

**Radio Shack®**

# Service Manual

**20-148A**

## ADDENDUM

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TO SERVICE MANUAL FOR  
Cat. No. 20-148

PRO-2026  
100-CHANNEL DIRECT ENTRY  
PROGRAMMABLE SCANNER

Catalog Number: 20-148A

The 20-148A is very much like the 20-148. This addendum only notes how the 20-148A is different from the 20-148. A separate, complete service manual for the 20-148A will not be issued. Refer to the 20-148 service manual for items not covered in this addendum.

The parts marked  are different from the basic manual.

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# SPECIFICATIONS

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External Jacks:

ANT. Jack (BNC Type)

Earphone Jack (3.5ø)

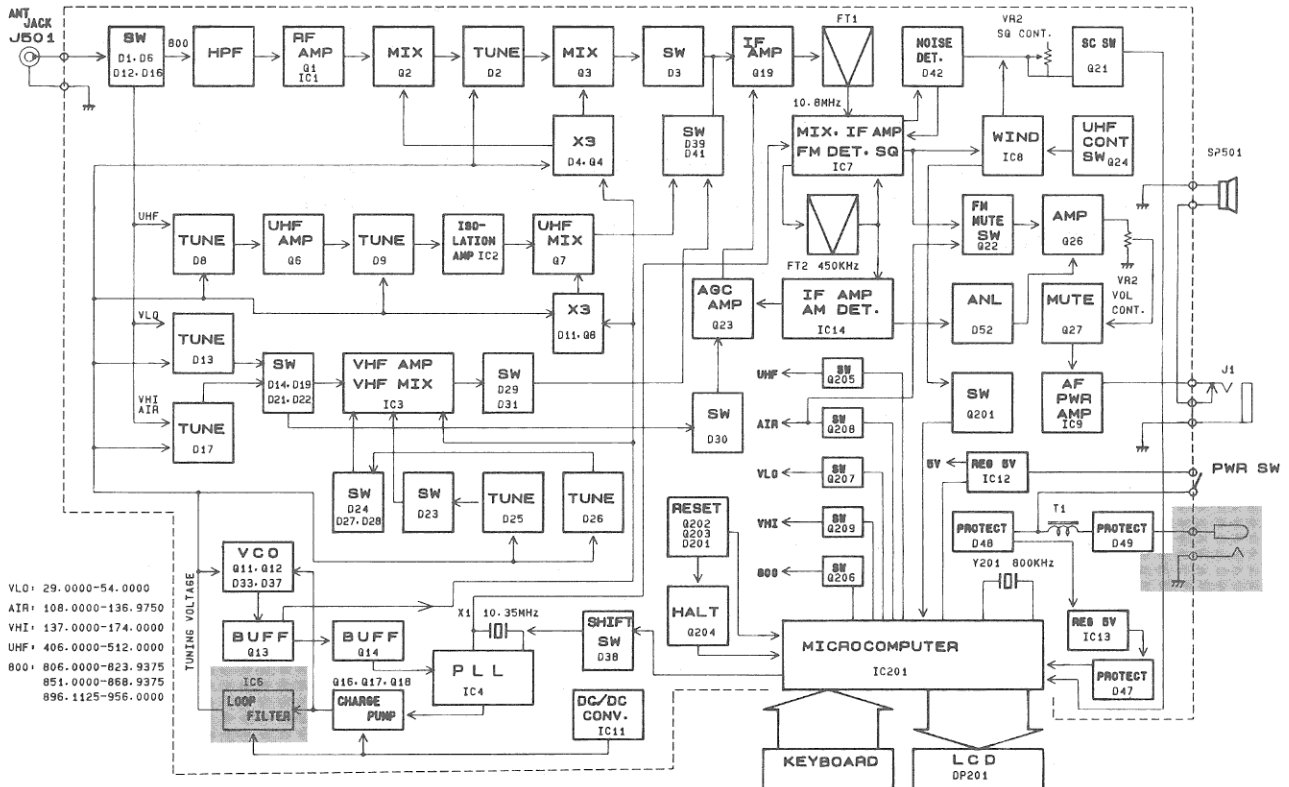
DC Power Jack (5.5ø)

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Item	Unit	Nominal	Limit
Current Drain (at full output)	mA DC	420	300 - 500
	mA DC	230	300
	within 30 minutes	mA DC	1
	after 30 minutes	µA DC	5
Memory Backup Time	Day	more than 14	14

# BLOCK DIAGRAM

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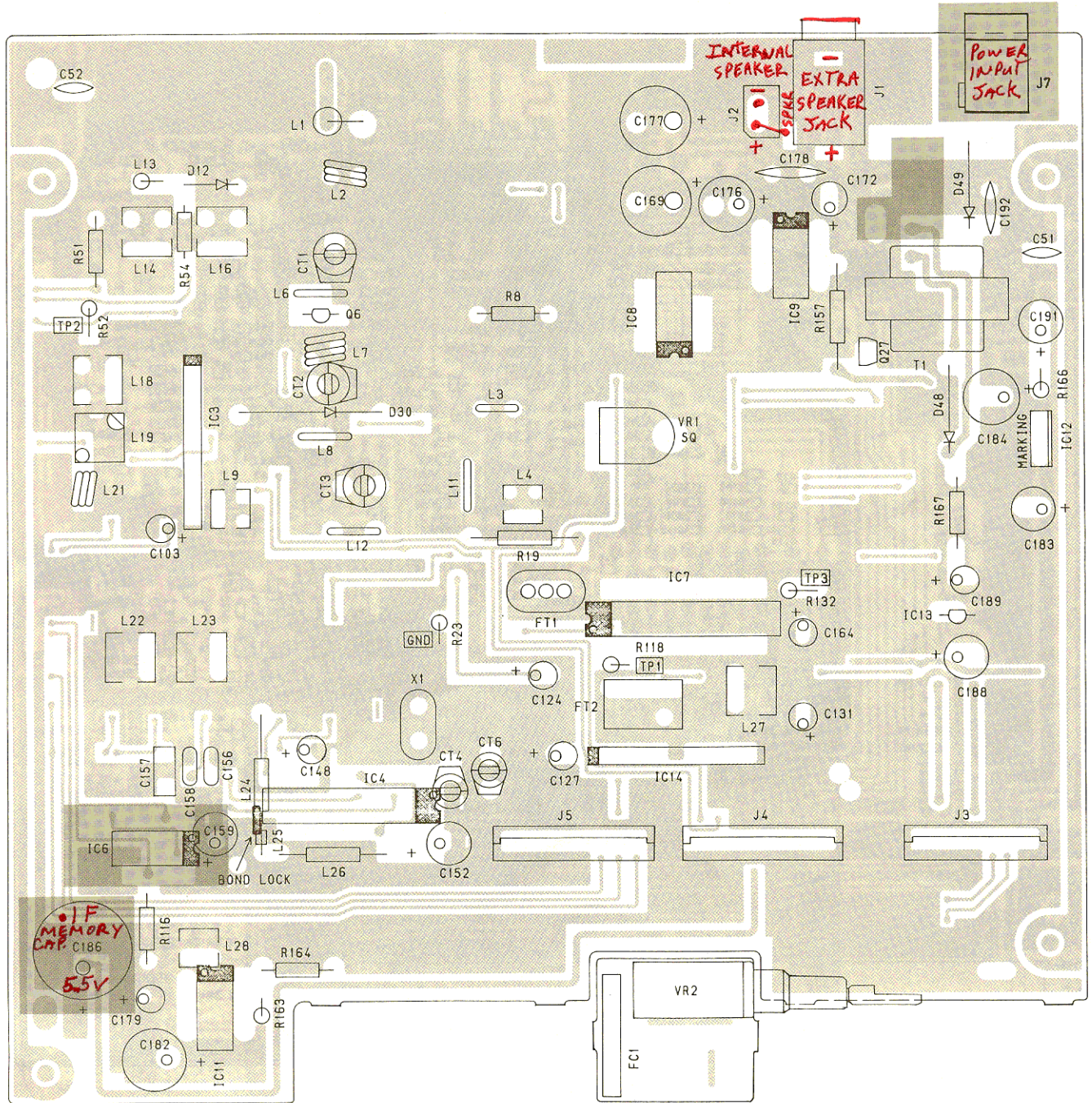
# PRINTED CIRCUIT BOARDS

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Main PCB (Top View)

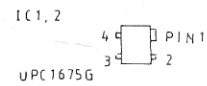
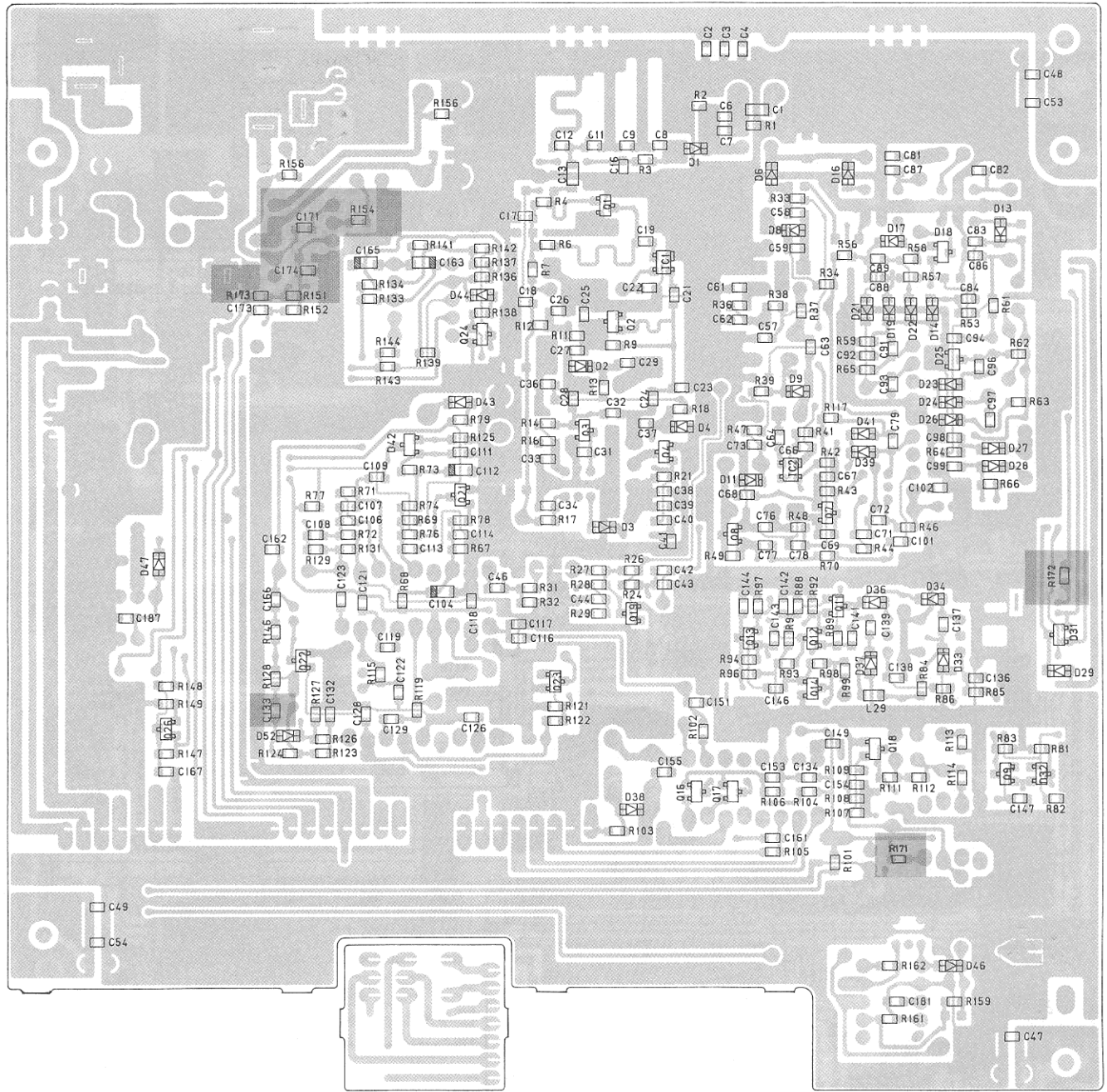
(SLEEVE)  
IS - }  
(TIP IS +)

SLEEVE CENTER  
GND @ +12VDC

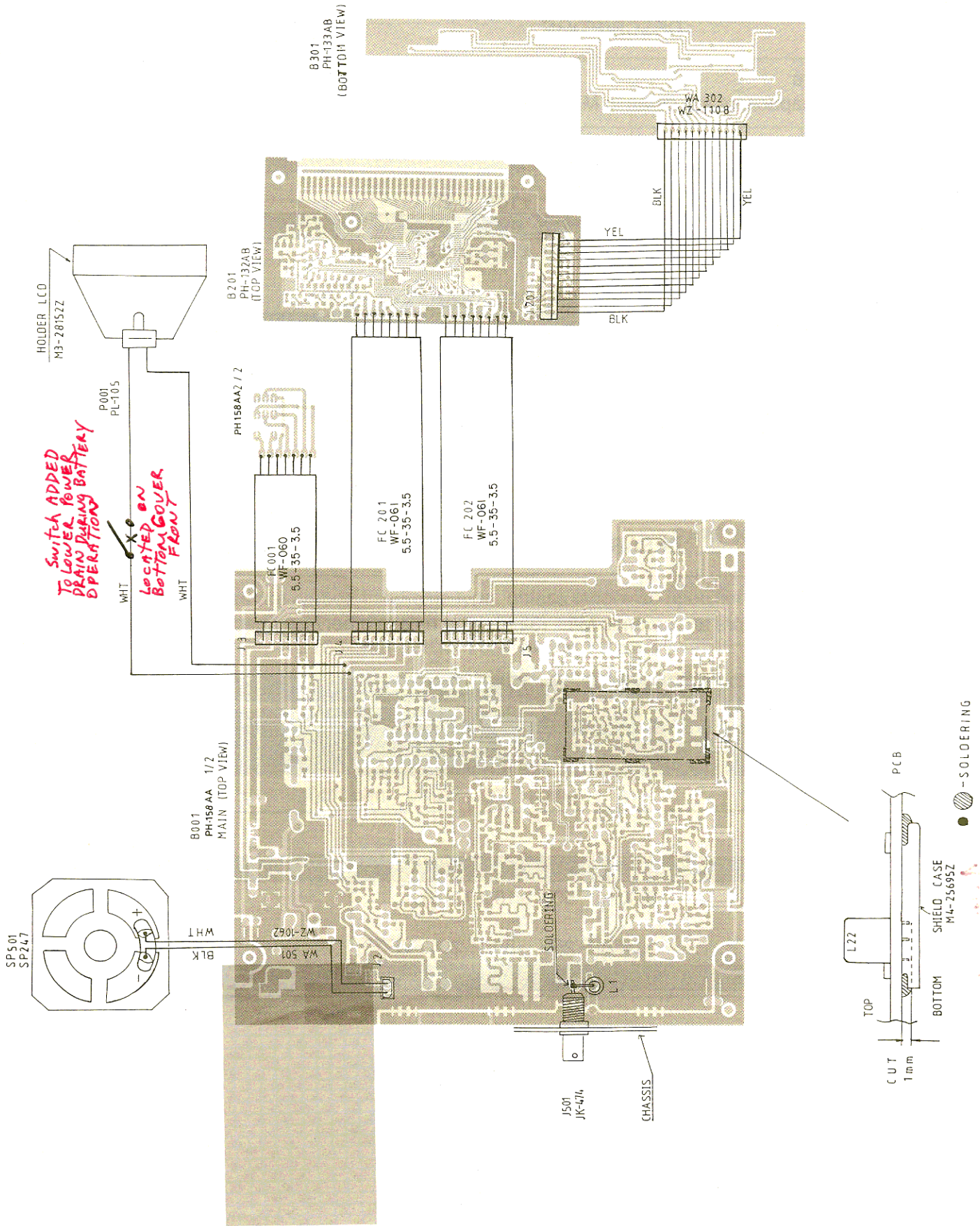




Main PCB (Bottom View and Chip Parts Locations)



# WIRING DIAGRAM





# ELECTRICAL PARTS LIST

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REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Capacitors</b> <b>Note</b> :All capacitors are ceramic M/L* (3216) type unless otherwise specified.			
C123	220PF 50V ±5% CG (CH)		BCXG812214Z
⋮			
C132	0.022μF 50V ±10% C(B)		BCXJ812235Z
C133	0.01μF 50V ±10% C(B)		BCXJ811035Z
C134	0.001μF 50V ±10% C(B)		BCXJ811025Z
⋮			
C167	0.01μF 25V ±10% C(B)		BCXJ511035Z
C168	-Not Used-		
C169	Electrolytic 470μF 25V ±20% C-130		BCAP514716Z

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REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Capacitors</b> <b>Note</b> :All capacitors are ceramic M/L* (3216) type unless otherwise specified.			
C170	-Not Used-		
C171	0.001μF 50V ±10% C(B)		BCXJ811025Z
C172	Electrolytic 100μF 16V ±20% C-130		BCAP311016Z
C173	9PF 50V ±0.5% CG(CH)		BCXG819092Z
C174	0.0018μF 50V ±10% C(B)		BCXJ811825Z
C175	-Not Used-		
⋮			
C185	-Not Used-		
C186	Electrolytic 0.1F 5.5V +80%/-20% C-217		BCFN851040Z
C187	0.001μF 50V ±10% C (B)		BCXJ811025Z
⋮			
C192	Ceramic 0.047μF 25V +80%/-20% YF(F)		BCKG514730Z
C193	-Not Used-		

→  
 LARGER  
 CAPACITOR  
 IN  
 NEWER  
 MODEL

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Diodes</b>			
D020	-Not Used-		
⋮			
D050	-Not Used-		
D051	-Not Used-		
D052	HSK120 TR Taping		BDAY0393001
<b>Jacks</b>			
J001	JK-089 HSJ0615		BJKY0089001
⋮			
J005	JK-662 8P		BJKY0662008
J006	-Not Used-		
J007	JK-135 HEC0470-01-230		BJKY0135001

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Resistors</b>			
<b>Note</b> :All resistors are carbon fixed-chip type, unless otherwise specified.			
R085	100 ohm 1/10W $\pm$ 5% Taping		BRFC011014Z
⋮			
R126	56K ohm 1/10W $\pm$ 5% Taping		BRFC015634Z
R127	22K ohm 1/10W $\pm$ 5% Taping		BRFC012234Z
R128	18K ohm 1/10W $\pm$ 5% Taping		BRFC011834Z
⋮			
R133	100K ohm 1/10W $\pm$ 5% Taping		BRFC011044Z

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Resistors</b>			
<b>Note</b> :All resistors are carbon fixed-chip type, unless otherwise specified.			
R134 ⋮ R150	680K ohm 1/10W ±5% Taping -Not Used-		BRFC016844Z
R151	33K ohm 1/10W ±5% Taping		BRFC013334Z
R152	470K ohm 1/10W ±5% Taping		BRFC014744Z
R153 R154	-Not Used- 270 ohm 1/10W ±5% Taping		BRFC012714Z
R155 ⋮ R167	-Not Used- Carbon AX TS 26 47 ohm 1/6W ±5% Taping		BRPA614704Z
R171	0 ohm 1/10W ±5% Taping		BRFC010004Z
R172	10K ohm 1/10W ±5% Taping		BRFC011034Z
R173	0 ohm 1/10W ±5% Taping		BRFC010004Z
<b>Integrated Circuits</b>			
IC001 ⋮ IC005	RF Amp -Not Used-	UPC1675G-T1	BDEY1190001
IC006	Loop Filter	TLC271CP	BDEY0826001
IC007 ⋮ IC012	IF Amp & Detector Regulator	NJM3359D-A L78M05CV	BDEY0815001 BDEY0995001

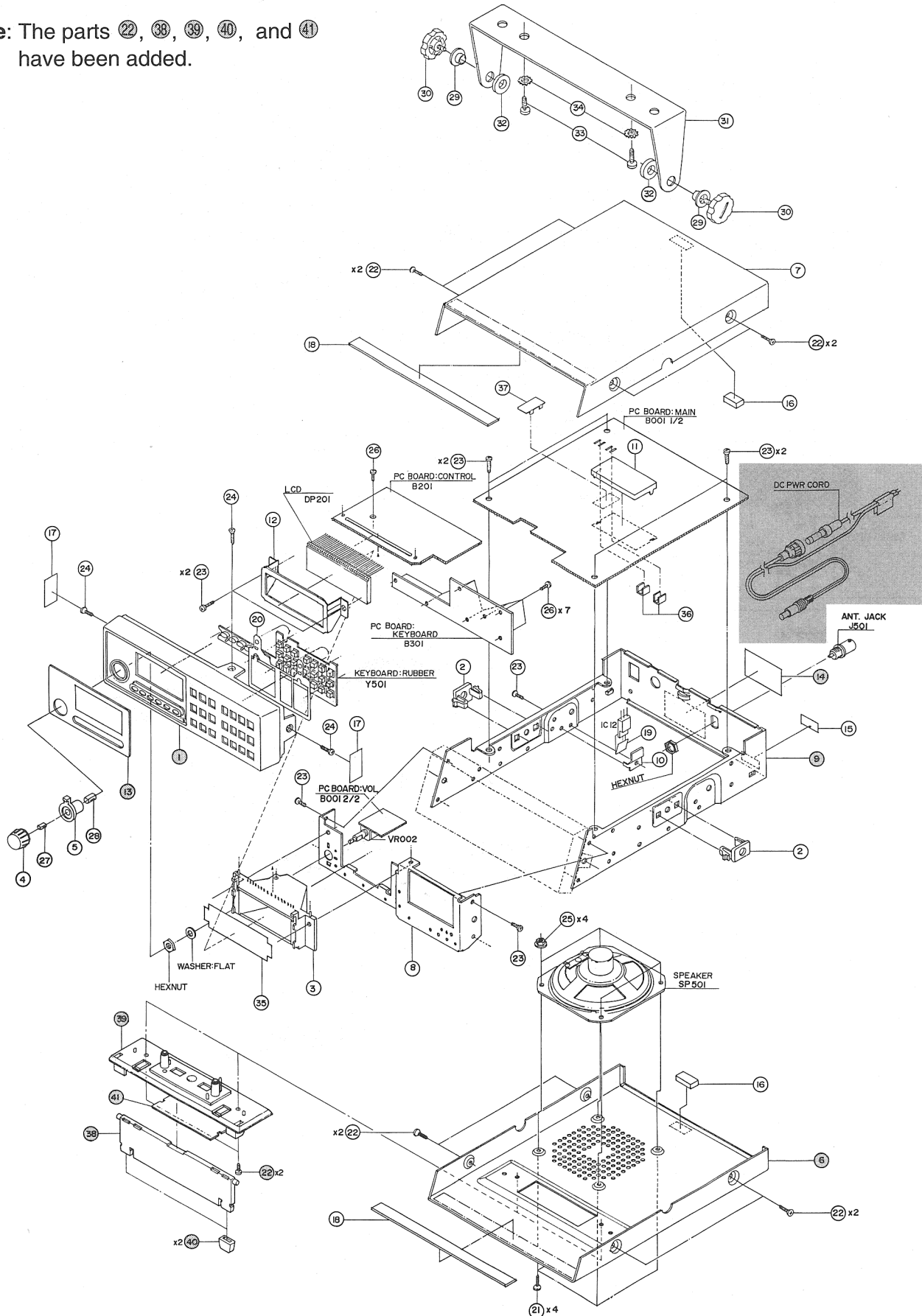
REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
<b>Miscellaneous</b>			
T001 ⋮ VR002	Transformer Variable	TF-374 RV-766 100KA & 100KC	BTFY0374001 BRVY0766001
WA001	DC Power Cord	WZ-647	BWZY0647001
P001	Pilot Lamp	PL-105	BPLY0105001



# DISASSEMBLY/EXPLODED VIEW

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**Note:** The parts ②②, ③⑧, ③⑨, ④①, and ④① have been added.

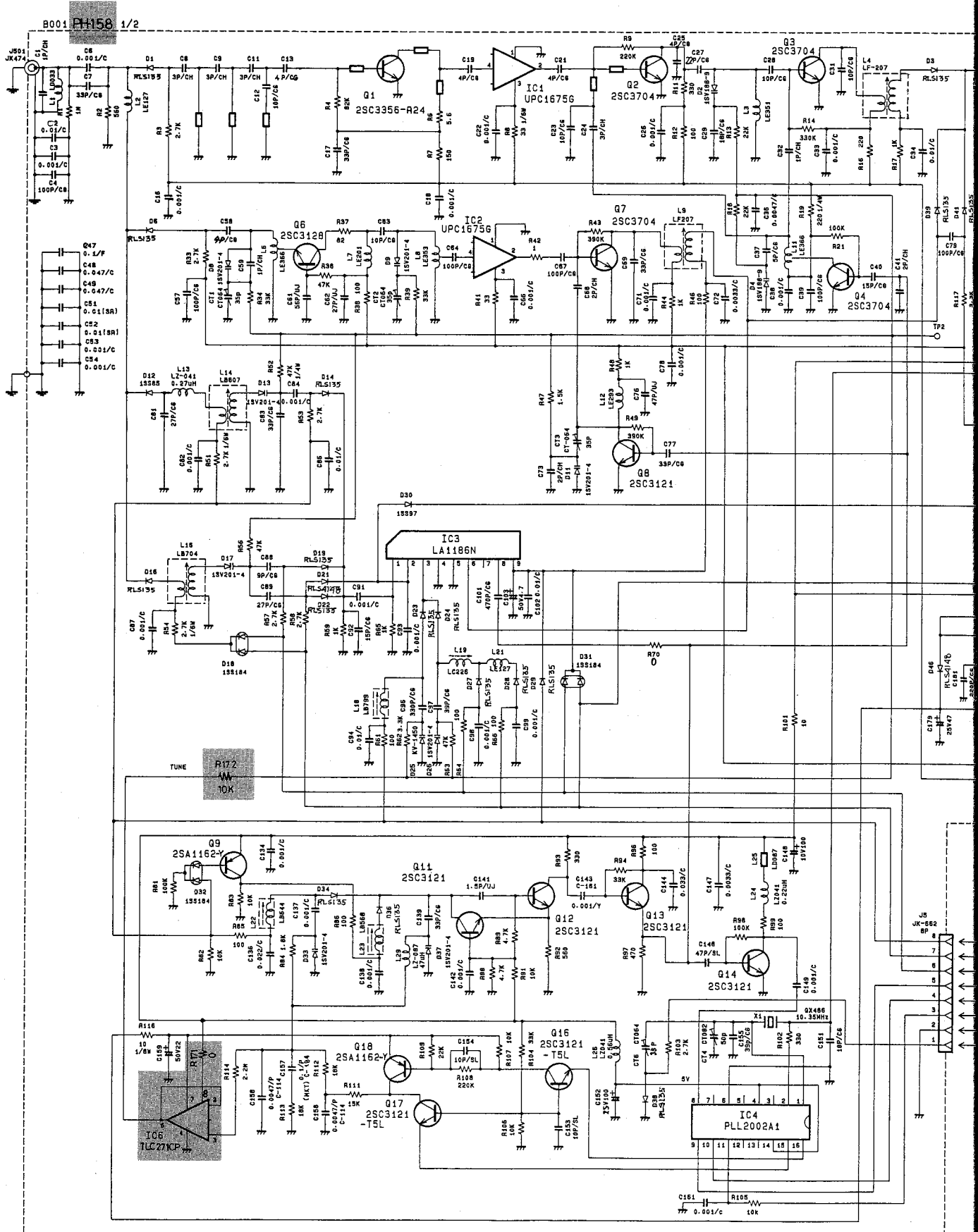


# MECHANICAL PARTS LIST

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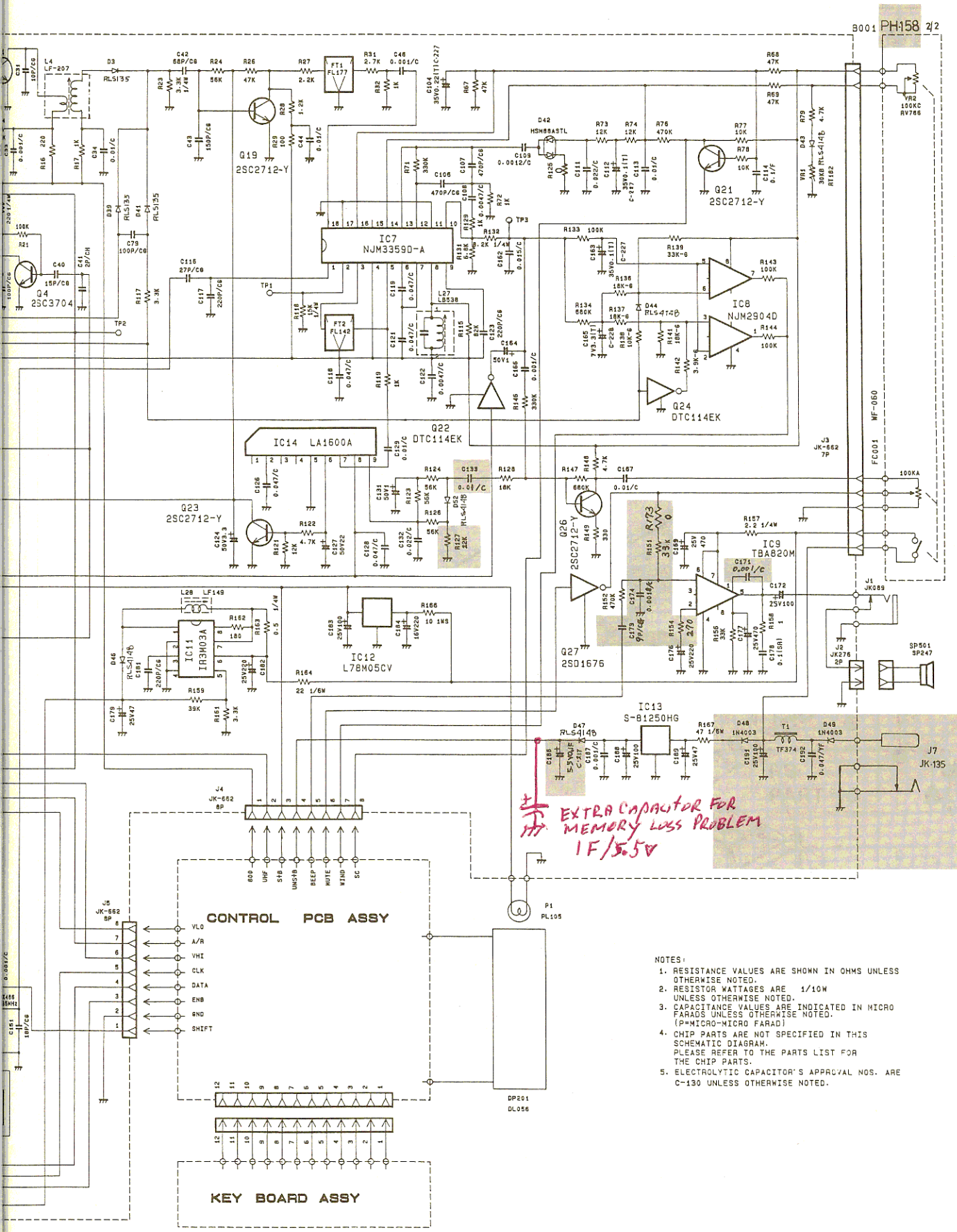
REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
1	Panel Front            ABS (HS-300) Gray		GCMF129226Z
2	Spacer (C)            PP Black		GETC416896Z
⋮			
5	Knob, SQ            ABS Black		GNBW419528Z
6	Cover, Bottom        SBK08 1T		HCMB319530Z
7	Cover, Top            SBK08 1T		HCMT319531Z
8	Front Chassis        SPCC 1.0T ZMC		HCSF328186Z
9	Chassis                SECC 1T		HCSY229076Z
10	Holder, IC            SPCC 1.0T ZMC		HHDE481129Z
⋮			
12	Frame, LCD            SPTTE 0.3T		HSDP428146Z
13	Plate, Display        PC 1T Silk		KDPT429241Z
14	Label, FCC            Polyester Film 0.05T		PLBF429181Z
⋮			
15	Label, DOC            Polyester 0.05T for CA only		PLBF425731Z
⋮			
37	Shield Case            SPTTE 0.3T for CA only		HSDP425745Z
	Front Panel Assembly (Ref. No. 1 and 13)		FRPAAS220ZP
	Chassis Assembly    (Ref. No.2,9, and 14)		CHAssy220ZP
	Mounting Bracket Assembly (Ref.No.29,31,32, and 34)		MTBRAS220ZP
38	Stand                  ABS Black		GCMZ319535A
39	Holder, Stand        ABS Black		GHDZ319522Z
40	Foot                    Urethane Rubber Black		LFUT419541Z
41	Blind                    PVC 0.5T Black		RBLD423043Z

Main Section





# IC DIAGRAMS



*EXTRA CAPACITOR FOR  
MEMORY LOSS PROBLEM  
1F/5.5V*

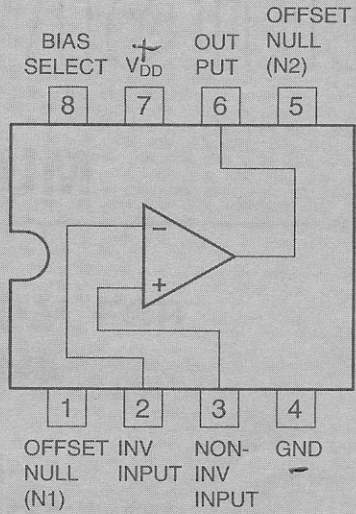
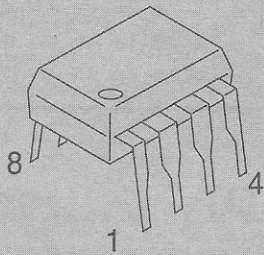
- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED.
  2. RESISTOR WATTAGES ARE 1/10W UNLESS OTHERWISE NOTED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P-MICRO-MICRO FARAD)
  4. CHIP PARTS ARE NOT SPECIFIED IN THIS SCHEMATIC DIAGRAM. PLEASE REFER TO THE PARTS LIST FOR THE CHIP PARTS.
  5. ELECTROLYTIC CAPACITOR'S APPROVAL NOS. ARE C-130 UNLESS OTHERWISE NOTED.

# IC INTERNAL DIAGRAM

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IC6

TLC271CP



Catalog Number: 2P-145A

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**8A3**

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