

# TA-FE210

## SERVICE MANUAL

*AEP Model  
UK Model*



The TA-FE210 is respectively the TA-FE200 model whose panels have been changed.

This service manual describes only the difference of exploded views, schematic diagram, printed wiring boards and electrical parts list.

For the other information, refer to the service manual for TA-FE200 (9-960-697-□□) previously issued.

### INTEGRATED STEREO AMPLIFIER



# SONY®

## 1. DIFFERENCE OF EXPLODED VIEWS, AND CORRECTION

 : Corrected portion

Page	TA-FE200				TA-FE210		
13							
	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
	4	X-4946-799-3	PANEL ASSY, FRONT		X-4948-265-1	PANEL ASSY, FRONT	
	* 7	1-659-952-11	AC SW BOARD		* 1-659-952-11	AC SW BOARD	
	<u>△</u> S1	_____			<u>△</u> 1-554-920-11	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
14	56	4-956-370-02	BAND, PLUG FIXED (UK)		4-956-370-12	BAND, PLUG FIXED (UK)	
	* 58	4-980-202-01	PANEL, BACK (AEP, German)		* 4-980-202-22	PANEL, BACK (AEP, German)	
	* 58	4-980-202-11	PANEL, BACK (UK)		* 4-980-202-31	PANEL, BACK (UK)	

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

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.

## 2. DIFFERENCE OF ACCESSORIES & PACKING MATERIALS

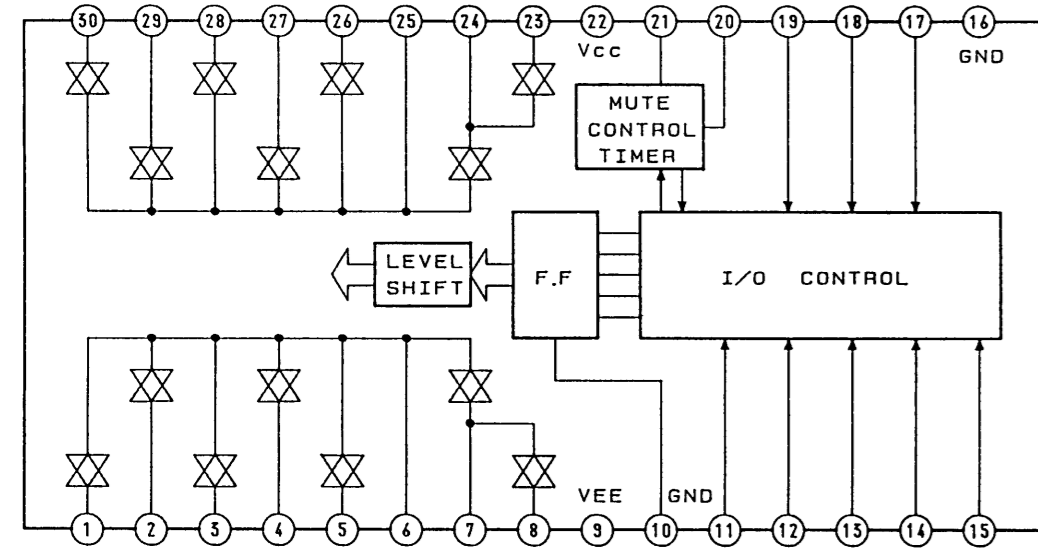
Page	TA-FE200				TA-FE210		
18	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		3-856-216-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, UK)		_____		
		3-856-216-21	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)		_____		
		3-856-216-31	MANUAL, INSTRUCTION (GERMAN) (German)		_____		
		_____			3-860-499-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)	
		_____			3-860-499-21	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, German)	
	* 4-981-581-01	INDIVIDUAL CARTON		_____			

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

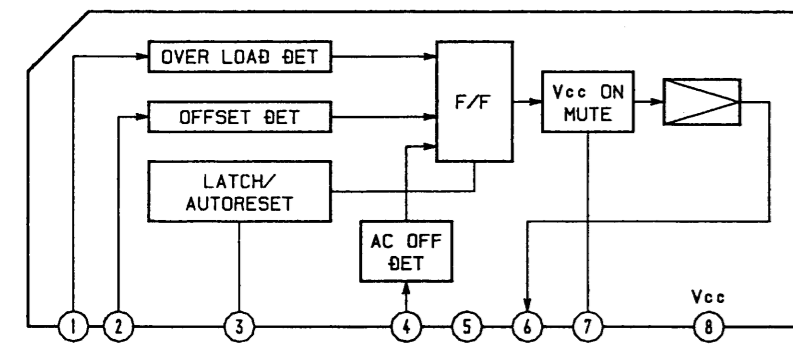


• IC Block Diagrams

IC103 LC7818



IC601 μPC1237HA



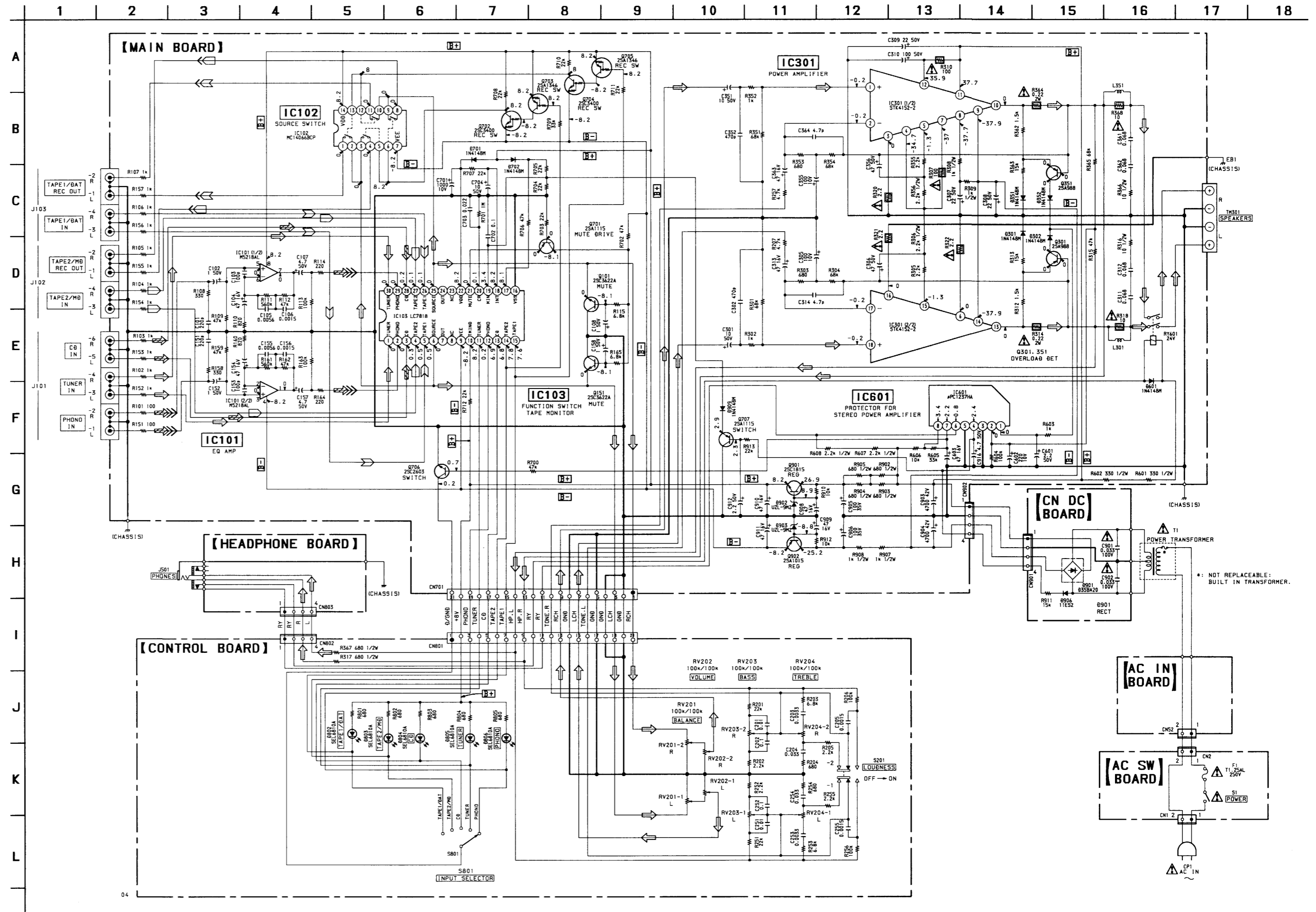
Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted, pF :  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and 1/4 W or less unless otherwise specified.

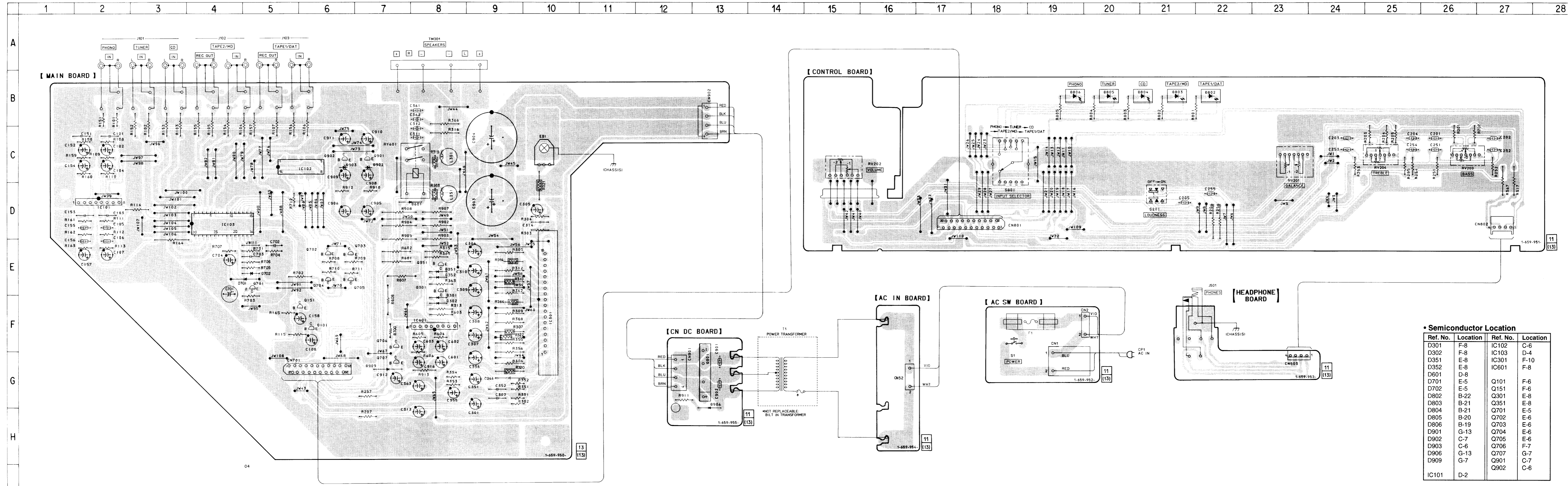
Note : The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

- $\square$  : nonflammable resistor.
- $\square$  : B+ Line.
- $\square$  : B- Line.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark : POWER ON
- Voltage are taken with a VOM (Input Impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerance.
- Signal path.
  - $\rightarrow$  : FM
  - $\rightarrow$  : PB (TAPE1 / DAT)
  - $\rightarrow$  : REC (TAPE1 / DAT)
  - $\rightarrow$  : PB (TAPE2 / MD)
  - $\rightarrow$  : REC (TAPE2 / MD)
  - $\rightarrow$  : CD
  - $\rightarrow$  : PHONO

3. SCHEMATIC DIAGRAM



4. PRINTED WIRING BOARDS



**• Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D301	F-8	IC102	C-6
D302	F-8	IC103	D-4
D351	E-8	IC301	F-10
D352	E-8	IC601	F-8
D601	D-8	Q101	F-6
D701	E-5	Q151	F-6
D702	E-5	Q301	E-8
D802	B-22	Q351	E-8
D803	B-21	Q701	E-5
D804	B-21	Q702	E-6
D805	B-20	Q703	E-6
D806	B-19	Q704	E-6
D901	G-13	Q705	E-6
D902	C-7	Q706	F-7
D903	C-6	Q707	G-7
D906	G-13	Q901	C-7
D909	G-7	Q902	C-6

**Note :**  
 • ○ : parts extracted from the component side.  
 • ◐ : Pattern on the side which is seen.

## 5. ELECTRICAL PARTS LIST

## NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u :  $\mu$ , for example:  
uA.. :  $\mu$ A.. uPA.. :  $\mu$ PA..  
uPB.. :  $\mu$ PB.. uPC.. :  $\mu$ PC.. uPD.. :  $\mu$ PD..
- CAPACITORS  
uF :  $\mu$ F
- COILS  
uH :  $\mu$ H

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

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-659-954-11	AC IN BOARD *****		C203	1-130-477-00	MYLAR	0.0033uF 5% 50V
				C204	1-136-159-00	FILM	0.033uF 5% 50V
				C205	1-130-473-00	MYLAR	0.0015uF 5% 50V
				C251	1-136-153-00	FILM	0.01uF 5% 50V
				C252	1-136-165-00	FILM	0.1uF 5% 50V
*	1-659-952-11	AC SW BOARD *****		C253	1-130-477-00	MYLAR	0.0033uF 5% 50V
	1-533-293-11	HOLDER, FUSE < CONNECTOR >		C254	1-136-159-00	FILM	0.033uF 5% 50V
				C255	1-130-473-00	MYLAR	0.0015uF 5% 50V
* CN1	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P		CN801	1-568-838-11	SOCKET, CONNECTOR 21P	
CN2	1-564-321-00	PIN, CONNECTOR 2P < FUSE >		CN802	1-562-087-00	SOCKET, CONNECTOR 4P < DIODE >	
$\triangle$ F1	1-532-502-51	FUSE, TIME LAG (T1.25AL/250V) < SWITCH >		D802	8-719-313-50	LED SEL6810A-TH12 (TAPE1/DAT)	
$\triangle$ S1	1-554-920-11	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) *****		D803	8-719-313-50	LED SEL6810A-TH12 (TAPE2/MD)	
				D804	8-719-313-50	LED SEL6810A-TH12 (CD)	
				D805	8-719-313-50	LED SEL6810A-TH12 (TUNER)	
				D806	8-719-313-50	LED SEL6810A-TH12 (PHONO) < RESISTOR >	
*	1-659-955-11	CN DC BOARD ***** < CAPACITOR >		R201	1-249-433-11	CARBON	22K 5% 1/4W
$\triangle$ C901	1-106-379-12	MYLAR	0.033uF 5% 200V	R202	1-249-421-11	CARBON	2.2K 5% 1/4W
$\triangle$ C902	1-106-379-12	MYLAR	0.033uF 5% 200V < CONNECTOR >	R203	1-249-427-11	CARBON	6.8K 5% 1/4W
				R204	1-249-415-11	CARBON	680 5% 1/4W
				R205	1-249-421-11	CARBON	2.2K 5% 1/4W
* CN901	1-564-241-11	PIN, CONNECTOR (B4P-VH) 4P < DIODE >		R206	1-249-441-11	CARBON	100K 5% 1/4W
				R251	1-249-433-11	CARBON	22K 5% 1/4W
D901	8-719-028-23	DIODE D3SBA20-4101		R252	1-249-421-11	CARBON	2.2K 5% 1/4W
D906	8-719-200-82	DIODE 11ES2 < RESISTOR >		R253	1-249-427-11	CARBON	6.8K 5% 1/4W
				R254	1-249-415-11	CARBON	680 5% 1/4W
R911	1-249-431-11	CARBON	15K 5% 1/4W *****	R255	1-249-421-11	CARBON	2.2K 5% 1/4W
				R256	1-249-441-11	CARBON	100K 5% 1/4W
				R317	1-247-750-11	CARBON	680 5% 1/2W
				R367	1-247-750-11	CARBON	680 5% 1/2W
				R801	1-249-415-11	CARBON	680 5% 1/4W
				R802	1-249-415-11	CARBON	680 5% 1/4W
				R803	1-249-415-11	CARBON	680 5% 1/4W
				R804	1-249-415-11	CARBON	680 5% 1/4W
				R805	1-249-415-11	CARBON	680 5% 1/4W
						< VARIABLE RESISTOR >	
				RV201	1-223-396-11	RES, VAR, CARBON 100K/100K (BALANCE)	
C201	1-136-153-00	FILM	0.01uF 5% 50V	RV202	1-241-408-11	RES, VAR, CARBON 100K/100K (VOLUME)	
C202	1-136-165-00	FILM	0.1uF 5% 50V	RV203	1-223-397-11	RES, VAR, CARBON 100K/100K (BASS)	

**CONTROL**

**HEADPHONE**

**MAIN**

Ref. No.	Part No.	Description	Remark
RV204	1-223-397-11	RES, VAR, CARBON 100K/100K (TREBLE)	
		< SWITCH >	
S201	1-571-112-21	SWITCH, PUSH (1 KEY) (LOUDNESS)	
S801	1-762-626-11	SWITCH, ROTARY (INPUT SELECTOR)	
*****			
*	1-659-953-11	HEADPHONE BOARD	
		*****	
		< CONNECTOR >	
CN803	1-560-941-11	PIN, CONNECTOR 4P	
		< JACK >	
J501	1-774-933-11	JACK (LARGE TYPE) (PHONES)	
*****			
*	A-4389-374-A	MAIN BOARD, COMPLETE	
		*****	
		< CAPACITOR >	
C101	1-162-286-31	CERAMIC	220PF 10% 50V
C102	1-126-960-11	ELECT	1uF 20% 50V
C103	1-162-282-31	CERAMIC	100PF 10% 50V
C104	1-126-967-11	ELECT	47uF 20% 16V
C105	1-130-480-00	MYLAR	0.0056uF 5% 50V
C106	1-130-473-00	MYLAR	0.0015uF 5% 50V
C107	1-126-963-11	ELECT	4.7uF 20% 50V
C108	1-126-960-11	ELECT	1uF 20% 50V
C151	1-162-286-31	CERAMIC	220PF 10% 50V
C152	1-126-960-11	ELECT	1uF 20% 50V
C153	1-162-282-31	CERAMIC	100PF 10% 50V
C154	1-126-967-11	ELECT	47uF 20% 16V
C155	1-130-480-00	MYLAR	0.0056uF 5% 50V
C156	1-130-473-00	MYLAR	0.0015uF 5% 50V
C157	1-126-963-11	ELECT	4.7uF 20% 50V
C158	1-126-960-11	ELECT	1uF 20% 50V
C301	1-126-964-11	ELECT	10uF 20% 50V
C302	1-162-290-31	CERAMIC	470PF 10% 50V
C305	1-126-933-11	ELECT	100uF 20% 10V
C306	1-126-967-11	ELECT	47uF 20% 50V
C307	1-126-965-11	ELECT	22uF 20% 50V
C308	1-126-965-11	ELECT	22uF 20% 50V
C309	1-126-965-11	ELECT	22uF 20% 50V
C310	1-126-968-11	ELECT	100uF 20% 50V
C311	1-136-495-11	FILM	0.068uF 5% 50V
C312	1-136-495-11	FILM	0.068uF 5% 50V
C313	1-126-967-11	ELECT	47uF 20% 16V
C314	1-162-195-31	CERAMIC	4.7PF 10% 50V
C351	1-126-964-11	ELECT	10uF 20% 50V
C352	1-162-290-31	CERAMIC	470PF 10% 50V
C355	1-126-933-11	ELECT	100uF 20% 10V
C356	1-126-967-11	ELECT	47uF 20% 50V

Ref. No.	Part No.	Description	Remark
C361	1-136-495-11	FILM	0.068uF 5% 50V
C362	1-136-495-11	FILM	0.068uF 5% 50V
C363	1-126-967-11	ELECT	47uF 20% 16V
C364	1-162-195-31	CERAMIC	4.7PF 10% 50V
C601	1-126-961-11	ELECT	2.2uF 20% 50V
C602	1-126-923-11	ELECT	220uF 20% 10V
C603	1-126-967-11	ELECT	47uF 20% 16V
C701	1-126-926-11	ELECT	1000uF 20% 10V
C702	1-164-159-11	CERAMIC	0.1uF 50V
C703	1-161-494-00	CERAMIC	0.022uF 25V
C704	1-126-964-11	ELECT	10uF 20% 50V
C903	1-126-224-11	ELECT	4700uF 20% 42V
C904	1-126-224-11	ELECT	4700uF 20% 42V
C905	1-126-948-11	ELECT	100uF 20% 35V
C906	1-126-948-11	ELECT	100uF 20% 35V
C908	1-126-967-11	ELECT	47uF 20% 16V
C909	1-126-967-11	ELECT	47uF 20% 16V
C910	1-126-967-11	ELECT	47uF 20% 16V
C911	1-126-967-11	ELECT	47uF 20% 16V
C912	1-126-961-11	ELECT	2.2uF 20% 50V
C916	1-126-963-11	ELECT	4.7uF 20% 50V
		< CONNECTOR >	
CN701	1-568-838-11	SOCKET, CONNECTOR 21P	
* CN902	1-564-241-11	PIN, CONNECTOR (B4P-VH) 4P	
		< DIODE >	
D301	8-719-987-63	DIODE 1N4148M	
D302	8-719-987-63	DIODE 1N4148M	
D351	8-719-987-63	DIODE 1N4148M	
D352	8-719-987-63	DIODE 1N4148M	
D601	8-719-987-63	DIODE 1N4148M	
D701	8-719-987-63	DIODE 1N4148M	
D702	8-719-987-63	DIODE 1N4148M	
D902	8-719-001-15	DIODE UZL-9M2	
D903	8-719-001-15	DIODE UZL-9M2	
D909	8-719-987-63	DIODE 1N4148M	
		< EARTH TERMINAL >	
* EB1	1-537-738-21	TERMINAL, EARTH	
		< IC >	
IC101	8-759-184-02	IC NJM2068L-D	
IC102	8-759-000-49	IC MC14066BCP	
IC103	8-759-802-52	IC LC7818	
IC301	8-749-941-52	IC STK-4152II	
IC601	8-759-111-68	IC uPC1237HA	
		< JACK >	
J101	1-774-411-11	JACK, PIN 6P (PHONO,TUNER,CD)	
J102	1-695-188-31	JACK, PIN 4P (TAPE2/MD)	
J103	1-695-188-31	JACK, PIN 4P (TAPE1/DAT)	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< COIL >					
L301	1-420-872-00	COIL, AIR-CORE		R301	1-249-439-11	CARBON 68K 5%	1/4W
L351	1-420-872-00	COIL, AIR-CORE		R302	1-249-417-11	CARBON 1K 5%	1/4W
		< TRANSISTOR >		R303	1-249-415-11	CARBON 680 5%	1/4W
Q101	8-729-141-26	TRANSISTOR 2SC3622A-LK		R304	1-249-439-11	CARBON 68K 5%	1/4W
Q151	8-729-141-26	TRANSISTOR 2SC3622A-LK		R305	1-249-421-11	CARBON 2.2K 5%	1/4W
Q301	8-729-140-82	TRANSISTOR 2SA988-PAFAEA		R306	1-260-103-11	CARBON 2.2K 5%	1/2W
Q351	8-729-140-82	TRANSISTOR 2SA988-PAFAEA		△R307	1-249-405-11	CARBON 100 5%	1/4W F
Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE		R308	1-260-099-11	CARBON 1K 5%	1/2W
Q702	8-729-900-36	TRANSISTOR DTC124ES		R309	1-260-099-11	CARBON 1K 5%	1/2W
Q703	8-729-900-63	TRANSISTOR DTA124ES		△R310	1-249-405-11	CARBON 100 5%	1/4W F
Q704	8-729-900-36	TRANSISTOR DTC124ES		R312	1-249-419-11	CARBON 1.5K 5%	1/4W
Q705	8-729-900-63	TRANSISTOR DTA124ES		R313	1-249-431-11	CARBON 15K 5%	1/4W
Q706	8-729-620-05	TRANSISTOR 2SC2603-EF		△R314	1-217-151-00	METAL PLATE 0.22	2W F
Q707	8-729-119-76	TRANSISTOR 2SA1175-HFE		R315	1-249-437-11	CARBON 47K 5%	1/4W
Q901	8-729-281-54	TRANSISTOR 2SC1815-BL		R316	1-247-727-11	CARBON 10 5%	1/2W
Q902	8-729-201-53	TRANSISTOR 2SA1015-GR		△R318	1-249-393-11	CARBON 10 5%	1/4W F
		< RESISTOR >		△R320	1-249-385-11	CARBON 2.2 5%	1/6W F
R101	1-247-807-31	CARBON 100 5%	1/4W	△R321	1-249-385-11	CARBON 2.2 5%	1/6W F
R102	1-249-417-11	CARBON 1K 5%	1/4W	△R322	1-249-385-11	CARBON 2.2 5%	1/6W F
R103	1-249-417-11	CARBON 1K 5%	1/4W	R351	1-249-439-11	CARBON 68K 5%	1/4W
R104	1-249-417-11	CARBON 1K 5%	1/4W	R352	1-249-417-11	CARBON 1K 5%	1/4W
R105	1-249-417-11	CARBON 1K 5%	1/4W	R353	1-249-415-11	CARBON 680 5%	1/4W
R106	1-249-417-11	CARBON 1K 5%	1/4W	R354	1-249-439-11	CARBON 68K 5%	1/4W
R107	1-249-417-11	CARBON 1K 5%	1/4W	R355	1-249-421-11	CARBON 2.2K 5%	1/4W
R108	1-249-411-11	CARBON 330 5%	1/4W	R356	1-260-103-11	CARBON 2.2K 5%	1/2W
R109	1-249-437-11	CARBON 47K 5%	1/4W	R362	1-249-419-11	CARBON 1.5K 5%	1/4W
R110	1-249-416-11	CARBON 820 5%	1/4W	R363	1-249-431-11	CARBON 15K 5%	1/4W
R111	1-247-897-11	CARBON 560K 5%	1/4W	△R364	1-217-151-00	METAL PLATE 0.22	2W F
R112	1-249-437-11	CARBON 47K 5%	1/4W	R365	1-249-439-11	CARBON 68K 5%	1/4W
R113	1-249-441-11	CARBON 100K 5%	1/4W	R366	1-247-727-11	CARBON 10 5%	1/2W
R114	1-249-409-11	CARBON 220 5%	1/4W	△R368	1-249-393-11	CARBON 10 5%	1/4W F
R115	1-249-427-11	CARBON 6.8K 5%	1/4W	R601	1-247-745-11	CARBON 330 5%	1/2W
R151	1-247-807-31	CARBON 100 5%	1/4W	R602	1-247-745-11	CARBON 330 5%	1/2W
R152	1-249-417-11	CARBON 1K 5%	1/4W	R603	1-249-417-11	CARBON 1K 5%	1/4W
R153	1-249-417-11	CARBON 1K 5%	1/4W	R604	1-249-441-11	CARBON 100K 5%	1/4W
R154	1-249-417-11	CARBON 1K 5%	1/4W	R605	1-249-435-11	CARBON 33K 5%	1/4W
R155	1-249-417-11	CARBON 1K 5%	1/4W	R606	1-249-429-11	CARBON 10K 5%	1/4W
R156	1-249-417-11	CARBON 1K 5%	1/4W	R607	1-247-756-11	CARBON 2.2K 5%	1/2W
R157	1-249-417-11	CARBON 1K 5%	1/4W	R608	1-247-756-11	CARBON 2.2K 5%	1/2W
R158	1-249-411-11	CARBON 330 5%	1/4W	R700	1-249-437-11	CARBON 47K 5%	1/4W
R159	1-249-437-11	CARBON 47K 5%	1/4W	R701	1-247-903-00	CARBON 1M 5%	1/4W
R160	1-249-416-11	CARBON 820 5%	1/4W	R702	1-249-437-11	CARBON 47K 5%	1/4W
R161	1-247-897-11	CARBON 560K 5%	1/4W	R703	1-249-433-11	CARBON 22K 5%	1/4W
R162	1-249-437-11	CARBON 47K 5%	1/4W	R704	1-249-433-11	CARBON 22K 5%	1/4W
R163	1-249-441-11	CARBON 100K 5%	1/4W	R705	1-249-433-11	CARBON 22K 5%	1/4W
R164	1-249-409-11	CARBON 220 5%	1/4W	R706	1-249-437-11	CARBON 47K 5%	1/4W
R165	1-249-427-11	CARBON 6.8K 5%	1/4W	R707	1-249-433-11	CARBON 22K 5%	1/4W
R207	1-249-425-11	CARBON 4.7K 5%	1/4W	R708	1-249-433-11	CARBON 22K 5%	1/4W
R257	1-249-425-11	CARBON 4.7K 5%	1/4W	R709	1-249-435-11	CARBON 33K 5%	1/4W
				R710	1-249-433-11	CARBON 22K 5%	1/4W
				R711	1-249-433-11	CARBON 22K 5%	1/4W
				R712	1-249-433-11	CARBON 22K 5%	1/4W
				R902	1-247-750-11	CARBON 680 5%	1/2W

The components identified by mark △ or dotted line with mark. △ are critical for safety.  
Replace only with part number specified.



## MAIN

Ref. No.	Part No.	Description			Remark
R903	1-247-750-11	CARBON	680	5%	1/2W
R904	1-247-750-11	CARBON	680	5%	1/2W
R905	1-247-750-11	CARBON	680	5%	1/2W
R907	1-247-752-11	CARBON	1K	5%	1/2W
R908	1-247-752-11	CARBON	1K	5%	1/2W
R910	1-249-429-11	CARBON	10K	5%	1/4W
R912	1-249-429-11	CARBON	10K	5%	1/4W
R913	1-249-433-11	CARBON	22K	5%	1/4W
< RELAY >					
RY601	1-515-920-11	RELAY (24V)			
< TERMINAL >					
TM301	1-537-238-11	TERMINAL BOARD (SPEAKERS)			
*****					

### 3. SCHEMATIC DIAGRAM

### 4. PRINTED WIRING BOARDS

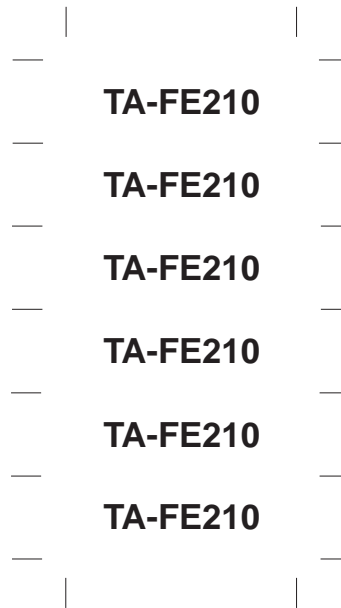
#### • IC Block Diagrams

IC103 LC7818

IC601  $\mu$ PC1237HA

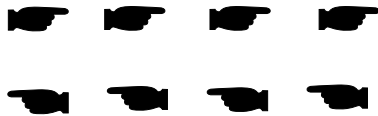
#### • Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	F-8	IC102	C-6
D302	F-8	IC103	D-4
D351	E-8	IC301	F-10
D352	E-8	IC601	F-8
D601	D-8		
D701	E-5	Q101	F-6
D702	E-5	Q151	F-6
D802	B-22	Q301	E-8
D803	B-21	Q351	E-8
D804	B-21	Q701	E-5
D805	B-20	Q702	E-6
D806	B-19	Q703	E-6
D901	G-13	Q704	E-6
D902	C-7	Q705	E-6
D903	C-6	Q706	F-7
D906	G-13	Q707	G-7
D909	G-7	Q901	C-7
		Q902	C-6
IC101	D-2		



S1

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#### Note :

- All capacitors are in  $\mu$ F unless otherwise noted. pF :  $\mu$ F 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and 1/4 W or less unless otherwise specified.

**Note :** The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

- : nonflammable resistor.
- : B+ Line.
- : B- Line.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark : POWER ON
- Voltage are taken with a VOM (Input Impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerance.
- Signal path.
  - : FM
  - : PB (TAPE1 / DAT)
  - : REC (TAPE1 / DAT)
  - : PB (TAPE2 / MD)
  - : REC (TAPE2 / MD)
  - : CD
  - : PHONO

#### Note :

- : parts extracted from the component side.
- : Pattern on the side which is seen.