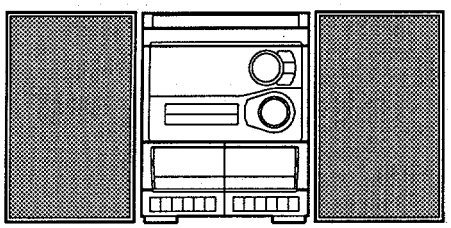
aiwa

aiwa SERVICE

NSX-S201
NSX-S202
NSX-S203

SERVICE MANUAL



CD STEREO SYSTEM

- BASIC TAPE MECHANISM: TN-21ZFW-1788
- BASIC CD MECHANISM: 4ZG-1 Z3DLSHNM/Z4DLSHNC
- TYPE: LH,EZ,K,V

REVISION PUBLISHING

System	CD Mechanism		Tape Mechanism
	Z3DLSHNM	Z4DLSHNC	
NSX-S201<LH> NSX-S202<EZ,K,V> NSX-S203<EZ>	201<LH> 202<EZ> STNM 203<EZ> STNM	202<EZ,K> STNE 202<EZ,K,V> STNC 203<EZ> STNC, STNE	TN-21ZFW-1788

SYSTEM	CD CASSEIVER	SPEAKER	REMOTE CONTROLLER
NSX-S201	CX-NS201	SX-SNS202	RC UNIT,6AS14
NSX-S202	CX-NS202	SX-NS202	
NSX-S203	CX-NS203	SX-NS202	

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual", S/M Code No. 09-986-285-20A and 09-986-285-2FE.
- If requiring information about the CD mechanism, see Service Manual of 4ZG-1. (S/M Code No.09-983-249-3OT)

S/M Code No. 09-98A-299-9FE

SPECIFICATIONS

<FM Tuner section> (LH,EZ,K)

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity(IHF)	16.8 dBf
Antenna terminals	75 ohms (unbalanced)

<FM Tuner section> (V)

Tuning range	FM1 (OIRT) 65 MHz to 74 MHz (10 kHz step) FM2 (CCIR) 87.5 MHz to 108 MHz (10 kHz step)
Usable sensitivity(IHF)	FM1 : 15.3 dBf FM2 : 12.8 dBf
Antenna terminals	75 ohms (unbalanced)

<AM (MW) Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 uV/m
Antenna	Loop antenna

<LW Tuner section> (EZ,K)

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 uV/m
Antenna	Loop antenna

<Amplifier section>

Power output	Rated : 12 W + 12 W (6 ohms, THD 1%, 1 kHz/DIN 45500) Reference : 15 W + 15 W (6 ohms, THD 10%, 1 kHz/DIN 45324) DIN MUSIC POWER: 35 W + 35 W
Total harmonic distortion	0.1% (6 W,1 kHz, 6 ohms, DIN AUDIO)
Inputs	VIDEO/AUX : 500 mV
Outputs	SPEAKERS: accept speakers of 6 ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz - 10000 Hz
Recording system	AC bias
Heads	Deck 1 : Recording/Playback head x 1, erase head x 1 Deck 2 : Playback head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX-NS202

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 120 mm cone type Tweeter : 20 mm ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	230 x 324 x 250 mm
Weight	3.2 kg

<General>

Power requirements	230 V AC, 50 Hz
Power consumption	55 W
Dimensions of main unit	260 x 324 x 337 mm
Weight of main unit	4.6 kg

• Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-NF9-905-010		IB,K(E)H<K>
1	88-NF9-906-010		IB,E(E9L)H<202EZ>
1	88-NF9-907-010		IB,V(ER)H<V>
1	88-NF9-916-010		IB,E(9L)203H<203EZ>
1	88-NF9-923-010		IB,LH(P)CCE 201<LH>
2	87-006-225-010		AM LOOP ANT NC2
3	87-043-115-010		ANT,FEEDER FM<LH,V>
4	87-A90-118-010		ANT,WIRE FM(Z)<EZ,K>
5	88-NF9-660-010		RC UNIT,6AS14

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

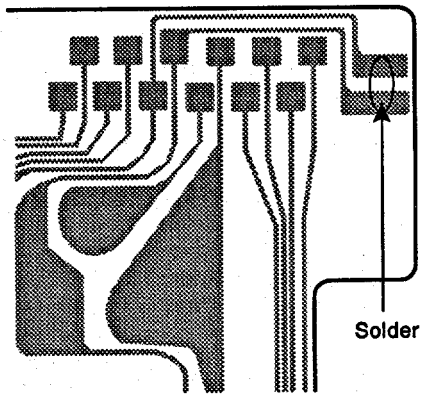
Precaution to replace Optical block

(KSS – 213C)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.

PICK-UP Assy P.C.B



NOTE ON BEFORE STARTING REPAIR

1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, the secondary defect can occur.
In order to prevent the secondary trouble, perform the following measures before starting repair work.

Discharge procedure

① Remove the AC power cord.
② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead wire to metal chassis.
③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
⑤ Check that voltage across C101 and C102 has decreased 1 V or less using a multimeter or an oscilloscope.

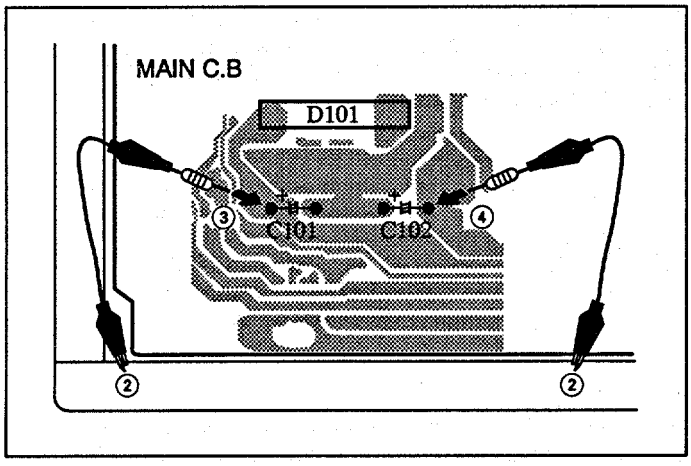


Fig-1

Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor (Ω)	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitors on schematic diagram before starting the discharging work.

2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly. When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.
When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

- Good or no good judgement of the MICROCOMPUTER

① Turn on the AC main power.
② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

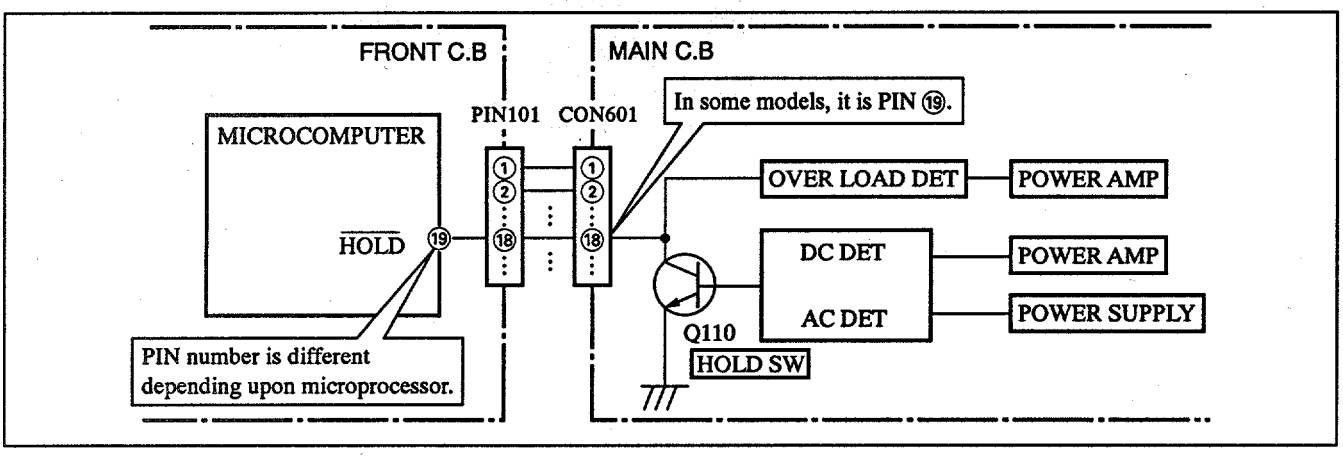


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.
When the above described phenomenon occurs, it can leads to wrong judgement as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

① Remove the AC power cord.

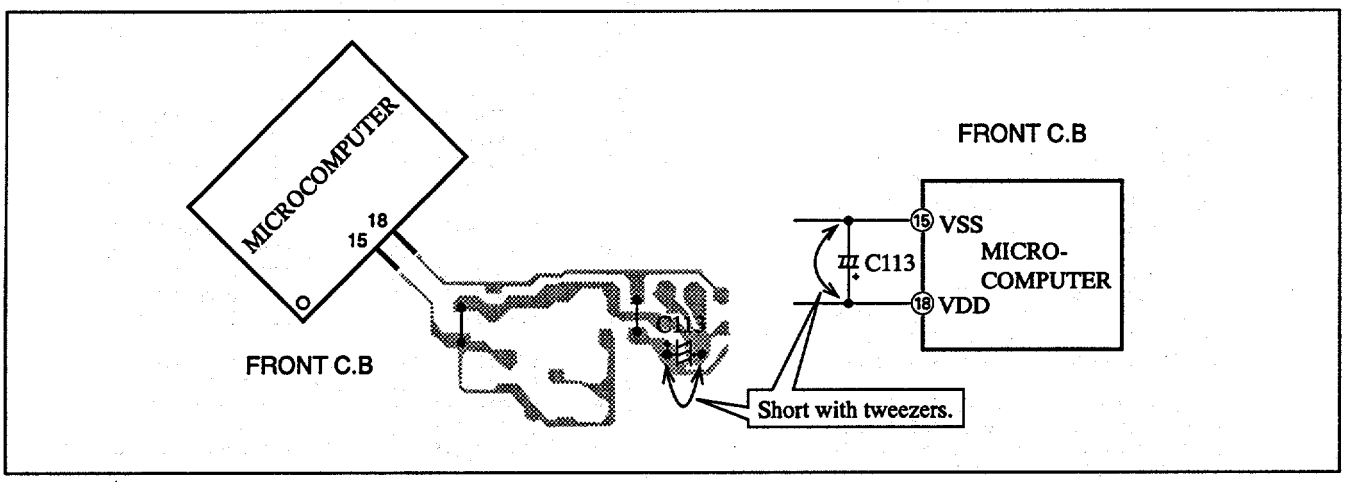


Fig-2-2

② Short both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-502-010		IC,BU1920
	88-NF9-653-010		IC,LA1837NZ
	88-NF9-656-010		IC,LC72131DZ
	88-NF9-659-010		IC,M38B57MCH-P202FP
	88-NF9-632-010		IC,M62439SP
	87-017-889-010		IC,NJM4558LD
	87-A20-951-010		IC,TSOP1838RF1
TRANSISTOR			
	89-213-702-010		TR,2SB1370E
	88-NF9-622-010		TR,2SB1616
	87-A30-196-080		TR,2SC4115SRS
	89-305-352-380		TR,2SC535(B/C)<EZ,K,V>
	88-NF9-623-010		TR,2SD2478
	87-A30-091-080		FET,2SJ460
	87-A30-090-080		FET,2SK2541
	87-A30-092-080		FET,2SK439E/F<EZ,K>
	87-A30-164-080		TR,CSC2001K<EZ,K>
	87-026-269-080		TR,DTA114ES<EZ,K>
	87-026-214-080		TR,DTA114YS (0.3W)
	87-026-219-080		TR,DTA144ES (0.3W)
	87-026-218-080		TR,DTC144ES (0.2W)
	87-026-609-080		TR,KTA1266GR
	87-A30-197-080		TR,KTA1267GR
	87-026-610-080		TR,KTC3198GR
	87-A30-198-080		TR,KTC3199GR
	87-026-372-080		TR,RN1210
DIODE			
	87-A40-454-080		DIODE,1N5393 GW
	87-A40-393-090		DIODE,1N5402GW F20
	87-A40-336-080		ZENER,MTZJ27D T-72
	87-A40-470-080		DIODE,1SS254
	87-A40-308-080		ZENER,DZ10M
	87-A40-345-080		ZENER,MTZJ10C
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-304-080		ZENER,DZ6.2M
	87-017-932-080		ZENER,MTZJ6.2B
	87-A40-292-080		ZENER,DZ2.7L
	87-A40-466-080		ZENER,MTZJ2.7A
	87-A40-302-080		ZENER,DZ5.6M
	87-017-931-080		ZENER,MTZJ5.6B
MAIN C.B			
C101	87-016-495-090		CAP,E 3300-25 SMG
C104	87-A10-011-090		CAP,E 2200-25 SMG
C105	87-018-127-080		CAP, CER 470P-50V
C106	87-010-260-080		CAP, ELECT 47-25V
C107	87-010-384-080		CAP, ELECT 100-25
C108	87-010-381-080		CAP, ELECT 330-16V
C111	87-010-247-080		CAP, ELECT 100-50V
C112	87-010-263-080		CAP, ELECT 100-10V
C113	87-010-403-080		CAP, ELECT 3.3-50V
C114	87-010-374-080		CAP, ELECT 47-10V
C122	87-010-384-080		CAP, ELECT 100-25V
C123	87-010-384-080		CAP, ELECT 100-25V
C127	87-018-134-080		CAPACITOR,TC-U 0.01-16<V>
C130	87-018-131-080		CAPACITOR, CER 1000P-50V<V>
C207	87-010-544-080		CAP, ELECT 0.1-50V
C208	87-010-544-080		CAP, ELECT 0.1-50V
C209	87-018-133-080		CAPACITOR,CER 4700P-16V
C210	87-018-133-080		CAPACITOR,CER 4700P-16V
C211	87-010-402-080		CAP, ELECT 2.2-50V
C212	87-010-402-080		CAP, ELECT 2.2-50V
C213	87-010-260-080		CAP, ELECT 47-25V
C214	87-010-260-080		CAP, ELECT 47-25V
C219	87-010-544-080		CAP, ELECT 0.1-50V
C220	87-010-544-080		CAP, ELECT 0.1-50V
C221	87-018-211-080		CAP, CER 0.01-50<EZ,K>
C222	87-018-211-080		CAP, CER 0.01-50<EZ,K>
C223	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K>
C224	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K>
C229	87-018-123-080		CAP, CER 220P-50V
C230	87-018-123-080		CAP, CER 220P-50V
C237	87-018-134-080		CAPACITOR,TC-U 0.01-16
C239	87-010-402-080		CAP, ELECT 2.2-50V
C240	87-010-402-080		CAP, ELECT 2.2-50V
C253	87-018-131-080		CAP, CER 1000P-50V<EZ,K>
C254	87-018-131-080		CAP, CER 1000P-50V<EZ,K>
C255	87-018-115-080		CAP, CER 47P-50V<EZ,K>
C256	87-018-115-080		CAP, CER 47P-50V<EZ,K>
C257	87-018-119-080		CAP, CER 100P-50V<EZ,K>
C258	87-018-119-080		CAP, CER 100P-50V<EZ,K>
C301	87-018-197-080		CAP, CER 1800P-16V
C302	87-018-197-080		CAP, CER 1800P-16V
C303	87-018-196-080		CAP, CER 1500P-16V
C304	87-018-196-080		CAP, CER 1500P-16V
C307	87-010-263-080		CAP, ELECT 100-10V
C308	87-010-263-080		CAP, ELECT 100-10V
C309	87-018-115-080		CAP, CER 47P-50V<EZ,K>
C310	87-018-115-080		CAP, CER 47P-50V<EZ,K>
C315	87-010-375-080		CAP,E 330-10 SME<LH,V>
C317	87-010-546-080		CAP, ELECT 0.33-50V
C318	87-010-546-080		CAP, ELECT 0.33-50V
C322	87-018-209-080		CAP, CER 0.1-50V<EZ,K>
C325	87-018-209-080		CAP, CER 0.1-50V<EZ,K>
C326	87-018-209-080		CAP, CER 0.1-50V<EZ,K>
C326	87-018-205-080		CAP, CER A-SOL 0.022<LH,V>
C327	87-018-209-080		CAP, CER 0.1-50V<EZ,K>
C329	87-018-134-080		CAPACITOR,TC-U 0.01-16<V>
C360	87-010-401-080		CAP, ELECT 1-50V
C361	87-010-374-080		CAP, ELECT 47-10V
C401	87-010-401-080		CAP, ELECT 1-50V<LH,V>
C401	87-010-400-080		CAP, ELECT 0.47-50V<EZ,K>
C402	87-010-401-080		CAP, ELECT 1-50V<LH,V>
C402	87-010-400-080		CAP, ELECT 0.47-50V<EZ,K>
C403	87-018-118-080		CAP,TC-U 82P-50 B
C404	87-018-118-080		CAP,TC-U 82P-50 B
C411	87-010-405-080		CAP, ELECT 10-50V
C412	87-010-405-080		CAP, ELECT 10-50V
C452	87-010-382-080		CAP, ELECT 22-25V
C459	87-018-128-080		CAP, CERA-SOL SS 560P
C461	87-018-126-080		CAP,TC-U 390P-50 B
C462	87-018-126-080		CAP,TC-U 390P-50 B
C601	87-018-195-080		CAP, CER 1200P-16V
C602	87-018-195-080		CAP, CER 1200P-16V
C611	87-010-545-080		CAP, ELECT 0.22-50V
C612	87-010-545-080		CAP, ELECT 0.22-50V
C613	87-010-545-080		CAP, ELECT 0.22-50V
C614	87-010-545-080		CAP, ELECT 0.22-50V
C615	87-018-104-080		CAP,TC-U 10P-50 SL
C616	87-010-260-080		CAP, ELECT 47-25V
C617	87-010-260-080		CAP, ELECT 47-25V
C701	87-010-404-080		CAP, ELECT 4.7-50V
C702	87-018-134-080		CAPACITOR,TC-U 0.01-16
C703	87-018-134-080		CAPACITOR,TC-U 0.01-16
C704	87-018-131-080		CAP, CER 1000P-50V
C705	87-018-131-080		CAP, CER 1000P-50V
C706	87-018-131-080		CAP, CER 1000P-50V
C707	87-010-112-080		CAP, ELECT 100-16V
C709	87-010-248-080		CAP, ELECT 220-10V
C710	87-010-112-080		CAP, ELECT 100-16V
C712	87-018-149-080		CAP,TC-U 15P-50 CH
C713	87-018-149-080		CAP,TC-U 15P-50 CH
C714	87-010-112-080		CAP, ELECT 100-16V
C715	87-018-119-080		CAP, CER 100P-50V

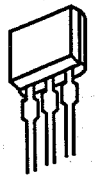
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C746	87-018-134-080		CAPACITOR,TC-U 0.01-16
C752	87-018-143-080		CAP, TC-U 4.7P-50CH<EZ,K,V>
C753	87-010-408-080		CAP, ELECT 47-50V
C756	87-018-134-080		CAPACITOR,TC-U 0.01-16
C757	87-018-134-080		CAPACITOR,TC-U 0.01-16
C758	87-010-112-080		CAP, ELECT 100-16V
C759	87-018-134-080		CAPACITOR,TC-U 0.01-16
C761	87-010-404-080		CAP, ELECT 4.7-50V
C762	87-010-400-080		CAP, ELECT 0.47-50V
C763	87-010-401-080		CAP, ELECT 1-50V
C764	87-010-401-080		CAP, ELECT 1-50V
C765	87-018-115-080		CAP, CER 47P-50V
C766	87-010-407-080		CAP, ELECT 33-50V
C768	87-018-208-080		CAP 0.047-50F
C769	87-010-403-080		CAP, ELECT 3.3-50V
C770	87-018-134-080		CAPACITOR,TC-U 0.01-16
C771	87-010-406-080		CAP, ELECT 22-50
C773	87-018-131-080		CAP, CER 1000P-50V<LH,V>
C773	87-018-196-080		CAP, CER 1500P-16V<K>
C773	87-018-195-080		CAP, CER 1200P-16V<EZ>
C774	87-010-405-080		CAP, ELECT 10-50V
C775	88-266-850-810		CAP,SC 0.047-25 X K
C783	87-018-199-080		CAP, CER 3300P<LH,V>
C783	87-018-202-080		CAP, CER 6800P<EZ,K>
C784	87-018-199-080		CAP, CER 3300P<LH,V>
C784	87-018-202-080		CAP, CER 6800P<EZ,K>
C785	87-010-405-080		CAP, ELECT 10-50V
C786	87-010-405-080		CAP, ELECT 10-50V
C787	87-018-196-080		CAP,CER 1500P-16V<EZ,K,V>
C787	87-018-132-080		CAP, CER 2200P-16V<LH>
C788	87-018-196-080		CAP,CER 1500P-16V<EZ,K,V>
C788	87-018-132-080		CAP, CER 2200P-16V<LH>
C789	87-010-403-080		CAP, ELECT 3.3-50V
C790	87-010-403-080		CAP, ELECT 3.3-50V
C801	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K>
C802	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K>
C803	87-018-134-080		CAPACITOR,TC-U 0.01-16
C804	87-018-134-080		CAPACITOR,TC-U 0.01-16
C808	87-018-134-080		CAPACITOR,TC-U 0.01-16
C809	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K,V>
C810	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K,V>
C811	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K,V>
C812	87-010-408-080		CAP, ELECT 47-50V<EZ,K,V>
C813	87-018-131-080		CAP, CER 1000P-50V
C851	87-018-123-080		CAP, CER 220P-50V<203EZ>
C852	87-018-123-080		CAP, CER 220P-50V<203EZ>
C855	87-010-405-080		CAP, ELECT 10-50V<203EZ>
C856	87-010-405-080		CAP, ELECT 10-50V<203EZ>
C857	87-018-134-080		CAP,TC-U 0.01-16<203EZ>
C858	87-018-109-080		CAP, CER 22P-50V<203EZ>
C859	87-018-109-080		CAP, CER 22P-50V<203EZ>
C860	87-018-134-080		CAP,TC-U 0.01-16<203EZ>
C921	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K>
C923	87-018-102-080		CAP,TC-U 6.8P-50 SL<EZ,K>
C924	87-014-049-080		CAP, PP 470P-100J<EZ,K>
C857	87-018-134-080		CAP,TC-U 0.01-16<203EZ>
C937	87-018-134-080		CAP,TC-U 0.01-16<EZ,K>
C938	87-018-134-080		CAPACITOR,TC-U 0.01-16<EZ,K>
C944	87-018-104-080		CAP,TC-U 10P-50 SL<LH,V>
CF801	87-008-261-010		FILTER, SFE10.7MA5-A<LH,V>
CF801	87-008-423-010		FILTER, CF SFE10.7MS3G-A<EZ,K>
CF802	87-008-261-010		FILTER, SFE10.7MA5-A<V>
CF802	82-785-747-010		CF, MS2 GHY,R<EZ,K>
CN351	88-NF9-634-010		CONN ASSY,8P RPB
CON301	87-A60-620-010		CONN,3P V 2MM JMT
CON351	87-A60-625-010		CONN,8P V 2MM JMT
CON601	88-NF9-657-010		CONN,30P H BLK TYK-B(X)
CON602	87-099-194-010		CONN,6P 6216V
FB301	87-008-372-080		FILTER, EMI BL OIRNI<EZ,K>
FB302	87-008-372-080		FILTER, EMI BL OIRNI<EZ,K>
FB303	87-008-372-080		FILTER, EMI BL OIRNI<EZ,K>
FB601	87-008-372-080		FILTER, EMI BL OIRNI<EZ,K>
FC602	88-906-251-110		FF-CABLE, 6P 1.25
FFE801	A8-8ZA-191-030		8ZA-1 YFEUNM<LH>
FFE801	A8-6ZA-19C-170		6ZA-1 YFEENC<EZ,K>
FFE801	A8-6ZA-19F-170		6ZA-1 YFEVNC<V>
J201	88-NF9-620-010		JACK,DIA6.3 BLK ST W/SW KM16AT
J202	87-A60-238-010		TERMINAL,SP 4P (MSC)
J601	87-A60-425-010		JACK,PIN 2P YKC21-3838
J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02<LH,V>
J801	87-A60-427-010		TERMINAL,ANT PAL 2P<EZ,K>
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L451	87-007-342-010		COIL,OSC 85K BIAS
L701	87-005-847-080		COIL,2.2UH(CECS)
L771	87-A50-266-010		COIL,FM DET-2N(TOK)
L772	87-A90-733-010		FLTR,PCFAZH-450 (TOK)
L801	87-005-847-080		COIL,2.2UH(CECS)
L851	87-005-847-080		COIL,2.2UH(CECS)<203EZ>
L941	87-A50-020-010		COIL,ANT LW (COI) 252KHZ<EZ,K>
L942	87-A50-019-010		COIL,OSC LW (COI) 856KHZ<EZ,K>
L981	88-NF9-651-010		COI,AM PACK 4E(TOK)<LH,V>
L981	87-NF4-651-010		COI,AM PACK 2N(TOM)<EZ,K>
R249	87-A00-258-080		RES,M/F 0.22-1W J
R250	87-A00-258-080		RES,M/F 0.22-1W J
TC942	87-011-221-080		CAP,TRIMMER 30P<EZ,K>
W101	83-NE2-618-110		F-CABEL,5P-2.5
WH102	87-A90-460-010		HLDR,WIRE 2.5-7P
X701	88-NF9-654-010		VIB,XTAL 4.500 MHZ CSA-309
X851	89-KT1-608-010		X,TAL,4.332MHZ<203EZ>

FRONT C.B

C201	87-010-404-040		CAP,E 4.7-50 SME
C202	87-015-698-040		CAP,E 4.7-50 7L
C204	87-016-513-080		CAP,E 47-35 7L
C205	87-018-205-080		CAP, CERA-SOL 0.022
C208	87-010-405-080		CAP, ELECT 10-50V
C210	87-010-263-040		CAP,E 100-10
C211	87-010-248-040		CAP,E 220-10 SME
C212	87-018-205-080		CAP, CERA-SOL 0.022
C213	87-010-401-040		CAP,E 1-50 SME
C214	87-018-134-080		CAPACITOR,TC-U 0.01-16
C216	87-018-205-080		CAP, CERA-SOL 0.022
C218	87-018-205-080		CAP, CERA-SOL 0.022
C219	87-018-205-080		CAP, CERA-SOL 0.022
C220	87-018-205-080		CAP, CERA-SOL 0.022
C221	87-018-115-080		CAP, CER 47P-50V
C224	87-018-205-080		CAP, CERA-SOL 0.022
C225	87-018-149-080		CAP,TC-U 15P-50 CH
C226	87-018-113-080		CAP, CER 33P-50V
C231	87-010-384-040		CAP,E 100-25 SME
C241	87-018-117-080		CAP,TC-U 68P-50 SL<LH,V>
C241	87-018-121-080		CAP,CER 150P-50V<EZ,K>
C242	87-018-117-080		CAP,TC-U 68P-50 SL
C243	87-018-117-080		CAP,TC-U 68P-50 SL
C244	87-018-117-080		CAP,TC-U 68P-50 SL
C245	87-018-117-080		CAP,TC-U 68P-50 SL
C246	87-018-118-080		CAP,TC-U 82P-50 B
C247	87-018-134-080		CAP,TC-U 0.01-16
C251	87-018-205-080		CAP, CERA-SOL 0.022
CN103	88-NF9-635-010		CONN ASSY,10P,MECHA
CON101	88-NF9-658-010		CONN,30P BLK TYK-B(P)
CON102	87-099-015-010		CONN,13P 6216V
CON103	87-A60-674-010		CONN,10P H 2MM JMT
FC102	88-913-221-110		FF-CABLE, 13P 1.25 220MM
FL301	88-NF9-630-010		FL,10-BT-207GK
S201	87-A90-535-010		SW,RTRY EC16B24304
S301	87-A90-164-080		SW,TACT SKQAB(N)
S302	87-A90-164-080		SW,TACT SKQAB(N)
S303	87-A90-164-080		SW,TACT SKQAB(N)

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S304	87-A90-164-080		SW,TACT SKQAB(N)
S305	87-A90-164-080		SW,TACT SKQAB(N)
S306	87-A90-164-080		SW,TACT SKQAB(N)
S307	87-A90-164-080		SW,TACT SKQAB(N)
S308	87-A90-164-080		SW,TACT SKQAB(N)
S309	87-A90-164-080		SW,TACT SKQAB(N)
S310	87-A90-164-080		SW,TACT SKQAB(N)
S311	87-A90-164-080		SW,TACT SKQAB(N)
S312	87-A90-164-080		SW,TACT SKQAB(N)
S313	87-A90-164-080		SW,TACT SKQAB(N)
S314	87-A90-164-080		SW,TACT SKQAB(N)
S315	87-A90-164-080		SW,TACT SKQAB(N)
S316	87-A90-164-080		SW,TACT SKQAB(N)
S317	87-A90-164-080		SW,TACT SKQAB(N)
S318	87-A90-164-080		SW,TACT SKQAB(N)
S319	87-A90-164-080		SW,TACT SKQAB(N)<203EZ>
S320	87-A90-164-080		SW,TACT SKQAB(N)
S321	87-A90-164-080		SW,TACT SKQAB(N)<203EZ>
S322	87-A90-164-080		SW,TACT SKQAB(N)<203EZ>
SFR201	87-A90-556-080		SFR,2.2K H HOKU
X201	87-A70-075-080		VIB,CER 4.19MHZ CRHF
AC2 C.B			
WH101	87-A90-460-010		HLDR,WIRE 2.5-7P
AC1 C.B			
⚠F101	87-035-219-010		FUSE, 500MA 'T'<LH>
⚠F101	87-035-217-010		FUSE, 315MA 'T'<EZ,K,V>
⚠FC101	87-033-147-010		FUSE CLAMP
⚠FC102	87-033-147-010		FUSE CLAMP
⚠PT101	88-NF9-608-010		PT,8NF-9 EKZ<EZ,K,V>
⚠PT101	88-NF9-609-010		PT,8NF-9 LH<LH>
⚠SW101	87-A90-165-010		SW,SL 1-2-3 SWS2301<LH>
⚠T1	87-A60-317-010		TERMINAL, 1P MSC
⚠T2	87-A60-317-010		TERMINAL, 1P MSC

TRANSISTOR ILLUSTRATION



B C E

2SC4115S

E C B

2SC535
CSC2001
KTA1266
KTC3198

B C E

2SB1370

E C B

DTA114ES
DTA114YS
DTA144ES
DTC144ES
RN1210

S D G

2SJ460

B C E

2SB1616
2SD2478

E C B

KTA1267
KTC3199

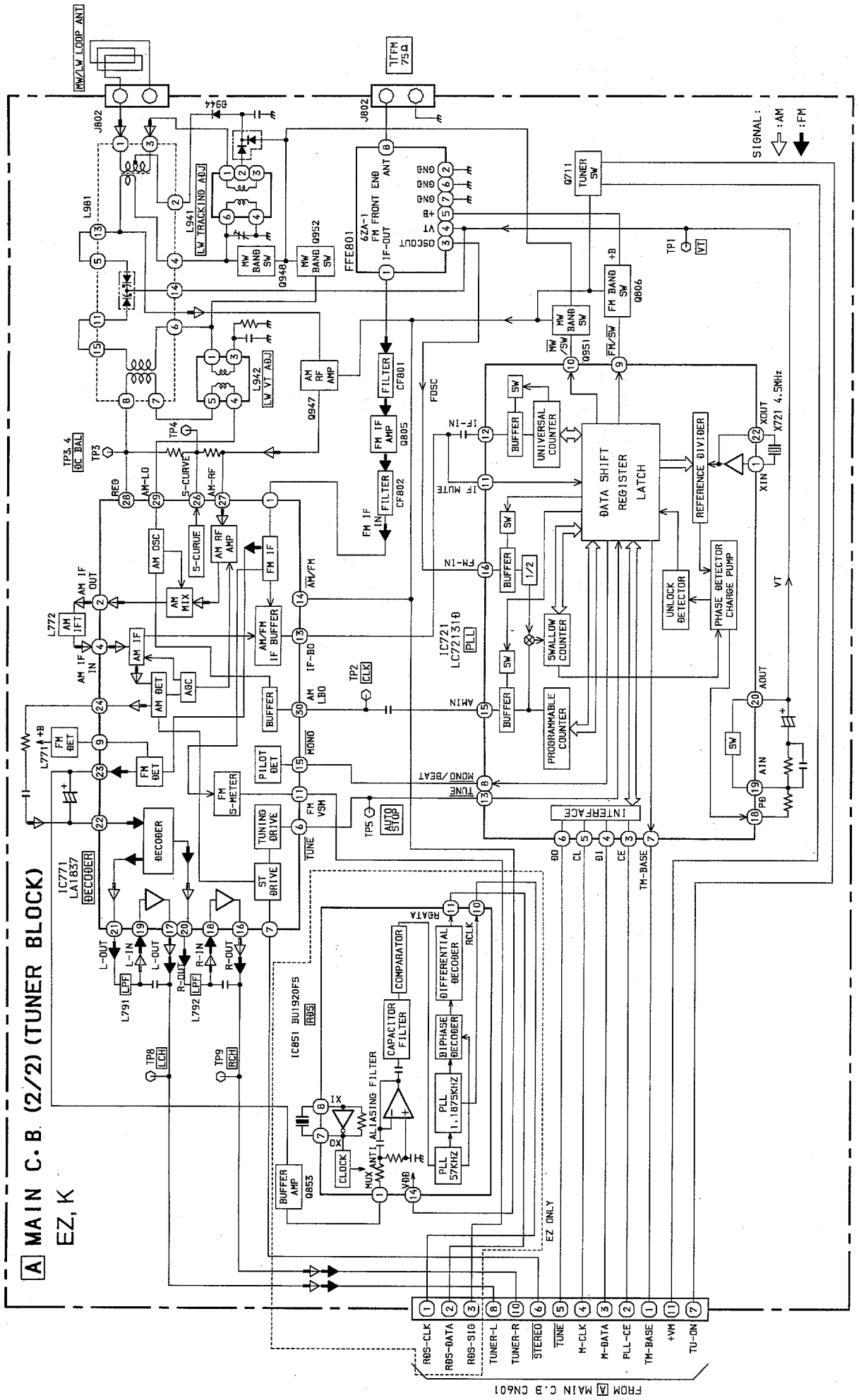
S D G

2SK2541

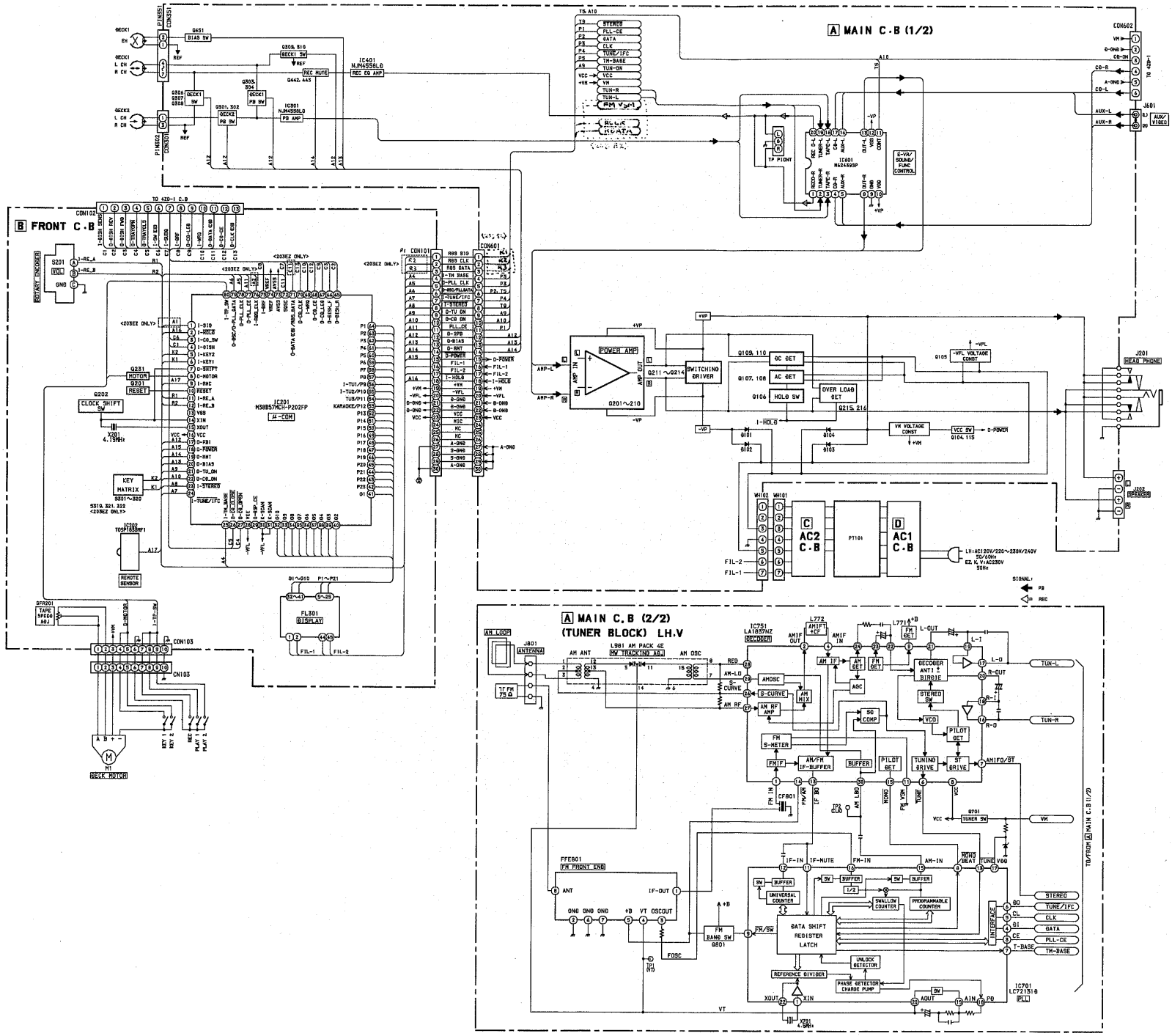
G S D

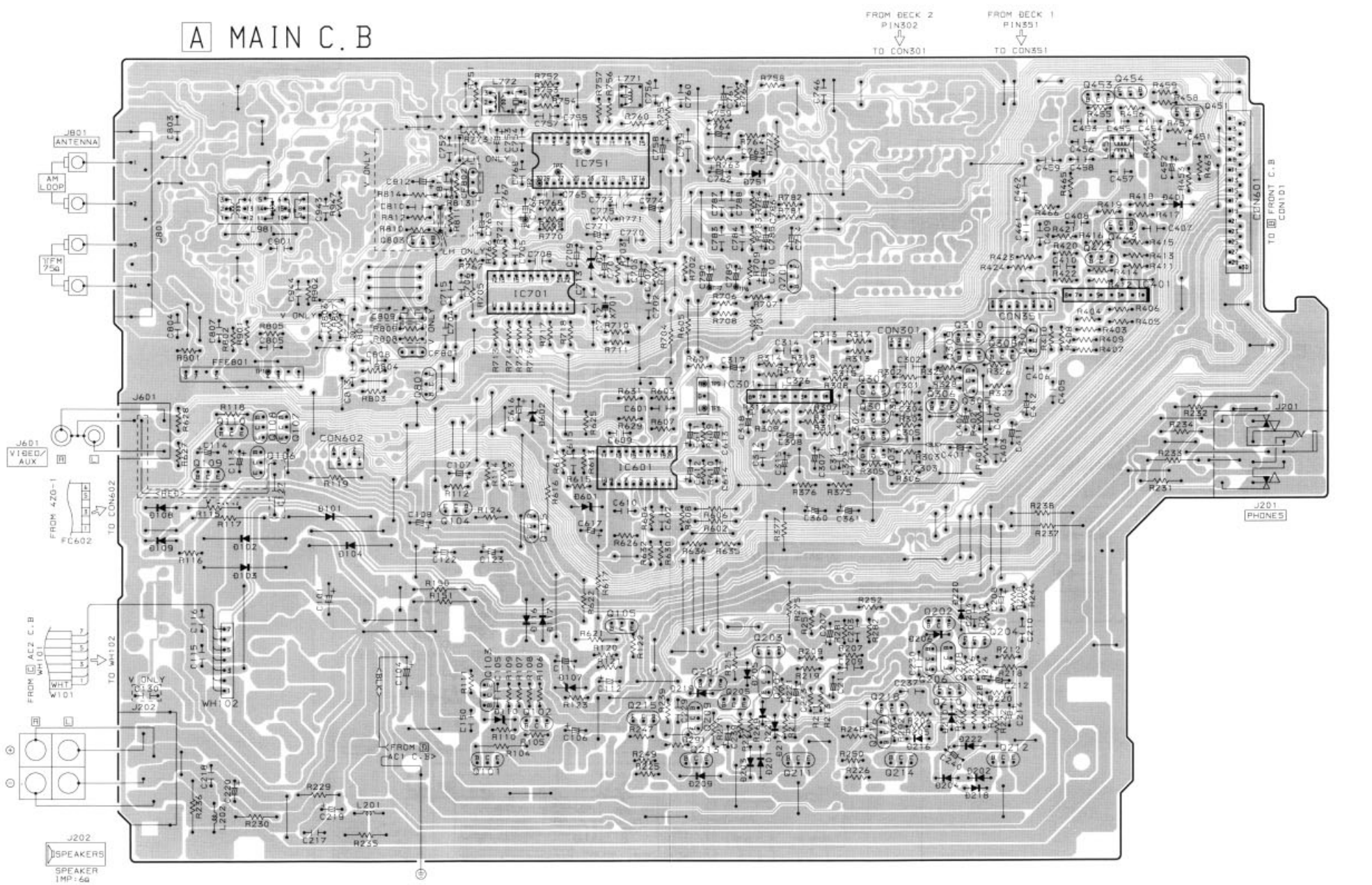
2SK439E

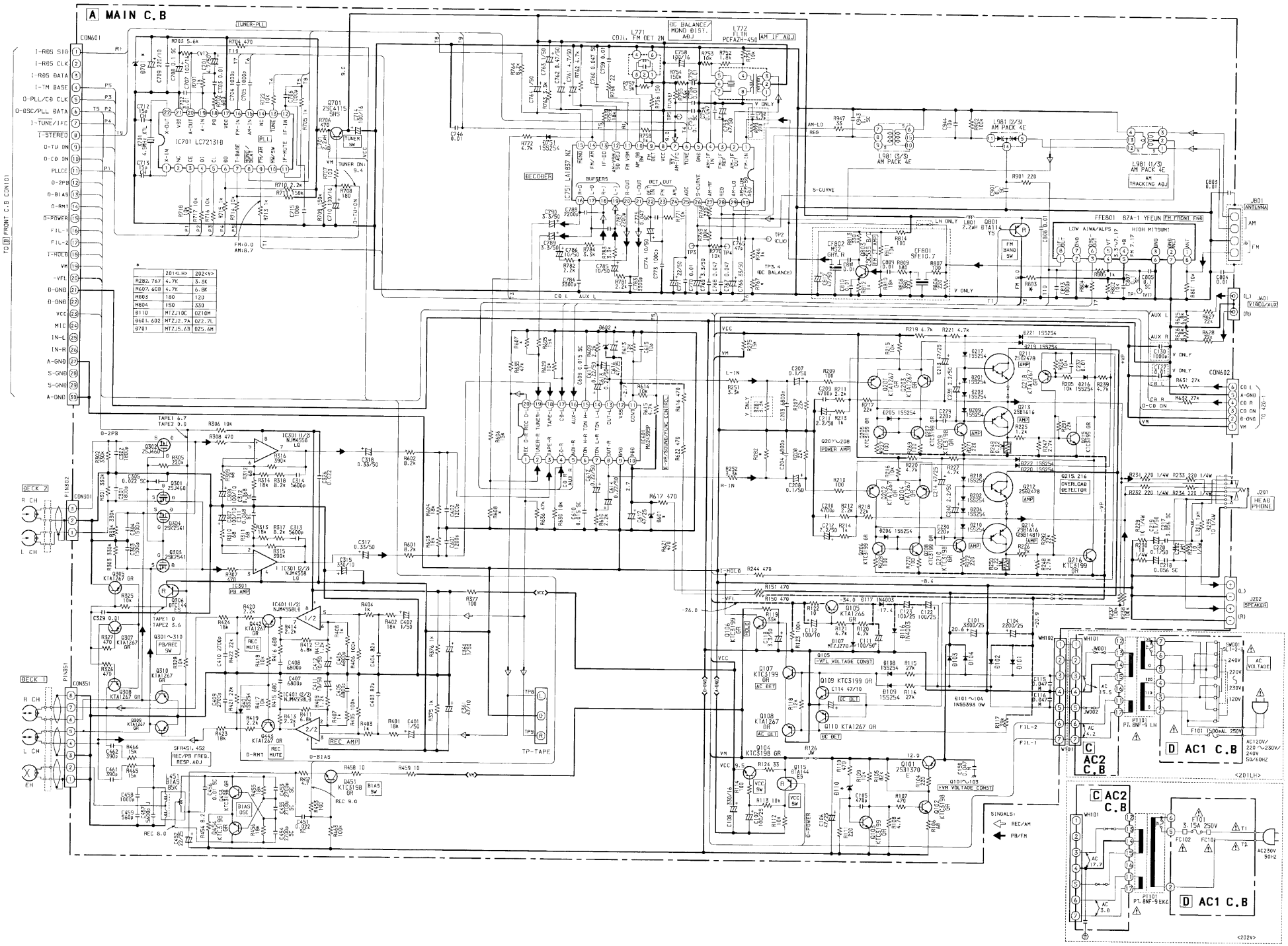
BLOCK DIAGRAM – 1 (EZ, K : MAIN C.B 2 / 2)



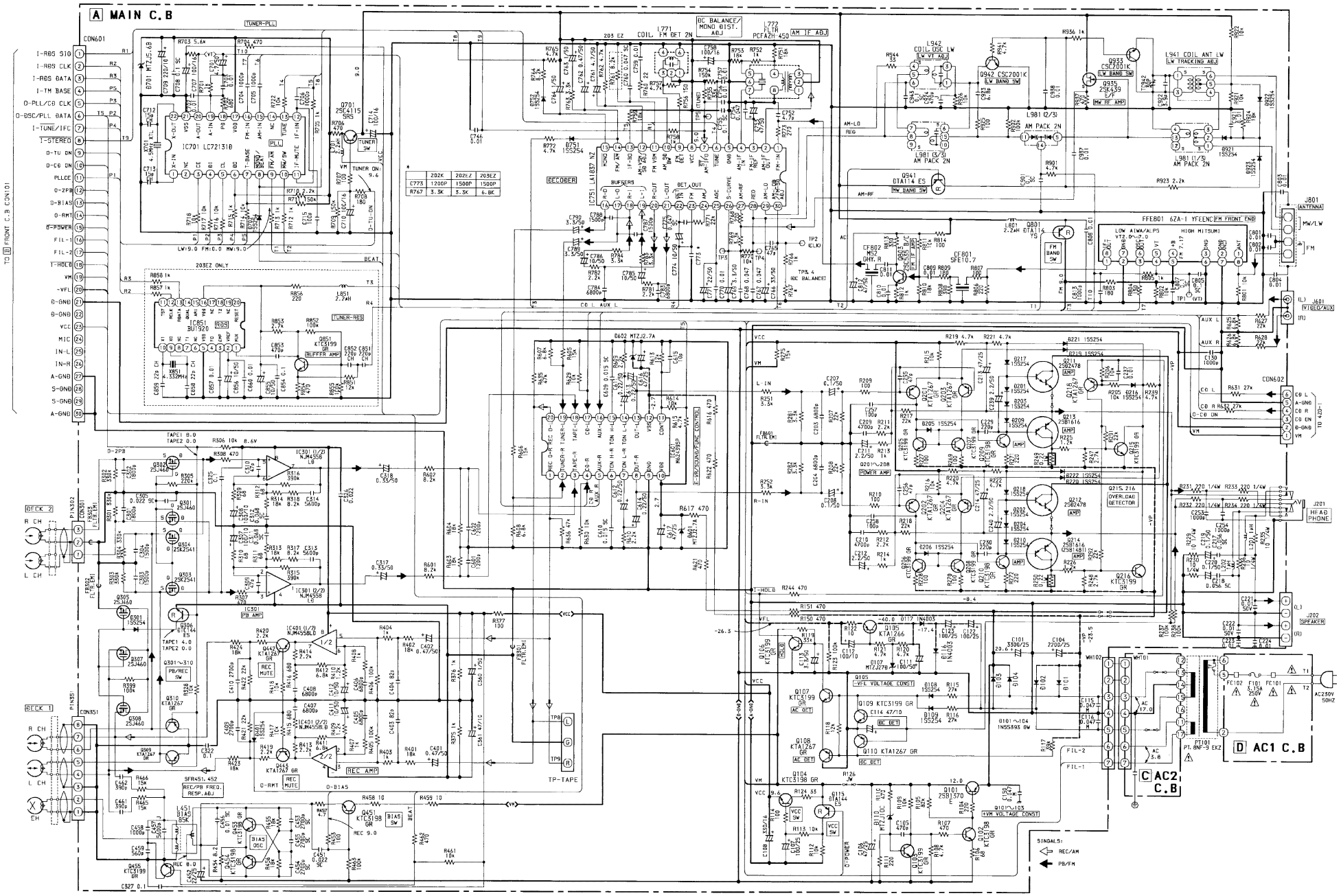
BLOCK DIAGRAM – 2 (MAIN / FRONT)



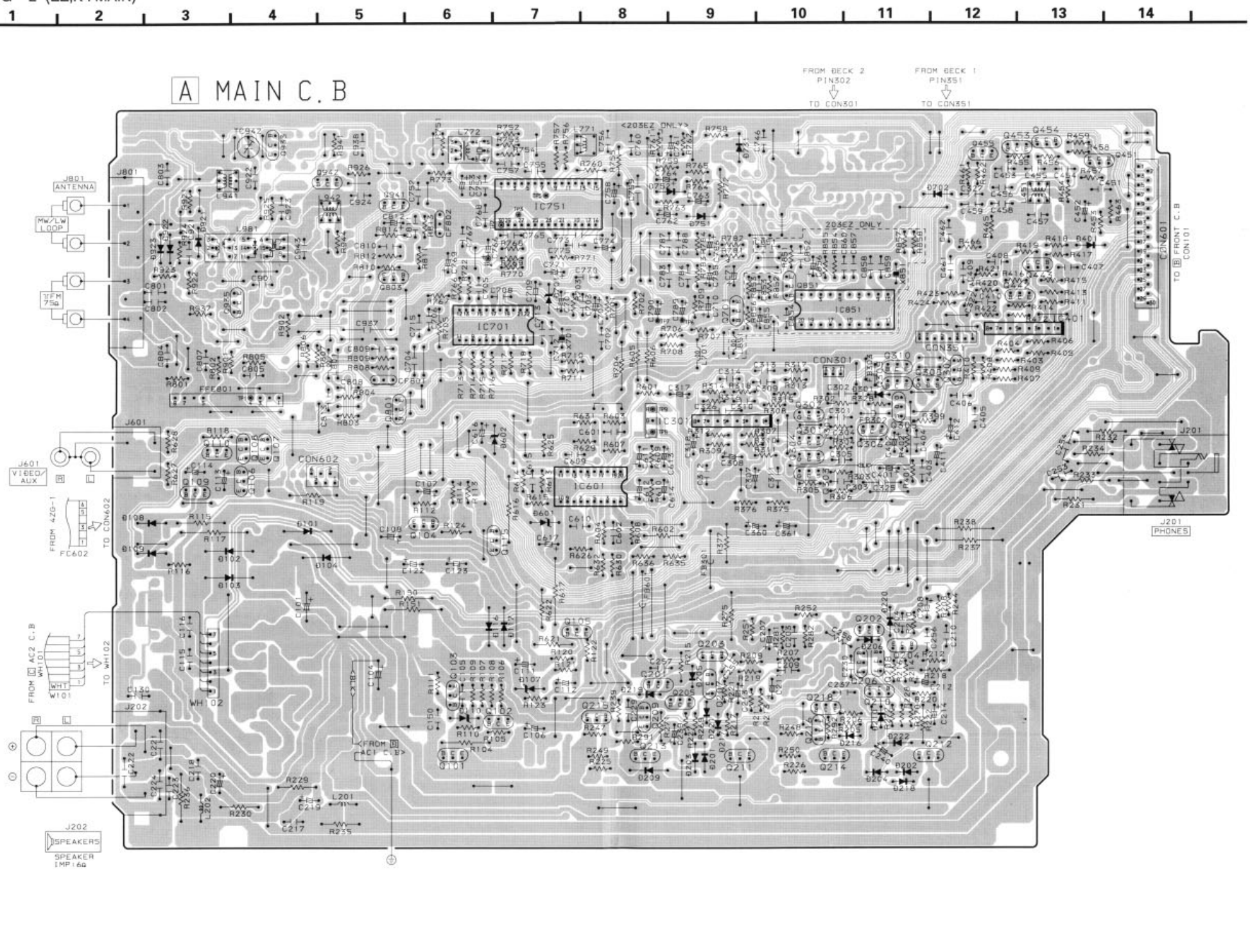

A MAIN C.B
FROM DECK 2
PIN302
TO CON301
FROM DECK 1
PIN351
TO CON351
J801
ANTENNA
AM LOOP
FM 75Ω
IC751
IC701
IC601
CON301
CON351
CON601
TO FRONT C.B CON101
J601
VIDEO/AUX
CON602
FROM 420-1
TO CON602
FC602
J201
PHONES
FROM AC2 C.B WH101
TO WH102
WHT
WH101
WH102
V ONLY
TO J30
J202
SPEAKERS
SPEAKER
IMP : 6Ω
FROM AC1 C.B

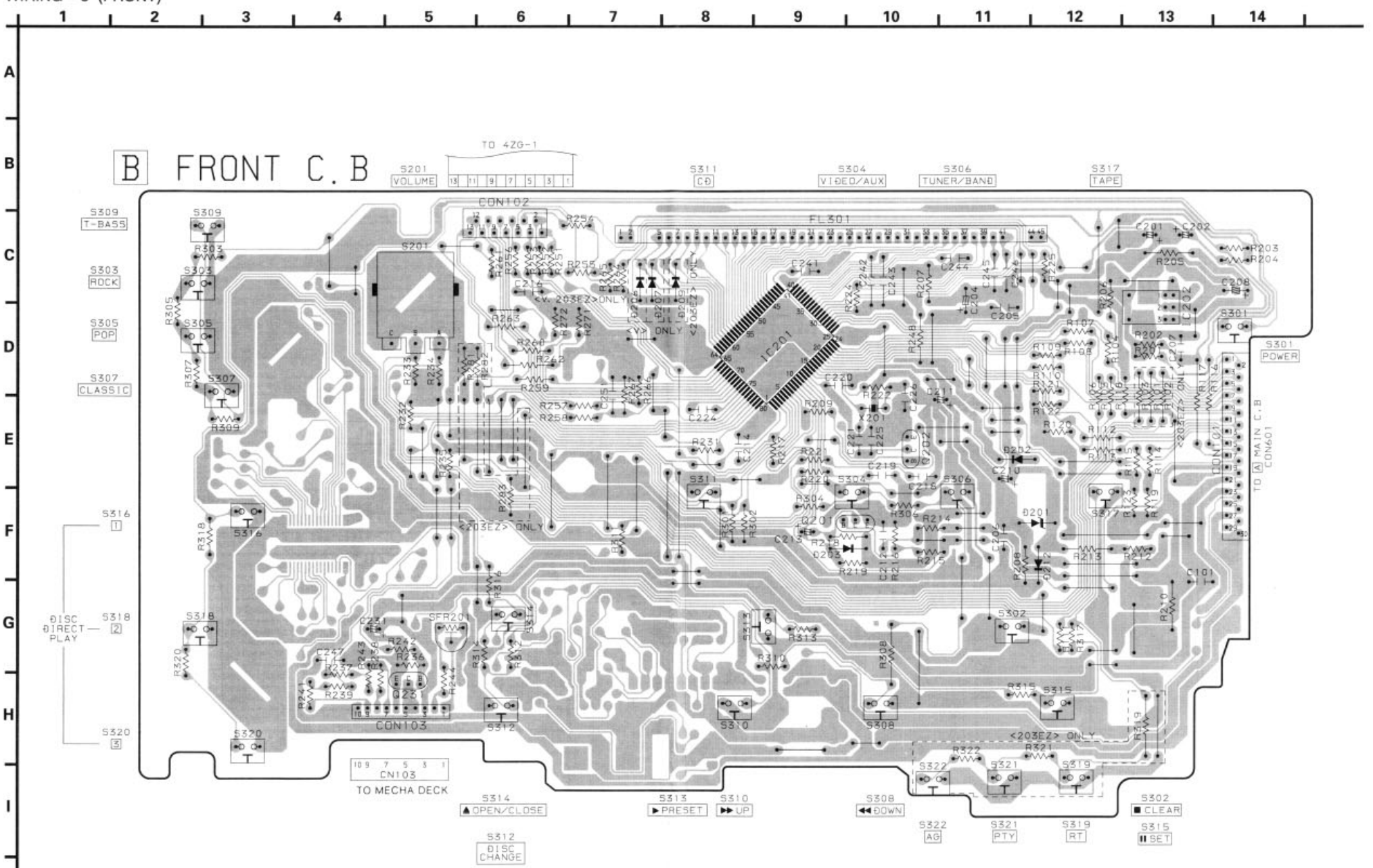

A MAIN C.B
CON601
I-RDS SIG
I-RDS CLK
I-RDS DATA
I-TM BASE
O-PLL/CD CLK
O-BSC/PLL DATA
I-TUNE/IFC
I-STEREO
O-TU ON
O-CD ON
PLLCE
O-2PB
O-BIAS
O-RMT
O-POWER
FIL-1
FIL-2
I-RDCD
VM
-VFL
O-GND
O-GND
VCC
MIC
IN-L
IN-R
A-GND
S-GND
S-GND
A-GND
TO (B) FRONT C.B CON101
TUNER-PLL
IC701 LC72131D
IC751 LA1837 NC
DECODER
IC401 (1/2) NJM4558 LB
IC401 (2/2) NJM4558 LB
IC301 PB AMP
IC401 (2/2) NJM4558L LB
L771 COIL FM DET 2N
L772 FLTR PCFA2H-450
L981 (2/3) AM PACK 4E
L981 (3/3) AM PACK 4E
AM TRACKING ADJ
FFE801 87A-1 YFEUN FM FRONT END
LOW AIWA/ALPS
HIGH MITSUMI
CF801 SFE10.7
CF802 MS2 GHT.R
Q801 2SA1115 Y5
Q201~208 POWER AMP
Q215,216 OVERLOAD DETECTOR
Q105 -VFL VOLTAGE CONST
Q109 KTC3199 GR AC BET
Q110 KTA1267 GR BC BET
Q108 KTA1267 GR AC BET
Q104 KTC3198 GR
Q101~103 2SB1370
Q101~104 1N5393S 8W
Q106 KTC3199 GR
Q107 KTC3199 GR
Q301~310 PB/REC SW
Q451 KTC3198 GR BIAS SW
REC AMP
TP-TAPE
O-BIAS
O-RMT
REC MUTE
SFR451, 452 REC/PB FREQ. RESP.ADJ
DECK 2
DECK 1
R CH
L CH
EH
CON501
CON351
P1N502
P1N351
CON602
J801 ANTENNA
J201 HEAD PHONE
J202 SPEAKER
C AC2 C.B
D AC1 C.B
SIGNALS: REC/AM PB/FM
<201LH>
<202V>

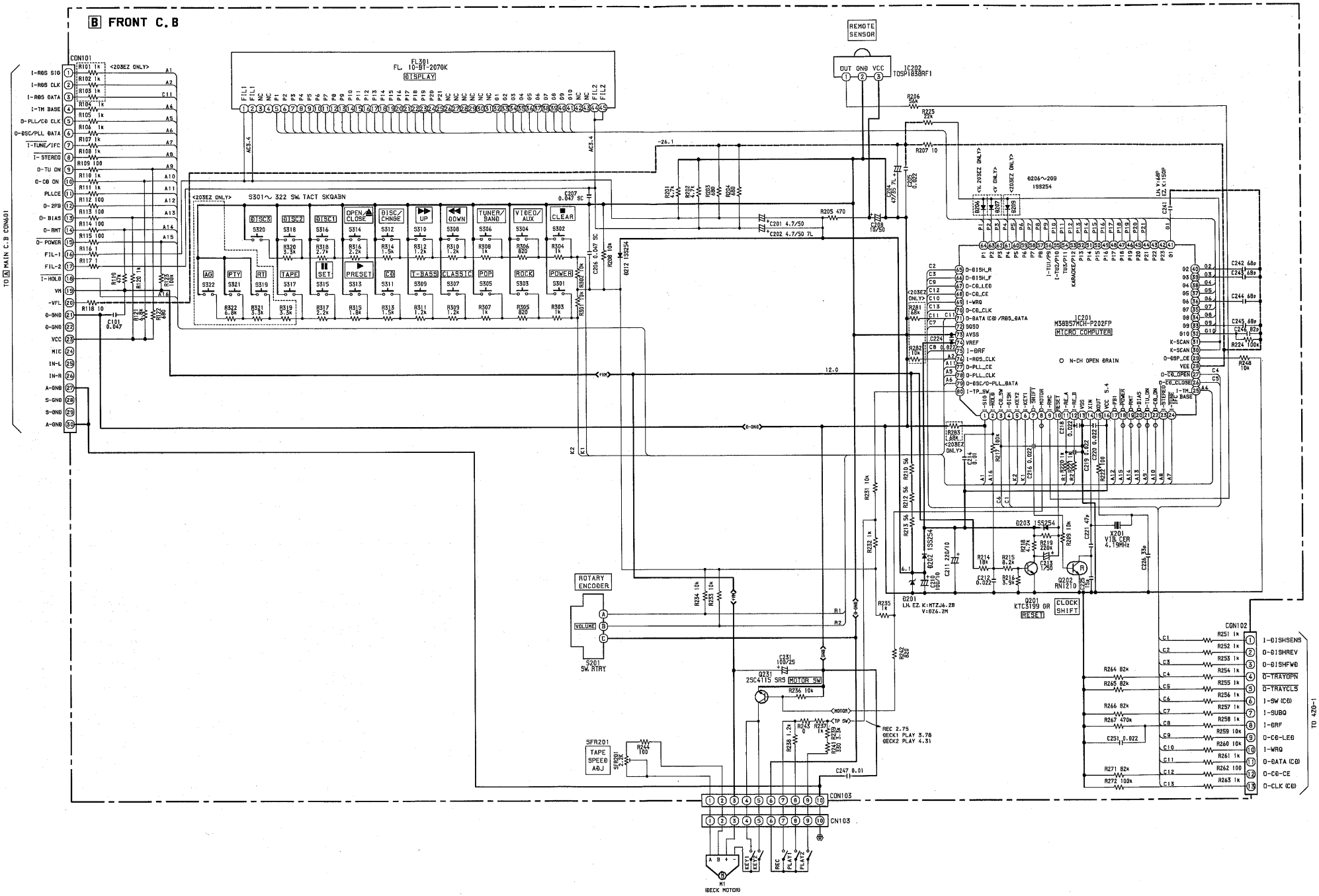
SCHEMATIC DIAGRAM – 2 (EZ,K : MAIN 1 / 2)



*	202K	202EZ	203EZ
C775	1200P	1500P	1500P
R767	3.3K	3.3K	6.8K

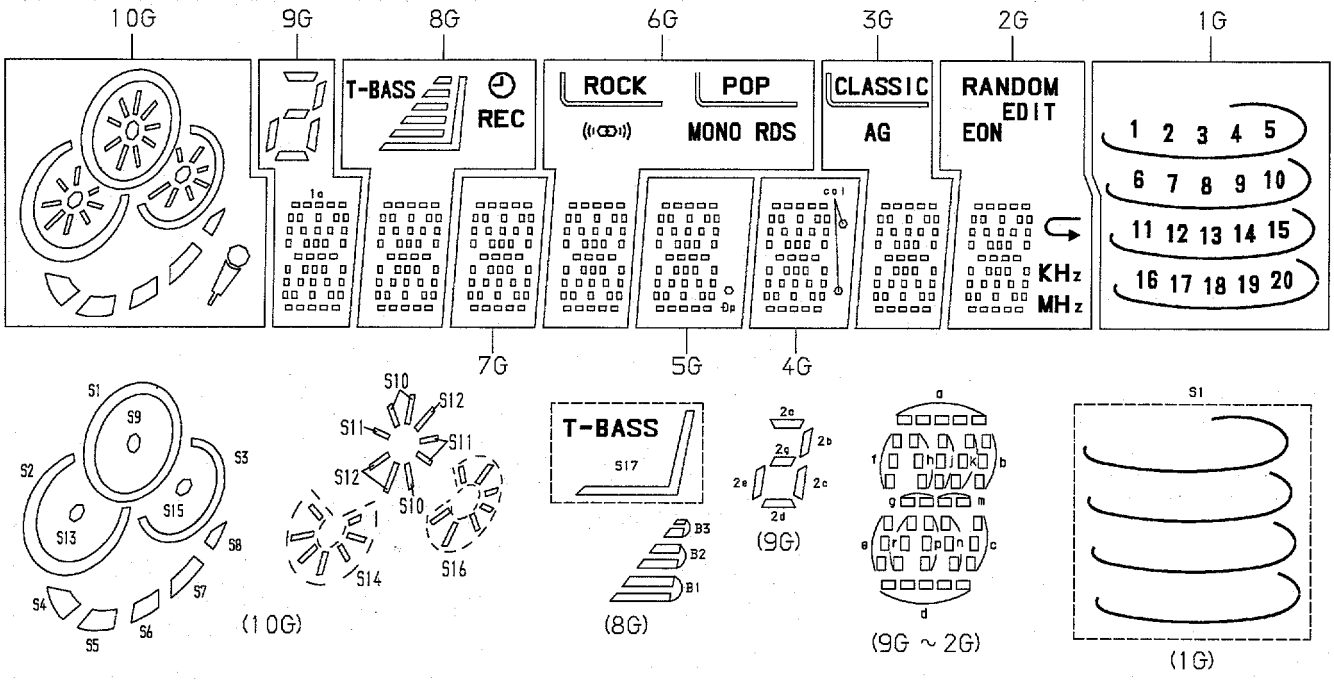

A MAIN C.B
FROM DECK 2
PIN302
TO CON301
FROM DECK 1
PIN351
TO CON351
<203EZ ONLY>
J801
ANTENNA
MW/LW
LOOP
VFM
75Ω
IC751
IC701
IC851
IC301
IC601
CON301
CON602
CON601
TO B FRONT C.B
CON101
J601
VIDEO/
AUX
J201
PHONES
FROM 4ZG-1
FC602
TO CON602
FROM C AC2 C.B
WH101
TO WH102
WH 02
J202
SPEAKERS
SPEAKER
IMP 16Ω
<FROM D
AC1 C.B>


B FRONT C.B
TO 4ZG-1
S201 VOLUME
S311 CD
S304 VIDEO/AUX
S306 TUNER/BAND
S317 TAPE
S309 T-BASS
S303 ROCK
S305 POP
S307 CLASSIC
S316 T
S318 2
S320 3
DISC DIRECT PLAY
CON102
FL301
IC201
S301 POWER
TO A MAIN C.B CON601
CON103
TO MECHA DECK
S314 OPEN/CLOSE
S312 DISC CHANGE
S313 PRESET
S310 UP
S308 DOWN
S302 CLEAR
S315 SET
S322 AG
S321 PTY
S319 RT
<203EZ> ONLY


B FRONT C.B
TO A MAIN C.B CON601
CON101
FL301
FL 10-BT-2076K
GTSPLAY
REMOTE SENSOR
IC202
TDSP1838RF1
S301~ 322 SW TACT SKQABN
DISC3
DISC2
DISC1
OPEN CLOSE
DISC/ CHNGE
UP
DOWN
TUNER/ BAND
VIDEO/ AUX
CLEAR
AG
PTY
RT
TAPE
SET
PRESET
CD
T-BASS
CLASSIC
POP
ROCK
POWER
IC201
M38B57MCH-P202FP
MICRO COMPUTER
N-CH OPEN DRAIN
ROTARY ENCODER
VOLUME
S201
SW RTRY
SFR201
TAPE SPEED ADJ
Q231
2SC4115 SRS
MOTOR SW
REC 2.75
DECK1 PLAY 3.78
DECK2 PLAY 4.51
M1
(DECK MOTOR)
CON103
CON102
Q201
KTC3199 GR
RESET
CLOCK SHIFT
Q202
AN1210
D201
LH. EZ. K:MTZJ6.2B
V:BZ6.2M
X201
CSB
4.19MHz
TO A26-1

FL GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



(10G)

(8G)

(9G)

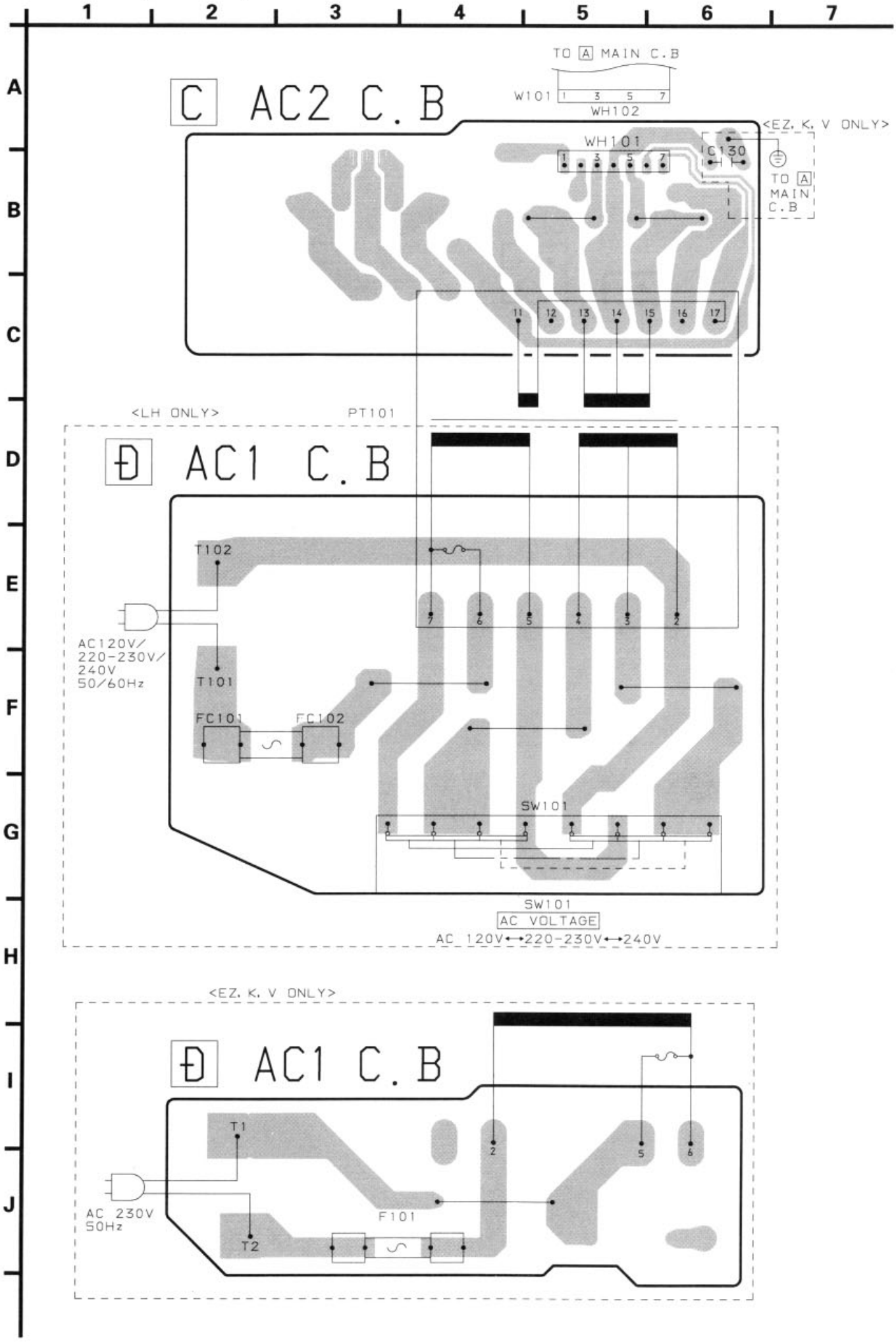
(9G ~ 2G)

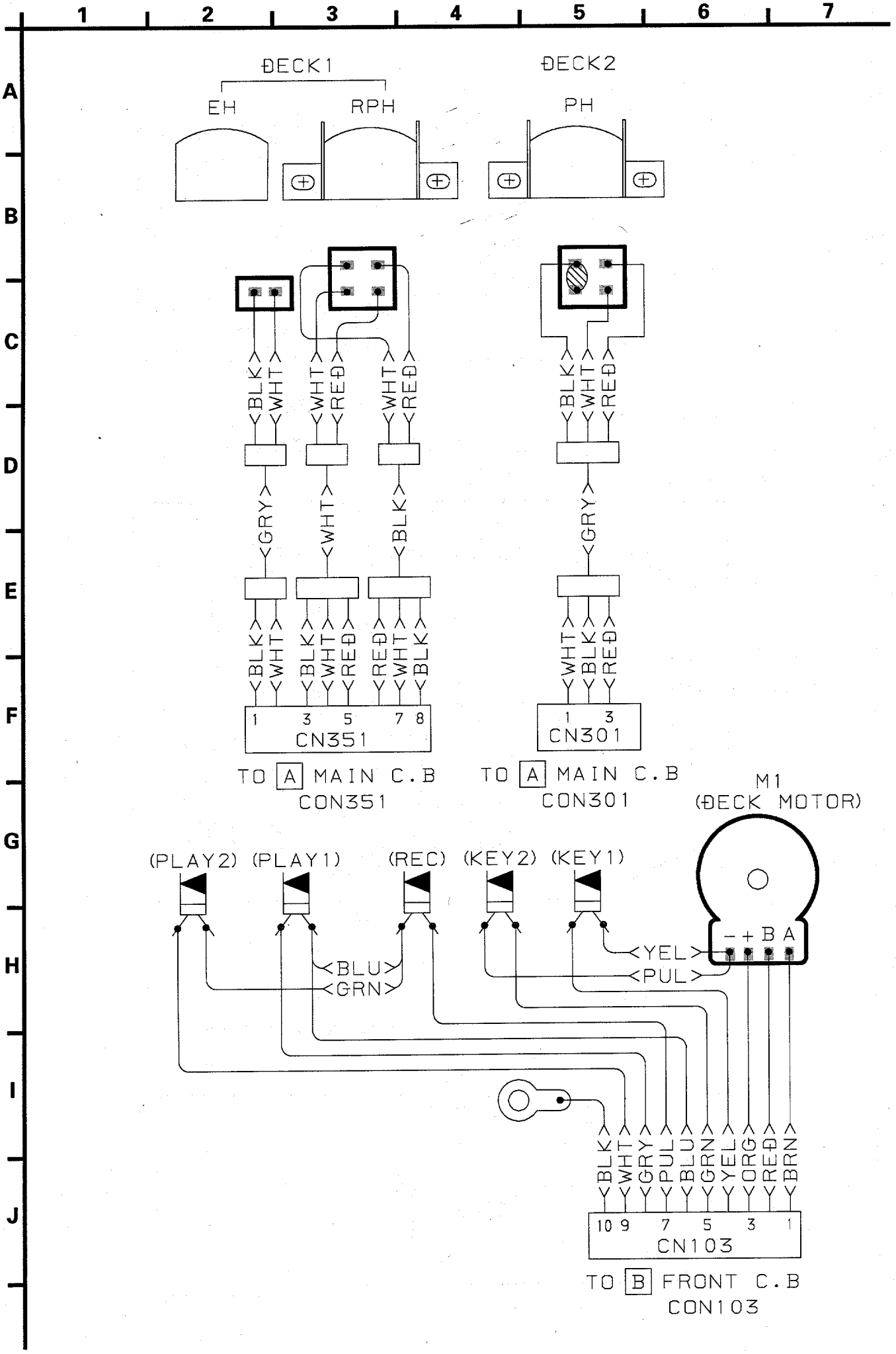
(1G)

ANODE CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	S6	1d	d	d	d	d	d	d	d	20
P2	S7	1n	n	n	n	n	n	n	n	19
P3	S8	1p	p	p	p	p	p	p	p	18
P4	S14	1r	r	r	r	r	r	r	r	17
P5	S13	1e	e	e	e	e	e	e	e	16
P6	S2	1c	c	c	c	c	c	c	c	15
P7	S16	1g	g	g	g	g	g	g	g	14
P8	S15	1m	m	m	m	m	m	m	m	13
P9	S3	1f	f	f	f	f	f	f	f	12
P10	S12	1b	b	b	b	b	b	b	b	11
P11	S11	1k	k	k	k	k	k	k	k	10
P12	S10	1j	j	j	j	j	j	j	j	9
P13	S9	1h	h	h	h	h	h	h	h	8
P14	S1	1a	a	a	a	a	a	a	a	7
P15	S5	–	REC	–	((∞))	Đp	col (ĐOWN)	–	MHz	6
P16	S4	–	◴	–	MONO	–	col (UP)	–	KHz	5
P17		2a, 2g 2d	S17	–	RDS	–	–	AG	↪	4
P18	–	2e	B1	–	(ROCK)	–	–	(CLASSIC)	EON	3
P19	–	2c	B2	–	(POP)	–	–	–	EDIT	2
P20	–	2b	B3	–	ROCK POP	–	–	CLASSIC	RANDOM	1
P21	–	–	–	–	–	–	–	–	–	S1

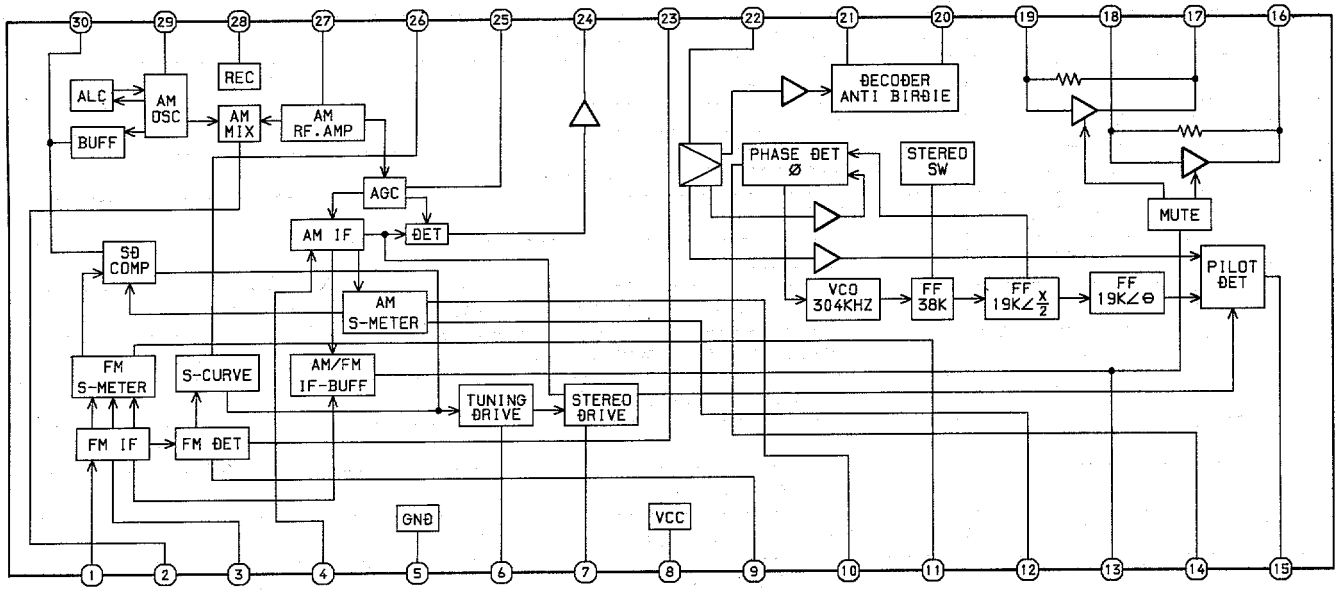
WIRING – 4 (AC1 / AC2)



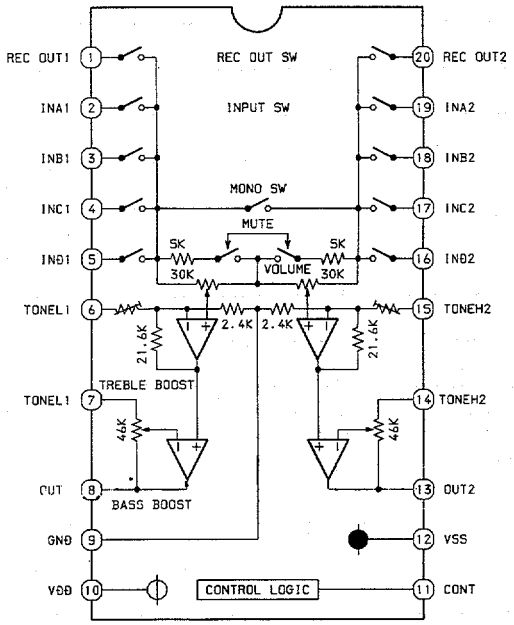

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
ÐECK1
EH
RPH
ÐECK2
PH
BLK
WHT
WHT
REÐ
WHT
REÐ
GRY
WHT
BLK
BLK
WHT
BLK
WHT
REÐ
REÐ
WHT
BLK
1 3 5 7 8
CN351
TO A MAIN C.B
CON351
BLK
WHT
REÐ
GRY
WHT
BLK
REÐ
1 3
CN301
TO A MAIN C.B
CON301
M1
(ÐECK MOTOR)
(PLAY2)
(PLAY1)
(REC)
(KEY2)
(KEY1)
– + B A
YEL
PUL
BLU
GRN
BLK
WHT
GRY
PUL
BLU
GRN
YEL
ORG
REÐ
BRN
10 9 7 5 3 1
CN103
TO B FRONT C.B
CON103

IC BLOCK DIAGRAM – 1

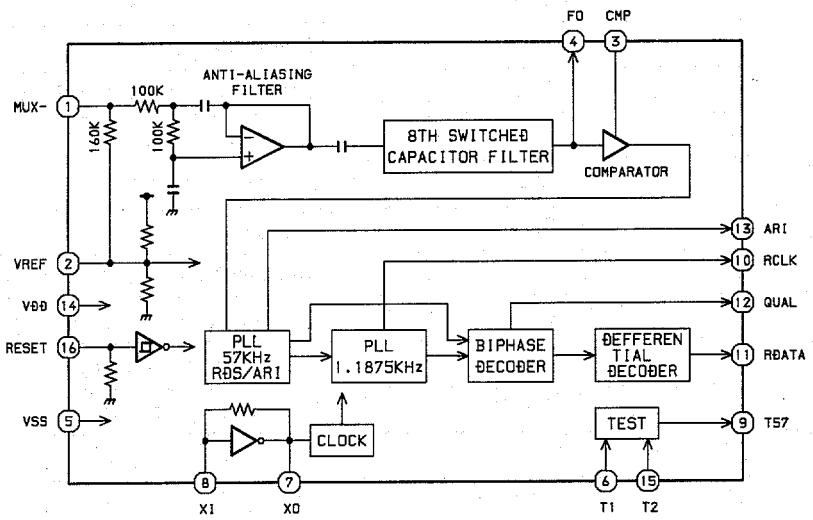
IC, LA1837



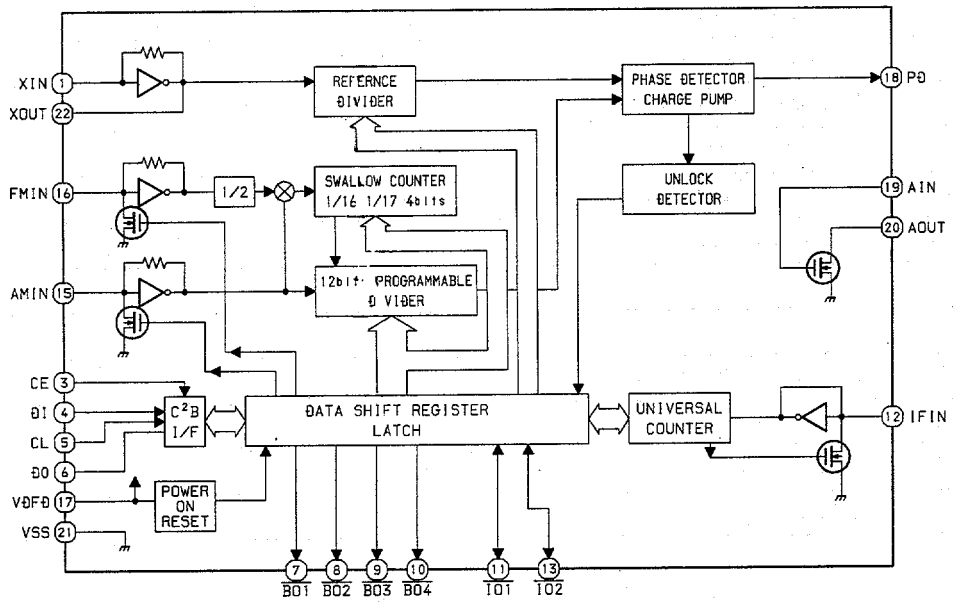
IC, M62439SP



IC, BU1920FS



IC, LC72131



IC DESCRIPTION

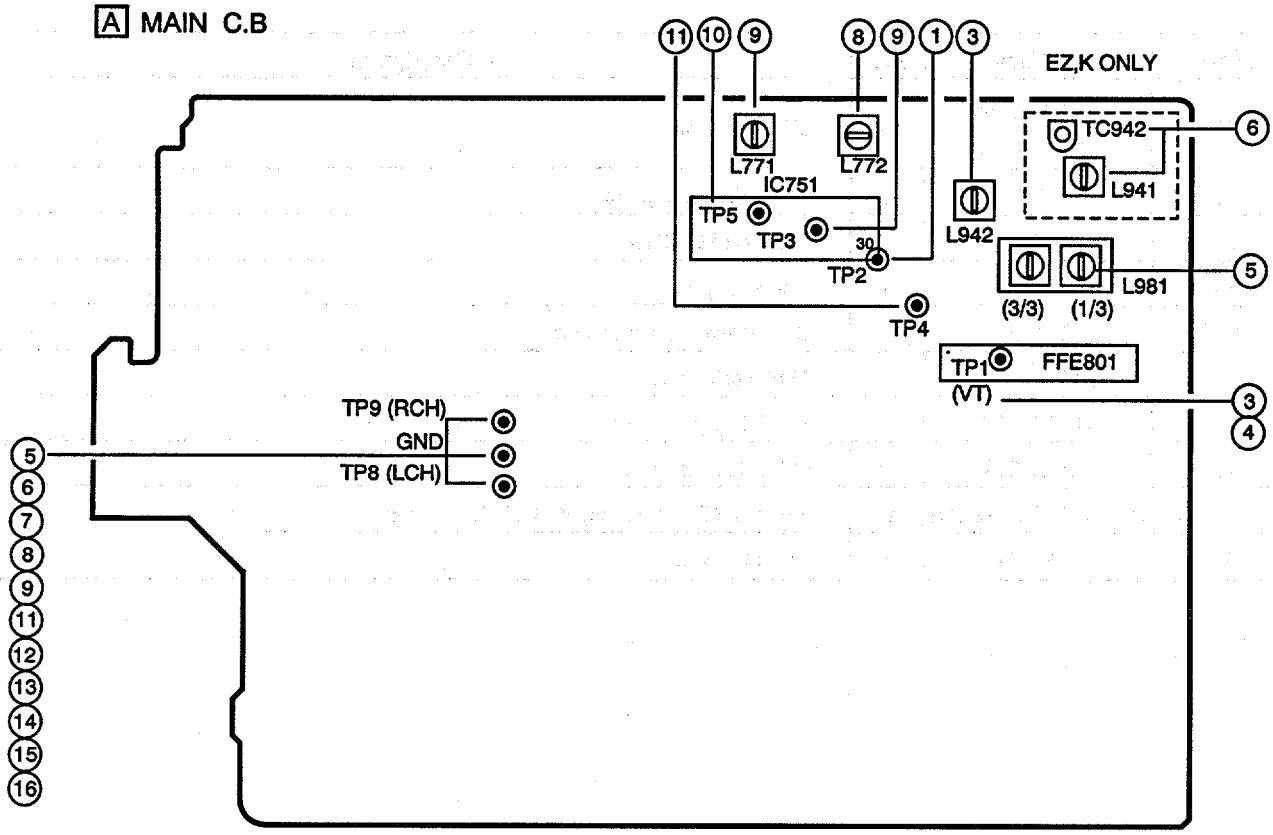
IC, M38B57MCH-P202FP

Pin No.	Pin Name	I/O	Description
1	I-SIG	I	Signal level for RDS A/D input.
2	I-$\overline{\text{HOLD}}$	I	Hold input.
3	I-CD_SW	I	CD mechanical switch input.
4	I-DISH	I	CD turntable photo sensor input.
5	I-KEY2	I	KEY input 1.
6	I-KEY1	I	KEY input 2.
7	O-$\overline{\text{SHIFT}}$	O	Clock shift output for microcomputer when tuner receiving broadcast.
8	O-MOTOR	O	Cassette deck motor control output.
9	I-RMC	I	System remote control signal input.
10	$\overline{\text{RESET}}$	I	RESET input.
11	I-RE_A	I	Rotary encoder A input.
12	I-RE_B	I	Rotary encoder B input.
13	VSS	–	Connected to GND.
14	XIN	–	4.19 MHz oscillator circuit.
15	XOUT	–	
16	VCC	–	Power supply.
17	O-PB1	O	Cassette deck output switching.
18	O-$\overline{\text{POWER}}$	O	Power control output.
19	O-RMT	O	REC MUTE output.
20	O-BIAS	O	Bias output.
21	O-TU_ON	O	Tuner power supply ON/OFF output.
22	O-$\overline{\text{CD\_ON}}$	O	CD power supply ON/OFF output.
23	I-$\overline{\text{STEREO}}$	I	Tuner stereo detected input.
24	I-$\overline{\text{TUNE}}$/IFC	I	Tuner signal input (Active Low) / Tune IF count serial data input.
25	I-TM_BASE	I	Reference clock input for timer watch.
26	O-$\overline{\text{CD\_CLOSE}}$	O	CD tray close data output.
27	O-$\overline{\text{CD\_OPEN}}$	O	CD tray open data output.
28	VEE	–	Power supply input for FL display.
29	O-DSP_CE	O	DSP chip enable output.
30	K-SCAN	O	Initial scan output.
31	K-SCAN	O	Initial scan output.
32~41	G10~G1	O	FL grid output G1~G10.
42~43	P23~P24	O	FL segment output (Not connected).
44~62	P21~P3	O	FL segment output.
63	P2	I/O	FL segment output/TU2 input to diode.
64	P1	O	FL segment output.
65	O-DISH_R	O	CD turntable reverse rotation output.
66	O-DISH_F	O	CD turntable forward rotation output.
67	O-CD_LED	O	CD flash window output.
68	O-CD_CE	O	CD IC control output.
69	I-WRQ	I	CD IC control output.
70	O-CD_CLK	O	CD clock output.

Pin No.	Pin Name	I/O	Description
71	O-DATA(CD)/ RDS_DATA	O	CD data output.
72	SQSO	O	CD SUBQ data output.
73	AVSS	–	Connected to GND.
74	VREF	–	Power supply.
75	I-DRF	I	CD RF level detection input.
76	I-RDS-CLK	I	RDS clock input.
77	O-PLL_CE	O	PLL IC chip enable output.
78	O-PLL_CLK	O	PLL IC clock output.
79	O-DSC/O-PLL DATA	O	Function IC control output / PLL data output.
80	I-TP-SW	I	Cassette deck.

ADJUSTMENT <TUNER / DECK>

A MAIN C.B



< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP2
   Method : Set to AM (MW) 1602kHz (EZ,K,V) / AM 1710kHz (LH) and check that the test point is 2052kHz ± 45Hz (EZ,K,V) / 2160 kHz ± 45Hz (LH).

2a. MW VT Check <LH>
   Settings : • Test point : TP1 (VT)
   Method : Set to AM 1710kHz and AM 530 kHz and check that the test point is less than 8.5V (1710kHz) and more than 0.6V (530kHz)

2b. MW VT Check <EZ,K,V>
   Settings : • Test point : TP1 (VT)
   Method : Set to AM 1602kHz and AM 531 kHz and check that the test point is less than 8.0V (1602kHz) and more than 0.6V (531kHz)

3. LW VT Adjustment <EZ,K>
   Settings : • Test point : TP1 (VT)
   • Adjustment location : L942
   Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V ± 0.05V. Then check that the test point is less than 8.0V (290kHz).

4a. FM VT Check <LH,EZ,K>
   Settings : • Test point : TP1 (VT)
   Method : Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 0.5V (87.5MHz) and less than 8.0V (108.0MHz).

4b. FM VT Check <V>
   Settings : • Test point : TP1 (VT)
   Method : Set to FM 65.0MHz, 108.0MHz and check that the test point is more than 1.0V (65.0 MHz) and less than 9.5V (108.0MHz).

5. MW Tracking Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L981(1/3) 999kHz
   Method : Set to AM 999kHz and adjust L981(1/3)to MAX.

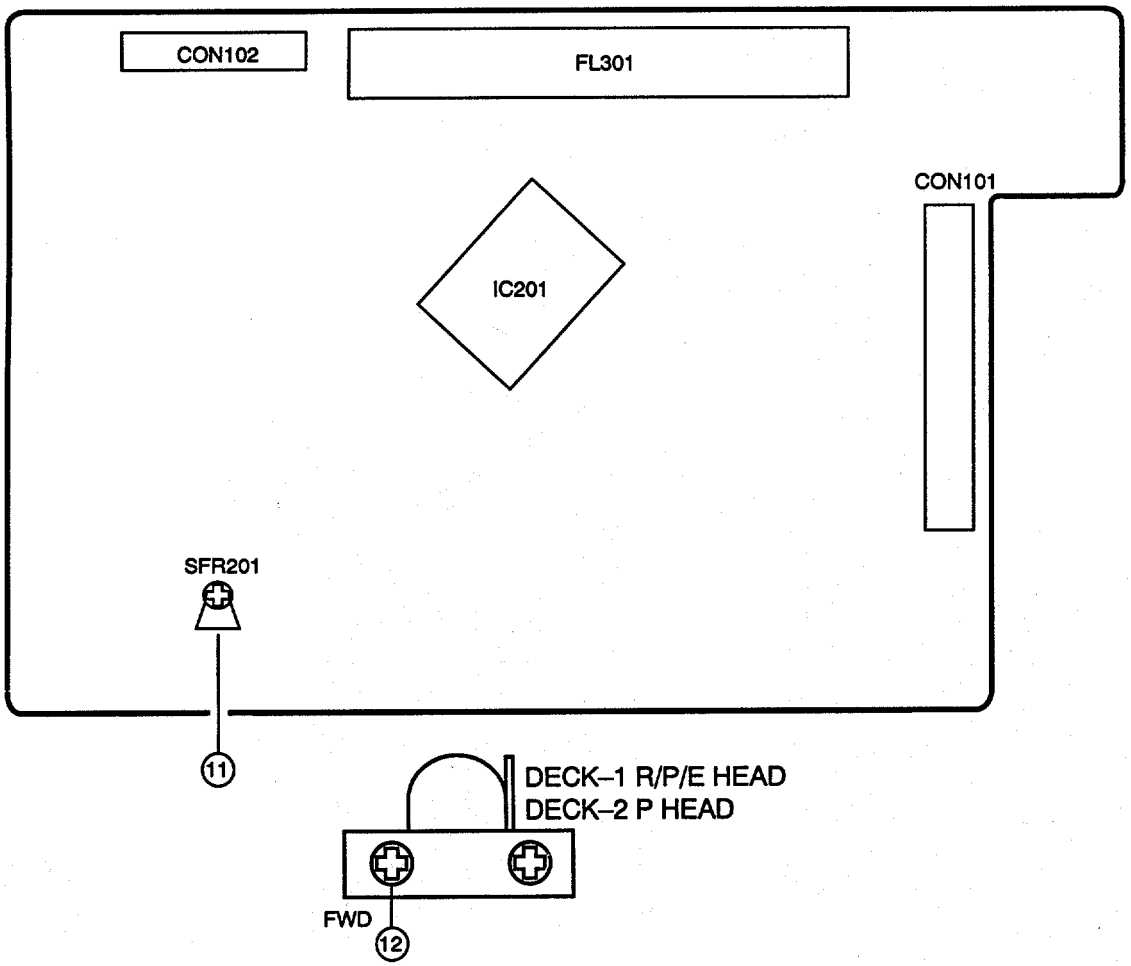
6. LW Tracking Adjustment <EZ,K>
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L941 ..... 5.9MHz
   TC942 ..... 17.9MHz
   Method : Set up TC942 to center before adjustment. The level at 144kHz is adjust to maximum by L941. Then the level at 290kHz is adjust to maximum by TC942.

7. FM Tracking Check
   Settings : • Test point : TP8(Lch), TP9(Rch)
   Method : Set to FM 98.0MHz and check that the test point is less than 9dB <LH> / 10dB <EZ,K> / 6dB <V>.

8. AM(MW) IF Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L772 ..... 450kHz

9. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3, TP4 (DC Balance)
   : TP8(Lch), TP9(Rch) (Distortion)
   • Adjustment location : L771
   • Input level : 54dB
   Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V. Next, check that the distortion is less than 1.3%.

B FRONT C.B



10. Auto Stop Level Check
    MW : • Input level : 52dB
    • Test point : TP5
    Method : Check auto stop at MW 999kHz and the level is 52dB +10dB /-15dB.
    FM : • Input level : 25dB
    • Test point : TP5
    Method : Check auto stop at FM 98.0MHz and the level is 25 dB ± 10 dB.

< DECK SECTION >

11. Tape Speed Adjustment (DECK 1, DECK 2)
    Settings : • Test tape : TTA–100
    • Test point : TP8(Lch), TP9(Rch)
    • Adjustment location : SFR201
    Method : Play back the test tape and adjust SFR201 so that the frequency counter reads 3000Hz ± 5Hz.

12. Head Azimuth Adjustment (DECK 1, DECK 2)
    Settings : • Test tape : TTA–330
    • Test point : TP8(Lch), TP9(Rch)
    • Adjustment location : Head azimuth adjustment screw
    Method : Play back (FWD) the 8kHz signal of the test tape and adjust screw so that the output becomes maximum.

13. PB Frequency Response Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–330
    • Test point :TP8(Lch), TP9(Rch)
    Method : Play back the 315Hz and 8kHz signals of the test tape and check that the output ratio of the 8kHz signal with respect to that of the 315Hz signal is within 5dB.

14. PB Sensitivity Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–200
    • Test point : TP8(Lch), TP9(Rch)
    Method : Play back the test tape and check that the output level of the test point is 110mV ± 3.0dB

15. REC/PB Frequency Response Check (DECK 1)
    Settings : • Test tape : TTA–602
    • Test point : TP8(Lch), TP9(Rch)
    • Input signal : 1kHz / 8kHz (LINE IN)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8, TP9 becomes (-20VU) -26dBV. Record and Play back the 1kHz and 8kHz signals so that the output of the 8kHz signal is 0dB +4dB/-6dB.

16. REC/PB Sensitivity Check (DECK 1)
    Settings : • Test tape : TTA–602
    • Test point : TP8(Lch), TP9(Rch)
    • Input signal : 1kHz (LINE IN)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at TP8,TP9 becomes (0VU) -6dBV. Record and play back the 1kHz and 8kHz signal and check that the output is -2 ± 3.5dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	Less than 10 / 9 / 9dB (LH)
(THD 3%)	(at 87.5 / 98.0 / 108.0MHz)
	Less than 11 / 10 / 10dB (EZ,K)
	(at 87.5 / 98.0 / 108.0MHz)
	Less than 9dB (V)
	(at 70.0MHz)
S/N 50dB Quieting sensitivity :	
	Less than 38dB (EZ,K)
	Less than 35dB (LH,V)
	(at 98.0MHz)
Signal to noise ratio :	Mono : More than 68dB (98.0MHz)
	Stereo: More than 66dB (98.0MHz)
Distortion :	Mono : Less than 1.2% (98.0MHz)
	Stereo: Less than 2.0% (98.0MHz)
Auto stop level :	25dB ± 10dB
Stereo separation :	More than 25dB (LH,V)
	More than 12dB (EZ,K)
	(at 98.0MHz)
Intermediate frequency :	10.7MHz

<LW SECTION> (EZ,K)

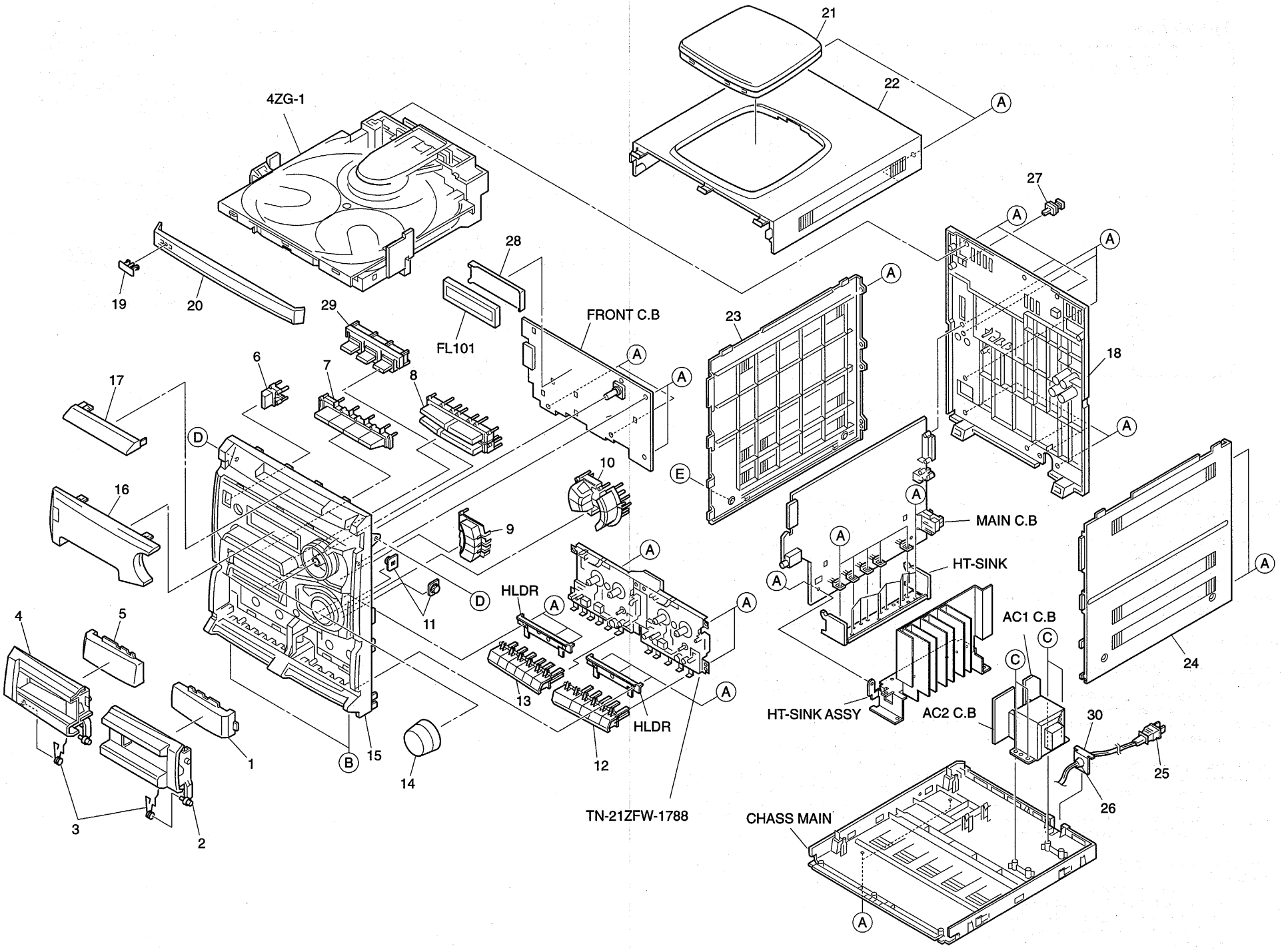
Sensitivity :	Less than 70dB (at 144kHz)
	Less than 66dB (at 198kHz)
	Less than 66dB (at 290kHz)

<MW SECTION>

Sensitivity :	Less than 60dB (at 603kHz)
	Less than 58dB (at 1000kHz)
	Less than 58dB (at 1404kHz)
Signal to noise ratio :	More than 36dB (at 1000kHz)
Distortion :	Less than 1.5% (at 1000kHz)
Auto stop level :	52dB +10dB / -15dB (at 1000kHz)
Intermediate frequency :	450kHz

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.35% (W.R.M.S)
Take-up torque :	30 ~ 60g-cm (FWD)
Back tension :	2 ~ 5g-cm
PB output level :	2.8V± 3dB
REC/PB output level :	1.8V± 3dB
Distortion (REC/PB) :	Less than 2.0% (NORM)
Noise level (PB) :	Less than 30mV (NORM)
Noise level (REC/PB) :	Less than 30mV (NORM)
Erasing ratio :	More than 60dB (at 125Hz, +10VU)
Test tape :	TTA-602 (NORMAL)

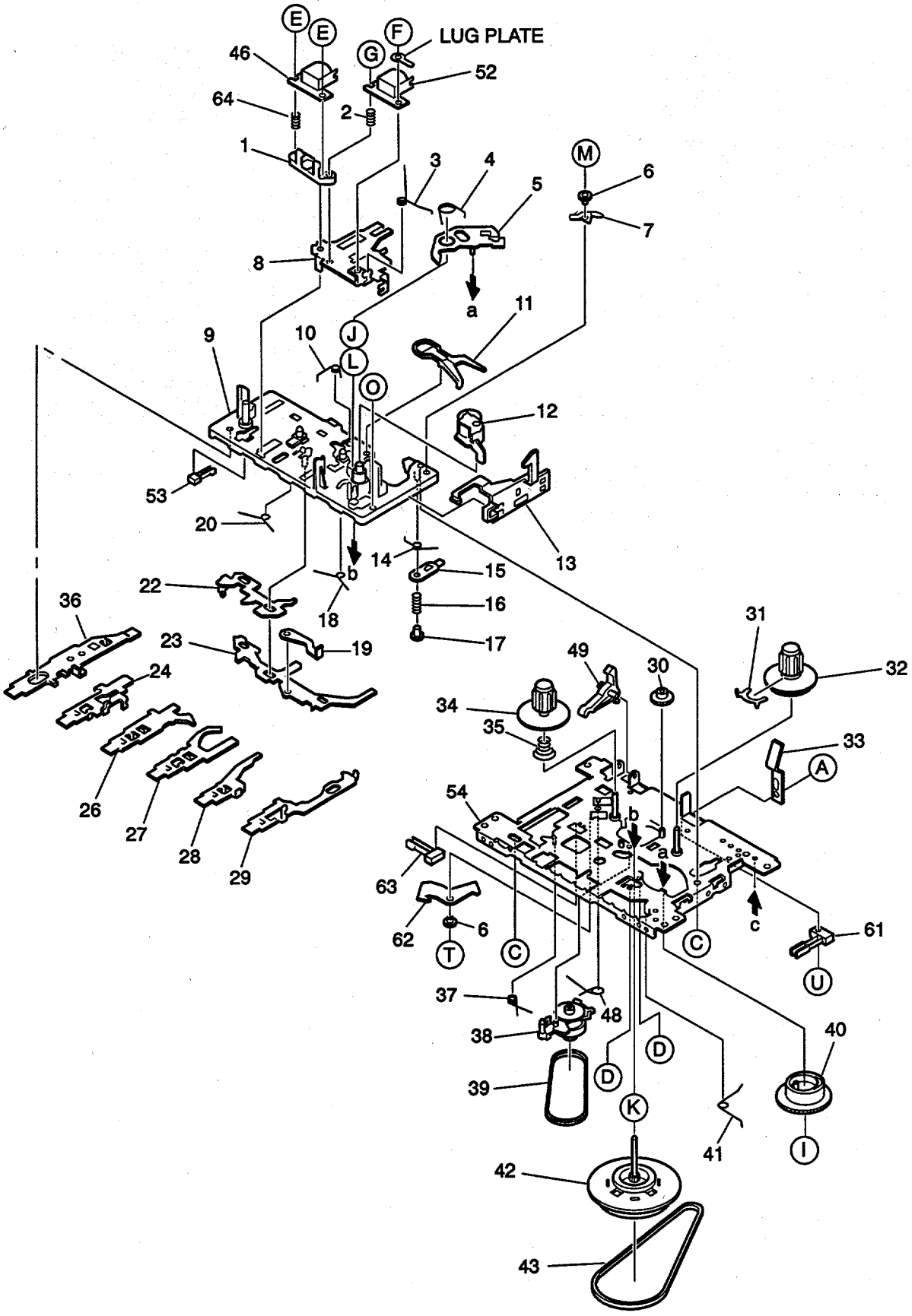

21
22
4ZG-1
27
28
19
20
29
FRONT C.B
FL101
23
18
6
7
8
17
10
16
9
MAIN C.B
HT-SINK
HLDR
11
AC1 C.B
24
4
5
13
HLDR
HT-SINK ASSY
AC2 C.B
30
25
1
15
14
12
26
3
2
TN-21ZFW-1788
CHASS MAIN

MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-NF9-014-010		WINDOW,CASS 1
2	88-NF9-004-110		BOX,CASS U2
3	82-NF7-218-010		SPR-T,CASS
4	88-NF9-003-110		BOX,CASS U1
5	88-NF9-015-010		WINDOW,CASS 2
6	88-NF9-005-010		KEY,POWER
7	88-NF9-008-010		KEY,FUN
8	88-NF9-011-010		KEY,OPE
9	88-NF9-007-010		KEY,GEQ
10	88-NF9-006-010		KEY,CD
11	86-NFZ-231-010		DMPR,70
12	88-NF9-009-110		KEY,CASS 1
13	88-NF9-010-110		KEY,CASS 2
14	88-NF9-012-010		KNOB,RTRY VOL
15	88-NF9-022-010		CABI,FR LH<K,V,202EZ>
15	88-NF9-022-110		CABI,FR LH<LH>
15	88-NF9-024-010		CABI,FR RDS<203EZ>
16	88-NF9-038-110		WINDOW,DISP K<K,V,202EZ>
16	88-NF9-081-110		WINDOW,DISP LHC1<LH>
16	88-NF9-037-110		WINDOW,DISP RDS<203EZ>
17	88-NF9-016-010		WINDOW,CD
18	88-NF9-076-010		CABI,REAR EZSTNM<202EZ>
18	88-NF9-077-010		CABI,REAR EZSTNM RDS<203EZ>
18	88-NF9-045-010		CABI,REAR KSTNC<K>
18	88-NF9-057-010		CABI,REAR LHJSC1M<LH>
18	88-NF9-046-010		CABI,REAR VJSTNC<V>
19	82-NE6-067-010		BADGE,AIWA 30N
20	88-NF9-018-010		PANEL,TRAY
21	86-NFZ-001-010		WINDOW,TOP
22	87-NF8-045-010		PANEL,TOP ST
23	88-NF9-030-010		PANEL,LEFT
24	88-NF9-031-010		PANEL,RIGHT<V,LH>
24	88-NF9-082-010		PANEL,RIGHT HI<K,EZ>
⚠ 25	87-A80-007-110		AC CORD ASSY,K BLK<K>
⚠ 25	87-050-079-010		AC-CORD ASSY,E<EXCEPT K>
26	87-085-185-010		BUSHING, AC CORD (E)
27	84-ZG1-245-210		CAP,OPTICAL
28	82-NF7-210-110		GUIDE,FL
29	88-NF9-017-010		KEY,RDS<203EZ>
30	86-NFZ-204-010		HLDR,BUSHING<V,LH>
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-067-758-010		BVT2+3-12 W/O SLOT<V,LH>
B	87-067-688-010		BVTT+3-6<K,EZ>
C	87-078-019-010		S-SCREW,IT+4-6<K,EZ>
C	87-741-172-410		UT2+4-12 W/O SLOT<V,LH>
D	87-721-097-410		QT2+3-12 GLD
E	87-067-641-010		UTT2+3-8(W/O SLOT)BL

TAPE MECHANISM EXPLODED VIEW 1 / 2

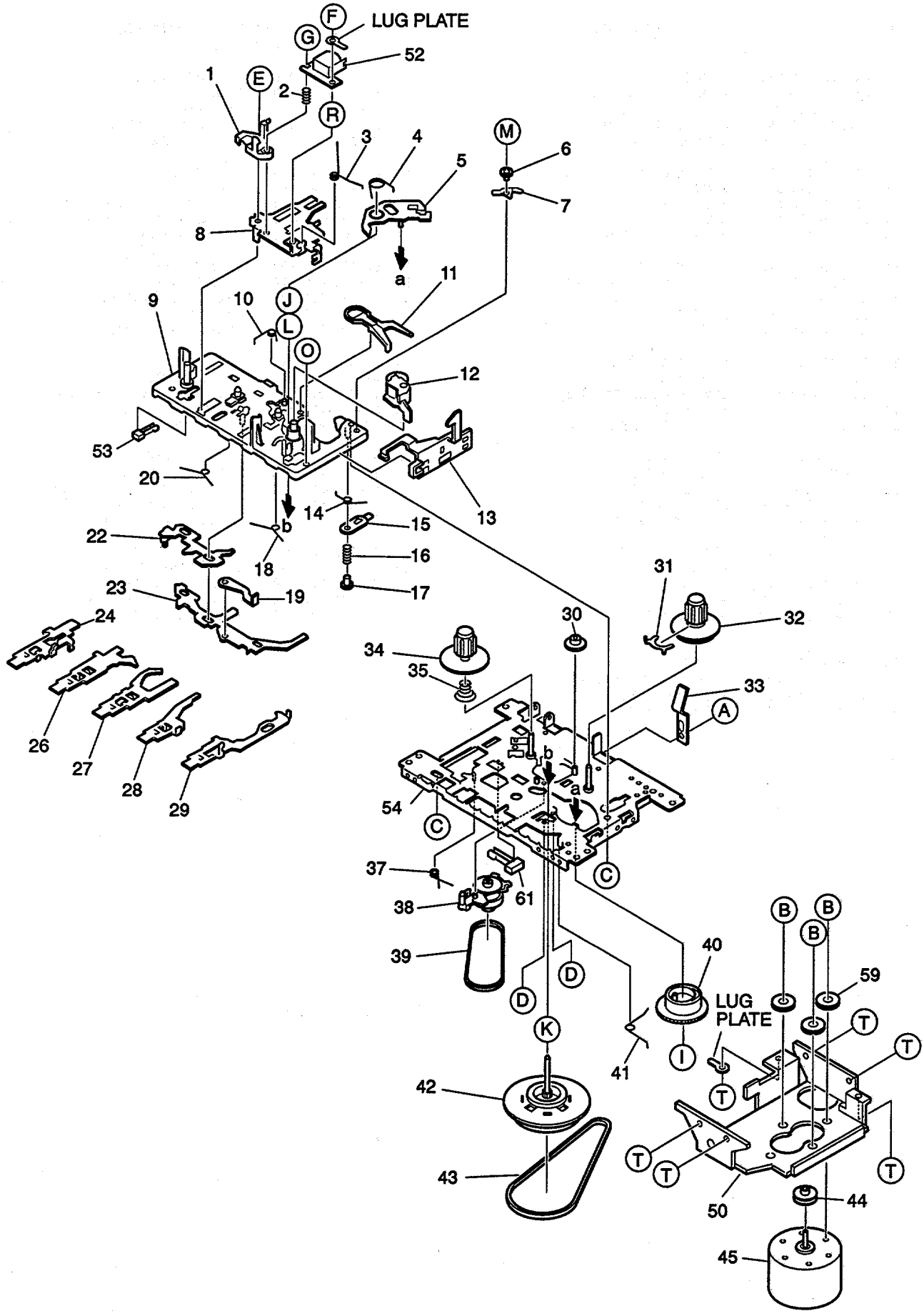


TAPE MECHANISM PARTS LIST 1 / 2

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-060		HEAD BASE
2	S1-821-030-070		AZIMUTH SPRING
3	S1-921-030-090		PANEL P SPRING
4	S1-921-260-050		GEAR PLATE SPRING
5	S1-921-265-020		GEAR PLATE ASSY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-921-030-140		HEAD PANEL
9	S1-921-143-170		BASE ASSY
10	S1-921-141-8A0		M CONTROL SPRING
11	S1-921-260-4A0		SENSING LEVER
12	S1-921-043-100		PINCH ROLLER ARM ASSY
13	S1-921-130-020		EJECT SLIDE LEVER
14	S1-921-141-3A0		P CONTROL SPRING
15	S1-921-140-550		PAUSE LEVER(E)
16	S1-921-140-120		PAUSE LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER
18	S1-921-140-150		BUTTON LEVER SPRING(B)
19	S1-921-140-640		E KICK LEVER
20	S1-921-140-140		BUTTON LEVER SPRING(A)
22	S1-921-140-090		SWITCH ACTUATOR
23	S1-921-140-080		PUSH BUTTON ACTUATOR
24	S1-921-140-230		PLAY BUTTON LEVER
26	S1-921-140-240		REW BUTTON LEVER
27	S1-921-140-250		FF BUTTON LEVER
28	S1-921-140-660		STOP BUTTON LEVER
29	S1-921-140-610		PAUSE BUTTON LEVER
30	S1-821-100-700		FF GEAR
31	S1-921-050-060		SENSER
32	S1-921-053-100		TAKE UP REEL ASSY
33	S1-829-100-010		PACK SPRING
34	S1-921-050-150		S REEL HUB
35	S1-921-050-220		BACK TENSION SPRING
36	S1-921-140-220		REC BUTTON LEVER
37	S1-921-140-170		P.S.LEVER SPRING
38	S1-921-073-080		RF CLUTCH ASSY
39	S1-821-070-110		RF BELT
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-093-210		FLYWHEEL ASSY
43	S1-921-090-240		MAIN BELT
46	S6-202-140-190		E,HEAD
48	S1-921-140-210		REC BUTTON LEVER SPRING
49	S1-821-100-690		RECORD SAFETY LEVER
52	S6-202-010-920		R.P HEAD MS15R-AK0N1
53	S6-401-011-490		LEAF SW MSW-1541T
54	S1-921-015-010		CHASSIS ASSY
61	S6-401-010-380		LEAF SWITCH MSW-1275
62	S1-921-020-010		REC ARM
63	S6-401-011-610		LEAF SW MSW-17820MVE1
64	S1-821-030-080		EH SPRING
A	S9-P04-200-310		TAPPING SCREW 2-3
C	S9-B10-200-510		P TAPPING BIND ACREW M2-5
D	S9-C07-204-510		SCREW,TAPPING M2-4.5
E	S9-P17-205-710		+-CAP SCREW M2-7.5
F	S9-B01-200-310		+ BIND SCREW M2-3
G	S9-F08-200-710		AZIMUTH SCREW M2-7
I	S9-W02-300-100		P WASHER CUT 1.2-3.8-0.3
J	S9-W02-500-100		P WASHER CUT 1.45-3.8-0.5
K	S9-W01-400-100		P WASHER 2-3.5-0.4
L	S9-W01-130-200		P WASHER 2.1-4-0.13
M	S9-P08-203-010		PS TAPPING SCREW M2-5
O	S9-P05-200-610		S TAPPING SCREW M2-6
T	S9-P04-200-410		C TAPPING SCREW M2-4
U	S9-P04-200-510		C TAPPING SCREW M2-5

TAPE MECHANISM EXPLODED VIEW 2 / 2



TAPE MECHANISM PARTS LIST 2 / 2

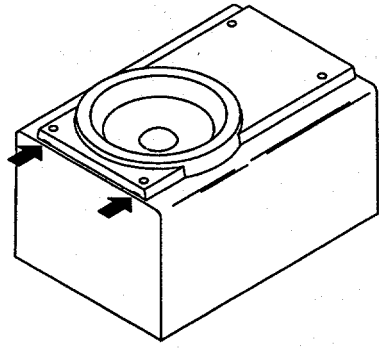
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-4A0		HEAD BASE
2	S1-821-030-070		AZIMUTH SPRING
3	S1-921-030-090		PANEL P SPRING
4	S1-921-260-050		GEAR PLATE SPRING
5	S1-921-265-020		GEAR PLATE ASSY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-921-030-110		HEAD PANEL
9	S1-921-143-010		BASE ASSY
10	S1-921-141-8A0		M CONTROL SPRING
11	S1-921-260-4A0		SENSING LEVER
12	S1-921-043-100		PINCH ROLLER ARM ASSY
13	S1-921-130-020		EJECT SLIDE LEVER
14	S1-921-141-3A0		P CONTROL SPRING
15	S1-921-140-550		PAUSE LEVER(E)
16	S1-921-140-120		PAUSE LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER
18	S1-921-140-150		BUTTON LEVER SPRING(B)
19	S1-821-011-590		E KICK LEVER
20	S1-921-140-140		BUTTON LEVER SPRING(A)
22	S1-921-140-090		SWITCH ACTUATOR
23	S1-921-140-080		PUSH BUTTON ACTUATOR
24	S1-921-140-230		PLAY BUTTON LEVER
26	S1-921-140-240		REW BUTTON LEVER
27	S1-921-140-250		FF BUTTON LEVER
28	S1-921-140-260		STOP BUTTON LEVER
29	S1-921-140-610		PAUSE BUTTON LEVER
30	S1-821-100-700		FF GEAR
31	S1-921-050-060		SENSER
32	S1-921-053-100		TAKE UP REEL ASSY
33	S1-829-100-010		PACK SPRING
34	S1-921-050-150		S REEL HUB
35	S1-921-050-220		BACK TENSION SPRING
37	S1-921-140-170		P.S.LEVER SPRING
38	S1-921-073-080		RF CLUTCH ASSY
39	S1-821-070-110		RF BELT
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-093-240		FLYWHEEL ASSY
43	S1-921-090-240		MAIN BBELT
44	S1-921-120-130		MOTOR PULLEY
45	S6-002-030-290		MOTOR EG530YD-2BH
50	S1-921-120-110		MOTOR BRACKET
52	S6-202-010-920		R.P HEAD MS15R-AK0N1
53	S6-401-011-490		LEAF SW MSW-1541T
54	S1-921-015-010		CHASSIS ASSY
59	S1-820-130-060		MOTOR RUBBER
61	S6-401-011-610		LEAF SW MSW-17820MVE1
A	S9-P04-200-310		TAPPING SCREW 2-3
B	S1-821-120-020		MOTOR COLLER SCREW
C	S9-B10-200-510		P TAPPING BIND ACREW M2-5
D	S9-C07-204-510		SCREW,TAPPING M2-4.5
E	S9-P01-200-610		SCREW M2-6
F	S9-B01-200-310		+ BIND SCREW M2-3
G	S9-F08-200-710		AZIMUTH SCREW M2-7
I	S9-W02-300-100		P WASHER CUT 1.2-3.8-0.3
J	S9-W02-500-100		P WASHER CUT 1.45-3.8-0.5
K	S9-W01-400-100		P WASHER 2-3.5-0.4
L	S9-W01-130-200		P WASHER 2.1-4-0.13
M	S9-P08-203-010		PS TAPPING SCREW M2-5
O	S9-P05-200-610		S TAPPING SCREW M2-6
T	S9-P04-200-410		C TAPPING SCREW M2-4

SPEAKER DISASSEMBLY INSTRUCTIONS

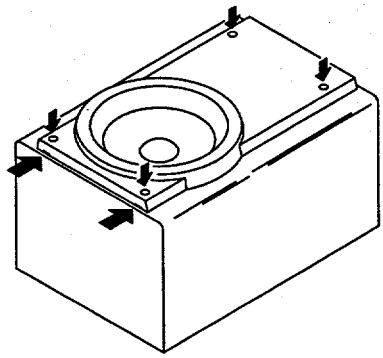
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



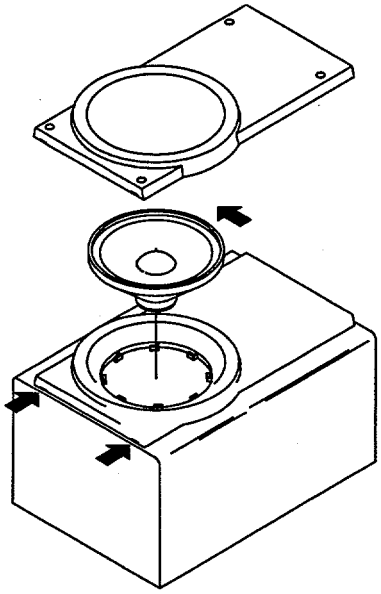
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

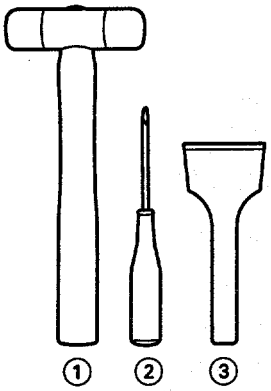


Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



Type.4



TOOLS

① Plastic head hammer
② (⊖) flat head screwdriver
③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.

2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.

3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

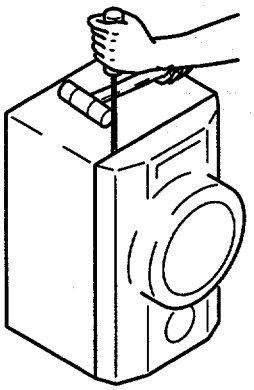


Fig-1

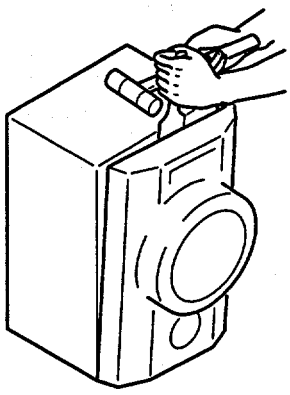


Fig-2

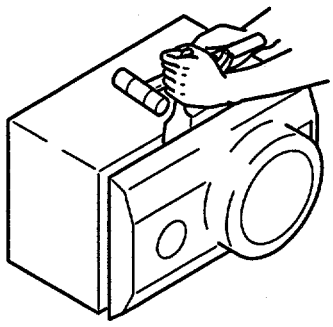


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST
(SX–NS202 <YSTNL,YSTNC,YJSTNC,YSTNYI,YSTNY2>)
(SX–SNS202 <YLJSCM>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NS7-611-010		CORD, SPKR
2	88-NSK-001-010		PANEL, FR
3	88-NSK-002-010		PANEL, BA
4	88-NSK-610-010		SPKR, CERAMIC ASSY
5	88-NSK-601-110		SPKR, W 120<YSTNC,YSTNL>
5	88-NSK-603-110		SPKR, W 120<YJSTNC,YLJSCM>
5	88-NSK-604-010		SPKR, W 120<YSTNY1,YSTNY2>

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
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