



RadioShack®

ServiceManual

20-524

PRO-94

1000-CHANNEL HANDHELD TRUNKING SCANNER

Catalog Number: 20-524

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SPECIFICATIONS

GENERAL

Band coverage:	14 bands
Frequency range:	29 to 29.7 MHz (10 meter amateur band) 29.7 to 50 MHz (VHF low band) 50 to 54 MHz (6 meter amateur band) 108 to 136.975 MHz (Aircraft band) 137 to 144 MHz (Military land mobile) 144 to 148 MHz (2 meter amateur band) 148 to 174 MHz (VHF high band) 216 to 225 MHz (1 meter amateur) 406 to 420 MHz (Federal government land mobile) 420 to 450 MHz (70-cm amateur band) 450 to 470 MHz (UHF standard band) 470 to 512 MHz (UHF "T" band) 806 to 956 MHz (Public service except cellular band) 1240 to 1300 MHz (25 cm amateur band)
Number of programmable channels:	1000 channels (50 CH × 20 banks) 20 channels for search skip memory 20 channels for service scan skip memory
External Jacks:	ANT. jack: BNC type Earphone jack (EXT. SP): 3.5 mm dia. EXT. Power jack: 3.4 mm dia. (Center negative)
Internal Speaker:	8-ohm, 0.5 W (36 mm dia.)
Power requirements:	4 AA size rechargeable Ni-Cd battery, 4 AA size regular alkaline battery or 9 V DC provided by AC adapter from EXT. Power jack
Operating temperature:	-20 °C ~ +60 °C
Storage temperature:	-30 °C ~ +60 °C
Dimensions (HWD):	152 × 66 × 41 mm
Weight:	250 g (without battery and antenna)
Accessories:	Flexible antenna, Belt clip
Heterodyne system:	1. 1st heterodyne 29 to 225 MHz: Upper heterodyne (IF 380.6050-380.7000 MHz) 406 to 512 MHz: Upper heterodyne (IF 380.6125-380.7000 MHz) 806 to 1300 MHz: Lower heterodyne (IF 380.7000-380.7875 MHz) 2. 2nd heterodyne (IF 10.85 MHz) All bands: Upper heterodyne 3. 3rd heterodyne (IF 450 kHz) All bands: Lower heterodyne

Filter: 380.70 MHz: SAW filter
10.85 MHz: Monolithic crystal filter
450 kHz: Ceramic filter

MEASUREMENT CONDITIONS

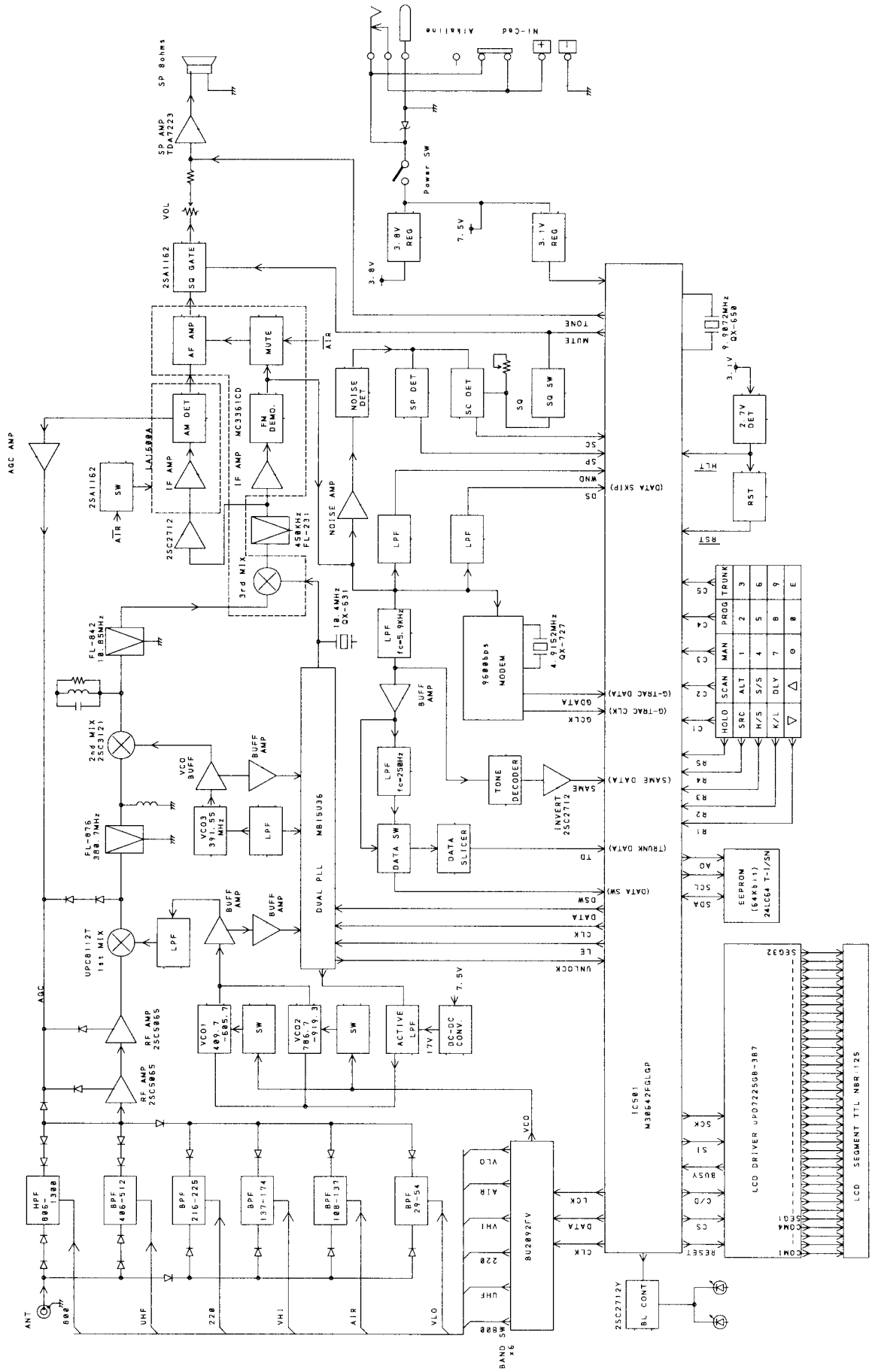
Power source: 6 V DC at battery terminal
Antenna impedance: 50-ohm
Test temperature: +25 °C ±5 °C
Modulation frequency: 1 kHz
Deviation: NFM ±3 kHz dev./AM 60% mod.
Mean signal input level: 100 μV
Audio output load: 8-ohm resistive load
Standard ref. audio output: 50 mW (0.632 V)

Item		Unit	Nominal	Limit
Sensitivity (S+N)/N=20 dB				
VHF low band	40.840 MHz	μV	0.5	2.0
VHF high band	162.400 MHz	μV	0.5	3.0
220 MHz band	216.005 MHz	μV	0.6	3.0
UHF band	453.250 MHz	μV	0.4	3.0
Aircraft band	127.175 MHz	μV	1.6	8.0
Public service band	857.200 MHz	μV	0.6	4.0
1200 MHz band	1299.9125 MHz	μV	4.0	20.0
Maximum sensitivity	127.175 MHz	μV	0.6	3.0
Threshold squelch (MANUAL)				
VHF low band	at 40.840 MHz	μV	0.3	1.3
VHF high band	at 162.400 MHz	μV	0.3	1.6
220 MHz band	at 216.005 MHz	μV	0.6	3.0
UHF band	at 453.250 MHz	μV	0.3	2.5
Aircraft band	at 127.175 MHz	μV	0.3	3.0
Public service band	at 857.200 MHz	μV	0.4	3.0
1200 MHz band	at 1299.9125 MHz	μV	2.5	10.0
Tight squelch (MANUAL) (S+N)/N				
VHF low band	at 40.840 MHz	dB	25	15
VHF high band	at 162.400 MHz	dB	25	15
220 MHz band	at 216.005 MHz	dB	25	15
UHF band	at 453.250 MHz	dB	25	15
Aircraft band	at 127.175 MHz	dB	16	8
Public service band	at 857.200 MHz	dB	25	15
1200 MHz band	at 1299.9125 MHz	dB	25	15
Hum and noise				
VHF low band	at 40.840 MHz	dB	40	30
VHF high band	at 162.400 MHz	dB	40	30
220 MHz band	at 216.005 MHz	dB	39	30
UHF band	at 453.250 MHz	dB	39	30
Aircraft band	at 127.175 MHz	dB	47	30
Public service band	at 857.200 MHz	dB	39	30
1200 MHz band	at 1299.9125 MHz	dB	35	25
Data deviation sensitivity				
Control ch data	at 851.0125 MHz	kHz	±0.5	±1.5
Voice ch data	at 851.0125 MHz	kHz	±0.2	±1.0
Audio frequency response -6 dB				
(at 162.400 MHz)	Low	Hz	330	200 ~ 450
	High	Hz	1900	1300 ~ 3000
(at 127.175 MHz)	Low	Hz	330	200 ~ 450
	High	Hz	1900	1260 ~ 2900

Item	Unit	Nominal	Limit
Audio output power of internal speaker			
(at 162.400 MHz) Maximum	mW	350	100
10% THD	mW	300	90
(at 127.175 MHz) Maximum	mW	350	100
10% THD	mW	300	90
Distortion at 50 mW output power (100 μ V RF input)			
at 162.400 MHz	%	1.5	6
at 127.175 MHz	%	2.5	10
Acceptable radio frequency displacement (EIA RS-204-D)			
at 162.400 MHz	kHz	± 6	± 3
IF rejection (380.7 MHz)			
at 162.4 MHz	dB	80	50
Residual noise (Vol.: max, SQ: close) at 162.4 MHz	mV	0.5	2
Scan/Search rate			
Scan	CH/sec.	50	25
Search (162.4 ~ 163.4 MHz, MANUAL mode)	Step/sec.	100	50
Current drain (at 162.40 MHz)			
(at full output)	mA DC	180	220
(at Squelched)	mA DC	70	100
Batt. Low turn-on voltage	V	4.50	4.35~4.65
Auto power off voltage	V	4.30	4.15~4.45
Battery charge current	mA	60	30 ~ 90
Alert sensitivity (at 162.4 MHz, 1050 Hz)	kHz	± 0.8	± 2.0
EAS DATA sensitivity (at 162.4 MHz)	kHz	± 1.6	± 2.0

Note: Nominal specs represent the design specs. All units should be able to approximate these — some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; in no case should a unit fail to meet limit specs.

BLOCK DIAGRAM



ALIGNMENT AND ADJUSTMENT

PREPARATION FOR ALIGNMENT

To enter the following test frequencies into the channel memories:

Turn on the Power while pressing "2", "9" and "SCAN" keys. Then press "MANUAL" key.

TEST EQUIPMENT REQUIRED

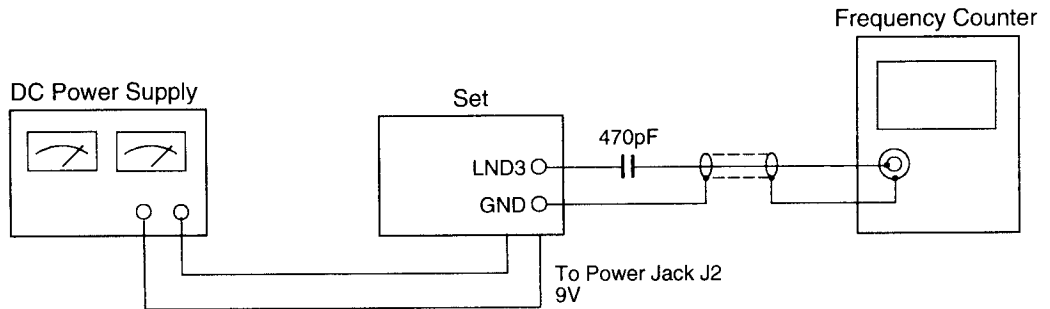
- DC power supply EXT. DC Power JACK: 9.0 V DC (Center Negative)
- Oscilloscope
- Digital voltmeter
- Frequency counter
- SSVM
- SINAD meter
- Signal generator (SG)

Table 1. Test Frequency

Channel	Test Frequency	Channel	Test Frequency	Channel	Test Frequency
1	30.0500 MHz	9	511.9125 MHz	17	857.2000 MHz
2	40.8400 MHz	10	108.5000 MHz	18	911.5000 MHz
3	49.9000 MHz	11	118.8000 MHz	19	954.9125 MHz
4	138.1500 MHz	12	127.1750 MHz	20	1299.9125 MHz
5	162.4000 MHz	13	135.5000 MHz	21	216.0050 MHz
6	173.2250 MHz	14	29.0000 MHz	51	29.0000 MHz
7	406.8750 MHz	15	54.0000 MHz	52	512.0000 MHz
8	453.2500 MHz	16	806.0000 MHz		

ALIGNMENT OF REFERENCE OSC

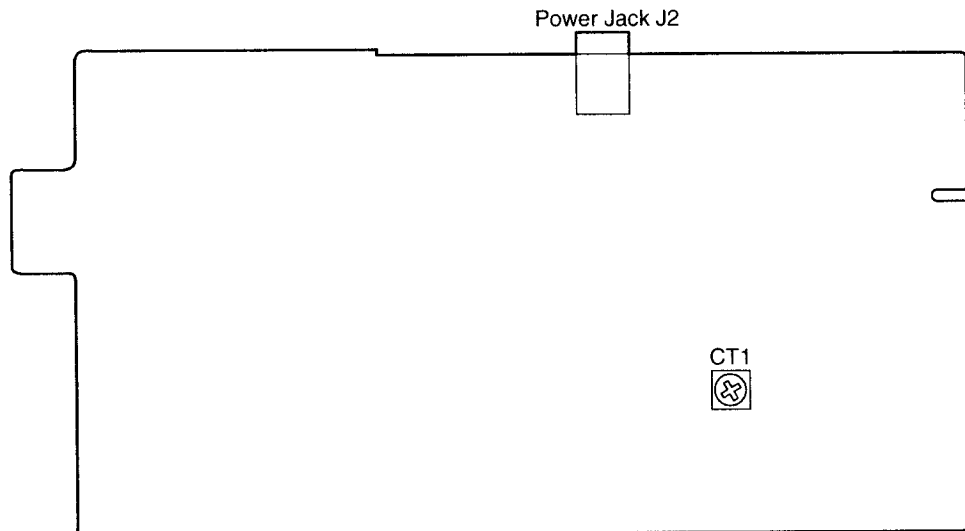
Test Equipment Required and Connections



Alignment Procedure

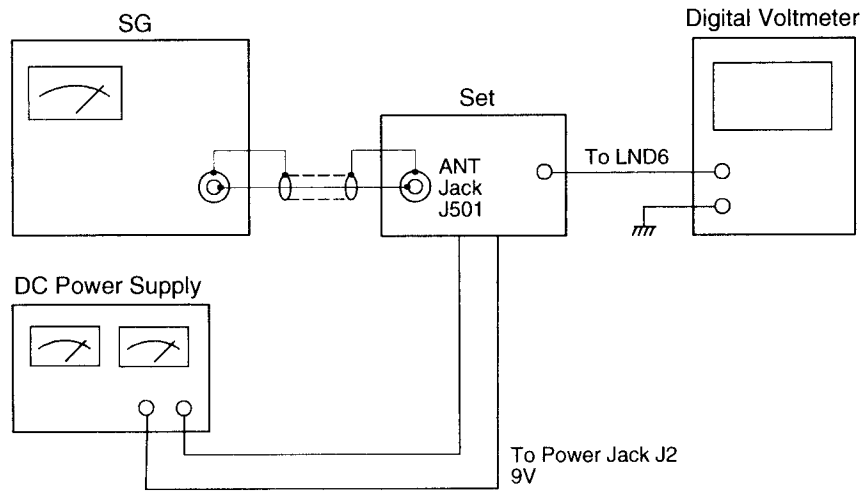
Step	Preset to	Adjustment	Result
1	CH14	CT1	Connect the frequency counter to LND3. (See Page 17 for the position.) Adjust CT1 to obtain 391.55 MHz \pm 100 Hz.

Alignment Point Locations (RF PCB)



ALIGNMENT OF NFM DISCRIMINATOR

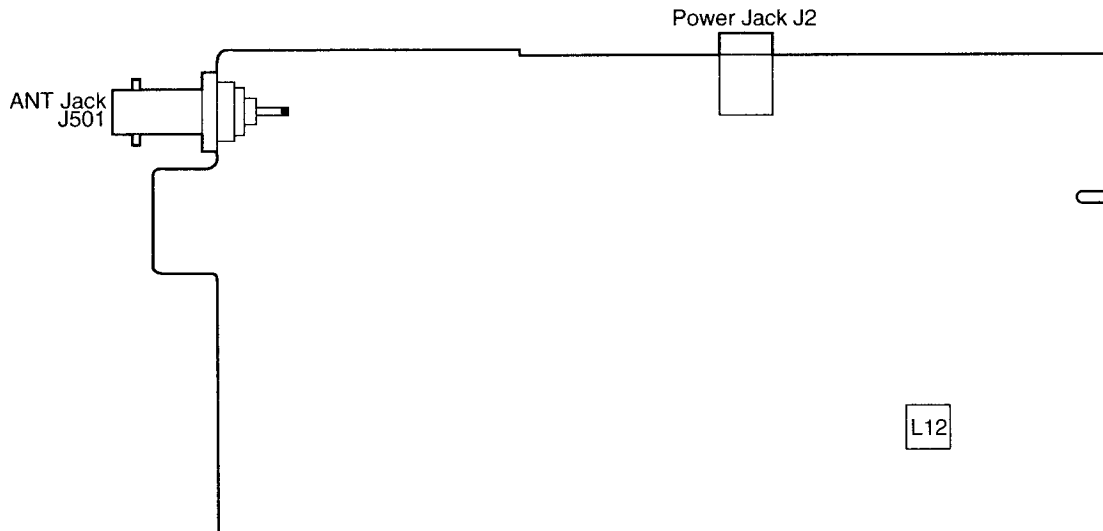
Test Equipment Required and Connections



Alignment Procedure

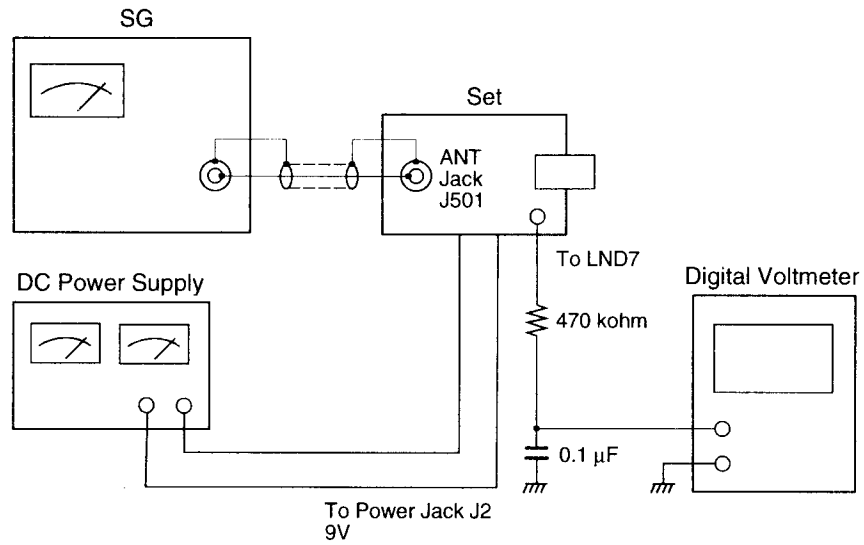
Step	Preset to	Adjustment	Result
1	CH2 SG: 40.84 MHz No modulation 100 μ V	L12	Connect the digital voltmeter to LND6. (See Page 17 for the position.) Adjust L12 to obtain 1.3 V \pm 0.05 V DC.

Alignment Point Locations (RF PCB)



ALIGNMENT OF SQUELCH

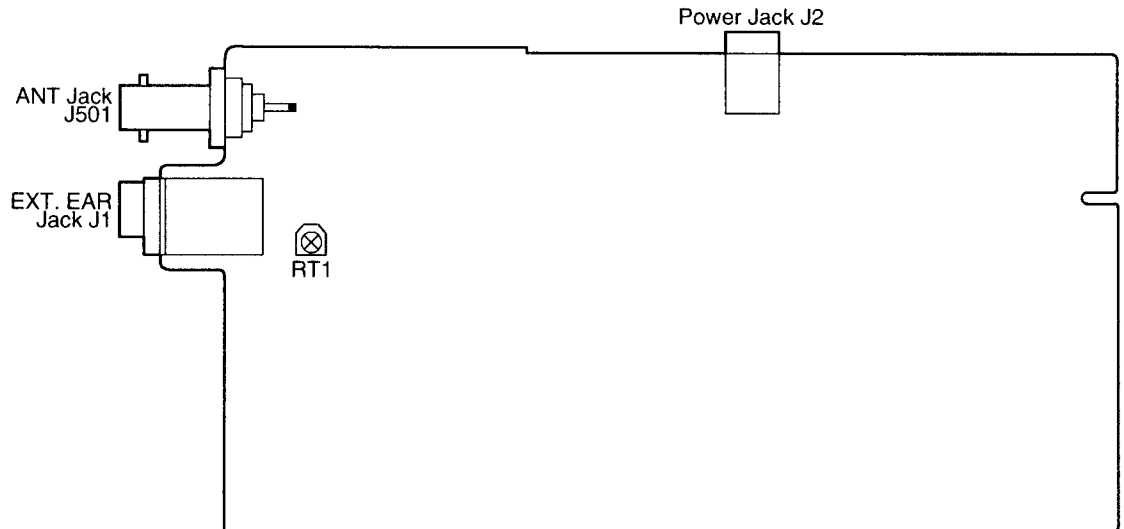
Test Equipment Required and Connections



Alignment Procedure

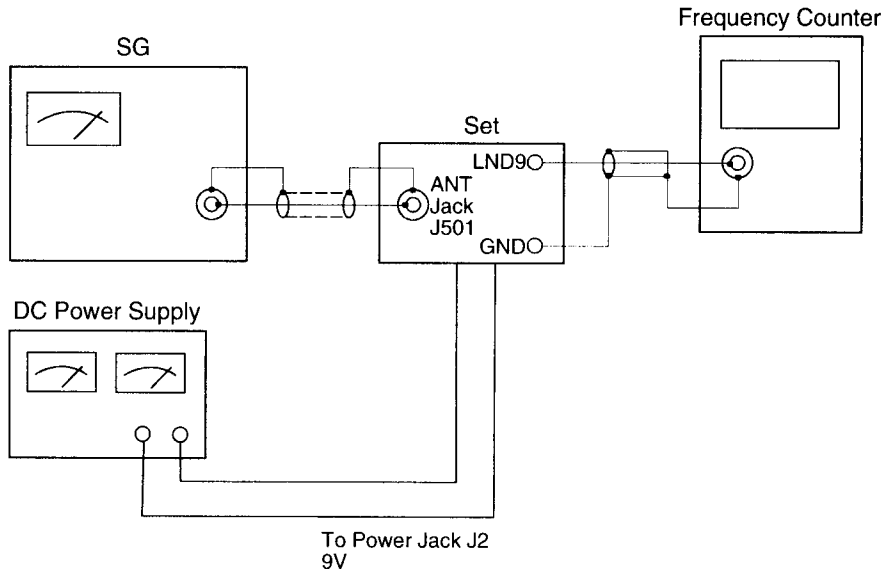
Step	Preset to	Adjustment	Result
1	CH2 SG: 40.840 MHz NFM No modulation Squelch: CW	RT1	Set the SG level so that the voltage at LND7 is 0.80 ± 0.05 V DC. (See Page 17 for the position.) Adjust RT1 slowly until the squelch opens.

Alignment Point Location (RF PCB)



ALIGNMENT OF S.A.M.E.

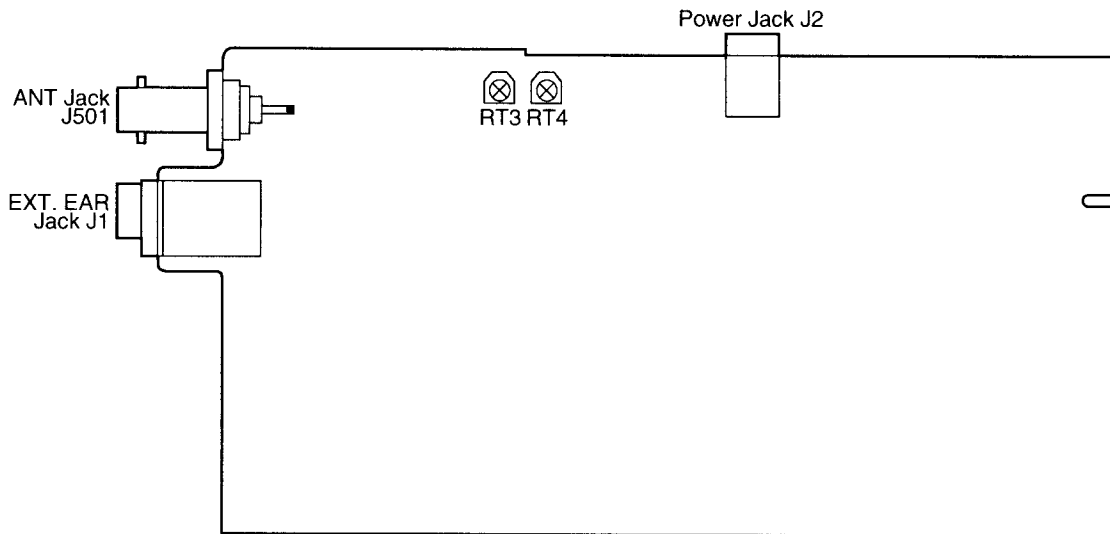
Test Equipment Required and Connections



Alignment Procedure

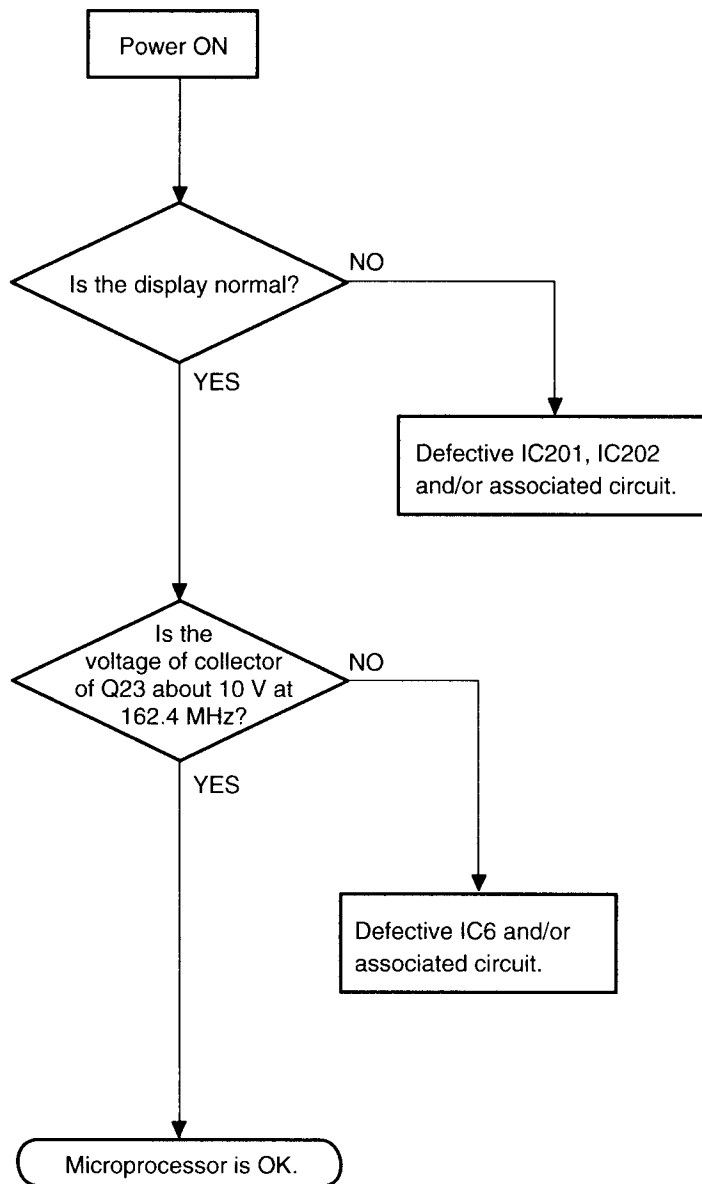
Step	Preset to	Adjustment	Result
1		—	Turn on the Power while pressing "2", "9" and "PRIORITY" keys. Then press "MANUAL" key.
2	SG: 162.4 MHz 100 μ V No modulation	RT4	Connect the frequency counter to LND9. (See Page 17 for the position.) Adjust RT4 to obtain 2100 Hz \pm 10Hz.
3	Ditto	RT3	Press "MANUAL" key. Then adjust RT3 to obtain 3575 Hz \pm 10 Hz

Alignment Point Location (RF PCB)

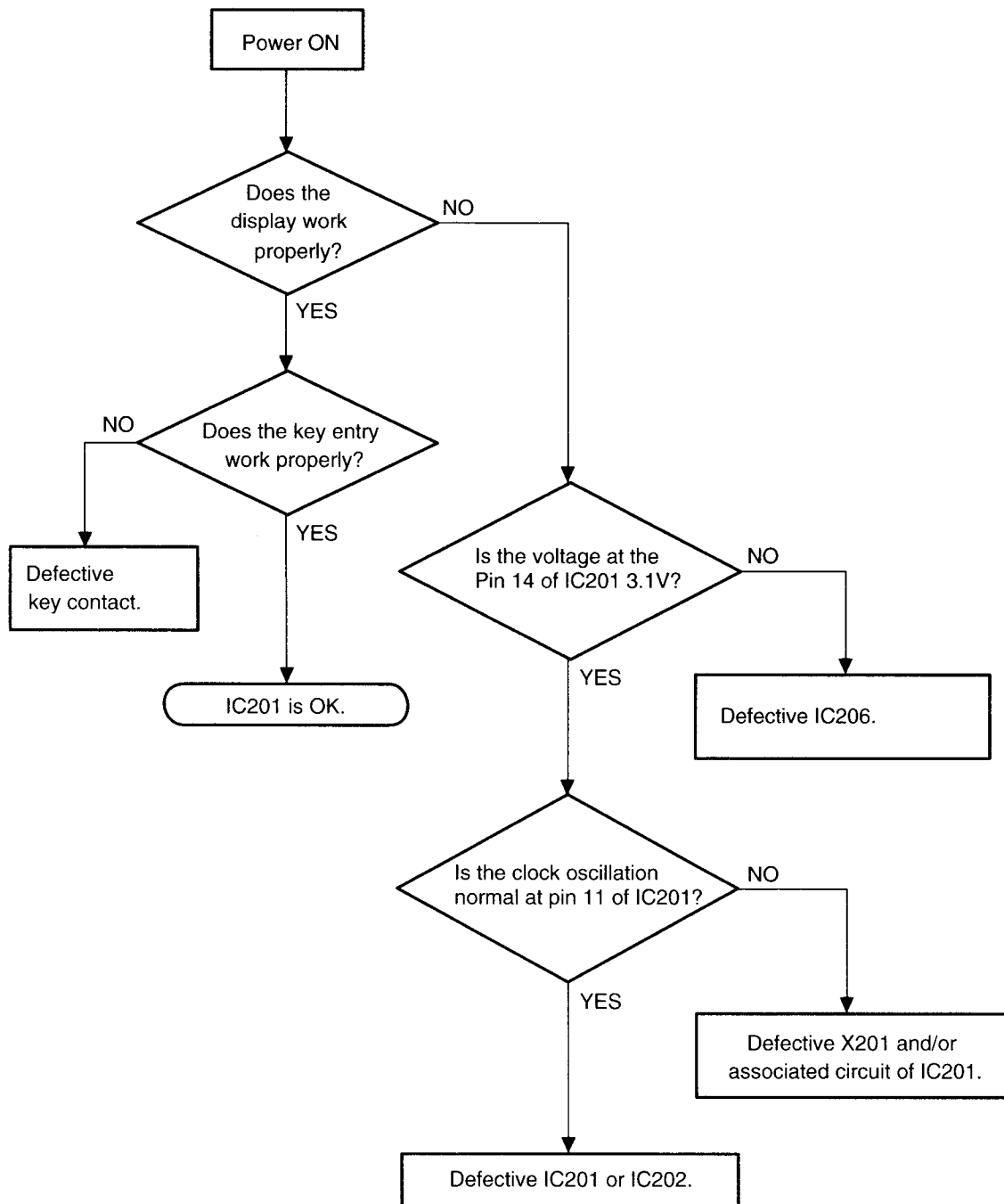


TROUBLESHOOTING

Reception Check

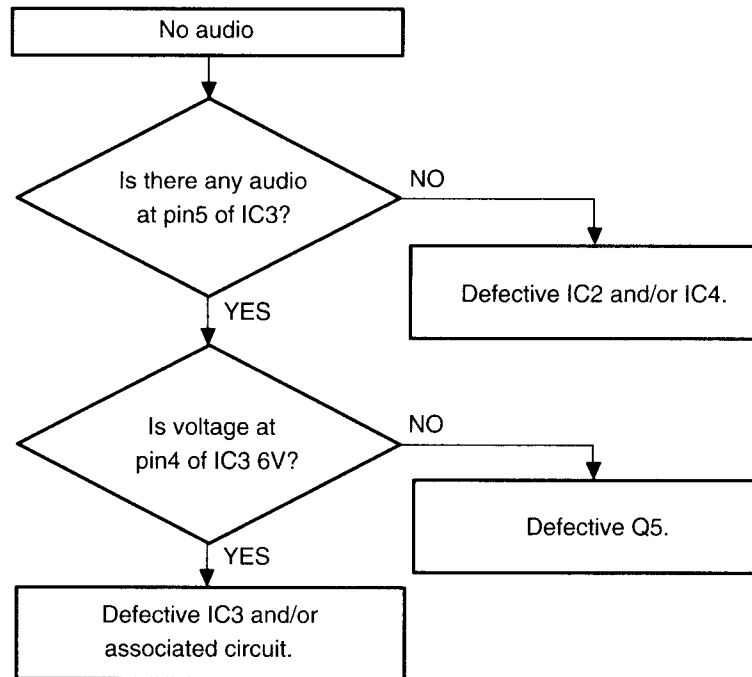


Microprocessor Check



Note: While checking the above items, the microprocessor might "lock up." If so, turn the power switch OFF and then ON and restart to check.

Audio Section



RF Section

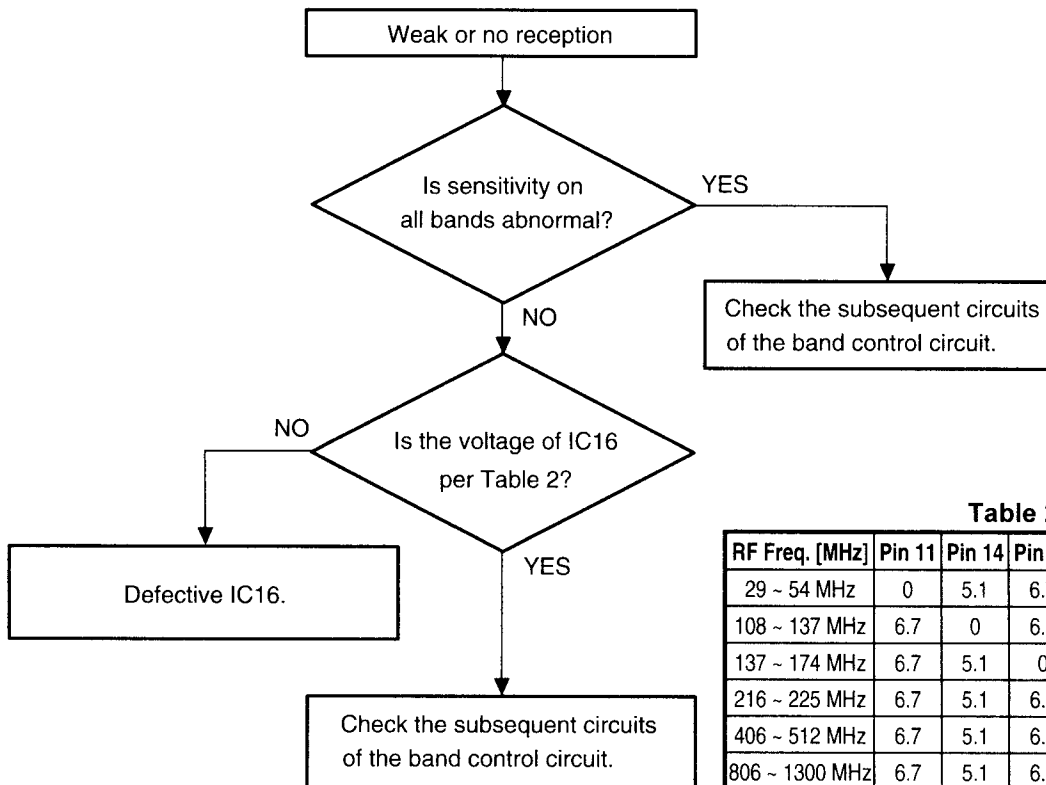
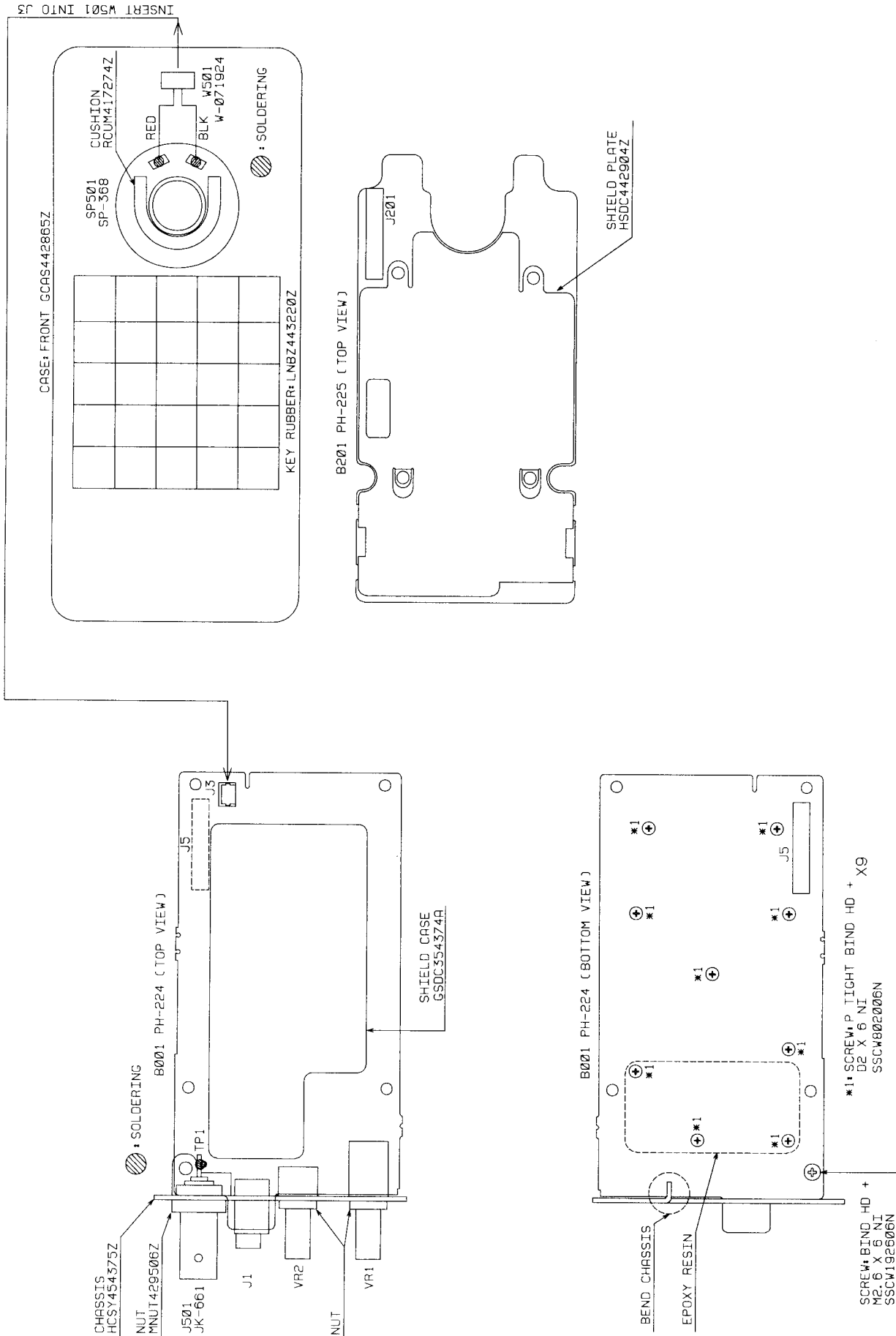


Table 2. Unit: V

RF Freq. [MHz]	Pin 11	Pin 14	Pin 15	Pin 16	Pin 17	Pin 18
29 ~ 54 MHz	0	5.1	6.7	6.7	6.7	4.8
108 ~ 137 MHz	6.7	0	6.7	6.7	6.7	4.8
137 ~ 174 MHz	6.7	5.1	0	6.7	6.7	4.8
216 ~ 225 MHz	6.7	5.1	6.7	0	6.7	4.8
406 ~ 512 MHz	6.7	5.1	6.7	6.7	0	4.8
806 ~ 1300 MHz	6.7	5.1	6.7	6.7	6.7	0

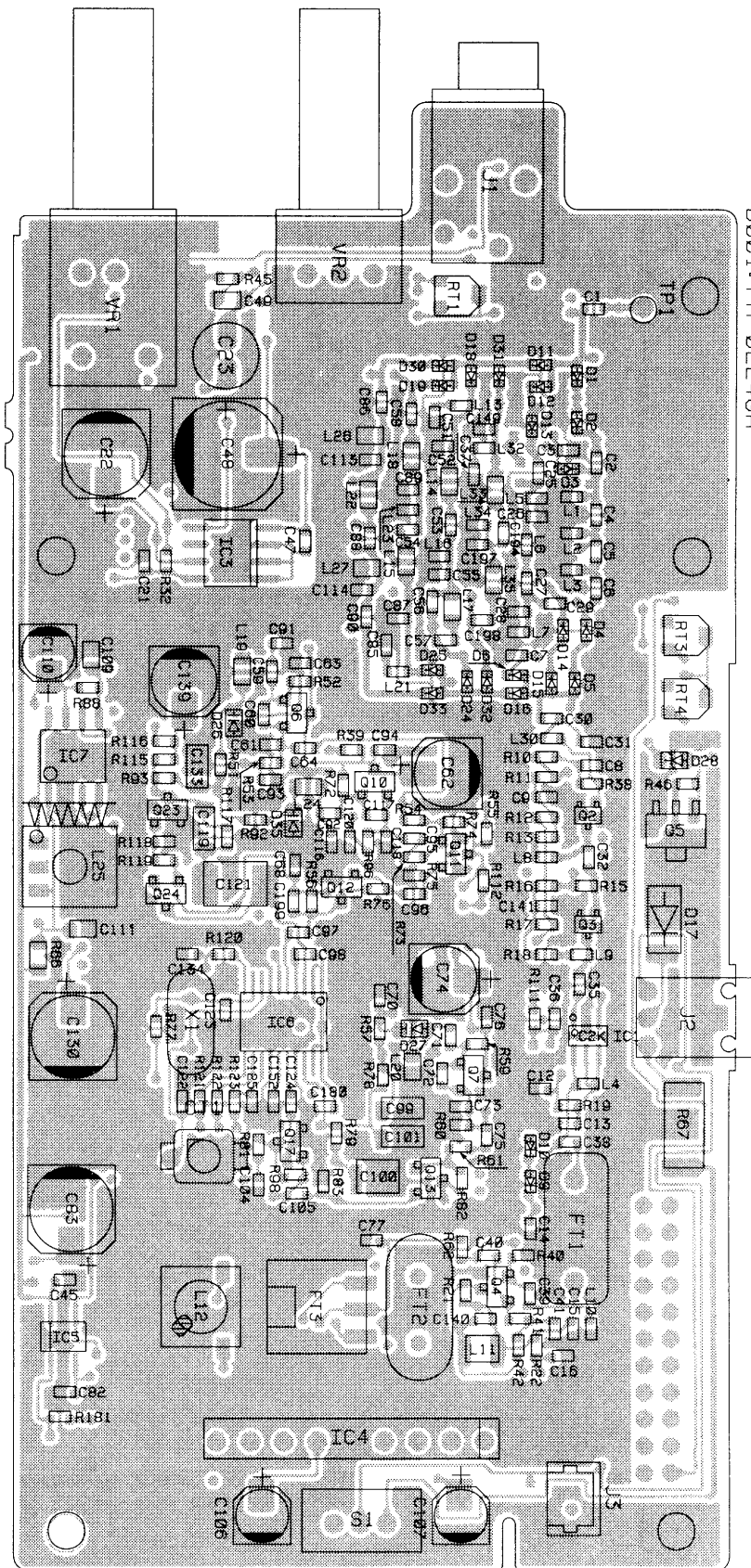
WIRING DIAGRAM



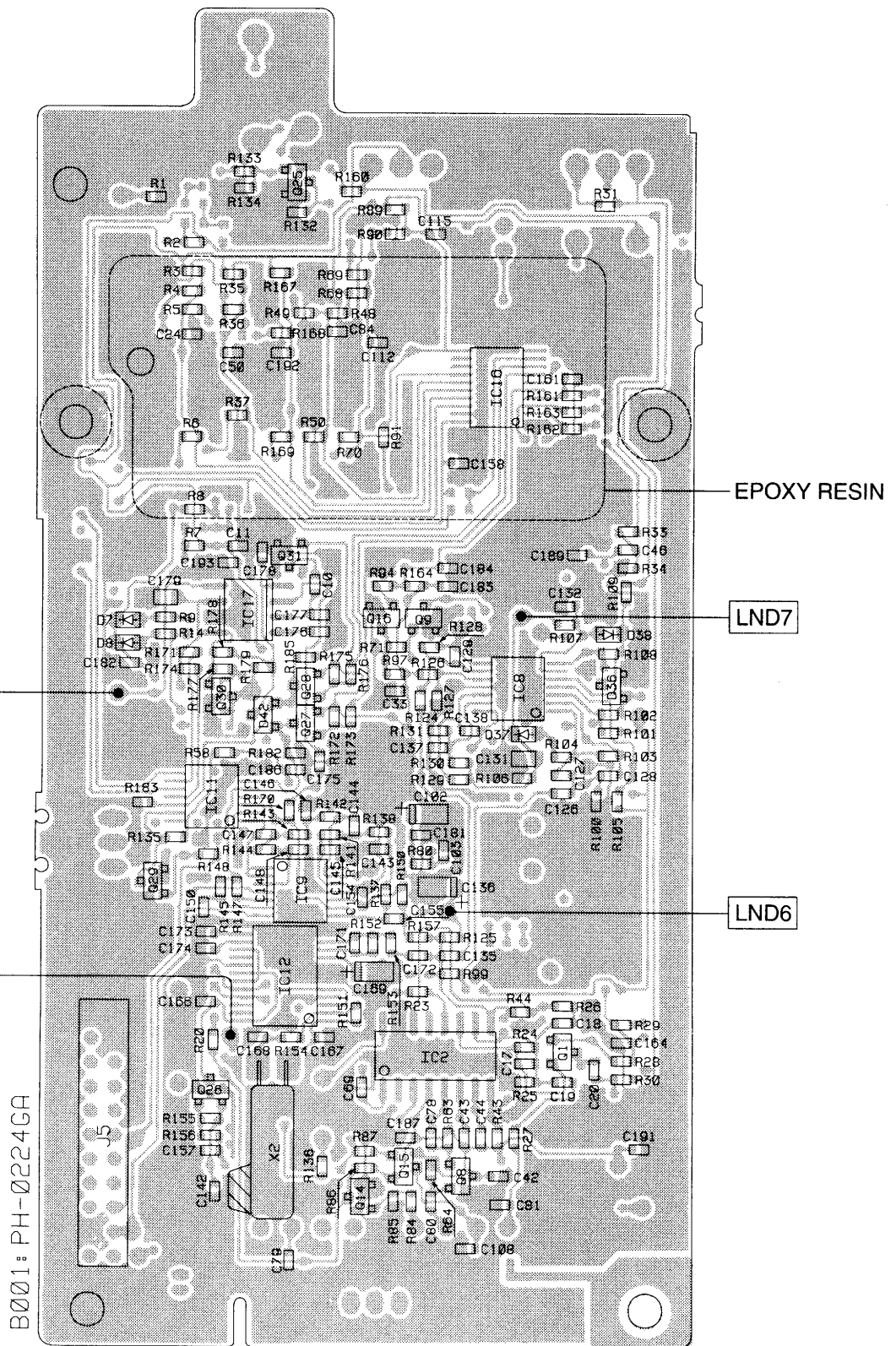
PRINTED CIRCUIT BOARDS

RF

B001: PH-0224GA



Top View

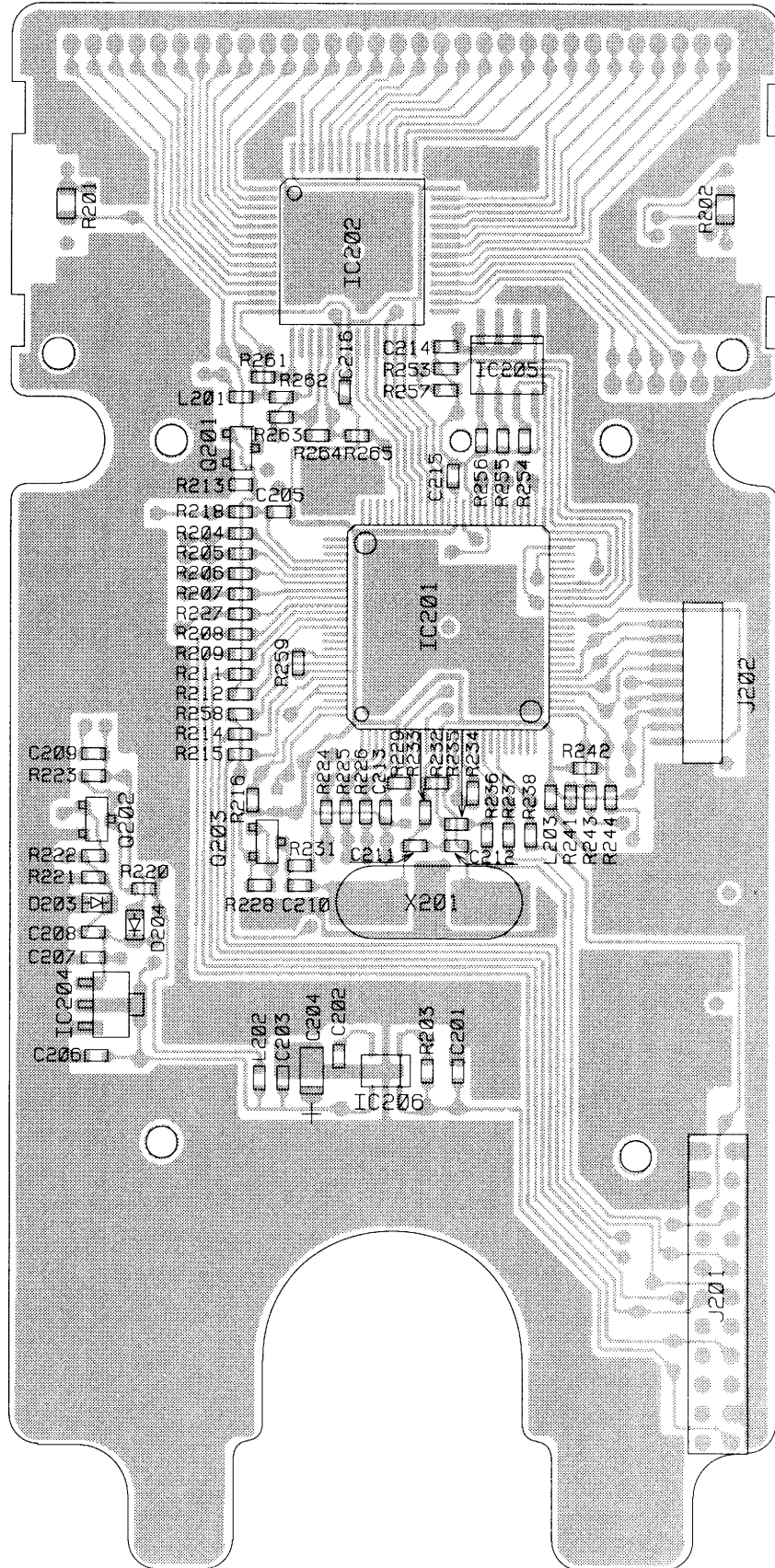


B001: PH-0224GA

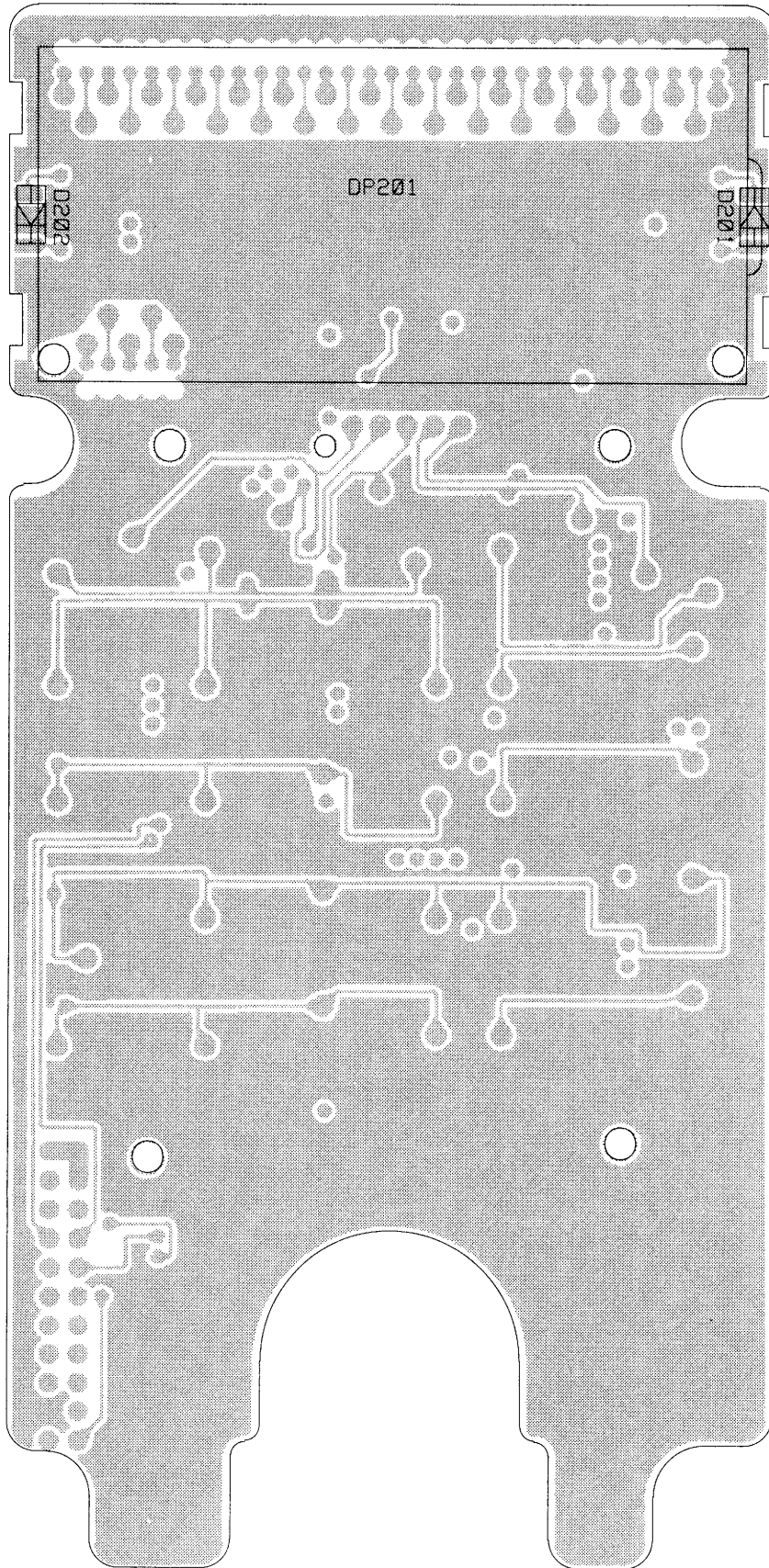
Bottom View

LOGIC

B201: PH-225EA



Top View



B201 : PH-225EA

Bottom View

MECHANICAL PARTS LIST

Ref. No.	Description	RS Part No.	Mfr's Part No.
1	Case, Rear		GCAS131851B
2	Battery Terminal		HTML431942B
3	Battery Terminal		HTML431862B
4	Case, Front	ABS	GCAS442865Z
5	Case, Top	ABS	GCAS442870Z
6	Case, Battery	ABS Dark Gray	GCAS231854Z
7	Display Window	PMMA	GCAS442869Z
8	Belt Clip	PC Dark Gray	GETC329513Z
9	Lighting Plate	PMMA	GETC454379Z
10	Knob	ABS Black	GNBZ431856Z
11	Chassis	SECC	HCSY454375Z
12	LCD Frame	SPT 0.3T	HSDC342874Z
13	Insulation Plate	Polyester Film, 0.1t	RZEB442909Z
14	Reflection Sheet	Polyester	RETC457780A
15	Knob, Release	ABS Dark Gray	GNBZ431857Z
16	Battery Terminal	C5191(PBP) T=0.25	HTML431860Z
17	Battery Terminal	C5191(PBP) T=0.25	HTML431859Z
18	Key Rubber	SI	LNBZ443220Z
19	Nut	C3601BD M11	MNUT429506Z
20	Spring Terminal	SUS304 WPB	NSPZ431915Z
21	Spring Terminal	SWIC-F	NSPZ431858Z
22	Not Used		
23	Shield Plate	SPT 0.3T	HSDC442904Z
24	Holder, Button	SECC T=0.8 MFZN-3	HHDZ431863Z
25	Cushion	Moltprene	RCUM417274Z
26	Coil Spring	SWIC-F D0.6	NSPZ431864Z
27	Reflection Sheet	Yupo Paper, 0.15T	RETC454380Z
28	Speaker Net	Himelon Black	RNTH430040Z
29	Screw, Bind HD +	M2.6X6 NI	SSCW192606N
30	Screw, Bind HD +	M3X6 BZMC	SSCW193006D
31	Screw, P Tight Bind HD +	D2X6 NI	SSCW802006N
32	Screw, P Tight Bind HD +	D2.6X20 BZMC	SSCW802620D
33	Spring Plate, Knob	D6XL5.2	TSTD0200006
34	Screw, P TIGHT Bind HD +	D2.6X6 NI	SSCW802606N
35	Shield Case	ABS	GSDC354374A
36	Cushion	Neoprene	RCUN443348Z
	Front Case Assembly (Ref. No. 2, 4, 7, 20, 21 and 28)		AB306ZPBC
	Rear Case Assembly (Ref. No. 1, 15, 17, 24, 26 and 34)		AB306ZPBD
	Knob Assembly (Ref No. 10 and 33)		AB306ZPBE
	Battery Case Assembly (Ref. No. 3, 6, 16 and 20)		AB306ZPBF
	Belt Clip Kit (Ref. No. 8 and 30)		BLCPKB306ZP
	Hardware Kit (Ref. No. 31 and 32)		HDWRKB306ZP

ELECTRICAL PARTS LIST

RF PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B1	Assembly, RF PCB Consists of the following:		AB306ZLBA
Capacitors			
<p>Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%, CH=0±60 ppm/°C, CJ=0±120 ppm/°C CK=0±250 ppm/°C F=+30-80%, UJ=-750 ppm/°C±120 ppm/°C, RH=-220 ppm/°C±60 ppm/°C</p>			
C1	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C2	Ceramic	47 pF 50 V ±5 %	CH BCMM814704Z
C3	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C4	Ceramic	3 pF 50 V ±0.25 pF	CJ BCMT813091Z
C5	Ceramic	2 pF 50 V ±0.25 pF	CK BCMS812091Z
C6	Ceramic	4 pF 50 V ±0.25 pF	CH BCMM814091Z
C7	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C8	Ceramic	0.01 μF 50 V ±10 %	B BCML811035Z
C9	Ceramic	0.01 μF 50 V ±10 %	B BCML811035Z
C10	Ceramic	0.1 μF 16 V ±10 %	B BCML311045Z
C11	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C12	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C13	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C14	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C15	Ceramic	0.01 μF 50 V ±10 %	B BCML811035Z
C16	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C17	Ceramic	470 pF 50 V ±5 %	CH BCMM814714Z
C18	Ceramic	0.0039 μF 50 V ±10 %	B BCML813925Z
C19	Ceramic	680 pF 25 V ±5 %	CH BCMM516814Z
C20	Ceramic	0.0039 μF 50 V ±10 %	B BCML813925Z
C21	Ceramic	0.0047 μF 50 V ±10 %	B BCML814725Z
C22	Electrolytic	100 μF 10 V ±20 %	C-274 BCZN111016Z
	or	100 μF 10 V ±20 %	C-258 BCFZ111016Z
C23	Electrolytic	100 μF 10 V ±20 %	C-130 BCAP111016Z
	or	100 μF 10 V ±20 %	C-156 BCAZ111016Z
	or	100 μF 10 V ±20 %	C-290 BCDS111016Z
C24	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C25	Ceramic	470 pF 50 V ±5 %	CH BCMM814714Z
C26	Ceramic	8 pF 50 V ±0.5 pF	CH BCMM818092Z
C27	Ceramic	1.5 pF 50 V ±0.25 pF	CK BCMS811591Z
C28	Ceramic	3 pF 50 V ±0.25 pF	CJ BCMT813091Z
C29	Ceramic	10 pF 50 V ±0.5 pF	CH BCMM811002Z
C30	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C31	Ceramic	2 pF 50 V ±0.25 pF	CK BCMS812091Z
C32	Ceramic	68 pF 50 V ±5 %	CH BCMM816804Z
C33	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C34	Not Used		
C35	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C36	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C37	Ceramic	22 pF 50 V ±5 %	CH BCMM812204Z
C38	Ceramic	3 pF 50 V ±0.25 pF	CJ BCMT813091Z
C39	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z
C40	Ceramic	5 pF 50 V ±0.25 pF	CH BCMM815091Z
C41	Ceramic	0.001 μF 50 V ±10 %	B BCML811025Z

Ref. No.	Description						RS Part No.	Mfr's Part No.
C42	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z	
C43	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z	
C44	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z	
C45	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z	
C46	Ceramic	10 pF	50 V	± 0.5 pF	CH		BCMM811002Z	
C47	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z	
C48	Electrolytic	470 μ F	16 V	± 20 %	C-281		BCZR314716Z	
C49	Ceramic (2125)	0.1 μ F	25 V	± 10 %	B		BCXT511045Z	
C50	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	
C51	Ceramic	180 pF	50 V	± 5 %	CH		BCMM811814Z	
C52	Ceramic	39 pF	50 V	± 5 %	CH		BCMM813904Z	
C53	Ceramic	5 pF	50 V	± 0.25 pF	CH		BCMM815091Z	
C54	Ceramic	5 pF	50 V	± 0.25 pF	CH		BCMM815091Z	
C55	Ceramic	68 pF	50 V	± 5 %	CH		BCMM816804Z	
C56	Ceramic	3 pF	50 V	± 0.25 pF	CJ		BCMT813091Z	
C57	Ceramic	8 pF	50 V	± 0.5 pF	CH		BCMM818092Z	
C58	Ceramic	12 pF	50 V	± 5 %	CH		BCMM811204Z	
C59	Ceramic	68 pF	50 V	± 5 %	UJ		BCMP816804Z	
C60	Ceramic	5 pF	50 V	± 0.25 pF	UJ		BCMP815091Z	
C61	Ceramic	5 pF	50 V	± 0.25 pF	UJ		BCMP815091Z	
C62	Electrolytic or	47 μ F 47 μ F	6.3 V 6.3 V	± 20 % ± 20 %	C-274 C-258		BCZN904706Z BCFZ904706Z	
C63	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	
C64	Ceramic	5 pF	50 V	± 0.25 pF	CH		BCMM815091Z	
C65~C67	Not Used							
C68	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	
C69	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	
C70	Ceramic	12 pF	50 V	± 5 %	RH		BCMN811204Z	
C71	Ceramic	15 pF	50 V	± 5 %	CH		BCMM811504Z	
C72	Ceramic	4 pF	50 V	± 0.25 pF	CH		BCMM814091Z	
C73	Ceramic	4 pF	50 V	± 0.25 pF	CH		BCMM814091Z	
C74	Electrolytic or	47 μ F 47 μ F	6.3 V 6.3 V	± 20 % ± 20 %	C-274 C-258		BCZN904706Z BCFZ904706Z	
C75	Ceramic	10 pF	50 V	± 0.5 pF	CH		BCMM811002Z	
C76	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	
C77	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	
C78	Ceramic	0.022 μ F	25 V	± 10 %	B		BCML512235Z	
C79	Ceramic	0.047 μ F	16 V	± 10 %	B		BCML314735Z	
C80	Ceramic	0.022 μ F	25 V	± 10 %	B		BCML512235Z	
C81	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z	
C82	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z	
C83	Electrolytic or	100 μ F 100 μ F	10 V 10 V	± 20 % ± 20 %	C-274 C-258		BCZN111016Z BCFZ111016Z	
C84	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	
C85	Ceramic	220 pF	50 V	± 5 %	CH		BCMM812214Z	
C86	Ceramic	470 pF	50 V	± 5 %	CH		BCMM814714Z	
C87	Ceramic	56 pF	50 V	± 5 %	CH		BCMM815604Z	
C88	Ceramic	47 pF	50 V	± 5 %	CH		BCMM814704Z	
C89	Ceramic	100 pF	50 V	± 5 %	CH		BCMM811014Z	
C90	Ceramic	470 pF	50 V	± 5 %	CH		BCMM814714Z	
C91	Ceramic	7 pF	50 V	± 0.5 pF	RH		BCMN817092Z	
C92	Ceramic	3 pF	50 V	± 0.25 pF	RJ		BCMJ813091Z	
C93	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z	

Ref. No.	Description	RS Part No.	Mfr's Part No.
C94	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C95	Ceramic 3 pF 50V \pm 0.25 pF CJ		BCMT813091Z
C96	Ceramic 10 pF 50V \pm 0.5 pF CH		BCMM811002Z
C97	Ceramic 100 pF 50V \pm 5 % CH		BCMM811014Z
C98	Ceramic 47 pF 50V \pm 5 % CH		BCMM814704Z
C99	Mylar* Chip 0.0047 μ F 50V \pm 5 % C-264		BCTG814724Z
C100	Mylar* Chip 0.1 μ F 16V \pm 5 % C-264		BCTG311044Z
C101	Mylar* Chip 0.0047 μ F 50V \pm 5 % C-264		BCTG814724Z
C102	Tantalum Chip 4.7 μ F 10V \pm 20 % C-122 TAPE or 4.7 μ F 10V \pm 20 % A C-241		BCSH114796Z BCSS114796Z
C103	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C104	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C105	Ceramic 3 pF 50V \pm 0.25 pF CJ		BCMT813091Z
C106	Electrolytic 22 μ F 6.3V \pm 20 % C-274 or 22 μ F 6.3V \pm 20 % C-258		BCZN902206Z BCFZ902206Z
C107	Electrolytic 4.7 μ F 35V \pm 20 % C-274 or 4.7 μ F 35V \pm 20 % C-258		BCZN664796Z BCFZ664796Z
C108	Ceramic 0.1 μ F 16V \pm 10 % B		BCML311045Z
C109	Ceramic (2125) 0.1 μ F 25V \pm 10 % B		BCXT511045Z
C110	Electrolytic 4.7 μ F 35V \pm 20 % C-274 or 4.7 μ F 35V \pm 20 % C-258		BCZN664796Z BCFZ664796Z
C111	Ceramic (2125) 1 μ F 16V $-20+80$ % F		BCXK311050Z
C112	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C113	Ceramic 82 pF 50V \pm 5 % CH		BCMM818204Z
C114	Ceramic 100 pF 50V \pm 5 % CH		BCMM811014Z
C115	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C116	Ceramic 0.75 pF 50V \pm 0.1 pF CH		BCMS817588Z
C117	Ceramic 2 pF 50V \pm 0.25 pF RK		BCMH812091Z
C118	Ceramic 2 pF 50V \pm 0.25 pF RK		BCMH812091Z
C119	Mylar* Chip 0.0047 μ F 50V \pm 5 % C-264		BCTG814724Z
C120	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C121	Mylar* Chip 0.1 μ F 50V \pm 5 % C-264		BCTG811044Z
C122	Ceramic 22 pF 50V \pm 5 % CH		BCMM812204Z
C123	Ceramic 33 pF 50V \pm 5 % CH		BCMM813304Z
C124	Ceramic 3 pF 50V \pm 0.25 pF CJ		BCMT813091Z
C125	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C126	Ceramic 470 pF 50V \pm 5 % CH		BCMM814714Z
C127	Ceramic 47 pF 50V \pm 5 % CH		BCMM814704Z
C128	Ceramic 0.001 μ F 50V \pm 10 % B		BCML811025Z
C129	Ceramic 22 pF 50V \pm 5 % CH		BCMM812204Z
C130	Electrolytic 100 μ F 10V \pm 20 % C-274 or 100 μ F 10V \pm 20 % C-258		BCZN111016Z BCFZ111016Z
C131	Ceramic (2125) 0.22 μ F 16V \pm 10 % B		BCXT312245Z
C132	Ceramic 0.047 μ F 16V \pm 10 % B		BCML314735Z
C133	Mylar* Chip 0.0047 μ F 50V \pm 5 % C-264		BCTG814724Z
C134	Ceramic 100 pF 50V \pm 5 % CH		BCMM811014Z
C135	Ceramic 0.027 μ F 16V \pm 10 % B		BCML312735Z
C136	Tantalum Chip 4.7 μ F 10V \pm 20 % C-122 TAPE or 4.7 μ F 10V \pm 20 % A C-241		BCSH114796Z BCSS114796Z
C137	Ceramic 0.047 μ F 16V \pm 10 % B		BCML314735Z
C138	Ceramic 0.0027 μ F 50V \pm 10 % B		BCML812725Z
C139	Electrolytic 10 μ F 35V \pm 20 % C-274 or 10 μ F 35V \pm 20 % C-258		BCZN661006Z BCFZ661006Z

* Mylar is a registered trademark of E. I. DuPont de Nemours and Company.

Ref. No.	Description						RS Part No.	Mfr's Part No.
C140	Ceramic	18 pF	50V	±5 %	CH		BCMM811804Z	
C141	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C142	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C143	Ceramic	0.056 μF	16 V	±10 %	B		BCML315635Z	
C144	Ceramic	0.0027 μF	50 V	±10 %	B		BCML812725Z	
C145	Ceramic	680 pF	25 V	±5 %	CH		BCMM516814Z	
C146	Ceramic	0.056 μF	16 V	±10 %	B		BCML315635Z	
C147	Ceramic	0.0027 μF	50 V	±10 %	B		BCML812725Z	
C148	Ceramic	390 pF	50 V	±5 %	CH		BCMM813914Z	
C149	Ceramic	33 pF	50 V	±5 %	CH		BCMM813304Z	
C150	Ceramic	0.1 μF	16 V	±10 %	B		BCML311045Z	
C151	Not Used							
C152	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C153	Not Used							
C154	Ceramic	0.0068 μF	50 V	±10 %	B		BCML816825Z	
C155	Ceramic	0.012 μF	50 V	±10 %	B		BCML811235Z	
C156	Not Used							
C157	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C158	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C159,160	Not Used							
C161	Ceramic	100 pF	50 V	±5 %	CH		BCMM811014Z	
C162,163	Not Used							
C164	Ceramic	0.1 μF	16 V	±10 %	B		BCML311045Z	
C165	Not Used							
C166	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C167	Ceramic	15 pF	50 V	±5 %	CH		BCMM811504Z	
C168	Ceramic	15 pF	50 V	±5 %	CH		BCMM811504Z	
C169	Tantalum Chip or	1 μF 1 μF	16 V 16 V	±20 % ±20 %	C-122 TAPE A C-227		BCSH311096Z BCPP311096Z	
C170	Not Used							
C171	Ceramic	27 pF	50 V	±5 %	CH		BCMM812704Z	
C172	Ceramic	0.1 μF	16 V	±10 %	B		BCML311045Z	
C173	Ceramic	0.015 μF	50 V	±10 %	B		BCML811535Z	
C174	Ceramic	0.015 μF	50 V	±10 %	B		BCML811535Z	
C175	Ceramic	0.0082 μF	50 V	±10 %	B		BCML818225Z	
C176	Ceramic	0.015 μF	50 V	±10 %	B		BCML811535Z	
C177	Ceramic	0.0022 μF	50 V	±10 %	B		BCML812225Z	
C178	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C179	Ceramic (2125)	0.0022 μF	50 V	±5 %	CH		BCBH812224Z	
C180	Ceramic	47 pF	50 V	±5 %	CH		BCMM814704Z	
C181	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C182	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C183	Ceramic	100 pF	50 V	±5 %	CH		BCMM811014Z	
C184	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C185	Not Used							
C186	Ceramic	100 pF	50 V	±5 %	CH		BCMM811014Z	
C187	Ceramic	100 pF	50 V	±5 %	CH		BCMM811014Z	
C189	Ceramic	10 pF	50 V	±0.5 pF	CH		BCMM811002Z	
C190	Not Used							
C191	Ceramic	100 pF	50 V	±5 %	CH		BCMM811014Z	
C192	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C193	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C194	Ceramic	5 pF	50 V	±0.25 pF	CH		BCMM815091Z	

Ref. No.	Description				RS Part No.	Mfr's Part No.
C195,196	Not Used					
C197	Ceramic	68 pF	50 V	±5 %	CH	BCMM816804Z
C198	Ceramic	4 pF	50 V	±0.25 pF	CH	BCMM814091Z
C199	Ceramic	4 pF	50 V	±0.25 pF	CH	BCMM814091Z
CT1	Trimmer	30 pF	CT-090 ECR-LA030E52			BCTY0090300
Filters						
FT1	SAW	FL-876	SAF380MA10T			BFLY0876001
FT2	Crystal	FL-842	UMF-7078A			BFLY0842001
FT3	Ceramic	FL-739	SFPC450D			BFLY0739001
Diodes						
D1		DA-1041	1SS390	TE61		BDAY1041001
D2		DA-1041	1SS390	TE61		BDAY1041001
D3		DA-1041	1SS390	TE61		BDAY1041001
D4		DA-1041	1SS390	TE61		BDAY1041001
D5		DA-1041	1SS390	TE61		BDAY1041001
D6		DA-1041	1SS390	TE61		BDAY1041001
D7			1SS355	TE-17		BDAY0807001
D8			1SS355	TE-17		BDAY0807001
D9		DA-1041	1SS390	TE61		BDAY1041001
D10		DA-1041	1SS390	TE61		BDAY1041001
D11		DA-1041	1SS390	TE61		BDAY1041001
D12		DA-1041	1SS390	TE61		BDAY1041001
D13		DA-1041	1SS390	TE61		BDAY1041001
D14		DA-1041	1SS390	TE61		BDAY1041001
D15		DA-1041	1SS390	TE61		BDAY1041001
D16		DA-1041	1SS390	TE61		BDAY1041001
D17		DSM10C		TR		BDAY0555001
D18		DA-1041	1SS390	TE61		BDAY1041001
D19		DA-1041	1SS390	TE61		BDAY1041001
D20~23	Not Used					
D24		DA-1041	1SS390	TE61		BDAY1041001
D25		DA-1041	1SS390	TE61		BDAY1041001
D26	Varicap	MA357-(TX)				BDAY1077001
D27	Varicap	HVU308-1		TRF		BDAY0674001
D28	Zener	UDZS7.5B		TE-17		BDAY1082015
D29	Not Used					
D30		DA-1041	1SS390	TE61		BDAY1041001
D31		DA-1041	1SS390	TE61		BDAY1041001
D32		DA-1041	1SS390	TE61		BDAY1041001
D33		DA-1041	1SS390	TE61		BDAY1041001
D34	Not Used					
D35	Varicap	MA357-(TX)				BDAY1077001
D36			1SS226	TE85L		BDAY0274001
D37			1SS355	TE-17		BDAY0807001
D38			1SS355	TE-17		BDAY0807001
D39~41	Not Used					
D42			1SS184	TE85L		BDAY0256001

Ref. No.	Description		RS Part No.	Mfr's Part No.
ICs				
IC1		UPC8112T-E3		BDEY2885003
IC2		MC3361CDR2		BDEY2768003
IC3		TDA7233D TAPE		BDEY2587003
IC4		LA1600A		BDEY1000001
IC5		TK11238BMCL		BDEY3881003
IC6		MB15U36PFV-G-BND-ER		BDEY3642003
IC7		TK11806M		BDEY0999001
IC8		NJM3403AV-TE1		BDEY2421003
IC9		NJM3403AV-TE1		BDEY2421003
IC10	Not Used			
IC11		BU4066BCFV-E2		BDEY3876003
IC12		FX589D5 TR		BDEY3902003
IC13~15	Not Used			
IC16		BU2092FV-E2		BDEY3875003
IC17		LMC567CMX TAPE		BDEY2734003
Jacks				
J1	Speaker	JK-424	HSJ0836-01-500	BJKY0424001
J2		JK-285	HEC2711-01-620	BJKY0285001
J3		JK-459	53047-0210 2P	BJKY0459002
J4	Not Used			
J5	Plug	PG-177	9210B-2-22Z395-GF	BPGY0177022
Coils				
L1	Inductor Molded Chip	LZ188	ELJRE2N2DF2 0.0022 μ H	BLZY0188226
L2	Inductor Molded Chip	LZ188	ELJRE5N6JF2 0.0056 μ H	BLZY0188566
L3	Inductor Molded Chip	LZ188	ELJRE4N7JF2 0.0047 μ H	BLZY0188476
L4	Inductor Molded Chip	LZ-188	ELJRE27NJF2 0.027 μ H	BLZY0188277
L5	Inductor Molded Chip	LZ-188	ELJRE10NJF2 0.01 μ H	BLZY0188107
L6	Inductor Molded Chip	LZ-188	ELJRE56NJF3 0.056 μ H	BLZY0188567
L7	Inductor Molded Chip	LZ-188	ELJRE12NJF2 0.012 μ H	BLZY0188127
L8	Inductor Molded Chip	LZ188	ELJRE1N5DF2 0.0015 μ H	BLZY0188156
L9	Inductor Molded Chip	LZ-188	ELJRE27NJF2 0.027 μ H	BLZY0188277
L10	Inductor Molded Chip	LZ-188	ELJRE56NJF3 0.056 μ H	BLZY0188567
L11	Inductor Molded Chip	LZ-087	10 μ H J TAPE	BLZY0087100
L12	Chip Tape	LF-271	614AG-0246GW=P3	BLFY0271001
L13	Inductor Molded Chip	LZ-188	ELJRE27NJF2 0.027 μ H	BLZY0188277
L14	Inductor Molded Chip	LZ-199	ELJNDR18JF 0.18 μ H	BLZY0199188
L15	Inductor Molded Chip	LZ-199	ELJNDR27JF 0.27 μ H	BLZY0199278
L16	Inductor Molded Chip	LZ-188	ELJRE15NJF2 0.015 μ H	BLZY0188157
L17	Inductor Molded Chip	LZ-199	ELJNDR15JF 0.15 μ H	BLZY0199158
L18	Inductor Molded Chip	LZ-199	ELJNDR15JF 0.15 μ H	BLZY0199158
L19	Inductor Molded Chip	LZ-199	ELJND12NJF 0.012 μ H	BLZY0199127
L20	Inductor Molded Chip	LZ-199	ELJND10NJF 0.01 μ H	BLZY0199107
L21	Inductor Molded Chip	LZ-188	ELJRE27NJF2 0.027 μ H	BLZY0188277
L22	Inductor Molded Chip	LZ-199	ELJNDR33JF 0.33 μ H	BLZY0199338
L23	Inductor Molded Chip	LZ-188	ELJRE15NJF2 0.015 μ H	BLZY0188157
L24	Inductor Molded Chip	LZ-199	ELJND10NJF 0.01 μ H	BLZY0199107
L25	Inductor Molded	LZ-077	395AN-0054Z 1.2 MH	BLZY0077122

Ref. No.	Description			RS Part No.	Mfr's Part No.
L26	Inductor Molded Chip	LZ-199	ELJNDR15JF 0.15 μ H		BLZY0199158
L27	Inductor Molded Chip	LZ-199	ELJNDR15JF 0.15 μ H		BLZY0199158
L28,29	Not Used				
L30	Inductor Molded Chip	LZ188	ELJRE4N7JF2 0.0047 μ H		BLZY0188476
L31	Not Used				
L32	Inductor Molded Chip	LZ-188	ELJRE39NJF2 0.039 μ H		BLZY0188397
L33	Inductor Molded Chip	LZ-199	ELJNDR10JF 0.1 μ H		BLZY0199108
L34	Inductor Molded Chip	LZ188	ELJRE8N2JF2 0.0082 μ H		BLZY0188826
L35	Inductor Molded Chip	LZ-199	ELJNDR12JF 0.12 μ H		BLZY0199128
Transistors					
Q1		DB-035	2SA812(M)-M6A	T1B	BDBA0812695
	or	DB-036	2SA1162-Y	TE85L	BDBA1162124
Q2		DB-848	2SC5065-Y	(TE85R)	BDBC5065124
Q3		DB-848	2SC5065-Y	(TE85R)	BDBC5065124
Q4		DB-724	2SC3121	TE85L	BDBC3121000
Q5		DB-126	2SB1115-YL	T1	BDBB1115333
Q6		DB-711	2SC3356-R24	T1B	BDBC3356646
Q7		DB-711	2SC3356-R24	T1B	BDBC3356646
Q8		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124
Q9		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124
Q10		DB-711	2SC3356-R24	T1B	BDBC3356646
Q11		DB-711	2SC3356-R24	T1B	BDBC3356646
Q12		DB-711	2SC3356-R24	T1B	BDBC3356646
Q13		DB-711	2SC3356-R24	T1B	BDBC3356646
Q14		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124
Q15		DB-035	2SA812(M)-M6A	T1B	BDBA0812695
	or	DB-036	2SA1162-Y	TE85L	BDBA1162124
Q16		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124
Q17		DB-711	2SC3356-R24	T1B	BDBC3356646
Q18~22	Not Used				
Q23		DB-1004	MMBT6428L	T1	BDBZ1004001
Q24	Field Effect	DC-052	2SK209-GR		BDCB0209303
Q25		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124
Q26		DB-035	2SA812(M)-M6A	T1B	BDBA0812695
	or	DB-036	2SA1162-Y	TE85L	BDBA1162124
Q27		DB-035	2SA812(M)-M6A	T1B	BDBA0812695
	or	DB-036	2SA1162-Y	TE85L	BDBA1162124
Q28		DB-035	2SA812(M)-M6A	T1B	BDBA0812695
	or	DB-036	2SA1162-Y	TE85L	BDBA1162124
Q29		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124
Q30		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124
Q31		DB-380	2SC1623-L6	T1B	BDBC1623648
	or	DB-381	2SC2712-Y	TE85L	BDBC2712124

Ref. No.	Description	RS Part No.	Mfr's Part No.
Resistors			
R1	Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$		BRFC161024Z
R2	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R3	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R4	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R5	Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$		BRFC164724Z
R6	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R7	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R8	Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$		BRFC161044Z
R9	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R10	Carbon Fixed Chip 68 kohm 1/16 W $\pm 5\%$		BRFC166834Z
R11	Carbon Fixed Chip 15 kohm 1/16 W $\pm 5\%$		BRFC161534Z
R12	Carbon Fixed Chip 330 ohm 1/16 W $\pm 5\%$		BRFC163314Z
R13	Carbon Fixed Chip 15 ohm 1/16 W $\pm 5\%$		BRFC161504Z
R14	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R15	Carbon Fixed Chip 68 kohm 1/16 W $\pm 5\%$		BRFC166834Z
R16	Carbon Fixed Chip 15 kohm 1/16 W $\pm 5\%$		BRFC161534Z
R17	Carbon Fixed Chip 820 ohm 1/16 W $\pm 5\%$		BRFC168214Z
R18	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R19	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R20	Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$		BRFC161044Z
R21	Carbon Fixed Chip 5.6 kohm 1/16 W $\pm 5\%$		BRFC165624Z
R22	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R23	Carbon Fixed Chip 33 kohm 1/16 W $\pm 5\%$		BRFC163334Z
R24	Carbon Fixed Chip 330 kohm 1/16 W $\pm 5\%$		BRFC163344Z
R25	Carbon Fixed Chip 270 kohm 1/16 W $\pm 5\%$		BRFC162744Z
R26	Carbon Fixed Chip 27 kohm 1/16 W $\pm 5\%$		BRFC162734Z
R27	Carbon Fixed Chip 330 kohm 1/16 W $\pm 5\%$		BRFC163344Z
R28	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R29	Carbon Fixed Chip 220 kohm 1/16 W $\pm 5\%$		BRFC162244Z
R30	Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$		BRFC164734Z
R31	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R32	Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$		BRFC164734Z
R33	Carbon Fixed Chip 680 kohm 1/16 W $\pm 5\%$		BRFC166844Z
R34	Carbon Fixed Chip 470 kohm 1/16 W $\pm 5\%$		BRFC164744Z
R35	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R36	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R37	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R38	Carbon Fixed Chip 470 ohm 1/16 W $\pm 5\%$		BRFC164714Z
R39	Carbon Fixed Chip 330 ohm 1/16 W $\pm 5\%$		BRFC163314Z
R40	Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$		BRFC161024Z
R41	Carbon Fixed Chip 27 ohm 1/16 W $\pm 5\%$		BRFC162704Z
R42	Carbon Fixed Chip 1 Mohm 1/16 W $\pm 5\%$		BRFC161054Z
R43	Carbon Fixed Chip 22 kohm 1/16 W $\pm 5\%$		BRFC162234Z
R44	Carbon Fixed Chip 27 kohm 1/16 W $\pm 5\%$		BRFC162734Z
R45	Carbon Fixed Chip 4.7 ohm 1/16 W $\pm 5\%$		BRFC164794Z
R46	Carbon Fixed Chip 560 ohm 1/16 W $\pm 5\%$		BRFC165614Z
R47	Not Used		
R48	Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$		BRFC164734Z
R49	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R50	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R51	Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$		BRFC164724Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
R52	Carbon Fixed Chip 15 kohm 1/16 W ±5 %		BRFC161534Z
R53	Carbon Fixed Chip 270 ohm 1/16 W ±5 %		BRFC162714Z
R54	Carbon Fixed Chip 22 ohm 1/16 W ±5 %		BRFC162204Z
R55	Carbon Fixed Chip 330 ohm 1/16 W ±5 %		BRFC163314Z
R56	Carbon Fixed Chip 120 ohm 1/16 W ±5 %		BRFC161214Z
R57	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R58	Carbon Fixed Chip 680 ohm 1/16 W ±5 %		BRFC166814Z
R59	Carbon Fixed Chip 39 kohm 1/16 W ±5 %		BRFC163934Z
R60	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R61	Carbon Fixed Chip 22 ohm 1/16 W ±5 %		BRFC162204Z
R62	Carbon Fixed Chip 820 ohm 1/16 W ±5 %		BRFC168214Z
R63	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R64	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R65	Not Used		
R66	Carbon Fixed Chip 4.7 ohm 1/10 W ±5 %		BRFC014794Z
R67	Carbon Fixed Chip 12 ohm 1 W ±5 %		BRFC101204Z
R68	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R69	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R70	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R71	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R72	Carbon Fixed Chip 15 kohm 1/16 W ±5 %		BRFC161534Z
R73	Carbon Fixed Chip 22 ohm 1/16 W ±5 %		BRFC162204Z
R74	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R75	Carbon Fixed Chip 68 ohm 1/16 W ±5 %		BRFC166804Z
R76	Carbon Fixed Chip 68 kohm 1/16 W ±5 %		BRFC166834Z
R77	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R78	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R79	Carbon Fixed Chip 5.6 kohm 1/16 W ±5 %		BRFC165624Z
R80	Carbon Fixed Chip 47 ohm 1/16 W ±5 %		BRFC164704Z
R81	Carbon Fixed Chip 330 ohm 1/16 W ±5 %		BRFC163314Z
R82	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R83	Carbon Fixed Chip 68 ohm 1/16 W ±5 %		BRFC166804Z
R84	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R85	Carbon Fixed Chip 8.2 kohm 1/16 W ±5 %		BRFC168224Z
R86	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R87	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R88	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R89	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R90	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R91	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R92	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R93	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R94	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R95	Not Used		
R96	Carbon Fixed Chip 270 ohm 1/16 W ±5 %		BRFC162714Z
R97	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R98	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R99	Carbon Fixed Chip 1.8 kohm 1/16 W ±5 %		BRFC161824Z
R100	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R101	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R102	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R103	Carbon Fixed Chip 390 kohm 1/16 W ±5 %		BRFC163944Z
R104	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
R105	Carbon Fixed Chip 10 ohm 1/16 W ±5 %		BRFC161004Z
R106	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R107	Carbon Fixed Chip 470 kohm 1/16 W ±5 %		BRFC164744Z
R108	Carbon Fixed Chip 330 kohm 1/16 W ±5 %		BRFC163344Z
R109	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R110	Not Used		
R111	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R112	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R113,114	Not Used		
R115	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R116	Carbon Fixed Chip 470 ohm 1/16 W ±5 %		BRFC164714Z
R117	Carbon Fixed Chip 5.6 kohm 1/16 W ±5 %		BRFC165624Z
R118	Carbon Fixed Chip 8.2 kohm 1/16 W ±5 %		BRFC168224Z
R119	Carbon Fixed Chip 3.9 kohm 1/16 W ±5 %		BRFC163924Z
R120	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R121	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R122	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R123	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R124	Carbon Fixed Chip 390 kohm 1/16 W ±5 %		BRFC163944Z
R125	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R126	Carbon Fixed Chip 8.2 kohm 1/16 W ±5 %		BRFC168224Z
R127	Carbon Fixed Chip 3.3 kohm 1/16 W ±5 %		BRFC163324Z
R128	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R129	Carbon Fixed Chip 680 kohm 1/16 W ±5 %		BRFC166844Z
R130	Carbon Fixed Chip 220 kohm 1/16 W ±5 %		BRFC162244Z
R131	Carbon Fixed Chip 2.2 Mohm 1/16 W ±5 %		BRFC162254Z
R132	Carbon Fixed Chip 6.8 kohm 1/16 W ±5 %		BRFC166824Z
R133	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R134	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R135	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R136	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R137	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R138	Carbon Fixed Chip 470 kohm 1/16 W ±5 %		BRFC164744Z
R139,140	Not Used		
R141	Carbon Fixed Chip 470 kohm 1/16 W ±5 %		BRFC164744Z
R142	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R143	Carbon Fixed Chip 680 kohm 1/16 W ±5 %		BRFC166844Z
R144	Carbon Fixed Chip 680 kohm 1/16 W ±5 %		BRFC166844Z
R145	Carbon Fixed Chip 820 kohm 1/16 W ±5 %		BRFC168244Z
R146	Not Used		
R147	Carbon Fixed Chip 820 kohm 1/16 W ±5 %		BRFC168244Z
R148	Carbon Fixed Chip 220 kohm 1/16 W ±5 %		BRFC162244Z
R149	Not Used		
R150	Carbon Fixed Chip 5.6 kohm 1/16 W ±5 %		BRFC165624Z
R151	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R152	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R153	Carbon Fixed Chip 27 kohm 1/16 W ±5 %		BRFC162734Z
R154	Carbon Fixed Chip 220 ohm 1/16 W ±5 %		BRFC162214Z
R155	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R156	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R157	Carbon Fixed Chip 5.6 kohm 1/16 W ±5 %		BRFC165624Z
R158,159	Not Used		
R160	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
R161	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R162	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R163	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R164	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R165,166	Not Used		
R167	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R168	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R169	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R170	Carbon Fixed Chip 5.6 kohm 1/16 W ±5 %		BRFC165624Z
R171	Carbon Fixed Chip 82 kohm 1/16 W ±5 %		BRFC168234Z
R172	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R173	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R174	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R175	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R176	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R177	Carbon Fixed Chip 220 kohm 1/16 W ±5 %		BRFC162244Z
R178	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R179	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R180	Not Used		
R181	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R182	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R183	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R184	Not Used		
R185	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
RT1	Semi-Fixed (Tape) RT-550 100 KB		BRTY0550104
RT2	Not Used		
RT3	Semi-Fixed (Tape) RT-550 22 KB		BRTY0550223
RT4	Semi-Fixed (Tape) RT-550 100 KB		BRTY0550104
VR1	Variable RV-873 TP96N00N 100 KA W/S		BRVY0873001
VR2	Variable RV-874 TP96N00 100 KC		BRVY0874001
Miscellaneous			
S1	Switch Slide SW-465 SLVG-12BP04		BSWY0465001
TP1	Terminal Pin TP-118 IPS-1091-01		BTPY0118001
X1	Crystal QX-631 10.4 MHz		BQXY0631001
X2	Crystal QX-727 4.9152 MHz		BQXY0727001

LOGIC PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B201	Assembly, LOGIC PCB Consists of the following:		AB306ZLBA
Capacitors			
Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%, CH=0±60 ppm/°C			
C201	Ceramic	0.1 μF 16 V ±10 % B	BCML311045Z
C202	Ceramic	0.1 μF 16 V ±10 % B	BCML311045Z
C203	Ceramic	100 pF 50 V ±5 % CH	BCMM811014Z
C204	Tantalum Chip	10 μF 6.3 V ±20 % C-122	BCSH901006Z
	or	10 μF 7 V ±20 % A C-241	BCSS951006Z
C205	Ceramic	0.001 μF 50 V ±10 % B	BCML811025Z
C206	Ceramic	0.1 μF 16 V ±10 % B	BCML311045Z
C207	Ceramic	0.001 μF 50 V ±10 % B	BCML811025Z
C208	Ceramic	0.1 μF 16 V ±10 % B	BCML311045Z
C209	Ceramic	0.01 μF 50 V ±10 % B	BCML811035Z
C210	Ceramic	22 pF 50 V ±5 % CH	BCMM812204Z
C211	Ceramic	22 pF 50 V ±5 % CH	BCMM812204Z
C212	Ceramic	22 pF 50 V ±5 % CH	BCMM812204Z
C213	Ceramic	0.033 μF 16 V ±10 % B	BCML313335Z
C214	Ceramic	0.1 μF 16 V ±10 % B	BCML311045Z
C215	Ceramic	0.1 μF 16 V ±10 % B	BCML311045Z
C216	Ceramic	0.033 μF 16 V ±10 % B	BCML313335Z
Diodes			
D201	LED	CL-200Y-C-TS	BDAY0946001
D202	LED	CL-200Y-C-TS	BDAY0946001
D203		1SS355 TE-17	BDAY0807001
D204		1SS355 TE-17	BDAY0807001
Jacks			
J201	Plug	PG-196 9269S-22A-GF	BPGY0196022
J202	Jack	JK-965 IMSA-9611S-09C 9P	BJKY0965009
ICs			
IC201	Not Used	M30624FGLGPD5	BDEY3880001
IC202		UPD7225GB-3B7	BDEY1529001
IC203			
IC204		RH5VL27CA-T1	BDEY2917003
IC205		24LC64T-I/SN	BDEY3877003
IC206		TK11231BMCL	BDEY3801003
Coils			
L201	Inductor Molded Chip	LZ-207 MMZ1608Y601BT 600	BLZY0207601
L202	Inductor Molded Chip	LZ-207 MMZ1608Y601BT 600	BLZY0207601
L203	Inductor Molded Chip	LZ-207 MMZ1608Y601BT 600	BLZY0207601

Ref. No.	Description				RS Part No.	Mfr's Part No.
Transistors						
Q201		DB-380	2SC1623-L6	T1B		BDBC1623648
	or	DB-381	2SC2712-Y	TE85L		BDBC2712124
Q202		DB-380	2SC1623-L6	T1B		BDBC1623648
	or	DB-381	2SC2712-Y	TE85L		BDBC2712124
Q203		DB-380	2SC1623-L6	T1B		BDBC1623648
	or	DB-381	2SC2712-Y	TE85L		BDBC2712124
Resistors						
R201	Carbon Fixed Chip	100 ohm	1/10W	±5 %		BRFC011014Z
R202	Carbon Fixed Chip	100 ohm	1/10W	±5 %		BRFC011014Z
R203	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R204	Carbon Fixed Chip	4.7 kohm	1/16W	±5 %		BRFC164724Z
R205	Carbon Fixed Chip	4.7 kohm	1/16W	±5 %		BRFC164724Z
R206	Carbon Fixed Chip	4.7 kohm	1/16W	±5 %		BRFC164724Z
R207	Carbon Fixed Chip	4.7 kohm	1/16W	±5 %		BRFC164724Z
R208	Carbon Fixed Chip	2.2 kohm	1/16W	±5 %		BRFC162224Z
R209	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R210	Not Used					
R211	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R212	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R213	Carbon Fixed Chip	47 kohm	1/16W	±5 %		BRFC164734Z
R214	Carbon Fixed Chip	1 kohm	1/16W	±5 %		BRFC161024Z
R215	Carbon Fixed Chip	1 kohm	1/16W	±5 %		BRFC161024Z
R216	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R217	Not Used					
R218	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R219	Not Used					
R220	Carbon Fixed Chip	100 kohm	1/16W	±5 %		BRFC161044Z
R221	Carbon Fixed Chip	100 kohm	1/16W	±5 %		BRFC161044Z
R222	Carbon Fixed Chip	100 kohm	1/16W	±5 %		BRFC161044Z
R223	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R224	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R225	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R226	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R227	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R228	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R229	Carbon Fixed Chip	4.7 kohm	1/16W	±5 %		BRFC164724Z
R230	Not Used					
R231	Carbon Fixed Chip	100 kohm	1/16W	±5 %		BRFC161044Z
R232	Carbon Fixed Chip	1 Mohm	1/16W	±5 %		BRFC161054Z
R233	Carbon Fixed Chip	220 ohm	1/16W	±5 %		BRFC162214Z
R234	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R235	Carbon Fixed Chip	680 kohm	1/16W	±5 %		BRFC166844Z
R236	Carbon Fixed Chip	10 kohm	1/16W	±5 %		BRFC161034Z
R237	Carbon Fixed Chip	10 kohm	1/16 W	±5 %		BRFC161034Z
R238	Carbon Fixed Chip	10 kohm	1/16 W	±5 %		BRFC161034Z
R239,240	Not Used					
R241	Carbon Fixed Chip	39 kohm	1/16 W	±5 %		BRFC163934Z
R242	Carbon Fixed Chip	39 kohm	1/16 W	±5 %		BRFC163934Z
R243	Carbon Fixed Chip	10 kohm	1/16 W	±5 %		BRFC161034Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
R244	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R245~252	Not Used		
R253	Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$		BRFC164734Z
R254	Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$		BRFC164734Z
R255	Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$		BRFC164734Z
R256	Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$		BRFC161024Z
R257	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R258	Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 1\%$		BRFC164723Z
R259	Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 1\%$		BRFC164723Z
R260	Not Used		
R261	Carbon Fixed Chip 330 kohm 1/16 W $\pm 5\%$		BRFC163344Z
R262	Carbon Fixed Chip 39 kohm 1/16 W $\pm 5\%$		BRFC163934Z
R263	Carbon Fixed Chip 39 kohm 1/16 W $\pm 5\%$		BRFC163934Z
R264	Carbon Fixed Chip 39 kohm 1/16 W $\pm 5\%$		BRFC163934Z
R265	Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$		BRFC161024Z
Miscellaneous			
DP201	Liquid Crystal Display DL-196 DLC-1827P	BDLY0196001	
X201	Crystal QX-650 9.9072MHZ		BQXY0650001

OTHER ELECTRICAL PARTS

Ref. No.	Description	RS Part No.	Mfr's Part No.
AT951	Antenna AT-371		BATY0371001
	or AT-233 UNID233C		BATY0233001
J501	Jack JK-661 BNC-RF3		BJKY0661001
SP501	Speaker SP-368 CS036001-12		BSPY0368001
W501	Wires Assembled W-071924 50 2P		CZDZ071924Z

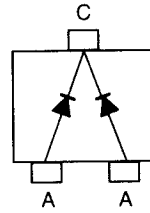
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DIODES

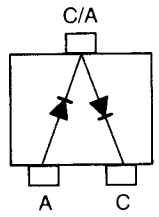
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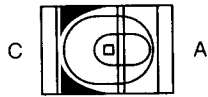
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1SS226



CL-200Y

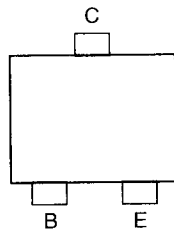


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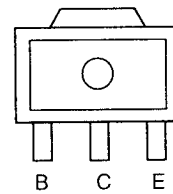


TRANSISTORS

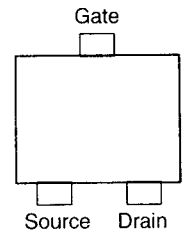
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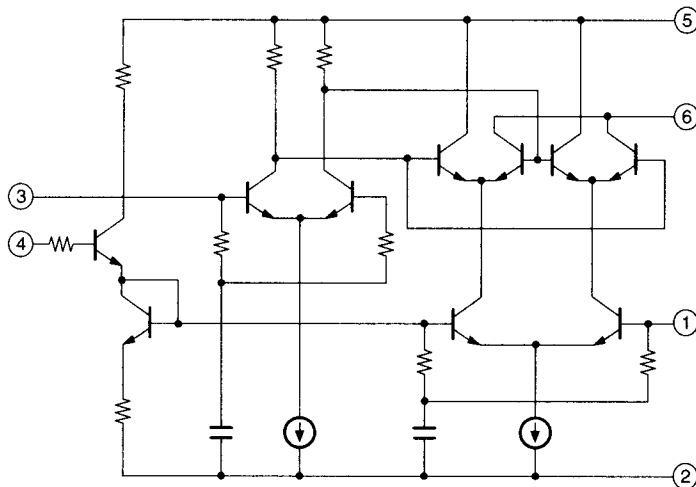
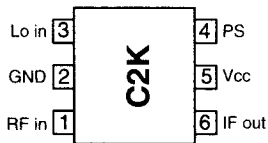


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C: Collector
E: Emitter

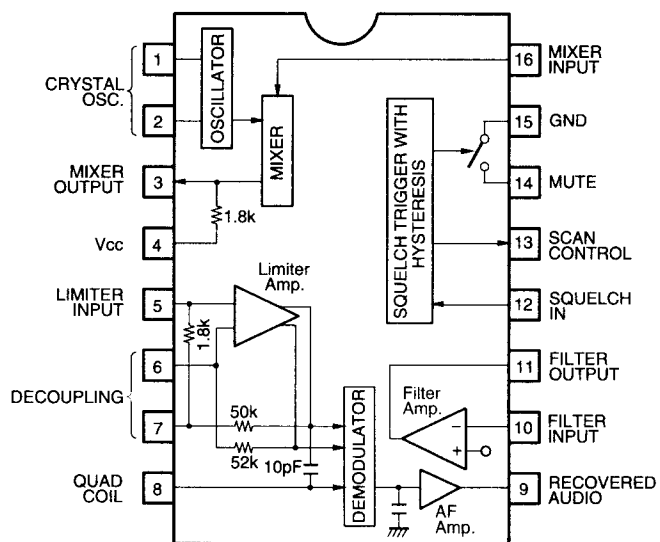
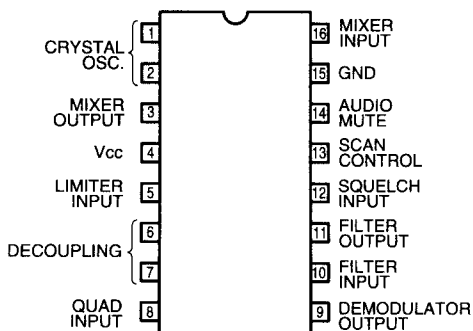
B: Base
C: Collector
E: Emitter

IC INTERNAL DIAGRAMS

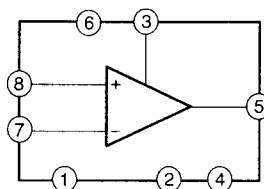
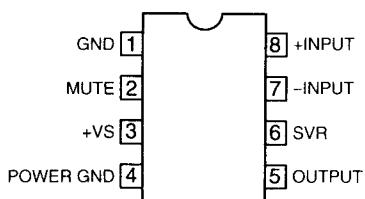
IC1
μPC8112T



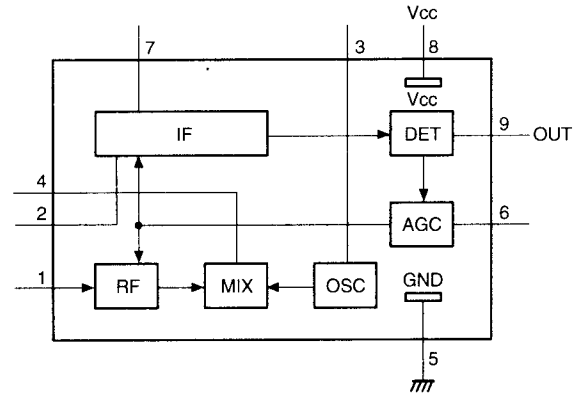
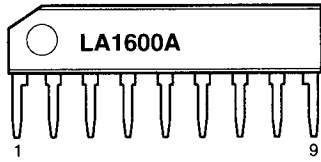
IC2
MC3361CDR2



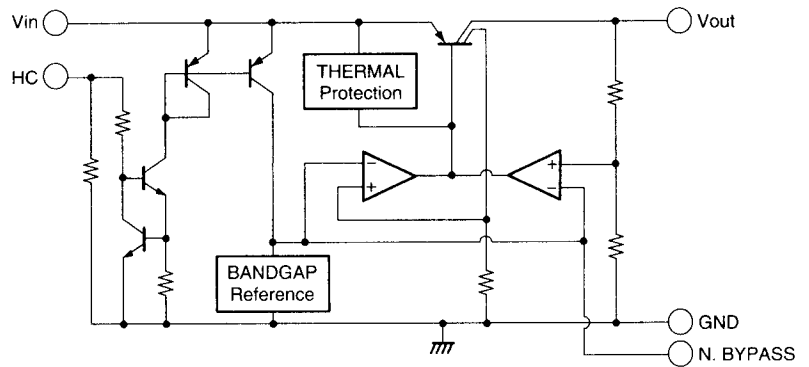
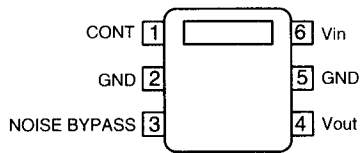
IC3
TDA7233D



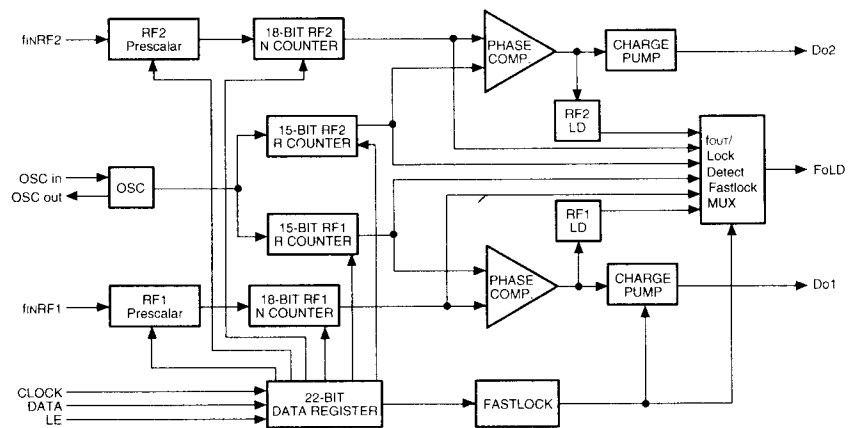
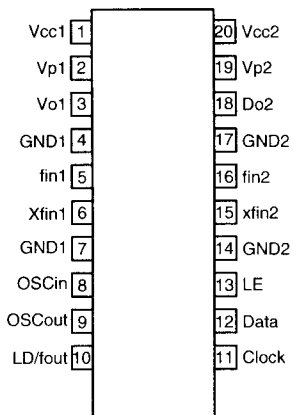
IC4
LA1600A



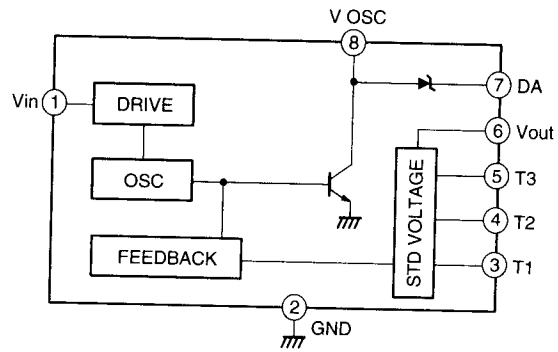
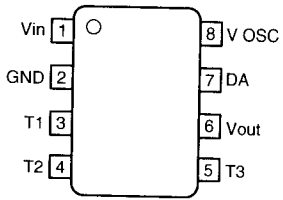
IC5
TK11238BMCL



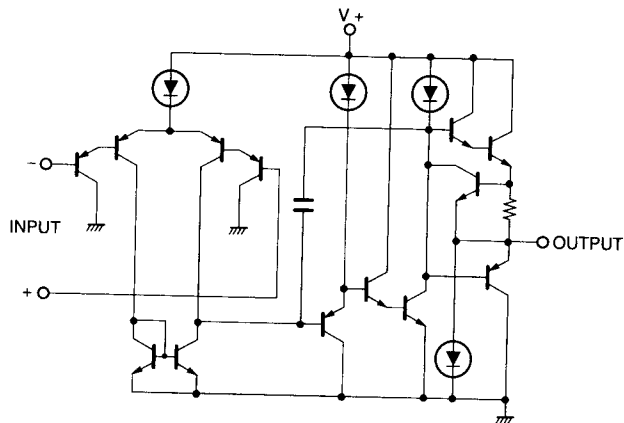
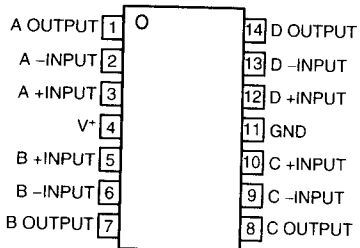
IC6
MB15U36PFV



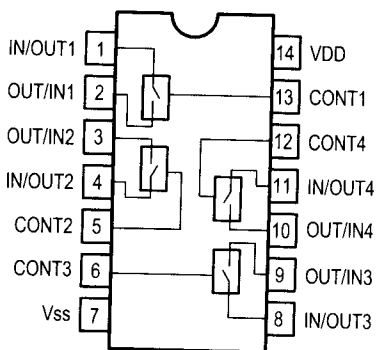
IC7
TK11806M



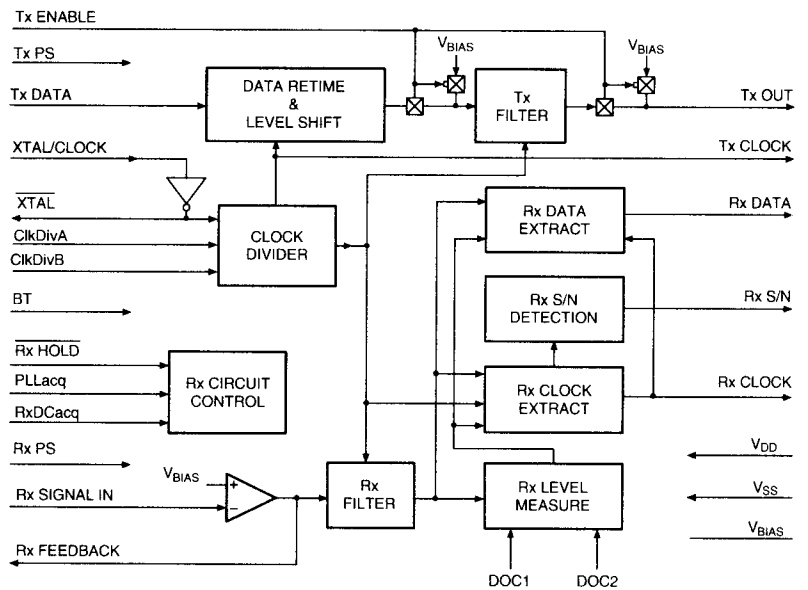
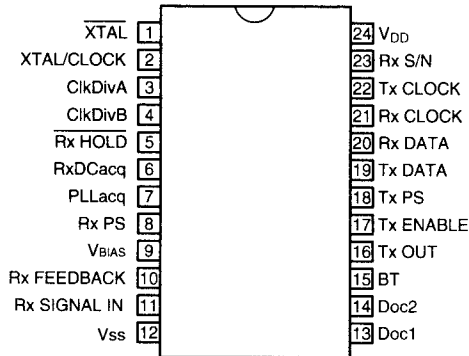
IC8/IC9
NJM3403AV



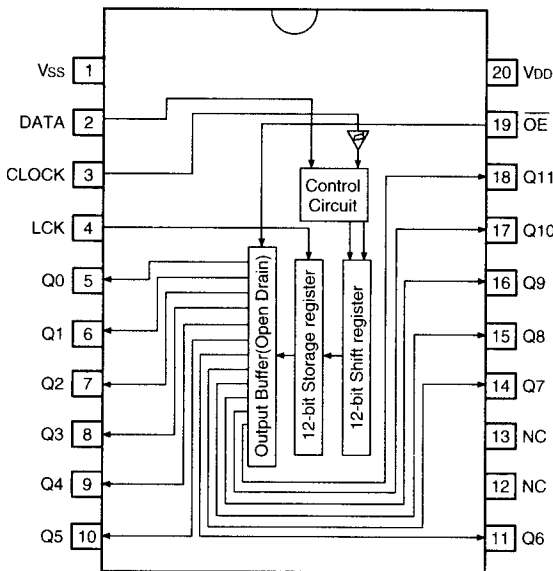
IC11
BU4066BCFV



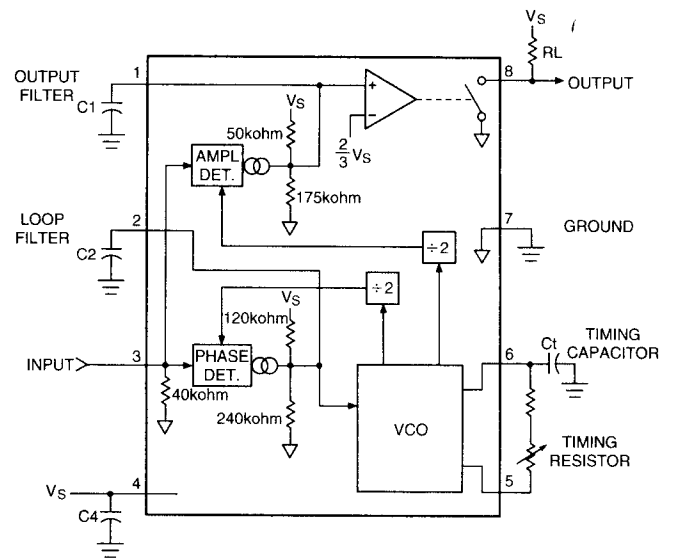
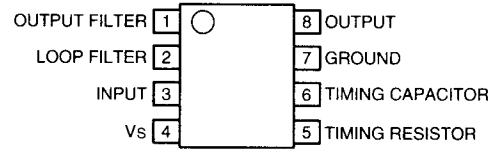
IC12
FX589D5



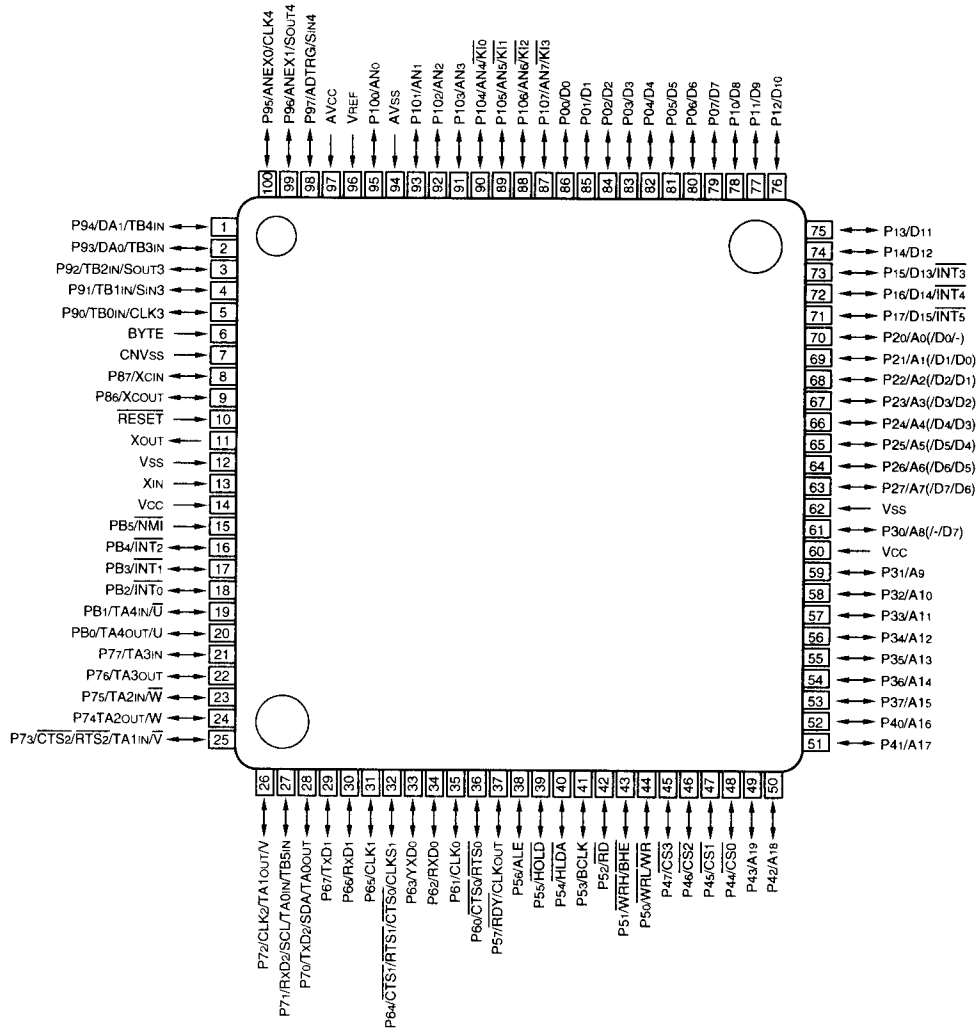
IC16
BU2092FV



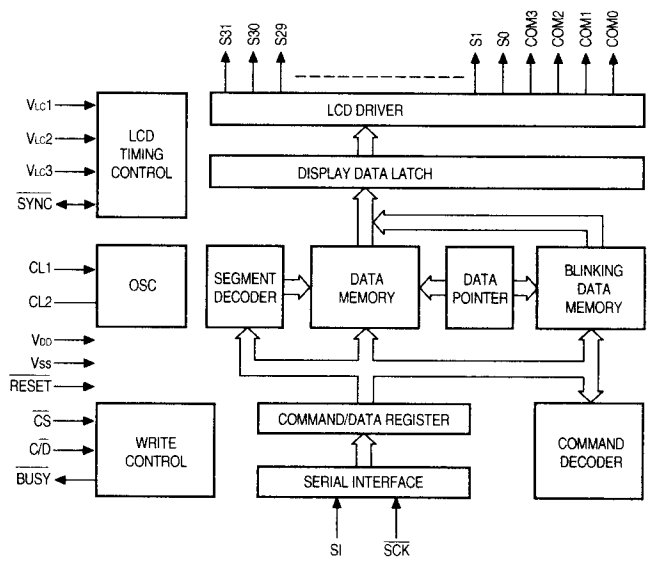
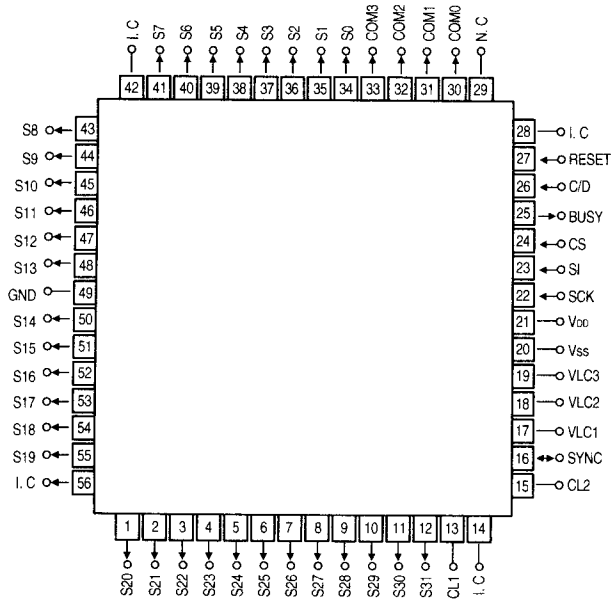
IC17
LMC567CMX



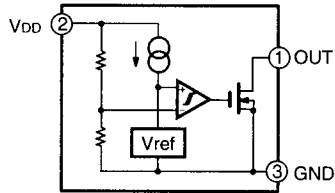
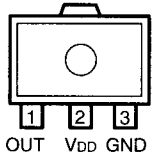
IC201
M30624FGLGPD5



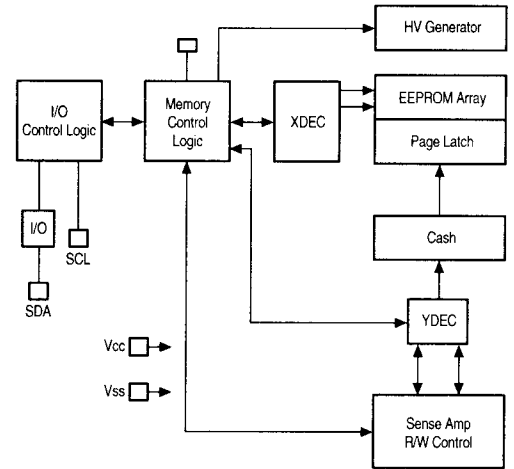
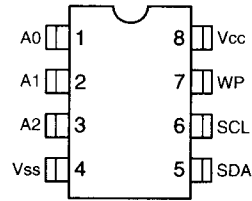
IC202
μPD7225GB



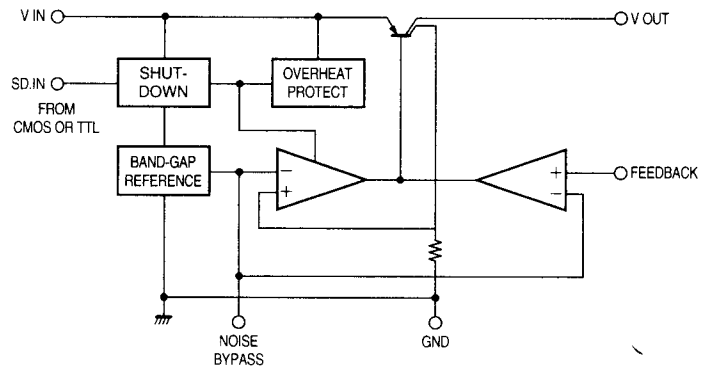
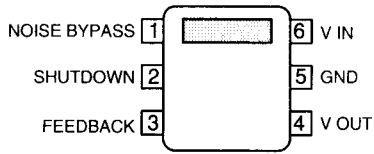
IC204
RH5VL27CA



IC205
24LC64



IC206
TK11231BMCL



VOLTAGE CHART

TRANSISTORS

Unit [V]

Ref. No.	Pin	Voltage	Remarks
Q1	B	0.8/3.1	162.4 MHz 100 μV RF=ON/OFF SQ=TIGHT
	E	1.4/1.4	
	C	1.4/0	
Q2	B	0.7	162.4 MHz 100 μV
	E	0.0	
	C	2.5	
Q3	B	0.7	162.4 MHz 100 μV
	E	0.0	
	C	1.7	
Q4	B	1.0	162.4 MHz 100 μV
	E	0.4	
	C	3.8	
Q5	B	-0.6	EXT. POWER
	E	0	
	C	-1.5	
Q6	B	2.1	162.4 MHz 100 μV
	E	1.4	
	C	2.8	
Q7	B	2.0	162.4 MHz 100 μV
	E	1.5	
	C	2.8	
Q8	B	2.6	162.4 MHz 100 μV
	E	2.2	
	C	3.8	
Q9	B	0	162.4 MHz 100 μV
	E	0	
	C	0	
Q10	B	2.1	162.4 MHz 100 μV
	E	1.4	
	C	2.8	
Q11	B	0.9	162.4 MHz 100 μV
	E	0.0	
	C	3.0	
Q12	B	0.7	162.4 MHz 100 μV
	E	0.0	
	C	3.0	
Q13	B	0.9	162.4 MHz 100 μV
	E	0.0	
	C	2.9	
Q14	B	0.2	162.4 MHz 100 μV
	E	0.0	
	C	3.7	
Q15	B	4.5	162.4 MHz 100 μV
	E	3.8	
	C	0.3	
Q16	B	0.7	453.25 MHz 100 μV
	E	0.0	
	C	1.8	

Unit [V]

Ref. No.	Pin	Voltage	Remarks
Q17	B	0.7	162.4 MHz 100 μV
	E	0.0	
	C	3.0	
Q23	B	0.6	162.4 MHz 100 μV
	E	0.0	
	C	10.1	
Q24	1	0.9	162.4 MHz 100 μV
	2	3.8	
	3	0.4	
Q25	B	0/0.6	162.4 MHz 100 μV RF=ON/OFF SQ=TIGHT
	E	0/0	
	C	0.5/0	
Q26	B	3.2/3.8	TRUNK ON/OFF
	E	3.8/3.8	
	C	3.8/0.0	
Q27	B	3.8	162.4 MHz 100 μV
	E	3.8	
	C	0.0	
Q28	B	3.8	162.4 MHz 100 μV
	E	3.8	
	C	0.0	
Q29	B	0.6	TRUNK ON
	E	0.0	
	C	0.0	
Q30	B	0.0	162.4 MHz 100 μV
	E	GND	
	C	0.0	
Q31	B	0.0	162.4 MHz 100 μV
	E	GND	
	C	0.0	
Q201	B	0.7/0	BACK LIGHT ON/OFF
	E	0/0	
	C	0.1/1.8	
Q202	B	3.1	162.4 MHz 100 μV
	E	0.0	
	C	0.5	
Q203	B	0.0	SINE WAVE
	E	0.0	
	C	—	

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IC'S

Unit [V]

Ref. No.	Pin	Voltage	Remarks
IC1	1	1.2	162.4 MHz 100 μV
	2	0.0	
	3	1.4	
	4	3.0	
	5	3.0	
	6	3.0	
IC2	1	3.8	162.4 MHz 100 μV
	2	NC	
	3	3.3	
	4	3.8	
	5	3.4	
	6	3.4	
	7	3.4	
	8	3.8	
	9	1.3	
	10	0.6	
	11	1.4	
	12	2.3	
	13	NC	
	14	1.3	
	15	0.0	
	16	3.8	
IC3	1	0.0	162.4 MHz 100 μV VOL. MIN.
	2	0.0	
	3	0.0	
	4	6.0	
	5	2.8	
	6	1.3	
	7	0.5	
	8	0.0	
IC5	1	2.7	162.4 MHz 100 μV
	2	0.0	
	3	1.2	
	4	3.8	
	5	0.0	
	6	6.0	
IC6	1	3.5	
	2	3.5	
	3	0.6	
	4	0	
	5	2.4	
	6	NC	
	7	0	
	8	1.4	
	9	1.3	
	10	3.5	
	11	0	
	12	0	
	13	0	

Unit [V]

Ref. No.	Pin	Voltage	Remarks
IC6	14	0	
	15	2.5	
	16	2.5	
	17	0	
	18	1.1	
	19	3.5	
	20	3.5	
IC7	1	6.0	162.4 MHz 100 μV
	2	0.0	
	3	9.2	
	4	9.2	
	5	16.8	
	6	16.8	
	7	17.5	
	8	6.0	
IC8	1	1.5/1.5	162.4 MHz 100 μV RF=ON/OFF SQ=TIGHT
	2	1.5/1.5	
	3	1.5/1.5	
	4	3.8/3.8	
	5	1.3/1.0	
	6	1/1.6	
	7	3.1/0	
	8	1.3/1.3	
	9	1.4/1.4	
	10	1.4/1.4	
	11	0.0	
	12	1.2/2.1	
	13	0.9/2	
	14	3.1/3.1	
IC9	1	1.3	162.4 MHz 100 μV
	2	1.3	
	3	1.1	
	4	3.8	
	5	1.3	
	6	1.3	
	7	0.0	
	8	1.2	
	9	1.2	
	10	1.2	
	11	0.0	
	12	1.2	
	13	1.2	
	14	1.2	
IC11	1	1.3	162.4 MHz 100 μV
	2	1.2	
	3	1.2	
	4	1.2	
	5	3.0	
	6	0	
	7	0	
	8	0	

IC'S

Unit [V]

Ref. No.	Pin	Voltage	Remarks
IC11	9	0	162.4 MHz 100 μV
	10	0	
	11	0.1	
	12	0	
	13	0.1	
	14	3.8	
IC12	1	SINE	162.4 MHz 100 μV TRUNK ON
	2	SINE	
	3	3.8	
	4	GND	
	5	3.8	
	6	GND	
	7	GND	
	8	GND	
	9	1.9	
	10	1.9	
	11	0.0	
	12	GND	
	13	1.0	
	14	2.7	
	15	3.8	
	16	NC	
17	GND		
18	3.8		
19	3.8		
20	1.6		
21	1.9		
22	NC		
23	NC		
24	3.8		
IC16	1	GND	162.4 MHz 100 μV
	2	0.0	
	3	0.0	
	4	0.0	
	5	0.0	
	6	3.8	
	7	0.0	
	8	0.0	
	9	NC	
	10	NC	
	11	6.0	
	12	NC	
	13	NC	
	14	4.6	
15	0.0		
16	5.9		
17	5.9		
18	4.3		
19	GND		
20	3.8		

Unit [V]

Ref. No.	Pin	Voltage	Remarks
IC17	1	2.5	NWR-SAME ON
	2	2.1	
	3	0.0	
	4	SQUARE	
	5	SQUARE	
	6	1.6	
	7	GND	
	8	1.6	
IC201	1	NC	
	2	NC	
	3	3.1	
	4	0.0	
	5	—	SQUARE WAVE
	6	GND	
	7	0.0	
	8	NC	
	9	NC	
	10	3.1	
	11	--	SINE WAVE
	12	GND	
	13	--	SINE WAVE
	14	3.1	
	15	3.1	
	16	NC	
	17	3.3	
	18	3.2	
	19	NC	
	20	0.0	
	21	NC	
	22	NC	
	23	NC	
	24	NC	
	25	NC	
	26	0.0	
	27	0.0	
	28	NC	
	29	0.0	
	30	0.0	
	31	0.0	
	32	0.0	
33	NC		
34	NC		
35	NC		
36	NC		
37	NC		
38	NC		
39	0.0		
40	NC		
41	3.1		

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Unit [V]

Ref. No.	Pin	Voltage	Remarks
IC201	42	3.1	
	43	3.1	
	44	3.1	
	45	NC	
	46	NC	
	47	NC	
	48	0.0	
	49	0.0	
	50	0.0	
	51	0.0	
	52	0.0	
	53	NC	
	54	NC	
	55	NC	
	56	3.1	
	57	3.1	
	58	3.1	
	59	3.1	
	60	3.1	
	61	3.1	
	62	0.0	
	63	NC	
	64	3.1	
	65	3.1	
	66	3.1	
	67	3.1	
	68	3.1	
	69	3.1	
	70	0.0	
	71	NC	
	72	NC	
	73	NC	
	74	NC	
	75	NC	
	76	NC	
	77	NC	
78	NC		
79	3.1		
80	0.0		
81	0.0		
82	0.0		
83	0.0		
84	0.0		
85	3.1		
86	0.0		
87	3.1		
88	0.0		
89	NC		

Unit [V]

Ref. No.	Pin	Voltage	Remarks
IC201	90	NC	
	91	NC	
	92	3.0	
	93	1.4	
	94	GND	
	95	—	SINE WAVE 162.4 MHz
	96	3.1	
	97	3.1	
	98	NC	
	99	0.4	
	100	3.1	
IC202	1	—	SQUARE WAVE
	2	—	SQUARE WAVE
	3	—	SQUARE WAVE
	4	—	SQUARE WAVE
	5	—	SQUARE WAVE
	6	—	SQUARE WAVE
	7	—	SQUARE WAVE
	8	—	SQUARE WAVE
	9	—	SQUARE WAVE
	10	—	SQUARE WAVE
	11	—	SQUARE WAVE
	12	—	SQUARE WAVE
	13	1.5	CLOCK
	14	3.1	
	15	1.6	CLOCK
	16	NC	
	17	2.1	
	18	1.1	
	19	0	
	20	0	
	21	3.1	
	22	—	SQUARE WAVE
	23	—	SQUARE WAVE
	24	—	SQUARE WAVE
	25	—	SQUARE WAVE
	26	3.1	
	27	3.1	
28	3.1		
29	NC		
30	—	SQUARE WAVE	
31	—	SQUARE WAVE	
32	—	SQUARE WAVE	
33	—	SQUARE WAVE	
34	—	SQUARE WAVE	
35	—	SQUARE WAVE	
36	—	SQUARE WAVE	
37	—	SQUARE WAVE	

Unit [V]

Ref. No.	Pin	Voltage	Remarks
IC202	38	—	SQUARE WAVE
	39	—	SQUARE WAVE
	40	—	SQUARE WAVE
	41	—	SQUARE WAVE
	42	3.1	
	43	—	SQUARE WAVE
	44	—	SQUARE WAVE
	45	—	SQUARE WAVE
	46	—	SQUARE WAVE
	47	—	SQUARE WAVE
	48	—	SQUARE WAVE
	49	3.1	
	50	—	SQUARE WAVE
	51	—	SQUARE WAVE
	52	—	SQUARE WAVE
	53	—	SQUARE WAVE
	54	—	SQUARE WAVE
55	—	SQUARE WAVE	
56	3.1		
IC204	1	3.1	
	2	3.1	
	3	0	
IC205	1	3.1	
	2	0	
	3	0	
	4	0	
	5	3.1	
	6	3.1	
	7	3.1	
	8	3.1	
IC206	1	5.4	
	2	0	
	3	1.3	
	4	3.1	
	5	0	
	6	6.0	

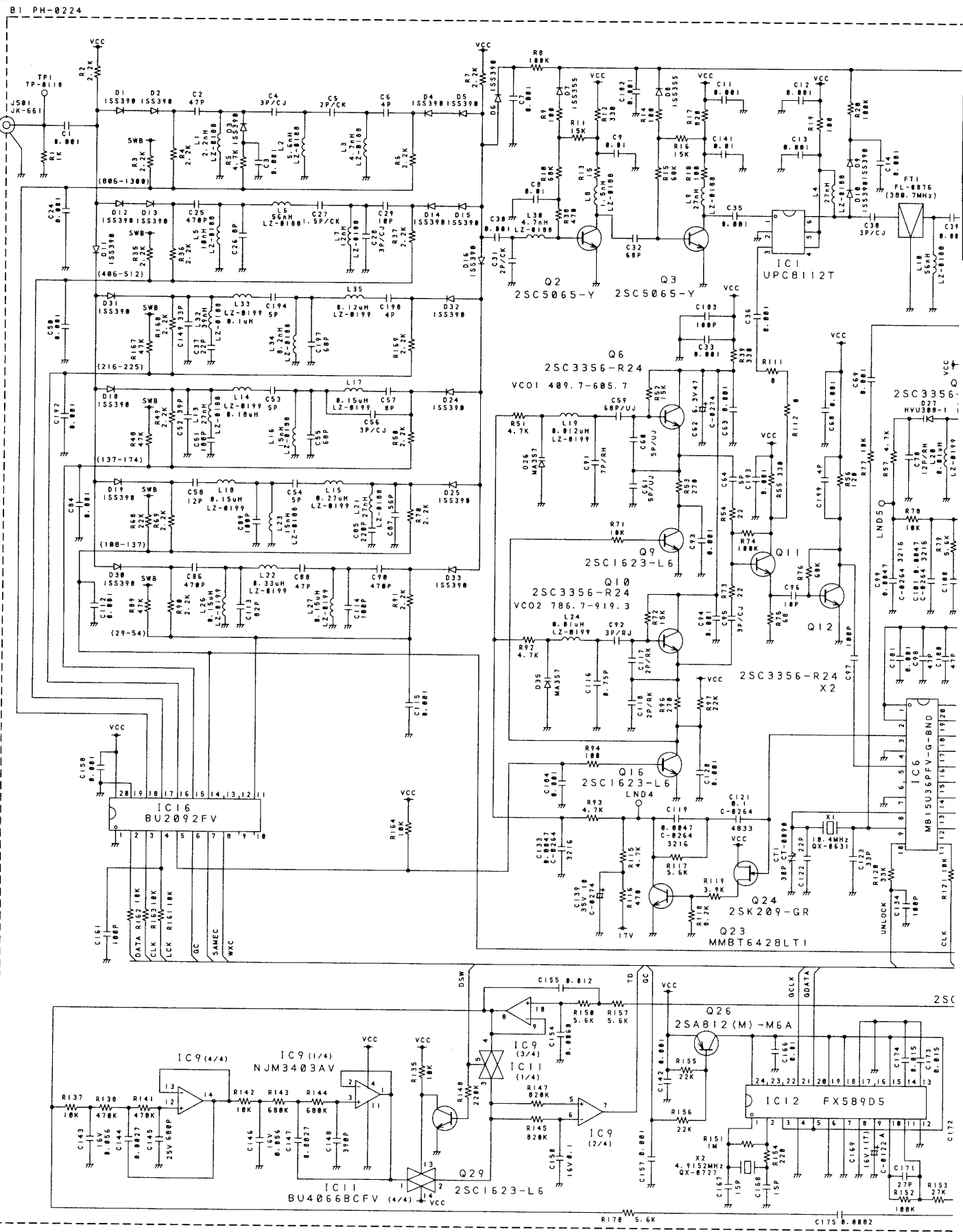
20-524

NOTE

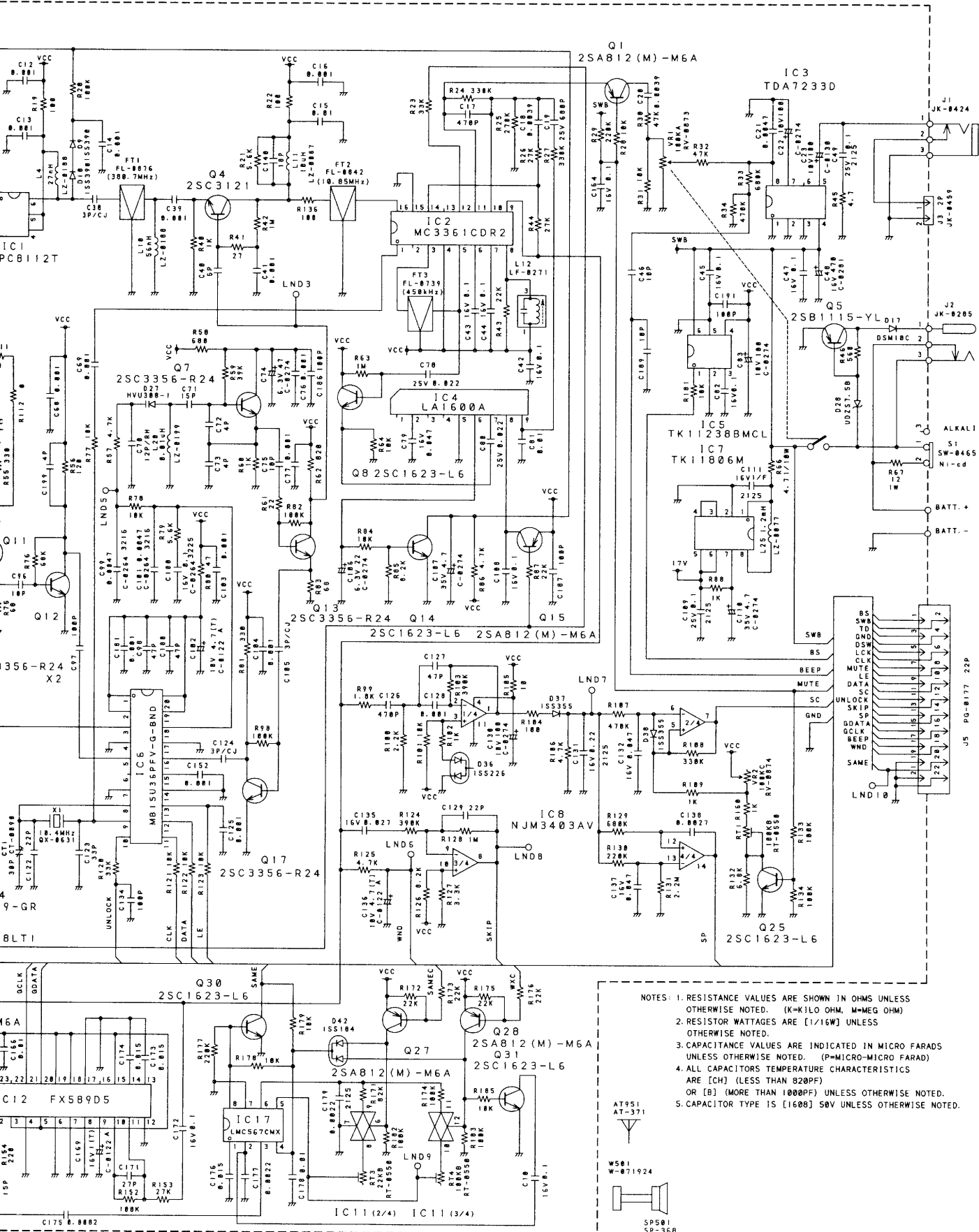
SCHEMATIC DIAGRAM

RF PCB

20-524



ATATIC DIAGRAMS (Cat No. 20-524)



- NOTES: 1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K=KILO OHM, M=MEG OHM)
 2. RESISTOR WATTAGES ARE [1/16W] UNLESS OTHERWISE NOTED.
 3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P=MICRO-MICRO FARAD)
 4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE [CH] (LESS THAN 820PF) OR [B] (MORE THAN 1000PF) UNLESS OTHERWISE NOTED.
 5. CAPACITOR TYPE IS [1608] 50V UNLESS OTHERWISE NOTED.

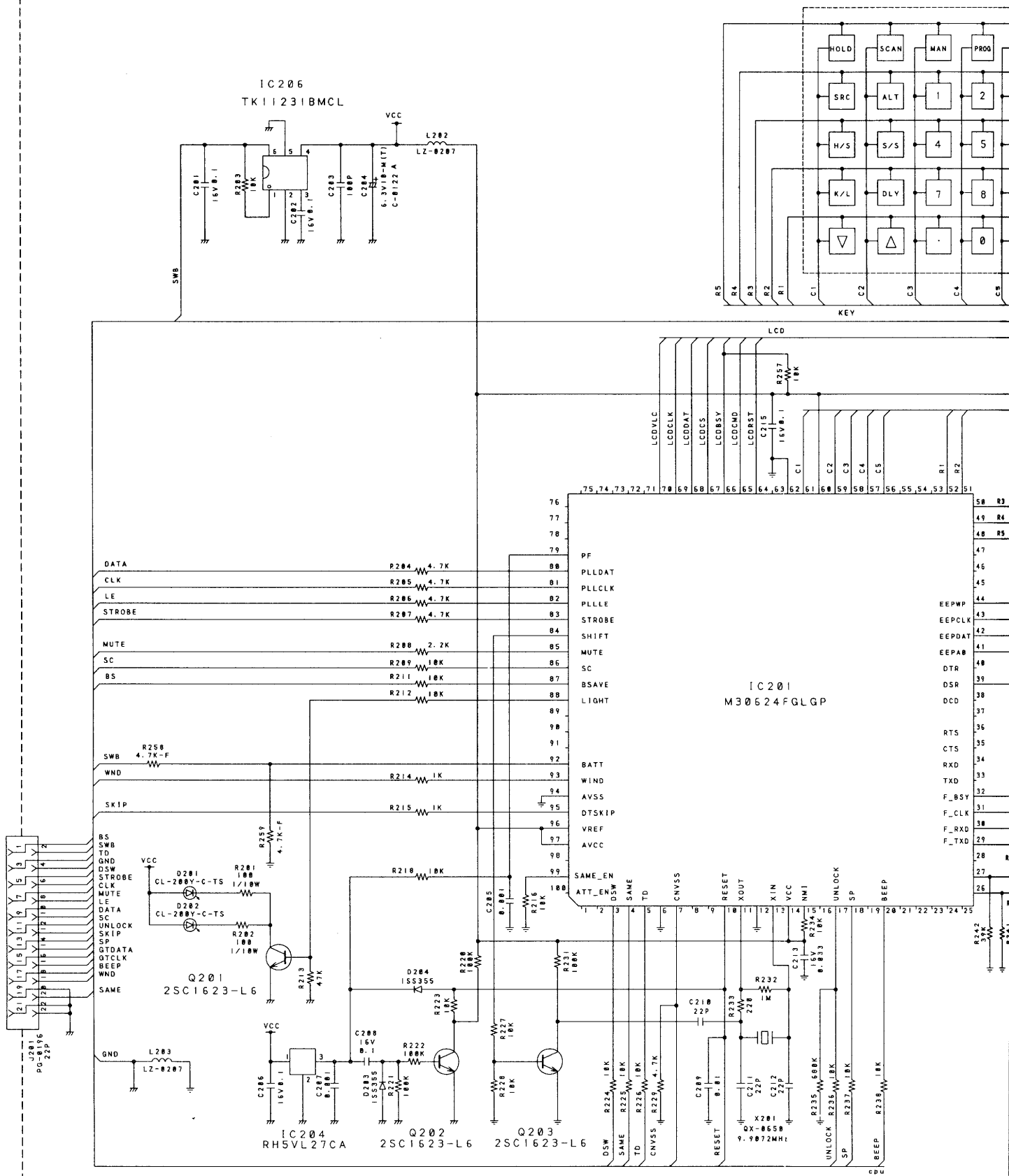
AT951
AT-371

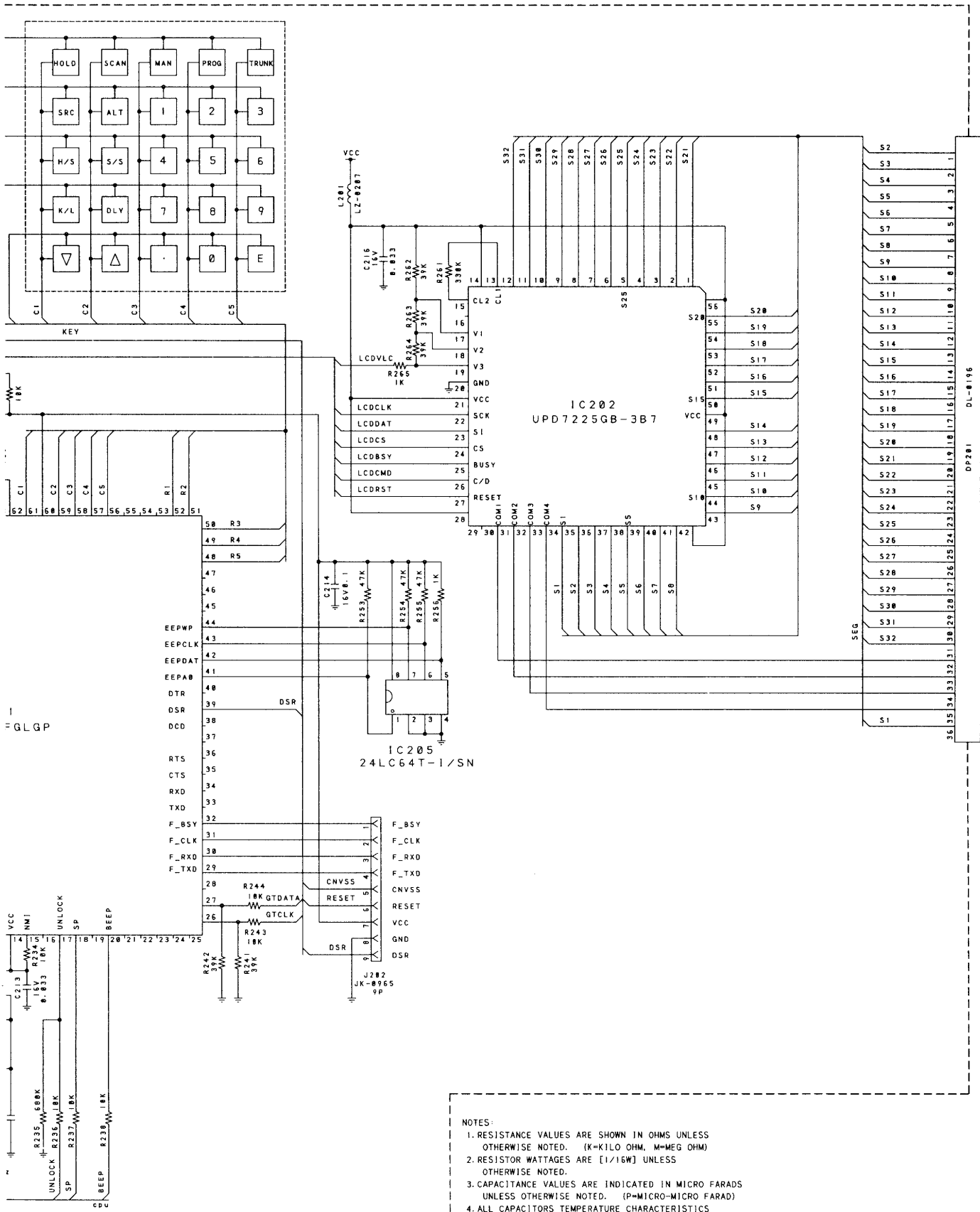
W501
W-071924

SP501
SP-358

LOGIC PCB (20-524)

B201 PH-0225





- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K=KILO OHM, M=MEG OHM)
 2. RESISTOR WATTAGES ARE [1/16W] UNLESS OTHERWISE NOTED.
 3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P=MICRO-MICRO FARAD)
 4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE [CH] (LESS THAN 820PF) OR [B] (MORE THAN 1000PF) UNLESS OTHERWISE NOTED.
 5. CHIP CAPACITORS TYPE ARE [1608] 50V UNLESS OTHERWISE NOTED.