

# STR-AV19

## SERVICE MANUAL

US Model

This model is almost the same as the model STR-AV320 previously produced. Therefore, see the STR-AV220/AV320 service manual for the information not contained in this service manual.

### SPECIFICATIONS

#### Audio Power Specifications

#### POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm load, both channels driven, from 40-20,000 Hz, rated 40 watts per channel minimum RMS power, with no more than 0.8% total harmonic distortion from 250 milliwatts to rated output.

#### Other Specifications

##### Amplifier section

Continuous RMS power output (8 ohms, at 1 kHz less than 0.8% total harmonic distortion)

50 watts + 50 watts

##### Harmonic distortion

Less than 0.8% at rated output

##### Frequency response

PHONO: RIAA equalization curve  $\pm 0.5$  dB  
CD, VIDEO, TAPE: 10 Hz - 50 kHz  $\pm 0.5$  dB

##### Inputs

	Sensitivity	Impedance	S/N (weighting network, input level)
PHONO	2.5 mV	50 kilohms	74 dB 72 dB* (A, 2.5 mV)
CD VIDEO TAPE	150 mV	50 kilohms	95 dB 80 dB* (A, 150 mV)

\* 78 IHF

##### Outputs

REC OUT, VIDEO (AUDIO) OUT	Voltage 150 mV Impedance 10 kilohms
SPEAKER A, B	Accepts speakers of 8 - 16 ohms
HEADPHONES	Accepts low and high impedance headphones

##### Tone controls

BASS:  $\pm 10$  dB at 100 Hz  
TREBLE:  $\pm 10$  dB at 10 kHz

##### Muting

- 20 dB

#### FM/AM tuner section

	FM tuner section	AM tuner section
Tuning range	87.5 - 108 MHz	530 - 1,710 kHz
Antenna terminals	300 ohms, balanced 75 ohms, unbalanced	External antenna terminal
Sensitivity at 50 dB quieting	18.3 dBf, 4.5 $\mu$ V (mono) 38.3 dBf, 45 $\mu$ V (stereo)	—
Usable sensitivity	11.2 dBf, 2 $\mu$ V (IHF)	Loop antenna: 500 $\mu$ V (at 1,000 kHz)
Signal-to-noise ratio	76 dB (mono) 70 dB (stereo)	54 dB (at 50 mV/m)
Harmonic distortion	0.2% (mono), 0.4% (stereo) at 1 kHz	0.3% (at 50 mV/m, 400 Hz)
Selectivity	60 dB at 400 kHz	40 dB at 10 kHz
Separation	45 dB at 1 kHz	—
Frequency response	30 Hz - 15 kHz $\pm 0.5$ dB	—

#### General

##### System

Tuner section: PLL quartz-locked digital synthesizer system  
Preamplifier section: low-noise NF type equalizer amp  
Power amplifier section: quasi-complementary SEPP

##### Power requirements

120 V AC, 60 Hz

##### Power consumption

100 watts  
In standby condition: 5 watts

##### AC outlets

One switched (100 watts)

##### Dimensions

Approx. 430  $\times$  110  $\times$  295 mm (w/h/d)  
(17  $\times$  4  $\frac{5}{16}$   $\times$  11  $\frac{5}{8}$  inches)

including projecting parts and controls

##### Weight

Approx. 6.2 kg (13 lbs 11 oz) net

##### Accessories supplied

Remote Commander RM-S70 (1)  
Sony batteries SUM-3(NS) (2)  
FM wire antenna (1)  
AM loop antenna (1)

Design and specifications subject to change without notice.

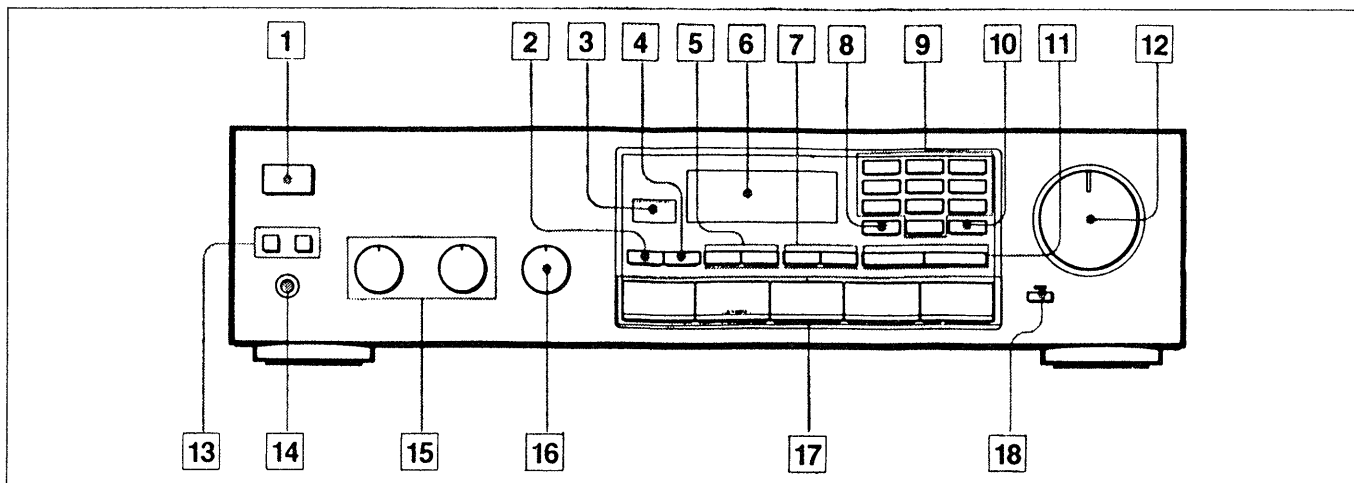
# FM STEREO FM-AM RECEIVER

# SONY®

Sony Corporation  
Audio Group

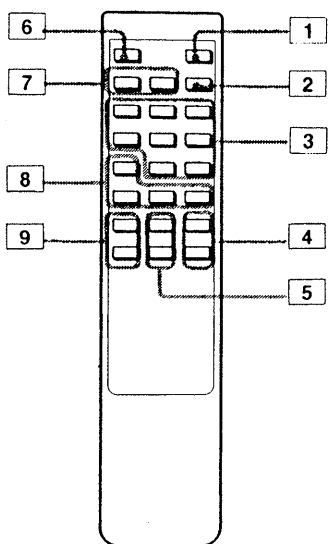
English  
90D0240-1  
Printed in Japan  
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## LOCATION AND FUNCTION OF CONTROLS



- 1 POWER switch**
- 2 DIRECT TUNING button**
- 3 Remote sensor**
- 4 FM MODE button**  
When an FM stereo program is noisy or hard to receive, press this button. The STEREO indicator goes out (the sound is heard in monaural, but the reception will be improved). To return to the stereo mode, press again or change the frequency.
- 5 BAND selectors**
- 6 Display window**
- 7 TUNING +/- buttons**
- 8 MEMORY button**
- 9 Numeric buttons**
- 10 SHIFT button**
- 11 PRESET +/- buttons**
- 12 VOLUME control and indicator**
- 13 SPEAKERS selectors**  
Depress to select which speaker system to drive. For both speaker systems, depress A and B.
- 14 HEADPHONES jack (stereo phone jack)**
- 15 TONE controls**  
Turn the TREBLE control to adjust the high frequency sound. Turn BASS control to adjust the low frequency sound.
- 16 BALANCE control**  
Turn clockwise to decrease the left channel volume, and turn counterclockwise to decrease the right channel volume.
- 17 Function selectors**
- 18 MUTING button and indicator**  
Press to attenuate the sound level immediately (-20 dB attenuation). Pressing this button makes the indicator be lighted. To restore the sound level, press again.

## Remote Commander RM-S70



- 1 POWER switch**
- 2 DBFB button**  
This button does not function.
- 3 Tape deck operation buttons**  
TAPE ◀ or ▶: Selects the TAPE function and starts tape playback.  
DECK A/B: Set this switch to select a deck of a doubledeck unit.
- 4 VOLUME +/- buttons**
- 5 TUNER PRESET +/- buttons**  
Depress to tune in a preset station.
- 6 MUTING button**
- 7 Turntable system operation buttons**  
PHONO START: Selects the PHONO function and starts the playing of a phono disc.
- 8 CD player operation buttons**  
DISC SKIP: When your CD player is equipped with 5 disc trays, use this button to skip loaded disc.  
CD ▶: Selects the CD function and starts CD playback.
- 9 TUNER/VIDEO function buttons**  
Select TUNER or VIDEO function.

EXPLODED VIEWS

Page on STR-AV220/ AV320 SERVICE MANUAL	STR-AV320 (US model)		STR-AV19	
	Ref. No.	Part No.	Part No.	Description
23	3	4-916-745-01	4-916-746-21	KNOB (DIA, 21) ROUND
	4	X-4906-829-1	X-4906-833-1	PANEL ASSY, FRONT
	901	A-4334-398-A	*A-4334-989-A	MOUNTED PCB, TONE
	902	A-4334-395-A	*A-4334-969-A	MOUNTED PCB, DISPLAY
25	113	4-931-096-01	*4-931-096-91	PANEL, BACK
	918	A-4334-394-A	*A-4334-990-A	MOUNTED PCB, MAIN

ELECTRICAL PARTS LIST

Page on STR-AV220/ AV320 SERVICE MANUAL	STR-AV320 (US, model)		STR-AV19	
	Ref. No.	Description		
28	C509	TANTALUM 1MF	} Not used	
	C510	MYLAR 0.033MF		
	C512	ELECT 0.022MF		
	C513	ELECT 0.068MF		
	C514	MYLAR 0.068MF		
	C515	CERAMIC 100PF		
	C559	TANTALUM 1MF		
	C560	MYLAR 0.033MF		
	C565	CERAMIC 100PF		
29	D317	DIODE SEL2810A-C	} Not used	
	D318	DIODE SEL2810A-C		
	D501	DIODE 1SS120		
	D502	DIODE 1SS120		
	D604	DIODE 1SS120		
30	Q302	TRANSISTOR DTC124ES	} Not used	
	Q303	TRANSISTOR DTC124ES		
	Q501	TRANSISTOR 2SK246GR3		
	Q502	TRANSISTOR 2SC2603-EF		
	Q504	TRANSISTOR 2SK246GR3		
	Q505	TRANSISTOR DTC124ES		
	Q506	TRANSISTOR DTC124ES		
	Q551	TRANSISTOR 2SK246GR3		
	Q552	TRANSISTOR 2SC2603-EF		
31	R322	CARBON 270	} Not used	
	R323	CARBON 270		
	R506	CARBON 100K		
	R507	CARBON 150K		
	R508	CARBON 1K		
	R509	CARBON 390		
	R510	CARBON 6.8K		
	R515	CARBON 27K		
	R517	CARBON 100K		
	R518	CARBON 100K		
R519	CARBON 100K			
R520	CARBON 1M			

ELECTRICAL PARTS LIST

Page on STR-AV220/ AV320 SERVICE MANUAL	STR-AV320 (US model)		STR-AV19	
	Ref. No.	Description		
31	R521	CARBON 8.2K	} Not used	
	R522	CARBON 1M		
	R556	CARBON 100K		
	R557	CARBON 150K		
	R558	CARBON 1K		
	R559	CARBON 390		
	R560	CARBON 6.8K		
	R626	CARBON 100K		
	R633	CARBON 10K		
	R634	CARBON 3.3K		
32	R676	CARBON 100K		
32	S328	SWITCH, KEY BOARD		
	S329	SWITCH, KEY BOARD		

ACCESSORY & PACKING MATERIAL

Page on STR-AV220/ AV320 SERVICE MANUAL	STR-AV320 (US, model)		STR-AV19	
	Part No.	Description	Part No.	Description
32	(RM-S103)		(RM-S70)	
	1-465-423-11	REMOTE COMMANDER	1-465-096-11	REMOTE COMMANDER
	3-751-607-21	MANUAL, INSTRUCTION	3-751-800-21	MANUAL, INSTRUCTION
	4-931-098-01	INDIVIDUAL CARTON	*4-938-142-01	INDIVIDUAL CARTON

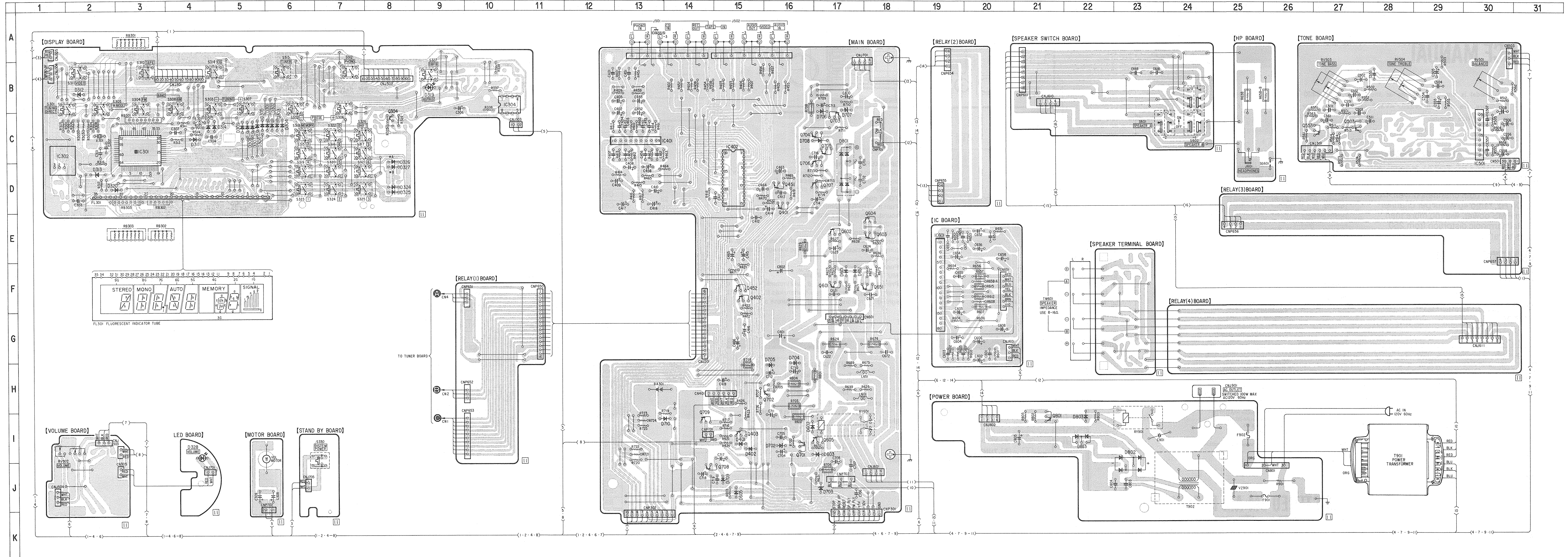
NOTE:

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• SEMICONDUCTOR LOCATION

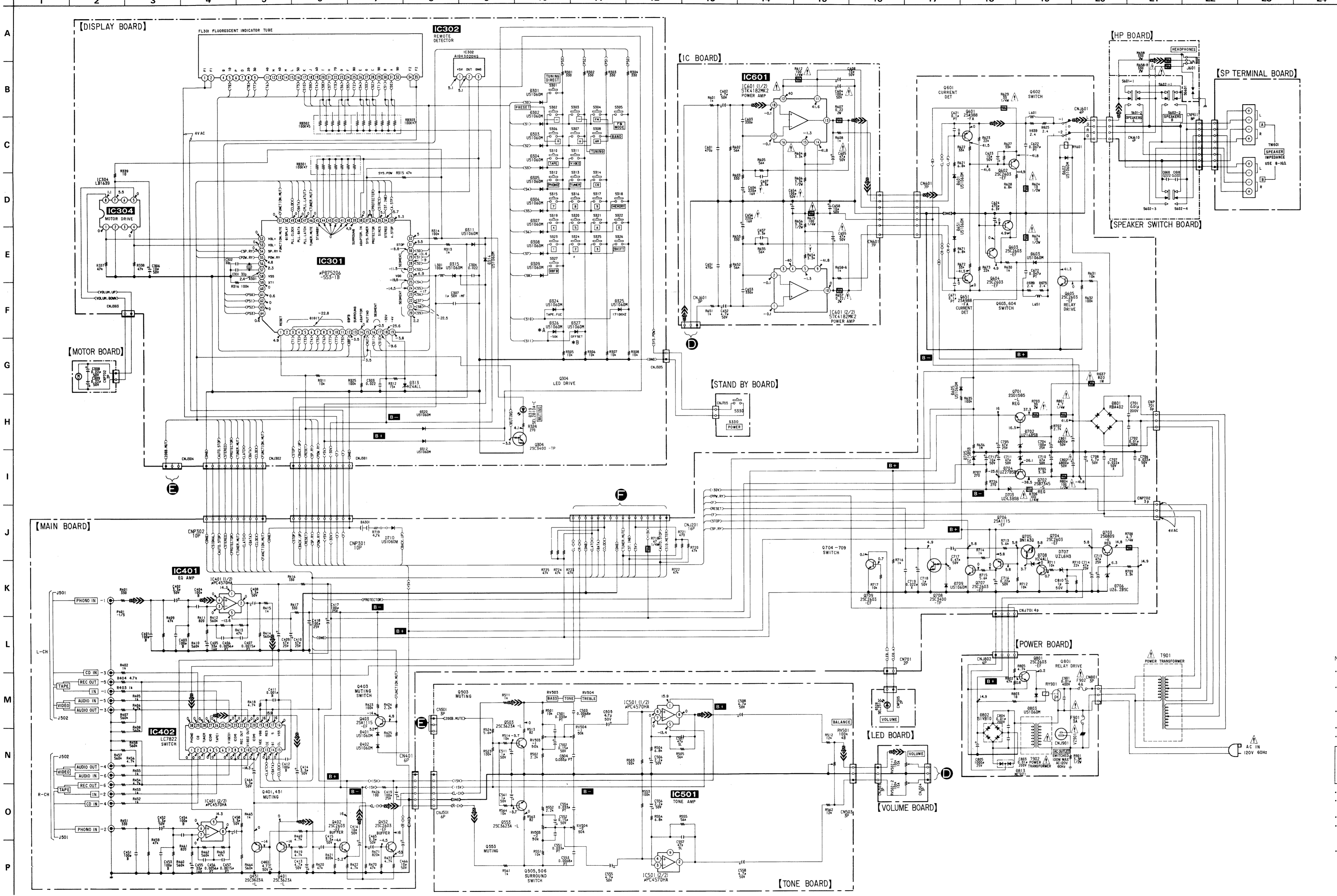
Ref. No.	Location	Ref. No.	Location
IC301	C-3	D312	B-2
IC302	C-1	D313	D-2
IC304	B-10	D314	C-4
IC401	C-13	D315	C-4
IC402	D-15	D319	B-9
IC501	C-30	D320	D-3
IC601	F-19	D324	D-8
		D325	D-8
Q304	C-8	D326	C-8
Q401	D-16	D327	D-8
Q402	F-15		
Q403	I-15	D328	I-4
Q451	D-16	D401	I-15
		D402	I-15
Q452	F-15	D601	F-17
Q503	C-27	D602	I-16
Q553	C-27		
Q601	F-17	D603	I-17
Q602	E-17	D605	J-15
		D651	F-17
Q603	E-18	D702	I-16
Q604	E-18	D703	J-17
Q605	I-17		
Q651	F-18	D704	H-16
Q701	I-16	D705	H-16
		D706	B-17
Q702	H-16	D707	B-17
Q703	C-17	D708	C-17
Q704	C-17		
Q705	C-17	D709	J-15
Q706	D-17	D710	I-14
		D801	D-17
Q707	D-17	D802	J-23
Q708	J-14	D803	I-22
Q709	I-14		
Q801	I-21	D813	B-18
		D813	I-22
D301	C-6		
D302	C-6		
D303	C-6		
D304	C-6		
D305	C-5		
D306	C-5		
D307	C-5		
D308	C-5		
D309	C-5		
D311	C-4		

PRINTED WIRING BOARDS — MAIN SECTION —



Note :

- — parts extracted from the component side.
- — parts mounted on the conductor side.
- indicates side identified with part number.
- \*A, \*B: See page 4 for Note on Ceramic Filter (CF1, 2) Replacement.



Note:

- \*A, \*B: See page 4 for Note on Ceramic Filter (CF1, 2) Replacement.
- All capacitors are in  $\mu F$  unless otherwise noted.  $\mu F$ :  $\mu F$ , 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{2}W$  or less unless otherwise specified.
- $\Delta$ : internal component.
- $\square$ : nonflammable resistor.

The components identified by mark  $\Delta$  or dotted line with mark  $\square$  are critical for safety. Replace only with part number specified.

- $\square$ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: PHONE
- Volts are taken with a VOM (Input impedance 10M  $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\Rightarrow$ : PHONO