

ADDITIONAL



PIONEER®
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Service Manual

ORDER NO.
ARP 1400

FM/AM DIGITAL SYNTHESIZER TUNER

F-551

KUC, SD, HEZ

F-551-S

 HEZ

F-551L

 HE, HB

- For servicing these models, please refer to the F-X420L(BK)/HE type service manual (ARP1220) with the exception of this additional service manual.

MODELS F-551, F-551-S AND F-551L COMES IN FIVE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model				Power requirement	Export destination
	F-X420L (BK)	F-551	F-551-S	F-551L		
KUC	—	○	—	—	AC120V only	U.S.A. and Canada
HE	○	—	—	○	AC220V, 240V ※	European continent
HB	○	—	—	○	AC220V, 240V ※	United Kingdom
HEZ	—	○	○	—	AC220V, 240V ※	West Germany
SD	—	○	—	—	AC110V, 120V-127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and general market

※ Change the primary wiring of the Complex assembly.

- The AM tuner of the F-551L/HE and HB types are a two wave-band tuner with MW (medium wave) and LW (long wave), but the F-551/KUC, SD, HEZ and F-551-S/HEZ types are MW only.
- This additional service manual is applicable to the F-551/KUC, SD, HEZ, F-551-S/HEZ, F-551L/HE and HB types.
- The F-551-S/HEZ type is the silver version of the F-551/HEZ type.
- Ce manuel pour le service comprend les explications en français de réglage.
- Este manual de servicio trata del método ajuste escrito en español.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 6B8 Canada TEL: [416] 479-4411
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775 · 28 · 08
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks $\star\star$ and $\star$.
 $\star\star$ GENERALLY MOVES FASTER THAN $\star$
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "©" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The F-551/KUC, SD, HEZ, F-551-S/HEZ, F-551L/HE and HB types are the same as the F-X420L(BK)/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.							Remarks
		F-X420L (BK)/HE	F-551/KUC	F-551/SD	F-551L/HE	F-551L/HB	F-551/HEZ	F-551-S/HEZ	
	TUNER assembly	AWZ1154	AWZ1417	AWZ1418	AWZ1424	AWZ1424	AWZ1427	AWZ1427	
	DISPLAY assembly	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	
	FE assembly (FTZ)	.....	.....	.....	.....	.....	AWB1003	AWB1003	
	Power knob (POWER)	AAD1055	AAD1152	AAD1152	AAD1152	AAD1152	AAD1152	AAD1157	
	Display plate	AAK1126	AAK1253	AAK1253	AAK1253	AAK1253	AAK1253	AAK1253	
Δ	AC power cord	ADG-071	ADG-088	ADG1015	ADG1021	ADG-063	ADG-094	ADG-094	
$\Delta\star\star$	Fuse (T400mA, FU301)	AEK-407	.....	.....	AEK-407	AEK-407	AEK-407	AEK-407	
$\Delta\star\star$	Fuse (T500mA, FU301)	.....	AEK-136	AEK-136	.....	.....	.....	.....	
	Leg assembly	AEP-320	AEP-280	AEP-280	AEP-280	AEP-280	AEP-280	AEC-903	
	Front rear pad	AHA1025	.....	.....	.....	.....	.....	.....	For packing
	Packing case	AHD1113	AHD1227	AHD1227	AHD1226	AHD1226	AHD1227	AHD1228	For packing
	Front panel base	AMB1089	AMB1180	AMB1180	AMB1180	AMB1180	AMB1180	AMB1193	
	Front panel	ANB1076	.....	.....	.....	.....	.....	.....	
	Front panel assembly	.....	ANB1097	ANB1097	ANB1096	ANB1096	ANB1121	ANB1098	
	Bonnet	ANE-618	ANE1052	ANE1052	ANE1052	ANE1052	ANE1060	ANE1073	
	Operating instructions (English)	.....	ARB1061	ARB1061	.....	ARB1061	.....	.....	
	(English/German/French/Italian)	ARE1024	.....	.....	ARE1048	.....	.....	.....	
	(German)	.....	.....	.....	.....	.....	ARC1039	ARC1039	
	(Spanish)	.....	.....	ARC1055	.....	.....	.....	.....	
	Push rivet	.....	AEP-319	AEP-319	AEP-319	AEP-319	AEP-319	AEP-319	
	Side pad	.....	AHA-341	AHA-341	AHA-341	AHA-341	AHA-341	AHA-341	For packing
	Power joint	.....	AMR1098	AMR1098	AMR1098	AMR1098	AMR1098	AMR1098	
	Connection cord with Mini plug	.....	ADE-085	ADE-085	.....	.....	.....	.....	
	FL filter	AAK1125	AAK1125	AAK1125	AAK1144	AAK1144	AAK1144	AAK1144	
	FM antenna assembly	.....	.....	.....	.....	.....	ADH1002	ADH1002	
	FM antenna	ADH-005	ADH-005	ADH-005	ADH-005	ADH-005	.....	.....	

Note: The F-551-S/HEZ type is the silver color design type of the F-551/HEZ type.

Therefore, the F-551-S/HEZ type is the same circuit construction as the F-551/HEZ type.

2. ADJUSTMENTS

FM Tuner Section Adjustment

- Connect up as indicated in Fig.2-1.
- Press the FM key to set FM mode.
- CCTS switch OFF.
- Center the FM tuner section's trimmer and VR.

Note : Stereo modulation: Main 1kHz L+R ± 68.25 Hz dev.
Pilot 19kHz ± 6.75 kHz dev.

Step No.	FM SG (1kHz $\pm$ 75kHz dev.)		F-551 (F-551L, F-551-S) Frequency display	Adjustment	
	Frequency(MHz)	Level(dB)		Adjustment location	Specifications
1 *1	No input signal		108.0MHz	L105	Adjust so that TP4 is 10V(± 0.3 V).
2 *1	98.0	20-30	98.0MHz	T101	Set the output from TP2 of the tuner assembly to maximum level.
3	98.0	60	98.0MHz	L109	Adjust so that it become 0V between TP5 and TP6.
	No modulation				
4	No input signal		98.0MHz	VR101	Ground pin 6 of IC101 through a 220 μ F capacitor and adjust so that TP7 is 19kHz(± 50 Hz).
5	98.0	60	98.0MHz	T101	Minimize distortion in both left and right channel outputs (adjust T101 to within $\pm 90^\circ$) .
	Stereo modulation (note)				

* 1 : For the F-551/HEZ type and F-551-S/HEZ type, proceed as shown in the chart below instead of using steps 1 and 2 in the chart above. Refer to Figs.2-4 and 2-5 for the adjustment locations.

1	①	90.0	20-30	90.0MHz	L702 *2, L703, T701	Set the output from TP2 of the tuner assembly to maximum level. (S.meter)
	②	106.0		106.0MHz	TC701, L703, T701	
	③	90.0		90.0MHz	L702 *2	
	④	98.0		98.0MHz	T702	
	⑤	Repeat steps 1-② and 1-③ until both specification ratings are met.				

* 2 : The expression "adjust L702" found in the text means that the tuning coil is to be extended outwards with spatula (non metal) as shown in Fig.2-5.

AM (MW) Tuner Section Adjustment

- Connect up as indicated in Fig.2-2.
- Press the AM (MW) key to set AM (MW) mode.
- For the F-551/KUC type and SD type, set the FM/AM CHANNEL STEP switch (S801) to 100/10kHz.
For all other types, set this switch to 50/9kHz. (Always turn off the power when making these settings.)
The value within brackets () in the section of adjustment method is the value when S801 is 100/10kHz.
- CCTS switch OFF.
- Center the MW tuner section's trimmer and VR.

Step No.	AM SG (400Hz, 30% modulation)		F-551 (F-551L,F-551-S) Frequency display	Adjustment	
	Frequency(kHz)	Level(dB)		Adjustment location	Specifications
1	No input signal		531kHz (530kHz)	L201	Set TP4 of tuner assembly to 1.3V(±0.1V).
2			1602kHz (1700kHz)	TC202	Set TP4 of tuner assembly to 10.0V (±0.3V).
3	Repeat steps 1 and 2 until both specification ratings are satisfied.				
4	603 (600)	40	603kHz (600kHz)	T201	Set the output from TP2 of the tuner assembly to maximum level.
5	1395 (1400)	40	1395kHz (1400kHz)	TC201	
6	Repeat steps 4 and 5 until both specification ratings are satisfied.				

AM (LW) Tuner Section Adjustment (F-551L/HE type and HB type only)

- Connect up as indicated in Fig.2-2.
- Press the AM (LW) key to set AM (LW) mode.
- CCTS switch OFF.
- Center the LW tuner section's trimmer and VR.

Step No.	AM SG (400Hz, 30% modulation)		F-551L Frequency display	Adjustment	
	Frequency(kHz)	Level (dB)		Adjustment location	Specifications
1	No input signal		281kHz	L202	Set TP4 of tuner assembly to 5.2V(±0.1V).
2	164	40	164kHz	T202	Set the output from TP2 of the tuner assembly to maximum level.
3	254	40	254kHz	TC203	
4	Repeat steps 2 and 3 until both specification ratings are satisfied.				

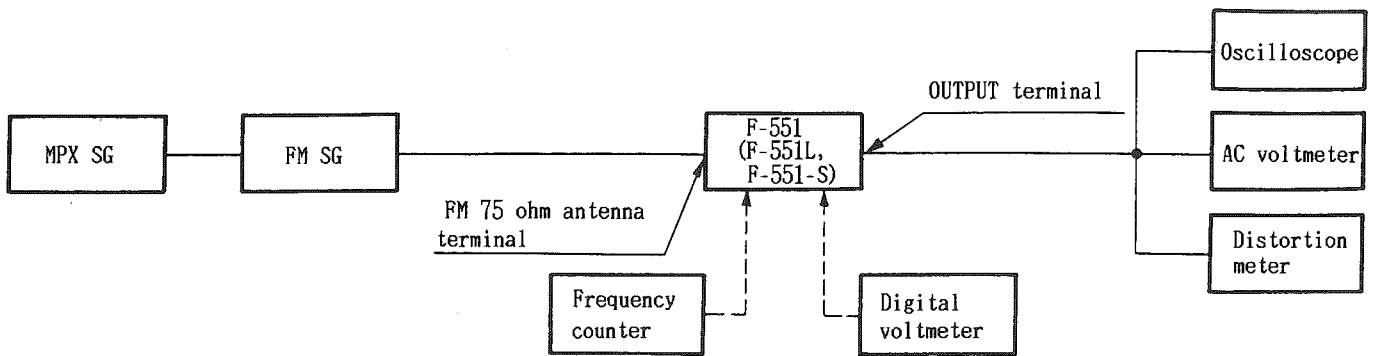


Fig. 2-1. FM adjustment connection diagram

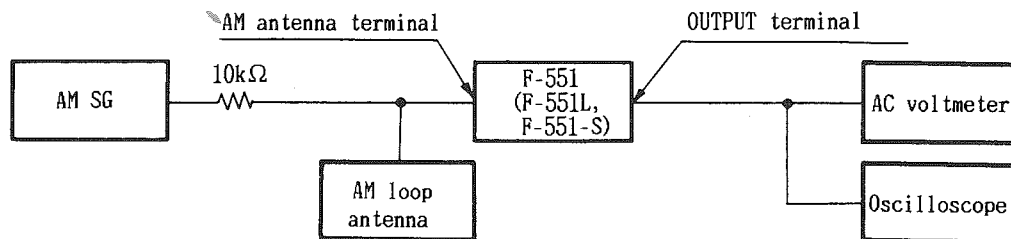


Fig. 2-2. AM adjustments connection diagram

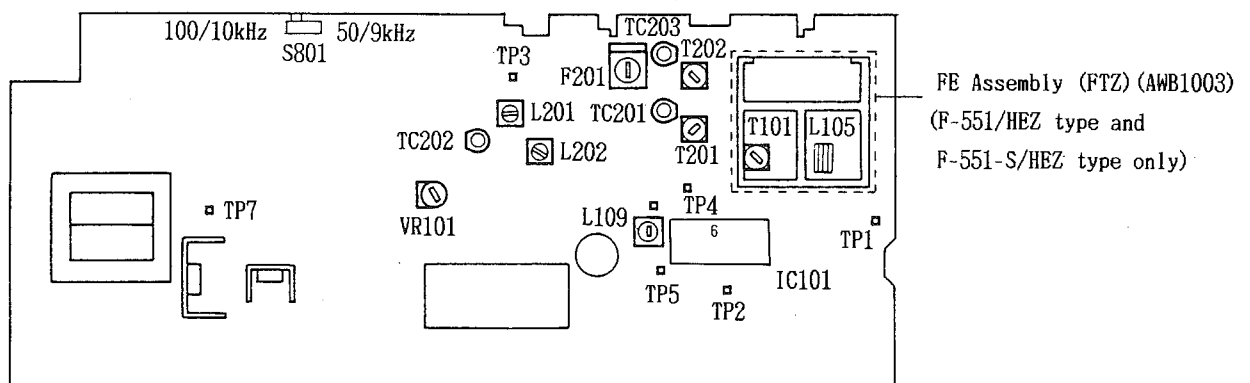


Fig. 2-3. Adjustment positions

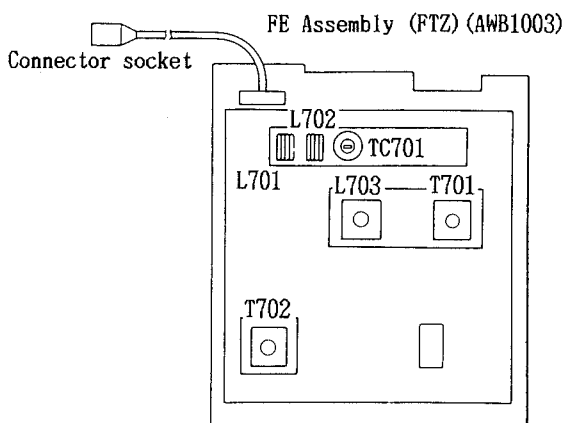


Fig. 2-4. Adjustment point of FE Assembly

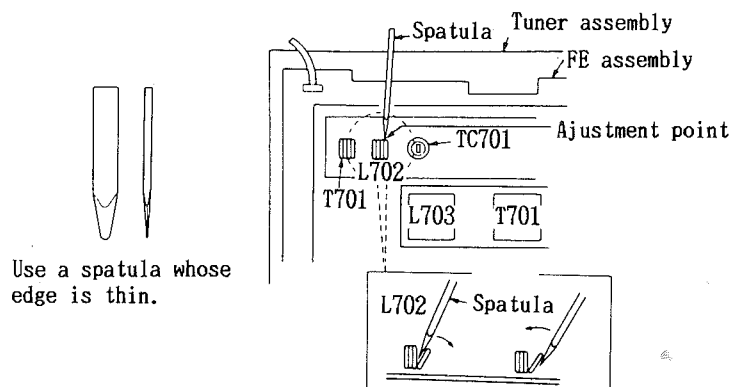


Fig. 2-5. Adjustment tuning coil L702

2. RÉGLAGE

Réglage de la partie syntoniseur FM

- Faire les raccordements comme indiqué en Fig.2-1.
- Enfoncer la touche FM pour régler en mode FM.
- Sélecteur CCTS hors action.
- Centrer les sections du trimmer et VR du tuner FM.

Note : Modulation stéréo: Principal 1kHz L + R $\pm$ 68,25Hz dév.
Pilote 19kHz $\pm$ 6,75kHz dév.

Etape N°	FM SG (1kHz $\pm$ 75kHz dév.)		Affichage de fréquence syntonisée F-551 (F-551L, F-551-S)	Réglage	
	Fréquence(MHz)	Niveau(dB)		Lieu de réglage	Caractéristiques
1 *1	Pas de signal d'entrée		108,0MHz	L105	Ajuster de sorte que TP4 soit 10V($\pm$ 0,3V).
2 *1	98,0	20-30	98,0MHz	T101	Régler la puissance de la fiche 1 del' ensemble syntoniseur au niveau maximal.
3	98,0	60	98,0MHz	L109	Ajuster la bobine de sorte qu'elle se trouve à 0V entre TP5 et TP6.
4	Pas de signal d'entrée		98,0MHz	VR101	Mettre la broche 6 de IC101 à la masse par un condensateur de 220 μ F et régler de sorte que TP7 soit 19kHz ($\pm$ 50Hz).
5	98,0	60	98,0MHz	T101	Réduire la distorsion dans les sorties des deux canaux droit et gauche (régler T101 à $\pm$ 90°).
	Modulation stéréo (Note)				

* 1 : Pour le F-551/HEZ et le F-551-S/HEZ, procéder comme illustré sur le schéma ci-dessous au lieu de procéder aux étapes 1 et 2 ci-dessus. Se reporter aux Fig.2-4 et 2-5 pour l'emplacement des réglages.

1	①	90,0	20-30	90.0MHz	L702*2, L703, T701	Régler la sortie à partir de TP2 del' assemblage du tuner an niveau, maximum. (Masureur du S)
	②	106,0		106.0MHz	TC701, L703, T701	
	③	90,0		90.0MHz	L702 *2	
	④	98,0		98.0MHz	T702	
	⑤	Répéter les étapes 1-② et 1-③ jusqu'à ce que les deux spécifications du classement soient rencontrées.				

* 2 : L'expression "ajuster L702" trouvée dans l'explication signifie que le self d'accord doit être étendu de hors avec une spatule (non métallique) comme montré dans la Fig.2-5.

Réglage de la partie syntoniseur AM (MW)

- Faire les raccordements comme indiqué en Fig.2-2.
- Enfoncer la touche AM (MW) pour régler en mode AM (MW).
- Pour le F-551/KUC et SD, régler l'interrupteur FM/AM CHANNEL STEP (S801) sur 100/10kHz.
Pour les autres types, laisser l'interrupteur sur 50/9kHz (toujours couper l'alimentation lors de ces réglages).
- La valeur entre parenthèses dans la section de la "Méthode de réglage" représente la valeur lorsque S801 est 100/10kHz.
- Sélecteur CCTS hors action.
- Centrer les sections du trimmer et VR du tuner MW.

Etape N°	AM SG (400Hz, 30% modulation)		Affichage de fréquence syntonisée F-551 (F-551L, F-551-S)	Réglage	
	Fréquence(kHz)	Niveau(dB)		Lieu de réglage	Caractéristiques
1	Pas de signal d'entrée		531kHz (530kHz)	L201	Régler la TP4 del' ensemble syntoniseur à 1,3V (±0,1V).
2			1602kHz (1700kHz)	TC202	Régler la TP4 del' ensemble syntoniseur à 10,0V (±0,3V).
3	Répéter les Etapes 1 et 2 jusqu'à ce que les taux nominaux préconisés soient atteints.				
4	603 (600)	40	603kHz (600kHz)	T201	Régler la puissance de la TP2 del' ensemble syntoniseur au niveau maximal.
5	1395 (1400)	40	1395kHz (1400kHz)	TC201	
6	Répéter les Etapes 4 et 5 jusqu'à ce que les taux nominaux préconisés soient atteints.				

Réglage de la partie syntoniseur AM (LW) (F-551L/HE et HB uniquement)

- Faire les raccordements comme indiqué en Fig.2-2.
- Enfoncer la touche AM (LW) pour régler en mode AM (LW).
- Sélecteur CCTS hors action.
- Centrer les sections du trimmer et VR du tuner LW.

Etape N°	AM SG (400Hz, 30% modulation)		Affichage de fréquence syntonisée F-551L	Réglage	
	Fréquence(kHz)	Niveau(dB)		Lieu de réglage	Caractéristiques
1	Pas de signal d'entrée		281kHz	L202	Régler la TP4 del' ensemble syntoniseur à 5,2V (±0,1V).
2	164	40	164kHz	T202	Régler la puissance de la TP2 del' ensemble syntoniseur au niveau maximal.
3	254	40	254kHz	TC203	
4	Répéter les Etapes 2 et 3 jusqu'à ce que les taux préconisés soient atteints.				

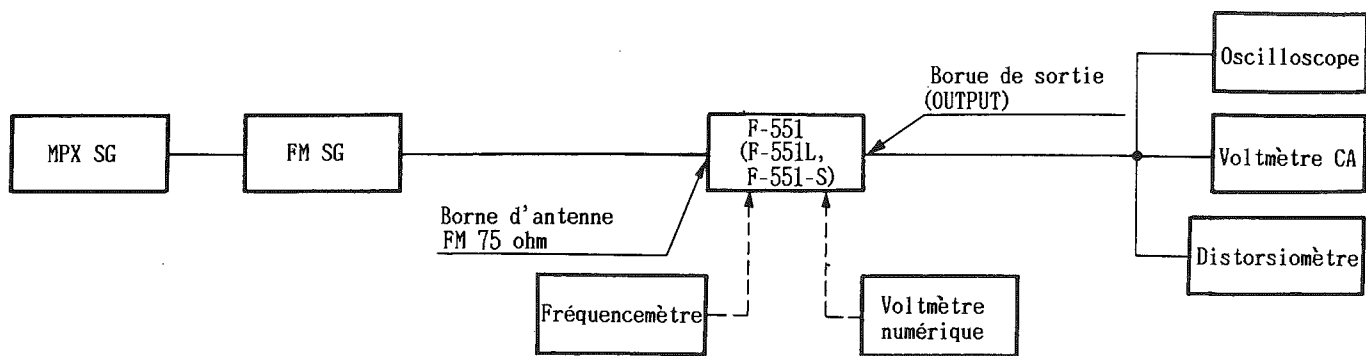


Fig.2-1. Diagramme de reccordement de réglage FM

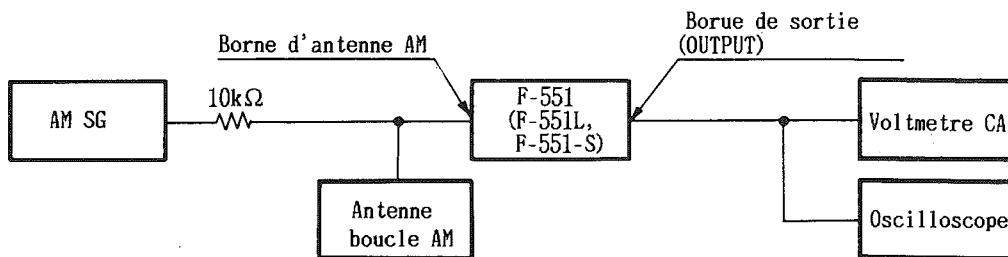


Fig.2-2. Diagramme de reccordement de réglage AM

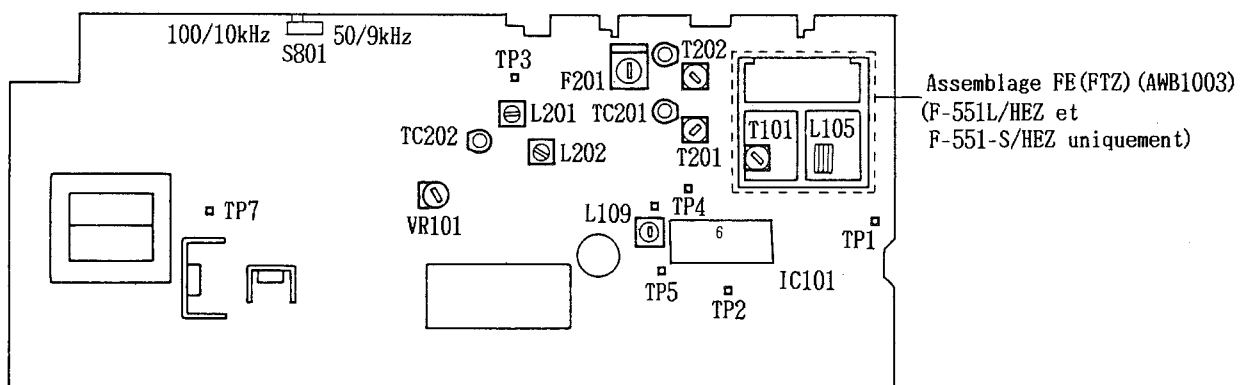


Fig.2-3. Positions de réglage

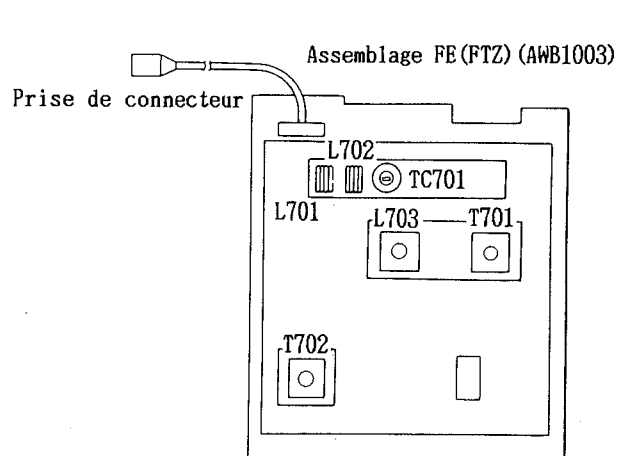
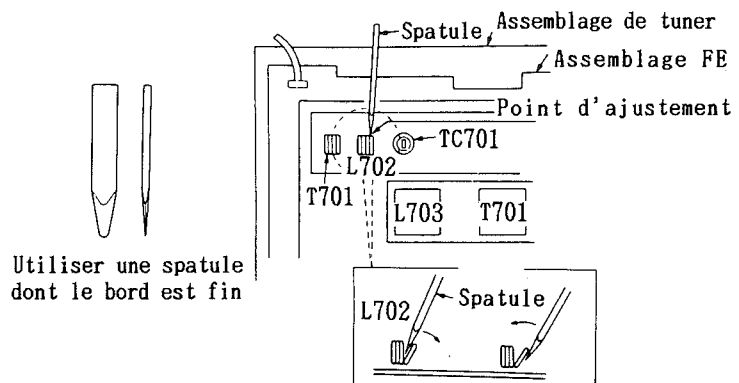


Fig.2-4. Point d'ajustement du l'assemblage FE



Pour obtenir une sortie maximum en ouvrant et fermant sur le premier réglage du côté droit de la bobine.

Fig.2-5. Réglage du self d'accord L702

2. AJUSTE

Ajuste de la sección del sintonizador de FM

- Conecte como es indicado en la Fig.2-1.
- Oprima la tecla de FM para fijar el modo de FM.
- Desconexión de CCTS.
- Centre el corrector de sintonía y el resistor variable de la sección del sintonizador de FM.

Nota : Modulación estereo: Principal 1kHz L+R $\pm 68,25$ Hz dev.
Piloto 19kHz $\pm 6,75$ kHz dev.

No. de paso	FM SG (1kHz $\pm$ 75kHz dev.)		Visualización de frecuencia sintonizada F-551 (F-551L, F-551-S)	Lugar de ajuste	Ajuste
	Frecuencia(MHz)	Nivel(dB)			Especificaciones
1 *1	No hay señal de entrada		108,0MHz	L105	Ajuste hasta obtener en TP4 una tensión de 10V ($\pm 0,3$ V).
2 *1	98,0	20-30	98,0MHz	T101	Fije la salida de la patilla 1 del conjunto del sintonizador al máximo nivel.
3	98,0	60	98,0MHz	L109	Ajuste de forma que la tensión entre TP5 y TP6 sea de 0V.
	Sin modulación				
4	No hay señal de entrada		98,0MHz	VR101	Ponga a masa la patilla 6 de IC101 a través de un capacitor de 220 μ F, y ajuste hasta obtener en TP7 una frecuencia de 19kHz (± 50 Hz).
5	98,0	60	98,0MHz	T101	Reduzca la distorsión tanto en la salida del canal izquierdo como en la del derecho (ajuste T101 a dentro de $\pm 90^\circ$).
	Modulación estereo (Nota)				

* 1 : Para los tipos F-551/HEZ y F-551-S/HEZ, realice lo indicado en la tabla siguiente en vez de emplear los pasos 1 y 2 de la tabla anterior. Con respecto a los lugares de ajuste, consulte las Fig.2-4 y 2-5.

1	①	90,0	20-30	90,0MHz	L702 *2, L703, T701	Ajuste la salida de TP2 del conjunto del sintonizador al nivel máximo. (medidor de S.)
	②	106,0		106,0MHz	TC701, L703, T701	
	③	90,0		90,0MHz	L702 *2	
	④	98,0		98,0MHz	T702	
	⑤	Repita los pasos 1-② y 1-③ hasta que se satisfagan los valores de las especificaciones.				

* 2 : La expresión "ajuste L702" encontrada significa que la bobina de sintonía tiene que extenderse hacia afuera con una espátula (no metálica) como se muestra en la Fig.2-5.

Ajuste de la sección del sintonizador de AM (MW)

- Conecte como es indicado en la Fig.2-2.
- Oprima la tecla AM (MW) para fijar el modo AM (MW).
- Para los tipos F-551/KUC y SD, ponga el conmutador FM/AM STEP CHANNEL (S801) en 100/10kHz. Para todos los demás tipos, ponga este conmutador en 50/9kHz. (Antes de realizar este ajuste, desconecte siempre la alimentación.)
El valor entre paréntesis () de la sección del método de ajuste es el correspondiente cuando S801 está en 100/10kHz.
- Desconexión de CCTS.
- Centre el corrector de sintonía y el resistor variable de la sección del sintonizador de MW.

No. de paso	AM SG (400Hz, 30% modulation)		Visualización de frecuencia sintonizada F-551 (F-551L, F-551-S)	Lugar de ajuste	Ajuste
	Frecuencia(kHz)	Nivel(dB)			Especificaciones
1	No hay señal de entrada		531kHz (530kHz)	L201	Fije la TP4 del conjunto del sintonizador a 1,3V (±0,1V).
2			1602kHz (1700kHz)	TC202	Fije la TP4 del conjunto del sintonizador a 10,0V (±0,3V).
3	Repita los pasos 1 y 2 hasta que ambos valores nominales especificados sean satisfechos.				
4	603 (600)	40	603kHz (600kHz)	T201	Fije la salida de la TP2 del conjunto del sintonizador al máximo nivel.
5	1395 (1400)	40	1395kHz (1400kHz)	TC201	
6	Repita los pasos 4 y 5 hasta que ambos valores nominales especificados sean satisfechos.				

Ajuste de la sección del sintonizador de AM (LW) (Tipos F-551L/HE y HB solamente)

- Conecte como es indicado en la Fig.2-2.
- Oprima la tecla AM (LW) para fijar el modo AM (LW).
- Desconexión de CCTS.
- Centre el corrector de sintonía y el resistor variable de la sección del sintonizador de LW.

No. de paso	AM SG (400Hz, 30% modulation)		Visualización de frecuencia sintonizada F-551L	Lugar de ajuste	Ajuste
	Frecuencia(kHz)	Nivel(dB)			Especificaciones
1	No hay señal de entrada		281kHz	L202	Fije la TP4 del conjunto del sintonizador a 5,2V (±0,1V).
2	164	40	164kHz	T202	Fije la salida de la TP2 del conjunto del sintonizador al máximo nivel.
3	254	40	254kHz	TC203	
4	Repita los pasos 2 y 3 hasta que ambos valores nominales especificados sean satisfechos.				

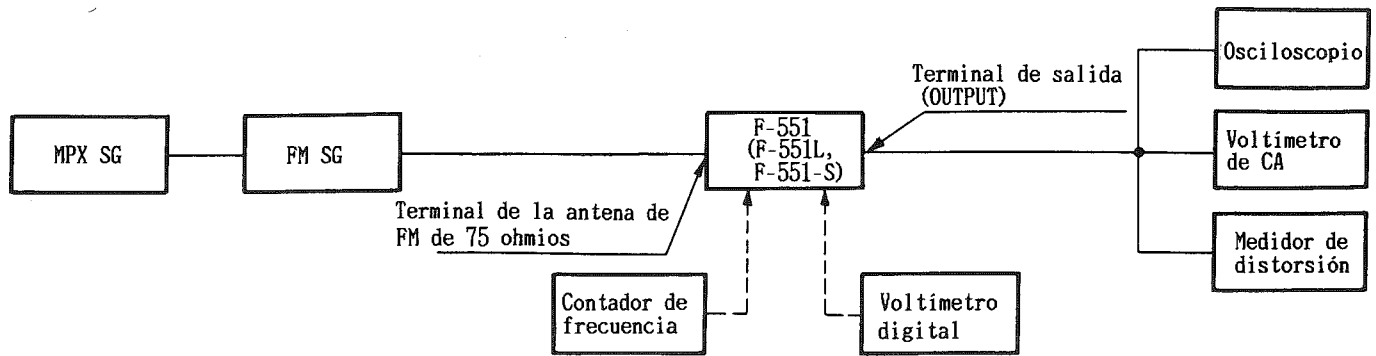


Fig.2-1. Diagrama de conexión de ajuste de FM

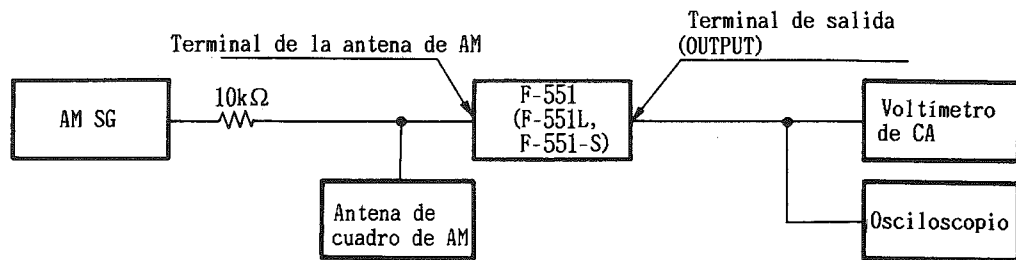


Fig.2-2. Diagrama de conexión de ajuste de AM

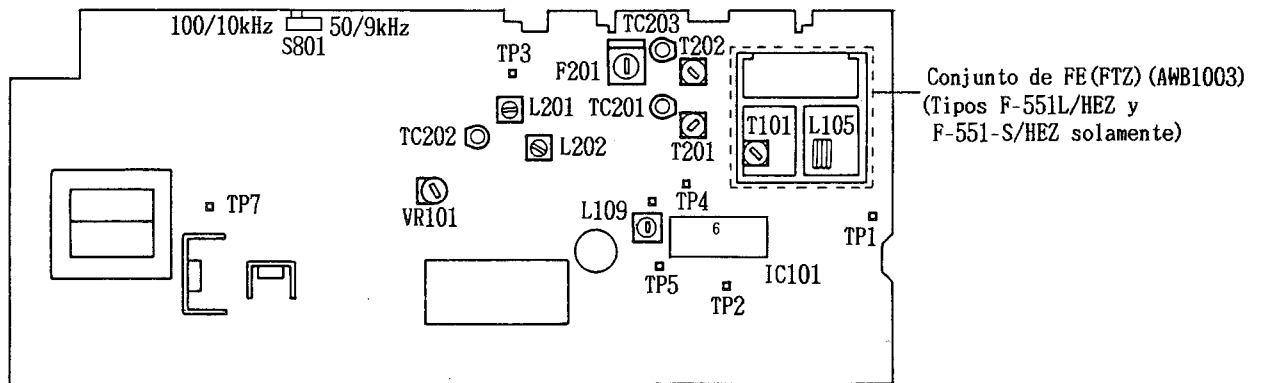


Fig.2-3. Puntos de ajuste

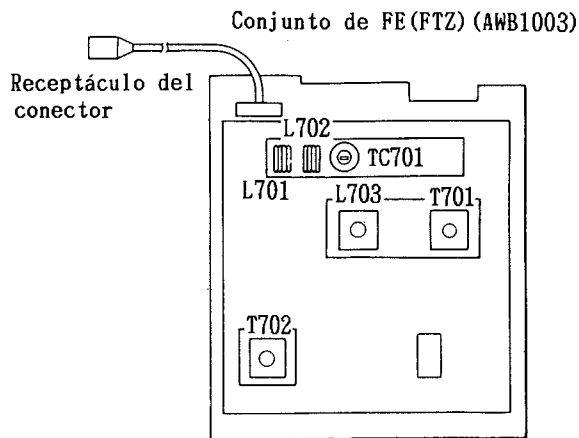
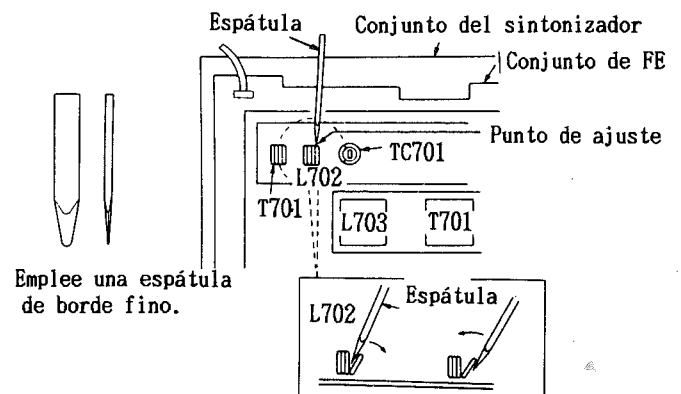


Fig.2-4. Punto de ajuste del conjunto de FE



Para hacer que la salida sea máxima abriendo y cerrando la primera espira de la parte derecha de la bobina.

Fig.2-5. Ajuste de la bobina de sintonía L702

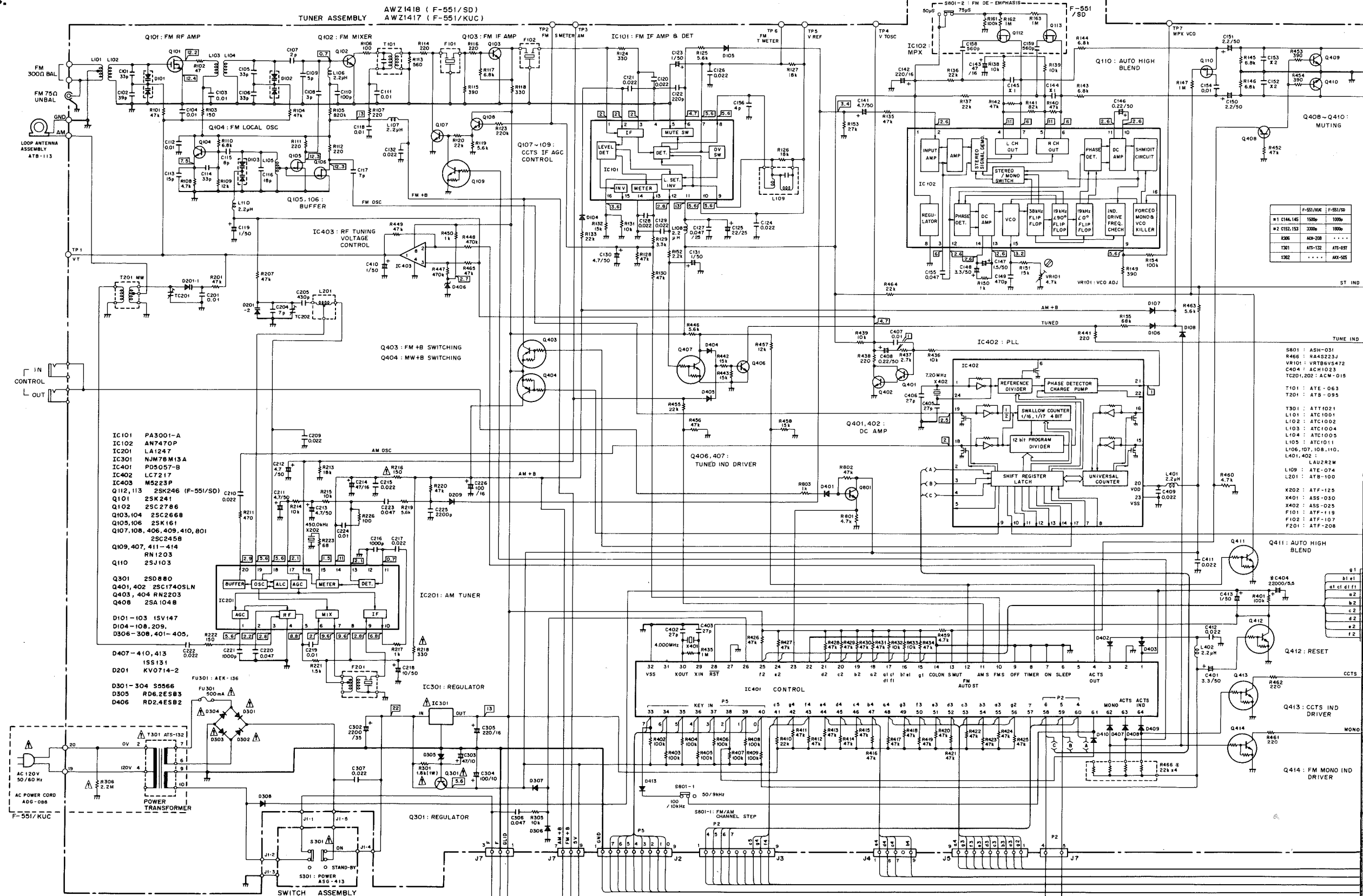
Note : This schematic diagram and P.C. boards are common used to the F-551/KUC and SD types.

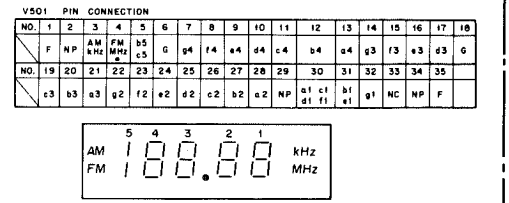
A

B

C

D





3.3 ELECTRICAL PARTS LIST (FOR F-551/KUC TYPE)

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★ GENERALLY MOVES FASTER THAN ★

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56×10^1	561.....	RD1/4PS	5	6	1	J
47kΩ	47×10^3	473.....	RD1/4PS	4	7	3	J
0.5Ω	0R5.....		RN2H	0	5		K
1Ω	010.....		RS1P	0	1	0	K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562×10^1	5621.....	RN1/4SR	5	6	2	1	F
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Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1417
△★★★	FU301 Fuse (500mA)	AEK-136
△	AC power cord	ADG-088
	L1 Loop antenna assembly	ATB-113

SWITCH Assembly

Mark	Symbol & Description	Part No.
△★★★	S301 Push switch (POWER)	ASG-413

DISPLAY Assembly

Mark	Symbol & Description	Part No.
★★	Q501, Q502	RN1203
★	D502	AEL1009
★	D501, D503, D504	AEL1015

SWITCHES

Mark	Symbol & Description	Part No.
★★	S501-S519 Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
	R501, R502	RD1/8PM332J

OTHERS

Mark	Symbol & Description	Part No.
★	V501 Fluorescent indicator tube	AAV-023

TUNER Assembly (AWZ1417)

Mark	Symbol & Description	Part No.
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★★	IC102	AN7470P
★★	IC201	LA1247
★★	IC402	LC7217
★★	IC403	M5223P
△★★	IC301	NJM78M13A

★★	IC101	PA3001-A
★★	IC401	PD5057-B
★★	Q109, Q407, Q411-Q414	RN1203
★★	Q403, Q404	RN2203
★★	Q408	2SA1048

★★	Q401, Q402	2SC1740SLN
★★	Q107, Q108, Q406, Q409, Q410, Q801	2SC2458
★★	Q103, Q104	2SC2668
★★	Q102	2SC2786

★★	Q301	2SD880
★★	Q110	2SJ103
★★	Q105, Q106	2SK161
★★	Q101	2SK241
★	D201	KV0714-2

★	D406	RD2.4ESB2
★	D305	RD6.2ESB3
△★	D301-D304	S5566
★	D104-D108, D209, D306-D308, D401-D405, D407-D410, D413	1SS131
★	D101-D103	1SV147

SWITCH

Mark	Symbol & Description	Part No.
★★	S801 Slide switch (FM/AM CHANNEL STEP)	ASH-031

COILS, FILTERS AND TRANSFORMERS

Mark	Symbol & Description	Part No.
	L201 AM OSC coil	ATB-100
	L101 FM coil	ATC1001
	L102 FM coil	ATC1002
	L105 FM coil	ATC1011
	L103 FM coil	ATC1004
	L104 FM coil	ATC1005
	L109 FM detector coil	ATE-074
	L106-L108, L110, L401, L402 Axial inductor (2.2μH)	LAU2R2M
	F102 RM ceramic filter	ATF-107
	F101 FM ceramic filter	ATF-119
	F201 AM ceramic filter	ATF-208
	T201 AM antenna transformer	ATB-095
	T101 FM matching transformer	ATE-063
△ ★	T301 Power transformer	ATS-132

CAPACITORS

Mark	Symbol & Description	Part No.
	TC201, TC202 Trimmer	ACM-015
	C404 (22000 μF/5.5V)	ACH1023
	C156	CCDCH040C50
	C204	CCDCH070D50
	C115	CCDCH080D50
	C113	CCDCH150J50
	C405, C406	CCDCH270J50
	C114	CCDCH330J50
	C101, C105, C106	CCDRH330J50
	C102	CCDRH390J50
	C107	CCDSL020C50
	C108	CCDSL030C50
	C109	CCDSL050C50
	C117	CCDSL070D50
	C110	CCDSL101J50
	C122	CCDSL221J50
	C402, C403	CCDSL270J50
	C116	CCDTH180J50
	C146, C408	CEASR22M50
	C119, C123, C131, C410, C413	CEAS010M50
	C147	CEAS1R5M50
	C218	CEAS100M50
	C304	CEAS101M10
	C226	CEAS101M16
	C150, C151	CEAS2R2M50

Mark	Symbol & Description	Part No.
	C125	CEAS220M25
	C142, C305	CEAS221M16
	C302	CEAS222M35
	C148, C401	CEAS3R3M50
	C130, C141, C211-C213	CEAS4R7M50
	C303	CEAS470M10
	C143, C214	CEAS470M16
	C216, C221	CKDYB102K50
	C144, C145	CKDYB152K50
	C152, C153	CKDYB322K50
	C103, C104, C111, C112, C118, C154, C201, C219, C224, C407	CKDYF103Z50
	C225	CKDYF222Z50
	C120, C121, C124, C126, C128, C129, C132, C209, C210, C215, C217, C222, C307, C409, C411, C412	CKDYF223Z50
	C155, C220, C223, C306	CKDYF473Z50
	C127	CKDYX473M25
	C205	CQSA431J50
	C149	CQSA471J50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR101 Semi-fixed (4.7KΩ)	VRTB6VS472
△	R306 Solid resistor (2.2M)	ACN-208
	R466 Resistor array (22k×4)	RAAS223J
△	R216, R218	RD1/4PM□□□J
△	R301	RS1PMF182J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
★	X402 Crystal resonator (7.20MHz)	ASS-025
★	X401 Ceramic resonator (4.000MHz)	ASS-030
★	X202 Ceramic resonator (450.0kHz)	ATF-125
	4P Termianl (ANTENNA)	AKA-017
	2P Pin jack	AKB-119
	Mini jack	AKN-207

3.4 ELECTRICAL PARTS LIST (FOR F-551/SD TYPE)

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★ GENERALLY MOVES FASTER THAN ★

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56 × 10 ¹	561.....	RD1/4PS 5 6 1 J
47kΩ	47 × 10 ³	473.....	RD1/4PS 4 7 3 J
0.5Ω	0R5.....		RN2H 0 5 K
1Ω	010.....		RS1P 0 1 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10 ¹	5621.....	RN1/4SR 5 6 2 1 F
--------	-----------------------	-----------	-------------------

Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1418
△★★	FU301 Fuse (500mA)	AEK-136
△	AC power cord	ADG1015

SWITCH Assembly

Mark	Symbol & Description	Part No.
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△★★	S301 Push switch (POWER)	ASG-413
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DISPLAY Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q501, Q502	RN1203
★	D502	AEL1009
★	D501, D503, D504	AEL1015

SWITCHES

Mark	Symbol & Description	Part No.
★★	S501-S519 Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
	R501, R502	RD1/8PM332J

OTHERS

Mark	Symbol & Description	Part No.
★	V501 Fluorescent indicator tube	AAV-023

TUNER Assembly (AWZ1418)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC102	AN7470P
★★	IC201	LA1247
★★	IC402	LC7217
★★	IC403	M5223P
△★★	IC301	NJM78M13A
★★	IC101	PA3001-A
★★	IC401	PD5057-B
★★	Q109, Q407, Q411-Q414	RN1203
★★	Q403, Q404	RN2203
★★	Q408	2SA1048
★★	Q401, Q402	2SC1740SLN
★★	Q107, Q108, Q406, Q409, Q410, Q801	2SC2458
★★	Q103, Q104	2SC2668
★★	Q102	2SC2786
★★	Q301	2SD880
★★	Q110	2SJ103
★★	Q105, Q106	2SK161
★★	Q101	2SK241
★★	Q112, Q113	2SK246
★	D201	KV0714-2
★	D406	RD2.4ESB2
★	D305	RD6.2ESB3
△★	D301-D304	S5566
★	D104-D108, D209, D306-D308, D401-D405, D407-D410, D413	1SS131
★	D101-D103	1SV147

SWITCHES

Mark	Symbol & Description	Part No.
△★★	S302 Line voltage selector (110V, 120-127V, 220V, 240V)	AKX-505
★★	S801 Slide switch (FM/AM CHANNEL STEP, FM DE-EMPHASIS)	ASH-031

COILS, FILTERS AND TRANSFORMERS

Mark	Symbol & Description	Part No.
	L201 AM OSC coil	ATB-100
	L101 FM coil	ATC1001
	L102 FM coil	ATC1002
	L103 FM coil	ATC1004
	L104 FM coil	ATC1005
	L105 FM coil	ATC1011
	L109 FM detector coil	ATE-074
	L106-L108, L110, L401, L402 Axial inductor (2.2μH)	LAU2R2M
	F102 FM ceramic filter	ATF-107
	F101 FM ceramic filter	ATF-119
	F201 AM ceramic filter	ATF-208
	T201 AM antenna transformer	ATB-095
	T101 FM matching transformer	ATE-063
△ ★	T301 Power transformer	ATS-097

CAPACITORS

Mark	Symbol & Description	Part No.
	TC201, TC202 Trimmer	ACM-015
	C404 (22000 μF/5.5V)	ACH1023
	C156	CCDCH040C50
	C204	CCDCH070D50
	C115	CCDCH080D50
	C113	CCDCH150J50
	C405, C406	CCDCH270J50
	C114	CCDCH330J50
	C101, C105, C106	CCDRH330J50
	C102	CCDRH390J50
	C107	CCDSL020C50
	C108	CCDSL030C50
	C109	CCDSL050C50
	C117	CCDSL070D50
	C110	CCDSL101J50
	C122	CCDSL221J50
	C402, C403	CCDSL270J50
	C116	CCDTH180J50
	C146, C408	CEASR22M50
	C119, C123, C131, C410, C413	CEAS010M50
	C147	CEAS1R5M50
	C218	CEAS100M50
	C304	CEAS101M10
	C226	CEAS101M16
	C150, C151	CEAS2R2M50
	C125	CEAS220M25
	C142, C305	CEAS221M16
	C302	CEAS222M35
	C148, C401	CEAS3R3M50
	C130, C141, C211-C213	CEAS4R7M50

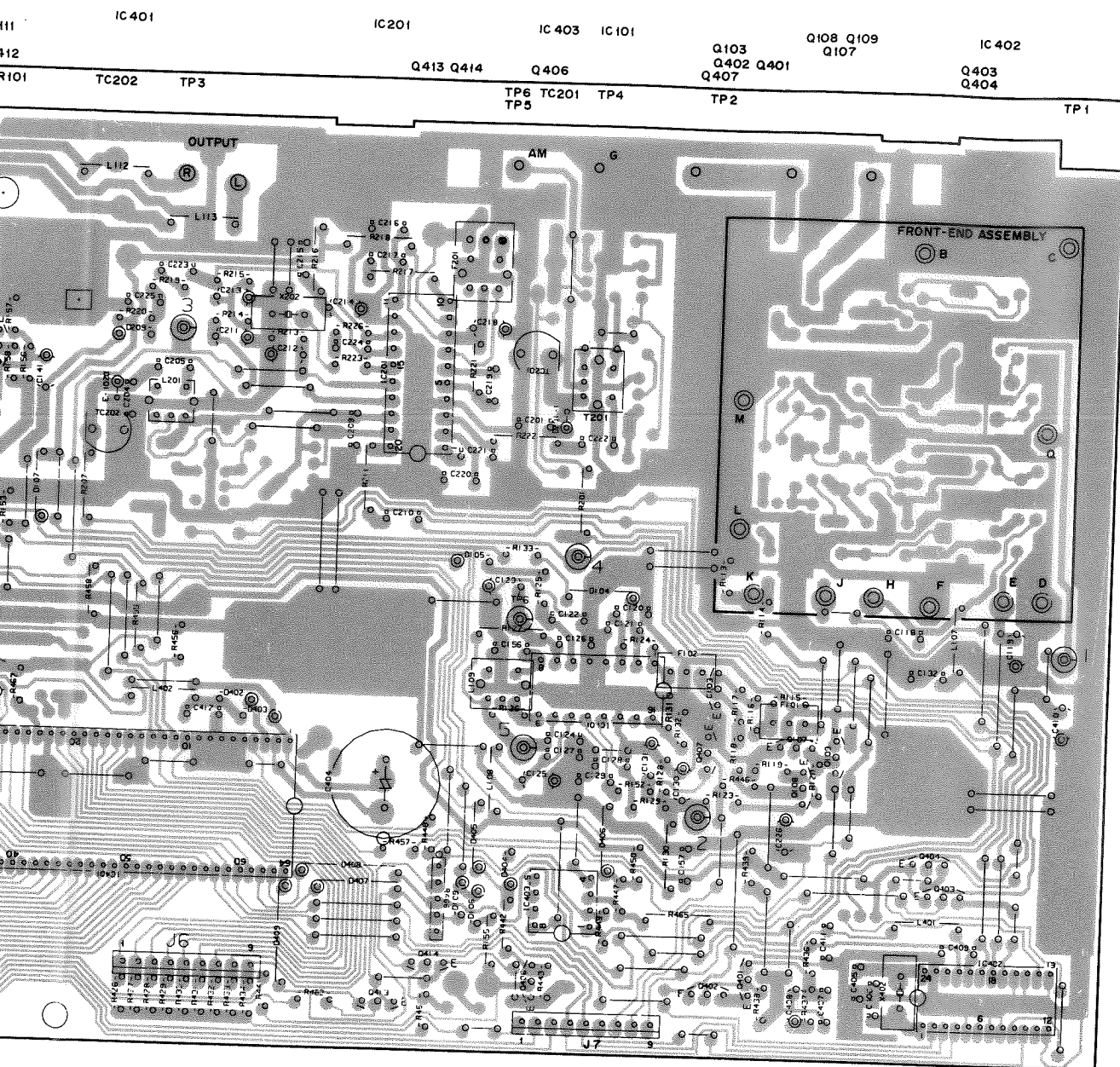
Mark	Symbol & Description	Part No.
	C303	CEAS470M10
	C143, C214	CEAS470M16
	C144, C145, C216, C221	CKDYB102K50
	C152, C153	CKDYB182K50
	C158, C159	CKDYB561K50
	C103, C104, C111, C112, C118, C154, C201, C219, C224, C407 C225	CKDYF103Z50
	C120, C121, C124, C126, C128, C129, C132, C209, C210, C215, C217, C222, C307, C409, C411, C412	CKDYF222Z50 CKDYF223Z50
	C155, C220, C223, C306	CKDYF473Z50
	C127	CKDYX473M25
	C205	CQSA431J50
	C149	CQSA471J50

RESISTORS

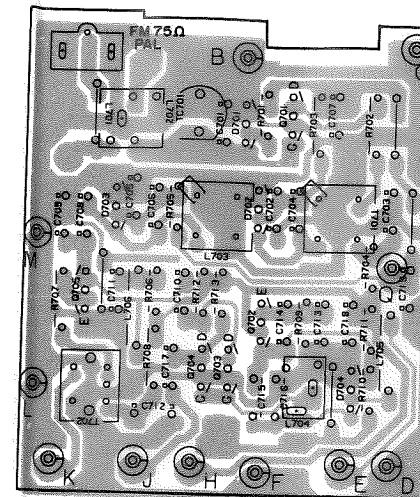
Mark	Symbol & Description	Part No.
★	VR101 Semi-fixed (4.7kΩ)	VRTB6VS472
	R466 Resistor array (22k×4)	RA4S223J
△	R216, R218	RD1/4PM□□□J
△	R301	RS1PMF182J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
★	X402 Crystal resonator (7.20MHz)	ASS-025
★	X401 Ceramic resonator (4.000MHz)	ASS-030
★	X202 Ceramic resonator (450.0kHz)	ATF-125
	4P Terminal (ANTENNA)	AKA-017
	2P Pin jack	AKB-119
	Mini jack	AKN-207



FE ASSEMBLY (FTZ)(AWB1003)



NOTE

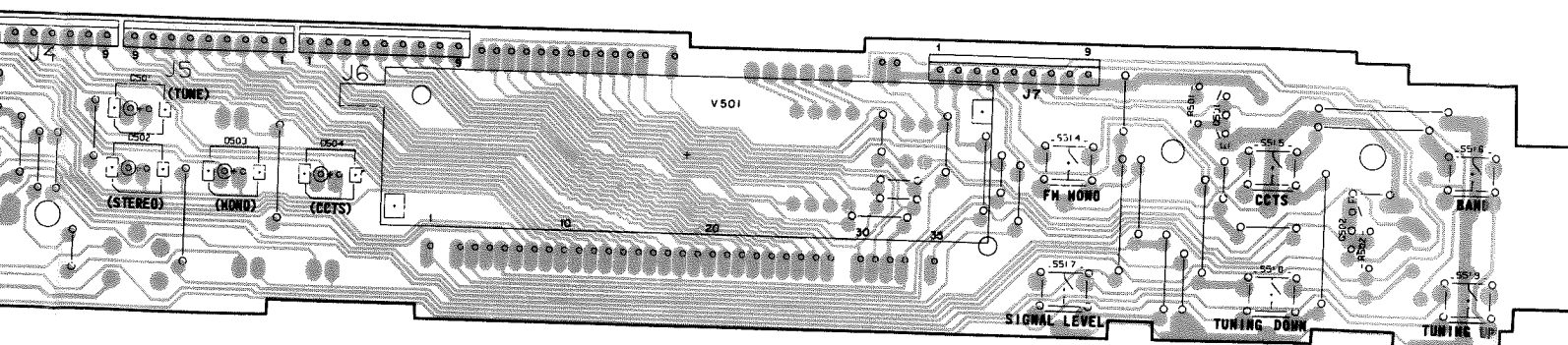
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203		Diode
R237		Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

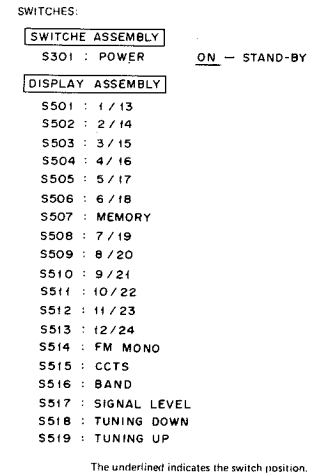
3. The capacitor terminal marked with ⊙ (double circles) shows negative terminal.
4. The diode terminal marked with ⊙ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



6



6



4.3 ELECTRICAL PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks $\star\star$ and $\star$.

$\star\star$ GENERALLY MOVES FASTER THAN $\star$

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω	56 $\times 10^1$	561.....	RD1/4PS $\square$ $\square$ $\square$ J
47k Ω	47 $\times 10^3$	473.....	RD1/4PS $\square$ $\square$ $\square$ J
0.5 Ω	0R5.....		RN2H $\square$ $\square$ $\square$ K
1 Ω	010.....		RSIP $\square$ $\square$ $\square$ K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	562 $\times 10^1$	5621.....	RN1/4SR $\square$ $\square$ $\square$ $\square$ F
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Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1427
$\Delta\star\star$	FU301 Fuse (T400mA)	AEK-407
Δ	AC power cord	ADG-094
	L1 Loop antenna assembly	ATB-113

SWITCH Assembly

SWITCH

Mark	Symbol & Description	Part No.
$\Delta\star\star$	S301 Push switch (POWER)	ASG-413

DISPLAY Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
$\star\star$	Q501, Q502	RN1203
$\star$	D502	AEL1009
$\star$	D501, D503, D504	AEL1015

SWITCHES

Mark	Symbol & Description	Part No.
$\star\star$	S501-S519 Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
	R501, R502	RD1/8PM332J

OTHERS

Mark	Symbol & Description	Part No.
$\star$	V501 Fluorescent indicator tube	AAV-023

TUNER Assembly (AWZ1427)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
$\star\star$	IC102	AN7470P
$\star\star$	IC201	LA1247
$\star\star$	IC402	LC7217
$\star\star$	IC403	M5223P
$\Delta\star\star$	IC301	NJM78M13A
$\star\star$	IC101	PA3001-A
$\star\star$	IC401	PD5057-B
$\star\star$	Q109, Q407, Q411-Q414	RN1203
$\star\star$	Q403, Q404	RN2203
$\star\star$	Q408	2SA1048
$\star\star$	Q401, Q402	2SC1740SLN
$\star\star$	Q107, Q108, Q111, Q406, Q409, Q410	2SC2458
$\star\star$	Q103	2SC2668
$\star\star$	Q301	2SD880
$\star\star$	Q110	2SJ103
$\star$	D201	KV0714-2
$\star$	D406	RD2.4ESB2
$\star$	D305	RD6.2ESB3
$\Delta\star$	D301-D304	S5566
$\star$	D104-D108, D209, D306-D308, D402-D405, D407-D410	1SS131

COILS, FILTERS AND TRANSFORMERS

Mark	Symbol & Description	Part No.
△	L201 AM OSC coil	ATB-100
	L109 FM detector coil	ATE-074
	L301 Line filter (1mH)	ATF-163
	L107, L108, L401, L402	LAU2R2M
	Axial inductor (2.2μH)	
	L112, L113 Axial inductor (220μH)	LAU221K
	F102 FM ceramic filter	ATF-107
	F101 FM ceramic filter	ATF-119
	F103 Beat eliminate filter	ATF-146
	F201 AM ceramic filter	ATF-208
	T201 AM antenna transformer	ATB-095
△ ★	T301 Power transformer	ATT1021

CAPACITORS

Mark	Symbol & Description	Part No.
	TC201, TC202 Trimmer	ACM-015
	C404 (22000 μF/5.5V)	ACH1023
	C156	CCDCH040C50
	C204	CCDCH150J50
	C405, C406	CCDCH270J50
	C122	CCDSL221J50
	C402, C403	CCDSL270J50
	C146, C408	CEASR22M50
	C119, C123, C131, C410, C413	CEAS010M50
	C147	CEAS1R5M50
	C133, C218	CEAS100M50
	C304	CEAS101M10
	C226	CEAS101M16
	C150, C151	CEAS2R2M50
	C125	CEAS220M25
	C142, C305	CEAS221M16
	C302	CEAS222M35
	C148, C401	CEAS3R3M50
	C130, C141, C211 - C213	CEAS4R7M50
	C303	CEAS470M10
	C143, C214	CEAS470M16
	C144, C145, C216, C221	CKDYB102K50
	C152, C153	CKDYB182K50
	C134	CKDYB681K50
	C118, C154, C157, C201, C219, C224, C407	CKDYF103Z50
	C225	CKDYF222Z50
	C120, C121, C124, C126, C128, C129, C132, C209, C210, C215, C217, C222, C307, C409, C411, C412	CKDYF223Z50
	C155, C220, C223, C306	CKDYF473Z50
	C127	CKDYX473M25
	C205	CQSA431J50
	C149	CQSA471J50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR101 Semi-fixed (4.7kΩ)	VRTB6VS472
	R466 Resistor array (22k×4)	RA4S223J
△	R216, R218	RD1/4PM□□□J
△	R302	RFA1/4PL390J
△	R301	RS1PMF182J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
★	X402 Crystal resonator (7.20MHz)	ASS-025
★	X401 Ceramic resonator (4.000MHz)	ASS-030
★	X202 Ceramic resonator (450.0kHz)	ATF-125
	Terminal (ANTENNA)	AKA1004
	2P Pin jack	AKB-119
	FE assembly (FTZ)	AWB1003

FE Assembly (FTZ)(AWB1003)

NOTE; This FE Assembly (FTZ)(AWB1003) is part of
TUNER Assembly (AWZ1427).

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q702	2SC2668
★★	Q705	2SC2786
★★	Q701, Q703, Q704	2SK241
★	D701-D704	1SV147

COILS AND TRANSFORMERS

Mark	Symbol & Description	Part No.
	L703 FM RF coil	ATC-247
	L701 FM coil	ATC1001
	L704 FM coil	ATC1003
	L702 FM coil	ATC1010
	L705, L706 Inductor (2.2 μ H)	ATH-049
	T701 FM RF transformer	ATC-194
	T702 FM matching transformer	ATE-063

CAPACITORS

Mark	Symbol & Description	Part No.
	TC701	ACM-014
	C715	CCDCH080D50
	C713	CCDCH150J50
	C714	CCDCH330J50
	C701	CCDRH100D50
	C705	CCDRH330J50
	C702, C704, C706	CCDRH390J50
	C710	CCDSL010C50
	C708, C709	CCDSL020C50
	C717	CCDSL050C50
	C711	CCDSL101J50
	C716	CCDTH180J50
	C703, C712, C718, C719	CKDYF103Z50
	C707	CKDYF223Z50

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM□□□J

A



1

2

3

4

5

6



5.3 ELECTRICAL PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
 - Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ **GENERALLY MOVES FASTER THAN ★**
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56 × 10 ¹	561.....	RD1/4PS 5 6 1 J
47kΩ	47 × 10 ³	473.....	RD1/4PS 4 7 3 J
0.5Ω	0R5.....		RN2H 0 5 K
1Ω	010.....		RSIP 0 1 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10 ¹	5621.....	RN1/4SR 5 6 2 1 F
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Note: This electrical parts list is common used to F-551L/HE and HB types.

Miscellaneous Parts

Mark	Symbol & Description	Part No.
	SWITCH assembly	
	DISPLAY assembly	
	TUNER assembly	AWZ1424
Δ★★	FU301 Fuse (T400mA)	AEK-407
Δ	AC power cord (HE type)	ADG1021
Δ	AC power cord (HB type)	ADG-063
	L1 Loop antenna assembly	ATB-113

SWITCH Assembly

SWITCH

Mark	Symbol & Description	Part No.
Δ★★	S301 Push switch (POWER)	ASG-413

DISPLAY Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q501, Q502	RN1203
★	D502	AEL1009
★	D501, D503, D504	AEL1015

SWITCHES

Mark	Symbol & Description	Part No.
★★	S501-S519 Tact switch (STATION CALL, MEMORY, FM MONO, CCTS, BAND, SIGNAL LEVEL, TUNING)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
	R501, R502	RD1/8PM332J

OTHERS

Mark	Symbol & Description	Part No.
★	V501 Fluorescent indicator tube	AAV-023

TUNER Assembly(AWZ1424)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC102	AN7470P
★★	IC201	LA1247
★★	IC402	LC7217
★★	IC403	M5223P
Δ★★	IC301	NJM78M13A
★★	IC101	PA3001-A
★★	IC401	PD5057-B
★★	Q109, Q407, Q411-Q414	RN1203
★★	Q403-Q405	RN2203
★★	Q408	2SA1048
★★	Q401, Q402	2SC1740SLN
★★	Q107, Q108, Q406, Q409, Q410	2SC2458
★★	Q103, Q104	2SC2668
★★	Q102	2SC2786
★★	Q201, Q202	2SC2878
★★	Q301	2SD880
★★	Q110	2SJ103
★★	Q105, Q106	2SK161
★★	Q101	2SK241
★	D201	KV0714-3
★	D406	RD2.4ESB2
★	D305	RD6.2ESB3
Δ	D301-D304	S5566
★	D104-D108, D208-D211, D306-D308, D402-D405, D407-D409	1SS131
★	D204-D207	1SS85
★	D101-D103	1SV147

COILS, FILTERS AND TRANSFORMERS

Mark	Symbol & Description	Part No.
	L201 AM OSC coil	ATB-100
	L101 FM coil	ATC1001
	L102 FM coil	ATC1002
	L103 FM coil	ATC1004
	L104 FM coil	ATC1005
	L105 FM coil	ATC1011
	L202 LW OSC coil	ATD-023
	L109 FM detector coil	ATE-074
	L106-L108, L110, L401, L402 Axial inductor (2.2μH)	LAU2R2M
	F102 FM ceramic filter	ATF-107
	F101 FM ceramic filter	ATF-119
	F201 AM ceramic filter	ATF-208
	T201 AM antenna transformer	ATB-095
	T202 LW antenna transformer	ATD1002
	T101 FM matching transformer	ATE-063
△ ★	T301 Power transformer	ATT1021 (ATS-096)

CAPACITORS

Mark	Symbol & Description	Part No.
	TC201, TC202 Trimmer	ACM-015
	TC203 Trimmer	ACM-020
	C404 (22000μF/5.5V)	ACH1023
	C156	CCDCH040C50
	C115	CCDCH080D50
	C203	CCDCH100D50
	C113, C204	CCDCH150J50
	C405, C406	CCDCH270J50
	C114	CCDCH330J50
	C207	CCDCH560J50
	C101, C105, C106	CCDRH330J50
	C102	CCDRH390J50
	C107	CCDSL020C50
	C108	CCDSL030C50
	C109	CCDSL050C50
	C117	CCDSL070D50
	C110	CCDSL101J50
	C122	CCDSL221J50
	C402, C403	CCDSL270J50
	C116	CCDTH180J50
	C146, C408	CEASR22M50
	C119, C123, C131, C208, C410, C413	CEAS010M50
	C147	CEAS1R5M50
	C218	CEAS100M50
	C304	CEAS101M10
	C226	CEAS101M16
	C150, C151	CEAS2R2M50
	C125	CEAS220M25
	C142, C305	CEAS221M16

Mark	Symbol & Description	Part No.
	C302	CEAS222M35
	C148, C401	CEAS3R3M50
	C130, C141, C211-C213	CEAS4R7M50
	C303	CEAS470M10
	C143, C214	CEAS470M16
	C144, C145, C216, C221	CKDYB102K50
	C152, C153	CKDYB182K50
	C103, C104, C111, C112, C118, C154, C201, C202, C219, C224, C407	CKDYF103Z50
	C225	CKDYF222Z50
	C120, C121, C124, C126, C128, C129, C132, C209, C210, C215, C217, C222, C307, C409, C411, C412	CKDYF223Z50
	C155, C220, C223, C306	CKDYF473Z50
	C127	CKDYX473M25
	C206	CQSA301J50
	C205	CQSA431J50
	C149	CQSA471J50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR101 Semi-fixed (4.7kΩ)	VRTB6VS472
	R466 Resistor array (22k×4)	RA4S223J
△	R216, R218	RD1/4PM□□□J
△	R302	RFA1/4PL390J
△	R301	RS1PMF182J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
★	X402 Crystal resonator (7.20MHz)	ASS-025
★	X401 Ceramic resonator (4.000MHz)	ASS-030
★	X202 Ceramic resonator (450.0kHz)	ATF-125
	4P Termianl (ANTENNA)	AKA1002
	2P Pin jack	AKB-119

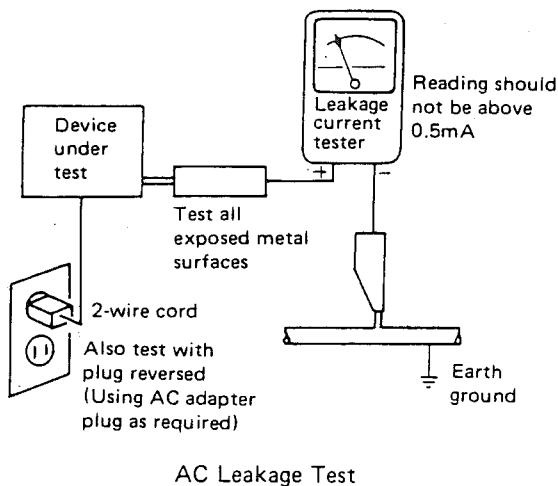
6. SAFTY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.