

STR-GX290/GX390

SERVICE MANUAL

AEP Model

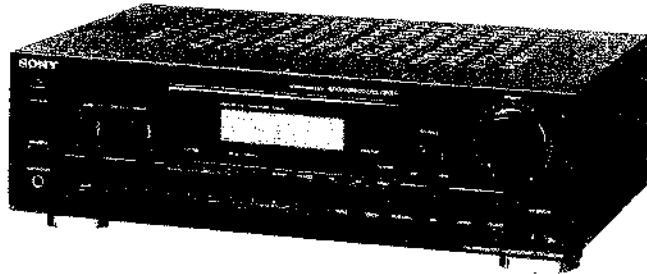


Photo : STR-GX290

SPECIFICATIONS

Amplifier section

Continuous RMS power output

STR-GX390 : 50W + 50W (8 ohms : AEP/4 ohms : Germany, at 40Hz - 20kHz less than 0.7% total harmonic distortion)

STR-GX290 : 30W + 30W (8 ohms : AEP/4 ohms : Germany, at 40Hz - 20kHz less than 0.7% total harmonic distortion)

Dynamic power (DIN)

STR-GX390 : 50W + 50W (8 ohms : AEP/4 ohms : Germany, at 1KHz 0.7%)

STR-GX290 : 30W + 30W (8 ohms : AEP/4 ohms : Germany, at 1KHz 0.7%)

Dynamic power (IEC)

STR-GX390 : 50W + 50W (8 ohms : AEP/4 ohms : Germany, at 1KHz 0.7%)

STR-GX290 : 30W + 30W (8 ohms : AEP/4 ohms : Germany, at 1KHz 0.7%)

Harmonic distortion

less than 0.7% at rated output

Frequency response

PHONO : RIAA equalization curve ± 0.5 dB

CD	} 10Hz - 50kHz $\begin{matrix} +0 \\ -5 \end{matrix}$ dB
VIDEO	
TAPE	

Inputs

	Sensitivity	Impedance	S/N (Weighting network) input level)
PHONO	2.5 mV	50 kohms	74 dB 72 dB* (A, 2.5 mV)
CD, VIDEO TAPE 1, 2	200 mV	50 kohms	95 dB 80 dB* (A, 200 mV)

* 78 IHF

Outputs

REC OUT VIDEO (AUDIO) OUT	Voltage : 200 mV Impedance 10 kohms
SPEAKER A, B	Impedance 8 ohms : AEP/4 ohms : Germany - 16 ohms
HEADPHONES	Accepts low and high impedance headphones

Tone controls

BASS : ± 10 dB at 100Hz

TREBLE : ± 10 dB at 10kHz

Variable loudness control

+6dB at 100Hz (MAX)

FM STEREO/FM-AM RECEIVER
SONY[®]

TABLE OF CONTENTS

Tuner section

	FM tuner section	AM tuner section
Tuning range	87.5–108 MHz	531–1602 kHz
Antenna terminals	75 ohms, unbalanced	External antenna terminal
Sensitivity at 46 dB : AEP/50 dB : Germany quieting	18.3 dBf, 4.5 μ V(mono) : AEP 18.3 dBf, 2.25 μ V(mono) : Germany 38.3 dBf, 45 μ V(stereo) : AEP 38.3 dBf, 22.5 μ V(stereo) : Germany	_____
Usable sensitivity	11.2dBf, 2 μ V(IHF) : AEP 11.2 dBf, 1 μ V(IHF) : Germany	Loop antenna : 500 μ V(at 1000 kHz)
Signal-to-noise ratio	76 dB(mono) : AEP 70 dB(mono) : Germany 70 dB(stereo) : AEP 66 dB(stereo) : Germany	54 dB(at 50 mV/m)
Harmonic distortion	0.3%(mono) 0.5%(stereo) at 1kHz	0.5%(at 50 mV/m, 400 Hz)
Selectivity	60 dB at 400 kHz	40 dB at 10 kHz : AEP 30 dB at 9 kHz : Germany
Separation	45 dB at 1 kHz	_____
Frequency response	30 Hz–15 kHz $^{+0.5}_{-2}$ dB	_____

General

System

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

Power requirements

220–230 V, 50/60 Hz

Power consumption

100 W (STR-GX390)

Dimensions

430X135X300 mm (w/h/d)

Weight

STR-GX390 : 6.5 kg

STR-GX290 : 6.0 kg

Accessories supplied

FM wire antenna (1) : AEP model only

AM loop antenna (1)



Remote commander (STR-GX390 only)

RM-S103 (1)

Sony batteries SUM-3 (NS) (2)

<u>Section</u>	<u>Title</u>	<u>Page</u>
SECTION 1. GENERAL	3
SECTION 2. IC PIN FUNCTION	4
SECTION 3. ELECTRICAL ADJUSTMENTS	6
SECTION 4. DIAGRAMS		
4-1.	Circuit Boards Location	8
4-2.	Semiconductor Lead Layouts	9
4-3.	Printed Wiring Bosrds – Main Section –	11
4-4.	Schematic Diagrams – Main Section –	15
	IC Block Diagram	18
4-5.	Printed Wiring Bosrds – Display Section –	19
4-6.	Schematic Diagram – Display Section –	23
	IC Block Diagrams	25
4-7.	Schematic Diagram – Tuner Section –	26
	IC Block Diagrams	28
SECTION 5. EXPLODED VIEWS		
5-1.	Front Panel Section	29
5-2.	Chassis Section	30
SECTION 6. ELECTRICAL PARTS LIST	31

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

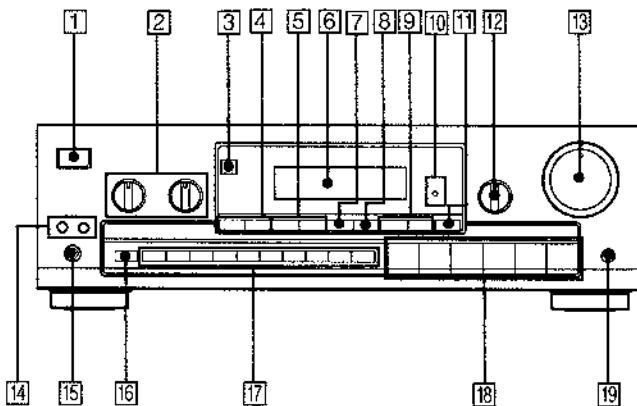
SECTION 1 GENERAL

STR-GX290/GX390

This section is extracted
from instruction manual.

Parts Identification

Front Panel



- 1 POWER switch
- 2 BASS/TREBLE TONE controls
(page 20.)
- 3 Remote control sensor (GX390)
- 4 TUNING +/- buttons
(pages 28 and 30.)
- 5 PRESET TUNING +/- buttons
(page 36.)
- 6 Display window
- 7 MEMORY button (page 32.)
- 8 FM MODE button (page 26.)
- 9 FM/AM BAND selectors
(pages 24, 28 and 30.)
- 10 MONITOR indicator (page 38.)
- 11 TUNING DIRECT button
(page 26.)
- 12 BALANCE control (page 20.)
- 13 MASTER VOLUME control
(page 20.)
- 14 SPEAKERS A/B buttons
(page 20.)
- 15 HEADPHONES jack
- 16 SHIFT button (pages 32 and 34.)
- 17 Numeric buttons
(pages 24, 32 and 34.)
- 18 Function selectors
- 19 LOUDNESS control (page 20.)

SECTION 2 IC PIN FUNCTION

• μ PD75206GF-727-3BE

PIN No.	SIGNAL NAME	FUNCTION	I/O
1	RESET	Micro Computer RESET	I
2	T0	FL tube indication (invalid) digit	0
3	T1	FL tube indication digit	0
4	T2	FL tube indication digit	0
5	T3	FL tube indication digit	0
6	T4	FL tube indication digit	0
7	T5	FL tube indication digit	0
8	T6	FL tube indication digit	0
9	T7	FL tube indication digit	0
10	T8	FL tube indication digit	0
11	T9	FL tube signal indication digit	0
12	T10/PH3	SURR. C/MONITOR OUTPUT	0
13	T11/PH2	SURR. B OUTPUT	0
14	T12/PH1	SURR. A OUTPUT	0
15	T13/PH0	-20dB Muting Output	0
16	T14/S11	FL tube indication Segment/Diode	0
17	T15/S10	FL tube indication Segment/Diode	0
18	V road	FL tube pulldown power supply	-
19	V pre	FL tube driver power supply	-
20	S9	FL tube indication Segment/Diode	0
21	S8	FL tube indication Segment/Key Scan	0
22	S7	FL tube indication Segment/Key Scan	0
23	S6	FL tube indication Segment/Key Scan	0
24	S5	FL tube indication Segment/Key Scan	0
25	S4	FL tube indication Segment/Key Scan	0
26	V _{DD}	Micro Computer power supply	-
27	S3	FL tube indication Segment/Key Scan	0
28	S2	FL tube indication Segment/Key Scan	0
29	S1	FL tube indication Segment/Key Scan	0
30	S0	FL tube indication Segment/Key Scan	0
31	P00/INT4	Signal to cut power supply	I
32	P01/SCK	Serial latch for electrical adjustment use	I

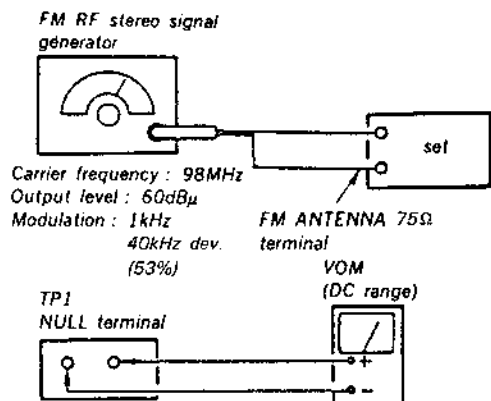
PIN No.	SIGNAL NAME	FUNCTION	I/O
33	P02/S0	Tuner Auto Stop input	I
34	P03/S1	Tuner Stereo input	I
35	P10/INT0	Remote Control Signal input	I
36	P11/INT1	Protector input	I
37	P12/INT2	System Power Key input	I
38	P13/T10	IF Data input	I
39	P20	DBFB output	O
40	P21	Video Control A	O
41	P22	Video Control B	O
42	P23/BUZ	Video Control C	O
43	P30	Protector Muting	O
44	P31	SURR. RY	O
45	P32	Standby LED Output	O
46	P33	Tuner Muting	O
47	P60	PLL/7822 Latch	O
48	P61	PLL/7822/SI Data	I/O
49	P62	PLL/7822/SI Clock	I/O
50	P63	LV1001 latch	O
51	P40	Function Muting	O
52	P41	Motor Volume UP	O
53	P42	Motor Volume DOWN	O
54	P43	Speaker Relay	O
55	PP0	Power Relay	O
56	X1	Ceramic Oscillator	-
57	X2	Ceramic Oscillator	-
58	V _{SS}	Micro Computer GND	-
59	XT1	—	-
60	XT2	—	-
61	P50	Key Scan input	I
62	P51	Key Scan input	I
63	P52	Key Scan input	I
64	P53	Key Scan input	I

SECTION 3 ELECTRICAL ADJUSTMENTS

FM SECTION

• FM Discriminator (NULL) Adjustment

Setting :



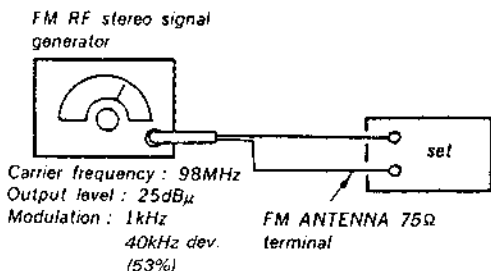
Procedure :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM.

Note : FM Tuning Level adjustment should be made after FM discriminator adjustment.

• FM Stereo Operation Level Adjustment

Setting :

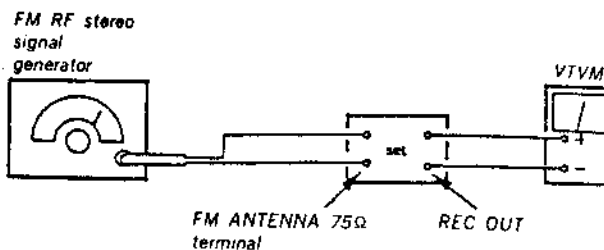


Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the STEREO LED goes on.

• FM Stereo Separation Adjustment

Setting :



Carrier frequency : 98MHz
Output level : 60dB μ
Modulation :
Audio (1kHz) : 16.25kHz dev. (21.7%)
Pilot (19kHz) : 7.5kHz dev. (13.3%)
Sub-channel (38kHz) : 16.25kHz dev. (21.7%)

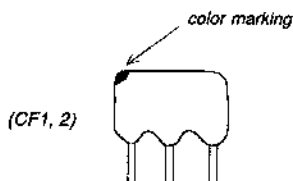
Procedure :

Tune the set to 98MHz.

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
R-CH	L-CH	Adjust RV21 for minimum reading

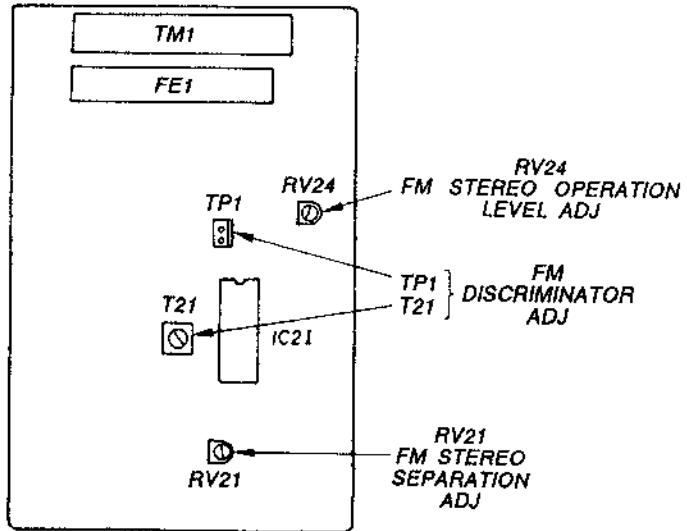
Note on Ceramic Filter (CF1, 2) Replacement.

This set employs two ceramic filters (CF1, 2) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by (*A, *B) connection is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



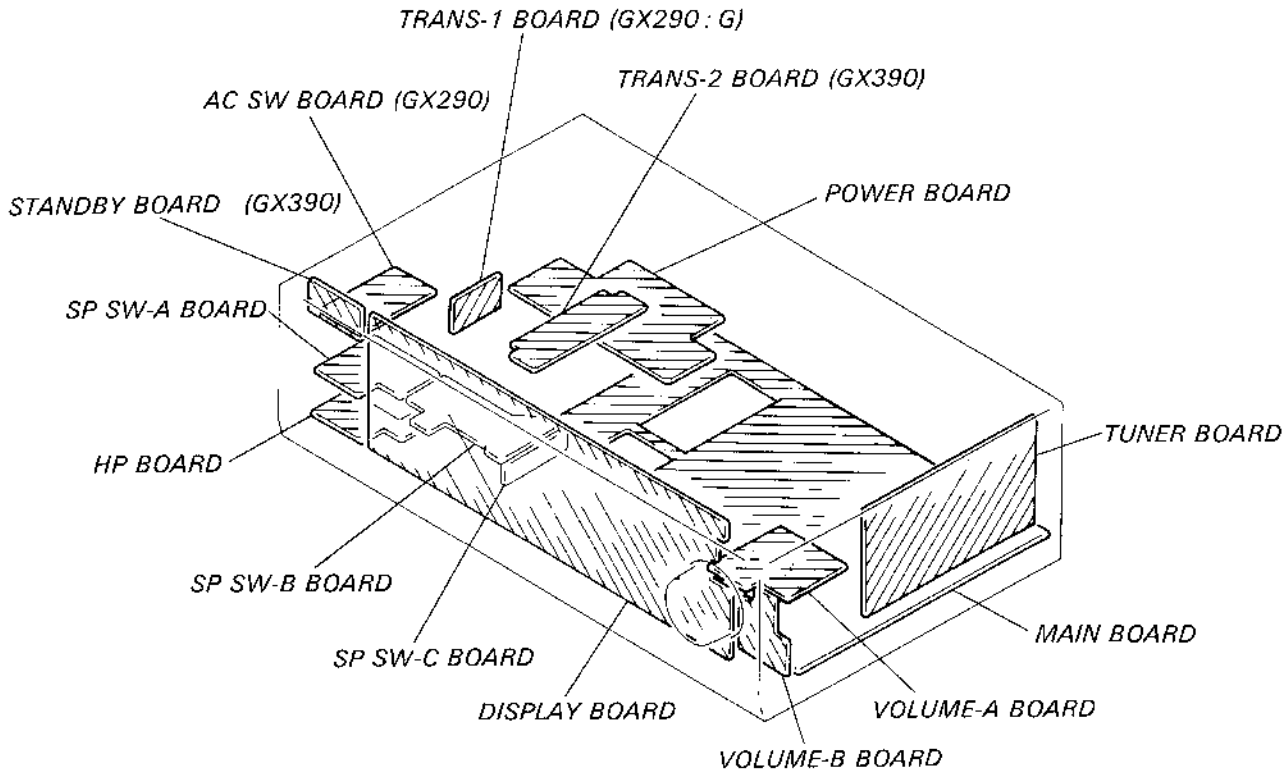
○ : short
× : open

Ceramic filter		Connection		FM intermediate frequency (MHz)
Color mark	Center Frequency (MHz)	*A (D125)	*B (D124)	
White	10.750	×	○	10.750
Red	10.700	×	×	10.700
Black	10.650	○	○	10.650



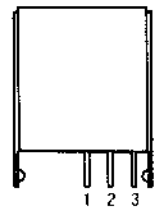
SECTION 4 DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



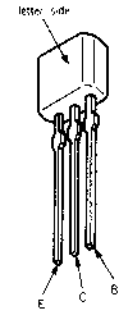
4-2. SEMICONDUCTOR LEAD LAYOUTS

GP1U52XB



1 Vout
2 Vcc
3 GND

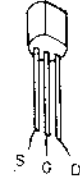
2SA1175-HFE
2SC2785-HFE



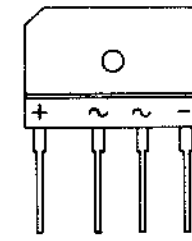
2SA988-PAFAEA



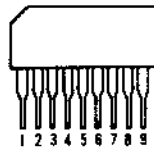
2SK246-GR3



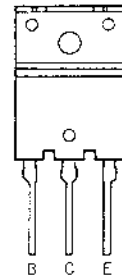
RBA402



LB1493
μPC4570HA-1



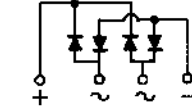
2SA1670-OP-A
2SA1670-OY



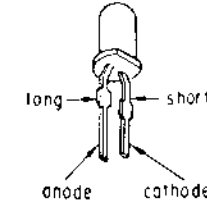
2SC2603-EF
2SC2669-OY
2SC3113-AB
2SC3623A-LK
DTA114ES
DTA124ES
DTC114ES
DTC124ES



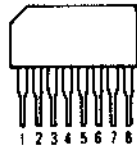
KSA708



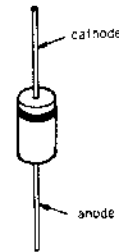
SEL3210S-CD
SEL3810A-CD



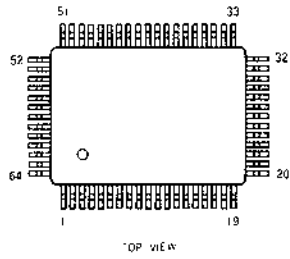
M5218AL



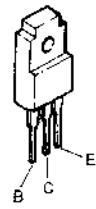
1N4148M
UZ-12BSB
UZ-13BSB
UZ-4.3BSB
UZ-6.2BSC



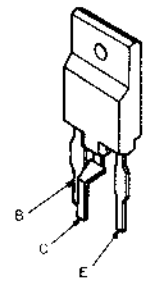
μPD75206GF-727-3BE



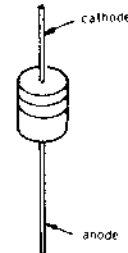
2SA1684-LK
2SC4431-LK



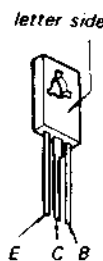
2SC4385-OP-A
2SC4385-OY



11ES2
HZS22-2L
HZS4ALL
HZS6C3L
UZL-24L



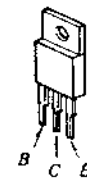
2SA1142-QPE
2SC2682-QPE
2SD809-K



2SA979-FG



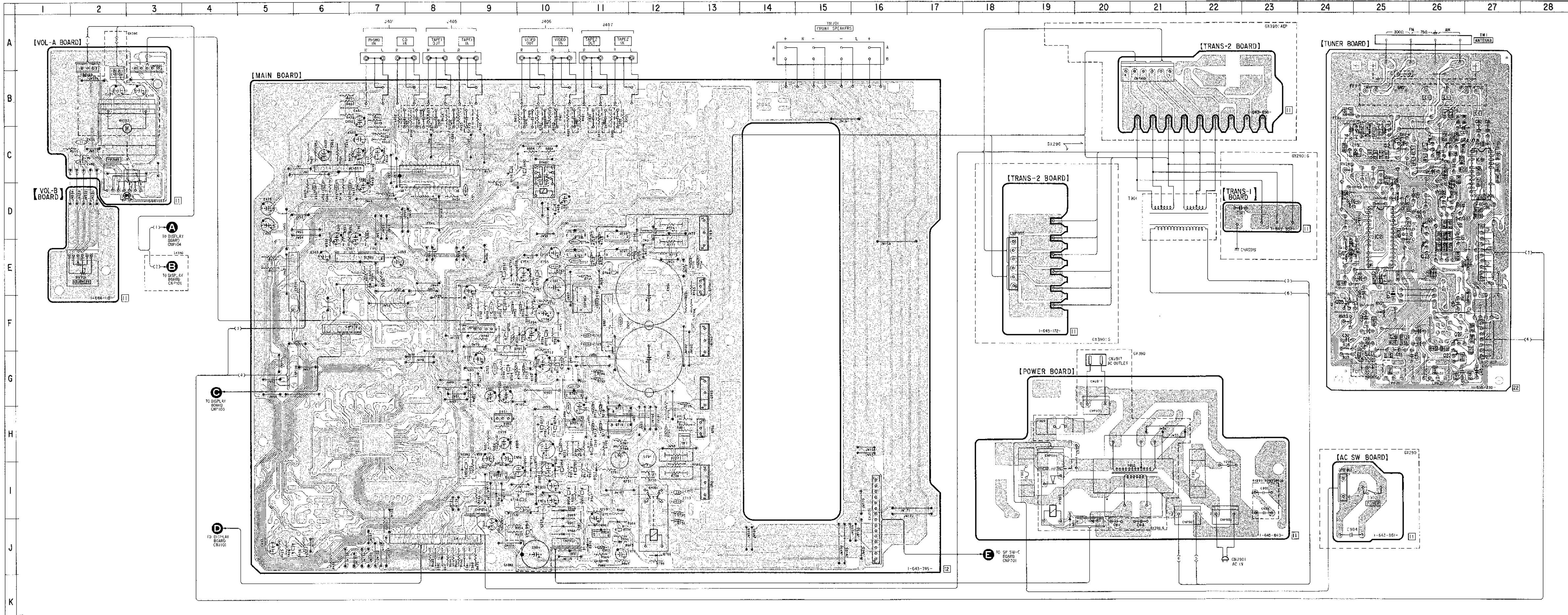
2SD2012



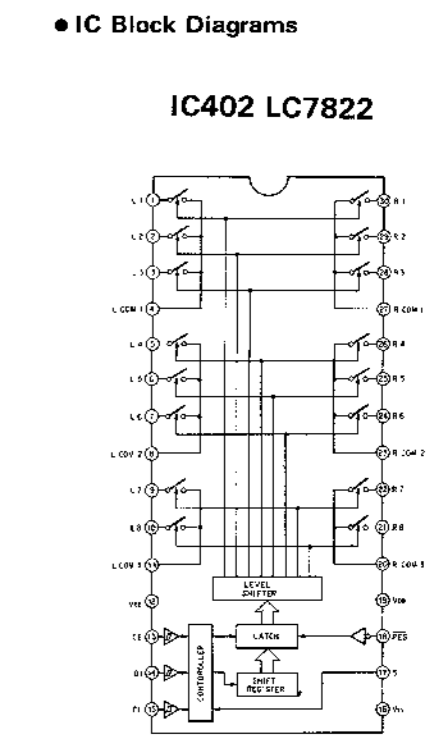
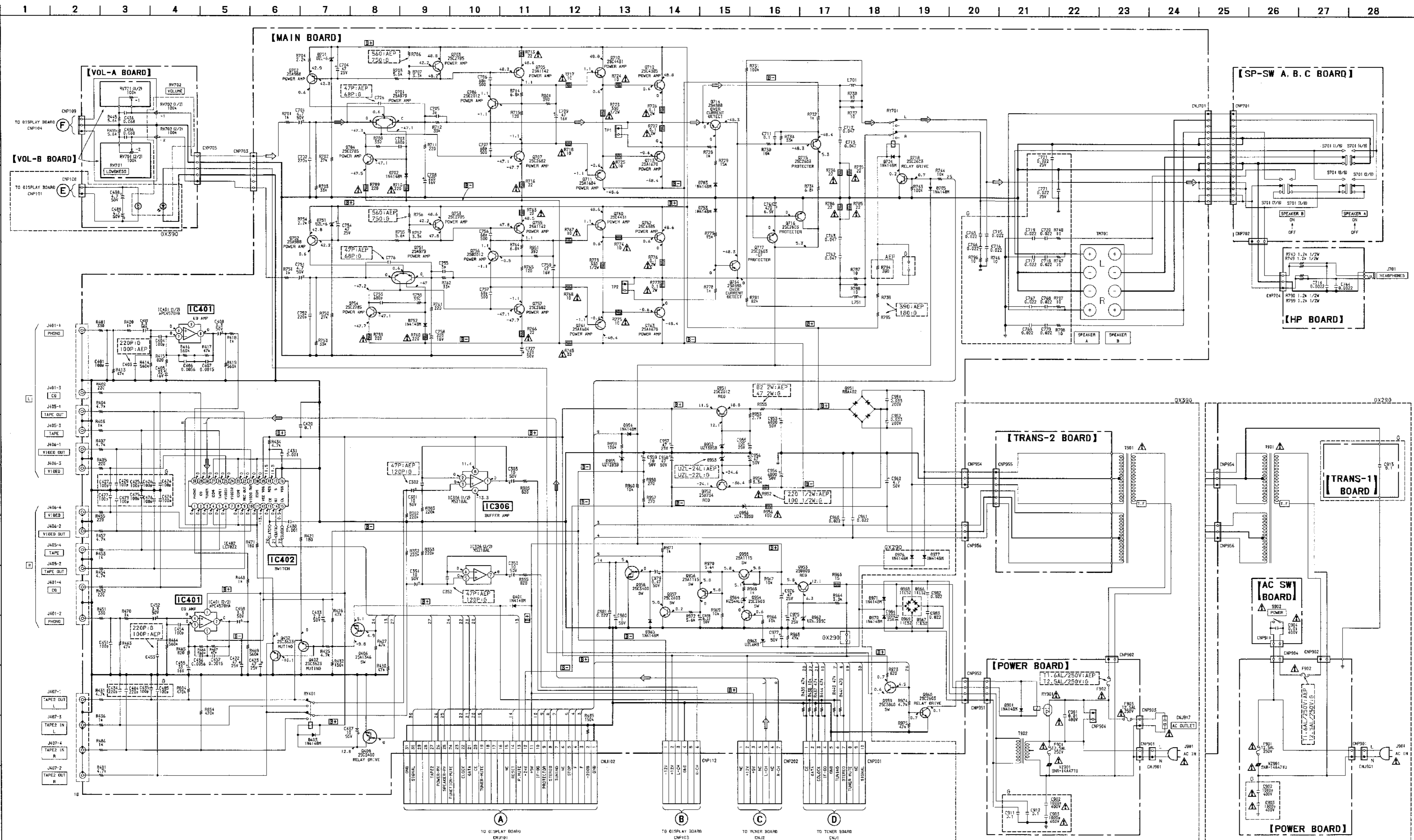
4-3. PRINTED WIRING BOARDS - MAIN Section-

● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D401	J-8	Q408	D-10
D403	D-10	Q452	C-9
D701	F-9	Q701	F-9
D702	G-10	Q702	F-9
D703	I-11	Q703	F-10
D704	J-12	Q704	G-9
D705	I-10	Q705	H-10
D751	E-9	Q706	H-13
D752	F-10	Q707	G-10
D753	D-12	Q710	H-11
D901	J-19	Q711	H-11
D951	F-11	Q712	I-13
D952	G-9	Q713	G-13
D953	I-9	Q714	H-11
D954	I-10	Q715	H-10
D955	H-9	Q716	H-10
D956	I-9	Q717	H-10
D962	J-11	Q718	I-9
D963	J-11	Q751	E-9
D964	J-11	Q752	E-9
D965	I-10	Q753	E-10
D966	J-10	Q754	F-9
D967	J-10	Q755	D-11
D968	I-10	Q756	E-13
D969	I-10	Q757	E-11
D970	J-11	Q760	D-11
D971	J-10	Q761	E-11
D976	J-11	Q762	F-13
D977	J-10	Q763	D-13
		Q764	E-11
IC21	E-25	Q951	H-9
IC81	C-27	Q952	I-9
IC306	E-7	Q953	J-11
IC401	C-6	Q954	J-11
IC402	C-8	Q955	I-11
		Q956	I-10
Q1	C-26	Q957	I-11
Q2	C-25	Q958	I-10
Q21	F-26	Q959	I-9
Q22	G-26	Q960	J-10
Q23	E-26		
Q24	D-26		
Q25	F-24		
Q81	D-26		
Q82	D-26		
Q83	D-26		
Q84	C-26		
Q402	C-10		
Q406	J-5		



Note:
 ● — : parts extracted from the component side.
 ■ — : parts mounted on the conductor side.
 [] — indicates side identified with part number.
 * , *A , *B : See page 6 for Note on Ceramic Filter (CF1, 2) Replacement.
 G: Germany



Note:

- *A, *B: See page 6 for Note on Ceramic Filter (CF1, 2) Replacement.
- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- \square : nonflammable resistor.

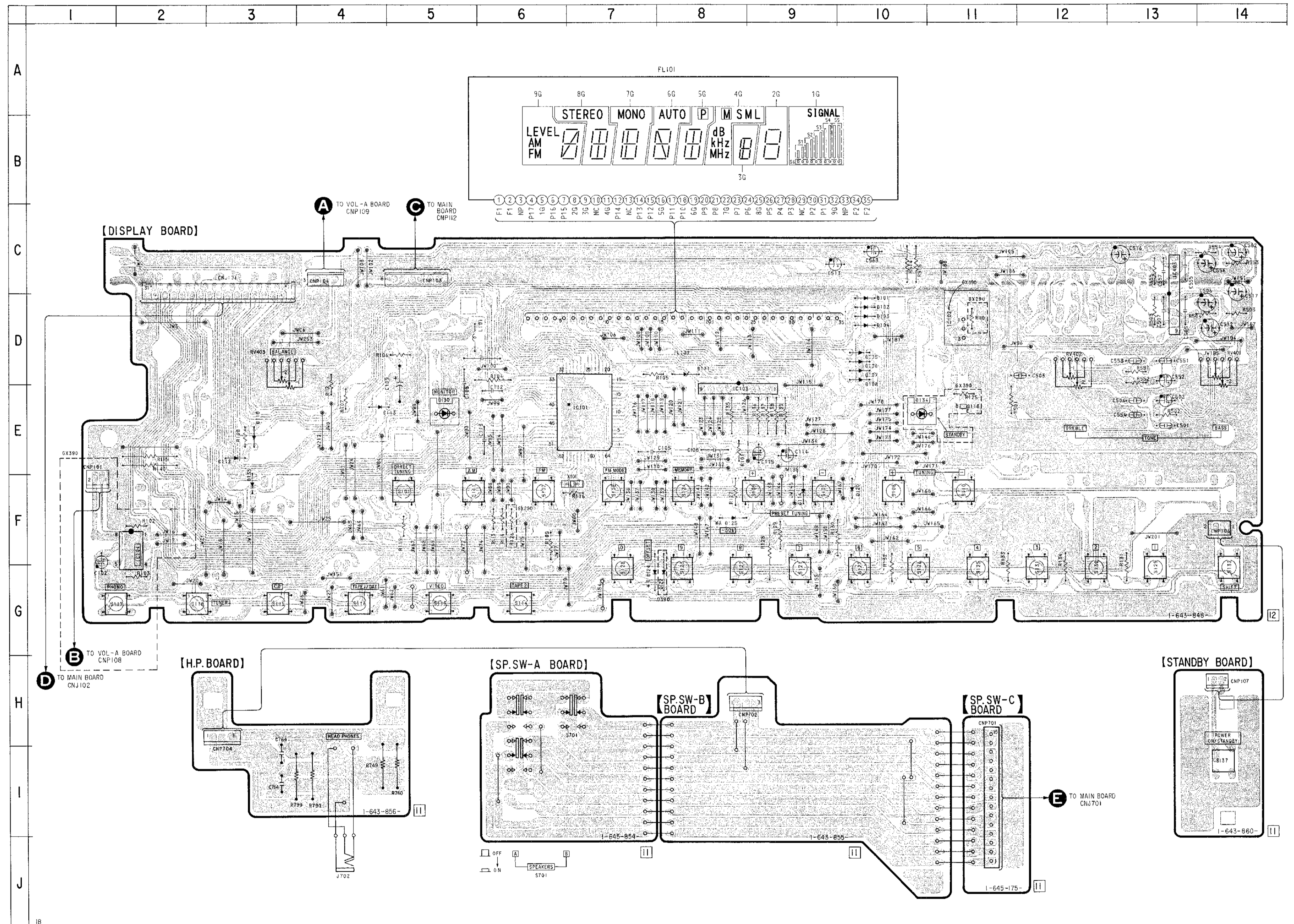
Note:

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

- \square B+ Line
- \square B- Line
- \square : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- G: Germany

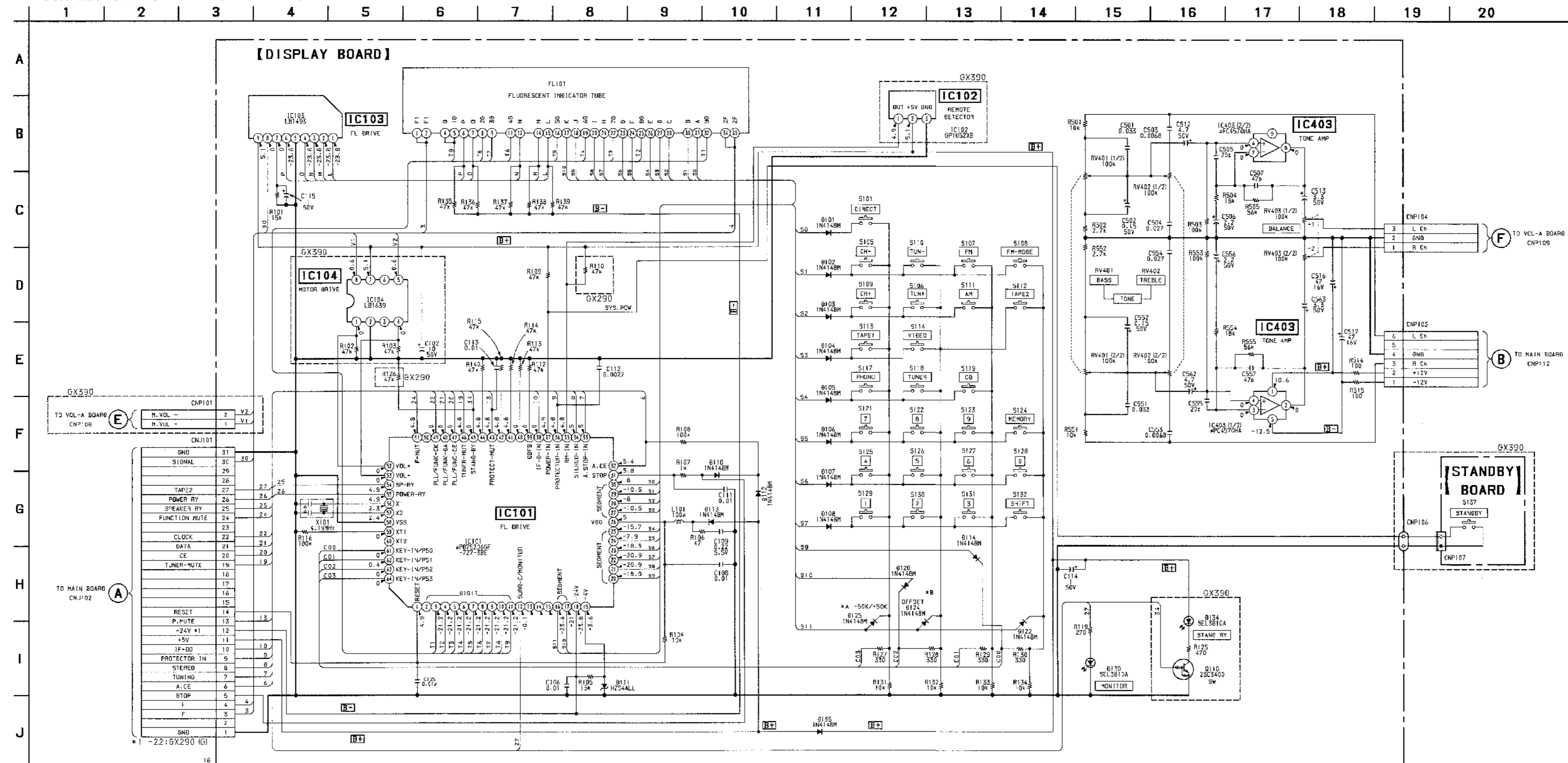
● Semiconductor Location

Ref. No.	Location
D101	D-10
D102	D-10
D103	D-10
D104	D-10
D105	D-10
D106	D-10
D107	D-10
D108	D-10
D110	E-3
D111	D-8
D112	E-3
D113	E-4
D114	F-9
D120	F-10
D122	G-8
D124	G-7
D125	F-8
D130	E-5
D134	E-10
D135	F-3
IC101	E-7
IC102	D-11
IC103	E-8
IC104	F-2
IC403	C-13
Q110	E-11



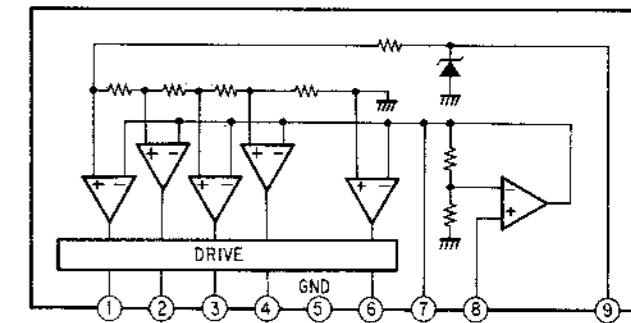
Note:
 ○ : parts extracted from the component side.
 ● : parts mounted on the conductor side.
 ⊕ : indicates side identified with part number.
 * , *A , *B : See page 6 for Note on Ceramic Filter (CF1, 2) Replacement.
 G: Germany

4-6. SCHEMATIC DIAGRAM — DISPLAY Section—

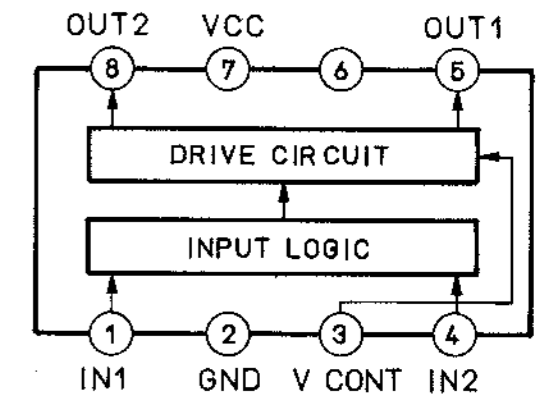


IC Block Diagrams

IC103 LB1493



IC104 LB1639

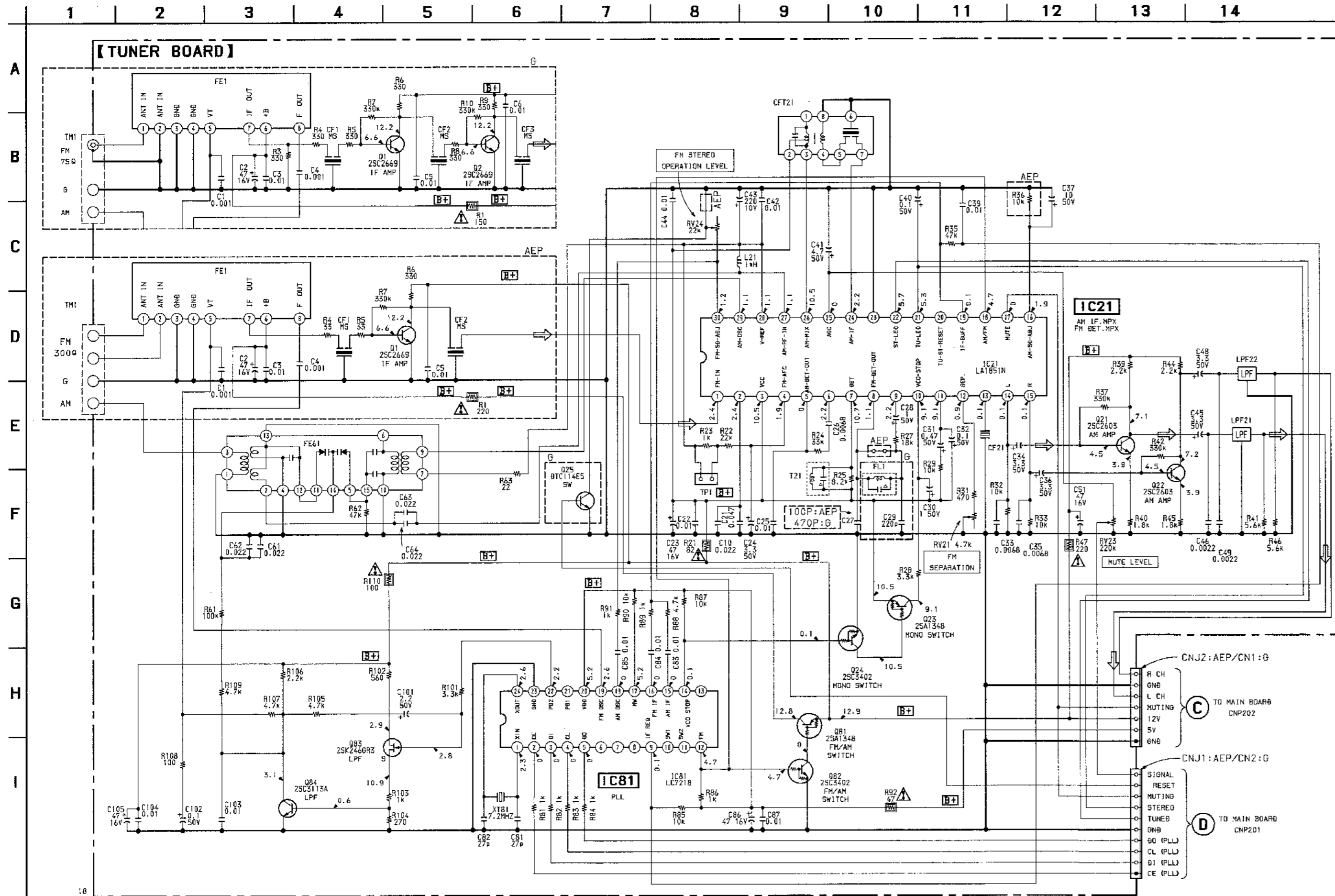


- Note:**
- *: *A, *B: See page 6 for Note on Ceramic Filter (CF1, 2) Replacement.
 - All capacitors are in μF unless otherwise noted. pF : μpF 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
 - \triangle : internal component.
 - \square : nonflammable resistor.

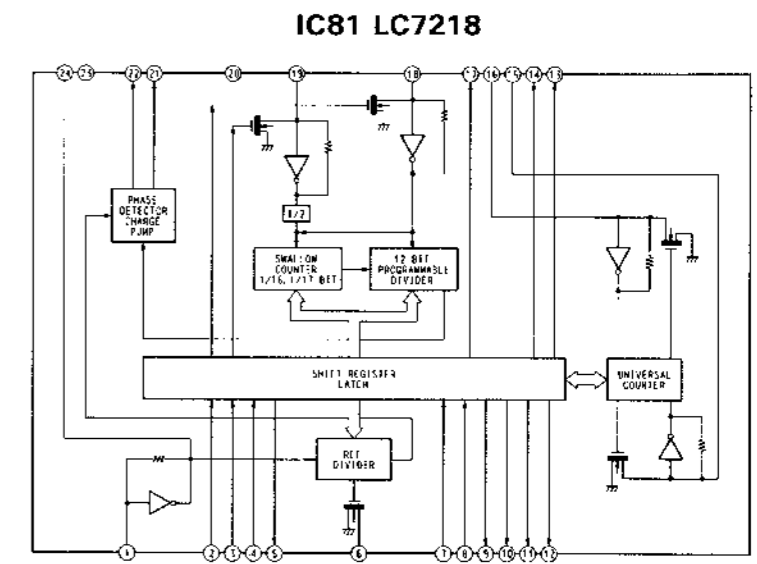
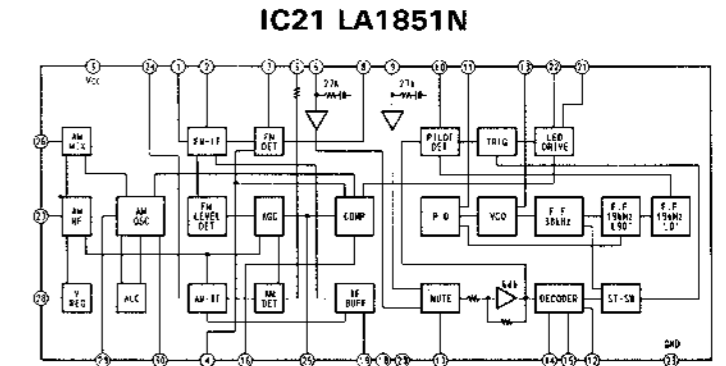
- Note:**
- The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

- $B+$: B+ Line
- $B-$: B- Line
- \square : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input Impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \Rightarrow : FM
- G: Germany

4-7. SCHEMATIC DIAGRAM -TUNER Section-



● IC Block Diagrams



Note:

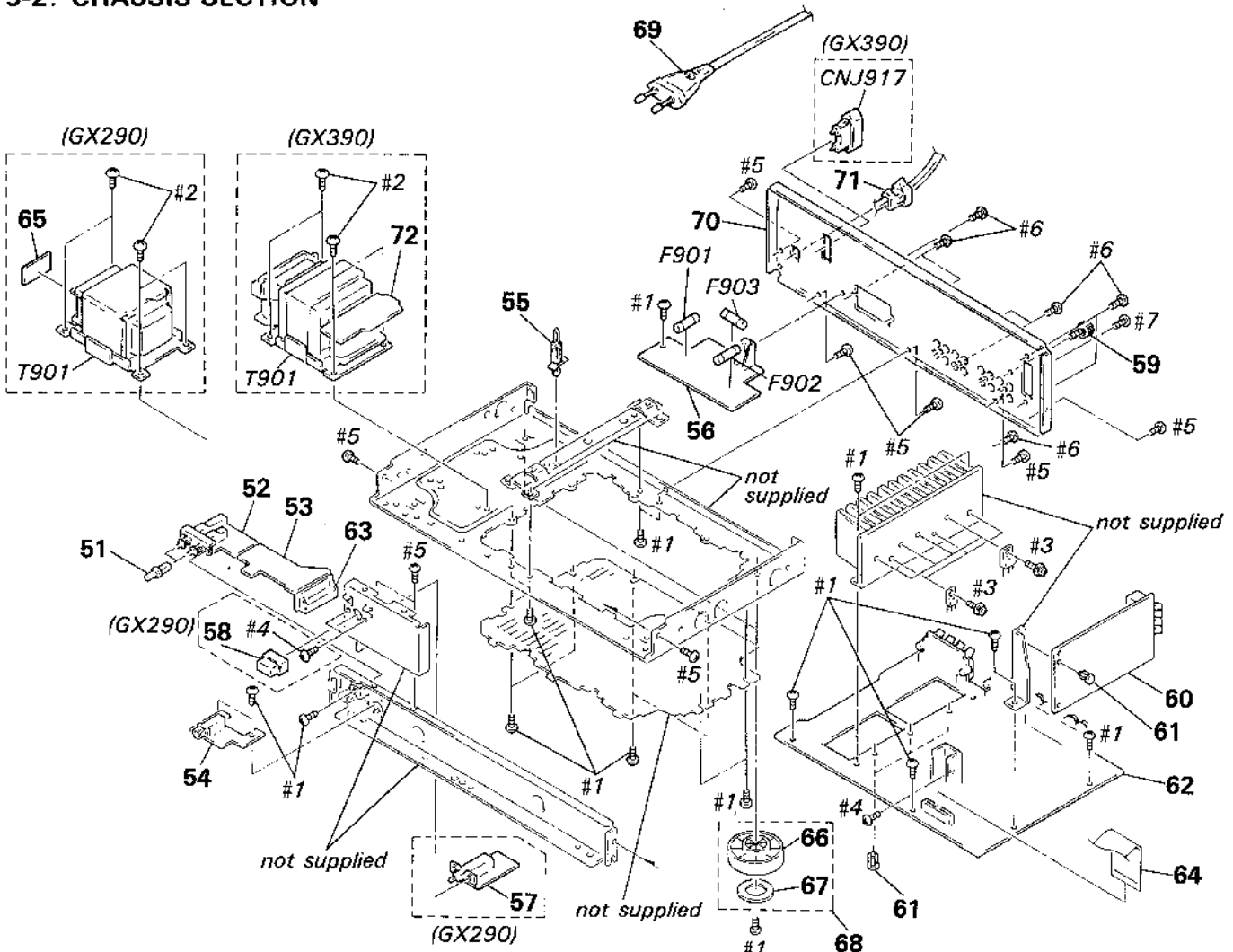
- * , *A , *B : See page 6 for Note on Ceramic Filter (CF1, 2) Replacement.
- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- \square : nonflammable resistor.

Note:

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

- \square : B+ Line
- \square : B- Line
- \square : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \rightarrow : FM
- G:Germany

5-2. CHASSIS SECTION



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

Ref. No.	Part No.	Description	Remark
	51	4-951-801-01 BUTTON (S)	
*	52	1-643-854-11 SP SW-A BOARD	
*	53	1-643-855-11 SP SW-B BOARD	
*	54	1-643-856-11 HP BOARD	
*	55	4-924-098-31 HOLDER, PC BOARD	
*	56	1-643-849-11 POWER BOARD	
*	57	1-643-861-11 AC SW BOARD (GX290)	
	58	4-917-460-01 KNOB, POWER (GX290)	
	59	4-947-010-01 SCREW, FEEDER FIXED	
*	60	A-4347-793-A TUNER BOARD, COMPLETE (G)	
*	60	A-4356-361-A TUNER BOARD, COMPLETE (AEP)	
	61	4-812-134-11 RIVET NYLON, 3.5	
*	62	A-4347-757-A MAIN BOARD, COMPLETE (GX290:AEP)	
*	62	A-4347-758-A MAIN BOARD, COMPLETE (GX290:G)	
*	62	A-4347-791-A MAIN BOARD, COMPLETE (GX390:AEP)	
*	62	A-4347-792-A MAIN BOARD, COMPLETE (GX390:G)	
*	63	1-645-175-11 SP SW-C BOARD	
	64	1-696-456-01 WIRE (FLAT TYPE) (31 CORE)	
*	65	1-643-857-11 TRANS-1 BOARD (GX290:G)	
	66	3-318-688-31 FOOT (F58175S)	

Ref. No.	Part No.	Description	Remark
	67	4-923-836-11 CUSHION	
	68	X-4941-292-1 FOOT ASSY (F58175S)	
	69	1-575-651-11 CORD, POWER	
*	70	4-951-798-11 PANEL, BACK (GX390:AEP)	
*	70	4-951-798-21 PANEL, BACK (GX390:G)	
*	70	4-951-798-41 PANEL, BACK (GX290:AEP)	
*	70	4-951-798-51 PANEL, BACK (GX290:G)	
	71	3-703-244-00 BUSHING (2104), CORD	
*	72	1-643-858-11 TRANS-2 BOARD (GX390:AEP)	
*	72	1-645-172-11 TRANS-2 BOARD (GX390:G)	
	F901	1-532-286-00 FUSE (T2.5AL)	
	F902	1-532-259-00 FUSE (T1.6AL) (GX390:AEP)	
	F902	1-532-285-00 FUSE (T1.25AL) (GX290)	
	F902	1-532-286-00 FUSE (T2.5AL) (GX390:G)	
	F903	1-532-286-00 FUSE (T2.5AL) (GX390)	
	CNJ917	1-526-794-11 OUTLET, AC (GX390)	
	T901	1-450-363-11 TRANSFORMER, POWER (GX390:AEP)	
	T901	1-450-364-21 TRANSFORMER, POWER (GX290:AEP)	
	T901	1-450-384-11 TRANSFORMER, POWER (GX390:G)	
	T901	1-450-385-21 TRANSFORMER, POWER (GX290:G)	

SECTION 6 ELECTRICAL PARTS LIST

AC SW

DISPLAY

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: μ , for example:
uA.: μ A. uPA.: μ PA.
uPB.: μ PB. uPC.: μ PC. uPD.: μ PD.
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

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

G: Germany

Ref. No.	Part No.	Description	Remark
*	1-643-861-11	AC SW BOARD (GX290) *****	
		< CAPACITOR >	
Δ C904	1-161-744-00	CERAMIC 0.01uF 400V (GX290)	
		< CONNECTOR >	
* CNP911	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P (GX290)	
		< SWITCH >	
Δ S902	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (GX290) *****	
*	A-4347-754-A	DISPLAY BOARD, COMPLETE (GX290)	
*	A-4347-771-A	DISPLAY BOARD, COMPLETE (GX390) *****	
*	4-921-941-01	CUSHION (FL)	
*	4-942-204-01	PLATE, GROUND	
*	4-943-107-11	HOLDER (FL TUBE)	
		< CAPACITOR >	
C102	1-126-157-11	ELECT 10uF 20% 16V (GX390)	
C105	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C106	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C108	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C109	1-125-486-11	DOUBLE LAYERS 0.22F 5.5V	
C111	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C112	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C113	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C114	1-126-301-11	ELECT 1uF 20% 50V	
C115	1-126-301-11	ELECT 1uF 20% 50V	
C501	1-130-489-00	MYLAR 0.033uF 5% 50V	
C502	1-124-250-00	ELECT 0.15uF 20% 50V	
C503	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C504	1-130-488-00	MYLAR 0.027uF 5% 50V	
C505	1-162-206-31	CERAMIC 20PF 5% 50V	
C506	1-124-257-00	ELECT 2.2uF 20% 50V	
C507	1-162-215-31	CERAMIC 47PF 5% 50V	
C512	1-126-163-11	ELECT 4.7uF 20% 50V	

Ref. No.	Part No.	Description	Remark
C513	1-126-162-11	ELECT 3.3uF 20% 50V	
C516	1-124-589-11	ELECT 47uF 20% 16V	
C517	1-124-589-11	ELECT 47uF 20% 16V	
C551	1-130-489-00	MYLAR 0.033uF 5% 50V	
C552	1-124-250-00	ELECT 0.15uF 20% 50V	
C553	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C554	1-130-488-00	MYLAR 0.027uF 5% 50V	
C555	1-162-206-31	CERAMIC 20PF 5% 50V	
C556	1-124-257-00	ELECT 2.2uF 20% 50V	
C557	1-162-215-31	CERAMIC 47PF 5% 50V	
C562	1-126-163-11	ELECT 4.7uF 20% 50V	
C563	1-126-162-11	ELECT 3.3uF 20% 50V	
		< JACK >	
* CNJ101	1-568-873-11	SOCKET, CONNECTOR 31P	
		< CONNECTOR >	
* CNP101	1-568-951-11	PIN, CONNECTOR 2P (GX390)	
* CNP103	1-564-521-11	PLUG, CONNECTOR 6P	
* CNP104	1-564-518-11	PLUG, CONNECTOR 3P	
		< DIODE >	
D101	8-719-987-63	DIODE 1N4148M	
D102	8-719-987-63	DIODE 1N4148M	
D103	8-719-987-63	DIODE 1N4148M	
D104	8-719-987-63	DIODE 1N4148M	
D105	8-719-987-63	DIODE 1N4148M	
D106	8-719-987-63	DIODE 1N4148M	
D107	8-719-987-63	DIODE 1N4148M	
D108	8-719-987-63	DIODE 1N4148M	
D110	8-719-987-63	DIODE 1N4148M	
D111	8-719-985-53	DIODE HZS4ALL	
D112	8-719-987-63	DIODE 1N4148M	
D113	8-719-987-63	DIODE 1N4148M	
D114	8-719-987-63	DIODE 1N4148M	
D120	8-719-987-63	DIODE 1N4148M	
D122	8-719-987-63	DIODE 1N4148M	
D124	8-719-987-63	DIODE 1N4148M	
D125	8-719-987-63	DIODE 1N4148M	

DISPLAY	HP	MAIN
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
S132	1-554-303-21	SWITCH, TACTILE (SHIFT)		C403	1-162-282-31	CERAMIC	100PF 10% 50V (AEP)
		< VIBRATOR >		C404	1-162-282-31	CERAMIC	100PF 10% 50V
X101	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)		C405	1-124-034-51	ELECT	33uF 20% 16V

*	1-643-856-11	HP BOARD		C406	1-130-480-00	MYLAR	0.0056uF 5% 50V
		*****		C407	1-130-473-00	MYLAR	0.0015uF 5% 50V
		< CAPACITOR >		C408	1-123-382-00	ELECT	3.3uF 20% 100V
C714	1-164-089-11	CERAMIC	0.0022uF 50V	C420	1-164-159-11	CERAMIC	0.1uF 50V
C764	1-164-089-11	CERAMIC	0.0022uF 50V	C422	1-124-477-11	ELECT	47uF 20% 25V
		< CONNECTOR >		C423	1-124-477-11	ELECT	47uF 20% 25V
* CNP704	1-564-518-11	PLUG, CONNECTOR 3P		C424	1-162-282-31	CERAMIC	100PF 10% 50V (G)
		< JACK >		C425	1-162-282-31	CERAMIC	100PF 10% 50V (G)
J701	1-568-515-21	JACK (LARGE TYPE) (HEADPHONES)		C426	1-162-282-31	CERAMIC	100PF 10% 50V (G)
		< RESISTOR >		C427	1-162-282-31	CERAMIC	100PF 10% 50V (G)
R740	1-247-753-11	CARBON	1.2K 5% 1/2W	C429	1-162-282-31	CERAMIC	100PF 10% 50V (G)
R749	1-247-753-11	CARBON	1.2K 5% 1/2W	C430	1-162-294-31	CERAMIC	0.001uF 10% 50V
R790	1-247-753-11	CARBON	1.2K 5% 1/2W	C431	1-130-471-00	MYLAR	0.001uF 5% 50V
R799	1-247-753-11	CARBON	1.2K 5% 1/2W	C433	1-124-925-11	ELECT	2.2uF 20% 100V

*	A-4347-757-A	MAIN BOARD, COMPLETE (GX290:AEP)		C434	1-162-286-31	CERAMIC	220PF 10% 50V (G)
*	A-4347-758-A	MAIN BOARD, COMPLETE (GX290:G)		C435	1-162-282-31	CERAMIC	100PF 10% 50V (G)
*	A-4347-791-A	MAIN BOARD, COMPLETE (GX390:AEP)		C437	1-124-907-11	ELECT	10uF 20% 50V
*	A-4347-792-A	MAIN BOARD, COMPLETE (GX390:G)		C451	1-162-282-31	CERAMIC	100PF 10% 50V
		*****		C452	1-123-382-00	ELECT	3.3uF 20% 100V
	4-812-134-00	RIVET NYLON, 3.5		C453	1-162-286-31	CERAMIC	220PF 10% 50V (G)
*	4-942-204-01	PLATE, GROUND (GX290/GX390:G)		C453	1-162-282-31	CERAMIC	100PF 10% 50V (AEP)
*	4-953-350-01	PLATE, GROUND		C454	1-162-282-31	CERAMIC	100PF 10% 50V
	7-682-548-04	SCREW +BVTT 3X8 (S)		C455	1-124-034-51	ELECT	33uF 20% 16V
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3		C456	1-130-480-00	MYLAR	0.0056uF 5% 50V
		< CAPACITOR >		C457	1-130-473-00	MYLAR	0.0015uF 5% 50V
C301	1-124-907-11	ELECT	10uF 20% 50V	C458	1-123-382-00	ELECT	3.3uF 20% 100V
C302	1-162-283-31	CERAMIC	120PF 10% 50V (G)	C474	1-162-282-31	CERAMIC	100PF 10% 50V (G)
C302	1-162-215-31	CERAMIC	47PF 5% 50V (AEP)	C475	1-162-282-31	CERAMIC	100PF 10% 50V (G)
C303	1-124-907-11	ELECT	10uF 20% 50V	C476	1-162-282-31	CERAMIC	100PF 10% 50V (G)
C351	1-124-907-11	ELECT	10uF 20% 50V	C477	1-162-282-31	CERAMIC	100PF 10% 50V (G)
C352	1-162-283-31	CERAMIC	120PF 10% 50V (G)	C479	1-162-282-31	CERAMIC	100PF 10% 50V (G)
C352	1-162-215-31	CERAMIC	47PF 5% 50V (AEP)	C484	1-162-286-31	CERAMIC	220PF 10% 50V (G)
C353	1-124-907-11	ELECT	10uF 20% 50V	C485	1-162-282-31	CERAMIC	100PF 10% 50V (G)
C401	1-162-282-31	CERAMIC	100PF 10% 50V	C701	1-124-927-11	ELECT	4.7uF 20% 100V
C402	1-123-382-00	ELECT	3.3uF 20% 100V	C702	1-162-286-31	CERAMIC	220PF 10% 50V
C403	1-162-286-31	CERAMIC	220PF 10% 50V (G)	C703	1-102-116-00	CERAMIC	680PF 10% 50V
				C704	1-124-477-11	ELECT	47uF 20% 25V
				C705	1-164-039-11	CERAMIC	3PF 0.25PF50V
				C706	1-102-989-00	CERAMIC	68PF 5% 500V
				C707	1-102-989-00	CERAMIC	68PF 5% 500V
				C708	1-124-120-11	ELECT	220uF 20% 25V
				C709	1-124-477-11	ELECT	47uF 20% 25V
				C711	1-164-159-11	CERAMIC	0.1uF 50V
				C712	1-136-161-00	FILM	0.047uF 5% 50V
				C713	1-136-161-00	FILM	0.047uF 5% 50V
				C715	1-101-005-00	CERAMIC	22000PF 50V (G)

MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C716	1-101-005-00	CERAMIC	22000PF		50V (G)	C980	1-124-903-11	ELECT	1uF	20%	50V
C717	1-101-005-00	CERAMIC	22000PF		50V (G)	C981	1-161-494-00	CERAMIC	0.022uF		25V
C718	1-101-005-00	CERAMIC	22000PF		50V (G)	C982	1-161-494-00	CERAMIC	0.022uF		25V(GX390)
C719	1-101-005-00	CERAMIC	22000PF		50V (G)	C983	1-161-494-00	CERAMIC	0.022uF		25V(GX390)
C720	1-101-005-00	CERAMIC	22000PF		50V (G)	C984	1-124-557-11	ELECT	1000uF	20%	25V(GX390)
C721	1-161-494-00	CERAMIC	0.022uF		25V (G)						
C726	1-162-219-31	CERAMIC	68PF	5%	50V (G)			< JACK >			
C726	1-162-215-31	CERAMIC	47PF	5%	50V (AEP)						
C727	1-124-911-11	ELECT	220uF	20%	50V	* CNJ102	1-568-845-11	SOCKET, CONNECTOR 31P			
C751	1-124-927-11	ELECT	4.7uF	20%	100V	CNJ701	1-573-095-11	SOCKET, CONNECTOR 15P			
C752	1-162-286-31	CERAMIC	220PF	10%	50V			< CONNECTOR >			
C753	1-102-116-00	CERAMIC	680PF	10%	50V	* CNP112	1-564-509-11	PLUG, CONNECTOR 5P			
C754	1-124-477-11	ELECT	47uF	20%	25V	* CNP201	1-506-608-11	PIN, CONNECTOR 10P			
C755	1-164-039-11	CERAMIC	3PF	0.25PF	50V	* CNP202	1-560-532-00	PIN, CONNECTOR 7P			
C756	1-102-989-00	CERAMIC	68PF	5%	500V	CNP952	1-564-507-11	PLUG, CONNECTOR 4P (GX390)			
C757	1-102-989-00	CERAMIC	68PF	5%	500V	* CNP954	1-564-104-00	PIN, CONNECTOR (B3P-VH) 3P			
C758	1-124-120-11	ELECT	220uF	20%	25V	* CNP956	1-564-506-11	PLUG, CONNECTOR 3P			
C759	1-124-477-11	ELECT	47uF	20%	25V			< DIODE >			
C761	1-124-472-11	ELECT	470uF	20%	10V	D401	8-719-987-63	DIODE	1N4148M		
C762	1-136-161-00	FILM	0.047uF	5%	50V	D403	8-719-987-63	DIODE	1N4148M		
C763	1-136-161-00	FILM	0.047uF	5%	50V	D701	8-719-933-41	DIODE	HZS6C3L		
C765	1-101-005-00	CERAMIC	22000PF		50V (G)	D702	8-719-987-63	DIODE	1N4148M		
C766	1-101-005-00	CERAMIC	22000PF		50V (G)	D703	8-719-987-63	DIODE	1N4148M		
C767	1-101-005-00	CERAMIC	22000PF		50V (G)	D704	8-719-987-63	DIODE	1N4148M		
C768	1-101-005-00	CERAMIC	22000PF		50V (G)	D705	8-719-987-63	DIODE	1N4148M		
C769	1-101-005-00	CERAMIC	22000PF		50V (G)	D751	8-719-933-41	DIODE	HZS6C3L		
C770	1-101-005-00	CERAMIC	22000PF		50V (G)	D752	8-719-987-63	DIODE	1N4148M		
C771	1-161-494-00	CERAMIC	0.022uF		25V (G)	D753	8-719-987-63	DIODE	1N4148M		
C776	1-162-219-31	CERAMIC	68PF	5%	50V (G)	D951	8-719-312-09	DIODE	R6A-402		
C776	1-162-215-31	CERAMIC	47PF	5%	50V (AEP)	D952	8-719-010-78	DIODE	UZ-13BSB-TP		
C951	1-106-379-12	MYLAR	0.033uF	5%	200V	D953	8-719-934-00	DIODE	HZS22-2L (GX290:G)		
C952	1-106-379-12	MYLAR	0.033uF	5%	200V	D953	8-719-002-33	DIODE	UZL-24L (GX290:AEP/GX390)		
C953	1-125-614-11	ELECT	6800uF	20%	50V	D954	8-719-987-63	DIODE	1N4148M		
C953	1-128-506-11	ELECT	6800uF	20%	50V	D955	8-719-010-74	DIODE	UZ-12BSB-TP		
C954	1-125-614-11	ELECT	6800uF	20%	50V	D956	8-719-010-29	DIODE	UZ-4.3BSB		
C954	1-128-506-11	ELECT	6800uF	20%	50V	D962	8-719-010-47	DIODE	UZ-6.2BSB		
C955	1-124-478-11	ELECT	100uF	20%	25V	D963	8-719-933-41	DIODE	HZS6C3L		
C956	1-124-910-11	ELECT	47uF	20%	50V	D964	8-719-985-53	DIODE	HZS4ALL		
C957	1-124-477-11	ELECT	47uF	20%	25V	D965	8-719-987-63	DIODE	1N4148M		
C958	1-124-910-11	ELECT	47uF	20%	50V	D966	8-719-200-82	DIODE	11ES2 (GX390)		
C959	1-124-907-11	ELECT	10uF	20%	50V	D967	8-719-200-82	DIODE	11ES2 (GX390)		
C960	1-161-494-00	CERAMIC	0.022uF		25V	D968	8-719-200-82	DIODE	11ES2 (GX390)		
C961	1-161-494-00	CERAMIC	0.022uF		25V	D969	8-719-200-82	DIODE	11ES2 (GX390)		
C962	1-124-927-11	ELECT	4.7uF	20%	100V	D970	8-719-987-63	DIODE	1N4148M (GX390)		
C975	1-124-477-11	ELECT	47uF	20%	25V	D971	8-719-987-63	DIODE	1N4148M (GX390)		
C976	1-124-477-11	ELECT	47uF	20%	25V	D976	8-719-987-63	DIODE	1N4148M (GX290)		
C977	1-124-903-11	ELECT	1uF	20%	50V	D977	8-719-987-63	DIODE	1N4148M (GX290)		
C978	1-124-464-11	ELECT	0.22uF	20%	50V						
C979	1-124-902-00	ELECT	0.47uF	20%	50V						

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< IC >							
IC306	8-759-634-50	IC MS218AL		Q762	8-729-321-30	TRANSISTOR 2SC4385-OY (GX290)	
IC401	8-759-112-93	IC uPC4570HA-1		Q763	8-729-016-66	TRANSISTOR 2SA1670-OP-A (GX390)	
IC402	8-759-805-14	IC LC7822		Q763	8-729-321-27	TRANSISTOR 2SA1670-OY (GX290)	
< JACK >							
J401	1-695-188-21	JACK, PIN 4P		Q764	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
J405	1-695-188-21	JACK, PIN 4P		Q951	8-729-209-15	TRANSISTOR 2SD2012	
J406	1-695-188-21	JACK, PIN 4P		Q952	8-729-140-97	TRANSISTOR KSA708	
J407	1-695-188-21	JACK, PIN 4P		Q953	8-729-180-92	TRANSISTOR 2SD809-K	
< COIL >							
L701	1-420-872-00	COIL, AIR CORE		Q954	8-729-620-05	TRANSISTOR 2SC2603-EF	
L751	1-420-872-00	COIL, AIR CORE		Q955	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< TRANSISTOR >				< RESISTOR >			
Q402	8-729-141-30	TRANSISTOR 2SC3623A-LK		R302	1-247-887-00	CARBON 220K 5% 1/4W	
Q406	8-729-900-63	TRANSISTOR DTA124ES		R303	1-247-887-00	CARBON 220K 5% 1/4W	
Q408	8-729-900-36	TRANSISTOR DTC124ES		R305	1-249-416-11	CARBON 820 5% 1/4W	
Q452	8-729-141-30	TRANSISTOR 2SC3623A-LK		R352	1-247-887-00	CARBON 220K 5% 1/4W	
Q701	8-729-620-18	TRANSISTOR 2SA979-FG		R353	1-247-887-00	CARBON 220K 5% 1/4W	
Q702	8-729-140-82	TRANSISTOR 2SA988-PAFAEA		R355	1-249-416-11	CARBON 820 5% 1/4W	
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE		R401	1-249-411-11	CARBON 330 5% 1/4W	
Q704	8-729-119-78	TRANSISTOR 2SC2785-HFE		R402	1-249-409-11	CARBON 220 5% 1/4W	
Q705	8-729-141-06	TRANSISTOR 2SA1142-QPE		R403	1-249-417-11	CARBON 1K 5% 1/4W	
Q706	8-729-209-15	TRANSISTOR 2SD2012		R404	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q707	8-729-141-05	TRANSISTOR 2SC2682-QPE		R405	1-249-409-11	CARBON 220 5% 1/4W	
Q710	8-729-141-46	TRANSISTOR 2SC4431-LK		R407	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q711	8-729-141-37	TRANSISTOR 2SA1684-LK		R413	1-249-437-11	CARBON 47K 5% 1/4W	
Q712	8-729-016-65	TRANSISTOR 2SC4385-OP-A (GX390)		R414	1-247-897-11	CARBON 560K 5% 1/4W	
Q712	8-729-321-30	TRANSISTOR 2SC4385-OY (GX290)		R415	1-249 416 11	CARBON 820 5% 1/4W	
Q713	8-729-016-66	TRANSISTOR 2SA1670-OP-A (GX390)		R416	1-247-897-11	CARBON 560K 5% 1/4W	
Q713	8-729-321-27	TRANSISTOR 2SA1670-OY (GX290)		R417	1-249-437-11	CARBON 47K 5% 1/4W	
Q714	8-729-140-82	TRANSISTOR 2SA988-PAFAEA		R418	1-249-417-11	CARBON 1K 5% 1/4W	
Q715	8-729-620-05	TRANSISTOR 2SC2603-EF		R419	1-247-897-11	CARBON 560K 5% 1/4W	
Q716	8-729-620-05	TRANSISTOR 2SC2603-EF		R420	1-249-417-11	CARBON 1K 5% 1/4W	
Q717	8-729-620-05	TRANSISTOR 2SC2603-EF		R421	1-249-408-11	CARBON 180 5% 1/4W	
Q718	8 729-620-05	TRANSISTOR 2SC2603-EF		R425	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q751	8-729-620-18	TRANSISTOR 2SA979-FG		R426	1-249-437-11	CARBON 47K 5% 1/4W	
Q752	8-729-140-82	TRANSISTOR 2SA988-PAFAEA		R427	1-249-437-11	CARBON 47K 5% 1/4W	
Q753	8-729-119-78	TRANSISTOR 2SC2785-HFE		R430	1-249-437 11	CARBON 47K 5% 1/4W	
Q754	8-729-119-78	TRANSISTOR 2SC2785-HFE		R431	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q755	8-729-141-06	TRANSISTOR 2SA1142-QPE		R432	1-247-883-00	CARBON 150K 5% 1/4W	
Q756	8-729-209-15	TRANSISTOR 2SD2012		R434	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q757	8-729-141-05	TRANSISTOR 2SC2682-QPE		R435	1-247-883-00	CARBON 150K 5% 1/4W	
Q760	8-729-141-46	TRANSISTOR 2SC4431-LK		R436	1-249-417-11	CARBON 1K 5% 1/4W	
Q761	8-729-141-37	TRANSISTOR 2SA1684-LK		R437	1-249-437-11	CARBON 47K 5% 1/4W	
Q762	8-729-016-65	TRANSISTOR 2SC4385-OP-A (GX390)		R438	1-249-429-11	CARBON 10K 5% 1/4W	

MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R439	1-249-437-11	CARBON	47K	5%	1/4W	R731	1-249-441-11	CARBON	100K	5%	1/4W
R440	1-249-437-11	CARBON	47K	5%	1/4W	R732	1-249-417-11	CARBON	1K	5%	1/4W
R441	1-249-413-11	CARBON	470	5%	1/4W	R733	1-249-435-11	CARBON	33K	5%	1/4W
R444	1-249-437-11	CARBON	47K	5%	1/4W	R734	1-249-427-11	CARBON	6.8K	5%	1/4W
R451	1-249-411-11	CARBON	330	5%	1/4W	△R735	1-249-397-11	CARBON	22	5%	1/4W
R452	1-249-409-11	CARBON	220	5%	1/4W	△R736	1-249-397-11	CARBON	22	5%	1/4W
R453	1-249-417-11	CARBON	1K	5%	1/4W	R737	1-249-393-11	CARBON	10	5%	1/4W
R454	1-249-425-11	CARBON	4.7K	5%	1/4W	R738	1-249-393-11	CARBON	10	5%	1/4W
R455	1-249-409-11	CARBON	220	5%	1/4W	R739	1-249-408-11	CARBON	180	5%	1/4W (GX290:G)
R457	1-249-425-11	CARBON	4.7K	5%	1/4W	R739	1-249-412-11	CARBON	390	5%	1/4W (GX290:AEP/GX390)
R463	1-249-437-11	CARBON	47K	5%	1/4W	R743	1-249-441-11	CARBON	100K	5%	1/4W
R464	1-247-897-11	CARBON	560K	5%	1/4W	R744	1-249-429-11	CARBON	10K	5%	1/4W
R465	1-249-416-11	CARBON	820	5%	1/4W	△R745	1-249-399-11	CARBON	33	5%	1/4W
R466	1-247-897-11	CARBON	560K	5%	1/4W	R746	1-249-393-11	CARBON	10	5%	1/4W (G)
R467	1-249-437-11	CARBON	47K	5%	1/4W	R747	1-249-393-11	CARBON	10	5%	1/4W (G)
R468	1-249-417-11	CARBON	1K	5%	1/4W	R748	1-249-393-11	CARBON	10	5%	1/4W (G)
R469	1-247-897-11	CARBON	560K	5%	1/4W	R751	1-249-417-11	CARBON	1K	5%	1/4W
R470	1-249-417-11	CARBON	1K	5%	1/4W	R752	1-249-434-11	CARBON	27K	5%	1/4W
R471	1-249-408-11	CARBON	180	5%	1/4W	R753	1-249-435-11	CARBON	33K	5%	1/4W
R481	1-249-425-11	CARBON	4.7K	5%	1/4W	R754	1-249-421-11	CARBON	2.2K	5%	1/4W
R486	1-249-417-11	CARBON	1K	5%	1/4W	R755	1-249-426-11	CARBON	5.6K	5%	1/4W
R701	1-249-417-11	CARBON	1K	5%	1/4W	R756	1-249-414-11	CARBON	560	5%	1/4W (GX390:AEP)
R702	1-249-434-11	CARBON	27K	5%	1/4W	R756	1-247-828-11	CARBON	750	5%	1/4W (GX290/GX390:G)
R703	1-249-435-11	CARBON	33K	5%	1/4W	R757	1-249-423-11	CARBON	3.3K	5%	1/4W
R704	1-249-421-11	CARBON	2.2K	5%	1/4W	R758	1-249-411-11	CARBON	330	5%	1/4W
R705	1-249-426-11	CARBON	5.6K	5%	1/4W	△R759	1-249-409-11	CARBON	220	5%	1/4W
R706	1-249-414-11	CARBON	560	5%	1/4W (GX390:AEP)	△R760	1-249-409-11	CARBON	220	5%	1/4W
R706	1-247-828-11	CARBON	750	5%	1/4W (GX290/GX390:G)	R761	1-249-409-11	CARBON	220	5%	1/4W
R707	1-249-423-11	CARBON	3.3K	5%	1/4W	R762	1-249-435-11	CARBON	33K	5%	1/4W
R708	1-249-411-11	CARBON	330	5%	1/4W	△R763	1-249-397-11	CARBON	22	5%	1/4W
△R709	1-249-409-11	CARBON	220	5%	1/4W	R764	1-249-427-11	CARBON	6.8K	5%	1/4W
△R710	1-249-409-11	CARBON	220	5%	1/4W	R765	1-249-406-11	CARBON	120	5%	1/4W
R711	1-249-409-11	CARBON	220	5%	1/4W	△R766	1-249-397-11	CARBON	22	5%	1/4W
R712	1-249-435-11	CARBON	33K	5%	1/4W	△R767	1-249-393-11	CARBON	10	5%	1/4W
△R713	1-249-397-11	CARBON	22	5%	1/4W	△R768	1-249-393-11	CARBON	10	5%	1/4W
R714	1-249-427-11	CARBON	6.8K	5%	1/4W	△R773	1-247-745-11	CARBON	330	5%	1/2W
R715	1-249-406-11	CARBON	120	5%	1/4W	△R774	1-249-393-11	CARBON	10	5%	1/4W
△R716	1-249-397-11	CARBON	22	5%	1/4W	△R775	1-249-393-11	CARBON	10	5%	1/4W
△R717	1-249-393-11	CARBON	10	5%	1/4W	△R776	1-217-611-00	RES, METAL PLATE			0.1
△R718	1-249-393-11	CARBON	10	5%	1/4W	△R777	1-217-611-00	RES, METAL PLATE			0.1
△R723	1-247-745-11	CARBON	330	5%	1/2W	R778	1-249-417-11	CARBON	1K	5%	1/4W
△R724	1-249-393-11	CARBON	10	5%	1/4W	R779	1-249-431-11	CARBON	15K	5%	1/4W
△R725	1-249-393-11	CARBON	10	5%	1/4W	R781	1-249-440-11	CARBON	82K	5%	1/4W
△R726	1-217-611-00	RES, METAL PLATE			0.1	△R785	1-249-397-11	CARBON	22	5%	1/4W
△R727	1-217-611-00	RES, METAL PLATE			0.1	△R786	1-249-397-11	CARBON	22	5%	1/4W
R728	1-249-417-11	CARBON	1K	5%	1/4W	R787	1-249-393-11	CARBON	10	5%	1/4W
R729	1-249-431-11	CARBON	15K	5%	1/4W	R788	1-249-393-11	CARBON	10	5%	1/4W
R730	1-249-429-11	CARBON	10K	5%	1/4W	R794	1-249-412-11	CARBON	390	5%	1/4W (GX390:AEP)
						R795	1-249-408-11	CARBON	180	5%	1/4W (GX290:G)

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

MAIN

POWER

SP SW-A

SP SW-B

Ref. No.	Part No.	Description	Remark
R795	1-249-412-11	CARBON 390 5% 1/4W (GX290:AEP/GX390)	
R796	1-249-393-11	CARBON 10 5% 1/4W (G)	
R797	1-249-393-11	CARBON 10 5% 1/4W (G)	
R798	1-249-393-11	CARBON 10 5% 1/4W (G)	
R801	1-249-412-11	CARBON 390 5% 1/4W	
R804	1-247-895-00	CARBON 470K 5% 1/4W	
R851	1-249-412-11	CARBON 390 5% 1/4W	
R854	1-247-895-00	CARBON 470K 5% 1/4W	
△R952	1-247-739-11	CARBON 100 5% 1/2W (GX390:G)	
△R952	1-247-727-11	CARBON 10 5% 1/2W F (GX290:G)	
△R952	1-247-743-11	CARBON 220 5% 1/2W F (AEP)	
R953	1-249-422-11	CARBON 2.7K 5% 1/4W	
R954	1-249-423-11	CARBON 3.3K 5% 1/4W	
△R955	1-216-450-00	METAL OXIDE 82 5% 2W F (GX390:AEP)	
△R955	1-216-448-11	METAL OXIDE 39 5% 2W F (GX290:G)	
△R955	1-215-884-11	METAL OXIDE 47 5% 2W F (GX290:AEP/GX390:G)	
△R956	1-249-405-11	CARBON 100 5% 1/4W	
R957	1-249-410-11	CARBON 270 5% 1/4W	
R958	1-249-410-11	CARBON 270 5% 1/4W	
R959	1-249-441-11	CARBON 100K 5% 1/4W	
R960	1-249-429-11	CARBON 10K 5% 1/4W	
△R963	1-249-395-11	CARBON 15 5% 1/4W	
R964	1-249-423-11	CARBON 3.3K 5% 1/4W	
R965	1-249-437-11	CARBON 47K 5% 1/4W	
R966	1-249-429-11	CARBON 10K 5% 1/4W	
R967	1-249-429-11	CARBON 10K 5% 1/4W	
R968	1-249-417-11	CARBON 1K 5% 1/4W	
R969	1-249-429-11	CARBON 10K 5% 1/4W	
R970	1-249-426-11	CARBON 5.6K 5% 1/4W	
R971	1-249-417-11	CARBON 1K 5% 1/4W	
R972	1-249-426-11	CARBON 5.6K 5% 1/4W	
R973	1-249-416-11	CARBON 820 5% 1/4W (GX390)	
R974	1-249-425-11	CARBON 4.7K 5% 1/4W (GX390)	
R975	1-249-437-11	CARBON 47K 5% 1/4W (GX390)	
< RELAY >			
RY401	1-515-614-11	RELAY	
RY701	1-515-533-11	RELAY	
< TERMINAL >			
TW701	1-537-376-11	TERMINAL BOARD (SP)	
< TEST PIN >			
* TP1	1-560-060-00	PIN, CONNECTOR 2P	
* TP2	1-560-060-00	PIN, CONNECTOR 2P	

Ref. No.	Part No.	Description	Remark
*	1-643-849-11	POWER BOARD *****	
< CAPACITOR >			
△C901	1-161-744-00	CERAMIC 0.01uF 400V (GX390)	
△C902	1-161-741-00	CERAMIC 0.001uF 10% 400V (G)	
△C903	1-161-741-00	CERAMIC 0.001uF 10% 400V (G)	
C911	1-164-159-11	CERAMIC 0.1uF 50V (GX390:G)	
C912	1-164-159-11	CERAMIC 0.1uF 50V (GX390:G)	
< CONNECTOR >			
* CNP901	1-564-321-00	PIN, CONNECTOR 2P	
* CNP902	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
* CNP903	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P (GX390)	
* CNP904	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
CNP951	1-564-507-11	PLUG, CONNECTOR 4P (GX390)	
< DIODE >			
D901	8-719-987-63	DIODE 1N4148M (GX390)	
< FUSE HOLDER >			
△F901	1-533-217-31	HOLDER, FUSE	
△F902	1-533-217-31	HOLDER, FUSE	
△F903	1-533-217-31	HOLDER, FUSE (GX390)	
< RELAY >			
△RY901	1-515-738-11	RELAY, POWER (GX390)	
< TRANSFORMER >			
△T902	1 450 358-11	TRANSFORMER, POWER (GX390)	
< VARISTOR >			
△VZ901	1-807-180-31	VARISTOR SNR-14A471U	

*	1-643-854-11	SP SW-A BOARD *****	
< SWITCH >			
S701	1-571-485-11	SWITCH, PUSH (2 KEY)	

*	1-643-855-11	SP SW B BOARD *****	
< CONNECTOR >			
* CNP702	1-564-518-11	PLUG, CONNECTOR 3P	

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

SP SW-C

STANDBY

TRANS-1

TRANS-2

TUNER

Ref.No.	Part No.	Description	Remark
*	1-645-175-11	SP SW-C BOARD *****	
		< CONNECTOR >	
	CNP701 1-573-109-11	PIN, CONNECTOR 15P *****	
*	1-643-860-11	STANDBY BOARD (GX390) *****	
		< SWITCH >	
	S137 1-554-303-21	SWITCH, TACTILE (STANDBY) (GX390)	
		< CONNECTOR >	
*	CNP107 1-568-951-11	PIN, CONNECTOR 2P (GX390) *****	
*	1-643-857-11	TRANS-1 BOARD (GX290:G) *****	
		< CAPACITOR >	
	C913 1-164-159-11	CERAMIC 0.1uF 50V (GX290:G) *****	
*	1-643-858-11	TRANS-2 BOARD (GX390:AEP)	
*	1-645-172-11	TRANS-2 BOARD (GX390:G) *****	
		< CONNECTOR >	
*	CNP955 1-564-243-00	PIN, CONNECTOR 6P (GX390) *****	
*	A-4347-793-A	TUNER BOARD, COMPLETE (G)	
*	A-4356-361-A	TUNER BOARD, COMPLETE (AEP) *****	
		< CAPACITOR >	
	C1 1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
	C2 1-124-477-11	ELECT 47uF 20% 25V	
	C3 1-164-232-11	CERAMIC CHIP 0.01uF 50V	
	C4 1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
	C5 1-164-232-11	CERAMIC CHIP 0.01uF 50V	
	C6 1-164-232-11	CERAMIC CHIP 0.01uF 50V (G)	
	C10 1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
	C21 1-161-021-11	CERAMIC 0.047uF 10% 25V	
	C22 1-164-232-11	CERAMIC CHIP 0.01uF 50V	
	C23 1-124-477-11	ELECT 47uF 20% 25V	
	C24 1-123-382-00	ELECT 3.3uF 20% 100V	
	C25 1-164-232-11	CERAMIC CHIP 0.01uF 50V	
	C26 1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	

Ref.No.	Part No.	Description	Remark
C27	1-163-133-00	CERAMIC CHIP 470PF 5% 50V (G)	
C27	1-163-117-00	CERAMIC CHIP 100PF 5% 50V (AEP)	
C28	1-124-903-11	ELECT 1uF 20% 50V	
C29	1-163-125-00	CERAMIC CHIP 220PF 5% 50V (G)	
C30	1-124-903-11	ELECT 1uF 20% 50V	
C31	1-124-902-00	ELECT 0.47uF 20% 50V	
C32	1-124-463-00	ELECT 0.1uF 20% 50V	
C33	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C34	1-123-382-00	ELECT 3.3uF 20% 100V	
C35	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C36	1-123-382-00	ELECT 3.3uF 20% 100V	
C37	1-124-907-11	ELECT 10uF 20% 50V	
C39	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C40	1-124-463-00	ELECT 0.1uF 20% 50V	
C41	1-124-927-11	ELECT 4.7uF 20% 100V	
C42	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C43	1-126-176-11	ELECT 220uF 20% 10V	
C44	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C45	1-123-382-00	ELECT 3.3uF 20% 100V	
C46	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C48	1-123-382-00	ELECT 3.3uF 20% 100V	
C49	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C51	1-124-477-11	ELECT 47uF 20% 25V	
C61	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C62	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C63	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C64	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C81	1-102-961-00	CERAMIC 27PF 5% 50V	
C82	1-102-961-00	CERAMIC 27PF 5% 50V	
C83	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C84	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C85	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C86	1-124-477-11	ELECT 47uF 20% 25V	
C87	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C101	1-124-925-11	ELECT 2.2uF 20% 100V	
C102	1-124-463-00	ELECT 0.1uF 20% 50V	
C104	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C105	1-124-477-11	ELECT 47uF 20% 25V	
		< FILTER >	
CF1	1-567-389-11	FILTER, CERAMIC	
CF2	1-567-389-11	FILTER, CERAMIC	
CF3	1-567-389-11	FILTER, CERAMIC (G)	
CF21	1-577-075-11	OSCILLATOR, CERAMIC	
		< COMPOSITION CIRCUIT BLOCK >	
CF21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)	

TUNER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< CONNECTOR >					
* CN1	1-565-483-11	CONNECTOR, BOARD TO BOARD 7P (G)		R5	1-216-037-00	METAL CHIP 330 5% 1/10W (G)	
* CN2	1-565-486-11	CONNECTOR, BOARD TO BOARD 10P (G)		R6	1-216-013-00	METAL CHIP 33 5% 1/10W (AEP)	
		< JACK >		R7	1-216-037-00	METAL CHIP 330 5% 1/10W	
* CNJ1	1-565-486-11	CONNECTOR, BOARD TO BOARD 10P (AEP)		R8	1-216-109-00	METAL CHIP 330K 5% 1/10W	
* CNJ2	1-565-483-11	CONNECTOR, BOARD TO BOARD 7P (AEP)		R9	1-216-037-00	METAL CHIP 330 5% 1/10W (G)	
		< FRONTEND >		R10	1-216-109-00	METAL CHIP 330K 5% 1/10W (G)	
FE1	1-465-007-11	FRONTEND (FM 4 GANG) (G)		R21	1-249-404-00	CARBON 82 5% 1/4W	
FE1	1-465-006-11	FRONT END (FM) (2 GANG) (AEP)		R22	1-249-462-11	CARBON 22K 5% 1/4W	
FE61	1-236-461-11	ENCAPSULATED COMPONENT		R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< FILTER >		R24	1-216-085-00	METAL CHIP 33K 5% 1/10W	
FL1	1-235-126-00	ENCAPSULATED COMPONENT (G)		R25	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
		< IC >		R27	1-249-461-11	CARBON 18K 5% 1/4W	
IC21	8-759-821-45	IC LA1851N		R28	1-247-719-11	CARBON 3.3K 5% 1/4W	
IC81	8-759-820-91	IC LC7218		R29	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< COIL >		R31	1-216-041-00	METAL CHIP 470 5% 1/10W	
L21	1-410-494-11	INDUCTOR 1MH		R32	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< FILTER >		R33	1-216-073-00	METAL CHIP 10K 5% 1/10W	
LPF21	1-235-164-00	FILTER, LOW PASS		R35	1-216-089-00	METAL CHIP 47K 5% 1/10W	
LPF22	1-235-164-00	FILTER, LOW PASS		R36	1-216-073-00	METAL CHIP 10K 5% 1/10W (AEP)	
		< TRANSISTOR >		R37	1-216-109-00	METAL CHIP 330K 5% 1/10W	
Q1	8-729-230-99	TRANSISTOR 2SC2669-OY		R39	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
Q2	8-729-230-99	TRANSISTOR 2SC2669-OY (G)		R40	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
Q21	8-729-620-05	TRANSISTOR 2SC2603-EF		R41	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
Q22	8-729-620-05	TRANSISTOR 2SC2603-EF		R42	1-216-109-00	METAL CHIP 330K 5% 1/10W	
Q23	8-729-900-61	TRANSISTOR DTA114ES		R44	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
Q24	8-729-900-80	TRANSISTOR DTC114ES		R45	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
Q25	8-729-900-80	TRANSISTOR DTC114ES (G)		R46	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
Q81	8-729-900-61	TRANSISTOR DTA114ES		R47	1-249-409-11	CARBON 220 5% 1/4W	
Q82	8-729-900-80	TRANSISTOR DTC114ES		R61	1-216-097-00	METAL CHIP 100K 5% 1/10W	
Q83	8-729-202-67	TRANSISTOR 2SK246-GR3		R62	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB		R63	1-216-009-00	METAL CHIP 22 5% 1/10W	
		< RESISTOR >		R81	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1	1-249-407-11	CARBON 150 5% 1/4W (G)		R82	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R1	1-249-409-11	CARBON 220 5% 1/4W (AEP)		R83	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R3	1-216-037-00	METAL CHIP 330 5% 1/10W (G)		R84	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R4	1-216-037-00	METAL CHIP 330 5% 1/10W (G)		R85	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R4	1-216-013-00	METAL CHIP 33 5% 1/10W (AEP)		R86	1-216-049-00	METAL CHIP 1K 5% 1/10W	
				R87	1-216-073-00	METAL CHIP 10K 5% 1/10W	
				R88	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
				R89	1-216-049-00	METAL CHIP 1K 5% 1/10W	
				R90	1-216-073-00	METAL CHIP 10K 5% 1/10W	
				R91	1-216-049-00	METAL CHIP 1K 5% 1/10W	
				R92	1-249-401-11	CARBON 47 5% 1/4W	
				R101	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
				R102	1-216-043-00	METAL CHIP 560 5% 1/10W	
				R103	1-216-049-00	METAL CHIP 1K 5% 1/10W	
				R104	1-216-035-00	METAL CHIP 270 5% 1/10W	
				R105	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

TUNER

VOLUME-A

VOLUME-B

Ref. No.	Part No.	Description	Remark
R106	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R107	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R108	1-216-025-00	METAL CHIP	100 5% 1/10W
R109	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R110	1-249-405-11	CARBON	100 5% 1/4W

< VARIABLE RESISTOR >

RV21	1-238-015-11	RES, ADJ, CARBON	4.7K
RV21	1-238-599-11	RES, ADJ, CARBON	4.7K
RV23	1-238-021-11	RES, ADJ, CARBON	220K
RV23	1-238-604-11	RES, ADJ, CARBON	220K
RV24	1-238-017-11	RES, ADJ, CARBON	22K

RV24	1-238-601-11	RES, ADJ, CARBON	22K
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< TRANSFORMER >

T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR
T21	1-404-880-11	TRANSFORMER, DISCRIMINATOR

< TERMINAL >

* TM1	1-537-288-11	TERMINAL BOARD, ANTENNA (PAL)
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< TEST PIN >

* TP1	1-560-060-00	PIN, CONNECTOR 2P
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< VIBRATOR >

XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)
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* 1-644-117-11	VOLUME-A BOARD
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< CAPACITOR >

C436	1-136-163-00	FILM	0.068uF	5%	50V
C438	1-124-927-11	ELECT	4.7uF	20%	100V (GX390)
C439	1-124-927-11	ELECT	4.7uF	20%	100V (GX390)
C486	1-136-163-00	FILM	0.068uF	5%	50V

< CONNECTOR >

* CNP108	1-568-951-11	PIN, CONNECTOR 2P (GX390)
* CNP109	1-564-506-11	PLUG, CONNECTOR 3P
* CNP705	1-564-508-11	PLUG, CONNECTOR 5P

< RESISTOR >

R445	1-249-426-11	CARBON	5.6K	5%	1/4W
R495	1-249-426-11	CARBON	5.6K	5%	1/4W

Ref. No.	Part No.	Description	Remark
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< VARIABLE RESISTOR >

RV702	1-241-850-11	RES, VAR, CARBON 100K/100K(VOLUME) (GX390)
RV702	1-241-852-11	RES, VAR, CARBON 100K/100K(VOLUME) (GX290)

* 1-644-118-11	VOLUME-B BOARD
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< VARIABLE RESISTOR >

RV701	1-241-851-11	RES, VAR, CARBON 100K/100K (LOUDNESS)
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MISCELLANEOUS

54	1-696-456-11	WIRE (FLAT TYPE) (31 CORE)
△69	1-575-651-11	CORD, POWER
△CNJ917	1-526-794-11	OUTLET, AC (GX390)
△F901	1-532-286-00	FUSE (T2.5AL)
△F902	1-532-259-00	FUSE (T1.6AL) (GX390:AEP)

△F902	1-532-285-00	FUSE (T1.25AL) (GX290)
△F902	1-532-286-00	FUSE (T2.5AL) (GX390:G)
△F903	1-532-286-00	FUSE (T2.5AL) (GX390)
△T901	1-450-363-11	TRANSFORMER, POWER (GX390:AEP)
△T901	1-450-364-21	TRANSFORMER, POWER (GX290:AEP)

△T901	1-450-384-11	TRANSFORMER, POWER (GX390:G)
△T901	1-450-385-21	TRANSFORMER, POWER (GX290:G)

ACCESSORIES & PACKING MATERIALS

1-465-423-11	REMOTE COMMANDER (RM-S103) (GX390)
1-501-374-11	ANTENNA, LOOP (AM)
1-501-536-11	ANTENNA (FM) (AEP)
2-181-754-01	COVER, BATTERY (RM-S103) (GX390)
3-755-234-11	MANUAL, INSTRUCTION (FRENCH, GERMAN, ITALIAN, SPANISH, DUTCH, SWEDISH) (AEP)
3-755-234-41	MANUAL, INSTRUCTION (GERMAN) (G)
* 4-952-676-01	CUSHION
* 4-952-682-01	INDIVIDUAL CARTON (GX390)
* 4-952-683-01	INDIVIDUAL CARTON (GX290)

HARDWARE LIST

#1	7-682-548-09	SCREW +BVTT 3X8 (S)
#2	7-682-560-04	SCREW +BVTT 4X6 (S)

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
#4	7-682-548-04	SCREW +BVTT 3X8 (S)	
#5	7-682-547-09	SCREW +BVTT 3X6 (S)	
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#7	7-621-849-00	SCREW, TAPPING	

