

# SERVICE MANUAL

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PORTABLE MP3 RECORDER

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- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-007-434-3T2).

## SPECIFICATIONS

<b>Memory card slot</b>	For a removable 16 MB or 32 MB memory card
<b>Maximum output level</b>	5 mW + 5 mW (32 ohms)
<b>Frequency range</b>	20 Hz – 20 kHz
<b>Load impedance</b>	16 – 32 ohms
<b>Distortion rate</b>	0.35 % or less S/N ratio 85 dB
<b>Power supply</b>	DC 1.5 V using an LR6 (size AA) alkaline battery
<b>Battery life</b>	Using an LR6 alkaline battery Approx. 10 hours for playback Approx. 8 hours for recording (Mic) Approx. 3.5 hours for recording (Line in)
<b>PC interface</b>	Parallel port
<b>Built-in microphone</b>	Electric condenser microphone (monaural)
<b>Maximum dimension</b>	Approx. 65 (W) x 90 (H) x 18.7 (D) mm 2 <sup>5</sup> / <sub>8</sub> (W) x 3 <sup>5</sup> / <sub>8</sub> (H) x 3 <sup>3</sup> / <sub>4</sub> (D) in.
<b>Weight</b>	Approx. 77.5 g (2.7 oz) excluding battery
<b>Supplied headphones HP-M054</b>	Type: In-ear type Impedance: 32 ohms Sensitivity: 105 dB/mW

- Design and specifications are subject to change without notice.

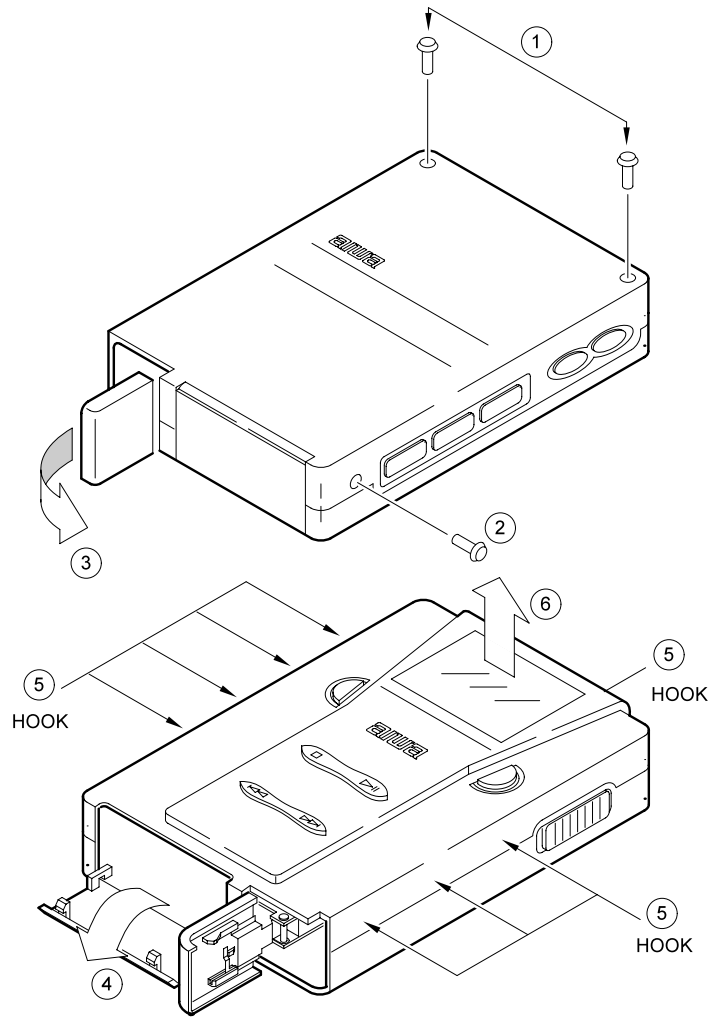
## ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-HZ4-905-010		IB, Y (6L)-I
2	87-B30-337-010		HEADPHONE, HP-M054
3	8A-HZ4-952-010		CORD, PARALLEL MM-FX500
4	8A-HZ4-953-010		RC UNIT, RCM 500

# DISASSEMBLY INSTRUCTIONS

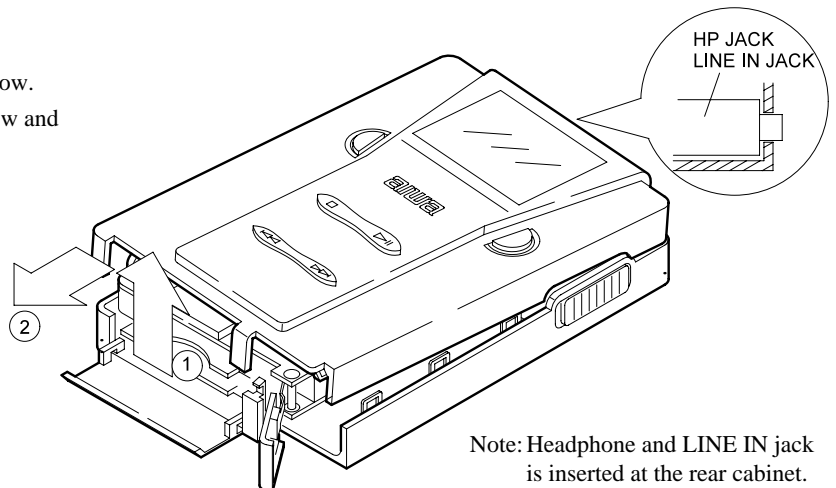
## 1. Removal of FRONT, CABI

- 1) Remove the two screws (VT2+1.7-9).
- 2) Remove the screw (S-SCREW, SR+1.4-4.5).
- 3) Open the battery lid.
- 4) Open the MMC slot lid.
- 5) Press on the cabinet indicated by the arrows, and release the catches.
- 6) Remove the front cabinet.



## 2. Removal of PWBs

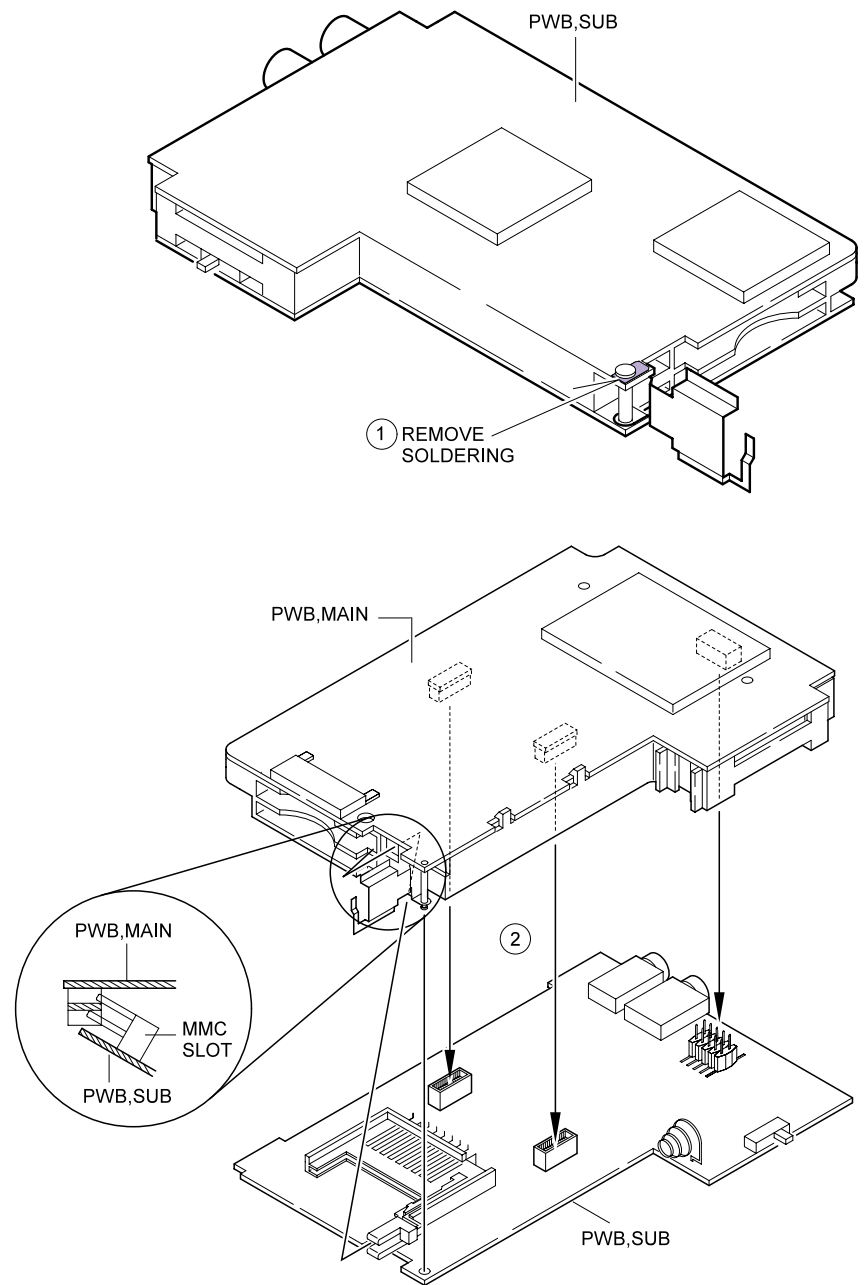
- 1) Lift up the PWBs to the direction indicated by the arrow.
- 2) Move the PWBs to the direction indicated by the arrow and remove the PWBs.



Note: Headphone and LINE IN jack is inserted at the rear cabinet.

### 3. Dividing the PWBs

- 1) Remove the solder indicated by the arrow.
- 2) Detach the three connector and remove the PWB.



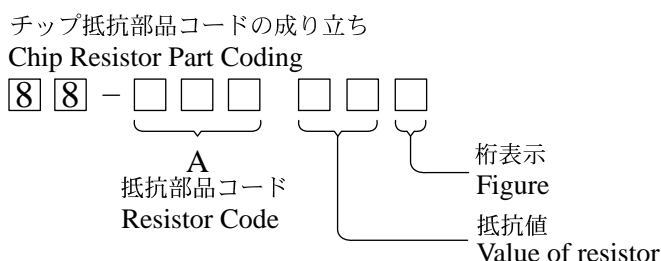
Note: The knob of the MMC slot on the PWB, SUB is inserted to the guide of the PWB, MAIN. Pay attention to it when assemble them.

# ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
<b>IC</b>				C566	87-010-831-080		C-CAP,U,0.1-16 Z F
	87-A21-720-080		C-IC,LM4881MM	C601	87-010-805-080		CAP,S 1-16 Z F
	87-A21-729-040		C-IC,SN74CBTLV3384PWR	C602	87-010-805-080		CAP,S 1-16 Z F
	87-A21-725-080		C-IC,DG9232	C603	87-010-831-080		C-CAP,U,0.1-16 Z F
	87-A21-741-030		C-IC,M30620ECGP	C604	87-010-831-080		C-CAP,U,0.1-16 Z F
	87-A21-711-040		C-IC,DS1816-20	C605	87-010-831-080		C-CAP,U,0.1-16 Z F
	87-A21-740-030		C-IC,TMS320VC5402PGE	C606	87-010-831-080		C-CAP,U,0.1-16 Z F
	87-A21-743-030		C-IC,SST39VF020	C607	87-010-831-080		C-CAP,U,0.1-16 Z F
	87-A21-744-040		C-IC,SN104940DGNR	C608	87-010-831-080		C-CAP,U,0.1-16 Z F
	87-A21-034-040		C-IC,UDA1341TS	C609	87-010-805-080		CAP,S 1-16 Z F
	87-A21-742-030		C-IC,STA013T	C610	87-010-805-080		CAP,S 1-16 Z F
	87-A21-655-040		C-IC,MAX1705EEE	C611	87-012-286-080		CAP,U 0.01-25 K B
	87-A21-730-040		C-IC,SN74LVTH244APWR	C612	87-012-286-080		CAP,U 0.01-25 K B
				C613	87-012-286-080		CAP,U 0.01-25 K B
				C614	87-012-286-080		CAP,U 0.01-25 K B
<b>TRANSISTOR</b>				C615	87-012-286-080		CAP,U 0.01-25 K B
	87-A30-519-080		C-FET,SSM3J02F	C616	87-012-286-080		CAP,U 0.01-25 K B
	89-327-125-080		C-TR,2SC2712GR	C617	87-012-286-080		CAP,U 0.01-25 K B
	87-A30-278-040		C-FET,2SK2980	C618	87-012-286-080		CAP,U 0.01-25 K B
				C619	87-012-286-080		CAP,U 0.01-25 K B
<b>DIODE</b>				C620	87-012-286-080		CAP,U 0.01-25 K B
	87-017-520-080		C-DIODE,SFPB52	C621	87-012-286-080		CAP,U 0.01-25 K B
				C651	87-010-805-080		CAP,S 1-16 Z F
				C652	87-010-805-080		CAP,S 1-16 Z F
				C653	87-010-805-080		CAP,S 1-16 Z F
<b>MAIN C.B</b>				C654	87-010-831-080		C-CAP,U,0.1-16 Z F
C101	87-012-178-080		C-CAP,U 18P-50 J CH	C655	87-016-436-080		C-CAP,TN 47-4 B2
C102	87-012-178-080		C-CAP,U 18P-50 J CH	C657	87-012-286-080		CAP,U 0.01-25 K B
C103	87-012-178-080		C-CAP,U 18P-50 J CH	C670	87-010-831-080		C-CAP,U,0.1-16 Z F
C104	87-012-178-080		C-CAP,U 18P-50 J CH	CN101	87-A61-343-080		C-CONN,10P REC P1270-25G
C105	87-A10-707-080		C-CAP,U 0.47-10 Z F	CN301	87-A61-341-080		C-CONN,20P REC CHB-3.9
C106	87-010-831-080		C-CAP,U,0.1-16 Z F	CN501	87-A61-341-080		C-CONN,20P REC CHB-3.9
C107	87-016-289-080		C-CAP,TN 10-6.3 F93	CON1	87-A61-345-080		C-CONN,15P PCMI51001
C109	87-010-831-080		C-CAP,U,0.1-16 Z F	L451	87-A50-190-080		C-COIL,S BLM21A102S
C151	87-010-805-080		CAP,S 1-16 Z F	L452	87-A50-190-080		C-COIL,S BLM21A102S
C154	87-012-178-080		C-CAP,U 18P-50 J CH	L501	87-A50-658-080		C-COIL,CR43-10UH
C155	87-010-805-080		CAP,S 1-16 Z F	L551	87-A50-190-080		C-COIL,S BLM21A102S
C451	87-010-805-080		CAP,S 1-16 Z F	LCD1	87-A91-815-010		LCD ASSY,WD-A1202W-1YNN
C452	87-010-831-080		C-CAP,U,0.1-16 Z F	MIC1	87-A91-816-010		MIC,ECM OB-22P 46
C453	87-016-288-080		C-CAP,TN 4.7-6.3 M	R103	87-022-286-080		C-RES,U 100K-1/16WF
C454	87-010-831-080		C-CAP,U,0.1-16 Z F	R501	87-022-288-080		C-RES,U 150K-1/16WF
C455	87-012-274-080		CHIP CAP,U 1000P-50 K B	R502	87-022-290-080		C-RES,U 220K-1/16WF
C456	87-012-282-080		CAP,U 4700P-50 K B	R601	87-022-296-080		C-RES,U 680K-1/16WF
C457	87-A10-039-080		C-CAP,U 470P-50 J CH	R620	87-022-290-080		C-RES,U 220K-1/16WF
C458	87-012-178-080		C-CAP,U 18P-50 J CH	S601	87-A91-814-080		C-SW,TACT SKQGAB
C459	87-012-178-080		C-CAP,U 18P-50 J CH	S602	87-A91-814-080		C-SW,TACT SKQGAB
C460	87-010-805-080		CAP,S 1-16 Z F	S603	87-A91-814-080		C-SW,TACT SKQGAB
C461	87-010-805-080		CAP,S 1-16 Z F	S604	87-A91-814-080		C-SW,TACT SKQGAB
C501	87-016-436-080		C-CAP,TN 47-4 B2	S605	87-A91-814-080		C-SW,TACT SKQGAB
C502	87-A10-828-080		C-CAP,U 0.33-6.3 K B	S606	87-A91-813-010		SW,TACT SKHLLD
C503	87-A10-828-080		C-CAP,U 0.33-6.3 K B	S607	87-A91-813-010		SW,TACT SKHLLD
C504	87-010-831-080		C-CAP,U,0.1-16 Z F	S608	87-A91-813-010		SW,TACT SKHLLD
C505	87-012-180-080		C-CAP,U 22P-50 J CH	S609	87-A91-813-010		SW,TACT SKHLLD
C506	87-010-944-180		C-CAP,E 220-4 M ZS	S610	87-A91-813-010		SW,TACT SKHLLD
C551	87-012-197-080		C-CAP,U 150P-50 J CH	S611	87-A91-814-080		C-SW,TACT SKQGAB
C552	87-012-197-080		C-CAP,U 150P-50 J CH	X101	87-030-364-010		VIB,XTAL 32.768KHZ CFS-308 CT
C553	87-012-197-080		C-CAP,U 150P-50 J CH	X102	87-A70-285-080		C-VIB,XTAL 10MHZ HCM49
C554	87-012-197-080		C-CAP,U 150P-50 J CH	X451	87-A70-286-080		C-VIB,XTAL 14.31818MHZ HCM49
C555	87-012-197-080		C-CAP,U 150P-50 J CH	<b>SUB C.B</b>			
C556	87-012-197-080		C-CAP,U 150P-50 J CH	C201	87-010-831-080		C-CAP,U,0.1-16 Z F
C557	87-012-197-080		C-CAP,U 150P-50 J CH	C202	87-010-831-080		C-CAP,U,0.1-16 Z F
C558	87-012-197-080		C-CAP,U 150P-50 J CH	C203	87-010-831-080		C-CAP,U,0.1-16 Z F
C559	87-012-197-080		C-CAP,U 150P-50 J CH	C204	87-010-831-080		C-CAP,U,0.1-16 Z F
C560	87-012-197-080		C-CAP,U 150P-50 J CH	C205	87-010-831-080		C-CAP,U,0.1-16 Z F
C561	87-012-197-080		C-CAP,U 150P-50 J CH	C206	87-010-831-080		C-CAP,U,0.1-16 Z F
C562	87-012-197-080		C-CAP,U 150P-50 J CH	C207	87-010-831-080		C-CAP,U,0.1-16 Z F
C563	87-012-197-080		C-CAP,U 150P-50 J CH	C208	87-010-831-080		C-CAP,U,0.1-16 Z F
C564	87-012-197-080		C-CAP,U 150P-50 J CH	C209	87-010-831-080		C-CAP,U,0.1-16 Z F
C565	87-010-831-080		C-CAP,U,0.1-16 Z F				

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C210	87-010-831-080		C-CAP,U,0.1-16 Z F	C367	87-010-831-080		C-CAP,U,0.1-16 Z F
C211	87-010-831-080		C-CAP,U,0.1-16 Z F	C368	87-016-288-080		C-CAP,TN 4.7-6.3 M
C212	87-010-831-080		C-CAP,U,0.1-16 Z F	C369	87-010-831-080		C-CAP,U,0.1-16 Z F
C213	87-012-178-080		C-CAP,U 18P-50 J CH	C370	87-012-274-080		CHIP CAP,U 1000P-50 K B
C214	87-012-178-080		C-CAP,U 18P-50 J CH	C401	87-010-805-080		CAP,S 1-16 Z F
C215	87-010-831-080		C-CAP,U,0.1-16 Z F	C402	87-010-831-080		C-CAP,U,0.1-16 Z F
C216	87-010-831-080		C-CAP,U,0.1-16 Z F	C508	87-A10-828-080		C-CAP,U 0.33-6.3 K B
C217	87-010-831-080		C-CAP,U,0.1-16 Z F	C509	87-012-180-080		C-CAP,U 22P-50 J CH
C218	87-010-831-080		C-CAP,U,0.1-16 Z F	C510	87-A10-828-080		C-CAP,U 0.33-6.3 K B
C219	87-010-831-080		C-CAP,U,0.1-16 Z F	C511	87-016-436-080		C-CAP,TN 47-4 B2
C220	87-010-831-080		C-CAP,U,0.1-16 Z F	C512	87-A10-828-080		C-CAP,U 0.33-6.3 K B
C221	87-010-831-080		C-CAP,U,0.1-16 Z F	C513	87-010-831-080		C-CAP,U,0.1-16F
C222	87-010-831-080		C-CAP,U,0.1-16 Z F	C514	87-016-436-080		C-CAP,TN 47-4 B2
C223	87-010-831-080		C-CAP,U,0.1-16 Z F	C515	87-010-831-080		C-CAP,U,0.1-16 Z F
C224	87-010-831-080		C-CAP,U,0.1-16 Z F	C516	87-012-180-080		C-CAP,U 22P-50 J CH
C225	87-010-831-080		C-CAP,U,0.1-16 Z F	C517	87-A12-329-080		C-CAP,TN 100-6.3 M D
C226	87-010-831-080		C-CAP,U,0.1-16 Z F	C519	87-016-288-080		C-CAP,TN 4.7-6.3 M
C227	87-012-178-080		C-CAP,U 18P-50 J CH	C520	87-016-288-080		C-CAP,TN 4.7-6.3 M
C228	87-012-178-080		C-CAP,U 18P-50 J CH	C521	87-016-436-080		C-CAP,TN 47-4 B2
C251	87-010-831-080		C-CAP,U,0.1-16 Z F	C656	87-010-805-080		CAP,S 1-16 Z F
C301	87-016-436-080		C-CAP,TN 47-4 B2	C721	87-016-289-080		C-CAP,TN 10-6.3M F93
C302	87-016-436-080		C-CAP,TN 47-4 B2	C722	87-010-197-080		C-CAP,S 0.01-251 CB
C303	87-010-831-080		C-CAP,U,0.1-16 Z F	CN1	87-A61-475-030		C-SOCKET,9P MMC DUAL
C304	87-012-167-080		C-CAP,U 5P-50 C CH	CN201	87-A61-344-080		C-CONN,10P PLUG N2440-01G
C305	87-012-167-080		C-CAP,U 5P-50 C CH	CN401	87-A61-342-080		C-CONN,20P PLUG CHB-5.3
C306	87-010-805-080		CAP,S 1-16 Z F	CN601	87-A61-342-080		C-CONN,20P PLUG CHB-5.3
C307	87-010-805-080		CAP,S 1-16 Z F	J1	87-A61-442-010		JACK,3.5 4P BLK ST
C308	87-010-805-080		CAP,S 1-16 Z F	J3	87-049-861-010		JACK,3.5BLK ST W/O SW2.5MM
C320	87-012-274-080		CHIP CAP,U 1000P-50 K B	L351	87-A50-190-080		C-COIL,S BLM21A102S
C351	87-A12-329-080		C-CAP,TN 100-6.3 M D	L352	87-A50-190-080		C-COIL,S BLM21A102S
C352	87-A12-329-080		C-CAP,TN 100-6.3 M D	L503	87-A50-658-080		C-COIL,CR43-10UH
C353	87-016-289-080		C-CAP,TN 10-6.3 M F93	L701	87-A91-667-080		C-F-BEAD,U BLM11B102S
C354	87-012-167-080		C-CAP,U 5P-50 C CH	L702	87-A91-667-080		C-F-BEAD,U BLM11B102S
C355	87-010-831-080		C-CAP,U,0.1-16 Z F	L703	87-A91-667-080		C-F-BEAD,U BLM11B102S
C356	87-010-805-080		CAP,S 1-16 Z F	L704	87-A91-667-080		C-F-BEAD,U BLM11B102S
C357	87-010-805-080		CAP,S 1-16 Z F	L705	87-A91-667-080		C-F-BEAD,U BLM11B102S
C358	87-012-167-080		C-CAP,U 5P-50 C CH	L706	87-A91-667-080		C-F-BEAD,U BLM11B102S
C359	87-010-831-080		C-CAP,U,0.1-16 Z F	R155	87-022-287-080		C-RES,U 120K-1/16WF
C360	87-016-288-080		C-CAP,TN 4.7-6.3 M	R156	87-022-291-080		C-RES,U 270K-1/16WF
C361	87-010-805-080		CAP,S 1-16 Z F	R157	87-022-288-080		C-RES,U 150K-1/16WF
C362	87-010-831-080		C-CAP,U,0.1-16 Z F	R158	87-022-286-080		C-RES,U 100K-1/16WF
C363	87-010-831-080		C-CAP,U,0.1-16 Z F	S1	87-A90-330-080		C-SW,SL 1-1-2 SSSS81 T1.4
C364	87-016-436-080		C-CAP,TN 47-4 B2	X1	87-A70-288-080		C-VIB,XTAL 11.2896MHZ HCM49
C365	87-016-289-080		C-CAP,TN 10-6.3 M F93	X2	87-A70-287-080		C-VIB,XTAL 12.288MHZ HCM49
C366	87-010-831-080		C-CAP,U,0.1-16 Z F				

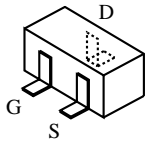
チップ抵抗部品コード/CHIP RESISTOR PART CODE



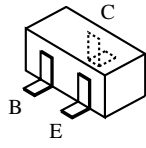
チップ抵抗  
Chip resistor

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

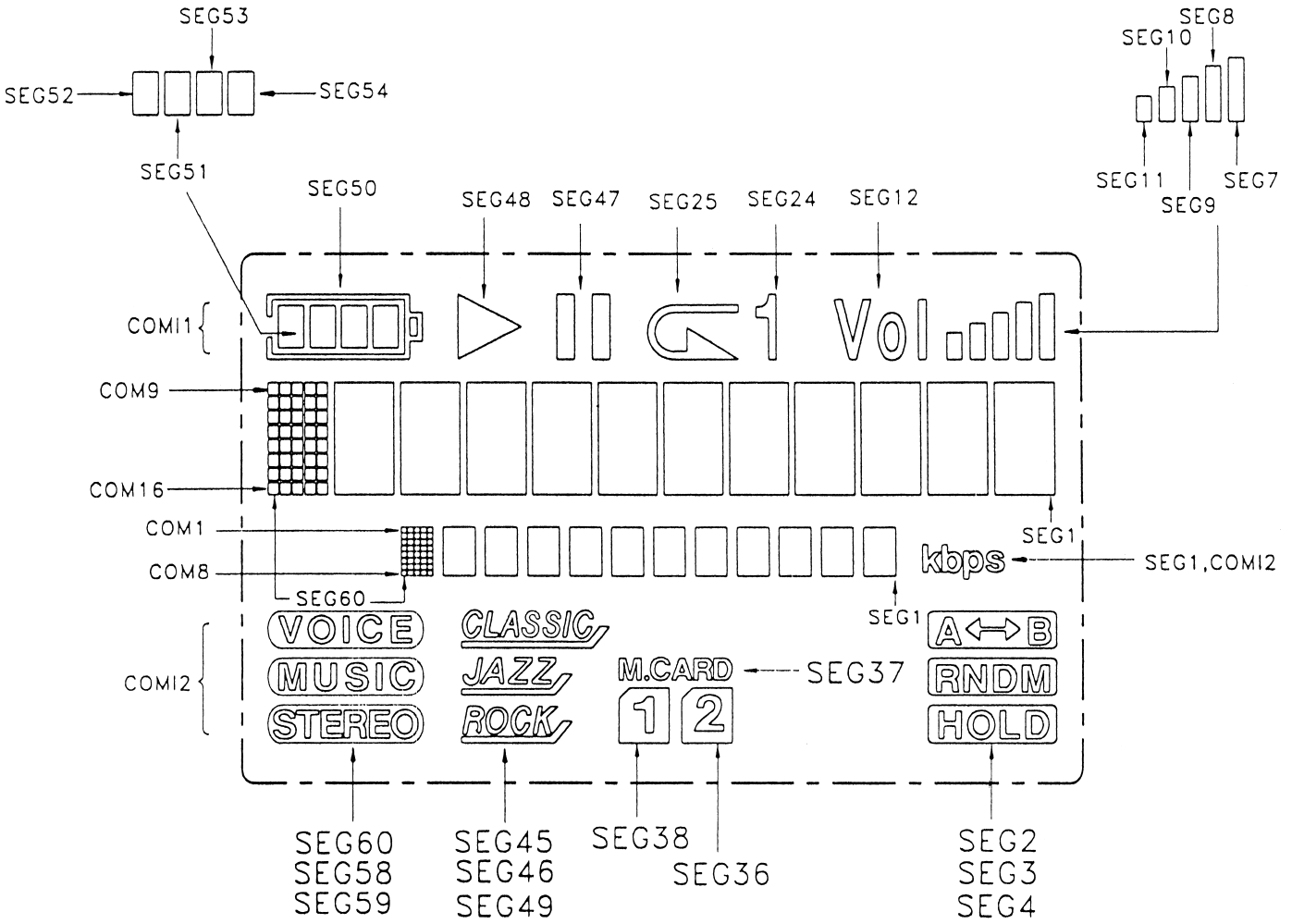


2SK2980  
SSM3J02F

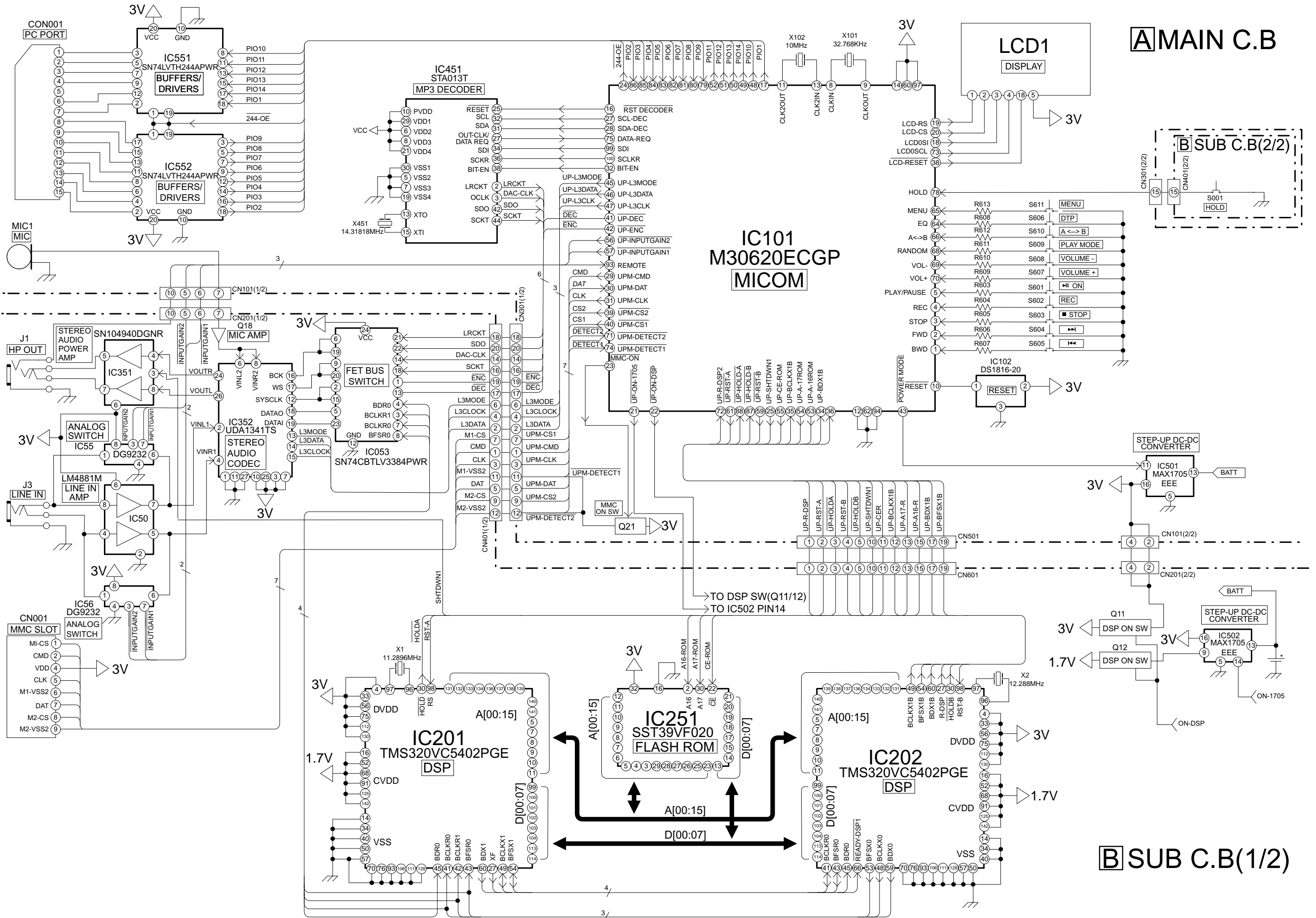


2SC2712

# LCD DISPLAY



BLOCK DIAGRAM



A MAIN C.B

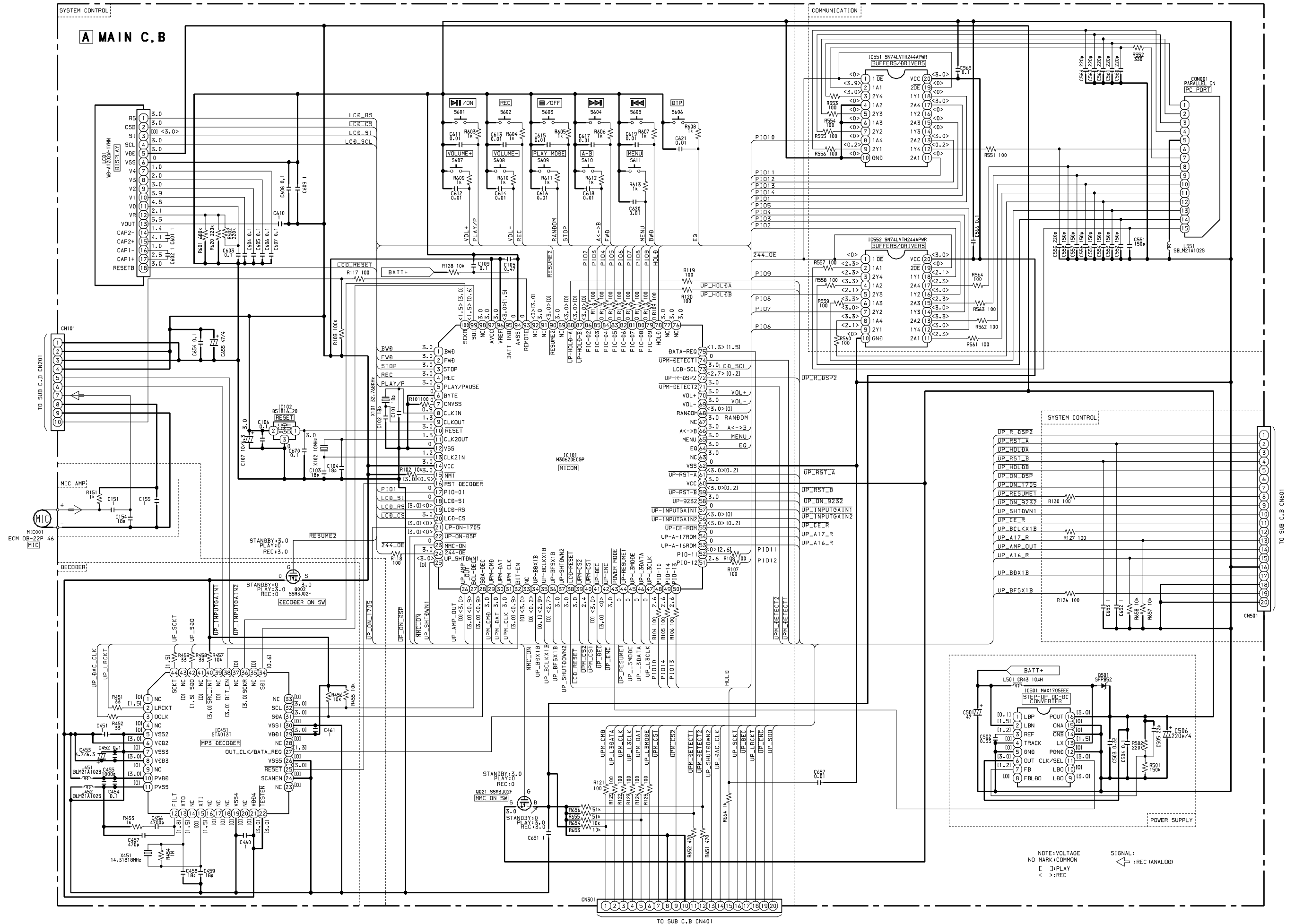
B SUB C.B(2/2)

B SUB C.B(1/2)

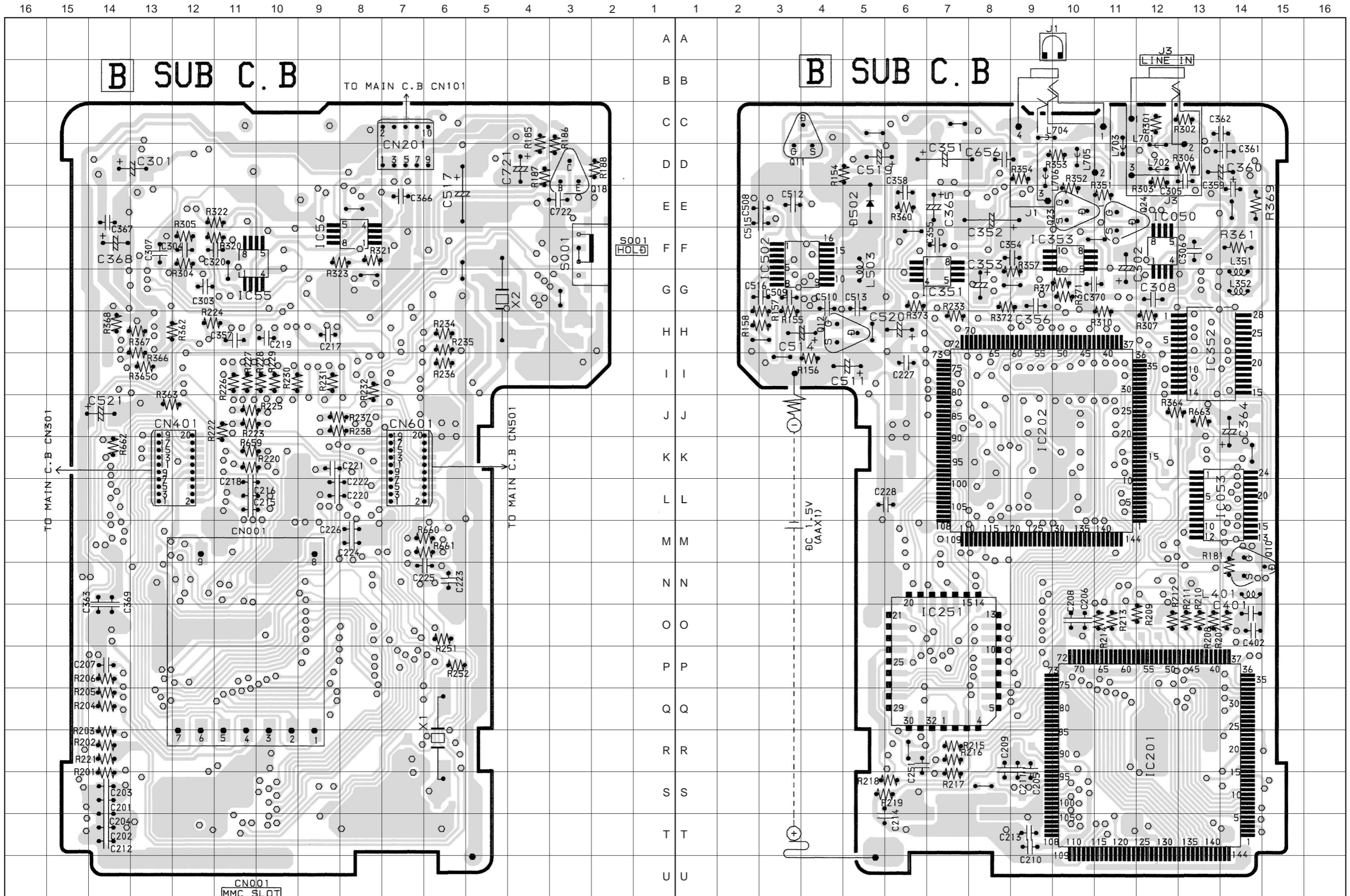




SCHEMATIC DIAGRAM - 1 (MAIN)

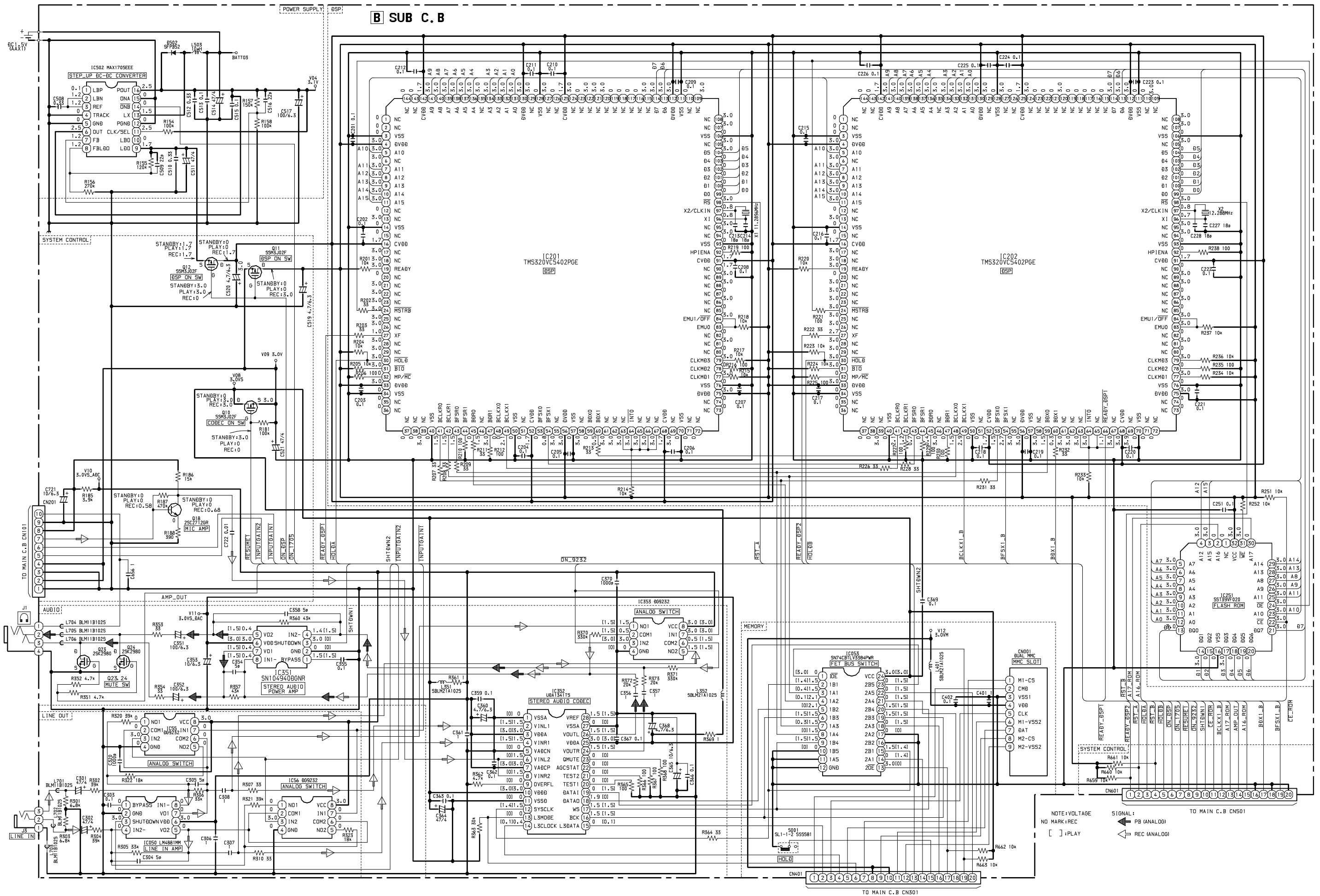






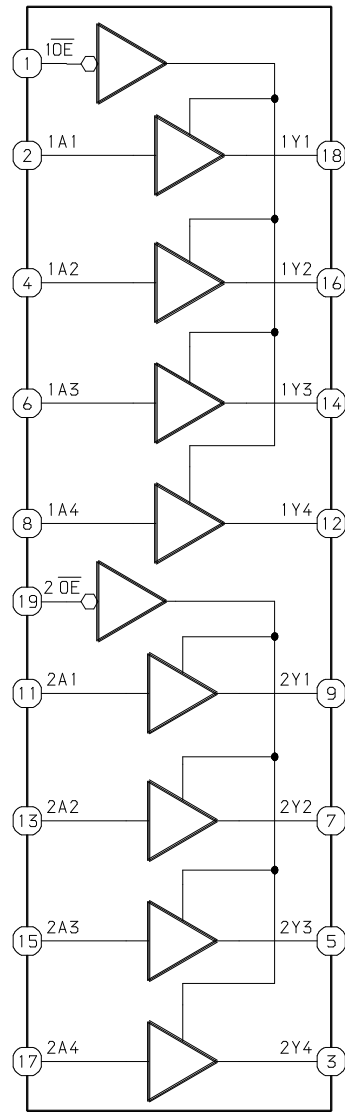


SCHEMATIC DIAGRAM - 2 (SUB)



# IC BLOCK DIAGRAM

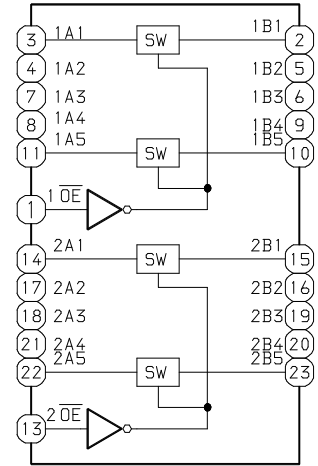
IC, SN74LVTH244PWR



FUNCTION TABLE (EACH BUFFER)

INPUTS	OUTPUT
OE A Y	
L H H	H
L L L	L
H X Z	Z

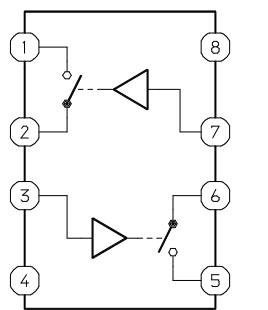
IC, SN74CBTLV3384PWR



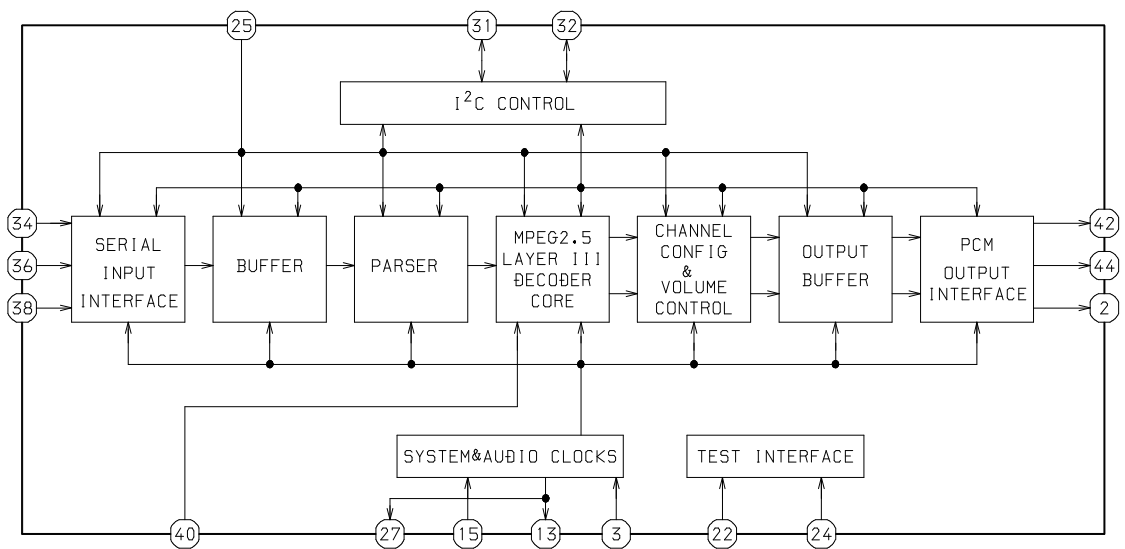
TRUTH TABLE

INPUTS	INPUTS/OUTPUTS
1OE 2OE 1B1-1B5 2B1-2B5	
L L 1A1-1A5 2A1-2A5	
L H 1A1-1A5 Z	
H L Z 2A1-2A5	
H H Z Z	

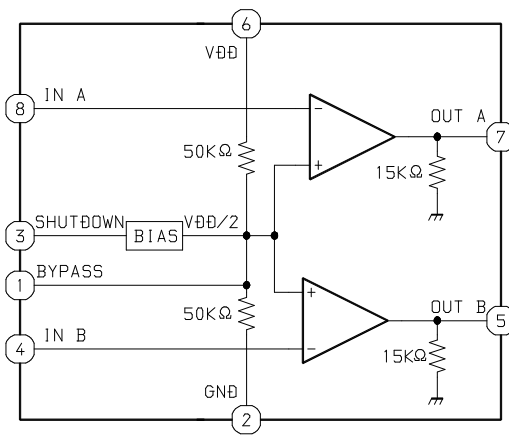
IC, DG9232



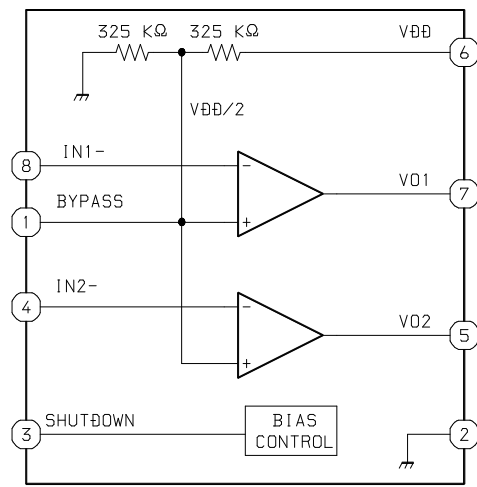
IC, STA013T



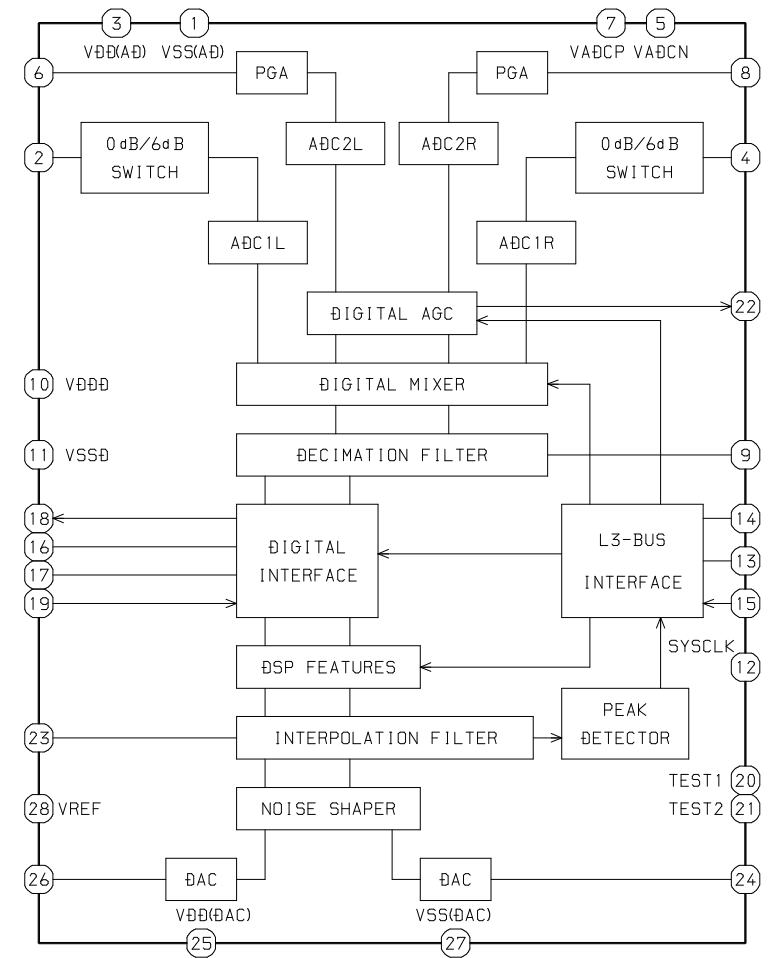
IC, LM4881MM



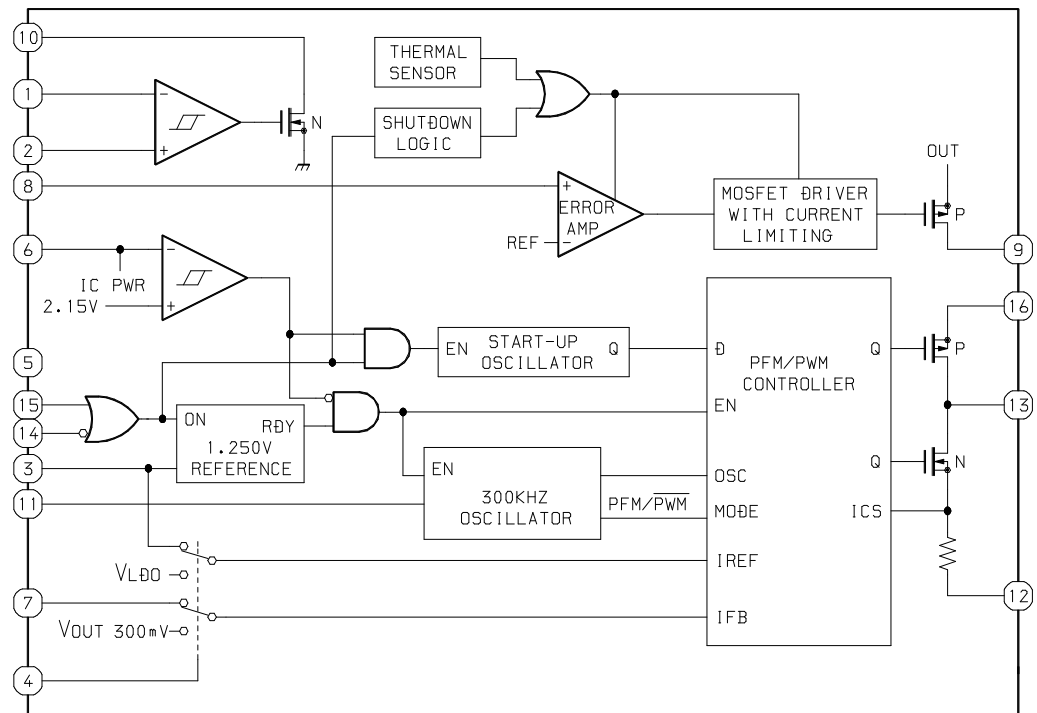
IC, SN104940DGNR



IC, UDA1341TS



IC, MAX1705EEE



## IC DESCRIPTION

IC, M30620ECGP

Pin No.	Pin Name	I/O	Description
1	BWD	I	Backward key input.
2	FWD	I	Fordward key input.
3	STOP	I	Stop key input.
4	REC	I	Record key input.
5	PLAY/PAUSE	I	Play/pause key input.
6	BYTE	I	External data bus width input select. (Connected to GND)
7	CNVSS	I	Processor mode selection.
8	CLKIN	I	32.768kHz ceralock.
9	CLKOUT	O	32.768kHz ceralock.
10	$\overline{\text{RESET}}$	I	Micon reset input.
11	CLK2OUT	O	10MHz ceralock.
12	VSS	I	GND.
13	CLK2IN	I	10MHz ceralock.
14	VCC	I	Power supply (+3.0V).
15	$\overline{\text{NMI}}$	I	Non-maskabable interrupt pin.
16	$\overline{\text{RST DECODER}}$	O	Decoder reset pin.
17	PIO-01	I	PC link data.
18	LCD-SI	O	LCD serial data input.
19	LCD-RS	O	LCD register selection.
20	LCD-CS	O	LCD chip selection.
21	$\overline{\text{UP-ON-1705}}$	O	DC-DC converter ON/OFF control for recording.
22	$\overline{\text{UP-ON-DSP}}$	O	DSP ON/OFF control.
23	$\overline{\text{MMC-ON}}$	O	Multimedia card ON/OFF control.
24	$\overline{244\text{-OE}}$	O	I/O buffer/driver ON/OFF control.
25	UP-SHTDWN1	O	Power amp ON/OFF control.
26	UP-AMP-OUT	O	Mute ON/OFF control.
27	SCL-DEC	I	Decoder PC serial data clock.
28	SDA-DEC	I/O	Decoder PC serial data and acknowledge.
29	UPM-CMD	O	Multimedia card command/respond.
30	UPM-DAT	I/O	Multimedia card data input/output.
31	UPM-CLK	O	Multimedia card clock input.
32	BIT-EN	O	Decoder audio data valid/invalid control.
33	NC	-	Not connected.
34	UP-BDX1B	I	DSP encoded audio data.
35	UP-BCLKX1B	I	DSP audio data clock.
36	UP-BFSX1B	I	DSP encoded audio data synchronization pulse.
37	UP-SHTDWN2	O	Line-in record amp ON/OFF control.
38	$\overline{\text{LCD RESET}}$	O	LCD reset control.
39	$\overline{\text{UPM-CS2}}$	I	Multimedia card select 2.
40	$\overline{\text{UPM-CS1}}$	I	Multimedia card select 1.
41	$\overline{\text{UP-DEC}}$	O	Decode function control

Pin No.	Pin Name	I/O	Description
41	$\overline{\text{UP-DEC}}$	O	Decode function control.
42	$\overline{\text{UP-ENC}}$	O	Encode function control.
43	$\overline{\text{POWER MODE}}$	O	Power mode control.
44	$\overline{\text{UP-RESUME1}}$	O	CODEC ON/OFF control.
45	UP-L3MODE	O	CODEC L3 bus mode input.
46	UP-L3DATA	O	CODEC L3 bus data input.
47	UP-L3CLK	O	CODEC L3 bus clock input.
48	PIO-10	I	PC link data.
49 ~ 52	PIO-14 ~ PIO-11	I	PC link data.
53	UP-A-16ROM	O	Flash ROM music/voice select pin.
54	UP-A-17ROM	O	Flash ROM music/voice select pin.
55	$\overline{\text{UP-CE-ROM}}$	O	Flash ROM ON/OFF select.
56	$\overline{\text{UP-INPUTGAIN2}}$	O	Line-in record buffer amp gain 2 ON/OFF control.
57	$\overline{\text{UP-INPUTGAIN1}}$	O	Line-in record buffer amp gain 1 ON/OFF control.
58	$\overline{\text{UP-9232}}$	O	Record monitoring ON/OFF control.
59	$\overline{\text{UP\_RST\_B}}$	O	DSP 2 reset control.
60	VCC	I	Power supply (+3.0V).
61	$\overline{\text{UP-RST-A}}$	O	DSP 1 reset control.
62	VSS	I	GND.
63	NC	–	Not connected.
64	EQ	I	DTP key input.
65	MENU	I	Menu key input.
66	A<--->B	I	A to B repeat key input.
67	NC	–	Not connected.
68	RANDOM	I	Random play key input.
69	VOL–	I	Volume decrease key input.
70	VOL+	I	Volume increase key input.
71	$\overline{\text{UPM-DETECT2}}$	I	Multimedia card slot 2 acknowledge pin.
72	$\overline{\text{UP-R-DSP2}}$	I	DSP 2 ready acknowledge pin.
73	LCD-SCL	I	LCD serial clock.
74	$\overline{\text{UPM-DETECT1}}$	I	Multimedia card slot 1 acknowledge pin.
75	DATA-REQ	I	Decoder request data acknowledge pin.
76 ~ 77	NC	–	Not connected.
78	HOLD	I	Hold key input.
79 ~ 86	PIO-09 ~ PIO-02	I	PC link data.
87	$\overline{\text{UP-HOLD-B}}$	O	DSP 2 hold stage control.
88	$\overline{\text{UP-HOLD-A}}$	O	DSP 1 hold stage control.
89	NC	–	Not connected.
90	$\overline{\text{RESUME2}}$	O	Decoder ON/OFF control.
91 ~ 92	NC	–	Not connected.
93	REMOTE	I	Remote control A/D key input.

Pin No.	Pin Name	I/O	Description
94	AVSS	I	GND.
95	BATT-IND	I	Battery indicator A/D key input.
96	VREF	I	Reference voltage input for A/D converter. (Connected to power supply (+3.0V))
97	AVCC	I	Power supply (+3.0V).
98	NC	–	Not connected.
99	SDI	O	Serial audio data to decoder.
100	SCKR	O	Serial audio data clock to decoder.

#### IC, TMS320VC5402PGE

Pin No.	Pin Name	I/O	Description
1 ~ 2	NC	–	Not connected.
3	VSS	I	GND.
4	DVDD	I	Device supply voltage, I/O.
5	A10	O	Parallel address bus.
6	NC	–	Not connected.
7 ~ 11	A11 ~ A15	O	Parallel address bus.
12 ~ 13	NC	–	Not connected.
14	VSS	I	GND.
15	NC	–	Not connected.
16	CVDD	I	Device supply voltage, core.
17 ~ 18	NC	–	Not connected.
19	READY	I	Indication of external device is prepare for bus transaction.
20 ~ 23	NC	–	Not connected.
24	$\overline{\text{MSTRB}}$	O	Memory strobe signal.
25 ~ 26	NC	–	Not connected.
27	XF	O	Signaling microcontroller that DSP is ready.
28 ~ 29	NC	–	Not connected.
30	$\overline{\text{HOLD}}$	I	Control of the address, data and control lines.
31	$\overline{\text{BIO}}$	I	Branch control.
32	$\overline{\text{MP/MC}}$	I	Microprocessor/microcomputer mode selection.
33	DVDD	I	Device supply voltage, I/O.
34	VSS	I	GND.
35 ~ 39	NC	–	Not connected.
40	VSS	I	GND.
41	BCLKR0	I	Serial shift clock for the buffer serial port driver.
42	BCLKR1	I	Serial shift clock for the buffer serial port driver.
43	BFSR0	I	Frame synchronization pulse for receive input.
44	BFSR1	I	Frame synchronization pulse for receive input.



Pin No.	Pin Name	I/O	Description
45	BDR0	I	Serial data receive input.
46	NC	–	Not connected.
47	BDR1	I	Serial data receive input.
48	BCLKX0	I	Transmitter clock.
49	BCLKX1	I/O	Transmit clock.
50	VSS	I	GND.
51	NC	–	Not connected.
52	CVDD	I	Device supply voltage, core.
53	BFSX0	I	Frame synchronization pulse for transmit.
54	BFSX1	I/O	Frame synchronization pulse for transmit output/input.
55	NC	–	Not connected.
56	DVDD	I	Device supply voltage, I/O.
57	VSS	I	GND.
58	NC	–	Not connected.
59	BDX0	O	Serial data transmit output.
60	BDX1	O	Serial data transmit output.
61 ~ 62	NC	–	Not connected.
63	NC	I	Connected to INT0 pin.
64	$\overline{\text{INT0}}$	I	External user interrupts.
65	NC	–	Not connected.
66	$\overline{\text{READY DSP1}}$	I	External user interrupts.
67	NC	I	Connected to INT0 pin.
68	CVDD	I	Device supply voltage, I/O.
69	NC	–	Not connected.
70	VSS	I	GND.
71 ~ 74	NC	–	Not connected.
75	DVDD	I	Device supply voltage, I/O.
76	VSS	I	GND.
77	CLKMD1	I	Select the mode that the clock is initialize after read.
78	CLKMD2	I	Select the mode thah the clock is initialize after read.
79	CLKMD3	I	Select the mode thah the clock is initialize after read.
80 ~ 82	NC	–	Not connected.
83	EMU0	I	Emulator 0 pin.
84	$\overline{\text{EMU1/OFF}}$	I	Emulator 1 pin/disable all outputs.
85 ~ 90	NC	–	Not connected.
91	CVDD	I	Device supply voltage, core.
92	HPIENA	I	HPI module select.
93	VSS	I	GND.
94 ~ 95	NC	–	Not connected.
96	XI	O	12.288MHz/11.2896MHz ceralock.
97	X2/CLKIN	I	12.288MHz/11.2896MHz ceralock.

Pin No.	Pin Name	I/O	Description
98	RS	I	Reset terminate the DSP execution.
99 ~ 104	D0 ~ D5	I/O	Parallel data bus.
105	NC	–	Not connected.
106	VSS	I	GND.
107 ~ 110	NC	–	Not connected.
111	VSS	I	GND.
112	DVDD	I	Device supply voltage, I/O.
113 ~ 114	D6 ~ D7	I/O	Parallel data bus.
115 ~ 124	NC	–	Not connected.
125	CVDD	I	Device supply voltage, core.
126 ~ 127	NC	–	Not connected.
128	VSS	I	GND.
129	NC	–	Not connected.
130	DVDD	I	Device supply voltage, I/O.
131 ~ 134	A0~A3	O	Parallel data bus address. All external memory program or I/O devices.
135	NC	–	Not connected.
136 ~ 141	A4~A9	O	Parallel data bus address. All external memory program or I/O devices.
142	CVDD	I	Divice supply voltage, core.
143 ~ 144	NC	–	Not connected.

IC, STA013T

Pin No.	Pin Name	I/O	Description
1	NC	–	Not connected.
2	LRCKT	O	Transmitter left/right clock.
3	OCLK	I/O	Oversampling clock for DAC.
4	NC	–	Not connected.
5	VSS2	I	GND.
6	VDD2	I	Voltage supply (+3.0V).
7	VSS3	I	GND.
8	VDD3	I	Voltage supply (+3.0V).
9	NC	–	Not connected.
10	PVDD	I	PLL power supply (+3.0V).
11	PVSS	I	PLL GND.
12	FILT	O	PLL filter external capacitor connection.
13	XTO	O	Crystal output.
14	NC	–	Not connected.
15	XTI	I	Crystal input (14.31818MHz).
16 ~ 18	NC	–	Not connected.
19	VSS4	I	GND.
20	NC	–	Not connected.
21	VDD4	I	Voltage supply (+3.0V).
22	$\overline{\text{TESTEN}}$	I	Test mode (Connected to VDD)
23	NC	–	Not connected.
24	SCANEN	I	Scan enable. (Connected to GND)
25	$\overline{\text{RESET}}$	I	System reset.
26	VSS5	I	GND.
27	OUT-CLK/DATA-REQ	O	Buffered output clock/data request signal.
28	NC	–	Not connected.
29	VDD1	I	Voltage supply (+3.0V).
30	VSS1	I	GND.
31	SDA	I/O	I <sup>2</sup> C serial data and acknowledge.
32	SCL	I	I <sup>2</sup> C serial clock.
33	NC	–	Not connected.
34	SDI	I	Receiver serial data.
35	NC	–	Not connected.
36	SCKR	I	Receiver serial clock.
37	NC	–	Not connected.
38	BIT-EN	I	Bit enable.
39	NC	–	Not connected.
40	$\overline{\text{SRC-INT}}$	I	Interrupt line for S.R control.
41	NC	–	Not connected.
42	SDO	O	Transmitter serial data (PCM data).
43	NC	–	Not connected.
44	SCKT	O	Transmitter serial clock.

## TEST MODE

- Checking LCD segment all on  
All segment of LCD will be turned on in a method as shown follows.

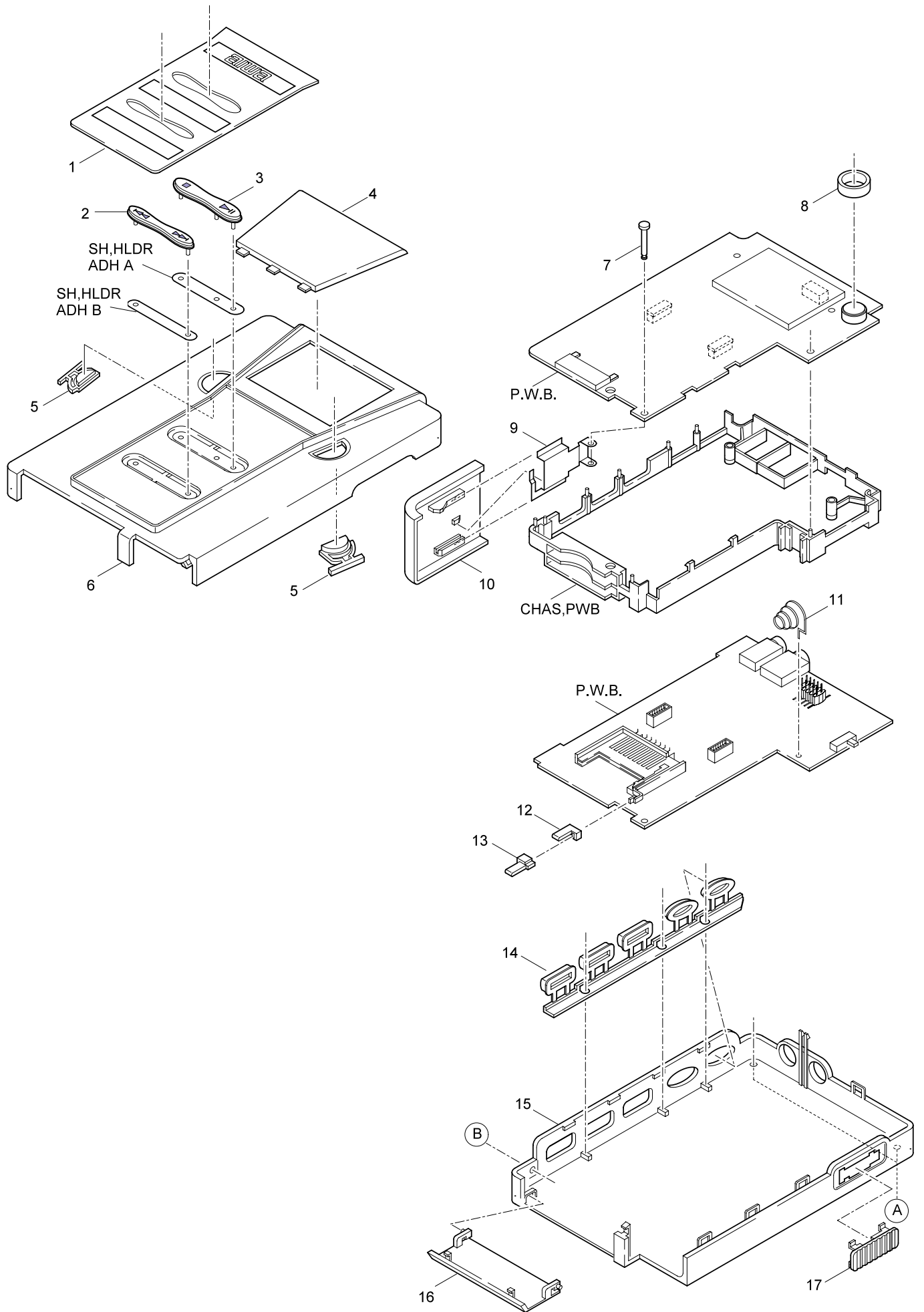
### **Entering:**

- 1) Turn on the power.
- 2) Press "MENU" button. ("MEMORY" will appear on the LCD)
- 3) Press "+" and "-" volume button at the same time.
- 4) All segment of LCD will be turned on for a few seconds.  
(After that, the version of the firware will appear on the LCD)

### **Exiting:**

Press any key in the "MENU", "A-B", "MSP" or "PLAY MODE".

# MECHANICAL EXPLODED VIEW 1 / 1



# MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-HZ4-004-010		PANEL, TOP
2	8A-HZ4-008-010		BTN, FUNC B
3	8A-HZ4-007-010		BTN, FUNC A
4	8A-HZ4-003-010		WINDOW, LCD
5	8A-HZ4-010-010		BTN, REC
6	8A-HZ4-001-010		CABI, FRONT
7	8A-HZ4-210-010		SHAFT, BATT
8	8A-HZ4-213-010		HOLDER, MIC
9	8A-HZ4-202-010		BAT, CONT+
10	8A-HZ4-005-010		LID, BATT
11	8A-HZ4-203-010		BAT, CONT-
12	8A-HZ4-012-010		LEVER, EJECT A
13	8A-HZ4-013-010		LEVER, EJECT B
14	8A-HZ4-009-010		BTN, SIDE
15	8A-HZ4-002-010		CABI, REAR
16	8A-HZ4-006-010		LID, MMC
17	8A-HZ4-011-010		KNOB, SL HOLD
A	87-067-855-010		V+1.4-7
B	87-264-509-310		SCREW V+1.4-4

## 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

**アイワ株式会社** 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)  
**AIWA CO.,LTD.** 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111