Service Manual

Synthesizer FM/AM Stereo Receiver

Receiver

SA-350



Color

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

Color	Area				
(K) (S)	[EX] Switzerland and				
	Scandinavía.				
(K) (S)	[EH]Holland.				
	[XL] Australia.				
(S)	[XA] Asia, Latin America,				
, ,	Africa, Middle Near				
	East and Oceania.				

SPECIFICATION

(DIN 45 500)

M AMPLIFIER SECTION

20 Hz~20 kHz continuous power output both channels driven 2 × 45W (4Ω) 2 × 37W (8Ω) 1 kHz continuous power output $2 \times 55W (4\Omega)$ both channels driven 2 × 47W (8Ω) Total harmonic distortion rated power at 20 Hz~20 kHz $0.02\% (4\Omega)$ 0.007% (8Q) 0.001% (8Q) rated power at 1 kHz Intermodulation distortion rated power at 250 Hz: 8 kHz=4:1, 4Ω 0.02% rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0.01% Power bandwidth 5 Hz -40 kHz (40) both channels driven, -3 dB Damping factor 20 (4Ω), 40 (8Ω) Input sensitivity and Impedance **PHONO** 2.5 mV/47kΩ CD/AUX 1, VIDEO/AUX 2, TAPE/EXT 150 mV/22kΩ PHONO maximum input voltage (1 kHz, RMS) 160 mV rated power (4Ω) **PHONO** 72 dB (IHF, A: 80 dB) CD/AUX 1, VIDEO/AUX 2, TAPE/EXT 88 dB (1HF, A: 95 dB) Frequency response **PHONO** RIAA standard curve ±0.8 dB (30 Hz-15 kHz) CD/AUX 1, VIDEO/AUX 2, TAPE/EXT 5 Hz~70 kHz (-3 dB) Tone controls BASS 50 Hz, +10 dB--10 dB TREBLE 20 kHz, +10 dB~-10 dB Loudness control (volume at -30 dB) 50 Hz, +9 dB

Headphones output level and impedance	440 mV/330Ω
Load impedance	
MAIN or REMOTE	$4\Omega \sim 16\Omega$
MAIN and REMOTE	8Ω∼16Ω

■ FM TUNER SECTION

Limiting point

IF amplitier

Antenna terminals

FM demodulator

Bandwidth

150 mV

±1 dB

55 dB

Frequency range	87.50~108.00 MHz
87.525-108	025 MHz (+25 kHz shift)
Sensitivity	
S/N 30 dB 1.9	μV (300 $Ω$), 1.3 $μ$ V (75 $Ω$)
S/N 26 dB 1.7	μ V (300Ω), 1.2 μ V (75Ω)
S/N 20 dB 1.5	μV (300 Ω), 0.9 μV (75 Ω)
IHF usable sensitivity	1.9 µV (IHF 58)
IHF 46 dB stereo quieting sensitivity	22 μV/75Ω
Total harmonic distortion	
MONO	0.15%
STEREO	0.3%
S/N	
MONO	60 dB (77 dB IHF)
STEREO	58 dB (71 dB, IHF)
Frequency response 20 Hz	~15 kHz, +1 dB ~ -2 dB
Alternate channel selectivity ±400 kH	
Capture ratio	1 dB
Image rejection at 98 MHz	55 dB
IF rejection at 98 MHz	80 dB
Spurious response rejection at 98 MH	
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	M GEOGRAPHS THAT
19 kHz	-33 dB (-35 dB, IHF)
38 kHz	-50 dB (-50 dB, IHF)
Channel balance (250 Hz~6,300 Hz)	±1.5 dB

Technics

Output voltage

Channel separation

TAPE, REC OUT

Channel balance, 250 Hz~6,300 Hz

Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Central Osaka Japan

1.2 µV

180 kHz

1000 kHz

300Ω (balanced)

75Ω (unbalanced)

■ AM TUNER SECTION

■ GENERAL

Dimensions (W×H×D)

430 × 97 × 283 mm (16-15/16" × 3-13/16" × 11-5/32") 6.6 kg

(14.6 lb.)

Note:

Weight

Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

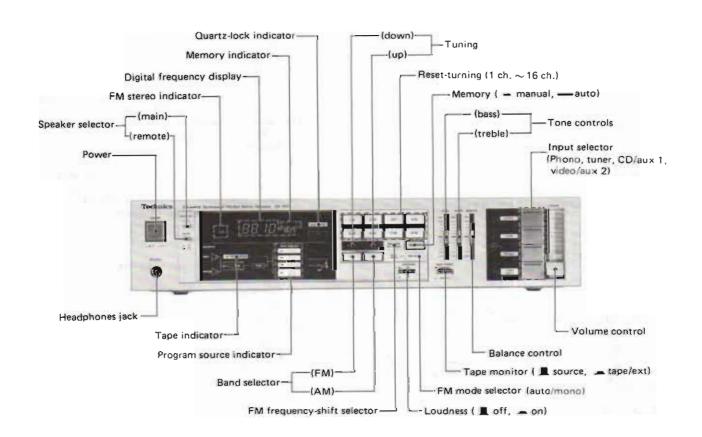
Specifications are subject to change without notice for further improvement.

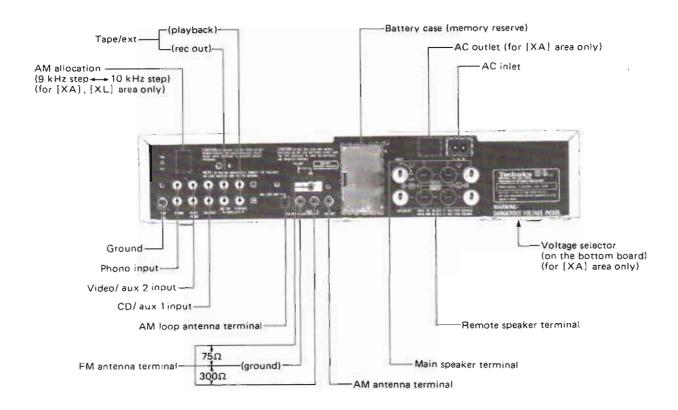
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■ LOCATION OF CONTROLS





- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different.
 So, refer to the circuit diagram and the replacement parts list.
 - ★ 220V (50/60 Hz) for Continental Europe.
 - ★ 240V (50/60 Hz) for Australia ([XL] area).
 - * 110V/120V/220V/240V (50/60 Hz) for [XA] area (For [XA] area is provided with woltage selector)
 - ★ [XA] and [XL] areas are provided with AM allocation switch.
- Phono input capaigtance is about 150pF.

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if eigher of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlined below:

- 1. Turn off the power.
- 2. Determine the cause of the problem and correct it.
- 3. Turn on the power once again.

Note:

When the protection circuitry functions the unit will not operate unless the power is first turned off and then on again.

■ 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.

1. Automatic presetting:

Beginning at the frequency indicated by the digital display, the next consecutive FM broadcasting stations and AM broadcasting stations will be automatically preset to "channels" 1 through 8 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.

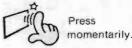
2. Manual presetting:

Stations can be freely preset to any desired channel.

■ Before memory presetting

Each button is used to preset two stations.

Presetting front channels (CH 1~8)



Presetting back channels (CH 9~16)



Press slightly longer.

tune to one of the above.

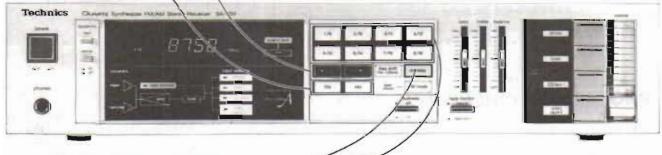
Automatic memory presetting



change will stop).

(frequency will change continuously).

(frequency change will stop)



3 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.)

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

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

Press momentarily. Channel number is displayed. Frequency stored in the memory is displayed.



→ [... £.H. f



Notes:

- In areas where there are less than 8 FM stations, the remaining channels (through channel 8) will be left empty. The empty channels can be filled by using manual memory presetting.
- If a new broadcasting station is preset into a channel, the broadcasting station which was previously entered in that channel will be automatically erased.

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

Fress slightly longer. Release the button when the channel number is displayed.

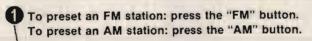
Frequency stored in the memory is displayed.







Manual memory presetting



2 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



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









Memory

3 Press momentarily, and then release.



(The memory indicator will illuminate for approximately 5 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.

5 Enter the name (call sign, etc.) of the preset broadcasting station on the 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 (1) through (4). 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.

To preset channels 9 through 16:



Press the button slightly longer, and then release

Note:

- If the memory indication illumination stops before you press the button, once again repeat step (3) and then step (4).
- If a new broadcasting station is preset into a channel, the broadcasting station which was previously entered in that channel will be automatically erased.

■ BEFORE REPAIR AND ADJUSTMENT

 Disconnect AC power, Discharge both Power Supply Capacitors C703 and C704 (8200μF) through a 10Ω, 5W resistor to ground.

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may distroy solid state devices.

After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
 Current consumption at 50/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110/120V/220V/240V.

Power supply	voltage	AC 110V	AC 120V	AC 220V	AC 240V
Consumed	50 Hz	170 ~ 510mA	150 ~ 450mA	90 ~ 260mA	80 ~ 250mA
Consumed current	60 Hz	160 ~ 500mA	140 ~ 440mA	80 ~ 250mA	70 ~ 240mA

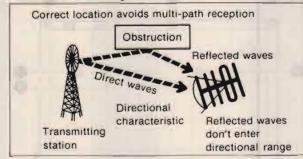
■ FM ANTENNA

For best reception of FM broadcasts, select an FM antenna with the best characteristics for the area in which the unit is used.

Location of antenna

Install the antenna:

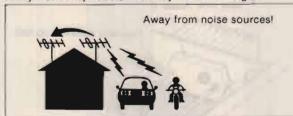
 Where it will receive FM broadcast signals directly; not in the "shadow" of a building.



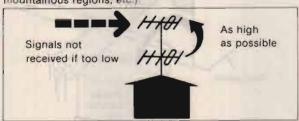
Note:

Multi-path distortion is the distortion which results from the reception of two types of signals: those reflected from nearby buildings, mountains, etc., and those received directly from the broadcasting station.

2. Away from busy roads, and away from neon signs.



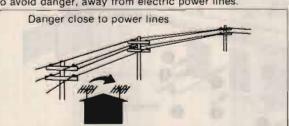
 At least 4 meters (13 feet) above the ground (except in mountainous regions, etc.)



 At least 3 meters (10 feet) away from a metal roof or other antennas.



5. To avoid danger, away from electric power lines.



Note:

An outdoor antenna should be installed by a competent technician only.

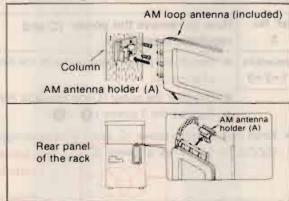
■ AM ANTENNA

This unit includes an AM loop antenna. No outdoor antenna is necessary unless the broadcast signals in your area are especially weak. (Connect the loop antenna even if an outdoor antenna is used; if it is not connected, AM reception will not be possible.)

How to use the AM loop antenna

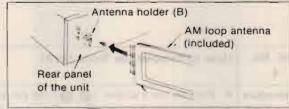
Pay attention to the following points when attaching the antenna.

- Do not attach it horizontally (to do so would impair reception).
- Do not attach it close to metal surfaces (to do so would result in noise).
- Do not attach it close to power cords, speaker wires, etc. (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).
- Connect the AM loop antenna to the AM antenna terminals located on the rear panel of the unit.
- Find the height and direction of the antenna where reception is best and then fix it vertically to the wall, rack, etc.
 - 1) When attaching the antenna to a wall, column or rack

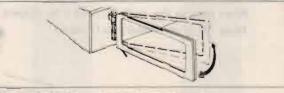


2) When attaching the antenna to the unit.

This type of installation may cause impaired reception or result in signal noise. If possible, attach the antenna to the rack, a wall, or a column.



Move the antenna toward the right or left to find the point of best reception.



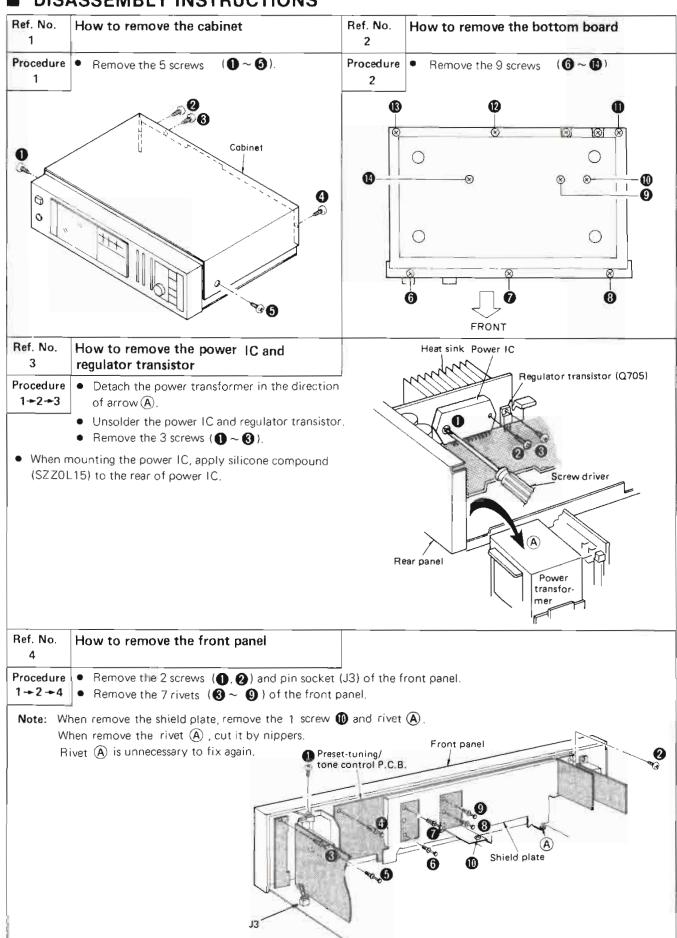
■ Connection of an outdoor antenna

If an outside AM antenna is installed (in mountainous regions or between reinforced-concrete buildings), install it in a location away from utility poles, high-voltage power lines, high buildings and busy roads.

Note:

An outdoor antenna should be installed by a competent technician only.

■ DISASSEMBLY INSTRUCTIONS



■ MEASUREMENTS AND ADJUSTMENTS

Note: AM OSC coil (L202) and AM IFT (T203) have been already adjusted, and require no adjustment.

AM ADJUSTMENT

	* Setting and Equipmer 1. AC electronic voltmet 2. AM signal generator (. 3. Set band selector to '' 4. Set AM allocation sele (Product for [XA] an	ers (EVM). AM-SG). AM" position. ector to "9 kHz st		to obtai	d be no higher than necessary the adjustment. Itage.	
	AM SIGNAL GE	NERATOR	DISPLAY	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
tep	CONNECTION	FREQUENCY	FREQUENCY			
lo.			А	M-RF ADJUSTMEN	Г	
1	Connect AM-SG to AM antenna terminal	612 kHz (30% Mod. with 400 Hz)	612 kHz	Connect AC EVM or scope to "speaker" terminal of the set	L201 (ANT Coil)	Adjust for maximum output Adjust cord of L201 by screwdriver.
2	through 200pF capacitor. Common to chassis. (Weak input) (Refer to Fig. 1)	1503 kHz (30% Mod. with 400 Hz)	1503 kHz	Connect AC EVM or scope to "speaker" terminal of the set.	CT201 (ANT Trimmer)	Adjust for maximum output Repeat steps (1) and (2) until the frequency correctly matches the frequency display.

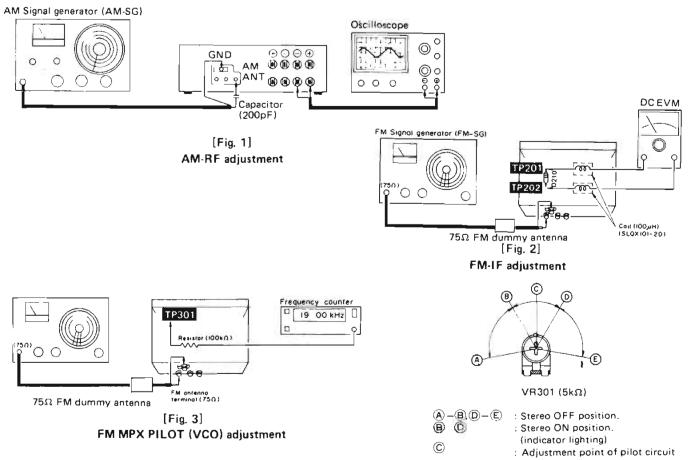
FM ADJUSTMENT

*	Setting	and	Equip	pment	used
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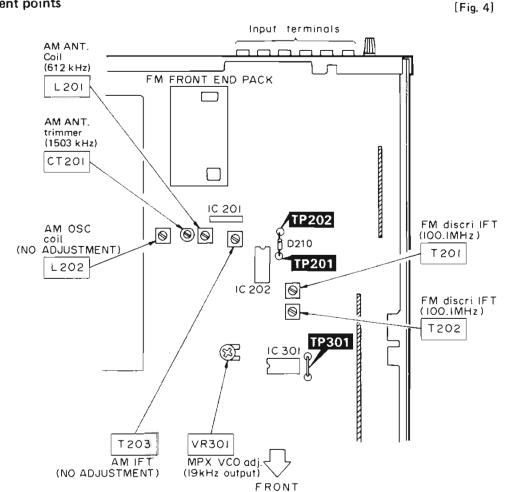
- FM signal generator (FM-SG).
- Distortion analyser.
- 3. Oscilloscope.
- 4. DC electronic voltmeters (EVM),
- 5. Frequency counter (19 kHz and 108 MHz measurable). 6. Set band selector to "FM" position.

- * Preparation of FM signal generator (FM-SG)
- 1. Apply SG output to antenna terminal of the set through 75Ω FM dummy antenna.
- 2. The standard input of the set is 60 dB (1 mV), 400 Hz, 100% modulation [Because of using dummy antenna, SG output must be 12 dB $(4\mu V)$ plus (IHF). That is, when input 60 dB $\{1 \text{ mV}\}$, SG output is to be 72 dB $\{4 \text{ mV}\}$].

	7. Set FM mode selector		ion,			stereo modulator to FM	
	FM SIGNAL GE	GENERATOR DISPLAY		DDG	PREPARATIONS PARTS ADJUSTE		ADJUSTING PROCEDURE
	CONNECTION	FREQUENCY	FREQUENCY	FRE	rana i i ons	PARTS ADJUSTED	ADJOSTING PROCEDURE
				FM-IF	ADJUSTMENT		
3	Connect FM-SG to FM antenna terminal through 75 \(\text{FM} \) dummy antenna. (Apply 60 dB (1 mV) to antenna terminal)	100.1 MHz (100% Mod. with 400 Hz)	100.1 MHz	between and Tahroug	t DC EVM en TP201 (-) P202 (+) h choke coil, to Fig. 2)	T201 (Discri, IFT)	Adjust T201 core so that voltage measured in signal mode is 0 mV in 300 mV range.
			FM MONO	DISTO	RTION ADJU	STMENT	
4	Connect FM-SG to FM antenna terminal through 75Ω FM dummy antenna. (Apply 60 dB (1 mV) to antenna terminal)	100.1 MHz (100% Mod. with 400 Hz)	100.1 MHz	analyse	et distortion or to "speaker" als of the set.	T202 (Discri IFT)	1. Check step (3). 2. If it is deflected, readjust of T201. 3. Adjust T202 core so that distortion of right and left channels are minimized.
			FM M	PX V.C	O. ADJUSTM	ENT	
	USING A F	REQUENCY COU	INTER		ı	ISING ALTERNATE SY	STEM
5	1. 100.1 MHz, 60 dB N 2. FM mode switch to " 3. Connect frequency α (100kΩ) referring to 4. Adjust VR301 to 19	auto" position. ounter to TP301 1 Fig. 3.		to set.	Adjust VR3	o signal from generator o 301 until stereo indicator is shown in Fig. 4.	or stereo station to tuner, lights up. Cement arm



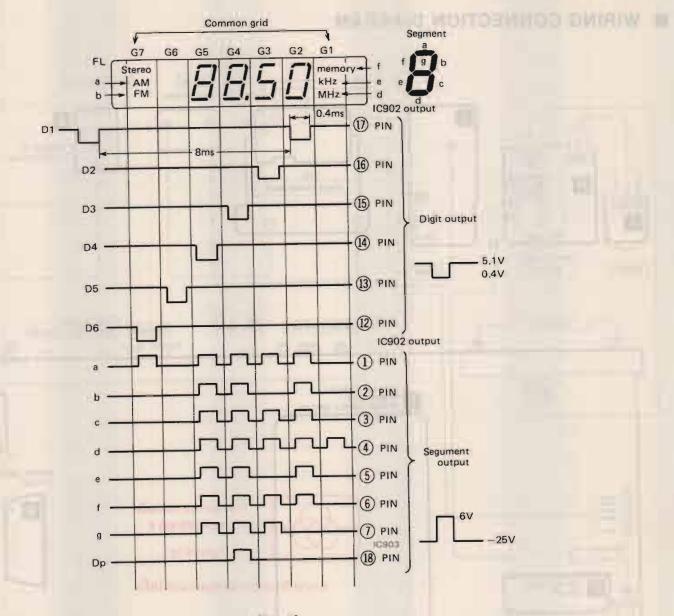
Adjustment points



■ FUNCTION OF TERMINAL (PLL CONTROLLER IC902)

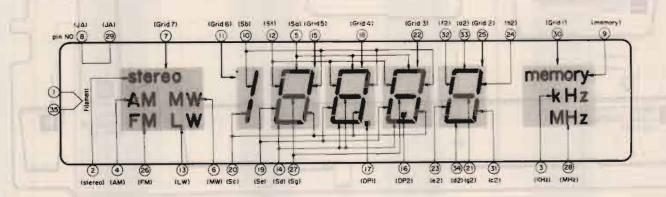
Pin No.	Mark	Description of terminal
1	Sa	Segment signal output terminal for display.
2	Sb	(Refer to Fig. 5)
3	Sc	
4	Sd	
5	Se	
6	Sf	
7	Sg	
8	K0	Input terminal for key return signal from
9	K1	external key matrix. The output of segment terminals (a \sim g) is used as the key return
10	K2	signal source.
11	кз	
12	D6	Digit signal output terminal for display.
13	D5	(Refer to Fig. 5)
14	D4	
15	D3	
16	D2	This is the output terminal to eliminate
17	DI /	shock noise due to unlocking at PLL. When the CE terminal is at low level, the
18	MT	output from this terminal is at high level.
		Power "ON" Power "OFF"
		700μs 4V
		- OV
		Muting "ON" / Muting "OFF"
19	×2	Connecting terminal for crystal oscillator.
20	X1	The crystal connected is at 4.5 MHz,
21	VDD	Power supply terminal of the device.
22	E01	When the divided oscillation frequency is higher than the standard frequency, H level output is delivered from these terminals. When it is lower, L-level (0V) output is
		delivered. When they coincide, it results in floating.
23	GND	Ground terminal.
24	E02	Not used in this unit.
25	CE	This is the selected signal input terminal of the device. When operating the device, make the level high, and when it is not used, make the level flow. When this terminal is at low level, all the segment (a \sim g) and digits (D1 \sim D6) terminals are off, but the memory is held.
		Power "ON" Power "OFF"
		4V
		The device does not operate during this period.
	SD	This input terminal detects the reception of a broadcasting station. The voltage is 4.2V
26		during reception, and otherwise OV.

Pin No.	Mark	Descripiton of terminal
28	PSC	This is the terminal to deliver the frequency dividing ratio changeover output signal to the pre-scaler. The terminal continues to produce pulses at the rise of the signal applied to FM terminal (27) until the content of the inside swallow counter is 0. The frequency dividing ratio of pre-scaler is 1/17. When the swallow counter comes to 0, the terminal level becomes low, then the frequency dividing ratio of pre-scaler is 1/16. Pulse two times larger than the value that cannot be divided by VCO/16.
29	INT	This is the interrupt demand signal input terminal. The signal from the control input terminal is put into this terminal, demanding for interruption, then the flow of program will be unconditionally shifted to the address No. 1.
30	АМ	Input terminal for AM OSC output. 2.8V 1.7V 1 MHz ~ 2 MHz
31	Dp	2-bit input/output. Dp (31) is decimal point
32	Lamp	indication output terminal for digital indica- tion. Lamp (32) is not used in this unit.
33	IF	4-Bit output port. FM (35) is FM/AM output
34	LW	terminal; 5V in FM and 0V in AM. IF (33), LW (34) and AM (36) are not used in this unit.
35	FM	
36	АМ	764-66
37	TV	This is 4-bit input/output port. MONO terminal (38) is the auto/mono
38	MONO	changeover output terminal, which is 5V in auto, and 0V in mono.
39	SDC	SDC terminal (39) is the auto scan/manual scan changeover output terminal, which is
40	D	5V in auto scan, and 0V in manual scan. TV (37) and D(40) are not used in this unit.
41	СОМР	One-bit input/output port. (Not used in this unit.)
42	VDP	One-bit output port, (Not used in this unit,)



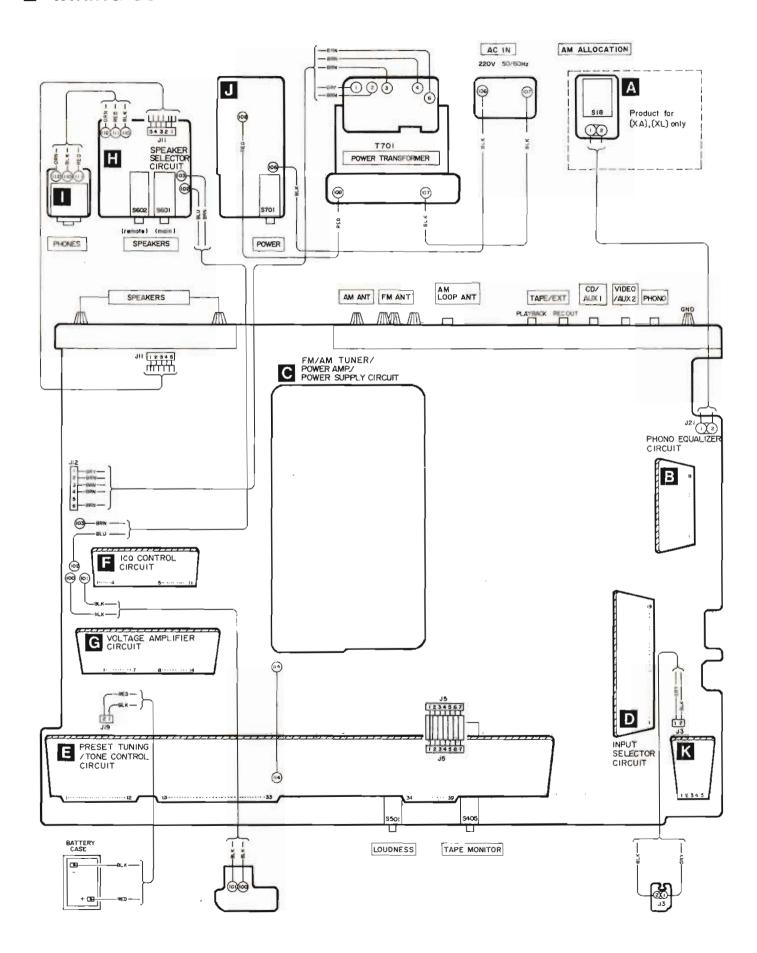
[Fig. 5]

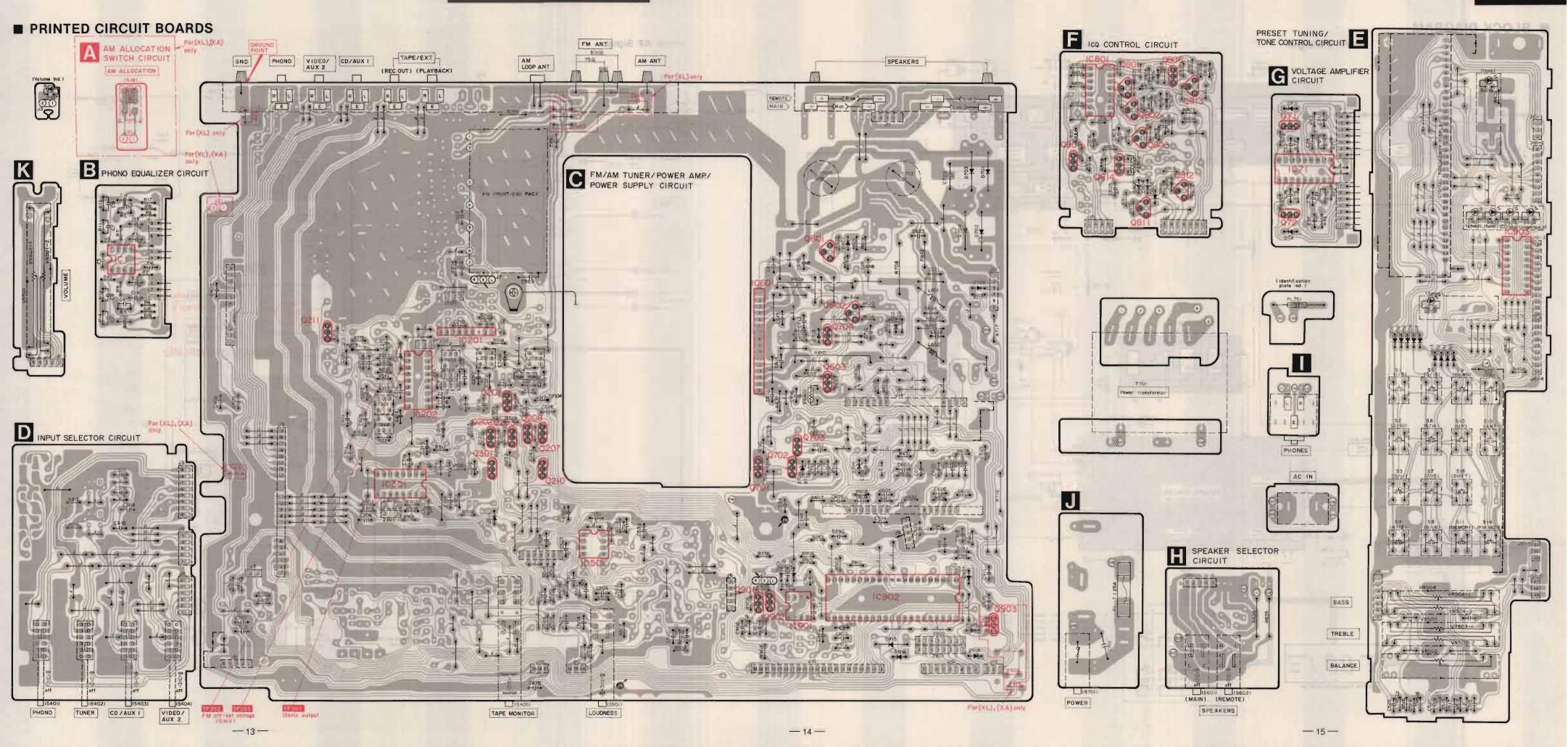
• Fluorescent Display Tube (FL)



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WIRING CONNECTION DIAGRAM

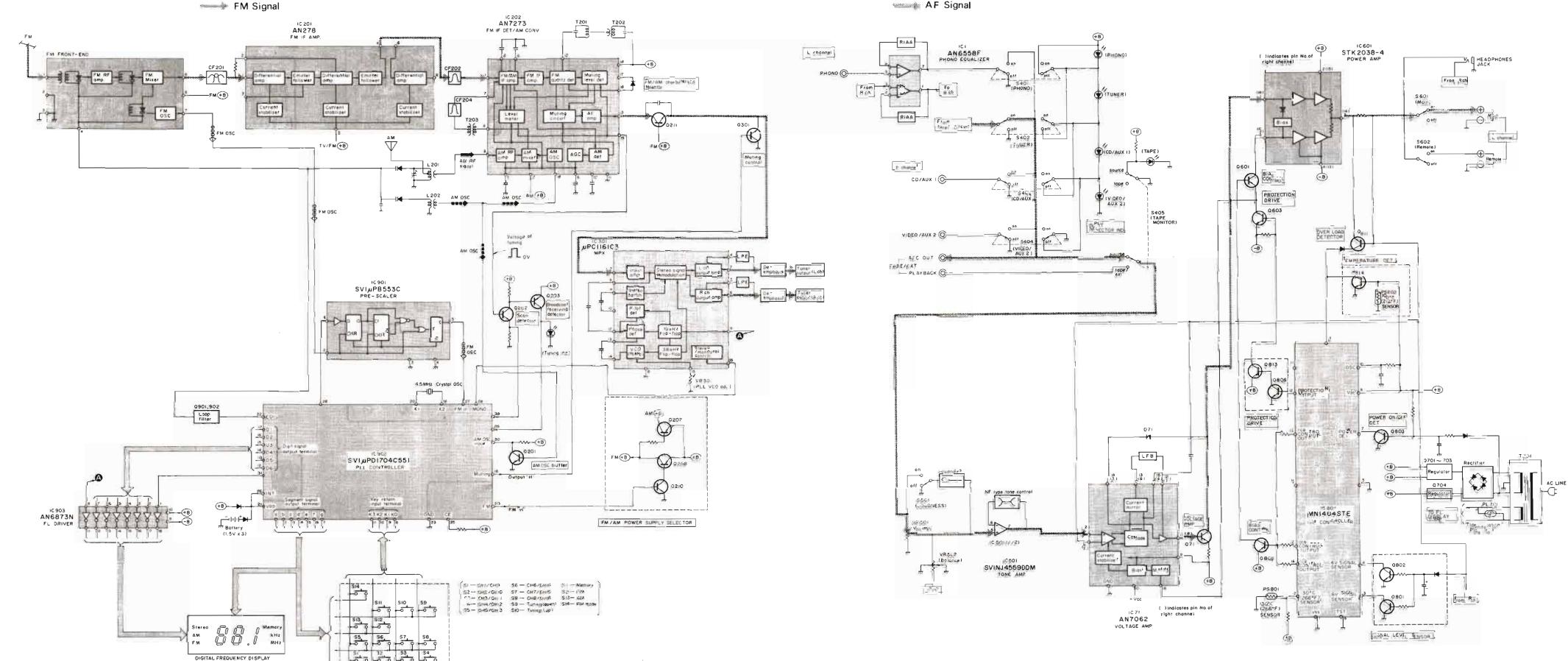


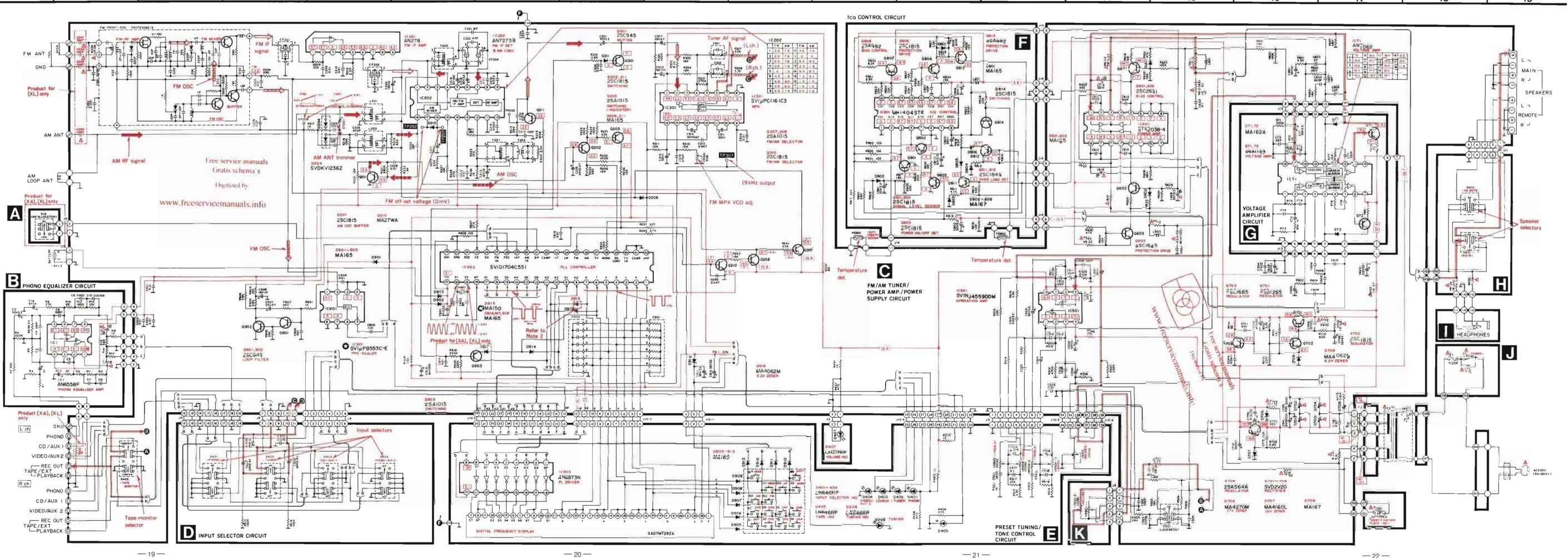


■ BLOCK DIAGRAM

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■ 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. Regarding the 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.
- * This is the basic circuit diagram (For continental Europe) of this unit. Note that part of the circuit is subject to change depending on the areas.
- * Regarding the circuits to be changed in the basic circuit diagram (For continental Europe) and related areas [XA] and [XL] refer to the separate service manual (Order No. 84072865C8-A.)

- Preset tuning switch, (S1 — CH 1/CH 9 S4 — CH 4/CH 12 S7 — CH 7/CH 15) S2 — CH 2/CH 10 S5 — CH 5/CH 13 S8 — CH 8/CH 16 S3 — CH 3/CH 11 S6 — CH 6/CH 14 * With it lightly pushed and released, the 1 \sim 8 CH (front stations) are * With it continuously pushed and released, the 9 \sim 16 CH (back stations) are received. Tuning switch
- (\$9 --- down (tuning to lower frequency)) S10 — up (tuning to higher frequency) Memory switch.
- (manual ----- auto) 4. **S12, 13** Band selector switch S12 --- FM. S13 --- AM FM mode selector switch,
- (auto → → mono) 6. S18 [XA, XL] AM allocation selector switch in "9 kHz step" position. 9 kHz - 10 kHz (Other areas are 9 kHz step only). Input selectors switch in "tuner" position.
- (\$401 --- phono, \$403 --- CD/aux 1 S402 — tuner, S404 — Video/aux 2 Tape -monitor selector switch in "source" position.
- source ← → tage/ext Loudness switch in "off" position.
- on → → off : Main speaker switch in "on" position.
- on ← − → off Remote speaker switch in "off" position.
- on +---- off : Power switch in "on" position.
- 13. **\$702** : Voltage selector switch in "240V" position. 110V ++ 120V ++ 240V ++ 220V
- 14. 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 erro's in the voltage values, depending on the internal impedance of the DC circuit tester. * Figures in and for DC voltage in FM signal (monaural signal) reception mode.
- stand for DC voltage in AM signal reception mode.
- Positive and negative voltage line
- FM signal
- 16. 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.

Use of ceramic filters in pairs

The ceramic filters (CF201, CF202) for FM-IF circuit are available in two 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 diode (D915) for use as different diode must be used depending on each rank of the ceramic filters.

)	RANK (Color)	D915	CENTER FREQUENCY
	Red	X	10.70 MHz
	Black	_ 0	10.65 MHz
	Black		

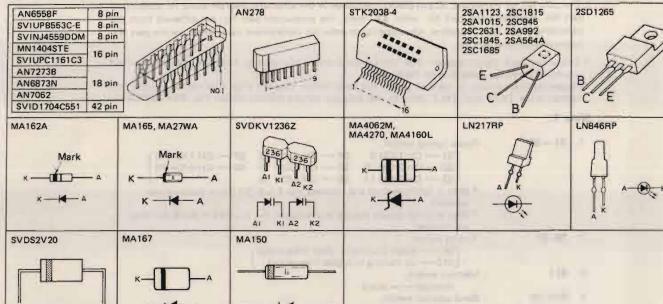
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SA-350 SA-350

SA-350 SA-350

■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S



■ RESISTORS AND CAPACITORS

- 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 \triangle mark have special characteristics $P = 10^{-6} \mu F$. important for safety. When replacing any of these components, use only manufacturer's specified parts.

 6. Bracketed indications in Ref. No. columns specify the area, use only manufacturer's specified parts.
- use only manufacturer's specified parts.

 3. The "(S)" mark is service standard parts and may differ from production parts.

Numbering System of Resistor

ERD	25	F	J	101
Туре	Wattage	Shape	Tolerance	Value
ERG	2	AN	j	282

Examp	16				
ECKD	1 H	102		Z	F
Туре	Voltage	Value	То	lerance	Peculiarity
ECEA	50	M		R47	R
Туре	Voltage	Peculiar	ity	Value	Special use

Res	istor Type	Wattage			Tolerance			
ERD	: Carbon	S1	;	1/2W	G	3	± 2°	
ERO	: Metal Film	10	:	1/8W	J	5	± 5	
ERX	: Metal Film	12	:	1/2W				
ERG	: Metal Oxide	25	- :	1/4W				
ERC	: Solid	1	13	1W				
		2	;	2W	100			

4. The unit of resistance is Ω , (ohm). $K = 1000 \Omega, M = 1000 k\Omega.$

The unit of capacitance is μF. (microfarad).

ring S	ystem	of Capaci	tor	7			Voltage					4		
				Capacitor Type		ECEA Type		Other		Tolerance				
1 H	102	Z	F	ECEA	: Electrolytic	OJ	;	6.3V	1H		50V	С	:	± 0.25pF
oltage	Value	Tolerance	Peculiarity	ECCD	: Ceramic	1A 1C	:	10V 16V	2H 1	:	500V 100V	J K	:	± 5% ± 10%
50	M	R47	R	ECQM	: Polyester	1E	1	25V	KC	;	400V AC	Z	:	+80%, -20%
oltage	Peculiar	ity Value	Special use	ECQP ECET ECEAN	: Polypropylene : Electrolytic : Non Polar	1H 1V 50	:	50V 35V 50V				Y	:	± 22%
					Electrolytic	25	1	25 V	-					

• RESISTORS

THE SIG	TONO		22								
Ref. No.	Part No.	Value	Ref No	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Va
R1,1	ER010TL /391U	390	R73,74	ERD10TLJ102U	1K	R218	ERDS2TJ104	100K	R226	ERDS2TJ471	
R3,4	ERD10TLJ224U	220K	R75,76	ERD10TLJ124U	120K	R219	ERDS2TJ821	820	R229	ERDS2TJ104	1
R5,6	ERO10MKG5622	56.2K	R77,78	ERD10TLJ103U	10K	R220	ERDS2TJ103	10K	R230	ERDS2TJ561	
R7,8	ERD10TLJ271U	270	R79,80	ERD10TLJ220U	22	R221	ERDS2TJ684	680K	R231	ERDS2TJ333	
R9,10	ERD10TLJ680U	68	R204	ERDS2TJ391	390	R222	ERDS2TJ152	1 5K	R232	ERDS2TJ474	4
R11,12	ERO10TLJ184U	180K	R209	ERDS2TJ331	330	R223	ERDS2TJ154	150K	R236	ERDS2TJ101	
R13,14	ERD10TLJ123U	12K	R210	ERDS2TJ222	2.2K	R224	ERDS2TJ222	2.2K	R237	ERDS2TJ221	
R15,16	ERD10TLJ563U	56K	R211	ERDS2TJ561	560	R225	ERDS2TJ103	10K	R241	ERDS2TJ473	
R17,18	ERD10TLJ102U	1K	R215	ERDS2TJ104	100K	R226	ERDS2TJ102	1K	R242	ERDS2TJ103	
871.72	ERO10TLJ334U	330K	B217	ERDS2TJ102	1K	R227	ERDS2TJ103	10K	R243	ERDS2TJ473	

Bal No	Part No.	Value	Ref No.	Part No.	Value	Ref No	Part No	Value	Ref. No.	Part No.	Value
		712.00					1	3.3	C503,504	ECQM1H563JZ	0.056
5 🛆	ERDS0FJ103	10K		ERDS1FJ152	1.5K	C1,2	ECEA1HU3R3	1 1 1 1 1 1 1 1 1 1 1 1 1		The second secon	0.006
5	ERDS2TJ103	10K	R705	ERDS2TJ561	560	C3,4	ECCD1H101K	100P	C507,508	ECEA1HU010	
5	ERDS2TJ332	3.3K	R706	ERDS2TJ682	6.8K	0,00	ECKD1H102ZF	0.001	C509,510	ECCD1H101K	100P
5	ERDS2TJ392	3.9K	R708 (\$1	ERG2ANJ220	2.2	C7,8	ECQM1H223JZ	0.022	C511,512	ECCD1H101K	100P
0	ERDS2TJ824	820K	R709 🛆	ERDS1FJ152	1.5K	C9,10	ECQM1H682JZ	0.0068	C513,514	ECCD1H101K	100P
	ERDS2TJ104	100K	R710	ERDS2TJ821	820	C11,12	ECEA1HN010S	1	C515,516	ECQM1H183JZ	0.018
2	ERDS2TJ822	8.2K	R711	ERDS2TJ102	1K	C13,14	ECEA0JU330	33	C517,518	ECQM1H104JZ	0.1
3,304	ERDS2TJ183	18K	R712	ERDS2TJ272	2.7K	C71,72	ECEA1HU3R3	3.3	C519,520	EGQM1H332JZ	0.0033
7,308	ERDS2TJ332	3.3K	R713	ERDS2TJ222	2.2K	C73,74 5	ECCD1H390K	39P	C521,522	ECQM1H333JZ	0.033
)	ERDS2TJ151	150	R714	ERDS2TJ820	82	C75,76	ECCD1H820K	82K	C523,524	ECEATHU3R3	3.3
)	ERDS2TJ153	15K	R715	ERDS2TJ562	5.6K	C77.78 \$	ECKD1H391KB	390P	C531	ECKD1H103ZF	0.01
1	ERDS2TJ103	10K	R716 S	ERG1ANJ121	120	C203 \$	ECKD1H103ZF	0.01	C532	ECEATCU100	10
3	ERDS2TJ274	270K	R717	ERD2FCJ5R6	5.6	G209,210 §	ECKD1H103ZF	0.01	C534	ECKD1H223ZF	0.022
5,316	ERDS2TJ104	100K	R801,802	ERDS2TJ103	10K	C211	ECEA1HU010	1	C551,552	ECKD1H221KB	220P
1	ERDS2TJ102	1K	R803	ERDS2TJ103	10K	C212 \$	ECKD1H103ZF	0.01	C601,602	ECEATOU100	10
3	ERDS2TJ102	1K	R804	ERDS2TJ183	18K	G213	EGEA1CU100	10	C603,604	ECCD1H050CC	5P
5	ERDS2TJ102	1K	R805,806	ERDS2TJ333	33K	C214	ECKD1H2232F	0.022	C605,606	ECKD1H821KB	820P
7	ERDS2TJ471	470	R807,808	ERDS2TJ683	68K	C215 S	ECCD1H101K	100P	C607,608	ECCD1H180KC	18P
3,409	ERDS2TJ471	470	R811,812	ERDS2TJ472	4.7K	C216 S	ECKD1H223ZF	0.022	C609,610	ECCD1H330K	33P
2,413	ERDS2TJ100	10	R813,814	ERDS2TJ331	330	G217 g	ECKD1H103ZF	0.01	C611,612	ECCD1H101K	100P
[XL]orling			R816	ERDS2TJ822	8.2K	C218	ECEATHU3R3	33	C613,614	ECCD1H101K	100P
,502	ERDS2TJ222	2.2K	8817	ERDS2TJ223	2.2K	C219	ECEA0JU101	100	C615,616	ECEATHN010S	1
3,504	ERDS2TJ183	18K	R818	ERDS2TJ123	12K	C220	ECEA1CU100	10	C621,622	ECQM1H104JZ	0.1
5,506	ERDS2TJ393	39K	R819	ERDS2TJ223	22K	G221 S	ECCD1H080CC	98	C623,624	ECQM1H104JZ	0.1
2,508	ERDS2TJ224	220K	R820	ERDS2TJ101	100	C222	ECCD1H470K	47P	C625	ECEA1JU330	33
9,510	EROS2TJ474	470K	R823	ERDS2TJ394	390K	C223 S	ECCD1H180KC	189	C626	ECKD1H103ZF	0.01
1,512	ERDS2TJ474	470K	R824	ERDS2TJ153	15K	C224	ECKD1H221KB	220P	C628	ECEA1HN3R3S	3.3
3,514	ERDS2TJ223	22K	R826	ERDS2TJ333	33K	C225 'š	ECKD1H223ZF	0.022	C629	ECEA1HU0R1	0.1
5,516	ERDS2TJ332	3.3K	R827	ERDS2TJ332	3.3K	C226	ECQP1471JZ	470P	C701	ECKDKC103PF2	0.01
7,518	ERDS2TJ223	22K	R828	ERDS2TJ823	82K	C227 s	ECCD1H100KC	10P	C702	ECQE1474KZ	0.47
9.520	ERDS2TJ392	3.9K	R829	ERDS2TJ103	10K	C228	ECKD1H103ZF	0.01	C703,704	ECETS45V822U	8200
.522	ERDS2TJ102	1K	R830	ERDS2TJ473	47K	C229	ECEATHUR47	0.47	C706	ECEATVU330	33
1	ERDS2TJ101	100	R831	ERDS2TJ682	6.8K	C231	ECQM1H183JZ	0.018	C708	ECEA1VU470	47
.602	ERDS2TJ562	5.6K	R832	ERDS2TJ822	8.2K	C235	ECKD1H103ZF	0.01	C709	ECKD1H223ZF	0.022
3,604	ERDS2TJ124	12DK	R833.834	ERDS2TJ223	2.2K	C240[XL]	ECKDHS102MD	0.001	C710	ECEAOJU101	100
	ERDS2TJ182	1.8K	R835	ERDS2TJ223	22K	C241,242[XL]	ECKDHS101MB	1009	G711	ECKD1H103ZF	0.01
5,606		1000	R837	ERDS2TJ103	10K	C243[XL] \ S	ECKDHS102MD	0.001	C712	ECEATVU470	47
,608	ERDS2TJ683	68K	R838	ERDS2TJ223	22K	C244 S	ECKD1H473ZF	0.001	G713	ECKD1H103ZF	0.01
,610	ERX3ANJR22	0.22	R901		7.01	C290	ECKD1H4732F	0.047	C801,802	ECEATHU3R3	3.3
,612	ERDS1FJ100	10	110.0.1	ERDS2TJ102	1K	C290		220P	C803	The same of the sa	
3,614 🛆	ERDS1FJ100	10	R902	ERDS2TJ561	560	C292[EX.EH]	ECKD1H221KB	0.001	C805	ECEA1HU3R3	3.3
9,620	ERDS2TJ680	68	R903	ERDS2TJ101	100	C301	ECKD1H102ZF		C805	ECEATHU010	170
,622	ERDS2TJ471	470	R904	ERDS2TJ682	6.8K	23.55	ECEA1HU2R2	2.2	7.700	ECEA0JU471	470
3,624	ERDS2TJ333	33K	R905	ERDS2TJ333	33K	C302	ECEA1VU4R7	4.7	C807	ECCD1H101K	100P
626	ERDS2TJ104	100K	R906	ERDS2TJ562	5.6K	C303	ECEA1CU101	100	C808	ECEA1CU100	10
,630	ERDS2TJ331	330	R907	ERDS2TJ273	27K	C304 5	ECKD1H223ZF	0.022	C901	ECEA0JU102	1000
	ERDS2TJ393	39K	R908	EROS2TJ103	10K	C306	ECKD1H103ZF	0.01	C902	ECCD1H180KC	18P
2	ERDS2TJ104	100K	R910	ERDS2TJ104	100K	C307,308	ECEA1EU4R7	0.47	C903	ECCD1H080CC	89
	ERD25FJ 221	220	R911	ERDS2TJ681	680	C309,310	ECQM1H153JZ	0.015	C904,905	ECKD1H103ZF	0.01
	ERDS2TJ103	10K	R914	ERDS2TJ151	150	C311	ECEA1HU010	1	C906	ECKD1H103ZF	0.01
,636	ERG1ANJ331	330	R919,920 [XA,XL]	ERDS2TJ224	220K	C312	ECEA1HUR47	0 47	C907	ECEA25M4R7R	4.7
	ERD25FJ470	47				C303	ECQM1H473JZ	0.047	C908	ECEA1CU100	10
						C314	ECOP1471JZ	470P	C910	ECEAOJU102	1000
						C315	EGEA1HU010	1	C911,912	ECEATVU330	33
						C401,402	ECKD1H103ZF	0.01	C913	ECKD1H103ZF	0.01
						C403	ECKD1H103ZF	0.01	C914[XA,XL]	ECKD1H103ZF	0.01

■ REPLACEMENT PARTS LIST

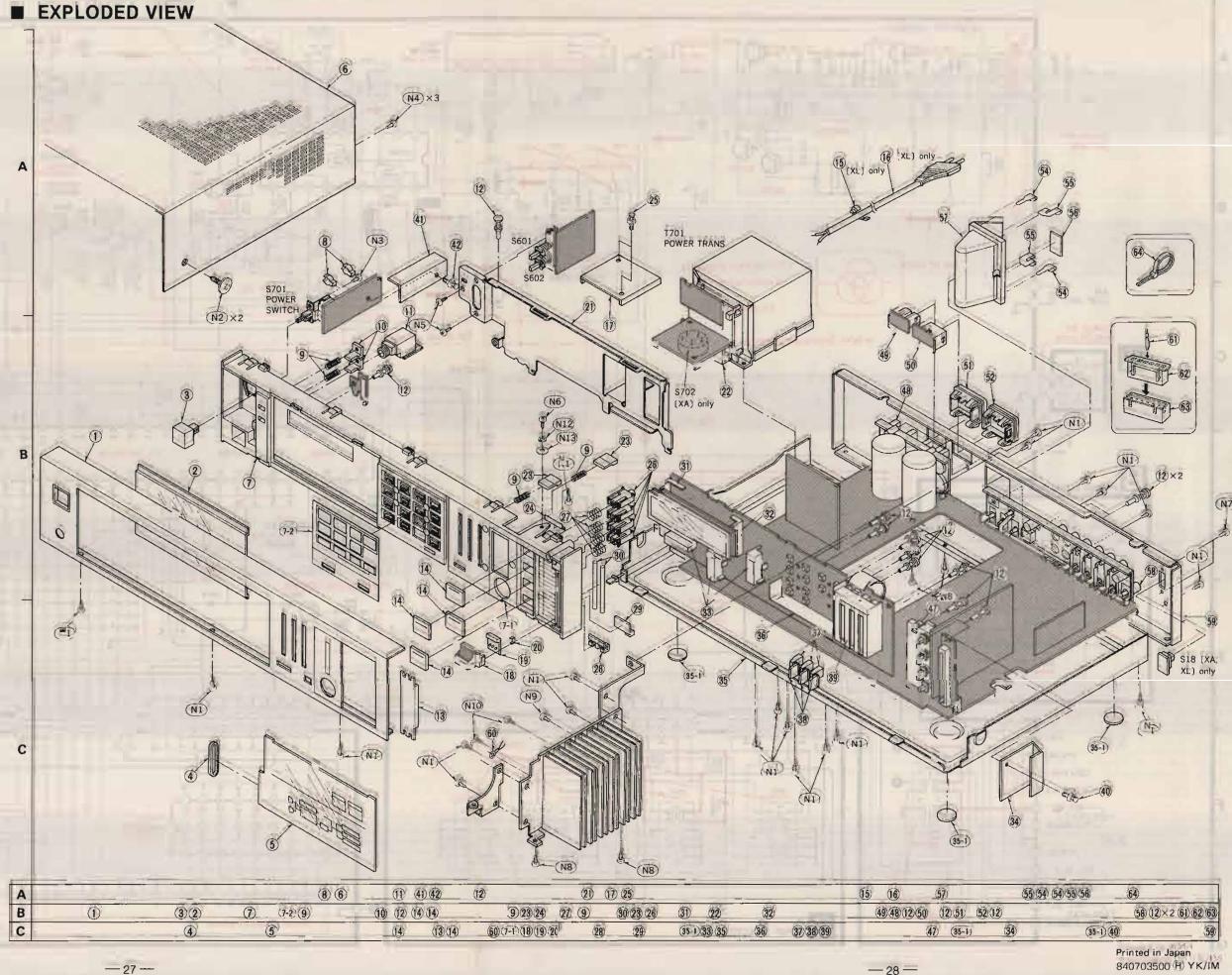
Part numbers are indicated on most mechanical parts.

Please use this part number for parts orders.

Important safety notice:
 Edition parts.
 Important safety notice:
 Bracketed indications in Ref. No. columns specify the area.
 The parenthesized number in the column of description stand for the quantity per set.

3. The "\$" mark is service standard parts and may differ from production parts.

Ref No	Part No	Description	Ref. No.	Part No.	Description	Ref No.	Part No.	Description	Ref No	Part No.	Description	4
INTEGRATED CIT	RCUITS	- 100	CRYOTAL		- 11 110	CABINET	AND CHASSIS	PARTS	CABINET	AND CHASSIS	PARTS	
C1	AN6558F	Integrated circuit	X901	SVQ4351452-D	4.5MHz Counter	47-1 K	3GK1834D	Sheet,input Selector	51	SJS9231A	Socket,AC Inlet	(t)
C71	AN7062	Integrated circuit		014.00.00	OSC	7-2	SGK1835-5A	Sheet Indication 1	[EX,EH,XA]	000020171	Cooker, No line.	
C201	AN278	Integrated circuit	VARIABLE	RESISTORS		147-2	SGK1835-5B	Sheet Indication 1.	52 🛆	SJS9232A	Socket,AC Outlet	
C202	AN7273B	Integrated circuit	VR301	EVNE4AA0085	FM MPX VCG				[XAJonly △			
C301	SVIUPC1161C3	Integrated circuit	VH301	EAMERANDES	Adj.5KΩ(B)	8	SJT345	Holder, Fuse '2'	54	SJC7	Terminal, Battery Case 12	2)
C501	SVINJ4559DDM	integrated circuit	VR501	EWAPBAX05B15		9	SUS257	Spring Speakers Steree	55	SJC9	Terminal Battery Case 12	21
C601	STK2038-4	Integrated circuit	T T T T T T T T T T T T T T T T T T T	LYTAI DAXOOD 10	100KΩ(B)			Dex, Loudness 4	56	SGK1569-1	Label Battery Case	1
C801	MN1404STE	Integrated circuit	VR502	EWANF5X05G15		102 30	989 100211	Sold of the Market Co.	57	SJB3005-1	Battery Case	
C901	UPB553AC	Integrated circuit			100KΩ(G)	r 10	SBC483-6T	Button, Speaker 12	58	SJF8037-17N	Terminal Board,Input	11
C902	SVID1704C551	Integrated circuit	VR503,504	EWANA6X05C15	Tone Control	1410	SBC483-8T	Button, Speaker 12	FOUND	Special V	\$66 W 8 0	
C903	AN6873N	Integrated circuit			100KΩ(C)	111	SJJ71B	Jack, Headphones 11	59[XA] 59[XL]	3GP6180-4A 3GP6180-5A	Rear Panel	3
RANSISTORS	TAX	I	VARIABLE	CAPACITORS		12	SHR415	Pin,P C.B	59(other)	SGP6180-1A	Rear Panel	
771,72	23A1123-R	Transistor	CT201	ECRHA010A11	AM Antenna		3/10413	Holder -10	a stomen	3GF0100-1A	near range	1
2201,202,210	2SC1815-Y	Transistor	0,20,	LOTHINGTON	Trimmer	13	SGX7669	ornament, Main, Volume	60	SNE75	Plate,Ground terminal	
11,702	Landa Service	E-start.	LAMP			L 13 %	SGX7669-1	Ornament, Main, Volume 11	61	SJT783	Terminal	51
2203,207,208	2SA1015Y	Transistor		4.000000000	T (172 - 1/3 - 1/4			100	F 62	SJS5629	Socket(6pin)	15
903 [XA,XL]only 0301,901,902	2SC1815GR	Tanadayac	PL701 🛆	XAMS6Q17	Identification Plate	14	SBCA350-SE	Button,CD/Video	462	SJS5215	Socket(2pin)	1
2301,301,302	230101308	Transistor (Product Part	FUEL		lind	100	inchies.	/Aux 141	F 63	SJT3611	Post(6pin)	9
		No.is 2SC945)	FUSES			15[XL]only	SHR131	Bushing,AC Cord	63	SJT3213	Past(2pin)	25
0601,602	2SC2631-Q	Transistor		XBA2C25TRO	250V,T2.5A	16[XL]only	or a discount of	U.S. March	100	1	Towns I was a service of	1
A STATE OF THE REAL PROPERTY AND ADDRESS OF THE PARTY AND ADDRESS OF TH	2SC1845-E	Transistor		XBA2C12TRO	250V,T1.25A		QFC1207MA	AC Cord (1)	64	3HR301	Clamper Read Wire 13	12
10.00	2SD1265-0	Transistor	COMPON	NT COMBINA	TONS	17(XA)only	SMX771	Shield Cover	SCREWS,	WASHERS		-
2703	2SC1685-QNC	Transistor	Z301,302	EXRP181K473C	47KΩ×1/180P/	10	SBOSS	Dutten Willia Villa 1	N1	XTBS3+8BFZ1	Tapping, +3X6	1
2704	2SA564A-QNC	Transistor	120	National Committee	X1	18 K	SBD96 SBD96-1	Button, Main, Volume 11:				
2801,802,803	2SC1815-Y	Transistor	Z901	EXBP87104M	100KΩ(X7)	۱٦٬۰۰ ۶	3DD30-1	Button, Main, Volume 11	HN2	SNE2095-4	Cabinet (2	0
806,814		-	Z902	EXFP7331MW	330pF(X ¹⁾	19	SBE295	Holder, Main Volume 11;	4N2 ×	SNE2095-5	Cabinet (2	41
0808,813	2SA992E	Transistor	SWITCHES	3		20	SHR5274	Spacer Main Volume	145 (8	INVESTIGATION .	T T SACRETURED A VALUE OF	
DIODES			\$1~14,16	SSG13	Preset Buttons	21	SMC1140-1	Shield Plate (1)	N3	(TB3+8BFN	Tapping ±3×8	1
71,72	MA162A	Switching	S18 [XA,XL]		AM allocation	22[XA]only			PA DE	MADE PRICES	Leaster Peaces to	127
204	SVDKV1236Z	Variable	S401~404	SSH480	Input selector		SJS5711	Socket 11;		XTB3+8BFN XTB3+8BFZ	Tapping, 3×8 13	
		capacitance	S405	SSH1033	Tape-monitor,	23	SBC565-3	Button, Tape monitor (2)	744 85.5	X1B3+8BFZ	Tapping, 3×8	
0208,401,402	LN846RP	LED, Tuning,	100	100	Stereoplex	24	SMC1063	Shield Plate,	N5	XYNS3+C6-1S	3×6 3	
403,404,405		Input selector	S501	SSH1031	Loudness	1		Tape monitor	N6 S	XYN3+85	**************************************	Ó
ALC:		and,stereo	\$601,602	SSH2047	Speaker Selectors	25	SHR401-1	Clip	A STATE OF THE PERSON NAMED IN	XYN25+C5FZ	26×5	71
0210	MA27W-A	Switching	S701 🛆	SSH1071	Power	26	SHR9724	Holder, Selector, Button	N8	XTW3+8H	Tapping, 3×8	
0206,211,601	MA 165	Switching	S702	ESE37219	Voltage selector	27	SUS191-1	Spring Selector Button	N9	XTB3+88	Tapping, 3×8	
502,901,902			(XA)	W-11 20 10 1		28	SHR322	Holder Main Volume 11.	N10 8	XTB3+16B	Tapping, 3×16	640
903,914			FLUORES	CENT DISPLAY	TUBE	29	SHR9723	Holder, Volume (1)	N11	XYN3+C6FZS	Washer il	
14 [XA,XL]only			Ft	SAD7MT29ZA	Frequency Display	30	SUG183	Connection Rod	N12	XWA3B	Washer 11	1
919 [EX,EH.]only 0407	1 1104 200	LED.Volume	THERMAL	DETECTOR		31	SMN1911-1	Main Volume 121	N13	XWG3	Washer 1	4
The second second	LN217RP SVDS2V20	Rectifier	PS801	SRPBA47101	Temperature Det,	32	SMN1911	Bracket,FL(Left) 11	ACCESSO	RIES		
0706	MA4270	27V,Zener	15001	SHF DA47 101	130°C(266°F)Sensor	33	3MP373	Holder LED 31	100	SJA168	Cord AC Power	7
0707	MA4160-L	16V,Zener	PS802	SRPBD47101	Temperative Pet,	34	SMZ315	Shield Cover	I (AA)Z	33A100	Source :1	3
LAGARE.	MA167	Rectifier	1 3502	3/11/004/101	100°C(212°F)Sensor	1 0	31412313	Silield Cover	L at	SFDAC05E02	Cord,AC Power	1
0709,918	MA4062-M	6.2V,Zener	EM EDON	FEND	100 0(2121)06(80)	35[XA]	SKUA350-SX	Bettom Board Ass'y :1	[other]	SI DACOSCOE	Source	
CATTON CONT. DOCUMENT	MA165	Switching	FM FRONT		Modern Day	35[other]	SKUA450-SM	Bottom Board Ass'y	A2	SSA902	Loop Antenna 11	1
0802~806	MA167	Switching		SNVFE306E15	Frontend Pack		1888-00		A2-1	SMA231	Holder B	1
	MA162A	Switching		wast was stated	(PCB Ass' V)	35-1	SKL245-2	Foot '4'	A2-2	SMA233-1	Holder A	7
COILS			CABINET	AND CHASSIS F	PARTS	36	SMC1141-1	Shield Plate	A2-3	XTN3+10AFZ	Screw,Loop '2	
	SLA2B1-P	AM,Antenna	H1	GWA350	-SE Parel Front Ass'y	37	SBZ9018	Connection Rod	A3	SSA267-1	Cord,FM Antenna (1	1
	SL02B7-P	AM,OSC		10.	(1	1		DESCRIPTION OF THE PARTY OF THE	1 S 100	1115	THE PART OF THE PARTY OF THE PA	
\$1-5 por	SLQY07G-30	Choke	41	k SGWA350)-KE Panel, Front Ass'y		\$8D97	Button, Bass, Treble		SQF12104	Instruction Book	1
.801	SLQX101-3M	Choke			,1	The state of the s	SBD97-1	Button, Bass Treble		SQF12105	Instruction Book	Y
RANSFORMERS			2	SGU409	Transparent plate		SGX7668	Plate, Bass, treble	Tax O Tox St. Linear	SQF12103	Instruction Book	2
		TM Do	3	SBC627	Button, Power	L 39	SGX7668-1	Plate Bass, treble	PACKING	PARTS		
	SLI4B511-Z	FM Ret	1	citio (cr	Switch 1	10	CHD 101 1	Odla US	P1 0	SPP699	Polyethylene Bag	2
	SLI4B513-Z	FM Discre	4	SHG436	Spacer, Transpa-	40	SHR401-1	Clip (1)	LP1 ·	3PP649	Polyethylene Bag (1,	
	SL12B101-M SLT5N439-W	AM IFT		SDL84F	rent Plate (1	41	SMX809 SHR411	Shield Cover 11		SPS3519-1	Pad Left Side (1)	1
	SLT5N439-W	Power Source Power Source	5	K SDL84E	Indication Plate II	Of the second	SHH411 SUW2832	Dista Calastas Cuitas 1:		SPS3519-3	Pad,Left,Side (1)	
THE RESERVE AND ADDRESS OF THE PARTY NAMED IN	SLT5N438-W	Power Source	1-6	SKC1011		10 10 10 10 10 10 10 10 10 10 10 10 10 1	SJF4815-2	Terminal Board, Selector 1	L b3 [XF]	3PS3521-3	Pad,Right Side 11	
CONTRACTOR AND THE PARTY.		- Gwei Sdurce	6	K SKC1011		49	SJS9231B	Socket,AC Inlet (1)	P3 [other]	SPS3521-5	Pad, Upper Side .1)
ERAMIC FILTER	Contract and a few second second second	In a series	r- 7	SGXA350		[EX,EH,XA]	03052010	COOKELAC III/et		to allow	5	
F201,202	SVFE107MS8A	FM 10.7MHz		JUNASSU	Ass'y (1		SJS9232B	Socket,AC Outlet :11	P4	SPS3523	Pad,Upper Side (1)	1
	SOUTH CONTINUES	(Red)	1.7	K SGXA350	A STATE OF THE PARTY OF THE PAR	[XA]only 🛆	50002020	- Dungara Dunga	6 12	Two Cine	Dun to Day	
	SVFE107MS8D	FM 10.65MHz		COARGOO	Ass'y :1	1 1,5,5,7	1 - 1			SPG4864	Carton Box (1)	
CF204	SVFSFZ450F7L	(Black)	I- 7-1	JGK1834					P5 (other)	SPG4863	Carton Box (1)	1
		AM,450KHz	ALC: -		Selector 1				-	A STATE OF THE REAL PROPERTY.		1



55 dB

300 Ω (symmetrisch)

75 Ω (unsymmetrisch)

Synthesizer FM/AM Stereo Receiver

SA-350

- This booklet includes the specifications and adjustment of Model SA-350 (Order No. HAD84072865C8) written in German, French and Spanish.
- File this booklet together with the service manual of Model SA-350.
- Dieses Büchlein umfaßt die technischen Daten und Justierungsanleitungen von Modell SA-350 (Bestell Nr. HAD84072865C8) in den Sprachen Deutsch, Französisch und Spanisch.
- Bewahren Sie dieses Büchlein zusammen mit dem Service-Handbuch von Modell SA-350 auf.
- Cette brochure comprend les spécifications et la mise au point du Modèle SA-350 (NO d'Ordre HAD84072865C8)
 écrites en allenmand, en français et en espagnol.
- Classer cette brochure en meme temps qu'avec le manuel de service du Modèle SA-350.
- Este librito incluye las especificaçiones y ajuste de Modelo SA-350 (Pedido Nº HAD84072865C8) escritas en alemán, francés y español.
- Guardar este librito juntamente con el manual servicio de Modelo SA-350.

DEUTSCH

Übersprechdämpfung

Antennenanschluß

150 mV ±1 dB

■ TECHNISCHE DATEN

Ausgangsspannung

Tape, Aufnahme (TAPE, REC OUT)

Kanalabweichung (250 Hz ~ 6300 Hz)

(DIN 45 500)	
■ VERSTÄRKERTEIL	
Dauerton-Ausgangsleistung bei 20 Hz	~ 20 kHz
beide Kanäle ausgesteuert	$2 \times 45W (4 \Omega)$
beide Kanale adogestedert	$2 \times 37W (8 \Omega)$
Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	$2 \times 55W (4 \Omega)$
beide italiaio zaugestodett	$2 \times 47W (8 \Omega)$
Gesamtklirrfaktor	
Nennleistung bei 20 Hz ~ 20 kHz	0,02% (4 Ω)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0,007% (8 Ω)
Nennleistung bei 1 kHz	0,001% (8 Ω)
Intermodulationsfaktor	,
Nennleistung bei 250 Hz: 8 kHz =	4:1, 4 Ω 0,02%
Nennieistung bei 60 Hz: 7 kHz = 4	
nach SMPTE, 8 Ω	0,01%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei -3	dB
	5 Hz \sim 40 kHz (4 Ω)
Dämpfungsfaktor	20 (4 Ω), 40 (8 Ω)
Eingangsempfindlichkeit und -impeda	n2
Phono	2,5 mV/47 kΩ
CD/AUX1, VIDEO/AUX2, TAPE/E	
Maximale TA-Eingangsspannung (1 kl	Hz, eff.) 160 mV
Geräuschabstand	
Nennleistung (4 Ω)	
	B (nach IHF, A: 80 dB)
CD/AUX1, VIDEO/AUX2, TAP	
	B (nach IHF, A: 95 dB)
Frequenzgang	DIAA Chaadaadhaa
Phono	RIAA-Standardkurve
),8 dB (30 Hz ~ 15 kHz)
CD/AUX1, VIDEO/AUX2, TAPE/E	a i 5 Hz ∼ 70 kHz (−3 dB)
Klangregler	3 112 - 10 KHZ (-3 UD)
	60 Hz, +10 dB ~ −10 dB
	kHz, +10 dB ~ -10 dB
Gehörrichtige Lautstärkekorrektur (Lo	
(bei -30 dB Ausgangsleistung)	50 Hz. +9 dB
(

Kopfhörerpegel und -Impedanz	440 mV	/330 Ω
Lautsprecherimpedanz		
MAIN oder REMOTE	4 Ω ~	- 16 Ω
MAIN und REMOTE	8Ω~	- 16 Ω
■ UKW-TUNERTEIL		
Wellenbereich	87,50 ~ 108,0	0 MHz
87,525	~108,025 MHz (+25 kH	z shift)
Eingangsempfindlichkeit		
S/R 30 dB	1,9 μV (300 Ω), 1,3 μV	(75 Ω)
S/R 26 dB	1,7 μ V (300 Ω), 1,2 μ V	(75Ω)
S/R 20 dB	1,5 μ V (300 Ω), 0,9 μ V	(75Ω)
Nutzempfindlichkeit nach IHF	1,9 μV (nach II	HF '58)
Stereoumschaltschweile bei 46 d	dB nach IHF 22 μ	V/75 Ω
Gesamtklirrfaktor		
Mono		0,15%
Stereo		0,3%
Geräuschabstand		
Mono	60 dB (77 dB nac	
Stereo	58 dB (71 dB nac	,
	Hz \sim 15 kHz (+1 dB \sim	
Trennschärfe bei Störsender ±40	00 kHz	70 dB
Einfangverhältnis		1 dB
Splegelfrequenz-Dämpfung bei	98 MHz	55 dB
ZF-Dämpfung bei 98 MHz		80 dB
Ansprechdämpfung auf Nebenfr	equenzen bel 98 MHz	82 dB
MW-Unterdrückung		50 dB
Übersprechdämpfung		
1 kHz		40 dB
10 kHz		30 dB
Trägerrest	00 40 / 05 40)- ICITY
19 kHz	-33 dB (-35 dB nac -50 dB (-50 dB nac	
38 kHz Kanalabweichung (250 Hz \sim 630	•	1,5 dB
Begrenzereinsatz	10 f12) ±	1,3 uB
Bandbreite		·, ε μν
ZF-Verstärker	11	30 kHz
UKW-Demodulator		00 kHz
OR W-Delliodulator	100	70 KI (2

■ MW-TUNERTEIL

522 ~ 1629 kHz (9-kHz-Schritte) Wellenbereiche Eingangsempfindlichkeit (S/R 20 dB) 20 µV, 300 µV/m 55 dB Trennschärfe 40 dB Spiegelfrequenz-Dämpfung bei 999 kHz 60 dB ZF-Dämpfung bei 999 kHz

ALLGEMEINE DATEN

Leistungsaufnahme

330 W

Netzspannung

Für Kontinentaleuropa Wechselstrom 50 Hz/60 Hz, 220V Für andere Länder

Wechselstrom 50 Hz/60 Hz,

110V/120V/220V/240V

430 × 97 × 283 mm Abmessungen (BXHXT)

(16-15/16" × 3-13/16" × 11-5/32")

Gewicht 6.6 kg (14,6 lb.)

Bemrkung:

Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

(Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden,)

MESSUNGEN UND JUSTIERUNGEN

AM (MW)-EINSTELLUNG

Anmerkung: Die AM OSC-Spule (L202) und AM ZFT (T203) sind bereits justiert und benötigen keine Justierung,

Stellungen und zu benutzende Geräte

- Elektronische Voltmeter für Wechsel- und Gleichstrom (VTVM)
- AM (MW)-Meßsender (AM-SG)
- 3. Bereichsschalter AM
- 4. AM (MW) Wellenverteilungs-Wahlschalter auf Position "9 kHz" stellen.
- Der Ausgang des Meßsenders darf nicht h\u00f6her sein als unbedingt notwendig für eine gute ablesung.
- Einen nichtmetallischen Schraubenzieher für die Einstellungen verwenden.
- 7. Die Netzspannung auf ihren Sollwert einstellen,

Nr.	AM (MW)-MESSE	NDER	ANZEIGE- FREQUENZ		ABGLEICH-	V-V			
	ANSCHLUSS	FREQUENZ	DURCH VOR- EINSTELLUNG	VORBEREITUNG	SPUNKTE	ABGLEICHSVERFAHREN			
	MW-HF-ABGLEICH								
1	200pF Kondensator mit dem MW-Antenne- neingang verbinden.	nerator über einen (400 Hz Modulat., 612 kHz		Oszilloskop oder	L201 (Ant. Spule)	Auf max. Ausgang abgleichen Den Ferritkern von L201 mit einem Schraubendreher justieren.			
2		1503 kHz (400Hz Modulat., 30%)	1503 kHz	Wechselstrom-Volt- meter über den Lautsprecher schließen	CT201 (Ant. Trimmer)	Auf max. Ausgang abgleichen. Die Schritte (1) und (2) wiederholen, bis die Frequenz genau mit der Skalenanzeige übereinstimmt.			

FM (UKW)-EINSTELLUNG

- Stellungen und zu benutzenden Geräte
- UKW-Meßsender (FM-SG)
- 2. Elektronische Voltmeter für Wechsel-und Gleichstrom (EVM)
- Signalfrequenzmesser (meßar für 19kHz und 108MHz)
- Bereichsschalter FM
- Den UKW-Betriebsartenschalter auf die "mono"-position stellen.
- Die anderen Einstellungen sind gleich wie beider MW-Justierung. 7. Stereo-Modular (oder Trennmesser)
- Vorbereitung am UKW-Messender (FM-SG)
- SG-Ausgang über 75-Ohm-UKW-Kunstantenne an den Antenneneingang des Gerätes anschließen.
- Der normale Eingang des Gerätes beträt 60 dB (1 mV), 400 Hz, 100% Modulation, Wegen Verwendung der Kunstantenne muß ber Signalausgang 12 dB (4µV) plus (ZHF) sein: d.h. beim Eingang von 60 dB (1 mV) soll der Signalausgang 72 dB 4 mV) sein.)

	FM (UKW) MESS	ENDER	FREQUENZ	VORBEREITUNG	ABGLEICH-	ABGLEICHSVERFAHREN
Nr.	ANSCHLUSS FREQUEN		DURCH VOR- EINSTELLUNG	VORBEREITONG	SPUNKTE	ABGLEICHSVERFAHREN
		ABGLEI	CH AUF MIN. V	ERZERRUNG IN ST	ELLUNG UKW-MO	NO
3	Meßsender über eine 75Ω-UKW- Kunstantenne an den UKW-Antennen- eingang anschließen.	100.1 MHz (400Hz Modulat., 100%)	100.1 MHz	Ein Gleichstromrören- voltmeter zwishen TP201 (-) und TP202 (+) über eine Drosselspule verbinden. (Siehe Abb. 2)	T201 (Diskriminator FT)	Den Kern von T201 so justieren, daß die gemessene Spannung im signallosen Modus 0mV im 300mV Bereich beträgt.
	(60 dB (1 mV) in den Antenneneingang leiten.)	100.1 MHz (400Hz Modulat., 100%)	100.1 MHz	Klirrfaktor-Meßbrücke uber den Lautsprecher schließen	T202 (Diskriminator FT)	T202 Kern für minimale Verzerrung der rechten und linken Kanäle justieren.
			LUCIAL OTE	DEC DEVODED AD	TI ELOU	

UKW-STEREO-DEKODER-ABGLEICH

UNTER VERWENDUNG EINES ZAHLES ALTERNATIV-MEB METHODE

ANIZEIGE

- Unmodulierts Mono-Signal 100.1MHz in das Gerät speisen. FM muting/mode-Schalter auf "on/FM auto
- Zähler über einen Widerstand 100k ohm an TP301 schließen.
- VR301 auf 19 kHz ± 30 Hz einstellen.

5

- Stereosignal entweder von einem Stereogenerator, Oder einem Sender einspeisen.
- VR301 so einstellen, bis die Stereolampe auf leuchtet. VR301 Schleifer von sichern, wie in Abb. 4 gezeigt.

FRANÇAIS

■ CARACTERISTIQUES

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue de 20	
les deux canaux en circult	$2 \times 45W (4\Omega)$
	$2 \times 37W$ (8 Ω)
Puissance de sortie continue à 1 k	Hz
les deux canaux en circuit	$2 \times 55W (4\Omega)$
	$2 \times 47W$ (8 Ω)
Distorsion harmonique totale	
à puissance nominale (20 Hz~	20 kHz) 0,02% (4Ω)
	0.007% (8Ω)
à puissance nominale (1 kHz)	0,001% (8Ω
Distorsion d'intermodulation	-100 1 10 10 10 10
à puissance nominale à 250 Hz	z: 8 kHz=4:1, 4Ω 0.02%
à puissance nominale à 60 Hz:	
	0.01%
SMPTE, 8Ω	0,01%
Réponse de fréquences	4D 5115 40 1115 (40)
les deux canaux en circuit, -3	
Coefficient d'amortissement	20 (4Ω), 40 (8Ω)
Sensibilité et impédance d'entrée	W 2 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
PHONO	2,5 mV/47kΩ
CD/AUX1, VIDEO/AUX2, TAPI	
PHONO (tension d'entrée maximus	m, 1 kHz RMS) 160 mV
Signal/Bruit	
à puissance nominale (4Ω)	
PHONO	72 dB (IHF, A: 80 dB)
CD/AUX1, VIDEO/AUX2, 1	TAPE/EXT
	88 dB (IHF, A: 95 dB)
Réponse de fréquence	
PHONO	Courbe nominale RIAA
	±0,8 dB (30 Hz~15 kHz)
CD/AUX1, VIDEO/AUX2, TAPE	E/EXT
	5 Hz~70 kHz (-3 dB)
Réglage de la tonalité	
BASSES (BASS)	50 Hz, +10 dB~ -10 dB
AIGUS (TREBLE)	20 kHz, +10 dB~ -10 dB
Compensateur physiologique (volu	
Compensated physiciogidae (void	50 Hz, +9 dE
Tension de sortie	50 1141 15 414
SORTIE ENREGISTREMENT/E	BANDE
(TAPE, REC OUT)	150 mV
Equilibrage des canaux, 250 Hz~6,	
-	55 dE
Séparation des canaux	
Niveau de sortie des casques et im	pedance 440 mv/5501
Impédance de charge	(MANIAL OF DEMOCE)
PRINCIPALE ou AUXILIAIRE (
	4Ω - 16Ω
PRINCIPALE et AUXILIAIRE (I	MAIN and REMOTE)

■ SECTION SYNTONISATEUR FM

Gamme de fréquence	87,50~108,00 MHz
87.525~108	3.025 MHz (+25 kHz shift)
Sensibilité	
S/B 30 dB 1,9	$9 \mu V (300\Omega), 1.3 \mu V (75\Omega)$
S/B 26 dB 1,3	$7 \mu V$ (300Ω), 1.2 μV (75Ω)
S/B 20 dB 1,5	$5 \mu V$ (300Ω), 0.9 μV (75Ω)
Sensibilité utilisable IHF	1,9 µV (IHF '58)
Sensibilité stéréo au seuil de 46 dB,	IHF 22 μV/75Ω
Distorsion harmonique totale	50-00 Al-10
MONO	0.15%
STEREO	0.3%
Signal/Bruit	
MONO	60dB (77 dB, IHF)
STEREO	58 dB (71 dB, IHF)
Réponse de fréquence 20 H	z~15 kHz, +1 dB~ -2 dB
Sélectivité alternée par canal± 400 k	Hz 70 dB
Taux de capture	t dB
Rejection d'image à 98 MHz	55 dB
Rejection FI à 98 MHz	80 dB
Rejection de réponse parasite à 98 M	MHz 82 dB
Suppression AM	50 dB
Séparation stéréophonique	
1 kHz	40 dB
10 kHz	30 dB
Fuite de porteuse	
19 kHz	-33 dB (-35 dB, IHF)
38 kHz	-50 dB (-50 dB, IHF)
Equilibrage de canaux (250 Hz 6,30	10 Hz) ±1,5 dB
Point de limite	1,2 μV
Largeur de bande	
Amplificateur Fl	180 kHz
Démodulateur FM	1000 kHz
Bornes d'antenne	300Ω (symétrique)

■ SECTION SYNTONISATEUR AM

Gamme de fréquence	522~1629 kHz (par palier 9 kHz)
Sensibilité (S/B 20 dB)	$20 \mu V$, $300 \mu V/m$
Sélectivité	55 dB
Réjection d'image à 999 kh	tz 40 dB
Réjection FI à 999 kHz	60 dB

■ DIVERS

Consommation	330W
Allmentation	
Pour l'Europe	CA 50 Hz/60 Hz, 220V
Autres	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 97 × 283 mm
	(16-15/16" × 3-13/16" × 11-5/32")
Poids	6,6 kg
	(14 6 lb)

Remardues.

On mesure la distortion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

(Sujet à changement sans peraris.)

■ MESURAGES ET RÉGLAGES

REGLAGE DE AM

Nota: La bobine de l'oscillateur de la modulation d'amplitude (L202) et le transformateur de fréquence intermédiaire de modulation d'amplitude (T203) ont déià été ajustés et ne nécessitent plus de réglage.

	Réglage et équipemen Voltmètres électroniq continu (VTVM) Générateur du signal / Sélecteur de gamme . Régler le sélecteur d'a step"	ue de courant a AM (AM-SG) AM		nécessair 6. Utiliser u 7. Conserve	e à obtenir une lectu in tournevis non-mét	it pas être plus êlevé qu'il n'est re en sortie. allique pour la rélage. ur à la tension nominale.
	AM GENERAT	EUR	FREQUENCE D'AFFICHAGE	PREPARATIONS	ELEMENTS	PROCEDURE DE
d	BRANCHEMENT	FREQUENCE	PAR PREREGLAGE	THEFANATIONS	REGLES	REGLAGE
10			В	EGLAGE DE RF-AM		
	Raccorder le générateur de signaux AM (modula- tion d'amplitude) à la	612 kHz (modulé à 30% par 400Hz)	612 kHz	Branchez un c.a. voltmêtre électronique	L201 (Bobine Ant.)	Règler au maximum de signal de sortie. Règler le noyau ferrite de L201 à l'aide d'un tournevis.
	borne d'antenne AM par l'intermédiaire d'un condensateur de 200 pF en ser référant à la Fig. 1 (Entrée faible)	1503kHz (modulé à 30% par 400Hz)	1503 kHz	voltmêtre électronique ou nu oscilloscope sur les bornes de haut- parleur	CT201 (Trimmer Ant.)	Régler au maximum de signal de sortie. Refaire les étapes (1) et (2) jusqu'à ce que le fréquence s'aligne correctement avec l'affichage du cadran.

REGLAGE DE FM

-	Rég	lage	et	équipen	. ent	untilisé	

- Générateur du signal FM (FM-SG)
- Oscilloscope.

3

5

- Voltmètres électronique de courant alternatif et de courant continu (EVM),
- 4. Compteur de fréquence (19kHz et 108MHz mesurable).
- Sélecteur d'entrée sur la position "FM"
- 6. Placer le sélecteur de mode FM sur la position "mono".
- Les autres réglages sont les mêmes que pour la mise au point de l'amplitude modulée (AM).
- Préparatifs pour le générateur de signaux FM (FM-SG).
- Almenter la sortie du générateur de signaux à la borne de l'antenne de l'appareil, par l'antenne fictive FM de 75Ω.
- L'entrée standard de l'appareil est de 60 dB (1 mV), 400 Hz, 100% de modulation [à cause de l'utilisation de l'antenne fictive, la sortie du générateur de signaux doit être de plus 12 dB (4µV) (IHF). Ce qui signifie que quand l'entrée est de 60 dB (1 mV), la sortie du générateur de signaux doit être de 72 dB (4mV)].

FM GENERAT	EUR FREQUENCE D'AFFICHAGI		PREPARATIONS	ELEMENTS	PROCEDURE DE
BRANCHEMENT	FREQUENCE	PAR PREREGLAGE	THEFANATIONS	REGLES	REGLAGE
		REGLAGE DE	LA DISTORSION F	M EN MONO	
Branchez le générateur de signaux à la borne d'antenne FM à travers une antenne fictive FM	100.1 MHz (modulé à 100% par 400 Hz)	100.1 MHz	Brancher le voltmêtre électronique a c.c. aux bornes TP201 (-) et TP202 (+). (Voir la Fig. 2)	T201 (Transfor FI discri.)	Régler en noyau T201 de telle sorte que le voltage mesuré dans le mode sans signal, soti de 0mV dans la gamme des 300mV.
de 75Ω . (Appliquer 60 dB (1 mV) à la borne d'antenne.)	100.1 MHz (modulé à 100% par 400Hz)	100.1 MHz	Branchez un distor- tion metre sur les bornes de haut-parleur de appareil	T202 (Transfor FI discri.)	Régler le noyou T202 de telle sorte que la distor- tion des canaux droit et gauche soit la plus faible.
		REGLAC	SE PILOTE MULTIPL	EX FM	
AVEC	UN ERÉQUENC	CEMÊNTRE		PAR UN OUT	TRE SYSTÈME
Signal mono 100.1MF Commutateur de silen Branchez le fréquence Régler VR301 sur	cieux sur "on/F srmètre sur T	M auto	générate ne. 2. Régler phonic s	ur ou de la réception d	ue l'indicateur de stéréo-

ESPAÑOL

ESPECIFICACIONES

(DIN 45 500)

■ SECCION AMPLIFICADOR

Potencia continua de 20 Hz~20 kHz	z
en ambos canales	$2 \times 45W (4\Omega)$
	$2 \times 37W (8\Omega)$
Potencia continua de 1 kHz	, ,
en ambos canales	$2 \times 55W (4\Omega)$
• • • • • • • • • • • • • • • • • • • •	$2 \times 47W (8\Omega)$
Distorsión armónica total	E W MEN
potencia de régimen a 20 Hz~2	0 kHz 0.02% (4Ω)
potentia de regimen a 20 m2 2	0.007% (8Ω)
potencia de régimen a 1 kHz	0,001% (8Ω)
Distorsión por intermodulación	
potencia de régimen a 250 Hz:	8 kHz=4:1, 4Ω 0.02%
potencia de régimen a 230 Hz. 7	
SMPTE, 8Ω	0.01%
•	0,0196
Ancho de banda de potencia	E He 40 MH 440
con ambos canales, -3 dB	5 Hz~40 kHz (4Ω)
Factor de amortiguamiento	20 (4Ω), 40 (8Ω)
Sensibilidad e impedancia de entrac	
TOCADISC. (PHONO)	2,5 mV/47kΩ
CD/AUX1, VIDEO/AUX2, TAPE	
Voltaje máximo de entrada de PHO	NO (1 kHz, RMS) 160 mV
Relación de señal a ruido	
potencia de régimen (4 Ω)	
TOCADISC. (PHONO)	72 dB (IHF, A: 80 dB)
CD/AUX1, VIDEO/AUX2, TA	APE/EXT
	88 dB (IHF, A: 95 dB)
Respuesta de frecuencia	
TOCADISC. (PHONO)	curva RIAA estândar
	±0,8 dB (30 Hz~15 kHz)
CD/AUX1, VIDEO/AUX2, TAPE/	EXT
	5 Hz~70 kHz (-3 dB)
Controles de tono	
BAJOS (BASS)	50 Hz, +10 dB~-10 dB
	20 kHz, +10 dB~ -10 dB
Control de sonoridad (volumen a -3	
Voltaje de salida	GROUNG ST. Steel
GRAB., SAL. GRAB. (TAPE, RE	C OUT) 150 mV
Equilibrio de canales, 250 Hz a 6,300	
Separación de canales	55 dB
Impedancia y nivel de salida de los	
Impedancia de carga	2011001010
MAIN o REMOTE	4Ω~16Ω
	8Ω~16Ω
MAIN y REMOTE	017-1017

■ SECCION PARA SINTONIZADOR FM

Gama de frecuencias	87,50~108,00 MHz
	87.525-108.025 MHz (+25 kHz shift)
Sensibilidad	
Señal a ruido 30 dB	1.9 μ V (300 Ω), 1,3 μ V (75 Ω)
Señal a ruido 26 dB	1,7 μ V (300 Ω), 1,2 μ V (75 Ω)
Señal a ruido 20 dB	1,5 μ V (300 Ω), 0,9 μ V (75 Ω)

Sensibilidad de acallamiento estéreo de 46 dB IHF 22 μV/75Ω
Distorsión armónica total 0.15% MONO. (MONO) 0.35% ESTEREO (STEREO) 0.3% Relación de señal a ruido 60 dB (77 dB, IHF) MONO. (MONO) 60 dB (71 dB, IHF) ESTEREO (STEREO) 58 dB (71 dB, IHF)
MONO. (MONO) 0,15% ESTEREO (STEREO) 0,3% Relación de señal a ruido 60 dB (77 dB, IHF) ESTEREO (STEREO) 58 dB (71 dB, IHF)
ESTEREO (STEREO) 0,3% Relación de señal a ruido 60 dB (77 dB, IHF) MONO. (MONO) 58 dB (71 dB, IHF)
Relación de señal a ruido MONO. (MONO) ESTEREO (STEREO) 60 dB (77 dB, IHF) 58 dB (71 dB, IHF)
MONO. (MONO) 60 dB (77 dB, IHF) ESTEREO (STEREO) 58 dB (71 dB, IHF)
ESTEREO (STEREO) 58 dB (71 dB, IHF)
Respuesta de frecuencia 20 Hz = 15 kHz, +1 dB = -2 dB
transparent as transparent and the same and
Selectividad alternada de canal ±400 kHz 70 dB
Relación de captura 1 dB
Rechazo de Imagen a 98 MHz 55 dB
Rechazo de F.I. a 98 MHz 80 dB
Rechazo de respuesta espuria a 98 MHz 82 dB
Supresión AM 50 dB
Separación estereofónica
1 kHz 40 dB
10 kHz 30 dB
Fuga de onda portadora
19 kHz -33 dB (-35 dB, IHF)
38 kHz -50 dB (-50 dB, IHF)
Equilibrio de canales 250 Hz~6 300 Hz ±1.5 dB
Punto de limite 1.2μ V
Ancho de banda
Amplificador FI 180 kHz
Demodulador FM 1000 kHz
Bornes de antena 300Ω (equilibrado)
75Ω (no equilibrado)

■ SECCION PARA SINTONIZADOR AM

d8)
5 11 555 W
$PO \mu V$, 300 $\mu V/m$.
55 dB
40 dB
60 dB

■ GENERAL

330W
CA 50 Hz/60 Hz, 220V
CA 50 Hz/60 Hz.
110V/120V/220V/240V
430 × 97 × 283 mm
6" × 3-13/16" × 11-5/32")
6,6 kg
(14,6 lb.)

Nota:

La distorsión armónica total se mide con el analizador de espectro digital (sistema $\,$ H.P. $\,$ 3045).

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

■ MEDICIONES Y AJUSTES

AJUSTE DE AM

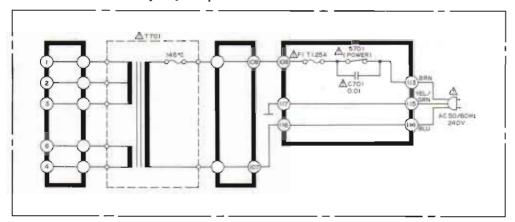
Nota: Bobina AM OSC (L202) y AM IFT (T203) han sido ya ajustados.

Puesta y Uso de equi Voltimetros electron Generador de señale Poner selector FM-A Poner selector de asi	icos de CA y CC s AM (AM-SG) M en positión "Al	M".	tep''.	6. Para el a	de generador de señale s para obtener una lectu juste use un destornillad r voltaje de lñea a volta	dor no metálico.	
AM GENERADOR D	E SEÑALES	A FRECUEN- CIA DE PRESEN-	PREPARACIONES		PIEZAS AJUSTADAS	PROCEDIMIENTO DE	
		TACION		AJUSTADAS	AJUSTE		
			AJUSTI	RF-AM			
Conector AM-SG a con 400Hz) terminal de antena AM a través de capacitor 200pF. Curmún a 1503kHz		612kHz	terminale	loscopio a	L201 (Bobins ANT AM)	Ajustar para salida máxima Ajustar núcleo de ferrita de L201 con destornil lador.	
		1503kHz	terminale	loscopio a	CT201 (Trimer de ANT AM)	Ajustor para solida máxima Repetir pasos (1) y (2) hasta que la frecuencia se adapte correctamente a la escala del cuadrante.	
AJUSTE DE FM	162						
Frecuencimetro (19i Poner selector FM-A Poner el interruptor Otras puestas son las FM GENERADOR D	M en posicion "Fi de modalidad FM mismas que en aj	M". en la posición "l	MONO".	de ser 12 60 dB (1		ónico a FM-SG.	
CONEXION	FRECUENCIA	ODESEM.	PREPARACIONES		AJUSTADAS	PROCEDIMIENTO DE AJUSTE	
	1	AJUSTE	DE DIST	DRSION FM	MONO		
Conectar FM-SG a terminal de antena FM a través de antena fícticia FM de 75Ω.	100.1 MHz (Mad. 100% con 400Hz)	100,1 MHz		terminal -) y TP202 is de bobina	T201 (Discri, IFT)	Ajustar núcleo de T201 de manera que voltaje medido en modalidad de señal se 0mV en gema de 300mV.	
(Aplicar 60 dB (1 mV) a terminal de antena). 100.1 MHz (Mod. 100% con 400Hz				osciloscopio ''speaker''	T202 (Discri, IFT)	Ajustar núcleo de T202 de manera que distor- sión de canales derecho e izquierdo se minimice.	
		AJUS	TE DE V.	C.O. MPX de	e FM		
USAN	DO UN FREQUE	NCIMETRO			USANDO SISTEM	A ALTERNATIVO	
Señal mono no mod al aparato. Interruptor de moda 3. Conectar frecuéncia (100kΩ). (Ves la Fig 4. Ajustar VR301 a	elidad/sinlenciador netro a TP301 a j. 3)	FM a "auto FM	e.	2. Ajustar	estereofónica. VR301 y fijar el con dio de la gama-ON del i	al aparato o recibir una ntacto deslizante de VR301 indicador estereofónico.	

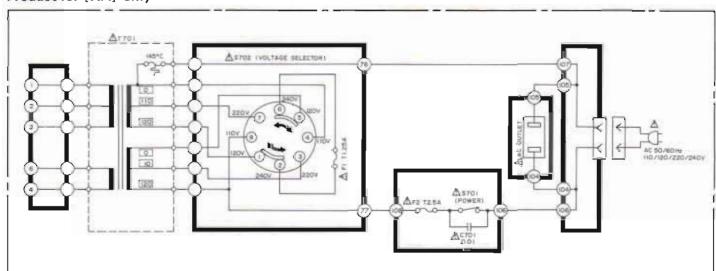
■ CIRCUITS TO BE CHANGED AND THE AREAS

• Power supply circuit

Product for Australia [XL] only



Product for [XA] only



[XA] is available in Asia, Latin America, Africa, Middle Near East and Oceania.