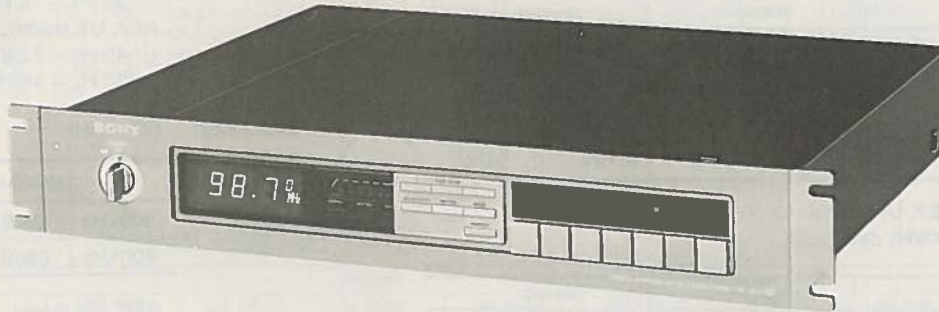


ST-J88B

*US Model
AEP Model
UK Model*



FM STEREO TUNER

SPECIFICATIONS

GENERAL

System:	PLL crystal locked digital synthesizer system
Power Requirements:	US model: 120 V ac, 60 Hz AEP, UK model: 110, 120, 220 or 240 V ac ~ adjustable, 50/60 Hz
Power Consumption:	25 W
Dimensions:	Approx. 480 (w) x 80 (h) x 370 (d) mm 19 (w) x 3 1/4 (h) x 14 1/2 (d) inches including projecting parts and controls
Weight:	US model: Approx. 6.6 kg, 14 lb 9 oz (net) Approx. 7.6 kg, 16 lb 13 oz (in shipping carton) AEP, UK model: Approx. 6.7 kg, 14 lb 12 oz (net) Approx. 7.7 kg, 17 lb (in shipping carton)

TUNER SECTION

Tuning Range:	87.5 — 107.9 MHz (US model) 87.5 — 108 MHz (AEP, UK model)
Antenna Terminals:	300 Ω , balanced 75 Ω , unbalanced coaxial input
Intermediate Frequency:	10.7 MHz
Sensitivity at 50dB Quieting:	3.2 μ V, 15.3 dBf (mono) } (US model) 35 μ V, 36.1 dBf (stereo)
Sensitivity at 46dB Quieting (40kHz deviation):	3.2 μ V (mono) } (AEP, UK model) 35 μ V (stereo)
Usable Sensitivity:	US model: 1.8 μ V, 10.3 dBf AEP, UK model: 1.2 μ V (S/N = 26 dB, 40 kHz deviation) 1.8 μ V, 10.3 dBf (IHF)

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY
SERVICE MANUAL

Limiting Threshold: 1 μ V (AEP, UK model)

S/N Ratio:

	US model	AEP, UK model (40kHz deviation)
mono	80dB	75dB
stereo	75dB	70dB

Harmonic Distortion: US model:

	mono		stereo	
	NORMAL	NARROW	NORMAL	NARROW
100Hz	0.04%	0.1%	0.07%	0.3%
1kHz	0.04%	0.1%	0.07%	0.3%
10kHz	0.04%	0.1%	0.15%	0.6%

AEP, UK model:
(40kHz deviation)

	mono		stereo	
	NORMAL	NARROW	NORMAL	NARROW
100Hz	0.04%	0.1%	0.07%	0.3%
1kHz	0.04%	0.1%	0.07%	0.3%
10kHz	0.04%	0.1%	0.15%	0.6%

IM Distortion: US model:

	mono		stereo	
	NORMAL	NARROW	NORMAL	NARROW
0.04%	0.1%	0.07%	0.3%	

AEP, UK model:
(40kHz deviation)

	mono		stereo	
	NORMAL	NARROW	NORMAL	NARROW
0.04%	0.1%	0.07%	0.3%	

Separation:

	NORMAL	NARROW
100Hz	50dB	45dB
1kHz	50dB	45dB
10kHz	45dB	40dB

Frequency Response:

US model:
30 Hz — 15 kHz +0.2 dB
—0.5 dB
AEP, UK model:
40 Hz — 12.5 kHz $\pm$ 0.2 dB
30 Hz — 15 kHz +0.2 dB
—0.5 dB

Selectivity: US model:

	NORMAL	NARROW
300kHz	25dB	80dB
400kHz	65dB	—

AEP, UK model

	NORMAL	NARROW
300kHz	30dB	85dB
400kHz	70dB	—

Capture Ratio: 1.0 dB (NORMAL)
1.7 dB (NARROW)

AM Suppression Ratio: 60 dB

Image Response Ratio: 110 dB

IF Response Ratio: 110 dB

Spurious Response Ratio: 110 dB

RF Intermodulation: 80 dB

Sub-carrier Product Ratio: 70 dB (US model)

65 dB (AEP, UK model)

Muting and Auto-tuning Threshold: Approx. 5 μ V, 19.2 dBf

Output Level: FIXED: 750 mV, 2 k Ω
VARIABLE: 0 — 1.2 V, 470 Ω

MODEL IDENTIFICATION

— Specification Label —

● AEP model

SONY 	FM STEREO TUNER
	MODEL NO. ST-J88B
	FREQ. RANGE : FM 87.5-108MHz
	IF : FM 10.7MHz
	AC 110 120 220 240V ~ 50/60Hz 25W
SERIAL NO.	
FTZ PRÜFNUMMER U185	
MADE IN JAPAN	

● UK model

SONY 	FM STEREO TUNER
	MODEL NO. ST-J88B
	FREQ. RANGE : FM 87.5-108MHz
	IF : FM 10.7MHz
	AC 110 120 220 240V ~ 50/60Hz 25W
SERIAL NO.	
MADE IN JAPAN	

● US model

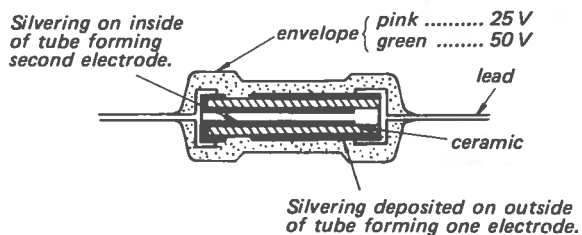
SONY	FM STEREO TUNER
	MODEL NO. ST-J88B
	FREQ. RANGE FM 87.5-107.9MHz
	IF FM 10.7MHz
	AC 120V 60Hz 25W
SERIAL NO.	MADE IN JAPAN
CERTIFICATION: DESIGN CERTIFIED AS COMPLYING WITH F.C.C. RULES PART 15, IN EFFECT AS OF DATE OF MANUFACTURE.	

THE CERAMIC CAPACITORS

This set uses tube-type ceramic capacitors whose shape is identical with the carbon resistors. Be careful not to use resistors instead of capacitors in repairing.

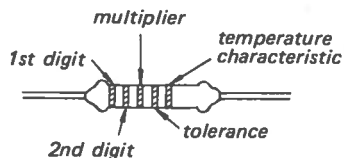
Disc-type ceramic capacitors can be used for replacing those originally used in the set.

Two kinds of drilled holes are provided in some patterns for mounting the tube-type and disc-type ceramic capacitors. Use appropriate holes where applicable.

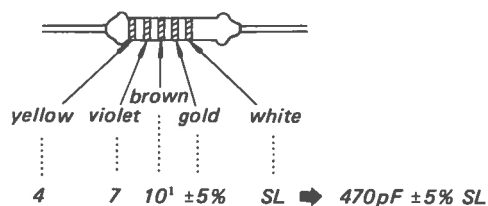


COLOR CODE (in pF)

Color	1st or 2nd Digit	Multiplier	Tolerance	Temperature characteristic
brown	1	10^1		Y
red	2	10^2		D
orange	3	10^3		
yellow	4	10^4		RH
green	5			
blue	6			
violet	7			UJ
gray	8		$\pm 30\%$	X
white	9			SL
black	0	10^0	$\pm 20\%$	CH
gold		10^{-1}	$\pm 5\%$	V
silver		10^{-2}	$\pm 10\%$	B



Example:



Handling Precautions for MOS ICs (IC106, 404-408, 502)

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential. (The ICs should be stored in that manner until mounted on the circuit board.)

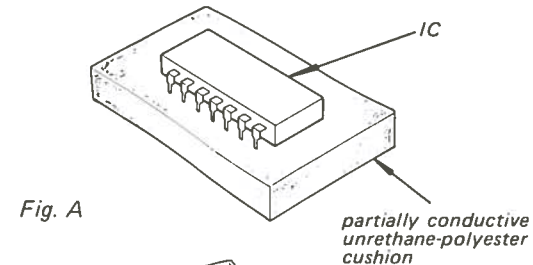


Fig. A

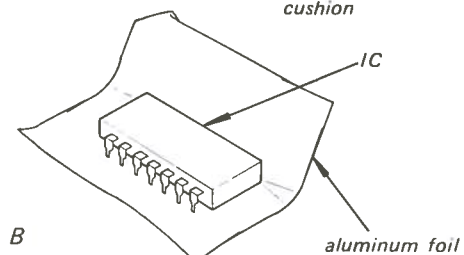


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

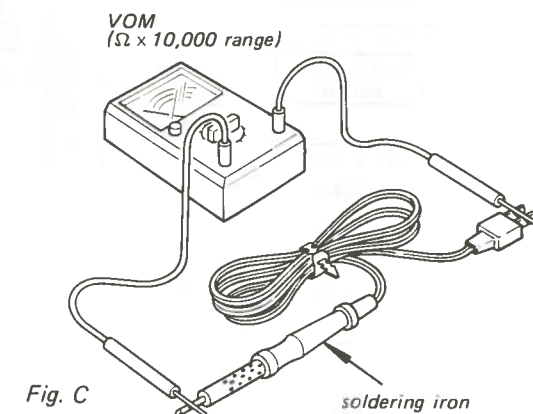


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
 - Use a paper clip modified by soldering in a wire braid insert.

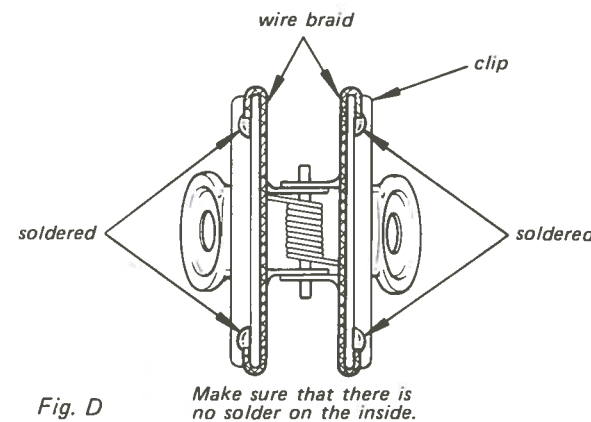


Fig. D

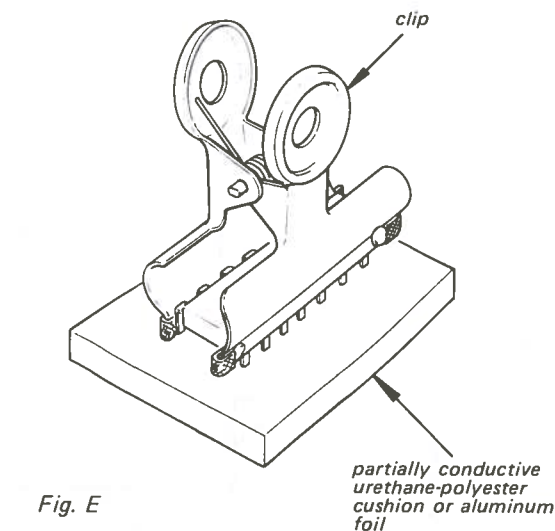


Fig. E

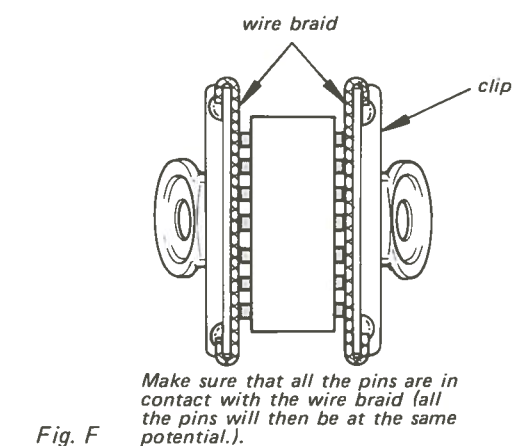


Fig. F

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

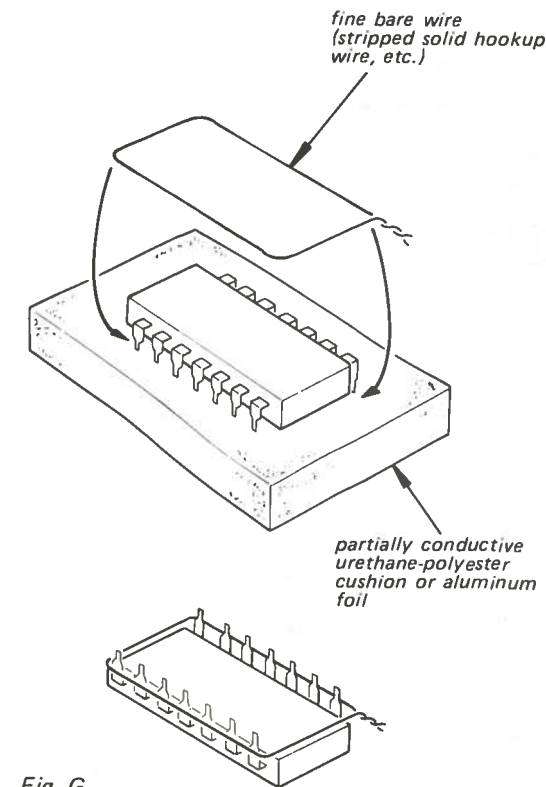


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

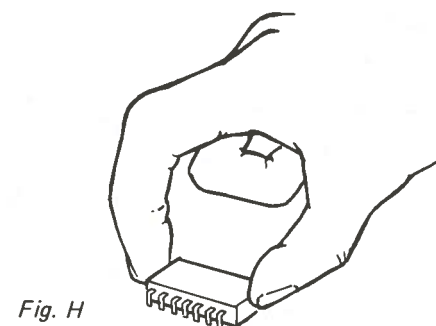


Fig. H

5. Method of Mounting
Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

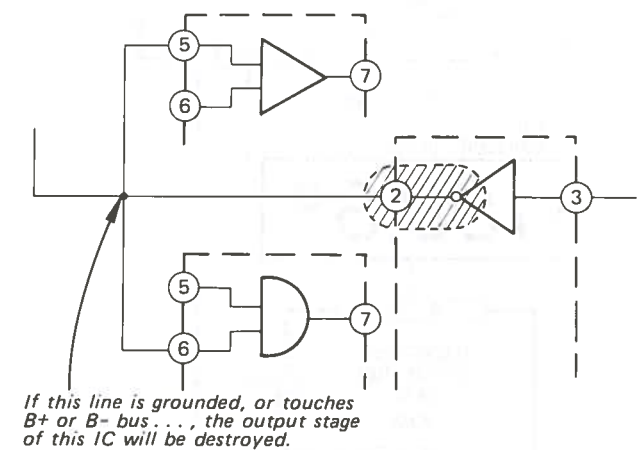
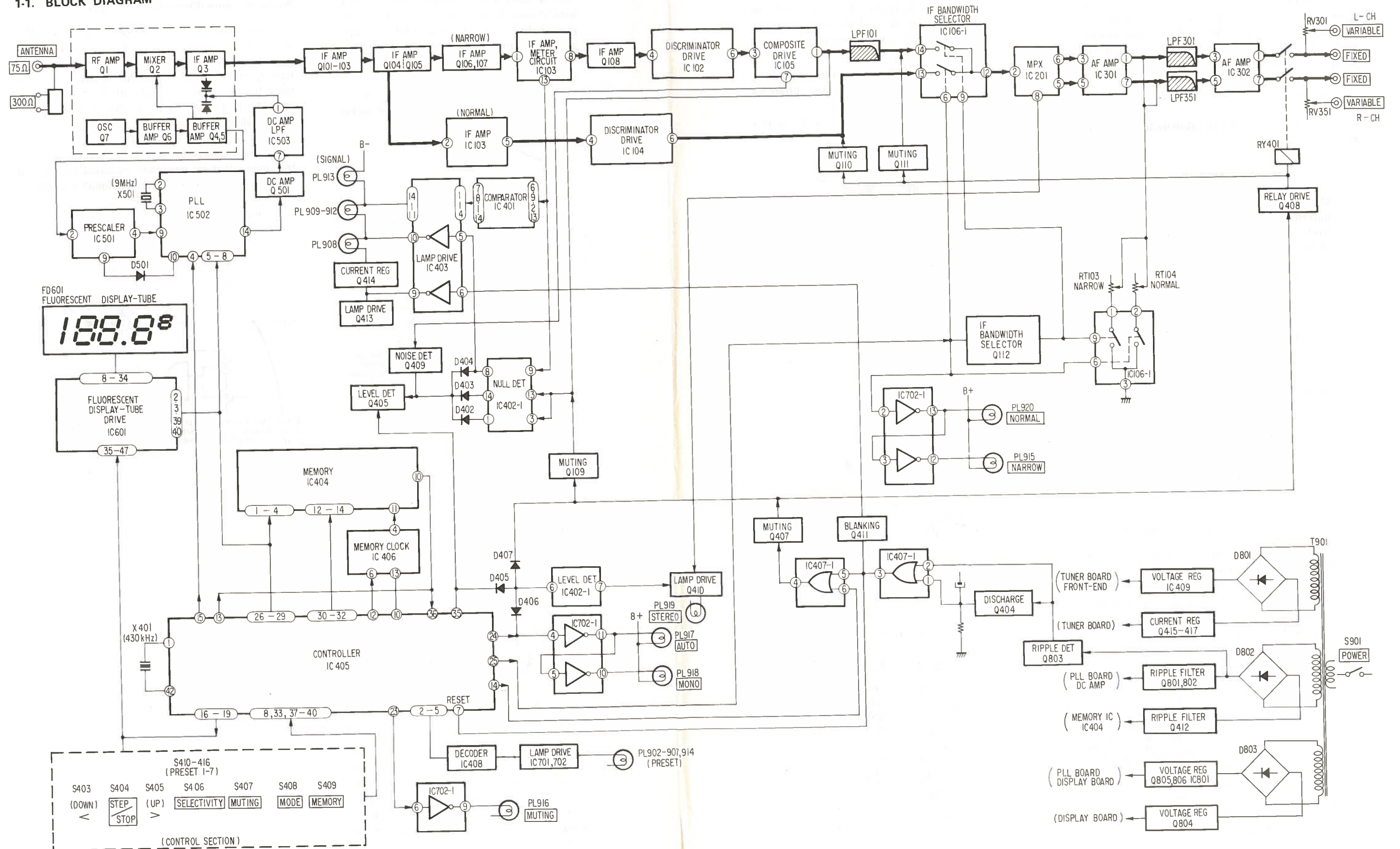


Fig. I

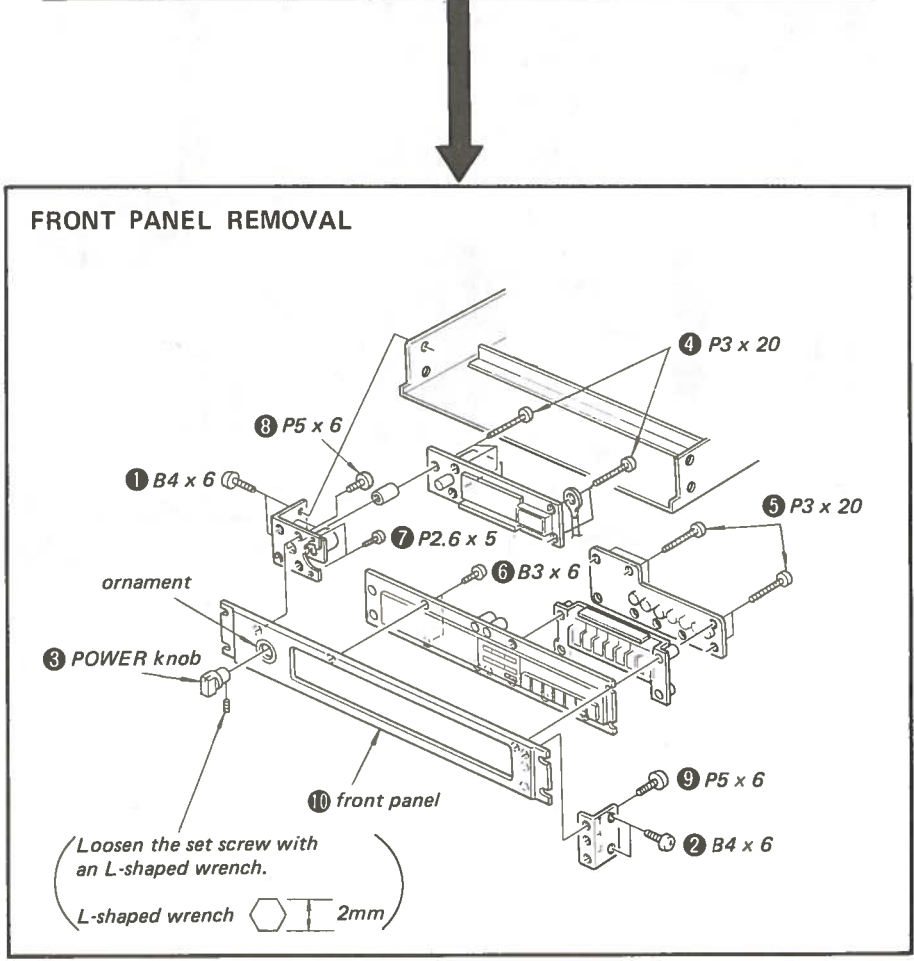
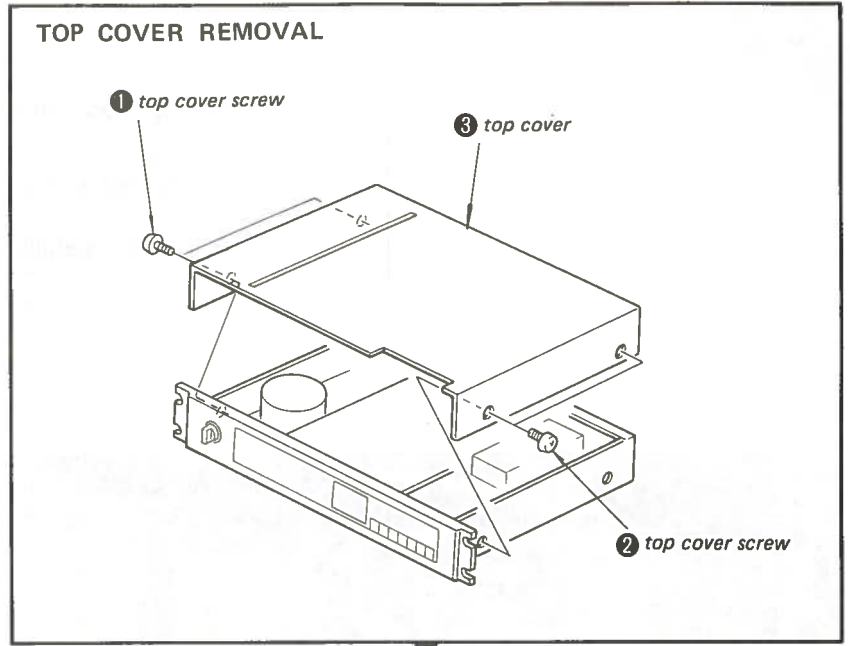
SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



SECTION 2
DISASSEMBLY

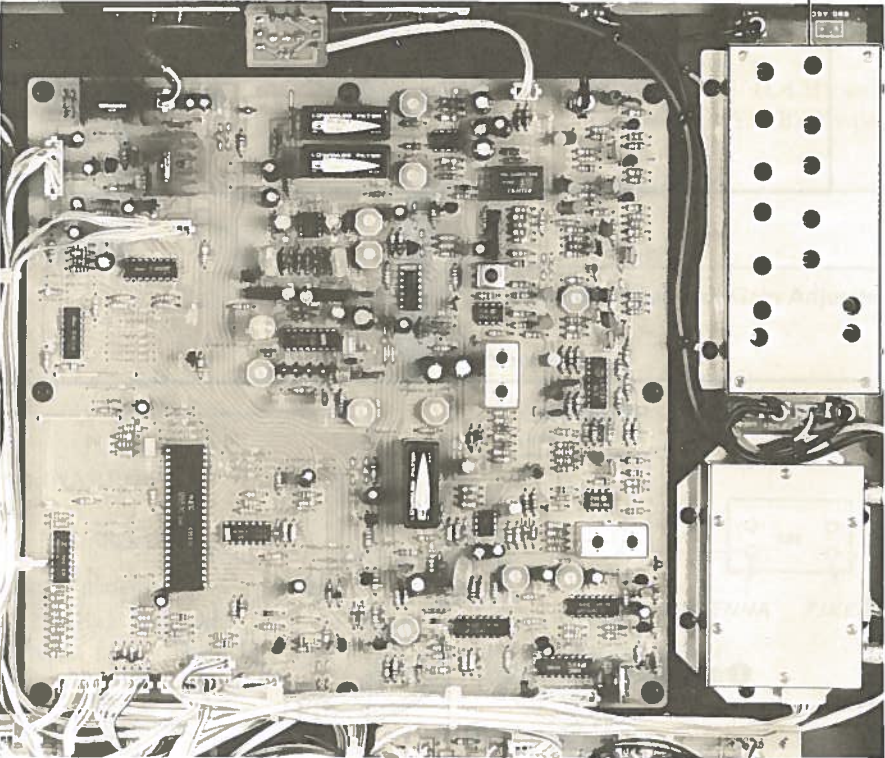
Note: Follow the disassembly procedure in the numerical order given.



SECTION 3
ADJUSTMENTS

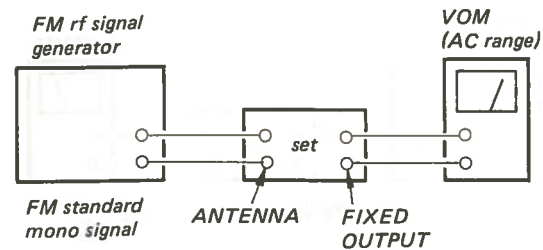
Servicing Precaution

The front-end section can not be repaired and it is only supplied as the front-end block.
This section has been carefully adjusted at the factory.



Tuning Adjustment

Procedure:

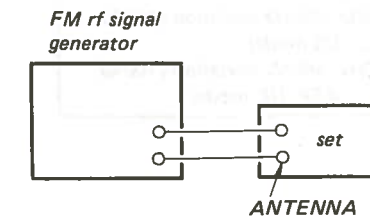


Output level: $2\mu\text{V}$ (6dB)

1. SELECTIVITY switch: NORMAL
MUTING switch: OFF
2. Adjust IFT102 for maximum reading on the VOM.

Signal Indicator Adjustment

Procedure:

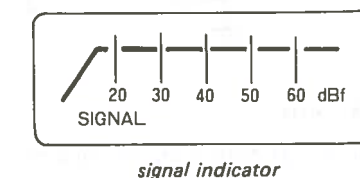


Carrier frequency: 98.1MHz
Modulation: no modulation

1. SELECTIVITY switch: NARROW

2.

FM rf signal generator output level	Indication	Adjustment part
560 μV (55dB)	The sixth lamp from the left lights up.	RT101
56 μV (35dB)	The fourth lamp from the left lights up.	RT401
5.6 μV (15dB)	The second lamp from the left lights up.	RT402



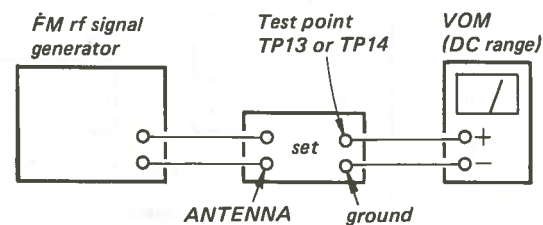
FM Standard Mono Signal

Carrier frequency: 98.1MHz
Modulation: 400Hz, 75kHz deviation (100%)
..... US model
400Hz, 40kHz deviation (100%)
..... AEP, UK model

Discriminator Alignment

A) Secondary Side

Procedure:



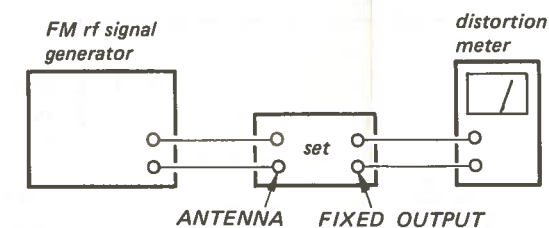
Carrier frequency: 98.1MHz
Modulation: no modulation
Output level: 1mV (60dB)

1. Connect the VOM to the test point TP13.
2. MODE switch: MONO
SELECTIVITY switch: NARROW
3. Turn the core (secondary side: black) of IFT101 for 0V reading on the VOM.
4. Connect the VOM to the test point TP14.
5. SELECTIVITY switch: NORMAL
6. Turn the core (secondary side: black) of IFT103 for 0V reading on the VOM.

Note: Repeat the secondary side and primary side adjustments several times.

B) Primary Side

Procedure:



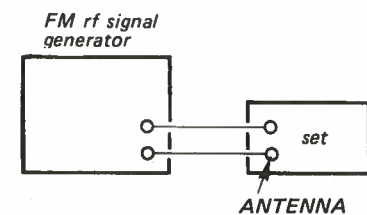
FM standard mono signal
Output level: 1mV (60dB)

1. MODE switch: MONO
SELECTIVITY switch: NARROW
2. Turn the core (primary side: orange) of IFT101 for minimum distortion reading on the distortion meter.
3. SELECTIVITY switch: NORMAL
4. Turn the core (primary side: orange) of IFT103 for minimum distortion reading on the distortion meter.

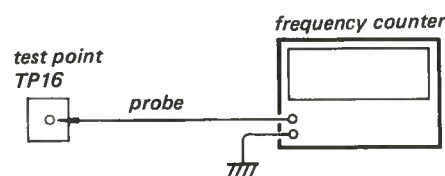
Note: Repeat the secondary side and primary side adjustments several times.

FM Standard Mono Signal

Carrier frequency: 98.1MHz
 Modulation: 400Hz, 75kHz deviation (100%)
 US model
 400Hz, 40kHz deviation (100%)
 AEP, UK model

76kHz Adjustment**A) Regular Method****Procedure:**

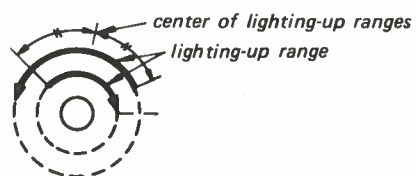
Carrier frequency: 98.1MHz
 Modulation: no modulation
 Output level: 1mV (60dB)



1. Tune the set to 98.1MHz.
2. Adjust RT202 for 76kHz $\pm$ 50Hz on the counter.

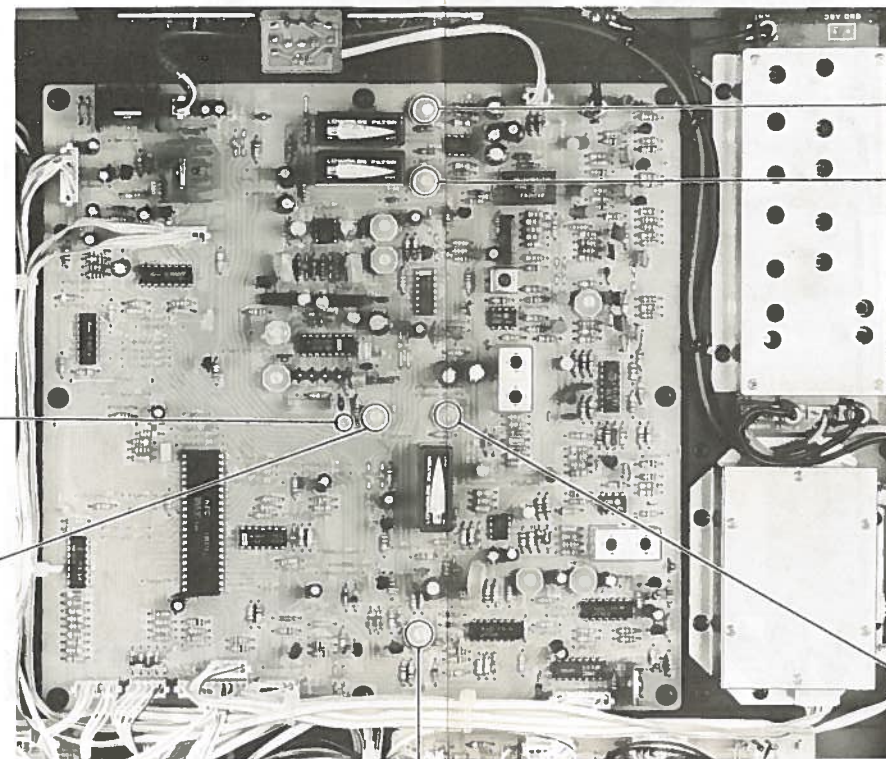
B) Simple Method**Procedure:**

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RT202 clockwise or counterclockwise and memorize the lighting-up range of the stereo lamp.
3. Secure RT202 at the center of the lighting-up range of both turns as shown below.



TP16

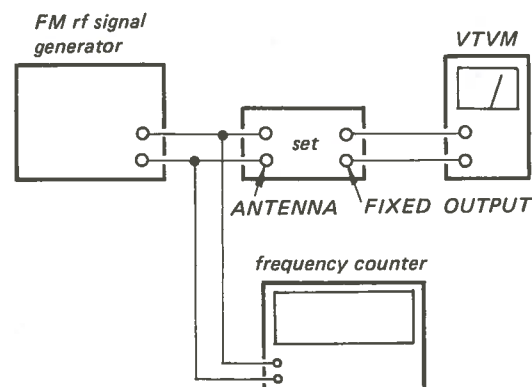
RT202



RT301 (L-CH)

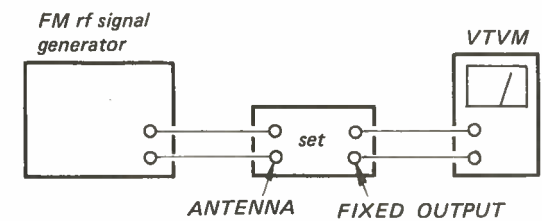
RT351 (R-CH)

RT403

Muting Range Adjustment**Procedure:**

Carrier frequency: 98.1MHz
 Modulation: 400Hz, 75kHz deviation (100%) (US model)
 400Hz, 40kHz deviation (100%) (AEP, UK model)
 Output level: 1mV (60dB)

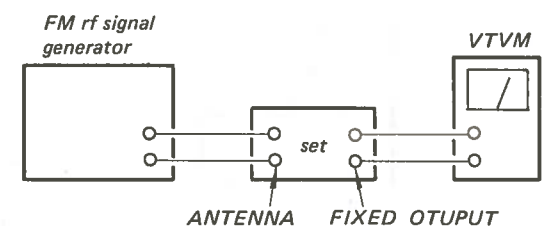
1. SELECTIVITY switch: NARROW
MUTING switch: ON
2. US model:
Adjust FM rf signal generator for +70kHz (98.17MHz) on the frequency counter.
AEP, UK model:
Adjust FM rf signal generator for +30kHz (98.13MHz) on the frequency counter.
3. Adjust RT403 for 0V reading on the VTVM.

Output Level Adjustment**Procedure:**

FM standard mono signal
 Output level: 1mV (60dB)

1. SELECTIVITY switch: NORMAL
2. US model:
Adjust RT301 (L-CH) and RT351 (R-CH) for 0.775V (0dB) reading on the VTVM.
AEP, UK model:
Adjust RT301 (L-CH) and RT351 (R-CH) for 0.42V (-5.5dB) reading on the VTVM.

RT102

IF Bandwidth Selector Gain Adjustment**Procedure:**

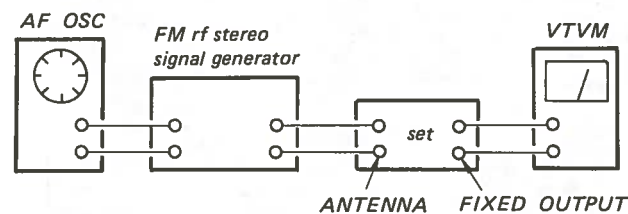
FM standard mono signal
 Output level: 1mV (60dB)

1. MODE switch: MONO
SELECTIVITY switch: NORMAL
2. Memorize the VTVM reading.
3. SELECTIVITY switch: NARROW
4. Adjust RT102 for the same reading as obtained in step 2.

FM Standard Stereo Signal		
Carrier frequency: 98.1MHz		
Modulation:		
Audio (400Hz):	33.75kHz deviation (45%)	US model
Subchannel (38kHz):	33.75kHz deviation (45%)	
Pilot (19kHz):	7.5kHz deviation (10%)	
Audio (400Hz):	20kHz deviation	AEP, UK model
Subchannel (38kHz):	20kHz deviation	
Pilot (19kHz):	7.5kHz deviation	

Stereo Separation Adjustment

Procedure:



FM standard stereo signal
Output level: 1mV (60dB)

1. MODE switch: STEREO
SELECTIVITY switch: NARROW

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	(A)
R-CH	L-CH	(B) Adjust RT103 for minimum reading.
R-CH	R-CH	(C)
L-CH	R-CH	(D) Adjust RT103 for minimum reading.

L-CH Stereo separation: (A) - (B)
R-CH Stereo separation: (C) - (D)

The difference between the separations of both channels should be within 2dB.

3. SELECTIVITY switch: NORMAL

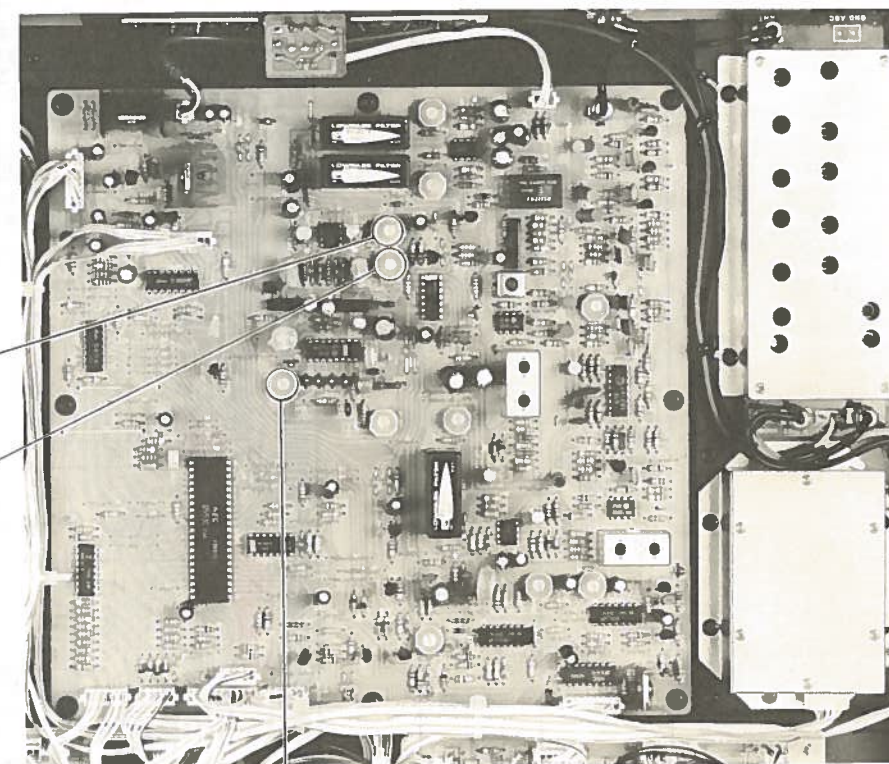
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	(A)
R-CH	L-CH	(B) Adjust RT104 for minimum reading.
R-CH	R-CH	(C)
L-CH	R-CH	(D) Adjust RT104 for minimum reading.

L-CH Stereo separation: (A) - (B)
R-CH Stereo separation: (C) - (D)

The separations of both channels should be equal.

RT104
(NORMAL)

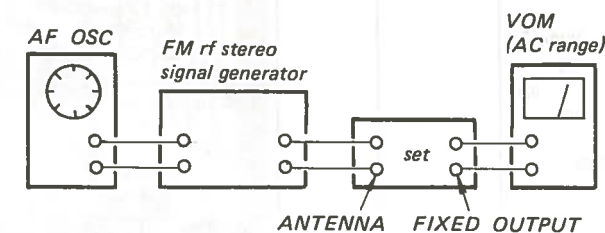
RT103
(NARROW)



RT201

19kHz Cancel Adjustment

Procedure:



FM standard stereo signal
Output level: 1mV (60dB)

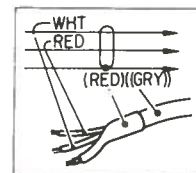
1. MODE switch: STEREO
SELECTIVITY switch: NORMAL
2. Remove AF OSC.
(19kHz pilot signal is only supplied.)
3. Adjust RT201 for the same FIXED OUTPUT levels of both channels.

4-1. MOUNTING DIAGRAM (TUNER BOARD)
— Conductor Side —

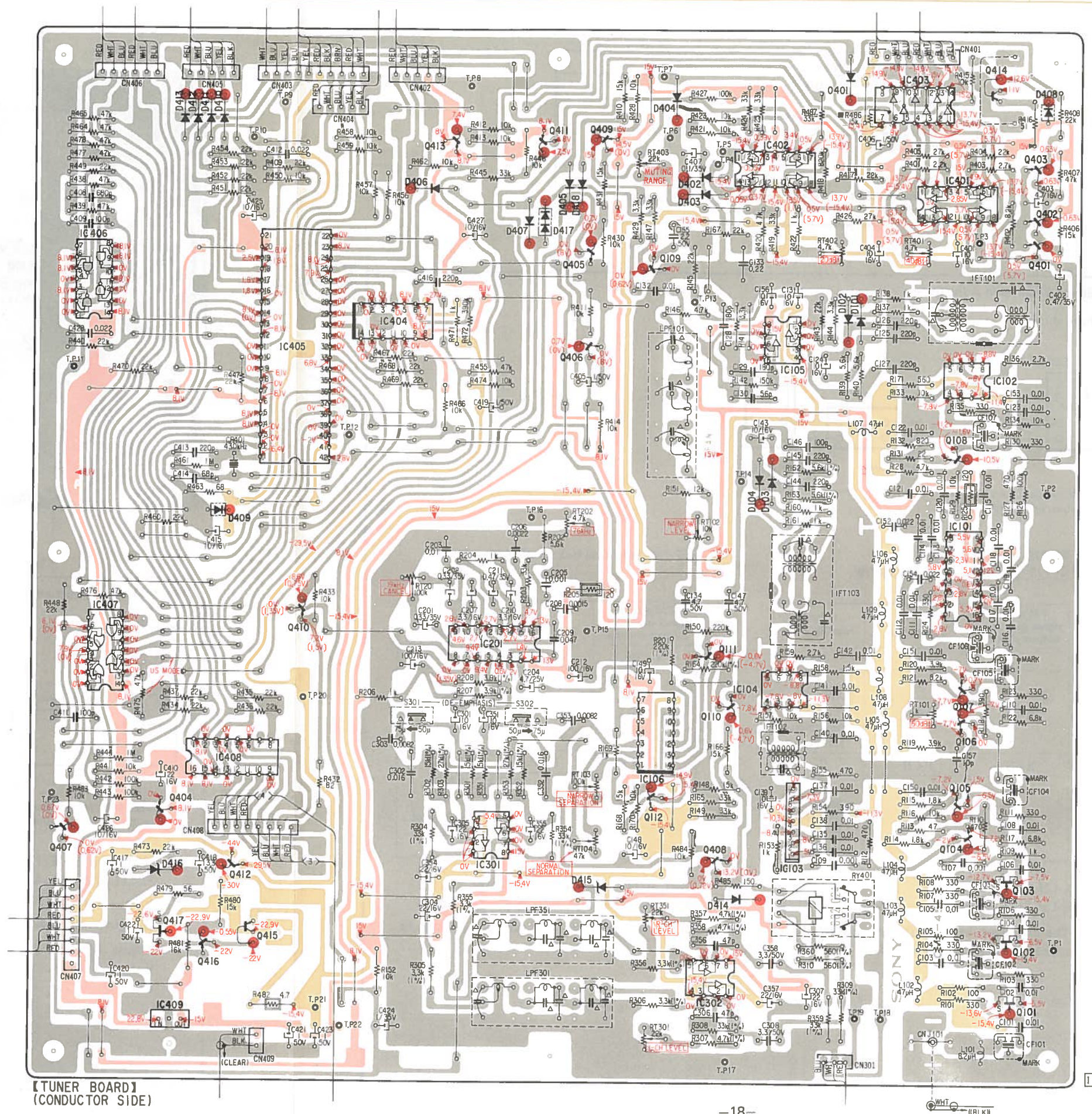
IC, Q	D
414	401
IC403	404 408
413 411 409	410-413
IC402	403
IC401	402
	405, 418
	403
	407, 417
405	401
109	
IC406	
IC404	102, 101
IC405	
IC105	
IC102	
108	
	104, 103
	409
IC101	
410	
IC201	
IC407	111
IC104	107
110	106
IC106	
IC408	
112	105
404	IC103
407	104
IC301	408
412	416
	415
	414
417, 415	102
416	
IC302	
101	
IC409	
IC, Q	D

Note:

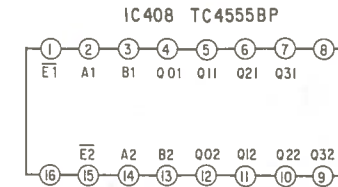
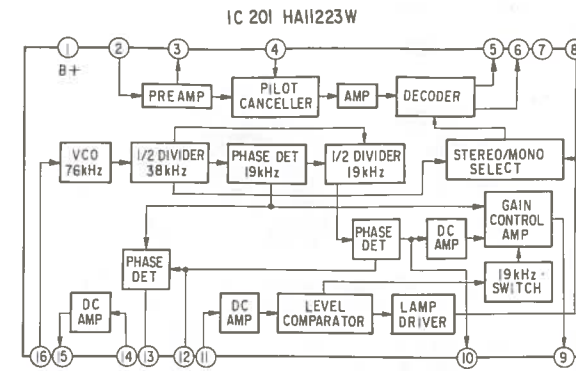
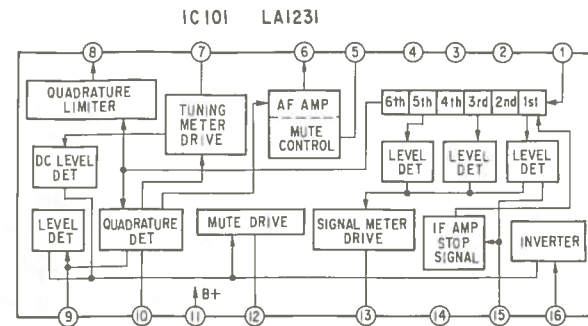
- Color code of sleeving over the end of the jacket.



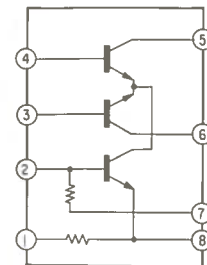
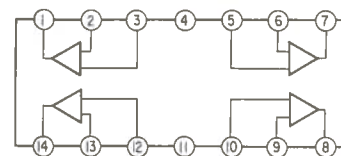
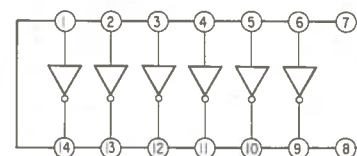
- : parts extracted from the component side.
- : part mounted on the conductor side.
- [] : indicates side identified with part number.
- Readings are taken with a VOM (20kΩ/V).
- no mark: Detuned condition (98.1MHz is indicated on the display.)
- [] : Tuned condition (Received signal: 98.1MHz, 60dBμ, stereo mode, 100% modulation)
- : B + pattern
- : B - pattern



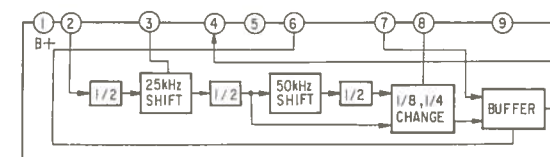
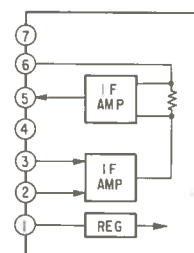
【TUNER BOARD】
(CONDUCTOR SIDE)



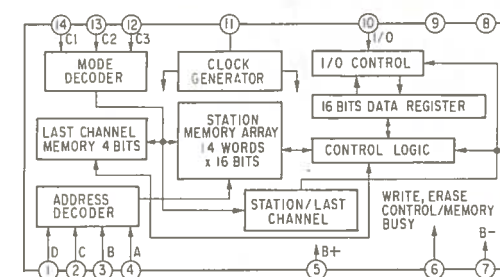
IC102,104 HAI202

IC402 μ PC324CIC403,701,702 μ PA67C

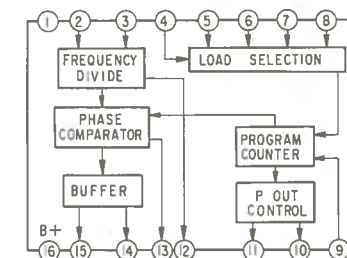
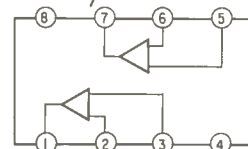
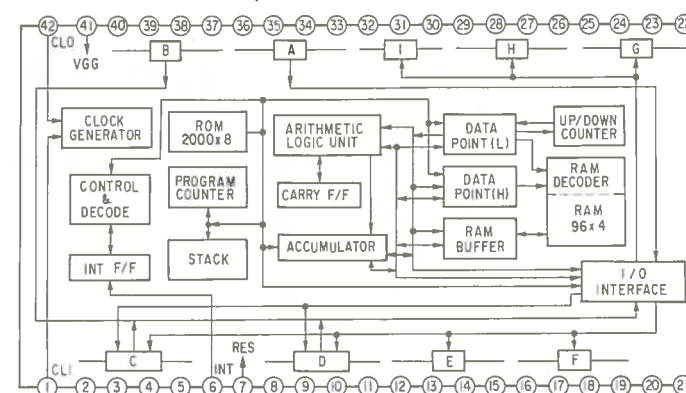
IC501 CX554

IC103 μ PC577H

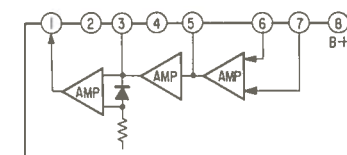
IC404 CX761



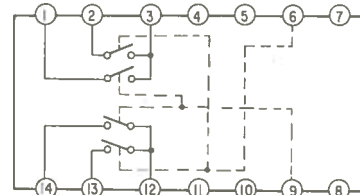
IC502 TC9125

IC105,301,302 NJM4560D
IC801 μ PC4558CIC405 μ PD553C-044

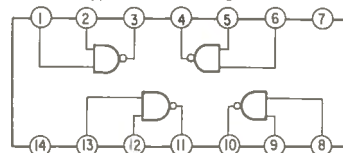
IC503 HAI457



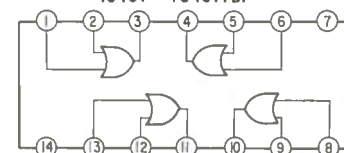
IC106 CX770



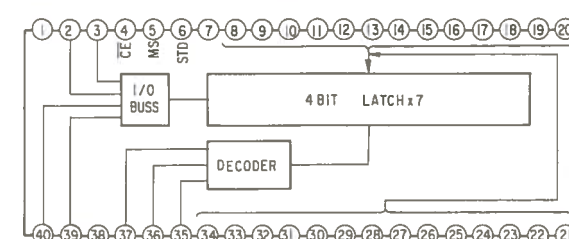
IC406 TC4011BP



IC407 TC4071BP



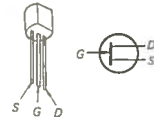
IC601 TMS1025N2L



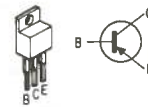
Replacement Semiconductors

For replacement, use semiconductors except in ().

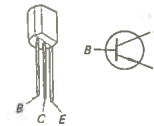
Q101-103: 2SK125
Q417, 801: 2SK34



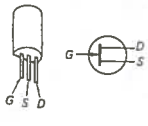
Q414, 415 } : 2SA771 (2SA769)
Q804 }



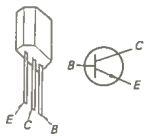
Q104-108: 2SC710-14 (2SC710)



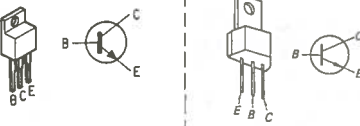
Q501: 2SK43-4 (2SK43)



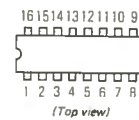
Q109-111 } : 2SC1636
Q404 }



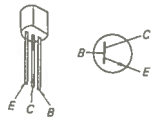
Q805, 806: 2SC1986D-O (2SC1826)



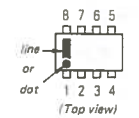
IC101: LA1231
IC408: TC4555BP
IC502: TC9125P



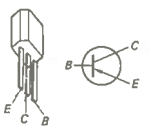
Q112 } : 2SC1364 (2SC1815)
Q401-403 }
Q405-408 }
Q803 }
Q802 : 2SC1475



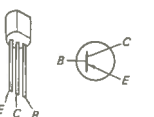
IC102, 104 : HA1202
IC105 } : NJM4560D
IC301, 302 }



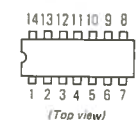
Q409-411 } : 2SA1027R (2SA1026)
Q416 }



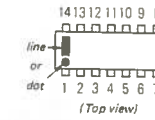
Q412, 413: 2SA684 (2SA773)



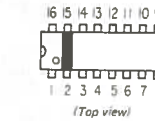
IC103 : μ PC577H
IC401, 402 : μ PC324C
IC403 } : μ PA67C
IC701, 702 }
IC404 : CX761C (CX761)
IC406 : TC4011BP
IC407 : TC4071BP



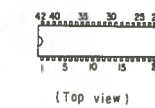
IC106: CX770



IC201: HA11223W



IC405: μ PD553C-044



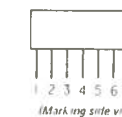
IC409: μ PC14315H



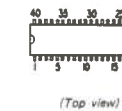
IC501: CX554



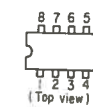
IC503: HA1457



IC601: TMS1025N2L



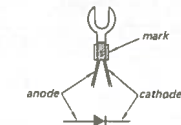
IC801: μ PC4558C



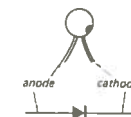
D101-104 }
D401-407 } : 1S1555
D410-414 }
D418 }
D501-503 }
D415 : HZ7C2L (HZ7C1L)
D416, 805 : HZ30-2L (HZ30-1L)
D804 : 10E2



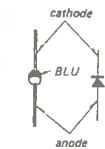
D408: MV104V



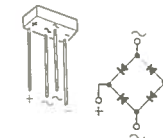
D409: MV203V



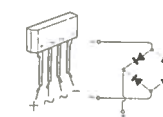
D417: MV12N



D801, 803: S1RB10

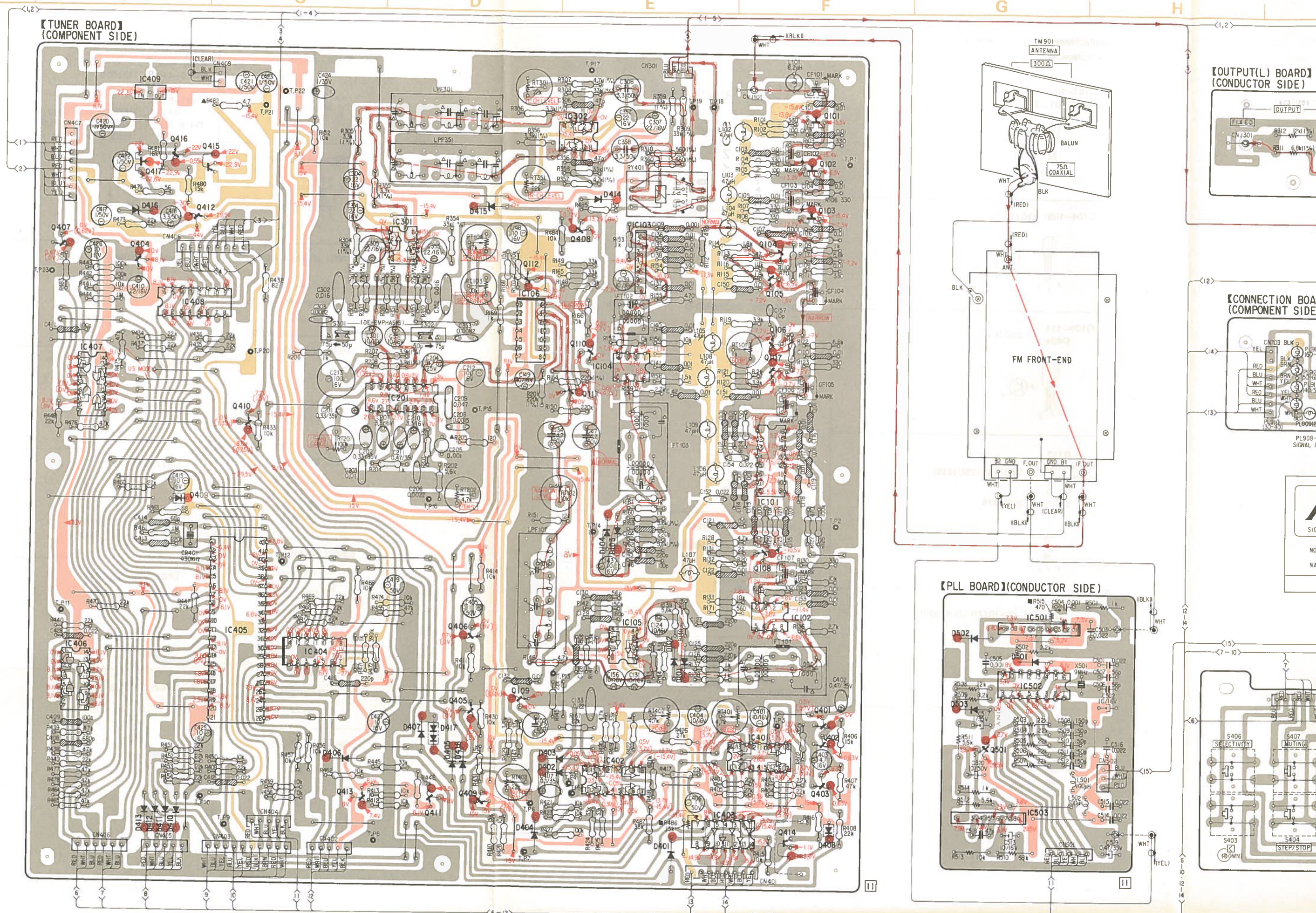


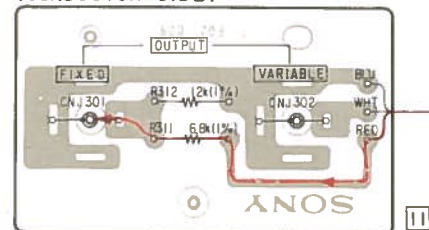
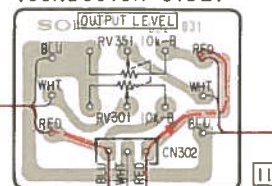
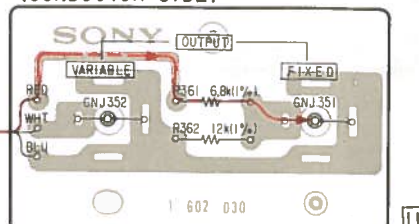
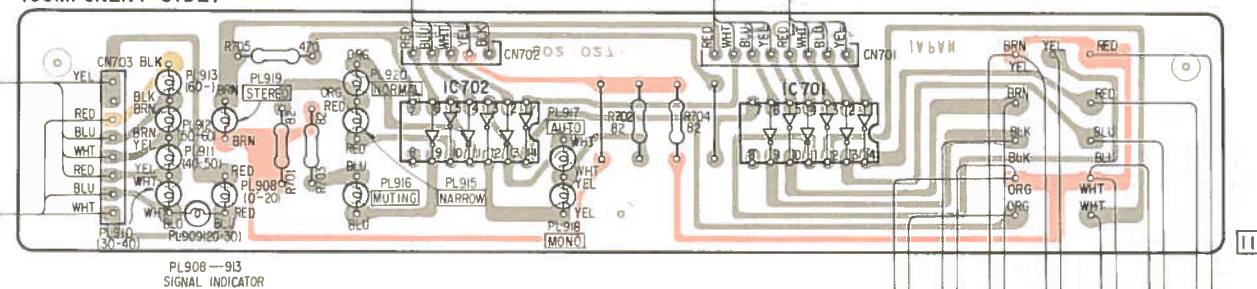
D802: S1VB20



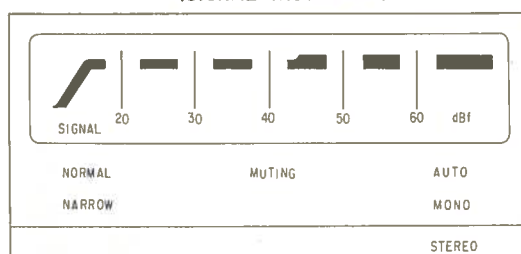
ST-J88B **ST-J88B**

IC , Q	D
IC409	
101	
IC302	
416 417,415	102
103	414 415
412 408 IC301	416
407	104
404 IC103	
112	105
IC408	
IC106	
106	
110	
IC104	107
IC407 111 IC201	
410	
IC101	
	409
	104,103
108	
IC102	
IC405 406 IC105	
IC404	102,101
IC406	
109	
405	401 402
IC401	407,417
IC402 403	406 403 405,418 402
413 411 409	410-413
IC403	404 408
414	401



【OUTPUT(L) BOARD】
(CONDUCTOR SIDE)【VOLUME BOARD】
(CONDUCTOR SIDE)【OUTPUT(R) BOARD】
(CONDUCTOR SIDE)【CONNECTION BOARD】
(COMPONENT SIDE)

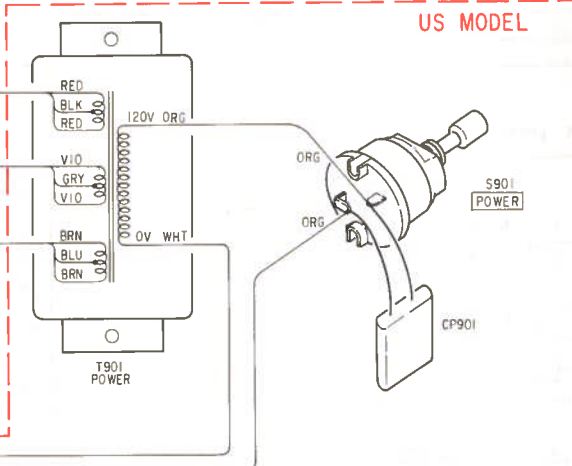
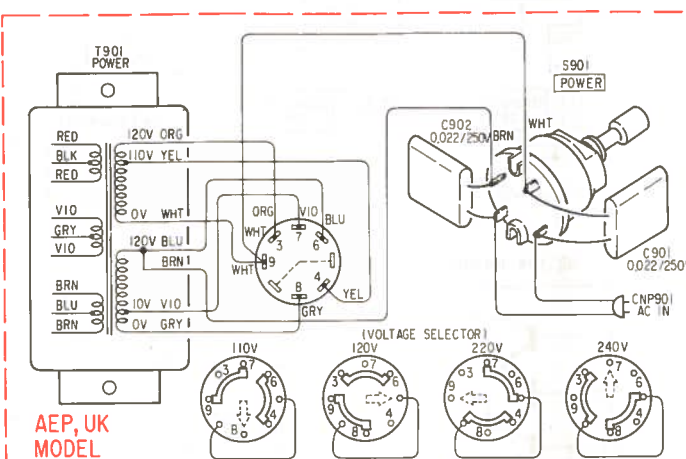
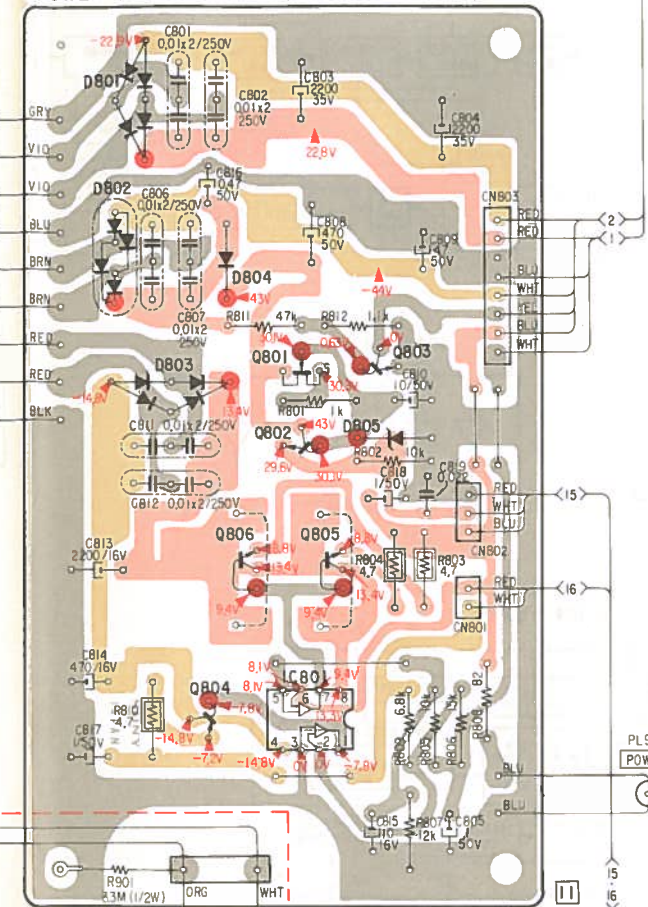
(SIGNAL INDICATOR)



PL904 (7) PL907 (16) PL906 (15) PL905 (14) PL904 (13) PL903 (12) PL902 (11)

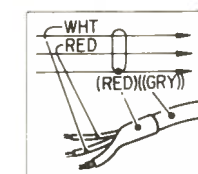
Q801 Q802 Q803 Q804 Q805 Q806 IC801 IC802

【POWER SUPPLY BOARD】(CONDUCTOR SIDE)



Note:

- Color code of sleeving over the end of the jacket.

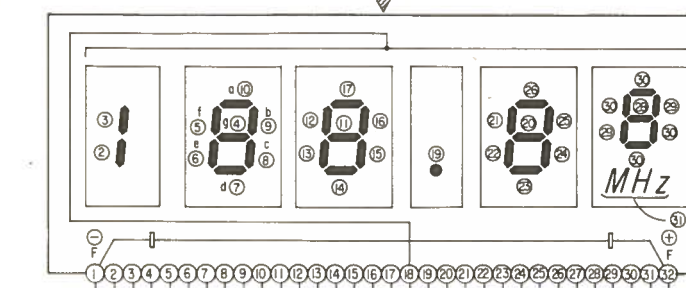
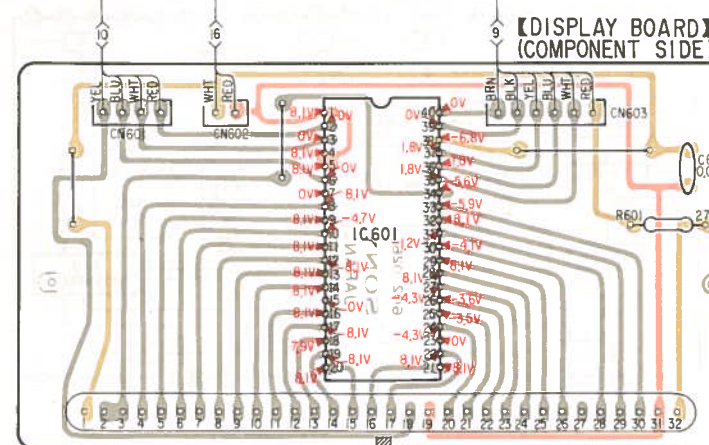


- : parts extracted from the component side.
- : part mounted on the conductor side.
- : indicates side identified with part number.
- ▲ : nonflammable resistor.

- Readings are taken with a VOM (20kΩ/V).
- no mark: Detuned condition (98.1MHz is indicated on the display.)
- [] : Tuned condition (Received signal: 98.1MHz, 60dBμ, stereo mode, 100% modulation)

- : signal path
- : L-CH signal path
- : R-CH signal path

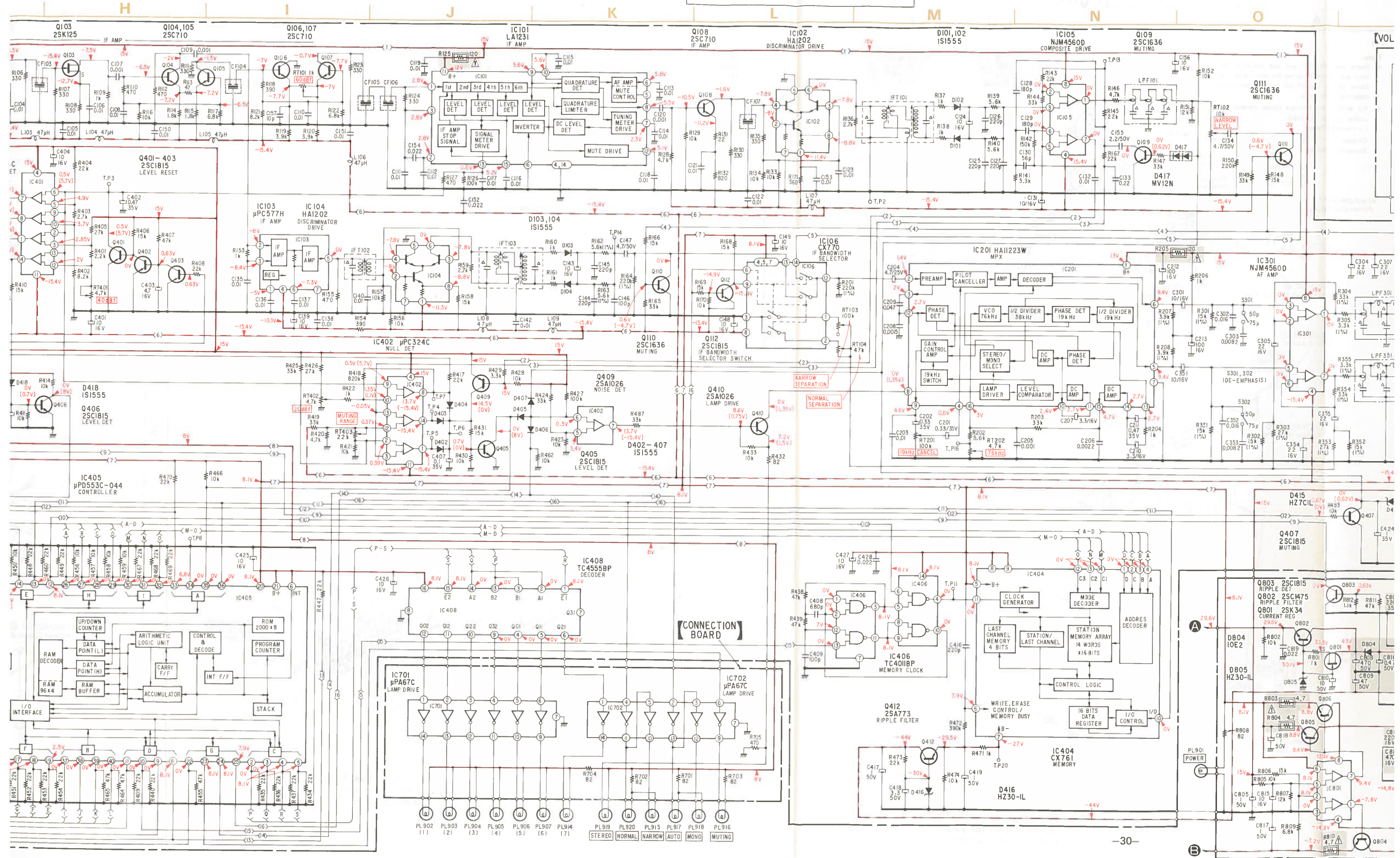
- : B+ pattern
- : B- pattern
- : Ceramic Capacitor

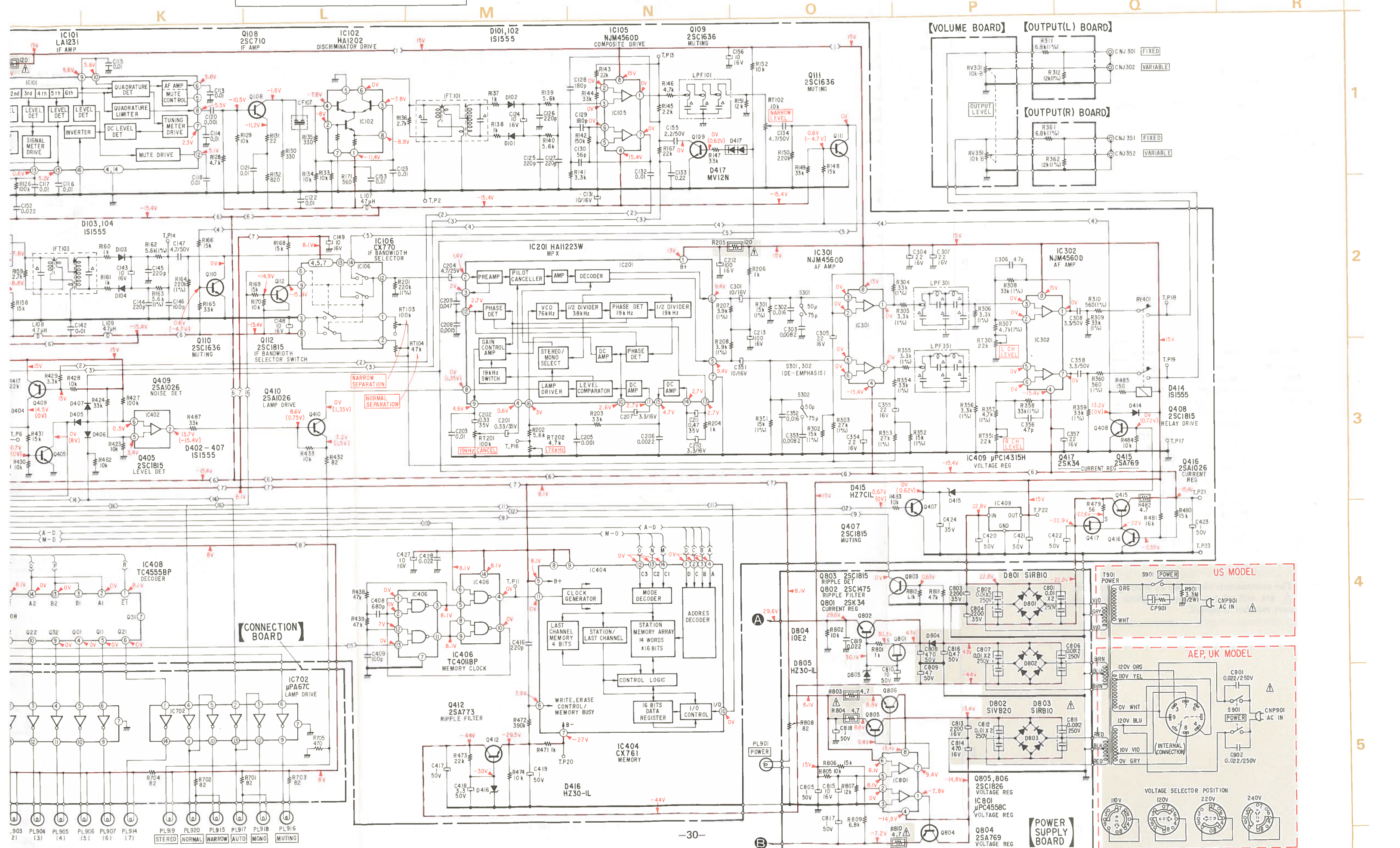
FD601
(FLUORESCENT
DISPLAY TUBE)

ST-J88B **ST-J88B**



ST-J88B





Note: Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
IFT103	1-404-250-00	(D) Discriminator
PT901	(A) 1-446-635-00	Power (US model)
	(A) 1-446-648-00	(M) Power (AEP, UK model)
CAPACITORS		
All capacitors are in μ F and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalums. p : μ F, elect : electrolytic Common capacitors are omitted. Refer to the lists on pages 40 and 41 for their part numbers.		
C107, 109, C120	1-161-323-00	(A) 0.001
C124	1-121-651-00	(B) 10 16V elect
C125-127	1-161-315-00	(A) 220p
C128, 129	1-161-314-00	(A) 180p
C134	1-123-232-00	(B) 4.7 50V elect (nonpolarized)
C143	1-121-651-00	(B) 10 16V elect
C144, 145	1-161-315-00	(A) 220p
C147	1-123-232-00	(B) 4.7 50V elect (nonpolarized)
C155	1-123-230-00	(B) 2.2 50V elect (nonpolarized)
C213	1-123-320-00	(B) 100 16V elect
C301, 351	1-121-651-00	(B) 10 16V elect
C302, 352	1-130-125-00	(B) 0.016 100V polyethylene
C308, 358	1-123-231-00	(B) 3.3 50V elect (nonpolarized)
C413-416	1-161-315-00	(A) 220p
C506, 507	1-101-884-00	(A) 56p
C801, 802	(A) 1-102-394-00	(B) 0.01/0.01 250V (dual type)
C803, 804	(A) 1-123-509-00	(C) 2200 35V elect
C806, 807	(A) 1-102-394-00	(B) 0.01/0.01 250V (dual type)
C808	(A) 1-123-516-00	(C) 470 50V elect
C809	(A) 1-123-512-00	(B) 47 50V elect
C811, 812	(A) 1-102-394-00	(B) 0.01/0.01 250V (dual type)
C813	(A) 1-123-489-00	(C) 2200 16V elect
C814	(A) 1-123-487-00	(B) 470 16V elect

Ref. No.	Part No.	Description
C816	(A) 1-121-726-00	(B) 0.47 50V elect
C901, 902	(A) 1-130-267-00	(C) 0.022 250V film (AEP, UK model)
RESISTORS		
All resistors are in ohms. Common $\frac{1}{4}$ W carbon resistors are omitted. Refer to the list on last page for their part numbers.		
R125	(A) 1-247-109-00	(A) 120 $\frac{1}{4}$ W carbon (nonflammable)
R162, 163	1-214-747-00	(A) 5.6k $\frac{1}{4}$ W metal oxide (1%)
R164, 201	1-214-785-00	(A) 220k $\frac{1}{4}$ W metal oxide (1%)
R205	(A) 1-247-109-00	(A) 120 $\frac{1}{4}$ W carbon (nonflammable)
R207, 208	1-214-743-00	(A) 3.9k $\frac{1}{4}$ W metal oxide (1%)
R301, 351	1-214-757-00	(A) 15k $\frac{1}{4}$ W metal oxide (1%)
R302, 352		
R304, 354	1-214-765-00	(A) 33k $\frac{1}{4}$ W metal oxide (1%)
R305, 355	1-214-741-00	(A) 3.3k $\frac{1}{4}$ W metal oxide (1%)
R306, 356		
R308, 358	1-214-765-00	(A) 33k $\frac{1}{4}$ W metal oxide (1%)
R309, 359		
R310, 360	1-214-723-00	(A) 560 $\frac{1}{4}$ W metal oxide (1%)
R311, 361	1-214-749-00	(A) 6.8k $\frac{1}{4}$ W metal oxide (1%)
R312, 362	1-214-755-00	(A) 12k $\frac{1}{4}$ W metal oxide (1%)
R482	(A) 1-247-079-00	(A) 4.7 $\frac{1}{4}$ W carbon (nonflammable)
R803, 804	(A) 1-247-079-00	(A) 4.7 $\frac{1}{4}$ W carbon (nonflammable)
R810	(A) 1-247-079-00	(A) 4.7 $\frac{1}{4}$ W carbon (nonflammable)
R901	(A) 1-202-725-00	3.3M $\frac{1}{2}$ W composition (US model)
RT101	1-224-550-21	(B) 220-B, adjustable; 60dBf
RT102	1-224-252-XX	(B) 10k-B, adjustable; narrow level
RT103	1-224-255-XX	(B) 100k-B, adjustable; narrow separation
RT104	1-224-254-XX	(B) 47k-B, adjustable; normal separation
RT201	1-224-255-XX	(B) 100k-B, adjustable; 19kHz cancel

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
RT202	1-224-251-XX	(B) 4.7k-B, adjustable; 76kHz
RT301, 351	1-224-253-XX	(B) 22k-B, adjustable; level
RT401, 402	1-224-251-XX	(B) 4.7k-B, adjustable; 40dBf, 20dBf
RT403	1-224-253-XX	(B) 22k-B, adjustable; muting range
RV301, 351	1-226-133-00	(D) 10k/10k-B, variable; OUTPUT LEVEL
SWITCHES		
S301, 351	1-552-430-00	(B) Slide, de-emphasis
S403-416	1-552-539-00	(B) Pushbutton, down, STEP/STOP, up, SELECTIVITY, MUTING MODE, MEMORY, preset
S901	(A) 1-552-974-00	Rotary, POWER (US model)
	(A) 1-552-975-00	(E) Rotary, POWER (AEP, UK model)
LAMPS		
PL901	1-518-331-81	(B) 6V 35mA, POWER
PL902-920	1-518-169-XX	(B) 4.5V 40mA, preset, signal indicator, NARROW, MUTING, AUTO, MONO, STEREO, NORMAL
CONNECTORS		
● CN406	1-560-064-00	(B) 6p
● CN409	1-560-060-00	(A) 2p
● CN410	1-560-075-00	(B) 6p
● CN411	1-560-074-00	(B) 5p
● CN501	1-560-070-00	(B) 5p
● CN502	1-508-878-00	(A) 3p
● CN601	1-560-060-00	(A) 2p
● CN602	1-560-062-00	(B) 4p
● CN603	1-560-064-00	(B) 6p
● CN801	1-560-060-00	(A) 2p
	1-560-070-00	(B) 5p
MISCELLANEOUS		
CF101-103	1-527-405-00	(C) Filter, ceramic

• Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
CF104-106	1-527-344-91	(C) Filter, ceramic
CF107	1-527-405-00	(C) Filter, ceramic
CNJ301, 351	1-507-567-00	(B) Jack, 1p; L OUTPUT, R OUTPUT
CNJ302, 352		
CNJ501, 502	1-507-456-00	(B) Jack, 1p
CNP901	(A) 1-534-817-XX	(D) Cord, power (AEP model)
	(A) 1-534-986-XX	Cord, power (US model)
	(A) 1-551-884-00	(E) Cord, power (UK model)
CP901	(A) 1-231-326-11	Encapsulated Component (US model)
CR401	1-527-522-00	(D) Ceramic, osc
FD601	1-519-172-00	(L) Fluorescent Display-tube
FE901	1-463-308-00	(S) FM Front-end
LPF101	1-231-422-00	(A) Filter, low-pass
LPF301, 351	1-231-421-00	(A) Filter, low-pass
RY401	1-515-297-00	(F) Relay, reed
TM901	1-536-528-00	Terminal Plate, ANTENNA (US model)
	1-536-611-00	(E) Terminal Plate, ANTENNA (AEP, UK model)
VS901	(A) 1-552-963-00	(D) Voltage Selector (AEP, UK model)
X501	1-527-551-00	(E) Crystal, osc
	● A-4351-171-A	Complete Circuit Board, tuner
	● A-4394-177-A	Complete Circuit Board, power supply
	1-526-522-00	(B) Socket
	● 1-535-115-00	(A) Terminal Pin, 2p
	● 1-535-116-00	(A) Terminal Pin, 3p
	● 1-535-117-00	(A) Terminal Pin, 4p
	● 1-535-118-00	(A) Terminal Pin, 5p
	● 1-535-122-00	(A) Terminal Pin, 9p
	1-535-149-11	(A) Jumper Lead, 30mm
	● 1-602-025-00	(C) Printed Circuit Board, power supply
	● 1-602-026-00	(C) Printed Circuit Board, display
	● 1-602-027-00	(C) Printed Circuit Board, connection
	● 1-602-028-00	(C) Printed Circuit Board, PLL
	● 1-602-029-00	(C) Printed Circuit Board, output (L)
	● 1-602-030-00	(C) Printed Circuit Board, output (R)
	● 1-602-031-00	(C) Printed Circuit Board, control
	● 1-602-032-00	(C) Printed Circuit Board, switch

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Circled letters (A to Z) are applicable to European models only.

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
X-4861-505-5	Sheet Ass'y, memory (US model)
X-4861-505-6	(H) Sheet Ass'y, memory (AEP, UK model)
1-501-161-00	(F) FM Ribbon Antenna
1-506-305-00	Plug, FP-33 (US model)
1-551-315-00	(H) Cord, connection; RK-112
3-701-620-00	(A) Bag, plastic; for accessories
3-701-630-00	(A) Bag, plastic; for instruction manual
3-770-676-11	(K) Manual, instruction (AEP, UK model)
3-770-676-21	Manual, instruction (US model)
3-794-233-21	Separate Sheet, consumer products (US model)
4-809-251-00	(A) Bag, plastic; for set
4-852-949-00	(C) Cushion
4-861-552-00	(C) Carton

ELECTROLYTIC CAPACITORS

Note: Circled letter (A to Z) are applicable to European models only.

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47	→	→	→	1-121-392-00 (A)	→	1-121-726-00 (A)
1.0	→	→	→	1-121-395-00 (A)	→	1-121-391-00 (A)
2.2	→	→	→	→	→	1-121-450-00 (A)
3.3	→	→	→	→	→	1-121-393-00 (A)
4.7	→	→	→	→	→	1-121-396-00 (A)
10	→	→	1-121-651-00 (A)	1-121-398-00 (A)	→	1-121-738-00 (A)
22	→	→	1-121-479-00 (A)	1-121-480-00 (A)	1-121-662-00 (A)	1-121-152-00 (A)
33	→	→	1-121-403-00 (A)	1-121-404-00 (A)	1-121-652-00 (B)	1-121-405-00 (A)
47	→	1-121-352-00 (A)	1-121-409-00 (A)	1-121-410-00 (A)	1-121-653-00 (B)	1-121-411-00 (A)
100	→	1-121-414-00 (A)	1-121-415-00 (A)	1-121-416-00 (A)	1-121-357-00 (B)	1-121-417-00 (B)
220	1-121-419-00 (B)	1-121-420-00 (B)	1-121-421-00 (A)	1-121-422-00 (B)	1-121-261-00 (C)	1-121-423-00 (B)
330	1-121-751-00 (B)	1-121-805-00 (B)	1-121-521-00 (C)	1-121-654-00 (B)	1-121-655-00 (D)	1-121-656-00 (C)
470	1-121-424-00 (B)	1-121-425-00 (C)	1-121-426-00 (C)	1-121-733-00 (B)	1-121-361-00 (E)	1-121-810-00 (D)
1000	→	1-121-736-00 (C)	1-121-245-00 (D)	1-121-657-00 (D)	1-121-388-00 (E)	1-123-061-00 (F)
2200	1-121-658-00 (B)	1-121-659-00 (C)	1-121-660-00 (D)	1-123-067-00 (F)	1-121-984-00 (F)	→
3300	1-121-661-00 (D)	1-123-075-00 (E)	1-123-071-00 (F)	→	→	→

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	→	→	→	→
1.0	1-123-249-00 (A)	1-123-252-00 (A)	1-123-003-00 (B)	1-121-168-00 (B)
2.2	1-123-250-00 (A)	1-123-026-00 (B)	→	1-123-028-00 (B)
3.3	1-121-995-00 (A)	→	1-123-004-00 (B)	1-123-006-00 (C)
4.7	1-123-255-00 (A)	1-121-246-00 (B)	1-121-759-00 (B)	1-123-007-00 (D)
10	1-121-126-00 (B)	1-121-999-00 (B)	1-123-254-00 (C)	1-123-008-00 (D)
22	1-121-996-00 (C)	1-123-253-00 (C)	1-123-005-00 (D)	1-123-022-00 (D)
33	1-121-997-00 (C)	1-121-757-00 (C)	→	→
47	1-123-251-00 (C)	1-121-919-00 (C)	→	→
100	1-123-084-00 (E)	→	→	→

CERAMIC CAPACITORS (A)

RATING							
CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00	→	→
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00	→	→
16	1-102-952-00	110	1-102-815-00	→	→	→	→
18	1-102-953-00	120	1-102-816-00	→	→	→	→
20	1-102-958-00	130	1-101-081-00	→	→	→	→

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS (A)

RATING → : Use the high voltage rated one.					
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015	→	1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018	→	1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022	→	1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00	→	→	→
0.0082	1-161-012-00	1-161-050-00	→	→	→
0.01	1-161-013-00	1-161-051-00	→	→	→
0.012	→	1-161-052-00	→	→	→
0.015	1-161-015-00	1-161-053-00	→	→	→

MYLAR CAPACITORS (A)

Note: Circled letters (A to Z) are applicable to European models only.

RATING											
CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				

TANTALUM CAPACITORS

RATING → : Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00 (B)
0.015						→	1-131-397-00 (B)
0.022						→	1-131-398-00 (B)
0.033						→	1-131-399-00 (B)
0.047						→	1-131-400-00 (B)
0.068					→	→	1-131-401-00 (B)
0.1					→	→	1-131-402-00 (B)
0.15					→	→	1-131-403-00 (B)
0.22					→	→	1-131-404-00 (B)
0.33					→	1-131-409-00 (B)	1-131-405-00 (B)
0.47	—	—	—	—	1-131-412-00 (B)	→	1-131-406-00 (B)
0.68	—	—	—	1-131-415-00 (B)	→	1-131-410-00 (B)	1-131-407-00 (B)
1.0	—	—	1-131-418-00 (B)	—	1-131-413-00 (B)	→	1-131-408-00 (B)
1.5	—	1-131-421-00 (B)	—	1-131-416-00 (B)	→	1-131-411-00 (B)	1-131-348-00 (B)
2.2	1-131-424-00 (B)	—	1-131-419-00 (B)	—	1-131-414-00 (B)	1-131-355-00 (B)	1-131-349-00 (B)
3.3	—	1-131-422-00 (B)	—	1-131-417-00 (B)	1-131-362-00 (B)	1-131-356-00 (B)	1-131-350-00 (B)
4.7	1-131-425-00 (B)	—	1-131-420-00 (B)	1-131-369-00 (B)	1-131-363-00 (B)	1-131-357-00 (B)	1-131-351-00 (C)
6.8	—	1-131-423-00 (B)	1-131-376-00 (B)	1-131-370-00 (B)	1-131-364-00 (B)	1-131-358-00 (C)	1-131-352-00 (C)
10	1-131-426-00 (B)	1-131-383-00 (B)	1-131-377-00 (B)	1-131-371-00 (B)	1-131-365-00 (C)	1-131-359-00 (C)	1-131-353-00 (D)
15	1-131-390-00 (B)	1-131-384-00 (B)	1-131-378-00 (B)	1-131-372-00 (B)	1-131-366-00 (C)	1-131-360-00 (D)	—
22	1-131-391-00 (B)	1-131-385-00 (B)	1-131-379-00 (C)	1-131-373-00 (C)	1-131-367-00 (D)		
33	1-131-392-00 (B)	1-131-386-00 (C)	1-131-380-00 (C)	1-131-374-00 (D)			
47	1-131-393-00 (C)	1-131-387-00 (C)	1-131-381-00 (D)	—			
68	1-131-394-00 (B)	1-131-388-00 (C)	—	—			
100	1-131-395-00 (D)	—	—	—			

TANTALUM CAPACITORS

RATING						
CAP. (μF)	3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00 (E)
0.047						1-131-274-00 (E)
0.068						1-131-275-00 (E)
0.1						1-131-276-00 (D)
0.15						1-131-277-00 (D)
0.22			—	—	1-131-262-00 (D)	1-131-278-00 (D)
0.33			—	—	1-131-263-00 (D)	1-131-279-00 (D)
0.47			1-131-169-00 (D)	—	1-131-264-00 (D)	1-131-280-00 (D)
0.68			—	1-131-258-00 (D)	1-131-265-00 (D)	1-131-281-00 (D)
1.0			1-131-254-00 (D)	—	1-131-266-00 (D)	1-131-282-00 (D)
1.5		1-131-250-00 (D)	—	—	1-131-267-00 (D)	1-131-283-00 (E)
2.2		—	—	1-131-259-00 (D)	1-131-268-00 (D)	1-131-284-00 (E)
3.3		—	1-131-255-00 (D)	—	1-131-269-00 (D)	—
4.7		1-131-251-00 (E)	1-131-171-00 (D)	—	1-131-270-00 (D)	—
6.8		—	—	1-131-260-00 (D)	1-131-271-00 (E)	—
10	—	—	1-131-256-00 (D)	—	1-131-272-00 (E)	—
15	—	1-131-252-00 (D)	—	1-131-261-00 (E)		
22	—	—	1-131-257-00 (E)	—		
33	1-131-176-00 (D)	1-131-253-00 (E)	1-131-173-00 (C)	—		
47	1-131-288-00 (F)	1-131-174-00 (D)	—	—		
100	1-131-177-00 (D)					

1/4 WATT CARBON RESISTORS Ⓐ **Note:** Circled letter Ⓐ is applicable to European models only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00

HARDWARE NOMENCLATURE

Screw:

P 3 x 10

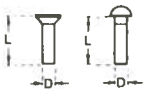
L: Length in mm

D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft

Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2 6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	