



HITACHI

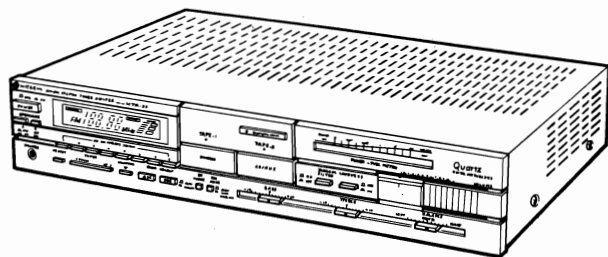
SERVICE MANUAL

TY

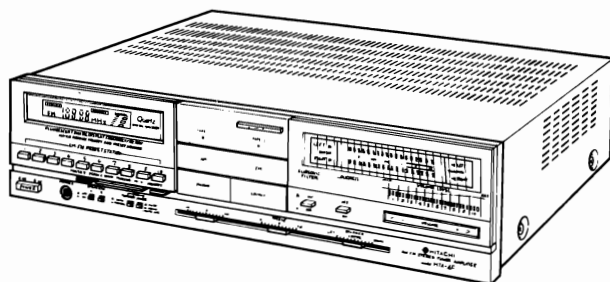
No. 378 EF

HTA-3F

HTA-4F



HTA-3F



HTA-4F

CONTENTS · SOMMAIRE

SPECIFICATIONS ·	
CARACTERISTIQUES TECHNIQUES	2,3
DISASSEMBLY AND REPLACEMENT ·	
DEMONTAGE ET REMONTAGE	4~7
GENERAL ALIGNMENT INSTRUCTION ·	
INSTRUCTIONS GENERALES	8
FM TUNER ALIGNMENT ·	
REGLAGE DE TUNER FM	9
AM TUNER ALIGNMENT ·	
REGLAGE DE TUNER AM	10
BLOCK DIAGRAM · SCHEMA	11
CIRCUIT DIAGRAM · PLAN DE CIRCUIT	12,14,16,18
PRINTED WIRING BOARD · PLAN DE BASE	13,15,17
TROUBLE SHOOTING ·	
ANALYSE DE PANNES	19~23
FRONT AND REAR PANEL ·	
PANNEAUX AVANT ET ARRIERE	24,25
REPLACEMENT PARTS LIST ·	
TABLEAU DE PIÈCE	26~33

CAUTION FOR U.S.A.

Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with Δ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

PRÉCAUTIONS DE SÉCURITÉ

Les précautions suivantes doivent être observées chaque fois qu'une réparation doit être faite.

1. Etant donné que de nombreux composants de l'appareil possèdent des caractéristiques relatives à la sécurité, utiliser uniquement des pièces de rechange d'origine Hitachi pour effectuer un remplacement. Ceci se rapporte notamment aux pièces critiques du bloc d'alimentation qui ne doivent en aucun cas être remplacées par celles d'autres fabricants. Les pièces critiques sont accompagnés du symbole Δ dans le schéma de montage et sur le schéma de plaque de câblage.
2. Avant de retourner l'appareil réparé au client, le technicien doit procéder à un essai complet pour s'assurer qu'il ne présente aucun danger de chocs électriques.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

STEREO TUNER AMPLIFIER

July 1983

TOYOKAWA WORKS

SPECIFICATIONS

FM SECTION

Frequency range	87.9 – 107.9 MHz (100 kHz spacing)	
Usable sensitivity (IHF)	Mono : 13.2 dBf	
50 dB quieting sensitivity	Mono : 20.2 dBf (5.6 μ V)	Stereo : 38.2 dBf (44.7 μ V)
Signal-to-noise ratio (at 65 dBf)	Mono : 76 dB (IHF)	Stereo : 70 dB (IHF)
Total harmonic distortion (at 65 dBf) 1 kHz	Mono : 0.15 %	Stereo : 0.25 %
Frequency response	30 Hz – 12 kHz \pm 2 dB	
Selectivity	53 dB (\pm 400 kHz IHF)	
Stereo separation	40 dB (1 kHz)	
Antenna input	300 ohms balanced, 75 ohms unbalanced	

AM SECTION

Frequency range	530 – 1,620 kHz (10 kHz spacing)
Sensitivity	15 μ V (IHF, ext. Antenna)
Selectivity	38 dB
Signal-to-noise ratio (at 50 mV)	45 dB
Antenna	Loop antenna and external terminal

AUDIO SECTION

RMS Power (Both channels driven)	30 Watts [HTA-3F] 40 Watts [HTA-4F] per channel, min RMS, at 8 ohms from 20 Hz to 20 kHz, with less than 0.05% [HTA-3F], 0.01% [HTA-4F] total harmonic distortion. 30 W + 30 W (8 ohms, 1 kHz, T.H.D. 0.05 % IHF) [HTA-3F] 45 W + 45 W (8 ohms, 1 kHz, T.H.D. 0.01 % IHF) [HTA-4F]
Power bandwidth	10 Hz – 30 kHz (1/2 RMS power, T.H.D. 0.05 % at 8 ohms) [HTA-3F] 20 Hz – 30 kHz (1/2 RMS power, T.H.D. 0.01 % at 8 ohms) [HTA-4F]
Frequency characteristics	10 Hz – 40 kHz (\pm 2 dB) [HTA-3F] 10 Hz – 60 kHz (\pm 2 dB) [HTA-4F]
Total harmonic distortion (at rated output)	Less than 0.05 % [HTA-3F] Less than 0.01 % [HTA-4F]
Intermodulation distortion (at 1/2 rated output)	Less than 0.05 % [HTA-3F] Less than 0.01 % [HTA-4F]
Input sensitivity/impedance (at 30 W output, 1 kHz)	
PHONO	2.5 mV/47 k-ohms [HTA-3F] 2.5 mV/50 k-ohms [HTA-4F]
TAPE 1,2 : CD/VIDEO/AUX	150 mV/35 k-ohms [HTA-3F] 150 mV/50 k-ohms [HTA-4F]
Max. input level (PHONO)	140 mV (T.H.D. 0.05 % at 1 kHz) [HTA-3F] 150 mV (T.H.D. 0.02 % at 1 kHz) [HTA-4F]
Output level at TAPE OUT	150 mV (PHONO at rated input) 150 mV (FM 400 Hz, 30 % mod. input 1 mV) 150 mV (AM 400 Hz, 30 % mod. input 5 mV/m)
Signal-to-noise ratio (IHF, A network, rated power)	
PHONO	70 dB [HTA-3F] 71 dB [HTA-4F]
TAPE 1,2 : CD/VIDEO/AUX	95 dB
Damping factor	30 (1 kHz, 8 ohms) [HTA-3F] 50 (1 kHz, 8 ohms) [HTA-4F]
Equalizer	RIAA \pm 0.5 dB
Bass control (100 Hz)	\pm 9 dB [HTA-3F] \pm 8 dB [HTA-4F]
Treble control (10 kHz)	\pm 8 dB
Loudness control (100 Hz/10 kHz)	+6 dB/+5 dB/(100 Hz/10 kHz) [HTA-3F] +7 dB/+5 dB/(100 Hz/10 kHz) [HTA-4F]
Subsonic filter	-12 dB/oct. (20 Hz)
FM muting	Provided
Tape monitor	Provided (2 tape deck facilities)
Tape copy	Provided (1 - 2)
Speaker switch	A, B, A + B, OFF
AC outlet	1 (100 W unswitched)
Power requirements	AC 120 V 60 Hz
Power consumption	150 W (at 1/3 rated output) [HTA-3F] 190 W (at 1/3 rated output) [HTA-4F]
Dimensions	435(W) \times 83(H) \times 292(D) mm [HTA-3F] 435(W) \times 110(H) \times 347(D) mm [HTA-4F]
Weight	5.5 kg [HTA-3F] 7.2 kg [HTA-4F]

CARACTERISTIQUES TECHNIQUES

SECTION FM

Gamme de fréquences	87,9 – 107,9 MHz (intervalle 100 kHz)	
Sensibilité utile (IHF)	Mono : 13,2 dBf	
Seuil de sensibilité 50 dB	Mono : 20,2 dBf (5,6 μ V)	Stéréo : 38,2 dBf (44,7 μ V)
Rapport signal/bruit (à 65 dBf)	Mono : 76 dB (IHF)	Stéréo : 70 dB (IHF)
Distorsion harmonique totale (à 65 dBf) 1 kHz	Mono : 0,15 %	Stéréo : 0,25 %
Courbe de réponse	30 Hz – 12 kHz \pm 2 dB	
Sélectivité	53 dB (\pm 400 kHz IHF)	
Séparation stéréo	40 dB (1 kHz)	
Entrée d'antenne	300 ohms équilibrée, 75 ohms non équilibrée	

SECTION AM

Gamme de fréquences	530 – 1,620 kHz (intervalle 10 kHz)
Sensibilité	15 μ V (IHF, antenne ext.)
Sélectivité	38 dB
Rapport signal/bruit (à 50 mV)	45 dB
Antenne	Antenne boucle et borne extérieure

SECTION AUDIO

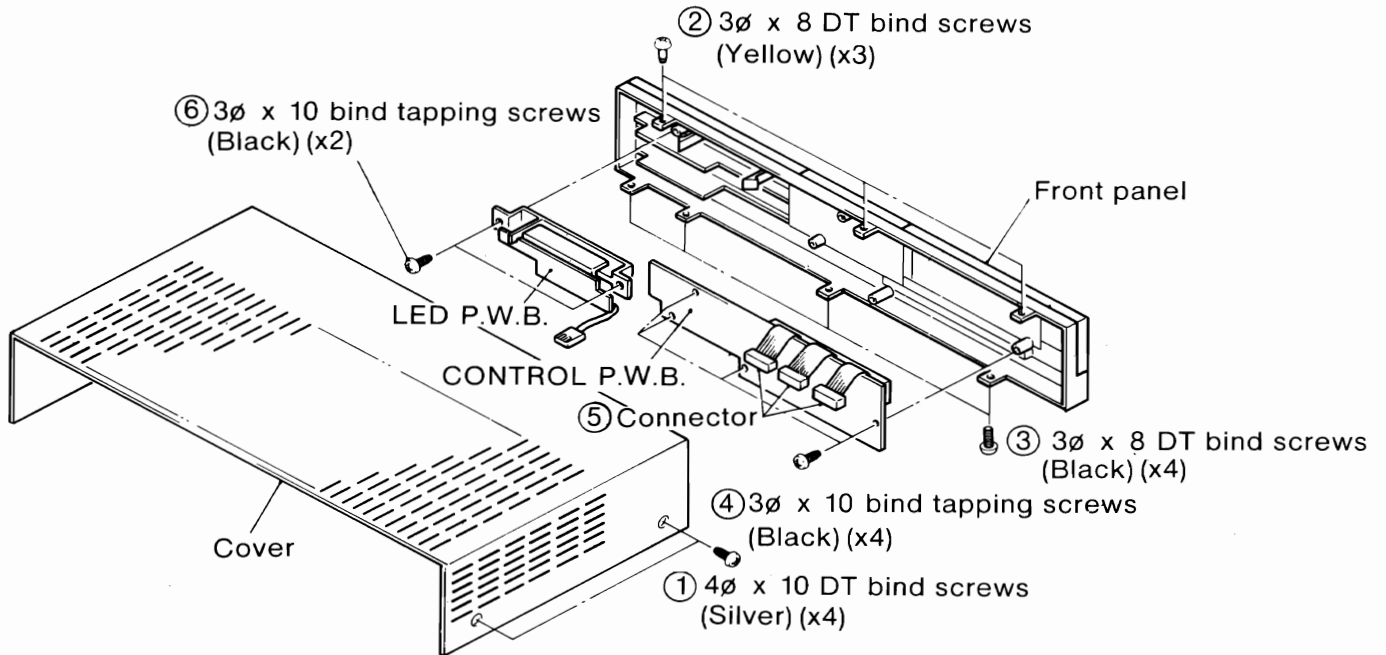
Puissance efficace	30 Watts [HTA-3F] 40 Watts [HTA-4F] par canal, min. efficace, à 8 ohms de 20 Hz à 20 kHz, avec une distorsion harmonique total inférieure à 0,05 % [HTA-3F] 0,01 % [HTA-4F]
	30 W + 30 W (8 ohms, 1 kHz, DHT 0,05 % IHF) [HTA-3F]
	45 W + 45 W (8 ohms, 1 kHz, DHT 0,01 % IHF) [HTA-4F]
Largeur de bande	10 Hz – 30 kHz (Puissance efficace 1/2, DHT 0,05 % à 8 ohms) [HTA-3F]
	20 Hz – 30 kHz (Puissance efficace 1/2, DHT 0,01 % à 8 ohms) [HTA-4F]
Caractéristiques de fréquence	10 Hz – 40 kHz (\pm 2 dB) [HTA-3F]
	10 Hz – 60 kHz (\pm 2 dB) [HTA-4F]
Distorsion harmonique totale (à la sortie nominale)	Inférieure à 0,05 % [HTA-3F]
	Inférieure à 0,01 % [HTA-4F]
Distorsion d'intermodulation (à 1/2 de la sortie nominale)	Inférieure à 0,05 % [HTA-3F]
	Inférieure à 0,02 % [HTA-4F]
Impédance/sensibilité d'entrée (avec sortie 30 W, 1 kHz) PHONO	2,5 mV/47-ohms [HTA-3F]
	2,5 mV/50 k-ohms [HTA-4F]
TAPE 1-2 : CD/VIDEO/AUX	150 mV/35 k-ohms [HTA-3F]
	150 mV/50 k-ohms [HTA-4F]
Niveau d'entrée max.	140 mV (DHT 0,05 % à 1 kHz) [HTA-3F]
	150 mV (DHT 0,01 % à 1 kHz) [HTA-4F]
Niveau de sortie à TAPE OUT	150 mV (PHONO à l'entrée nominale)
	150 mV (FM 400 Hz, 30 % mod. entrée 1 mV)
	150 mV (AM 400 Hz, 30 % mod. entrée 5 mV/m)
Rapport signal/bruit (IHF, réseau A, puissance nominale) PHONO	70 dB [HTA-3F]
	71 dB [HTA-4F]
TAPE 1-2 : CD/VIDEO/AUX	95 dB
Facteur d'amortissement	30 (1 kHz, 8 ohms) [HTA-3F]
	50 (1 kHz, 8 ohms) [HTA-4F]
Egalisateur	RIAA \pm 0,5 dB
Commande des graves (100 Hz)	\pm 9 dB [HTA-3F]
	\pm 8 dB [HTA-4F]
Commande des aigus (10 kHz)	\pm 8 dB
Commande de correction physiologique (100 Hz/10 kHz)	+6 dB/5 dB/(100 Hz/10 kHz) [HTA-3F]
	+7 dB/5 dB/(100 Hz/10 kHz) [HTA-4F]
Filtre infra-acoustique	-12 dB/oct. (20 Hz)
Sourdine FM	Fournie
Contrôleur de bande	Fourni (pour une installation de 2 magnéto-phones)
Copie de bande	Fournie (1 – 2)
Interrupteur d'enceintes	A, B, A+B, OFF
Prise secteur	1 (100 W non commutable)
Alimentation	CA 120 V 60 Hz
Consommation	150 W (au 1/3 de la sortie nominale) [HTA-3F]
	190 W (au 1/3 de la sortie nominale) [HTA-4F]
Dimensions	435(L) \times 83(H) \times 292(P) mm [HTA-3F]
	435(L) \times 110(H) \times 347(P) mm [HTA-4F]
Poides	5,5 kg [HTA-3F]
	7,2 kg [HTA-4F]

Les caractéristiques techniques et la présentation peuvent être modifiées sans préavis pour des raisons d'améliorations.

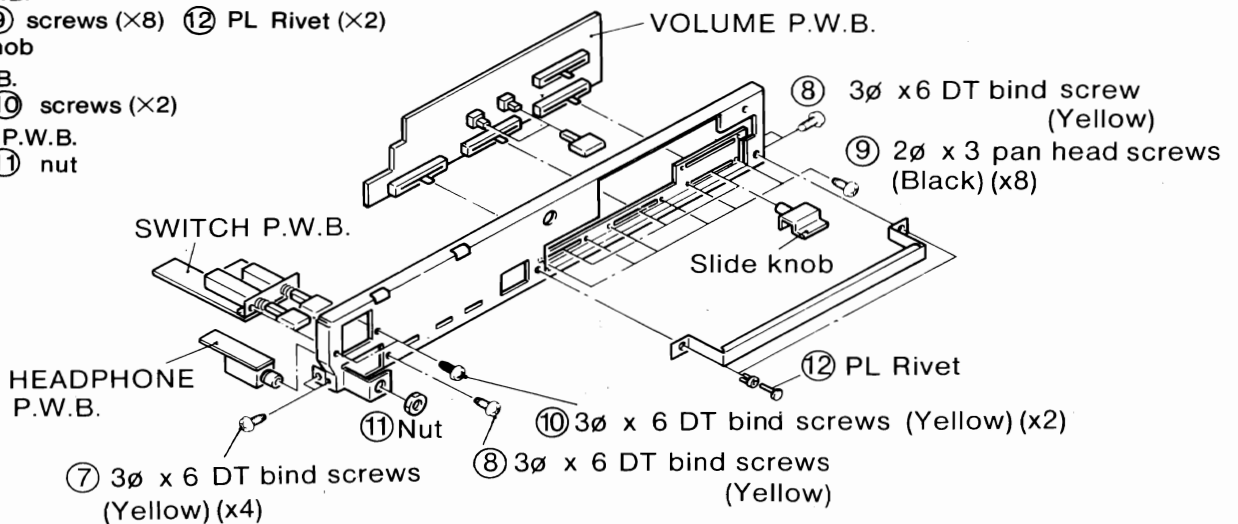
DISASSEMBLY AND REPLACEMENT · DEMONTAGE ET REMONTAGE

HTA-3F

1. Cover
 - Remove ① screws (×4)
2. Front panel
 - Remove ② screws (×3) and ③ screws (×4)
3. Control P.W.B.
 - Remove ④ screws (×4) and ⑤ connector (×3)
4. LED P.W.B.
 - Remove ⑥ screws (×2)



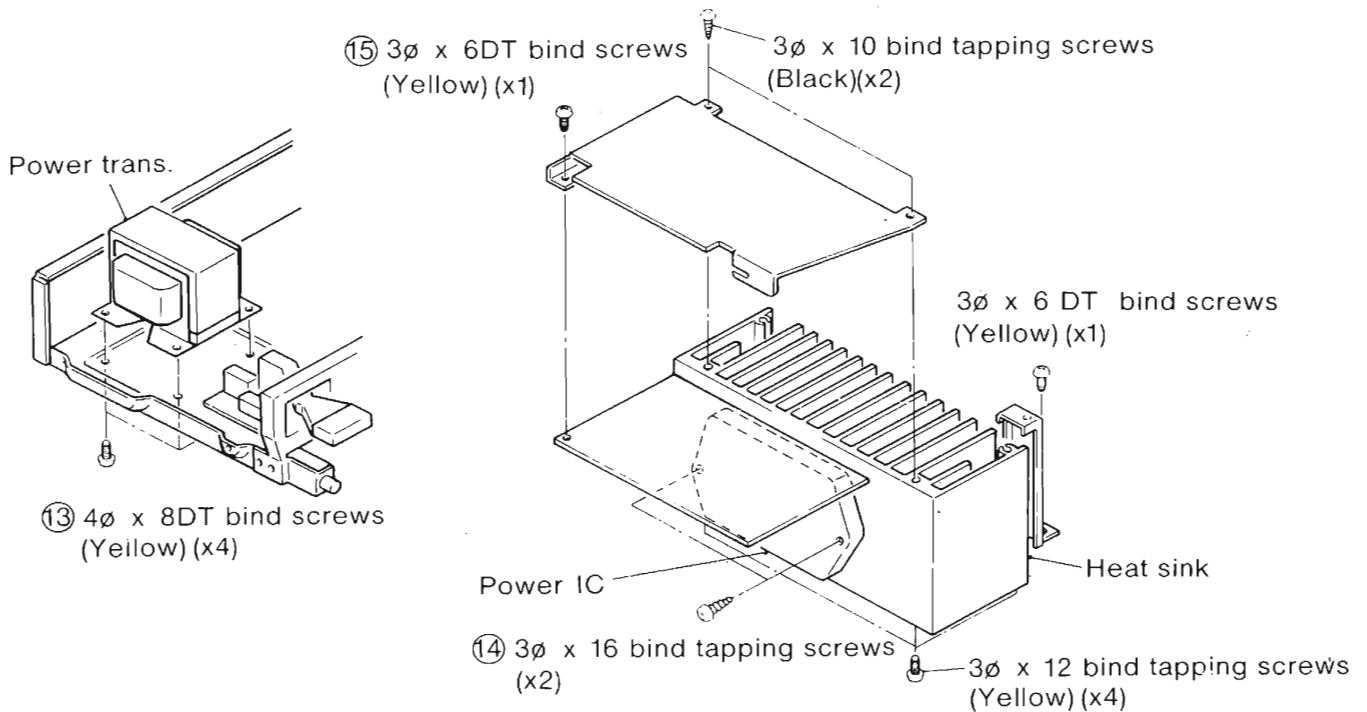
5. Mecha plate
 - Remove ⑦ screws (×4) and ⑧ 3ø × 6 DT bind screws
6. Volume P.W.B.
 - Remove ⑨ screws (×8) ⑫ PL Rivet (×2) and Slide knob
7. Switch P.W.B.
 - Remove ⑩ screws (×2)
8. Headphone P.W.B.
 - Remove ⑪ nut



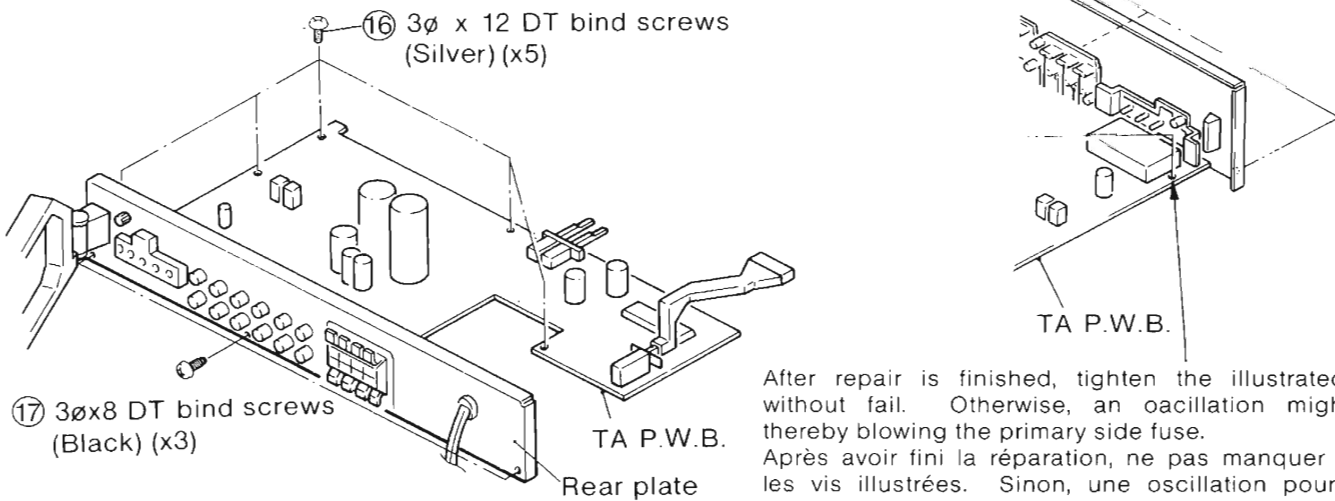
Note : After repair is finished, tighten the illustrated screws without fail. Otherwise, an oscillation might occur, thereby blowing the primary side fuse.

Note : Après avoir fini la réparation, ne pas manquer de serrer les vis illustrées. Sinon, une oscillation pourrait avoir lieu, ce qui ferait sauter le fusible côté primaire.

- 9. Power transformer
 - Remove ⑬ screws (x4)
- 10. Power IC
 - Remove ⑭ screws (x2) and ⑮ screws (x1)



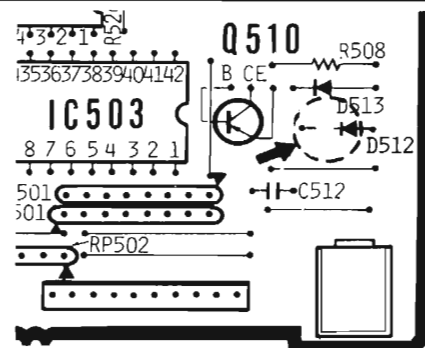
- 11. TA P.W.B.
 - Remove ⑯ screws (x5) and ⑰ screws (x3)



After repair is finished, tighten the illustrated screws without fail. Otherwise, an oscillation might occur, thereby blowing the primary side fuse.
 Après avoir fini la réparation, ne pas manquer de serrer les vis illustrées. Sinon, une oscillation pourrait avoir lieu, ce qui ferait sauter le fusible côté primaire.

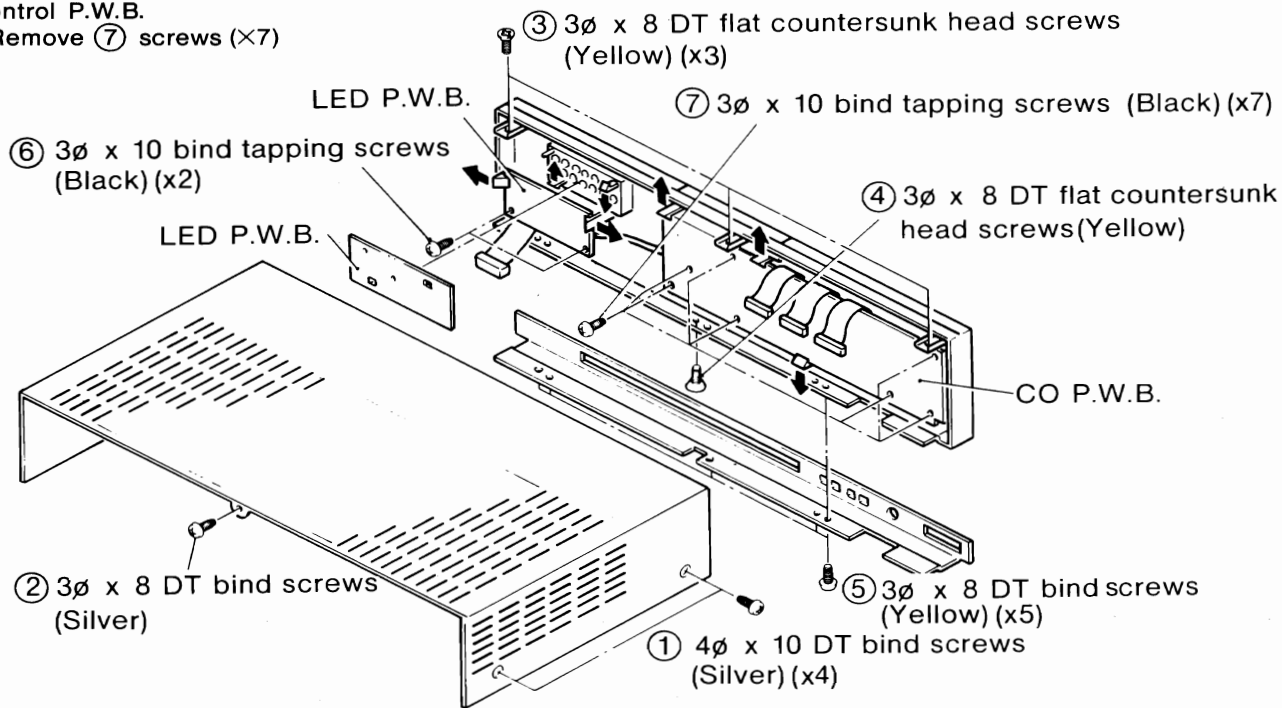
Notice for export models to the U.S.A. & Canada.
 In order to switch the AM broadcast frequencies channel spacing from 10 kHz to 9 kHz, connect D512 as illustrated in the following figure.

Remarque concernant les modèles d'exportation pour les Etats-Unis et le Canada
 Pour modifier l'espace entre deux fréquences radio de la bande AM de 10 kHz à 9 kHz, relier D512 comme indiqué sur la figure.

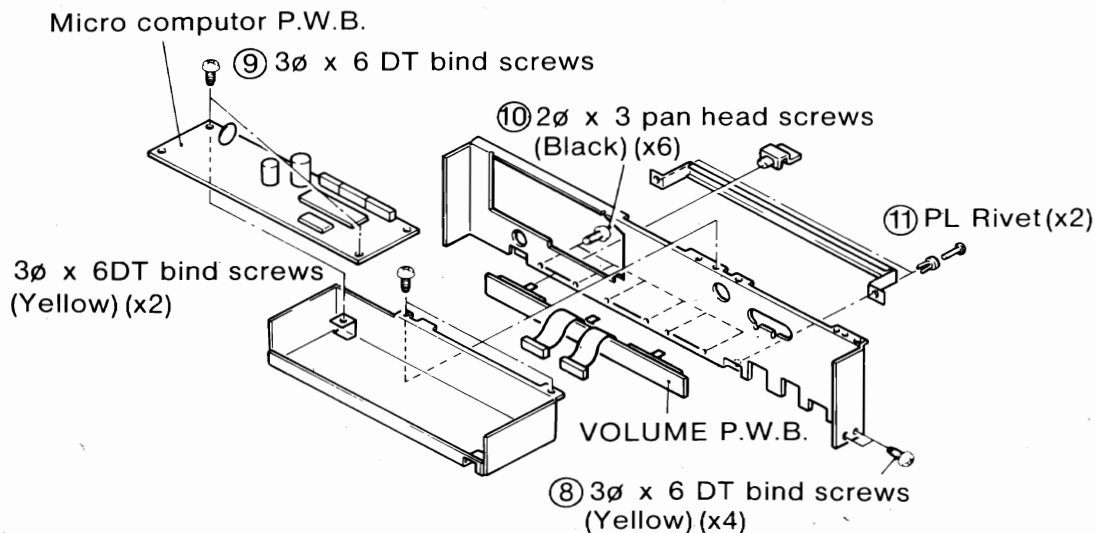


HTA-4F

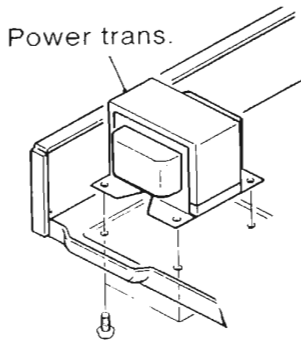
1. Cover
 - Remove ① screws (×4) and ② screws
2. Front panel
 - Remove ③ screws (×3), ④ screw and ⑤ screws (×5)
3. LED P.W.B.
 - Remove ⑥ screw (×2)
4. Control P.W.B.
 - Remove ⑦ screws (×7)



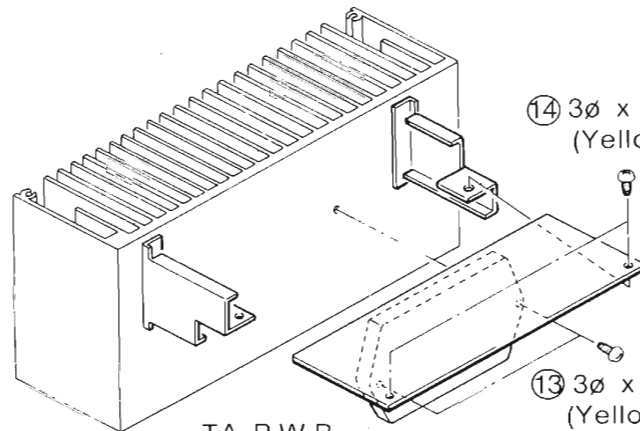
5. Mech plate
 - Remove ⑧ screws (×4)
6. MICRO COMPUTER P.W.B.
 - Remove ⑨ screws (×2)
7. VOLUME P.W.B.
 - Remove ⑩ screws (×6), ⑪ PL Rivet and Side knob



- 8. Power transformer
 - Remove ⑫ screws (x4)
- 9. Power IC
 - Remove ⑬ screws (x2) and ⑭ screws (x2)
- 10. TA P.W.B.
 - Remove ⑮ screws (x5) and ⑯ screws (x4)



⑫ 4ø x 8DT bind screws (Yellow) (x4)

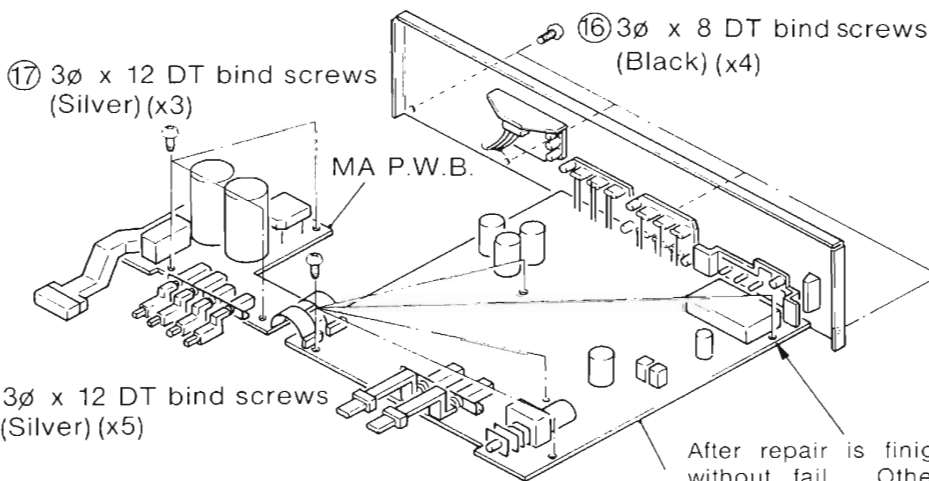


⑭ 3ø x 6 DT bind screws (Yellow) (x2)

⑬ 3ø x 16 bind tapping screws (Yellow) (x2)

TA P.W.B. Power IC

- 11. MA P.W.B.
 - Remove ⑰ screws (x3)



⑰ 3ø x 12 DT bind screws (Silver) (x3)

⑯ 3ø x 8 DT bind screws (Black) (x4)

⑮ 3ø x 12 DT bind screws (Silver) (x5)

TA P.W.B.

After repair is finished, tighten the illustrated screws without fail. Otherwise, an oscillation might occur, thereby blowing the primary side fuse.

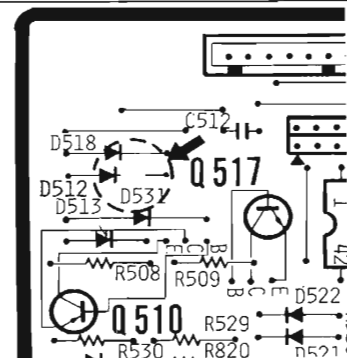
Après avoir fini la réparation, ne pas manquer de serrer les vis illustrées. Sinon, une oscillation pourrait avoir lieu, ce qui ferait sauter le fusible côté primaire.

Notice for export models to the U.S.A. & Canada.

In order to switch the AM broadcast frequencies channel spacing from 10 kHz to 9 kHz, connect D512 as illustrated in the following figure.

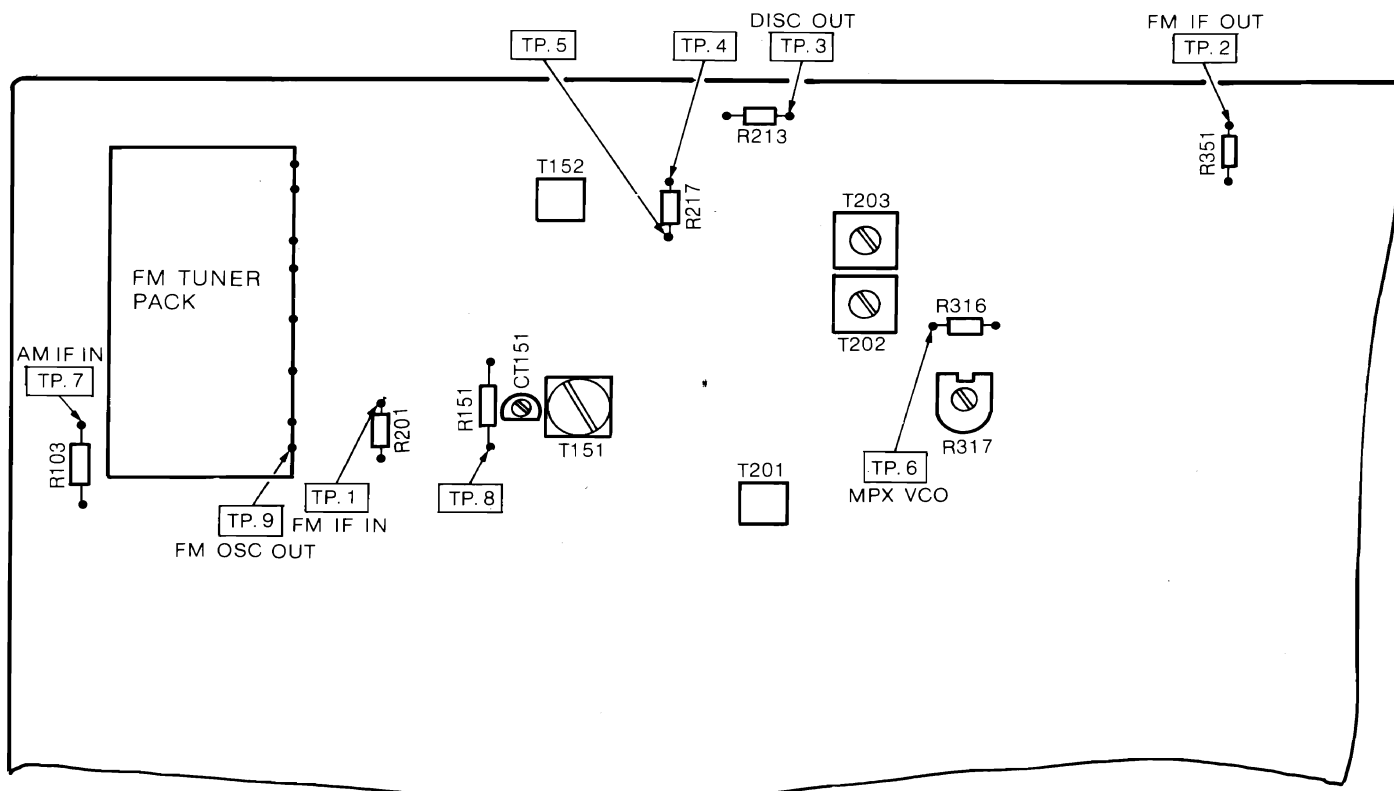
Remarque concernant les modèles d'exportation pour les Etats-Unis et le Canada

Pour modifier l'espacement entre deux fréquences radio de la bande AM de 10 kHz à 9 kHz, relier D512 comme indiqué sur la figure.

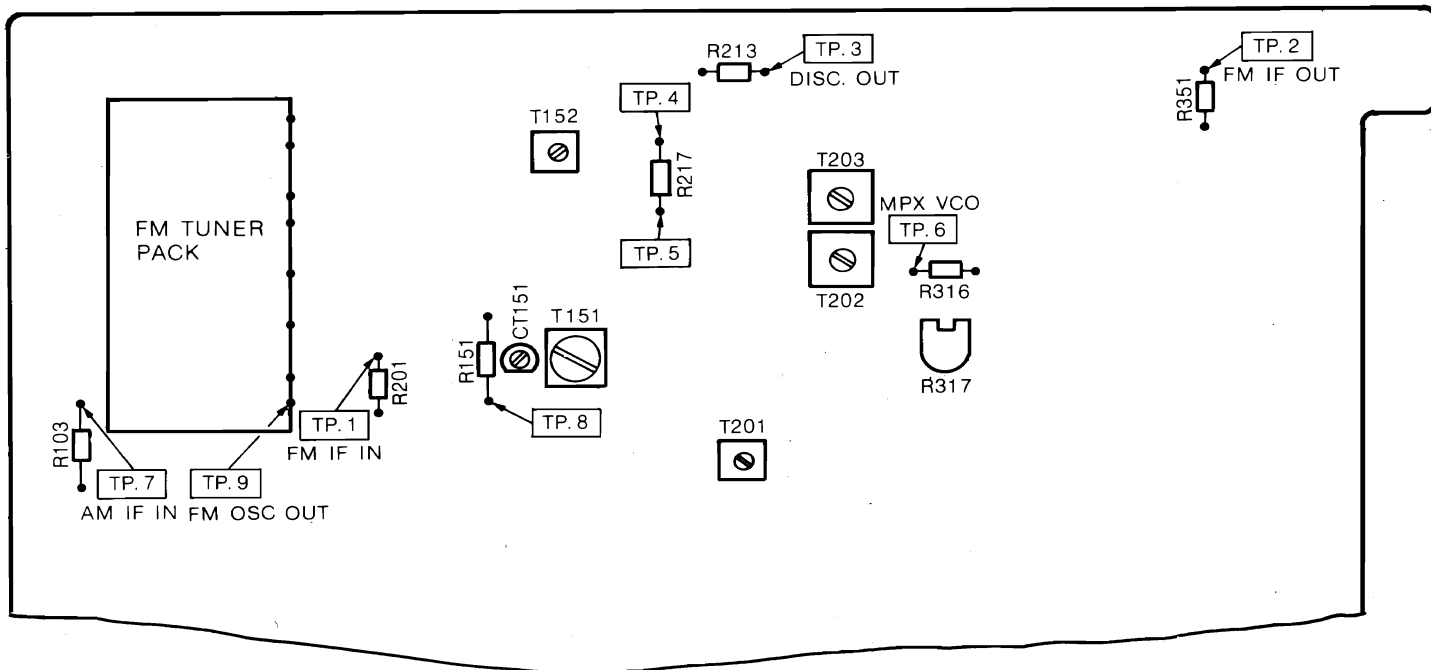


GENERAL ALIGNMENT INSTRUCTION · INSTRUCTIONS GENERALES

HTA-3F



HTA-4F





FM TUNER ALIGNMENT · REGLAGE DE TUNER FM

FUNCTION : FM
FONCTION : FM


VOLUME : MIN
VOLUME : min.


FM MODE : MONO


 Sweep Generator
Générateur de balayage

 Signal Generator
Générateur de signaux

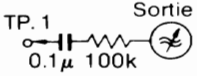
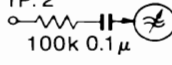
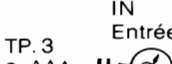
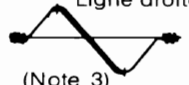
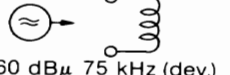
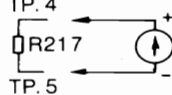
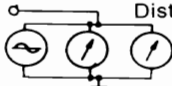
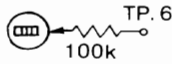
 Oscilloscope

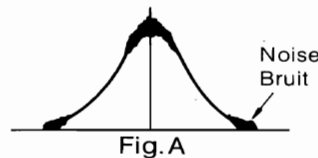
 + DC Null Meter
- Indicateur d'équilibrage à C.C.

 VTVM
Voltmètre électronique

 Frequency Counter
Fréquencemètre

Dist.
 Distortion Meter
Distorsionmètre

Sequence Ordre	Connection Connexion		Setting Montage		Adjust for Réglage pour		
	Input Entrée	Output Sortie	Tuning Indicateur d'accord	Signal	Adjust Réglage	Indication	
1	IF Amp. Amplificateur de fréquence intermédiaire	TP. 1 Out Sortie 	TP. 2 IN Entrée 	—	10.7 MHz	T101 (Tuner pack) (Ensemble Tuner)	(Note 2)
2	"S" curve Courbe	—	TP. 3 IN Entrée 	—	10.7 MHz	T202, T203 T202 : "S" curve Courbe en forme de "S" T203 : Straight Line Ligne droite	 (Note 3)
3	Discriminator Discriminateur	ANT. Terminal (300 ohms) Borne d'antenne (300 ohms) 	TP. 4 	98.1 MHz	98.1 MHz	T202	(Note 4)
4	Distortion Distorsion	1 kHz 60 dBµ 75 kHz (dev.)	REC OUT Dist. 	98.1 MHz	98.1 MHz	T202, T203	Distortion min. (Note 5)
5	Covering Portée	—					(Note 6)
6	Tracking Alignement	—					(Note 6)
7	76 kHz (FM MODE : AUTO)	ANT. Terminal (300 ohms) Borne d'antenne (300 ohms) 60 dBµ Non modulated Sans modulation	TP. 6 	98.1 MHz	98.1 MHz	R317	76 kHz ±100 Hz



Note 1 : Perform adjustment at least 3 minutes after the power has been switched on.

Note 2 : Using a sweep generator, apply low-input signals (with a small amount of noise superimposed as in Fig. A), and adjust the T101 so that the waveforms are brought to their maximum in center marker frequency (10.7 MHz).

Note 3 : Adjust the T202 coil and obtain an S-curve. Now adjust the T203 coil and improve the linearity of the S-curve.

Note 4 : Connect a DC null meter across R217 on the TA P.W.B., and adjust T202 core for a reading of 0 V ±60 mV.

Note 5 : When the distortion adjustment is performed, there will be a slight deviation in the discriminator adjustment performed under 3. Therefore, repeat adjustments 3 and 4 several times and adjust for a reading of 0V on the DC null meter with the distortion at its minimum.

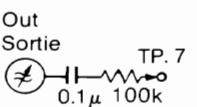
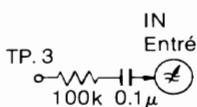


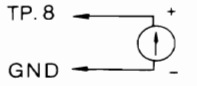

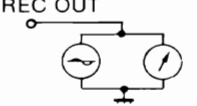
Note 6 : FM Tuner pack is aligned before shipping, so it is not necessary to adjust covering and tracking.

- Note 1 :** Effectuer ce réglage au moins 3 minutes après la mise sous tension.
- Note 2 :** Utiliser un générateur de balayage et appliquer des signaux d'entrée à faible niveau (avec un faible chevauchement de bruit comme représenté sur la Fig. A), et ajuster T101 pour amener les formes d'ondes à leur maximum de la fréquence nominale de repérage (10,7 MHz).
- Note 3 :** Ajuster la bobine T202 pour obtenir une courbe en forme de "S". Ajuster ensuite la bobine T203 et améliorer la linéarité de la courbe en forme de "S".
- Note 4 :** Raccorder un indicateur de zéro à courant continu entre R217 de la plaquette à circuits imprimés du TA et ajuster le noyau T202 pour obtenir une lecture de 0 V \pm 60 mV.
- Note 5 :** Quand le réglage de distorsion est réalisé, il existera un léger écart de réglage du discriminateur, opération qui est réalisée en en 3. Par conséquent, les réglages 3 et 4 doivent être faits à plusieurs reprises de façon à obtenir une indication de 0 V à l'indicateur de zéro à continu quand la distorsion est minimale.
- Note 6 :** L'étage tuner FM est réglé avant son envoi, il est donc inutile d'effectuer le réglage de portée et d'alignement.

AM TUENR ALIGNMENT · REGLAGE DE TUNER AM

FUNCTION : AM
MODULATION : 400 Hz 30 %

FONCTION : AM
MODULATION : 400 Hz 30 %

Sequence Ordre	Connection Connexion		Setting Montage		Adjust for Réglage pour		
	Input Entrée	Output Sortie	Tuning Indicateur d'accord	Signal	Adjust Réglage	Indication	
1	IF Amp. Amplificateur de fréquence intermédiaire	Out Sortie 	IN Entrée 	—	450 kHz	T201	 Caution 1 Attention 1
2	Covering Guipage	Loop antenna Antenne en carton 	TP. 8 	530 kHz	—	T152	530 kHz : 2.0V DC Caution 2 Attention 2
3	Tracking Alignement		REC OUT 	600 kHz	600 kHz	T151	Output max. Caution 3 Attention 3
			1400 kHz	1400 kHz	CT151		

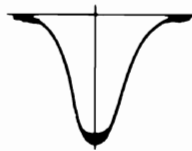


Fig. B

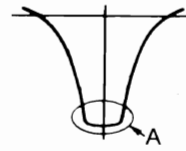


Fig. C

CAUTION

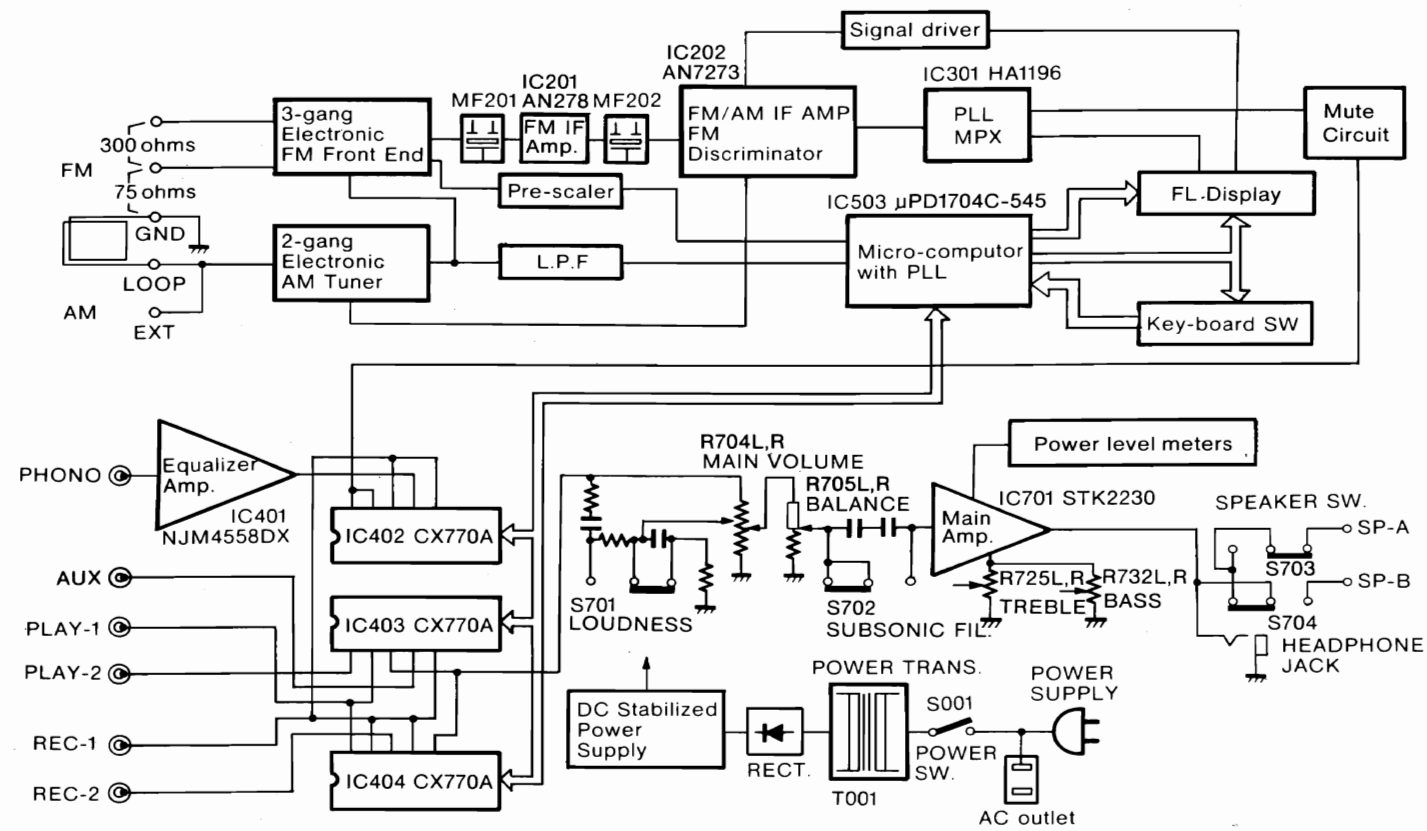
1. Adjust cores of T201 so that the waveform is as shown in Fig. B. After adjusting as above, increase the output level of the sweep generator and adjust T201 again so that the top of the waveform A (indicated in Fig. C) will be flat and wide.
2. Carry out this adjustment for final adjustment of the coil only when you have moved the core by mistake.
3. Set the input level to 74 dB/m in coarse adjustment. Reduce the input level to minimum (60 dB/m) as adjustment proceeds.

ATTENTION

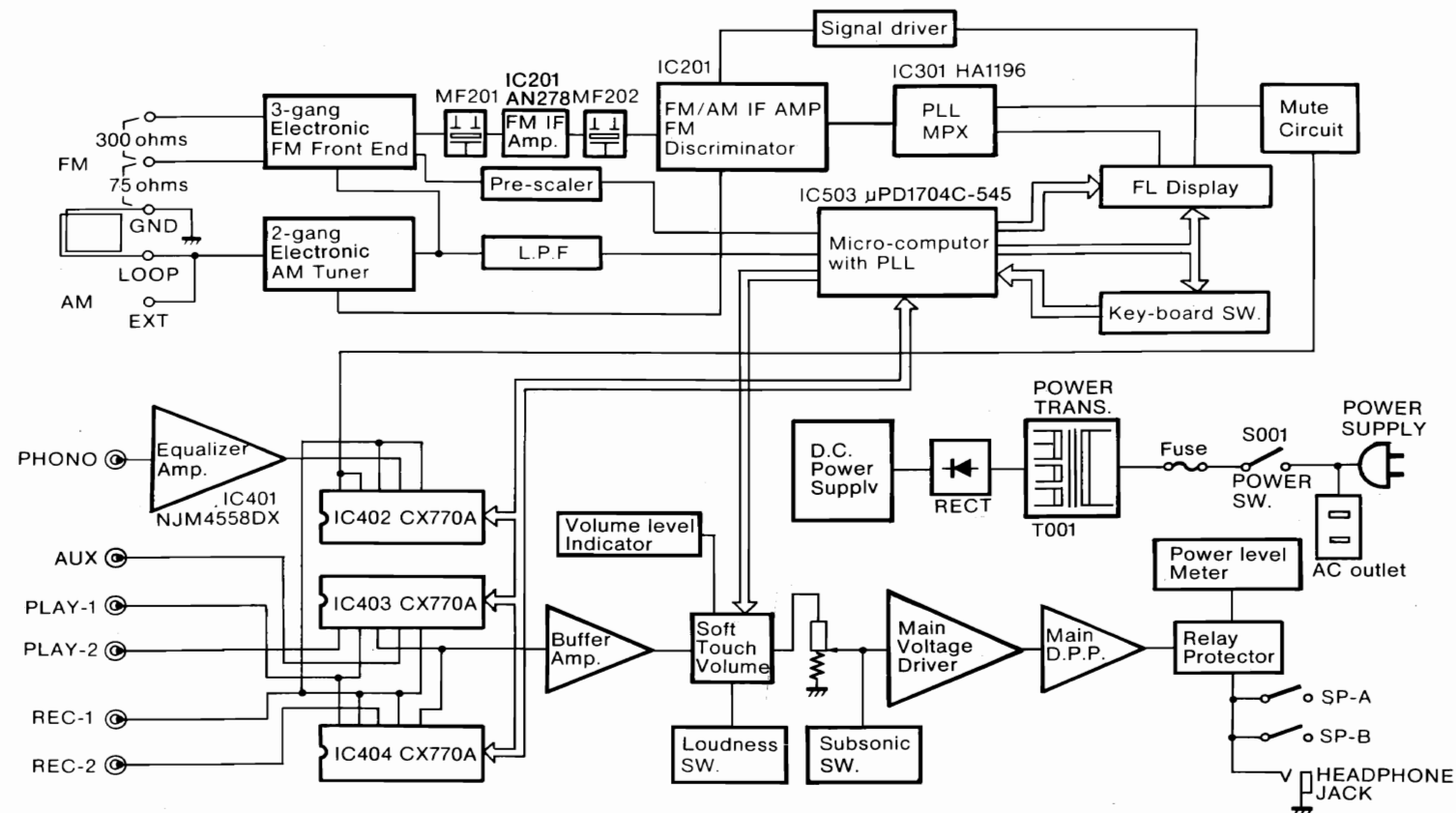
1. Régler les âmes noires de T201 de façon à obtenir une forme d'onde comme indiquée sur la Fig. B. Après avoir réglé comme indiqué ci-dessus, augmenter le niveau d'entrée du générateur de balayage et régler T201 à nouveau de façon que le sommet de la forme d'onde A (voir Fig. C) soit aplati et large.
2. N'effectuer le dernier réglage de la bobine par ce réglage que si vous avez bougé l'âme par erreur.
3. Faire un réglage approximatif du niveau d'entrée à 74 dB/m. Réduire le niveau d'entrée jusqu'à un minimum de 60 dB/m à mesure que l'on effectue le réglage.

BLOCK DIAGRAM · SCHEMA

HTA-3F

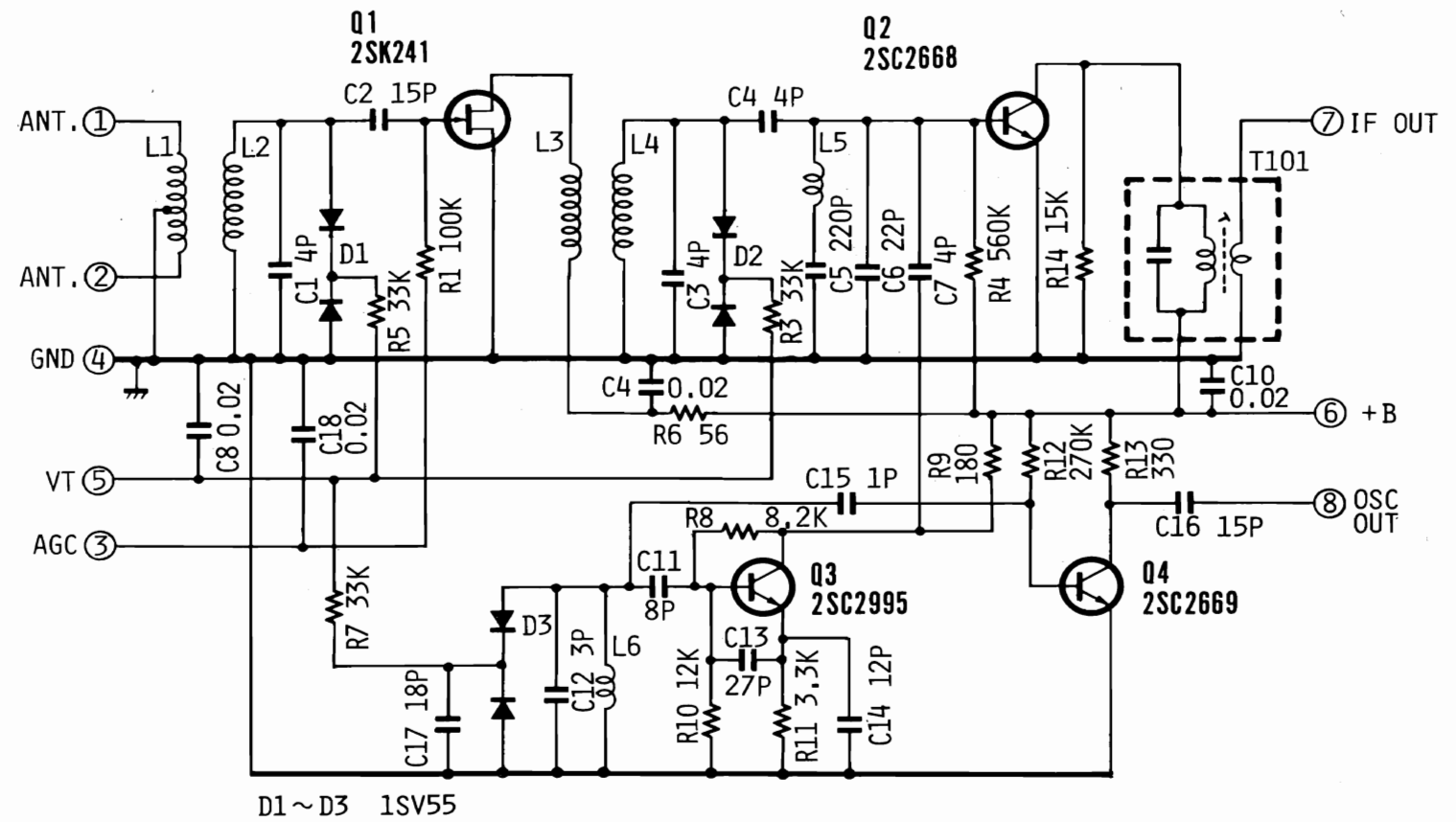


HTA-4F



CIRCUIT DIAGRAM · PLAN DE CIRCUIT

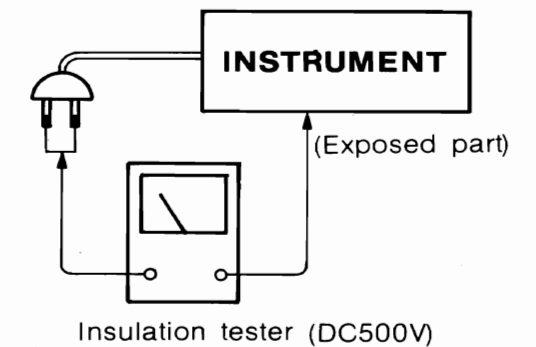
Tuner pack



Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

● Checking method

Power switch is set to ON.
Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Ground terminal, Knob, Cover, etc. where the customer is easy to touch.) and check that the resistance value is 500 kohms or more.

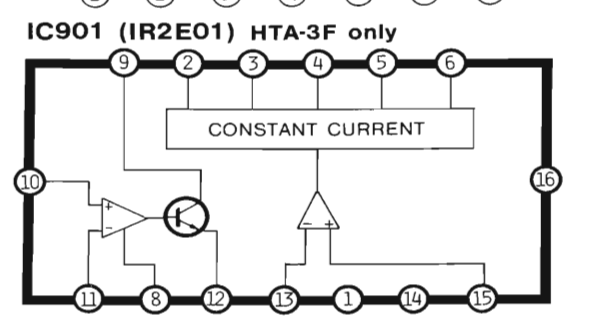
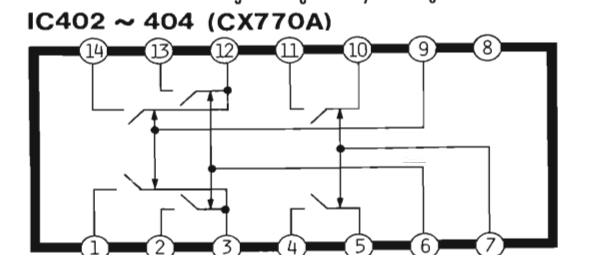
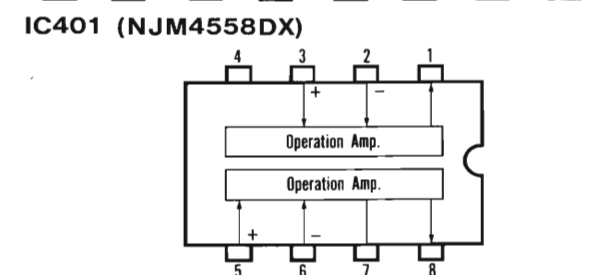
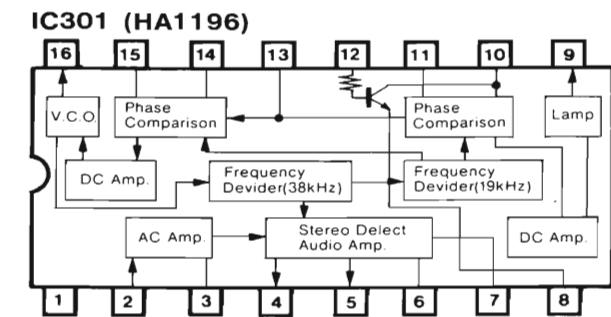
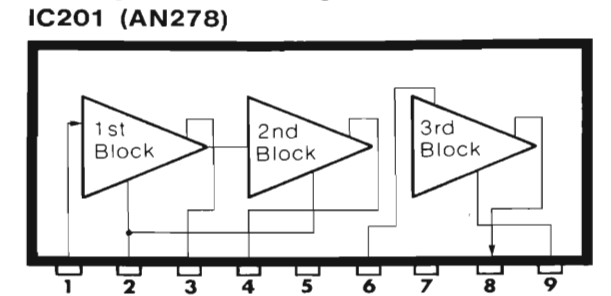
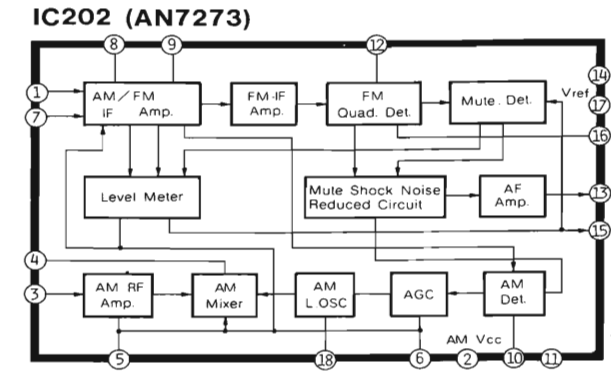
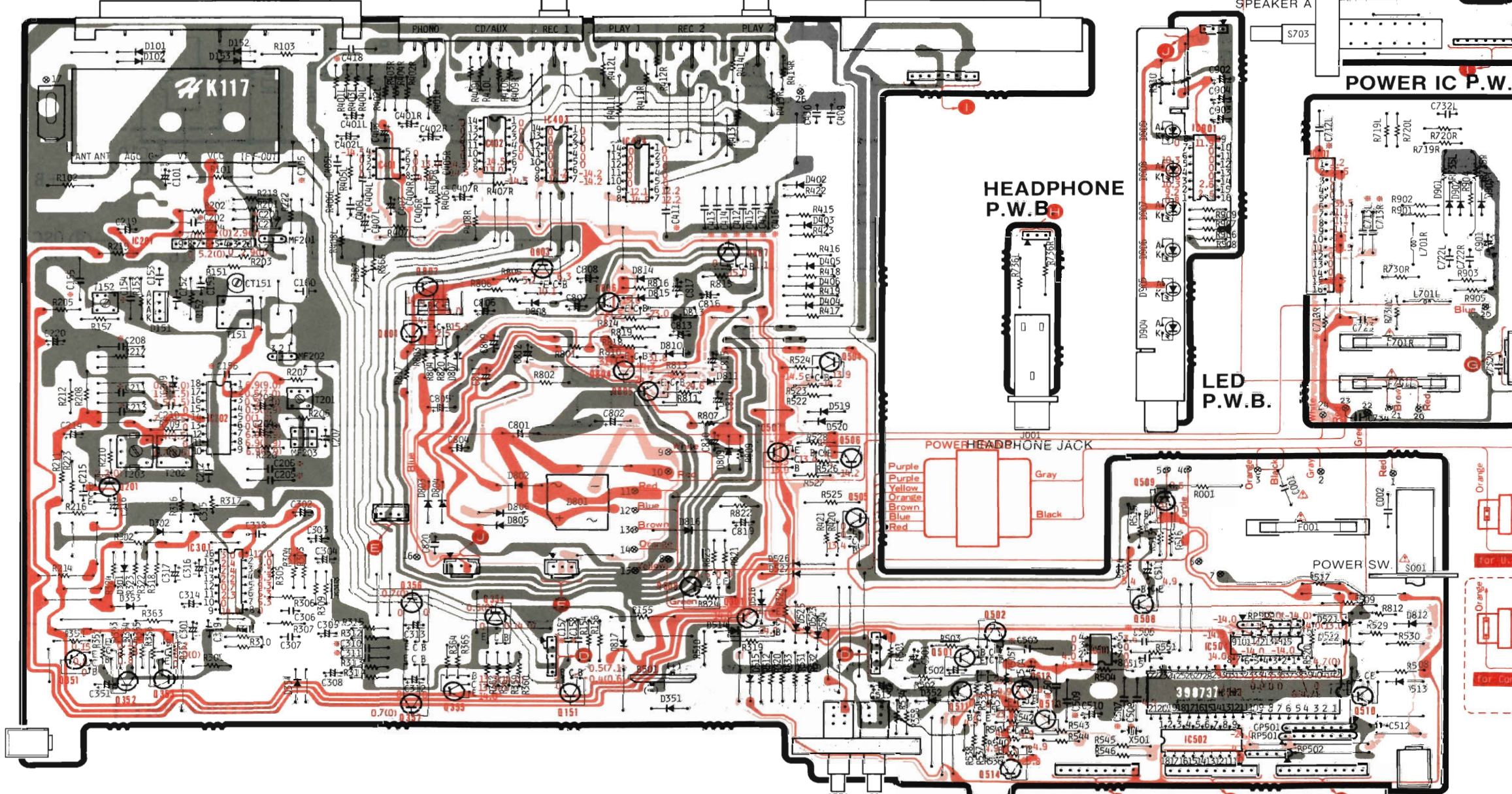


PRINTED WIRING BOARD · PLAN DE BASE
HTA-3F

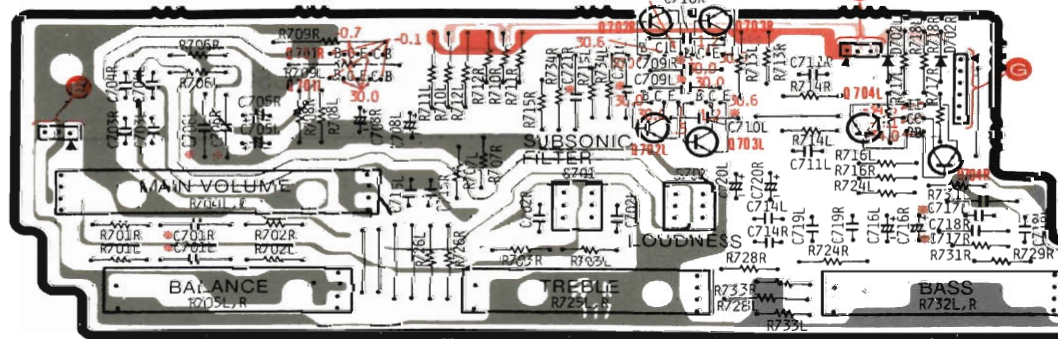
[: +B, : -B, : Earth, : Other]

* : Axial lead cylindrical ceramic capacitor
* : Condensateur céramique cylindrique à conducteur axial

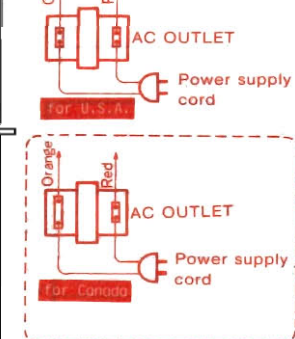
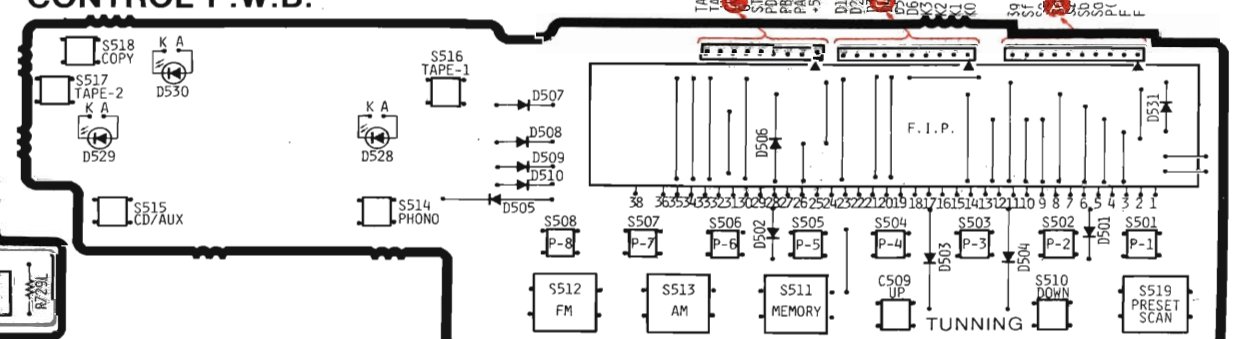
TA P.W.B. () : AM POSITION



VOLUME P.W.B.

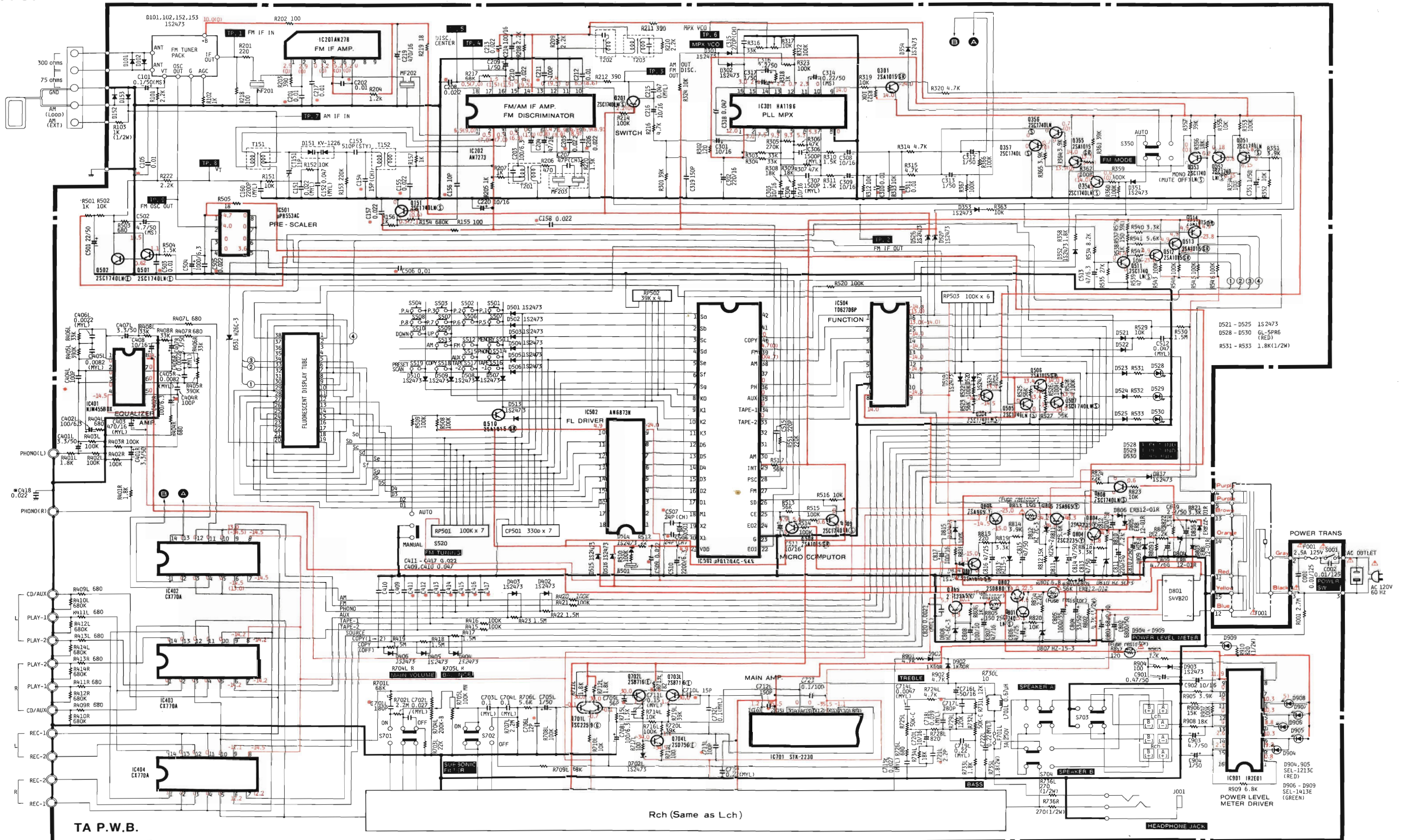


CONTROL P.W.B.



CIRCUIT DIAGRAM · PLAN DE CIRCUIT
HTA-3F

* : Axial lead cylindrical ceramic capacitor
* : Condensateur céramique cylindrique à conducteur axial



TA P.W.B.

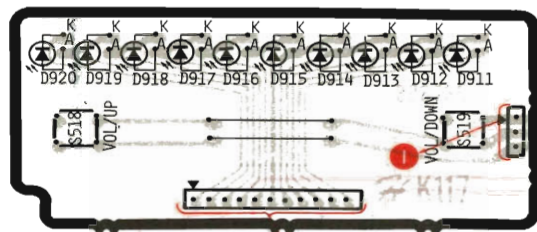
Rch (Same as Lch)

PRINTED WIRING BOARD · PLAN DE BASE
HTA-4F

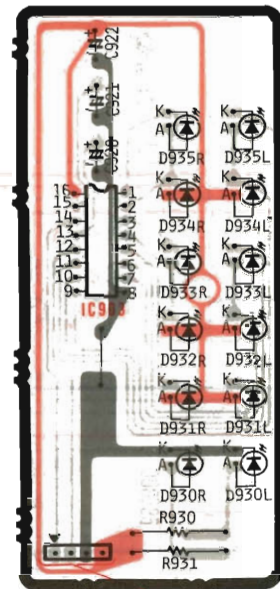
[■ : +B, ■ : -B, ■ : Earth, ■ : Other]

* : Axial lead cylindrical ceramic capacitor
* : Condensateur céramique cylindrique à conducteur axial

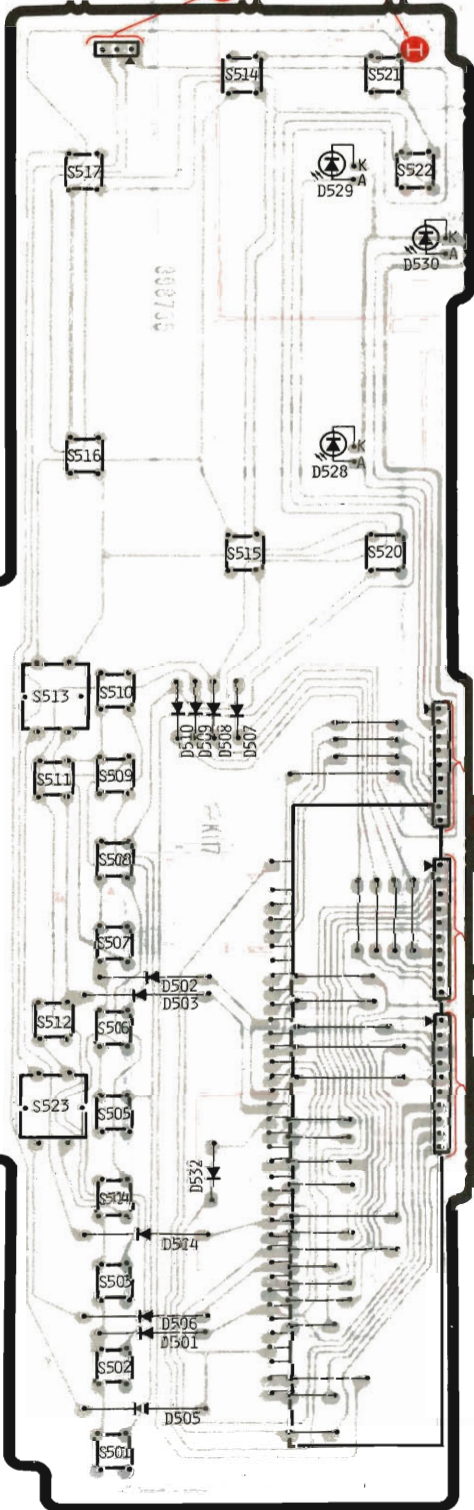
LED P.W.B.



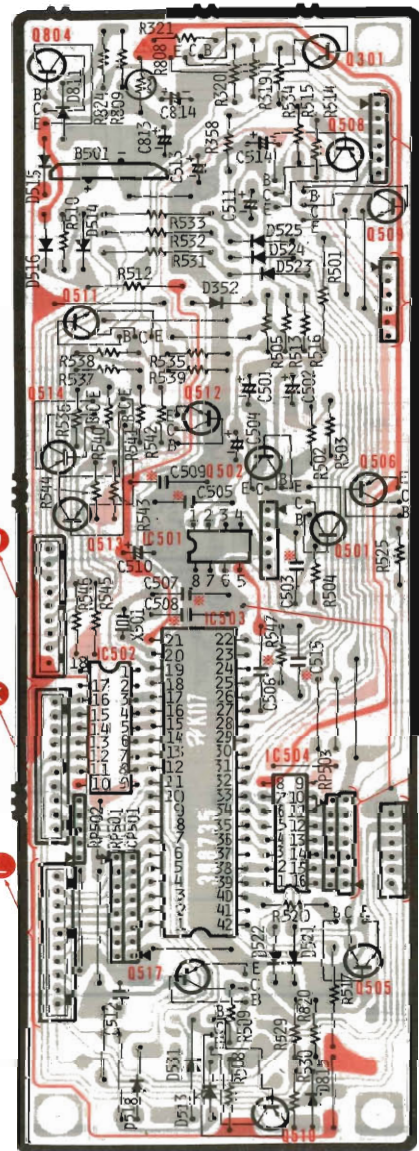
LED P.W.B.



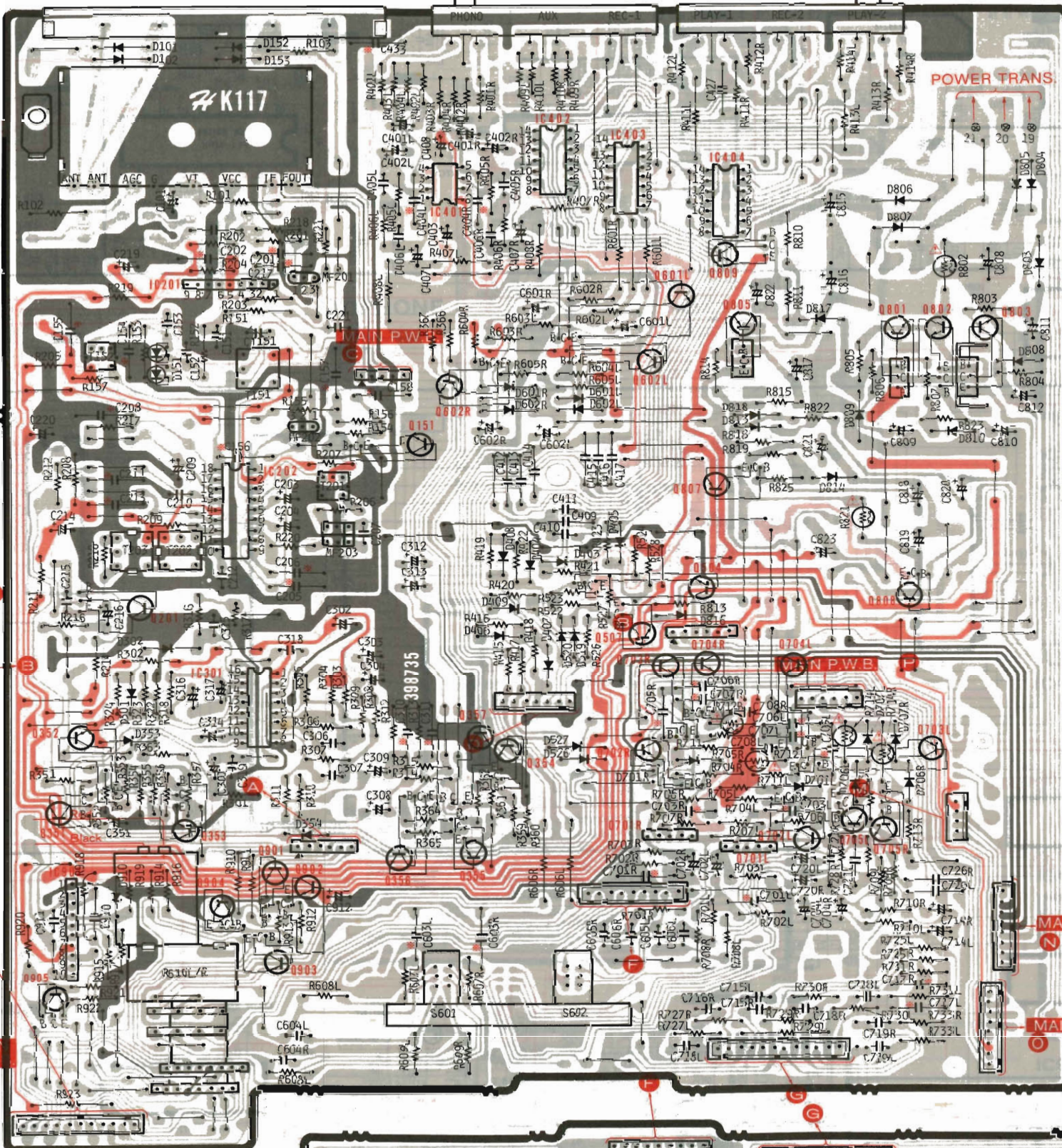
CONTROL P.W.B.



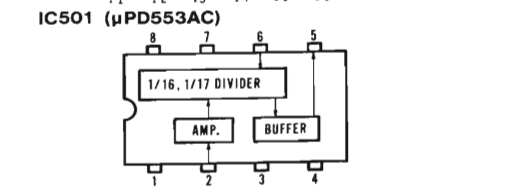
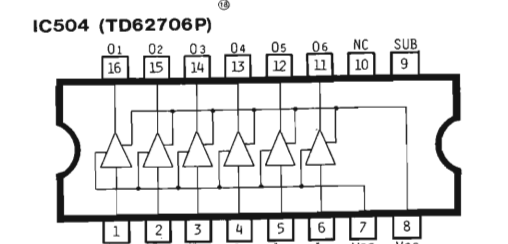
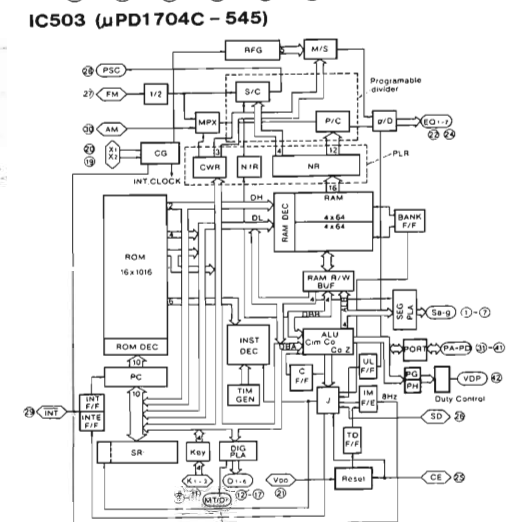
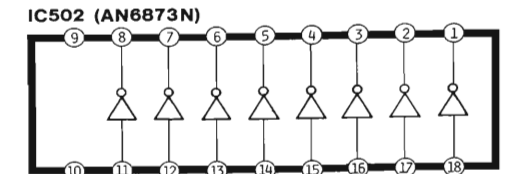
MICRO COMPUTER P.W.B.



TA P.W.B.

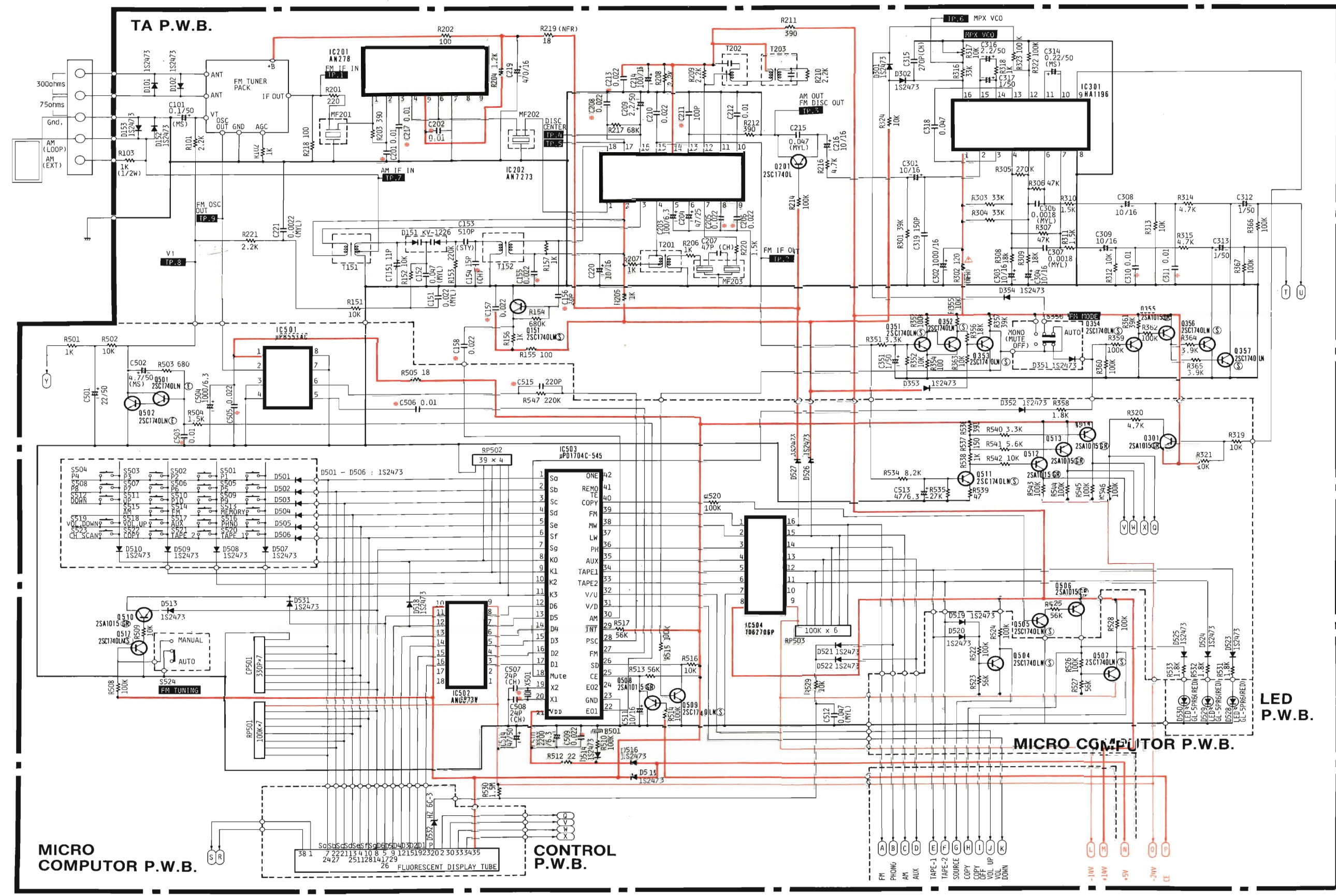


VOLUME P.W.B.



CIRCUIT DIAGRAM · PLAN DE CIRCUIT
HTA-4F

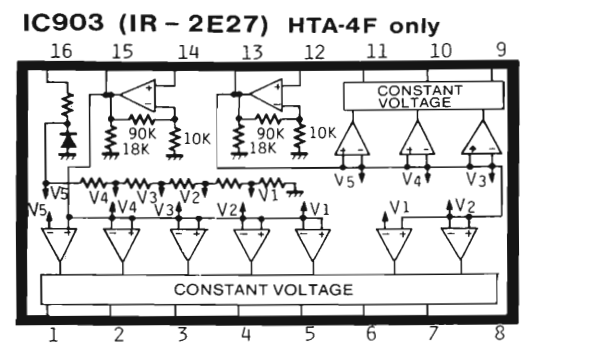
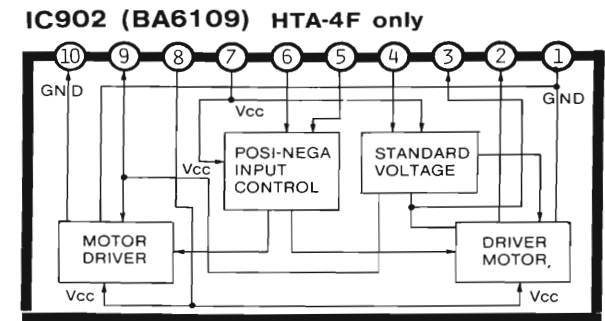
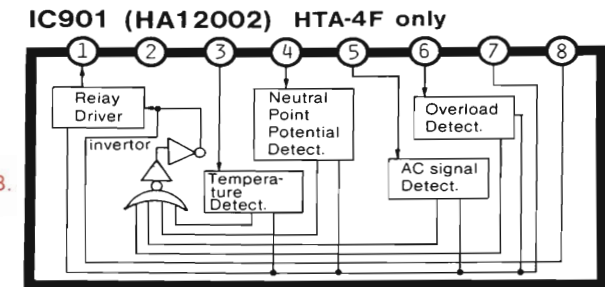
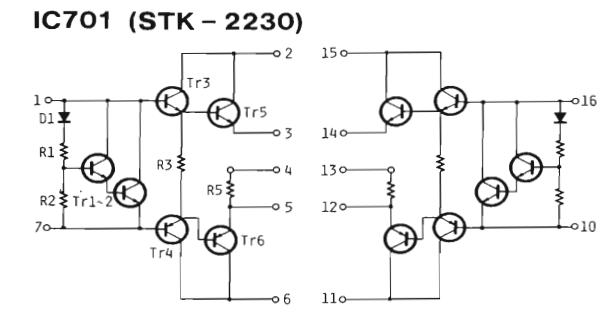
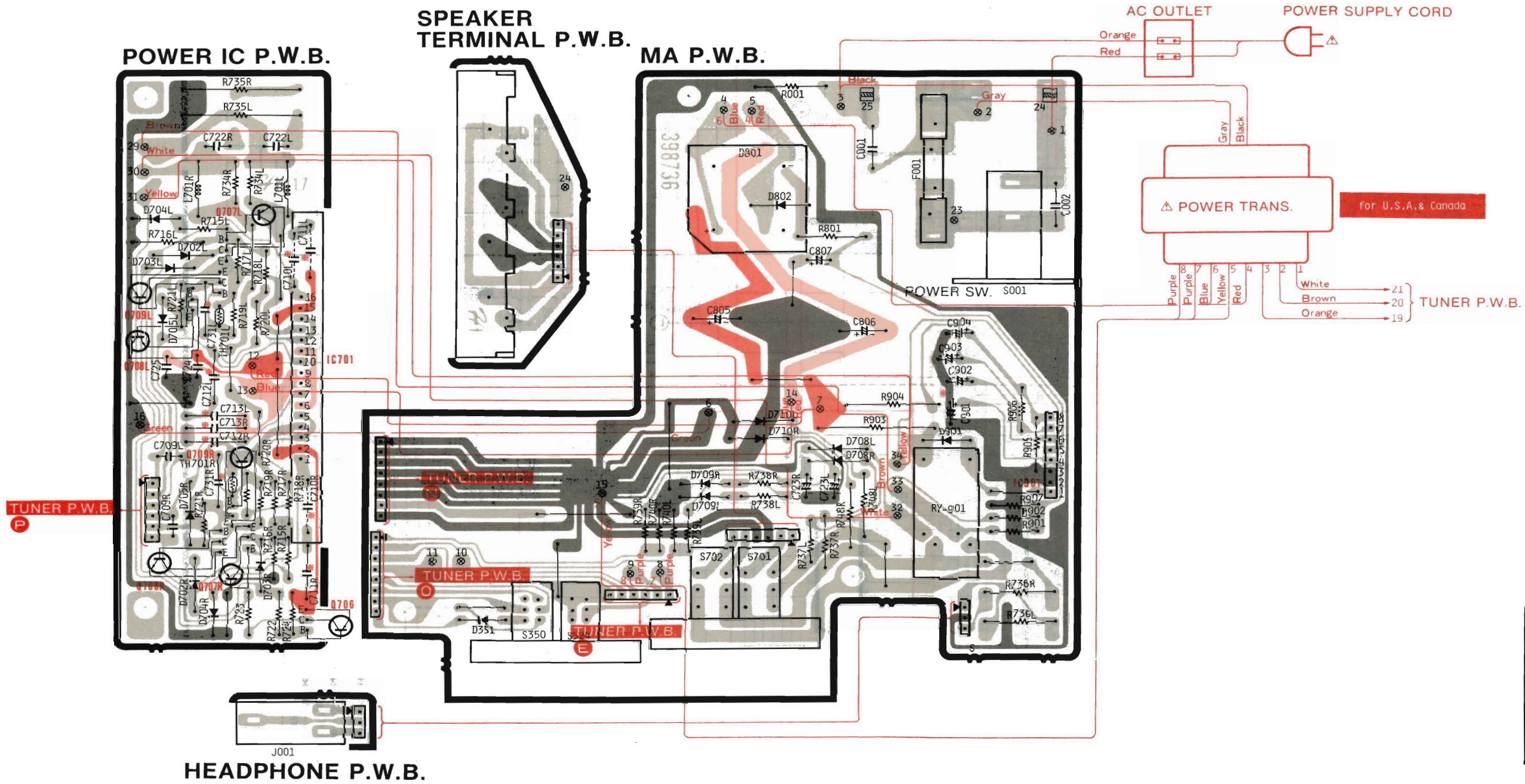
* : Axial lead cylindrical ceramic capacitor
* : Condensateur céramique cylindrique à conducteur axial



PRINTED WIRING BOARD · PLAN DE BASE
HTA-4F

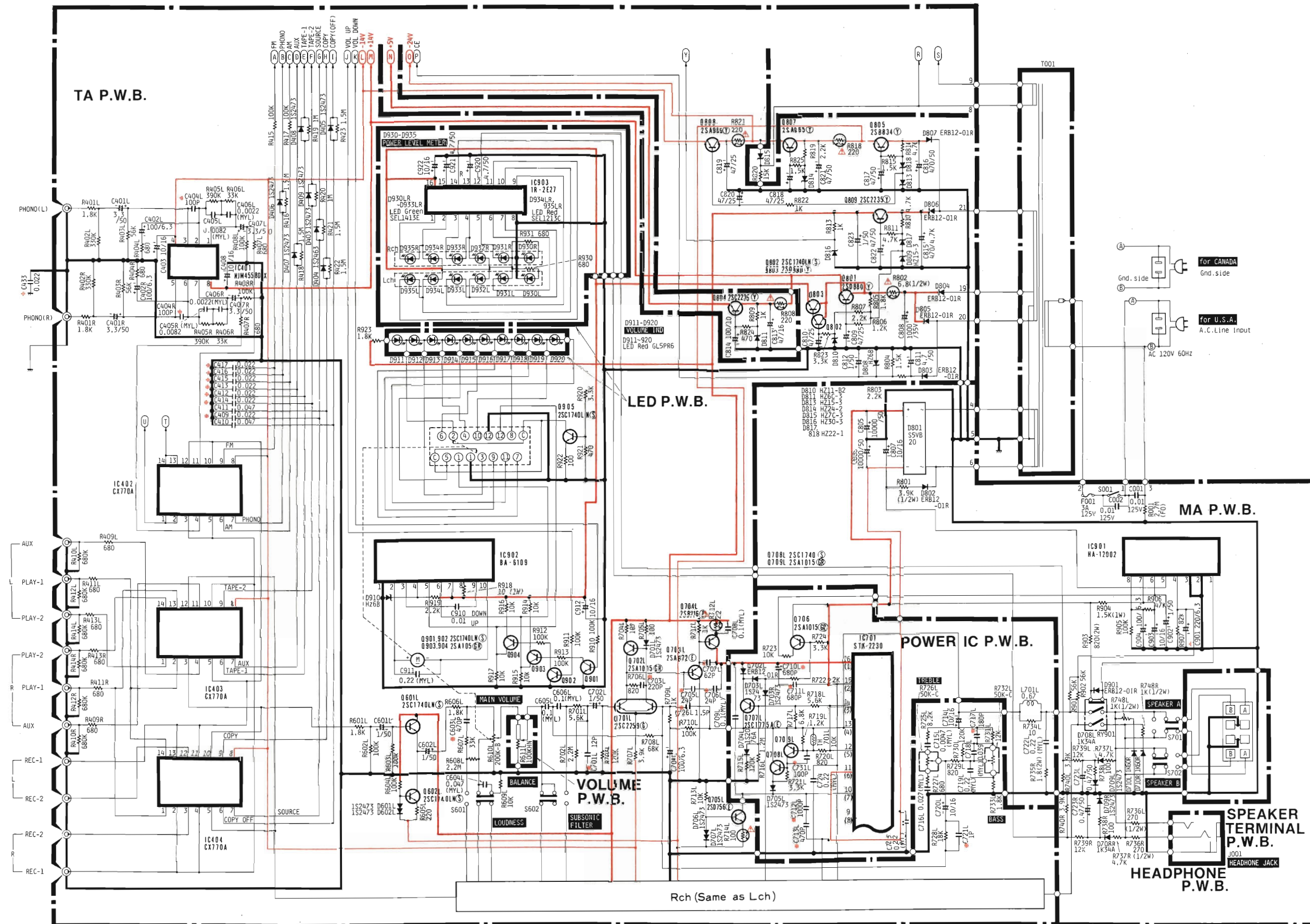
[ : +B,  : -B,  : Earth,  : Other]

⊛ : Axial lead cylindrical ceramic capacitor
⊛ : Condensateur céramique cylindrique à conducteur axial

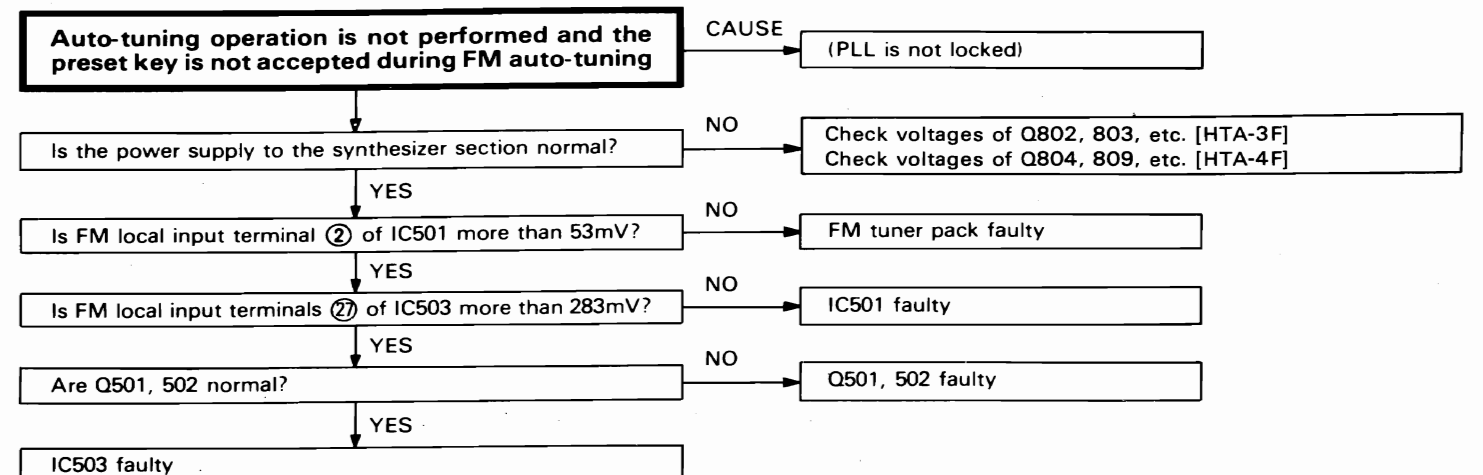
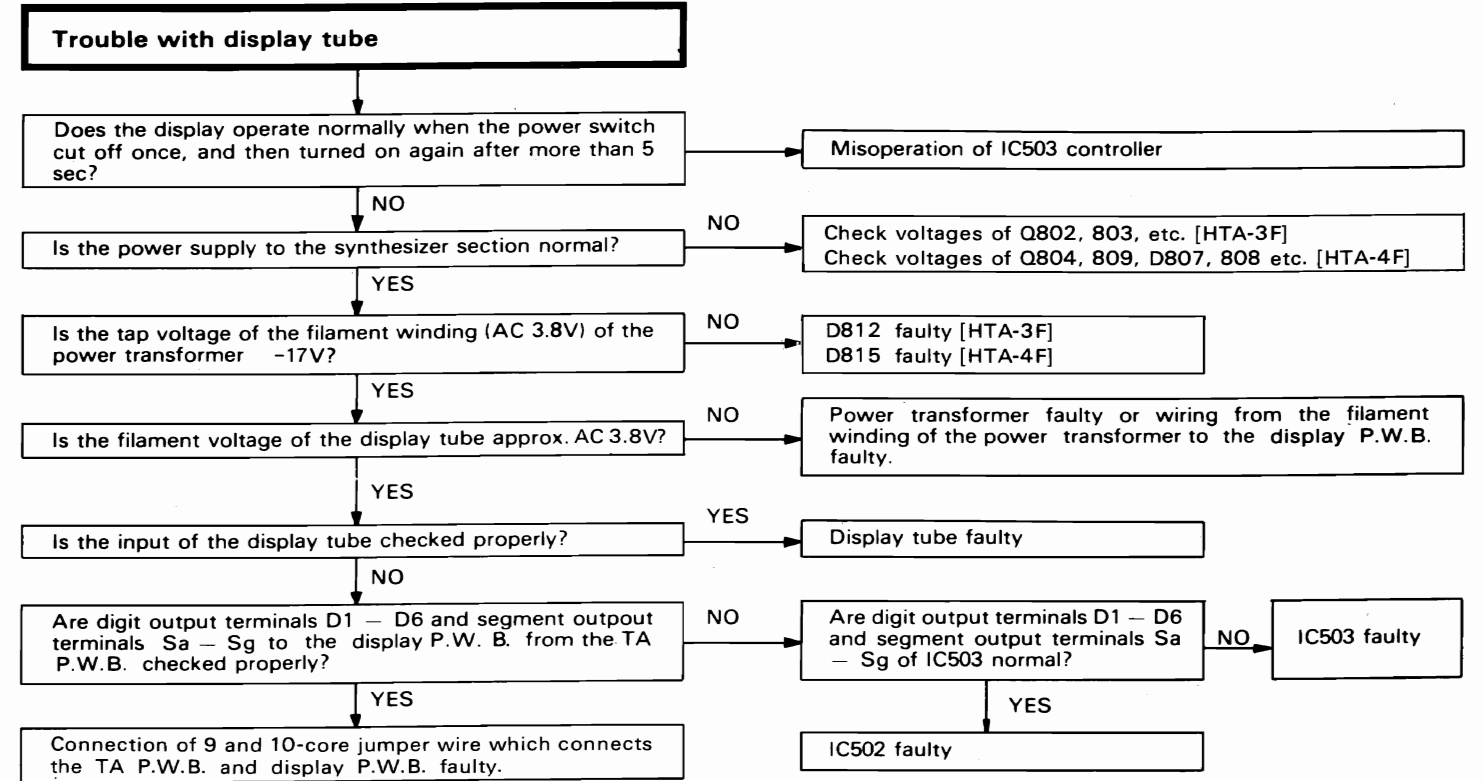
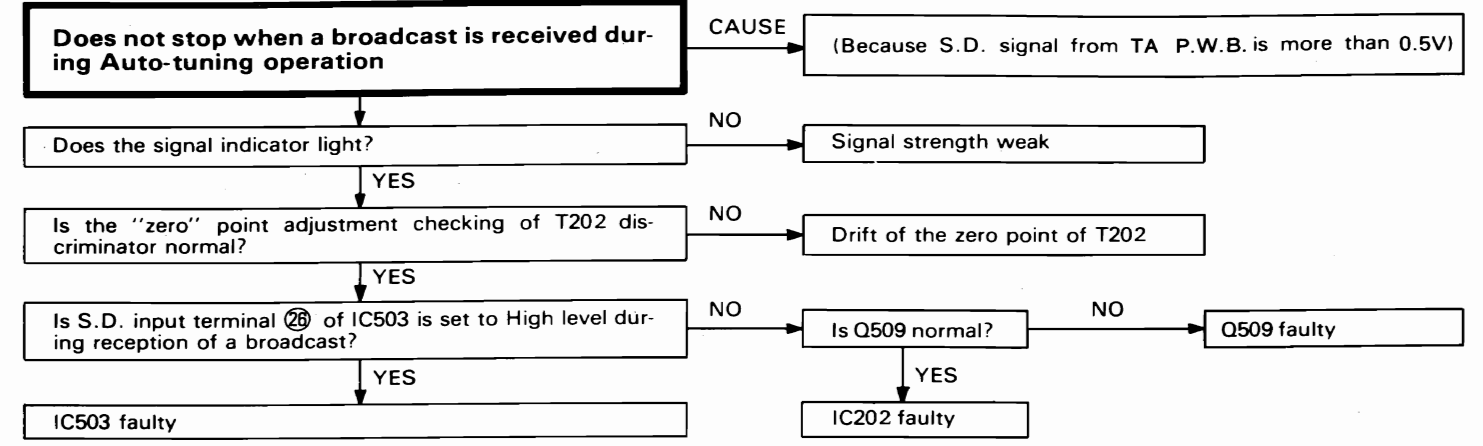
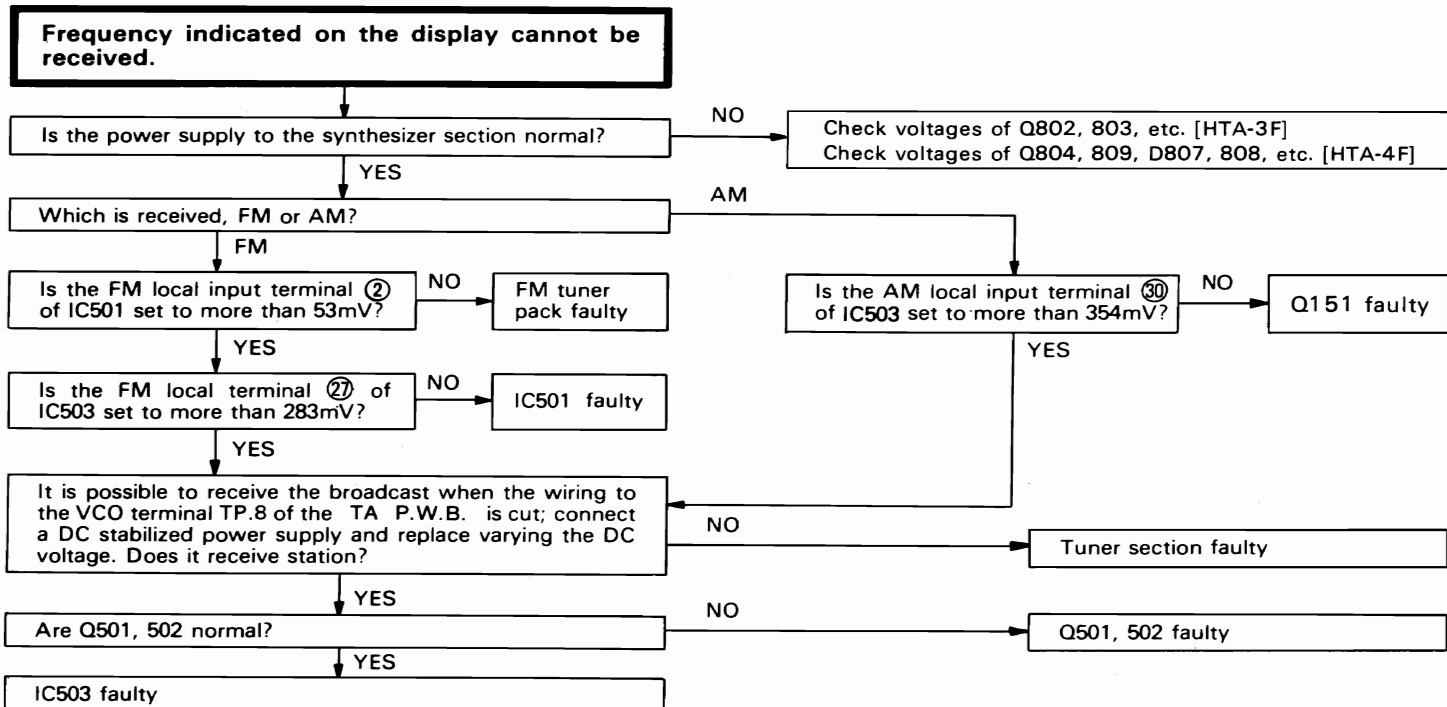
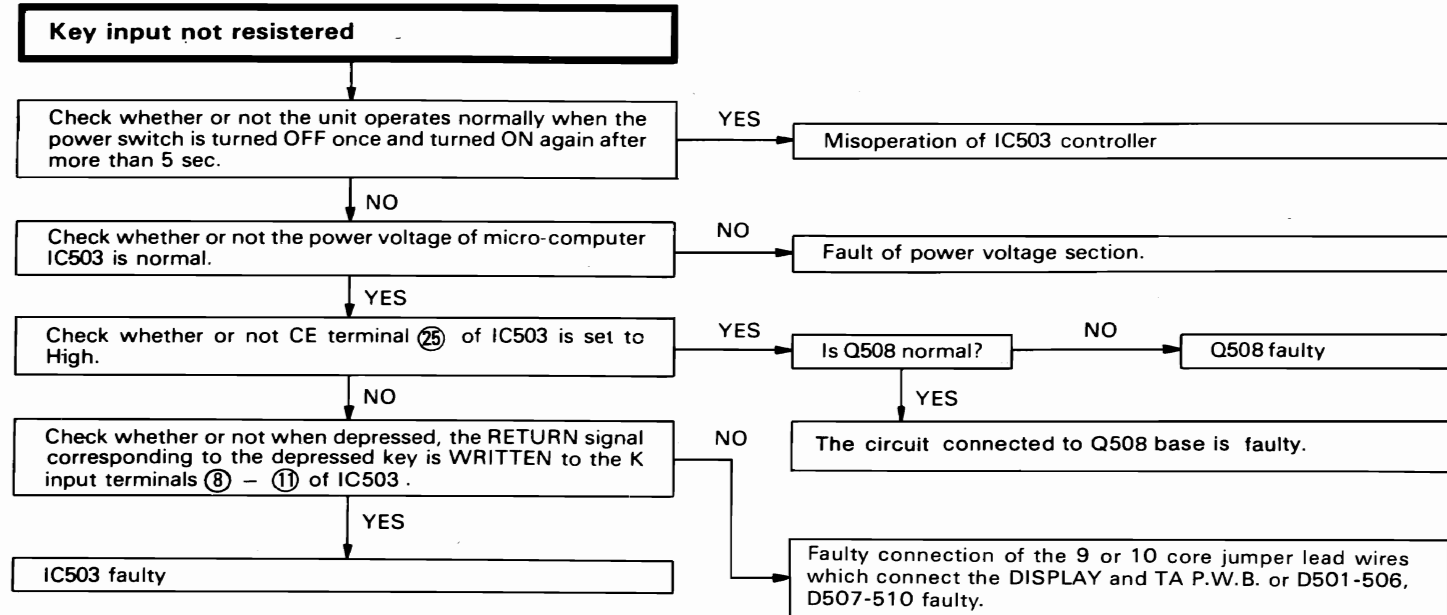


CIRCUIT DIAGRAM · PLAN DE CIRCUIT
HTA-4F

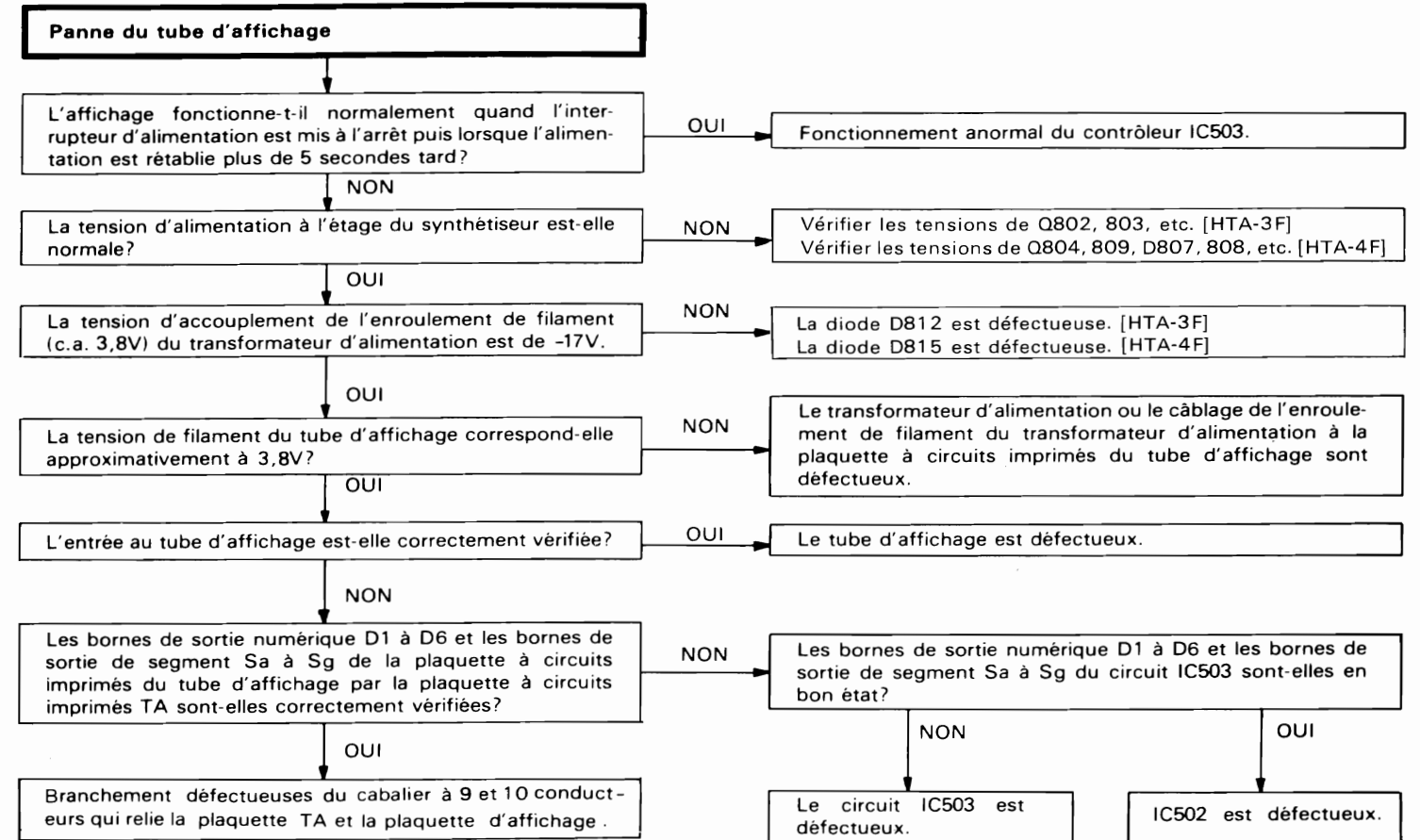
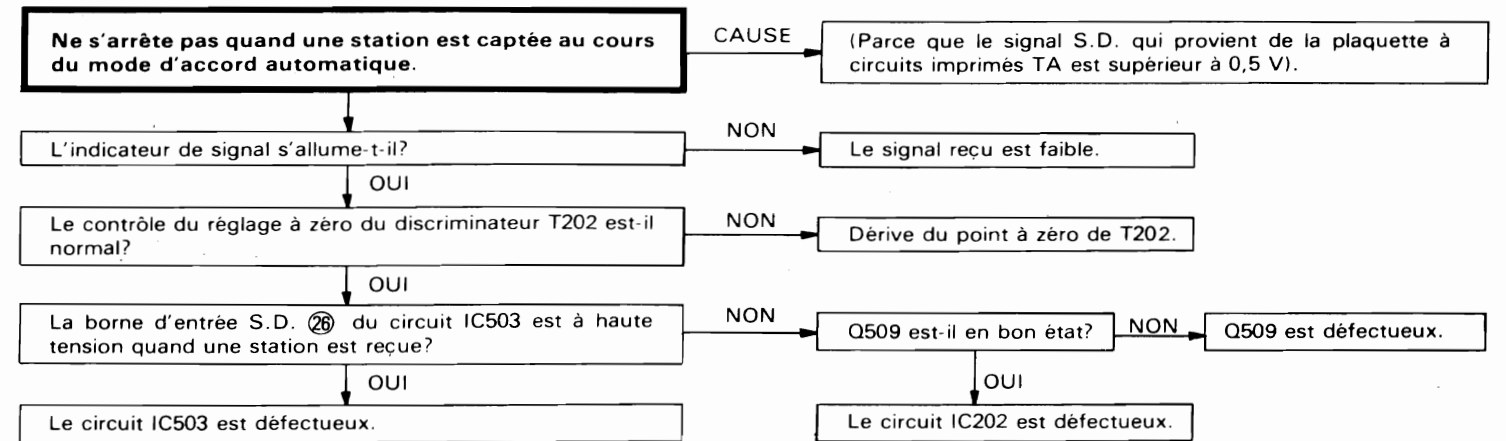
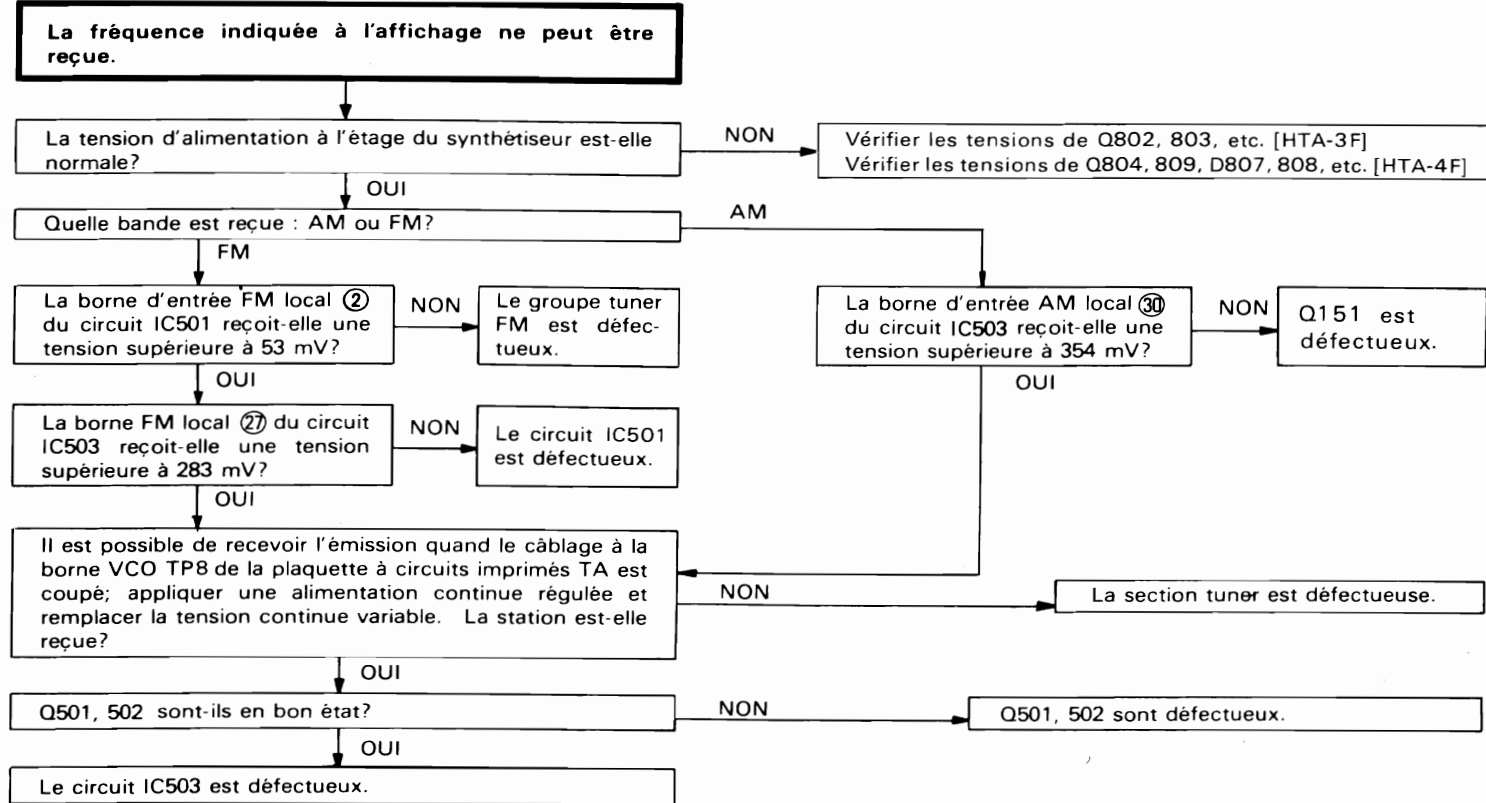
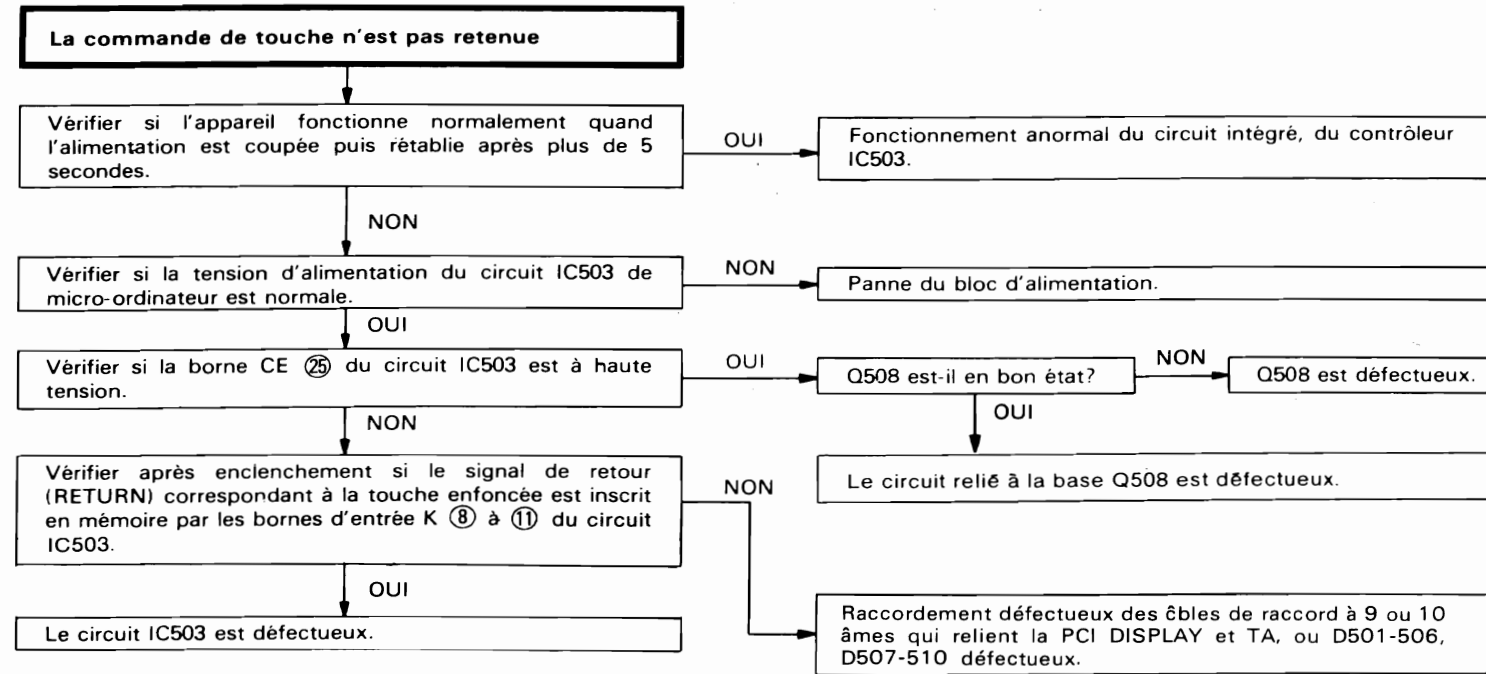
* : Axial lead cylindrical ceramic capacitor
* : Condensateur céramique cylindrique à conducteur axial



TROUBLE SHOOTING

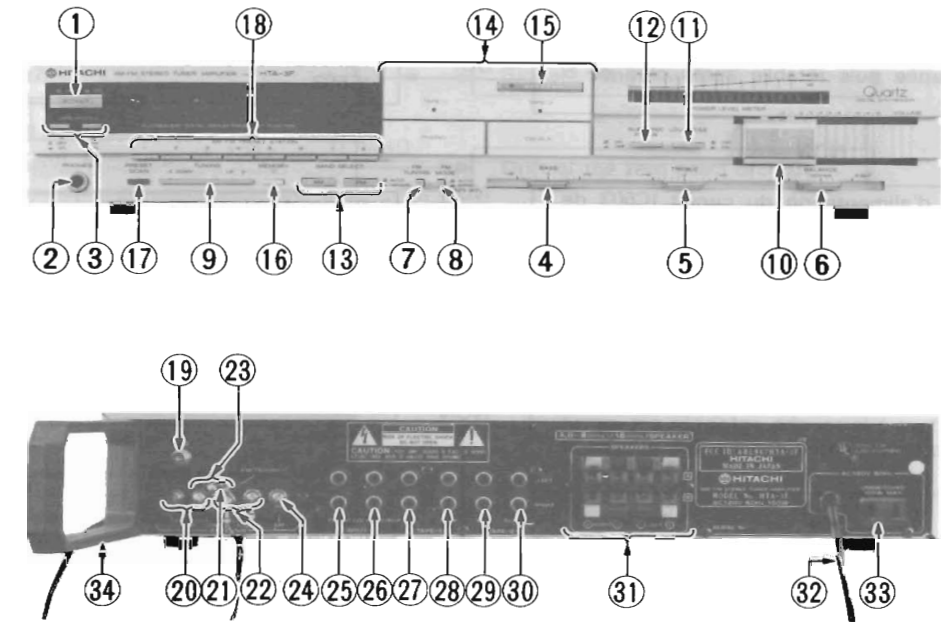
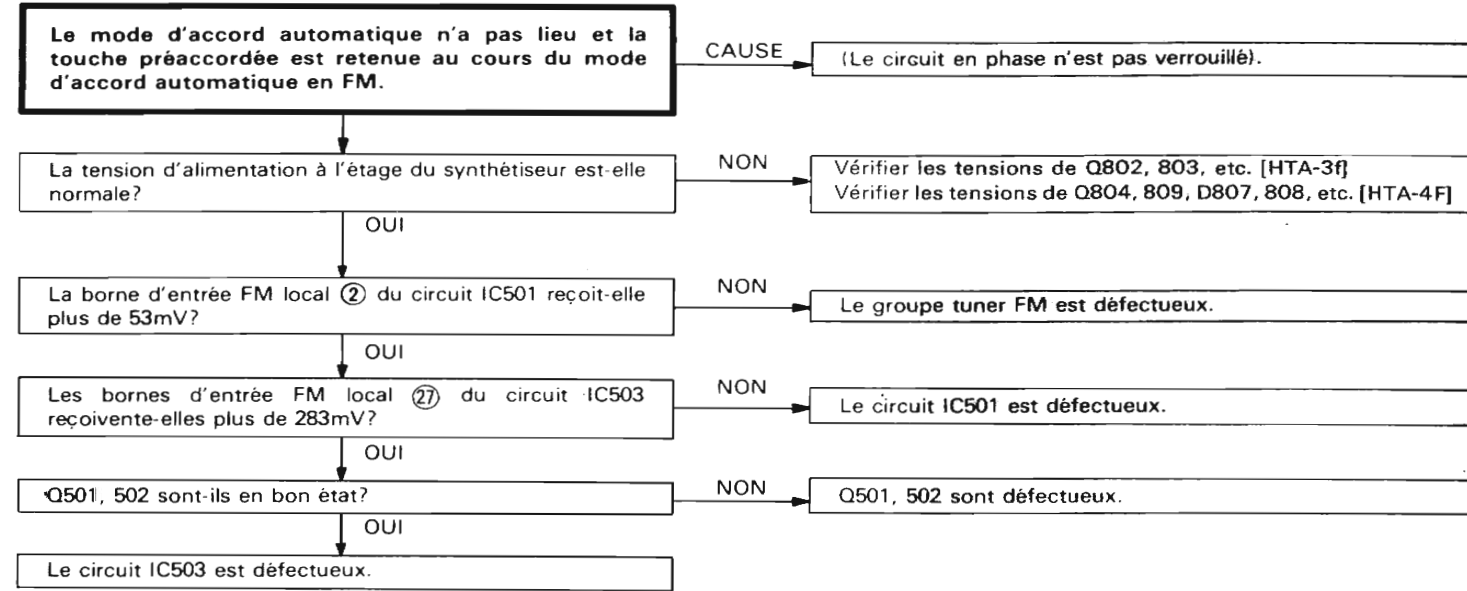


ANALYSE DE PANNES



FRONT AND REAR PANEL · PANNEAUX AVANT ET ARRIERE

HTA-3F



- ① POWER switch (POWER)
- ② HEADPHONES jack (PHONES)
- ③ SPEAKERS switches (SPEAKERS)
- ④ BASS control (BASS)
- ⑤ TREBLE control (TREBLE)
- ⑥ BALANCE control (BALANCE)
- ⑦ FM TUNING switch (FM TUNING)
- ⑧ FM MODE switch (FM MODE)
- ⑨ TUNING key (UP/DOWN) (TUNING)
- ⑩ VOLUME control (VOLUME)
- ⑪ LOUDNESS switch (LOUDNESS)
- ⑫ SUBSONIC FILTER switch (SUBSONIC FILTER)
- ⑬ BAND SELECTOR switch (BAND SELECT)
- ⑭ FUNCTION keys
- ⑮ TAPE COPY key (Copy 1 ▷ 2) (TAPE COPY)
- ⑯ MEMORY write key (MEMORY)
- ⑰ PRESET SCAN key (PRESET SCAN)
- ⑱ PRESET keys (AM-FM PRESET STATION)
- ⑲ GROUND terminal (GND)
- ⑳ FM ANTENNA terminals (300 ohms)(FM ANTENNA)
- ㉑ GROUND terminal (GND)
- ㉒ AM LOOP Antenna terminals (AM LOOP ANTENNA)
- ㉓ FM ANTENNA terminal (75 ohms)
- ㉔ AM ANTENNA terminal (AM ANTENNA)
- ㉕ PHONO INPUT jacks (PHONO INPUT)
- ㉖ CD/VIDEO/AUX INPUT jacks (CD/VIDEO AUX INPUT)
- ㉗ TAPE-1 REC jacks (TAPE-1 REC)
- ㉘ TAPE-1 PLAY jacks (TAPE-1 PLAY)
- ㉙ TAPE-2 REC jacks (TAPE-2 REC)
- ㉚ TAPE-2 PLAY jacks (TAPE-2 PLAY)
- ㉛ SPEAKER terminals (SPEAKERS)
- ㉜ Power supply cord
- ㉝ AC outlet
- ㉞ AM LOOP ANTENNA

- ① Interrupteur d'alimentation (POWER)
- ② Prise du casque d'écoute (PHONES)
- ③ Interrupteurs d'enceintes (SPEAKERS)
- ④ Commande des graves (BASS)
- ⑤ Commande des aigus (TREBLE)
- ⑥ Commande de balance (BALANCE)
- ⑦ Bouton d'accord FM (FM TUNING)
- ⑧ Commutateur de mode FM (FM MODE)
- ⑨ Touche d'accord (UP/DOWN) (TUNING)
- ⑩ Commande de volume (VOLUME)
- ⑪ Commande de correction physiologique (LOUDNESS)
- ⑫ Interrupteur du filtre infra-acoustique (SUBSONIC FILTER)
- ⑬ Selecteur de bande (BAND SELECT)
- ⑭ Touches de fonction
- ⑮ Touche de copie de bande (copie 1 ▷ 2) (TAPE COPY)
- ⑯ Touche d'enregistrement de mémoire (MEMORY)
- ⑰ Touche de pré-réglage de balayage (PRESET SCAN)
- ⑱ Touches de pré-réglage (AM-FM PRESET STATIONS)
- ⑲ Borne de mise à la terre (GND)
- ⑳ Bornes d'antenne FM (300 ohms) (FM ANTENNA)
- ㉑ Borne de mise à la terre (GND)
- ㉒ Bornes d'antenne boucle AM (AM LOOP ANTENNA)
- ㉓ Bornes d'antenne FM (75 ohms)
- ㉔ Borne d'antenne AM (Antenne AM)
- ㉕ Prises d'entrée phono (PHONO INPUT)
- ㉖ Prises d'entrée CD/VIDEO/AUX (CD/VIDEO/AUX INPUT)
- ㉗ Prises d'enregistrement de bande 1 (TAPE-1 REC)
- ㉘ Prises de lecture de bande 1 (TAPE-1 PLAY)
- ㉙ Prises d'enregistrement de bande 2 (TAPE-2 REC)
- ㉚ Prises de lecture de bande 2 (TAPE-2 PLAY)
- ㉛ Bornes d'enceintes (SPEAKERS)
- ㉜ Cordon d'alimentation
- ㉝ Prise secteur
- ㉞ Antenne boucle AM

* marked parts used for only HTA-3F, ◦ marked parts used for only HTA-4F

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
IC & TRANSISTOR					
IC201	2368431	AN278	*Q801	2328652	2SC1740LN (S)
IC202	2387321	AN7273	◦Q801	2317822	2SD880 (Y)
IC301	2367271	HA1196	*Q802	2317822	2SD880 (Y)
IC401	2368041	NJM4558DX	◦Q802	2328652	2SC1740LN (S)
IC402	2368831	CX770A	*Q803	2317782	2SC2235 (Y)
IC404	2368831	CX770A	◦Q803	2317822	2SD880 (Y)
IC501	2368741	μPB553AC	Q804	2317782	2SC2235 (Y)
IC502	2387421	AN6873N	*Q805	2317792	2SA965 (Y)
IC503	2369723	μPD1704C - 545	◦Q805	2317832	2SB834 (Y)
IC504	2387511	TD62706P	*Q806	2317792	2SA965 (Y)
IC701	2369771	STK2230	*Q807	2329183	2SA1015 (GR)
*IC901	2368631	IR - 2E01	◦Q807	2317792	2SA965 (Y)
◦IC901	2367372	HA - 12002R	*Q808	2328652	2SC1740LN (S)
◦IC902	2469931	BA6109	◦Q808	2317792	2SA965 (Y)
◦IC903	2387391	IR2E27	◦Q809	2317782	2SC2235 (Y)
Q151	2328652	2SC1740LN (S)	◦Q901	2328652	2SC1740LN (S)
Q201	2328652	2SC1740LN (S)	◦Q902	2328652	2SC1740LN (S)
Q301	2329183	2SA1015 (GR)	◦Q903	2329183	2SA1015 (GR)
Q351	2328652	2SC1740LN (S)	◦Q904	2329183	2SA1015 (GR)
Q354	2328652	2SC1740LN (S)	◦Q905	2328652	2SC1740LN (S)
Q355	2329183	2SA1015 (GR)	DIODES		
Q356	2328652	2SC1740LN (S)	D101	2337601	1S2473
Q357	2328652	2SC1740LN (S)	D102	2337601	1S2473
Q501	2328653	2SC1740LN (E)	D151	2338541	KV - 1226
Q502	2328653	2SC1740LN (E)	D152	2337601	1S2473
Q504	2328652	2SC1740LN (S)	D153	2337601	1S2473
Q505	2328652	2SC1740LN (S)	D301	2337601	1S2473
Q506	2329183	2SA1015 (GR)	D302	2337601	1S2473
Q507	2328652	2SC1740LN (S)	D351	2337601	1S2473
Q508	2329183	2SA1015 (GR)	D352	2337601	1S2473
Q509	2328652	2SC1740LN (S)	D353	2337601	1S2473
Q510	2329183	2SA1015 (GR)	D354	2337601	1S2473
Q511	2328652	2SC1740LN (S)	*D402	2337601	1S2473
Q512	2329183	2SA1015 (GR)	D403	2337601	1S2473
Q514	2329183	2SA1015 (GR)	Q517	2328652	2SC1740LN (S)
◦Q601LR	2328652	2SC1740LN (S)	D408	2337601	1S2473
◦Q602LR	2328652	2SC1740LN (S)	◦D409	2337601	1S2473
Q701LR	2367656	2SC2259 (G)	D501	2337601	1S2473
*Q702LR	2328862	2SB716 (E)	D510	2337601	1S2473
◦Q702LR	2329183	2SA1015 (GR)	D513	2337601	1S2473
*Q703LR	2328862	2SB716 (E)	D516	2337601	1S2473
◦Q703LR	2327893	2SA872 (E)	◦D518	2337601	1S2473
*Q704LR	2328872	2SD756 (E)	D519	2337601	1S2473
◦Q704LR	2328862	2SB716 (E)	D527	2337601	1S2473
◦Q705LR	2328872	2SD756 (E)	D528	2337751	GL - 5PR6 (Red)
◦Q706	2329183	2SA1015 (GR)	D530	2337751	GL - 5PR6 (Red)
◦Q707LR	2327923	2SC1775A (E)	*D531	2337519	HZ6C - 3
◦Q708LR	2328652	2SC1740LN (S)	◦D531	2337601	1S2473
◦Q709LR	2329183	2SA1015 (GR)	◦D532	2337519	HZ6C - 3
			◦D601LR	2337601	1S2473
			◦D602LR	2337601	1S2473
			◦D701LR	2337601	1S2473

* marked parts used for only HTA-3F, o marked parts used for only HTA-4F

SYMBOL No.	PART No.	DESCRIPTION
*D702LR	2337601	1S2473
oD702LR	2337762	ERB12 - 01R
oD703LR	2337601	1S2473
oD704LR	2337151	1S2076A
oD705LR	2337601	1S2473
oD706LR	2337601	1S2473
oD707LR	2337601	1S2473
oD708LR	2337921	1K34A
oD709LR	2337601	1S2473
oD710LR	2337931	1K60R
*D801	2337461	S4VB20
oD801	2337341	S5VB20
D802	2337762	ERB12 - 01R
}	}	}
D806	2337762	ERB12 - 01R
*D807	2337189	HZ - 15 - 3
oD807	2337762	ERB12 - 01R
*D808	2337519	HZ6C - 3
oD808	2337122	HZ6B
*D809	2337122	HZ6B
oD809	2337189	HZ15 - 3
*D810	2337186	HZ - 30 - 3
oD810	2337555	HZ11 - B2
*D811	2337188	HZ - 24 - 2
oD811	2337519	HZ6C - 3
*D812	2337549	HZ - 7C - 3
D813	2337189	HZ - 15 - 3
*D814	2337601	1S2473
oD814	2337188	HZ24 - 2
*D815	2337601	1S2473
oD815	2337549	HZ7C - 3
*D816	2337762	ERB12 - 01R
oD816	2337186	HZ30 - 3
*D817	2337601	1S2473
oD817	2338371	HZ22 - 1
oD818	2338371	HZ22 - 1
*D901	2337931	1K60R
oD901	2337762	ERB12 - 01R
*D902	2337931	1K60R
*D903	2337601	1S2473
oD910	2337122	HZ6B
oD911	2337751	GL - 5PR6 (Red)
}	}	}
oD920	2337751	GL - 5PR6 (Red)
VARIABLE RESISTOR		
R317	0150958	10kΩ - (B)
oR610LR	0158604	100kΩ - (B)
oR611LR	0166724	100kΩ - (M)
*R704LR	0166727	200kΩ - (B) MAIN VOL.
*R705LR	0166724	100kΩ - (MW) BALANCE
*R725LR	0166725	50kΩ - (C) TREBLE
oR726LR	0166725	50kΩ - (C)
*R732LR	0166725	50kΩ - (C) BASS
oR732LR	0166725	50kΩ - (C)
COIL & TRANSFORMERS		
L701LR	2227361	Audio trap coil - 0.67μH
*T001	2248361	Power trans.
oT001	2248381	Power trans.

SYMBOL No.	PART No.	DESCRIPTION
T151	2136503	MW RF Coil
T152	2136493	MW OSC Coil
T201	2154493	AM IF trans.
T202	2155174	FM discri. coil
T203	2155175	FM discri. coil
MISCELLANEOUS (HTA-3F)		
MF201, 202,	2134992	FM ceramic filter MA8
MF203	2155152	AM ceramic filter 450F3
CT151	0283126	Trimmer capacitor 11P
RP501	0189014	100 kΩ
RP502	0189031	39 kΩ
RP503	0189001	100 kΩ
CP501	0241892	Capacitor array (300P × 7)
△ S001	2639869	Power switch
S350	2639931	2 keys push switch
S501	2639682	Tact switch
}	}	}
S510	2639682	Tact switch
S511	2638241	Tact switch
}	}	}
S513	2638241	Tact switch
S514	2639682	Tact switch
}	}	}
S518	2639682	Tact switch
S519	2638241	Tact switch
S520	2539931	2 keys push switch
S701	2639092	1 key push switch
S702	2639092	1 key push switch
S703	2639941	2 keys push switch
S704	2639941	2 keys push switch
△ B501	2810161	Lithium Battery
J001	2677751	Headphone jack
△ F001	2727564	Fuse (2.5A 125V)
△ F701LR	2727223	Fuse 3A 250V
	2688281	8P Push terminal
	2688203	5P screw terminal
	2425381	FM tuner pack
	2677612	6P US pin jack
	2788613	Flourescent display tube
X501	2789281	Crystal oscillator 4.5 MHz
	2397031	LED ass'y (D904 ~ D909)
for REAR PLATE ASSEMBLY		
	4453751	Rear plate (for U.S.A.)
	4453752	Rear plate (for Canada)
	4575661	Earth screw
	4408861	Washer
△	0043793	Bushing (3P - 4) (for U.S.A.)
△	3913006	Bushing (4N - 4) (for Canada)
△	2702331	Power supply cord (for U.S.A.)
△	2700122	Power supply cord (for Canada)
△	2657721	AC outlet (for U.S.A.)
△	2658372	AC outlet (for Canada)

SYMBOL No.	PART No.	DESCRIPTION
for FINAL ASSEMBLY		
	4450411	Cover
	4567463	4φ × 10 DT bind screw
for DIAL MECHANISM ASSEMBLY		
	4024551	Front panel ass'y
	3297861	Tape copy button ass'y
	3297671	Power button ass'y
	3297631	Push button (SPEAKER)
	3297591	PRESET button
	3297581	Push button (SM) Preset scan
	3297582	Push button (SM) Memory
	3297611	UP. Down button
	3297571	Push button (AM)
	3297572	Push button (FM)
	3297621	Push button (Tuning Mode)
	3297761	Function button (L) ass'y (TAPE)
	3297741	Function button (S) ass'y (PHONO)
	3297742	Function button (S) ass'y (CD/AUX)
	3902692	Power display sheet
	3297601	Push button (SUBSONIC FIL LOUDNESS)
	3296681	Volume knob
	3297851	Slide Inner Knob
	3296511	Slide VR Knob
	4451151	Slide VR plate
	3927411	Leg
	2757573	Loop antenna
	4567413	3φ × 10 DT bind screw
	4567422	4φ × 8 DT bind screw
	4573552	3φ × 16 bind tapping screw
	8691412	3φ × 12 bind tapping screw
	4784106	3φ × 10 bind tapping screw
	4567454	3φ × 12 DT bind screw
	4567411	3φ × 6 DT bind screw
	4580933	2φ × 3 pan head screw
	4567432	3φ × 8 DT bind screw
	4784106	3φ × 10 bind tapping screw
	4568812	3φ × 8 DT flat head screw
	4574605	3φ × 8 bind double thread screw
	4567432	3φ × 8 DT bind screw
	4567412	3φ × 8 DT bind screw
for ACCESSORIES		
	2757522	FM antenna
MISCELLANEOUS (HTA-4F)		
CT151	0283126	Trimmer capacitors 11P
RP501	0189014	100 kΩ
RP502	0189031	39 kΩ
RP503	0189001	100 kΩ
CP501	0241892	Capacitor array (300P × 7)
MF201	2134992	FM Ceramic filter MA8
MF202	2134992	FM Ceramic filter MA8
MF203	2155152	AM Ceramic filter 450F3
X501	2789281	Crystal oscillator 4.5MHz
△ B501	2810161	Lithium battery CR2032

SYMBOL No.	PART No.	DESCRIPTION
△ S001	2639869	Power switch
S350	2639931	2 keys push switch
S501	2639682	Tact switch
}	}	}
S512	2639682	Tact switch
S513	2638241	Tact switch
S514	2639682	Tact switch
}	}	}
S522	2639682	Tact switch
S523	2638241	Tact switch
S524	2639931	2 keys push switch
S601	2639932	2 keys push switch
S602	2639932	2 keys push switch
S701	2639942	2 keys push switch
S702	2639942	2 keys push switch
△ F001	2727565	Fuse - 3A 125V
RY901	2647221	Miniature power relay
J001	2677751	Headphone jack
TH701LR	2347114	Thermostat
	2677612	6P US pin jack
	2688201	5P screw terminal
	2688281	8P push terminal
	2425381	FM tuner pack
	2788613	Flourescent display tube
	2397041	Led bar
for REAR PLATE ASSEMBLY		
	4451511	Rear plate (for U.S.A.)
	4451512	Rear plate (for Canada)
	4575661	Earth screw
	4408861	Washer
△ 0043793		Bushing (3P - 4) (for U.S.A.)
△ 3913006		Bushing (4N - 4) (for Canada)
△ 2702331		Power supply cord (for U.S.A.)
△ 2700122		Power supply cord (for Canada)
△ 2657721		AC outlet (for U.S.A.)
△ 2658372		AC outlet (for Canada)
2757573		AM Loop antenna
for FINAL ASSEMBLY		
	4451522	Cover
	4567463	4φ × 10 DT bind screw
	4567452	3φ × 8 DT bind screw
for DIAL MECHANISM ASSEMBLY		
T001	2248381	Power trans. AC 120V
	4023551	Front panel ass'y
	3959352	Display sheet
	3959351	Display sheet
	3959331	Blind A
	3959341	Blind B
	3947541	Nylon rivet B

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
	3298191	Knob (14) PRESET SCAN		4567413	3φ × 10 DT bind screw
	3298201	Knob (UD)		4784106	3φ × 10 bind tapping screw
	3298192	Knob (14) MEMORY		4567422	4φ × 8 DT bind screw
	3298131	Knob (T) ass'y TAPE - 1,2		4573554	4φ × 16 bind tapping screw
	3298071	Knob (B) ass'y AM FM		4567454	3φ × 12 DT bind screw
	3298101	Knob (F) ass'y CD/AUX		4567411	3φ × 6 DT bind screw
	3298102	Knob (F) ass'y PHONO		4573552	3φ × 16 bind tapping screw
	3296511	Slide volume knob (BASS, TREBLE, BALANCE)		4784106	3φ × 10 bind tapping screw
	3298181	Knob (Volume) ass'y		4567432	3φ × 8 DT bind screw
	3298211	Preset knob ass'y		4567411	3φ × 6 DT bind screw
	3249851	Escutcheon		4567413	3φ × 10 DT bind screw
	4568812	3φ × 8 DT flat head screw			
	4567411	3φ × 6 DT bind screw			
	4567413	3φ × 10 DT bind screw			
	4784106	3φ × 10 bind tapping screw			
	4784106	3φ × 10 bind tapping screw			
	4580933	2φ × 3 pan head screw			
	3960431	Plastic rivet			
	4784103	3φ × 8 bind tapping screw			
	3298031	Push button (S)			
	3298561	Push (A) ass'y			
	3298051	Power button ass'y			
	3927411	Leg			
					for ACCESSORIES
				2757522	FM Antenna



HITACHI SALES CORPORATION OF AMERICA
Eastern Regional Office

1200 Wall Street West, Lyndhurst, New Jersey
07071, U.S.A.
Tel. 201-935-8980

Mid-Western Regional Office

1400 Morse Ave., Elk Grove Village, Ill. 60007, U.S.A.
Tel. 312-593-1550

Southern Regional Office

510 Plaza Drive College Park, Georgia 30349, U.S.A.
Tel. 404-763-0360

Western Regional Office

401 West Artesia Boulevard, Compton, California
90220, U.S.A.
Tel. 213-537-8383

HITACHI SALES CORPORATION OF HAWAII, INC.

3219 Koapaka Street Honolulu, Hawaii 96819, U.S.A.
Tel. 808-836-3621

HITACHI (HSC) CANADA INC.

3300 Trans Canada Highway, Pointe Claire, Quebec
H9RU 1B1, Canada
Tel. 514-697-9150

HITACHI Ltd. TOKYO JAPAN

Head Office: THE HITACHI ATAGO BLDG.
No. 15-12, 2-chome Nishi-Shinbashi
Minato-ku, Tokyo 105, Japan
Tel. Tokyo (03) 502-2111

HTA-3F **TY** **No. 378 EF**
HTA-4F