

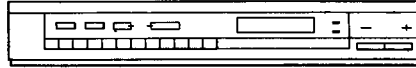


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Y072302

113.

Service Manual



ORDER NO.
ARP 1306

FM/AM DIGITAL SYNTHESIZER TUNER

F-X88ZL

MODEL F-X88ZL AND F-X88Z COMES IN FOUR VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model		Power requirement	Destination
	F-X88ZL	F-X88Z		
ZEB	○	—	(DC power supply)	European continent and United Kingdom
ZEZ	—	○	(DC power supply)	West Germany
Z	—	○	(DC power supply)	General market
ZIOX1B	—	○	(DC power supply)	Italy

- This service manual is applicable to the F-X88ZL/ZEB type.
- As to the other types, please refer to the additional service manual.
- The AM tuner of the F-X88ZL/ZEB type is a two wave-band tuner with MW (medium wave) and LW (long wave), but the other types are MW only.
- Ce manuel d'instruction se réfère au mode de réglage en français. (p. 21 - p. 23)
- Este manual de servicio trata del método ajuste escrito en español. (p. 24 - p. 26)

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1. SPECIFICATIONS

FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity	12.7 dBf, IHF (1.2 μ V/75 ohms)
50 dB Quieting Sensitivity	Mono: 18 dBf (2.2 μ V/75 ohms)
	Stereo: 38.3 dBf (22.6 μ V/75 ohms)
Sensitivity (DIN)	Mono 0.9 μ V/75 ohms
	Stereo: 31.5 μ V/75 ohms
Signal-to-Noise Ratio (IHF, 85 dBf Input)	Mono: 77 dB
	Stereo: 73 dB
Signal-to-Noise Ratio (DIN)	Mono: 62 dB
	Stereo: 60 dB
Distortion	Stereo: 0.5% (1 kHz)
Alternate Channel Selectivity	60 dB (400 kHz)
Stereo Separation	40 dB (1 kHz)
Frequency Response	± 1 dB (30 Hz to 15 kHz)
Image Interference Ratio	38 dB
IF Interference Ratio	110 dB
Antenna Input	300 ohm balanced
	75 ohm unbalanced
Output Level (FM 100% MOD)	650 mV

MW (AM) Tuner Section

Frequency range	
When 10 kHz step	530 kHz to 1,600 kHz
When 9 kHz step	531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna)	350 μ V/m
Selectivity	20 dB
Signal-to-Noise Ratio	45 dB
Image Interference Ratio	40 dB
IF Interference Ratio	50 dB
Antenna	Loop Antenna
Output Level (AM 30% MOD)	150mV

LW Tuner Section

(For LW-equipped models only)

Frequency range	153 kHz to 281 kHz
Sensitivity (IHF, Loop antenna)	1500 μ V/m
Selectivity	20 dB
Signal-to-Noise Ratio	45 dB
Image Interference Ratio	30 dB
IF Interference Ratio	50 dB
Antenna	Loop Antenna
Output Level (AM 30% MOD)	150 mV

Miscellaneous

Dimensions	360(W) $\times$ 56(H) $\times$ 215(D) mm
	14-3/16(W) $\times$ 2-3/16(H) $\times$ 8-1/2(D) in
Weight (without package)	1.8 kg (4 lb)

Furnished Parts

FM T-type antenna	1
AM Loop Antenna	1

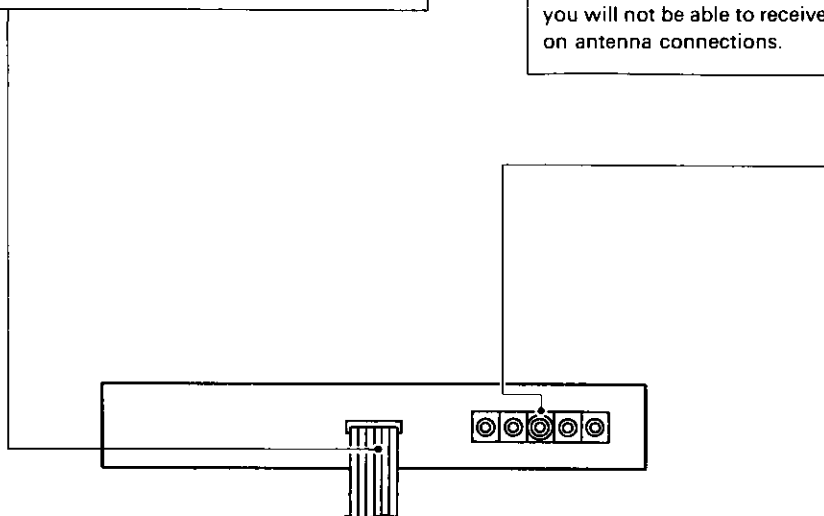
2. PANEL FACILITIES

TUNER input/output cord

Connect to the TUNER jack of the deck amplifier.

FM/AM antenna terminals

Antennas must be connected to these terminals; otherwise you will not be able to receive stations. See page 5 for details on antenna connections.



FM MONO switch/indicator

Normally this is set to the off position (the FM MONO indicator goes off). When noise spoils the reception of an FM program, press the switch to the on position (the FM MONO indicator will now light).

The program of an FM stereo broadcast will be heard in mono. The setting of the FM MONO switch (on or off) is memorized along with the station's frequency in the STATION CALL switches.

When using the preset tuning feature, reception will be in the mode selected when the station was memorized.

This switch will not function for AM (MW or LW) reception.

SELECT (1-12/13-24) switch/indicator

This switch is used to select the STATION CALL switches to Mode 1 (1-12) or Mode 2 (13-24). Mode 2 (13-24) is obtained when the switch is pressed and select indicator is lit.

NOTE:

Changing the position of this switch has no effect on receiver performance itself.

FREQUENCY display

Permits reading the received frequency at a glance from the displayed figure. The FM band is indicated by MHz, and the AM (MW or LW) band by kHz.

TUNING switch

This is used to locate the stations.

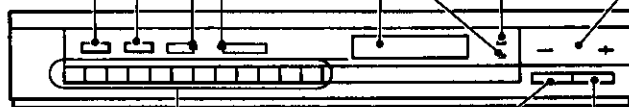
Push either side of this switch; the left side "-" to go to a lower, and the right side "+" to go to a higher frequency.

STEREO indicator

This lights when a stereo program has been picked up during an FM broadcast.

TUNED indicator

This lights to indicate when the finest tuning of a station has been achieved.

**STATION CALL switches**

These are used to recall preset broadcasting stations and to preset the station.

MEMORY switch

This switch is used to memorize stations. When the switch is pressed, the frequency indicator will flash. To memorize the frequency of any station, press the station call switch while the memory indicator is lit.

BAND SELECTOR switch

[For model F-X88Z]

Each time this switch is pressed, FM or AM reception is selected alternately.

FM and MHz light: FM reception

AM and kHz light: AM reception

[For model F-X88ZL]

Each time this switch is pressed, FM, MW or LW reception is selected alternately.

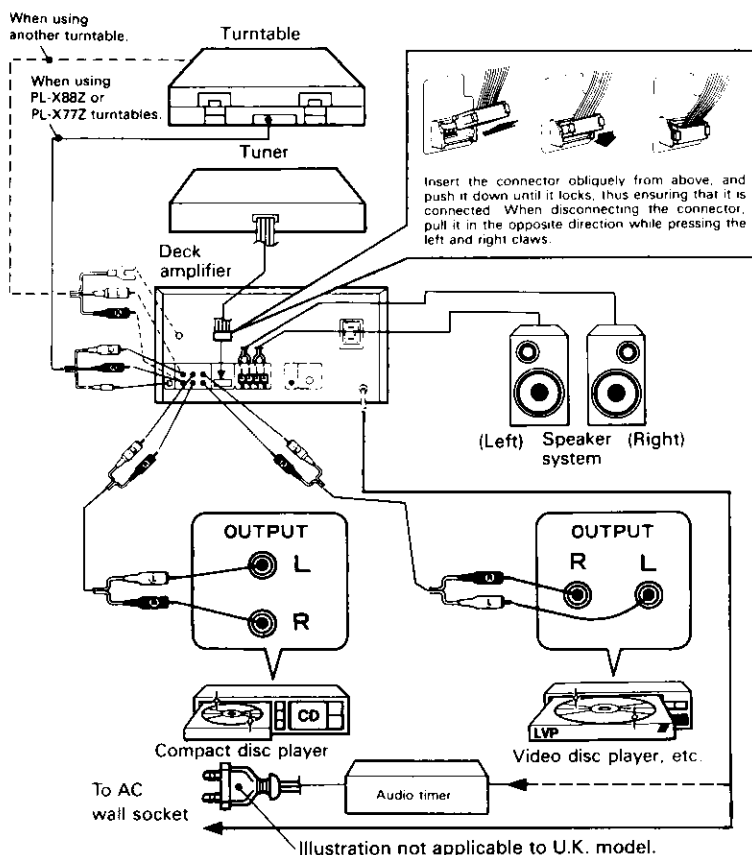
FM and MHz light: FM reception

AM and kHz light: MW or LW reception

Proceed as follows with the set-up and connections.

1. Place the tuner on top of the cassette tape deck amplifier.
2. Connect the tuner to cassette tape deck amplifier.
3. Connect the FM antenna and the AM antenna to the tuner's antenna terminals.
If the model has an AM/FM CHANNEL STEP switch, check whether it is positioned properly.
4. Attach the turntable legs at the left and right of the cassette tape deck amplifier's rear panel.
5. Place the turntable on top of the tuner.
6. Connect the turntable's output cords to the cassette tape deck amplifier's PHONO jacks. If any other stereo component is to be used, connect it in the same way to the CD or VIDEO jacks.
7. Connect the speaker cords to the SPEAKERS terminals.
8. Finally, connect the power cord the the AC wall socket.

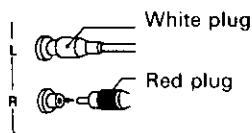
Plug the power cord into the AC wall socket outlet only after all the connections have been completed. Keep the power switch at the OFF position.



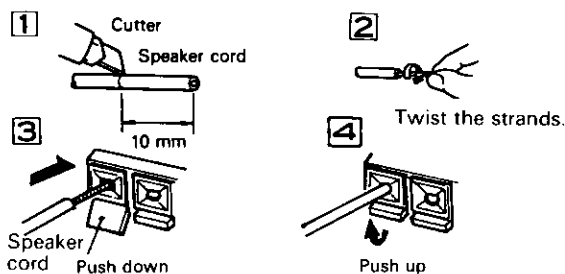
Connecting the input/output cords

- Insert the plugs securely into the jacks. Improper connection can lead to sound distortion or malfunctioning.
- The white plug is for the left channel connection and the red plug for the right channel connection.

Be sure to insert the plugs all the way.



Connecting the speaker cords



- Check that the speaker cords are secure and will not become disconnected.

NOTE:

Do not allow the conductors of the cords to project beyond the terminals and to come into contact with other conductors. A breakdown or failure may occur when conductors touch one another.

Speaker impedance

Connect speaker systems with a nominal impedance of between 6 and 16 ohms.

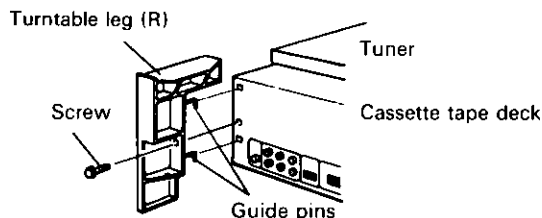
Attaching the legs of the turntable

Attach the legs accompanying the turntable to the rear panel of the cassette deck amplifier.

- Be sure to attach the left (L) and right (R) legs to their proper positions.

1. Insert the guide pins on the legs into the holes in the back of the cassette deck amplifier.
2. Fasten the legs in place with the screws provided.

3. After connecting the antenna, mount the turntable securely on top of the legs.



Radio reception is not possible unless the antenna is properly connected.

The strength of broadcast signals varies from one area to another (signal propagation is especially poor in metropolitan areas, where there are many tall buildings, and in mountainous areas). Proper antenna installation is vital to good reception.

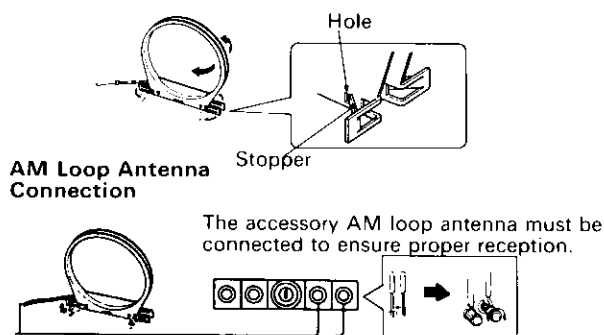
AM ANTENNA

The AM loop antenna supplied with the tuner should be connected to the AM antenna terminals. The antenna should be placed at a distance from the tuner, and should not be allowed to touch metallic objects. Avoid placing it near CD players, personal computers, television sets, and other devices generating radio frequencies.

Setting Up the AM Antenna

- Fold out the supports on the bottom of the antenna. Insert the stopper in the hole in the antenna to lock them in place.
- Place the antenna on a level surface and rotate it to locate the orientation that yields the best reception.

AM Loop Antenna Set-up



External AM antenna

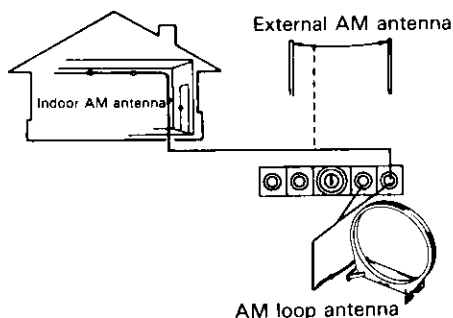
Indoor AM antenna

Provide a vinyl-coated wire (5 to 6 meters long). Secure one end to the AM terminal and the other end to a wall or other high location.

External AM antenna

If reception is still poor even when a lead antenna has been stretched out indoors, stretch out a vinyl-coated wire and secure it outdoors.

Connecting the external AM antenna



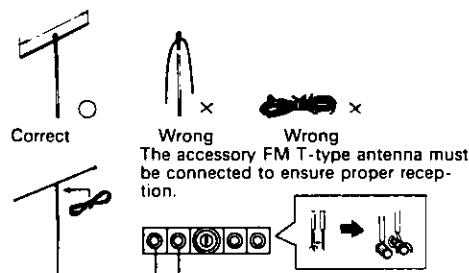
NOTE:
Do not detach the AM loop antenna when using the external AM antenna.

FM ANTENNA

FM T-type Antenna Attachment

Connect the accessory FM T-type antenna to the FM terminals. Stretch the antenna out to its full length, and affix it to a wall, etc.

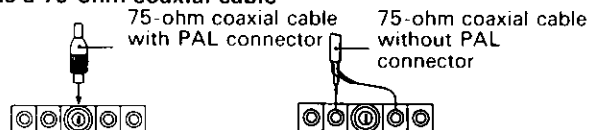
Stretch out both ends.



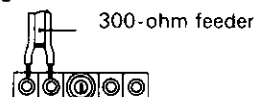
External FM antenna installation

Use an external antenna when the signals from the station are weak and cannot be picked up by the accessory T-type FM antenna, or when the sound heard is accompanied by large amounts of noise. There are two ways of connecting the external FM antenna to the ANTENNA terminals: with 300-ohm feeder wire, or with a 75-ohm coaxial cable. It is recommended that you use the 75-ohm coaxial cable, so that the effects of extraneous noise are reduced to a minimum.

When the connecting cable is a 75-ohm coaxial cable



When the connecting cable is a 300-ohm feeder wire



AM/FM CHANNEL STEP SWITCH (F-X88Z only)

This switch is not provided on models for use in Europe, North America, or Australia. (Provided only on models stamped "Z/E" on packing case.)

The AM/FM channel step switch is located on the rear panel of the digital synthesizer tuner. Before the tuner leaves the factory, this switch is set to the channel allotment plan of the area in which the tuner is sold. When the TUNING switch is given a single push, the frequency display will change in the following units.

Model destination	CHANNEL STEP switch position	Frequency change	
		FM mode	AM mode
North America and Continental South America	100 kHz/10 kHz	100 kHz	10 kHz
Other countries	50 kHz/9 kHz	50 kHz	9 kHz

NOTE:

- If the switch is set to the wrong position, correct tuning will not be possible.

Consult your dealer if you are not sure about the channel allotment plan in your area.

3. EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- The  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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

● Parts List

Mark	No.	Part No.	Description
	1.	AMB1146	Front panel assembly
	2.	AAC1006	Knob cap
	3.	AAD1107	Push knob
	4.	AAK1181	IND. panel
	5.	AAK1189	FL filter
	6.	ANE1062	Bonnet case
	7.	AMR1002	Foot assembly
	8.	ABA-298	Screw
	9.	ABA1009	Screw
	10.	AWZ1247	Tuner assembly
	11.	ADE1024	Connection cable
	51.		LED assembly
	52.		Tuning assembly
	53.		Chassis

1

2

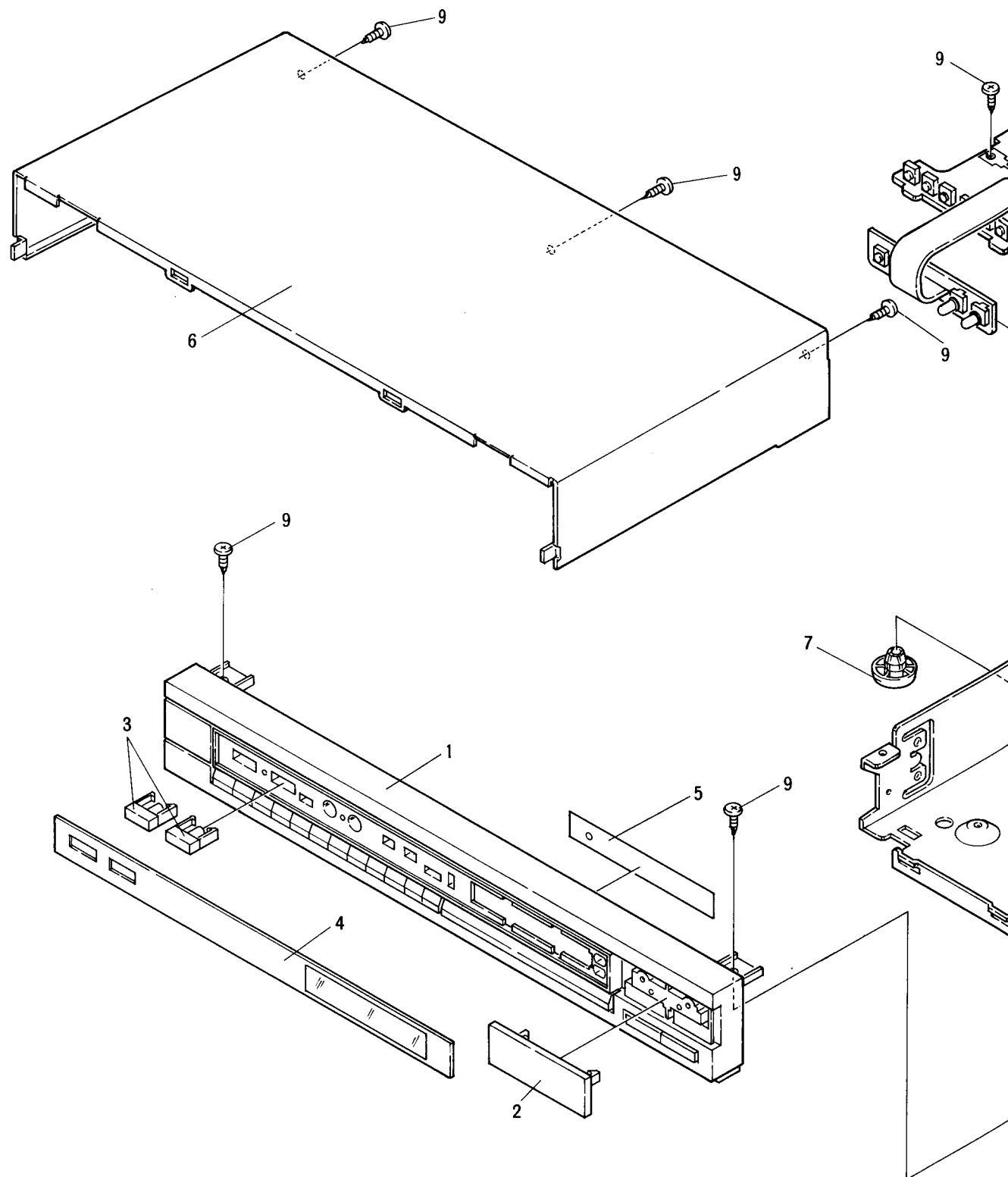
3

A

B

C

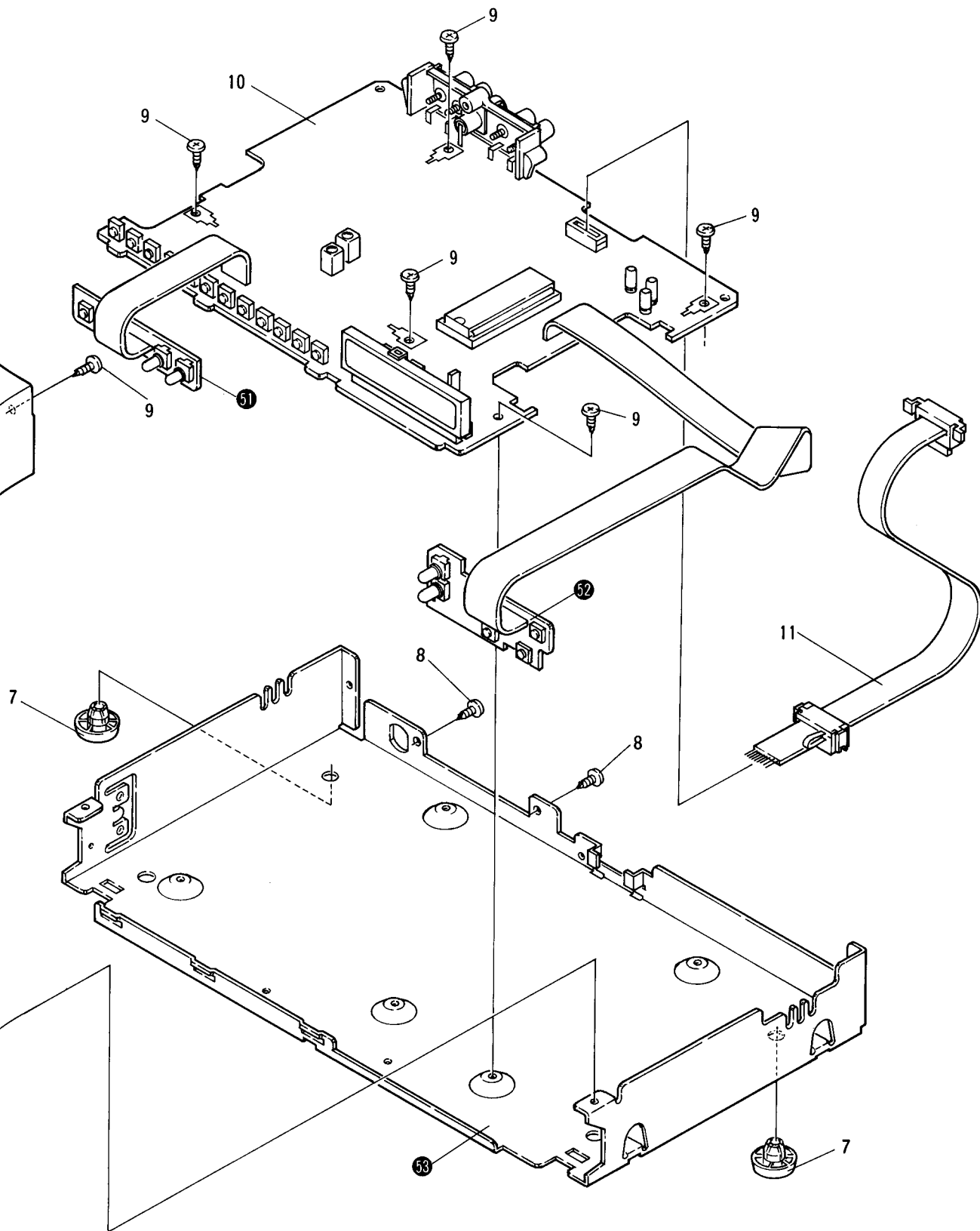
D



1

2

3



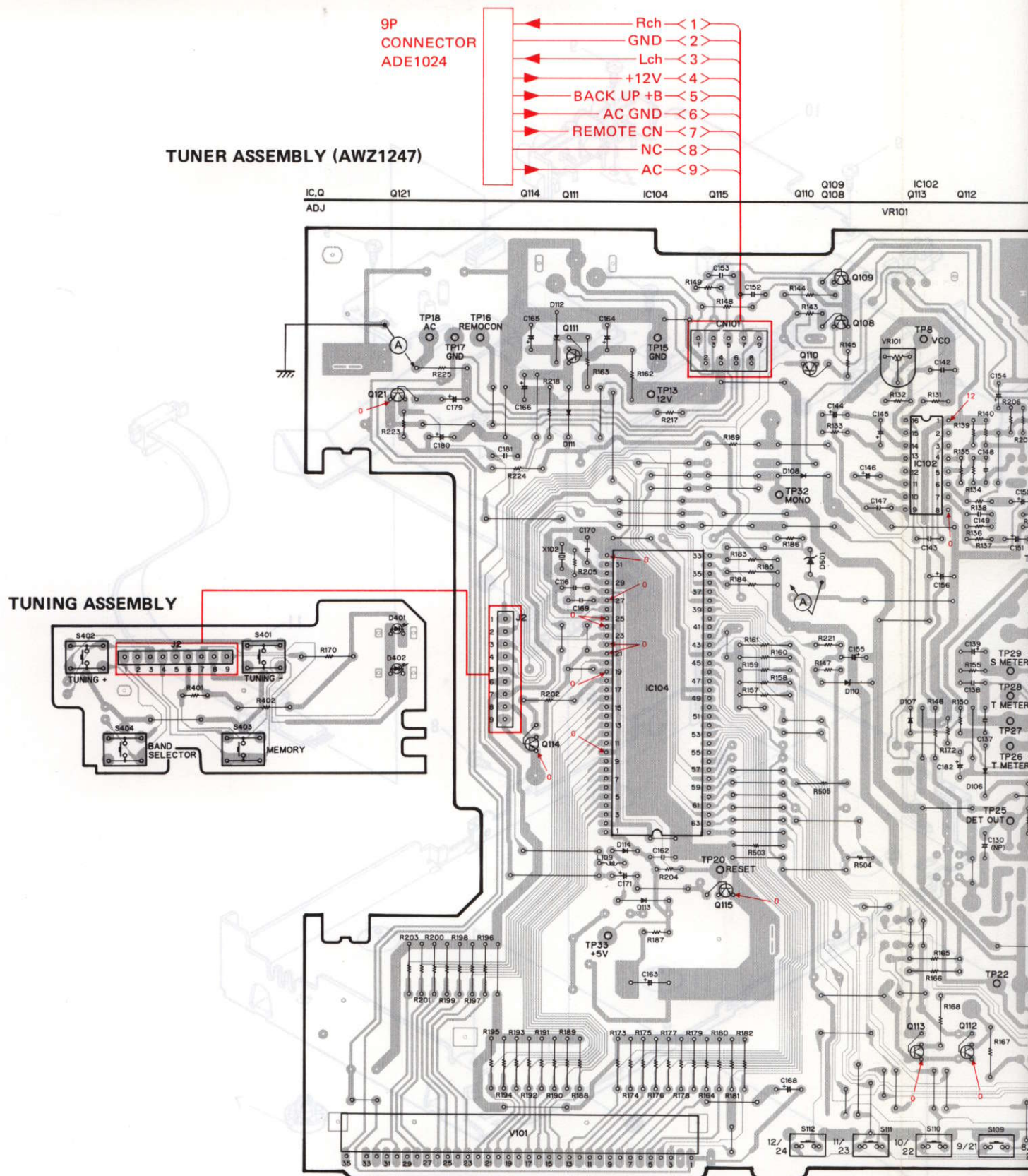
A

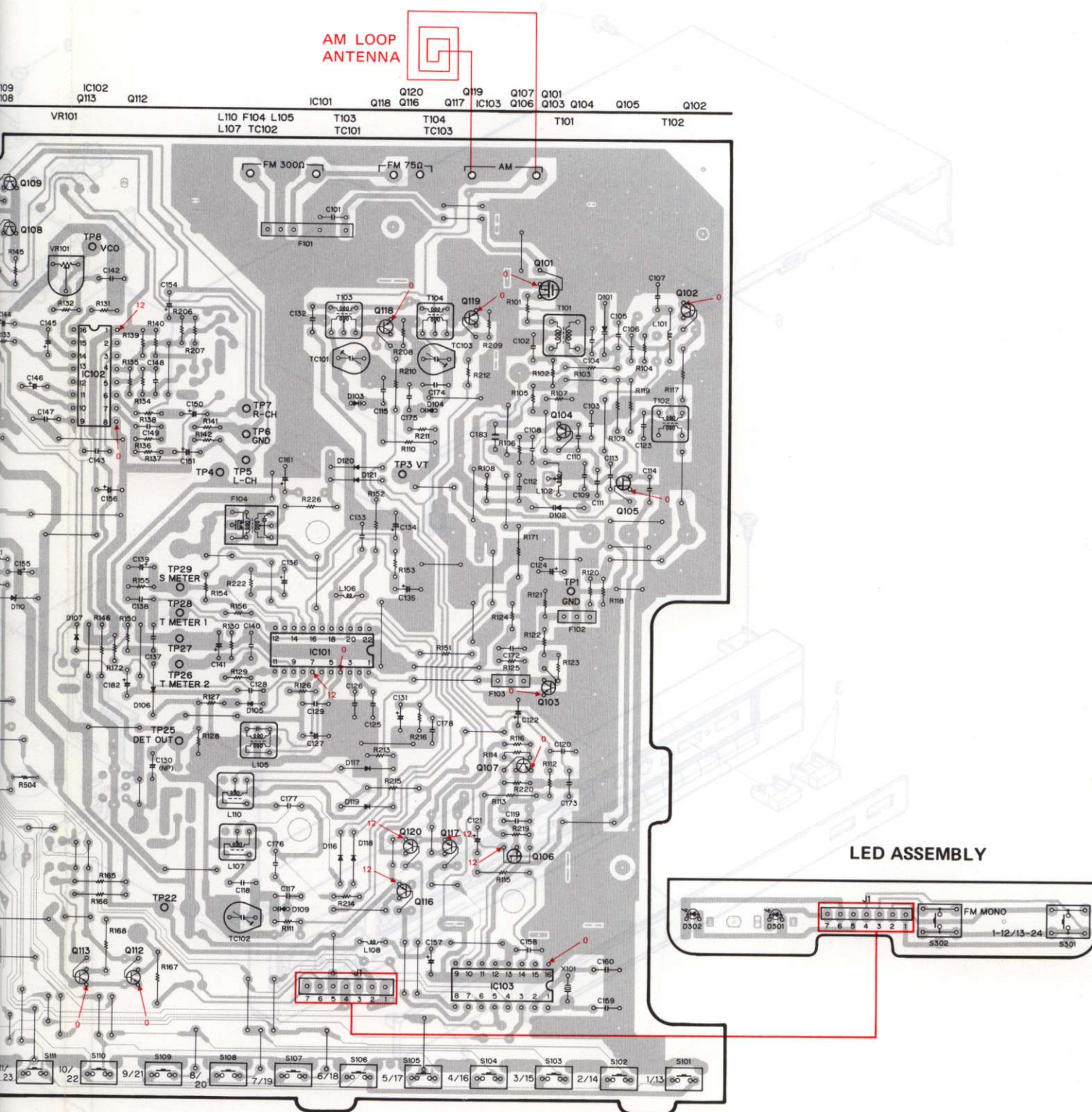
B

C

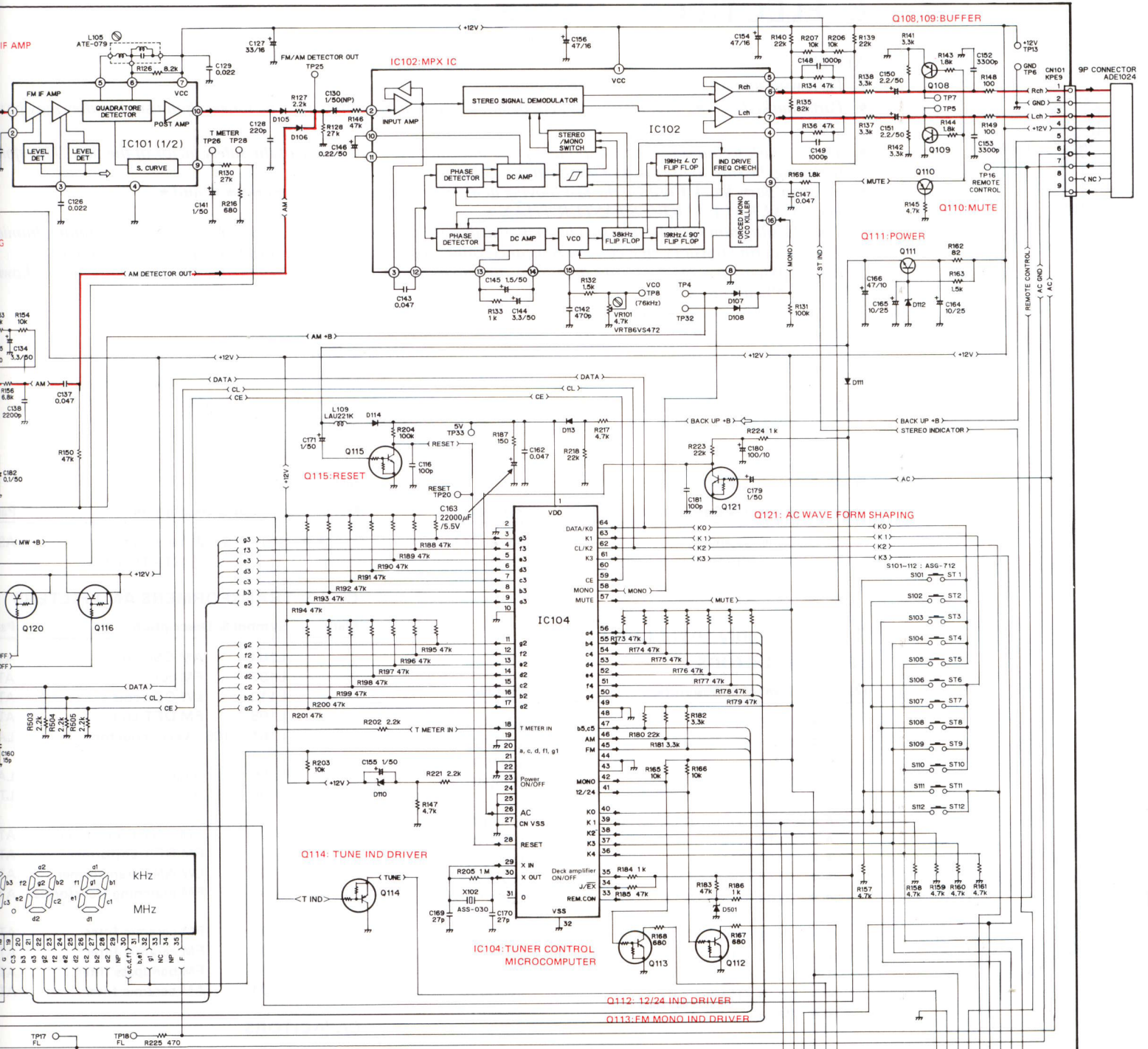
D

4. P.C. BOARDS CONNECTION DIAGRAM



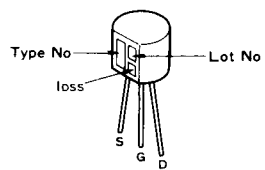


S302 : FM MONO
S401 : TUNING -
S402 : TUNING +
S403 : MEMORY
S404 : BAND SELECTOR

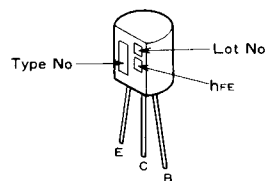


External Appearances of Transistors and ICs

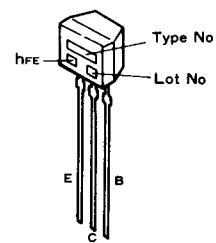
2SK246



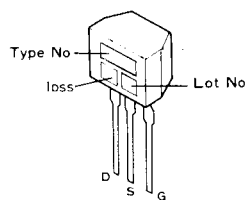
2SC2878



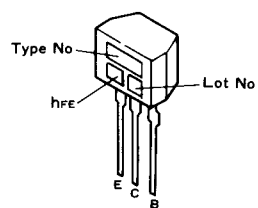
2SC2786



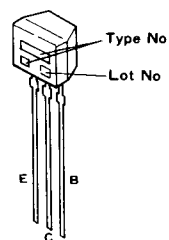
2SK161
2SK241



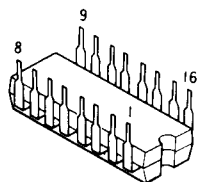
2SA933S
2SC1740S
2SC1740SLN



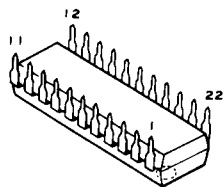
DTA143ES
DTC124ES
DTC143ES



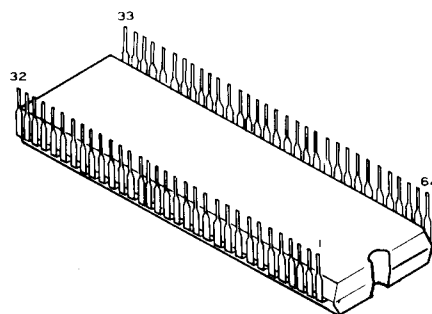
AN7470P
LM7001



LA1265S



PD5047



6. 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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Miscellaneous Parts

Mark	Symbol & Description	Part No.
	Tuner assembly	AWZ1247
	Tuning assembly	
	LED assembly	

Tuner Assembly (AWZ1247)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC102	AN7470P
★★	IC101	LA1265S
★★	IC103	LM7001
★★	IC104	PD5047
★★	Q114, Q116, Q117, Q120	DTA143ES
★★	Q115, Q121	DTC124ES
★★	Q112, Q113	DTC143ES
★★	Q110	2SA933S
★★	Q108, Q109, Q111	2SC1740S
★★	Q107	2SC1740SLN
★★	Q103, Q104	2SC2668
★★	Q102	2SC2786
★★	Q118, Q119	2SC2878
★★	Q105	2SK161
★★	Q101	2SK241
★★	Q106	2SK246
★	D101, D102	ITT310
★	D112	RD6.2ESB
★	D110, D501	RD7.5ESB
★	D103, D104, D109	SVC321C3 (SVC321D3)
★	D105 – D108, D111, D113,	1SS131
★	D114, D118 – D121	
★	D116, D117	1SS85

SWITCHES

Mark	Symbol & Description	Part No.
★★	S101 – S112 Tact switch (STATION)	ASG-712

COILS, TRANSFORMERS AND FILTERS

Mark	Symbol & Description	Part No.
	L107 AM OSC coil	ATB-114
	L102 FM coil	ATC1003
	L110 LW OSC coil	ATD-023
	L105 FM DET coil	ATE-079
	L101, L108 Axial inductor	LAU2R2M
	L109 Axial inductor	LAU221K
	L106 Inductor	LTA472J
	T103 AM ANT transformer	ATB-095
	T101 FM RF transformer	ATC-194
	T104 LW ANT transformer	ATD1002
	T102 FM matching transformer	ATE-063
	F103 FM ceramic filter	ATF-107
	F102 FM ceramic filter	ATF-119
	F101 FM bandpass filter	ATF-155
	F104 AM ceramic filter	ATF-208

CAPACITORS

Mark	Symbol & Description	Part No.
	C163 (22000μF/5.5V)	ACH1023
	TC103 Ceramic trimmer	ACM-020
	TC101, TC102 Ceramic trimmer	ACM-026
	C116, C181	CCCSL101J50
	C113	CCDCH010C50
	C106	CCDCH020C50
	C101	CCDCH040C50
	C111	CCDCH080D50
	C108, C114, C159, C160, C174	CCDCH150J50
	C169, C170	CCDCH270J50

Mark	Symbol & Description	Part No.
C110		CCDCH330J50
C176		CCDCH560J50
C104		CCDRH180J50
C107		CCDSL101J50
C128		CCDSL221J50
C109		CCDTH150J50
C117		CCDUJ120J50
C130		CEANP010M50
C146		CEASR22M50
C182		CEASOR1M50
C141, C155, C157, C171, C179		CEAS010M50
C121, C145		CEAS1R5M50
C164, C165		CEAS100M25
C180		CEAS101M10
C124, C161, C168		CEAS101M16
C139, C150, C151		CEAS2R2M50
C134, C144		CEAS3R3M50
C122, C127, C131		CEAS330M16
C135		CEAS4R7M50
C136, C166		CEAS470M10
C154, C156		CEAS470M16
C148, C149		CKCYB102K50
C138		CKCYB222K50
C152, C153		CKCYB332K50
C119, C132, C140		CKCYF103Z50
C120		CKCYF223Z50
C133, C143, C147		CKCYF473Z50
C137		CKCYX473M25
C112		CKDYB102K50
C102, C103, C105, C123, C172, C173		CKDYF103Z50
C115, C125, C126, C129, C175, C178		CKDYF223Z50
C158, C162		CKDYF473Z50
C177		CQSA301J50
C118		CQSA431J50
C142		CQSA471J50
C183		CKDYF103Z50

RESISTORS

Mark	Symbol & Description	Part No.
★ VR101	Semi-fixed (4.7kΩ)	VRTB6VS472
R226		RD1/2PM220J
R162, R167, R168, R170, R171, R225		RD1/4PM□□□J
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Antenna terminal (4P) (PAL)	AKA1002
★ V101	Fluorescent tube	AAV-017
★ X102	Ceramic resonator	ASS-030
★ X101	Crystal resonator	ASS1005

Tuning Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★ D402	LED assembly	AEL1009
★ D401	LED assembly	AEL1024

SWITCHES

Mark	Symbol & Description	Part No.
★★ S401 – S404	Tact switch (TUNING–, TUNING+, MEMORY, BAND)	ASG-711

RESISTORS

Mark	Symbol & Description	Part No.
	R401	RD1/8PM332J

LED Assembly

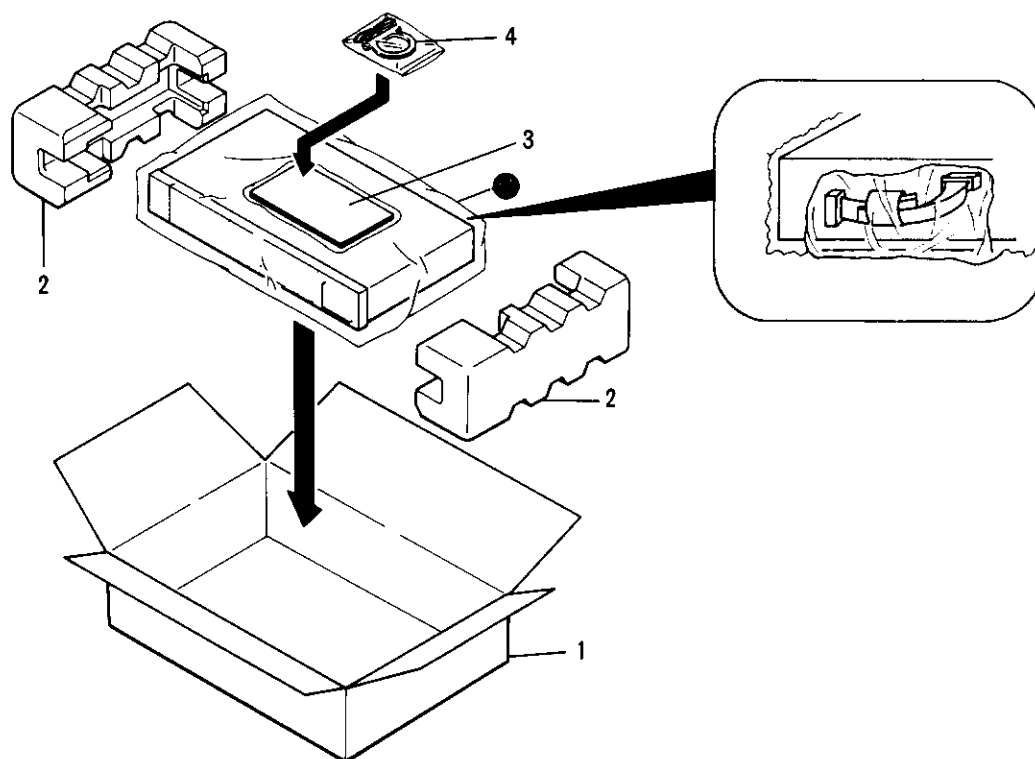
SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★ D301, D302	LED assembly	AEL1024

SWITCHES

Mark	Symbol & Description	Part No.
★★ S301, S302	Tact switch (FM MONO, STEREO)	ASG-711

7. PACKING



● Parts List of Packing

Mark	No.	Part No.	Description
	1.	AHD1164	Packing case
	2.	AHA1046	Side pad
	3.	ARH-051	Supplementary instructions
	4.	AEA1002	Antenna set
	51.		Packing sheet

8. ADJUSTMENT

PREPARATION

- Connect TP15 (GND) with TP17 (GND).
- Supply DC 12V between TP18 and TP17, and between TP13 and TP15 (see Fig. 8-1).

FM Tuner Adjustment

- Make the wire connections as shown in Fig. 8-2.
- Set the function to FM.

Step No.	FM SG (1kHz $\pm$ 75kHz dev.)		F-X88ZL Reception Frequency Display	Adjustment	
	Frequency (MHz)	Level (dB μ)		Adjustment Location	Specifications
1	98.0	60	98.0MHz	L105	Adjust so that DC voltage is 0V $\pm$ 0.1V for TP28 (TMETER 1) and TP26 (TMETER 2).
2 (*3)	98.0	60	98.0MHz	T101, T102	Adjust the output terminal (TP5: L ch, TP7: Rch) voltage to the maximum.
3	—	—	98.0MHz	VR101	Ground TP25 through the 220 μ F capacitor, and adjust the frequency of TP8 to 76kHz $\pm$ 200Hz.
4	98.0 *1 (stereo modulation)	60	98.0MHz	T102	Adjust the output terminal (TP5: Lch, TP7: Rch) distortion to the minimum.

(*1) Stereo Modulation: Main 1kHz L + R $\pm$ 68.25Hz dev.
Pilot 19kHz $\pm$ 6.75kHz dev.

(*3) The method of adjustment in step 2 is different for F-X88Z/ZEZ type. For details, refer to service manual (ARP1341) for type F-X88Z/ZEZ.

MW Tuner Adjustment

- Make the connections as shown in Fig. 8-3.
- Set the function to MW.

Step No.	AM SG (400Hz, 30% modulation)		F-X88ZL Reception Frequency Display	Adjustment	
	Frequency (kHz)	Level (dB μ)		Adjustment Location	Specifications
1	—	—	531kHz	L107	Adjust TP3 (VT) to 1.3V $\pm$ 0.1V.
2	—	—	1602kHz	TC102	Adjust TP3 (VT) to 10V $\pm$ 0.5V.
3	603	Level at which output is not saturated.	603kHz	T103 (*2)	Adjust the output terminal (TP5: L ch, TP7: R ch) voltage to the maximum.
4	1395		1395kHz	TC101 (*2)	

(*2) F104 is adjusted for F-X88Z/ZIOX1B type.

LW Tuner Adjustment

- Make the connections as shown in Fig. 8-3.
- Set the function to LW.
- F-X88ZL/ZEZ type only.

Step No.	AM SG (400Hz, 30% modulation)		F-X88ZL Reception Frequency Display	Adjustment	
	Frequency (kHz)	Level (dB μ)		Adjustment Location	Specifications
1	—	—	281kHz	L110	Adjust TP3 (VT) to 5.2V.
2	164	Level at which output is not saturated.	164kHz	T104	Adjust the output terminal (TP5: L ch, TP7: R ch) voltage to the maximum.
3	254		254kHz	TC103	

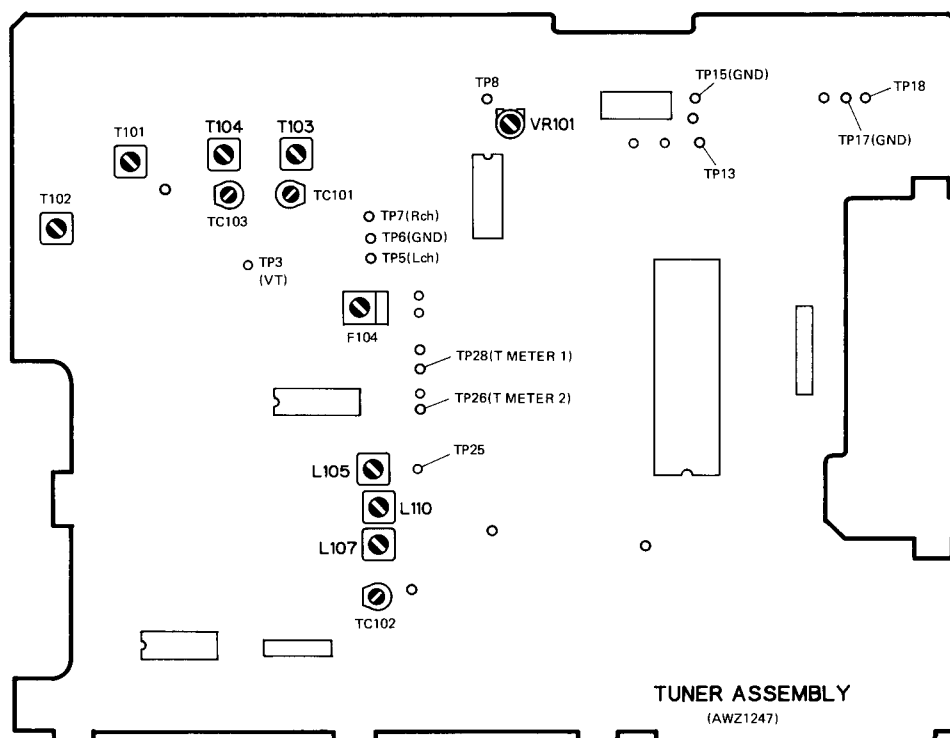


Fig. 8-1 Adjustment point

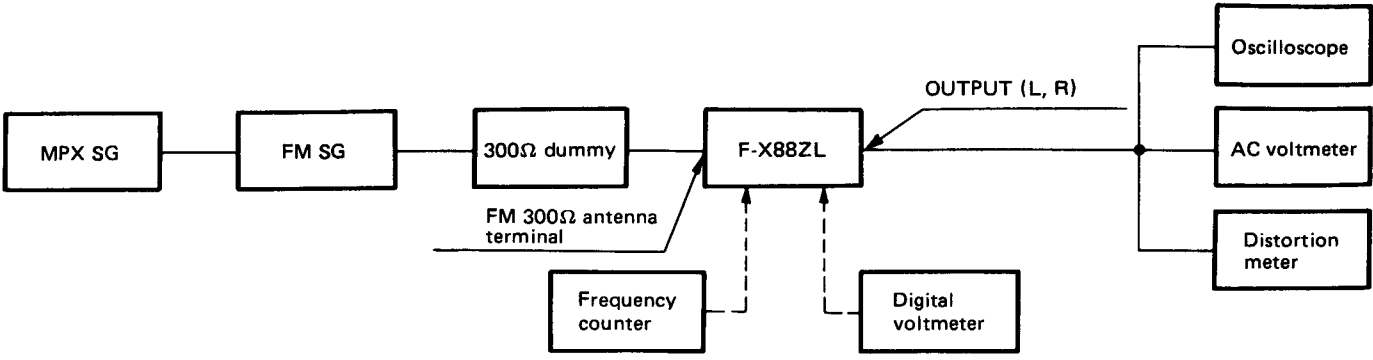


Fig. 8-2 FM Tuner Connection

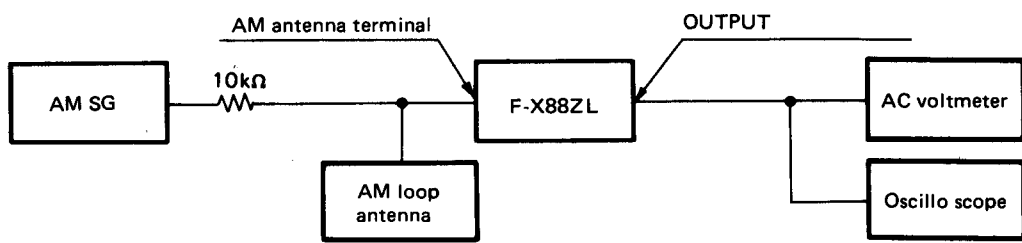


Fig. 8-3 AM Tuner Connection

8. RÉGLAGE

PRÉPARATIFS

- Raccorder TP15 (Terre) à TP17 (Terre).
- Fournir un courant continu de 12 V entre TP18 et TP17, et entre TP13 et TP15 (voir Fig. 8-1).

Réglage du tuner FM

- Effectuer les connexions des fils de la façon indiquée dans la Fig. 8-2.
- Régler la fonction sur FM.

Etape N°	FM SG (1kHz $\pm$ 75kHz dév.)		F-X88ZL Affichage de fréquence de réception	Réglage	
	Fréquence (MHz)	Niveau (dB μ)		Lieu de réglage	Caractéristiques
1	98,0	60	98,0MHz	L105	Ajuster de telle façon que la tension CC soit de 0V $\pm$ 0,1V pour TP28 (TMETER 1) et TP26 (TMETER 2).
2 (*3)	98,0	60	98,0MHz	T101, T102	Ajuster la tension de la borne de sortie (TP5: canal gauche, TP7: canal droit) au maximum.
3	—	—	98,0MHz	VR101	Mettre à la terre TP25 en passant par le condensateur de 220 μ F, et ajuster la fréquence de TP8 à 76kHz $\pm$ 200Hz.
4	98,0 *1 (modulation stéréo)	60	98,0MHz	T102	Ajuster la distortion de la borne de sortie (TP5: canal gauche, TP7: canal droit) au minimum.

(*1) Modulation stéréo: Déviation principale de 1kHz G + D $\pm$ 68,25Hz
Déviation pilote de 19kHz $\pm$ 6,75kHz

(*3) La méthode de réglage à l'étape 2 diffère pour le F-X88Z/ZEZ. Pour de plus amples détails, se reporter au mode d'emploi (ARP1341) du F-X88Z/ZEZ.

Réglage du tuner MW

- Effectuer les connexions comme indiqué dans la Fig. 8-3.
- Régler la fonction sur MW.

Etape N°	AM SG (400Hz, 30% modulation)		F-X88ZL Affichage de fréquence de réception	Réglage	
	Fréquence (kHz)	Niveau (dB μ)		Lieu de réglage	Caractéristiques
1	—	—	531kHz	L107	Ajuster TP3 (VT) sur 1,3V $\pm$ 0,1V.
2	—	—	1602kHz	TC102	Ajuster TP3 (VT) sur 10V $\pm$ 0,5V.
3	603	Niveau auquel la sortie n'est pas saturée.	603kHz	T103 (*2)	Ajuster la tension de la borne de sortie (TP5: canal gauche, TP7: canal droit) au maximum.
4	1395		1395kHz	TC101 (*2)	

(*2) F104 est réglé pour le type F-X88Z/ZIOX1B.

Réglage du tuner LW

- Effectuer les connexions comme indiqué dans la Fig. 8-3.
- Régler la fonction sur LW.
- F-X88ZL/ZEZ uniquement.

Etape N°	AM SG (400Hz, 30% modulation)		F-X88ZL Affichage de fréquence de réception	Réglage	
	Fréquence (kHz)	Niveau (dB μ)		Lieu de réglage	Caractéristiques
1	—	—	281kHz	L110	Ajuster TP3 (VT) sur 5,2V
2	164	Niveau auquel la sortie n'est pas saturée.	164kHz	T104	Ajuster la tension de la borne de sortie (TP5: canal gauche, TP7: canal droit) au maximum.
3	254		254kHz	TC103	

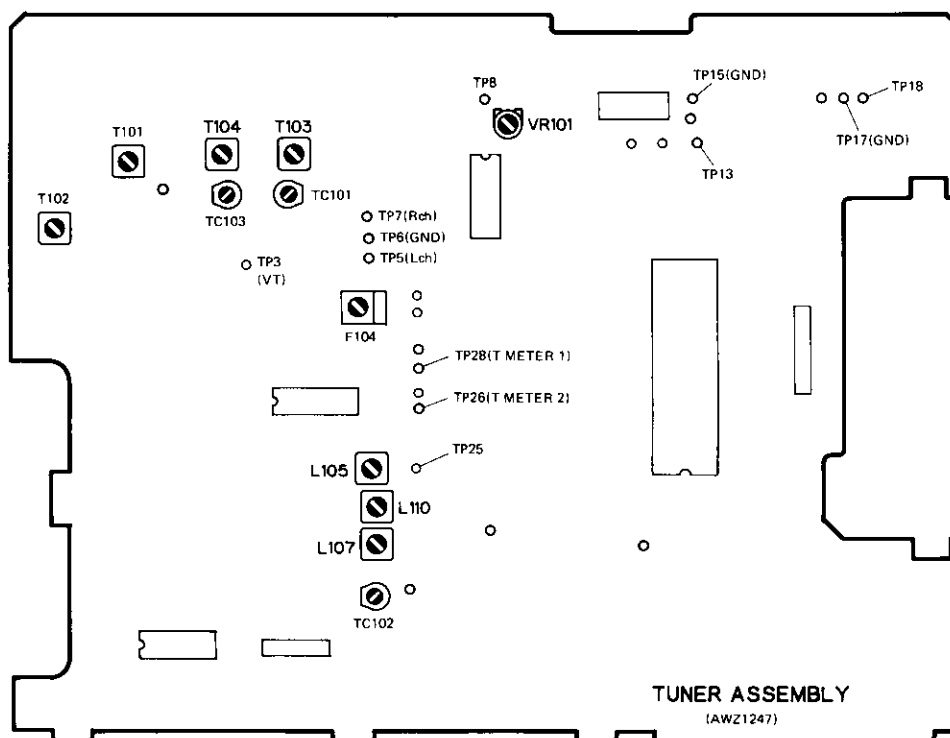


Fig. 8-1 Positions de réglage

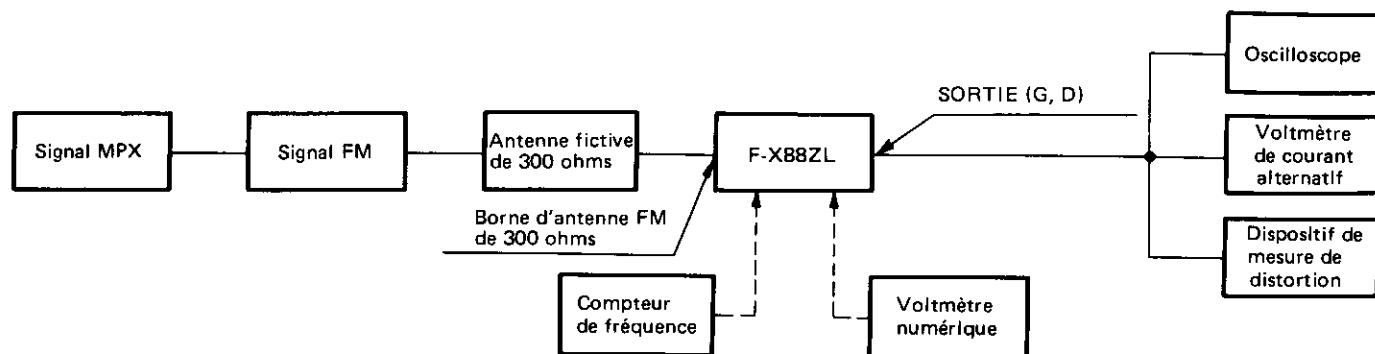


Fig. 8-2 Connexion du tuner FM

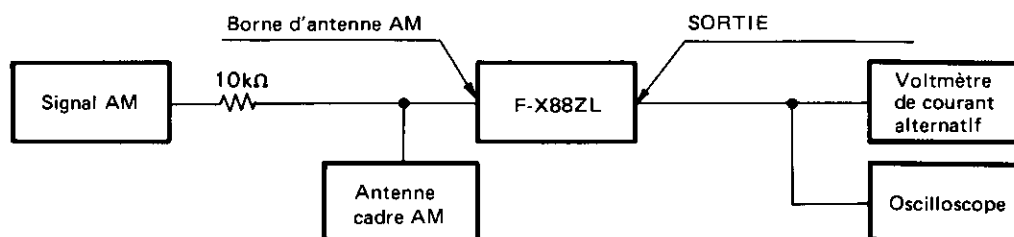


Fig. 8-3 Connexion du tuner AM

8. AJUSTE

PREPARATIVOS

- Conecte TP15 (masa) con TP17 (masa).
- Aplique 12V CC entre TP18 y TP17, y entre TP13 y TP15 (consulte la Fig. 8-1).

Ajuste del sintonizador de FM

- Realice las conexiones como se muestra en la Fig. 8-2.
- Ponga el selector de función en FM.

No. de paso	FM SG (1kHz $\pm$ 75kHz dev.)		F-X88ZL Frecuencímetro de recepción	Ajuste	
	Frecuencia (MHz)	Nivel (dB μ)		Lugar de ajuste	Especificaciones
1	98.0	60	98,0MHz	L105	Ajuste de forma que la tensión de CC sea de 0V $\pm$ 0,1V para TP28 (TMETER 1) y TP26 (TMETER 2).
2	98.0	60	98,0MHz	T101, T102	Ajuste la tensión del terminal de salida (TP5: canal izquierdo, TP7: canal derecho) al máximo valor.
3 (*3)	—	—	98,0MHz	VR101	Ponga TP25 a masa a través de un capacitor de 220 μ F, y ajuste la frecuencia de TP8 a 76kHz $\pm$ 200Hz.
4	98,0 *1 (modulación estéreo)	60	98,0MHz	T102	Ajuste la distorsión del terminal de salida (TP5: canal izquierdo, TP7: canal derecho) al mínimo estéreo)

(*1) Modulación estéreo: Principal 1kHz canal izquierdo + canal derecho $\pm$ 68,25Hz de desviación
Piloto 19kHz $\pm$ 6,75kHz de desviación

(*3) El método de ajuste del paso 2 es diferente para el tipo F-X88Z/ZEZ. Con respecto a los detalles, consulte el manual de servicio (ARP1341) para el tipo F-X88Z/ZEZ.

Ajuste del sintonizador de MW

- Realice las conexiones como se muestra en la Fig. 8-3.
- Ponga el selector de función en MW.

No. de paso	AM SG (400Hz, 30% modulation)		F-X88ZL Frecuencímetro de recepción	Ajuste	
	Frecuencia (kHz)	Nivel (dB μ)		Lugar de ajuste	Especificaciones
1	—	—	531kHz	L107	Ajuste TP3 (VT) a 1,3V $\pm$ 0,1V.
2	—	—	1602kHz	TC102	Ajuste TP3 (VT) a 10V $\pm$ 0,5V.
3	603	Nivel en el que la salida no se satura	603kHz	T103 (*2)	Ajuste la tensión del terminal de salida (TP5: canal izquierdo, TP7: canal derecho) al máximo valor.
4	1395		1395kHz	TC101 (*2)	

(*2) F104 se ajusta para el tipo F-X88Z/ZIOX1B.

Ajuste del sintonizador de LW

- Realice las conexiones como se muestra en la Fig. 8-3.
- Ponga el selector de función en LW.
- Tipo F-X88ZL/ZEB solamente.

No. de paso	AM SG (400Hz, 30% modulation)		F-X88ZL Frecuencímetro de recepción	Ajuste	
	Frecuencia (kHz)	Nivel (dB μ)		Lugar de ajuste	Especificaciones
1	—	—	281kHz	L110	Ajuste TP3 (VT) a 5,2V.
2	164	Nivel en el que la salida no se satura	164kHz	T104	Ajuste la tensión del terminal de salida TP5: canal izquierdo, TP7: canal derecho) al máximo valor.
3	254		254kHz	TC103	

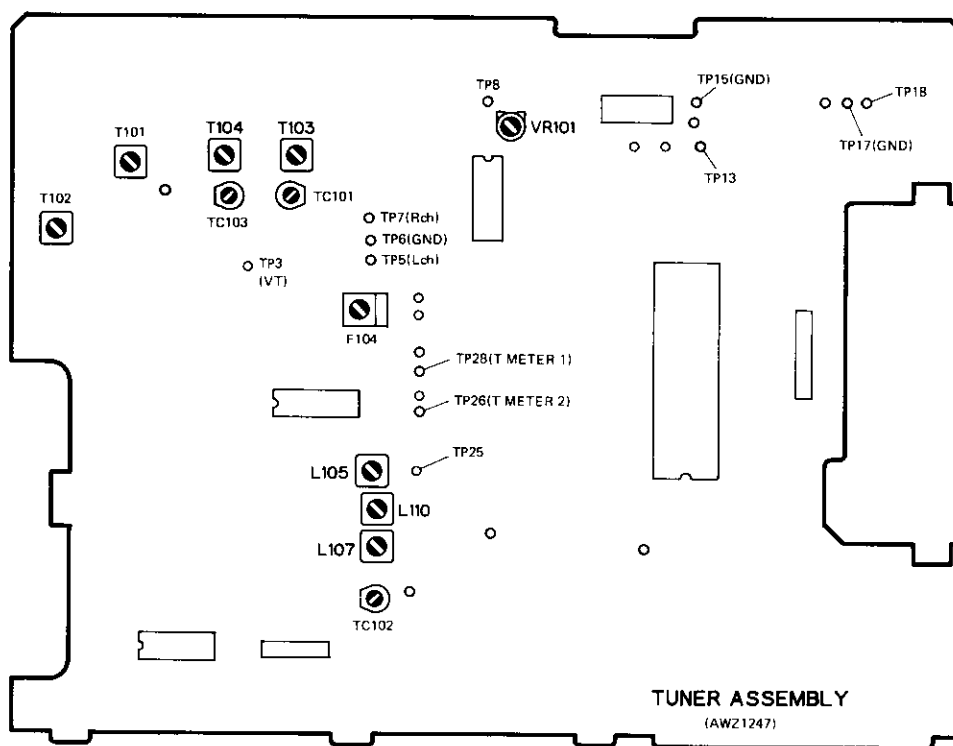


Fig. 8-1 Posiciones de ajuste

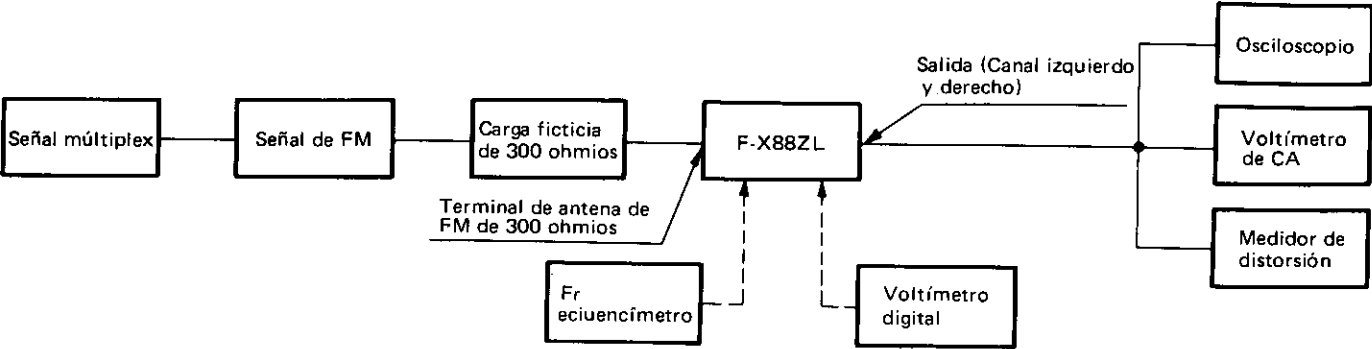


Fig. 8-2 Conexiones del sintonizador de FM

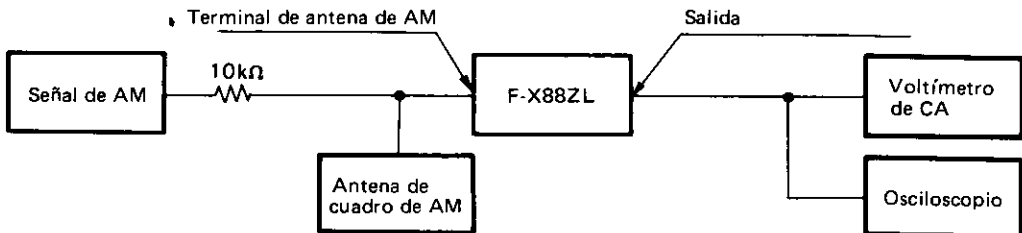


Fig. 8-3 Conexiones del sintonizador de AM

ADVARSEL

ADVARSEL!

Lithiumbatteri. Eksplosionsfare. Udskiftning må kun foretages af en sagkyndig, og som beskrevet i servicemanualen.

Denne advarsel er angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anvisning. Batterierne må kun udskiftes med batterier af samme type og mærke.

WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below. The batteries must be replaced only by batteries of the same type and manufacture.