

aiwa



XR-MD90 XR-MD95

MD / CD STEREO SYSTEM

- BASIC MD MECHANISM: 7ZG-1 A1
- BASIC CD MECHANISM: KSM-542 ABA

• TYPE: U

SIMPLE MANUAL

Replace this Service Manual with "Revision Publishing" when it is issued.

S/M Code No. 09-987-270-5T2

MANUAL
SERVICE

SPECIFICATIONS

MAIN UNITS

FM tuner section

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

AM tuner section

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

Amplifier section

Power output	16 watts per channel RMS at 8 ohms, from 60 Hz to 20 kHz, with no more than 1% Total Harmonic Distortion
Total harmonic distortion	0.1 % (10 W, 1 kHz, 8 ohms, DIN AUDIO)
Inputs	TAPE IN: 500 mV AUX IN: 500 mV
Outputs	SUPER WOOFER: 1.7 V SPEAKERS: accept speakers of 8 ohms or more LINE OUT: 340 mV PHONES (stereo minijack): accepts headphones of 32 ohms or more

Compact disc player section

Laser	Semiconductor laser ($\lambda = 780$ 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

MD recorder section

Scanning method	Non-contact optical scanner (Semiconductor laser application)
Recording system	Magnetic polarity modulation overwrite system
Rotation speed	Aprox. 400 - 900 rpm (CLV)
Sampling frequency	44.1 kHz
No. of channels	Stereo: 2 channels Monaural: 1 channel
A-D, D-A converter	1-bit
Frequency	20 - 20000 Hz +0.2 - -1.5 dB
Wow and flutter	Unmeasurable

SPEAKER SYSTEM (XR-MD90)


Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Main speaker: 100 mm (4 inches) cone type Cardioid Speaker: 60 mm (2 3/8 inches) cone type
Impedance	8 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	140 x 202 x 185 mm (5 5/8 x 8 x 7 3/8 inches)
Weight	1.8 kg (3 lb. 15 oz)

SPEAKER SYSTEM (XR-MD95)

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer: 100 mm (4 inches) cone type Tweeter: 25 mm (1 inch) cone type
Impedance	8 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	140 x 202 x 190 mm (5 3/4 x 8 x 7 1/2 inches)
Weight	1.9 kg (4 lb. 3 oz)

General

Power requirements	120 V AC, 60 Hz
Power consumption	45 W
Dimensions (W x H x D)	CD player/MD recorder unit 144 x 101.5 x 176.1 mm (5 3/4 x 4 x 7 inches) Tuner/amplifier unit 144 x 101.5 x 208 mm (5 3/4 x 4 x 8 1/4 inches)
Weight	CD player / MD recorder unit 1.45 kg (3 lb. 3 oz) Tuner / amplifier unit 2.4 kg (5 lb. 5 oz)

- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.
- The word "BBE" and the "BBE symbol" are trademarks of BBE Sound, Inc. Under license from BBE Sound, Inc.

PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
▲	S4-000-010-000		AC CONTACT TERMINAL		S0-016-930-000		CER, RESO
	S0-27N-F90-000		ANT, LOOP AM		S0-008-000-000		CER, RESO 8 MHZ
	S0-524-181-200		B-B HEADER 12P		87-008-246-010		CER, RESO CSB455EB
	S0-524-180-800		B-B HEADER 8PI		S6-004-560-050		CER, RESO CSB456F29
	S0-524-180-900		B-B HEADER 9PI		S6-010-700-010		CER, RESO7MG43-A
	S0-532-901-200		B-B RECEPTACLE 12P		S8-CL1-070-000		CHASSIS CD
	S0-532-900-800		B-B RECEPTACLE 8P		S8-CL1-220-000		CHASSIS PANEL CONTROL
	S0-532-900-900		B-B RECEPTACLE 9P		87-003-097-010		COIL, 1UH
	S8-CL1-800-000		BADGE AIWA		87-003-147-010		COIL, 22UH
	S8-CL1-620-000		BELT, PULLEY AMP		S0-035-341-000		COIL, BEAD 100MHZ
	S8-CL1-630-000		BELT, PULLEY CD 48-1.6-1.6		S0-055-301-200		CONN, BOARD TO BOARD 12P
	S8-CL1-680-000		BKT DISPLAY LCD		S0-528-061-400		CONN, FFC 14P
	S8-CL1-660-000		BRACKET CORD AC		S0-528-070-700		CONN, FFC 7P
	S8-CL1-470-000		BRACKET DOOR MD		S0-528-060-700		CONN, FFC 7P
	S8-CL1-240-010		BRACKET FAN		S0-528-060-800		CONN, FFC 8P
	S0-408-000-030		BUSHING CORD AC		S0-401-400-000		CONN, PIN 4P
	89-502-094-080		C-FET, 2SK209Y		S0-702-000-000		CONN, PIN 7P
	89-111-625-080		C-TR, 2SA1162GR		S0-000-151-510		CONN, SNAP-IN 15P
	89-327-126-080		C-TR, 2SC2712GR		S0-011-171-700		CONN, SOCKET FFC 17P
	89-327-143-080		C-TR, 2SC2714		S1-78C-L12-010		CONN-PLUG FC SMK 17P
	89-502-114-080		C-TR, 2SK211-Y/GR		S0-900-120-000		COOLING FAN DC12V 0.08A
	87-026-230-010		C-TR, DTA114YK	▲	S1-171-201-100		CORD, POWER 6.5
	87-026-239-080		C-TR, DTC114TK/TKA		82-596-799-010		DI, 1N4001B
	87-026-213-010		C-TR, DTC114YK		S0-254-010-000		DIODE, 1N5401BL
	S8-CL1-060-010		CAB, BOTTOM AMP		87-020-465-010		DIODE, 1SS133
	S8-CL1-050-010		CAB, BOTTOM MD (GRY)		82-135-799-010		DIODE, IN4148
	S8-CL1-040-100		CAB, TOP AMP		87-070-276-010		DIODE, SE1003-C
	S8-CL1-030-100		CAB, TOP MD		S8-CL1-080-100		DOOR, CD
	S0-871-300-200		CABLE HOLDER 2P		S8-CL1-130-100		DOOR, MD
	S0-871-300-400		CABLE HOLDER 4P		S8-CL1-530-010		DOOR, RM BATT
	S0-871-300-500		CABLE HOLDER 5P		S0-904-100-000		EL BACKLIGHT 114-36
	S0-871-300-700		CABLE HOLDER 7P		87-010-263-080		ELECT CAP 100-10V
	87-010-545-010		CAP, E 0.22-50V		87-010-406-080		ELECT CAP 22-50V
	87-010-546-080		CAP, E 0.33-50V		87-010-248-080		ELECT CAP 220-10V
	87-010-053-810		CAP, E 1-50V		S1-401-201-000		FFC CABLE 14P 120MM
	87-010-071-040		CAP, E 1-50V		S0-701-801-000		FFC CABLE 7P 180MM
	87-010-494-010		CAP, E 1-50V		S0-702-501-000		FFC CABLE 7P 250MM
	87-010-401-010		CAP, E 1-50V		S0-801-201-000		FFC CABLE 8P 120MM
	87-010-075-040		CAP, E 10-16V		S0-37N-F90-100		FM FEEDER-ANT/PE TWIN WIRE
	87-010-037-010		CAP, E 10-50V		S8-CL1-640-000		FOOT, RUBBER 10-10-3
	87-A10-818-040		CAP, E 100-16V	▲	S7-900-000-000		FUSE HOLDER
	87-010-112-010		CAP, E 100-16V	▲	S1-240-125-200		FUSE, 1.25A/250V
	87-010-045-010		CAP, E 100-25V	▲	S0-250-100-010		FUSE, 2.5A 125V
	87-010-393-010		CAP, E 100-35V		87-081-438-010		FW, 3-6-0.4
	87-010-047-010		CAP, E 100-50V		87-078-044-010		FW, 3.2-8-1
	87-010-079-010		CAP, E 100-6.3V		S8-CL1-180-000		GEAR, DOOR CD
	87-010-237-010		CAP, E 1000-16V		S8-CL1-170-000		GEAR, DOOR CD
	87-010-388-010		CAP, E 1000-25V		S8-CL1-160-000		GEAR, DOOR CD
	87-016-045-080		CAP, E 1000-6.3V		S8-CL1-150-000		GEAR, DOOR CD
	87-010-035-010		CAP, E 2.2-50V		S8-CL1-420-000		GEAR, TRAY
	87-010-244-040		CAP, E 22-16V		S2-001-WR0-700		HEADER 7P
	87-015-716-010		CAP, E 22-16V		S0-000-020-210		HEADER JST 2P
	87-010-038-010		CAP, E 22-25V		S0-000-020-230		HEADER JST 2P (BLU)
	87-A10-189-080		CAP, E 220-10V		S0-000-020-220		HEADER JST 2P (RED)
	87-015-975-010		CAP, E 220-6.3V		S0-532-650-200		HEADER MOLEX 2P
	87-010-398-090		CAP, E 2200-35V		S0-510-161-700		HOLDER CABLE 17P 1.5MM
	87-010-418-040		CAP, E 3.3-25V		S8-CL1-260-000		HOLDER LED
	87-010-403-010		CAP, E 3.3-50V		S8-CL1-450-000		HOLDER REMOTE SENSOR
	87-010-399-090		CAP, E 3300-35V		S0-035-183-500		HP, JACK ST 3.5MM
	87-010-234-070		CAP, E 4-16V		S0-58C-L12-500		HSG, 170MM
	87-010-074-080		CAP, E 4.7-35V		S0-38C-L13-500		HSG, 195MM (RED)
	87-010-404-010		CAP, E 4.7-50V		S0-201-700-010		HSG, 2P
	87-010-380-010		CAP, E 47-16V		S0-78C-L12-000		HSG, JST 200MM
	87-010-549-010		CAP, E 47-6.3V		S0-48C-L12-000		HSG, JST 250MM SHIELD
	87-010-221-010		CAP, E 470-10V		S0-28C-L11-510		HSG, JST 70MM
	87-010-249-010		CAP, E 470-16V		S0-28C-L11-500		HSG, JST 70MM
	87-010-124-090		CAP, E 4700-16V		S0-28C-L12-000		HSG, JST PHR 50MM
	87-010-782-010		CAP, E 47000-5.5V		87-A20-056-010		IC, BA3880S
	S8-CL1-430-000		CENTER GEAR TRAY		87-001-607-080		IC, BA4558F-E2
	S0-001-070-010		CER, FILTER		S4-038-540-000		IC, BH3854AFS

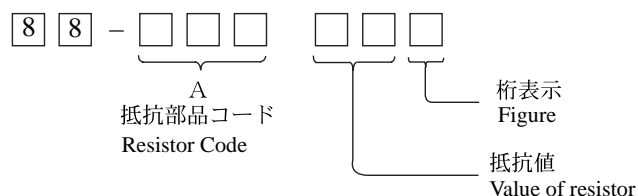
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
	87-017-726-080	IC,BU4052BCF			87-253-095-410		SCREW 3-8
	87-017-917-080	IC,BU4066BCF			87-357-036-010		SCREW ST 2-8
	S3-351-840-000	IC,KS51840-C7D			87-751-097-410		SCREW ST3-12MM HEAD
	87-002-368-010	IC,NJM7805FA			87-751-096-410		SCREW,3-10
	S8-CL1-270-000	IC,REGULATOR(B) 8CL1-27			87-741-096-010		SCREW,3-10MM PM
	87-022-899-010	IC,STK4122MK2			87-255-169-410		SCREW,4-6
	S8-279-340-000	IC,T7934-000			87-251-092-410		SCREW,M3-4
	S8-320-570-000	IC,TA2057N			87-261-094-410		SCREW,M3-6
	87-070-134-010	IC,TA2065F			87-268-508-310		SCREW,ST1.4-3.5
	87-A20-157-010	IC,TA2092N			87-067-911-010		SCREW,ST1.7-10
	87-001-982-010	IC,TA7291S			87-353-533-310		SCREW,ST1.7-5
	87-070-101-010	IC,TC9284AF			87-B10-026-010		SCREW,ST1.7-8
	S9-187-470-000	IC,TMP87CH47U-4A90			87-353-034-210		SCREW,ST2-5
	S9-187-400-000	IC,TMP87CM40AF-4A85			87-342-036-210		SCREW,ST2-8
	S8-492-570-000	IC0-C9257F			87-261-075-010		SCREW,ST2.6-10MM BB
	S7-NF8-020-240	IFT,AM PACK 4 455BFR-121			87-342-076-010		SCREW,ST2.6-12MM PAB
	87-A90-245-010	IFT,CFAZH-450			87-743-073-410		SCREW,ST2.6-6
	87-005-696-080	INDUCTOR,100UH			87-743-074-410		SCREW,ST2.6-8
	87-005-196-080	INDUCTOR,10UH			87-261-074-010		SCREW,ST2.6-8MM BB
	87-003-098-080	INDUCTOR,2.2UH			87-352-097-210		SCREW,ST3-12
	S8-CL1-910-410	INSTRUCTION BOOK(MD90U)<M90U>			87-741-097-410		SCREW,ST3-12
	S8-CL1-910-110	INSTRUCTION BOOK(MD95U)<MD95U>			87-078-157-010		SCREW,ST3-16
	S1-180-202-130	JACK,PIN 3P			87-251-094-410		SCREW,ST3-6
	S0-202-460-010	JACK,PIN 3Px2			87-352-095-010		SCREW,ST3-8
	S8-CL1-230-010	KEY,JOE GREY			87-024-176-080		SFR,100K
	S8-CL1-560-100	KEY,RUBBER(A)			S1-030-850-000		SFR,10K
	S8-CL1-570-100	KEY,RUBBER(B)			87-024-171-080		SFR,5K
	S8-CL1-370-100	KEY,SET-CD(GRY)			S8-CL1-720-000		SPACER DOOR CD(A)
	S8-CL1-340-010	KEY,SET-EDIT			S0-401-540-000		SPKR,TERMINAL 4P
	S8-CL1-380-100	KEY,SET-F.F			S8-CL1-740-000		SPR,DOOR MD
	S8-CL1-390-010	KEY,SET-FUNCTION			S0-000-020-000		SW,MICRO MQS-2
	S8-CL1-360-100	KEY,SET-REC			S0-000-010-010		SW,MIRCO MLS-1
	S8-CL1-350-010	KEY,SOUND			SK-HH9-130-000		SW,PB(CSDSR510,515)
	S8-CL1-120-010	KNOB,EJECT CD(GRY)			SK-HH9-010-000		SW,TACT KSM0612A
	S8-CL1-110-010	KNOB,EJECT MD(GRY)			S2-054-100-010		THERMISTOR T5D410K45JBPDA-0
	S8-CL1-100-100	KNOB,PLAY SET			89-213-702-010		TR,2SB1370E
	S8-CL1-400-010	KNOB,POWER(GRY)			89-304-583-010		TR,2SC458C
	S0-041-380-000	LCD DISPLAY			87-026-200-080		TR,DTC114ES
	S0-005-310-050	LED,5MM(GRN)			S7-805-000-020		TR,PE8050B,C,D
	S8-CL1-510-100	LENS,COVER TOP			S7-855-000-020		TR,PE8550B,C
	S8-CL1-190-100	LENS,DISPLAY			S8-CL1-210-000		TRAY,PANEL CONTROL
	S8-CL1-520-000	LENS,REMOTE			A8-8ZA-191-030		TUNER FM 8ZA-1
	S8-CL1-480-000	LENS,SENSOR REMOTE			87-261-095-410		V+3-8
	S1-215-370-000	MOTOR RF-370CA-15370 12V			S8-CL1-090-000		WINDOW,CD
	85-ZG1-616-010	MOTOR,FF-050SH-11190			S6-072-000-000		X'TAL 7.2 MHz
	S0-000-305-000	NUT,M3.5-0.5			S3-327-683-000		X'TAL,32.768 KHZ
	S8-CL1-020-010	PANEL,FRONT AMP			S3-327-680-000		X,TAL 32.768KHZ
	S8-CL1-010-010	PANEL,FRONT MD(GRY)			87-020-511-010		ZENER,05A24.7V
	S8-CL1-200-010	PANEL,TOP CONTROL			S0-100-221-200		ZENER,2.2V
	S8-CL1-710-100	PLATE CONTROL PANEL			87-070-136-080		ZENER,5.1V
	S8-CL1-750-200	PLATE COVER FRONT MD<MD95U>			S0-100-560-000		ZENER,5.6V
	S8-CL1-750-100	PLATE COVER FRONT MD<M90U>			S0-100-680-010		ZENER,6.8V MTZJ6.8B
	S8-CL1-760-100	PLATE PANEL FRONT AMP			S0-100-821-200		ZENER,8.2V,1/2W
	S8-RU5-190-000	PLATE,CONTACT			S3-MTZ-J91-BM0		ZENER,9.1V
	S5-166-360-200	POWER TF EI-66/36 120V			87-027-513-010		ZENER,IN5232B 5.6V1/2W
	S1-667-260-000	PT,EL EI-16					
	S8-CL1-410-000	PULLEY MOTOR TRAY					
	S0-006-380-000	RC,PHOTO RECEIVER					
	S2-291-030-000	RES,NETWORK EXB-Z9E103J					
	SH-132-032-000	ROTARY ENCODER					

- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

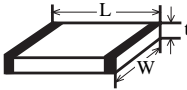
○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

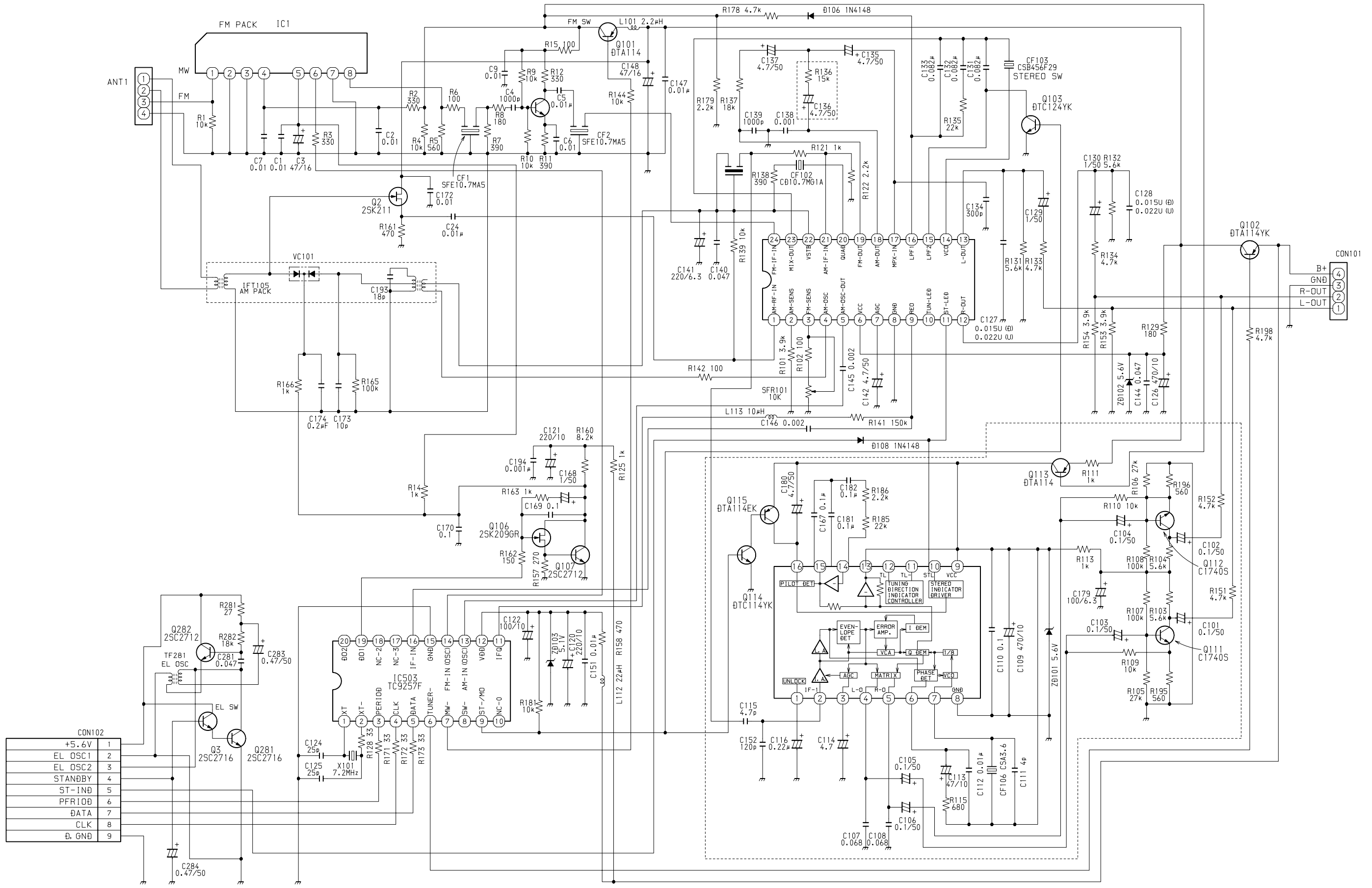
Chip Resistor Part Coding



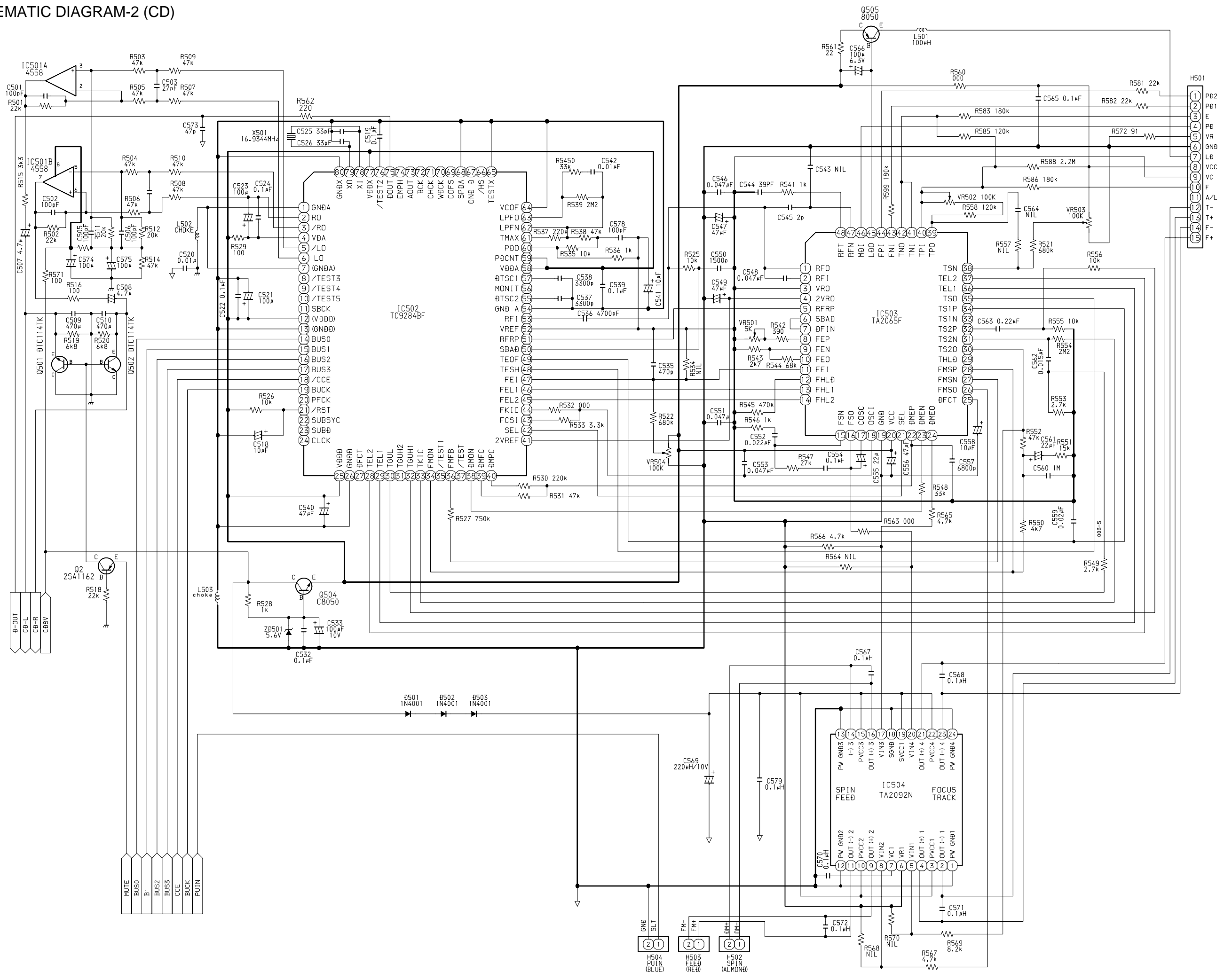
チップ抵抗
Chip resistor

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	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

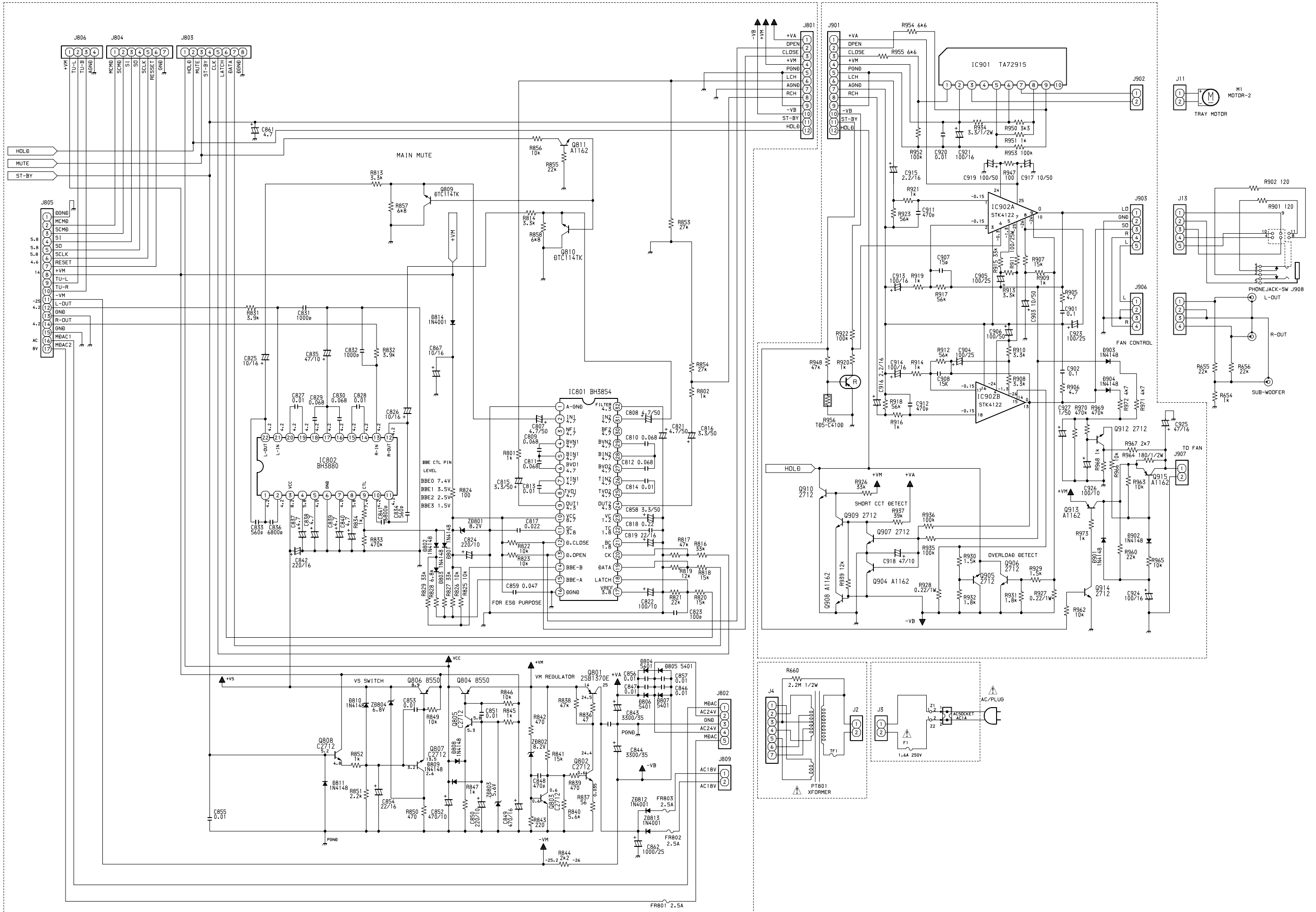
SCHEMATIC DIAGRAM-1 (TUNER)



SCHEMATIC DIAGRAM-2 (CD)

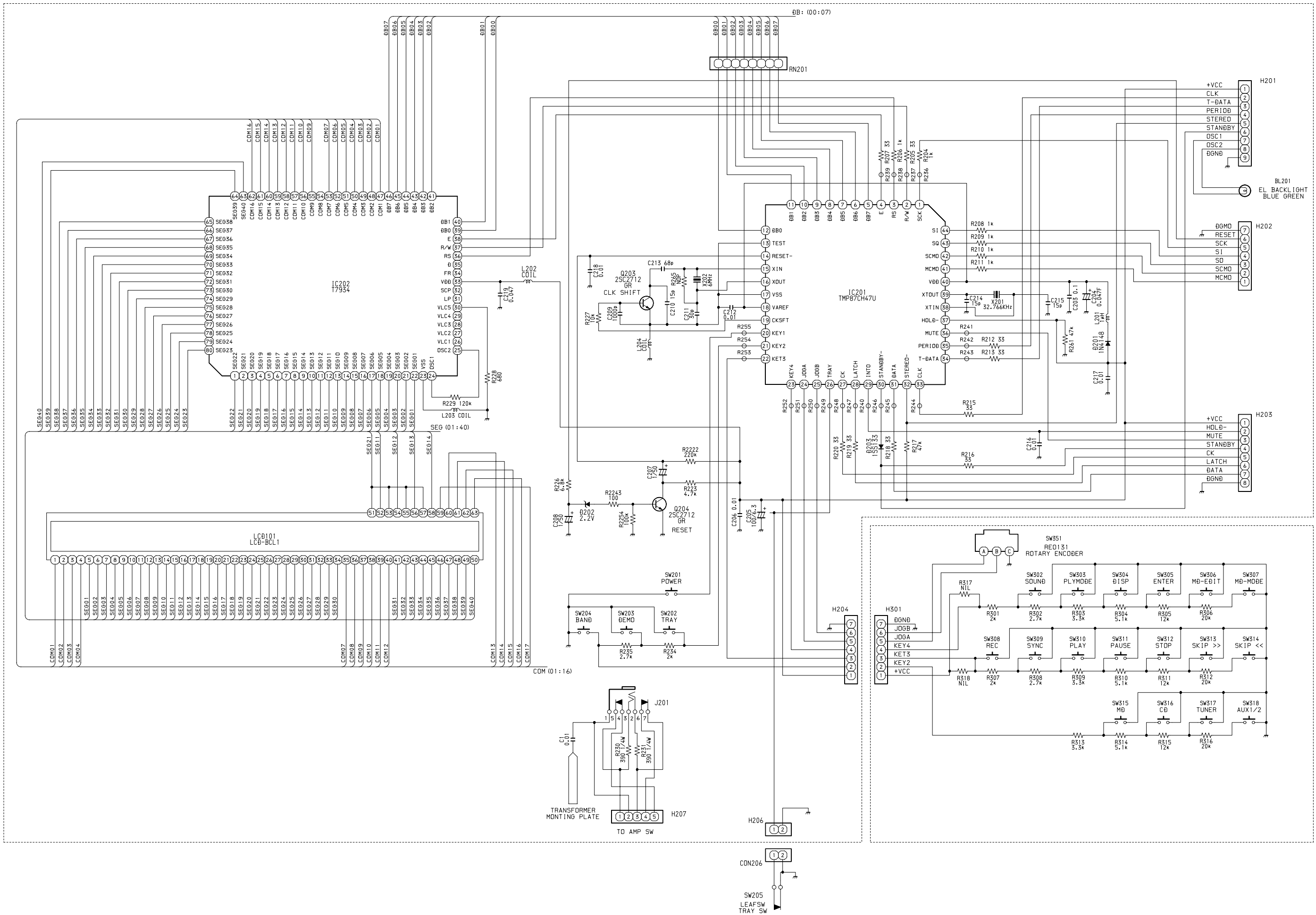


SCHEMATIC DIAGRAM-3 (AUDIO/POWER)

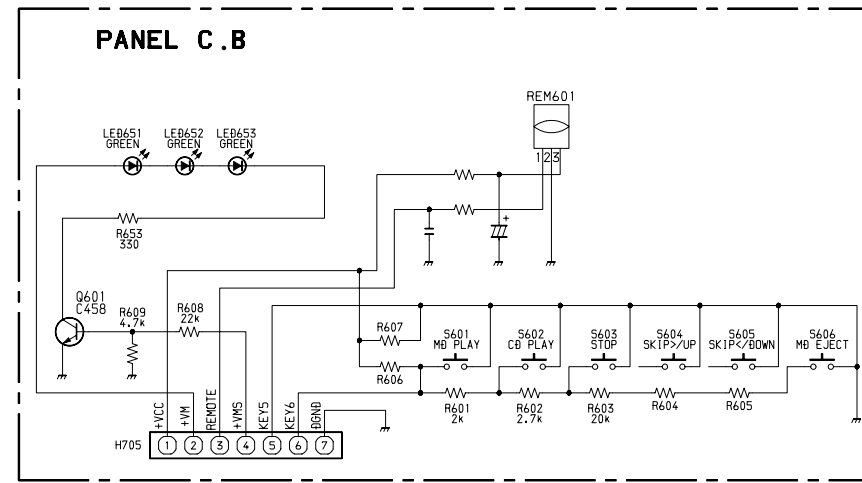
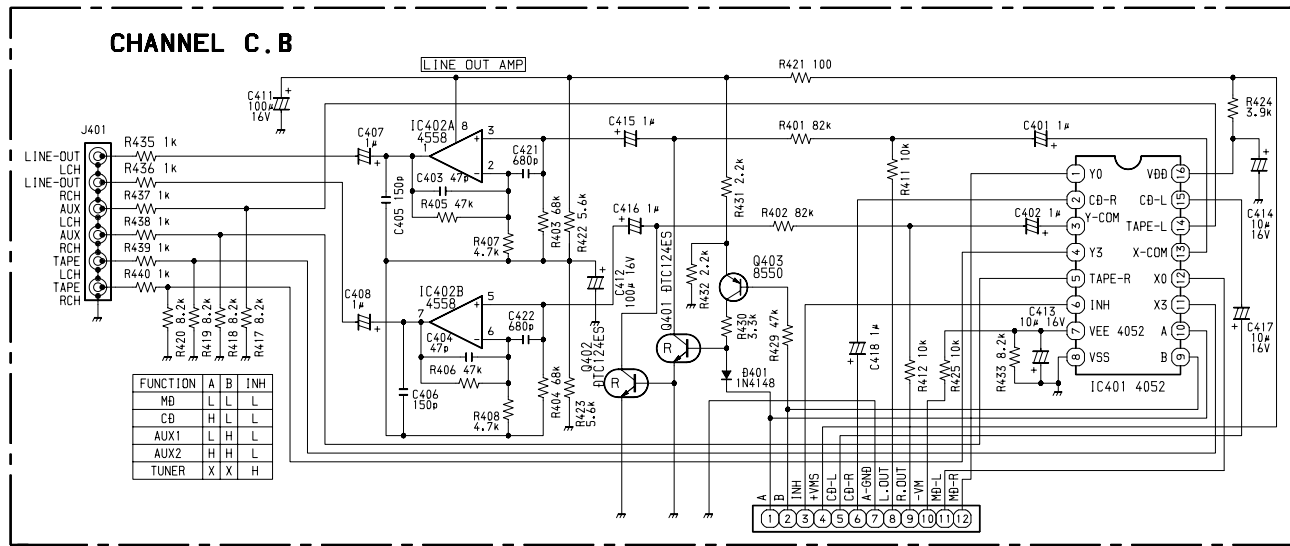


SCHEMATIC DIAGRAM-4 (DISPLAY)

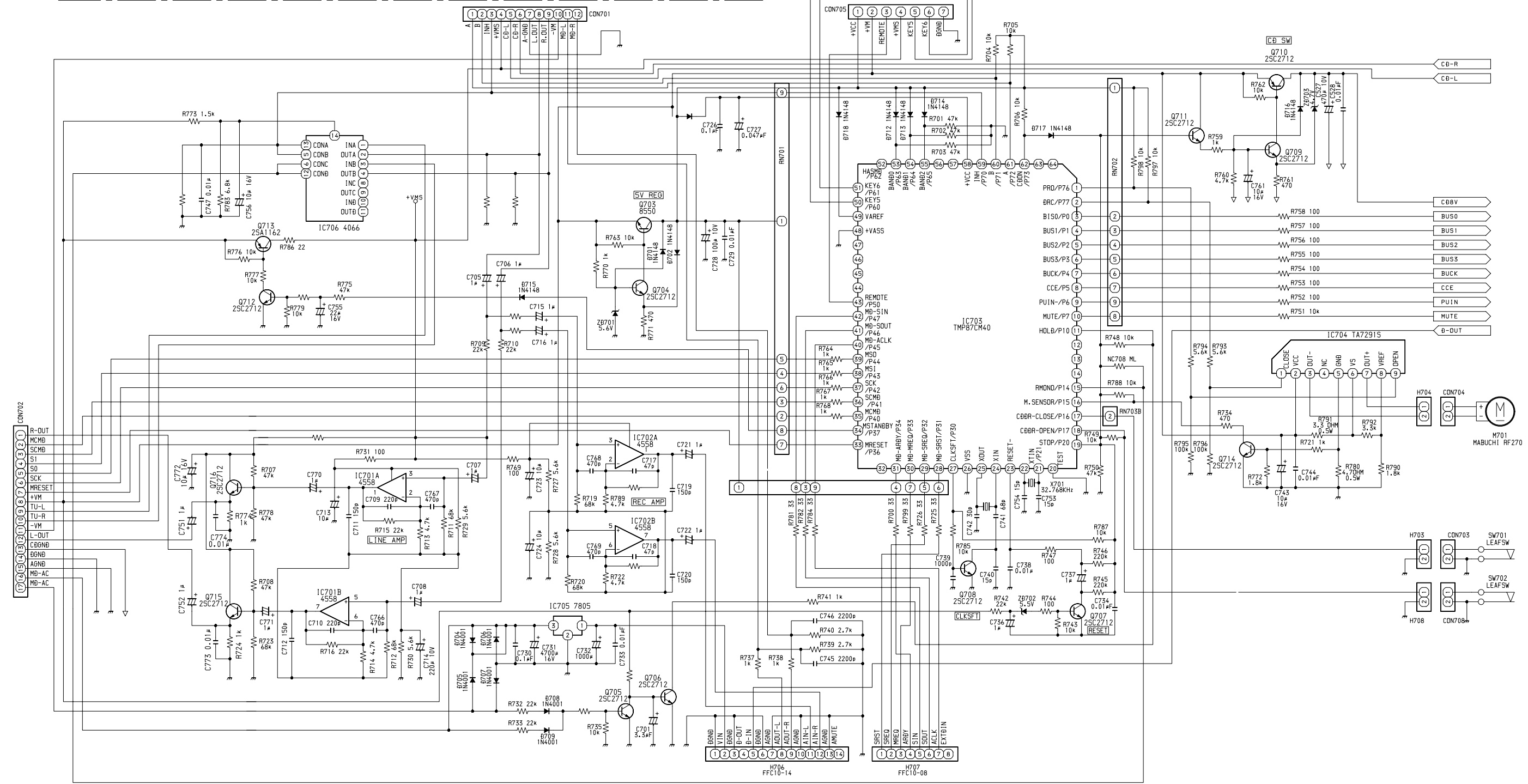
○ =PULL-UP



SCHEMATIC DIAGRAM-5 (MECHA CONTROL)



VERSION	B714	B713	B712
FM/AM (U)	0	0	0
FM/MW/SW	0	X	0
FM/MW/LW	X	0	0
FM1/FM2/MW/LW	X	X	0
FM/MW/LW	0	0	X
FM/AM STEREO	X	0	X
FM/AM	X	X	X



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
TRIMMER	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- -	
G- -	
G- -	

アイワ株式会社
AIWA CO., LTD.

931261 750038

Tokyo Japan