

# BOSS DIGITAL RECORDING STUDIO BR-900CD

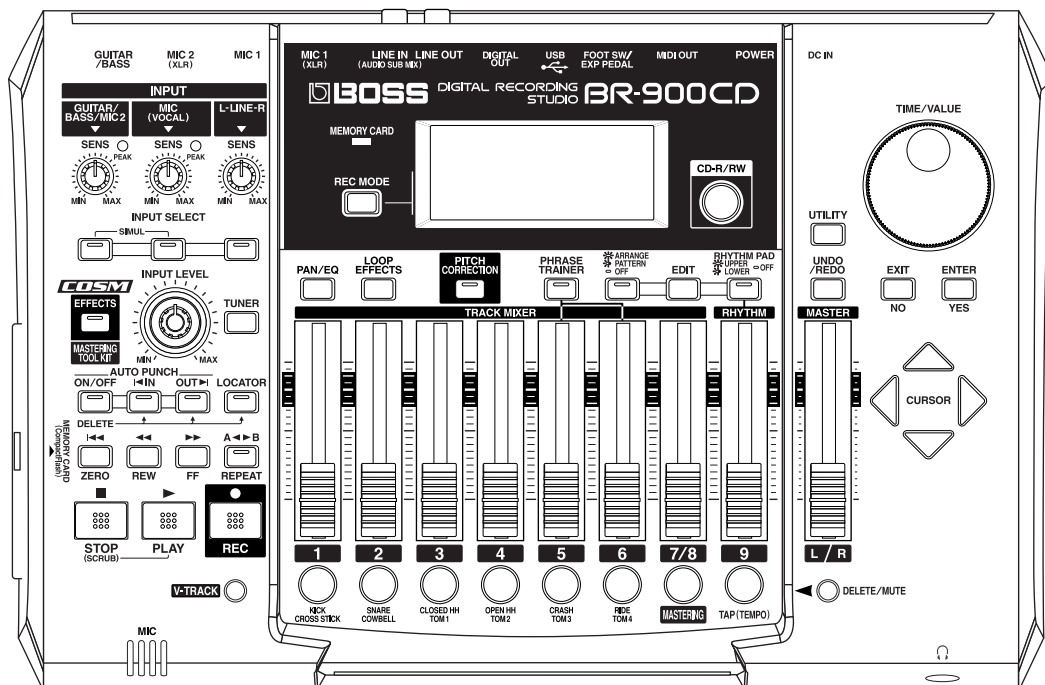
# SERVICE NOTES Issued by RJA

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### Revise Information

- p. 6 Revised some errors in "LOCATION OF CONTROLS PARTS LIST." (2006.02.24)
- p. 12 Revised some errors in "PARTS LIST." (2006.02.24)
- p. 3 Revised some errors in "Accessories." (2006.12.25)



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## CAUTIONARY NOTES

### User data status

User data status after each of the following processes is described below. Whenever carrying out procedures that involve deleting or erasing user data, always be sure to back up the user data to some form of external media (refer to Saving and Loading Data).

Process	User Data
Checking Version number	Preserved
Factory Reset	Deleted
System Update	Preserved
Test Mode	Preserved

\* Executing Test Mode during Factory Reset deletes the user data.

### PARTS LIST

Due to one or more of the following reasons, parts with parts code

- \* \*\*\*\*\* cannot be supplied as service parts.
- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

### CIRCUIT BOARD

NIU meant that "NOT IN USE" there don't set any contents in the Circuit Diagram.

There has silk-screen only in the Circuit Board.

## SPECIFICATIONS

### BR-900CD: Digital Recording Studio

#### Tracks

Track: 8

V-Track: 64 (8 V-Tracks per each Track)

- \* Up to 2 tracks can be recorded simultaneously, and up to 8 tracks can be played back simultaneously.

#### Useful Capacity

CompactFlash: 32 M-1 G bytes

#### Data Type

HiFi (MT2)

STANDARD (LV1)

LONG (LV2)

#### Signal Processing

AD Conversion: 24 bit, ?? Modulation + AF-AD (Guitar/Bass)  
24 bit, ?? Modulation + AF-AD (Mic 1/2)  
24 bit, ?? Modulation (Line)  
24 bit, ?? Modulation (Simul)

DA Conversion: 24 bit, ?? Modulation

Internal Processing: 24 bit (digital mixer section)

- \* AF method (Adaptive Focus method)

Adaptive Focus is a unique Roland/BOSS technology that allows the signal noise (S/N) ratios of AD and DA converters to be vastly improved.

#### Sample Rate

44.1 kHz

### Frequency Response

20 Hz to 20 kHz (+1/-3 dBu)

### Recording Time (conversion in one track)

Capacity	Data type		
	HiFi (MT2)	STD (LV1)	LONG (LV2)
32 MB	16 min.	19 min.	24 min.
64 MB	32 min.	39 min.	49 min.
128 MB	65 min.	78 min.	98 min.
256 MB	130 min.	156 min.	196 min.
512 MB	260 min.	312 min.	392 min.
1 GB	520 min.	624 min.	784 min.

\* The above-listed recording times are approximate. Times may be slightly shorter depending on the number of songs that were created.

\* The above number is the total for all the tracks that are used. If each of the eight tracks contain an equal amount of data, the length of the resulting song will be approximately 1/8 of the above.

### Nominal Input Level (Variable)

GUITAR/BASS jack: -20 dBu

MIC (TRS balanced/XLR) jack: -40 dBu

LINE IN jack: -10 dBu

### Input Impedance

GUITAR/BASS jack: 1 M $\Omega$

MIC 1/2 jack (TRS balanced/XLR): 1.5 k $\Omega$  (HOT-COLD), 1.0 k $\Omega$  (HOT-GND, COLD-GND)

LINE IN jack: 10 k $\Omega$

### Nominal Output Level

LINE OUT jack: -10 dBu

### Output Impedance

LINE OUT jack: 2 k $\Omega$

Headphone jack: 140 $\Omega$

### Recommended Load Impedance

LINE OUT jack: 20 k $\Omega$  or greater

Headphone jack: 32-100 $\Omega$

### Residual Noise Level

LINE OUT jack: -85 dBu or less

(INPUT SELECT: GUITAR/BASS/MIC2, input terminated with 1 k $\Omega$ , INPUT SENS: CENTER, IHF-A, typ., EFFECT: OFF)

- \* 0 dBu = 0.775 Vrms

### Interface

USB Connector

DIGITAL OUT: S/PDIF 16-24 bit (Optical type)

### Display

16 Characters x 2 Lines + Approx. 100 icons (Backlit LCD)

### Connectors

GUITAR/BASS jack (1/4 inch phone type)

MIC 1 jacks (XLR balanced type, TRS balanced 1/4 inch phone type)

MIC 2 jacks (XLR balanced type)

LINE IN jack (RCA Phono type)

LINE OUT jack (RCA Phono type)

DIGITAL OUT connector (Optical type)

FOOT SW/EXP PEDAL jack (1/4 inch phone type)

PHONES jack (Stereo 1/4 inch phone type)

MIDI OUT connector

USB connector

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## Power Supply

DC 9 V; Supply AC Adaptor (PSC series), Dry battery x 6

## Current Draw

900 mA (Average using AC adapter and CD-R/RW)

300 mA (When powered by batteries; CD-R/RW drive not used)

\* *Expected battery life under continuous use:*

Alkaline: 4 hours

These figures will vary depending on the actual conditions of use.

## Dimensions

351 (W) x 225 (D) x 69 (H) mm

13-7/8 (W) x 8-7/8 (D) x 2-3/4 (H) inches

## Weight

2.2 kg/4 lbs 14 oz (excluding batteries)

## Accessories

AC Adaptor (PSC-series): (#17041612)

(#17041613)

(#17041614)

(#17041615)

Demo Card (Already inserted when the BR-900CD is shipped): (#17041617)

Owner's Manual English: (#17041611)

~~Japanese: (#17041610)~~

Separate sheet ("About Memory Cards" etc.): ~~(#17041616)~~

(included in #17041611 Owner's Manual English)

Roland Service (information sheet): (#\*\*\*\*\*)

## Options

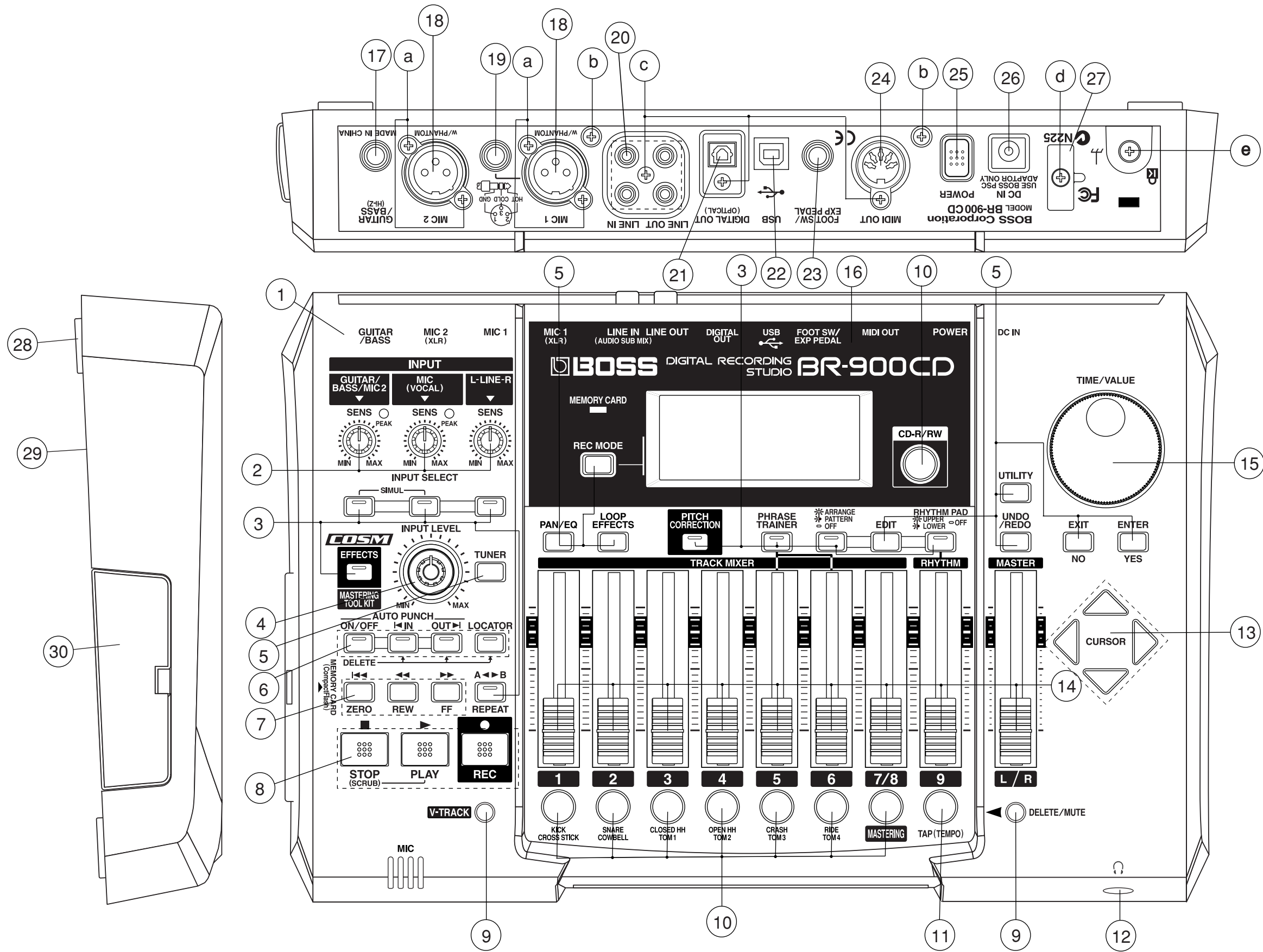
Foot Switch: FS-5U

Pedal Switch: DP-2 (Roland)

Expression Pedal: EV-5 (Roland), FV-300L

\* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

# LOCATION OF CONTROLS





# LOCATION OF CONTROLS PARTS LIST

No.	Part Code	Category Name	Part Name	Description	Q'ty
1	17041577	CASING	CASE		1
2	01891801	KNOB,BUTTON	U R-KNOB	S1 LCG/BLK	3
	17041334	POTENTIOMETER	ROTARY POTENTIOMETER	EVUF2KFK3A54(50KA)	2(GUITAR/BASS/MIC2,MIC)
	01451101	POTENTIOMETER	ROTARY POTENTIOMETER	EVJY95FB6A15(100kA)	1(LINE)
3	00900145	KNOB,BUTTON	D S-KEYTOP	SD1H BLK	9
	17041586	DIODE	LED	L132XIT	9
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	9
4	02457512	KNOB,BUTTON	J R-KNOB	SF-A BLK/LCG	1
	03780934	POTENTIOMETER	ROTARY POTENTIOMETER	RK09D1130C2P(50IB/L25)	1
5	00900189	KNOB,BUTTON	D S-KEYTOP	SX1H BLK	9
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	9
6	00900178	KNOB,BUTTON	D S-KEYTOP	SD4H BLK	1
	17041586	DIODE	LED	L132XIT	4
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	4
7	00904245	KNOB,BUTTON	D S-KEYTOP	SX3H BLK	1
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	3
8	01783945	KNOB,BUTTON	N S-KEYTOP	MD3H	1
	17041586	DIODE	LED	L132XIT	1
	17041587	DIODE	LED	L132XGT	1
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	3
9	01670512	KNOB,BUTTON	F C-KEYTOP	SX1H BLK	2
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	2
10	02013090	KNOB,BUTTON	F C-KEYTOP	MX1H CLR	8
	03786756	DIODE	LED	SML76755WN TP15(D2/D3 RANK)	7
	17041586	DIODE	LED	L132XIT	1
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	8
11	02123467	KNOB,BUTTON	F C-KEYTOP	MX1H BLK	1
	01340290	KNOB,BUTTON	TACT SWITCH	EVQ11A05R	1
12	13449275	JACK,EXT TERMINAL	6.5mm JACK	YKB21-5074	2
13	01234090	KNOB,BUTTON	D T-KEYTOP	MX4B BLK	1
	01340290	SWITCH	TACT SWITCH	EVQ11A05R	4
14	01902289	KNOB,BUTTON	U S-KNOB	M BLK-LCG	9
	01677312	POTENTIOMETER	45M/M SLIDE POTENTIOMETER	EWAP1AC10 B54(50kB/MS)	9
15	F2477101	KNOB,BUTTON	ENC KNOB	ABS BLACK	1
	01905467	ENCODER	ROTARY ENCODER	EVE_GC1_F20_24B	1
16	17041576	CASING	DISPLAY COVER	DISPLAY COVER	1
17	17041580	JACK,EXT TERMINAL	6.5mm JACK	HTJ-064-04M	1
18	03459223	JACK,EXT TERMINAL	XLR CONNECTOR	JY-5033A	2
19	17041581	JACK,EXT TERMINAL	6.5mm JACK	HTJ-064-04K	1
20	03345778	JACK,EXT TERMINAL	JACK	YKC21-3473	1
21	03454101	JACK,EXT TERMINAL	IC(OPTICAL)	GP1FA313TZ	1
22	02781189	JACK,EXT TERMINAL	USB	YKF45-0021	1
<del>23 24</del>	<del>13429672</del>	<del>JACK,EXT TERMINAL</del>	<del>MIDI</del>	<del>YKF51-5047</del>	<del>1</del>
<del>24 25</del>	<del>32490595</del>	<del>KNOB,BUTTON</del>	<del>P S-KEYTOP</del>	<del>MX BLK</del>	<del>1</del>
	<del>01676512</del>	<del>SWITCH</del>	<del>PUSH SWITCH</del>	<del>SDKLA10200</del>	<del>1</del>
<del>25 26</del>	<del>13449717</del>	<del>JACK,EXT TERMINAL</del>	<del>DC JACK</del>	<del>HEC2392-01-150</del>	<del>1</del>
<del>26 27</del>	<del>22365714</del>	<del>MISCELLANEOUS</del>	<del>CORD HOOK</del>		<del>1</del>
<del>27 28</del>	<del>17041604</del>	<del>MISCELLANEOUS</del>	<del>FOOT</del>	<del>S20 T5 16X16mm T=5mm(PORON)</del>	<del>4</del>
<del>28 29</del>	<del>17041573</del>	<del>CASING</del>	<del>BOTTOM COVER</del>		<del>1</del>
<del>29 30</del>	<del>17041574</del>	<del>CASING</del>	<del>CF COVER</del>		<del>1</del>
<del>30</del>	<del>01904189</del>	<del>DIODE</del>	<del>LED</del>	<del>SEL2210R D-RANK</del>	<del>2</del>
<del>31</del>	<del>17041586</del>	<del>DIODE</del>	<del>LED</del>	<del>L132XIT</del>	<del>1</del>
<del>32</del>	<del>02453156</del>	<del>DIODE</del>	<del>LED</del>	<del>LNJ801TP6JA</del>	<del>6</del>
23	13449275	6.2MM JACK	YKB21-5074		2

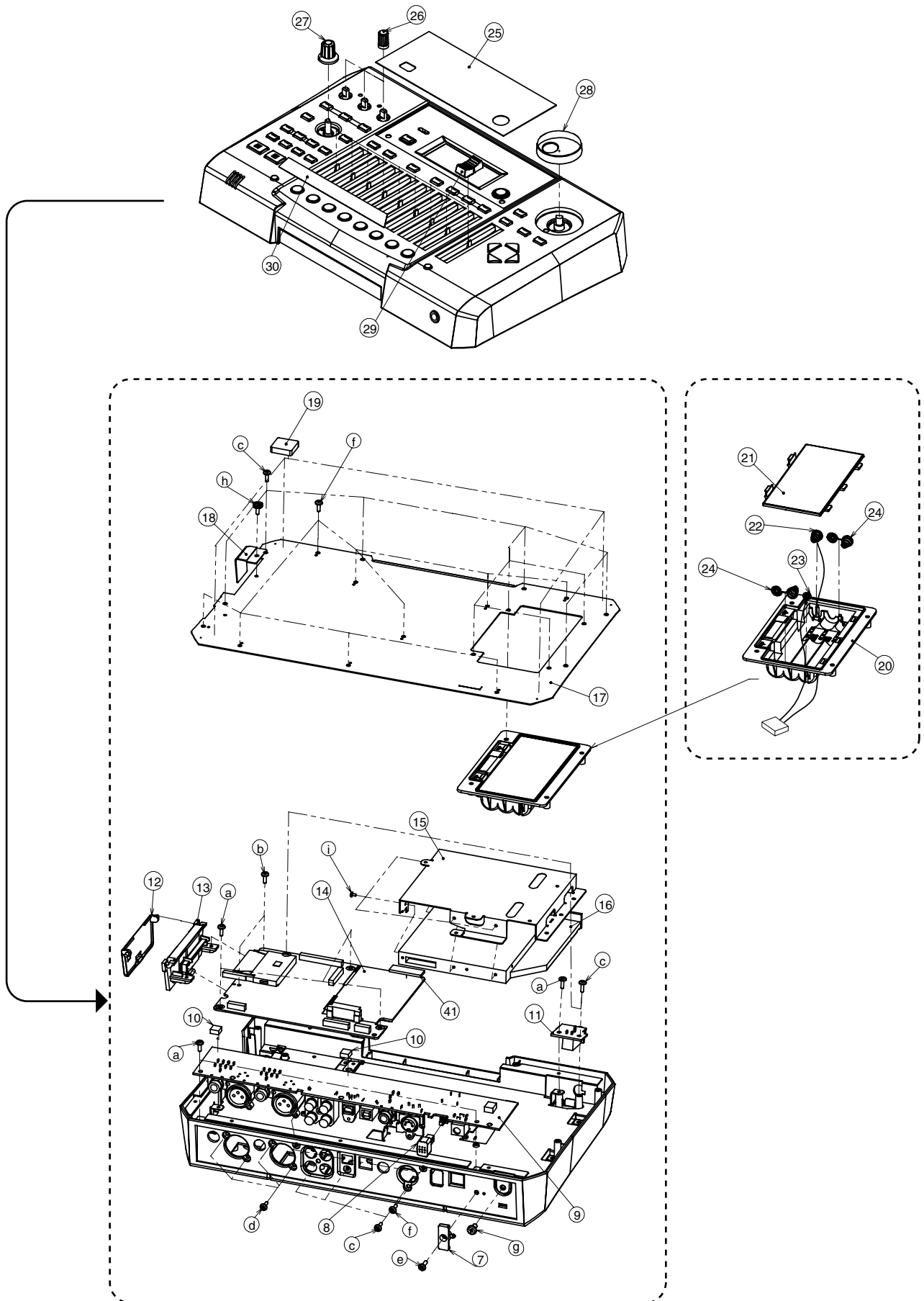
(Inof. No. 102233)

## [SCREW]

No.	Part Code	PART NAME	DESCRIPTION	Q'ty
a	40233012	SCREW M2.6X8	BINDING TAPTITE P BZC	4
b	40012534	SCREW 3X6	BINDING TAPTITE S FE BZC	2
c	40011312	SCREW 3X8	BINDING TAPTITE P BZC	3
d	40127689	SCREW M3X10	BINDING TAPTIGHT S TYPE FE BZC	1
e	40011378	SCREW M4X8	BINDING TAPTITE S FE BZC	1



# EXPLODED VIEW



## EXPLODED VIEW PARTS LIST1

### [PARTS]

NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
25	17041576	DISPLAY COVER		1
26	01891801	U R-KNOB	S1 LCG/BLK	3
27	02457512	J R-KNOB	SF-A BLK/LCG	1
28	F2477101	DR KNOB		1
29	01902289	U S-KNOB	M BLK-LCG	9
30		CD LABEL FOR BR-900CD		1

## EXPLODED VIEW PARTS LIST2

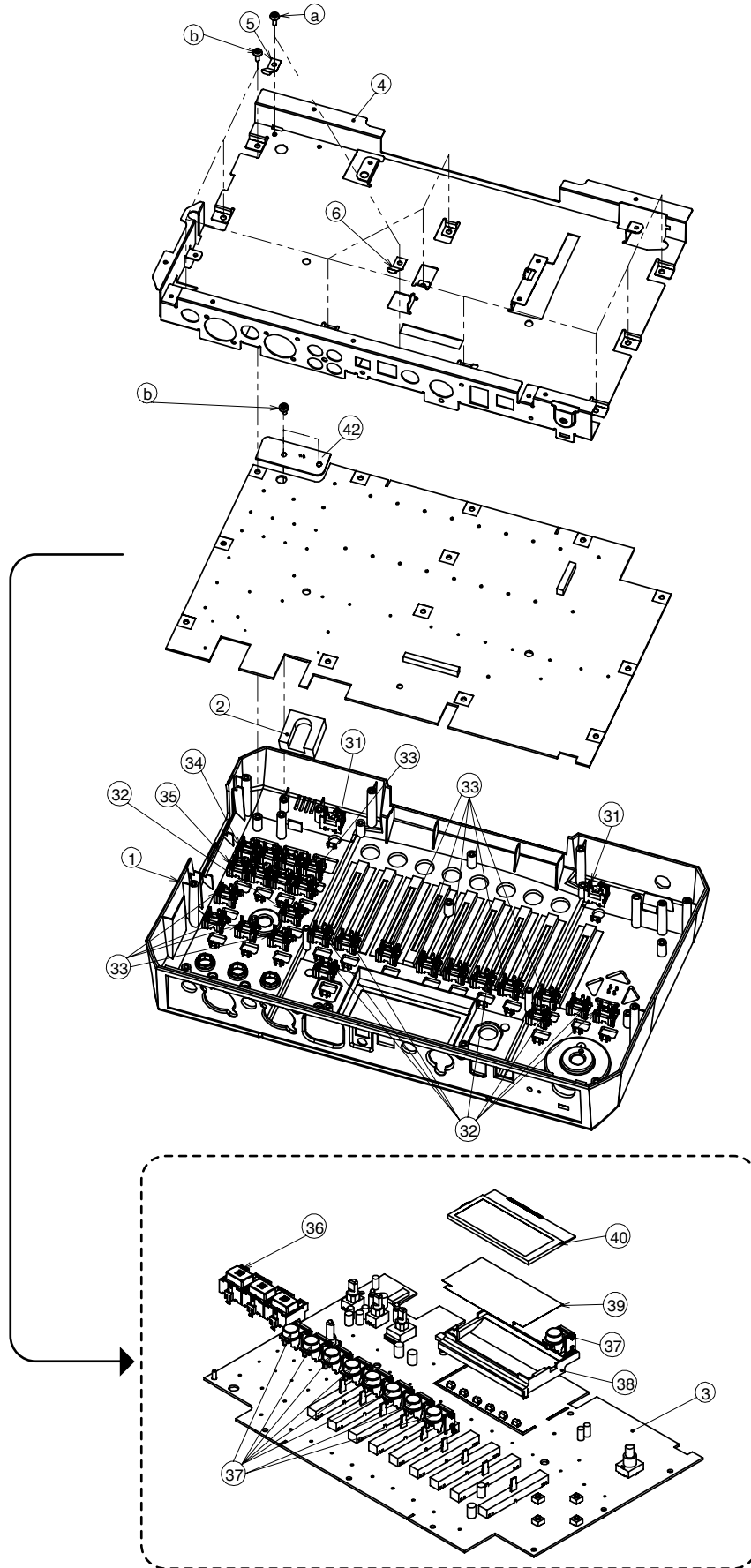
### [PARTS]

NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
3	17041585	PANEL BOARD ASSY		1
		NOTE:Spare parts for PANEL BOARD ASSY includes the following parts.		
11	*****	PHONES PWB UNIT		1
38	*****	LCD HOLDER		1
39	*****	DIFFUSION SHEET		1
40	*****	LCD M9116		1
42	*****	MIC PWB UNIT		1
6	02123467	F C-KEYTOP	MX1H BLK	1
7	22365714	CORD HOOK	236-714	1
8	32490595	P S-KEY	MX BLK	1
9	17041584	JACK BOARD ASSY		1
10	17041605	FOOT8X8mm T=4mm		2
12	17041574	CF COVER		1
13	17041575	CF ESCTCHEON		1
14	17041583	MAIN BOARD ASSY		1
15	17041579	CD HOLDER		1
16	17041582	CD-R/RW DRIVE SBW-242C	WITH BEZEL (QUANTA STORAGE)	1
17	17041573	BOTTOM COVER		1
18	17041331	CARD STOPPER		1
19	17041604	FOOT	S20 T5 16*16mm T=5mm(PORON)	4
20	17041572	BATTERY CASE		1
21	G2027602	BATTERY COVER		1
22	17041607	BATTERY TARMINAL	FOR DR-3 (-) DIA:0.7-MM SWP-B	1
23	G2177305	BATTERY TARMINAL(+)		1
24	17041606	BATTERY TARMINAL	FOR DR-3 (+-) DIA:0.7-MM SWP-B	2
41	17041602	FOOT	30x10x2	1

### [SCREW]

NO	PART CODE	PART NAME	DESCRIPTION
a	40012512	SCREW 3X6	BINDING TAPTITE S ZC
b	40011278	SCREW 3X8	BINDING TAPTITE P FE ZC
c	40011312	SCREW 3X8	BINDING TAPTITE P BZC
d	40233012	SCREW M2.6X8	BINDING TAPTITE P BZC
e	40127689	SCREW M3X10	BINDING TAPTITE S FE BZC
f	40342578	SCREW 3X6	BINDING TAPTITE S BZC
g	40011378	SCREW 4X8	BINDING TAPTITE S FE BZC
h	17041343	COIN SCREW 3X8	BBC
i	40455867	SCREW M2X2.5	PAN MACHNE W/SW

# EXPLODED VIEW



## EXPLODED VIEW PARTS LIST3

### [PARTS]

NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
1	17041577	CASE		1
	NOTE:Spare parts for CASE is not included the DISPLAY COVER. If you need, please order DISPLAY COVER,please order.			
2	17041342	MIC FILTER		1
3	17041585	PANEL BOARD ASSY		1
	NOTE:Spare parts for PANEL BOARD ASSY includes the following parts.			
4	17041578	CHASIS		1
5	17041603	LEAF		2
31	01670512	F C-KEYTOP	SX1H BLK	2
32	00900189	D S-KEYTOP	SX1H BLK	9
33	00900145	D S-KEYTOP	SD1H BLK	9
34	00904245	D S-KEYTOP	SX3H BLK	1
35	00900178	D S-KEYTOP	SD4H BLK	1

### [SCREW]

NO	PART CODE	PART NAME	DESCRIPTION
a	40012512	SCREW 3X6	BINDING TAPTITE S ZC
b	40011278	SCREW 3X8	BINDING TAPTITE P FE ZC

## EXPLODED VIEW PARTS LIST4

### [PARTS]

NO	PART CODE	PART NAME	DESCRIPTION	Q'TY
11	*****	PHONES PWB UNIT		1
38	*****	LCD HOLDER		1
39	*****	DIFFUSION SHEET		1
40	*****	LCD M9116		1
42	*****	MIC PWB UNIT		1
36	01783945	N S-KEYTOP	MD3H	1
37	02013090	F C-KEYTOP	MX1H CLR	8

# PARTS LIST

**SAFETY PRECAUTIONS:**  
The parts marked  $\Delta$  have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code \*\*\*\*\* cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

NOTE: The parts marked # are new. (initial parts) The description "Q'TY" means a necessary number of the parts per one product.

## CASING

#	17041572	BATTERY CASE		1
	G2027602	BATTERY COVER		1
#	17041573	BOTTOM COVER		1
	17041331	CARD STOPPER		1
#	17041577	CASE		1
#	17041574	CF COVER		1
#	17041575	CF ESCTCHEON		1
#	17041576	DISPLAY COVER		1

## CHASSIS

#	17041579	CD HOLDER		1
#	17041578	CHASSIS		1
	17041342	MIC FILTER		1

## KNOB,BUTTON

	00904245	D S-KEYTOP	SX3H BLK	1
	00900189	D S-KEYTOP	SX1H BLK	9
	01670512	F C-KEYTOP	SX1H BLK	2
	02457512	J R-KNOB	SFA BLK/LCG	1
	00900178	D S-KEYTOP	SD4H BLK	1
	00900145	D S-KEYTOP	SD1H BLK	9
	01891801	U R-KNOB	S1 LCG BLK	3
	01234090	D T-KEYTOP	MX4B BLK	1
	02013090	F C-KEYTOP	MX1H CLR	8
	02123467	F C-KEYTOP	MX1H BLK	1
	32490595	P S-KEY	MX BLK	1
	01783945	N S-KEYTOP	MD3H	1
	01902289	U S-KNOB	M BLK LCG	9
	F2477101	DR-KNOB		1

## SWITCH

	01676512	PUSH SWITCH	SDKLA10200	SW1 on JACK BOARD	1
	01340290	TACT SWITCH	EVQ11A H=5.0	SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8,S W9,SW10,SW1	43

## JACK,EXT TERMINAL

	13429672	MIDI JACK	YKF51-5047	JK7 on JACK BOARD	1
	02781189	USB CONNECTOR	YKF45-0021	JK4 on JACK BOARD	1
	03345778	JACK	YKC21-3473	JK9 on JACK BOARD	1
	13449275	6.5MM JACK	YKB21-5074	JK6 on JACK BOARD,JK1 on SW BOARD	2
	03459223	XLR CONNECTOR	JY-5033A	JK3,JK5 on JACK BOARD	2
#	17041580	JACK	HTJ-064-04M	JK1 on JACK BOARD	1
#	17041581	JACK	HTJ-064-04K	JK8 on JACK BOARD	1
	13449717	ADAPTOR JACK	HEC2392-01-150	JK2 on JACK BOARD	1
	17041362	COMPACTFLASH CONNECTOR	CFC-50MGS4-S-W-2-R	CN7 on MAIN BOARD	1
	17041662	COMPACTFLASH CONNECTOR	CFC-50MGS4-S-W-2-R (Info. No. 102233)		

## DISK DRIVE UNIT

#	17041582	WITH BEZEL (QUANTA STORAGE)	CD-R/RW DRIVE SBW-242C	1
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## PWB ASSY

#	17041584	JACK BOARD ASSY		1
#	17041583	MAIN BOARD ASSY		1
#	17041585	PANEL BOARD ASSY		1



<b>IC</b>					
	03454101	GP1FA313TZ	IC (OPTICAL)	CN5 on JACK BOARD	1
<b>DIODE</b>					
#	17041587	L132XGT	LED	LED13 on SW BOARD	1
#	17041586	L132XIT	LED	LED3,LED4,LED5,LED6,LED7,LED8,LED9, LED10,LED	16
	02453156	LNJ801TP6JA	LED	LED28,LED29,LED30,LED31,LED32,LED33 on SW BO	6
	01904189	SEL2210R D RANK	LED	LED1,LED2 on SW BOARD	2
	03786756	SML76755WN-TP15	LED	LED15,LED16,LED17,LED18,LED19,LED20 ,LED21 on	7
<b>POTENTIOMETER</b>					
#	17041334	EVUF2KFK3A54(50KA)	ROTARY POTENTIOMETER	VR12,VR1 on SW BOARD	2
#	03780934	RK09D1130C2P(50KB/L25)	POTENTIOMETER	VR11 on SW BOARD	1
	01677312	EWAP1AC10 B54 (50KB/MS)	45M/M SLIDE POTENTIOMER- TER	VR2,VR3,VR4,VR5,VR6,VR7,VR8,VR9,VR1 0 on SW B	9
	01451101	EVJY95FB6A15	12M/M ROTARY POTENTIOMETER	VR13 on SW BOARD	1
<b>ENCODER</b>					
	01905467	EVE GC1 F20 24B	ROTARY ENCODER	EN1 on SW BOARD	1
<b>WIRING, CABLE</b>					
#	17041589	BAN CARD	BNCD-P=1.00-K-38-320		1
#	17041592	BAN CARD	BNCD-P=1.00-K-24-50		1
#	17041590	BAN CARD	BNCD-P=1.00-K-24-320		1
#	17041591	BAN CARD	BNCD-P=1.00-K-14-90		1
#	17041593	BAN CARD	BNCD-P=1.00-K-12-80		1
#	17041594	BATTERY WIRING			1
<b>SCREWS</b>					
	40342578	SCREW 3X6	TAPTITE S BINDING BZC		9
	40455867	SCREW M2X2.5	PAN MACHNE W/SW		4
	40012512	SCREW 3X6	BINDING TAPTITE S ZC		10
	40012534	SCREW 3X6	BINDING TAPTITE S FE BZC		2
	40011378	SCREW M4X8	BINDING TAPTITE S FE BZC		1
	40011278	SCREW 3X8	BINDING TAPTITE P FE ZC		17
	40011312	SCREW 3X8	BINDING TAPTITE P BZC		11
	40233012	SCREW M2.6X8	BINDING TAPTITE P BZC		4
	40127689	SCREW M3X10	BINDING TAPTIGHT S TYPE FE BZ		1
	17041343	COIN SCREW M3X8	BBC		1
<b>PACKING</b>					
#	17041601	ADAPTOR PAD			1
#	17041600	PACKING CASE			1
#	17041595	SIDE PAD INNER L			1
#	17041596	SIDE PAD INNER R			1
#	17041598	SIDE PAD OUTER L			1
#	17041599	SIDE PAD OUTER R			1
#	17041597	UPPER PAD			1
<b>MISCELLANEOUS</b>					
#	17041608	GASKET	STG1-7CF3 L10 W7XH L=10MM		3
#	17041604	FOOT	S20 T5 16X16MM T=5MM (PORON)		4
#	17041607	BATTERY TERNINAL	FOR DR-3 (-) DIA:0.70MM SWP-B		1
#	17041606	BATTERY TERMINAL	FOR DR-3 (+) DIA:0.70MM SWP-		2
#	17041609	MIC	C9767HD463LFP	MIC1 on SW BOARD	1
	22365714	CORD HOOK	236-714		1
	G2177305	BATTERY TERMINAL (+)			1
#	17041602	FOOT 30X10X2			1
#	17041605	FOOT 8X8MM T=4MM			2
#	17041603	LEAF			2
<b>ACCESSORIES (Standard)</b>					
#	17041615	AC ADAPTOR	PSC-240A(SA10-0910A)(240V A)		1
#	17041614	AC ADAPTOR	PSC-230E(SA10-0910B)(230V E)		1
#	17041613	AC ADAPTOR	PSC-230(SA10-0910G)(230V EU)		1
#	17041612	AC ADAPTOR	PSC-100(SA10-0910)(100V,117V)		1
#	17041610	OWNER'S MANUAL	JAPANESE		1
#	17041611	OWNER'S MANUAL	ENGLISH		1
#	17041617	COMPACT FLASH 128M	HPC-CF128V-BOS (HAGIWARA)		1
#	17041616	CF LABEL	FOR BR-900		1

# CHECKING THE VERSION NUMBER

While simultaneously holding down the [CURSOR] left and right buttons, turn on the power.

The LCD screen will indicate the version number.

CPU: 1.xx Mask CPU ROM version

EXT: 1.xx External Flash ROM version

WAVE: 1.xx Rhythm Sound version

# USERS DATA SAVE AND LOAD

Data is saved in the BR-900CD itself and on a memory card (CompactFlash).

## 1.Data in the BR-900CD itself

The following data can be saved in BR-900CD.

- System parameter
- Sync parameter
- User effect patch

System parameter and Sync parameter data can not be saved and loaded in the Memory Card (CompactFlash).

User effect patch can be saved in the Memory Card (CompactFlash) as the song data.

Please refer to Owner's Manual p. 86, "Saving insert effects settings (Write)".

However user can save one effect patch at a time.

For this reason, it is hard to save all effect patches.

## 2.Memory card (CompactFlash) data

Before you begin, remove the memory card from the BR-900CD so that it will not be rewritten.

The BR-900CD's built-in CD-R/RW drive can be used to exchange data in the following ways:

- Storing of songs and other data on the memory card to CD-R/RW discs (Backup)
- Reading songs and other backup data back into the memory card (Recover)
- Exchanging of waveform data with a PC

### NOTE

When you use the CD-R/RW drive, you must use only the supplied AC adaptor. The CD-R/RW drive cannot be used while running on battery power.

# Saving Recorded Songs to CD-R/RW Discs (Backup)

Although the songs you've recorded and created are stored on the memory card, all of this data would be lost in the unlikely event that the memory card was damaged. For this reason, we recommend that you also save your songs on CD-R/RW discs (Backup).

Once songs have been backed up in this way, it will also be possible to read them from the CD-R/RW discs into another BR-900CD.

## Precautions for backup

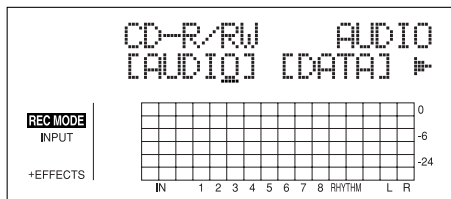
- If a CD-R disc selected for backup already contains data, the message "Not Blank Disc!" will appear and backup will not be possible. Always use an empty disc for this operation. If, on the other hand, you are using a CD-RW disc that already contains data, the message "Erase Disc?" will be displayed. If you then press [ENTER] (YES), the BR-900CD will begin erasing data from this disc.
- If the total size of the songs and other data you intend to back up exceeds the capacity of a single CD-R/RW disc, you will be able to perform a backup using as many discs as necessary. In this case, you will need to have a number of blank CD-R/RW discs on hand, and during the backup

process, you should insert and remove them as requested on-screen.

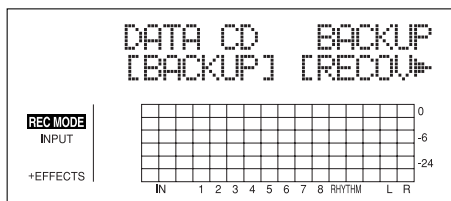
- To cancel writing to a CD-R/RW disc, press [EXIT] (NO). When the message "Cancel?" appears, press [ENTER] (YES) to confirm cancellation. (A certain amount of time may pass between pressing of [EXIT] (NO) and display of the confirmation message.) Please note, however, that no guarantee can be made regarding the state of the data written before cancellation.

# Backing up a song to a CD-R/RW disc one at a time (Song Backup)

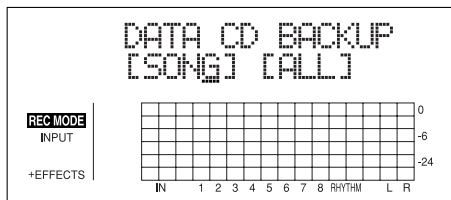
1. Insert an empty CD-R/RW disc into the BR-900CD's CD-R/RW drive. The drive's access indicator will begin to flash. Wait until this indicator stops flashing and turns off before proceeding.
2. Press [CD-R/RW]. The CD menu screen will appear.



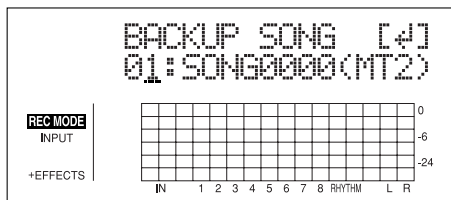
3. Press CURSOR [LEFT] [RIGHT] to move the cursor to "DATA," and press [ENTER]. The Data CD menu screen will appear.



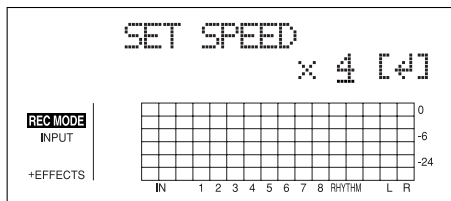
4. Press CURSOR [LEFT] [RIGHT] to move the cursor to "BACKUP," and press [ENTER]. The Backup menu screen will appear.



5. Press CURSOR [LEFT] [RIGHT] to move the cursor to "SONG," and press [ENTER]. The Song backup screen will appear.



6. Use the TIME/VALUE dial to select the song you want to back up, and press [ENTER]. The Write Speed screen will appear.



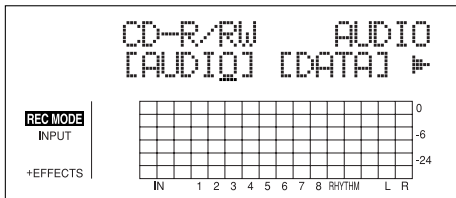
- Use the TIME/VALUE dial to set the write speed, and press [ENTER]. The message "Write sure?" will appear.

## NOTE

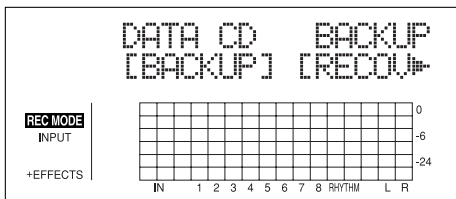
- The range of available write speeds can sometimes be limited by the type of media being used. In such a case, the BR-900CD will allow you to select only the supported speeds.
  - If you are using CD-R or CD-RW discs intended for high-speed writing, the frequency of write errors may increase if the x2 or x4 speed is selected. It is recommended that you use the x8 speed for high-speed discs.
- Press [ENTER] (YES).  
Writing to the CD-R/RW disc will begin.  
When the message "Completed!" appears, it indicates that the backup has been successfully completed.

## Saving all of the songs on a memory card to a CD-R/RW disc (All Backup)

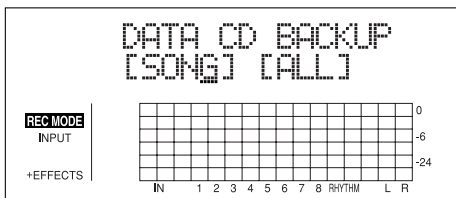
- Insert an empty CD-R/RW disc into the BR-900CD's CD-R/RW drive. The drive's access indicator will begin to flash. Wait until this indicator stops flashing and turns off before proceeding.
- Press [CD-R/RW].  
The CD menu screen will appear.



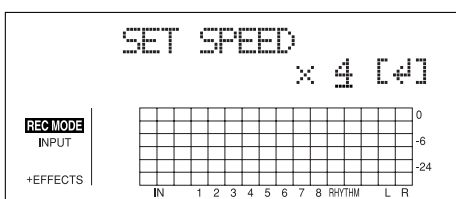
- Press CURSOR [LEFT] [RIGHT] to move the cursor to "DATA," and press [ENTER].  
The Data CD menu screen will appear.



- Press CURSOR [LEFT] [RIGHT] to move the cursor to "BACKUP," and press [ENTER].  
The Backup menu screen will appear.



- Press CURSOR [LEFT] [RIGHT] to move the cursor to "ALL," and press [ENTER].  
The Write Speed screen will appear.



## FACTORY RESET INSTRUCTIONS

The following settings are initialized together at one time.

- System Settings
- Effects (User Patches/Song Patches)
- Rhythm Guide (Arrangements/Patterns/Drum Kits)

## NOTE

The data saved at memory card is also initialized. This method does not operate. Unless memory card is inserted.

- Holding down INPUT SELECT [GUITAR/BASS], [MIC], and [LINE] button while turning the POWER switch ON, then pressing [ENTER] button.  
parameters.
- The confirmation message "Are you sure?" appears in the display.
- To continue the initialization, press [ENTER] button (YES). To cancel, press [EXIT] button (NO) (or [UTILITY] button). When [ENTER] button is pressed, initialization begins. After the initialization has been completed, you are returned to the Play screen.

## SYSTEM SOFTWARE UPDATING INSTRUCTIONS

### Required items

- Update CD-ROM (#17041618)

### Procedure

- While simultaneously holding down the [STOP] and [PLAY] buttons, press the [POWER] button.  
\* Continue holding down the [STOP] and [PLAY] buttons until the UPDATE screen appears.
- When the "CD Program Load Insert DISC." indication appears in the display, press the [EJECT] button of the CD-R/RW drive to open the CD-R/RW drive tray.
- Place the update CD in the CD-R/RW drive.
- The CD will be read, and the display will indicate "Update PROGRAM? Ver.xx to xx". If you want to perform the update, press the [ENTER/YES] button. (If you decide not to perform the update, press the [EXIT/NO] button.)
- The display will indicate "Update Ver xx Are you sure?" If you are sure you want to perform the update, press the [ENTER/YES] button once again. (If you decide not to perform the update, press the [EXIT/NO] button.)
- The display will indicate "KEEP POWER ON," and the update will begin.  
\* Don't turn off the power while the update is in progress.
- When the update is completed, the display will indicate "Completed! Please restart."
- Press the [EJECT] button to open the CD-R/RW drive, and remove the CD.
- Turn the power off and then on again.
- A short time after the power is turned on, the display will ask "INITIALIZE ALL Are you sure?" Press [ENTER/YES].

## NOTE

If the update failed, perform the procedure from the beginning.

## TEST MODE

### Required items

- Oscillator
- Oscilloscope
- DC regulated power supply \*1
- Foot switch (e.g., FS-5U)
- Expression pedal (e.g., EV-5)
- MIDI cable
- A rhythm machine with a MIDI IN (e.g., DR series)
- Audio speakers (e.g., MA series)
- Noise meter
- Optical cable
- A device with digital input (OPTICAL) (e.g., DS series)
- CompactFlash card for testing \*2, \*3
- CD-RW for testing \*4
- PC with a USB port \*5
- USB cable
- BOSS DI-1
- Open plug

\* 1 Required only if you want to perform the "11. Battery Detect check" test item with precision.

\* 2 Executing test item "9. CompactFlash check" will destroy the data in the CompactFlash card. If the card contains important data, please back it up on the PC before you proceed.

\* 3 In test item "9. CompactFlash check," do not insert the CompactFlash card until the LCD screen indicates "Insert CF Card."

\* 4 When you enter Test mode, the CD-R/RW drive tray will open immediately, however you must not insert the CD-RW when Version check will be finished.

\* 5 The operating systems supported by the BR-900CD are Windows Me/2000 or later, and Mac OS9.1 or later. However, Test mode supports only Windows XP. For details, refer to test item "8. USB check."

### Entering Test mode

While holding down the [TRACK1] button and [UTILITY] button, turn on the power. Below "BR-900 TEST MODE," the "ALL" indication will blink for a time, and then the CD-R/RW drive tray will open and the test item "1. Version check" will be executed.

\* **Subjecting the BR-900CD to physical shock while a CD is in the CD-R/RW drive may damage the CD-R/RW drive, so do not insert a CD into the drive until test item "1. Version check" is completed.**

\* Continue holding down the [TRACK1] button and [UTILITY] button until the Test mode screen appears.

### Test items

Test mode contains the following items.

1. Version check
2. Device check
3. Switch check
4. LED check
5. LCD/Encoder check
6. Knob/Fader check
7. Foot Sw/Exp.Pedal check
8. USB check
9. CompactFlash check
10. CD-RW check
11. Battery Detect check
12. MIDI check
13. Line Out check

14. Guitar In check
15. Mic In check
16. Line In check
17. Factory Reset

### Moving between test items

With the exception of items that progress automatically, you can use the following buttons to move between test items after each test is completed.

CURSOR[RIGHT]: Move to the next item

CURSOR[LEFT]: Move to the preceding item

\* By holding down the [STOP] button while performing the above actions, you can forcibly move between test items.

### Other settings

- Set the polarity switch of the foot switch (FS-5U) to the jack position.
- Set the minimum volume of the expression pedal (EV-5) to 0.
- If you want to perform test item "11. Battery Detect check" with precision, set your DC regulated power supply to 9.0V, and connect it to the BR-900CD's DC IN.

### Test contents

#### 1. Version check

1. Verify the version and checksum of the CPU mask ROM ("INT") and the flash ROM ("EXT").  
(If the respective versions are 1.00, this will indicate "INT V1.00(DADE)" and "EXT V1.00(B5B1)")

\* The FLASH ROM checksum here does not include the user area. After you've executed test item "17. Factory Reset" to initialize the user area, you'll be able to verify the checksum for the entire area.

2. Press CURSOR[RIGHT] to see the firmware version of the CD-R/RW drive.
3. All LEDs will be lit. Subject the BR-900CD to physical shock, and verify that the illuminated state does not become unstable.
4. Press the CD-R/RW drive [EJECT] button to open the tray, and insert the test CD-RW.
5. Press the CURSOR[RIGHT] button to proceed to the next item.

#### 2. Device check

##### 2-a. Flash ROM ID check

1. Verify the manufacturer and model name of the Flash ROM. (Upper line: manufacturer name, lower line: model name)
2. Press the CURSOR[RIGHT] button to proceed to the next item.

##### CPU, ESO, GA operation check

1. The following tests will be performed automatically.
  - CPU internal RAM (CPU IRAM) data/address check
  - SDRAM (CPU DRAM) data/address check
  - ESP PRAM, IRAM, GRAM, DRAM data/address and interrupt pin (INT0) check
  - GATE ARRAY DMA and communication check
  - DIF communication check
- \* While the test is being performed, the corresponding device name will be displayed.
- \* If an error occurs, the display will indicate the device in which the error occurred.
2. If all tests have passed, the display will blink "COMPLETE," and you will automatically proceed to the next test item.

### 3. Switch check

1. Press the buttons as directed by the LCD.
2. When you press a button, the LCD screen will indicate the next button to press. If you press a button other than the one you're supposed to press, the display will indicate "DIFFERENT SW!"
3. Finally when you press the [REC MODE] button, the LCD backlight will go dark and the display will indicate "OK."
4. Press the CURSOR[RIGHT] button to proceed to the next test item.

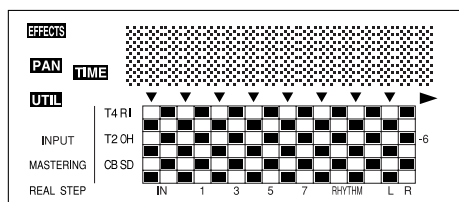
### 4. LED check

1. The display will indicate "TRACK (RED) ON." Verify that all TRACK LEDs are lit red.
2. Press CURSOR[RIGHT], and the LCD screen will indicate "TRACK (GREEN) ON." Verify that all TRACK LEDs are lit green.
3. Press the CURSOR[RIGHT] button to proceed to the next test item.

### 5. LCD/Encoder check

#### 5-a. Icon illumination check

1. Verify that all of the pixels in the 16-character 2-line LCD display are colored, and that all icons are lit.
2. Press the CURSOR[RIGHT] button. Verify that the 16-character 2-line display changes to a net-like pattern, and the icons shown below are lit.



3. Press the CURSOR[RIGHT] button to proceed to the next item.

#### 5-b. Contrast check

1. The display will indicate "(CONTRAST CHECK)". Turn the encoder clockwise.
2. When you turn the encoder clockwise, the pixels of the 16-character 2-line display will be fully colored, and all icons will be lit. Verify that the displayed state of the LCD does not change as you turn the encoder clockwise.
3. When you turn the encoder counter-clockwise, the 16-character 2-line display will indicate the current contrast value "0." Verify that the LCD's displayed state does not change while you turn the encoder counter-clockwise.
4. Slowly turn the encoder clockwise, and verify that the contrast gradually increases. At this time, verify that the contrast value stays maximized at "20".
5. Slowly turn the encoder counter-clockwise, and verify that the contrast gradually decreases.
6. When the contrast value decreases to "0" the display will blink "COMPLETE," and you will automatically proceed to the next test item.

### 6. Knob/Fader check

1. The display will indicate the name of each knob/fader you are to operate. Move each from its minimum to its maximum position.
  - \* The current value will be displayed while you operate a knob/fader. When the value has changed from the minimum:0 to maximum:127 and all intermediate values 55--75, you will be able to proceed to the next knob/fader.
  - \* If you operate knob or fader other than the one indicated in the display, the LCD screen will indicate "DIFFERENT FADER."
2. When all knobs/faders have been checked, the display will blink "COMPLETE," and you will automatically proceed to the next test item.

### 7. Foot Sw./Exp. Pedal check

1. The display will indicate "Connect FS-5U." Connect an FS-5U to the FOOT SW/EXP.PEDAL jack.
2. Press the [ENTER] button.
3. Press the foot switch. If it is detected normally, the display will indicate "Connect EV-5."
4. Connect the EV-5 to the FOOT SW/EXP.PEDAL jack.
5. Press the [ENTER] button.
6. Return the pedal all the way to the heel position (toward yourself), then advance the pedal to the toe position (away from yourself), and repeat this several times. When the pedal value has passed through the minimum:0, maximum:127 and intermediate values 55--75, the LCD screen will blink "COMPLETE," and you will automatically proceed to the next test item.

### 8.USB check

This tests the connection to the computer (PC).

\* Windows XP is the only operating system supported by Test mode.

1. The LCD screen will indicate "Connect to PC." Use a USB cable to connect the BR-900CD to your PC.
2. Press the BR-900CD's [ENTER] button. The BR-900CD and PC will be connected via USB. When the test has been completed successfully, the LCD display will indicate "OK." Then it will indicate "COMPLETE," and you will automatically proceed to the next test item.

### 9. CompactFlash check

\* The data in the CompactFlash card will be destroyed when you execute this test item. If the card contains important data, you must back it up to your PC before you continue.

1. The BR-900CD will detect that the CompactFlash card is uninserted (i.e., ejected). If this detection is successful, the display will indicate "Insert CF Card."
  - \* If the ejected state was not detected successfully, the display will indicate "NG." If you had inadvertently inserted a CompactFlash card, remove it and press the [UNDO/REDO] button to perform the eject test once again.
2. Insert a CompactFlash card and press the [ENTER] button. The test will be performed automatically. If there are no errors, the display will blink "COMPLETE," and you will automatically proceed to the next test item.

### 10.CD-RW check

1. If a CD-RW was inserted in the CD-RW drive at test item "1. Version check," this test will begin automatically. If there is no CD-RW in the CD-R/RW drive, the CD-R/RW drive tray will open automatically, and the LCD screen will indicate "Insert CD!" Insert a CD-RW.
2. When the test ends successfully, the LCD screen will blink "COMPLETE," the CD-R/RW drive tray will open, and you will automatically proceed to the next test item.
  - \* If you use a finalized CD-RW, the LCD screen will indicate "CD-RW CHECK:NG CD:FINALIZED CD." Remove the CD-RW, insert an unfinalized CD-RW, and perform the test again.
  - \* The same CD-RW used in Test mode may be used repeatedly, but errors will begin appearing as the disc is used. If so, replace the disc with a new CD-RW.

### 11. Battery Detect check

This test will first detect whether the BR-900CD is operating on batteries, and if it is operating on batteries, it checks the voltage level.

**If using the PSC adaptor to check**

1. Verify that the display indicates "NG".
2. Hold down the [STOP] button and press the cursor [Å®] to proceed to the next item.

**If using a DC regulated power supply to check (For Reference)**



1. Verify that when you vary the input voltage, an indication of "HIGH", "LOW", or "DOWN" appears at each voltage.

Display	Voltage
HIGH	9.0V
LOW	7.2V
DOWN	6.3V

2. When the entire range of voltage has been detected correctly, and "HIGH" is detected at the end, the display will blink "COMPLETE," and you will automatically proceed to the next test item.

\* You must return the input voltage to 9.0V before you proceed to the next test item.

## 12. MIDI check

1. Use a MIDI cable to connect BR-900CD's MIDI OUT to your rhythm machine's MIDI IN. Set the MIDI receive channel of the rhythm machine to "10".
2. Verify that the rhythm machine sounds a kick (LCD indication: "Do") and snare (LCD indication: "Ta") along with the indication in the LCD screen.
3. Press the CURSOR[RIGHT] button to proceed to the next test item.

## 13. Line Out check

1. A 200 Hz square wave internally generated by the ESP will be output, and the signal will be output intermittently in accordance with the analog mute switch.
  2. Verify that the waveform that is output from LINE OUT and PHONES appears and disappears at regular intervals.
- \* A small amount of sound leakage will be present even when muted.
3. Press the CURSOR[RIGHT] button to proceed to the next item.

## 14. Guitar In check

### 14-a. SW A/B ON/OFF (MIC2) check

1. Set the GUITAR/BASS/MIC2 SENS knob to MAX, connect an XLR cable to MIC2 (XLR) IN, and input a 200 Hz, 15m Vp-p square wave.
2. The signals passing through the analog switches (SW A:IC1A, SW B:IC1B) will be output from the Lch and Rch respectively.
3. SW A and SW B will alternately cycle on/off. Verify that the Lch and Rch waveform at LINE OUT alternately appears and disappears.
4. Insert an open plug into GUITAR/BASS IN, and verify that the waveform is no longer output.
5. Verify that when you remove the open plug from GUITAR/BASS IN, the waveform is again output alternately.
6. Disconnect the XLR cable from MIC2 (XLR) IN.
7. Set the GUITAR/BASS/MIC2 SENS knob to MAX, and input a 200 Hz, 200 mVp-p signal to GUITAR/BASS IN.
8. SW A and SW B will alternately cycle on/off. Verify that the Lch and Rch waveform at LINE OUT alternately appears and disappears.
9. Press the CURSOR[RIGHT] button to proceed to the next test item.

### 14-b. AF-AD Circuit check

1. The LCD screen will indicate "(AF-AD)." Input a 200 Hz, 15 mVp-p signal to GUITAR/BASS IN.
2. Verify that the Lch and Rch amplitude levels of LINE OUT are the same. (Lch: the signal that has passed through the AF-AD circuit, Rch: the direct signal)
3. Press the CURSOR[RIGHT] button to proceed to the next item.

### 14-c. Audio response check

1. The LCD screen will indicate "(AUDIO)." Input a 200Hz, 200mVp-p square wave into GUITAR/BASS IN.

2. Turn the GUITAR/BASS SENS knob through the range of MAX->MIN->MAX, and verify that the LINE OUT Lch and Rch signals vary smoothly.

### 14-d. Peak LED check

1. Input a 200 Hz, 500 mVp-p square wave into GUITAR/BASS IN.
2. Verify that the PEAK LED is lit when the GUITAR/BASS SENS knob is at the MAX position, and that the PEAK LED goes dark when you turn the knob to the 2 o'clock position.

### 14-e. Residual Noise check

1. Disconnect the plug that had been connected to GUITAR/BASS IN.
2. Set the GUITAR/BASS SENS knob to the MAX position, and verify that the residual noise level of LINE OUT Lch and Rch is -80 dBu (JIS-A) or lower.
3. Press the CURSOR[RIGHT] button to proceed to the next test item.

## 15. Mic In check

### 15-a. Analog switch operation check

1. Set the MIC SENS knob to MAX, and input a 200 Hz, 15 mVp-p square wave to MIC (XLR) IN.
2. The signals passing through the analog switches (SW A:IC1A, SW B:IC1B) will be output from Lch and Rch respectively.
3. SW A and SW B will turn on/off alternately. Verify that the waveform at LINE OUT Lch and Rch alternately appears and disappears.
4. Press the CURSOR[RIGHT] button to proceed to the next item.

### 15-b. Audio response check (external mic)

1. The LCD screen will indicate "(AUDIO: EXT MIC)." Input a 200 Hz, 15 mVp-p square wave to the MIC (XLR) IN.
2. Turn the MIC SENS knob through the range MAX->MIN->MAX, and verify that the LINE OUT Lch and Rch signals change smoothly.

### 15-c. PEAK LED check

1. Input a 200 Hz, 15 mVp-p square wave to the MIC (XLR) IN.
2. Verify that the PEAK LED is lit when the MIC SENS knob is at the MAX position, and that the PEAK LED goes dark when you turn the knob to the 2 o'clock position.

### 15-d. MIC JACK SW check

1. Input a 200 Hz, 15 mVp-p square wave to MIC (XLR) IN.
2. Turn the MIC SENS knob to MAX, and insert an open plug into MIC IN.
3. Verify that the waveform at LINE OUT Lch and Rch disappears.
4. Remove the open plug from MIC IN.

### 15-e. Residual Noise check

1. Disconnect any plugs connected to MIC IN and MIC (XLR) IN.
2. Set the MIC SENS knob at the MAX position, and verify that the LINE OUT Lch and Rch residual noise level is -77 dBu (JIS-A) or less.
3. Press the CURSOR[RIGHT] button to proceed to the next test item.

### 15-f. Audio response check

\* Make sure that the cable is connected from the MIC1 jack.

1. The LCD screen will indicate "(AUDIO: EXT MIC)." Press the [INPUT SELECT MIC] button to make the display switch to "(AUDIO: INT MIC)."
2. Connect an oscillator to an audio speaker, and place the speaker near the BR-900CD's internal mic. Verify that when the speaker produces sound, the LINE OUT Lch and Rch output a signal.

## 15-g. Phantom power supply operation check

1. The LCD screen will indicate "(PHANTOM OFF)." When you press the [INPUT SELECT MIC] button, the PHANTOM ON/OFF status will change.
  2. With PHANTOM turned OFF, use your tester to measure the voltage between the MIC1 (XLR) pin 2 (HOT), pin 3 (COLD), and pin 1 (GND), and verify that it is 0V.
  3. With PHANTOM turned ON, use your tester to measure the voltage between MIC1 (XLR) pin 2 (HOT), pin 3 (COLD), and pin 1 (GND), and verify that it is 46V or higher.
  4. With PHANTOM turned OFF, use your tester to measure the voltage between MIC2 (XLR) pin 2 (HOT), pin 3 (COLD), and pin 1 (GND), and verify that it is 0 V.
  5. With PHANTOM turned ON, use your tester to measure the voltage between MIC2 (XLR) pin 2 (HOT), pin 3 (COLD), and pin 1 (GND), and verify that it is 46V or higher.
  6. When PHANTOM is OFF, the LCD screen will indicate "(PHANTOM:OFF)," and the [INPUT SELECT MIC] button LED will go dark. When PHANTOM is ON, the LCD screen will indicate "(PHANTOM:ON)," and the [INPUT SELECT MIC] button LED will light.
- \* In the case of "INT MIC," the [INPUT SELECT MIC] button LED will also light. The internal mic will turn on/off each time you press the [INPUT SELECT MIC] button.

## 16. Line In check

### 16-a. Analog switch operation check

1. Set the LINE SENS knob to MAX, and input a 200 Hz, 500 mVp-p square wave to LINE IN.
2. The signals that pass through the analog switches (SW A:IC4D, SW B:IC4A) will be output from Lch and Rch respectively.
3. SW A and SW B will repeatedly turn on/off simultaneously. Verify that the waveform at LINE OUT Lch and Rch appears and disappears simultaneously.
4. Press the CURSOR[RIGHT] button to proceed to the next test item.

### 16-b. Audio Sub Mix Switch operation check

1. Set the LINE SENS knob to MAX, and input a 200 Hz, 500 mVp-p square wave to LINE IN.
2. The signals that pass through the analog switches (SW A:IC4C, SW B:IC4B) will be output from Lch and Rch respectively.
3. SW A and SW B will repeatedly turn on/off simultaneously. Verify that the waveform at LINE OUT Lch and Rch appears and disappears simultaneously.
4. Press the CURSOR[RIGHT] button to proceed to the next test item.

### 16-c. Audio response check

1. The LCD screen will indicate "(AUDIO: D.O OFF)." Input a 200 Hz, 500 mVp-p square wave to LINE IN.
  2. Turn the LINE SENS knob through the range of MAX->MIN->MAX, and verify that the LINE OUT Lch and Rch signals change smoothly.
  3. Connect an optical cable to the BR-900CD's DIGITAL OUT, and connect a device that has a digital input.
  4. Press the [INPUT SELECT LINE] button.
  5. The LCD screen will indicate "(AUDIO: D.O ON)." Verify that a signal is being output from the device connected via the optical cable.
- \* When "D.O ON," the [INPUT SELECT LINE] button LED will also be lit. The digital out on/off status will alternate each time you press the [INPUT SELECT LINE] button.
6. Press the CURSOR[RIGHT] button to proceed to the next item.

## 17. Factory Reset

1. This will perform a factory reset. The LCD screen will ask "Are you sure?" If you are sure you want to initialize the BR-900CD's internal data, press the [ENTER] button.
  - \* When you press the [ENTER] button, all data in the NAND-type FLASH ROM will be initialized. If you don't want to execute the reset, hold down the [STOP] button and press the CURSOR[RIGHT] button to exit Test mode.
2. When you press the [ENTER] button, the data in the BR-900CD will be initialized. At this time, a device check of the NAND-type FLASH ROM will also be performed.
  - \* The FLASH ROM checksum will be displayed. Note that this will differ from the checksum in test item "1. Device Check."
3. Press the CURSOR[RIGHT] button. The LCD screen will indicate "The End.", and you will exit Test mode.



## Error messages in Test mode

The following messages will appear if a problem is found in Test mode.

### Device check

The following messages will appear together with an indication of "NG."

#### CPU IRAM DATA

Meaning: A problem with the data bus of the CPU's internal RAM.  
Cause: Defective CPU (IC7).

#### CPU IRAM ADRS

Meaning: A problem with the address bus of the CPU's internal RAM.  
Cause: Defective CPU (IC7).

#### CPU DRAM DATA

Meaning: A problem with the data bus of the CPU's external DRAM (SDRAM).  
Cause: Defective SDRAM (IC10).  
A shorted trace, a broken trace, or faulty soldering in the data bus between the CPU (IC7) and SDRAM (IC10).

#### CPU DRAM ADRS

Meaning: A problem with the address bus of the CPU's external DRAM (SDRAM).  
Cause: Defective SDRAM (IC10).  
A shorted trace, a broken trace, or faulty soldering in the data bus between CPU (IC7) and SDRAM (IC10).

#### ESP:Time over!

Meaning: ESP does not respond.  
Cause: Defective ESP(IC16).  
The clock is not being supplied to ESP (IC16).  
A shorted trace, a broken trace, or faulty soldering between ESP (IC16) and CPU (IC7).

#### ESP:PRAM0

#### ESP:PRAM1

#### ESP:IRAM0

#### ESP:IRAM1

#### ESP:GRAM

Meaning: A problem with the ESP's internal memory.  
Cause: Defective ESP (IC16).  
A shorted trace, a broken trace, or faulty soldering between ESP (IC16) and CPU (IC7).

#### ESP:DRAM D (BK0)

#### ESP:DRAM D (BK1)

Meaning: A problem with the data bus of the ESP's external DRAM.  
Cause: Defective DRAM (IC19).  
A shorted trace, a broken trace, or faulty soldering in the data bus between ESP (IC16) and DRAM (IC19).

#### ESP:DRAM A (BK0)

#### ESP:DRAM A (BK1)

Meaning: A problem with the address bus of the ESP's external DRAM.  
Cause: Defective DRAM (IC19).  
A shorted trace, a broken trace, or faulty soldering in the address bus between ESP (IC16) and DRAM (IC19).

#### ESP:INT0

Meaning: A problem with the ESP's interrupt pin INT0.  
Cause: Defective ESP (IC16).  
A shorted trace, a broken trace, or faulty soldering between ESP(IC16) and CPU (IC7).

#### ESP:INT1

Meaning: A problem with the ESP's interrupt pin INT0.  
Cause: Defective ESP (IC16).  
A shorted trace, a broken trace, or faulty soldering between ESP (IC16) and CPU (IC7).

#### ESP:BUSY

Meaning: Access is not possible because the ESP's BUSY state cannot be cleared.  
Cause: Defective ESP (IC16).  
A shorted trace, a broken trace, or faulty soldering between ESP (IC16) and CPU (IC7).  
Clock is not being supplied to ESP (IC16).  
Power is not being supplied to ESP (IC16).

#### GA:DMARQ0=HI

#### GA:DMARQ1=HI

#### GA:DMARQ0/1=HI

#### GA:DMARQ0=LO

#### GA:DMARQ1=LO

#### GA:DMARQ0/1=LO

Meaning: DMA request is not being executed from GATE ARRAY to CPU.  
Cause: Defective GATE ARRAY (IC18).  
A shorted trace, a broken trace, or faulty soldering between GATE ARRAY (IC18) and CPU (IC7).  
Clock is not being supplied to GATE ARRAY (IC18).  
A shorted trace, a broken trace, or faulty soldering between GATE ARRAY (IC18) and ESP (IC16).

#### GA<-ESP:READ

Meaning: A problem with reading from the GATE ARRAY.  
Cause: Defective GATE ARRAY (IC18).  
A shorted trace, a broken trace, or faulty soldering between GATE ARRAY (IC18) and CPU (IC7).

#### GA<-ESP:VERIFY

Meaning: The data sent to the GATE ARRAY is not correctly returned via the ESP to the CPU.  
Cause: Defective GATE ARRAY (IC18).  
A shorted trace, a broken trace, or faulty soldering between GATE ARRAY

(IC18) and CPU (IC7).

A shorted trace, a broken trace, or faulty soldering between GATE ARRAY (IC18) and ESP (IC16).

Defective ESP (IC16).

Clock is not being supplied to ESP (IC16).

## DIF:DIF<->CPU

Meaning: Communication error between the DIGITAL AUDIO I/F and CPU.

Cause: Defective DIGITAL AUDIO I/F (IC14).

A shorted trace, a broken trace, or faulty soldering between DIGITAL AUDIO I/F (IC14) and CPU (IC7).

## DIF:INT

Meaning: DIGITAL AUDIO I/F interrupt error.

Cause: Defective DIGITAL AUDIO I/F (IC14).

Power is not being supplied to DIGITAL AUDIO I/F (IC14).

## Switch check

### DIFFERENT SW!

Meaning: A button other than the specified button was pressed.

Cause: Operating error.

Defect in switch detection circuit.

## Knob/Fader check

### DIFFERENT FADER!

Meaning: A fader or knob other than the specified fader or knob was operated.

Cause: Operating error.

Short between faders.

Analog reference voltage is abnormal.

## CompactFlash card check

"NG" appears together with the following messages.

### CF:DETECT EJECT

Meaning: Ejected state of the CompactFlash card could not be detected.

Cause: A CompactFlash card is inserted.

Faulty soldering in the connector.

A shorted trace, a broken trace, or faulty soldering between the connector (CN7) and CPU (IC7).

Defective IC30.

### CF:RESET

Meaning: The CompactFlash card could not be powered-on or reset.

Cause: CompactFlash card is defective.

Faulty soldering in the connector.

A shorted trace, a broken trace, or faulty soldering between the connector (CN7) and CPU (IC7).

Defective IC21, IC24, IC26, IC27, IC28, IC31, IC32, or IC33.

### CF:IDENTIFY-ENA

### CF:IDENTIFY-DIS

Meaning: Interrupt from the CompactFlash card does not occur.

Cause: CompactFlash card is defective.

Faulty soldering in the connector.

A shorted trace, a broken trace, or faulty soldering between the connector (CN7) and CPU (IC7).

Defective IC21, IC24, IC26, IC27, IC28, IC31, IC32, or IC33.

## CF:WRITE

### CF:READ

### CF:VERIFY

Meaning: Failed to write to CompactFlash card.

Cause: CompactFlash card is defective.

Faulty soldering in the connector.

A shorted trace, a broken trace, or faulty soldering between the connector (CN7) and CPU (IC7).

Defective IC21, IC24, IC26, IC27, IC28, IC31, IC32, or IC33.

## CD-RW CHECK

"NG" appears together with the following messages.

### CD:POWER ERROR

Meaning: Power is not supplied to the CD-RW drive.

Cause: Defective CD-RW drive.

### CD:ACTIVE ERROR

Meaning: CD-RW drive does not respond.

Cause: Defective CD-RW drive.

A shorted trace, a broken trace, or faulty soldering between the CD-RW drive and CPU (IC7).

### CD:FINALIZED CD

### CD:MEDIA FULL

### CD:WRITE ERROR

### CD:READ ERROR

### CD:VERIFY ERROR

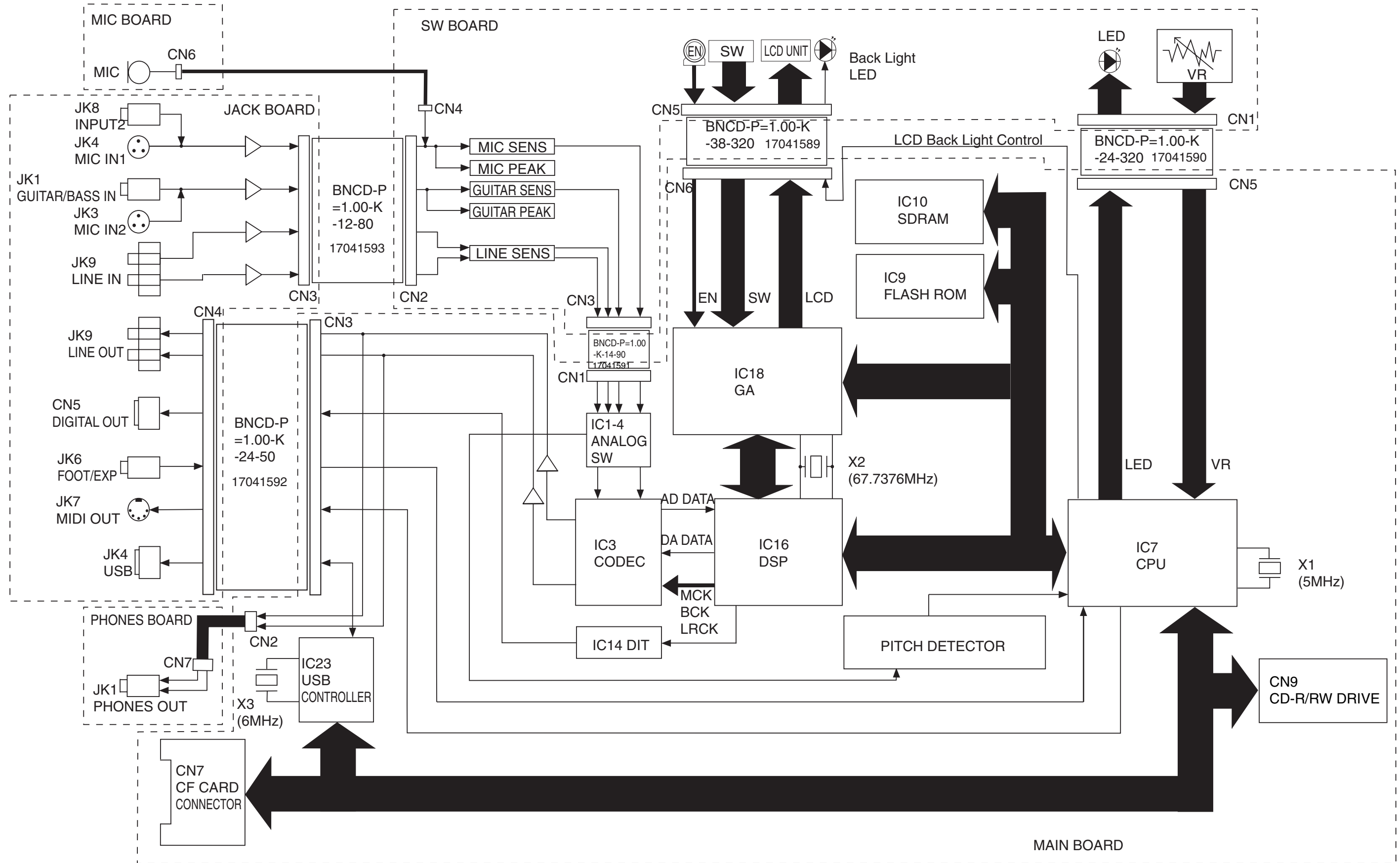
Meaning: The media was detected as being incapable of CD-RW reading/writing.

Cause: Defective CD-RW.

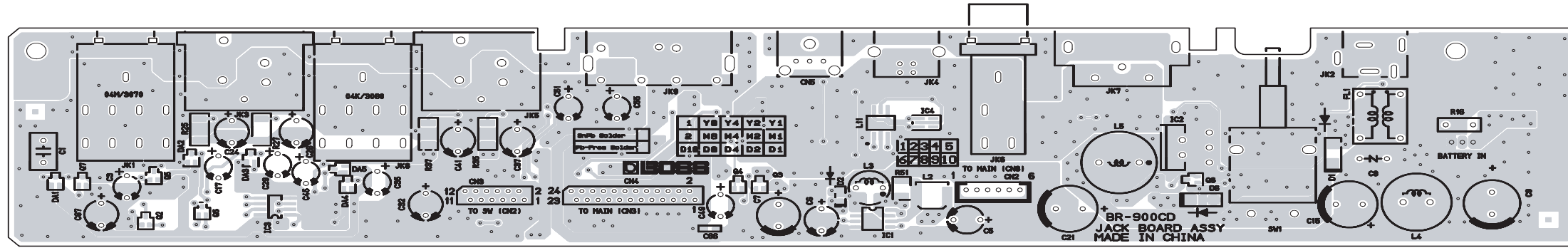
\* You must use a CD-RW that has not been finalized.

Defective CD-RW drive.

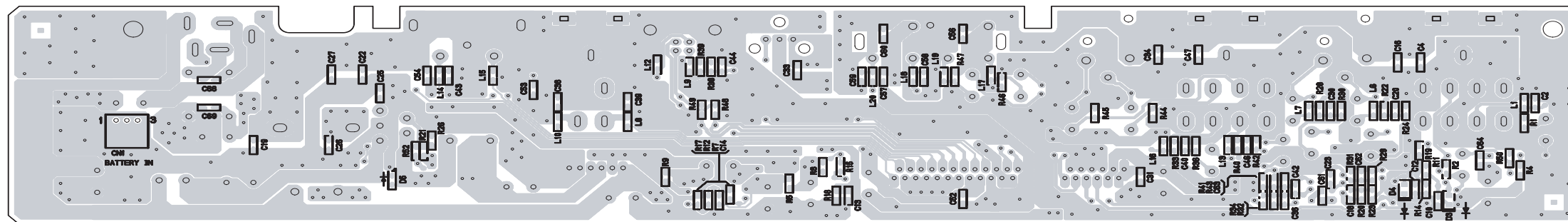
**BLOCK DIAGRAM**



# CIRCUIT BOARD(JACK)



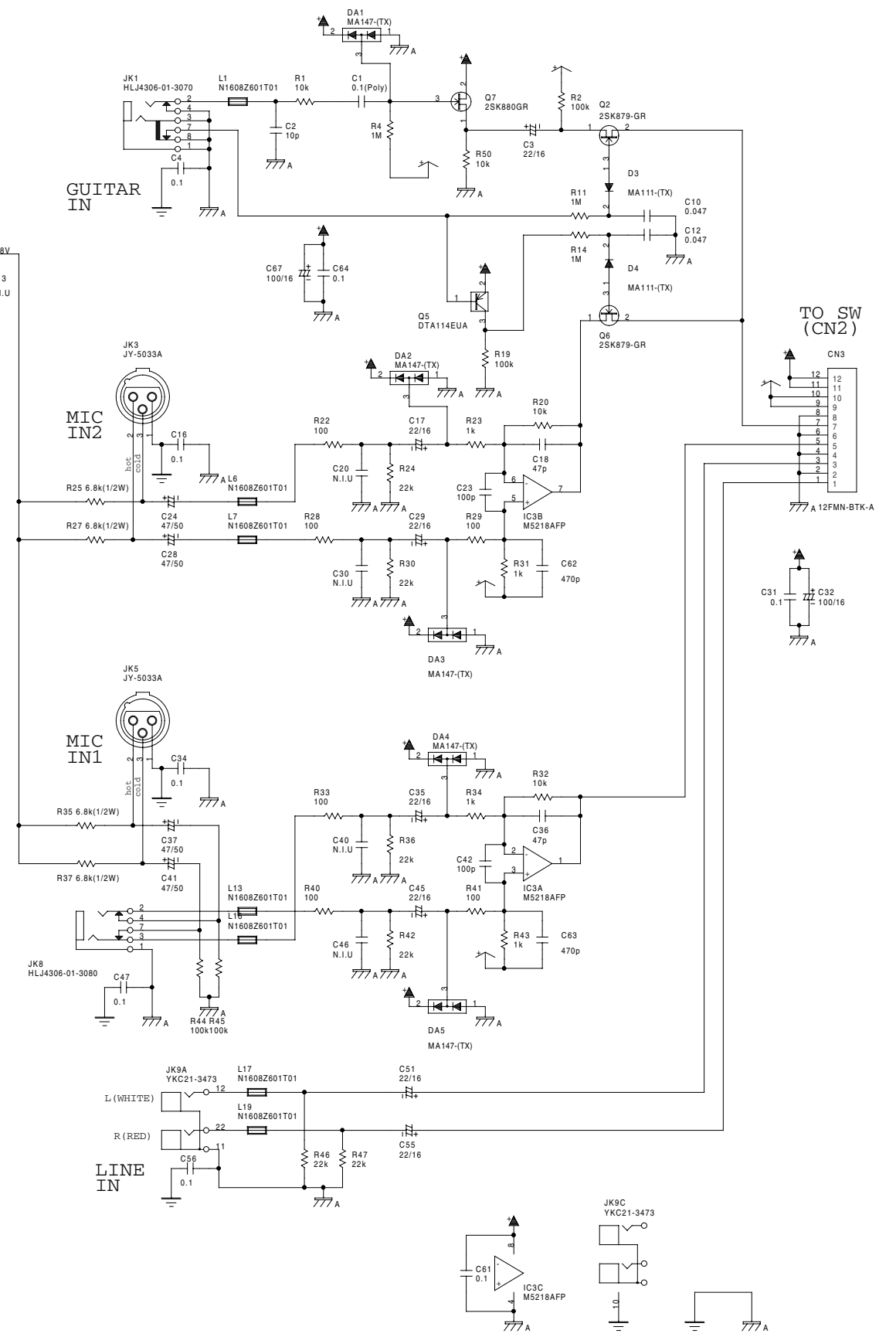
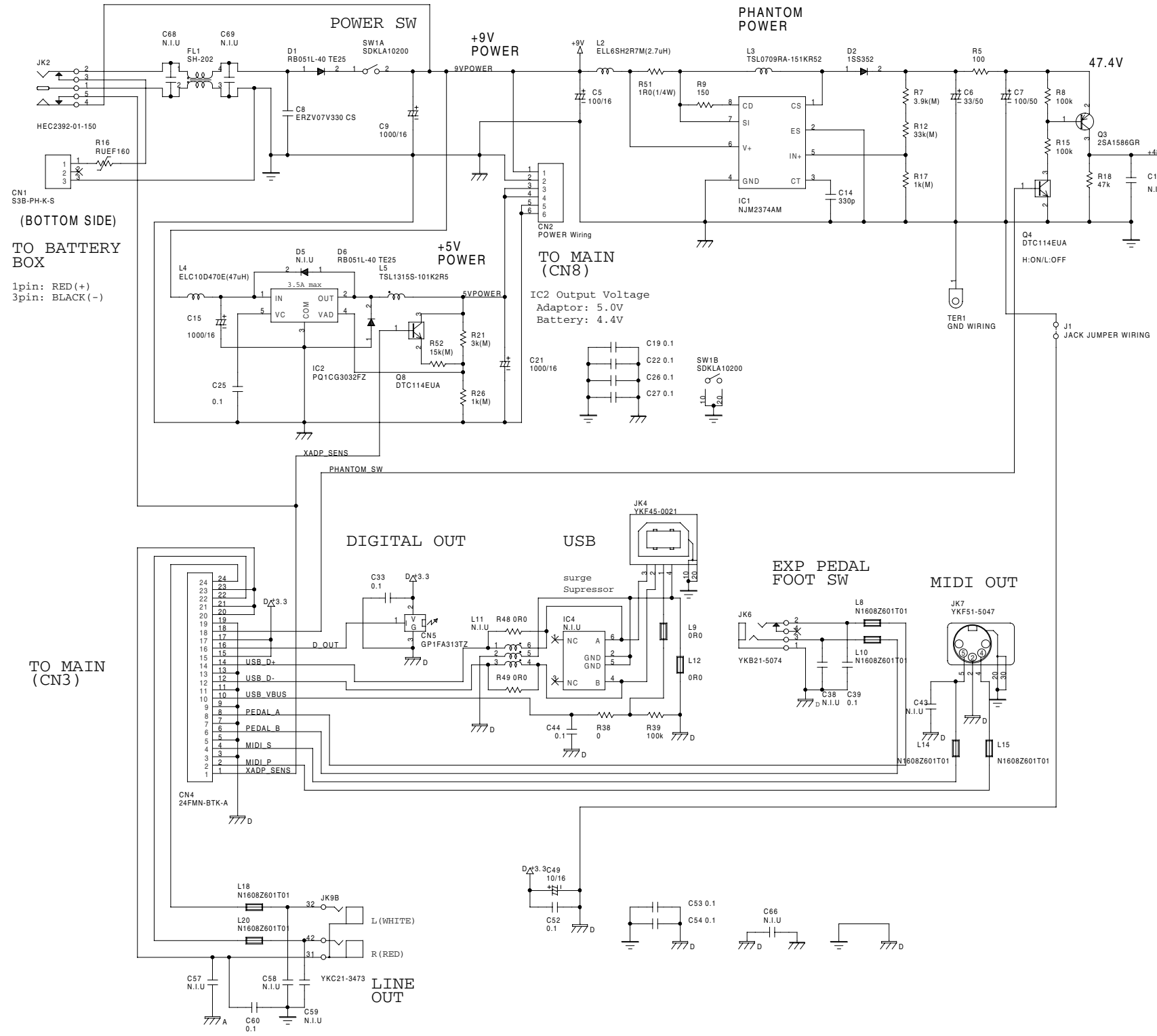
View from component side



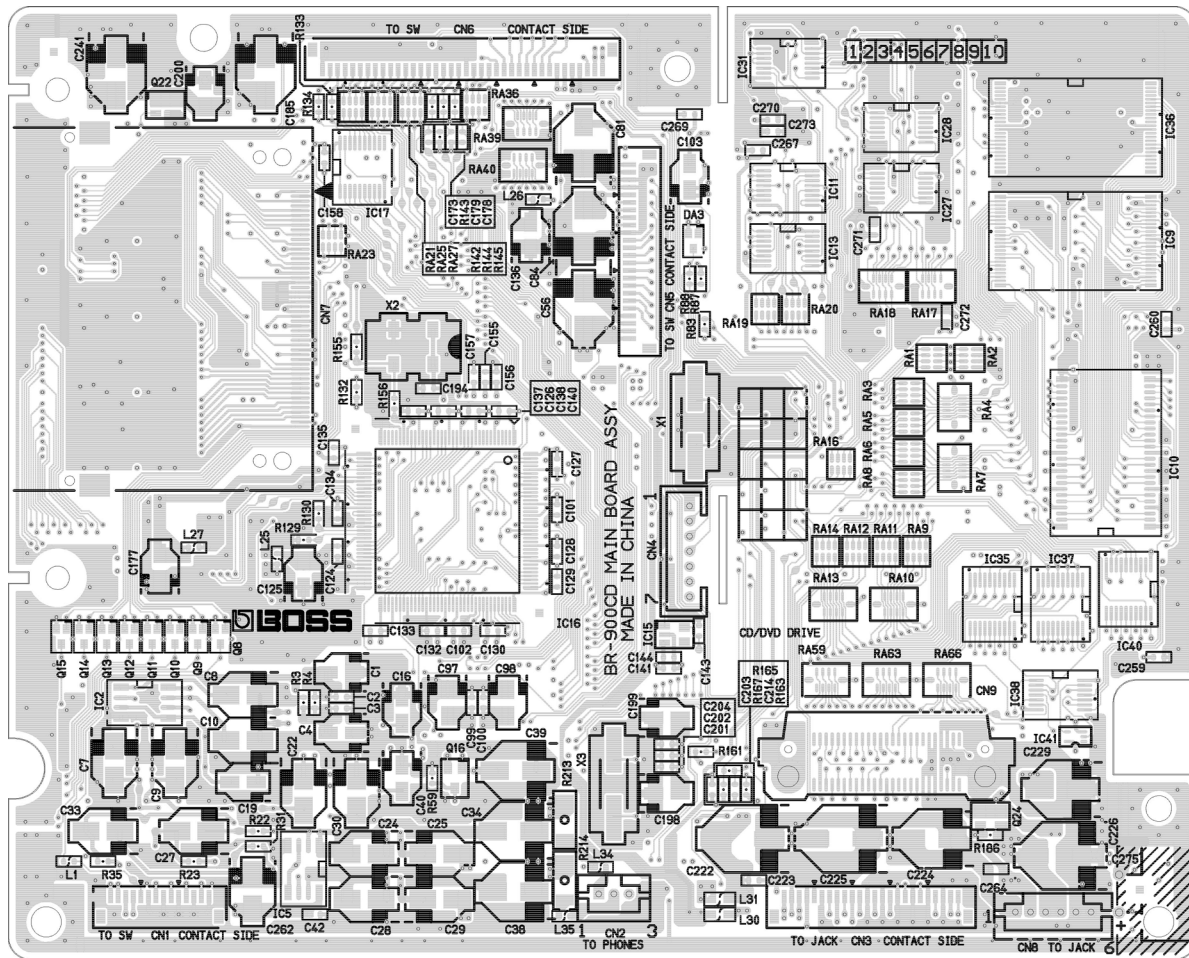
View from foil side

# CIRCUIT DIAGRAM(JACK)

ADAPTOR 9V JACK  
(PSC-100, 230, 230E, 240A)

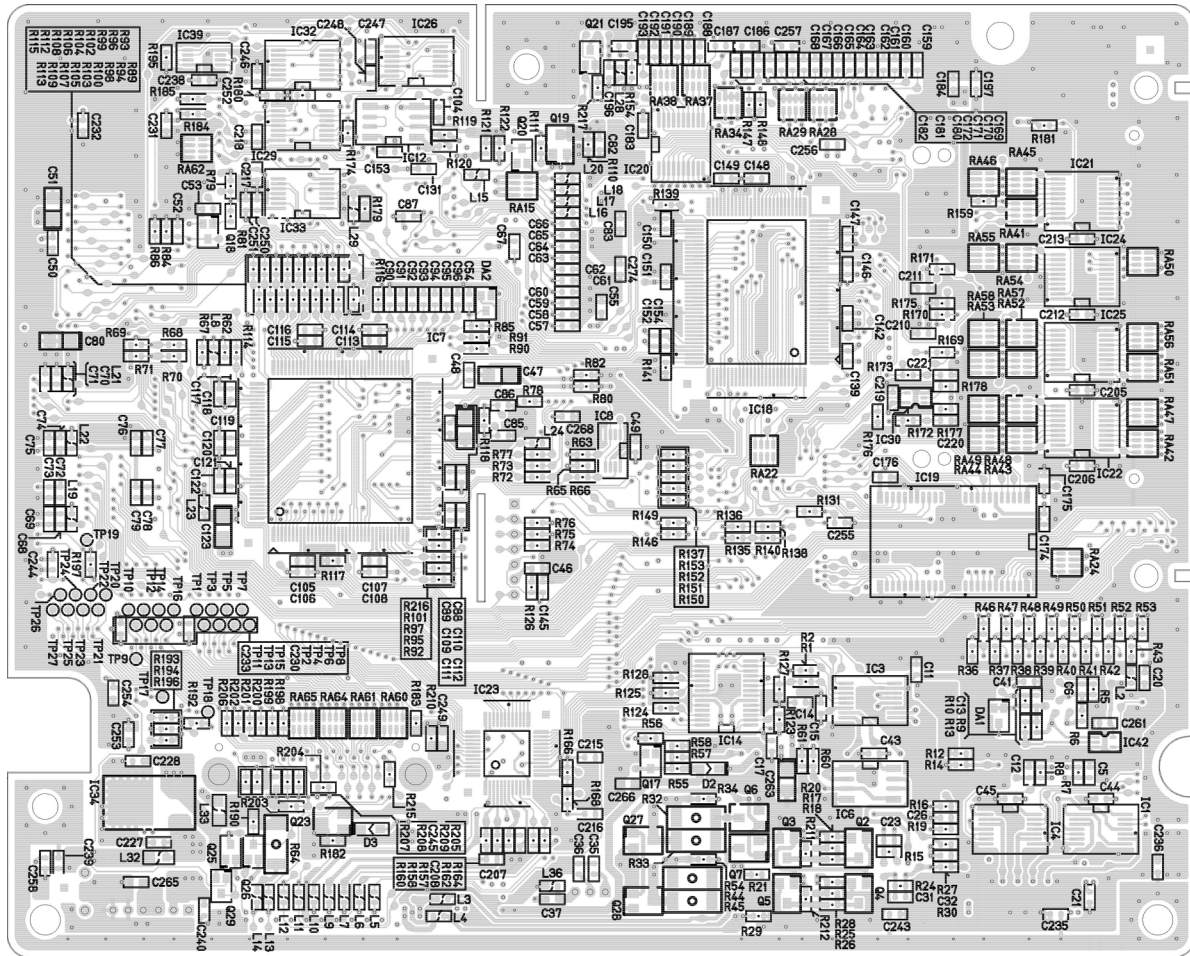


# CIRCUIT BOARD(MAIN)



View from components side

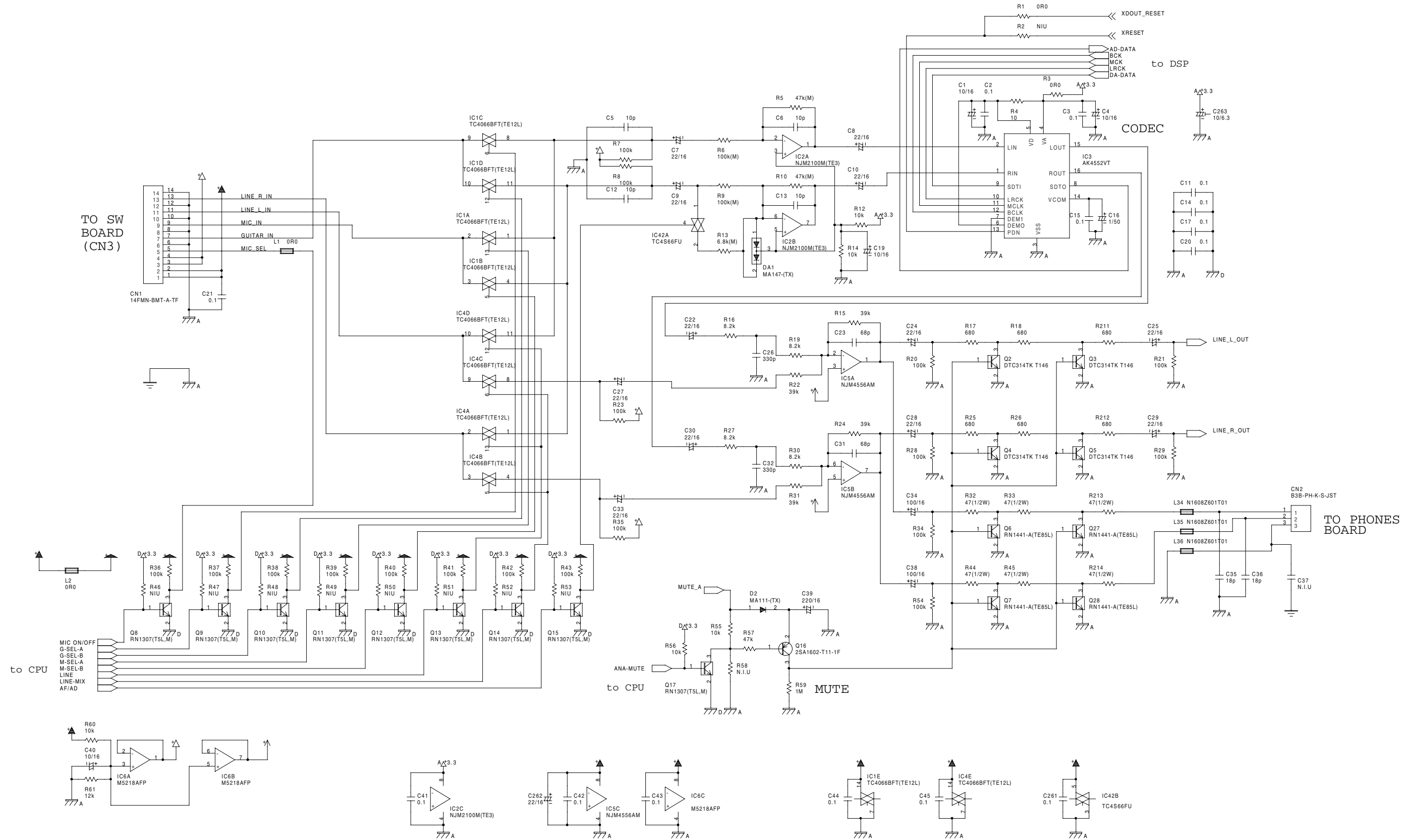




View from foil side

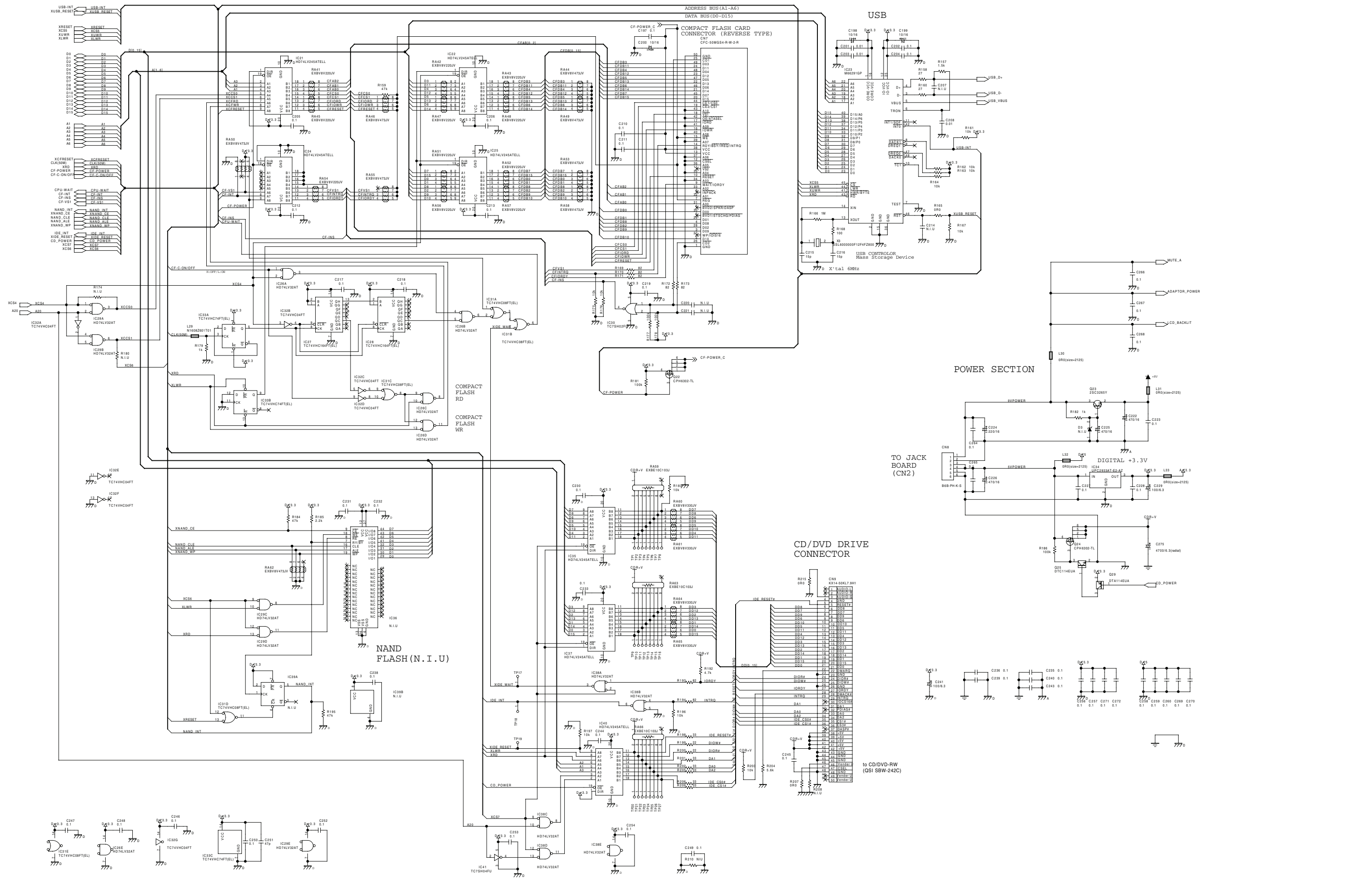


# CIRCUIT DIAGRAM(MAIN ANALOG)



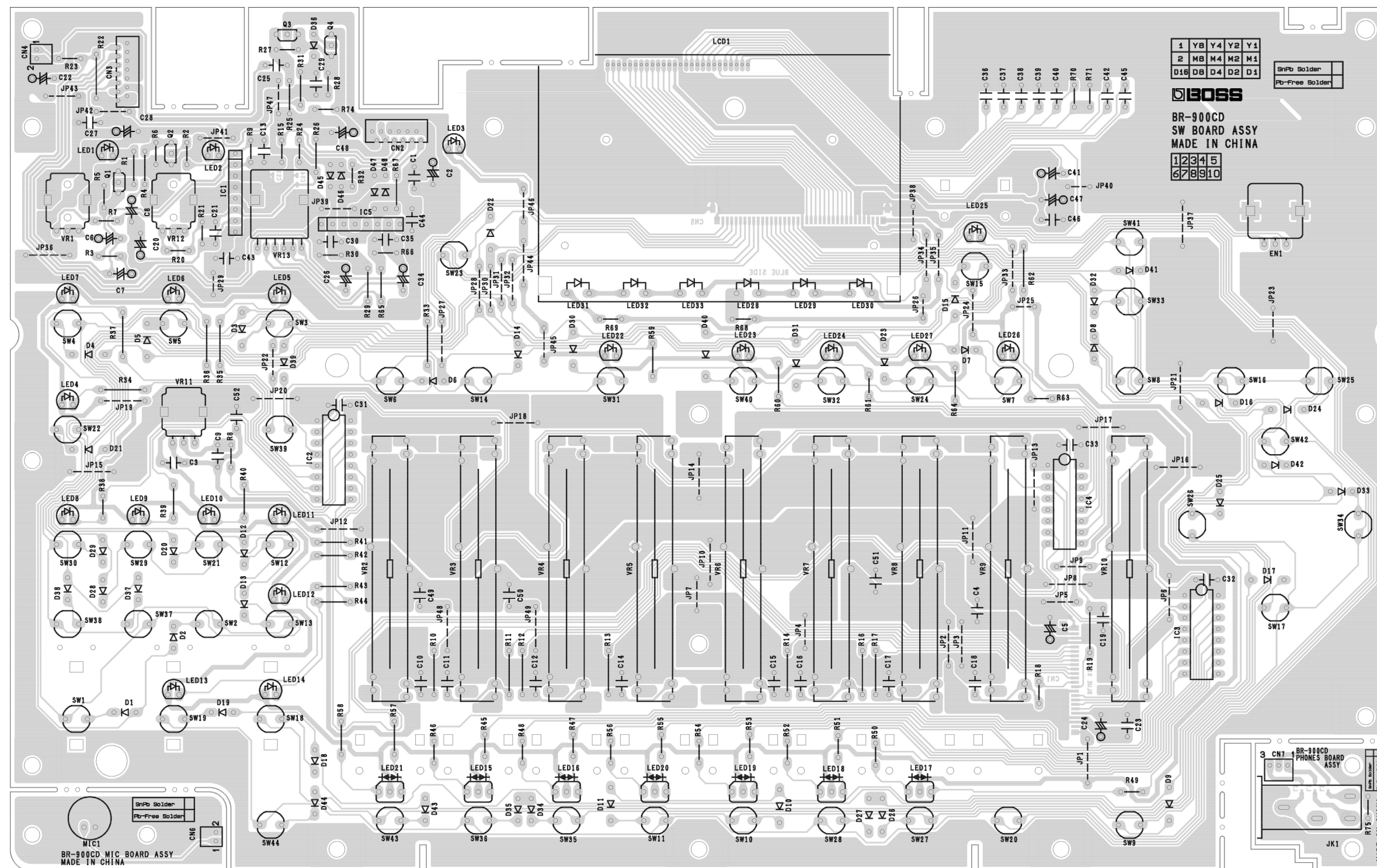


# CIRCUIT DIAGRAM(MAIN DIGITAL2)

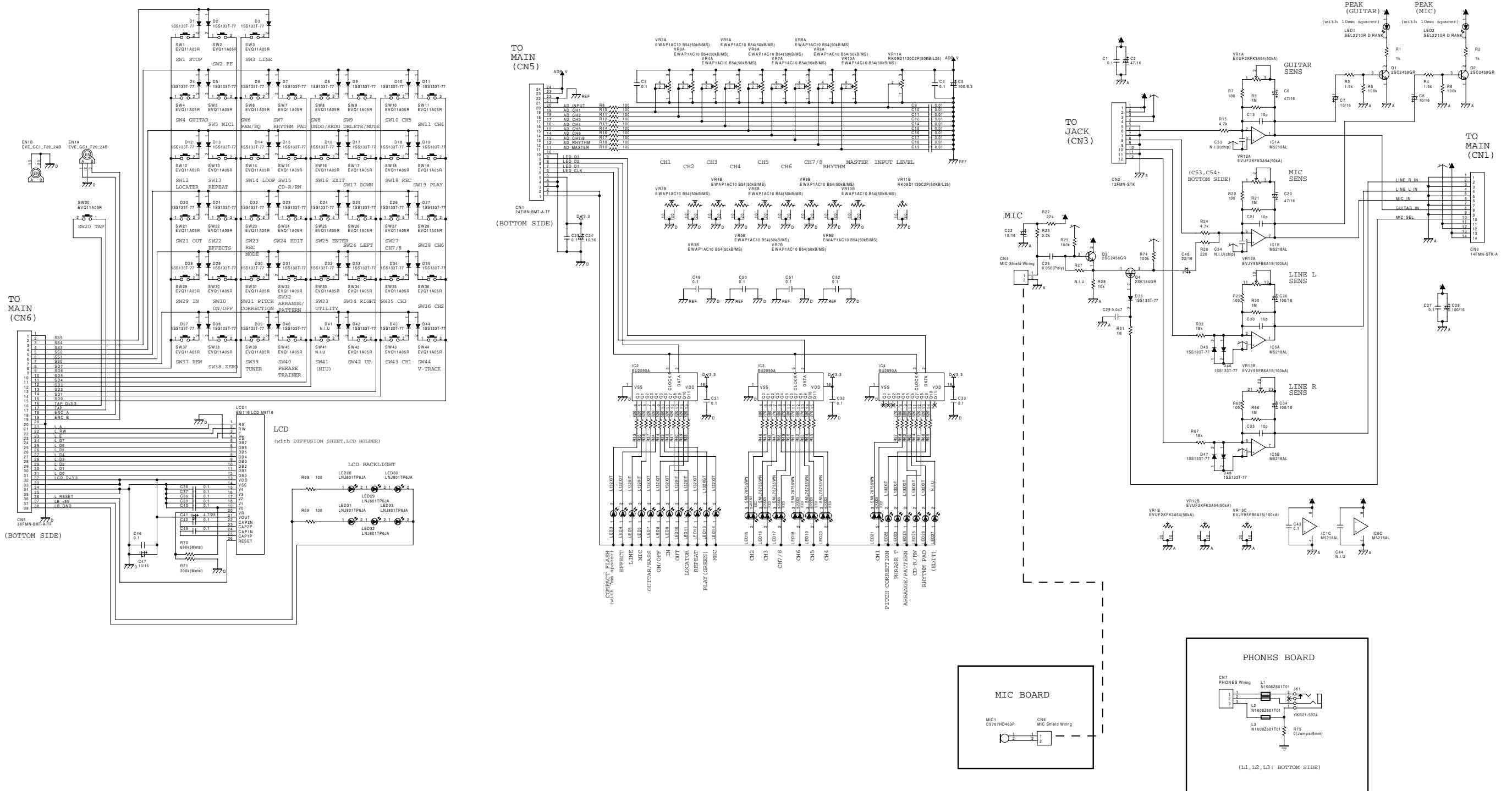




# CIRCUIT BOARD(SW)



# CIRCUIT DIAGRAM(SW)



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## ERROR MESSAGES

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If you attempt an incorrect operation or if an operation could not be executed, the display will indicate an error message. Refer to this list and take the appropriate action.

### Battery Low!

Cause: The batteries are depleted (6 x AA dry-cell batteries).  
Solution: Replace the batteries as soon as possible (p. 23).

### Blank Disc!

Cause: Disc in the CD-R/RW drive contains no data.  
Solution: Load a CD-R/RW disc that has data written on it.

### Cannot Edit! Quantize is Low!

Cause: During Step Recording of a pattern, the Quantize setting is too coarse, so multiple entries are appearing at the same point in the matrix.  
Solution: Fine the Quantize setting (p. 130).

### Cannot Edit! This is a Preset

Cause: Preset data is selected; you cannot edit this data.  
Solution: Copy the song data and then edit that.

### Cannot Erase!

Cause: No further steps can be erased.  
Solution: The Pitch Correction Map must contain a minimum of one step.

### Cannot Insert!

Cause: No further steps can be inserted.  
Solution: The Pitch Correction Map can contain a maximum of 99 steps.

### Cannot Program! Rhythm Off.

Cause: The Rhythm is switched off, so you cannot program it.  
Solution: Press [ARRANGE/PATTERN/OFF] to select Arrange mode or Pattern mode.

### Cannot Punch In for CD-R/RW!

Cause: You cannot punch in when a CD is specified as the bounce destination.  
Solution: If using the punch-in function, specify a track as the bounce destination.

### Card Full!

Cause: It is not possible to record or copy due to small memory capacity.  
Solution1: Back up the data you need to your computer (p. 164, p. 175), and delete unneeded data.  
Solution2: Perform the Song Optimize operation (p. 78).

### Card Read Error!

Cause: Memory card data cannot be loaded correctly.  
Solution 1: Turn off the BR-900CD, properly insert the memory card, then turn the BR-900CD back on.  
Solution 2: Initialize the card (p. 196).  
\* If the same message appears after you have taken the above steps, it is possible that the memory card is malfunctioning.

### Card Write Error!

Cause: An error occurred while writing data to the memory card.  
Solution: The memory card must be initialized (p. 196). Also, the song data you had been attempting to save will be lost.

### CD Full!

Cause 1: The CD-R/RW disc is full, and no more data can be written to it.  
Cause 2: When creating an audio CD, the total time of the tracks exceeds the capacity of the CD-R/RW disc.  
Solution: Either reduce the amount of data to be written, or place a new CD-R/RW disc in the drive and start the procedure over again.

### CD Medium Error!

Cause: There is a problem with the CD-R/RW disc. Alternatively, the disc on the CD-R/RW drive is unreadable.  
Solution 1: Confirm that the correct type of disc is placed in the CD-R/RW drive.  
Solution 2: Use a new CD-R/RW disc.

### CD Read Error!

Cause: An error occurred while reading data from the CD-R/RW disc.  
Solution: This may be due to a low-quality or dated disc. Try using a new CD-R/RW disc.

### CD Write Error!

Cause: An error occurred while writing data to the CD-R/RW disc.  
Solution: This may be due to a low-quality or dated disc. Try using a new CD-R/RW disc.

### Data Too Short!

Cause: You have attempted to import a WAV/AIFF file shorter than one second or to load a WAV/AIFF file shorter than 0.1 seconds using the Tone Load function.  
Solution: Make sure the WAV/AIFF file to be loaded is at least one second in length, or if using the Tone Load function, select a WAV/AIFF file that is at least 0.1 seconds in length.  
Cause: You attempted to write an audio CD with a track that is less than four seconds in length.  
Solution: Prepare tracks being written to audio CDs so that they are at least four seconds long.

### Disc Not Ready!

Cause: There is no CD-R/RW disc in the drive.  
Solution: Place a CD-R/RW disc in the drive.



## Drive Busy!

**Cause:** If this message appears after you have been using the memory card with the BR-900CD, the data on the card has become fragmented, causing delays in reading and writing data.  
Or, you could be using memory card with a slow processing speed.

\* *In cases of unfavorable disc access conditions, such as when track editing, punch-in/out recording, etc. is used to connect phrases (musical data) of several seconds.*

**Solution 1:** Reduce the number of tracks that are played back simultaneously. Use track bouncing etc. to combine tracks, or erase data from tracks which you do not need to playback, and then try the playback again.

**Solution 2:** Reduce the number of tracks that are being recorded simultaneously.

**Solution 3:** Reduce the Data Type (STD (LV1) or LONG (LV2)), and then try creating the song again.

**Cause:** There is a problem with the CD-R/RW disc, preventing audio playback.

**Solution:** If the disc is dirty, wipe the disc to clean it, then try playing the disc again.

## Event Full!

**Cause:** The BR-900CD has used up all the events that can be handled by one song.

**Solution:** Perform the Song Optimize operation (p. 78).

## Finalized Disc!

**Cause:** Data has already been written to the CD-R/RW disc, and the data has been finalized.

**Solution:** Place a CD-R/RW disc that has not been finalized in the drive.

## Turn Off Pitch Correction!

**Cause:** You cannot use the loop effects or phrase trainer while Pitch Correction is on.

**Solution:** Press [PITCH CORRECTION] to turn it off, and try the operation once again.

## Memory Full!

**Cause:** The total time of the drum sounds for one drum kit that can be loaded with tone load has exceeded 13 seconds.

**Solution:** Make sure the drum sounds being loaded by means of tone load do not exceed a total of 13 seconds (p. 135, p. 171, p. 181).

**Cause:** No rhythm pattern memory remaining.

**Solution 1:** Delete any unneeded rhythm patterns (p. 133).

**Solution 2:** Delete any unneeded drum sounds in the rhythm patterns (p. 129, p. 132).

**Cause:** You have attempted to import an SMF that exceeds the available memory for imported files.

**Solution:** Delete any unneeded rhythm patterns (p. 133).

## MIDI Buffer Full!

**Cause:** Excessive number of MIDI messages being output.

**Solution 1:** Either decrease the tempo of the Rhythm or reduce the number of Note messages (p. 123, p. 126).

**Solution 2:** Set the RhyMIDI ch to "OFF" (p. 157).

## No Card!

**Cause:** You have tried to operate the recorder, or access the memory while the memory card (CompactFlash) is not inserted, or is not inserted properly.

**Cause:** The memory card has been removed after selection of data on that memory card.

**Solution:** Turn off the BR-900CD, properly insert the memory card, then turn the BR-900CD back on.

## No File!

**Cause:** The file you are trying to import with WAV/AIFF/SMF import or Tone Load was not found.

**Solution:** Have the file you want to import ready.

## No Song!

**Cause:** There are no songs on the memory card.

**Solution:** Create a new song (p. 32).

**Cause:** Incorrect data is in the song folder, or the necessary data is not present.

**Solution:** Restore the data backed up on the computer to the BR-900CD. In this case, restore each "ROLAND" folder to the BR-900CD (p. 164, p. 175).

## Not Available in Mastering Mode!

**Cause:** You cannot carry out this operation with "MASTERING" selected as the recording mode.

**Solution:** First press the [REC MODE] button to switch the recording mode to "INPUT" or "BOUNCE," then proceed with the operation.

## Not Blank Disc!

**Cause:** The CD-R/RW disc already has data written to it.

**Solution:** Place a CD-R/RW disc with no data written to it (a blank disc) in the CD-R/RW drive.

If using a CD-RW disc, you can erase the data on the disc in order to create a blank disc (p. 153).

## Not CD-RW Disc!

**Cause:** The disc is not a CD-R/RW disc, so the data cannot be erased.

**Solution:** Use a CD-RW disc.

## Not Finalized Disc!

**Cause:** The disc cannot be played back properly because it has not been finalized.

**Solution:** Finalize the disc (p. 143).

## Power Down!

**Cause:** Internal power source voltage is below than guaranteed workable range.

**Solution:** In case of using PSC adaptor: Cable might be broken or adaptor itself might be malfunctioning. Please contact Roland Service or Roland authorized dealers.

In case of using batteries: Please replace with new batteries (p. 23).



## Protected!

- Cause: You are attempting to write data to a song that has protection switched on.
- Solution: To write data to the song, switch Protect to OFF (p. 79). Set Bounce Target to Track!
- Cause: You cannot use the Rhythm-related functions (switching Arrangement/Pattern/Off, editing, switching Rhythm pads, Tone Load) when a CD is specified as the bounce destination.
- Solution: When using Rhythms, specify a track as the bounce destination.

powered by the batteries. If you want to use the CD-R/RW drive, first save the song, turn off the power to the BR-900CD, connect the AC adaptor, then turn the power back on.

## Wrong Disc!

- Cause: A disc other than the required CD-R/RW disc is placed in the drive.
- Solution: Place a CD-R/RW disc in the drive.

## Set the Repeat!

- Cause: Repeat A (Starting Point) and B (Ending Point) is not set.
- Solution: Set the Repeat A and B (p. 51).

## Stop P.Trainer!

- Cause: The operation you attempted cannot be done while the Phrase Trainer (p. 192) is operating.
- Solution: Press [PHRASE TRAINER] to turn off the Phrase Trainer.

## Stop Recorder!

- Cause: The operation you attempted cannot be done while the recorder is running (playing or recording).
- Solution: Press [STOP] to stop playback or recording.

## Too Many Songs!

- Cause: You are attempting to create more than 100 songs.
- Solution: Erase unneeded songs (p. 77).

## Unformatted!

- Cause: The Memory card is not formatted by DOS.
- Solution 1: Turn off the BR-900CD, properly insert the memory card, then turn the BR-900CD back on.
- Solution 2: Initialize the card (p. 196).

## Unsupported Card!

- Cause: The memory card (CompactFlash) or MicroDrive inserted is not compatible with the BR-900CD.
- Solution: Use a memory card compatible with the BR-900CD (32 MB to 1 GB CompactFlash with a power-source voltage of 3.3 V).

## Unsupported Format!

- Cause 1: The BR-900CD cannot recognize or use the format of the inserted memory card.
- Solution 1: Insert a memory card initialized for use with the BR-900CD (p. 196).
- Cause 2: You have attempted to load an incompatible WAV or AIFF file or SMF to the BR-900CD.
- Solution 2: Check the format of the WAV or AIFF file or SMF.

## Use AC Adaptor!

- Cause: You have attempted to use the CD-R/RW drive while running on battery power.
- Solution: You cannot use the CD-R/RW drive while the BR-900CD is