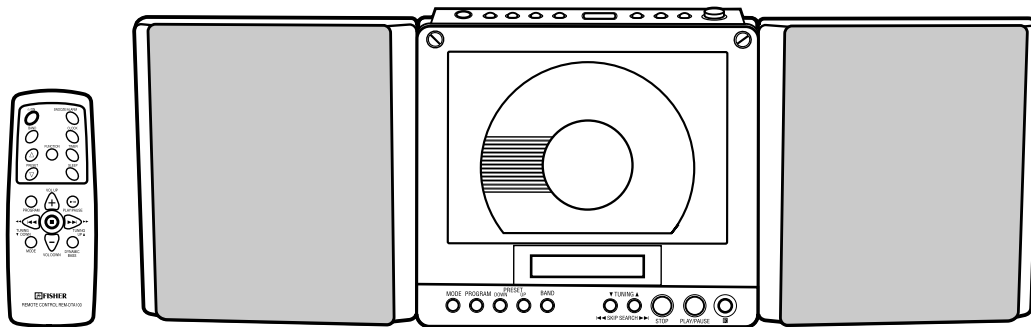


**Service Manual****Desktop Audio System****DTA-100 (DE)****PRODUCT CODE No.**  
**164 065 06****CONTENTS**

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## SPECIFICATIONS

### (CD PLAYER SECTION)

Channels ..... 2 channels stereo  
 S/N ratio ..... 60 dB  
 Wow & Flutter ..... Below measurable limits  
 Sampling frequency ..... 44.1 kHz  
 Quantization ..... 16 bits linear/ch  
 Pickup light source ..... Semi-conductor laser  
 Pickup wave length ..... 790 nm  
 Laser output ..... Continuous wave max. 0.6 mW

### (RADIO SECTION)

Tuning range ..... FM : 87.5 - 108 MHz  
 AM : 522 - 1,611 kHz(9 kHz step)

### (GENERAL SECTION)

Power output ..... AC : 1.5 W/ch (10% T.H.D)  
 Speaker ..... 8 cm x 2, 4ohm  
 Terminal impedance ..... PHONES : 32 ohms  
 Power source ..... DC : 9 V (AC adaptor)  
 Dimensions ..... 430 (W) x 150 (H) x 50 (D) mm  
 Weight (approx.) ..... 1.5 kg (Without including batteries)

This is a basic specifications.

Specifications subject to change without notice.

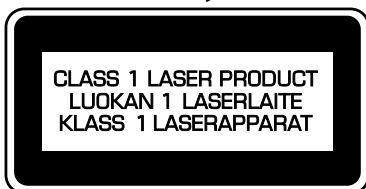
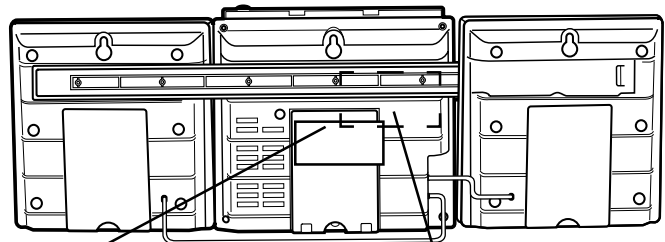
## LASER BEAM SAFETY PRECAUTION

- Pickup that emits a laser beam is used on this CD section.

### CAUTION :

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

LASER OUTPUT ..... 0.6 mW Max. (CW)  
 WAVE LENGTH ..... 790 nm



CAUTION - INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

ADVARSEL - USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDSÆTTELSE FOR STRÅLING.

VARNING - OSYNLIG LASER STRÅLNING NÅR DENNA DEL ÅR ÖPPNAD OCH SPÄRR ÅR URKOPPLAD. STRÅLEN ÅR FARLIG.

VORSICHT - UNSICHTBARE LASERSTRAHLUNG TRIT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.

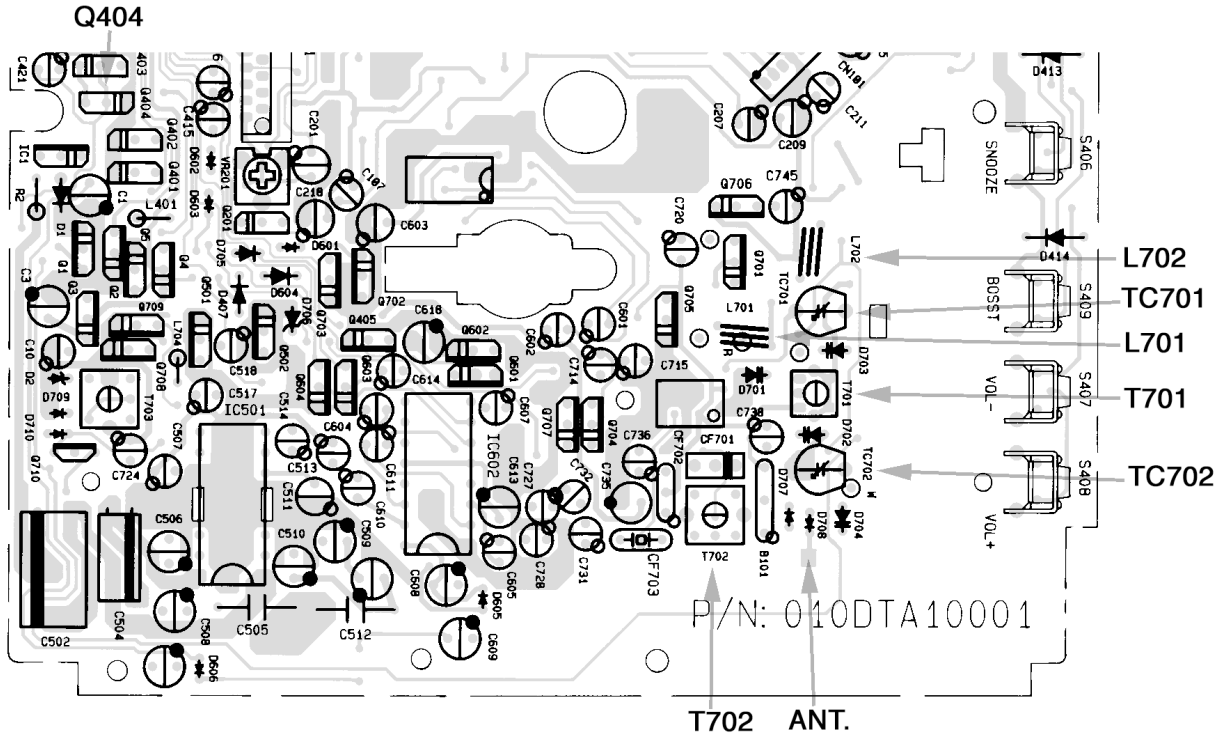
VARO - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

# TUNER ADJUSTMENTS

This is a basic adjustments.

- Use a plastic screw driver for adjustments.
- Adjust the intermediate frequency of AM and FM to the frequency of ceramic filter.
- Set of unit
  - Supply voltage : DC 12V
  - Speaker : 8 ohms
  - Standard output : 50 mW
  - Function switch : RADIO

## a. PARTS LOCATION



## b. AM ADJUSTMENT

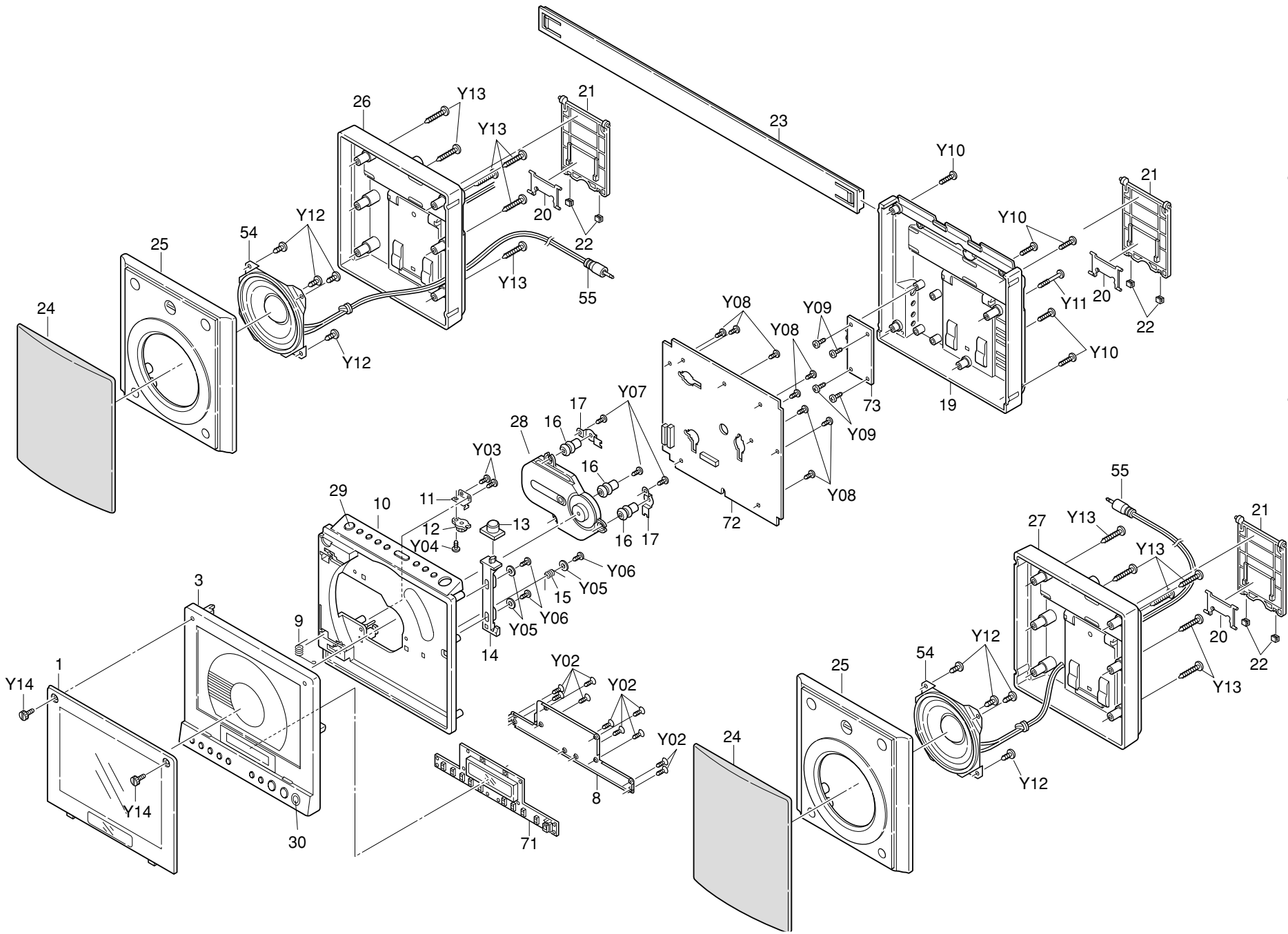
Band switch : AM

Adjusting Circuit	Equipment Connection	Step	Gen. freq.	Set Radio freq. To	To obtain MAX. output adjust. Measurement
IF		1	450kHz	1611kHz	T702
AM band	Connect Digital Voltmeter to Collector of Q404	2	522kHz	522kHz	T701 (Adjust the voltage to 1.42 +/- 0.2V)
		3	1611kHz	1611kHz	Confirm the voltage to 7.05 +/- 0.3V
Tracking	Connect VTVM and 4 ohm load across speaker terminals. Signal Generator coupled by a loop antenna. Output level must be below reference output.	4	603kHz	603kHz	L703 ant. Coil.
		5	1404kHz	1404kHz	TC702 ANT-TRIMMER.
		6	Repeat steps 4 and 5 obtain Maximum output.		

## c. FM ADJUSTMENT

Band switch : FM

Adjusting Circuit	Equipment Connection	Step	Gen. freq.	Set Radio freq. To	To obtain MAX. output adjust. Measurement
FM band	Connect Digital Voltmeter to Collector of Q404	1	87.5MHz	87.5MHz	T701 (Adjust the voltage to 4 +/- 0.2V)
		2	107.9MHz	107.9MHz	Confirm the voltage to 8.1 +/- 0.2V
Tracking	Connect VTVM and 4 ohm load across speaker terminals. Signal Generator to ANT. Output level must be below reference output.	3	90.1MHz	90.1MHz	L702(FM RF coil)
		4	106.1MHz	106.1MHz	TC701 ANT-TRIMMER.
		5	Repeat steps 3 and 4 obtain Maximum output.		



## PARTS LIST

### PRODUCT SAFETY NOTICE

EACH PRECAUTION IN THIS MANUAL SHOULD BE FOLLOWED DURING SERVICING. COMPONENTS IDENTIFIED WITH THE IEC SYMBOL  $\Delta$  IN THE PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN OF SPECIAL SIGNIFICANCE. WHEN REPLACING A COMPONENT IDENTIFIED, USE ONLY THE REPLACEMENT PARTS DESIGNATED, OR PARTS WITH THE SAME RATINGS OF RESISTANCE, WATTAGE OR VOLTAGE THAT ARE DESIGNATED IN THE PARTS LIST IN THIS MANUAL. LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS MUST BE MADE TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE PRODUCT TO THE CUSTOMER.

**CAUTION :** Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.  
 Regular type resistors are less than 1/4W carbon type and chip resistors.  
 Regular type capacitors are less than 50V and less than 1000 $\mu$ F of Ceramic type and Electrolytic type.

### PACKING & ACCESSORIES

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
	645 053 4324	INSTRUCTION MANUAL	Y07	645 045 5469	TAPPING SCR 2X6, MECH MTG PLATE TO F CAB
	645 053 4331	CARTON INNER	Y08	645 045 5469	TAPPING SCR 2X6, MAIN PCB TO F CAB
	645 031 1703	POLYBAG	Y09	645 045 5469	TAPPING SCR 2X6, JACK PCB TO REAR CAB
	645 045 5636	POLY BAG,I/B	Y10	645 031 3684	TAPPING SCR2X10,REAR CAB
	645 045 5629	POLY BAG,MAIN UNIT	Y11	645 045 5483	TAPPING SCR 2X23,REAR CAB
	645 045 6770	POLYFOAM,SPEAKER PORTECT	Y12	645 045 5490	TAPPING SCR 3X6,SPK TO SPK F CAB
	645 051 1639	POLYFOAM SHEET	Y13	645 045 5506	TAPPING SCR 3X20, SPK REAR CAB TO SPK CAB
	645 051 1646	POLYFOAM SHEET	Y14	645 045 5551	PHOTO LENS SCR NUT,W/NI-PLATED
	645 053 4355	CARTON OUTER FOR 4 SE			
	645 045 6114	GIFT BOX HANDLE			
$\Delta$	645 051 1547	AC ADAPTOR			
	645 045 6732	REMOTE CTL,FISHER			
	645 045 4646	ASSY SPK NET B			

### CABINET & CHASSIS

REF.NO.	PART NO.	DESCRIPTION
1	645 045 5346	CD DOOR LENS
3	645 045 4714	ASSY CD LID
8	645 045 6015	METAL COVER,DISPLAY PCB
9	645 045 5544	CD LID OPEN SPRING
10	645 045 4684	ASSY CABINET FRONT
11	645 045 6008	GEAR MOUNTING BKT
12	645 045 6053	GEAR DAMPER,29TO-E
13	645 045 5964	CD DOOR OPEN KNOB
14	645 045 7548	DOOR OPEN HOOK
15	645 045 5537	OPEN KNOB SPRING
16	645 042 1532	CUSHION RUBBER,CD MECHA
17	645 045 6039	MECH MTG PLATE A
19	645 045 4707	ASSY CABINET REAR
20	645 045 5353	STAND ADAPTOR,SPK L/R, UNIT
21	645 045 5261	STAND REAR CAB UNIT/SPK
22	645 045 5698	STAND RUBBER FOOT NATURE RUBB
23	645 051 1455	ASSY MOUNTING BAR,SCREW
24	645 045 4639	ASSY SPK NET A
25	645 045 4653	ASSY SPK FRONT
26	645 053 4812	ASSY SPK REAR L
27	645 053 4805	ASSY SPK REAR R
28	645 045 5926	CD MECHA TPP33B,KIT
29	645 045 5971	TOP FUNCTION KNOB
30	645 045 5438	SENSOR LENS,W/TAPE

### FIXING PARTS

REF.NO.	PART NO.	DESCRIPTION
Y02	645 036 5911	TAPPING SCR 1.7X4,DISPLAY BD
Y03	645 045 5513	MACHINE SCR 2X3, GEAR TO GEAR MTG BKT
Y04	645 042 1563	TPP SCR 2X4, GEAR MTG BKT TO F CAB
Y05	645 045 5520	FBIRE WASHER,DOOR OPEN HOOK
Y06	645 042 1563	TPP SCR 2X4, DOOR OPEN HOOK TO F CAB

### ELECTRICAL-PARTS

REF.NO.	PART NO.	DESCRIPTION
54	645 045 5209	SPEAKER 3",W/BLACK CAP
55	645 045 5902	SPEAKER WIRE, W/MONO PLUG SPK L/R

### DISPLAY P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
71	614 316 3459	ASSY,PWB,DISPLAY(Only initial)
D0901	645 031 3653	DIODE 1N4148
D0902	645 031 3653	DIODE 1N4148
D0903	645 031 3653	DIODE 1N4148
D0904	645 031 3653	DIODE 1N4148
D0905	645 031 3653	DIODE 1N4148
D0906	645 031 3653	DIODE 1N4148
D0907	645 031 3653	DIODE 1N4148
D0908	645 031 3653	DIODE 1N4148
D0909	645 045 5797	LED
D0910	645 045 5797	LED
D0911	645 045 5797	LED
D0912	645 045 5797	LED
IC901	645 045 4905	RPM6938-V4
S0901	645 045 5155	SW TACT,PLAY
S0902	645 045 5155	SW TACT,STOP
S0903	645 045 5155	SW TACT,TU-DN
S0904	645 045 5155	SW TACT,TU-UP
S0905	645 045 5155	SW TACT,MODE
S0906	645 045 5155	SW TACT,PROG
S0907	645 045 5155	SW TACT,PRESET-DN
S0908	645 045 5155	SW TACT,PRESET-UP
S0909	645 045 5155	SW TACT,BAND
	645 045 5278	DISPLAY BRACKET,037DTA100240AA
	645 045 5322	BACK LIGHT LENS,037DTA100470AA
	645 045 5919	LCD DISPLAY,SDT-A232-TP-O TN POS
	645 045 6022	LCD BRACKET
	645 045 6060	PVC SPL SHEET
	645 045 6091	FLEXIBLE WIRE 18P, TO MAIN BD CN401
	645 045 6107	FLEXIBLE WIRE 19P, TO MAIN BD CN402
	645 036 5942	TAPPING SCR1.7X2,DISPLAY
	645 045 7678	ZEBRA CONNECTOR

# PARTS LIST

## CD MAIN P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
72	614 320 9515	ASSY,PWB,CD MAIN, DOUBLE SIDE(Only initial)	L0402	645 045 4738	FIXED INDUCTOR COIL, AL0305-101K-09-S
B0101	645 045 4783	BAND PASS FLTER,BPMB6A FM BAND	L0701	645 045 4752	FM COIL,FM OSC
C0001	403 366 9104	ELECT 220U M 50V,6.3X7MM	L0702	645 045 4745	FM COIL,FM RF
CF701	645 045 4790	CERAMIC FILTER,LPU450B	L0703	645 045 4769	AM COIL
CF702	645 045 4806	CERAMIC FILTER,L10.7MA5-A	L0704	645 045 4738	FIXED INDUCTOR COIL, AL0305-101K-09-S
CF703	645 045 4813	CERAMIC DISC,JT10.7MG18	Q0001	645 045 5001	TR 2SB892,PNP
CN101	645 042 1761	HEADER 6P,B6B-ZR	Q0002	645 045 5087	TR DTC114ES,NPN
CN201	645 036 5645	HEADER 16P, FFC/DIP TYPE UP W/O LOCK	Q0003	645 045 5094	TR KTC3205Y,NPN
CN401	645 045 5940	HEADER 18P,FFC/DIP TYPE	Q0004	645 045 5001	TR 2SB892,PNP
CN402	645 045 5933	HEADER 19P,FFC/DIP TYPE	Q0005	645 045 5087	TR DTC114ES,NPN
D0001	645 031 3646	DIODE 1N4001,RECTIFIER	Q0006	645 045 5049	TR 8050C,NPN
D0002	645 045 4950	ZENER DIODE 6V8,MTZ J6.8B/C	Q0201	645 045 5070	TR KTA1266Y,PNP
D0003	645 045 4943	ZENER DIODE 5V6,MTZ J5.6B/C	Q0401	645 045 5032	TR 9014C,NPN
D0401	645 031 3653	DIODE 1N4148	Q0402	645 045 5032	TR 9014C,NPN
D0406	645 031 3646	DIODE 1N4001,RECTIFIER	Q0403	645 045 5100	TR KTC3199L GR,NPN
D0407	645 031 3653	DIODE 1N4148	Q0404	645 045 5100	TR KTC3199L GR,NPN
D0408	645 031 3653	DIODE 1N4148	Q0405	645 045 5032	TR 9014C,NPN
D0409	645 031 3653	DIODE 1N4148	Q0501	645 045 5032	TR 9014C,NPN
D0410	645 031 3653	DIODE 1N4148	Q0502	645 045 5032	TR 9014C,NPN
D0411	645 031 3653	DIODE 1N4148	Q0601	645 045 5032	TR 9014C,NPN
D0412	645 031 3653	DIODE 1N4148	Q0602	645 045 5032	TR 9014C,NPN
D0413	645 031 3653	DIODE 1N4148	Q0603	645 045 5087	TR DTC114ES,NPN
D0414	645 031 3653	DIODE 1N4148	Q0604	645 045 5087	TR DTC114ES,NPN
D0415	645 031 3653	DIODE 1N4148	Q0701	645 045 5025	TR 9018G,NPN
D0601	645 031 3653	DIODE 1N4148	Q0702	645 045 5063	TR 8550C,PNP
D0602	645 031 3653	DIODE 1N4148	Q0703	645 045 5087	TR DTC114ES,NPN
D0603	645 031 3653	DIODE 1N4148	Q0705	645 045 5087	TR DTC114ES,NPN
D0604	645 031 3653	DIODE 1N4148	Q0706	645 045 5087	TR DTC114ES,NPN
D0605	645 031 3653	DIODE 1N4148	Q0707	645 045 5087	TR DTC114ES,NPN
D0606	645 031 3653	DIODE 1N4148	Q0708	645 045 5056	TR C1815GR,NPN
D0701	645 045 4967	DIODE 1SV101,FM VARICAP	Q0709	645 045 5056	TR C1815GR,NPN
D0702	645 045 4974	DIODE 1SV149 B,FM VARICAP	Q0710	645 045 5018	TR 2SK118,FET
D0703	645 045 4967	DIODE 1SV101,FM VARICAP	S0401	645 045 5162	SW TACT,TS3100114C POWER
D0704	645 045 4974	DIODE 1SV149 B,FM VARICAP	S0402	645 045 5162	SW TACT,TS3100114C FUNCTION
D0705	645 031 3653	DIODE 1N4148	S0403	645 045 5162	SW TACT,TS3100114C CLOCK
D0706	645 045 4981	ZENER DIODE 3V,MTZ J3.0A/B	S0404	645 045 5162	SW TACT,TS3100114C SLEEP
D0707	645 031 3653	DIODE 1N4148	S0405	645 045 5162	SW TACT,TS3100114C TIMER
D0708	645 031 3653	DIODE 1N4148	S0406	645 045 5162	SW TACT,TS3100114C SNOOZE
D0709	645 031 3653	DIODE 1N4148	S0407	645 045 5162	SW TACT,TS3100114C VOL -
D0710	645 031 3653	DIODE 1N4148	S0408	645 045 5162	SW TACT,TS3100114C VOL +
IC001	645 045 4851	IC KIA78L05BP-AT, POSITIVE VOLTAGE REGULAT	S0409	645 045 5162	SW TACT,TS3100114C X-BASS
IC002	645 045 4851	IC KIA78L05BP-AT, POSITIVE VOLTAGE REGULAT	T0701	645 045 5131	AM OSC COIL,AM OSC 005-044P
IC101	645 045 4868	IC TA2092N, PWR DRIVE IC FOR CD PLAY	T0702	645 045 5124	AM IFT COIL,106-088
IC201	645 045 4875	IC TA2065F, CD FOCUS TRACKING SERVO	T0703	645 045 5117	DC-DC CONVERTER,7E6-1042
IC301	645 045 4882	IC TC9284BF, CD SINGLE CHIP PROCESSOR	TC701	645 045 4837	TRIMMER 10PF,CVN610
IC302	645 036 5782	IC BA4510F,OPERATIONAL AMP	TC702	645 045 4837	TRIMMER 10PF,CVN610
IC401	645 045 4929	IC TC9314F 049, SINGLE CHIP DIGITAL TUNI	VR201	645 045 5193	SEMI-FIXED,EVND8AA03B
IC501	645 045 4844	IC TA8227P, LOW FREQUENCY PWR AMP	X0301	645 045 4820	CERAMIC RESONATOR
IC601	645 045 4899	IC TC4052BFN, DIFF 4 CHANNEL MULTI/DEM	X0401	645 045 5216	CRYSTAL
IC602	645 045 4936	IC PT2256, DUAL ELECTRONIC VOL CTL		645 045 5957	HEAT SINK,FOR IC501
IC701	645 045 4912	IC TA2104AFN, 3V AM/FM 1 CHIP TUNER IC		645 045 5759	SHIELD WIRE AWG32,2C UL2851
J0401	645 031 1208	SW PUSH,CD DOOR		645 045 5780	COPPER WIRE,FOR C714
L0401	645 045 4738	FIXED INDUCTOR COIL, AL0305-101K-09-S		645 045 5414	SPONGE,FOR L701, L702
				645 045 4592	ASSY BAR ANT
				645 045 4776	FERRITE BAR,FOR L703
				645 045 5223	ANT BRACKET,037DM9096990AA

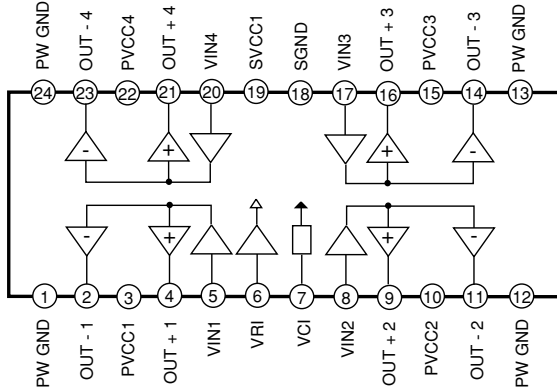
# PARTS LIST

## HEADPHONE P.W.BOARD ASSY

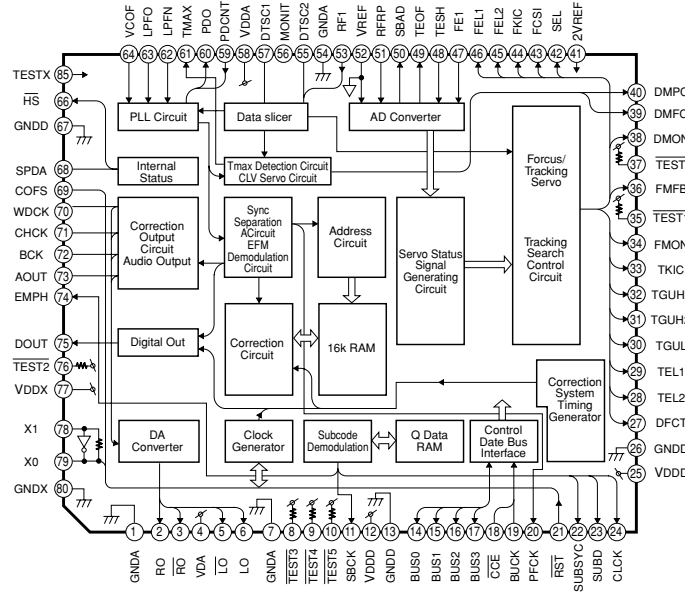
REF.NO.	PART NO.	DESCRIPTION
73	614 316 3466	ASSY,PWB,HEADPHONE(Only initial)
DO801	645 045 4998	DIODE 1N5391
JO801	645 045 5179	JACK STEREO,W/SW TC38-020-05-04
JO802	645 045 5186	JACK SPEAKER,MONO ST-002
JO803	645 045 5186	JACK SPEAKER,MONO ST-002
JO804	645 031 1253	JACK DC PWR,PWR UIC-18-073-02

## IC BLOCK DIAGRAM & DESCRIPTION

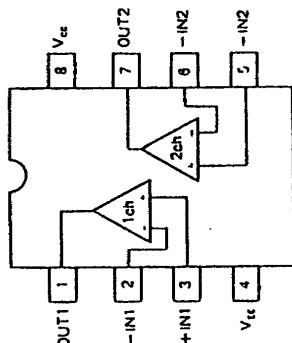
### IC101 TA2092 (POWER DRIVE)



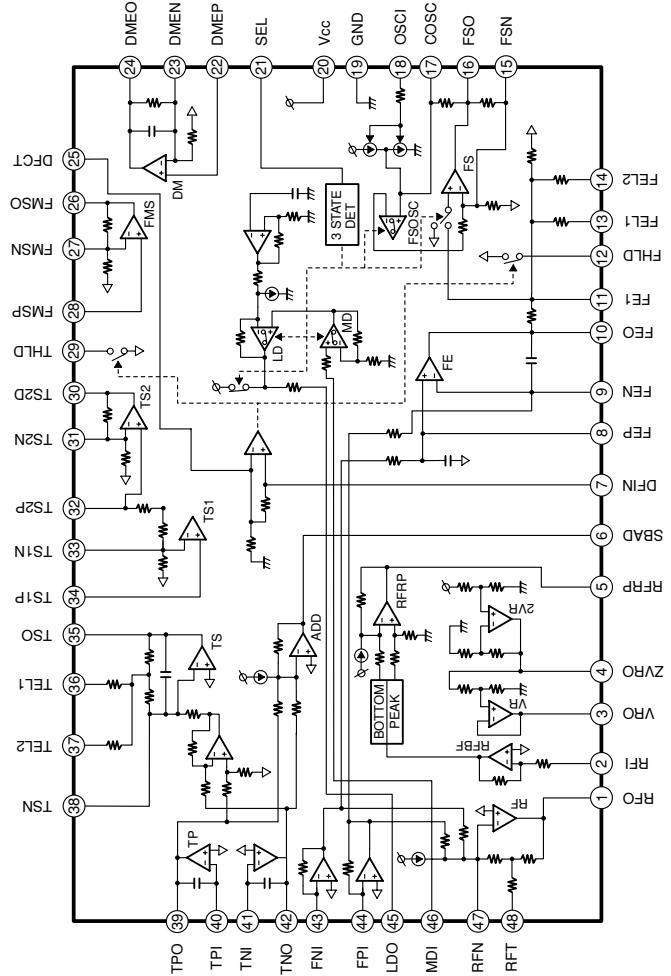
### IC301 TC9248 (CD SINGLE CHIP PROCESSOR)



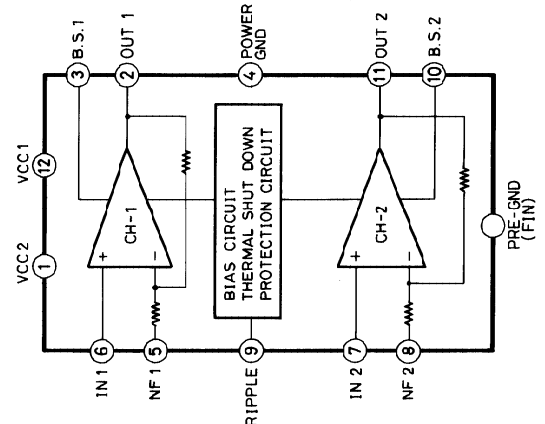
### IC302 BA4510F (OPE AMP)



### IC201 TA2065 (CD FORCUS TRACKING SERVO)



### IC401 TC9314F (DIGITAL TUNER)



# IC BLOCK DIAGRAM & DESCRIPTION

## IC301 TC9248 (CD SINGLE CHIP PROCESSER)

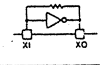
PIN FUNCTION

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARKS
1	GNDA	—	Analog grand terminal for DA converter (R channel)	—
2	RO	O	R channel data forward output terminal.	—
3	RO	O	R channel data reverse output terminal.	—
4	VDA	—	Analog power supply terminal for DA converter.	—
5	LO	O	L channel data reverse output terminal.	—
6	LO	O	L channel data forward output terminal.	—
7	GNDA	—	Analog grand terminal for DA converter (L channel)	—
8	TEST3	I	Test terminal. Normally, keep at "H" level or open.	With pull-up resistor
9	TEST4	I	Test terminal. Normally, keep at "H" level or open.	
10	TEST5	I	Test terminal. Normally, keep at "H" level or open.	
11	SBOK	O	Subcode Q data CRC check adjusting result output terminal. The adjusting result is OK at "H" level.	
12	VDDO	—	Digital supply voltage terminal. (+5V)	—
13	GNDD	—	Digital ground terminal.	—
14	BUS0	I/O	Command and data sending/receiving input/output terminals.	Schmitt input
15	BUS1			Open drain output
16	BUS2	I/O	Command and data sending/receiving chip enable signal input terminal. The bus line becomes active at "L" level.	Schmitt input
17	BUS3			Open drain output
18	CC	I	Command and data sending/receiving clock input terminal.	—
19	BUCK	I	Regeneration system frame periodic signal output terminal. 7.35kHz	—
20	PFCK	O	Reset input terminal. The internal system is reset at "L" level.	With pull-up resistor
21	SUBSYN	O	Subcode sync signal output terminal.	—
22	SUBD	O	Subcode P-W output terminals.	—
23	CLCK	J	Subcode P-W data readout clock input terminal.	—
24	VDDO	—	Digital supply voltage terminal.	—
25	GNDD	—	Digital ground terminal.	—
26	DFCT	O	Defect detection signal output terminal. VREF when defect is detected. Normally, HiZ.	—
27	TEL2	O	Tracking gain adjusting analog switch output terminals VREF or HiZ.	—
28	TEL1	O	Tracking servo loop low frequency phase compensator change-over analog switch output terminal.	—
29	TGUL	O	HiZ (gain up) when detecting shock. Normally, VREF.	—

PIN FUNCTION

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARKS																
31	TGUH2	O	Tracking servo loop middle/high frequency phase compensator change-over analog switch output terminals. HiZ (gain up) when detecting shock. Normally, VREF. TGUH1 is used at normal regeneration and TGUH2 is used at double speed regeneration.	—																
32	TGUH1		—																	
33	TKIC	O	Tracking actuator kick signal output terminal. Kicks in the outer circumferential direction at "H" level and in the inner circumferential direction at "L" level.	3-state output																
34	FMON	O	Feed servo ON/OFF analog switch output terminals. Servo on at "HiZ". Servo off at "VREF".	—																
35	TEST1	I	Test terminal. Normally, keep at "H" level or open.	With pull-up resistor																
36	FMFB	O	Feed motor FWD/BWD feeding control signal output terminal. Feed in the outer circumferential direction at "H" level and in the inner circumferential direction at "L" level.	3-state output																
37	TEST	I	Test terminal. Normally, keep at "H" level or open.	With pull-up resistor																
38	DMON	O	Disc motor driving circuit gain change-over analog switch output terminal.	—																
39	DMFC	O	Disc motor CLV servo AFC signal output terminal.	3-state output																
			<table border="1"> <thead> <tr> <th>COMMAND</th> <th>DMFC OUTPUT</th> <th>OPERATION</th> </tr> </thead> <tbody> <tr><td>DMFK</td><td>H</td><td>Motor acceleration</td></tr> <tr><td>DMSV</td><td>PWM</td><td>CLV servo ON</td></tr> <tr><td>DMBK</td><td>L</td><td>Motor deceleration</td></tr> <tr><td>DMOFF</td><td>VREF</td><td>CLV servo OFF</td></tr> </tbody> </table>		COMMAND	DMFC OUTPUT	OPERATION	DMFK	H	Motor acceleration	DMSV	PWM	CLV servo ON	DMBK	L	Motor deceleration	DMOFF	VREF	CLV servo OFF	
COMMAND	DMFC OUTPUT	OPERATION																		
DMFK	H	Motor acceleration																		
DMSV	PWM	CLV servo ON																		
DMBK	L	Motor deceleration																		
DMOFF	VREF	CLV servo OFF																		
40	DMPC	O	Disc motor CLV servo APC signal output terminal.	3-state output																
41	2VREF	I	Double times reference voltage input terminal. (VREF x 2)	—																
42	SEL	O	Servo mode indicating signal output terminal.	3-state output																
			<table border="1"> <thead> <tr> <th>SEL</th> <th>LD ON/OFF</th> <th>FOCUS SERVO</th> <th>OPERATION</th> </tr> </thead> <tbody> <tr><td>L</td><td>OFF</td><td>OFF</td><td>LD OFF</td></tr> <tr><td>HiZ</td><td>ON</td><td>OFF</td><td>Focus Search</td></tr> <tr><td>H</td><td>ON</td><td>ON</td><td>Normal play, etc. Focus Servo ON : FOK</td></tr> </tbody> </table>		SEL	LD ON/OFF	FOCUS SERVO	OPERATION	L	OFF	OFF	LD OFF	HiZ	ON	OFF	Focus Search	H	ON	ON	Normal play, etc. Focus Servo ON : FOK
SEL	LD ON/OFF	FOCUS SERVO	OPERATION																	
L	OFF	OFF	LD OFF																	
HiZ	ON	OFF	Focus Search																	
H	ON	ON	Normal play, etc. Focus Servo ON : FOK																	
43	FCSI	O	Focus actuator driving signal output terminal in the focus search mode.	3-state output																
			<table border="1"> <thead> <tr> <th>COMMAND</th> <th>FCSI OUTPUT</th> <th>OPERATION</th> </tr> </thead> <tbody> <tr><td>FORST</td><td>H</td><td>Lens gets for away from disc</td></tr> <tr><td>FOSET</td><td>L</td><td>Lens gets near disc</td></tr> <tr><td>Others</td><td>HiZ</td><td>Other than focus search</td></tr> </tbody> </table>		COMMAND	FCSI OUTPUT	OPERATION	FORST	H	Lens gets for away from disc	FOSET	L	Lens gets near disc	Others	HiZ	Other than focus search				
COMMAND	FCSI OUTPUT	OPERATION																		
FORST	H	Lens gets for away from disc																		
FOSET	L	Lens gets near disc																		
Others	HiZ	Other than focus search																		
44	FKIC	O	Focus actuator driving signal output terminal in the focus gain adjusting mode.	3-state output																
			<table border="1"> <thead> <tr> <th>COMMAND</th> <th>FKIC OUTPUT</th> <th>OPERATION</th> </tr> </thead> <tbody> <tr><td>FGASR</td><td>H</td><td>Lens gets for away from disc</td></tr> <tr><td>FGASS</td><td>L</td><td>Lens gets near disc</td></tr> <tr><td>Others</td><td>HiZ</td><td>Other than focus adjustment</td></tr> </tbody> </table>		COMMAND	FKIC OUTPUT	OPERATION	FGASR	H	Lens gets for away from disc	FGASS	L	Lens gets near disc	Others	HiZ	Other than focus adjustment				
COMMAND	FKIC OUTPUT	OPERATION																		
FGASR	H	Lens gets for away from disc																		
FGASS	L	Lens gets near disc																		
Others	HiZ	Other than focus adjustment																		
45	FEL2	O	Focus again adjusting analog switch output terminals.	—																
46	FEL1	O	Focus error signal input terminal.	Analog output																
47	FEI	I	Tracking error signal input sample holding analog switch input terminal.	—																
48	TESH	I	Tracking servo operation ON/OFF analog switch output terminal. VREF when the tracking servo is OFF.	—																
49	TEOF	O	Sub beam adding signal input terminal.	Analog input																
50	RFRP	I	RF ripple signal input terminal.	—																
51	VREF	I	Reference voltage input terminal. (+2.1V)	—																
52	RFI	I	RF signal input terminal.	Analog input																
53	GNDA	—	Analog ground terminal.	—																
54	DTSC2	O	Data slice control EFM signal passive output terminal.	—																
55	MONIT	O	Data slice control EFM signal negative output terminal.	—																
56	VDDA	—	Analog supply voltage terminal. (+5V)	—																
57	PDCNT	I	PDO output control terminal. At "L" level, PDO output is made to HiZ by force.	—																
58	PDO	O	Phase error signal output terminal between EFM signal and PLCK.	3-state output																

PIN FUNCTION

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARKS								
61	TMAX	O	TMAX signal output terminal. HiZ at time of system clock.	3-state output								
			<table border="1"> <thead> <tr> <th>TMAX PERIOD</th> <th>TMAX OUTPUT</th> </tr> </thead> <tbody> <tr><td>Longer than specified period</td><td>L</td></tr> <tr><td>Shorter than specified period</td><td>H (2VREF)</td></tr> <tr><td>Specified period</td><td>HiZ</td></tr> </tbody> </table>		TMAX PERIOD	TMAX OUTPUT	Longer than specified period	L	Shorter than specified period	H (2VREF)	Specified period	HiZ
TMAX PERIOD	TMAX OUTPUT											
Longer than specified period	L											
Shorter than specified period	H (2VREF)											
Specified period	HiZ											
62	LPFN	I	LPF amplifier inverting input terminal for PLL.	—								
63	LPFO	O	LPF amplifier output terminal for PLL.	—								
64	VCOF	I	VCO filter terminal.	—								
65	TESTX	I	Test terminal.	—								
66	HS	O	Double speed monitor output terminal. Double speed operation at "L" level.	—								
67	GNDD	—	Digital ground terminal.	—								
68	SPDA	O	Processor status signal output terminal. Correction process judging result, memory buffer capacity, etc.	—								
69	COFS	O	Correction system frame periodic signal output terminal. 7.35kHz.	—								
70	WDCK	O	Word clock output terminal. Normally, 88.2kHz.	—								
71	CHCK	O	Channel clock output terminal. Normally, 44.1kHz.	—								
72	BCK	O	Bit clock output terminal. Normally, 1.4112MHz.	—								
73	AOUT	O	Audio data output terminal.	—								
74	EMPH	O	Emphasis ON/OFF indication signal output terminal. Emphasis ON at "H" level.	—								
75	DOUT	O	Digital out output terminal.	—								
76	TEST2	I	Test terminal. Normally, keep at "H" level or open.	With pull-up resistor								
77	VDDX	O	Oscillator supply voltage terminal.	—								
78	XI	I	Crystal oscillator connecting terminal.									
79	XO	O										
80	GNDX	O	Oscillator grand terminal.	—								



## IC & TRANSISTOR VOLTAGES

This is a basic voltages.

### IC201 TA2065F

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	1.6	2	2	4	1.9	2	2.1	2	2	2	2	2	2	2	2	2
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Voltage	2	2.5	0	4.8	4.8	2	2	2.1	2	2.1	2	2	2.2	2.1	1.9	1.9
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Voltage	2	2.1	2.1	2	2.1	2	1.8	2.6	2	1.8	2.1	2.1	4.5	0	2.1	1.2

### IC301 TC9284BF

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	2.3	2.5	5	2.5	2.3	0	5	5	5	2.9	5	0	4	4	4
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Voltage	4	3.5	4.4	2.3	5	0	0	0	5	0	2.1	2.1	2.1	2.1	2.3	2.1
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Voltage	1.8	2	5	2.2	5	2.1	2.1	2.1	4.2	5	2.5	2.5	2	2	2	2
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Voltage	2	2	1.8	2.1	2.1	0	4	0	2.4	5	5	2.1	2.1	1.9	1.9	1.4
Pin No.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	0	5	0	1	1.6	2.5	2.5	2.5	1.6	0	2.5	4.8	0	1.9	2	0

### IC302 BA4510F

(V)

Pin No.	1	2	3	4	5	6	7	8
Voltage	2.2	2.3	2.3	0	2.3	2.3	2.2	4.5

### IC101 TA2092N

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	2.3	4.9	1.9	2.6	2.1	2.1	2.1	2.1	4.8	2.1	0	0	1.9	4.8	2.3
Pin No.	17	18	19	20	21	22	23	24								
Voltage	2.1	0	4.8	2.1	2.1	4.8	2.1	0								

### IC601 TC4052BFN

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	2.5	0	0	3.4	0	0	0	0	2.5	4.5	2.5	2.5	0.9	0	0	6.2

### IC602 PT2256

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	2.7	2.7	2.7	2.7	5.4	5.4	0	5.4	6	4.8	2.7	2.7	2.7	2.7	5.5

### IC501 TA8227P

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12
Voltage	8.2	4.2	7.8	0	0.5	0	0	0.5	4.5	7.8	4.2	8.2

### IC401 TC9314F-049(CD)

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Voltage	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Voltage	1.5	1.7	1.7	1.7	2.7	4.8	4.8	0	0	0	0	0	0	4.2	3.9	4.1
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Voltage	4	4	3.8	0	0	5.3	0	0	0	4.8	0	0	0	0	0	5.2
Pin No.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	5.4	0	5.4	1.4	1.4	1.4	1.4	1.4	1.4	0.5	0.5	0.5	1.7	4.8	4.8	0

## IC & TRANSISTOR VOLTAGES

### IC401 TC9314F-049(AM)

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Voltage	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Voltage	1.5	1.5	1.5	1.5	2.5	4.7	4.7	0	0	0	0	0	0	0	0	0
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Voltage	0	0	0	1.9	5.3	5.3	4.6	0	0	0	4.7	0	0	0	0	5.2
Pin No.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	0	0	5.4	2.6	5.3	1.9	1	0	0	2.7	4.8	4.8	0	0.8	1.6	3

### IC401 TC9314F-049(FM)

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Voltage	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Voltage	1.5	1.7	1.7	1.7	2.4	4.7	4.7	4.7	0	0	0	0	0	0	0	0
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Voltage	0	0	0	1.9	5.2	5.4	0	0	0	0	4.8	0	0	0	0	5.2
Pin No.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	5.3	0	5.3	2.6	5.3	4.4	1	0	2.7	0	4.8	4.8	0	0.8	1.6	3

### IC701 TA2104AFM(AM)

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	0	1	3	3	2.5	3	0	0	3	1.2	1.2	0	0	0	1
Pin No.	17	18	19	20	21	22	23	24								
Voltage	1.5	5.4	3	3.2	3.1	3.1	3.1	3.1								

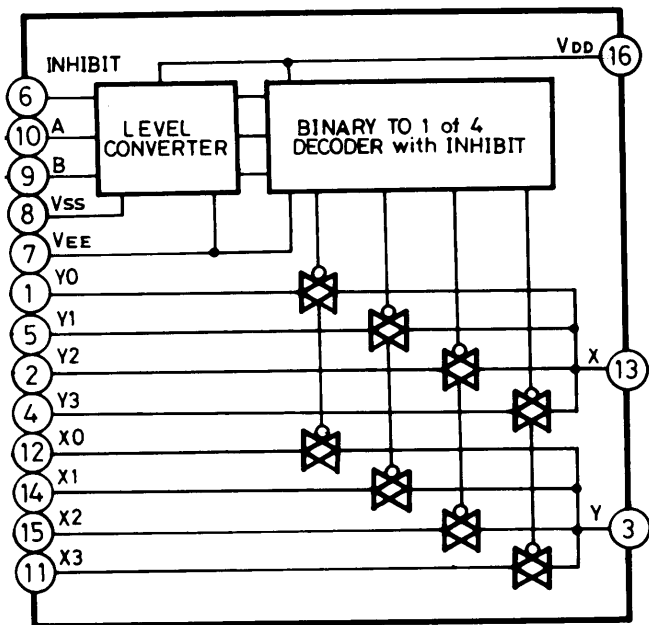
### IC701 TA2104AFN(FM)

(V)

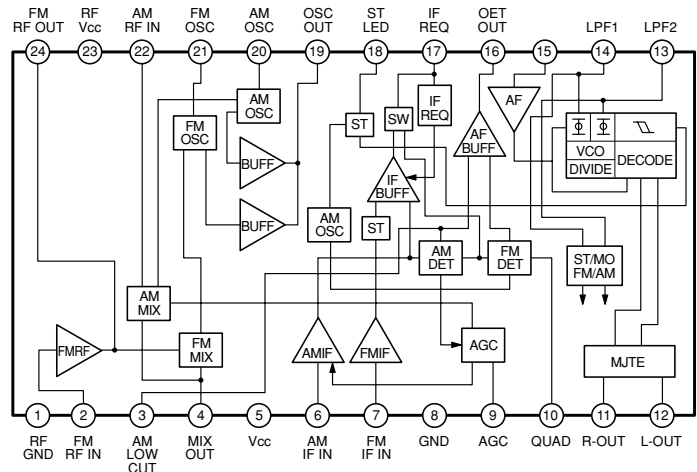
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	0.4	0.2	3	2.4	2.9	2.9	0	0	2	1.2	1.2	2.1	0	0	0
Pin No.	17	18	19	20	21	22	23	24								
Voltage	0	5.3	2.8	3	3	0	3	3								

## IC BLOCK DIAGRAM & DESCRIPTION

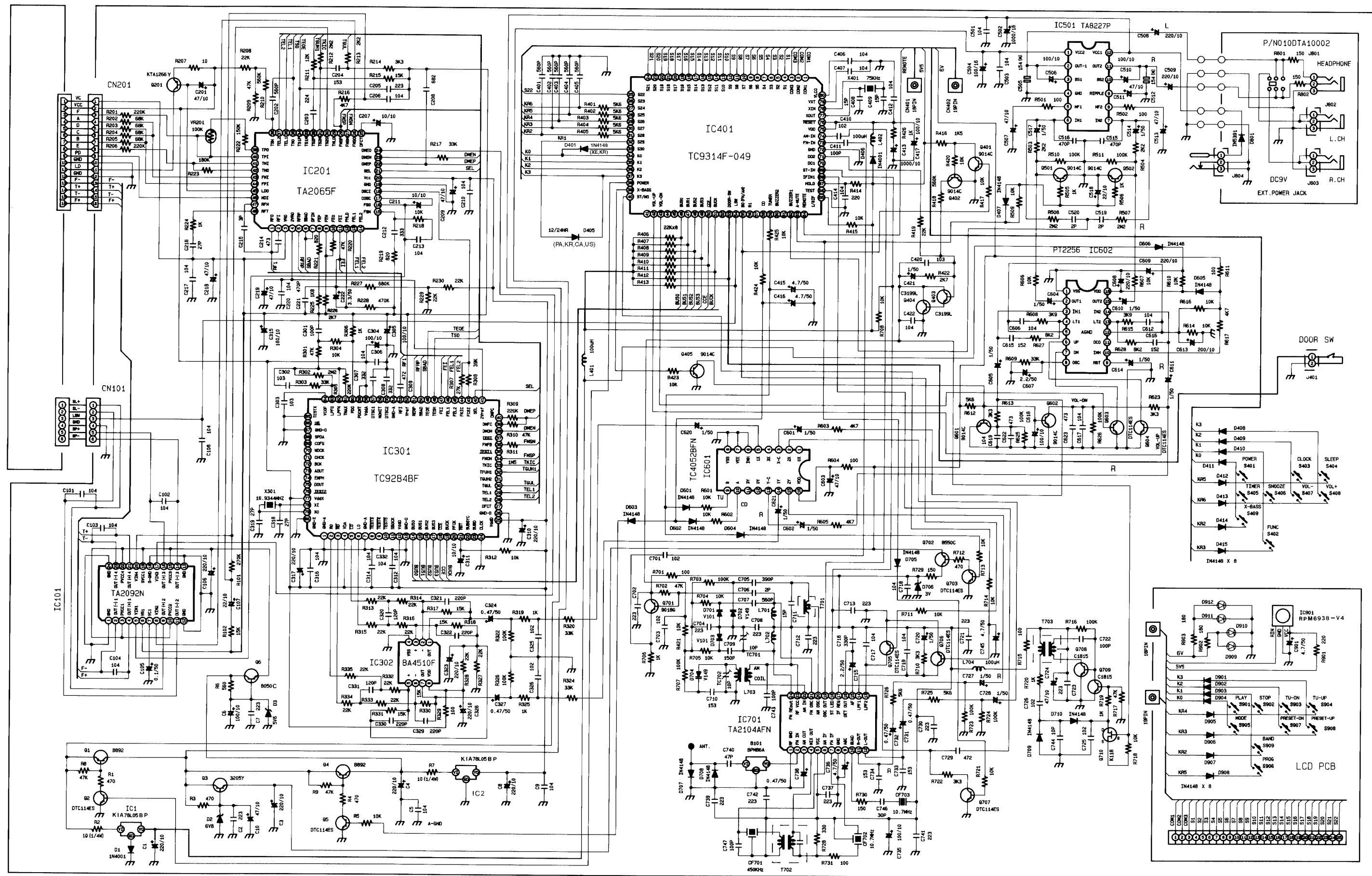
### IC601 TC4052BFN 4 CHANNEL MULUTI DEM)



### IC701 TA2104(3V AM/FM TUNER IC)

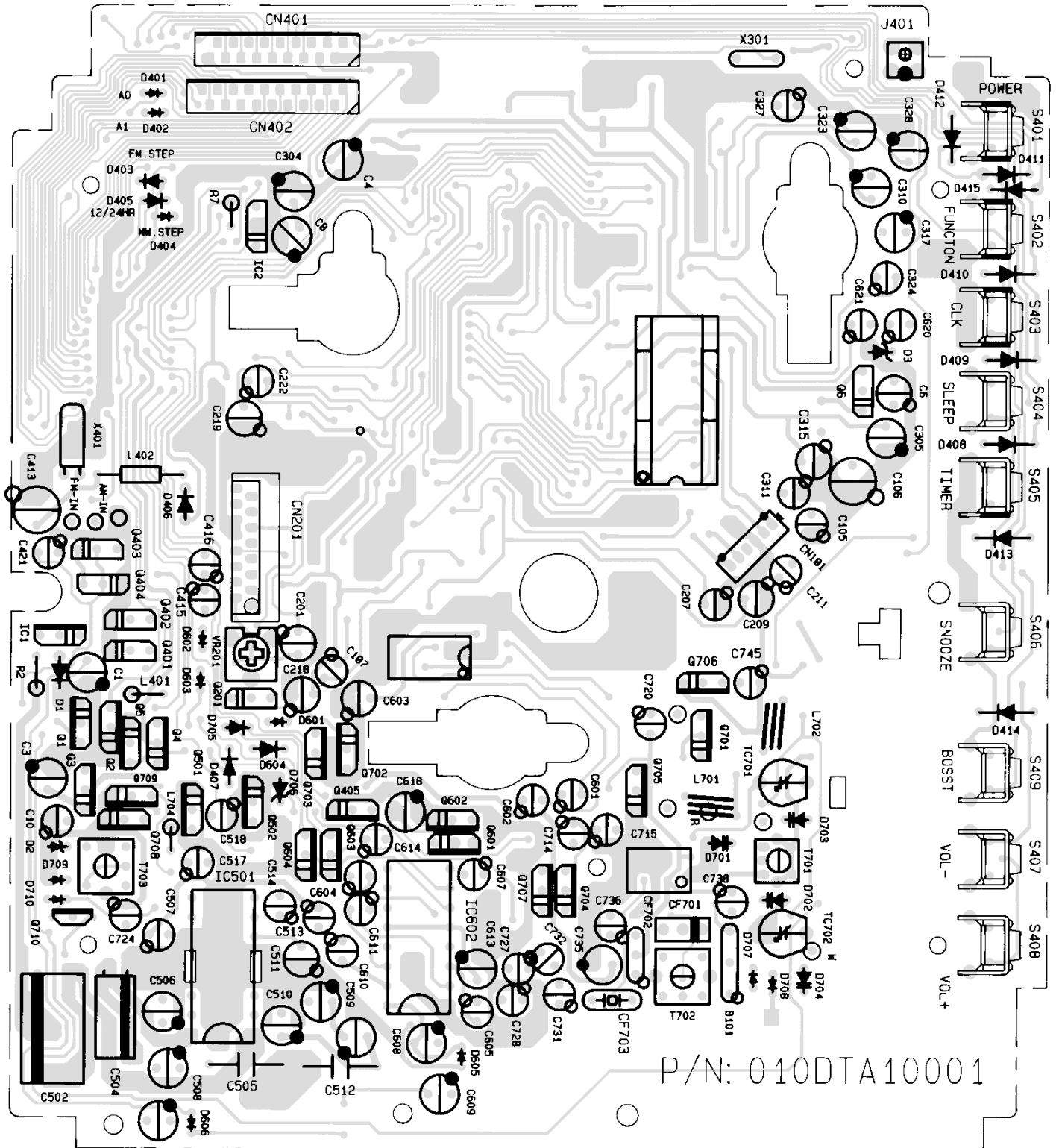


**SCHEMATIC DIAGRAM**



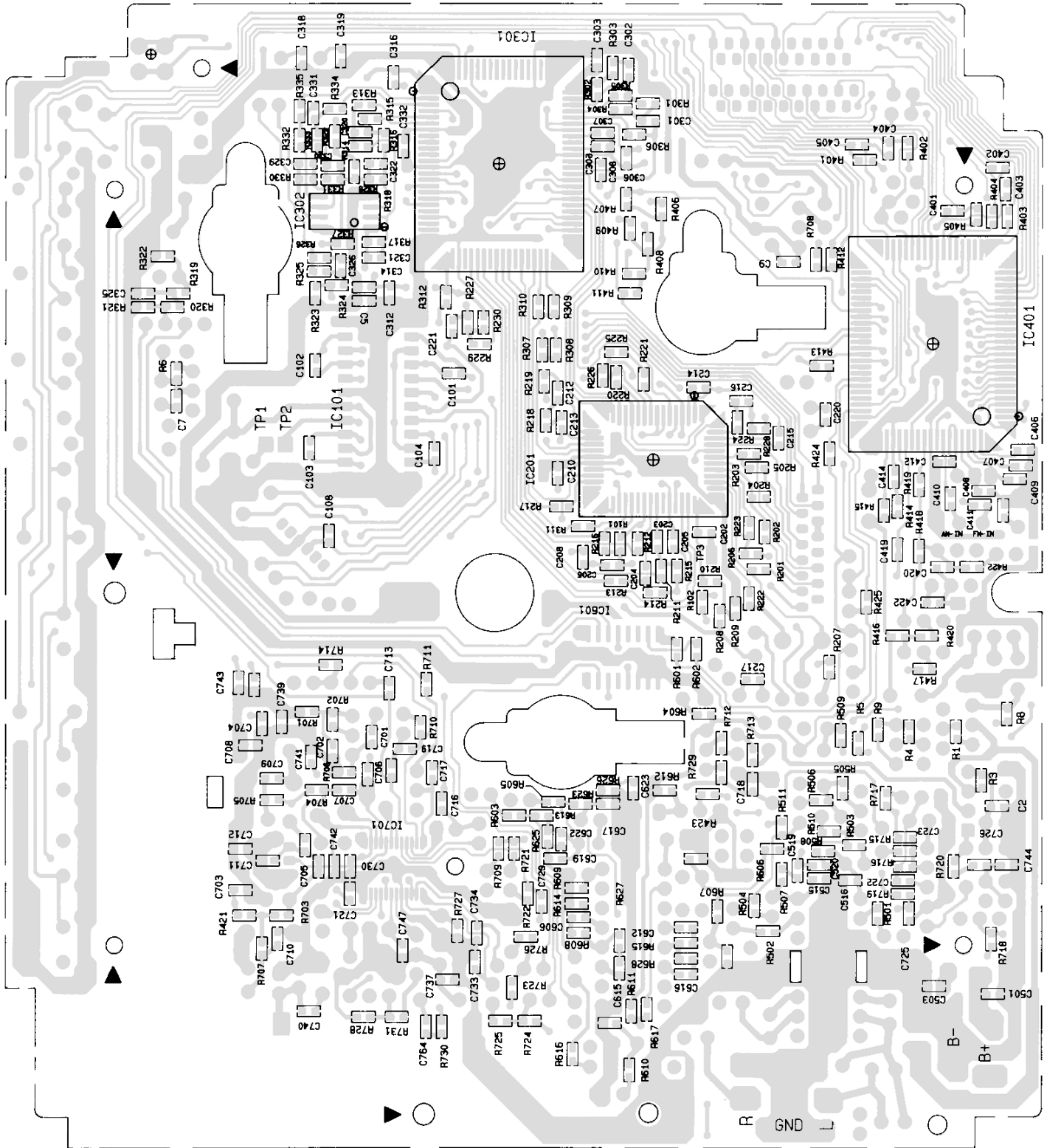
This is a basic schematic diagram.

WIRING DIAGRAM (CD MAIN A SIDE)



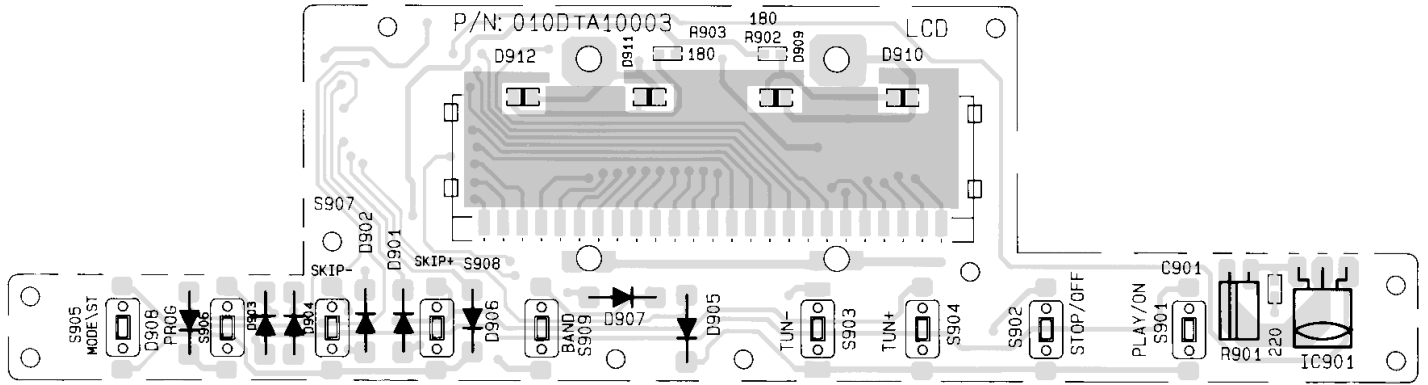
This is a basic wiring diagram.

# WIRING DIAGRAM (CD MAIN B SIDE)

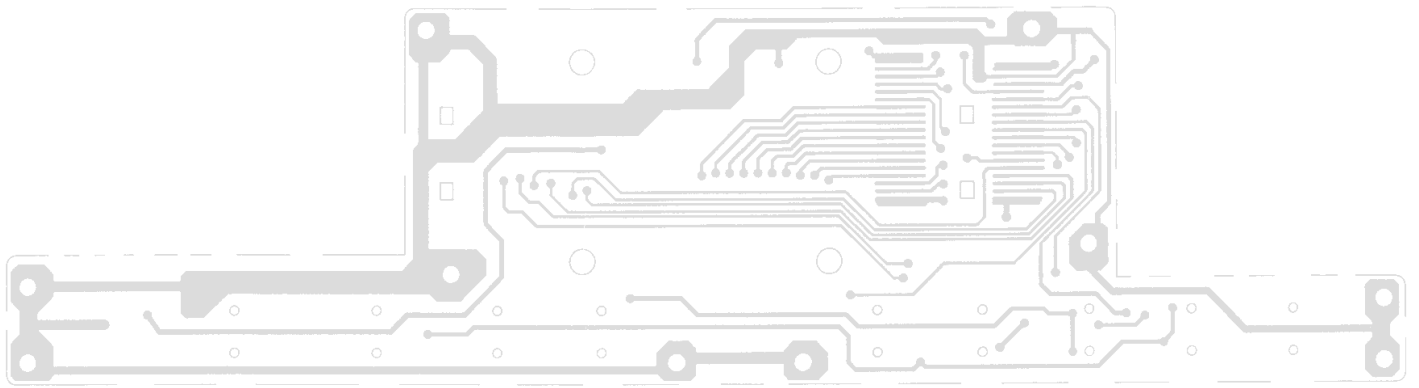


This is a basic wiring diagram.

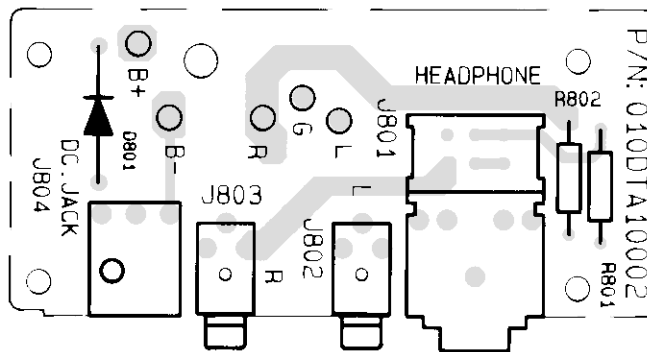
# WIRING DIAGRAM (DISPLAY & HEADPHONE)



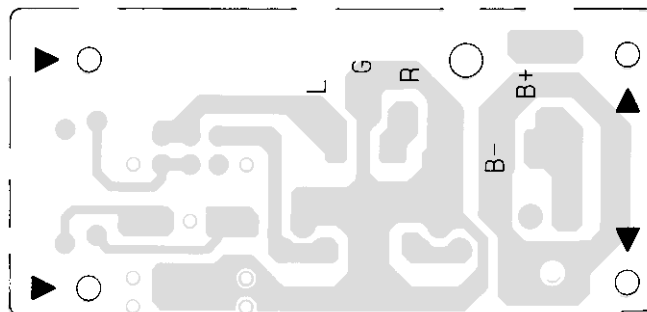
**DISPLAY A SIDE**



**DISPLAY B SIDE**



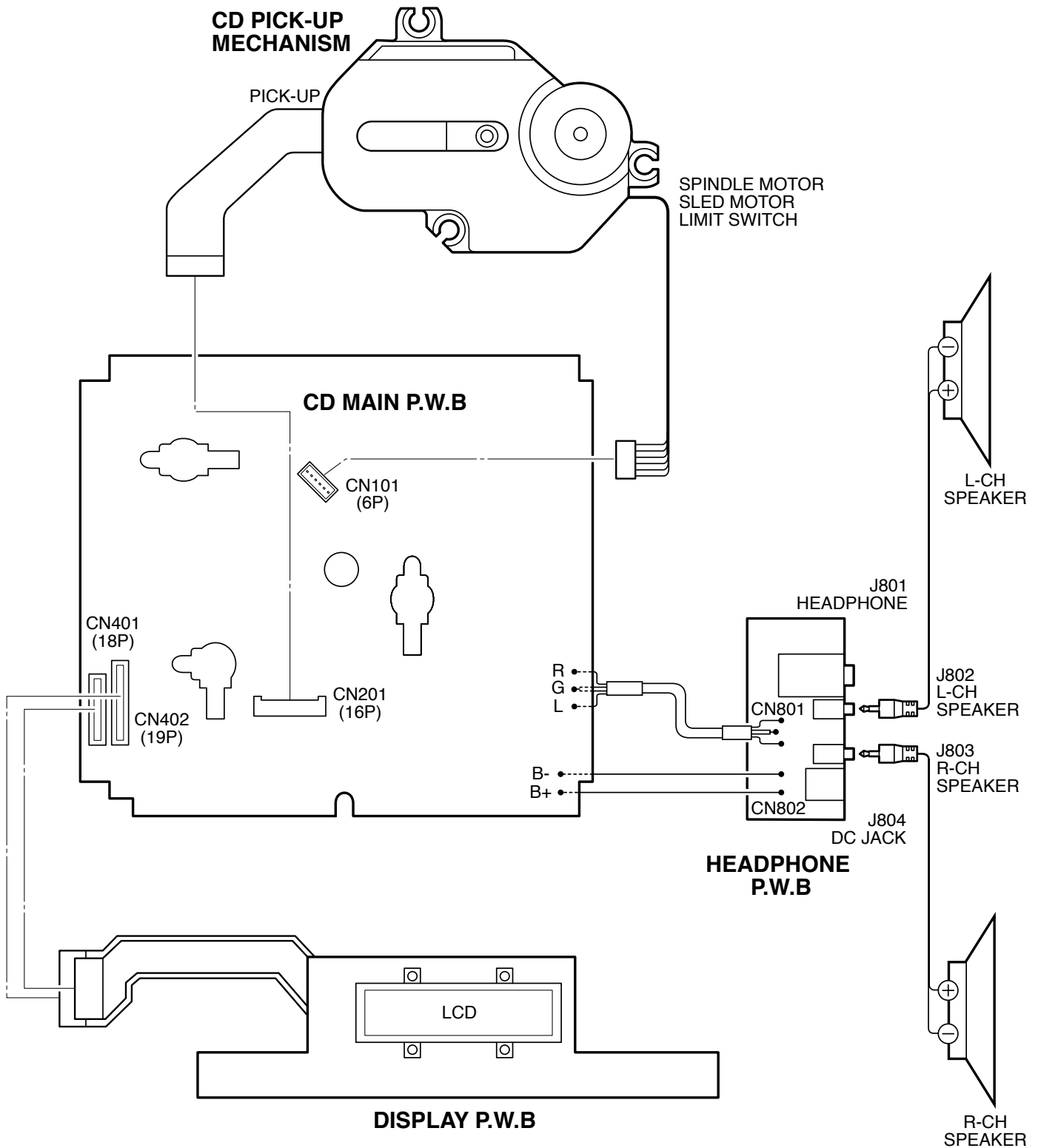
**HEADPHONE A SIDE**



**HEADPHONE B SIDE**

This is a basic wiring diagram.

# WIRING CONNECTION



This is a basic wiring connection.



SANYO Electric Co., Ltd.  
Osaka, Japan