ORDER NO. HAD84062801C9

Service Manual

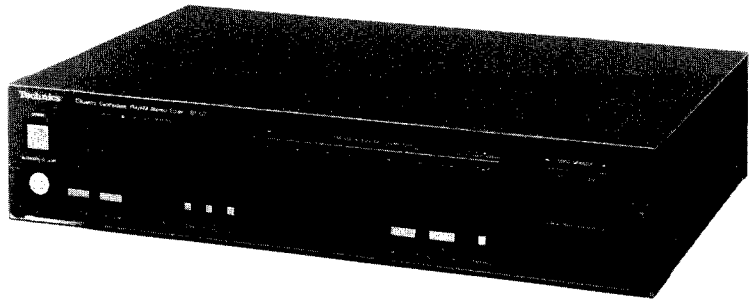
Tuner

ST-G7

QUARTZ Synthesizer
FM/AM Stereo Tuner

Color

(K) ...Black Type
(S)...Silver Type



Color	Area
(K)(S)	[E] ...Scandinavia and Switzerland
(K)(S)	[EK] ...United Kingdom
(K)(S)	[XA] ...Southeast Asia, Oceania, Africa, Middle Near East and Central South America
(K)(S)	[XL] ...Australia
(K)(S)	[EH] ...Holland
(K)(S)	[EB] ...Belgium
(K)(S)	[EF] ...France
(K)(S)	[PC] ...European Audio Club
(K)(S)	[PA] ...Far East PX
(K)(S)	[PE] ...European Military
(K)(S)	[EGA]...F.R. Germany

SPECIFICATIONS

(DIN 45 500)

■ FM TUNER SECTION

Frequency range	87.50~108.00 MHz
	87.525~108.025 MHz (+25 kHz shift)
Sensitivity	1.2 μV (IHF, usable)
S/N 30 dB	1.1 μV (75Ω)
S/N 26 dB	1.0 μV (75Ω)
S/N 20 dB	0.9 μV (75Ω)
IHF 46 dB stereo quieting sensitivity	28 μV/75Ω
Total harmonic distortion	
MONO	0.01%
STEREO	0.02%
Dynamic range	116 dB
Frequency response	4 Hz~18 kHz, +0.2 dB~ −0.5 dB
Alternate channel selectivity	
normal ±400 kHz	55 dB
super narrow ±200 kHz	25 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	105 dB
IF rejection at 98 MHz	110 dB
Spurious response rejection at 98 MHz	110 dB
AM suppression	70 dB
Stereo separation	
1 kHz	65 dB
10 kHz	50 dB
Carrier leak	
19 kHz	−70 dB
38 kHz	−70 dB
Channel balance (250 Hz~6,300 Hz)	±1.0 dB
Limiting point	0.75 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	
	75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	
(For Europe, South Africa and Australia)	
	522~1629 kHz (9 kHz-step)
	530~1620 kHz (10 kHz-step)
(For Saudi Arabia and others)	
	531~1620 kHz (9 kHz-step)
	530~1620 kHz (10 kHz-step)
Sensitivity (S/N 20 dB)	20 μV, 290 μV/m
Selectivity (±9 kHz)	55 dB
Image rejection at 999 kHz	40 dB
IF rejection at 999 kHz	65 dB

■ GENERAL

Output voltage	0.6V
Power consumption	11W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 97 × 276 mm
	(16-15/16" × 3-13/16" × 10-7/8")
Weight	4.1 kg (9 lb.)

- Specifications are subject to change without notice for further improvement.
- Weights and dimensions shown are approximate.

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shibakoen, Minato-ku, Tokyo 105 Japan

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ CONTENTS

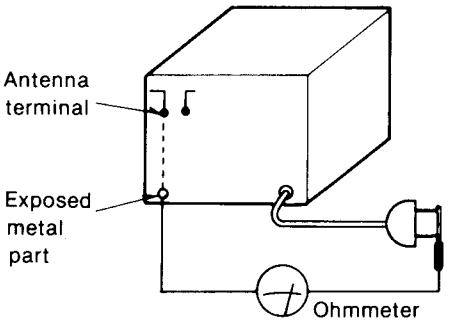
■ SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

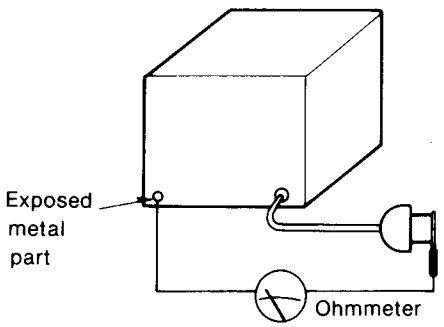
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



(Fig. B)

Resistance = Approx ∞

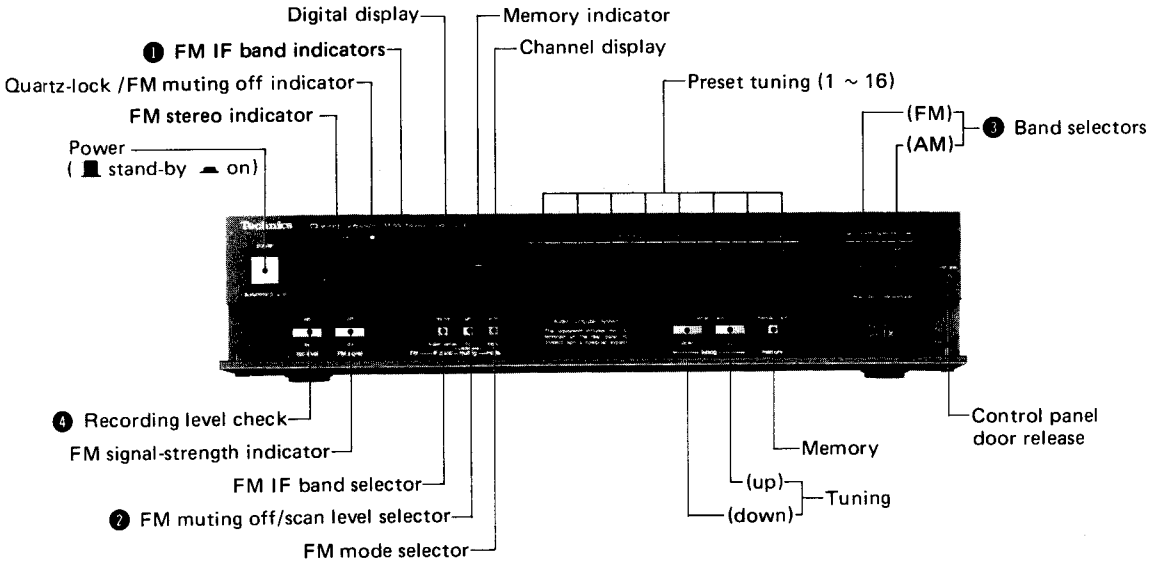
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ FEATURES

- Newly developed LSI successfully incorporating both digital (signal control) and analog (linear & signal transmission) circuits in one body.
- Extra-wide dynamic range of 116 dB (1 kHz), low distortion of 0.01% (1 kHz), and stereo separation of 65 dB (1 kHz).
- Linear detector and linear demodulation digital detector circuits.
- Self-computing RF tuning circuit capable of receiving desired station under the best conditions.
- FM-IF automatic IF band selecting function.
- Input/output terminal for personal computer connection.
- Multi-function LCD intensive display.
- Reference signal 0.33 kHz record checking signal output function.

■ LOCATION OF CONTROLS

• Front Panel



❶ FM IF band indicators (FM auto IF)

normal /:

This indicator will illuminate if the signal is strong and there is little effect from interference.

super narrow /:

This indicator will iluminate if the signal is weak and/or there is interference.

The illumination of the left and/or right parts of the indicator indicates that interference waves are present within ±300 kHz (left: −, right: +) of the tuned frequency.

❷ FM muting off/scan level selector (muting)

This selector is used when releasing the FM broadcast muting function and when setting the scan level for FM broadcasts.

- **Releasing the muting function (off)**

  In mountainous areas, etc., where broadcast waves are weak, breakup in the sound can be lessened by lightly pressing the button. When this is done, the function is released only for the statin being received.

  However, when a tuning button is pressed to begin scanning, the former scan level will be used.

- **Setting the scan level (scan level)**

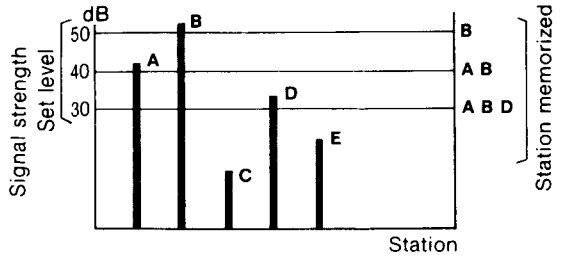
  This level setting is effective only for the automatic preset memory and auto tuning.

  When the button is held down, "dB" will be displayed and the numbers 30, 40, and 50 will be displayed in order.

  When the desired level is reached, release the button.

  The higher the level, the more noise is reduced. Stations with good reception can use " a high level", but stations below the set level cannot be received.

  In order to receive these station, the level has to be reset.



❸ Band selectors (band selector)

FM:

Press this button to listen to an FM broadcast.

+25 kHz:

The displayed FM frequency can be shifted by +0.025 MHz (+25 kHz) in order to precisely align with the frequency of the FM broadcast station.

If the FM button is pressed until the final digit of the frequency display is a small "5", the FM frequency will shift +0.025 MHz (+25 kHz).

To return to the original indication, press until the final small "5" digit disappears.

AM:

Press this button to listen to an AM broadcast.

allocation:

A frequency step of either AM 9 kHz or AM 10 kHz can be selected. Set to the appropriate position for your locality.

When the AM button is pressed slightly longer and then released when the AL10" indication illuminates, the AM frequency "step" will change to 10 kHz.

To return to the original 9 kHz, press the AM button slightly longer, and then release it when the "AL 9" indication illuminates.

❹ Recording-level check button (rec level)

This button is to be used for adjustment of the recording level when recording an FM broadcast.

When this button is pressed, the microcomputer functions to emit a reference signal of precisely 333 Hz from the output terminals of this unit. The word "CAL" (calibration) and then, soon thereafter, "0.33 kHz" will be shown by the digital display.

Adjustment of the recording level

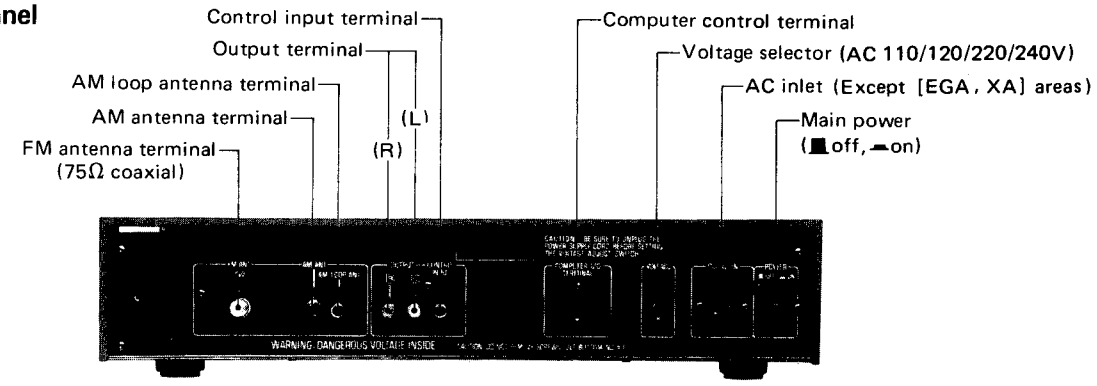
Use the input-level control(s) of the tape deck to make the adjustment while watching the recording-level meters.

- For VU meters and level meters:
  Adjust so that the indication is about +2 VU or +2 dB.
- For peak-level meters:
  Adjust so that the indication is about −2 dB.

Notes:

1) Because the ideal recording level is apt to vary depending upon the program source and the characteristics of the tape deck, the adjustment should be made by also considering those factors.
2) Don't press the operation buttons of this unit during a recording. If they are pressed, the recorded soundmay be disturbed.

- **Rear Panel**



■ HOW TO OPERATE

- **Listening to radio broadcasts**

Important!

AM loop antenna

This antenna must be installed to receive AM broadcasts.

1 Turn the amplifier on, and prepare it for listening to radio broadcasts.

2 **Power: "on" (■→▬)**

3 **Adjustment to FM broadcast signal strength is possible for automatic tuning.**

Press and hold the button.
(Will change to dB indication.)
Release the button when the desired scan level indication (30, 40 or 50 dB) is displayed.
(When the scan level is set, it will return to frequency display.)

4-2 **Station selection by using the tuning buttons:**

① Press either "FM" or "AM".

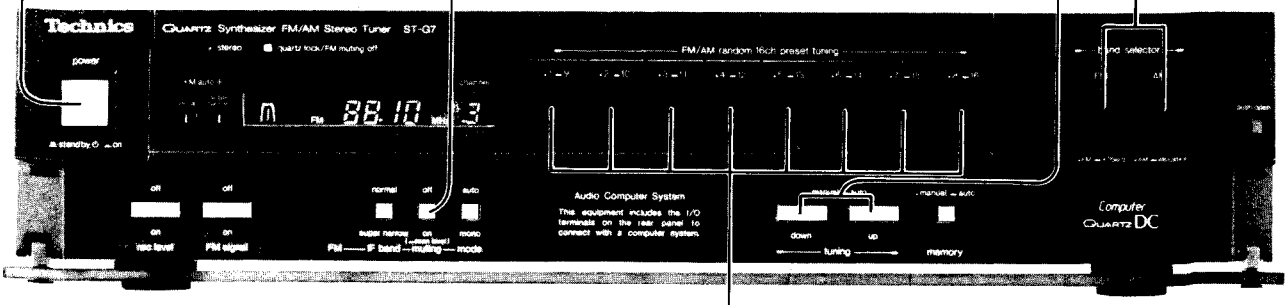
② Press the left button to change the frequency downward, and press the right button to change the frequency upward.

- **Auto tuning**

Press the button. When the frequency indication begins to change, release the button (a broadcasting station will be selected automatically). Repeat this operation until the desired station is found.

- **Manual tuning**

Press the button momentarily (the frequency will change each time the button is pressed) and tune to the desired station.

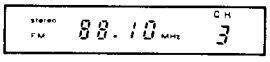


4-1 **Station selection by using preset tuning buttons:**

- **To select the front channels (CH 1~8):**

Press momentarily.

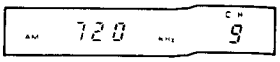
Frequency stored in the memory and channel number are displayed.



- **To select the back channels (CH 9~16):**

Press slightly longer.

Frequency stored in the memory and channel number are displayed.



• How to preset radio broadcast frequencies

This unit is used to preset as many as 16 radio broadcast frequencies: FM/AM random presetting. After broadcast frequencies have been preset as described below, any desired station can be quickly and easily selected by simply touching one button.

■ Memory presetting

There are two types of memory presetting: automatic and manual. Select whichever is preferred.

Important!

AM loop antenna

This antenna must be installed to receive AM broadcasts.

■ Before memory presetting

Each button is used to preset two stations.

Presetting front channels (CH 1~8)

Press momentarily.

Presetting back channels (CH 9~16)

Press slightly longer.

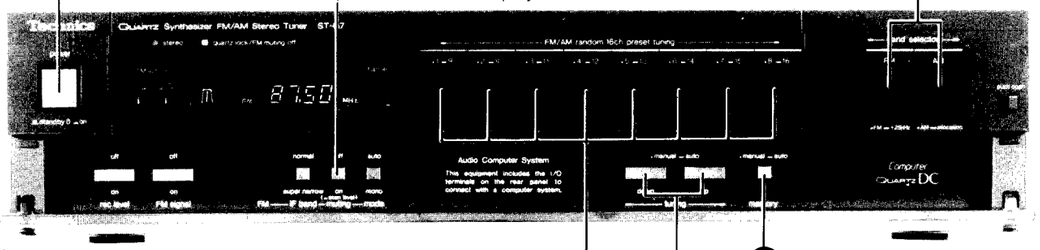
• Automatic memory presetting

Beginning at the frequency indicated by the digital display, the FM broadcasting stations and AM broadcasting stations will be automatically preset to "channels" 1 through 16 for FM and 9 through 16 for AM, respectively.
Note that in mountainous or remote areas, broadcasting stations which have weak broadcasting signals cannot be automatically preset into the memory.

❸ Adjustment to FM broadcast signal strength is possible.
Press and hold the button. (Will change to dB indication.) Release the button when the desired scan level indication (30, 40 or 50 dB) is displayed. (When the scan level is set, it will return to frequency display.)
A broadcast signal stronger than the set level is memorized.

❷ Press the "FM" or "AM" button.
To change the AM frequency by 10 kHz:
Press the "AM" button slightly longer and release the button when the "AL 10" is displayed.

❶ Power: "on" (⏻→●)

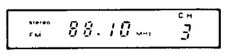


❻ Confirm the names (call signs, etc.) of the broadcasting stations which are preset to each channel, and enter them on the station memory file sheet.

To check the front channels (CH 1~8):

Press momentarily.

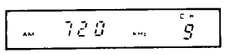
Frequency stored in the memory and channel number are displayed.



To check the back channels (CH 9~16):

Press slightly longer.

Frequency stored in the memory and channel number are displayed.



❺ Press. When the frequency indication begins to change, release.

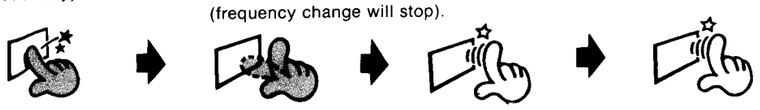
(The frequency will change upward, and the automatic presetting will begin with the broadcasting station of the lowest frequency and will continue in order.
Note that the channel display illuminates each time a broadcast station is preset in the memory, thus indicating which "channel" has been preset.)

❹ • To preset FM broadcasting stations: Set to 87.50 MHz.
• To preset AM broadcasting stations: Set to 522 kHz (or 530 kHz).

① Press the button and hold slightly (frequency will change continuously).

② Release it at 87.50 MHz for FM or 522 kHz (or 530 kHz) for AM, and then press the button again momentarily (frequency change will stop).

③ Press the button momentarily (frequency will change each time the button is pressed), and tune to one of the above frequencies.



• Manual memory presetting

Stations can be freely preset to any desired channel.

❹ Press the appropriate tuning button to tune to the desired broadcast.

- **Auto tuning**
  Press the button. When the frequency indication begins to change, release the button (a broadcasting station will be selected automatically). Repeat this operation until the desired station is found.

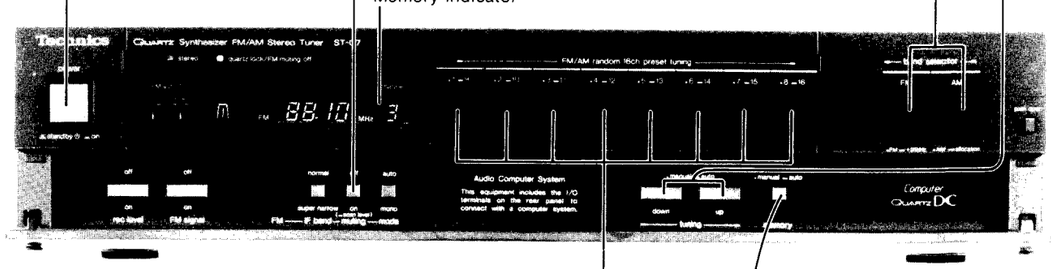
- **Manual tuning**
  Press the button momentarily and tune to the desired station (the frequency will change each time the button is pressed).

❸ Adjustment to FM broadcast signal strength is possible for automatic tuning.
Press and hold the button. (Will change to dB indication.)
Release the button when the desired scan level indication (30, 40 or 50 dB) is displayed. (When the scan level is set, it will return to frequency display.)

❷ Press the "FM" or "AM" button.
To change the AM frequency by 10 kHz:
Press the "AM" button slightly longer and release the button when the "AL 10" is displayed.

❶ Power: "on" (⏻→●)

Memory indicator



❻ While the memory indicator is illuminated, press the button of the desired channel.

- **To preset channels 1 through 8:**

Press the button momentarily, and then release. (Preset channel number is displayed on the channel display.)

- **To preset channels 9 through 16:**

Press the button slightly longer, and then release. (Preset channel number is displayed on the channel display.)

When the button is pressed, the memory indicator illumination will stop, and the presetting is complete.

Note:

1. If the memory indication illumination stops before you press the button, once again repeat step (5) and then step (6).
2. If a new broadcasting station is preset into a channel, the broadcasting station which was previously entered in that channel will be automatically erased.

❺ Press momentarily, and then release.
(The memory indicator will illuminate for approximately 4 seconds.)

Note:
If the button is pressed continuously, the frequency will begin to change, and the memory will be preset automatically.
To stop the automatic memory presetting, once again press either the "up" button or the "down" button.

❼ Enter the name (call sign, etc.) of the preset broadcasting station on the station memory file sheet.

This completes the procedures for presetting radio broadcast frequencies. The other preset-tuning buttons can be preset in the same way by following steps (2) through (7).

■ BEFORE REPAIR AND ADJUSTMENT

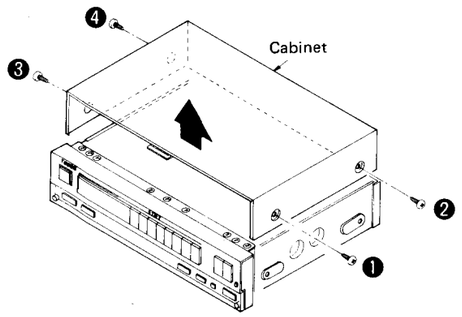
The power switch of this unit is located on the secondary side of power transformer. So, be sure to disconnect the power cord from the socket before starting the repair work. Also, when repairing the digital circuit, disconnect the power cord and then short-circuit across the gold capacitors (C920, C921, 2.3 V 3.3F) with a resistor (10 ohms, about 1 W) to discharge the voltage.

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1 — **How to remove the cabinet**

Procedure 1

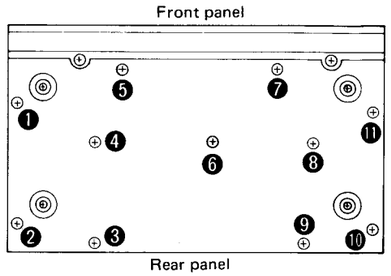
- Remove the 4 setscrews. (❶~❹)



Ref. No. 2 — **How to remove the bottom board**

Procedure 2

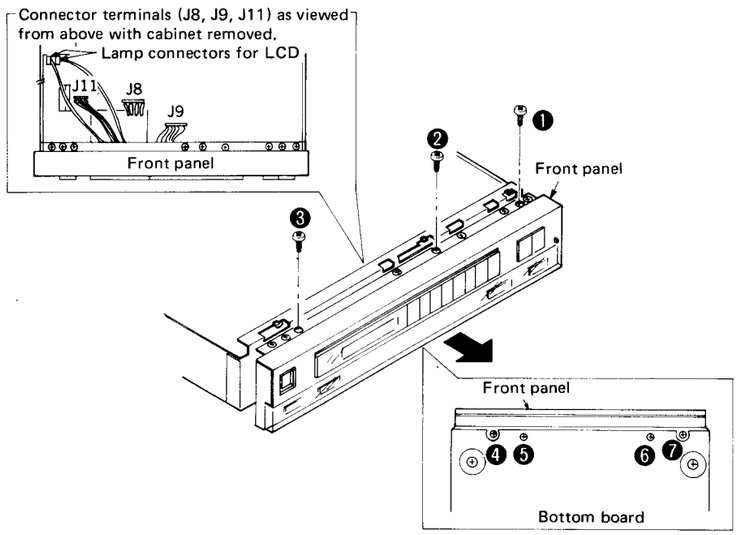
- Remove the 11 setscrews. (❶~⓫)



Ref. No. 3 — **How to remove the front panel**

Procedure 1 ➡ 3

1. Pull out the 5 connectors. (J8, J9, J11 and 2 lamp connectors)
2. Remove the 7 setscrews. (❶~❼)

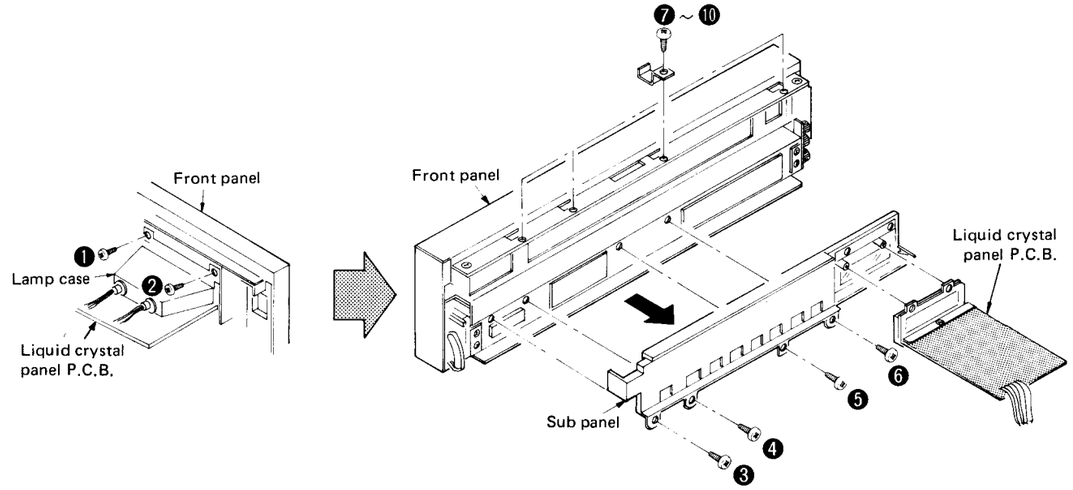


Ref. No. 4 — **How to remove the sub panel**

Procedure 1➡3➡4

- Remove the 8 setscrews. (❸~ ⓾)

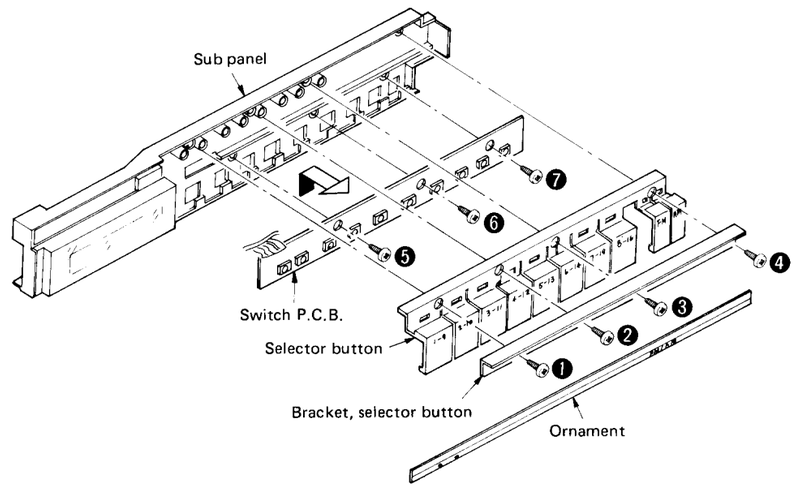
1. Remove the 2 setscrews. (❶, ❷)
2. Remove the lamp case and liquid crystal panel P.C.B.



Ref. No. 5 — **How to remove the switch P.C.B.**

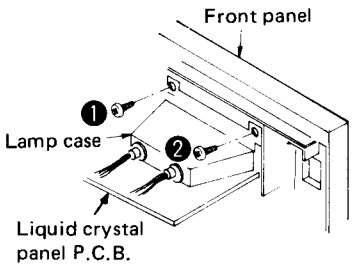
Procedure 1➡3➡4➡5

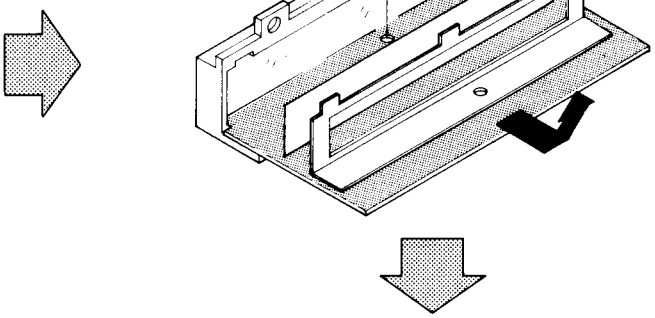
1. Remove the ornament.
2. Remove the 4 setscrews. (❶~❹)
3. Remove the 3 setscrews. (❺~❼)



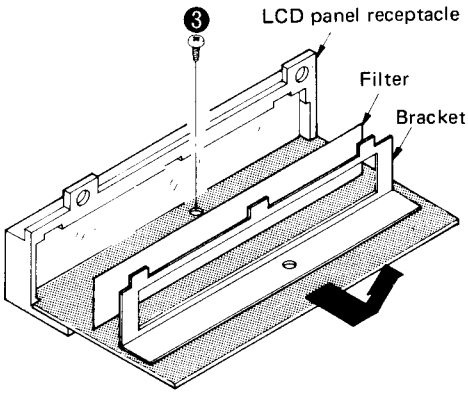
Ref. No. 6	How to remove the LCD panel
Procedure 1➡3➡6	

1. Remove the 2 setscrews (❶, ❷)
2. Remove the lamp case and liquid crystal panel P.C.B.

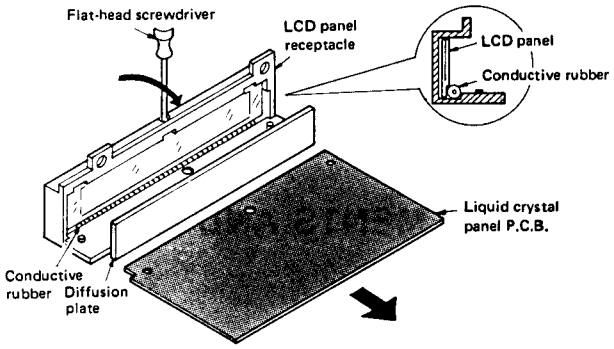




- Remove the 1 setscrew. (❸)



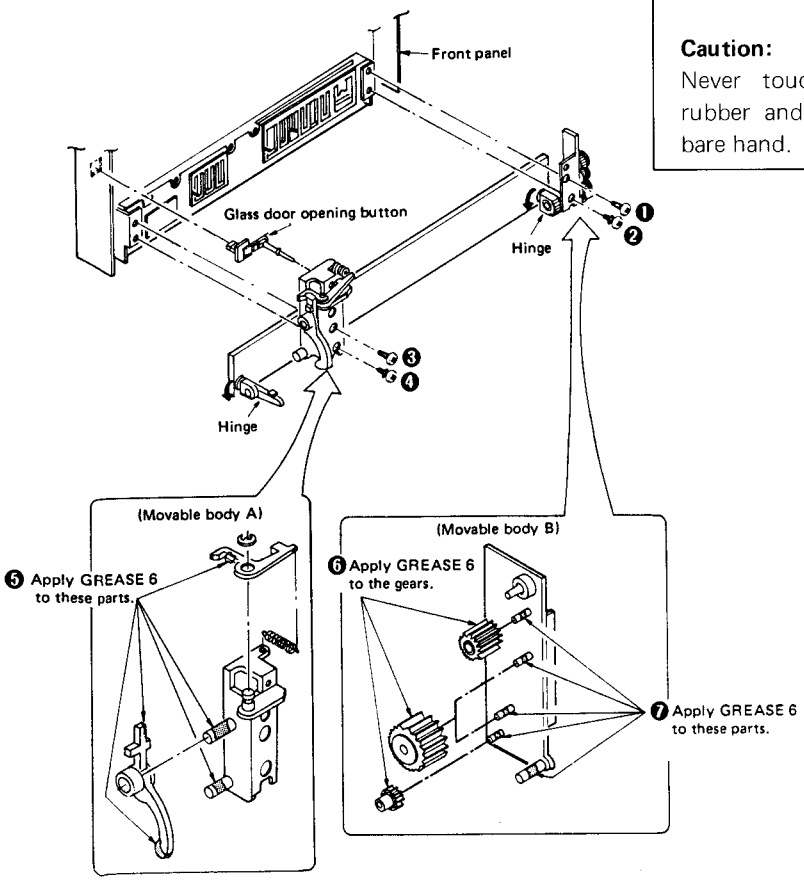
- Remove the diffusion plate and liquid crystal panel P.C.B. from the LCD panel receptacle.



Caution:
Never touch the LCD panel, electrode, conductive rubber and liquid crystal panel P.C.B. electrode with bare hand.

Ref. No. 7	How to remove the glass door
Procedure 1➡3➡7	

1. Remove the 4 setscrews. (❶~❹)
2. Turn the glass door hinge counter-clockwise (↶).
3. When disassembling or assembling the movable bodies A & B, apply GREASE 6 to the parts shown in ❺~❼.

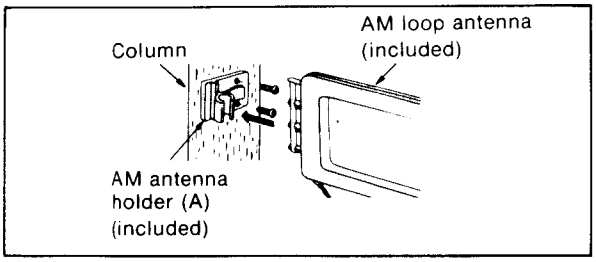


■ HOW TO USE THE AM LOOP ANTENNA

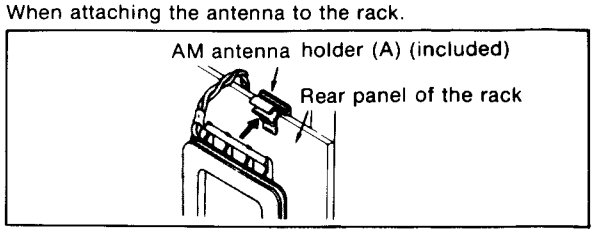
Find the best reception position for the FM antenna, and then fix it in place on a wall, the rack, or the unit.

Pay attention to the following points when attaching the antenna.
1) Find the height and direction of the antenna where reception is best and then fix it vertically to the wall, rack, etc.
2) Do not attach it horizontally (to do so would impair reception).
3) Do not attach it close to metal surfaces, power cords, or speaker wires (to do so would result in noise).
4) Do not attach it close to a tape deck (when the tape deck is being used, chirping or beeping sounds may be received).

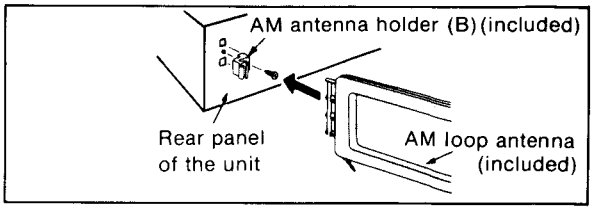
1. When attaching the antenna to a wall, column.



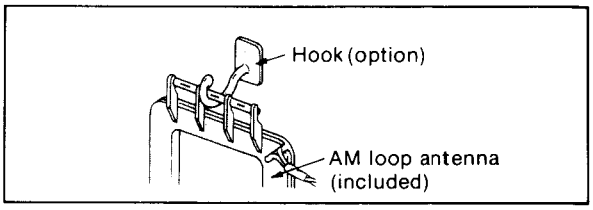
2. When attaching the antenna to the rack.



3. When attaching the antenna to the unit.



4. If a hook is used
(if the holder can't be attached by screws)



■ MEASUREMENTS AND ADJUSTMENTS

AM ADJUSTMENT

*** Setting and Equipment used**
1. AC electronic voltmeters (EVM).
2. AM signal generator (AM-SG).
3. Set Band selector to "AM (allocation 9 kHz)" position.
4. Maintain line voltage at rated voltage.
5. Output of signal generator should be no higher than necessary, to obtain an output reading.
6. Use a non-metal screwdriver for the adjustment.

Step No.	AM SIGNAL GENERATOR CONNECTION	AM SIGNAL GENERATOR FREQUENCY	DISPLAY FREQUENCY	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
	AM-IF ADJUSTMENT					
1	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Powerful input) (Refer to Fig. 1)	450 kHz 30% Mod. with 400 Hz)	Frequency of non-interference	Connect AC EVM or scope to "OUTPUT" terminals.	T201 (AM 1 st IFT)	* Adjust the input frequency and adjustment points so that the output becomes maximum.
	AM-RF ADJUSTMENT					
2	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input) (Refer to Fig. 1)	**Except [XA] area** 522 kHz **[XA] area** 531 kHz (30% Mod. with 400 Hz)	**Except [XA] area** 522 kHz **[XA] area** 531 kHz	Connect AC EVM or scope to "OUTPUT" terminals.	L203 (ANT Coil)	1. Adjust for maximum output. 2. Adjust core of L203 by screwdriver.
3		612 kHz (30% Mod. with 400 Hz)	612 kHz	Connect AC EVM or scope to "OUTPUT" terminals.	L202 (ANT Coil)	1. Adjust for maximum output. 2. Adjust core of L202 by screwdriver.
4		1503 kHz (30% Mod. with 400 Hz)	1503 kHz	Connect AC EVM or scope to "OUTPUT" terminals.	CT201 (ANT Trimmer)	1. Adjust for maximum output. 2. Repeat steps (2, 3) and (4) until the frequency correctly matches the frequency display.

Note: FM IFT (2nd) [T102], FM 2 nd IF filter [T104, T105] and FM DET filter [L302, L303] have been already adjusted, and require no adjustment.

FM ADJUSTMENT

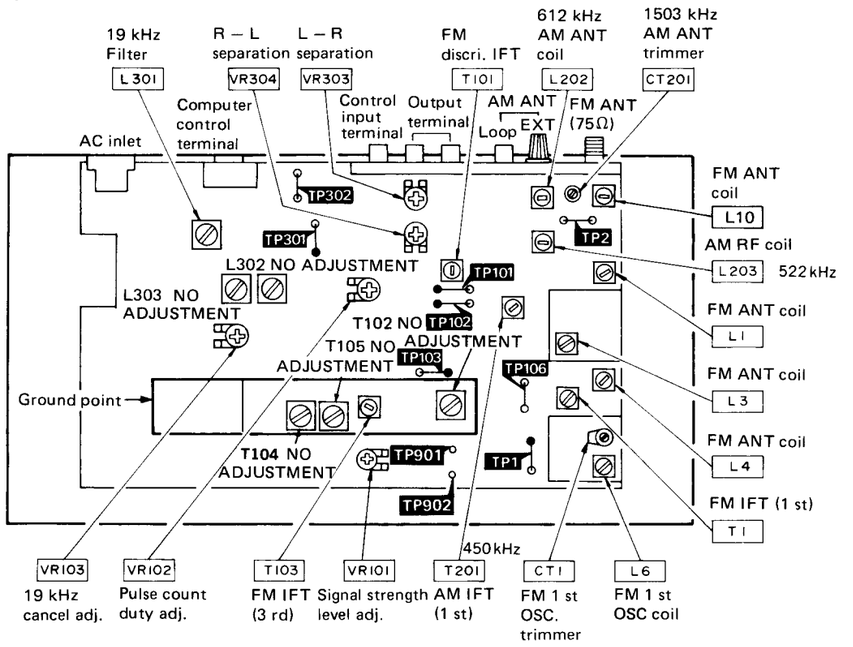
*** Setting and Equipment used.**
1. FM signal generator (FM-SG).
2. Distortion analyser.
3. Oscilloscope
4. AC and DC electronic voltmeters (EVM).
5. Frequency counter (19 kHz and 108 MHz measurable).
6. Set band selector to "FM" position.
7. Set FM mode selector to "mono" position.
8. Other setting are the same as in AM adjustment.
9. Set IF band selector to "normal" position.

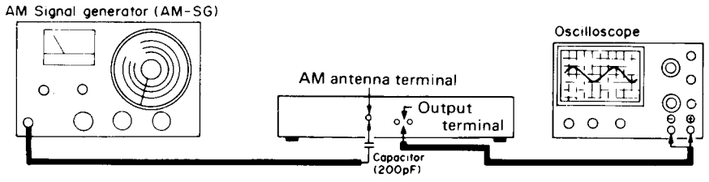
*** Preparation of FM signal generator (FM-SG)**
1. The standard input of the set is 60 dB (1 mV), 400 Hz, 100% modulation (Because of attenuation, using coaxial cables. SG output must be 6 dB plus. That is, when input 60 dB SG output is to be 66 dB.)

* When the frequency is changed, muting is automatically turned on. So, be sure to turn it off by the FM muting off/scan level selector switch. Also, make sure that the FM IF band is at "normal".

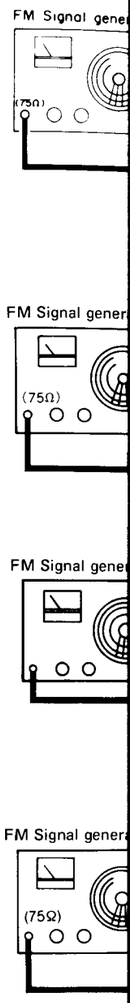
Step No.	FM SIGNAL GENERATOR CONNECTION	FM SIGNAL GENERATOR FREQUENCY	DISPLAY FREQUENCY	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
	FM MONO DISTORTION ADJUSTMENT					
5	Connect FM-SG to FM antenna terminal. (Apply 60 dB to antenna terminal.)	100.10 MHz (100% Mod. with 400 Hz)	100.10 MHz	Connect DC VEM between TP101 and TP102 through choke coil. (Refer to Fig. 2)	T101 (Discri. IFT)	1. Adjust T101 core so that voltage measured in signal mode is 0 mV in 300 mV range.
6		100.10 MHz (0% Mod. with 400 Hz)	100.10 MHz	Connect AC EVM between TP103 and ground. (Refer to Fig. 3)	T103 (FM 3rd IFT)	1. Adjust for maximum output. 2. Adjust core of T103 by screwdriver.
7		100.10 MHz (0% Mod. with 400 Hz)	100.10 MHz	Connect DC VEM between TP302 and ground. (Refer to Fig. 4.)	VR102 (Pulse count duty adj.)	1. Adjust VR102 so that voltage measured in signal mode is 0 mV in 300 mV range.
	Short-circuit between TP901 and TP902 by jumper wire only during FM-RF adjustment, and be sure to open the circuit during adjustment other than FM-RF.	**FM-RF ADJUSTMENT**				
8	Connect FM-SG to FM antenna terminal referring to Fig. 5. (Weak input)	87.50 MHz (100% Mod. with 400 Hz)	87.50 MHz	1. Short-circuit between TP901 and TP902 by jumper wire. 2. Connect DC EVM between TP1 (+) and Ground.	L6 (OSC Coil)	1. Adjust L6 for 3.0V reading on DC EVM.
9	Connect FM-SG to FM antenna terminal referring to Fig. 6. (Weak input)	90.10 MHz (100% Mod. with 400 Hz)	90.10 MHz	Connect scope to "OUTPUT" terminals.	L10 (ANT Coil) L1 (ANT Coil) L3 (ANT Coil) L4 (ANT Coil) T1 (FM 1st IFT)	1. Add weak input so that noise is included in the output wave form. 2. Make the adjustment so that the output wave form is vertically symmetrical. (Fig. 7). 3. Repeat the steps (8), (9) and (10) until the frequency correctly matches the frequency display.
10		106.10 MHz (100% Mod. with 400 Hz)	106.10 MHz	Connect scope to "OUTPUT" terminals.	CT1 (OSC Trimmer)	
	PILOT CANCEL ADJUSTMENT					
11	Connect FM-SG to FM antenna terminal referring to Fig. 8. (Apply 60 dB to antenna terminal.) (Pilot 10% Mod. stereo signal.)	100.10 MHz (0% Mod. with 400 Hz) (L + R)	100.10 MHz	Connect scope between TP301 and Ground.	L301 (Pilot filter) VR103 (Pilot Cancel)	Make the adjustments so that the output waveform is minimum referring to Fig. 9.
	STEREO DISTORTION ADJUSTMENT					
12	Connect FM-SG to FM antenna terminal refferring to Fig. 10. (Apply 60 dB to antenna terminal.) (Pilot 10% Mod. stereo signal.)	100.10 MHz (90% Mod. with 400 Hz) (L or R mode)	100.10 MHz	Connect distortion analyser to "OUTPUT" terminals of the set through low-pass filter. (fc = 15 kHz～19 kHz)	T1 (FM 1st IFT) T103 (FM 3rd IFT)	Adjust T1 and T103 core so that distortion of right and left channels are minimized.
	SEPARATION ADJUSTMENT					
13	Connect FM-SG to FM antenna terminal referring to Fig. 11. (Apply 60 dB to antenna terminal.) (Pilot 10% Mod. stereo signal.)	100.10 MHz (90% Mod. with 1 kHz) (L or R mode)	100.10 MHz	Connect AC EVM to "OUTPUT" terminals of the set through low-pass filter. (fc = 15 kHz～19 kHz)	VR303, VR304 (Separation)	1. Adjust VR303 so that R output is minimized when stereo modulator is in L (L ch. modulation) mode. 2. Adjust VR304 so that L output is minimized when stereo modulator is in R (R ch modulation) mode.
	SIGNAL STRENGTH LEVEL ADJUSTMENT					
14	Connect FM-SG to FM antenna terminal. (Apply 50 dB to antenna terminal.)	100.10 MHz (30% Mod. with 400 Hz)	100.10 MHz	———	VR101 (Signal strength level)	1. Change LCD display from frequency to dB by pressing the FM signal button. 2. Adjust VR101 so that 50 dB is indicated. 3. Make sure that the signal strength level is 22～38 dB when the input is 30 dB.

- **Adjustment points**





[Fig. 1] [Abb. 1]



y adjusted, and require no

, 400 Hz, 100% axial cables. SG t 60 dB SG
omatically turned on. ff/scan level selector switch. ormal".
ADJUSTING PROCEDURE
Adjust T101 core so that voltage measured in signal mode is 0 mV in 300 mV range.
Adjust for maximum output. Adjust core of T103 by screwdriver.
Adjust VR102 so that voltage measured in signal mode is 0 mV in 300 mV range.
Adjust L6 for 3.0V reading on DC EVM.
Add weak input so that noise is included in the output wave form. Make the adjustment so that the output wave form is vertically symmetrical. (Fig. 7). Repeat the steps (8), (9) and (10) until the frequency correctly matches the frequency display.
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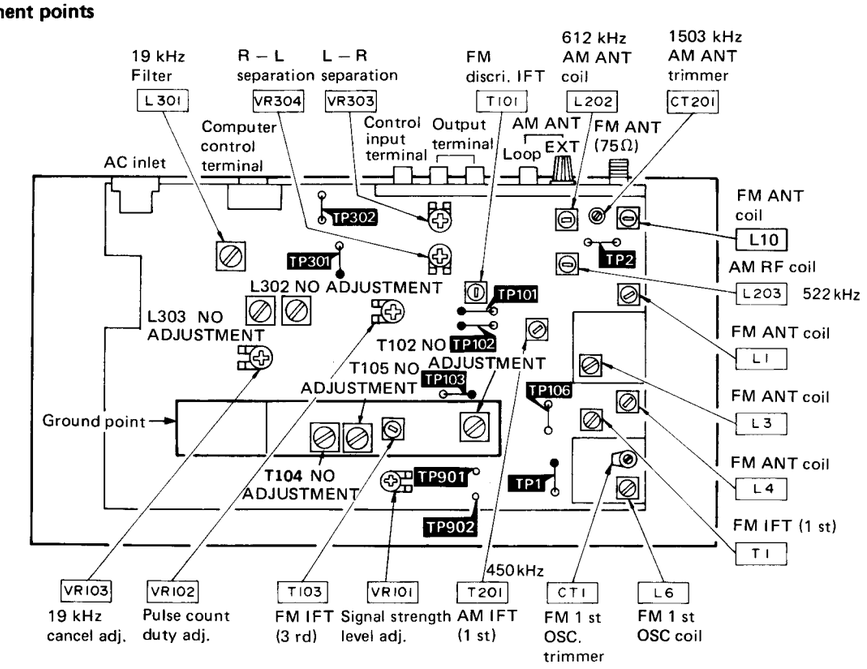
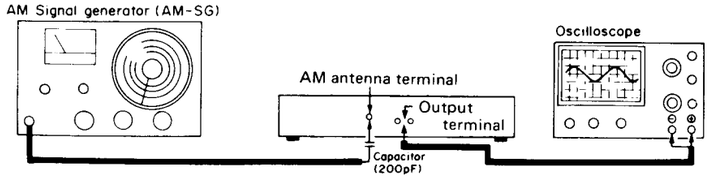
djust T1 and T103 core so that tortion of right and left annels are minimized.

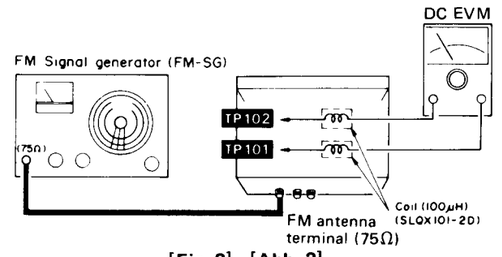
Step No.	FM SIGNAL GENERATOR CONNECTION	FM SIGNAL GENERATOR FREQUENCY	DISPLAY FREQUENCY	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
	SEPARATION ADJUSTMENT					
13	Connect FM-SG to FM antenna terminal referring to Fig. 11. (Apply 60 dB to antenna terminal.) (Pilot 10% Mod. stereo signal.)	100.10 MHz (90% Mod. with 1 kHz) (L or R mode)	100.10 MHz	Connect AC EVM to "OUTPUT" terminals of the set through low-pass filter. (fc = 15 kHz ~ 19 kHz)	VR303, VR304 (Separation)	1. Adjust VR303 so that R output is minimized when stereo modulator is in L (L ch. modulation) mode. 2. Adjust VR304 so that L output is minimized when stereo modulator is in R (R ch modulation) mode.
	SIGNAL STRENGTH LEVEL ADJUSTMENT					
14	Connect FM-SG to FM antenna terminal. (Apply 50 dB to antenna terminal.)	100.10 MHz (30% Mod. with 400 Hz)	100.10 MHz	———	VR101 (Signal strength level)	1. Change LCD display from frequency to dB by pressing the FM signal button. 2. Adjust VR101 so that 50 dB is indicated. 3. Make sure that the signal strength level is 22 ~ 38 dB when the input is 30 dB.

- **Adjustment points**

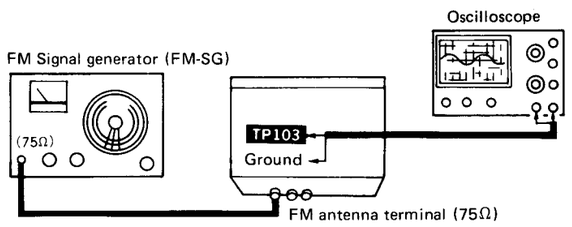




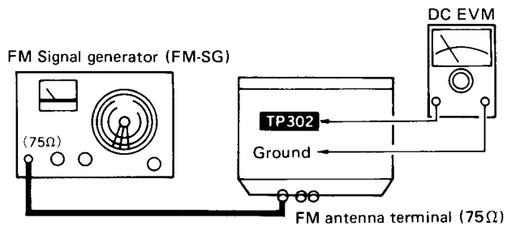
[Fig. 1] [Abb. 1]



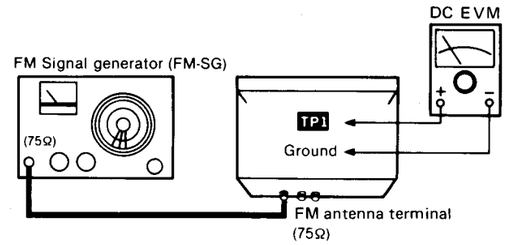
[Fig. 2] [Abb. 2]



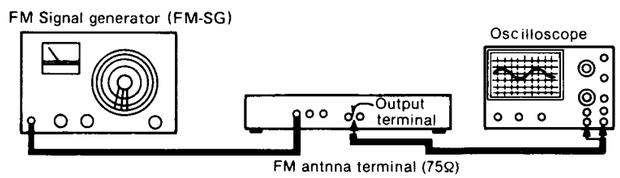
[Fig. 3] [Abb. 3]



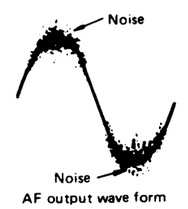
[Fig. 4] [Abb. 4]



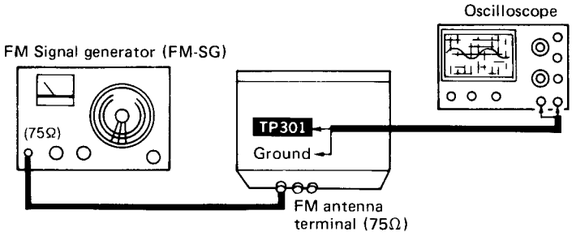
[Fig. 5] [Abb. 5]



[Fig. 6] [Abb. 6]

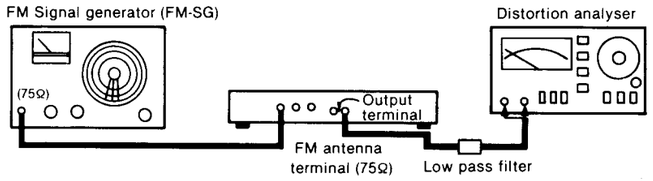


[Fig. 7] [Abb. 7]

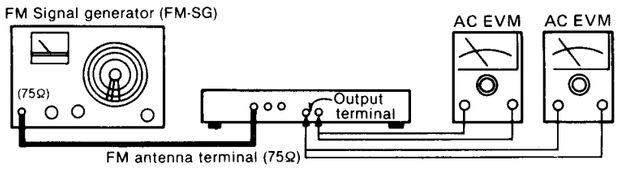


[Fig. 8] [Abb. 8]

[Fig. 9] [Abb. 9]



[Fig. 10] [Abb. 10]



[Fig. 11] [Abb. 11]

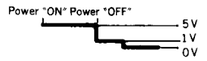
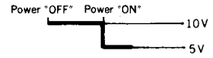
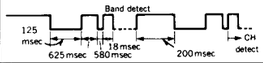
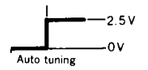
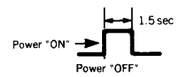
■ FUNCTION OF TERMINAL (MPX IC301 • AN7471S)

Pin No.	Function	Pin No.	Function
1	Pilot cancel signal "output"	13 ~ 16	Not used in this unit
2	6.5V	17	VCO stop control "input"
3	Pilot cancel signal "input"	18	VCO auto/monaural control "input"
4	Phase compensation of PLL circuit "input"	19	VCO OSC frequency adjustment "input"
5	Standard voltage "input"	20	Inner standard voltage "output"
6	Composite signal "input"	21	Low pass filter of PLL compensation "input"
7	Composite signal "output"	22, 23	Low pass filter of PLL circuit "output"
8	Ground	24	19 kHz monitor and stereo indicator drive "output"
9	Sampling pulse (L ch) "output"	25	Stereo/monaural control "input"
10	L-90° Sampling pulse (R ch) "output"	26	Stereo signal detector low pass filter "input"
11	Sampling pulse (R ch) "output"	27, 28	Pilot signal cancel low pass filter "input"
12	R-90° Sampling pulse (R ch) "output"		

■ FUNCTION OF TERMINAL (PLL CONTROLLER IC902 • MN1291)

Pin No.	I/O	Mark	Description of terminal	Waveforms No.
1	—	—	Not used in this unit	—
2	OUTPUT	DA01	Digital → analog conversion signal output of input signal terminal 39.	❶
3 ~ 6	—	—	Not used in this unit	—
7	INPUT	AD13	Analog →digital conversion of FM-RF tuning voltage (auto track) input signal.	❷
8	INPUT	AD12	Analog →digital conversion of FM station tuning voltage.	❸
9	INPUT	AD11	Analog →digital conversion of electric field strength level input.	❹
10, 11	—	—	Not used in this unit	—
12	INPUT	Vref	Reference voltage input of digital →analog conversion circuit. (5 V)	—
13	—	—	Not used in this unit	—
14	OUTPUT	ADO	Analog →digital conversion output of data of input terminals 7, 8 or 9.	❺
15	—	Vss	Ground for PLL	—
16	—	—	Not used in this unit	—
17	INPUT	CP	Input of pulse waveform for the beginning and the end of each data of input signal terminal 39.	❻
18	—	—	Not used in this unit	—
19	OUTPUT	P02	PLL phase comparison output.	—
20	—	—	Not used in this unit	—
21	OUTPUT	DET	PLL lock detection output.	❼
22 ~ 24	—	—	Not used in this unit	—
25	OUTPUT	F03	1 kHz output for LCD drive and for VCO auto adjustment of MPX circuit.	❽
26 ~ 28	—	—	Not used in this unit	—
29	INPUT	X1	Connecting terminal for crystal oscillator.	—
30	INPUT	X2	The crystal connected is at 8.55 MHz	—
31, 32	—	—	Not used in this unit	—
33	OUTPUT	PSC OUT	Terminal to put out frequency dividing ratio changeover signal to prescaler.	❾
34	—	—	Not used in this unit	—
35	—	Vss	Ground	—
36	INPUT	FM IN	FM station (VCO) input, frequency-divided to 1/32 and 1/33 by prescaler.	—
37	INPUT	AM IN	AM OSC input	—
38	INPUT	VDD	Power supply terminal (5 V)	—
39	INPUT	SBI	PLL frequency setting and digital →analog conversion setting signal input.	❿
40	INPUT	SBT	Signal input of reference clock for data transfer of input signal terminal 39.	⓫
41	—	—	Not used in this unit	—
42	INPUT	AVDD	Power supply terminal (5 V)	—

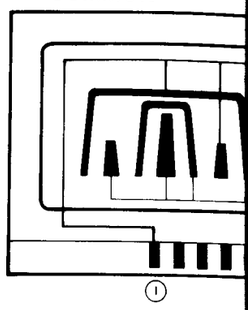
■ FUNCTION OF TERMINAL (MICRO COMPUTOR IC903 • MN1554STD)

Pin No.	I/O	Mark	Description of terminal	Waveforms No.
1	INPUT	CE1	Power failure detection. Detected with input at "L". 	—
2, 3	—	—	Not used in this unit	—
4	INPUT	CE2	Power failure reset detection. Detected with input at "L". 	—
5	INPUT	INT	Interrupt request signal input terminal. Signal from control input terminal is put in. Detected with input at "L". 	—
6	OUTPUT	SBT	Signal output of transfer reference clock for LCD drive. (5 V after reference clock output) 	—
7	OUTPUT	SBO	Reference frequency output. (Data output)	⓬
8	OUTPUT	SBI		
9	INPUT	RST	Microcomputer reset. Reset with input at "L".	—
10 ~ 17	OUTPUT	KO0 ~ KO7	Signal output for key scan	⓭
18	OUTPUT	CP	Pulse waveform output for the beginning and the end of each data.	⓮
19 ~ 24	—	—	Not used in this unit	—
25	INPUT	VDD	Power supply terminal	—
26, 27	—	—	Not used in this unit	—
28	OUTPUT	333 Hz	Reference signal output for record level check.	⓯
29 ~ 32	INPUT	KI0 ~ KI3	Key input from external key matrix.	⓰
33	INPUT	VDD	Power supply terminal	—
34	INPUT	ST	Stereo detection. Stereo signal with input at "L". 	—
35	INPUT	AD	Analog →digital converted signal is put in from IC902 terminal 14.	⓱
36	INPUT	SD	This input terminal detects the reception of a auto tuned, 2.5V with a broadcast received, and 0 V without receiving a broadcast. 	—
37	—	—	Not used in this unit	—
38	OUTPUT	KO9	Diode matrix key scan signal output	—
39	OUTPUT	HBL	Hi-blend, High frequency cutting command output during weak input signal reception.	—
40 ~ 42	—	—	Not used in this unit	—
43	OUTPUT	DT OUT	Data output to personal computer.	—
44	OUTPUT	RF ATT	Gain control output of RF amplifier.	—
45 ~ 52	—	—	Not used in this unit	—
53	INPUT	OSC1	Connection terminals of ceramic oscillator. Oscillating frequency is 2 MHz.	—
54	INPUT	OSC2		—
55, 56	—	—	Not used in this unit	—
57	—	Vss	Ground terminal	—
58	OUTPUT	A	FM/AM/REC selector 1→5.2V 0→0V	—
59	OUTPUT	B		
60	—	—	Not used in this unit	—
61	OUTPUT	IF	Normal/Super narrow select for FM IF signal flow (output "L" (0V) →FM IF band is super narrow output "H" (4V) →FM IF band is normal	—
62	—	—	Not used in this unit	—
63	OUTPUT	MONO	Stereo/Monaural switching signal. (Monaural →5V, Stereo →0V	—
64	OUTPUT	MUTE	Output terminal to eliminate shock noise in case of PLL lock failure. When CE terminal is at low level, the output to this terminal is at high level. 	—

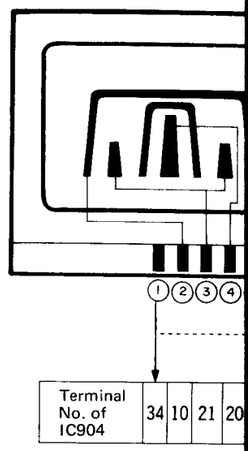
	FM	AM	REC
A	0	1	0
B	1	1	0

■ FUNCTION O

- **COMMON**

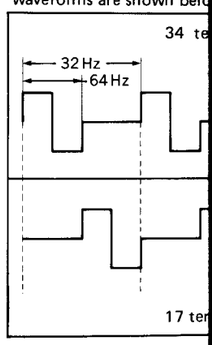


- **SEGMENT**



- **Common output wavefo**

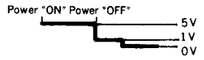
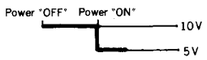
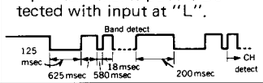
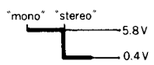
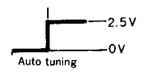
Terminals, 34 and 17 alwa
waveforms are shown belo



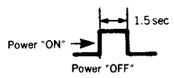
(NOTE)

For the output waveform of ea
segment, the potential differen
from that of COM terminal wav
form is measured. So, do not co
nect the groundign wire of oth
equipment to the oscilloscop
Otherwise, IC904 will break dow

■ FUNCTION OF TERMINAL (MICRO COMPUTOR IC903 • MN1554STD)

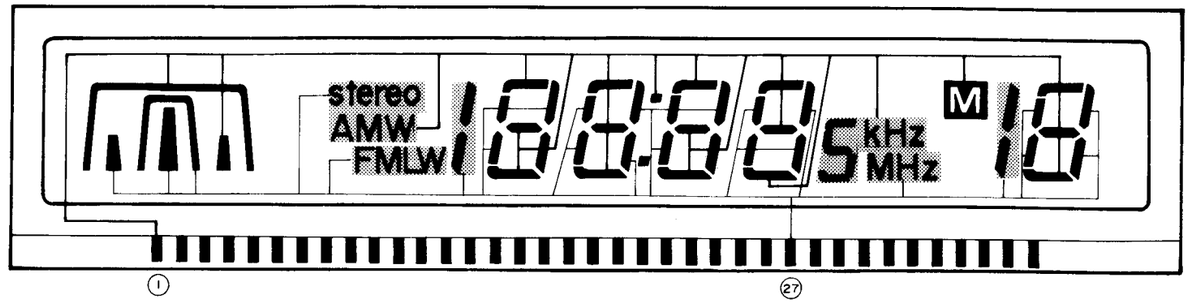
Pin No.	I/O	Mark	Description of terminal	Waveforms No.
1	INPUT	CE1	Power failure detection. Detected with input at "L". 	—
2, 3	—	—	Not used in this unit	—
4	INPUT	CE2	Power failure reset detection. Detected with input at "L". 	—
5	INPUT	INT	Interrupt request signal input terminal. Signal from control input terminal is put in. Detected with input at "L". 	—
6	OUTPUT	SBT	Signal output of transfer reference clock for LCD drive. (5 V after reference clock output) 	—
7	OUTPUT	SBO	Reference frequency output. (Data output)	⓬
8	OUTPUT	SBI		
9	INPUT	RST	Microcomputer reset. Reset with input at "L".	—
10 ~ 17	OUTPUT	KO0 ~ KO7	Signal output for key scan	⓭
18	OUTPUT	CP	Pulse waveform output for the beginning and the end of each data.	⓮
19 ~ 24	—	—	Not used in this unit	—
25	INPUT	VDD	Power supply terminal	—
26 27	—	—	Not used in this unit	—
28	OUTPUT	333 Hz	Reference signal output for record level check.	⓯
29 ~ 32	INPUT	KI0 ~ KI3	Key input from external key matrix.	⓰
33	INPUT	VDD	Power supply terminal	—
34	INPUT	ST	Stereo detection. Stereo signal with input at "L". 	—
35	INPUT	AD	Analog → digital converted signal is put in from IC902 terminal 14.	⓱
36	INPUT	SD	This input terminal detects the reception of a auto tuned. 2.5V with a broadcast received, and 0 V without receiving a broadcast. 	—
37	—	—	Not used in this unit	—
38	OUTPUT	KO9	Diode matrix key scan signal output	—
39	OUTPUT	HBL	Hi-blend. High frequency cutting command output during weak input signal reception.	—
40 ~ 42	—	—	Not used in this unit	—
43	OUTPUT	DT OUT	Data output to personal computer.	—
44	OUTPUT	RF ATT	Gain control output of RF amplifier.	—
45 ~ 52	—	—	Not used in this unit	—
53	INPUT	OSC1	Connection terminals of ceramic oscillator. Oscillating frequency is 2 MHz.	—
54	INPUT	OSC2		—
55, 56	—	—	Not used in this unit	—
57	—	Vss	Ground terminal	—
58	OUTPUT	A	FM/AM/REC selector 1→5.2V 0→0V	—
59	OUTPUT	B		

	FM	AM	REC
A	0	1	0
B	1	1	0

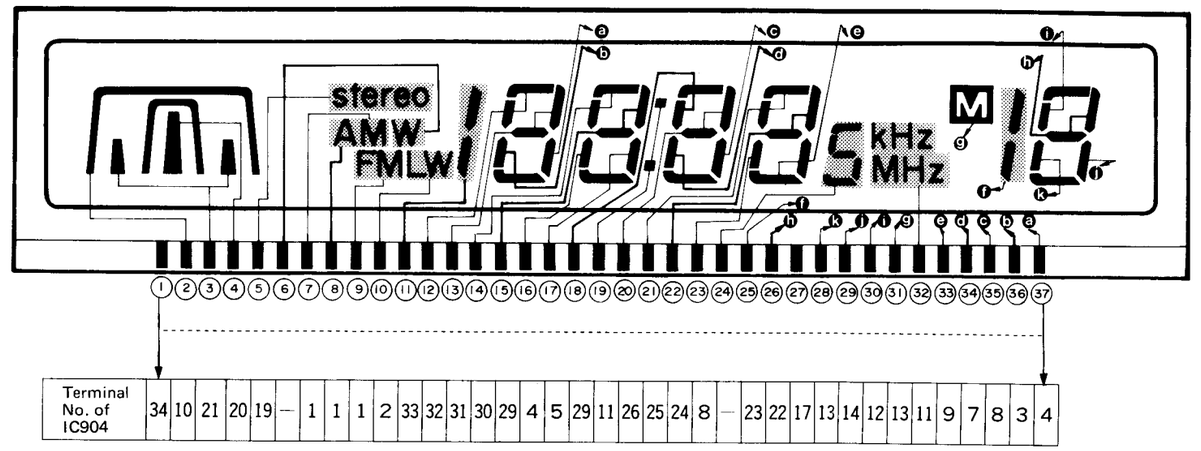
Pin No.	I/O	Mark	Description of terminal	Waveforms No.
60	—	—	Not used in this unit	—
61	OUTPUT	IF	Normal/Super narrow select for FM IF signal flow (output "L" (0V) → FM IF band is super narrow; output "H" (4V) → FM IF band is normal)	—
62	—	—	Not used in this unit	—
63	OUTPUT	MONO	Stereo/Monaural switching signal. (Monaural → 5V, Stereo → 0V	—
64	OUTPUT	MUTE	Output terminal to eliminate shock noise in case of PLL lock failure. When CE terminal is at low level, the output to this terminal is at high level. 	—

■ FUNCTION OF LIQUID CRYSTAL PANEL

- **COMMON**

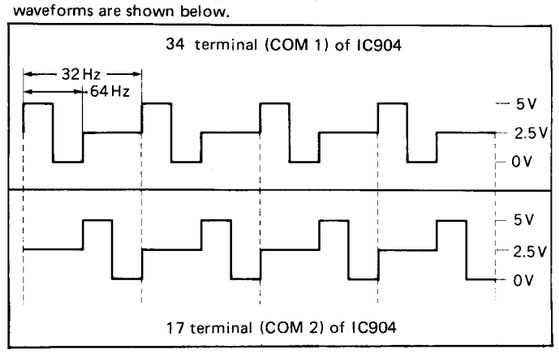


- **SEGMENT**

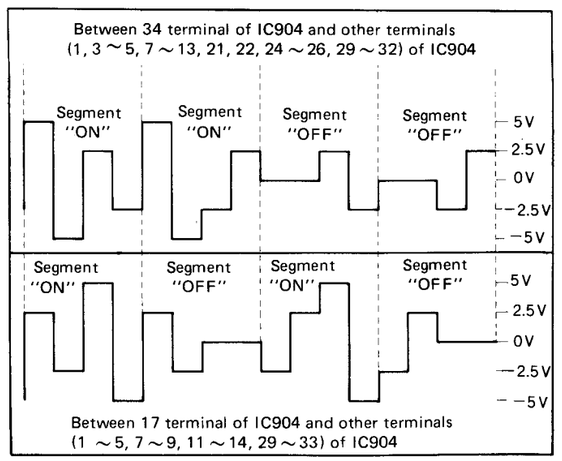


- **Common output waveforms of IC904 (LCD drive)**

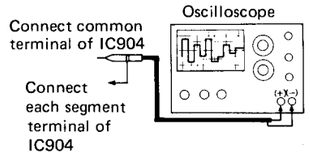
Terminals, 34 and 17 always deliver outputs whose waveforms are shown below.



- **Segment output waveforms of IC904 (LCD drive)**



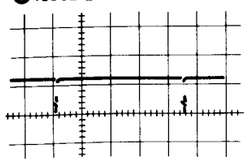
- **How to measure the waveform of each segment**



(NOTE)
For the output waveform of each segment, the potential difference from that of COM terminal waveform is measured. So, do not connect the groundign wire of other equipment to the oscilloscope. Otherwise, IC904 will break down.

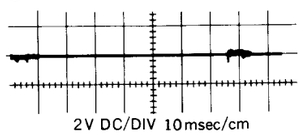
■ WAVEFORMS (Instantaneous measurement)

❶ IC902 ②



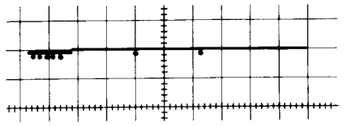
2V DC/DIV 1msec/cm

❷ IC902 ⑦



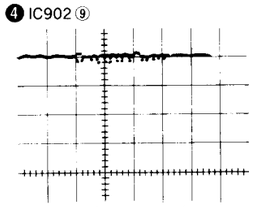
2V DC/DIV 10msec/cm

❸ IC902 ⑧



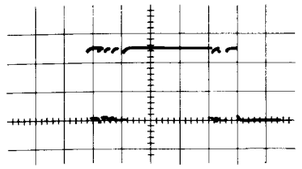
2V DC/DIV 2msec/cm

❹ IC902 ⑨



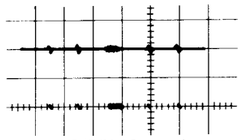
0.5V DC/DIV 2msec/cm

❺ IC902 ⑭



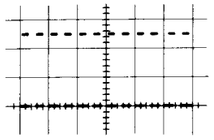
2V DC/DIV 10msec/cm

❻ IC902 ⑰



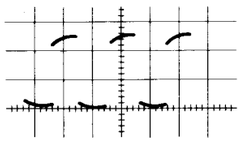
2V DC/DIV 10msec/cm

❼ IC902 ㉑



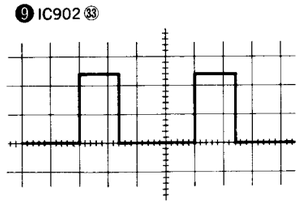
2V DC/DIV 0.1msec/cm

❽ IC902 ㉕



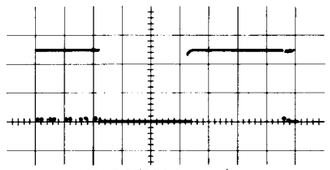
2V DC/DIV 0.5msec/cm

❾ IC902 ㉝



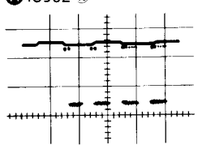
2V DC/DIV 10μsec/cm

❿ IC902 ㊴



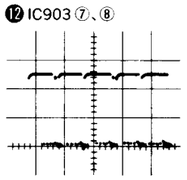
2V DC/DIV 1msec/cm

⓫ IC902 ㊵



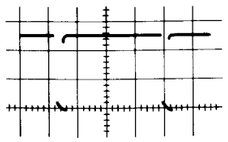
2V DC/DIV 10msec/cm

⓬ IC903 ⑦、⑧



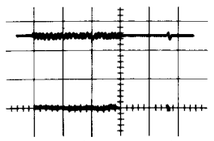
2V DC/DIV 5msec/cm

⓭ IC903 ⑩～⑰



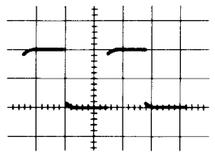
2V DC/DIV 5msec/cm

⓮ IC903 ⑱



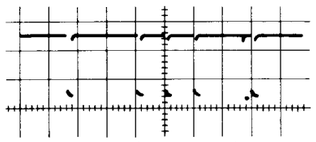
2V DC/DIV 5msec/cm

⓯ IC903 ㉘



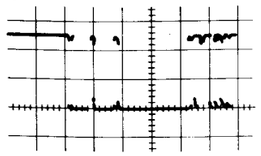
2V DC/DIV 1msec/cm

⓰ IC903 ㉙～㉜



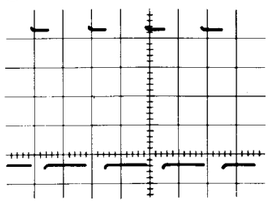
2V DC/DIV 10msec/cm

⓱ IC903 ㉟



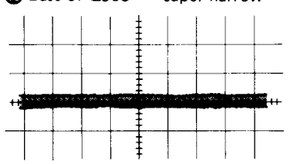
2V DC/DIV 20msec/cm

⓲ IC901 ⑧ AM 時 0V



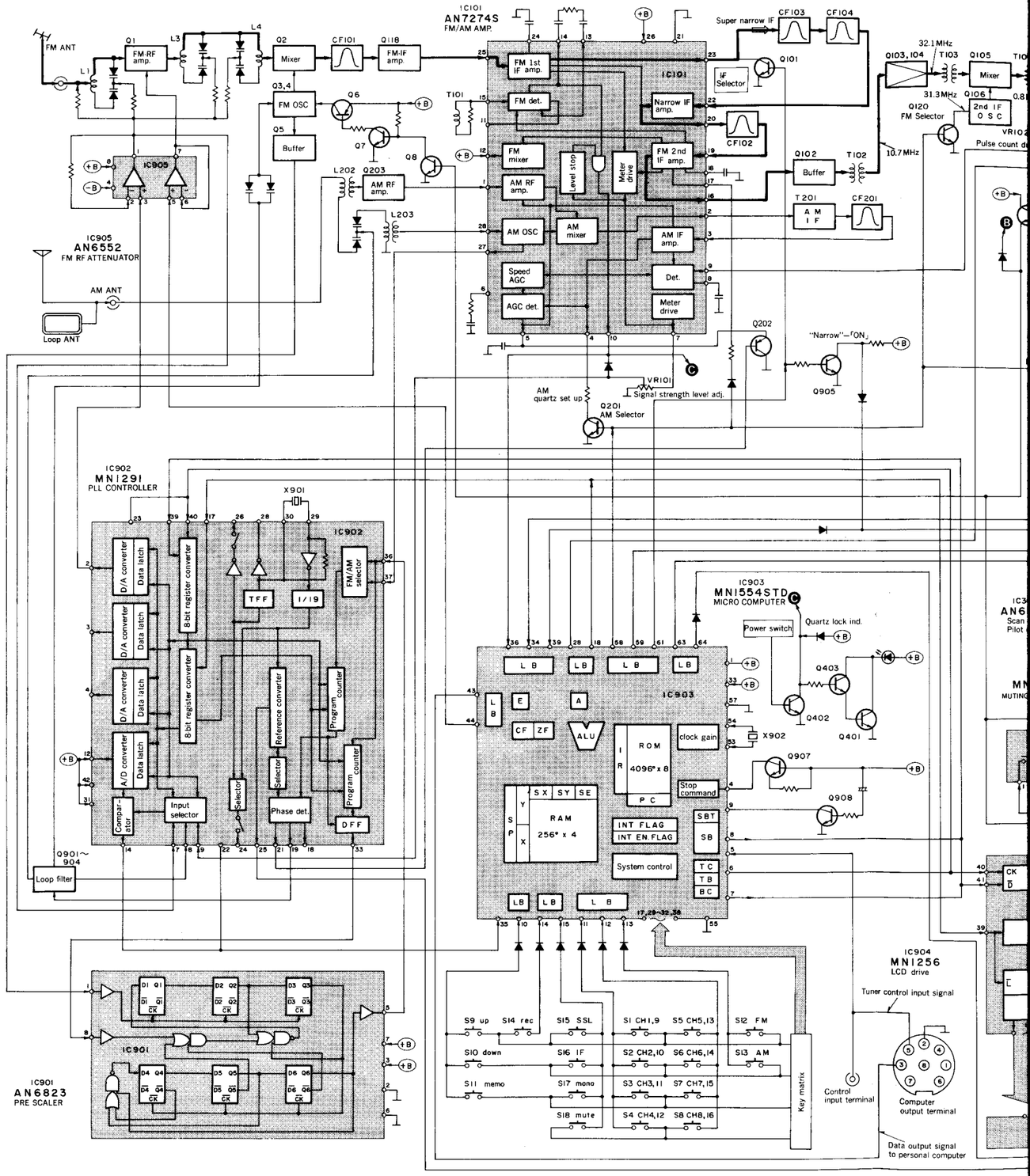
1V AC/DIV 20μsec/cm

⓳ Base of Q905 — super narrow



200mV DC/DIV 1msec/cm
Note: Base of Q905 (normal is 0.6V)

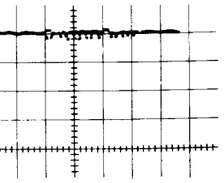
■ BLOCK DIAGRAM



ST-G7

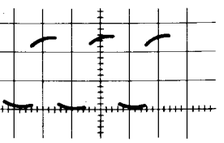
■ BLOCK DIAGRAM

IC902 ⑨



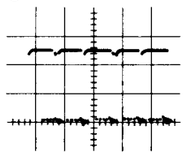
0.5V DC/DIV 2msec/cm

⑧ IC902 ㉕



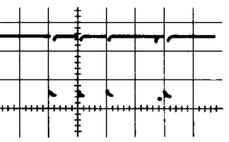
2V DC/DIV 0.5msec/cm

⑫ IC903 ⑦、⑧



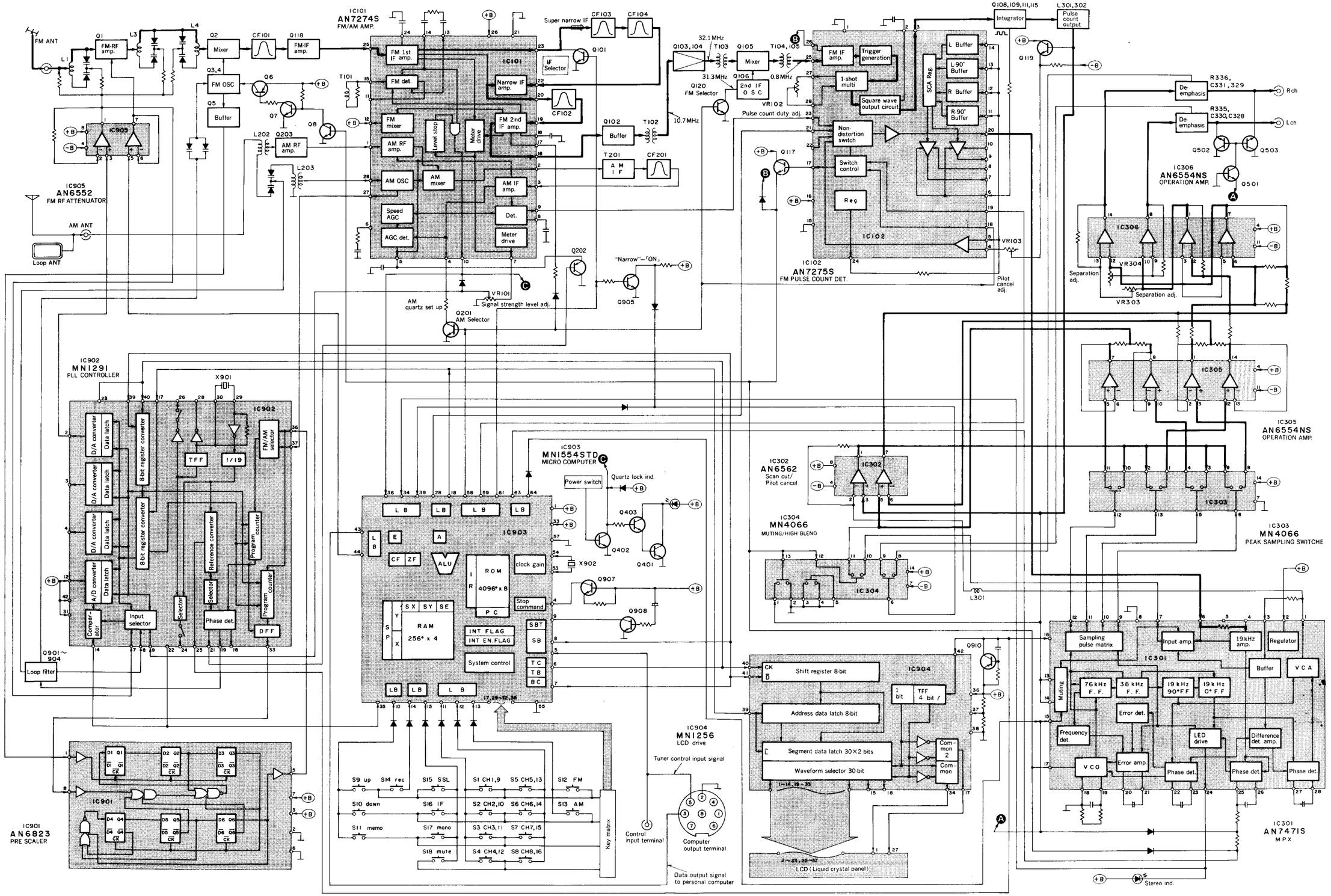
2V DC/DIV 5msec/cm

⑨～㉜

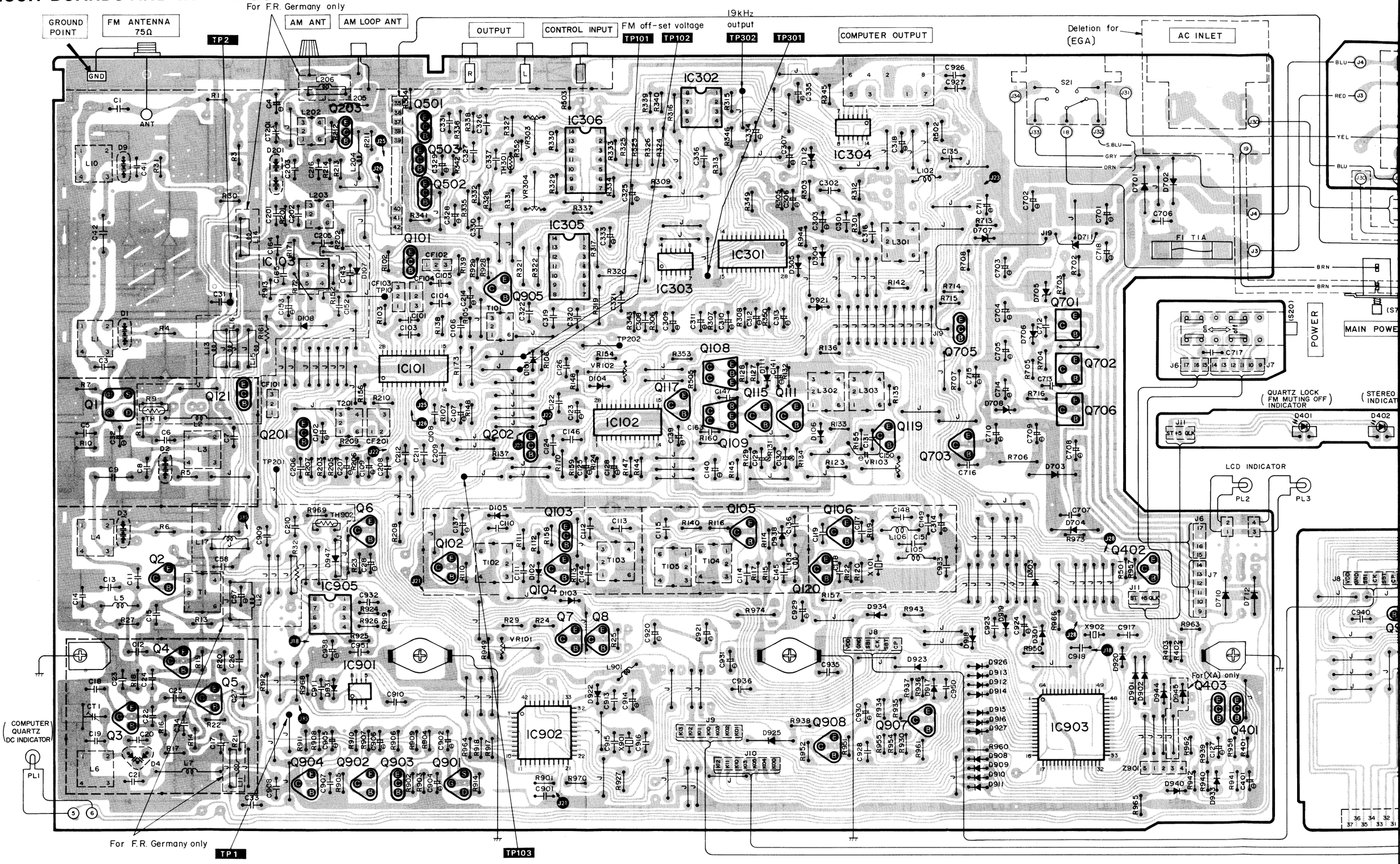


2V DC/DIV 10msec/cm

0.6V)



■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



OUTPUT

CONTROL INPUT

FM off-set voltage

TP101 TP102

19kHz output

TP302 TP301

COMPUTER OUTPUT

Deletion for (EGA)

AC INLET

IC302 IC306 IC304 IC305 IC301 IC303 IC102 IC902 IC903 IC904

Q905 Q108 Q117 Q115 Q111 Q109 Q119 Q703 Q705 Q701 Q702 Q706 Q202 Q103 Q104 Q105 Q106 Q120 Q7 Q8 Q907 Q908 Q402 Q403 Q401 Q910 Q123 Q122

S21

BLU RED YEL BLU

POWER TRANSFORMER T701

ORN GRY S.BLU

FI T1A

BRN BRN

(S701)

L750 L751

AC 110/120/ 220/240V (50/60Hz)

For F.R.Germany only

MEMORY TUNING (up) (down)

(S11) (S9) (S10) J5

(S20) POWER MAIN POWER

QUARTZ LOCK (FM MUTING OFF) INDICATOR

(STEREO INDICATOR)

D401 D402

LCD INDICATOR

PL2 PL3

For (XA) only

MADE IN JAPAN

SUP2809C

LCD

(S14) (S15) (S16) (S18) (S17) J10 J5

REC LEVEL

FM SIGNAL

IF BAND

MUTING

MODE

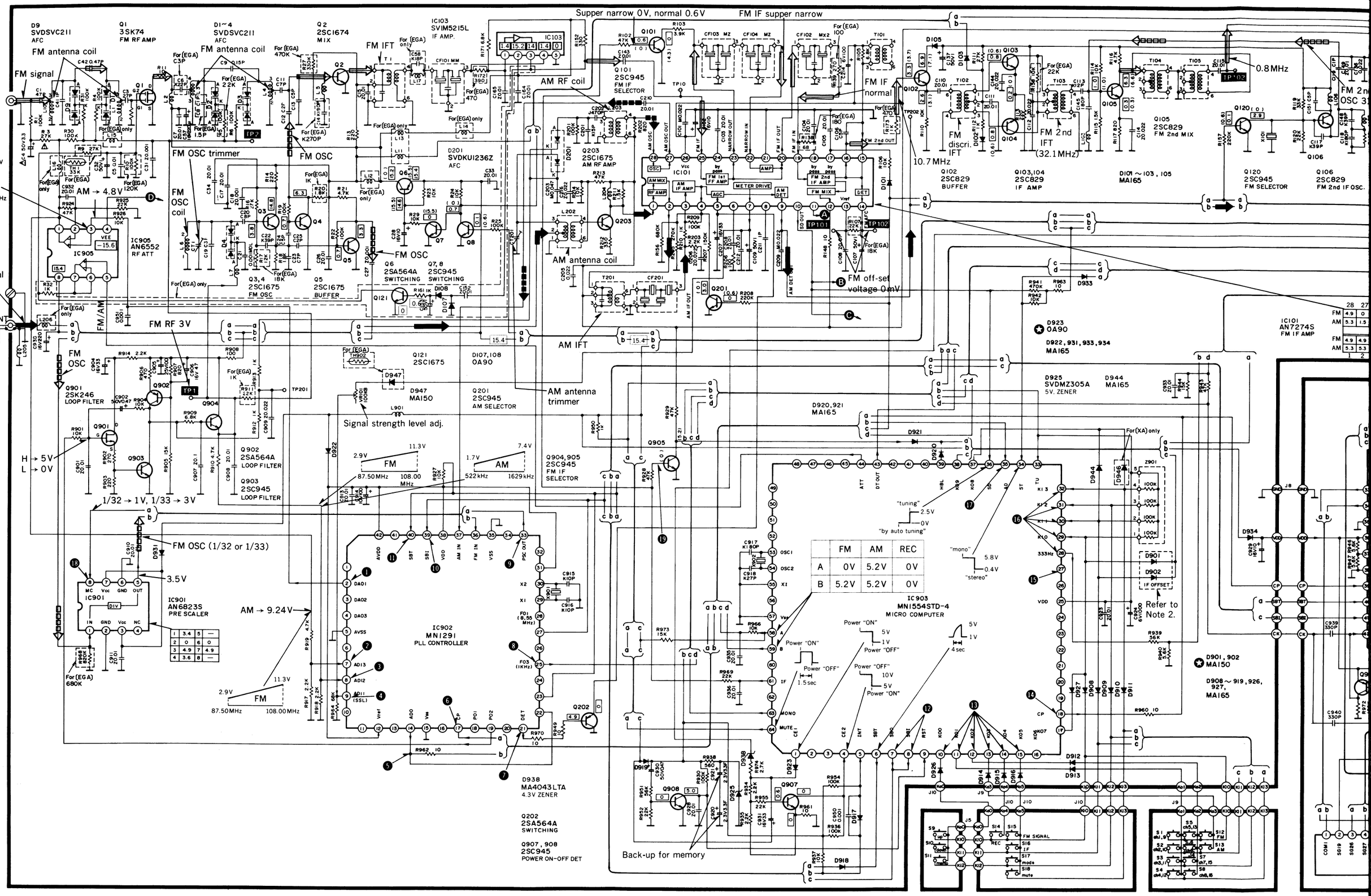
BAND SELECTOR (AM) (FM)

(S13) (S12) (S8) (S7) (S6) (S5) (S4) (S3) (S2) (S1)

(CH8,16) (CH7,15) (CH6,14) (CH5,13) (CH4,12) (CH3,11) (CH2,10) (CH1,9)

FM/AM RANDOM 16CH PRESET TUNING

TP103



	FM	AM	REC
A	0V	5.2V	0V
B	5.2V	5.2V	0V

FM IF supper narrow

FM IF normal

FM discri. IFT

FM 2nd IFT (32.1MHz)

10.7MHz

0.8MHz

FM 2nd IF OSC 31.3MHz

Q102 2SC829 BUFFER

Q103,104 2SC829 IF AMP

D101~103, 105 MA165

Q105 2SC829 FM 2nd MIX

Q120 2SC945 FM SELECTOR

Q106 2SC829 FM 2nd IF OSC.

Q122 2SC945 CONTROL, FM TUNING DET

Q123 2SC945 FM TUNING DET

D109,110 0A90

FM off-set voltage 0mV

D923 0A90

D922, 931, 933, 934 MA165

D925 SVDMZ305A 5V, ZENER

D944 MA165

D920,921 MA165

For(XA) only

IC101 AN7274S FM IF AMP

	28	27	26	25	24	23	22	21	20	19	18	17	16	15
FM	4.9	0	4.9	2.9	2.9	2.6	2.9	0	2.8	3.3	3.6	3.3	3.3	4.9
AM	5.3	1.5	5.3	4.3	4.2	4.2	4.2	0	4.2	3.7	3.7	3.9	3.8	0.1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FM	4.9	4.9	2.9	2.9	0	2.5	0.1	3.2	3.1	0	2.0	4.9	2.5	2.7
AM	5.3	5.3	3.0	3.1	0.2	1.8	0.1	3.2	2.6	0	2.4	5.3	2.5	2.5

IC903 MN1554STD-4 MICRO COMPUTER

	FM	AM	REC
A	0V	5.2V	0V
B	5.2V	5.2V	0V

"tuning" 2.5V / 0V "by auto tuning"

"mono" 5.8V / "stereo" 0.4V

Power "ON" 5V / 1V / Power "OFF" 1.5sec

Power "OFF" 10V / 5V / Power "ON" 4sec

D901, 902 MA150

D908~919, 926, 927, MA165

IC904 MN1256 LCD DRIVE

Q910 2SA564A BUFFER

Refer to Note 2.

Refer to page 16.

Liquid crystal panel

FM mono distortion adj.

FM 2nd IF signal

AM signal

REC input

D104, 301 MA165

D303 MA150

D111, 112 MA165

Pilot cancel adj.

320mV AC

3.6V AC

75kHz L.P.F.

Q108 2SA995NGF INTEGRAL

Q109 2SC1583 INTEGRAL

D106 MA165

	28	27	26	25	24	23	21	20	19	18	17	16
FM	—	3.1	4.6	4.6	2.5	2.5	2.5	2.5	5.0	0.1	0.2	5.7
AM	—	3.1	6.3	6.3	2.5	2.5	2.5	2.5	5.0	4.2	8.5	5.7

IC102 AN7275S FM PULSE DETECTOR

	1	2	3	4	5	6	11	12	13
FM	0	1.3	7.4	2.5	2.5	7.7	2.5	2.5	2.5
AM	0	1.3	7.2	2.5	2.5	7.8	2.5	2.5	2.5

Q111 2SA564A INTEGRAL

Q115 2SC945 INTEGRAL

Q117 2SC945 RF SWITCHING

Q119 2SC945 DISTORTION CONTROL

Q401, 403 2SC945 QUARTZ LOCK IND.DRIVE

D940 MA165TA

Q402 2SC945 QUARTZ LOCK IND. CONTROL

AM/FM muting → "OFF"

D401 SVDAY5533K-M QUARTZ INDICATOR

D402 SVDPR5533K STEREO INDICATOR

Q120 2SC945 FM SELECTOR

Q106 2SC829 FM 2nd IF OSC.

FM 2nd IF OSC 31.3MHz

Q122 2SC945 CONTROL, FM TUNING DET

Q123 2SC945 FM TUNING DET

D109, 110 0A90

IC101 AN7274S FM IF AMP

	28	27	26	25	24	23	22	21	20	19	18	17	16	15
FM	4.9	0	4.9	2.9	2.9	2.6	2.9	0	2.6	3.3	3.6	3.3	3.3	4.9
AM	5.3	1.5	5.3	4.3	4.2	4.2	4.2	0	4.2	3.7	3.7	3.9	3.8	0.1
FM	4.9	4.9	2.9	2.9	0	2.5	0.1	3.2	3.1	0	2.0	4.9	2.5	2.7
AM	5.3	5.3	3.0	3.1	0.2	1.8	0.1	3.2	2.6	0	2.4	5.3	2.5	2.5
	1	2	3	4	5	6	7	8	9	10	11	12	13	14

IC904 MN1256 LCD DRIVE

Q910 2SA564A BUFFER

Refer to page 16.

Liquid crystal panel

D104, 301, 304, 305 MA165

D303 MA150

FM 2nd IF signal

AM signal

REC input

FM mono distortion adj.

FM → 0V AM/REC → 9V

D111, 112 MA165

Pilot cancel adj.

Q108 2SA995NGF INTEGRAL

Q109 2SC1583 INTEGRAL

D106 MA165

75kHz L.P.F.

IC102 AN7275S FM PULSE DETECTOR

	28	27	26	25	24	23	21	20	19	18	17	16	15
FM	—	3.1	4.6	4.6	2.5	2.5	2.5	2.5	5.0	0.1	0.2	5.7	0
AM	—	3.1	6.3	6.3	2.5	2.5	2.5	2.5	5.0	4.2	8.5	5.7	0
FM	0	1.3	7.4	2.5	2.5	7.7	2.5	2.5	2.5	2.5			
AM	0	1.3	7.2	2.5	2.5	7.8	2.5	2.5	2.5	2.5			
	1	2	3	4	5	6	11	12	13	14			

Q111 2SA564A INTEGRAL

Q115 2SC945 INTEGRAL

Q117 2SC945 RF SWITCHING

Q119 2SC945 DISTORTION CONTROL

IC301 AN7471S MPX

	28	27	26	25	24	23	22	21	20	19	18	17	16	15
FM STEREO	2.4	2.4	2.4	2.4	0.2	2.4	2.4	2.0	2.0	1.1	0	0.1	0.8	0.1
FM	2.5	2.5	2.5	3.0	5.2	2.5	2.5	2.0	2.0	1.1	0	0.1	0.8	3.5
AM	2.7	2.7	2.8	2.8	5.4	2.6	2.6	2.0	2.0	0.2	0	8.0	0.8	0.1
FM	3.6	8.6	2.6		2.5	2.5	2.5	0	8.5	8.5	8.5	8.5	0	0
AM	3.3	8.6	2.6		2.6	2.6	2.7	0	8.6	8.6	8.6	8.6	0.1	0.1
FM STEREO	3.3	8.6	2.6		2.4	2.4	2.3	0	0.3	0.3	0.3	0.3	0	0
	1	2	3		5	6	7	8	9	10	11	12	13	14

IC305,306 AN6554 OPE AMP

	FM	AM		FM	AM		FM	AM		FM	AM
1	0.4	0.5	4	8.6	8.6	7	0.4	0.5	10	0.5	0.3
2	2.7	2.7	5	2.7	2.7	8	0.9	1.1	11	-8.4	-8.4
3	2.7	2.7	6	2.7	2.7	9	0.4	0.3	12	0.4	0.5

IC302 AN6552 SCAN CUT/ PILOT CANCEL

	1	2	3	4
FM	3.8	0	0	-8.4
AM	3.8	0	0	-8.4
FM	8.6	3.8	3.8	3.8
AM	8.6	3.7	3.8	3.8
	8	7	6	5

IC303,304 MN4066BS PEAK SAMPLING SWITCH/MUTING/ HIGH BLEND

	FM	AM		FM	AM		FM	AM		FM	AM		FM	AM
1	0	0	4	0	0	7	-2.3	-2.4	10	—	3.8	13	-0.2	8.0
2	0	0	5	0	0	8	4.0	4.0	11	3.8	3.8	14	8.6	—
3	0	0	6	5.0	0.3	9	0	4.0	12	0.2	8.0	—	—	—

Q401, 403 2SC945 QUARTZ LOCK IND.DRIVE

D940 MA165TA

Q402 2SC945 QUARTZ LOCK IND. CONTROL

D401 SVDAY5533K-M QUARTZ INDICATOR

D402 SVDPR5533K STEREO INDICATOR

AM/FM muting → "OFF"

19kHz output

Pilot cancel

Pilot cancel coil

Lch sampling pulse

Rch sampling pulse

R−90° sampling pulse

L−90° sampling pulse

Peak sampling switch

PEAK HOLD CIRCUIT

FM mono distortion 0mV

FM/AM/REC → "OFF"

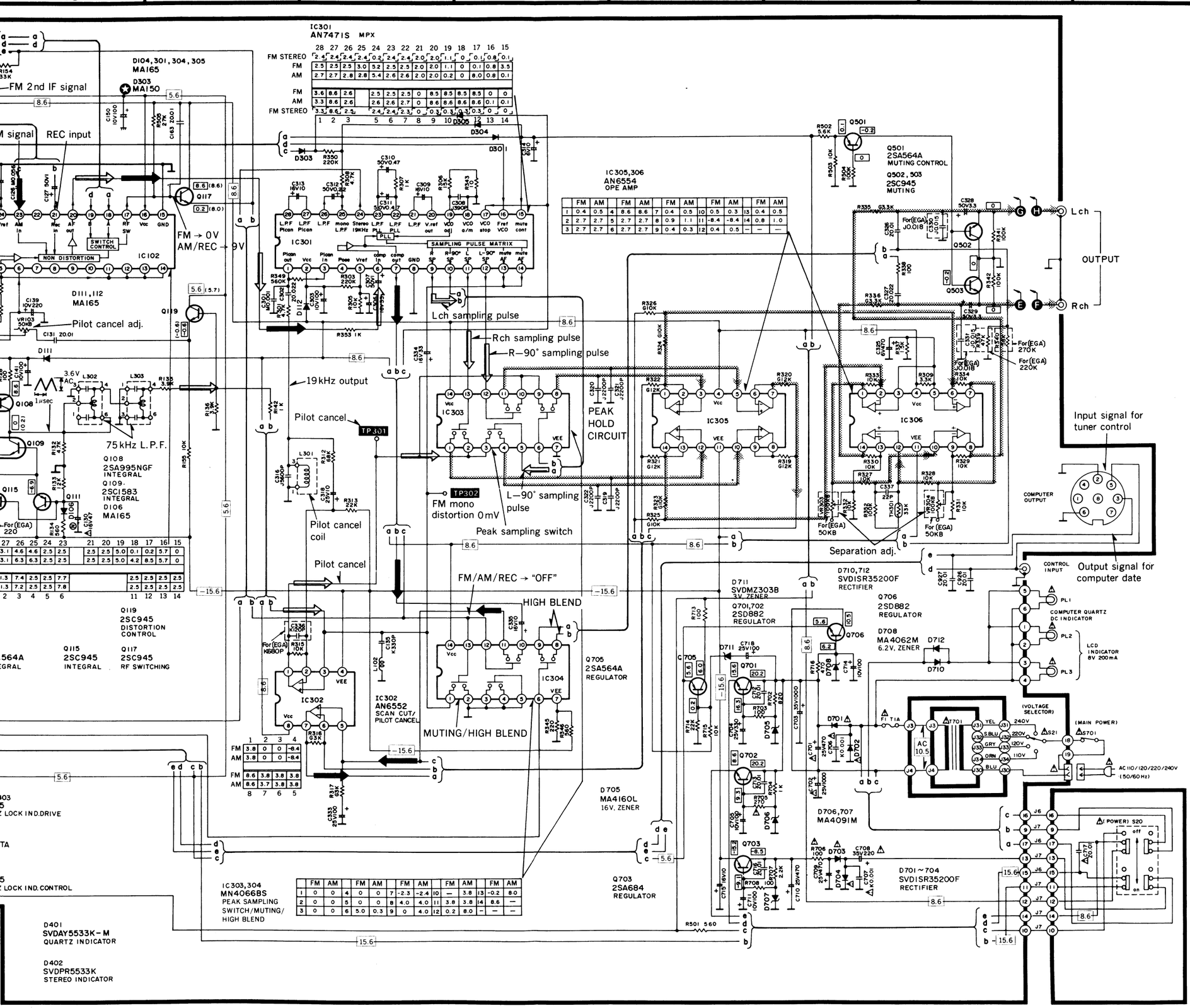
HIGH BLEND

MUTING/HIGH BLEND

Q705 2SA564A REGULATOR

D705 MA4160L 16V, ZENER

Q703 2SA684 REGULATOR



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

* The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part please use the part No. in the replacement part list.

Note 1:

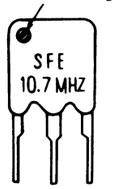
1. **S1 ~ S8** : Preset tuning switch. FM 1 ch ~ 8 ch, AM 9 ch ~ 16 ch.
2. **S9** : Tuning (up) switch. (manual ◂▸ auto) [up: tuning to higher frequency]
3. **S10** : Tuning (down) switch. (manual ◂▸ auto) [down: tuning to lower frequency]
4. **S11** : Memory switch. (manual ◂▸ auto)
5. **S12** : FM selector switch.
6. **S13** : AM selector switch.
7. **S14** : Recording level check switch.
8. **S15** : FM signal strength level call switch.
9. **S16** : FM IF band selector switch. (normal ◂▸ super narrow)
10. **S17** : FM mode switch. (auto ◂▸ mono)
11. **S18** : FM muting switch. (off ◂▸ scan level)
12. **S20** : Power switch in "on" position.
13. **S21** : Voltage selector switch in "220V" position. 110V ◂▸ 120V ◂▸ 220V ◂▸ 240V
14. **S701** : Main power switch in "on" position.
15. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
    * Figures in ☐ stand for DC voltage in FM signal (monaural) reception mode.
    * Figures in ⌜ ⌟ stand for DC voltage in FM stereo signal reception mode.
    * Figures in ( ) stand for DC voltage in AM signal reception mode.
    * Figures in < > stand for DC voltage in FM-IF super narrow condition mode.
16. ⇨ FM signal ⇨ AM signal ⇨ AF signal lines ⇨ FM OSC ⇨ AM OSC
17. —— Positive voltage lines and negative voltage lines.
18. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
19. The waveforms ❶ ~ ⓳: Refer to page 17.

Note 2:

● Use of ceramic filters in pairs

The ceramic filters (CF101 ~ CF104) for FM-IF circuit are available in four ranks. For this machine, be sure to use the ceramics of the same rank in a pair.
At repairing and replacement, pay close attention to the diodes (D901, D902) for use as different diodes must be used depending on each rank of the ceramic filters.

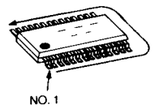
Color marking



RANK (Color)	D901	D902	CENTER FREQUENCY
Black	×	○	10.65 MHz
Red	×	×	10.70 MHz
Blue	○	×	10.67 MHz
Orange	○	○	10.73 MHz

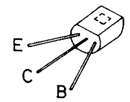
Note: ○ Mark Diode is used.
× Mark Diode is not used.

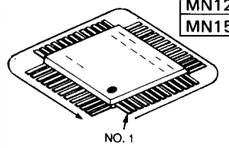
■ TERMINAL GUIDE OF TRANSISTORS, IC'S AND DIODES



AN6823S	8 Pin
MN4066BS	14 Pin
AN7274S	28 Pin
AN7275S	
AN7471S	

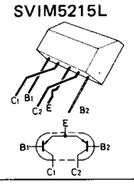
2SA564, 2SA684, 2SA995, 2SC829, 2SC945, 2SC1674, 2SC1675



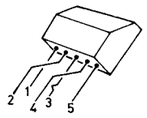


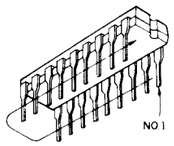
MN1256	40 Pin
MN1291	42 Pin
MN1554STD	64 Pin

SVIM5215L



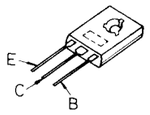
2SC1583



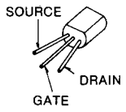


AN6552	8 Pin
AN6554	14 Pin

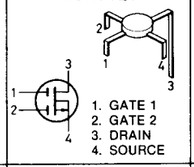
2SD882



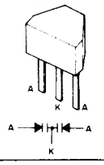
2SK246



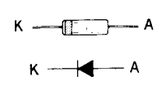
3SK74L1



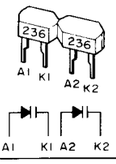
SVDSVC211



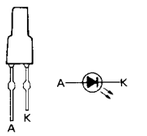
OA90, MA150, MA165



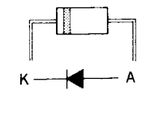
SVDKV1236Z



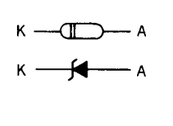
SVDAY5533K, SVDPR5533



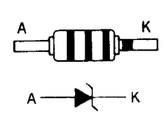
SVD1SR35200F



SVDMZ305A, SVDMZ303B



MA4160L, MA4043L, MA4062M, MA4091M



■ RESISTORS, CAPACITORS & REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. The unit of resistance is OHM (Ω).
   K = 1000Ω, M = 1000kΩ
5. The unit of capacitance is MICROFARAD (μF)
   P = 10^{-6} μF
6. Ⓚ -marked, parts are used for black only, while ◯-marked parts are for silver type only.
7. Part other than Ⓚ -and ◯-marked are used for both black and silver type.
8. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
9. The parenthesized numbers in the column of description stand for the quantity per set.

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
ERD : Carbon ERO : Metal film	25 : 1/4W S2 : 1/4W S1 : 1/2W	J : ±5% G : ±2%

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity
ECEA	50	M	R47	R
Type	Voltage	Peculiarity use	Value.	Special use

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA : Electrolytic ECCD : Ceramic ECKD : Ceramic ECQM : Polyester ECQP : Polypropylene EECW : Liquid electrolyte double layer capacitor ECG : Ceramic	OJ : 6.3V 1A : 10V 1C : 16V 1E : 25V 1H : 50V 50 : 50V 1V : 35V	1H : 50V DC 2H : 500V DC 2R3 : 2.3V DC	C : ±0.25pF J : ±5% K : ±10% Z : +80%, −20% M : ±20%

RESISTORS

Ref. No.	Part No.	Value
R1	ERDS2TJ104	100K
R3	ERDS2TJ273	27K
R4	ERDS2TJ104	100K
R5 [EGA] only	ERDS2TJ223	22K
R5 [EGA] except	ERDS2TJ104	100K
R6, 7	ERDS2TJ104	100K
R9 [EGA] except	ERDS2TJ273	27K
R10 [EGA] only	ERDS2TJ124	120K
R10 [EGA] except	ERDS2TJ104	100K

Ref. No.	Part No.	Value
R11	ERDS2TJ100	10
R13, 14	ERDS2TJ221	220
R16	ERDS2TJ273	27K
R17 [EGA] only	ERDS2TJ183	18K
R17 [EGA] except	ERDS2TJ123	12K
R18	ERDS2TJ182	1.8K
R19	ERDS2TJ104	100K
R20 [EGA] only	ERDS2TJ102	1K
R20 [EGA] except	ERDS2TJ182	1.8K

Ref. No.	Part No.	Value
R21	ERDS2TJ472	4.7K
R22	ERDS2TJ104	100K
R23, 24	ERDS2TJ103	10K
R25	ERDS2TJ104	100K
R27 [EGA] only	ERDS2TJ474	470K
R27 other	ERDS2TJ334	330K
R29	ERDS2TJ103	10K
R30, 31	ERDS2TJ104	100K
R32 [EGA] only	ERDS2TJ102	1K
R102	ERDS2TJ473	47K
R103	ERDS2TJ392	3.9K
R105	ERDS2TJ682	6.8K
R106	ERDS2TJ103	10K
R107 [EGA] only	ERDS2TJ183	18K
R107 [EGA] except	ERDS2TJ223	22K
R110	ERDS2TJ103	10K
R111	ERDS2TJ273	27K
R112	ERDS2TJ102	1K
R113	ERDS2TJ221	220
R114	ERDS2TJ103	10K
R115	ERDS2TJ152	1.5K
R116	ERDS2TJ472	4.7K
R117	ERDS2TJ821	820
R119	ERDS2TJ333	33K
R120	ERDS2TJ223	22K
R122	ERDS2TJ472	4.7K
R123	ERDS2TJ123	12K
R124	ERDS2TJ473	47K
R127, 128	ERDS2TJ101	100
R129	ERDS2TJ103	10K
R131 [EGA] only	ERDS2TJ221	220
R131 [EGA] except	ERDS2TJ331	330
R132	ERDS2TJ472	4.7K
R133	ERDS2TJ123	12K
R134	ERDS2TJ561	560
R135, 136	ERDS2TJ392	3.9K
R137	ERDS2TJ680	68
R138 [EGA] only	ERDS2TJ181	180
R138 [EGA] except	ERDS2TJ680	68
R139 [EGA] only	ERDS2TJ101	100
R139 [EGA] except	ERDS2TJ271	270
R140	ERDS2TJ101	100
R142	ERDS2TJ102	1K
R144	ERDS2TJ102	1K
R145	ERDS2TJ471	470
R146	ERDS2TJ562	5.6K
R147, 148	ERDS2TJ100	10
R152	ERDS2TJ331	330
R154	ERDS2TJ333	33K
R155	ERDS2TJ103	10K
R156	ERDS2TJ684	680K
R157	ERDS2TJ224	220K
R158 [EGA] only	ERDS2TJ223	22K
R158 [EGA] except	ERDS2TJ103	10K
R159	ERDS2TJ100	10
R160	ERDS2TJ221	220
R161 [EGA] Ⓢ only	ERD25FJ102	1K
R163, 164 Ⓢ	ERD25TJ104	100K
R165 Ⓢ	ERD25FJ151	150
R167 Ⓢ	ERD25TJ683	68K
R168 Ⓢ	ERD25TJ684	680K
R170 Ⓢ	ERD25FJ331	330
R171	ERDS2TJ682	6.8K
R172 [EGA] Ⓢ only	ERD25FJ471	470
R172 [EGA] Ⓢ except	ERD25FJ391	390
R173 [EGA] Ⓢ only	ERD25FJ471	470
R173 [EGA] Ⓢ excpet	ERD25FJ102	1K
R201	ERDS2TJ104	100K
R202	ERDS2TJ821	820
R203	ERDS2TJ222	2.2K
R205	ERDS2TJ274	270K
R206	ERDS2TJ101	100

Ref. No.	Part No.	Value
R207	ERDS2TJ154	150K
R208	ERDS2TJ224	220K
R209	ERDS2TJ104	100K
R210	ERDS2TJ102	1K
R211	ERDS2TJ152	1.5K
R212	ERDS2TJ331	330
R213	ERDS2TJ473	47K
R214	ERDS2TJ103	10K
R301	ERDS2TJ472	4.7K
R303	ERDS2TJ224	220K
R305	ERDS2TJ103	10K
R306	ERDS2TJ153	15K
R307	ERDS2TJ102	1K
R308	ERDS2TJ472	4.7K
R309	ERDS2TJ332	3.3K
R312	ERDS2TJ683	68K
R313	ERDS2TJ223	22K
R315	ERDS2TJ103	10K
R316, 317	ERO25CKG3001	3K
R319, 320	ERO25CKG1202	12K
R321, 322	ERO25CKG1202	12K
R323, 324	ERO25CKG1002	10K
R325, 326	ERO25CKG1002	10K
R327, 328	ERDS2TJ103	10K
R329, 330	ERDS2TJ103	10K
R331, 332	ERDS2TJ103	10K
R333, 334	ERDS2TJ103	10K
R335, 336	ERO25CKG3301	3.3K
R337	ERDS2TJ152	1.5K
R338	ERDS2TJ101	100
R339 [EGA] only	ERDS2TJ224	220K
R339 [EGA] except	ERDS2TJ473	47K
R340 [EGA] only	ERDS2TJ274	270K
R340 [EGA] except	ERDS2TJ563	56K
R341, 342	ERDS2TJ104	100K
R343	ERDS2TJ100	10
R345	ERDS2TJ221	220
R346	ERDS2TJ561	560
R349 Ⓢ	ERD25TJ564	560K
R350	ERDS2TJ224	220K
R352	ERDS2TJ104	100K
R353	ERDS2TJ102	1K
R401	ERDS2TJ474	470K
R402	ERDS2TJ221	220
R403	ERDS2TJ331	330
R501	ERDS2TJ561	560
R502	ERDS2TJ562	5.6K
R503	ERDS2TJ103	10K
R504	ERDS2TJ104	100K
R505	ERDS2TJ273	27K
R702	ERDS2TJ821	820
R703	ERDS2TJ101	100
R704	ERDS2TJ102	1K
R705 ⚠	ERDS1FJ271	270
R706 ⚠Ⓢ	ERD25FJ101	100
R707	ERDS2TJ222	2.2K
R708	ERDS2TJ101	100
R713	ERDS2TJ101	100
R714	ERDS2TJ223	22K
R715	ERDS2TJ103	10K
R716 ⚠	ERDS1FJ471	470
R901	ERDS2TJ103	10K
R902	ERDS2TJ271	270
R903	ERDS2TJ221	220
R904	ERDS2TJ103	10K
R905	ERDS2TJ153	15K
R906	ERDS2TJ471	470
R907	ERDS2TJ821	820
R908	ERDS2TJ101	100
R909	ERDS2TJ682	6.8K
R910	ERDS2TJ472	4.7K
R911 [EGA] only	ERDS2TJ102	1K
R911 [EGA] except	ERDS2TJ223	22K
R912, 913	ERDS2TJ102	1K
R914	ERDS2TJ222	2.2K
R917, 918	ERDS2TJ222	2.2K
R919	ERDS2TJ472	4.7K
R924	ERDS2TJ473	47K
R925	ERDS2TJ223	22K
R926, 927	ERDS2TJ103	10K
R928, 929	ERDS2TJ473	47K
R930	ERDS2TJ104	100K
R934, 935	ERDS2TJ222	2.2K
R936	ERDS2TJ104	100K
R937	ERDS2TJ103	10K
R938	ERDS2TJ561	560
R939	ERDS2TJ563	56K
R940	ERDS2TJ562	5.6K
R941	ERDS2TJ474	470K
R942	ERDS2TJ103	10K

Ref. No.	Part No.	Value
R943	ERDS2TJ473	47K
R944	ERDS2TJ153	15K
R946, 947 Ⓢ	ERD25FJ562	5.6K
R949	ERDS2TJ100	10
R950	ERDS2TJ102	1K
R951	ERDS2TJ563	56K

Ref. No.	Part No.	Value
R952	ERDS2TJ223	22K
R954	ERDS2TJ104	100K
R955	ERDS2TJ223	22K
R957	ERDS2TJ104	100K
R958	ERDS2TJ680	68
R960, 961	ERDS2TJ100	10
R962, 963	ERDS2TJ100	10

Ref. No.	Part No.	Value
R964	ERDS2TJ683	68K
R965	ERDS2TJ474	470K
R966	ERDS2TJ103	10K
R968 [EGA] only	ERDS2TJ684	680K
R968 [EGA] except	ERDS2TJ824	820K

CAPACITORS

Ref. No.	Part No.	Value
C1 Ⓢ	ECCD1H470KC	47P
C3 Ⓢ	ECCD1H270KC	27P
C4	ECEA1HU3R3	3.3
C5	ECKD1H102MDL	0.001
C6 [EGA] Ⓢ only	ECCD1H030CC	3P
C6 [EGA] Ⓢ except	ECCD1H220KC	22P
C7 Ⓢ	ECKD1H103ZF	0.01
C8 [EGA] Ⓢ only	ECCD1H1R5CC	1.5P
C8 [EGA] Ⓢ except	ECCD1H010CC	1P
C9	ECGN5R15K	15P
C11 Ⓢ	ECCD1H070CC	7P
C13 Ⓢ	ECCD1H050CC	5P
C14 [EGA] Ⓢ only	ECCD1H271K	270P
C14 [EGA] Ⓢ except	ECCD1H181K	180P
C15 Ⓢ	ECKD1H103ZF	0.01
C17 Ⓢ	ECKD1H103ZF	0.01
C18 Ⓢ	ECKD1H102ZF	0.001
C19 Ⓢ	ECCD1H030CC	3P
C20 Ⓢ	ECCD1H080CC	8P
C21	ECKD1H102MDL	0.001
C22 Ⓢ	ECCD1H390KC	39P
C23 Ⓢ	ECCD1H070CC	7P
C24 Ⓢ	ECCD1H050CC	5P
C25 Ⓢ	ECCD1H020CC	2P
C26 Ⓢ	ECKD1H103ZF	0.01
C27 Ⓢ	ECKD1H102ZF	0.001
C28	ECEA1CU100	10
C31 Ⓢ	ECKD1H102ZF	0.001
C32	ECEA1HU010	1
C33, 34 Ⓢ	ECKD1H103ZF	0.01
C41 Ⓢ	ECCD1H010CC	1P
C42	ECGN5R47K	47P
C57	ECEA1CU221	220
C58 [EGA] Ⓢ only	ECCD1H180KC	18P
C101	ECQM1H223KV	0.022
C102	ECEA1CU100	10

Ref. No.	Part No.	Value
C103, 104 Ⓢ	ECKD1H103ZF	0.01
C105 Ⓢ	ECKD1H103ZF	0.01
C106 Ⓢ	ECCD1H050CC	5P
C107	ECEA1HU010	1
C108 Ⓢ	ECKD1H103ZF	0.01
C109	ECEA1HU010	1
C110, 111 Ⓢ	ECKD1H103ZF	0.01
C112 Ⓢ	ECKD1H223ZF	0.022
C113 Ⓢ	ECCD1H120KC	12P
C114 Ⓢ	ECKD1H223ZF	0.022
C115 Ⓢ	ECKD1H103ZF	0.01
C117 Ⓢ	ECCD1H390KC	39P
C118 Ⓢ	ECCD1H181K	180P
C119 Ⓢ	ECCD1H010CC	1P
C122 Ⓢ	ECCD1H390KC	39P
C123 Ⓢ	ECEA1AU101	100
C124 Ⓢ	ECKD1H223ZF	0.022
C125	ECEA1AU101	100
C126	ECQM1H563KV	0.056
C127	ECEA1HU010	1
C128	ECEA1AU101	100
C129 ⚠	ECEA1CN100S	10
C130 ⚠	ECEA1CN470S	47
C131 Ⓢ	ECKD1H103ZF	0.01
C135 Ⓢ	ECCD1H331K	330P
C136 Ⓢ	ECKD1H223ZF	0.022
C137	ECEA1HU010	1
C139	ECEA1AU221	220
C140	ECEA1EU101	100
C141	ECEA1AU101	100
C143 Ⓢ	ECKD1H103ZF	0.01
C144 Ⓢ	ECKD1H223ZF	0.022
C145 Ⓢ	ECCD1H181K	180P
C146 Ⓢ	ECCD1H331K	330P
C147 Ⓢ	ECCD1H121K	120P
C148 Ⓢ	ECCD1H390KC	39P
C149 Ⓢ	ECKD1H103ZF	0.01
C150	ECEA1AU101	100
C151 Ⓢ	ECCD1H050CC	5P
C152 [EGA] Ⓢ only	ECKD1H103ZF	0.01
C153 [EGA] only	ECEA1HU010	1
C154 Ⓢ	ECKD1H103ZF	0.01
C156 Ⓢ	ECKD1H103ZF	0.01
C158 Ⓢ	ECCD1H180KC	18P
C159	ECQM1H104KV	0.1

Ref. No.	Part No.	Value
C163, 164 Ⓢ	ECKD1H103ZF	0.01
C165 Ⓢ	ECKD1H103ZF	0.01
C187 Ⓢ	ECKD1H103ZF	0.01
C201 Ⓢ	ECCD1H150KC	15P
C202	ECQP1471JZ	470P
C203	ECQM1H473KV	0.047
C205, 206 Ⓢ	ECKD1H223ZF	0.022
C207	ECEA1CU330	33
C208 Ⓢ	ECKD1H103ZF	0.01
C209	ECQM1H223KV	0.022
C210 Ⓢ	ECKD1H103ZF	0.01
C211 Ⓢ	ECCD1H010CC	1P
C212 Ⓢ	ECKD1H103ZF	0.01
C214	ECEA0JU101	100
C216 Ⓢ	ECKD1H223ZF	0.022
C301	ECQM1H102KV	0.001
C302	ECKD1H223ZF	0.022
C303	ECEA1AU101	100
C306	ECEA1CU330	33
C307	ECEA1HU010	1
C308	ECQP1391JZ	390P
C309	ECEA1CU100	10
C310, 311	ECEA1HUR47	0.47
C312	ECEA1HUR22	0.22
C313, 314	ECEA1CU100	10
C316	ECQP1562JZ	5600P
C318	ECEA1EU100	10
C319, 320	ECQP1222JZ	2200P
C321, 322	ECQP1222JZ	2200P
C325	ECEA0JU471	470
C326 Ⓢ	ECKD1H103ZF	0.01
C327 Ⓢ	ECKD1H223ZF	0.022
C328, 329	ECEA1HU3R3	3.3
C330, 331 [EGA] only	ECQM1H183JV	0.018
C330, 331 [PA, PE, PC] only	ECQM1H273JV	0.027
C330, 331 [EGA, PA, PE, PC] except	ECQM1H153JV	0.015
C333	ECEA1EU101	100
C334	ECEA1CU330	33
C335	ECEA1CU100	10
C336 [EGA] Ⓢ only	ECKD1H681KB	680P

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC101	AN7274S	FM IF Amp.
IC102	AN7275S	FM Pulse Detector
IC103	SVIM5215L	FM IF
IC301	AN7471S	MPX
IC302, 905	AN6552	Scan Cutlpilot Cancel, RF ATT
IC303, 304	MN4066BS	Peak Sampling Switch/Muting/ High Blend
IC305, 306	AN6554	Ope Amp.
IC901	AN6823S	Pre-Scaler
IC902	MN1291	PLL Controller
IC903	MN1554STD-4	Micro Computer
IC904	MN1256	LCD Drive
TRANSISTORS		
Q1	3SK74-L1	FM RF Amp.
Q2	2SC1674-M	Mix
Q3 ~ 5, 203	2SC1675-L	FM OSC, Buffer
Q6, 111, 202, 501 705, 902, 910	2SA722-S	Switching
Q7, 8, 101, 115, 117, 119, 120, 122, 123, 201, 401 ~ 403, 502, 503, 903 ~ 905, 907, 908	2SC945-Q	Switching
Q102 ~ 106	2SC829-C	Buffer, IF Amp. FM Mix. FM IF OSC
Q108	2SA995N-G	Integral
Q109	2SC1583-G	Integral
Q121 [EGA] only	2SC1675-L	

Ref. No.	Part No.	Description
Q701, 702, 706	2SD882-R	Regulator
Q703	2SA684-QNC	Regulator
Q901	2SK246-GR	
DIODES		
D1 ~ 4, 9	SVDSVC211	AFC
D101 ~ 106, 111, 112, 301, 304, 305, 908 ~ 922, 926, 927, 931, 933, 934, 940, 944	MA165	Switching
D107, 108 Ⓢ [EGA] only	2OA90	
D109, 110, 923 Ⓢ	2OA90	
D201	SVDKV1236Z	AFC
D303, 901, 902 Ⓢ	MA162	
D401	SVDAY5533K-M	L.E.D. (Quartz Ind.)
D402	SVDPR5533K	L.E.D. (Stereo Ind.)
D701 ~ 704, 710, ⚠ 712	SVD1SR35200F	Rectifier
D705	MA4160L	16V, Zener
D706, 707	MA4091M	9.1V, Zener
D708	MA4062M	6.2V, Zener
D711	SVDMZ303B	3V, Zener
D901 ~ 903 Ⓢ	MA162A	
D925	SVDMZ305A	5V, Zener
D938	MA4043L	4.3V, Zener
D946 [XA] only	MA165	
D947 Ⓢ [EGA] except	MA162A	

Ref. No.
COILS
L1, 3, 4
L2, 7
L5, 103, 105 106, 205
L6
L10
L11 ~ 17 [EGA] o
L102, 901
L107, 204
L202
L203
L206 [EGA] only
L301
L302 [EGA] only
L302 [other]
L303 [EGA] only
L303 [other]
L750, 751 [EGA] only
VARIABLE R
CT1
CT201

f. No.	Part No.	Value
	ERDS2TJ472	4.7K
	ERDS2TJ104	100K
24	ERDS2TJ103	10K
	ERDS2TJ104	100K
EGA]	ERDS2TJ474	470K
only		
other	ERDS2TJ334	330K
	ERDS2TJ103	10K
	ERDS2TJ104	100K
31	ERDS2TJ102	1K
EGA]		
only		
	ERDS2TJ473	47K
	ERDS2TJ392	3.9K
	ERDS2TJ682	6.8K
	ERDS2TJ103	10K
[EGA]	ERDS2TJ183	18K
only		
[EGA]	ERDS2TJ223	22K
except		
	ERDS2TJ103	10K
	ERDS2TJ273	27K
	ERDS2TJ102	1K
	ERDS2TJ221	220
	ERDS2TJ103	10K
	ERDS2TJ152	1.5K
	ERDS2TJ472	4.7K
	ERDS2TJ821	820
	ERDS2TJ333	33K
	ERDS2TJ223	22K
	ERDS2TJ472	4.7K
	ERDS2TJ123	12K
	ERDS2TJ473	47K
, 128	ERDS2TJ101	100
	ERDS2TJ103	10K
[EGA]	ERDS2TJ221	220
only		
[EGA]	ERDS2TJ331	330
except		
	ERDS2TJ472	4.7K
	ERDS2TJ123	12K
	ERDS2TJ561	560
, 136	ERDS2TJ392	3.9K
	ERDS2TJ680	68
[EGA]	ERDS2TJ181	180
only		
[EGA]	ERDS2TJ680	68
except		
[EGA]	ERDS2TJ101	100
only		
[EGA]	ERDS2TJ271	270
except		
	ERDS2TJ101	100
	ERDS2TJ102	1K
	ERDS2TJ102	1K
	ERDS2TJ471	470
, 148	ERDS2TJ562	5.6K
	ERDS2TJ100	10
	ERDS2TJ331	330
	ERDS2TJ333	33K
	ERDS2TJ103	10K
	ERDS2TJ684	680K
	ERDS2TJ224	220K
[EGA]	ERDS2TJ223	22K
only		
[EGA]	ERDS2TJ103	10K
except		
	ERDS2TJ100	10
	ERDS2TJ221	220
[EGA] Ⓢ	ERD25FJ102	1K
only		
164 Ⓢ	ERD25TJ104	100K
Ⓢ	ERD25FJ151	150
Ⓢ	ERD25TJ683	68K
Ⓢ	ERD25TJ684	680K
Ⓢ	ERD25FJ331	330
	ERDS2TJ682	6.8K
[EGA] Ⓢ	ERD25FJ471	470
only		
[EGA] Ⓢ	ERD25FJ391	390
except		
[EGA] Ⓢ	ERD25FJ471	470
only		
[EGA] Ⓢ	ERD25FJ102	1K
excpet		
	ERDS2TJ104	100K
	ERDS2TJ821	820
	ERDS2TJ222	2.2K
	ERDS2TJ274	270K
	ERDS2TJ101	100

Ref. No.	Part No.	Value
R207	ERDS2TJ154	150K
R208	ERDS2TJ224	220K
R209	ERDS2TJ104	100K
R210	ERDS2TJ102	1K
R211	ERDS2TJ152	1.5K
R212	ERDS2TJ331	330
R213	ERDS2TJ473	47K
R214	ERDS2TJ103	10K
R301	ERDS2TJ472	4.7K
R303	ERDS2TJ224	220K
R305	ERDS2TJ103	10K
R306	ERDS2TJ153	15K
R307	ERDS2TJ102	1K
R308	ERDS2TJ472	4.7K
R309	ERDS2TJ332	3.3K
R312	ERDS2TJ683	68K
R313	ERDS2TJ223	22K
R315	ERDS2TJ103	10K
R316, 317	ERO25CKG3001	3K
R319, 320	ERO25CKG1202	12K
R321, 322	ERO25CKG1202	12K
R323, 324	ERO25CKG1002	10K
R325, 326	ERO25CKG1002	10K
R327, 328	ERDS2TJ103	10K
R329, 330	ERDS2TJ103	10K
R331, 332	ERDS2TJ103	10K
R333, 334	ERDS2TJ103	10K
R335, 336	ERO25CKG3301	3.3K
R337	ERDS2TJ152	1.5K
R338	ERDS2TJ101	100
R339 [EGA] only	ERDS2TJ224	220K
R339 [EGA] except	ERDS2TJ473	47K
R340 [EGA] only	ERDS2TJ274	270K
R340 [EGA] except	ERDS2TJ563	56K
R341, 342	ERDS2TJ104	100K
R343	ERDS2TJ100	10
R345	ERDS2TJ221	220
R346	ERDS2TJ561	560
R349 Ⓢ	ERD25TJ564	560K
R350	ERDS2TJ224	220K
R352	ERDS2TJ104	100K
R353	ERDS2TJ102	1K
R401	ERDS2TJ474	470K
R402	ERDS2TJ221	220
R403	ERDS2TJ331	330
R501	ERDS2TJ561	560
R502	ERDS2TJ562	5.6K
R503	ERDS2TJ103	10K
R504	ERDS2TJ104	100K
R505	ERDS2TJ273	27K
R702	ERDS2TJ821	820
R703	ERDS2TJ101	100
R704	ERDS2TJ102	1K
R705 ⚠	ERDS1FJ271	270
R706 ⚠Ⓢ	ERD25FJ101	100
R707	ERDS2TJ222	2.2K
R708	ERDS2TJ101	100
R713	ERDS2TJ101	100
R714	ERDS2TJ223	22K
R715	ERDS2TJ103	10K
R716 ⚠	ERDS1FJ471	470
R901	ERDS2TJ103	10K
R902	ERDS2TJ271	270
R903	ERDS2TJ221	220
R904	ERDS2TJ103	10K
R905	ERDS2TJ153	15K
R906	ERDS2TJ471	470
R907	ERDS2TJ821	820
R908	ERDS2TJ101	100
R909	ERDS2TJ682	6.8K
R910	ERDS2TJ472	4.7K
R911 [EGA] only	ERDS2TJ102	1K
R911 [EGA] except	ERDS2TJ223	22K
R912, 913	ERDS2TJ102	1K
R914	ERDS2TJ222	2.2K
R917, 918	ERDS2TJ222	2.2K
R919	ERDS2TJ472	4.7K
R924	ERDS2TJ473	47K
R925	ERDS2TJ223	22K
R926, 927	ERDS2TJ103	10K
R928, 929	ERDS2TJ473	47K
R930	ERDS2TJ104	100K
R934, 935	ERDS2TJ222	2.2K
R936	ERDS2TJ104	100K
R937	ERDS2TJ103	10K
R938	ERDS2TJ561	560
R939	ERDS2TJ563	56K
R940	ERDS2TJ562	5.6K
R941	ERDS2TJ474	470K
R942	ERDS2TJ103	10K

Ref. No.	Part No.	Value
R943	ERDS2TJ473	47K
R944	ERDS2TJ153	15K
R946, 947 Ⓢ	ERD25FJ562	5.6K
R949	ERDS2TJ100	10
R950	ERDS2TJ102	1K
R951	ERDS2TJ563	56K

Ref. No.	Part No.	Value
R952	ERDS2TJ223	22K
R954	ERDS2TJ104	100K
R955	ERDS2TJ223	22K
R957	ERDS2TJ104	100K
R958	ERDS2TJ680	68
R960, 961	ERDS2TJ100	10
R962, 963	ERDS2TJ100	10

Ref. No.	Part No.	Value
R964	ERDS2TJ683	68K
R965	ERDS2TJ474	470K
R966	ERDS2TJ103	10K
R968 [EGA] only	ERDS2TJ684	680K
R968 [EGA] except	ERDS2TJ824	820K

Ref. No.	Part No.	Value
R969	ERDS2TJ223	22K
R970	ERDS2TJ100	10
R971, 972 Ⓢ	ERD25TJ104	100K
R973	ERDS2TJ153	15K
R974 Ⓢ	ERD25FJ272	2.7K

CAPACITORS

Ref. No.	Part No.	Value
C1 Ⓢ	ECCD1H470KC	47P
C3 Ⓢ	ECCD1H270KC	27P
C4	ECEA1HU3R3	3.3
C5	ECKD1H102MDL	0.001
C6 [EGA] only Ⓢ	ECCD1H030CC	3P
C6 [EGA] except Ⓢ	ECCD1H220KC	22P
C7 Ⓢ	ECKD1H103ZF	0.01
C8 [EGA] only Ⓢ	ECCD1H1R5CC	1.5P
C8 [EGA] except Ⓢ	ECCD1H010CC	1P
C9	ECGN5R15K	15P
C11 Ⓢ	ECCD1H070CC	7P
C13 Ⓢ	ECCD1H050CC	5P
C14 [EGA] only Ⓢ	ECCD1H271K	270P
C14 [EGA] except Ⓢ	ECCD1H181K	180P
C15 Ⓢ	ECKD1H103ZF	0.01
C17 Ⓢ	ECKD1H103ZF	0.01
C18 Ⓢ	ECKD1H102ZF	0.001
C19 Ⓢ	ECCD1H030CC	3P
C20 Ⓢ	ECCD1H080CC	8P
C21	ECKD1H102MDL	0.001
C22 Ⓢ	ECCD1H390KC	39P
C23 Ⓢ	ECCD1H070CC	7P
C24 Ⓢ	ECCD1H050CC	5P
C25 Ⓢ	ECCD1H020CC	2P
C26 Ⓢ	ECKD1H103ZF	0.01
C27 Ⓢ	ECKD1H102ZF	0.001
C28	ECEA1CU100	10
C31 Ⓢ	ECKD1H102ZF	0.001
C32	ECEA1HU010	1
C33, 34 Ⓢ	ECKD1H103ZF	0.01
C41 Ⓢ	ECCD1H010CC	1P
C42	ECGN5R47K	47P
C57	ECEA1CU221	220
C58 [EGA] only Ⓢ	ECCD1H180KC	18P
C101	ECQM1H223KV	0.022
C102	ECEA1CU100	10
C103, 104 Ⓢ	ECKD1H103ZF	0.01
C105 Ⓢ	ECKD1H103ZF	0.01
C106 Ⓢ	ECCD1H050CC	5P
C107	ECEA1HU010	1
C108 Ⓢ	ECKD1H103ZF	0.01
C109	ECEA1HU010	1
C110, 111 Ⓢ	ECKD1H103ZF	0.01
C112 Ⓢ	ECKD1H223ZF	0.022
C113 Ⓢ	ECCD1H120KC	12P
C114 Ⓢ	ECKD1H223ZF	0.022
C115 Ⓢ	ECKD1H103ZF	0.01
C117 Ⓢ	ECCD1H390KC	39P
C118 Ⓢ	ECCD1H181K	180P
C119 Ⓢ	ECCD1H010CC	1P
C122 Ⓢ	ECCD1H390KC	39P
C123	ECEA1AU101	100
C124 Ⓢ	ECKD1H223ZF	0.022
C125	ECEA1AU101	100
C126	ECQM1H563KV	0.056
C127	ECEA1HU010	1
C128	ECEA1AU101	100
C129 ⚠	ECEA1CN100S	10
C130 ⚠	ECEA1CN470S	47
C131 Ⓢ	ECKD1H103ZF	0.01
C135 Ⓢ	ECCD1H331K	330P
C136 Ⓢ	ECKD1H223ZF	0.022
C137	ECEA1HU010	1
C139	ECEA1AU221	220
C140	ECEA1EU101	100
C141	ECEA1AU101	100
C143 Ⓢ	ECKD1H103ZF	0.01
C144 Ⓢ	ECKD1H223ZF	0.022
C145 Ⓢ	ECCD1H181K	180P
C146 Ⓢ	ECCD1H331K	330P
C147 Ⓢ	ECCD1H121K	120P
C148 Ⓢ	ECCD1H390KC	39P
C149 Ⓢ	ECKD1H103ZF	0.01
C150	ECEA1AU101	100
C151 Ⓢ	ECCD1H050CC	5P
C152 [EGA] only Ⓢ	ECKD1H103ZF	0.01
C153 [EGA] only	ECEA1HU010	1
C154 Ⓢ	ECKD1H103ZF	0.01
C156 Ⓢ	ECKD1H103ZF	0.01
C158 Ⓢ	ECCD1H180KC	18P
C159	ECQM1H104KV	0.1
C163, 164 Ⓢ	ECKD1H103ZF	0.01
C165 Ⓢ	ECKD1H103ZF	0.01
C187 Ⓢ	ECKD1H103ZF	0.01
C201 Ⓢ	ECCD1H150KC	15P
C202	ECQP1471JZ	470P
C203	ECQM1H473KV	0.047
C205, 206 Ⓢ	ECKD1H223ZF	0.022
C207	ECEA1CU330	33
C208 Ⓢ	ECKD1H103ZF	0.01
C209	ECQM1H223KV	0.022
C210 Ⓢ	ECKD1H103ZF	0.01
C211 Ⓢ	ECCD1H010CC	1P
C212 Ⓢ	ECKD1H103ZF	0.01
C214	ECEA0JU101	100
C216 Ⓢ	ECKD1H223ZF	0.022
C301	ECQM1H102KV	0.001
C302	ECKD1H223ZF	0.022
C303	ECEA1AU101	100
C306	ECEA1CU330	33
C307	ECEA1HU010	1
C308	ECQP1391JZ	390P
C309	ECEA1CU100	10
C310, 311	ECEA1HUR47	0.47
C312	ECEA1HUR22	0.22
C313, 314	ECEA1CU100	10
C316	ECQP1562JZ	5600P
C318	ECEA1EU100	10
C319, 320	ECQP1222JZ	2200P
C321, 322	ECQP1222JZ	2200P
C325	ECEA0JU471	470
C326 Ⓢ	ECKD1H103ZF	0.01
C327 Ⓢ	ECKD1H223ZF	0.022
C328, 329	ECEA1HU3R3	3.3
C330, 331 [EGA] only	ECQM1H183JV	0.018
C330, 331 [PA, PE, PC] only	ECQM1H273JV	0.027
C330, 331 [EGA, PA, PE, PC] except	ECQM1H153JV	0.015
C333	ECEA1EU101	100
C334	ECEA1CU330	33
C335	ECEA1CU100	10
C336 [EGA] only Ⓢ	ECKD1H681KB	680P
C336 [EGA] except Ⓢ	ECCD1H121K	120P
C337 Ⓢ	ECCD1H220KC	22P
C401	ECEA1HUR47	0.47
C701	ECEA1EU471	470
C702	ECEA1EU102	1000
C703	ECEA1VU102	1000
C704	ECEA1EU331	330
C705	ECEA1AU101	100
C706, 707 Ⓢ	ECKD2H102FF	0.001
C708	ECEA1VU221	220
C709, 710	ECEA1EU471	470
C711	ECEA1AU101	100
C712, 713 Ⓢ	ECKD1H103ZF	0.01
C714	ECEA1AU101	100
C715	ECEA1CU100	10
C716, 717 Ⓢ	ECKD1H103ZF	0.01
C718	ECEA1EU101	100
C901 Ⓢ	ECKD1H103ZF	0.01
C902 Ⓢ	ECEA50MR47R	0.47
C904	ECEA1CU330	33
C905	ECEA1EU101	100
C906	ECEA1CU470	47
C907	ECQM1H104KV	0.1
C908 Ⓢ	ECKD1H103ZF	0.01
C909 Ⓢ	ECKD1H223ZF	0.022
C910, 911 Ⓢ	ECKD1H103ZF	0.01
C913 Ⓢ	ECKD1H103ZF	0.01
C914	ECEA1AU101	100
C915, 916 Ⓢ	ECCD1H100KC	10P
C917 Ⓢ	ECCD1H181K	180P
C918 Ⓢ	ECCD1H270KC	27P
C920, 921	EECW2R3A3R3	3.3
C923 Ⓢ	ECKD1H103ZF	0.01
C924	ECEA0JU102	1000
C926, 927 Ⓢ	ECKD1H103ZF	0.01
C928 Ⓢ	ECKD1H103ZF	0.01
C929	ECEA1CU100	10
C930	ECEA1HUR47	0.47
C931	ECEA1CU330	33
C932, 933 Ⓢ	ECKD1H103ZF	0.01
C935, 936 Ⓢ	ECKD1H103ZF	0.01
C938	ECEA1CU221	220
C939, 940 Ⓢ	ECCD1H331K	330
C950, 951 Ⓢ	ECKD1H102ZF	0.001

INTEGRATED CIRCUITS

Ref. No.	Part No.	Description
IC101	AN7274S	FM IF Amp.
IC102	AN7275S	FM Pulse Detector
IC103	SVIM5215L	FM IF
IC301	AN7471S	MPX
IC302, 905	AN6552	Scan Cutipilot Cancel, RF ATT
IC303, 304	MN4066BS	Peak Sampling Switch/Muting/ High Blend
IC305, 306	AN6554	Ope Amp.
IC901	AN6823S	Pre-Scaler
IC902	MN1291	PLL Controller
IC903	MN1554STD-4	Micro Computer
IC904	MN1256	LCD Drive

TRANSISTORS

Ref. No.	Part No.	Description
Q1	3SK74-L1	FM RF Amp.
Q2	2SC1674-M	Mix
Q3 ~ 5, 203	2SC1675-L	FM OSC, Buffer
Q6, 111, 202, 501 705, 902, 910	2SA722-S	Switching
Q7, 8, 101, 115, 117, 119, 120, 122, 123, 201, 401 ~ 403, 502, 503, 903 ~ 905, 907, 908	2SC945-Q	Switching
Q102 ~ 106	2SC829-C	Buffer, IF Amp. FM Mix. FM IF OSC
Q108	2SA995N-G	Integral
Q109	2SC1583-G	Integral
Q121 [EGA] only	2SC1675-L	
Q701, 702, 706	2SD882-R	Regulator
Q703	2SA684-QNC	Regulator
Q901	2SK246-GR	Regulator

DIODES

Ref. No.	Part No.	Description
D1 ~ 4, 9	SVDSVC211	AFC
D101 ~ 106, 111, 112, 301, 304, 305, 908 ~ 922, 926, 927, 931, 933, 934, 940, 944	MA165	Switching
D107, 108 [EGA] only Ⓢ	2OA90	
D109, 110, 923 Ⓢ	2OA90	
D201	SVDKV1236Z	AFC
D303, 901, 902 Ⓢ	MA162	
D401	SVDAY5533K-M	L.E.D. (Quartz Ind.)
D402	SVDPR5533K	L.E.D. (Stereo Ind.)
D701 ~ 704, 710, ⚠ 712	SVD1SR35200F	Rectifier
D705	MA4160L	16V, Zener
D706, 707	MA4091M	9.1V, Zener
D708	MA4062M	6.2V, Zener
D711	SVDMZ303B	3V, Zener
D901 ~ 903 Ⓢ	MA162A	
D925	SVDMZ305A	5V, Zener
D938	MA4043L	4.3V, Zener
D946 [XA] only	MA165	
D947 [EGA] except Ⓢ	MA162A	

COILS

Ref. No.	Part No.	Description
L1, 3, 4	SLD4P81	FM Antenna
L2, 7	SLQAN40G1-P	Choke
L5, 103, 105 106, 205	SLQZ12G1-D	Choke
L6	SLO4P35	FM OSC
L10	SLA4P81	FM Antenna
L11 ~ 17 [EGA] only	SLQZ12G1-D	Choke
L102, 901	SLQX101-2D	Choke
L107, 204	ELEA821KA	Choke
L202	SLA2B1-P	AM Antenna
L203	SLO2B7-P	AM OSC
L206 [EGA] only	SLQZ12G1-D	Choke
L301	SLM1C57-Z	19kHz Filter
L302 [EGA] only	SLM1C85-P	FM Detector Filter
L302 [other]	SLM1C83-P	FM Detector Filter
L303 [EGA] only	SLM1C87-P	FM Detector Filter
L303 [other]	SLM1C81-P	FM Detector Filter
L750, 751 [EGA] only	SLQX400-D	Choke

VARIABLE RESISTORS

Ref. No.	Part No.	Description
CT1	ECV1ZW06X32E	Trimmer, FM OSC
CT201	ECRHA010A11	Trimmer, AM OSC

TRANSFORMERS

Ref. No.	Part No.	Description
T1	SLI4C109	FM IF
T101	SLI4B515-Z	FM IF
T102	SLI4C115-P	FM IF
T103	SLI4C117-P	FM IF
T104	SLI4C123-P	FM IF
T105	SLI4C125-P	FM IF
T201	SLI2B103-M	AM IF
T701 ⚠	SLT5K167-H	Power Source

CERAMIC FILTERS

Ref. No.	Part No.	Description
CF101 [EGA] except	SVFE107MM-A	FM, 10.7MHz, (Red)
	SVFE107MM-B	FM, 10.675MHz (Blue)
	SVFE107MM-C	FM, 10.725MHz (Orange)
	SVFE107MM-D	FM, 10.650MHz (Black)
CF102 [EGA] except	SVFE107MX2-A	FM, 10.7MHz, (Red)
	SVFE107MX2-B	FM, 10.675MHz (Blue)
	SVFE107MX2-C	FM, 10.725MHz (Orange)
	SVFE107MX2-D	FM, 10.650MHz (Black)
CF103, 104 [EGA] except	SVFE107MZ2-A	FM, 10.7MHz, (Red)
	SVFE107MZ2-B	FM, 10.675MHz (Blue)
	SVFE107MZ2-C	FM, 10.725MHz (Orange)
	SVFE107MZ2-D	FM, 10.650MHz (Black)
CF101 ~ 104 [EGA] only	SVFE107MZ2-A	FM, 10.7MHz, (Red)
	SVFE107MZ2-B	FM, 10.675MHz (Blue)
	SVFE107MZ2-C	FM, 10.725MHz (Orange)
	SVFE107MZ2-D	FM, 10.650MHz (Black)
	(Use pair ranks as same as CF101, CF102, CF103 and CF104)	
CF201	SVFSFP450HT	AM, 450kHz

CRYSTALS

Ref. No.	Part No.	Description
X101	SVQ49U313-D	31.3MHz
X901	SVQ49U855-D	8.55MHz
X902	SVFCSA200MK	2MHz

VARIABLE RESISTORS

Ref. No.	Part No.	Description
VR101	EVN58AA00B15	dB Ind. Adjustment, 100kΩ (B)
VR102	EVN58AA00B14	Pulse Count Adjustment, 10kΩ (B)
VR103	EVN58AA00B54	Pilot Cancel Adjustment, 50kΩ (B)
VR303, 304 [EGA] only	EVN58AA00B54	Sparation Adjustment, 50kΩ (B)
VR303, 304 [EGA] except	EVN58AA00B15	Sparation Adjustment, 100kΩ (B)

THERMISTERS

Ref. No.	Part No.	Description
TH1 [EGA] only	ERTD2ZHL333S	33kΩ
TH301	ERTD2ZHL333S	33kΩ
TH902 [EGA] only	ERTD2ZHL332S	3.3kΩ

COMPONENT COMBINATION

Ref. No.	Part No.	Description
Z901	EXBP84104K	100kΩ (X4)

LIQUID CRYSTAL PANEL

Ref. No.	Part No.	Description
LCD	EDD092C31A2E	FM IF Band. Signal, Frequency Display

LAMPS

Ref. No.	Part No.	Description
PL1 ⚠	XAMS4S150B	Computer Quartz DC Ind. (8V, 1.0A)
PL2, 3 ⚠	XAMS11S150	LCD Ind. (8V, 200mA)

FUSE

Ref. No.	Part No.	Description
F1 ⚠	XBA2C10TRO	250V, T 1.0A

SWITCHES

Ref. No.	Part No.	Description
S1 ~ 18	SSG13	CH 1 ~ 8, FM, AM, Tuning
S20 ⚠	SSH183	Power Source
S21 ⚠	SSR187	Voltage Selector
S701 ⚠	SSH1057	Main Power Source

CABINET and CHASSIS PARTS

Ref. No.	Part No.	Description
1	SGU187	Tinted Glass (1)
2	SHG6131	Rubber (2)
3	SHR9575	Spacer (2)
4 ○	SUB51-2	Hinge, Right (1)
4 Ⓚ	SUB51	Hinge, Right (1)
5	SUE23-1	Holder, Tinted Glass (1)
6	SUB57	Hinge, Tinted Glass (1)
7	SUB55	Hinge, Tinted Glass (1)
8	SUS223	Spring, Tinted Glass (1)
9 ○	SGXTG7-SN	Ornament (1)
9 Ⓚ	SGXTG7-KN	Ornament (1)
10	SHG6129	Spacer, Button (1)
11 ○	SBC639-1	Button, Tinted Glass (1)
11 Ⓚ	SBC639	Button, Tinted Glass (1)
12 [PA, PE] only ○	SGWTG7-SP	Front Panel, Ass'y (Silver Type) (1)
12 [other] ○	SGWTG7-SE	Front Panel, Ass'y (Silver Type) (1)
12 [PA, PE] only (K)	SGWTG7-KP	Front Panel, Ass'y (Black Type) (1)
12 [other] Ⓚ	SGWTG7-KE	Front Panel, Ass'y (Black Type) (1)
13	SUE25-1	Holder, Tinted Glass (1)
14	SUB63	Gear (1)
15	SUB59	Gear (2)
16	SUB65	Gear (1)
17 ○	SUB53-2	Hinge, Left (1)
17 Ⓚ	SUB53	Hinge, Left (1)
18 ○	SGXTG7-SN1	Ornament (1)
18 Ⓚ	SGXTG7-KN1	Ornament (1)
19	SUW2143	Bracket (4)
20	SUW2826	Bracket, L.C.D. (1)
21	SHR9715	Case, L.C.D. (1)
22	SHG519	Rubber, L.C.D. (1)
23	SDU225-2	Tinted Cover, L.C.D. (1)
24	SDU242-1	Filter, L.C.D. (1)
25	SUW2145	Bracket, L.C.D. (1)
26	SMP367	Case, L.C.D. (1)
27	SHG6354	Rubber (1)
28	SHG6351	Rubber (1)
29	SMP369	Case (1)
30	SUW2823	Bracket, Button (1)
31 ○	SBC637-2	Button, Preset Tuning (1)
31 Ⓚ	SBC637-4	Button, Preset Tuning (1)
32 ○	SGUTG7-SN	Transparent Cover (1)
32 Ⓚ	SGUTG7-KN	Transparent Cover (1)
33	SGX7627	Ornament (1)
34	SHR415	Lock Pin (2)
35 ○	SGKTG7-SN	Ornament (1)
35 Ⓚ	SGKTG7-KN	Ornament (1)
36	SBC627	Button, Power Switch (1)
37 [E]	SKUTG7-SE	Bottom Board (1)
37 [EK]	SKUTG7-SK	Bottom Board (1)
37 [PA, PE]	SKUTG7-SL	Bottom Board (1)
37 [other]	SKUTG7-SX	Bottom Board (1)
38	SKL247-2	Foot (4)
39	SJS6513	Socket, DIN (1)
40	SJS9230	Socket, Power Source (1)
41	SJF8611N	Terminal Board (1)
42 [EGA, XL] only	SGPTG7-SL	Rear Panel (1)
42 [other]	SGPTG7-SE	Rear Panel (1)
43 ○	SKCTG7-SE	Cabinet (1)
43 Ⓚ	SKCTG7-KE	Cabinet (1)
44	SMN1919	Bracket, Tap Switch (1)
45	SBC527	Button, Tap Switch (1)
46 [EGA, XL] only	SHR127	Bushing, AC Cord (1)
47 [XL] ⚠ only	RJA79ZA-K	AC Cord (1)
47 [EGA] ⚠ only	SJA153	AC Cord (1)
48	SJT347	Holder, Fuse (2)
49 [EGA] only	SMC1015	Shield Cover (1)
50 [EGA] only	SMX681	Insulation Plate (2)

Ref. No.	Part No.
SCREWS	
N1 ○	SNE208
N1 Ⓚ	SNE208
N2 Ⓢ	XTB3+
N3 Ⓢ	XTB3+
N4 Ⓢ	XTB3+
N5	XTB3+
N6 Ⓢ	XSN3+
N7 Ⓢ	XSN3+
N8	XTB3+
N9	XTBS3
N10 Ⓢ	XTB3+
N11 Ⓢ	XTB3+
N12	SNE205
N13 ○	SNE209
N13 Ⓚ	SNE209
N14 Ⓢ	XSN3+
N15 [EGA] only Ⓢ	XTB3+
WASHERS	
N20 Ⓢ	XWA3B
N21 Ⓢ	XWG3
N22 Ⓢ	XWT4
N23 Ⓢ	XWA3B
STOP RING	
N30 Ⓢ	XUC3F
ACCESSORIES	
A1 [EK] ⚠	SFDAC
A1 [PA, PE] ⚠	SJA168
A1 [E, EH, EB, EF, PC, XA] ⚠	SFDAC
A2	SJP224
A3 [EGA] only	SSA901
A3 [other]	SSA267
A4 [EGA] except	TJB525
A5 [EGA] except	SJSA68
A6 [EGA] except	SJSA74
A7 [XA, PC] ⚠ only	SJP521
A8 [PA, PE] ⚠ only	RJP120
A9	SSA611
A10	SMA231
A11	SMA233
A12	XTN3+
A13 [EGA]	SQF122
A13 [PA, PE]	SQF121
A13 [other]	SQF121
PACKING PARTS	
P1 ○	SPP699
P1 Ⓚ	SPP649
P2 [XL] only	SPS351
P2 [other]	SPS351
P3 [XL] only	SPS352
P3 [other]	SPS352
P4 [EF]	SPG493
P4 [XL]	SPG491
P4 [EK] ○	SPG491
P4 [EK] Ⓚ	SPG493
P4 [other]	SPEG49
P4 [other] Ⓚ	SPG491
P5 Ⓚ	SGK141

lue
68K
70K
10K
80K
20K

Ref. No.	Part No.	Value
R969	ERDS2TJ223	22K
R970	ERDS2TJ100	10
R971, 972 Ⓢ	ERD25TJ104	100K
R973	ERDS2TJ153	15K
R974 Ⓢ	ERD25FJ272	2.7K

Value
0.01
0.01
0.01
15P
470P
0.047
0.022
33
0.01
0.022
0.01
1P
0.01
100
0.022
0.001
0.022
100
33
1
390P
10
0.47
0.22
10
5600P
10
2200P
2200P
470
0.01
0.022
3.3
0.018
0.027
0.015
100
33
10
680P

Ref. No.	Part No.	Value
C336 [EGA] Ⓢ except	ECCD1H121K	120P
C337 Ⓢ	ECCD1H220KC	22P
C401	ECEA1HUR47	0.47
C701	ECEA1EU471	470
C702	ECEA1EU102	1000
C703	ECEA1VU102	1000
C704	ECEA1EU331	330
C705	ECEA1AU101	100
C706, 707 Ⓢ	ECKD2H102ZF	0.001
C708	ECEA1VU221	220
C709, 710	ECEA1EU471	470
C711	ECEA1AU101	100
C712, 713 Ⓢ	ECKD1H103ZF	0.01
C714	ECEA1AU101	100
C715	ECEA1CU100	10
C716, 717 Ⓢ	ECKD1H103ZF	0.01
C718	ECEA1EU101	100
C901 Ⓢ	ECKD1H103ZF	0.01
C902 Ⓢ	ECEA50MR47R	0.47
C904	ECEA1CU330	33
C905	ECEA1EU101	100
C906	ECEA1CU470	47
C907	ECQM1H104KV	0.1
C908 Ⓢ	ECKD1H103ZF	0.01
C909 Ⓢ	ECKD1H223ZF	0.022
C910, 911 Ⓢ	ECKD1H103ZF	0.01
C913 Ⓢ	ECKD1H103ZF	0.01
C914	ECEA1AU101	100
C915, 916 Ⓢ	ECCD1H100KC	10P
C917 Ⓢ	ECCD1H181K	180P
C918 Ⓢ	ECCD1H270KC	27P
C920, 921	EECW2R3A3R3	3.3
C923 Ⓢ	ECKD1H103ZF	0.01
C924	ECEA0JU102	1000
C926, 927 Ⓢ	ECKD1H103ZF	0.01
C928 Ⓢ	ECKD1H103ZF	0.01
C929	ECEA1CU100	10
C930	ECEA1HUR47	0.47
C931	ECEA1CU330	33
C932, 933 Ⓢ	ECKD1H103ZF	0.01
C935, 936 Ⓢ	ECKD1H103ZF	0.01
C938	ECEA1CU221	220
C939, 940 Ⓢ	ECCD1H331K	330
C950, 951 Ⓢ	ECKD1H102ZF	0.001

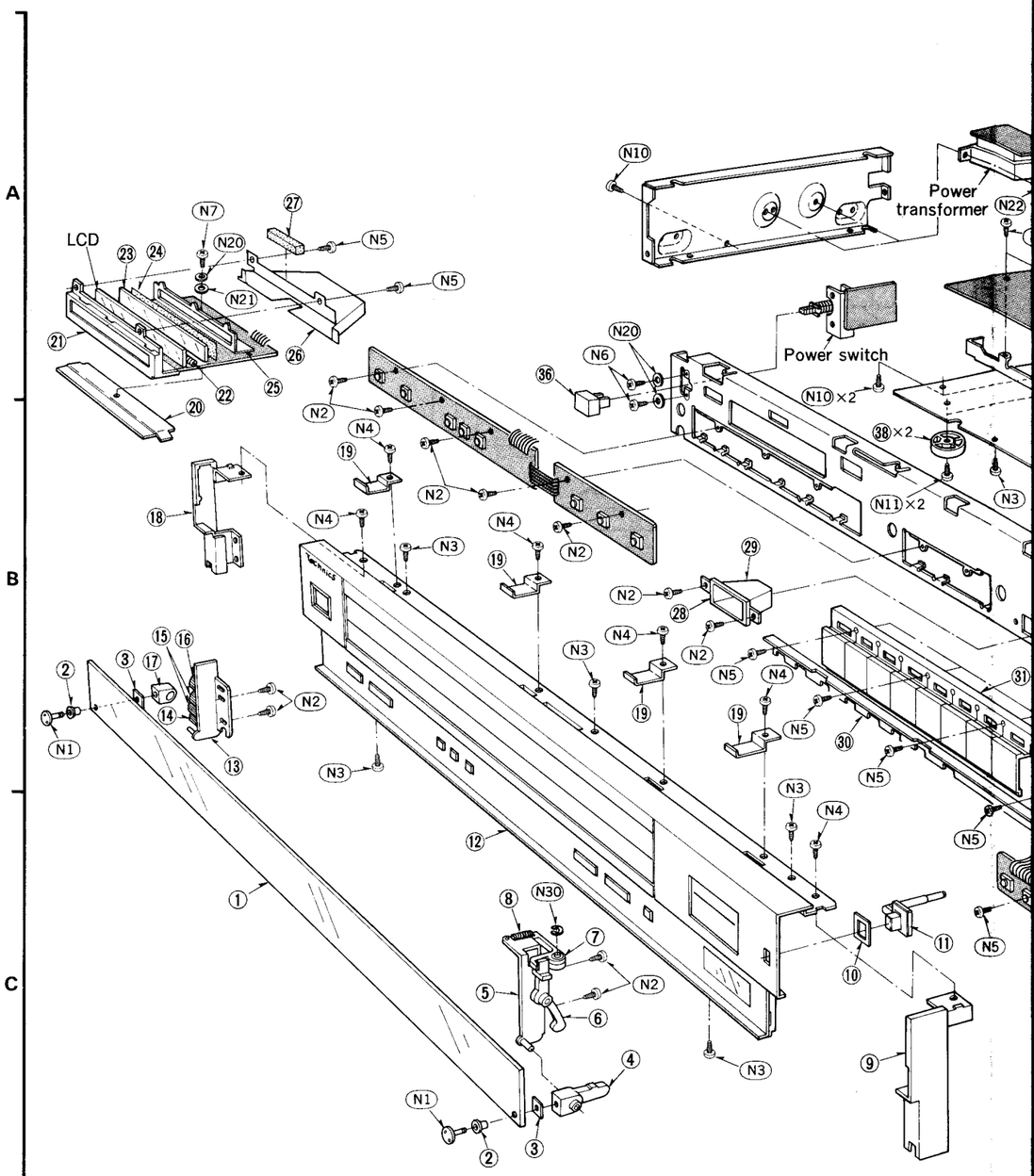
ef. No.	Part No.	Description
S		
4	SLD4P81	FM Antenna
	SLQAN40G1-P	Choke
3, 105 205	SLQZ12G1-D	Choke
	SLO4P35	FM OSC
	SLA4P81	FM Antenna
7 [EGA] only	SLQZ12G1-D	Choke
001	SLQX101-2D	Choke
204	ELEA821KA	Choke
	SLA2B1-P	AM Antenna
	SLO2B7-P	AM OSC
EGA] only	SLQZ12G1-D	Choke
	SLM1C57-Z	19kHz Filter
GA] only	SLM1C85-P	FM Detector Filter
ther]	SLM1C83-P	FM Detector Filter
GA] only	SLM1C87-P	FM Detector Filter
ther]	SLM1C81-P	FM Detector Filter
51 only	SLQX400-D	Choke
ABLE RESISTORS		
	ECV1ZW06X32E	Trimmer, FM OSC
	ECRHA010A11	Trimmer, AM OSC

Ref. No.	Part No.	Description
TRANSFORMERS		
T1	SLI4C109	FM IF
T101	SLI4B515-Z	FM IF
T102	SLI4C115-P	FM IF
T103	SLI4C117-P	FM IF
T104	SLI4C123-P	FM IF
T105	SLI4C125-P	FM IF
T201	SLI2B103-M	AM IF
T701 ⚠	SLT5K167-H	Power Source
CERAMIC FILTERS		
CF101 [EGA] except	SVFE107MM-A	FM, 10.7MHz, (Red)
	SVFE107MM-B	FM, 10.675MHz (Blue)
	SVFE107MM-C	FM, 10.725MHz (Orange)
	SVFE107MM-D	FM, 10.650MHz (Black)
CF102 [EGA] except	SVFE107MX2-A	FM, 10.7MHz, (Red)
	SVFE107MX2-B	FM, 10.675MHz (Blue)
	SVFE107MX2-C	FM, 10.725MHz (Orange)
	SVFE107MX2-D	FM, 10.650MHz (Black)
CF103, 104 [EGA] except	SVFE107MZ2-A	FM, 10.7MHz, (Red)
	SVFE107MZ2-B	FM, 10.675MHz (Blue)
	SVFE107MZ2-C	FM, 10.725MHz (Orange)
	SVFE107MZ2-D	FM, 10.650MHz (Black)
CF101 ~ 104 [EGA] only	SVFE107MZ2-A	FM, 10.7MHz, (Red)
	SVFE107MZ2-B	FM, 10.675MHz (Blue)
	SVFE107MZ2-C	FM, 10.725MHz (Orange)
	SVFE107MZ2-D	FM, 10.650MHz (Black)
	(Use pair ranks as same as CF101, CF102, CF103 and CF104)	
CF201	SVFSFP450HT	AM, 450kHz
CRYSTALS		
X101	SVQ49U313-D	31.3MHz
X901	SVQ49U855-D	8.55MHz
X902	SVFCSA200MK	2MHz
VARIABLE RESISTORS		
VR101	EVN58AA00B15	dB Ind. Adjustment, 100kΩ (B)
VR102	EVN58AA00B14	Pulse Count Adjustment, 10kΩ (B)
VR103	EVN58AA00B54	Pilot Cancel Adjustment, 50kΩ (B)
VR303, 304 [EGA] only	EVN58AA00B54	Sparation Adjustment, 50kΩ (B)
VR303, 304 [EGA] except	EVN58AA00B15	Sparation Adjustment, 100kΩ (B)
THERMISTERS		
TH1 [EGA] only	ERTD2ZHL333S	33kΩ
TH301	ERTD2ZHL333S	33kΩ
TH902 [EGA] only	ERTD2ZHL332S	3.3kΩ
COMPONENT COMBINATION		
Z901	EXBP84104K	100kΩ (X4)
LIQUID CRYSTAL PANEL		
LCD	EDD092C31A2E	FM IF Band. Signal, Frequency Display
LAMPS		
PL1 ⚠	XAMS4S150B	Computer Quartz DC Ind. (8V, 1.0A)
PL2, 3 ⚠	XAMS11S150	LCD Ind. (8V, 200mA)
FUSE		
F1 ⚠	XBA2C10TRO	250V, T 1.0A
SWITCHES		
S1 ~ 18	SSG13	CH1 ~ 8, FM, AM, Tuning
S20 ⚠	SSH183	Power Source
S21 ⚠	SSR187	Voltage Selector
S701 ⚠	SSH1057	Main Power Source

Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
1	SGU187	Tinted Glass (1)
2	SHG6131	Rubber (2)
3	SHR9575	Spacer (2)
4 ○	SUB51-2	Hinge, Right (1)
4 Ⓚ	SUB51	Hinge, Right (1)
5	SUE23-1	Holder, Tinted Glass (1)
6	SUB57	Hinge, Tinted Glass (1)
7	SUB55	Hinge, Tinted Glass (1)
8	SUS223	Spring, Tinted Glass (1)
9 ○	SGXTG7-SN	Ornament (1)
9 Ⓚ	SGXTG7-KN	Ornament (1)
10	SHG6129	Spacer, Button (1)
11 ○	SBC639-1	Button, Tinted Glass (1)
11 Ⓚ	SBC639	Button, Tinted Glass (1)
12 [PA, PE] only ○	SGWTG7-SP	Front Panel, Ass'y (Silver Type) (1)
12 [other] ○	SGWTG7-SE	Front Panel, Ass'y (Silver Type) (1)
12 [PA, PE] only (K)	SGWTG7-KP	Front Panel, Ass'y (Black Type) (1)
12 [other] Ⓚ	SGWTG7-KE	Front Panel, Ass'y (Black Type) (1)
13	SUE25-1	Holder, Tinted Glass (1)
14	SUB63	Gear (1)
15	SUB59	Gear (2)
16	SUB65	Gear (1)
17 ○	SUB53-2	Hinge, Left (1)
17 Ⓚ	SUB53	Hinge, Left (1)
18 ○	SGXTG7-SN1	Ornament (1)
18 Ⓚ	SGXTG7-KN1	Ornament (1)
19	SUW2143	Bracket (4)
20	SUW2826	Bracket, L.C.D. (1)
21	SHR9715	Case, L.C.D. (1)
22	SHG519	Rubber, L.C.D. (1)
23	SDU225-2	Tinted Cover, L.C.D. (1)
24	SDU242-1	Filter, L.C.D. (1)
25	SUW2145	Bracket, L.C.D. (1)
26	SMP367	Case, L.C.D. (1)
27	SHG6354	Rubber (1)
28	SHG6351	Rubber (1)
29	SMP369	Case (1)
30	SUW2823	Bracket, Button (1)
31 ○	SBC637-2	Button, Preset Tuning (1)
31 Ⓚ	SBC637-4	Button, Preset Tuning (1)
32 ○	SGUTG7-SN	Transparent Cover (1)
32 Ⓚ	SGUTG7-KN	Transparent Cover (1)
33	SGX7627	Ornament (1)
34	SHR415	Lock Pin (2)
35 ○	SGKTG7-SN	Ornament (1)
35 Ⓚ	SGKTG7-KN	Ornament (1)
36	SBC627	Button, Power Switch (1)
37 [E]	SKUTG7-SE	Bottom Board (1)
37 [EK]	SKUTG7-SK	Bottom Board (1)
37 [PA, PE]	SKUTG7-SL	Bottom Board (1)
37 [other]	SKUTG7-SX	Bottom Board (1)
38	SKL247-2	Foot (4)
39	SJS6513	Socket, DIN (1)
40	SJS9230	Socket, Power Source (1)
41	SJF8611N	Terminal Board (1)
42 [EGA, XL] only	SGPTG7-SL	Rear Panel (1)
42 [other]	SGPTG7-SE	Rear Panel (1)
43 ○	SKCTG7-SE	Cabinet (1)
43 Ⓚ	SKCTG7-KE	Cabinet (1)
44	SMN1919	Bracket, Tap Switch (1)
45	SBC527	Button, Tap Switch (1)
46 [EGA, XL] only	SHR127	Bushing, AC Cord (1)
47 [XL] ⚠ only	RJA79ZA-K	AC Cord (1)
47 [EGA] ⚠ only	SJA153	AC Cord (1)
48	SJT347	Holder, Fuse (2)
49 [EGA] only	SMC1015	Shield Cover (1)
50 [EGA] only	SMX681	Insulation Plate (2)

Ref. No.	Part No.	Description
SCREWS		
N1 ○	SNE2083-1	Tapping (Silver Type) (2)
N1 Ⓚ	SNE2083	Tapping (Black Type) (2)
N2 Ⓢ	XTB3 + 8BFZ	Tapping, ⊕3×8 (15)
N3 Ⓢ	XTB3 + 8BFZ	Tapping, ⊕3×8 (7)
N4 Ⓢ	XTB3 + 8BFZ	Tapping, ⊕3×8 (10)
N5	XTB3 + 8GFZ	Tapping, ⊕3×8 (14)
N6 Ⓢ	XSN3 + 6S	⊕3×6 (2)
N7 Ⓢ	XSN3 + 8S	⊕3×8 (1)
N8	XTB3 + 8F	Tapping, ⊕3×8 (2)
N9	XTBS3 + 8BFZ1	Tapping with Detent, ⊕3×8 (3)
N10 Ⓢ	XTB3 + 8BFZ	Tapping, ⊕3×8 (15)
N11 Ⓢ	XTB3 + 12BFZ	Tapping, ⊕3×12 (4)
N12	SNE2053	(1)
N13 ○	SNE2095-4	(Silver Type) (4)
N13 Ⓚ	SNE2095-5	(Black Type) (4)
N14 Ⓢ	XSN3 + 6BVS	⊕3×6 (4)
N15 [EGA] only Ⓢ	XTB3 + 8BFZ	Tapping, ⊕3×8 (2)
WASHERS		
N20 Ⓢ	XWA3B	Spring, $\phi 3$ (3)
N21 Ⓢ	XWG3	Plain, $\phi 3$ (1)
N22 Ⓢ	XWT4	Plain, $\phi 4$ (2)
N23 Ⓢ	XWA3BFZ	Spring, $\phi 3$ (4)
STOP RING		
N30 Ⓢ	XUC3FT	Type E (1)
ACCESSORIES		
A1 [EK] ⚠	SFDAC05G02	AC Cord (1)
A1 [PA, PE] ⚠	SJA168	AC Cord (1)
A1 [E, EH, EB, EF, PC, XA] ⚠	SFDAC05E02	AC Cord (1)
A2	SJP2249	Cord, Stereo Pin-Type Connection (1)
A3 [EGA] only	SSA901	FM Antenna Cord (1)
A3 [other]	SSA267-1	FM Antenna Cord (1)
A4 [EGA] except	TJB525102	Plug, 300Ω — 75Ω Impedance Conversion (1)
A5 [EGA] except	SJSA68-1	Plug, F-Type/Ring (Large) (1)
A6 [EGA] except	SJSA74	Plug, Coaxial, (w/Bind Band) for "5C-2V". (1)
A7 [XA, PC] only ⚠	SJP5213-1	Plug Adaptor, AC Power (1)
A8 [PA, PE] only ⚠	RJP120ZBS	Plug Adaptor, AC Power (1)
A9	SSA611-1	AM Loop Antenna (1)
A10	SMA231	Holder (B), Loop Antenna (1)
A11	SMA233-1	Holder (A), Loop Antenna (1)
A12	XTN3 + 10AFZ	Screw, Loop Antenna Holder (2)
A13 [EGA]	SQF12215	Instruction Book (1)
A13 [PA, PE]	SQF12124	Instruction Book (1)
A13 [other]	SQF12123	Instruction Book (1)
PACKING PARTS		
P1 ○	SPP699	Polyethylene Bag (1)
P1 Ⓚ	SPP649	Polyethylene Bag (1)
P2 [XL] only	SPS3519-1	Pad, Left Side (1)
P2 [other]	SPS3519-3	Pad, Left Side (1)
P3 [XL] only	SPS3521-3	Pad, Right Side (1)
P3 [other]	SPS3521-5	Pad, Right Side (1)
P4 [EF]	SPG4934	Carton Box (1)
P4 [XL]	SPG4918	Carton Box (1)
P4 [EK] ○	SPG4917	Carton Box (1)
P4 [EK] Ⓚ	SPG4933	Carton Box (1)
P4 [other] ○	SPEG4915	Carton Box (1)
P4 [other] Ⓚ	SPG4919	Carton Box (1)
P5 Ⓚ	SGK1413	Label (2)

EXPLODED VIEW



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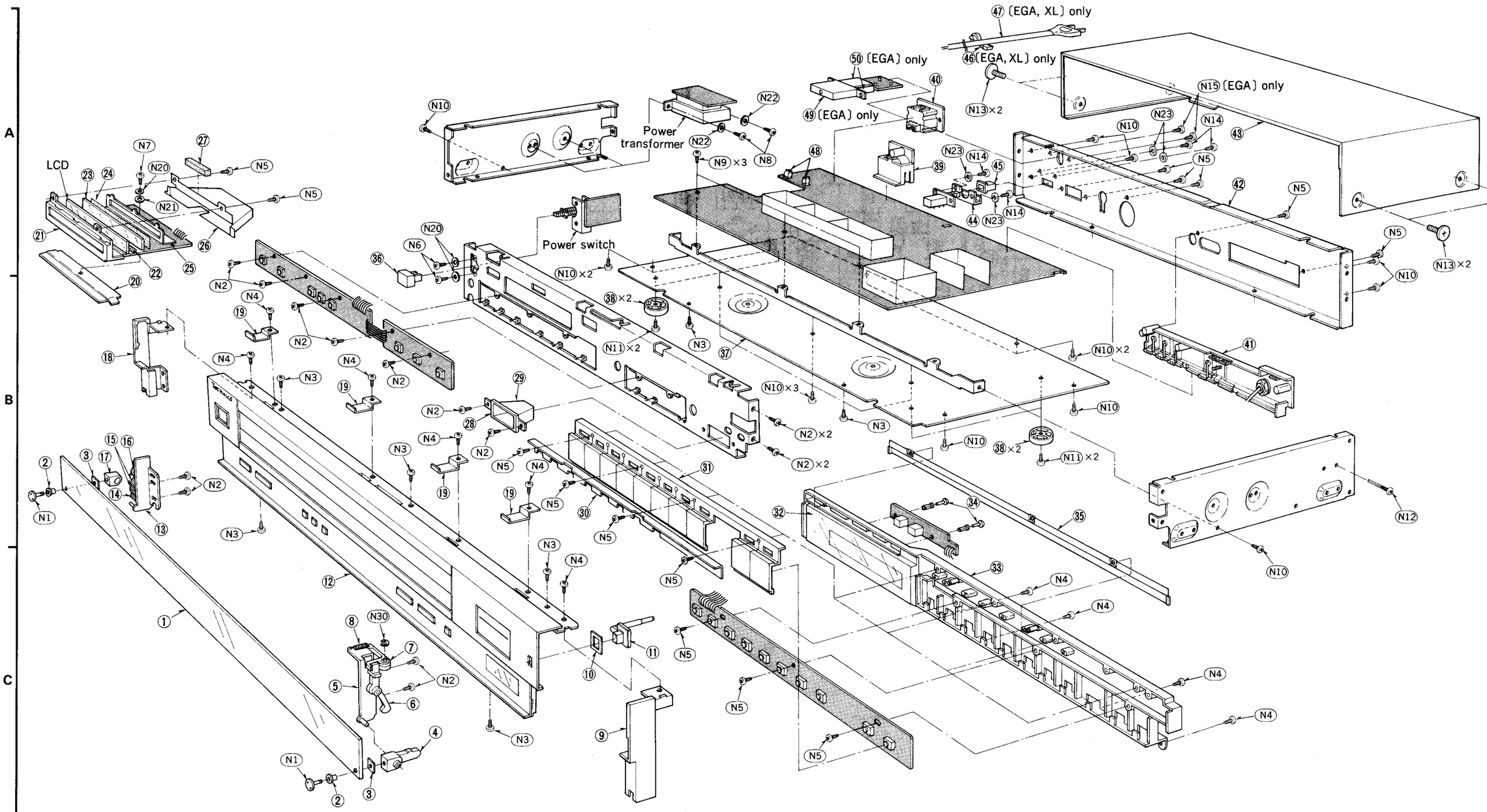
- * [E] is available in Scandinavia and Switzerland.
- * [EK] is available in United Kingdom.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XL] is available in Australia.
- * [EGA] is available in F. R. Germany.
- * [EH] is available in Holland.
- * [EB] is available in Belgium.
- * [EF] is available in France.
- * [PC] is available in European Audio Club.
- * [PA] is available in Far East PX.
- * [PE] is available in European Military.

Part No.	Description
NE2083-1	Tapping (Silver Type) (2)
NE2083	Tapping (Black Type) (2)
TB3 + 8BFZ	Tapping, ⊕3×8 (15)
TB3 + 8BFZ	Tapping, ⊕3×8 (7)
TB3 + 8BFZ	Tapping, ⊕3×8 (10)
TB3 + 8GFZ	Tapping, ⊕3×8 (14)
SN3 + 6S	⊕3×6 (2)
SN3 + 8S	⊕3×8 (1)
TB3 + 8F	Tapping, ⊕3×8 (2)
TBS3 + 8BFZ1	Tapping with Detent, ⊕3×8 (3)
TB3 + 8BFZ	Tapping, ⊕3×8 (15)
TB3 + 12BFZ	Tapping, ⊕3×12 (4)
NE2053	(1)
NE2095-4	(Silver Type) (4)
NE2095-5	(Black Type) (4)
SN3 + 6BVS	⊕3×6 (4)
TB3 + 8BFZ	Tapping, ⊕3×8 (2)
VA3B	Spring, $\phi 3$ (3)
VG3	Plain, $\phi 3$ (1)
VT4	Plain, $\phi 4$ (2)
VA3BFZ	Spring, $\phi 3$ (4)
IC3FT	Type E (1)
ES	
FDAC05G02	AC Cord (1)
A168	AC Cord (1)
FDAC05E02	AC Cord (1)
P2249	Cord, Stereo Pin-Type Connection (1)
A901	FM Antenna Cord (1)
A267-1	FM Antenna Cord (1)
B525102	Plug, 300Ω ⟵ 75Ω Impedance Conversion (1)
SA68-1	Plug, F-Type/Ring (Large) (1)
SA74	Plug, Coaxial, (w/Bind Band) for "5C-2V". (1)
P5213-1	Plug Adaptor, AC Power (1)
P120ZBS	Plug Adaptor, AC Power (1)
A611-1	AM Loop Antenna (1)
A231	Holder (B), Loop Antenna (1)
A233-1	Holder (A), Loop Antenna (1)
N3 + 10AFZ	Screw, Loop Antenna Holder (2)
F12215	Instruction Book (1)
F12124	Instruction Book (1)
F12123	Instruction Book (1)
RTS	
P699	Polyethylene Bag (1)
P649	Polyethylene Bag (1)
S3519-1	Pad, Left Side (1)
S3519-3	Pad, Left Side (1)
S3521-3	Pad, Right Side (1)
S3521-5	Pad, Right Side (1)
G4934	Carton Box (1)
G4918	Carton Box (1)
G4917	Carton Box (1)
G4933	Carton Box (1)
EG4915	Carton Box (1)
G4919	Carton Box (1)
K1413	Label (2)

EXPLODED VIEW



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* [PA] is available in Far East PX.
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ORDER NO. HAD84062801C9-A

QUARTZ Synthesizer
FM/AM Stereo Tuner

ST-G7

DEUTSCH

- This booklet contains the specifications and adjusting procedures for ST-G7, written in German, French and Spanish.
- File this manual together with the ST-G7 service manual (Order No. HAD84062801C9).

- Das vorliegende Büchlein enthält die technische Daten und Justierverfahren für den ST-G7 in deutscher, französischer und spanischer Sprache.
- Bewahren Sie das Büchlein zusammen mit der Bedienungsanleitung für den ST-G7 auf (Bestell-Nr. HAD84062801C9).

- Cette brochure contient les spécifications et les procédures de mises au point pour le ST-G7, écrites en allemand, en français et en espagnol.
- Classer ce manuel en même temps qu'avec le manuel de service du ST-G7 (N° d'ordre: HAD84062801C9).

- Este librito contiene la especificaciones y procedimientos de ajuste para ST-G7, escritos en alemán, francés y español.
- Guardar este manual juntamente con el manual de servicio de ST-G7 (Pedido N°. HAD84062801C9).

DEUTSCH

■ TECHNISCHE DATEN

(Die technischen Daten können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ UKW-TUNERTEIL

Wellenbereich	87,50 ~ 108,00 MHz 87,525~108,025 MHz (+25 kHz shift)
Eingangsempfindlichkeit	1,2 µV (nutzbar nach IHF)
S/R 30 dB	1,1 µV (75 Ω)
S/R 26 dB	1,0 µV (75 Ω)
S/R 20 dB	0,9 µV (75 Ω)
Stereoumschaltschwelle bei 46 dB nach IHF	28 µV/75 Ω
Gesamtklirrfaktor	
Mono	0,01%
Stereo	0,02%
Dynamikbereich	116 dB
Frequenzgang	4 Hz ~ 18 kHz (+0,2 dB ~ −0,5 dB)
Trennschärfe bei Störsender	
normal ±400 kHz	55 dB
super narrow ±200 kHz	25 dB
Einfangverhältnis	1,0 dB
Spiegelfrequenz-Dämpfung bei 98 MHz	105 dB
ZF-Dämpfung bei 98 MHz	110 dB
Ansprechdämpfung auf Nebenfrequenzen bei 98 MHz	110 dB
MW-Unterdrückung	70 dB
Übersprechdämpfung	
1 kHz	65 dB
10 kHz	50 dB
Trägerrest	
19 kHz	−70 dB
38 kHz	−70 dB
Kanalabweichung (250 Hz ~ 6300 Hz)	±1,0 dB
Begrenzereinsatz	0,75 µV
Bandbreite	
ZF-Verstärker	180 kHz
UKW-Demodulator	1000 kHz
Antennenanschluß	75 Ω (unsymmetrisch)

■ MW-TUNERTEIL

Wellenbereiche	
(für Europa, Südafrika und Australien)	
	522~1629 kHz (9-kHz-schritte)
	530~1620 kHz (10-kHz-schritte)
(für Saudi-Arabien und die übrigen Länder)	
	531~1620 kHz (9-kHz-schritte)
	530~1620 kHz (10-kHz-schritte)
Eingangsempfindlichkeit (S/R 20 dB)	20 µV, 290 µV/m
Trennschärfe (±9 kHz)	55 dB
Spiegelfrequenz-Dämpfung bei 999 kHz	40 dB
ZF-Dämpfung bei 999 kHz	65 dB

■ ALLGEMEINE DATEN

Ausgangsspannung	0,6 V
Leistungsaufnahme	11W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T)	430 × 97,1 × 276 mm
Gewicht	4,1 kg

■ MESSUNGEN UND JUSTIERUNGEN

AM (MW)-EINSTELLUNG

*** Einstellungen und zu benutzende Geräte**

1. Elektronisches Voltmeter für Wechselstrom.
2. AM (MW)-Meßsender (AM-SG).
3. Bereichsschalter . . . . . AM
4. AM (MW)-Wellenverteilungs-Wahlschalter auf Position "9 kHz" stellen.
5. Netzspannung auf ihrem Sollwert halten.
6. Der Ausgang des Meßsenders darf nicht höher sein als unbedingt notwendig für eine gute Ablesung.
7. Einen nichtmetallischen Schraubenzieher für die Einstellungen verwenden.

Nr.	AM (MW)-MESSENDER ANSCHLUSS	AM (MW)-MESSENDER FREQUENZ	ANZEIGE-FREQUENZ DURCH VOR-EINSTELLUNG	VORBEREITUNG	ABGLEICHS-PUNKTE	ABGLEICHSVERFAHREN
	AM(MW)-ZF-ABGLEICH					
1	AM-MO über 200 pF Kondensator an den AM-Antennenanschluß anschließen, wie in Abb. 1 gezeigt. (Starker Eingang.)	450 kHz (450 Hz Modulat., 30%)	Kein Empfang	Wechselstrom-Voltmeter oder Oszillograph über den Ausgang "OUTPUT" anschließen.	T201 (1. IFT)	Die Eingangsfrequenz und die Einstellungspunkte so justieren, daß der Ausgang den maximalen Wert erreicht.
	AM (MW)-HF-ABGLEICH					
2	AM-MO über 200 pF Kondensator an den AM-Antennenanschluß anschließen, wie in Abb. 1 gezeigt. (Schwacher Eingang.)	522 kHz (400 Hz Modulat., 30%)	522 kHz	Wechselstrom-Voltmeter oder Oszillograph über den Ausgang "OUTPUT" anschließen.	L203 (Ant. Spule)	1. Auf max. Ausgang abgleichen. 2. Den Ferritkern von L203 mit einem Schraubendreher justieren.
3		612 kHz (400 Hz Modulat., 30%)	612 kHz		L202 (Ant. Spule)	1. Auf max. Ausgang abgleichen. 2. Den Ferritkern von L202 mit einem Schraubendreher justieren.
4		1503 kHz (400 Hz Modulat., 30%)	1503 kHz		CT201 (Ant. Trimmer)	1. Auf max. Ausgang abgleichen. 2. Die Schritte (2), (3) und (4) wiederholen, bis die Frequenz genau mit der Skalenanzeige übereinstimmt.

FM (UKW)-EINSTELLUNG

Anmerkung: UKW 2. ZFT (T102), UKW 2. ZF Filter (T104, T105) und UKW DET Filter (L302, L303) sind bereits justiert und bedürfen keiner Abstimmung.

*** Einstellungen und zu bentzenden Geräte**
1. UKW-Meßsender (FM-SG)
2. Klirrfaktor-Meßbrücke.
3. Oszillograph.
4. Elektronische Voltmeter für Wechsel-und Gleichstrom.
5. Signalfrequenzmesser (meßbar für 19 kHz und 108 MHz)
6. Bereichsschalter . . . . . FM
7. Den UKW-Betriebsartenschalter in die "mono" -Position stellen.
8. Die anderen Einstellungen sind gleich wie bei der MW-Justierung.
9. Den ZF-Bandwahlschalter in die "normal"-Position stellen.

*** Vorbereitung des UKW-Meßoszillators (UKW-MO)**
Die Normal-Eingangsleistung dieses Gerätes beträgt 60 dB (1 mV), 400Hz, 100% Modulation. (Wegen der Dämpfung bei Verwendung von Koaxialkabeln, muß die MO-Ausgangsleistung 6 dB oder mehr betragen: d.h. wenn die Eingangsleistung 60 dB beträgt, muß der MO-Ausgang 66 dB betragen.

* Beim Ändern der Frequenz wird die Stummabstimmung (Muting) automatisch eingeschaltet. Daher ist sie unbedingt auszuschalten, indem der UKW-Stummabstimm-Aus/SCAN-Pegel-Wahlschalter auf OFF gestellt wird. Zudem ist sicherzustellen, daß der UKW-ZF-Bandwahlschalter auf NORMAL eingestellt ist.

Nr.	FM (UKW)-MESSENDER ANSCHLUSS	FM (UKW)-MESSENDER FREQUENZ	ANZEIGE-FREQUENZ DURCH VOR-EINSTELLUNG	VORBEREITUNG	ABGLEICHS-PUNKTE	ABGLEICHSVERFAHREN
	ABGLEICH AUF MIN. VERZERRUNG IN STELLUNG UKW-MONO					
5	UKW-MO an den UKW-Antennenanschluß anschließen. (60 dB an den Antenneneingang anlegen.)	100,10 MHz (400 Hz Modulat. 100%)	100,10 MHz	Ein Gleichstrom-Voltmeter zwischen TP101 und TP102 über eine Drosselspule anschließen, wie in Abb. 2.	T101 (Diskriminator FT)	Den Kern von T101 so justieren, daß die gemessene Spannung im signallosen Zustand 0 mV im 300 mV Bereich beträgt.
6		100,10 MHz (400 Hz Modulat.)	100,10 MHz	Ein Oszillograph zwischen TP103 und Masse anschließen, Wie in Abb. 3.	T103 (UKW 3. ZFT)	1. Auf max. Ausgang abgleichen. 2. Den Ferritkern von T103 mit einem Schraubendreher justieren.
7				Wechselstrom-Voltmeter zwischen TP302 und Masse anschließen, wie in Abb. 4.	VR102 (Impulszählungs-Betriebsjustierung)	VR102 so justieren, daß die im Signalzustand gemessene Spannung im 300 mV-Bereich 0 mV beträgt.
	UKW-HF-ABGLEICH **TP901 mit einer Kurzschlußbrücke an TP902 kurzschließen (nur während der UKW-HF-Justierung), und diese Kurzschlußbrücke für alle anderen Justierungen entfernen.**					
8	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 5 gezeigt. (Schwacher Eingang)	87,50 MHz (400 Hz Modulat., 100%)	87,50 MHz	1. TP901 mit einer Kurzschlußbrücke an TP902 kurzschließen. 2. Gleichstrom-Voltmeter zwischen TP1 und Masse anschließen.	L6 (Osc. Spule)	1. L6 auf eine Anzeige am Gleichstrom-Röhrenvoltmeter von 3,0 V abstimmen.

Nr.	FM (MW)-MESSENDER ANSCHLUSS	FM (MW)-MESSENDER FREQUENZ	ANZEIGE-FREQUENZ DURCH VOR-EINSTELLUNG	VORBEREITUNG	ABGLEICHS-PUNKTE	ABGLEICHSVERFAHREN
	UKW-HF-ABGLEICH ● **TP901 mit einer Kurzschlußbrücke an alle anderen Justierungen entfernen.** **TP902 kurzschließen (nur während der UKW-HF-Justierung), und diese Kurzschlußbrücke für**					
9	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 6 gezeigt. (Schwacher Eingang)	90,10 MHz (400 Hz Modulat., 100%)	90,10 MHz	Oszillograph über den Ausgang "OUTPUT" anschießen.	L10 (Ant. Spule) L1 (Ant. Spule) L3 (Ant. Spule) L4 (Ant. Spule) T1 (UKW 1. ZFT)	1. Einen schwachen Eingang anlegen, bei dem Geräusch in der Ausgangswellenform enthalten ist. 2. So einstellen, daß die Ausgangswellenform vertikal symmetrisch wird. (Abb. 7) 3. Die Einstellung von (8), (9) und (10) wiederholen, bis die Frequenz mit der Skala übereinstimmt.
10		106,10 MHz (400 Hz) Modulat., 100%)	106,10 MHz		CT1 (Osc. Trimmer)	
	PILOTSIGNALUNTERDRÜCKUNGS-JUSTIERUNG					
11	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 8 gezeigt. (60 dB an den Antennenanschluß anlegen.) (Pilot 10% Mod. Stereo-Signal.)	100,10 MHz (400 Hz Modulat., 0%) (L + R)	100,10 MHz	Oszillograph zwischen TP301 und Masse anschließen.	L301 (Pilot-Filter) VR103 (Pilotsignalunter-drückungs-Justierung)	Die Justierung so vornehmen, daß die Ausgangswellenform minimal wird, wie in Abb. 9 gezeigt.
	STEREOVERZERRUNGS-JUSTIERUNG					
12	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 10 gezeigt. (60 dB an den Antennenanschluß anlegen.) (Pilot 10% Mod. Stereo-Signal)	100,10 MHz (90% Mod mit 400 Hz) (L-oder R-Betrieb)	100,10 MHz	Verzerrungs-Analysator durch Tiefpassfilter an "OUTPUT"-Anschlüsse des Gerätes anschließen. (fc = 15 kHz — 19 kHz)	T1 (Pilotsignalunter-drückungs-Justierung) T103 (Impulszählungs-Betriebsjustierung)	Den Kern von T1 und T103 so abgleichen, daß die Verzerrung des rechten Kanals mininal ist.
	TRENNUNGS-JUSTIERUNG					
13	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 11 gezeigt. (60 dB an den Antennenanschluß anlegen.) (Pilot 10% Mod. Stereo-Signal)	100,10 MHz (1 kHz Modulat., 100%) (L-oder R-Betrieb)	100,10 MHz	Wechselstrom-Röhren-voltmeter durch Tiefpassfilter an die "OUTPUT" Anschlüsse des Gerätes anschließen. (fc = 15 kHz — 19 kHz)	VR303 VR304 (Trennungs-Justierung)	1. VR303 so justieren daß der R-Ausgang minimal wird, wenn der Stereo-Modulator im L-Zustand (L-Kanal-Modulation)ist. 2. VR304 so justieren, daß der L-Ausgang minimal wird, wenn der Stereo-Modulator im R-Zustand (R-Kanal-Modulation) ist.
	SIGNALSTÄRKEPEGEL-JUSTIERUNG					
14	UKW-MO an den UKW-Antennenanschluß anschließen. (50 dB an den Antennenanschluß anlegen.)	100,10 MHz (400 Hz Modulat., 30%)	100,10 MHz	—	VR101 (Signal-stärkepegel)	1. Die Flüssigkristallanzeige von Frequenz ±0 dB durch Drücken der UKW-Signal-taste ändern. 2. VR101 so abgleichen, daß 50 dB angezeigt wird. Über-prüfen, daß der Signalstärke-pegel 22 — 38 dB beträgt, wenn die Eingangsleistung 30 dB beträgt.

FRANÇAIS

■ CARACTÉRISTIQUES (Sujet à changement sans avertissement préalable.)

(DIN 45 500)

■ SECTION SYNTONISATEUR FM

Gamme de fréquence	87,50~108,00 MHz 87.525~108.025 MHz (+25 kHz shift)
Sensibilité	1,2 μV (IHF utilisable)
S/B 30 dB	1,1 μV (75Ω)
S/B 26 dB	1,0 μV (75Ω)
S/B 20 dB	0,9 μV (75Ω)
Sensibilité stéréo au seuil de 46 dB, IHF	28 μV/75Ω
Distorsion harmonique totale	
MONO	0,01%
STEREO	0,02%
Portée dynamique	116 dB
Réponse de fréquence	4 Hz~18 kHz, +0,2 dB~ −0,5 dB
Sélectivité alternée par canal	
normal ±400 kHz	55 dB
super narrow ±200 kHz	25 dB
Taux de capture	1,0 dB

Nr.	FM (MW)-MESSENDER ANSCHLUSS	FREQUENZ	ANZEIGE-FREQUENZ DURCH VOR-EINSTELLUNG	VORBEREITUNG	ABGLEICHS-PUNKTE	ABGLEICHSVERFAHREN
	UKW-HF-ABGLEICH ● **TP901 mit einer Kurzschlußbrücke an alle anderen Justierungen entfernen.** **TP902 kurzschließen (nur während der UKW-HF-Justierung), und diese Kurzschlußbrücke für**					
9	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 6 gezeigt. (Schwacher Eingang)	90,10 MHz (400 Hz Modulat., 100%)	90,10 MHz	Oszillograph über den Ausgang "OUTPUT" anschießen.	L10 (Ant. Spule) L1 (Ant. Spule) L3 (Ant. Spule) L4 (Ant. Spule) T1 (UKW 1. ZFT)	1. Einen schwachen Eingang anlegen, bei dem Geräusch in der Ausgangswellenform enthalten ist. 2. So einstellen, daß die Ausgangswellenform vertikal symmetrisch wird. (Abb. 7) 3. Die Einstellung von (8), (9) und (10) wiederholen, bis die Frequenz mit der Skala übereinstimmt.
10		106,10 MHz (400 Hz) Modulat., 100%)	106,10 MHz		CT1 (Osc. Trimmer)	
	PILOTSIGNALUNTERDRÜCKUNGS-JUSTIERUNG					
11	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 8 gezeigt. (60 dB an den Antennenanschluß anlegen.) (Pilot 10% Mod. Stereo-Signal.)	100,10 MHz (400 Hz Modulat., 0%) (L + R)	100,10 MHz	Oszillograph zwischen **TP301** und Masse anschließen.	L301 (Pilot-Filter) VR103 (Pilotsignalunter-drückungs-Justierung)	Die Justierung so vornehmen, daß die Ausgangswellenform minimal wird, wie in Abb. 9 gezeigt.
	STEREOVERZERRUNGS-JUSTIERUNG					
12	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 10 gezeigt. (60 dB an den Antennenanschluß anlegen.) (Pilot 10% Mod. Stereo-Signal)	100,10 MHz (90% Mod mit 400 Hz) (L-oder R-Betrieb)	100,10 MHz	Verzerrungs-Analysator durch Tiefpassfilter an "OUTPUT"-Anschlüsse des Gerätes anschließen. (fc = 15 kHz – 19 kHz)	T1 (Pilotsignalunter-drückungs-Justierung) T103 (Impulszählungs-Betriebsjustierung)	Den Kern von T1 und T103 so abgleichen, deß die Verzerrung des rechten Kanals mininal ist.
	TRENNUNGS-JUSTIERUNG					
13	UKW-MO an den UKW-Antennenanschluß anschließen, wie in Abb. 11 gezeigt. (60 dB an den Antennenanschluß anlegen.) (Pilot 10% Mod. Stereo-Signal)	100,10 MHz (1 kHz Modulat., 100%) (L-oder R-Betrieb)	100,10 MHz	Wechselstrom-Röhren-voltmeter durch Tiefpassfilter an die "OUTPUT" Anschlüsse des Gerätes anschließen. (fc = 15 kHz – 19 kHz)	VR303 VR304 (Trennungs-Justierung)	1. VR303 so justieren daß der R-Ausgang minimal wird, wenn der Stereo-Modulator im L-Zustand (L-Kanal-Modulation)ist. 2. VR304 so justieren, daß der L-Ausgang minimal wird, wenn der Stereo-Modulator im R-Zustand (R-Kanal-Modulation) ist.
	SIGNALSTÄRKEPEGEL-JUSTIERUNG					
14	UKW-MO an den UKW-Antennenanschluß anschließen. (50 dB an den Antennenanschluß anlegen.)	100,10 MHz (400 Hz Modulat., 30%)	100,10 MHz	—	VR101 (Signal-stärkepegel)	1. Die Flüssigkristallanzeige von Frequenz ±0 dB durch Drücken der UKW-Signal-taste ändern. 2. VR101 so abgleichen, daß 50 dB angezeigt wird. Über-prüfen, daß der Signalstärke-pegel 22 – 38 dB beträgt, wenn die Eingangsleistung 30 dB beträgt.

FRANÇAIS

■ CARACTÉRISTIQUES

(Sujet à changement sans avertissement préalable.)

(DIN 45 500)

■ SECTION SYNTONISATEUR FM

Gamme de fréquence	87,50~108,00 MHz 87.525~108.025 MHz (+25 kHz shift)
Sensibilité	1,2 μV (IHF utilisable)
S/B 30 dB	1,1 μV (75Ω)
S/B 26 dB	1,0 μV (75Ω)
S/B 20 dB	0,9 μV (75Ω)
Sensibilité stéréo au seuil de 46 dB, IHF	28 μV/75Ω
Distorsion harmonique totale	
MONO	0,01%
STEREO	0,02%
Portée dynamique	116 dB
Réponse de fréquence	4 Hz~18 kHz, +0,2 dB~ −0,5 dB
Sélectivité alternée par canal	
normal ±400 kHz	55 dB
super narrow ±200 kHz	25 dB
Taux de capture	1,0 dB
Rejection d'image à 98 MHz	105 dB
Rejection FI à 98 MHz	110 dB
Rejection de réponse parasite à 98 MHz	110 dB
Suppression AM	70 dB
Séparation stéréophonique	
1 kHz	65 dB
10 kHz	50 dB
Fuite de porteuse	
19 kHz	−70 dB
38 kHz	−70 dB
Equilibrage de canaux (250 Hz~6,300 Hz)	±1,0 dB
Point de limite	0,75 μV
Largeur de bande	
Amplificateur FI	180 kHz
Démodulateur FM	1000 kHz
Bornes d'antenne	75Ω (asymétrique)

■ SECTION SYNTONISATEUR AM

Gamme de fréquence	
(Pour l'Europe, l'Afrique du Sud et l'Australie)	522~1629 kHz (9 kHz par palier) 530~1620 kHz (10 kHz par palier)
(Pour l'Arabie Saoudite et les autres pays)	531~1620 kHz (9 kHz par palier) 530~1620 kHz (10 kHz par palier)
Sensibilité (S/B 20 dB)	20 μV, 290 μV/m
Sélectivité (±9 kHz)	55 dB
Réjection d'image à 999 kHz	40 dB
Réjection FI à 999 kHz	65 dB

■ DIVERS

Tension de sortie	0,6 V
Consommation	11W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 97,1 × 276 mm
Poids	4,1 kg

■ MESURAGES ET RÉGLAGES

RÉGLAGE DE AM

*** Réglage et équipement utilisé**

1. Voltmètres électronique de courant alternatif et de courant continu.
2. Générateur de signaux AM (AM-SG)
3. Sélecteur de gamme . . . . . AM
4. Régler le sélecteur d'attribution AM sur la position "9 kHz step".
5. Conserver la tension du secteur à la tension nominale.
6. Le signal du générateur ne doit pas être plus élevé qu'il n'est nécessaire pour obtenir une lecture de sortie.
7. Utiliser un tournevis non-métallique pour le réglage.

	GÉNÉRATEUR AM BRANCHEMENT	FRÉQUENCE	FRÉQUENCE D'AFFICHAGE PAR PRÉRÉGLAGE	PRÉPARATIFS	ÉLÉMENTS RÉGLÉS	PROCÉDURE DE RÉGLAGE
	RÉGLAGE DE IF-AM					
1	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 100 pF. Commun au châssis. (Entrée sous-puissante) (Se référer à la Fig. 1.)	450 kHz (modulé à 30% par 400 Hz)	Point sans signal	Voltmètre électronique à C. A. ou oscilloscope sur douille de sortie de l'appareil.	T201 (Transfor. FI) T202 (Transfor. FI)	1. Régler la fréquence d'entrée et les points de réglage de telle sorte que la sortie devienne maximale.
2	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 200 pF. Commun au châssis (Entrée faible) (Se référer à la Fig. 1)	522 kHz (modulé à 30% par 400 Hz)	522 kHz	Voltmètre électronique à C.A. oscilloscope sur douille de sortie de l'appareil.	L203 (Bobine Ant.)	1. Régler au maximum du signal de sortie. 2. Régler le noyau ferrite de L203 à l'aide d'un tournevis.
3		612 kHz (modulé à 30% par 400 Hz)	612 kHz		L202 (Bobine Ant.)	1. Régler au maximum du Signal de sortie. 2. Régler le noyau ferrite de L202 à l'aide d'un tournevis.
4		1503 kHz (Modulé à 30% par 400 Hz)	1503 kHz		CT201 (Trimmer Ant.)	1. Régler au maximum du signal de sortie. 2. Refaire les étapes (2), (3) et (4) jusqu'à ce que la fréquence s'aligne correctement avec l'affichage du cadran.

RÉGLAGE DE FM

Nota: Le 2ème transformateur de fréquence intermédiaire FM (T102), le 2ème filtre de fréquence intermédiaire FM (T104, T105) et le filtre de détection FM (L302, L303) ont déjà été mis au point et ne nécessitent donc aucun réglage.

*** Réglage et équipement utilisé**

1. Générateur de signaux FM (FM-SG)
2. Commande de réglage stéréophonique (ou vu-mètre de séparation).
3. Etalonneur de distorsion.
4. Oscilloscope.
5. Voltmètres électronique de courant alternatif et de courant continue.
6. Sélecteur d'entrée sur la position "FM".
7. Placer le sélecteur de mode FM sur la position "mono".
8. Les autres réglages sont les mêmes que pour la mise au point de l'amplitude modulée (AM).
9. Régler le sélecteur de bande de fréquence intermédiaire sur la position "normal".

*** Préparatifs pour le générateur de signaux FM (FM-SG).**

1. L'entrée normale de l'appareil est de 60 dB (1 mV), 400 Hz, modulation de 100%. (Du fait de l'atténuation, utiliser des câbles coaxiaux. La sortie du générateur de signaux devra être de plus de 6 dB. C'est-à-dire, que lorsque l'entrée est de 60 dB, la sortie du générateur de signaux devra être de 66 dB.)

* Lorsque la fréquence est modifiée, l'accord silencieux est automatiquement mis en marche. Aussi, s'assurer de mettre hors circuit avec le commutateur-sélecteur du niveau "OFF/SCAN" (Hors circuit/Exploration) d'accord silencieux FM (modulation de fréquence). En outre, s'assurer que la bande de fréquence intermédiaire (IF) FM soit sur "NORMAL".

GLEICHSVERFAHREN

zschlußbrücke für

en schwachen Eingang
gen, bei dem Geräusch in
Ausgangswellenform
halten ist.
einstellen, daß die
gangswellenform vertikal
metrisch wird. (Abb. 7)
Einstellung von (8), (9)
(10) wiederholen, bis die
quenz mit der Skala
reinstimmt.

tierung so vornehmen,
Ausgangswellenform
l wird, wie in Abb. 9

rn von T1 und T103
ichen, deß die
ung des rechten
mininal ist.

303 so justieren daß der
usgang minimal wird,
n der Stereo-Modulator
-Zustand (L-Kanal-
ulation)ist.
304 so justieren, daß der
usgang minimal wird,
n der Stereo-Modulator
-Zustand (R-Kanal-
ulation) ist.

Flüssigkristallanzeige
Frequenz ±0 dB durch
ken der UKW-Signal-
ändern.
01 so abgleichen, daß
B angezeigt wird. Über-
en, daß der Signalstärke-
22 – 38 dB beträgt,
die Eingangsleistung
B beträgt.

	0,01%
	0,02%
	116 dB
Hz,	+0,2 dB~ −0,5 dB
	55 dB
	25 dB
	1,0 dB

Rejection d'image à 98 MHz	105 dB
Rejection FI à 98 MHz	110 dB
Rejection de réponse parasite à 98 MHz	110 dB
Suppression AM	70 dB
Séparation stéréophonique	
1 kHz	65 dB
10 kHz	50 dB
Fuite de porteuse	
19 kHz	−70 dB
38 kHz	−70 dB
Equilibrage de canaux (250 Hz~6,300 Hz)	±1,0 dB
Point de limite	0,75 μV
Largeur de bande	
Amplificateur FI	180 kHz
Démodulateur FM	1000 kHz
Bornes d'antenne	75Ω (asymétrique)

■ SECTION SYNTONISATEUR AM

Gamme de fréquence
(Pour l'Europe, l'Afrique du Sud et l'Australie)
522~1629 kHz (9 kHz par palier)
530~1620 kHz (10 kHz par palier)
(Pour l'Arabie Saoudite et les autres pays)
531~1620 kHz (9 kHz par palier)
530~1620 kHz (10 kHz par palier)

Sensibilité (S/B 20 dB)	20 μV, 290 μV/m
Sélectivité (±9 kHz)	55 dB
Réjection d'image à 999 kHz	40 dB
Réjection FI à 999 kHz	65 dB

■ DIVERS

Tension de sortie	0,6 V
Consommation	11W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 97,1 × 276 mm
Poids	4,1 kg

■ MESURAGES ET RÉGLAGES

RÉGLAGE DE AM

*** Réglage et équipement utilisé**
1. Voltmètres électronique de courant alternatif et de courant continu.
2. Générateur de signaux AM (AM-SG)
3. Sélecteur de gamme . . . . . AM
4. Régler le sélecteur d'attribution AM sur la position "9 kHz step".
5. Conserver la tension du secteur à la tension nominale.
6. Le signal du générateur ne doit pas être plus élevé qu'il n'est nécessaire pour obtenir une lecture de sortie.
7. Utiliser un tournevis non-métallique pour le réglage.

	GÉNÉRATEUR AM		FRÉQUENCE D'AFFICHAGE PAR PRÉRÉGLAGE	PRÉPARATIFS	ÉLÉMENTS RÉGLÉS	PROCÉDURE DE RÉGLAGE
	BRANCHEMENT	FRÉQUENCE				
	RÉGLAGE DE IF-AM					
1	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 100 pF. Commun au châssis. (Entrée sous-puissante) (Se référer à la Fig. 1.)	450 kHz (modulé à 30% par 400 Hz)	Point sans signal	Voltmètre électronique à C. A. ou oscilloscope sur douille de sortie de l'appareil.	T201 (Transfor. FI) T202 (Transfor. FI)	1. Régler la fréquence d'entrée et les points de réglage de telle sorte que la sortie devienne maximale.
2	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 200 pF. Commun au châssis (Entrée faible) (Se référer à la Fig. 1)	522 kHz (modulé à 30% par 400 Hz)	522 kHz	Voltmètre électronique à C.A. oscilloscope sur douille de sortie de l'appareil.	L203 (Bobine Ant.)	1. Régler au maximum du signal de sortie. 2. Régler le noyau ferrite de L203 à l'aide d'un tournevis.
3		612 kHz (modulé à 30% par 400 Hz)	612 kHz		L202 (Bobine Ant.)	1. Régler au maximum du Signal de sortie. 2. Régler le noyau ferrite de L202 à l'aide d'un tournevis.
4		1503 kHz (Modulé à 30% par 400 Hz)	1503 kHz		CT201 (Trimmer Ant.)	1. Régler au maximum du signal de sortie. 2. Refaire les étapes (2), (3) et (4) jusqu'à ce que la fréquence s'aligne correctement avec l'affichage du cadran.

RÉGLAGE DE FM

Nota: Le 2ème transformateur de fréquence intermédiaire FM (T102), le 2ème filtre de fréquence intermédiaire FM (T104, T105) et le filtre de détection FM (L302, L303) ont déjà été mis au point et ne nécessitent donc aucun réglage.

*** Réglage et équipement utilisé**
1. Générateur de signaux FM (FM-SG)
2. Commande de réglage stéréophonique (ou vu-mètre de séparation).
3. Etalonneur de distorsion.
4. Oscilloscope.
5. Voltmètres électronique de courant alternatif et de courant continue.
6. Sélecteur d'entrée sur la position "FM".
7. Placer le sélecteur de mode FM sur la position "mono".
8. Les autres réglages sont les mêmes que pour la mise au point de l'amplitude modulée (AM).
9. Régler le sélecteur de bande de fréquence intermédiaire sur la position "normal".

*** Préparatifs pour le générateur de signaux FM (FM-SG).**
1. L'entrée normale de l'appareil est de 60 dB (1 mV), 400 Hz, modulation de 100%. (Du fait de l'atténuation, utiliser des câbles coaxiaux. La sortie du générateur de signaux devra être de plus de 6 dB. C'est-à-dire, que lorsque l'entrée est de 60 dB, la sortie du générateur de signaux devra être de 66 dB.)

* Lorsque la fréquence est modifiée, l'accord silencieux est automatiquement mis en marche. Aussi, s'assurer de mettre hors circuit avec le commutateur-sélecteur du niveau "OFF/SCAN" (Hors circuit/Exploration) d'accord silencieux FM (modulation de fréquence). En outre, s'assurer que la bande de fréquence intermédiaire (IF) FM soit sur "NORMAL".

Nº	GÉNÉRATEUR FM BRANCHEMENT	GÉNÉRATEUR FM FRÉQUENCE	FRÉQUENCE D'AFFICHAGE PAR PRÉRÉGLAGE	PRÉPARATIFS	ÉLÉMENTS RÉGLÉS	PROCÉDURE DE RÉGLAGE
	REGLAGE DE LA DISTORSION FM EN MONO					
5	Raccorder le générateur de signaux FM à la borne d'antenne FM. (Niveau de sur sortie du générateur 60 dB.)	100,10 MHz (modulé à 100% par 40 Hz)	100,10 MHz	Brancher le voltmetre électronique à C.C. aux bornes TP101 et TP102, en se référant à la Fig. 2.	T101 (Transfor. FI discri.)	Régler le noyau T101 de telle sorte que le voltage mesuré dans le mode sans signal, soit de 0 mV dans la gamme des 300 mV.
6		100,10 MHz (modulé à 0% par 400 Hz)		Brancher l'oscilloscope aux bornes TP103 et à la masse, en se référant à la Fig. 3.	T103 (3 ème transformateur de fréquence intermédiaire FM.)	1. Régler au maximum du signal de sortie. 2. Régler le noyau ferrite de T103 à l'aide d'un tournevis.
7				Brancher le voltmetre électronique à C.C. aux borne TP302 et à la masse, en se référant à la Fig. 4.	VR102 (Réglage pour l'utilisation du comptage d'impulsion)	Ajuster VR102 de telle sorte que la tension mesurée sur le mode de signal soit de 0 mV sur une plage de 300 mV.
	RÉGLAGE DE RF-FM **Court-circuiter entre TP901 et TP902 avec un fil de connexion seulement pendant le réglage FM-RF (Modulation de fréquence — Haute fréquence) et s'assurer d'ouvrir le circuit pendant un réglage autre que FM-RF.**					
8	Raccorder le générateur de signaux FM à la borne d'antenne FM, en se référant à la Fig. 5. (Entrée faible)	87,50 MHz (modulé à 100% par 400 Hz)	87,50 MHz	1. Court-circuiter entre TP901 et TP902 avec un fil de connexion. 2. Brancher le voltmètre électronique à C.C. aux borne TP1 et à la masse.	L6 (bobine oscillatrice)	1. Ajuster L6 pour une lecture de 3,0V sur le voltmètre électronique à C.C.
9	Raccorder le générateur de fréquences FM à la bobine d'antenne FM, en se référant à la Fig. 6. (Entrée faible)	90,10 MHz (modulé à 100% par 400 Hz) Entrée faible	90,10 MHz	Oscilloscope sur prise de sortie du tuner.	L10 (bobine ANT.) L1 (bobine ANT.) L3 (bobine ANT.) L4 (bobine ANT.) T1 (1er transformateur de fréquence intermédiaire FM.)	1. Appliquer une entrée faible de telle sorte que le parasite soit compris dans la forme de l'onde de sortie. 2. Faire le réglage de telle sorte que la forme de l'onde de sortie soit verticalement symétrique. (Voir Fig. 7) 3. Refaire les réglages (8), (9) et (10) jusqu'à ce que la fréquence corresponde correctement avec l'échelle du cadran.
10		106,10 MHz (Modulé à 100% par 400 Hz) Entrée faible	106,10 MHz		CT1 (Trimmer OSC.)	
	ADJUSTEMENT DE L'ANNULATION DE SYNCHRONISATION					
11	Brancher un générateur de signaux FM à la borne d'antenne FM, en se référant à la Fig. 8. (Appliquer 60 dB à la borne d'antenne.) (Signal stéréo de modulation pilote de 10% .)	100,10 MHz (modulé à 0% par 400 Hz) (G + D)	100,10 MHz	Brancher oscilloscope aux l'bornes TP301 et à la masse.	L301 (Filtre pilote) VR103 (Ajustement de l'annulation de synchronisation)	Effectuer le réglage de telle sorte que l'onde de sortie au départ soit au minimum, en se référant à la Fig. 9.
	RÉGLAGE DE LA DISTORSION STEREO					
12	Brancher un générateur de signaux FM à la borne d'antenne FM, en se référant à la Fig. 10. (Appliquer 60 dB à la borne d'antenne.) (Signal stéréo de modulation pilote de 10%)	100,10 MHz (modulé à 90% par 400 Hz) (Mode G ou D)	100,10 MHz	Brancher le filtre passe-bande (fc = 15kHz ~ 19kHz) à la borne de sortie "OUTPUT" de l'appareil par un mesureur de distortion à courant alternatif.	T1 (1er transformateur de fréquence intermédiaire FM.) T103 (3 ème transformateur de fréquence intermédiaire FM.)	Ajuster le noyau T1 et T103 de telle sorte que la distortion des canaux de droite et de gauche soit réduite au minimum.
	RÉGLAGE DE LA SÉPARATION DES CANAUX					
13	Brancher un générateur de signaux FM à la borne d'antenne FM, en se référant à la Fig. 11. (Appliquer 60 dB à la borne d'antenne.) (Signal stéréo de modulation pilote de 10% .)	100,10 MHz (modulé à 100% par 1kHz) (Mode G ou D.)	100,10 MHz	Brancher le filtre passe-bande (fc = 15kHz ~ 19kHz) à la borne de sortie "OUTPUT"de l'appareil par un mesureur de C.A.	VR303 VR304 (Séparation)	1. Ajuster VR303 de telle sorte que la sortie de droite soit réduite au minimum lorsque le modulateur stéréo est sur le mode de gauche (modulation du canal de gauche). 2. Ajuster VR304 de telle sorte que la sortie de gauche soit réduite au minimum lorsque le modulateur stéréo est sur le mode de droite (modulation du canal de droite).

Nº	GÉNÉRATEUR FM BRANCHEMENT	GÉNÉRATEUR FM FRÉQUENCE	FRÉQUENCE D'AFFICHAGE PAR PRÉRÉGLAGE	PRÉPARATIFS	ÉLÉMENTS RÉGLÉS	PROCÉDURE DE RÉGLAGE
	INDICATEUR D'INTENSITÉ DES SIGNAUX FM					
14	Brancher un générateur de signaux FM à la borne d'antenne FM. (Appliquer 50 dB à la borne d'antenne.)	100,10 MHz (modulé à 30% par 400 Hz)	100,10 MHz	———	VR101	1. Changer l'affichage à cristaux liquides en appuyant sur la touche de signaux FM. 2. Régler VR101 de façon à ce que 50 dB soit indiqué. 3. S'assurer que le niveau d'intensité des signaux soit de 22 ~ 38 dB lorsque l'entrée est de 30 dB.

ESPAÑOL

■ ESPECIFICACIONES

(Estas especificaciones están sujetas a cualquier cambio sin previo eviso.)

(DIN 45 500)

■ SECCION PARA SINTONIZADOR FM

Gama de frecuencias	87,50~108,00 MHz 87.525~108.025 MHz (+25 kHz shift)
Sensibilidad	1,2 μV (IHF, utilizable)
Señal a ruido 30 dB	1,1 μV (75Ω)
Señal a ruido 26 dB	1,0 μV (75Ω)
Señal a ruido 20 dB	0,9 μV (75Ω)
Sensibilidad de acallamiento estereo de 46 dB IHF	28 μV/75Ω
Distorsión armónica total	
MONO. (MONO)	0,01%
ESTEREO (STEREO)	0,02%
Gama dinámica	116 dB
Respuesta de frecuencia	4 Hz~18 kHz, +0,2 dB~ −0,5 dB
Selectividad alternada de canal	
normal ±400 kHz	55 dB
super narrow ±200 kHz	25 dB
Relación de captura	1,0 dB
Rechazo de imagen a 98 MHz	105 dB
Rechazo de F.I. a 98 MHz	110 dB
Rechazo de respuesta espuria a 98 MHz	110 dB
Supresión AM	70 dB
Separación estereofónica	
1 kHz	65 dB
10 kHz	50 dB
Fuga de onda portadora	
19 kHz	−70 dB
38 kHz	−70 dB
Equilibrio de canales 250 Hz~6 300 Hz	±1,0 dB
Punto de límite	0,75 μV
Ancho de banda	
Amplificador FI	180 kHz
Demodulador FM	1000 kHz
Bornes de antena	75Ω (no equilibrado)

■ SECCION PARA SINTONIZADOR AM

Gama de frecuencias	
(Para países europeos, Africa del Sur y Australia)	522~1629 kHz (9 kHz pasos) 530~1620 kHz (10 kHz pasos)
(Para Arabia Saudita y demás países)	531~1620 kHz (9 kHz pasos) 530~1620 kHz (10 kHz pasos)
Sensibilidad (Relación de señal a ruido de 20 dB)	20 μV, 290 μV/m
Selectividad (±9 kHz)	55 dB
Rechazo de imagen a 999 kHz	40 dB
Rechazo de F.I. a 999 kHz	65 dB

■ GENERAL

Voltaje de salida	0,6V
Consumo de energía	11W
Alimentación de energía	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensiones (An.×Al.×Prof.)	430 × 97,1 × 276 mm
Peso	4,1 kg

■ MEDICIONES Y AJUSTES

AJUSTE DE AM

*** Puesta y Uso de equipo**
1. Voltímetros electrónicos de CA (VTVM).
2. Generador de señales AM (AM-SG)
3. Poner selector FM-AM en posición "AM".
4. Poner selector de asignación AM en posición "9 kHz pasos".
5. Mantener voltaje de línea a voltaje nominal.
6. La salida de generador de señales no debe ser mayor que la necesaria para obtener una lectura de salida.
7. Para el ajuste use un destornillador no metálico.

Nº	GENERADOR DE SEÑALES AM CONEXION	GENERADOR DE SEÑALES AM FRECUENCIA	A FRECUENCIA DE PRESENTACION	PREPARACIONES	PIEZAS AJUSTADAS	PROCEDIMIENTO DE AJUSTE
	AJUSTE IF-AM					
1	Connectar AM-SG terminal de antena AM a través de capacitor 200 pF. Común a chasis. (Entrada potente.) (Referir a la Fig. 1.)	450 kHz (Mod. 30% con 400 Hz)	Punto de no interferencia.	Conectar VTVM de CA u osciloscopio a terminales de "OUTPUT"	T201 (IFT 1)	Ajuste la frecuencia de entrada y el punto de ajuste de manera que la salida se convierta en máxima.
	AJUSTE RF-AM					
2	Conectar AM-SG a terminal de antena AM a través de capacitor 200 pF. Común a chasis. (Entrada débil) (Referir a la Fig. 1) .)	522 kHz (Mod. 30% con 400 Hz)	522 kHz	Conectar VTVM de CA u osciloscopio a terminales de "OUTPUT".	T203 (Bobina ANT AM)	1. Ajustar para salida máxima. 2. Ajustar núcleo de ferrita de L203 con destornillador.
3		612 kHz (Mod. 30% con 400 Hz)	612 kHz		L202 (Bobina ANT AM)	1. Ajustar para salida máxima. 2. Ajustar núcleo de ferrita de L202 con destornillador.
4		1503 kHz (Mod. 30% con 400 Hz)	1503 kHz		CT201 (Trimer de ANT AM)	1. Ajustar para salida máxima. 2. Repetir pasos (2), (3) y (4) hasta que la frecuencia se adapte correctamente a la escala del cuadrante.

AJUSTE DE FM

Nota: 2º TFI FM (T102), filtro de 2º FI FM (T104, T105) y filtro DET FM (L302, L303) han sido ya ajustados y no requiere ajuste.

*** Equipo usado**
1. Generador de señales FM (FM-SG).
2. Modulador estereofónico (o medidor de separación).
3. Analizador de distorsión.
4. Osciloscopio.
5. Voltímetros electrónicos de CA y CC.
6. Poner selector FM-AM en posición "FM".
7. Poner el interruptor de modalidad FM en la posición "MONO".
8. Otras puestas son las mismas que en ajuste AM.
9. Ponga selector de band a FI en posición "normal".

*** Preparación de generador de señales FM (FM-SG)**
1. La entrada standard del aparato es 60 dB (1 mV), 400 Hz. modulación 100% (debido a atenuación, usando cables coaxiales.
   La salida SG ha de ser 6 dB más. Es decir, cuando la entrada 60 dB, la salida de SG ha de ser 66 dB.)
* Cuando se cambia la frecuencia, silenciamiento se convierte ON automáticamente. Por lo tanto, asegúrese de desconectarlo mediante el interruptor selector de nivel OFF/SCAN (desconexión/exploración). También, asegúrese de que la banda FI FM esté en "NORMAL".

Nº	GENERADOR DE SEÑALES FM CONEXION	GENERADOR DE SEÑALES FM FRECUENCIA	A FRECUENCIA DE PRESENTACION	PREPARACIONES	PIEZAS AJUSTADAS	PROCEDIMIENTO DE AJUSTE
	AJUSTE DE DISTORSION FM MONO					
5	Conectar SG-FM a terminal de antena FM. (Aplicar 60 dB a terminal de antena)	100,10 MHz (Mod 100% con 400 Mz)	100,10 MHz	Conectar VTVM CC entre terminal TP101 y TP102 través de bobina de choque. refiriendo a Fig. 2.	T101 (Discri. IFT)	Ajustar núcleo de T101 de manera que voltaje medido en modalidad de señal sea 0 mV en gama de 300mV.
6		100,10 MHz (Mod 0% con 400 Hz)		Conectar el osciloscopio entre TP103 y Tierra. refiriendo a Fig. 3.	T103 (3er. TFT)	1. Ajustar para salida máxima. 2. Ajustar núcleo de ferrita de T103 con destornillador.
7				Conectar VTVM CA a centro TP302 y Tierra. refiriendo a Fig. 4.	VR102 (Ajuste de empleo de conteo)	Ajuste VR102 de manera que voltaje medido en modalidad de señal sea 0 mV en gama de 300 mV.
	AJUSTE RF-AM **Cortocircuite entre TP901 y TP902 mediante hilo de puente sólo durante ajuste de FM-RF, y asegúrese de abrir el circuito durante ajuste otro que FM-RF.**					
8	Conectar SG-FM a terminal de antena FM refiriendo a Fig. 5. (Entrada débil)	87,50 MHz (Mod. 100% con 400 Hz)	87,50 MHz	1. Cortocircuite entre TP901 y TP902 mediante hilo de puente. 2. Conectar VTVM CA a centro TP1 y Tierra.	L6 (Bobina OSC)	1. Ajustar L6 para lectura de 3.0V en DC VTVM.

Nº	GENERADOR DE S CONEXION
	● **Cortocircuite entre TP ajuste otro que FM-RF.**
9	Conectar FM-SG a terminal de antena FM refiriendo a Fig. 6. (Entrada débil)
10	
11	Conectar FM-SG a terminal de antena de FM refiriendo a la Fig. 8. (Aplicar 60 dB a terminal de antena.) (Señal estéreofónica Mod. 10% piloto.)
12	Conectar FM-SG a terminal de antena de FM refiriendo a la Fig. 10. (Aplicar 60 dB a terminal de antena.) (Señal estéreofónica Mod. 10% piloto.)
13	Conectar FM-SG a terminal de antena de FM refiriendo a la Fig. 11. (Aplicar 60 dB a terminal de antena.) (Señal estéreofónica Mod. 10% piloto.)
14	Conectar FM-SG a terminal de antena de FM. (Aplicar 50 dB a terminal de antena.)

■ CIRCUITS TO

● **Power supply cir**

	GENERADOR DE SEÑALES AM		A FRECUENCIA DE PRESENTACION	PREPARACIONES	PIEZAS AJUSTADAS	PROCEDIMIENTO DE AJUSTE
	CONEXION	FRECUENCIA				
	AJUSTE IF-AM					
1	Connectar AM-SG terminal de antena AM a través de capacitor 200 pF. Común a chasis. (Entrada potente.) (Referir a la Fig. 1.)	450 kHz (Mod. 30% con 400 Hz)	Punto de no interferencia.	Conectar VTVM de CA u osciloscopio a terminales de "OUTPUT"	T201 (IFT 1)	Ajuste la frecuencia de entrada y el punto de ajuste de manera que la salida se convierta en máxima.
	AJUSTE RF-AM					
2	Conectar AM-SG a terminal de antena AM a través de capacitor 200 pF. Común a chasis. (Entrada débil) (Referir a la Fig. 1) .)	522 kHz (Mod. 30% con 400 Hz)	522 kHz	Conectar VTVM de CA u osciloscopio a terminales de "OUTPUT".	T203 (Bobina ANT AM)	1. Ajustar para salida máxima. 2. Ajustar núcleo de ferrita de L203 con destornillador.
3		612 kHz (Mod. 30% con 400 Hz)	612 kHz		L202 (Bobina ANT AM)	1. Ajustar para salida máxima. 2. Ajustar núcleo de ferrita de L202 con destornillador.
4		1503 kHz (Mod. 30% con 400 Hz)	1503 kHz		CT201 (Trimer de ANT AM)	1. Ajustar para salida máxima. 2. Repetir pasos (2), (3) y (4) hasta que la frecuencia se adapte correctamente a la escala del cuadrante.

AJUSTE DE FM

Nota: 2º TFI FM (T102), filtro de 2º FI FM (T104, T105) y filtro DET FM (L302, L303) han sido ya ajustados y no requiere ajuste.

*** Equipo usado**
1. Generador de señales FM (FM-SG).
2. Modulador estereofónico (o medidor de separación).
3. Analizador de distorsión.
4. Osciloscopio.
5. Voltímetros electrónicos de CA y CC.
6. Poner selector FM-AM en posición "FM".
7. Poner el interruptor de modalidad FM en la posición "MONO".
8. Otras puestas son las mismas que en ajuste AM.
9. Ponga selector de band a FI en posición "normal".

*** Preparación de generador de señales FM (FM-SG)**
1. La entrada standard del aparato es 60 dB (1 mV), 400 Hz. modulación 100% (debido a atenuación, usando cables coaxiales.
   La salida SG ha de ser 6 dB más. Es decir, cuando la entrada 60 dB, la salida de SG ha de ser 66 dB.)

* Cuando se cambia la frecuencia, silenciamiento se convierte ON automáticamente. Por lo tanto, asegúrese de desconectarlo mediante el interruptor selector de nivel OFF/SCAN (desconexión/exploración). También, asegúrese de que la banda FI FM esté en "NORMAL".

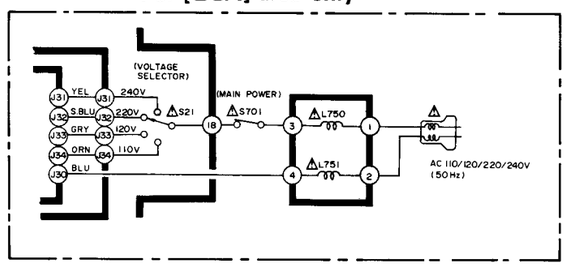
	GENERADOR DE SEÑALES FM		A FRECUENCIA DE PRESENTACION	PREPARACIONES	PIEZAS AJUSTADAS	PROCEDIMIENTO DE AJUSTE
	CONEXION	FRECUENCIA				
	AJUSTE DE DISTORSION FM MONO					
5	Conectar SG-FM a terminal de antena FM. (Aplicar 60 dB a terminal de antena)	100,10 MHz (Mod 100% con 400 Mz)	100,10 MHz	Conectar VTVM CC entre terminal TP101 y TP102 través de bobina de choque. refiriendo a Fig. 2.	T101 (Discri. IFT)	Ajustar núcleo de T101 de manera que voltaje medido en modalidad de señal sea 0 mV en gama de 300mV.
6		100,10 MHz (Mod 0% con 400 Hz)		Conectar el osciloscopio entre TP103 y Tierra. refiriendo a Fig. 3.	T103 (3er. TFT)	1. Ajustar para salida máxima. 2. Ajustar núcleo de ferrita de T103 con destornillador.
7				Conectar VTVM CA a centro TP302 y Tierra. refiriendo a Fig. 4.	VR102 (Ajuste de empleo de conteo)	Ajuste VR102 de manera que voltaje medido en modalidad de señal sea 0 mV en gama de 300 mV.
	AJUSTE RF-AM **Cortocircuite entre TP901 y TP902 mediante hilo de puente sólo durante ajuste de FM-RF, y asegúrese de abrir el circuito durante ajuste otro que FM-RF.**					
8	Conectar SG-FM a terminal de antena FM refiriendo a Fig. 5. (Entrada débil)	87,50 MHz (Mod. 100% con 400 Hz)	87,50 MHz	1. Cortocircuite entre TP901 y TP902 mediante hilo de puente. 2. Conectar VTVM CA a centro TP1 y Tierra.	L6 (Bobina OSC)	1. Ajustar L6 para lectura de 3.0V en DC VTVM.

Nº	GENERADOR DE SEÑALES AM		A FRECUENCIA DE PRESENTACION	PREPARACIONES	PIEZAS AJUSTADAS	PROCEDIMIENTO DE AJUSTE
	CONEXION	FRECUENCIA				
	AJUSTE RF-FM ● **Cortocircuite entre TP901 y TP902 mediante hilo de puente sólo durante ajuste de FM-RF, y asegúrese de abrir el circuito durante ajuste otro que FM-RF.**					
9	Conectar FM-SG a terminal de antena FM refiriendo a Fig. 6. (Entrada débil)	90,10 MHz (Mod. 100% con 400 Hz) Entrada débil.	90,10 MHz	Conectar osciloscopio a terminales "OUTPUT" del aparato.	L10 (Bobina ANT) L1 (Bobina ANT) L3 (Bobina ANT) L4 (Bobina ANT) T1 (1 er. TFI)	1. Añadir entrada débil de manera que ruido se incluya en la forma de onda de salida. 2. Hacer el ajuste de manera que la forma de onda de salida sea verticalmente simétrica. (Fig. 7) 3. Repetir los pasos (5), (6) y (7) hasta que la frecuencia se adapte correctamente a la escala del cuadrante.
10		106,10 MHz (Mod. 100% con 400 Hz) Entrada débil	106,10 MHz		CT1 (Trimer OSC)	
	AJUSTE DE EMPLEO DE CONTEO					
11	Conectar FM-SG a terminal de antena de FM refiriendo a la Fig. 8. (Aplicar 60 dB a terminal de antena.) (Señal estéreofónica Mod. 10% piloto.)	100,10 MHz (Mod. 0% con 400 Hz) (L-R)	100,10 MHz	Conectar el osciloscopio a entre TP301 y Tierra.	L301 B.P.F. (Filtro piloto.) VR103 (Ajuste de cancelación de Piloto FM)	Hacer el ajuste de manera que la forma de onda de salida sea mínima refiriendo a la Fig. 9.
	AJUSTE DE DISTORSION DE ESTEREO					
12	Conectar FM-SG a terminal de antena de FM refiriendo a la Fig. 10. (Aplicar 60 dB a terminal de antena.) (Señal estéreofónica Mod. 10% piloto.)	100,10 MHz (Mod 90% con 400 Hz) (Modalidad L o R)	100,10 MHz	Conectar analizador de distorsión a terminales "OUTPUT" (salida) del aparato a través de filtro pasabajos. (fc ≈ 15kHz ~ 19kHz)	T1 (1 er. TFI) T103 (Ajuste de empleo de conteo)	Ajustar núcleo T1 y T103 de manera que se minimice distorsión de canales derechoe izquierdo.
	AJUSTE DE SEPARACION					
13	Conectar FM-SG a terminal de antena de FM refiriendo a la Fig. 11. (Aplicar 60 dB a terminal de antena.) (Señal estéreofónica Mod. 10% piloto.)	100,10 MHz (Mod. 100% con 1 kHz) (Modalidad L o R)	100,10 MHz	Conectar VTVM CA a terminales "OUTPUT" (salida) del aparato a través de filtro pasabajos. (fc = 15kHz ~ 19kHz)	VR303 VR304 (Separación)	1. Ajustar VR303 de manera que la salida D se minimice cuando el modulador estereofónico esté en la modalidad I (modulación de canal 1). 2. Ajustar VR304 de manera que la salida I se minimice cuando el modulador estereofónico esté en la modalidad D. (modulación de canal D.)
	AJUSTE DE NIVEL DE INTENSIDAD DE SEÑAL					
14	Conectar FM-SG a terminal de antena de FM. (Aplicar 50 dB a terminal de antena.)	100,10 MHz (Mod. 30% con 400 Hz)	100,10 MHz	———	VR101 (Nivel de intensidad de señal)	1. Cambiar presentación de LCD de frecuencia oprimiendo el botón de ±0 dB señal FM. 2. Ajustar VR101 de manera que se indiquen 50 dB. 3. Asegurarse de que el nivel de intensidad de señal sea 22 ~ 38 dB cuando la entrada es 30 dB.

■ CIRCUITS TO BE CHANGED AND THE AREA

● **Power supply circuit**

For [EGA] area only



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ORDER NO. HAD8711327S0
A2

Service Manual

Supplement

QUARTZ Synthesizer
FM/AM Stereo Tuner

Tuner

ST-G7

Color

(K)...Black Type
(S)...Silver Type

Color	Areas
(K) (S)	[M] .....U.S.A.
(K) (S)	[MC]....Canada.
(K) (S)	[E] .....All European areas except United Kingdom.
(K) (S)	[EK].....United Kingdom.
(K) (S)	[EH].....Holland.
(K) (S)	[EB].....Belgium.
(K) (S)	[EF].....France.
(K) (S)	[EGA]..F.R. Germany.
(K) (S)	[XA].....Asia, Latin America, Middle Near East and Africa.
(K) (S)	[XL].....Australia.
(K) (S)	[PC].....European Audio Club.
(K) (S)	[PA].....Far East PX.
(K) (S)	[PE].....European Military.

Please file and use this supplement manual together with the service manual for Model No. ST-G7, Order No. HAD84062801C9 and HAD84092900A1.

Notes:

- This supplement has been issued to inform you that IC101 and D101 have been changed in units having serial number suffixes "B" or later to improve the unstable AM function at a low temperatures.
  (Refer to "How to read the serial number" on page 2.).
- Part No. of IC has been changed but the function is equivalent.

CHANGES

■ REPLACEMENT PARTS LIST

Notes: Part numbers are indicated on most mechanical parts. Please use this part number for parts order.

Ref. No.	Change of Parts No. OLD → NEW		Description	Remarks
INTEGRATED CIRCUIT				
IC101	AN7274S	**AN7274NS**	I.C. FM IF AMP.	Change
DIODE				
D101	MA165	**MA700A**	DIODE	Change

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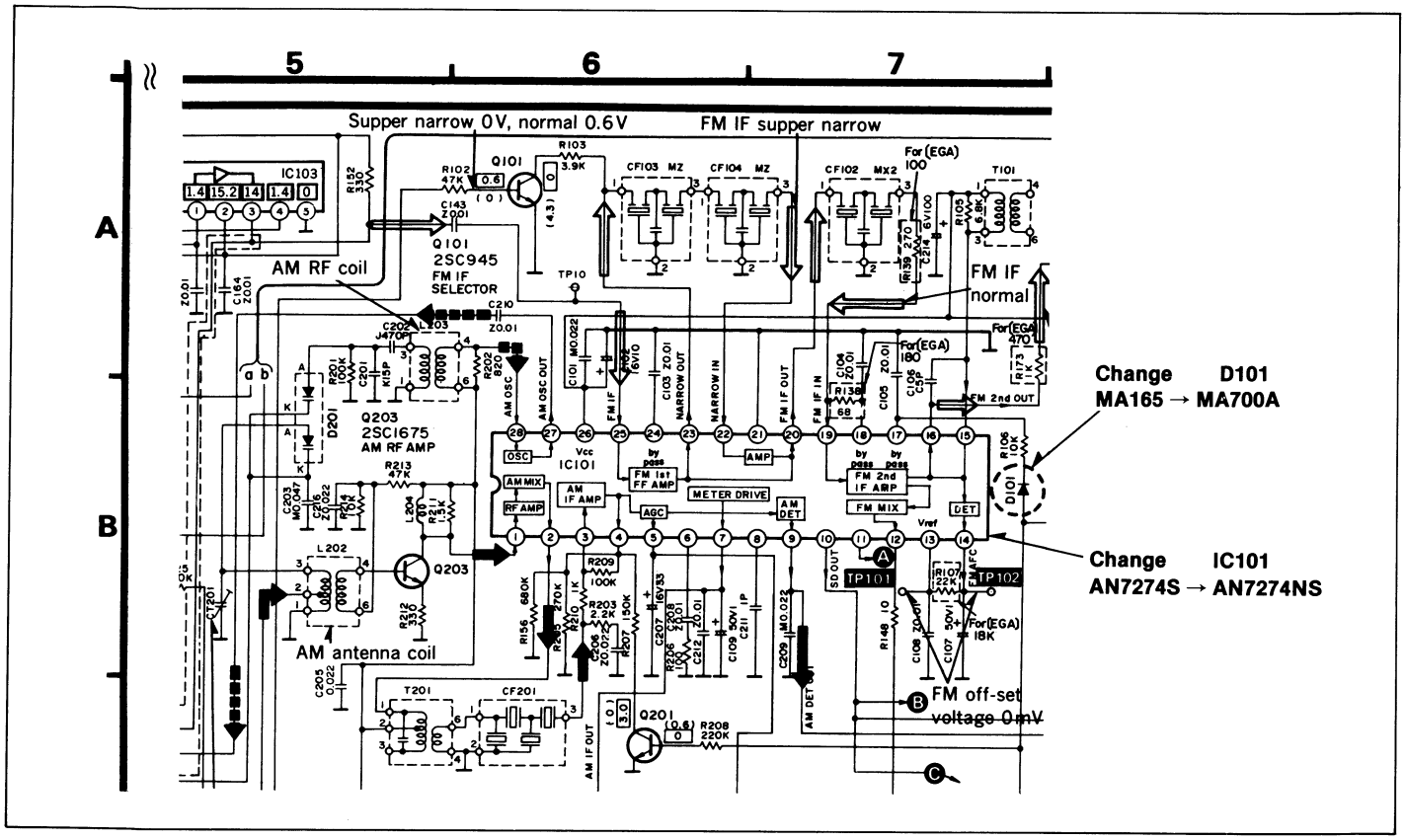
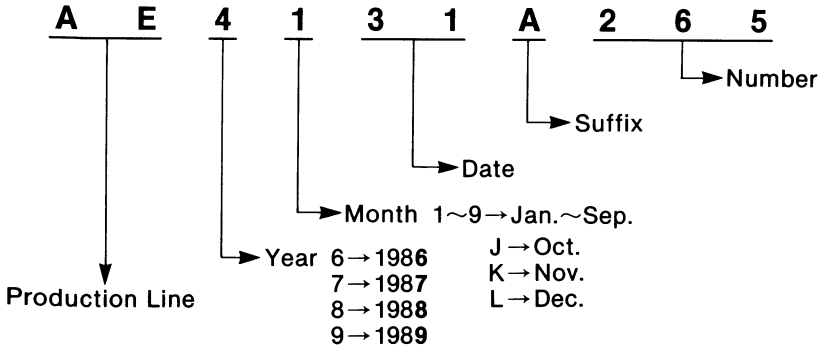
■ SCHEMATIC DIAGRAM

Note: IC101 and D101 have been changed to improve the efficiency.



● How to read the serial number



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