

SERVICE MANUAL

STEREO RADIO
CASSETTE RECORDER

BASIC TAPE MECHANISM : 7ZM-5 R3N

SPECIFICATIONS

Frequency range:	AM: 530 - 1605 kHz FM: 87.5 - 108 MHz
Maximum output:	450 mW + 450 mW (EIAJ 6 ohms) 15 mW + 15 mW (EIAJ 32 ohms)
Power source:	Battery DC 3 V, R6 (size AA) x 2 Domestic AC power (using optional AC adaptor: AIWA AC-620/AC-302)
Speakers:	Diameter 36 mm, 6 Ω x 2
Battery life:	EIAJ, 0.2 mW output, Playback Approx. 5 hours using R6P (size AA) manganese batteries Approx. 22 hours using LR6 (size AA) alkaline batteries EIAJ, 10 mW output, Playback Approx. 3 hours using R6P (size AA) manganese batteries Approx. 10 hours using LR6 (size AA) alkaline batteries EIAJ, recording Approx. 3.5 hours using R6P (size AA) manganese batteries Approx. 13 hours using LR6 (size AA) alkaline batteries
Maximum outside dimensions:	115.4 (W) x 86.3 (H) x 38.5 (D) mm (excluding projecting parts and controls)
Weight	Approx. 205 g (excluding batteries)

- Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	88-HJ7-912-010	IB, YHJ(ECC)S 395	
1	88-HJ7-913-010	IB, YJ(A)S 395<YJ>	
2	87-B30-395-010	HEADPHONE, HP-M007 (T2)	
3	88-HJ7-951-010	CASE, CARRYING (NEW)	
4	87-041-083-110	CM-S40A	

ELECTRICAL MAIN PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				C58	87-A10-504-080		C-CAP,U 0.047-16 K B
	87-001-943-080		IC,TA8155F	C59	87-016-453-080		C-CAP,U 0.1-16 BK
	87-A21-224-040		C-IC,LB1877M	C60	87-010-503-040		VAP,E 220-4 GAS
	87-A20-851-040		C-IC,TA2111F	C101	87-012-165-080		C-CAP,U 3P-50 C-CH
	87-017-643-080		IC,MM1206XF	C102	87-012-180-080		C-CAP,U 22P-50 CH
	87-A21-902-040		C-IC,BA5208AF TL	C103	87-012-182-080		C-CAP,U 27P-50 CH
	87-001-371-080		IC,LA4533M	C104	87-012-170-080		C-CAP,U 8P-50 CH
TRANSISTOR				C109	87-010-787-080		CAP, U 0.022-25
	89-502-094-040		C-FET,2SK209Y	C110	87-010-787-080		CAP, U 0.022-25
	87-026-261-080		CHIP-TR,RN1404	C111	87-016-396-080		C-CAP,U 0.22-16F
	87-A30-184-070		C-FET,2SJ106Y	C112	87-016-396-080		C-CAP,U 0.22-16F
	87-026-263-080		C-TR,RN1410	C113	87-A11-056-080		C-CAP,U 1-10 Z F
	87-A30-060-080		C-TR,KTC3875GR	C114	87-012-274-080		CHIP CAP,U 1000P-50B
	87-A30-085-040		C-TR,CSA1362GR	C115	87-A10-263-080		C-CAP,U 0.1-16ZF
	87-A30-061-080		C-TR,KTA1504GR	C116	87-A10-263-080		C-CAP,U 0.1-16ZF
	89-112-134-080		TR,2SA1213Y (1W)	C117	87-A11-056-080		C-CAP,U 1-10 Z F
	87-026-235-080		CHIP-TR,DTC114EK	C118	87-A11-056-080		C-CAP,U 1-10 Z F
	89-333-266-080		CHIP TR,2SC3326B	C119	87-010-274-080		C-CAP,TN 3.3-4
DIODE				C120	87-A10-827-080		C-CAP,U 0.47-6.3 K B
	87-020-027-080		CHIP-DIODE 1SS184	C121	87-012-286-080		CAP, U 0.01-25
	87-020-339-080		CHIP DIODE,1SS226	C122	87-010-503-040		VAP,E 220-4 GAS
MAIN C.B				C124	87-012-274-080		CHIP CAP,U 1000P-50B
BPF101	87-008-406-080		BPF GFMB1	C401	87-A10-828-080		C-CAP,U 0.33-6.3 K B
C1	87-012-276-080		CAP, CHIP SS 1500 PBK	C402	87-A10-828-080		C-CAP,U 0.33-6.3 K B
C2	87-012-276-080		CAP, CHIP SS 1500 PBK	C404	87-A11-056-080		C-CAP,U 1-10 Z F
C3	87-A11-056-080		C-CAP,U 1-10 Z F	C451	87-A11-056-080		C-CAP,U 1-10 Z F
C4	87-A11-056-080		C-CAP,U 1-10 Z F	C501	87-A10-827-080		C-CAP,U 0.47-6.3 K B
C5	87-012-195-080		C-CAP,U 100P-50CH	C502	87-A11-056-080		C-CAP,U 1-10 Z F
C6	87-012-195-080		C-CAP,U 100P-50CH	C503	87-012-286-080		CAP, U 0.01-25
C7	87-012-285-080		C-CAP,U 8200P-50 B	C504	87-010-851-080		C-CAP,47-4
C8	87-012-285-080		C-CAP,U 8200P-50 B	C617	87-A10-047-080		C-CAP,U 1-10 Z F
C9	87-010-784-080		C-CAP,U 0.012-25 B	C618	87-A10-047-080		C-CAP,U 1-10 Z F
C10	87-010-784-080		C-CAP,U 0.012-25 B	C651	87-016-396-080		C-CAP,U 0.22-16F
C11	87-016-296-080		C-CAP,TN 22-4SV (A)	C652	87-016-396-080		C-CAP,U 0.22-16F
C12	87-016-296-080		C-CAP,TN 22-4SV (A)	C653	87-016-468-080		C-CAP,TN 33-4 F93 B
C13	87-A10-504-080		C-CAP,U 0.047-16 K B	C654	87-012-274-080		CHIP CAP,U 1000P-50B
C14	87-A10-504-080		C-CAP,U 0.047-16 K B	C655	87-010-589-040		CAP,E 330-2
C15	87-A11-056-080		C-CAP,U 1-10 Z F	C656	87-010-822-040		CAP,E 220-4 M MJ
C16	87-A11-056-080		C-CAP,U 1-10 Z F	C701	87-016-296-080		C-CAP,TN 22-4SV (A)
C17	87-A11-056-080		C-CAP,U 1-10 Z F	C702	87-012-286-080		CAP, U 0.01-25
C18	87-A11-056-080		C-CAP,U 1-10 Z F	C703	87-012-280-080		CAP, U 3300P-50
C20	87-A10-039-080		C-CAP,U 470P-50 J CH	C704	87-012-286-080		CAP, U 0.01-25
C21	87-012-274-080		CHIP CAP,U 1000P-50B	C705	87-012-279-080		C-CAP,U 2700P-50 B
C22	87-A10-584-080		C-CAP,TN 100-4 M 125 F93C	C706	87-012-286-080		CAP, U 0.01-25
C23	87-A11-056-080		C-CAP,U 1-10 Z F	C707	87-012-334-080		C-CAP,U 220P-50 SL
C24	87-A11-056-080		C-CAP,U 1-10 Z F	C708	87-012-286-080		CAP, U 0.01-25
C25	87-A11-056-080		C-CAP,U 1-10 Z F	C709	87-A11-066-080		C-CAP,TN 47-4 M TCMS-B2R
C26	87-A11-056-080		C-CAP,U 1-10 Z F	C710	87-010-505-080		CA, CHIP TANTALUM 1-16
C27	87-012-275-080		C-CAP,U 1200P-50 B	C711	87-010-505-080		CA, CHIP TANTALUM 1-16
C28	87-012-275-080		C-CAP,U 1200P-50 B	C712	87-010-785-080		C-CAP,U0.015-25BK
C29	87-010-503-080		VAP,E 220-4 GAS	C713	87-010-785-080		C-CAP,U0.015-25BK
C31	87-A11-056-080		C-CAP,U 1-10 Z F	C714	87-A11-056-080		C-CAP,U 1-10 Z F
C32	87-016-296-080		C-CAP,TN 22-4SV (A)	C715	87-A11-056-080		C-CAP,U 1-10 Z F
C33	87-A11-056-080		C-CAP,U 1-10 Z F	C716	87-010-746-080		CAP, TANTAL 10-4
C34	87-A11-056-080		C-CAP,U 1-10 Z F	C717	87-012-199-080		CAP U220P-50JCH
C35	87-016-296-080		C-CAP,TN 22-4SV (A)	C718	87-012-199-080		CAP U220P-50JCH
C51	87-016-453-080		C-CAP,U 0.1-16 BK	CD101	87-A90-990-010		FLTR,CDA10.7 MG77AT6-Z
C52	87-A10-828-080		C-CAP,U 0.33-6.3 K B	CF101	87-A90-849-080		C-FLTR,PFWCC 455J3
C53	87-016-453-080		C-CAP,U 0.1-16 BK	CF102	87-A90-989-010		FLTR,SFE10.7 MS239T6-Z
C54	87-016-453-080		C-CAP,U 0.1-16 BK	CN101	87-A60-661-010		CONN,3P V (ZR)
C55	87-016-453-080		C-CAP,U 0.1-16 BK	IIFT105	87-A90-663-010		IIFT,MW 5L H6.4
C56	87-016-453-080		C-CAP,U 0.1-16 BK	J1	87-A60-122-010		JACK,DC 3.8
C57	87-A10-827-080		C-CAP,U 0.47-6.3 K B	J2	85-HRL-623-010		JACK,3.5 ST BLK
				J701	87-A60-474-010		JACK,3.5MM 5PINSTEREO
				L1	87-A50-581-080		C-COIL,S FCM2012H 252705
				L2	87-A50-581-080		C-COIL,S FCM2012H 252705
				L3	87-A50-581-080		C-COIL,S FCM2012H 252705
				L51	87-003-089-010		COIL,47uH FL5R200F
				L102	88-HJ7-610-010		COIL,FM RF
				L103	88-HJ7-611-010		COIL,FM OSC

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
L104	87-A50-288-080		C-COIL,AM OSC 270UH	C606	87-010-504-080		CAP, TN 0.47-25 MECS
L601	87-003-089-010		COIL,47uH FL5R200F	C607	87-010-504-080		CAP, TN 0.47-25 MECS
L651	87-003-089-010		COIL,47uH FL5R200F	C608	87-010-504-080		CAP, TN 0.47-25 MECS
L701	87-A50-289-080		C-COIL,OSC 50 KHZ	C609	87-010-424-080		CAPACTOR,TANTAL 4.7-4
LED451	87-A90-276-080		C-LED,SML-210MT GRN	C610	87-010-424-080		CAPACTOR,TANTAL 4.7-4
LED452	87-A90-711-080		C-LED,SML-210YTT YEL	C611	87-010-424-080		CAPACTOR,TANTAL 4.7-4
LED453	87-A90-278-080		C-LED,SML-210VT RED	C612	87-010-424-080		CAPACTOR,TANTAL 4.7-4
PVC101	87-A90-940-010		TUN-CAP,7.5-20P DA	C613	87-012-195-080		C-CAP,U 100P-50CH
S1	87-A90-423-010		SW,LEAF	C614	87-012-195-080		C-CAP,U 100P-50CH
S2	87-036-154-080		C-SLIDE SWITCH 2-2-3	C615	87-016-396-080		C-CAP,U 0.22-16F
S3	87-036-379-280		C-SW SL 1-1-2 SS-350-A12B-C-T	C616	87-016-396-080		C-CAP,U 0.22-16F
S4	87-A90-564-010		SW,LEAF MUTE	C617	87-A10-263-080		C-CAP,U 0.1-16ZF
S5	87-A90-422-010		SW,SL 2-2-2 SSZZ-S-502	C618	87-A10-263-080		C-CAP,U 0.1-16ZF
S51	87-036-123-080		C-SW,SL 1-1-2 SSSS81	C619	82-HJ5-612-010		CAP,E 470-4
S701	87-A90-725-010		SW,SL 2-2-2 MCS-2210-05	M701	87-A91-877-010		MIC,ECM 080-80LN-0B
SFR51	87-A90-914-080		C-SFR,33K V RH03AVA	S601	87-A90-419-010		C-SW,SL 1-1-3 SS-350-B13B-C-T
TH51	87-A90-542-080		C-THMS,NTH5G2M35A472K04TE	SP601	88-HJ7-613-010		SPKR, 60HM
VR1	87-A90-915-080		C-VR,RTRY 20KC*2(REFLOW)	SP602	88-HJ7-613-010		SPKR, 60HM
W1	88-HJ7-616-010		FF-CABLE, 10P				

FRONT C.B

C601	87-016-436-080	C-CAP,TN 47-4 (B2)
C602	87-016-436-080	C-CAP,TN 47-4 (B2)
C603	87-016-296-080	C-CAP,TN 22-4SV (A)
C604	87-016-296-080	C-CAP,TN 22-4SV (A)
C605	87-010-504-080	CAP, TN 0.47-25 M EC

BAR ANT C.B

L101	88-HJ7-614-010	BAR-ANT,MW
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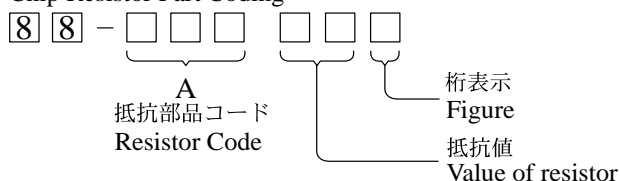
HEAD FLEX C.B

PH1	88-HJ7-615-010	HEAD ASSY,7ZM-5 R3N
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チップ抵抗部品コード/CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

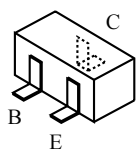
Chip Resistor Part Coding



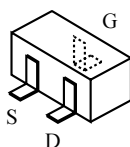
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法/Dimensions (mm)			抵抗コード : A Resistor Code : A	
				外形/Form	L	W		t
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

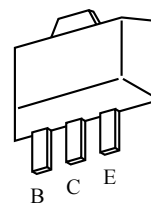
TRANSISTOR ILLUSTRATION



2SC3326
CSA1362
DTC114
KTA1504
KTC3875
RN1404
RN1410



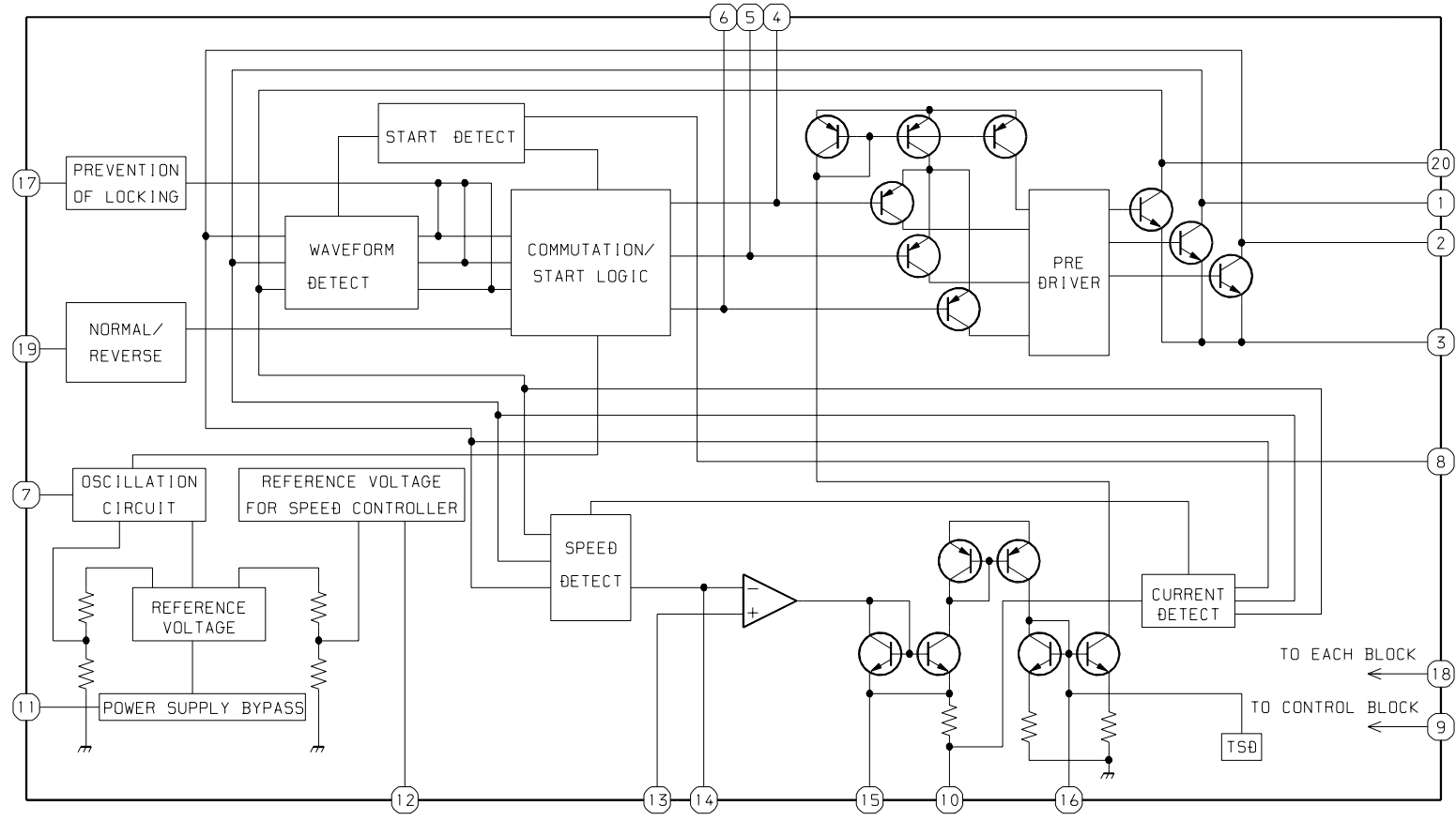
2SJ106
2SK209



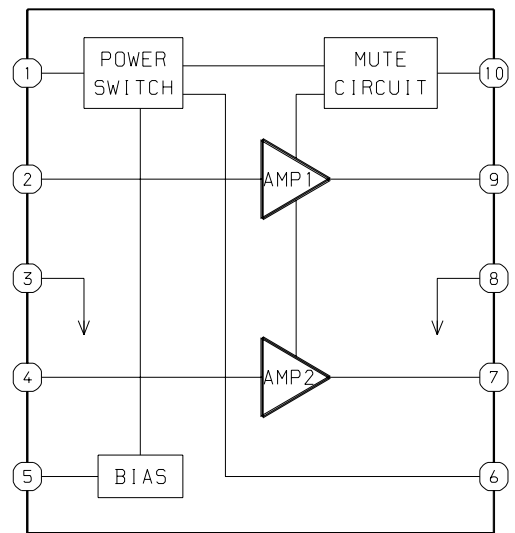
2SA1213

IC BLOCK DIAGRAM

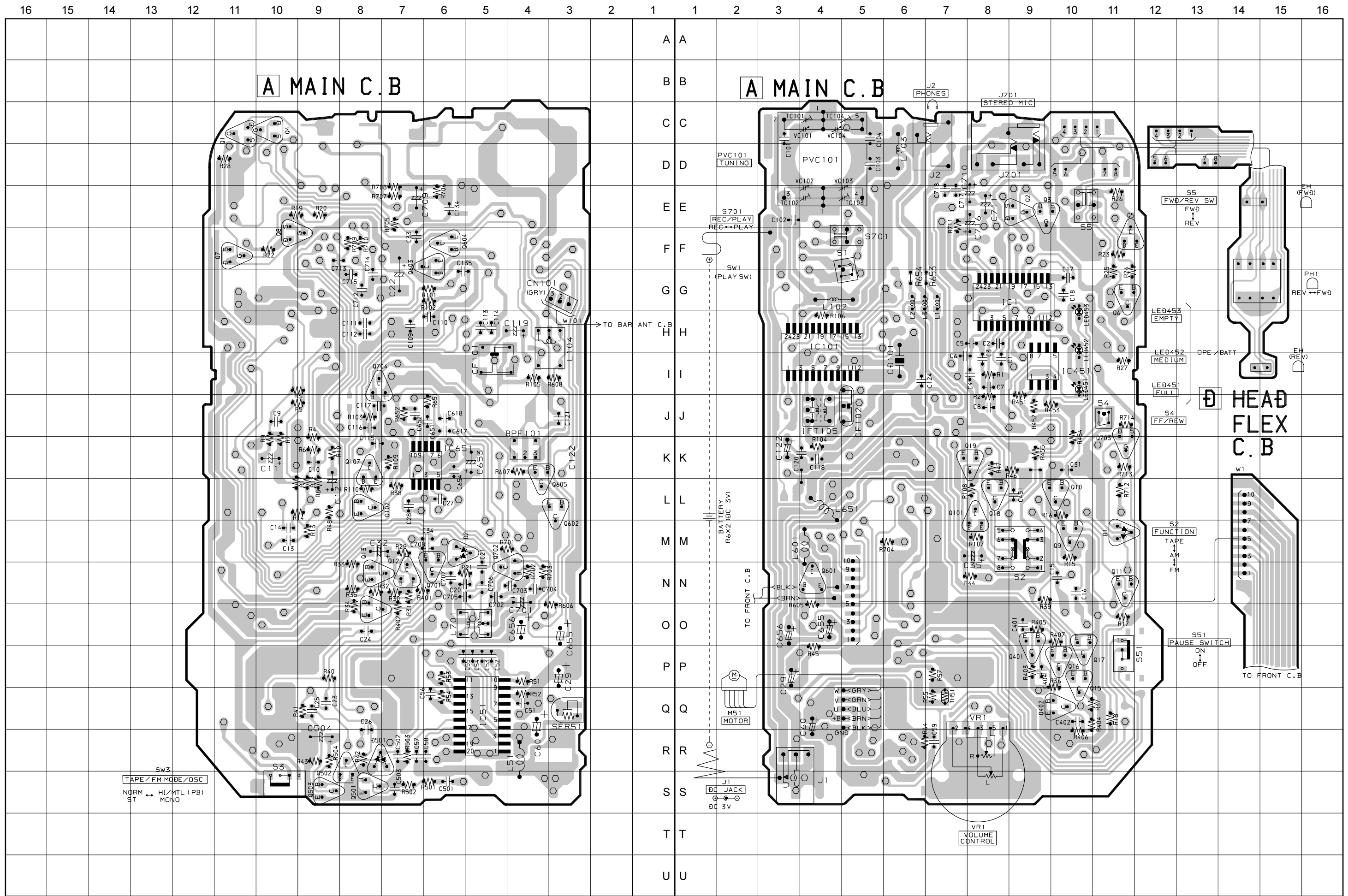
IC. LB1877M



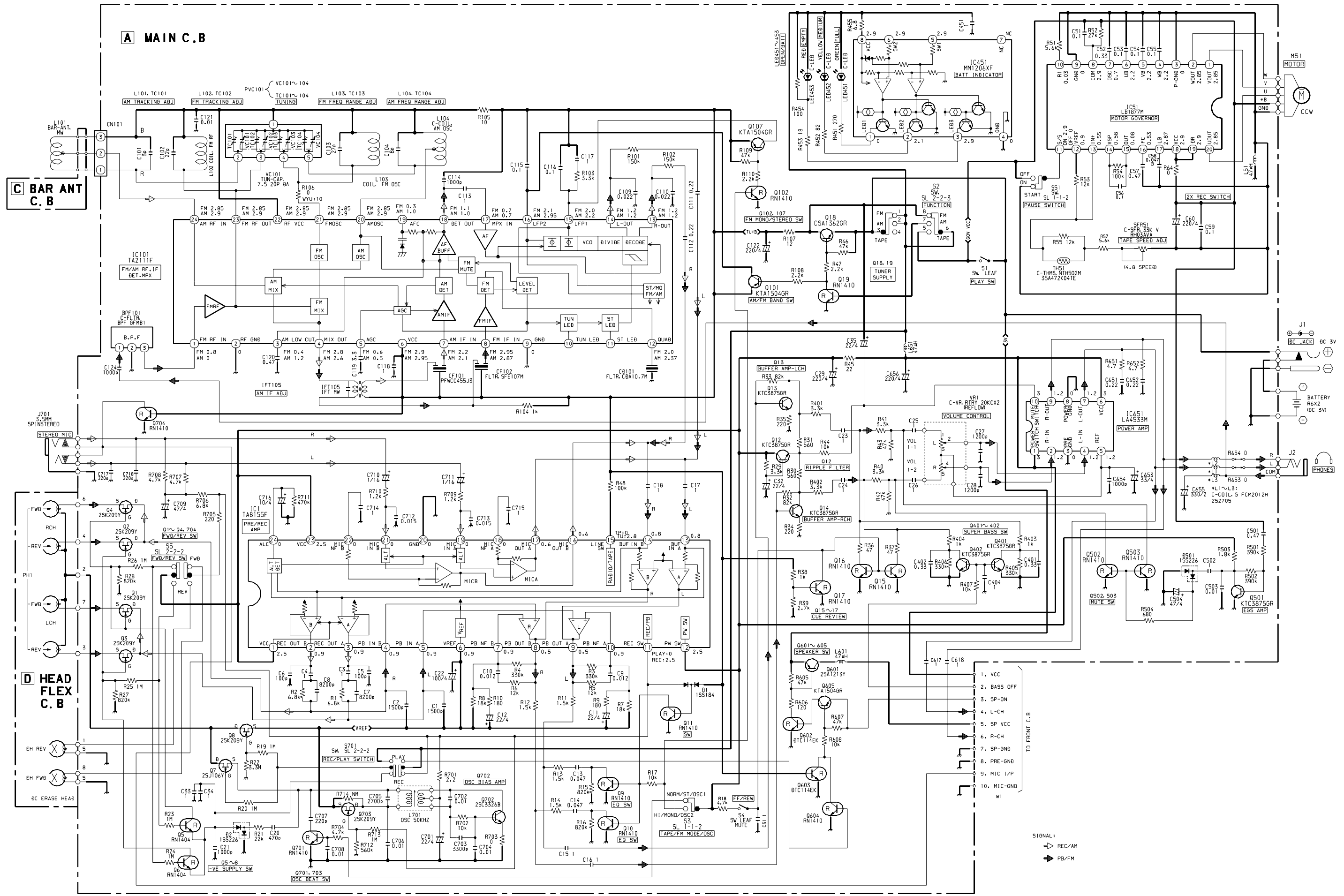
IC. LA4533M



WIRING - 1 (MAIN)



SCHEMATIC DIAGRAM - 1 (MAIN)

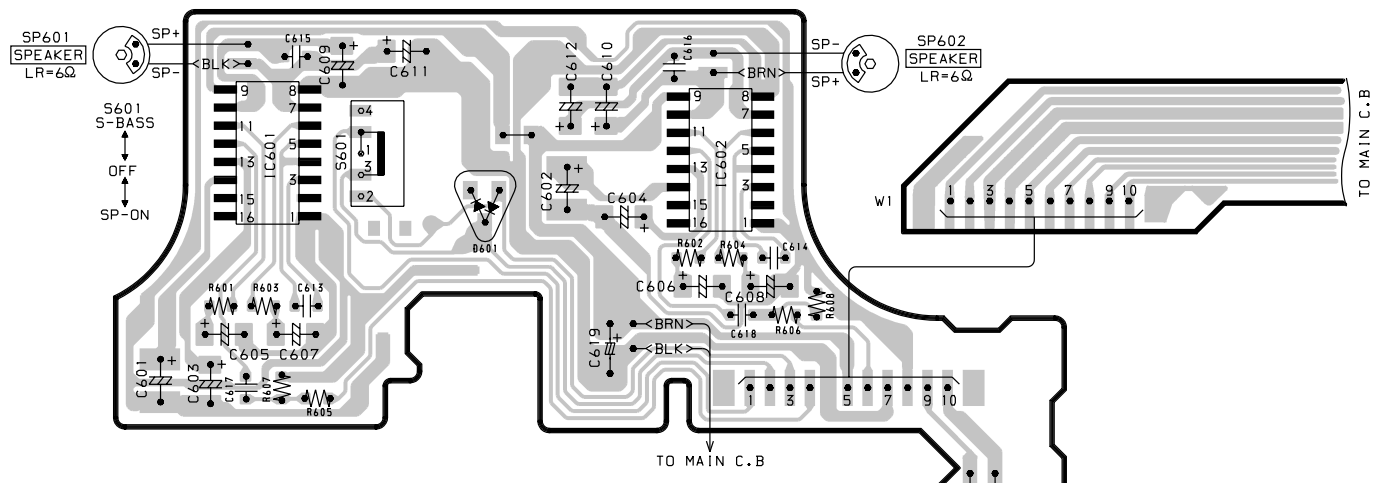


WIRING – 2 (FRONT)

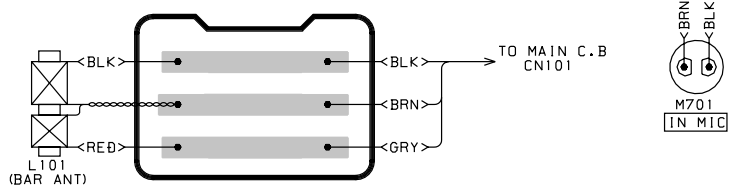
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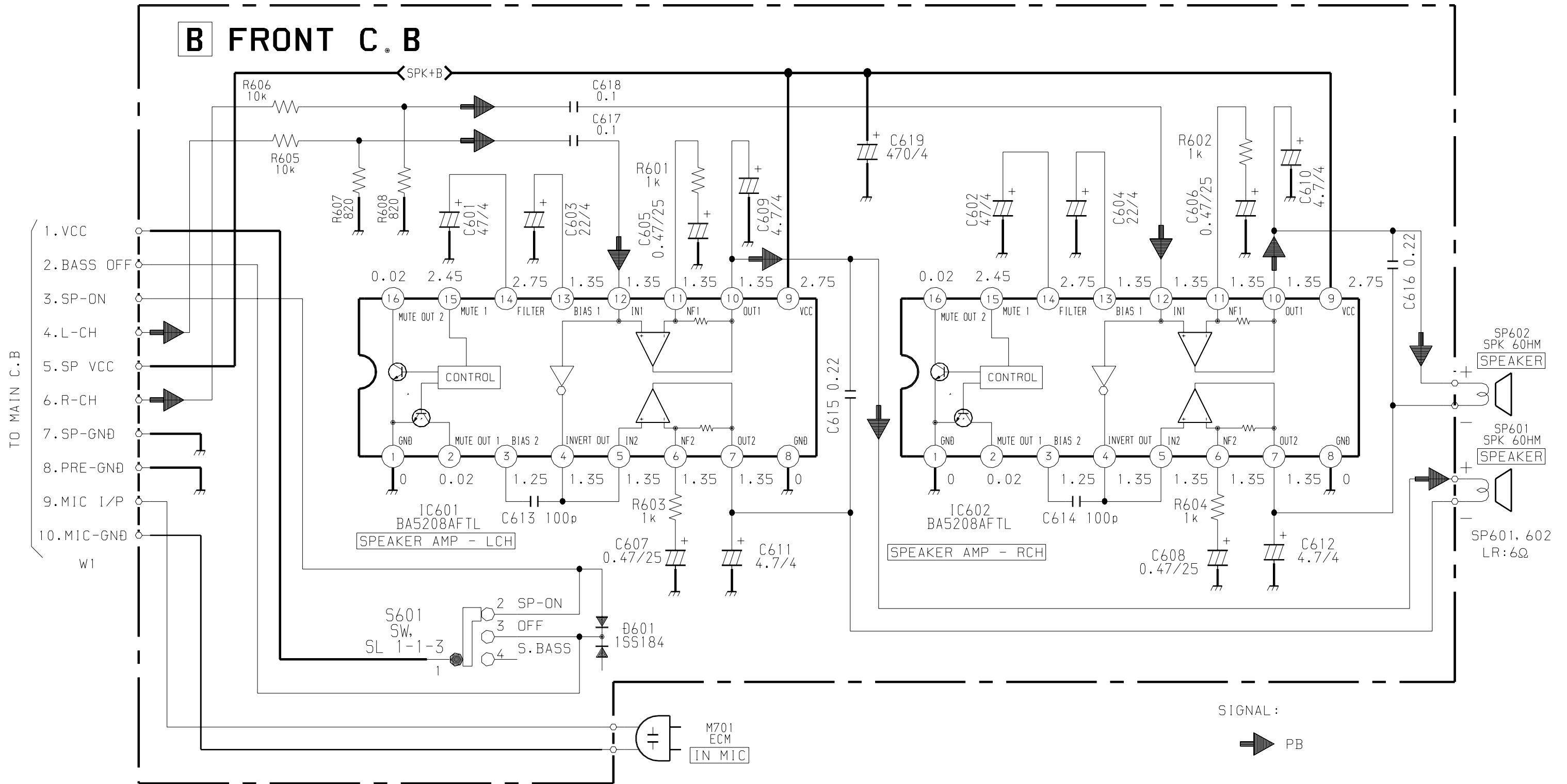
A
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B FRONT C. B



C BAR ANT C. B





ADJUSTMENT

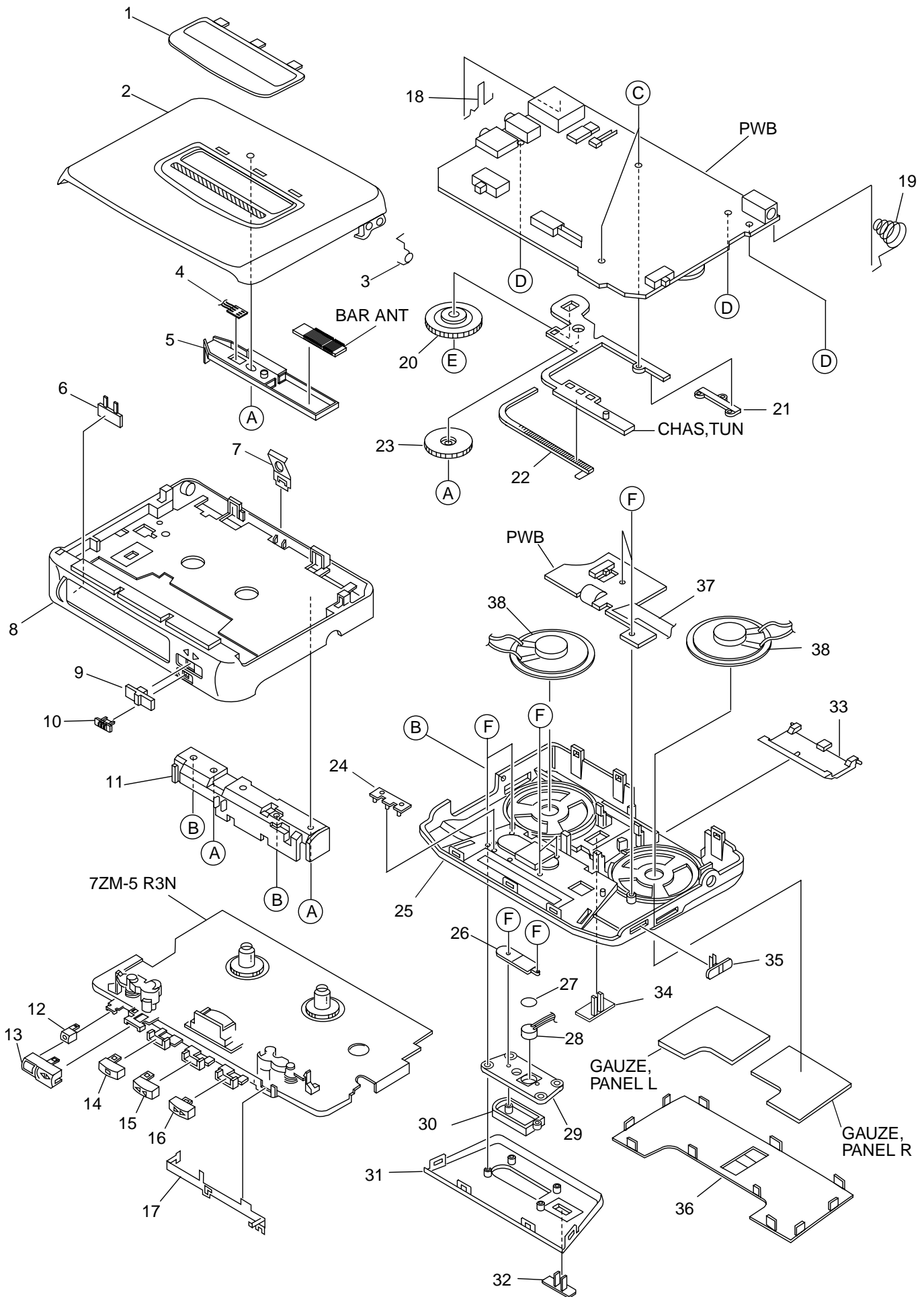
<RADIO SECTION>

1. AM IF Adjustment
IFT105 450kHz
2. AM Tracking Adjustment
L101 600kHz
TC101 1400kHz
3. AM Frequency range Adjustment
L104 $515 \pm 5\text{kHz}$
TC104 $1670 \pm 10\text{kHz}$
4. FM Frequency range Adjustment
L103 $87.0 \pm 0.1\text{MHz}$
TC103 $108.8 \pm 0.1\text{MHz}$
5. FM Tracking Adjustment
L102 88.0MHz
TC102 108.0MHz

<TAPE PLAYER SECTION>

6. Tape Speed Adjustment
Settings:
 - Test tape : TTA-100
 - Test point : PHONES (J2)
 - Adjustment location : SFR51
 - Super Bass: OFF
 - Tape/radio: TAPE
 - Tape select: NORM
 - Direction: FORWARD
 - Volume: NON-CLIP
(MAX - 10dB DOWN)
- Method: Play back the test tape and adjust SFR51 for $3015\text{Hz} \pm 10\text{Hz}$ (FWD) and $\text{FWD SPEED} \pm 45\text{Hz}$ (REV).
Then confirm WOW is less than 0.50%.

MECHANICAL EXPLODED VIEW 1 / 1



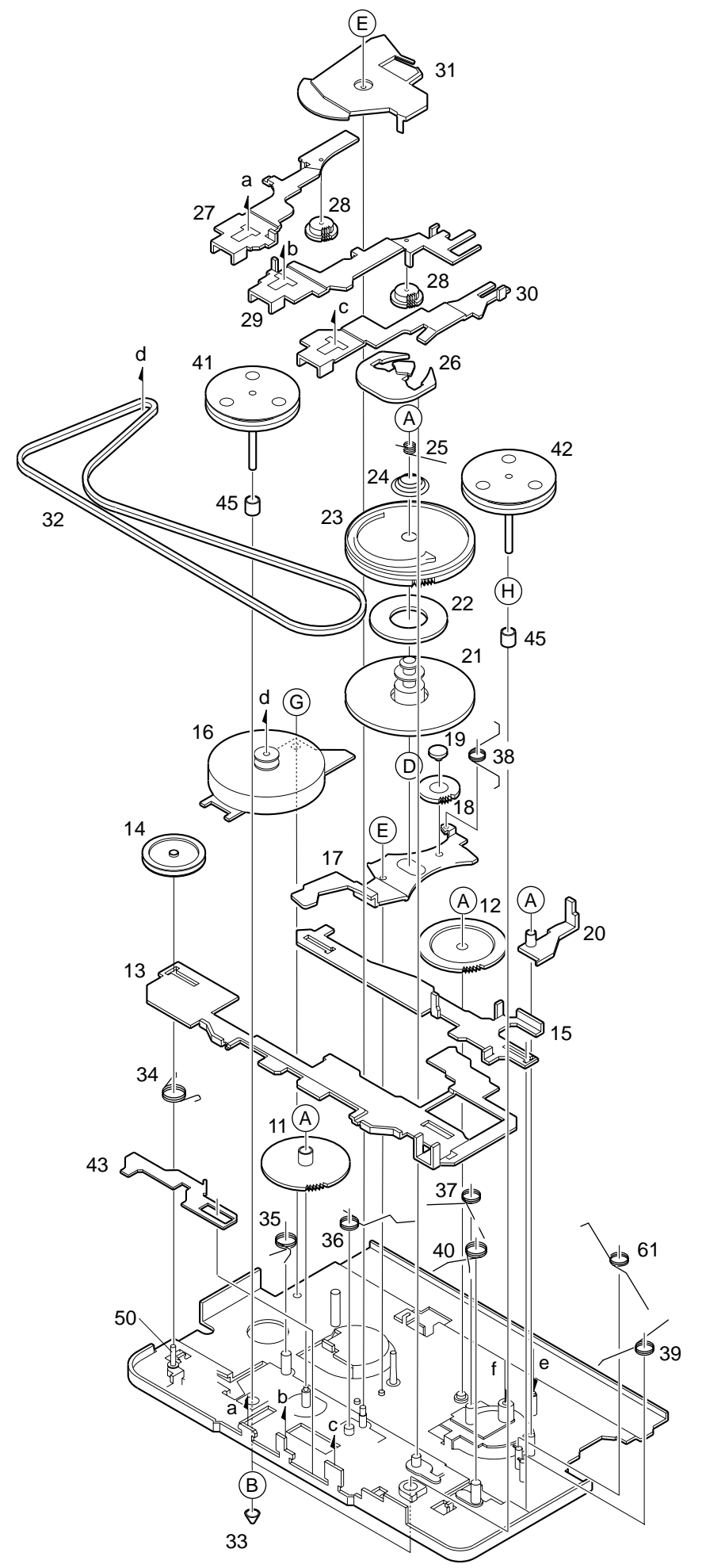
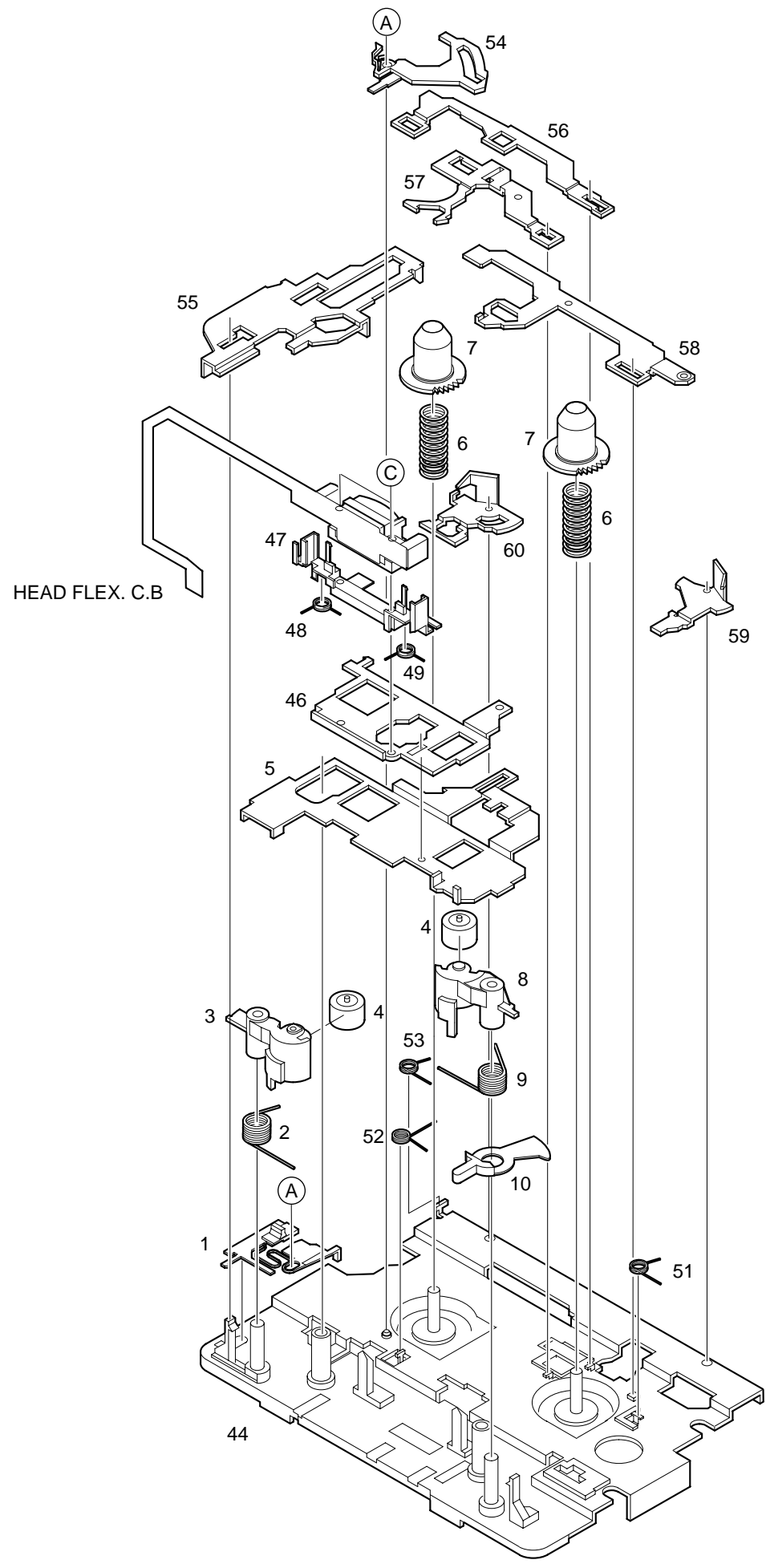
MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-HJ7-005-010		WINDOW, CASS
2	88-HJ7-001-210		LID, CASS
3	83-HRJ-202-010		T-SP, CLICK
4	88-HJ7-609-010		CONN, ASSY 3P
5	88-HJ7-213-010		HLDR, BAR-ANT
6	88-HJ7-040-010		PLATE, IND DIR
7	81-HK9-208-210		SPR-P, CASS A
8	88-HJ7-002-210		FRAME, CTR
9	88-HJ7-045-010		KNOB, SL FR
10	88-HJ7-020-010		KNOB, SL PAUSE
11	88-HJ7-209-110		HLDR, BAT
12	88-HJ7-009-010		BTN, REC
13	88-HJ7-010-010		BTN, PLAY
14	88-HJ7-011-210		BTN, STOP
15	88-HJ7-012-210		BTN, REW
16	88-HJ7-013-110		BTN, FF
17	88-HJ7-210-110		LEVER, PAUSE
18	88-HJ7-207-010		BAT-CONTACT, +
19	88-HJ7-221-010		BAT-CONTACT, M
20	88-HJ7-015-010		KNOB, RTRY TUN
21	88-HJ7-205-010		COVER, TUN
22	88-HJ7-014-110		POINTER, TUN
23	88-HJ7-202-110		GEAR, TUN
24	88-HJ7-022-010		LENS, LED
25	88-HJ7-032-110		CABI, FR
26	88-HJ7-204-010		COVER, MIC
27	88-HJ7-212-010		CUSHION, MIC
28	87-A91-877-010		MIC, ECM OBO-08LN-0A
29	88-HJ7-203-010		HLDR, MIC
30	88-HJ7-008-110		NET, MIC
31	88-HJ7-006-010		WINDOW, TUN
32	88-HJ7-017-110		KNOB, SL FN
33	88-HJ7-004-110		LID, BAT
34	88-HJ7-016-010		KNOB, SL SB
35	88-HJ7-019-110		KNOB, SL FM
36	88-HJ7-046-010		PANEL, SPKR 2
37	88-HJ7-616-010		FF-CABLE, 10P
38	88-HJ7-613-010		SPKR, 6OHM
A	87-067-527-010		SCREW, VT1.4-2.5(B)
B	87-067-384-010		SCREWVT1.4-3.5HL
C	87-067-732-010		TAPPING SCREW, VT1.4-3
D	87-067-430-010		VT1.4-5 BLK
E	87-264-525-310		SCREW, V+1.7-2.5
F	87-B10-196-010		VT2+1.4-4 BLK (3) HL

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green	HT	Transparent Gray

TAPE MECHANISM EXPLODED VIEW 1 / 1



TAPE MECHANISM PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZM5-314-110		LEVER, MODE SEL REC
2	87-ZM5-361-010		SPR-T, PINCH L REC
3	87-ZM5-351-010		ARM, PINCH L REC
4	87-ZM5-279-110		ROLLER ASSY, PINCH L
5	87-ZM5-324-110		LEVER, PLAY MS
6	87-ZM5-378-010		SPR-C, BT REC
7	87-ZM5-354-110		GEAR, REEL REC
8	87-ZM5-352-010		ARM, PINCH R REC
9	87-ZM5-362-010		SPR-T, PINCH R REC
10	87-ZM5-391-010		BTN, DIR KNOB R3
11	87-ZM5-221-110		GEAR, IDL A
12	87-ZM5-222-210		GEAR, IDL B
13	87-ZM5-339-010		LEVER ASSY, DIR TP
14	85-ZM1-212-110		PULLY PM 2
15	87-ZM5-335-110		LEVER, LOCK REC
16	M8-6ZS-391-000		ABL-63B
17	87-ZM5-208-310		LEVER ASSY, T-UP
18	87-ZM5-223-010		GEAR, PLAY
19	87-ZM5-259-210		CAP, PLAY
20	87-ZM5-216-010		LEVER, PLAY SW
21	87-ZM5-359-010		GEAR, SLIP REC
22	87-ZM5-229-010		FELT, CLUTCH
23	87-ZM5-344-010		GEAR, SLIP REC
24	87-ZM5-277-310		SPR-C, SLIP 2
25	87-ZM5-246-110		SPR-T, AUTO
26	87-ZM5-214-410		LEVER, AUTO
27	87-ZM5-204-310		LEVER ASSY, FF
28	87-ZM5-225-410		GEAR, FF/REW
29	87-ZM5-349-110		LEVER ASSY, REW REC
30	87-ZM5-332-110		LEVER, STOP REC
31	87-ZM5-261-610		LEVER, AUTO 2 S
32	87-ZM5-253-010		BELT, MAIN
33	87-ZM5-258-010		CAP, CAPSTAN
34	87-ZM5-245-110		SPR-T, DIR
35	87-ZM5-243-010		SPR-T, FF
36	87-ZM5-247-010		SPR-T, AUTO 2
37	87-ZM5-379-010		SPR-T, REW REC
38	87-ZM5-250-310		SPR-T, LEVER T-UP
39	87-ZM5-374-010		SPR-T, LEVER LOCK REC
40	87-ZM5-368-010		SPR-T, PLAY L REC
41	09-001-422-010		FLY-WHL ASSY R
42	09-001-423-010		FLY-WHL ASSY L
43	87-ZM5-330-010		LEVER, CUE REV
44	87-ZM5-301-410		CHAS ASSY, OUT-SERT REC
45	87-ZM5-260-110		CLR, BEARING
46	87-ZM5-329-010		LEVER, HEAD
47	87-ZM5-313-110		HLD, HEAD
48	87-ZM5-367-010		SPR-T, HEAD POSITION L
49	87-ZM5-377-010		SPR-T, HEAD POSITION R
50	87-ZM5-240-110		SHAFT, PULLEY
51	87-ZM5-364-010		SPR-T, RVS REC SLE
52	87-ZM5-366-110		SPR-T, REC OFF
53	87-ZM5-363-010		SPR-T, REC SEARCH L
54	87-ZM5-311-010		LEVER, REC OFF
55	87-ZM5-336-110		LEVER, BTN TP REC
56	87-ZM5-323-010		LEVER, REC GUARD
57	87-ZM5-328-010		LEVER, TRANSMIT
58	87-ZM5-327-010		LEVER, RVS REC SEL
59	87-ZM5-322-010		LEVER, REC SEARCH R
60	87-ZM5-321-010		LEVER, REC SEARCH L
61	87-ZM5-365-010		SPR-T, BTN REC
A	87-B10-136-010		W-P, 1.09-3.1-0.4
B	87-B10-070-010		W-P, 1.55-2.9-0.25 SLIT
C	87-ZM5-385-010		S-SCREW, EH+1.4-10.1
D	87-B10-180-010		W-L, 2.5-3.2-0.05 RED
E	87-B10-135-010		W-P, 1.17-3-0.35
F	87-B10-151-010		W-PVC, 1.09-3.1-0.3
G	87-ZM5-271-110		S-SCREW, 1.4-2.6 -STP
H	87-B10-107-010		W-L, 1.96-4.2-0.1

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