002
Q55	E2	TRANSISTOR	KTC200, TO-92	13210046
Q57	E2	TR-NPN	KRC112S	13210011
Q58	E1	TRANSISTOR	KTA200, TO-92	13210047
Q59	C3	TR-NPN	KRC110S	13210001
Q60	G4	TR-NPN	KRC102S	13210006
Q61	E1	TRANSISTOR	KTC3205, TO-92L	13210048

Q62	D2	TR-NPN	KRC110S	13210001
Q63	D1	TR-NPN	KTC3875S	13210009
Q64	B3	TR-NPN	KTC3875S	13210009
Q65	A2	TRANSISTOR	KTA1940	13220014
Q66	A2	TRANSISTOR	KTA200, TO-92	13210047
Q67	A2	TRANSISTOR	KTC200, TO-92	13210046
Q68	B2	TR-NPN	KTC3875S	13210009
Q69	B7	TRANSISTOR	KTC3879	13210050
Q71	B7	TR-NPN	2SC2314	13220003
Q72	A7	TRANSISTOR	25C2166(C)	13220013
Q73	A6	TR-NPN	25C1969 (CH)	13220004
Q74	A5	TR-NPN	25C1969 (CH)	13220004
Q75	B7	TRANSISTOR	KTC3879	13210050
Q75A	B3	TR-NPN	KRC110S	13210001
Q602	C3	TR-FET	25J144	13410005
Q603	C3	TR-NPN	KRC112S	13210011
Q604	C3	TR-FET	25J144	13410005
Q606	B2	TR-NPN	KRC112S	13210011
Q607	F4	TR-FET	25J144	13410005
Q611	E2	TR-NPN	KRC107	13220009

Q608 B2  
Q605 B3  
Q610 C4  
Q34 G7  
Q33 F7  
Q809 F7

REF.	LOC.	DESCRIPTION	SPECIFICATION	CODE NO.
R2	C7	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R3	C7	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R4	C7	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R5	C7	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R6	C7	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R7	C7	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R8	C7	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R9	C5	RESISTOR-FIXED	470K-J-1/16W (0603)	15210474
R11	C5	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
R12	C5	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
R13	C5	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R14	C5	RESISTOR-FIXED	1M-J-1/16W (0603)	15210105
R15	C5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R16	D5	RESISTOR-FIXED	5.6K-J-1/16W (0603)	15210562
R17	C5	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R18	C5	RESISTOR-FIXED	390-J-1/16W (0603)	15210391
R19	D5	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R21	D5	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R22	D5	RESISTOR-FIXED	470K-J-1/16W (0603)	15210474
R23	D5	RESISTOR-FIXED	15K-J-1/16W (0603)	15210153
R24	D5	RESISTOR-FIXED	150K-J-1/16W (0603)	15210154
R27	D5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R28	D5	RESISTOR-FIXED	5.6K-J-1/16W (0603)	15210562
R31	D5	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R32	D4	RESISTOR-FIXED	8.2K-J-1/16W (0603)	15210822
R37	C4	RESISTOR-FIXED	150K-J-1/16W (0603)	15210154
R38	C4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R39	D4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R41	D4	RESISTOR-FIXED	82K-J-1/16W (0603)	15210823
R43	D3	RESISTOR-FIXED	3.3K-J-1/16W (0603)	15210332
R45	C4	RESISTOR-FIXED	680-J-1/16W	15210681
R46	D3	RESISTOR-FIXED	270K-J-1 /16W (0603)	15210274
R47	D3	RESISTOR-FIXED	680K-J-1/16W (0603)	15210684
R48	D3	RESISTOR-FIXED	2.2M-J-1/16W	15210225
R49	C3	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R51	C4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104



R52	C4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R53	D4	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R54	C4	RESISTOR-FIXED	680-J-1/16W	15210681
R55	D3	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R57	F3	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R58	F3	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R59	G3	RESISTOR-FIXED	3.3K-J-1/16W (0603)	15210332
R61	F3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R62	E3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R63	F3	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R64	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R71	B4	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
R72	B4	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R73	B4	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R74	C4	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R76	C5	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R77	C5	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R78	B5	RESISTOR-FIXED	0-J-1/16W (0603)	15210000
R79	B6	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R81	B5	RESISTOR-FIXED	680-J-1/16W	15210681
R82	B5	RESISTOR-FIXED	82-J-1/16W (0603)	15210820
R83	B6	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R84	C6	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R85	C6	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R86	C6	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R87	C6	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R88	C6	RESISTOR-FIXED	82K-J-1/16W (0603)	15210823
R89	C6	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R93	D6	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R94	D6	RESISTOR-FIXED	470-J-1/16W (0603)	15210471
R95	D6	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R96		RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R97	D6	RESISTOR-FIXED	560-J-1/16W (0603)	15210561
R98	E5	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R99	E5	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R101	E5	RESISTOR-FIXED	680-J-1/16W	15210681
R102	E5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R103	E5	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R104	E5	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R105	E5	RESISTOR-FIXED	5.6K-J-1/16W (0603)	15210562
R106	E5	RESISTOR-FIXED	680-J-1/16W	15210681
R107	E5	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R111	E5	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R112	E4	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R113	E4	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R114	E4	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R115	E4	RESISTOR-FIXED	270-J-1/16W (0603)	15210271
R116	E4	RESISTOR-FIXED	150-J-1/16W (0603)	15210151
R117	E4	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R118	E4	RESISTOR-FIXED	68-J-1/16W (0603)	15210680
R119	E3	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R121	D3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R122	D3	RESISTOR-FIXED	82K-J-1/16W (0603)	15210823
R123	D3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R124	E3	RESISTOR-FIXED	470K-J-1/16W (0603)	15210474
R125	D3	RESISTOR-FIXED	82K-J-1/16W (0603)	15210823
R126	E3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R127	E3	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R131	G6	RESISTOR-FIXED	56-J-1/16W (0603)	15210560
R132	G7	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R133	G7	RESISTOR-FIXED	2.7K-J-1/16W (0603)	15210272
R135	H7	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R136	H7	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R143	F7	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R148	F6	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
R149	F6	RESISTOR-FIXED	8.2K-J-1/16W (0603)	15210822
R151	F6	RESISTOR-FIXED	680-J-1/16W	15210681

R152	F6	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R153	F6	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R154	F6	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R155	F6	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R156	F6	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R157	F6	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R158	F6	RESISTOR-FIXED	56-J-1/16W (0603)	15210560
R159	E5	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R161	F5	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R163	F5	RESISTOR-FIXED	270K-J-1 /16W (0603)	15210274
R164	F5	RESISTOR-FIXED	3.3K-J-1/16W (0603)	15210332
R165	F1	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R166	F1	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R167	F1	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R168	F1	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
R169	F1	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
R171	F1	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R172	F2	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R173	F2	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R174	F2	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R175	F2	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R176	F2	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R177	F2	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R178	F1	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R181	F1	RESISTOR-FIXED	470K-J-1/16W (0603)	15210474
R182	F1	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R183	G2	RESISTOR-FIXED	470-J-1/16W (0603)	15210471
R184	G1	RESISTOR-FIXED	470-J-1/16W (0603)	15210471
R185	G1	RESISTOR-FIXED	1M-J-1/16W (0603)	15210105
R186	G1	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R187	G2	RESISTOR-FIXED	3.3K-J-1/16W (0603)	15210332
R188	G2	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
R189	G1	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R191	G3	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R192	G3	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
R201	G5	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R205	G4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R208	G4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R211	G4	RESISTOR-FIXED	39K-J-1/16W (0603)	15210393
R212	G5	RESISTOR-FIXED	39K-J-1/16W (0603)	15210393
R213	G5	RESISTOR-FIXED	82K-J-1/16W (0603)	15210823
R214	G4	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R215	G5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R216	G5	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R217	G5	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R219	H6	RESISTOR-FIXED	10-J-1/16W (0603)	15210100
R221	H6	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R222	H6	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R223	H6	RESISTOR-FIXED	8.2K-J-1/16W (0603)	15210822
R224	H6	RESISTOR-FIXED	5.6K-J-1/16W (0603)	15210562
R226	G5	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R227	G5	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R228	F4	RESISTOR-FIXED	68-J-1/16W (0603)	15210680
R230	G5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R231	G3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R232	G5	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R233	G4	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R234	G3	RESISTOR-FIXED	1M-J-1/16W (0603)	15210105
R235	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R236	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R237	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R238	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R239	G4	RESISTOR-FIXED	330K-J-1/16W (0603)	15210334
R242	G3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R246	G3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R247	G4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R248	G4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104

R249	G4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R250	H4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R255	G5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R256	G5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R258	G5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R259	G5	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R261	G5	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R263	G5	RESISTOR-FIXED	1M-J-1/16W (0603)	15210105
R264	F4	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R265	F4	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R266	E4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R267	F5	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R268	E4	RESISTOR-FIXED	8.2K-J-1/16W (0603)	15210822
R269	E4	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R271	F3	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R272	E2	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R273	E2	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R274	E2	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
R275	F1	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R276	E2	RESISTOR-FIXED	0-J-1/16W (0603)	15210000
R277	E1	RESISTOR-FIXED	22-J-1/16W (0603)	15210220
R278	E1	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R280	D2	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R280A	D1	RESISTOR-FIXED	470K-J-1/16W (0603)	15210474
R281	D1	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R283	D1	RESISTOR-FIXED	680K-J-1/16W (0603)	15210684
R284	E1	RESISTOR-FIXED	3.3K-J-1/16W (0603)	15210332
R285	D1	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R286	D1	RESISTOR-FIXED	680-J-1/16W	15210681
R287	D1	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R288	D1	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R289	D1	RESISTOR-FIXED	68-J-1/16W (0603)	15210680
R290	D2	RESISTOR-FIXED	3.9-1W	160203R9
R291	B2	RESISTOR-FIXED	5.6K-J-1/16W (0603)	15210562
R292	C4	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R293	B3	RESISTOR-FIXED	470-J-1/16W (0603)	15210471
R294	B4	RESISTOR-FIXED	18K-J-1/16W (0603)	15210183
R295	B3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R296	B2	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R297	B2	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R298	B2	RESISTOR-FIXED	3.3K-J-1/16W (0603)	15210332
R301	A2	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R302	A2	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R303	A2	RESISTOR-FIXED	51-1W	16020051
R304	B2	RESISTOR-FIXED	560-J-1/16W (0603)	15210561
R305	B2	RESISTOR-FIXED	15-J-1/16W	15210150
R306	E7	RESISTOR-FIXED	1.2K-J-1/16W (0603)	15210122
R307	E7	RESISTOR-FIXED	470-J-1/16W (0603)	15210471
R308	D7	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R309	D7	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R311	D6	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R312	C7	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R313	C7	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R314	C7	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R316	B7	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R317	C7	RESISTOR-FIXED	330-J-1/16W (0603)	15210331
R318	C7	RESISTOR-FIXED	47-J-1/16W (0603)	15210470
R319	B7	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R320	B4	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R321	B7	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R322	B7	RESISTOR-FIXED	330-J-1/16W (0603)	15210331
R323	B7	RESISTOR-FIXED	10-J-1/16W (0603)	15210100
R324	B7	RESISTOR-FIXED	22-J-1/16W (0603)	15210220
R325	A7	RESISTOR-FIXED	680-J-1/16W	15210681
R326		RESISTOR-FIXED	150-1/8W	16020150
R327		RESISTOR-FIXED	150-1/8W	16020150
R328	A6	RESISTOR-FIXED	27-J-1/16W (0603)	15210270

R329	B5	RESISTOR-FIXED	27-J-1/16W (0603)	15210270
R330	F1	RESISTOR-FIXED	12K-J-1/16W (0603)	15210123
R333	B4	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R335	C4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R339	B3	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R341	B7	RESISTOR-FIXED	1.5K-J-1/16W (0603)	15210152
R342	C7	RESISTOR-FIXED	330-J-1/16W (0603)	15210331
R343	C7	RESISTOR-FIXED	47-J-1/16W (0603)	15210470
R344	B7	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R345	E4	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
R346	E4	RESISTOR-FIXED	39-J-1/16W (0603)	15210390
R348	B3	RESISTOR-FIXED	22-J-1/16W (0603)	15210220
R349	B3	RESISTOR-FIXED	22-J-1/16W (0603)	15210220
R350	B3	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
R351	B3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R374	B3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R581	B5	RESISTOR-FIXED	0-J-1/16W (0603)	15210000
R582	B5	RESISTOR-FIXED	0-J-1/16W (0603)	15210000
R586	F6	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
R587	F4	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R588	H6	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R589	G4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R590	C3	RESISTOR-FIXED	0-J-1/16W (0603)	15210000
R593	C2	RESISTOR-FIXED	270-J-1/16W (0603)	15210271
R596	D3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R601	E3	RESISTOR-FIXED	3.3K-J-1/16W (0603)	15210332
R603	C5	RESISTOR-FIXED	0-J-1/16W (0603)	15210000
R604	F7	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R605	H5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R606	H5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R607	H5	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R608	H4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R609		RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R611	F5	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R612	G5	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R613	G5	RESISTOR-FIXED	150K-J-1/16W (0603)	15210154
R614	F5	RESISTOR-FIXED	150K-J-1/16W (0603)	15210154
R616	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R618	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R619	G3	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R620	G4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R623	C3	RESISTOR-FIXED	10M-J-1/16W (0603)	15210106
R624	C3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R626	C3	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R627	C3	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R628	C3	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
R629	C3	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R632	F1	RESISTOR-FIXED	1M-J-1/16W (0603)	15210105
R633	F1	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
R708	F7	RESISTOR-FIXED	100K-J-1/16W (0603)	15210104
R710		RESISTOR—FIXED	6.8K-J-1/16W (0603)	15210682
R711	D4	RESISTOR—FIXED	680-J-1/16W	15210681
R716	E1	RESISTOR—FIXED	82K-J-1/16W (0603)	15210823
R717	E3	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R719	B6	RESISTOR-FIXED	220-J-1/16W (0603)	15210221
RV1	C3	RESISTOR—SEMI	6P1, 10KB, 631H	16550103
RV2	C3	RESISTOR—SEMI	6P1, 500KB, 631H	16550474
RV4	F5	RESISTOR—SEMI	6P1, 300KB, 631H	16550304
RV5	F2	RESISTOR—SEMI	6P1, 3KB, 631H	16550033
RV7	B3	RESISTOR—SEMI	6P1, 1KB, 631H	16550102
RV8	C2	RESISTOR—SEMI	6P1, 5KB, 631H	16550502
RV11	H6	RESISTOR—SEMI	6P1, 50KB, 631H	16550504
C9	C5	RESISTOR—FIXED	470K-J-1/16W (0603)	15210474

REF.	LOC	DESCRIPTION	SPECIFICATION	CODE NO.
C1	C4	C-ELECT	22µF-M-16V, SMS	18050022
C2	C5	C-CERAMIC	GRM39 COG 221 J50	17010221
C3	C5	C-CERAMIC	GRM39 X7R 223K 25	17010223
C4	C5	C-CERAMIC	GRM39 X7R 102K 50	17010102
C5	C5	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C6	C5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C7	C5	C-CERAMIC	GRM39 X7R 102K 50	17010102
C8	C5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C9	C5	RESISTOR—FIXED	470K-J-1/16W (0603)	15210474
C10	C4	C-CERAMIC	GRM39 X7R 103K 50	17010103
C11	C5	C-ELECT	10µF-M-25V, SMS	18050010
C12	C5	C-CERAMIC	GRM39 X7R 223K 25	17010223
C13	C5	C-ELECT	33µF-M-25V, SMS	18050033
C14	C5	C-ELECT	33µF-M-25V, SMS	18050033
C15	D5	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C17	D5	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C18	D5	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C19	D5	C-CERAMIC	GRM39 COG 220 J50	17010220
C21	D5	C-CERAMIC	GRM39 COG 470J 50	17010470
C22	D5	C-CERAMIC	GRM39 COG 271 J50	17010271
C24	D7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C25	D5	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C26	D7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C28	D5	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C29	D5	C-CERAMIC	GRM39 X7R 223K 25	17010223
C31	D4	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C32	D4	C-CERAMIC	GRM39 X7R 103K 50	17010103
C33	D5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C34		C-CERAMIC	GRM39 X7R 223K 25	17010223
C35	D3	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C36	C4	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C38	C4	C-ELECT	47µF-M-16V, SMS	18050047
C39	E3	C-CERAMIC	GRM39 COG 100D 50	17010100
C41	F4	C-ELECT	47µF-M-16V, SMS	18050047
C42	E3	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C43	G3	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C45	F3	C-ELECT	47µF-M-16V, SMS	18050047
C46		C-CERAMIC	GRM39 YSV 104Z 25	17010104
C51		C-CERAMIC	GRM39 X7R 472K 50S	17010472
C52		C-CERAMIC	GRM39 X7R 472K 50S	17010472
C53		C-CERAMIC	GRM39 X7R 472K 50S	17010472
C54	B4	C-CERAMIC	GRM39 X7R 103K 50	17010103
C55	B5	C-CERAMIC	GRM39 COG 330J 50	17010330
C56	C5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C57	B5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C58	B6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C59	B6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C61	B6	C-CERAMIC	GRM39 COG 330J 50	17010330
C62	B6	C-CERAMIC	GRM39 COG 030C 50	17010030
C63	C6	C-CERAMIC	GRM39 COG 330J 50	17010330
C64	C6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C65	D6	C-CERAMIC	GRM39 COG 030C 50	17010030
C67	C6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C69	D6	C-CERAMIC	GRM39 COG 1R5C 50	170101R5
C73	D5	C-CERAMIC	GRM39 COG 220 J50	17010220
C74	C7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C75	D6	C-CERAMIC	GRM39 X7R 102K 50	17010102
C76	E5	C-CERAMIC	GRM39 X7R 102K 50	17010102
C77	E5	C-CERAMIC	GRM39 COG 100D 50	17010100
C78	E5	C-CERAMIC	GRM39 X7R 102K 50	17010102
C79	E5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C82	E5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C83	E4	C-CERAMIC	GRM39 COG 680 J50	17010680

C84	E4	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C85	E4	C-ELECT	22µF-M-16V, SMS	18050022
C86	E4	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C87	E4	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C88	E3	C-CERAMIC	GRM39 COG 100D 50	17010100
C89	D3	C-CERAMIC	GRM39 COG 101J 50	17010101
C91	D3	C-ELECT	0.47µF-SMS 5*11	18020R47
C92	E3	C-CERAMIC	GRM39 COG 050C 50	17010050
C93	E3	C-CERAMIC	GRM39 COG 100D 50	17010100
C94	E3	C-CERAMIC	GRM39 X7R 102K 50	17010102
C95	E3	C-CERAMIC	GRM39 COG 050C 50	17010050
C101	G6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C102	G6	C-CERAMIC	GRM39 COG 100D 50	17010100
C103	G7	C-CERAMIC	GRM39 COG 121J 50	17010121
C104	G6	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C105	G7	C-CERAMIC	GRM39 COG 221 J50	17010221
C106	G6	C-CERAMIC	GRM39 COG 220 J50	17010220
C107	H7	C-CERAMIC	GRM39 X7R 223K 25	17010223
C111	F7	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C112	F7	C-CERAMIC	GRM39 X7R 102K 50	17010102
C117	F6	C-CERAMIC	GRM39 COG 101J 50	17010101
C118	F6	C-CERAMIC	GRM39 COG 680 J50	17010680
C122	F7	C-CERAMIC	GRM39 COG 270 J50	17010270
C123	F6	C-CERAMIC	GRM39 SL561J 50	17010561
C124	F6	C-CERAMIC	GRM39 COG 220 J50	17010220
C125	F6	C-CERAMIC	GRM39 COG 471J 50S	17010471
C126	F6	C-CERAMIC	GRM39 COG 100D 50	17010100
C127	F6	C-CERAMIC	GRM39COG 391J 50S	17010391
C128	F6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C129	D6	C-CERAMIC	GRM39 COG 070D 50	17010070
C131	F6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C132	F6	C-ELECT	220µF-M-16V, SHL	18020227
C133	F6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C135		C-CERAMIC	GRM39 COG 101J 50	17010101
C136		C-ELECT	47µF-M-16V, SMS	18050047
C137	F5	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C138	F5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C139		C-CERAMIC	GRM39 COG 100D 50	17010100
C141	F5	C-CERAMIC	GRM39 COG 330J 50	17010330
C142	F5	C-CERAMIC	GRM39 COG 680 J50	17010680
C143	F1	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C144	F2	C-ELECT	220µF-M-16V, SHL	18020227
C145	F1	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C146	F1	C-ELECT	1µF-M-50V, SMS	18050001
C147	F2	C-ELECT	1µF-M-50V, SMS	18050001
C148	F2	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C149	F2	C-ELECT	0.22µF-M-50V, SMS	18050224
C151	F2	C-CERAMIC	GRM39 X7R 333K 16	17010333
C152	F2	C-CERAMIC	GRM39 X7R 103K 50	17010103
C153	F2	C-CERAMIC	GRM39 X7R 102K 50	17010102
C154	F1	C-CERAMIC	GRM39 COG 331J 50S	17010331
C155	F1	C-ELECT	1µF-M-50V, SMS	18050001
C156	F1	C-ELECT	1µF-M-50V, SMS	18050001
C157	G1	C-ELECT	47µF-M-16V, SMS	18050047
C158	F1	C-ELECT	10µF-M-25V, SMS	18050010
C159		C-CERAMIC	GRM39 X7R 103K 50	17010103
C161	F1	C-ELECT	0.22µF-M-50V, SMS	18050224
C162	G1	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C163	G2	C-ELECT	1µF-M-50V, SMS	18050001
C164	G1	C-CERAMIC	GRM39 X7R 103K 50	17010103
C165	G3	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C166	G3	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C175	H4	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C176	H4	C-CERAMIC	GRM39 COG 822J 50	17010822
C177	H5	C-CERAMIC	GRM39 Y5V 153Z 50	17010153
C178	H5	C-CERAMIC	GRM39 X7R 333K 16	17010333
C183	H6	C-ELECT	22µF-M-16V, SMS	18050022

C184	H6	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C186	H6	C-ELECT	0.47µF-BP	18020474
C187	G5	C-CERAMIC	GRM39 X7R 102K 50	17010102
C188	G5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C189	G4	C-ELECT	47µF-M-16V, SMS	18050047
C191	G4	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C192	F4	C-ELECT	22µF-M-16V, SMS	18050022
C193	F2	C-CERAMIC	GRM39 X7R 102K 50	17010102
C194	F2	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C201	G3	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C202	H3	C-CERAMIC	GRM39 COG 220 J50	17010220
C203	H4	C-CERAMIC	GRM39 COG 330J 50	17010330
C204	H4	C-CERAMIC	GRM39 COG 270 J50	17010270
C205		C-CERAMIC	GRM39 YSV 104Z 25	17010104
C206	G3	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C207	G3	C-CERAMIC	GRM39 X7R 103K 50	17010103
C208	H5	C-CERAMIC	GRM39 COG 330J 50	17010330
C212	E4	C-CERAMIC	GRM39 X7R 103K 50	17010103
C213	F4	C-CERAMIC	GRM39 COG 121J 50	17010121
C214	E5	C-CERAMIC	GRM39 COG 100D 50	17010100
C215		C-CERAMIC	GRM39 COG 271 J50	17010271
C216	F4	C-ELECT	22µF-M-16V, SMS	18050022
C217	F4	C-CERAMIC	GRM39 X7R 103K 50	17010103
C218	F4	C-CERAMIC	GRM39 COG 120J 50	17010120
C219	F3	C-CERAMIC	GRM39 X7R 103K 50	17010103
C221	F4	C-CERAMIC	GRM39 COG 680 J50	17010680
C222	F3	C-CERAMIC	GRM39 COG 330J 50	17010330
C223	E3	C-CERAMIC	GRM39 X7R 103K 50	17010103
C225	F1	C-ELECT	0.22µF-M-50V, SMS	18050224
C226	E1	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C227	E1	C-ELECT	220µF-M-16V, SHL	18020227
C228	E1	C-ELECT	33µF-M-25V, SMS	18050033
C230	D1	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C231	D1	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C232	D1	C-ELECT	47µF-M-16V, SMS	18050047
C233	E1	C-ELECT	1000µF-M-25V, SMS	18051000
C235	D1	C-CERAMIC	GRM39 X7R 103K 50	17010103
C236	D1	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C237	D1	C-CERAMIC	GRM39 X7R 102K 50	17010102
C238	D1	C-ELECT	4.7µF-16V, SMS	1805R047
C239	D1	C-CERAMIC	GRM39 COG 181J 50	17010181
C241	D1	C-ELECT	33µF-M-25V, SMS	18050033
C242	D1	C-CERAMIC	GRM39 Y5V 683Z 25	17010683
C243	D1	C-ELECT	47µF-M-16V, SMS	18050047
C244	C1	C-ELECT	220µF-M-16V, SHL	18020227
C245	D1	C-CERAMIC	GRM39 COG 221 J50	17010221
C246	C1	C-ELECT	0.47µF-SMS 5*11	18020R47
C247	D2	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C248	B4	C-CERAMIC	GRM39 COG 270 J50	17010270
C249	B4	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C250	B2	C-CERAMIC	GRM39 X7R 103K 50	17010103
C251	B2	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C252	B2	C-ELECT	3300µF	18050338
C255	A1	C-CERAMIC (DISK)	0.01 UF-Z-50V, SL	17040103
C256	A1	C-CERAMIC (DISK)	0.01 UF-Z-50V, SL	17040103
C257	B1	C-CERAMIC (DISK)	0.022µF-K-50V, SL	17040022
C258	B1	C-CERAMIC (DISK)	0.022µF-K-50V, SL	17040022
C259	B2	C-ELECT	100µF-M-16V, SMS	18050100
C262		C-CERAMIC	GRM39 X7R 102K 50	17010102
C263	B2	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C264	E7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C265	D6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C266	D7	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C267	D7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C268	C7	C-CERAMIC	GRM39 COG 121J 50	17010121
C269	C7	C-CERAMIC	GRM39 COG 050C 50	17010050
C271	C7	C-CERAMIC	GRM39 COG 121J 50	17010121

C272	C7	C-CERAMIC	GRM39 COG 050C 50	17010050
C273	C7	C-CERAMIC	GRM39 COG 470J 50	17010470
C281	C7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C281A	C7	C-CERAMIC	GRM39 COG 330J 50	17010330
C282	B7	C-CERAMIC	GRM39 COG 221 J50	17010221
C283	B7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C284	B7	C-CERAMIC	GRM39 COG 471J 50S	17010471
C285	B7	C-CERAMIC	GRM39 X7R 223K 25	17010223
C287	A7	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C291	A7	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
C292	B6	C-ELECT	0.22µF-M-50V, SMS	18050224
C297	A6	C-CERAMIC (DISK)	390pF-J-50V, NPO	17040390
C298	A6	C-CERAMIC (DISK)	330pF-J-50V, NPO	17040330
C299	A5	C-CERAMIC (DISK)	390pF-J-50V, NPO	17040390
C301	A5	C-CERAMIC (DISK)	330pF-J-50V, NPO	17040330
C302	A6	C-CERAMIC (DISK)	56pF-J-50V, NPO	17040056
C303	B6	C-CERAMIC (DISK)	0.022µF-K-50V, SL	17040022
C304	A6	C-ELECT	0.47µF-SMS 5*11	18020R47
C305	B6	C-CERAMIC (DISK)	560pF-J-50V, NPO	17040560
C305A		C-CERAMIC (DISK)	470pF-J-50V, NPO	17040470
C306	B5	C-CERAMIC (DISK)	560pF-J-50V, NPO	17040560
C306A		C-CERAMIC (DISK)	470pF-J-50V, NPO	17040470
C307	B5	C-CERAMIC	GRM39 COG 180J 50	17010180
C308	B5	C-CERAMIC (DISK)	39pF-J-50V, NPO	17040039
C309	B5	C-CERAMIC (DISK)	270pF-J-50V, NPO	17040270
C311	B4	C-CERAMIC (DISK)	220pF-J-50V, NPO	17040220
C312	A4	C-CERAMIC (DISK)	150pF-J-50V, NPO	17040150
C313	B4	C-CERAMIC	GRM39 COG 030C 50	17010030
C314	B4	C-CERAMIC	GRM39 COG 030C 50	17010030
C315	B4	C-CERAMIC	GRM39 X7R 103K 50	17010103
C317	B4	C-CERAMIC	GRM39 X7R 103K 50	17010103
C318	B3	C-CERAMIC	GRM39 COG 101J 50	17010101
C319	B3	C-CERAMIC	GRM39 X7R 103K 50	17010103
C320	E5	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C321	B5	C-CERAMIC (DISK)	0.047µF-Z-50V, SL	17040473
C322	B6	C-CERAMIC (DISK)	0.022µF-K-50V, SL	17040022
C322A	A2	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C323	A5	C-CERAMIC (DISK)	56pF-J-50V, NPO	17040056
C324	A4	C-CERAMIC (DISK)	270pF-J-50V, NPO	17040270
C326	A3	CHIP—TRIMMER	TZCO3PO3OA110	18410031
C234		C-CERAMIC	GRM39 X7R 223K 25	17010223
C341	B7	C-CERAMIC	GRM39 COG 221 J50	17010221
C342	C7	C-CERAMIC	GRM39 COG 331J 50S	17010331
C343	C7	C-CERAMIC	GRM39 X7R 103K 50	17010103
C356	D5	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C357	E6	C-CERAMIC	GRM39 COG 470J 50	17010470
C358	G3	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C360	B3	C-CERAMIC	GRM39 COG 101J 50	17010101
C362	G5	C-CERAMIC	GRM39 X7R 103K 50	17010103
C363	F1	C-ELECT	0.47µF-SMS 5*11	18020R47
C394		C-ELECT	4.7µF-16V, SMS	1805R047
C583	F6	C-CERAMIC	GRM39 X7R 103K 50	17010103
C585	C2	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C595		C-CERAMIC	GRM39 X7R 472K 50S	17010472
C634	C4	C-ELECT	2.2µF-M-50V, SMS	18050225
C635	D2	C-CERAMIC	GRM39 YSV 104Z 25	17010104
C636	D4	C-ELECT	0.22µF-M-50V, SMS	18050224
C637	D4	C-ELECT	10µF-M-25V, SMS	18050010
C640	B3	C-CERAMIC	GRM39 COG 560J 50	17010560
C641	E2	C-ELECT	0.33µF-M-50V, SMS	8050334
Q22	C6	C-CERAMIC	GRM39 COG 150 J 50	17010150
Q22	C6	C-CERAMIC (DISK)	15PF-J-50V, NPO	17040015



REF.	LOC	DESCRIPTION	SPECIFICATION	CODE NO.
D1	C5	DIODE-GERMANUM	1N60	19820003
D2	C5	DIODE-GERMANUM	1N60	19820003
D4A	C4	DIODE-SWITCH	KDS184	19610003
D6A	C4	DIODE-SWITCH	KDS184	19610003
D7	E4	DIODE-GERMANUM	1N60	19820003
D9	E3	DIODE-SWITCH	KDS184	19610003
D11	B4	DIODE-SWITCH	KD5226	19610002
D13	B5	DIODE-VAR.CAPACITOR	KDV2515	20210001
D14	B6	DIODE-VAR.CAPACITOR	KDV2515	20210001
D18	D6	DIODE-SWITCH	KDS184	19610003
D19A	E5	DIODE-SWITCH	KDS184	19610003
D21	E5	DIODE-SWITCH	KDS181	19610001
D22A	D4	DIODE-SWITCH	KDS184	19610003
D23	E3	DIODE-GERMANUM	1N60	19820003
D24	D3	DIODE-GERMANUM	1N60	19820003
D25A	E3	DIODE-SWITCH	KDS184	19610003
D26A	E3	DIODE-SWITCH	KDS184	19610003
D27	H7	DIODE-SWITCH	KDS184	19610003
D28	H7	DIODE-VAR.CAPACITOR	KDV2515	20210001
D29	F7	DIODE-VAR.CAPACITOR	KDV2515	20210001
D30	C6	DIODE-VAR.CAPACITOR	KDV2515	20210001
D31	F7	DIODE-VAR.CAPACITOR	KDV2515	20210001
D35A	E5	DIODE-SWITCH	KDS184	19610003
D36A	F5	DIODE-SWITCH	KDS184	19610003
D37	F1	DIODE-SWITCH	KDS181	19610001
D37A	A7	DIODE-SWITCH	KDS184	19610003
D38	F1	DIODE-SWITCH	KD5226	19610002
D39A	G1	DIODE-SWITCH	KDS184	19610003
D40A	H7	DIODE-SWITCH	KDS184	19610003
D41A	F3	DIODE-SWITCH	KDS184	19610003
D46A	F5	DIODE-SWITCH	KDS184	19610003
D47	F5	DIODE-SWITCH	KDS181	19610001
D48A	G5	DIODE-SWITCH	KDS184	19610003
D51	E3	DIODE-SWITCH	KDS184	19610003
D52	F3	DIODE-SWITCH	KDS184	19610003
D53	E4	DIODE-SWITCH	KDS184	19610003
D54A	E3	DIODE-SWITCH	KDS184	19610003
D55	F3	DIODE-SWITCH	KDS184	19610003
D57	E1	DIODE-ZENER	UZ-9.1B	20010011
D58A	D2	DIODE-SWITCH	KDS184	19610003
D59	D2	DIODE-SWITCH	KDS184	19610003
D61A	C4	DIODE-SWITCH	KDS184	19610003
D62A	C3	DIODE-SWITCH	KDS184	19610003
D63	B2	DIODE-SWITCH	KDS184	19610003
D66	B2	DIODE-SWITCH	KDS184	19610003
D68	D7	DIODE-VAR.CAPACITOR	KDV2515	20210001
D69	C7	DIODE-VAR.CAPACITOR	KDV2515	20210001
D71	C7	DIODE-VAR.CAPACITOR	KDV2515	20210001
D74	A6	DIODE-1A	1N4001	19820001
D75	A5	DIODE-1A	1N4001	19820001
D76	B4	DIODE-SWITCH	KD5226	19610002
D77	B3	DIODE-GERMANUM	1N60	19820003
D78A	B3	DIODE	IN4148 SMALL TYPE	19820007
D81A	G1	DIODE-SWITCH	KDS184	19610003
D83	D4	DIODE-GERMANUM	1N60	19820003
D84B	F4	DIODE-SWITCH	KDS184	19610003
D91A	G4	DIODE-SWITCH	KDS184	19610003
D92A	G4	DIODE-SWITCH	KDS184	19610003
D93A	G4	DIODE-SWITCH	KDS184	19610003
D94A	G4	DIODE-SWITCH	KDS184	19610003
D96	G4	DIODE-SWITCH	KDS181	19610001
D97	F4	DIODE-SWITCH	KDS184	19610003
D98	F4	DIODE-SWITCH	KDS181	19610001
D101	B3	DIODE-GERMANUM	1N60	19820003
D102	F1	DIODE-SWITCH	KD5226	19610002
D103	B1	DIODE-SCHOTTKY	1N5820-3A	19820009

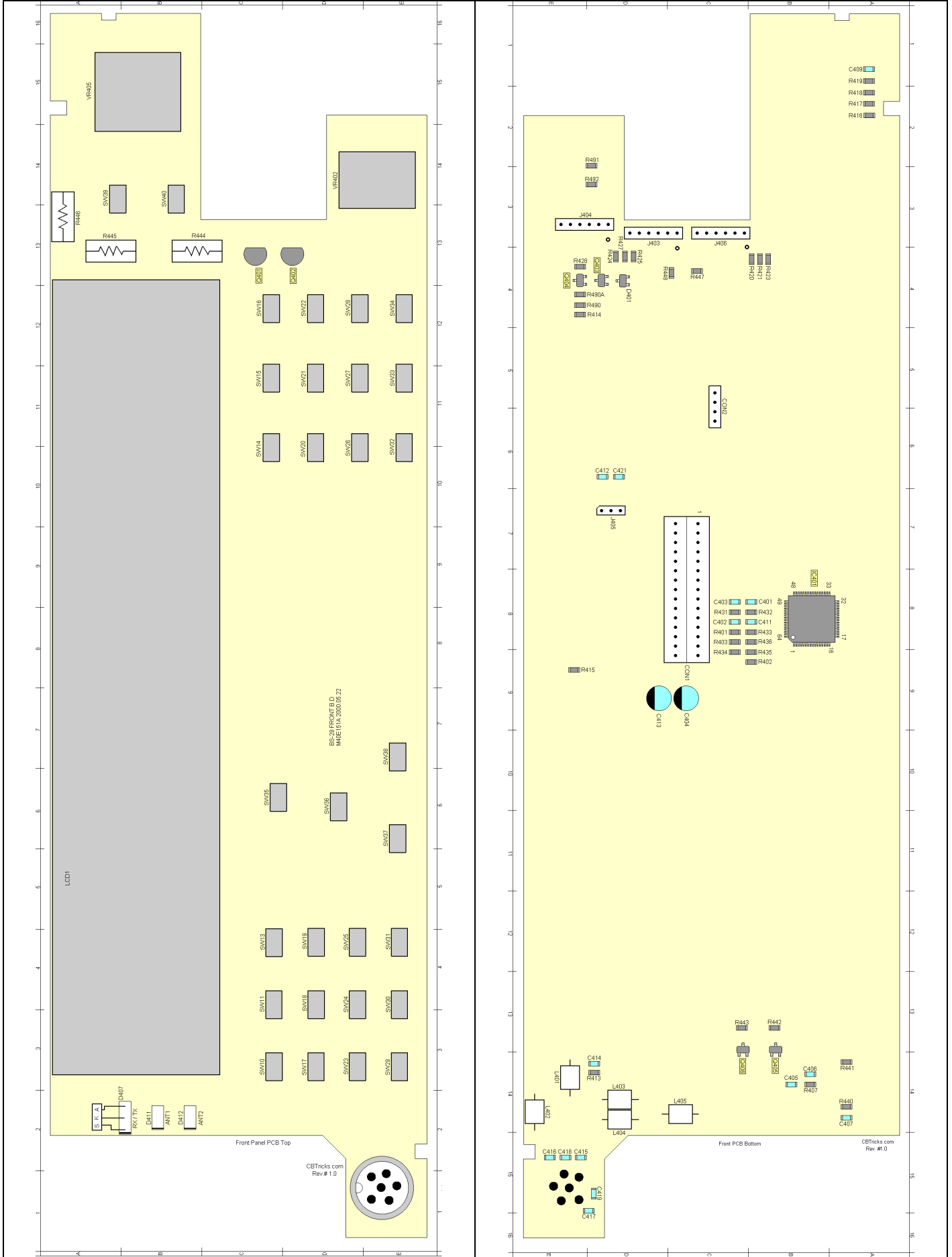
D111	G3	DIODE-SWITCH	KDS184	19610003
D600	E2	DIODE-SWITCH	KDS184	19610003
D601	D2	DIODE-SWITCH	KDS184	19610003

REF.	LOC	DESCRIPTION	SPECIFICATION	CODE NO.
		COIL CHOKE	1 UH, CORE, 0.4 PI, 8 TURN	21220001
T201		COIL-IFT	0031A	2142031A
T202		COIL-IFT	LB302	21420059
T203		COIL-IFT	LB302	21420059
T204		COIL-IFT	LB304	21420061
T205		COIL-IFT	LB304	21420061
T206		COIL-IFT	LB306	21420063
T207		COIL-IFT	LB306	21420063
T208		COIL-IFT	LB308	21420065
T209		COIL-IFT	LB309	21420066
T210		COIL-IFT	LB310	21420067
T211		COIL-IFT	LB311	21420068
T212		COIL-IFT	LB312	21420069
T213		COIL-IFT	LB313	21420070
T214		COIL-IFT	LB313	21420070
T215		COIL-IFT	LB315	21420072
T216		COIL-IFT	LB316	21420073
T217		COIL-IFT	LB317	21420074
T218		COIL-IFT	LB318	21420075
T219		COIL-IFT	LB319	21420076
L1		INDUCTOR-AXIAL	10µh, 03 TYPE	21620008
L2		INDUCTOR-AXIAL	10µh H, 03 TYPE	21620017
L3		COIL-AXIAL	LAL-03-220µh	21620014
L9		COIL-AXIAL	LAL-03-470µh	21620015
L11		COIL-AXIAL	LAL-03-470µh	21620015
L12		INDUCTOR-AXIAL	10µh, 03 TYPE	21620008
L13		COIL-AXIAL	1µh, 03 TYPE	21620005
L14		COIL-AXIAL	1µh, 03 TYPE	21620005
L15		COIL-SPRING	0.8*5.0*5T	21820054
L16		COIL-SPRING	5T02	21820047
L18		COIL-SPRING	5T03	21820048
L19		COIL-AXIAL	100µh, 03 TYPE	21620011
L21		COIL-TANK	1 ½ T	21820059
L24		COIL-SPRING	5T04	21820049
C22		COIL-SPRING	5*0.8*5.ST	21820061
C25		COIL-SPRING	5*08*7 ST	21820060

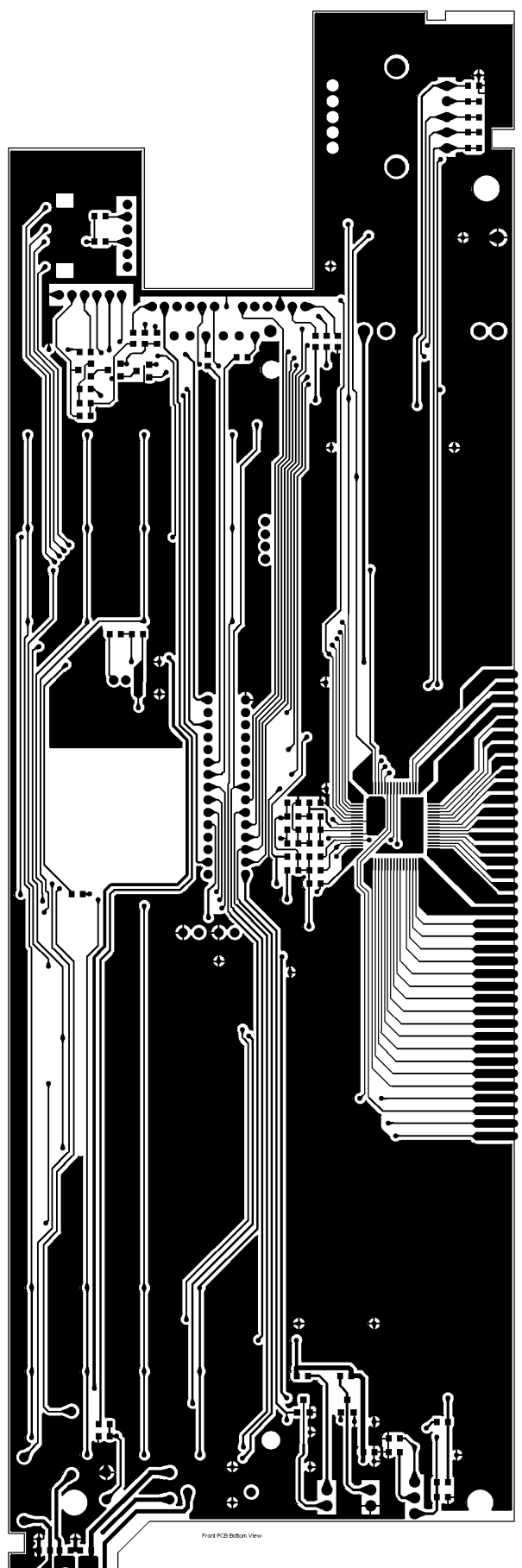
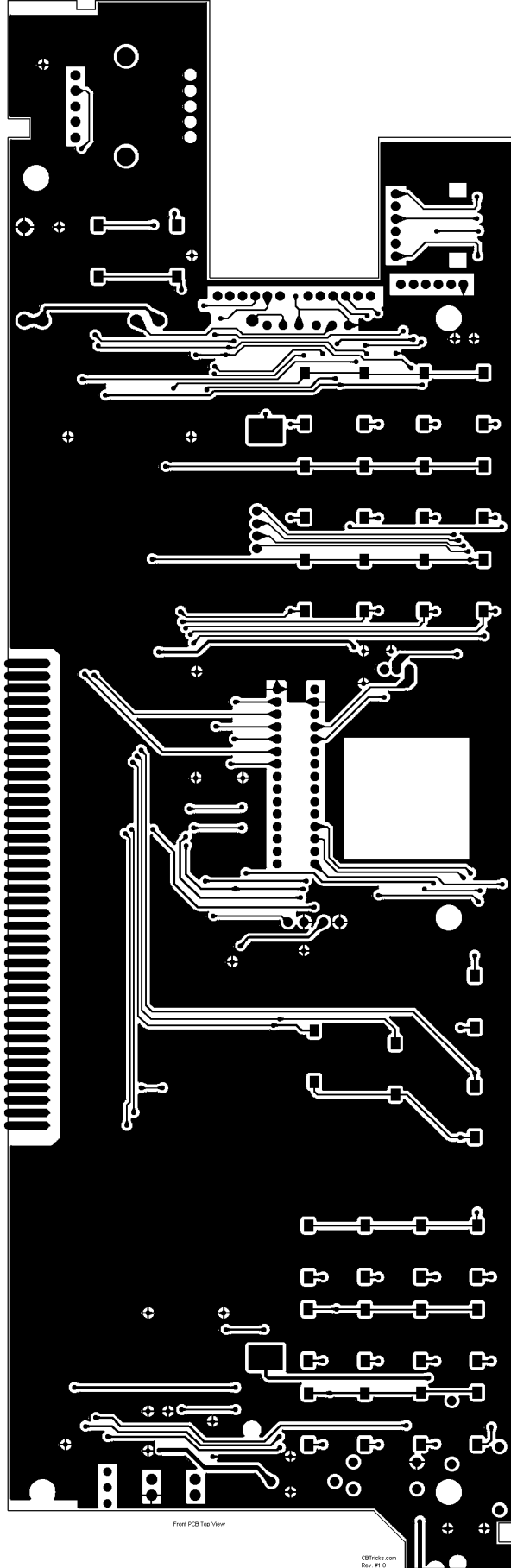
		COIL-SPRING	0.6*5.0*13T	21820055
BF1		BEAD CORE	LF03	24020008
BF2		BEAD CORE	LF03	24020008
BF3		BEAD CORE	LF03	24020008
BF4		BEAD CORE	LF03	24020008
BF5		BEAD CORE	LF03	24020008
BF6		BEAD CORE	LF03	24020008
BF7		RING CORE	6*2*3 RING	24020012

<b>LOCATION</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>CODE NO.</b>
<b>X-1</b>	X-TAL	10.241 Mhz, 49/U	23020028
<b>X-2</b>	X-TAL	3.579545 Mhz, 49/U	23020029
<b>X-3</b>	X-TAL	49/U, 4.5 Mhz	23020039
<b>X-4</b>	X-TAL	10.6975 Mhz, 49/U	23020031
<b>CF-1</b>	X-TAL FILTER	10M 7.5B 10.695 Mhz	24220010
<b>CF-2</b>	X-TAL FILTER	10M 7.5B 10.695 Mhz	24220010
<b>CF-3</b>	FILTER-CERAMIC	CFWS455HT	24020001
<b>CF-4</b>	X-TAL FILTER	10M04D	24220011

# SS4900 Front PCB Component Layout Top and Bottom



# SS4900 Front PCB Pattern Top and Bottom

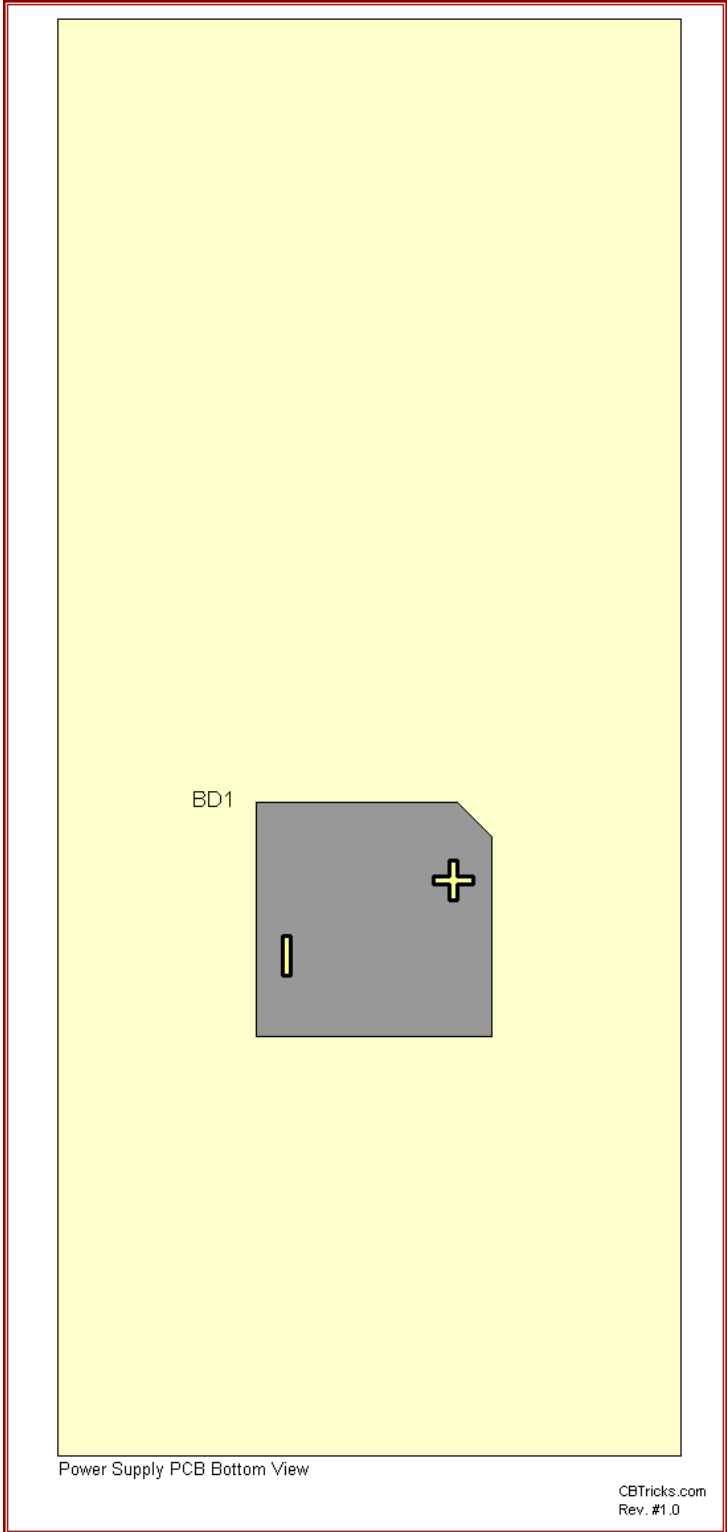
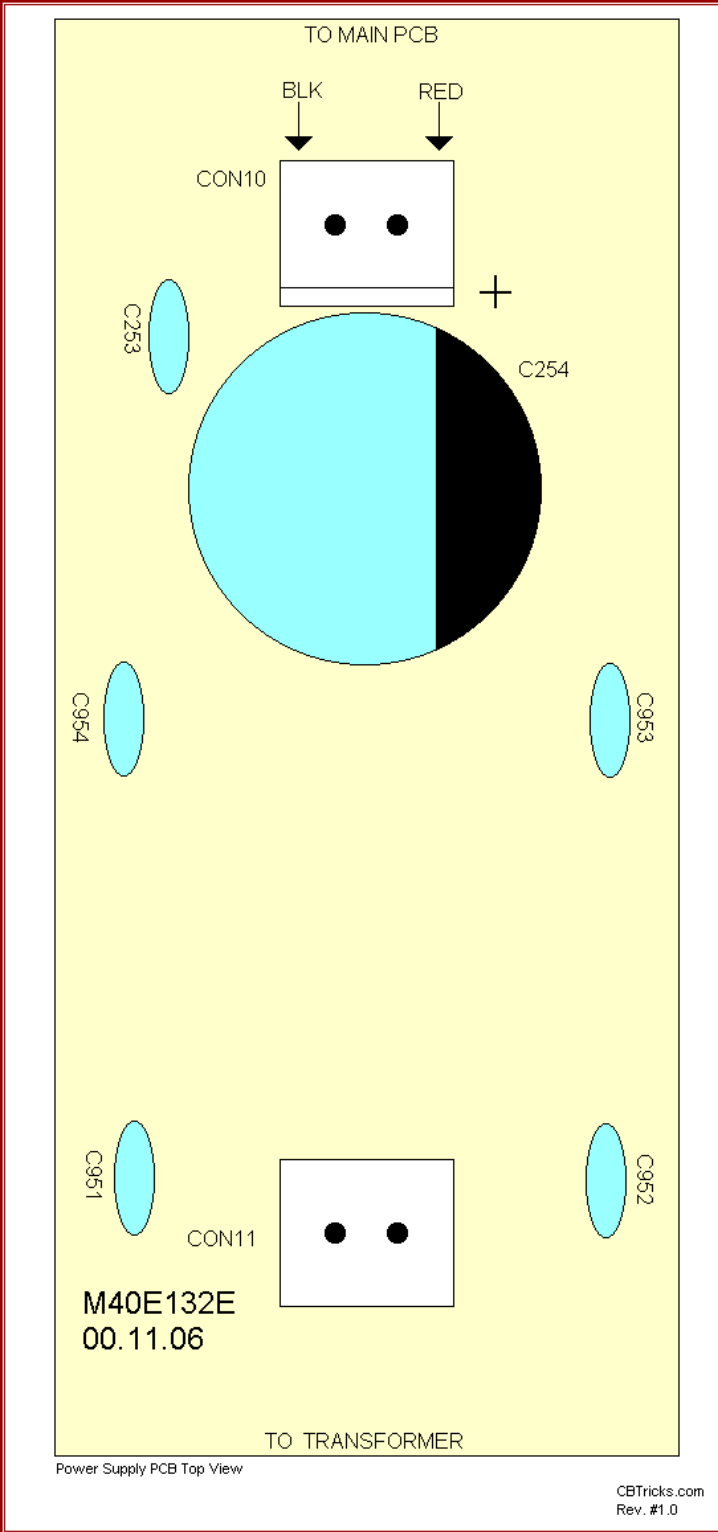


## FRONT PCB

REF.	LOC	DESCRIPTION	SPECIFICATION	CODE NO.
		ASSY FRONT PCB		80229011
		ASSY FRONT SMD		80229019
		PCB-BS-29-FRONT	81*266,1 .6T,D/S	M40E151A
		ASSY FRONT INSERT		80229020
<b>C401</b>	B8	C-CERAMIC	GRM39 Y5V 104Z 25	17010104
<b>C402</b>	C8	C-CERAMIC	GRM39 X7R 681K J50	17010681
<b>C403</b>	C8	C-CERAMIC	GRM39 Y5V 473Z 50	17010473
<b>C404</b>	C9	C-ELECT	47µF-M-16V,S M S	18050047
<b>C405</b>	B14	C-CERAMIC	GRM39 X7R 103K 50	17010103
<b>C406</b>	B14	C-CERAMIC	GRM39 X7R 103K 50	17010103
<b>C407</b>	A14	C-CERAMIC	GRM39 X7R 103K 50	17010103
<b>C409</b>	A1	C-CERAMIC	GRM39 X7R 103K 50	17010103
<b>C411</b>	B8	C-CERAMIC	GRM39 Y5V 104Z 25	17010104
<b>C412</b>	D6	C-CERAMIC	GRM39 Y5V 104Z 25	17010104
<b>C413</b>	D9	C-ELECT	2.2µF-M-50V.SMS	18050225
<b>C415</b>	E15	C-CERAMIC	GRM39 X7R 472K 505	17010472
<b>C416</b>	E15	C-CERAMIC	GRM39 X7R 472K 505	17010472
<b>C417</b>	E15	C-CERAMIC	GRM39 X7R 472K 505	17010472
<b>C418</b>	E15	C-CERAMIC	GRM39 X7R 472K 505	17010472
<b>C419</b>	D15	C-CERAMIC	GRM39 X7R 472K 505	17010472
<b>C421</b>	D6	C-CERAMIC	GRM39 Y5V 104Z 25	17010104
<b>L401</b>	E14	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L402</b>	E14	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L403</b>	D14	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L404</b>	D14	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L405</b>	C14	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>R401</b>	C8	RESISTOR-FIXED	150K-J-1/16W (0603)	15210154
<b>R402</b>	B9	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
<b>R403</b>	C8	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
<b>R407</b>	B14	RESISTOR-FIXED	680-J-1/16W	15210681
<b>R413</b>	D14	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
<b>R415</b>	E9	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
<b>R420</b>	B4	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
<b>R421</b>	B4	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
<b>R423</b>	B4	RESISTOR-FIXED	470-J-1/16W (0603)	15210471
<b>R424</b>	D4	RESISTOR-FIXED	2.7K-J-1/16W (0603)	15210272
<b>R425</b>	D4	RESISTOR-FIXED	1K-J-1/16W (0603)	15210102
<b>R427</b>	D4	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
<b>R428</b>	E4	RESISTOR-FIXED	4.7K-J-1/16W (0603)	15210472
<b>R431</b>		RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
<b>R432</b>	B8	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
<b>R433</b>	B8	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
<b>R434</b>	C9	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
<b>R435</b>	B9	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
<b>R436</b>	B8	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
<b>R440</b>	A14	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
<b>R441</b>	A14	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
<b>R442</b>	B13	RESISTOR-FIXED	1.2K-J-1/16W (0603)	15210122
<b>R443</b>	C13	RESISTOR-FIXED	1.2K-J-1/16W (0603)	15210122
<b>R444</b>	<b>B13</b>	RESISTOR-FIXED	100-J-1/2W, MINI SIZE	16020101
<b>R445</b>	<b>A13</b>	RESISTOR-FIXED	56-J-1/2W, MINI SIZE	16020056
<b>R447</b>	C4	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
<b>R448</b>	D4	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
<b>R490A</b>	E4	RESISTOR-FIXED	2.2K-J-1/16W (0603)	15210222
<b>VR402</b>	<b>E14</b>	RESISTOR-VARIABLE	RP12DM BC020F-B10K	1662D103
<b>IC-401</b>	B8	IC	LC75854W	11610048
<b>Q401</b>	<b>C13</b>	TRANSISTOR	KTC200, TO-92	13210046
<b>Q402</b>	<b>D13</b>	TRANSISTOR	KTC200, TO-92	13210046
<b>Q403</b>		TR-NPN	KRC102S	13210006

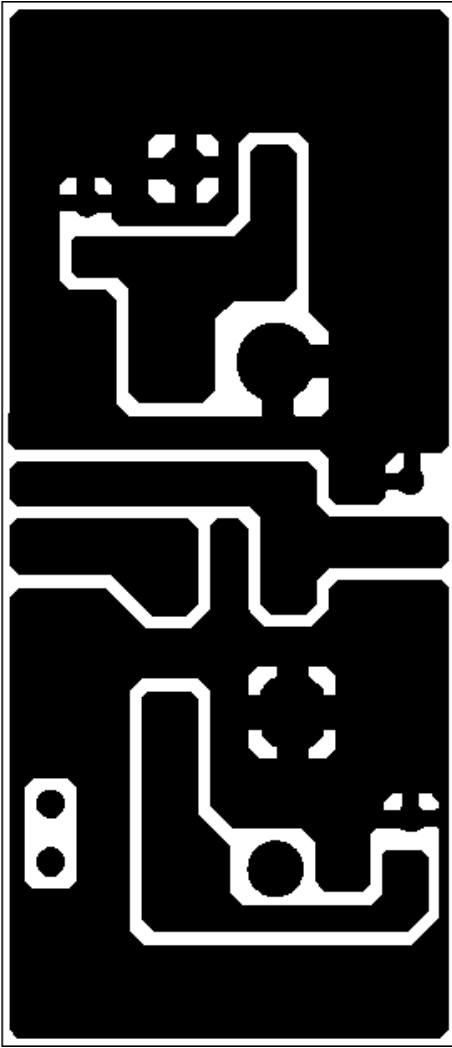
Q404		TR-PNP	KRA102S	13010005
Q405		TR-NPN	KRC112S	13210011
Q406		TR-NPN	KRC112S	13210011
D401		DIODE-SWITCH	KDS184	19610003
SW10		SWITCH-TACT	SMD-1101	35010003
SW11		SWITCH-TACT	SMD-1101	35010003
SW13		SWITCH-TACT	SMD-1101	35010003
SW14		SWITCH-TACT	SMD-1101	35010003
SW15		SWITCH-TACT	SMD-1101	35010003
SW16		SWITCH-TACT	SMD-1101	35010003
SW17		SWITCH-TACT	SMD-1101	35010003
SW18		SWITCH-TACT	SMD-1101	35010003
SW19		SWITCH-TACT	SMD-1101	35010003
SW20		SWITCH-TACT	SMD-1101	35010003
SW21		SWITCH-TACT	SMD-1101	35010003
SW22		SWITCH-TACT	SMD-1101	35010003
SW23		SWITCH-TACT	SMD-1101	35010003
SW24		SWITCH-TACT	SMD-1101	35010003
SW25		SWITCH-TACT	SMD-1101	35010003
SW26		SWITCH-TACT	SMD-1101	35010003
SW27		SWITCH-TACT	SMD-1101	35010003
SW28		SWITCH-TACT	SMD-1101	35010003
SW29		SWITCH-TACT	SMD-1101	35010003
SW30		SWITCH-TACT	SMD-1101	35010003
SW31		SWITCH-TACT	SMD-1101	35010003
SW32		SWITCH-TACT	SMD-1101	35010003
SW33		SWITCH-TACT	SMD-1101	35010003
SW34		SWITCH-TACT	SMD-1101	35010003
SW35		SWITCH-TACT	SMD-1101	35010003
SW36		SWITCH-TACT	SMD-1101	35010003
SW37		SWITCH-TACT	SMD-1101	35010003
SW38		SWITCH-TACT	SMD-1101	35010003
SW39		SWITCH-TACT	SMD-1101	35010003
SW40		SWITCH-TACT	SMD-1101	35010003
SW403		SWITCH MODE	BISR18-24N-F15	35020008
J404, J403		CONNECTOR	PLUG S/T 6PIN	32420029
J405		CONNECTOR	PLUG S/T 3PIN	32420030
CON-1		CON-ASSY	LOCK, 100M/M, 15PIN	32420041
CON-2		CON-ASSY	8283,250M/M, 6PIN	32420061
LCD1		LCD	DG-M910	28020019
LB1		BACKLIGHT	BS-27	28410003
D412,D411		LED LAMP	DKL 30RD	28420001
D407		LED	209EGW/S209	28420003

# SS4900 Power Supply PCB Component Layout Top and Bottom

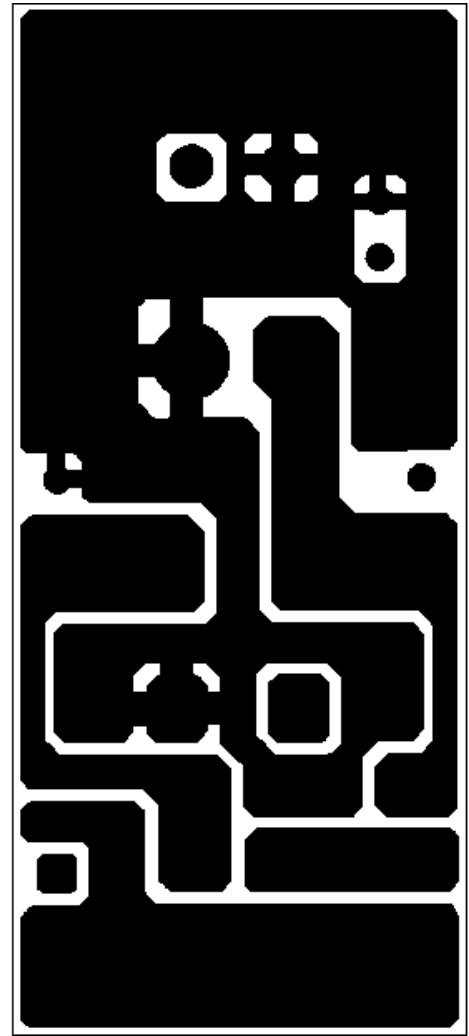




# SS4900 Power Supply PCB Pattern Top and Bottom



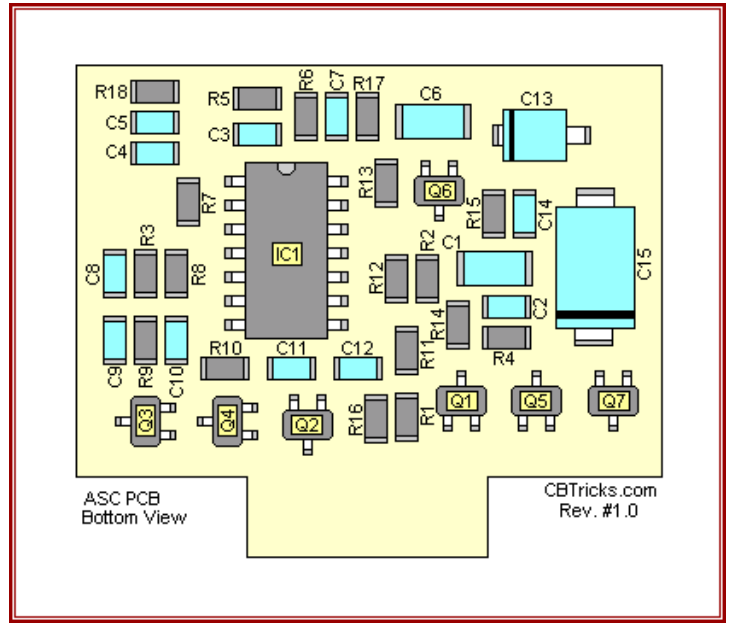
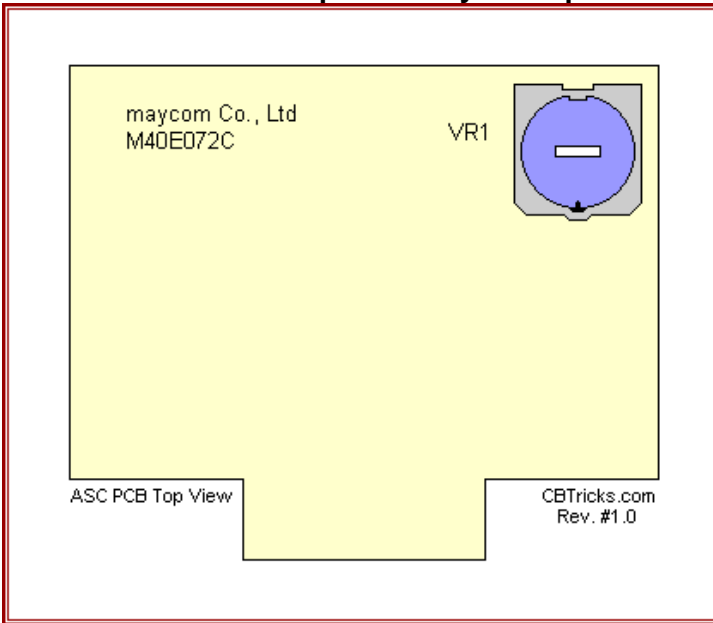
Top Pattern



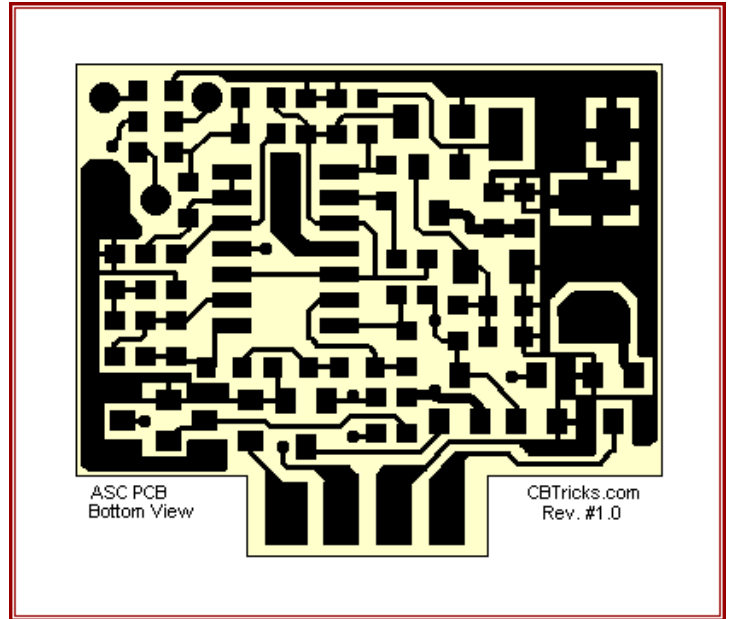
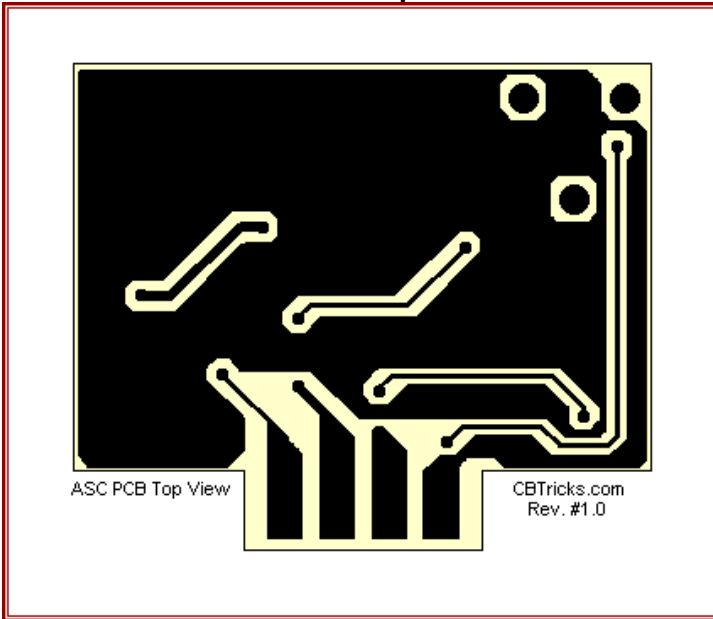
Bottom Pattern

REF.	DESCRIPTION	SPECIFICATION	QTY	CODE NO.
	ASSY DC SUPPLY PCB		1	80229023
	PCB-BS-27POWER	40*95,1 .6T,S/S	1	M40E132D
<b>C253</b>	C-CERAMIC (DISK)	0.022UF-K-50V SL		17040022
<b>C254</b>	C-ELECT	10000UF/25V		18050109
<b>C951</b>	C-CERAMIC (DISK)	0.1UF-Z-50V		17040104
<b>C952</b>	C-CERAMIC (DISK)	0.1UF-Z-50V		17040104
<b>C953</b>	C-CERAMIC (DISK)	0.1UF-Z-50V		17040104
<b>C954</b>	C-CERAMIC (DISK)	0.1UF-Z-50V		17040104
<b>BD1</b>	DIODE-BRIDGE	KBPC606		19820012
	CONNECTOR	7.92M/M2 PIN PLUG S/T	2	32420050
	WASHER-PLATE	5U5304, 0.2T	3	62000105
	HEAT-SINK "I"	AL	1	63000014
	SCREW-P/H, M/C	(+) M3*L6, FNW	2	68000054
	WASHER-SPRING	M3, FZY	3	68000059
	SCREW-PH, M/C	(+) M3*L13, FNW	1	68000072
	HEXAGON-POLE	M3*L7, NI	2	68000073

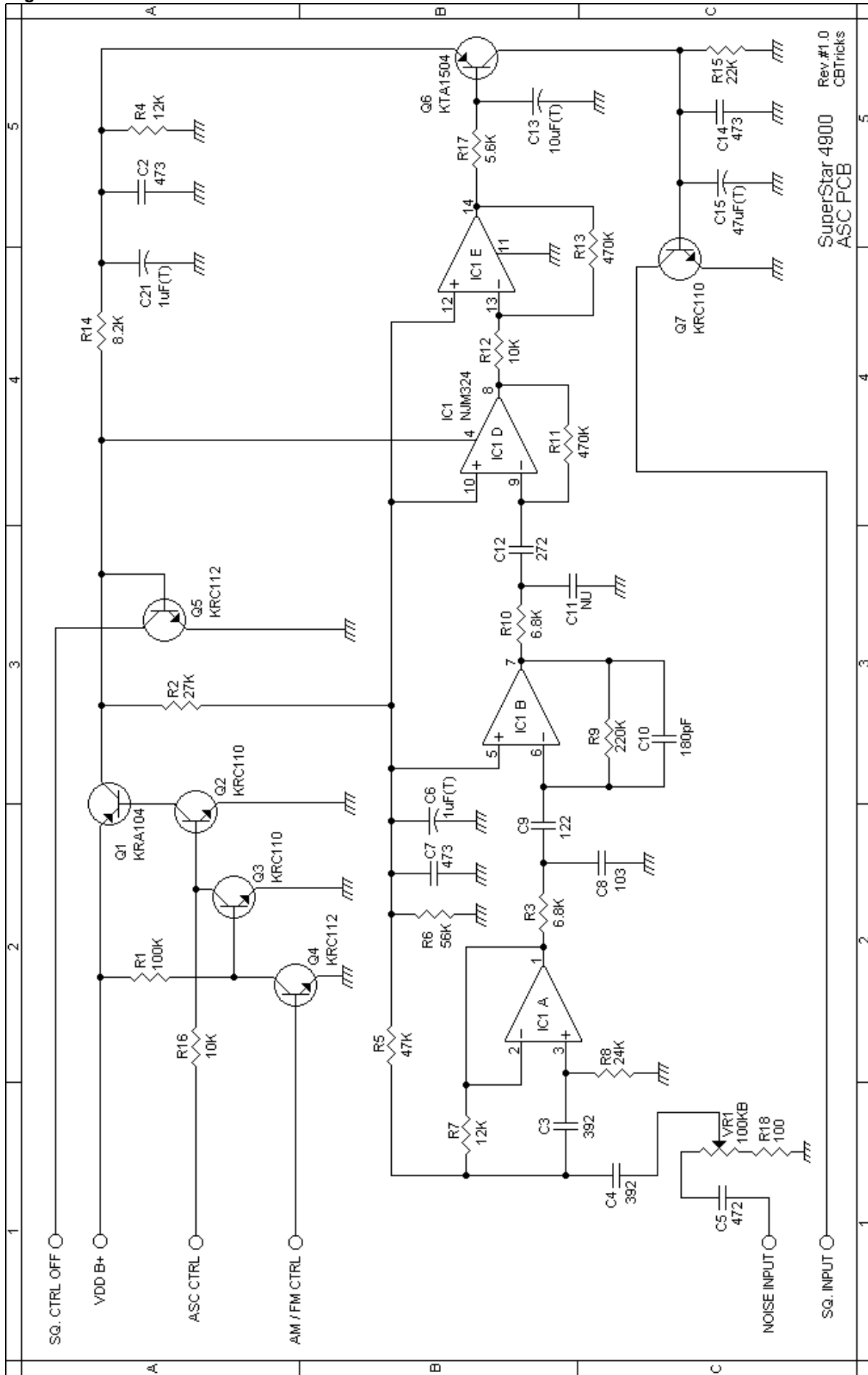
## SS4900 ASC PCB Component Layout Top and Bottom



## SS4900 ASC PCB Pattern Top and Bottom



ASC PCB  
Schematic Diagram

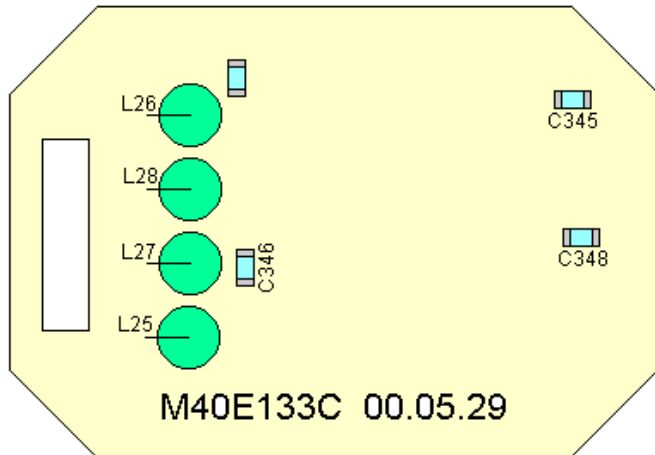


SuperStar 4800  
ASC PCB  
Rev.#1.0  
CBTricks

## ASC PCB

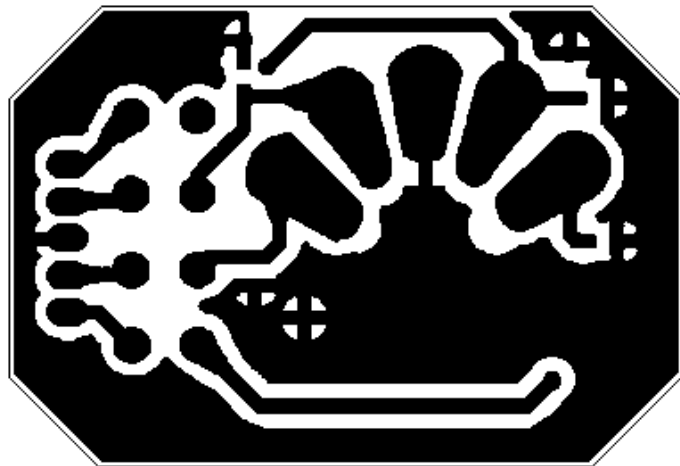
REF.	DESCRIPTION	SPECIFICATION	CODE NO.
	ASSY MAIN PCB		80229014
	ASSY ASC PCB		80213024
IC1	IC	NJM324 (M)	11610018
Q1	TR-PNP	KRA104	13010012
Q2	TR-NPN	KRC110S	13210001
Q5	TR-NPN	KRC112S	13210011
Q6	TR-PNP	KTA1504S	13010004
Q7	TR-NPN	KRC110S	13210001
R2	RESISTOR-FIXED	27K-J-1/16W (0603)	15210273
R3	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
R4	RESISTOR-FIXED	12K-J-1/16W (0603)	15210123
R5	RESISTOR-FIXED	47K-J-1/16W (0603)	15210473
R6	RESISTOR-FIXED	56K-J-1/16W (0603)	15210563
R7	RESISTOR-FIXED	12K-J-1/16W (0603)	15210123
R8	RESISTOR-FIXED	24K-J-1/16W (0603)	15210243
R9	RESISTOR-FIXED	220K-J-1/16W (0603)	15210224
R10	RESISTOR-FIXED	6.8K-J-1/16W (0603)	15210682
R11	RESISTOR-FIXED	470K-J-1/16W (0603)	15210474
R12	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R13	RESISTOR-FIXED	470K-J-1/16W (0603)	15210474
R14	RESISTOR-FIXED	8.2K-J-1/16W (0603)	15210822
R15	RESISTOR-FIXED	22K-J-1/16W (0603)	15210223
R16	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R17	RESISTOR-FIXED	5.6K-J-1/16W (0603)	15210562
R18	RESISTOR-FIXED	100-J-1/16W (0603)	15210101
VR1	RESISTOR-SEMI	6P1, 100K B, 631H	16550104
C1	C-CHIP-TANTAL	1 $\mu$ F-M-16V SIZEA	1821A001
C2	C-CERAMIC	GRM39Y5V 473Z 50	17010473
C3	C-CERAMIC	GRM39 X7R 392K 50	17010392
C4	C-CERAMIC	GRM39 X7R 392K 50	17010392
C5	C-CERAMIC	GRM39 X7R 472K 50S	17010472
C6	C-CHIP-TANTAL	1 $\mu$ F-M-16V SIZEA	1821A001
C7	C-CERAMIC	GRM39Y5V 473Z 50	17010473
C8	C-CERAMIC	GRM39 X7R 103K 50	17010103
C9	C-CERAMIC	GRMX7R 122K 50	17010122
C10	C-CERAMIC	GRM39 COG 181J 50	17010181
C12	C-CERAMIC	GRMX7R 272K 50	17010272
C13	C-CHIP-TANTAL	10 $\mu$ F-M-16V SIZEB3	1821B010
C14	C-CERAMIC	GRM39Y5V 473Z 50	17010473
C15	C-CHIP-TANTAL	47UF—M—6V SIZE C2	1821C047
	PCB-HM-27-ASC	26*1 7,1 .2T,D/S	M40E072C

## SS4900 DIN Jack PCB Component Layout Top and Bottom Pattern

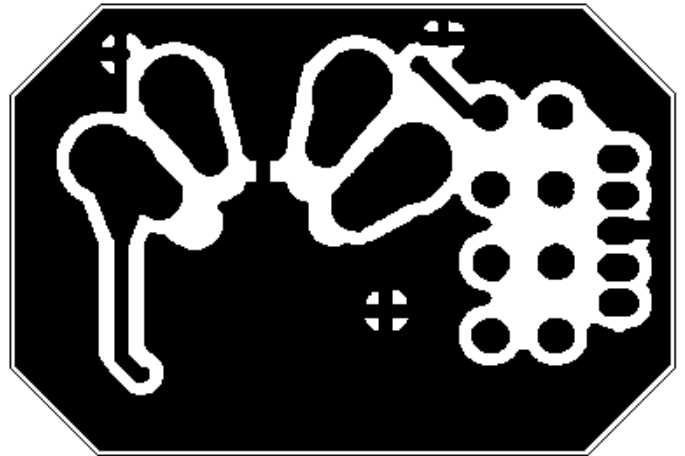


DIN Jack PCB

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Top Pattern

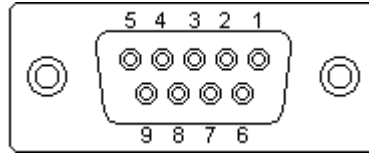
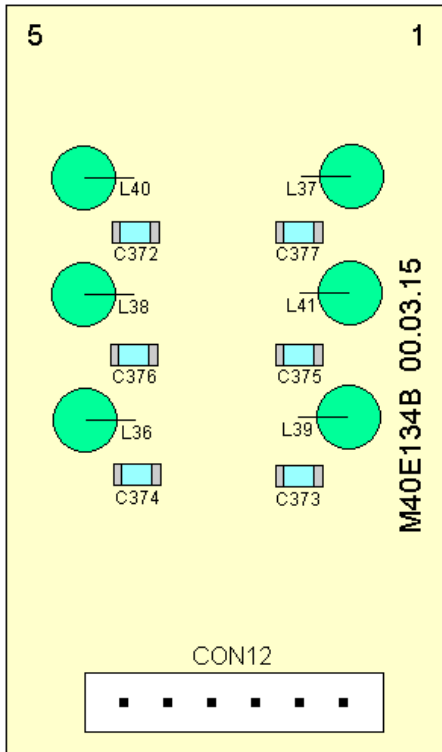


Bottom Pattern

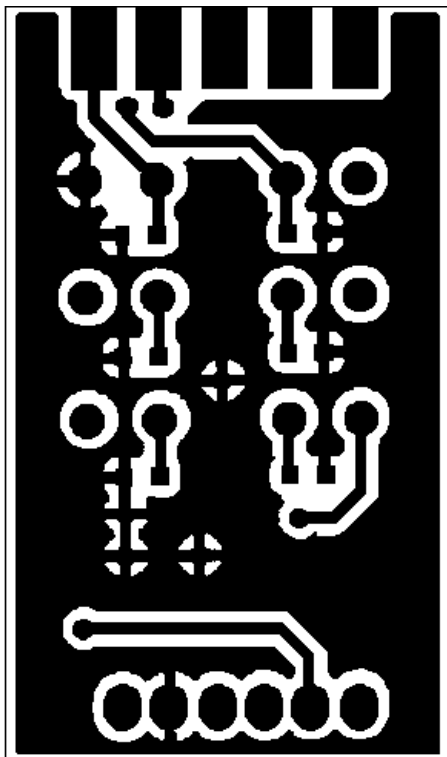
### 6 PIN DIN CON PCB

REF.	DESCRIPTION	SPECIFICATION	CODE NO
	ASSY 6 DIN JACK		80213027
	PCB-BS-27-DIN JACK	45*25,0.8T,D/S	M40E133C
<b>CON12</b>	CON-ASSY	350M/M, 6PIN (6 COLOR)	32420048
<b>C345</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C346</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C348</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C349</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>L25</b>	INDUCTOR—AXIAL	10µh, 03TYPE	21620008
<b>L27</b>	INDUCTOR—AXIAL	10µh, 03TYPE	21620008
<b>L28</b>	INDUCTOR—AXIAL	10µh, 03TYPE	21620008
<b>L29</b>	INDUCTOR—AXIAL	10µh, 03TYPE	21620008
<b>CON9</b>	DIN-CONNECTOR	DIN-S	32420039
	CON-ASSY	220M/M, 5PIN (5 COLOR)	32420040

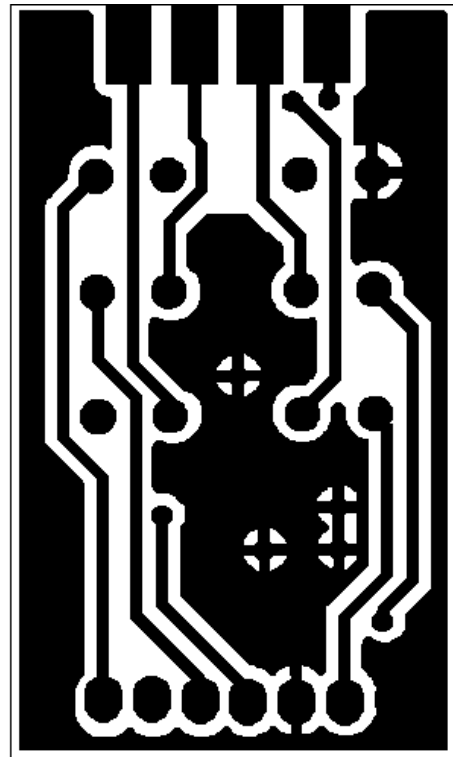
# SS4900 Sub-D9 PCB Component Layout Top and Bottom Pattern



Pin	Description
1-3	NC
4	Switched supply voltage 13.2 Vdc
5	Ground
6	AF out (needed for Voice Recorder, Tape 5 Tone Selective Call System)
7	AF in
8	PTT (low = TX) and FM-AF + Noise (Used for AKE FM – Select.)
9	Squelch input (High = Signal is squelched, used for 5-Tone, AKE FM-Select.)



Top Pattern

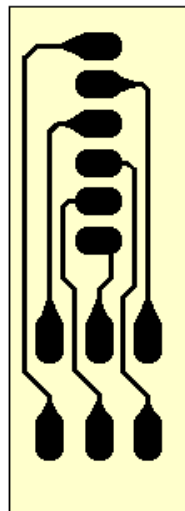
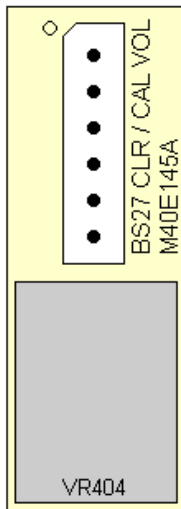
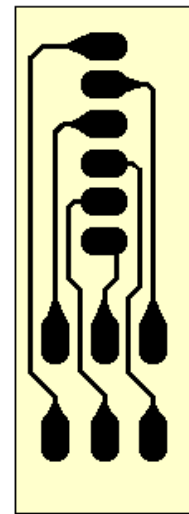
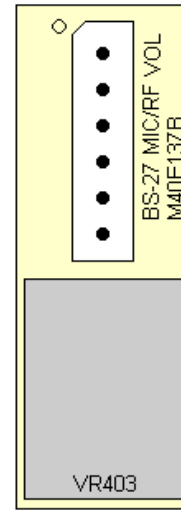
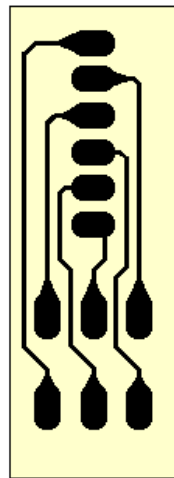
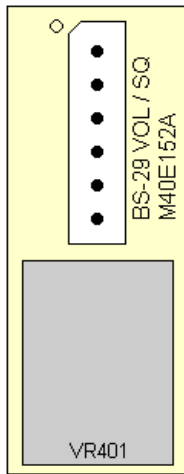


Bottom Pattern

9 PIN D-SUB PCB

REF.	DESCRIPTION	SPECIFICATION	CODE NO
	PCB-BS-27RS232	19*32,1 .6T,D/S	M40E134B
<b>C372</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C373</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C374</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C375</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C376</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>C377</b>	C-CERAMIC	GRM39 X7R 472K 50S	17010472
<b>L41</b>	INDUCTOR-AXIAL	10µh 03TYPE	21620008
<b>L36</b>	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L37</b>	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L38</b>	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L39</b>	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>L40</b>	INDUCTOR-AXIAL	10µh, 03TYPE	21620008
<b>CON3</b>	CONNECTOR	D-SUB, 9PIN	32420038

## SS4900 VR PCB's Component Layout Top and Bottom Pattern

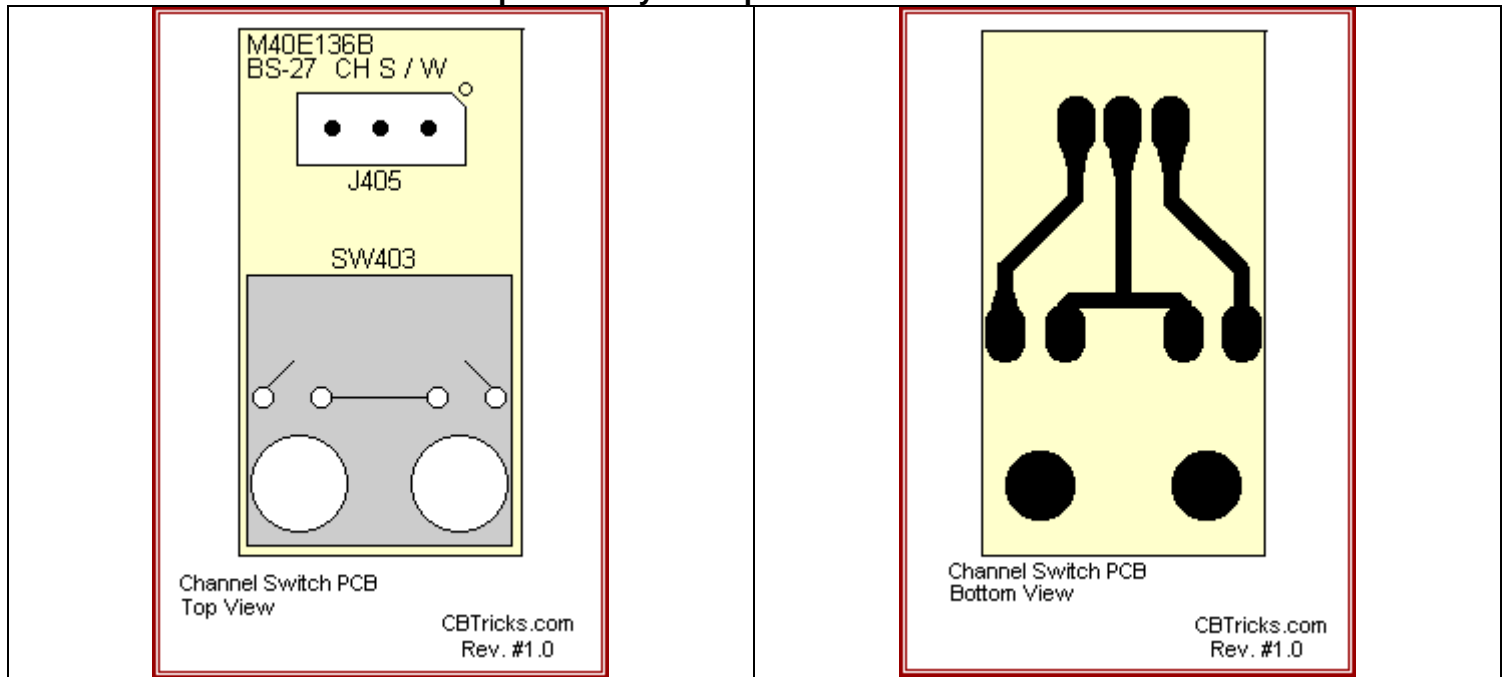


### VR PCB's

CODE NO.	DESCRIPTION	SPECIFICATION	QTY	REF.
80229017	ASSY VOL PCB		1	
1662A153	RESISTOR-VARIABLE	V9MDN-3B10K+15A 50K	1	
1662C203	RESISTOR-VARIABLE	V9MDN-3B5K+3B 20K	1	MIC VR403
1662C502	RESISTOR-VARIABLE	V9MDN-3B20K+3B 5K	1	CAL VR404
32420060	CON-ASSY	8283 (H+B) 70M/M, V 6PIN	3	
M40E137B	PCB-BS-27-MIC VOL	9*26,0.8T,D/S	2	
M40E145A	PCB-BS-27 CLR/CAL	9*26,FR-4,1 .6T,S/S	1	
M40E152A	PCB-BS-29-VOL/SQ	9*26*0.8T,D/S	1	



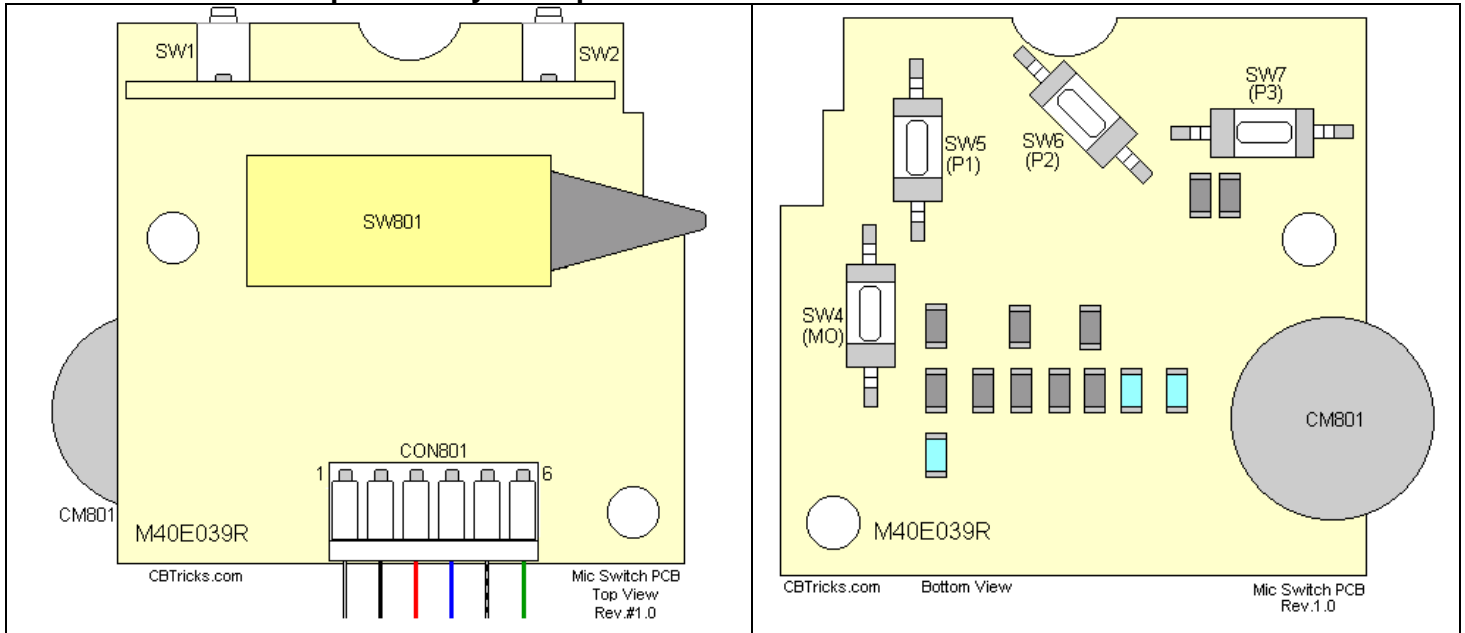
## SS4900 Channel Switch PCB Component Layout Top and Bottom Pattern



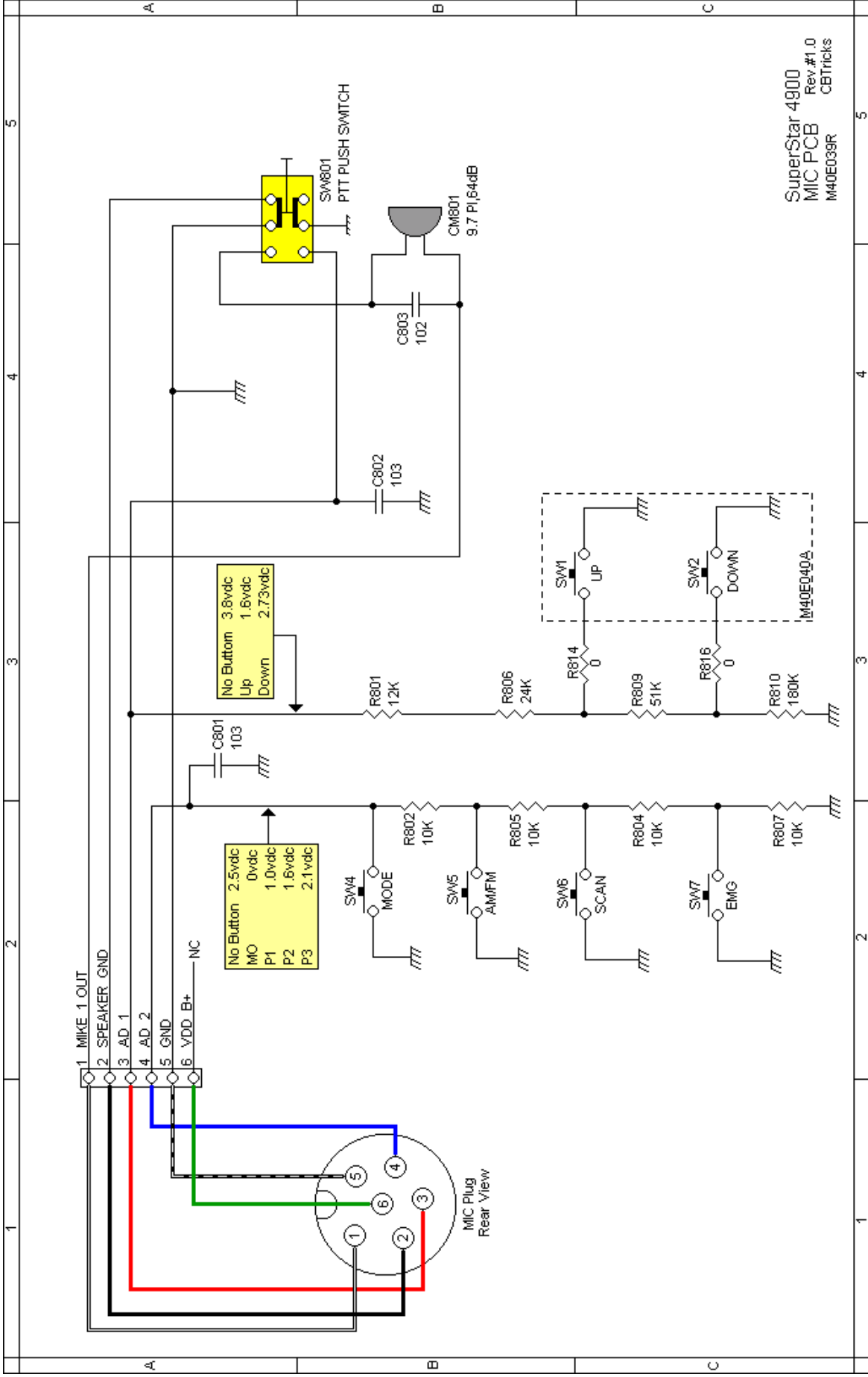
### CHANNEL PCB

CODE NO.	DESCRIPTION	SPECIFICATION	QTY	REF.
80213018	ASSY CH.PCB		1	
15210106	RESISTOR-FIXED	10M-J-1/16W (0603)		
15210153	RESISTOR-FIXED	15K-J-1/16W (0603)		
15210390	RESISTOR-FIXED	39-J-1/16W (0603)		
15210391	RESISTOR-FIXED	390-J-1/16W (0603)		
32420036	CON-ASSY	45M/M, 3PIN (B/R/W)		
35420006	SWITCH-PULSE	YPS-210115SK	1	SW402
M40E136B	PCB-BS-27-CH S/W	12*22.2,0.8T,D/S	1	

## SS4900 MIC PCB Component Layout Top and Bottom



REF.	DESCRIPTION	SPECIFICATION	CODE NO.
	PCB-EM-27-UP/DOWN	28.3*14.2*1.2T	M40E040A
	ASSY M/M BD		
SW1	SWITCH-TACT	DT1 101A	35020002
SW2	SWITCH-TACT	DT1 101A	35020002
SW4	SWITCH-TACT S/W	TACT S/W, DT1101S	35010001
SW5	SWITCH-TACT S/W	TACT S/W, DT1101S	35010001
SW6	SWITCH-TACT S/W	TACT S/W, DT1101S	35010001
SW7	SWITCH-TACT S/W	TACT S/W, DT1101S	35010001
CM801	C-MIC	CMP—756,S6dB,9.7P1	30620002
CON801	CONN-MIC (P)	SCN-16-6(P)	32020004
R801	RESISTOR-FIXED	12K-J-1/16W (0603)	15210123
R802	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R804	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R805	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R806	RESISTOR-FIXED	24K-J-1/16W (0603)	
R807	RESISTOR-FIXED	10K-J-1/16W (0603)	15210103
R809	RESISTOR-FIXED	51K-J-1/16W (0603)	
R810	RESISTOR-FIXED	180K-J-1/16W (0603)	
C801	C-CERAMIC	GRM39 X7R 103K 50	17010103
C802	C-CERAMIC	GRM39 X7R 103K 50	17010103
C803	C-CERAMIC	GRM39 X7R 102K 50	17010102



SuperStar 4900  
 MIC PCB Rev.#1.0  
 IM40E039R CBTricks

REF.	DESCRIPTION	SPECIFICATION	QTY	CODE NO.
	ASSY TRANS CHA		1	80229013
<b>TF-2</b>	TRANS	BS-29 (E) 120V / 16V, 5A	1	26020009
	MAIN TRANS CHASSIS	EGI 1T	1	62000088
	SCREW-PH, T/P2	(+) M3*L6, FNW	2	68000022
	WASHER-PLAIN	M4, FNW	4	68000025
	SCREW-B/H M/C	(+) M4*L12, FZY	4	68000060
	WASHER-SPRING	M4, FZY	4	68000061

CODE NO.	DESCRIPTION	SPECIFICATION	LOCATION
35420004	RELAY RY-12WK	1	
26020008	TRANSFORMER-CHOKE	1 9MM,0.9P1	1 TF-1
32420020	CONNECTOR	4PIN 3M/M	1
32420028	PLUG STRAIGHT	00-8283-15	12 00000 2
32420029	CONNECTOR	PULG S/T 6PIN	1 D—SUB 9PIN
32420030	CONNECTOR	PULG S/T 3PIN	1 PHONE JACK
32420042	CONNECTOR	PULG S/T 2PIN	3 SPK
32420042	CONNECTOR	PULG S/T 2PIN	3 S-METER
32420042	CONNECTOR	PULG S/T 2PIN	3 POW ON.OFF
32420043	CONNECTOR	PULG S/T 5 PIN	1
32420044	JUMPER	2PIN SHORT JUMPER	6 FOR OPTION
32420045	PIN	Y03—MC, 6PIN	1 FOR OPTION
32420046	DC-SOCKET	53259-0310	1
32420054	PIN	Y020—MC, 8PIN	1 FOR OPTION
3302000S	JACK-3.SPI	TH-35C#POM	1 STR J—2
37020062	WIRE (ANT2)	RG5178, 96M/M	1

CODE NO.	DESCRIPTION	SPECIFICATION	LOCATION
32420030	CONNECTOR	PULG S/T 3PIN	1
32420050	CONNECTOR	7.92M/M 2PIN PULG S/T	1 DC IN
32420051	CON-ASSY	7.92M/M, 2PIN, 230M/M	1
80229002	ASSY MIKE	1	
61000105	COVER-MIKE FRONT	ABS, BLK	1
61000106	COVER-MIKE BACK	ABS, BLK	1
61000108	BUTTON-MIKE CHANNE	ABS BLK, SILK	1
61000109	BUTTON-PTT	ABS, BLK	1
61000110	HANGER-MIKE	ABS BLK	1
61000497	M/FUNCTION BUTTON	ABS SILK	1
62000030	PLATE-WEIGHT	SPC 3t, ZN	1
65000023	P/MIKE FRONT	PC 0.254T, SILK	1
68000015	SCREW-B.H, T/P2	(+)M2.6*L12, FZB	3 FRONT+, BACK COVER
68000016	SCREW-B.H, T/P2	(+)M2.6*L6, FZY	2 FRONT+, FRONT PCB
68000017	SCREW-B.H, T/P2	(+)M2.6*L8, FZY	1 BACK+HANGE
70000023	FELT-MIKE SPEAKER	FELT 0.2T, BLK	1
70000027	SPONGE-SUPPORTING	R/SPONG 20T, BLK	1
80038015	ASSY MIKE CH.	1	

35020001	SWITCH-PUSH	DP2210A	1 SW801
M40E039A	PCB—EM—27—MIC	32*32*i.2T	1 PCB
89005008	CORD—CURL	5.2P1, 6PIN, I SHIELD	1 J801

CODE NO.	DESCRIPTION	SPECIFICATION	OTY	LOCATION
80213030	ASSY ELEMENTS		1	
62000027	B/K—MIKE	SPC iT, NI	1	
68000024	WASHER—I/TOOTHED	M4, FNW	2	
68000026	SCREW—B.H, T/Pi	(+)M4*L12, FZW	2	
70000011	BAG—POLY(i00*120)	LDPEO.OST	1	
80229003	ASSY PACKING	1		
37020059	DC—POWER CABLE	5021 7—8000,51067—030	1	
65000024	WINDOW—LCD	PVC 1.5T	1	
66000694	LABEL—SERIAL	TETRON 0.OST	1	
66000695	MANUAL—USERART	PAPER	1	
66000696	LABEL—CARTON	K/PAPER 0.iT	i	
66000724	LABEL"34"—G/NUMBER	A/PAP, BLK	2	
69000304	INNER PAD(R&L)	DW—2	1	
69000306	CARTON BOX	DW—2 0.5		
69000307	CARTON PAD	SW—3(ST)	1	
69000315	PAD "i—TOP & BTM	DW—2(314*238MM)	2	
69000316	PAD "2—FRONT & BA	DW—2(238*i2OMM)	2	

69000317	PAD "3—FRONT DW—2(210*i04)	2		
69000329	BOX—GIFT SW—3(i.5—2T)	i		
70000103	WINDOW TAPE(U)	DOUBLE AD/TAPE	1	
70000104	WINDOW TAPE(D)	DOUBLE AD/TAPE	1	
70000107	POLY BAG	LDPEO.05T	1	

M4OEi SQA	PCB—BS—29MA1N	169.1*198.2,1 .6T,D/S	1	
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80229007	ASSY BOTTOM	1		
61000495	FRAME HINGE(R)	PC, BLAK	1	

CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION
61000496	FRAME HINGE(L)	PC, BLACK	1	
62000086	MAIN BOTTOM CHASSI	EGI IT	1	
64000087	BACK FOOT	NBR	2	
67000020	HOOK UP FRAME	SUS 4P1	1	
68000055	SCREW—P/H T/P2	(+)M3*LiO,FZB	4	

PARTS LIST

CODE NO.	DESCRIPTION	SPECIFICATION	QTY	LOCATION
80229001	ASSY SET		1	
61000498	STRAP NYLON, BLK		1	
62000091	STRAP BRACKET	SUS	2	
64000086	SIDE FOOT	NBR	4	
67000019	HANDLE SUPPORT		2	
68000023	SCREW—P.H, M/C	(+) M3*L6, FZB	5	
68000053	SCREW—F/H M/C	(+) M3*L6, FZB	7	
68000054	SCREW—P/H, M/C	(+) M3*L6, FNW	8	
68000055	SCREW—P/H T/P2	(+) M3*L10, FZB	4	
68000056	SCREW—B/H M/C	(+) M3*L8, FNW	2	
80213006	ASSY TOP CHA		1	
30020005	SPEAKER	p5—07711—A7813	1	SP—1
32420049	CON—ASSY	LOCK,350M/M,2PIN	1	
62000085	MAIN TOP CHASSIS	EGI IT	1	
68000030	NUT—HEXAGON	M3, FZY	4	
68000053	SCREW—F/H M/C	(+)M3*L6,FZB	4	
70000105	SPEAKER FELT	FELTO.5T	1	
80229004	ASSY FRONT		1	
61000489	VOLUME KNOB	BLK SPRAY	1	
61000571	VOLUME KNOB	ABS	1	
61000490	CHANNEL KNOB	BLK SPRAY	1	
61000572	CHANNEL KNOB	ABS	1	
61000491	DUAL INNER KNOB	BLK SPRAY	3	
61000573	DUAL INNER KNOB	ABS	1	
61000492	DUAL OUT KNOB	BLK SPRAY	3	
61000574	DUAL OUT KNOB	ABS	1	
61000493	SELECTOR KNOB	BLK SPRAY	1	
61000575	SELECTOR KNOB	ABS	1	
64000082	DTMF BUTTON	SILICONE RUBBER	1	
64000083	CHANNEL BUTTON	SILICONE RUBBER	1	
64000084	FUNCTION BUTTON	SILICONE RUBBER	1	
64000085	EMG BUTTON	SILICONE RUBBER	1	
64000088	CHANNEL KNOB BELT	SILICONE	1	
68000037	SCREW—B.H,T/P2	(+)M3*L8,FZY	5	
70000106	FELT—REFLECTOR	FELT 0.5T, BLK	2	
80229010	ASSY F/COVER		1	
15410122	RESISTOR—FIXED	1.2K—F—1/6W	1	R449

CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	LOCATION
32020005	CONN—MIC(R)	SCN—16—6(Si)	1	FORMIC
32420032	CON —ASSY	350M/M ,2PIN(R/O)	1	POWERON/OF
32420033	CON—ASSY	350M/M,3PIN(W/G/O)	1	PHONE JACK
33020016	PHONE JACK	ST—044—0i—B	1	J—404
35020007	SWITCH LOCKER	KRAiiOi—(LED)—RED	1	J401
61000494	LED INDICATE	ACRYL,MILK	1	
61000531	COVER—FRONT	METAL SPRAY	1	

61000576	COVER—FRONT	ABS	1	
70000110	FELT—LCD	FELT 0.5T, BLK	1	
80229005	ASSY MAIN		1	
62000087	MAIN FRONT CHASSIS	EGIT	1	
62000089	MAIN RIGHT CHASSIS	EGIT	1	
68000022	SCREW—P.H, T/P2	(+)M3*L6, FNW	19	
80229012	ASSY BACK CHA		1	
32020003	CONNECTOR—ANT(M)	SO—239D	2	J—3, J—4
32420052	JOINT—CONNECTOR	YELLOW—CAP JOINT	1	
33010006	JACK TG—25N 2.5P1	WITHNUT	1	J—i
35020009	SWITCH LOCKER	KRA1101 RED	1	
37020056	WIRE AWG22, BLACK, 60—	3M/M1		AL SW
37020061	WIRE(ANT1)	RG5178, 60M/M	1	
37020062	WIRE(ANT2)	RG5178, 96M/M	1	
37020067	AC—CABLE	0.75MM*2C, i8OCM, AC12	1	AC IN
42020003	FUSE HOLDER	FUSE HOLDER(FH—30)	1	
42020004	FUSE	125V/0.5A	1	FSi
68000018	NUT—HEXAGON	M2.6, FZY	6	
68000057	SCREW—B/H M/C	(+) M2.6* L10, FNW		6
80213021	ASSY HEAT SINK		1	
38030002	INSULATOR	MICA TO—220	4	
38230001	INSULATOR—BUSHING	NYLON	1	
63000012	MAIN HEATSINK AL2T		1	
68000018	NUT—HEXAGON	M2.6, FZY	6	
68000057	SCREW—B/H M/C	(+) M2.6* L10, FNW		6
80229022	ASS'Y BACK CHA		1	
62000106	MAIN BACK CHASSIS	EGIT	1	
68000022	SCREW—P.H, T/P2	(+)M3*L6, FNW	8	
70000115	STRAIN RELIEF	5NF—16, BLK	1	