

ME-30

GUITAR MULTIPLE EFFECTS

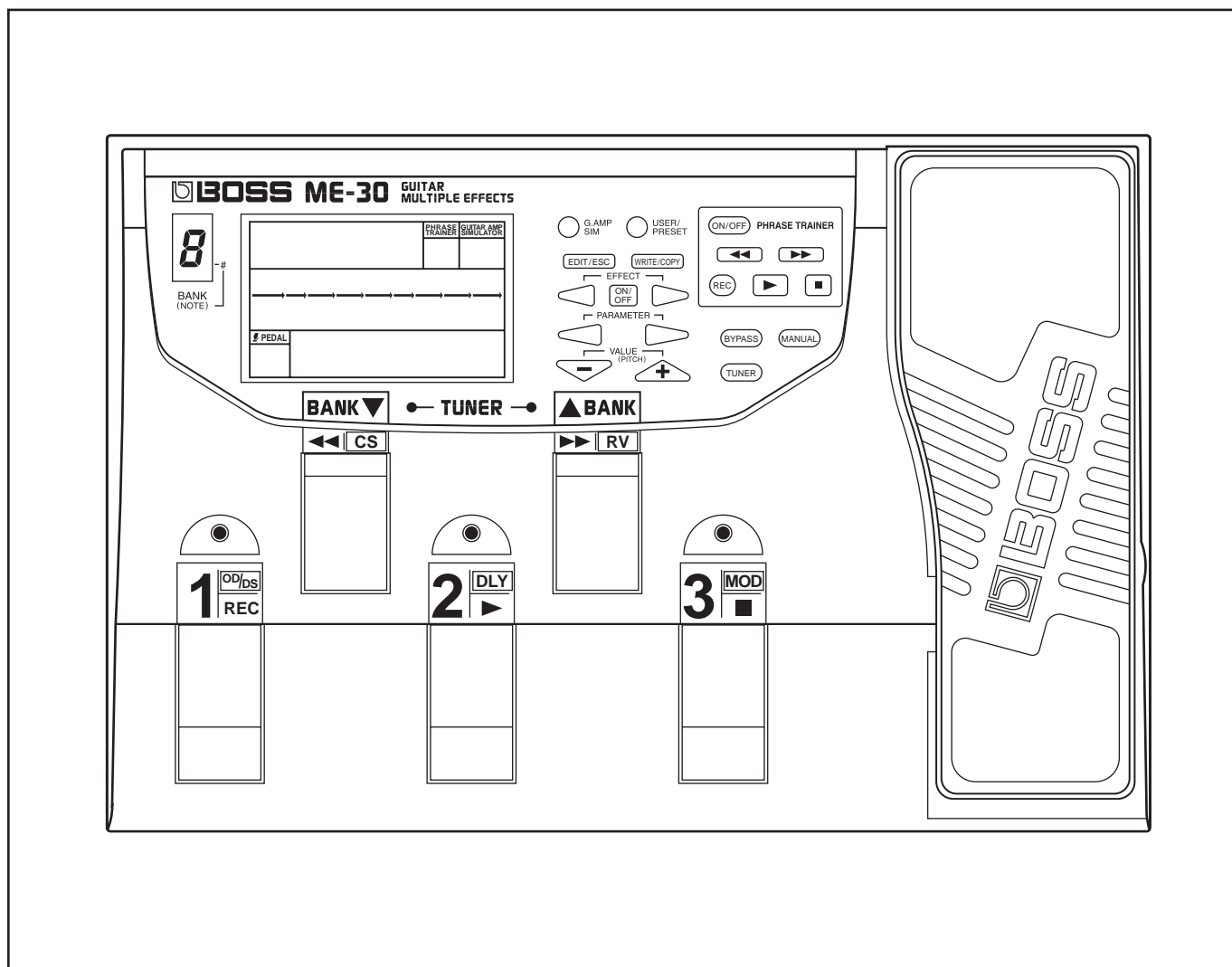
SERVICE NOTES

First Edition

Issued by RJA

TABLE OF CONTENTS

	Page
SPECIFICATIONS.....	2
LOCATION OF CONTROLS	3
EXPLODED VIEW.....	5
PARTS LIST	6
LOADING FACTORY PRESET DATA	7
TEST MODE	7 ~ 12
IC DATA	13
BLOCK DIAGRAM	13
CIRCUIT DIAGRAM & BOARD	14 ~ 19



Copyright © 1997 by ROLAND CORPORATION

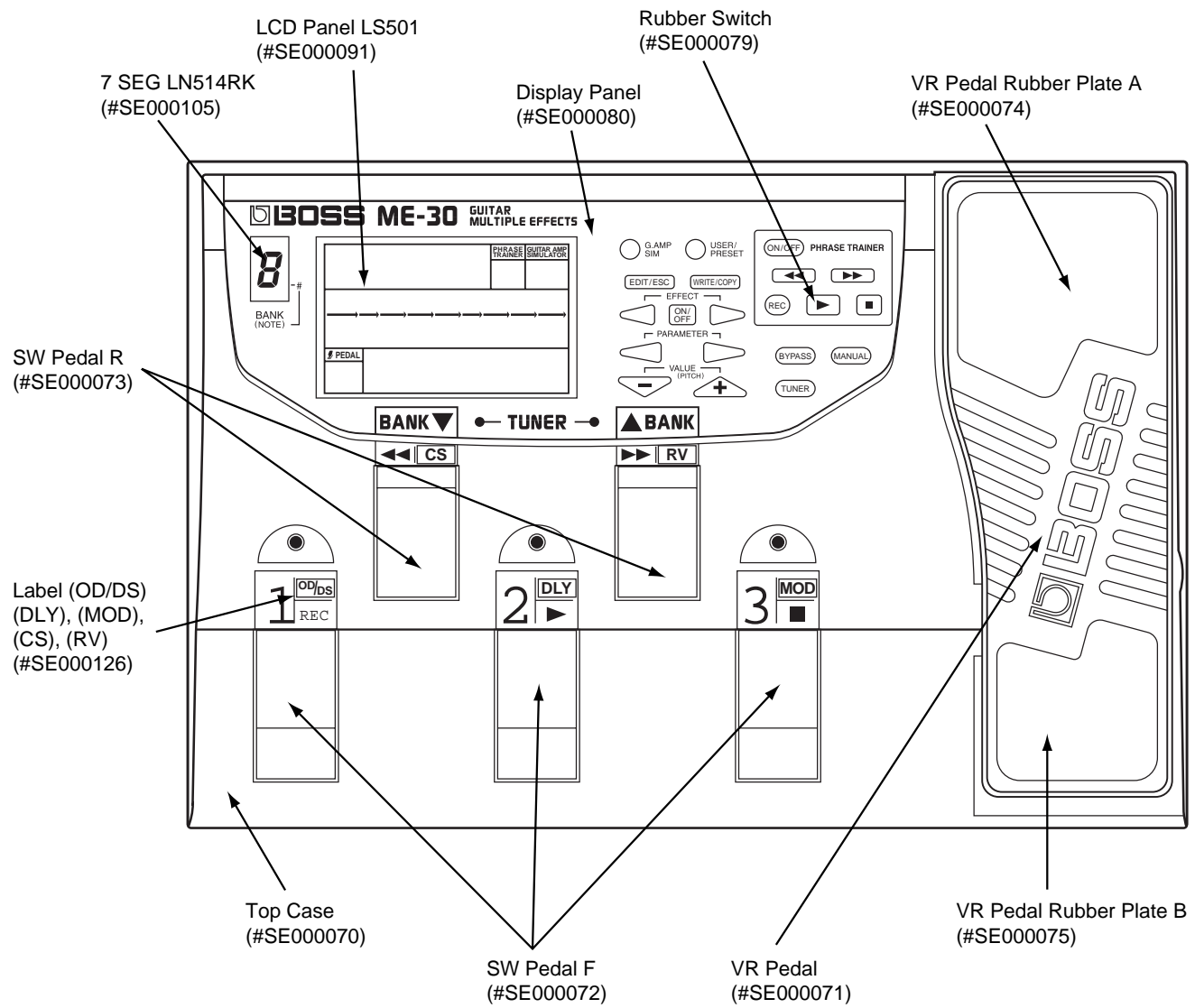
All rights reserved. No part of this publication may be reproduced in any form without the written permission of ROLAND CORPORATION.

SPECIFICATIONS

AD Conversion	: $\Delta \Sigma$ Method 20-bit ADC	
DA Conversion	: $\Delta \Sigma$ Method 18-bit DAC	
Sampling Frequency	: 44.1kHz	
Patches	: 30(User)+30(Preset)+Manual Settings	
Effects	: <Main Effects> Compressor Overdrive/Distortion Equalizer/Phaser Noise Suppressor Delay Chorus/Flanger/Pitch Shifter/Tremoro Reverb Gitar Amplifier Simulator <Effects for Expression Pedal> Volume Pedal Pedal Wah Tremoro Arm Ring Modulator	
Nominal Input Level	: INPUT: -20dBm AUX IN: -10dBm	
Input Impedance	: INPUT: 1M Ω AUX IN: 47k Ω	
Nominal Output Level	: OUTPUT: -20dBm	
Output Impedance	: OUTPUT: 2k Ω	
Display	: 7 segments, 1characterLED Custom LCD(Luminous Display)	
Jacks	: INPUT Jack AUX IN Jack (Stereo Mini Type) OUTPUT Jacks L(MONO)/R Headphose Jack (Stereo Mini Jack) AC ADAPTOR Jack	
Power Supply	: DC 9V:Dry Batteries(R6(AA)type) x6 AC Adptor(PAS-Series:Optional)	
Current Draw	: 170mA(DC 9V) AC Adptor(PAS-Series:Optional)	
Dimensions	: 305(W) x 205(D) x 55(H)mm 12-1/16(W) x 8-1/8(D) x 2-3/16(H)inches	
Weight	: 1.5kg/3 lbs 5 oz (including batteries)	
Accessories	: Owner's Manual(English) (P/No.SE000129) Owner's Manual(Japanese) (P/No.SE000130) Dry Batteries(R6(AA)type) x6(Alkaline) (P/No.*****) Roland Service	
Options	: AC Adaptor PSA-Series	

*0dBm=0.775 Vrms

LOCATION OF CONTROLS



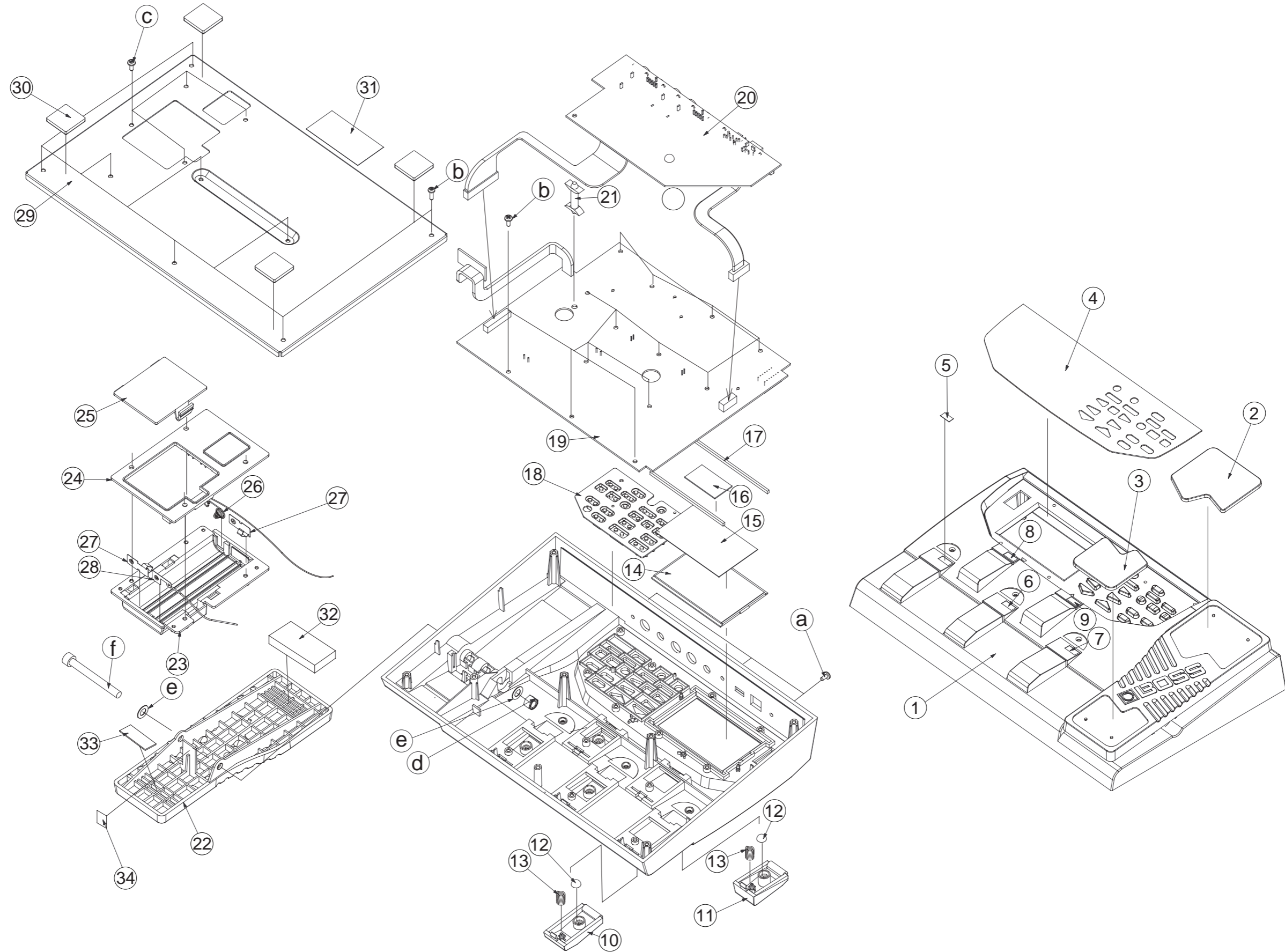
EXPLODED VIEW PARTS LIST**[PARTS]**

No.	Part Cord	Part Name	Description	Qty
①	SE000070	Top Case	M200004060	1
②	SE000074	VR Pedal Rubber Plate A	M203000410	1
③	SE000075	VR Pedal Rubber Plate B	M203000420	1
④	SE000080	Display Panel	M203000400	1
⑤	SE000126	Label (OD/DS)	M303002900	1
⑥	SE000126	Label (DLY)	M303002900	1
⑦	SE000126	Label (MOD)	M303002900	1
⑧	SE000126	Label (CS)	M303002900	1
⑨	SE000126	Label (RV)	M303002900	1
⑩	SE000072	SW Pedal F	M400001770	3
⑪	SE000073	SW Pedal R	M400001780	2
⑫	SE000076	SW Pedal F/R Switch Knob	M205001210	5
⑬	SE000131	SW Spring	M100001790	5
⑭	SE000091	LCD Panel LS501	MA38000210	1
⑮	SE000092	Luminous Sheet	M303002890	1
⑯	SE000082	LCD Cushion	M208001510	1
⑰	SE000081	LCD Connector	MA15000500	1
⑱	SE000079	Rubber Switch	MA25000850	1
⑲	SE000094	Main Board Assy	M001001670	1
⑳	SE000095	Jack Board Assy	M001001680	1
㉑	SE000128	PCB Support YP-17	M208001540	1
㉒	SE000071	VR Pedal	M400001760	1
㉓	SE000083	Battery Case A	M200004070	1
㉔	SE000084	Battery Case B	M200004080	1
㉕	SE000085	Battery Cover	M200004090	1
㉖	SE000089	Battery Terminal C	MA34002570	1
㉗	SE000087	Battery Terminal A	MA34002550	2
㉘	SE000088	Battery Terminal B	MA34002560	1
㉙	SE000086	Bottom Cover	M200004100	1
㉚	SE000090	Bottom Cover Cushion C	M208001270	1
㉛	40238434	CAUTION LABEL CANADA EMI		1
㉜	SE000078	VR Pedal Cushion Rear	M208001530	1
㉝	SE000077	VR Pedal Cushion Front	M208001520	1
㉞	SE000127	VR Pedal Reflect seal	M303002960	1

[SCREW]

No.	PART No.	PART NAME		
Ⓐ	40010256	Binding M3x8 BZC		3
Ⓑ	40011312	Binding M3x8 P-Tight BZC		21
Ⓒ	40011323	Binding M3x10 P-Tight BZC		4
Ⓓ	SE000120	Hex Nut M6 BZC	M100001630	1
Ⓔ	SE000121	Plain Washer	M100001640	2
Ⓕ	SE000119	Cap Bolt M6x55 BZC	M100001620	1

EXPLODED VIEW



PARTS LIST

<p>SAFETY PRECAUTIONS:* The parts marked Δ have safety-related characteristics. Use only listed parts for replacement.</p>	<p>CONSIDERATIONS ON PARTS ORDERING When ordering any parts listed in the parts list, please specify the following items in the order sheet.</p> <table border="1"> <thead> <tr> <th>QTY</th> <th>PART NUMBER</th> <th>DESCRIPTION</th> <th>MODEL NUMBER</th> </tr> </thead> <tbody> <tr> <td>Ex. 10</td> <td>22575241</td> <td>Sharp Key</td> <td>C-20/50</td> </tr> <tr> <td>15</td> <td>2247017300</td> <td>Knob (orange)</td> <td>DAC-15D</td> </tr> </tbody> </table> <p>Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.</p>	QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER	Ex. 10	22575241	Sharp Key	C-20/50	15	2247017300	Knob (orange)	DAC-15D
QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER										
Ex. 10	22575241	Sharp Key	C-20/50										
15	2247017300	Knob (orange)	DAC-15D										

NOTE: *1 The parts marked # are new (initial parts)

MB->Main Board , JB->Jack Board , SB->Sensor Board

#	DESCRIPTION	PART NUMBER	MODEL NUMBER	DESCRIPTION	MODEL NUMBER
CASING					
#	SE000070	Top Case	M200004060		
#	SE000071	VR Pedal	M400001760		
#	SE000072	SW Pedal F	M400001770		
#	SE000073	SW Pedal R	M400001780		
#	SE000074	VR Pedal Rubber Plate A	M203000410		
#	SE000075	VR Pedal Rubber Plate B	M203000420		
#	SE000076	SW Pedal F/R Switch Knob	M205001210		
#	SE000077	VR Pedal Cushion Front	M208001520		
#	SE000078	VR Pedal Cushion Rear	M208001530		
#	SE000080	Display Panel	M203000400		
#	SE000083	Battery Case A	M200004070		
#	SE000084	Battery Case B	M200004080		
#	SE000085	Battery Cover	M200004090		
#	SE000086	Bottom Cover	M200004100		
KNOB,BUTTON					
#	SE000079	Rubber Switch	MA25000850		
SWITCH					
#	13129776	Tact SW SKQKAE		SW1.SW6.SW11.SW16.SW21 on MB	
#	SE000096	Slide SW HSW2022-010010	MA25000830	SW50 on JB	
JACK,SOCKET					
	13449722	Mono Jack ϕ 6.5 HLJ0521-01-1110		JK1-JK3 on JB	
	13449443	Stereo Jack ϕ 3.5 HSJ0912-01-010		JK4,JK6 on JB	
	13449717	AC Adaptor Jack HEC2392-01-150		JK5 on JB	
DISPLAY UNIT					
#	SE000091	LCD Panel LS501	MA38000210		
#	SE000105	7 SEG.LED LN514RK	MA18000530	LED1 on MB	
PCB ASSY					
#	\square SE000094	Main Board Assy NOTE:Replacement Main Board Assy includes Sensor Board Assy. Exchange the Main Board and the Sensor board in the lump.	M001001670		
		Sensor Board Assy			
#	SE000095	Jack Board Assy	M001001680		
IC					
#	01238145	CPU Mask μ PD78064GF-095-3BA(FP)		IC305 on MB	
#	01235190	MR2 Chip TC203C040AF-001(FP)		IC306 on MB	
#	01238101	Audio CODEC AK4520A(SOP)		IC8 on MB	
#	01238112	DAC PCM1718E(SOP)		IC11 on MB	
#	SE000097	DRAM HM51W4400BT-6(TSOP)	MZ19000020	IC301 on MB	
#	SE000098	EEPROM AT24C16N-10SC-2.7(SOP)	MZ21000020	IC302 on MB	
#	SE000099	TTL TC74AC164F	MZ17000150	IC304,IC307 on MB	
#	SE000100	TTL HD74HC4066FPEL	MZ17000130	IC10 on MB	
#	SE000101	TTL HD74HC4052FPEL	MZ17000140	IC12 on MB	
#	15199159	DC/DC Converter IR3M03A		IC9 on MB	
#	SE000102	Reset IC M51955AFP600C	MZ24000270	IC303 on MB	
	00452290	OP Amp M5216FP		IC4 on MB	
	15289105	OP Amp μ PC4570G2-T2		IC3 on MB	
	00452301	OP Amp NJM2100M		IC7 on MB	
	15289148	OP Amp M5218AFP(Flat)		IC5,IC6 on MB	
#	SE000103	V.Reg.(3v) NJU7201U-32-TE1	MZ23000230	IC14 on MB	
	15289408	V.Reg.(5v) M5278L05M		IC13 on MB	
	15229728	Photo Coupler GP2S24B		IC300 on SB	
	15189189	OP Amp μ PC4570HA		IC1,IC2 on JB	

#	DESCRIPTION	PART NUMBER	MODEL NUMBER	DESCRIPTION	MODEL NUMBER
TRANSISTOR					
	15119112	TRANSISTOR 2SA1015-Y		Q300 on MB	
	15309104	TRANSISTOR 2SA1586-GR(TE85L)		Q301 on MB	
	15319119	TRANSISTOR 2SC4213-A		Q5-Q8 on MB	
	15319113	TRANSISTOR 2SK880-GR		Q9,Q10 on MB	
	15329523	TRANSISTOR RN1307		Q3,Q4,Q11,Q12 on MB	
	15129426	TRANSISTOR 2SC2235-Y		Q1 on JB	
	15139130	FET 2SK184-GR		Q2 on JB	
DIODE					
#	SE000104	MA111-(TX)	MD11000260	D4 on MB	
	01019534	Diode 1SS355TE-17		D301.D307.D312.D316-D318. D322.D327.D329.D330 on MB	
	15339120T0	Diode 1SS302		D1,D3.D300 on MB	
	15339122	Diode 1SS301		D11.D308-D315.D323.D326 on MB	
	00902978	Schottky Diode SB07-03N-AA		D7 on MB D5 on JB	
	00785856	LED SLR-342VR3F(MN)		LED2-LED6 on MB	
	15039118	Diode S5688G(TPA2)		D6 on JB	
RESISTOR ARRAY					
#	SE000107	EXBV8V681J(V5)	MR13000110	RA2,RA3 on MB	
#	SE000108	CNB2B9ZTE10K,QJ	MR13000100	RA1 on MB	
#	SE000109	EXBV8V101J(V5)	MR13000080	RA4,RA5 on MB	
TRIMMER					
	13299263	Trimmer EVND8AA03B52(500 Ω)		VR1 on MB	
	13299199	Trimmer EVND8AA03B13(1K Ω)		VR2 on MB	
INDUCTOR,COIL,FILTER					
#	SE000106	Coil ELCO8D151E	MA11000090	L1 on MB	
	12449456	EMI Filter BLM41A800SPB		L9.L300 on MB	
	12449457	EMI Filter BLM31A601SPB		L15.L301-L307 on MB	
	13529246	EMI Filter DS310-91D223S		FL1 on JB	
#	SE000110	Ferrite XCELDR35V	MA37000100	L2-L8 on JB	
	12449300	Ferrite BL02RN1-R62		L9 on JB	
#	SE000111	Ferrite Core FS0B190RT	MA33000010	FC1	
CRYSTAL,RESONATOR					
	01019523	Crystal DSX840GA 33.8688MHz		X1 on MB	
#	01340889	Crystal SMD-49 5MHz		X2 on MB	
CONNECTOR					
#	SE000081	LCD Connector	MA15000500		
#	SE000112	CONNECTOR B4B-PH-K-S	MA34002700	CN4 on MB	
#	SE000113	CONNECTOR B13B-PH-K-S	MA34002710	CN6 on MB	
WIRING,CABLE					
#	SE000114	Wiring A RED(for Battery Case)	MA34002580		
#	SE000115	Wiring B BLACK(for Battery Case)	MA34002590		
#	SE000116	Ribbon Cable 4P 2.0mm L=140mm	MA35000310	CN1,CN2 on MB & SB	
#	SE000117	Wiring 4P I=80	MA35000320	CN3 on JB	
#	SE000118	Wiring 13P I=130	MA35000330	CN5 on JB	
MISCELLANEOUS					
#	SE000082	LCD Cushion	M208001510		
#	SE000087	Battery Terminal A	MA34002550		
#	SE000088	Battery Terminal B	MA34002560		
#	SE000089	Battery Terminal C	MA34002570		
#	SE000090	Bottom Cover Cushion C	M208001270		
#	SE000092	Luminous Sheet	M303002890		
#	SE000093	LED Spacer	M207001200		
#	SE000122	Shield Plate	M200004210	SPA2-SPA4 on MB	
#	SE000123	Jack Holder	M207001150	on MB	
#	SE000124	Jack Cover	M200004160	on JB	
#	SE000125	Earth Spring	M211000350	on JB	
#	SE000126	Label	M303002900		
#	SE000127	VR Pedal Reflect seal	M303002960		
#	SE000128	PCB Support YP-17	M208001540		
#	SE000131	SW Spring	M100001790		
SCREW					
	40011323	Binding M3x10 P-Tite BZC			
	40010256	Binding M3x8 BZC			
	40011312	Binding M3x8 P-Tite BZC			
#	SE000119	Cap Bolt M6x55 BZC	M100001620		
#	SE000120	Hex Nut M6 BZC	M100001630		
#	SE000121	Plain Washer	M100001640		
ACCESSORIES					
#	SE000129	Owners Manual(English)	M302001560		
#	SE000130	Owners Manual(Japanese)	M302001550		
#	*****	Battery LR6G/2ST	MA28000160		
		NOTE:The above part (LR6G/2ST) does not supply as replacement parts, because it is options.			
OPTIONS					
Δ	*****	AC Adaptor PSA-100G 100V			
Δ	*****	AC Adaptor PSA-120 120V			
Δ	*****	AC Adaptor PSA-230G 230V			
Δ	*****	AC Adaptor PSA-240 240V			
		NOTE:The above part does not supply as replacement parts, because it is options.			

IDENTIFYING VERSION NUMBER

1. Turn the power off.
2. While pressing the USER/PRESET Key and PHRASE TRAINER ON/OFF Key simultaneously , turn the power on.
The version number is displayed on the LCD.
3. Turn the power off to exit this mode.

LOADING FACTORY PRESET DATA

CAUTION !!

The user data cannot be saved to a sequencer via MIDI.
Inform the user of this fact upon receiving a service request.

1. Turn the power off.
2. While pressing the PARAMETER_R Key and VALUE - Key simultaneously , turn the power on.
The " PRESET " is displayed on the LCD.
3. Press the WRITE copy Key .
The " write " flashes on the LCD for a while.
When the initialization is complete , the unit returns the Play Mode.
* To cancel the initialization at this time , turn the power off.

TEST MODE

The ME-30 provides six test modes ; from MODE 1 to MODE 6. Use whichever appropriate for your situation.

CAUTION !!

The user data cannot be saved to a sequencer via MIDI. Inform the user of this fact upon receiving a service request.

The test program will stop upon detecting a failure component or circuit, and may not proceed to the next step.

After taking a corrective action, restart the test program from the beginning.

Connection to OUTPUTs:

Unless otherwise specifically instructed, channels L and R are independently monitored: first connect the plug from the measuring instrument (oscilloscope or noise meter, whichever appropriate) into OUTPUT R, next, replace the instrument plug with a blank (open) plug and then connect the instrument to OUTPUT L.

Note that the channel R signal is connected to the OUTPUT L socket through the switch on the OUTPUT R socket. To obtain pure "L" channel signal, the R socket switch must be turned off.

Test Item

1. Panel LCD · LED Check
2. SW Check
3. DSP Check
4. Output Frequency Response Check
5. Output Mute Circuit Check
6. OD/DS Circuit Check
7. OD/DS Gain Check
8. Input Frequency Response Check
9. AUX Circuit Check
10. Residual Noise Check and Shock Noise Check
11. OD/DS Circuit Noise Check and Shock Noise Check
12. NS , Tuner Check
13. EV Pedal Check

Equipment Required

- Oscillator (Audio Generator)
- Oscilloscope
- Noise Meter
- Opened Plug

To Enter the Test Mode

While pressing the EFFECT ON/OFF Key ,
PARAMETER (L) Key and PARAMETER (R) Key
simultaneously , turn the power
on.
All the LCD are turned on.
Do the following operation to select the mode.

< Mode 1 >

Press PEDAL " 1 " to start with [1. Panel LCD · LED
Check] .

NOTE : As for the following MODE 2 to MODE 6 ,
each mode starts after DSP check.

< Mode 2 >

Press PEDAL " 2 " to start with [4. Output Frequency
Response Check] .

< Mode 3 >

Press PEDAL " 3 " to start with [6. DOD/DS Circuit
Check] .

< Mode 4 >

Press PEDAL " BANK DOWN " to start with [8. Input
Frequency Response Check] .

< Mode 5 >

Press PEDAL " BANK UP " to start with [10. Residual
Noise Check and Shock Noise Check] .

< Mode 6 >

Press MANUAL Key to start with [13. EV Pedal Check
] . Mode 6 to start DSP check , when return back to
the previous step.

Exiting test mode

Simply turn off the ME-30.

1. LCD & LED test

Press the pedal "1". The LCD starts displaying the test pattern shown in Fig. 1. Verify that the segments are turned on.

Press a key and verify that the 7-seg LED and the pedal LEDs are turned on in the order shown in Fig. 2.

2. Switch test

Press a key and the LCD will read "SW1".

Press the keys in the order shown in Fig. 3 and verify that pressed key is represented on the LCD.

The test stops upon detecting a defective key and won't proceed to the next key. Take a corrective action and return to the step 1.

When the test is successful, the test program proceeds to the step 3. DSP test.

3. DSP test

The test program automatically starts the test step 3 - 1. after completion of the step 2.

3 - 1. Initialization

When the unit is initialized, the program goes to the step 3 - .2. Otherwise, it displays "ERROR 1" and jumps to the step 4.

3 - 2. Internal RAM test

The program writes the test data into and reads out from the internal RAM and then goes to the step 3 - 3. If error, it displays "ERROR 2" and jumps to the step 4.

3 - 3. External RAM test

The program writes the test data into and reads out from the external RAM and then goes to the step 4. If error, it displays "ERROR 3" and goes to the step 4.

4. Output frequency response test

The LCD displays "TEST 1". Sine waves of 20 Hz - 1 kHz - 5 kHz - 15 kHz - 20 Hz from DSP are sent to OUTPUT sockets at 0.8 sec. interval.

Connect a noise meter to OUTPUT R. Set the meter to "FLAT" and check the readings against the table below.

Connect a noise meter to OUTPUT L (with the blank plug in R) and check the readings.

The difference in readings between R and L must be within 1 dBm.

Monitor OUTPUTs R and L and PHONES R and L in that order on the oscilloscope and make sure they are look like the waveforms shown in Fig. 4.

Frequency	Level
20 Hz	-20 dBm ± 1 dBm
1 kHz	-20 dBm ± 1 dBm
5 kHz	-20 dBm ± 1 dBm
15 kHz	-20 dBm ± 1 dBm

To go to the step 5, press VALUE + key.

5. Output stage muting test

The LCD displays "TEST 2". A 1 kHz sine wave from DSP is sent to OUTPUT sockets at 0.5 sec. interval.

In the similar way as in the step 4 above, connect the noise meter or scope to OUTPUT R and then L (with the blank plug in R)

and check the readings. The difference in readings between R and L must be within 1 dBm.

Monitor OUTPUTs R and L and PHONES R and L in that order on the oscilloscope and make sure they are look like

the waveforms shown in Fig. 5.

To go to the step 6, press VALUE + key.

To return back to the step 4, press VALUE - key.

6. OD and DS circuit test

The LCD displays "TEST 3". A 200 Hz square wave from DSP is sent to OUTPUTs at 0.8 sec. interval at four different levels.

Monitor the outputs by first connecting the scope to OUTPUT R and then L (with the blank plug in R) and make sure that

the waveforms look like the ones shown in Fig. 6.

To go to the step 7, press VALUE + key.

To return back to the step 5, press VALUE - key.

7. OD and DS gain test

The LCD displays "TEST 4". A 200 Hz sine wave from DSP is sent to OUTPUTs at an 0.8 sec. interval at four different levels.

Monitor the outputs by first connecting the scope to OUTPUT R and then L (with the blank plug in R) and make sure that

the waveforms look like the ones shown in Fig. 7.

To go to the step 8, press VALUE + key.

To return back to the step 6, press VALUE - key.

8. Input frequency response test

The LCD displays "TEST 5". Apply a square wave of 200 Hz, 200 mV to INPUTs.

Monitor the outputs by first connecting the scope to OUTPUT R and then L (with the blank plug in R) and make sure that

the waveform looks like the one shown in Fig. 8.

To go to the step 9, press VALUE + key.

To return back to the step 7, press VALUE - key.

9. AUX circuit test

The LCD displays "TEST 6". Apply a square wave of 200 Hz, 200 mV to AUX INP.

The input signal is modified into three waveforms which are sent to OUTPUTs at an 0.5 sec. interval.

Monitor the outputs by first connecting the scope to OUTPUT R and then L (with the blank plug in R) and make sure that

the waveforms look like the ones shown in Fig. 9.

To go to the step 10, press VALUE + key.

To return back to the step 8, press VALUE - key.

10. Residual and shock noises

The LCD displays "TEST 7". Short-circuit the inputs (e.g. insert a short circuit plug into INPUT and AUX IN).

Set the noise meter to "JIS-A" or "IHF" and connect it first to OUTPUT R and then L (with the blank plug in R) and make sure that the readings are -88.0 dBm or below.

Also verify that difference in noise level between channels is 1 dBm or less.

In the similar way, connect a speaker via high gain amplifier to individual OUTPUTs. Apply shocks to the unit and make sure no audible noises are heard.

To go to the step 11, press VALUE + key.
To return back to the step 9, press VALUE - key.

11. OD and DS circuit residual and shock noises
The LCD displays "TEST 8". Short-circuit the inputs (e.g. insert a short circuit plug into INPUT and AUX IN).
Set the noise meter to "JIS-A" or "IHF" and connect it first to OUTPUT R and then L (with the blank plug in R) and make sure that the readings are -84.0 dBm or below. Also verify that difference in noise level between channels is 1 dBm or less.

In the similar way, connect a speaker via a high gain amplifier to individual OUTPUTs. Apply shocks to the unit and make sure no audible noises are heard.

To go to the step 12, first connect the OUTPUT L to the INPUT socket and then press VALUE + key (see note in step 12).
To return back to the step 10, press VALUE - key.

12. NS and tuner test
Note: "ERROR **" will appear if VALUE - key has been pressed without connecting OUTPUT L to the INPUT socket.

The LCD displays "TEST 9".
12 - 1. NS bias test
The program checks the NS bias and, if correct, goes to the step 12.2. Otherwise, the program stops, displaying "ERROR 4".
Adjust the bias and restart the test program from step 1.

12 - 2. NS input test
When the input is as designed, the program displays the tuner status. See Fig. 10. Press TUNER key.

If the input is incorrect, the program displays stops here, displaying "ERROR 5" or "ERROR 6".
Isolate the cause and restart the test program from step 1.
To go to the step 13, press VALUE + key.
To return back to the step 11, press VALUE - key.

13 EV pedal test
The LCD displays "TES****".
Swing the volume control foot pedal (EV) and check the values shown on the LCD.
For pressing operation, refer to the EV adjustment shown below.

Travel of EV pedal	LCD reading
Deep press	220-224
Press and release	210 min
Swing up	002 max
Down position	150 min

If these values are not obtained, go to the FV Adjustment below.
To return back to the step 12, press VALUE - key.
EV adjustment
Set VR1 and VR2 at the middle of the travel.
1. Swing up the pedal and adjust VR1 for 002 reading on the LCD.
Make sure that the LCD reads 002 just before the pedal is fully swung up.
2. Depress the pedal to the bottom and add a slightly strong force.
Make sure that the LCD reads a value between 220 and 224. If outside the range, adjust VR2.
3. Release the pedal and make sure that the LCD reading is decreasing to 210 or below.
4. Fully swing up the pedal and make sure that the reading returns to 002.
5. Swing down the pedal until the bottom of the pedal just touches the cushion. Make sure that LCD reads at least 160.
6. Repeat steps 2 and 3 and verify that correct values are displayed.

ERROR MESSAGES

If an error message is displayed in TEST MODE , take the necessary to remove the cause described below.

Error Message	Description	Possible cause
" ERROR 1 "	DSP cannot be accessed	• Solder bridge or improper soldering at portion anywhere between CPU (IC305) and DSP (IC306). • CPU (IC305) and/or DSP (IC306) defective.
" ERROR 2 "	DSP IRAM defective	• Solder bridge or improper soldering at portion anywhere between CPU (IC305) and DSP (IC306). • CPU (IC305) and/or DSP (IC306) defective.
" ERROR 3 "	DSP ERAM defective	• Solder bridge or improper soldering at portion anywhere between CPU (IC305) and DSP (IC306). • CPU (IC305) and/or DSP (IC306) defective.
" ERROR 4 "	NS Circuit defective	• CPU (IC305) 29 , 30 pin around circuit and/or BIAS OPAMP (IC7) around circuit defective.
" ERROR 5 "	NS Circuit defective	• CPU (IC305) 29 , 30 pin around circuit and/or ENVELOP OPAMP (IC7) around circuit defective.
" ERROR 6 "	NS Circuit defective	• CPU (IC305) 29 , 30 pin around circuit and/or ENVELOP OPAMP (IC7) around circuit defective.

Fig.1. LCD TEST

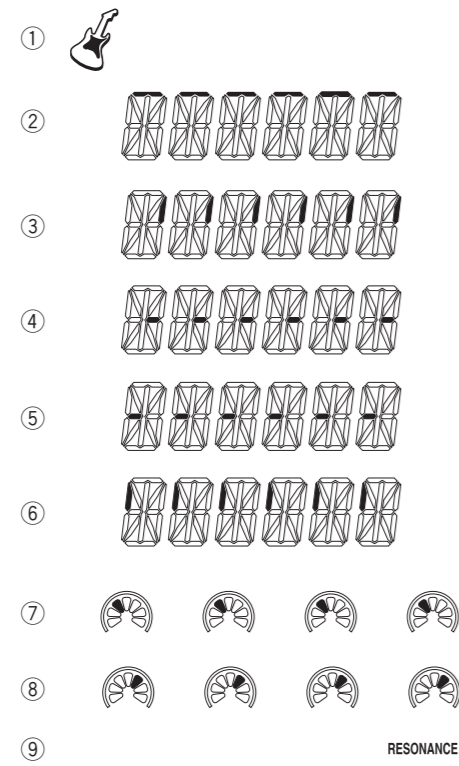


Fig.3. SW CHECK TEST

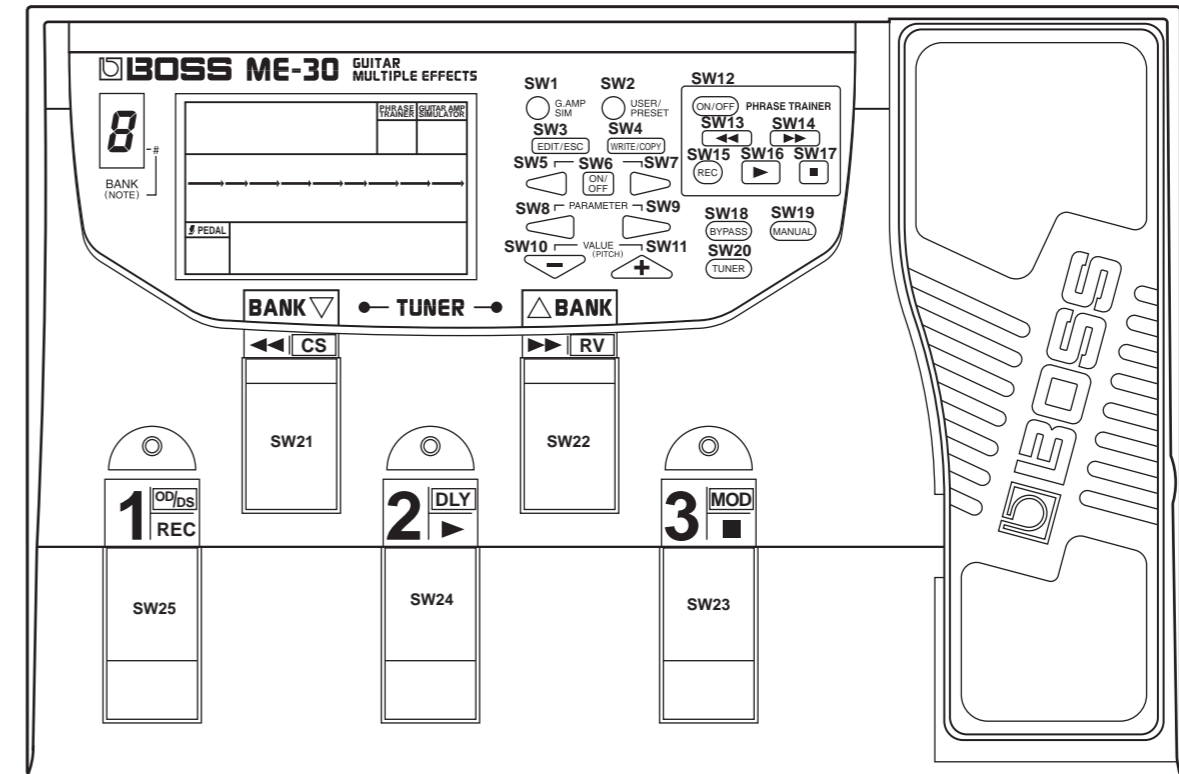


Fig.2. 7SEG. & PEDAL LED TEST

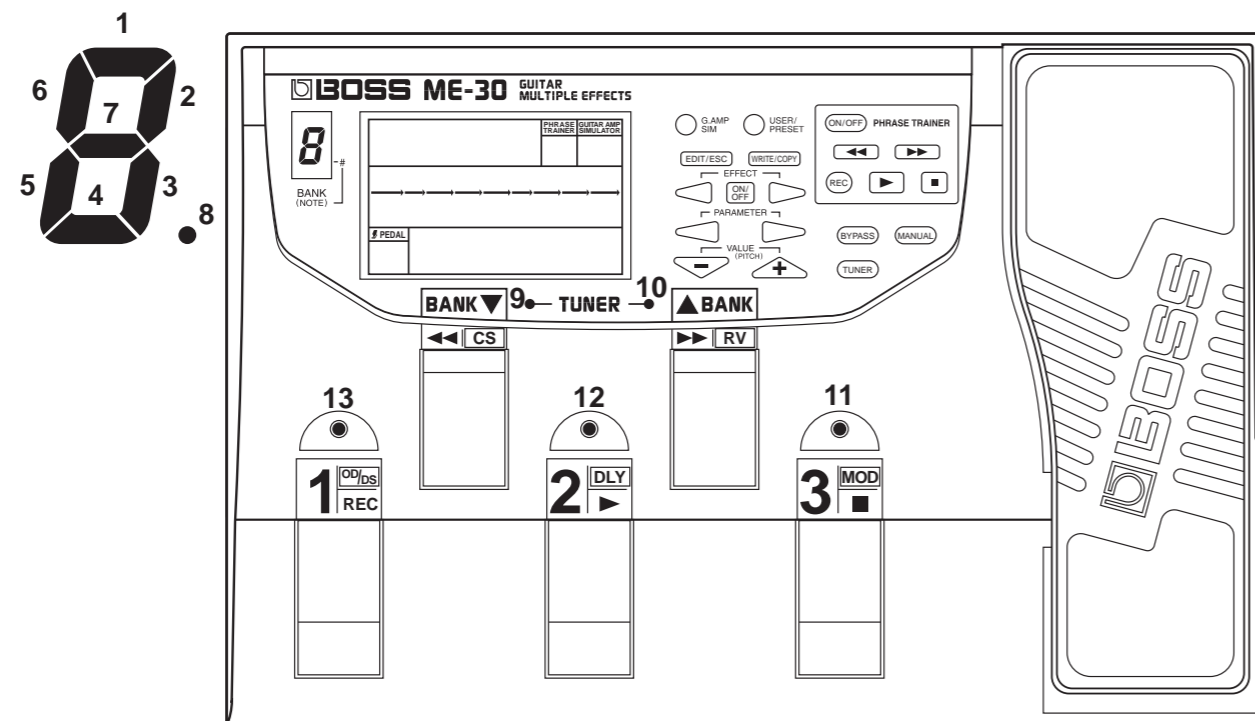


Fig.4 TEST 1 WAVE

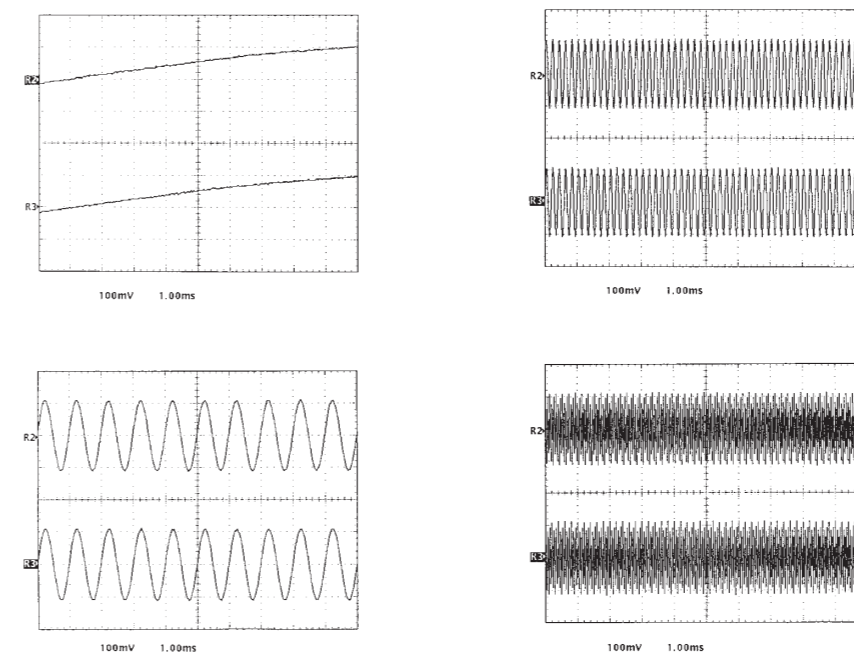


Fig.5 TEST 2 WAVE

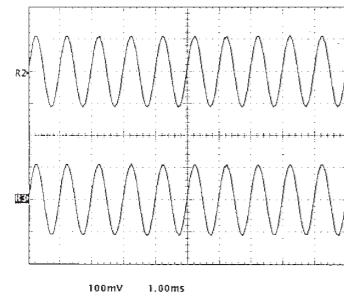


Fig.6 TEST 3 WAVE

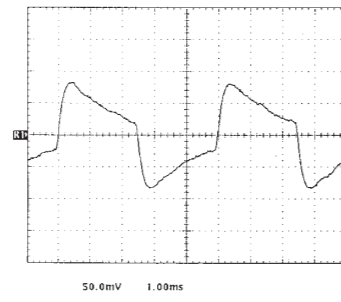


Fig.9 TEST 6 WAVE

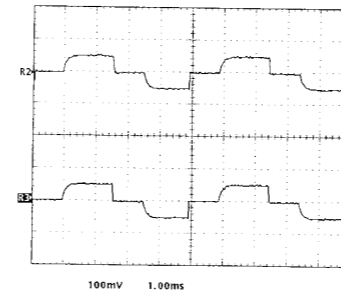
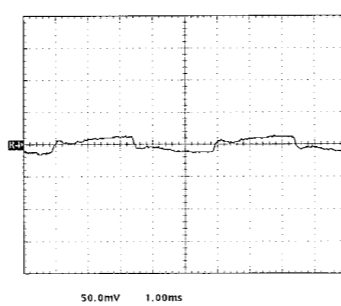
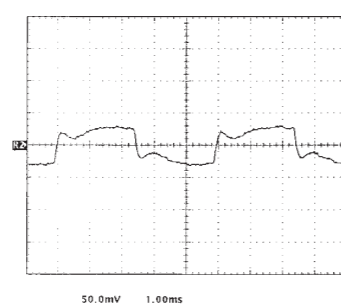
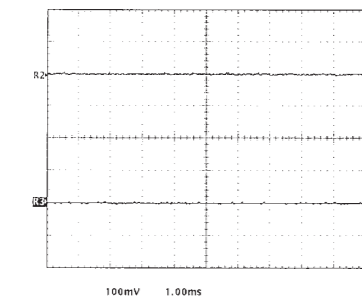
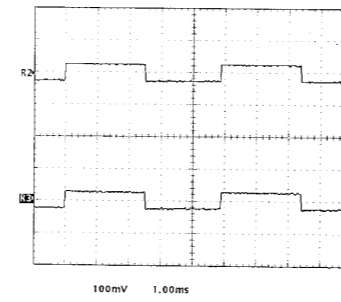


Fig.7 TEST 4 WAVE

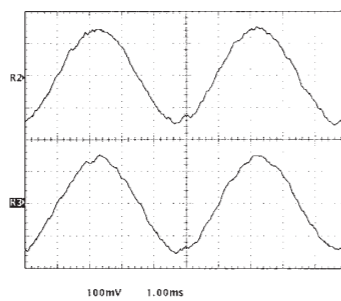
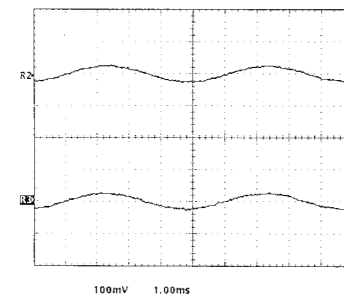


Fig.8 TEST 5 WAVE

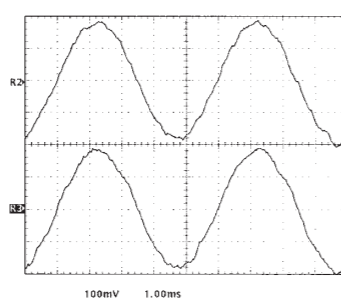
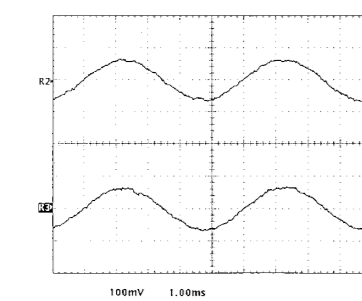
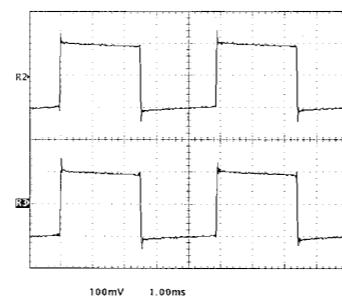
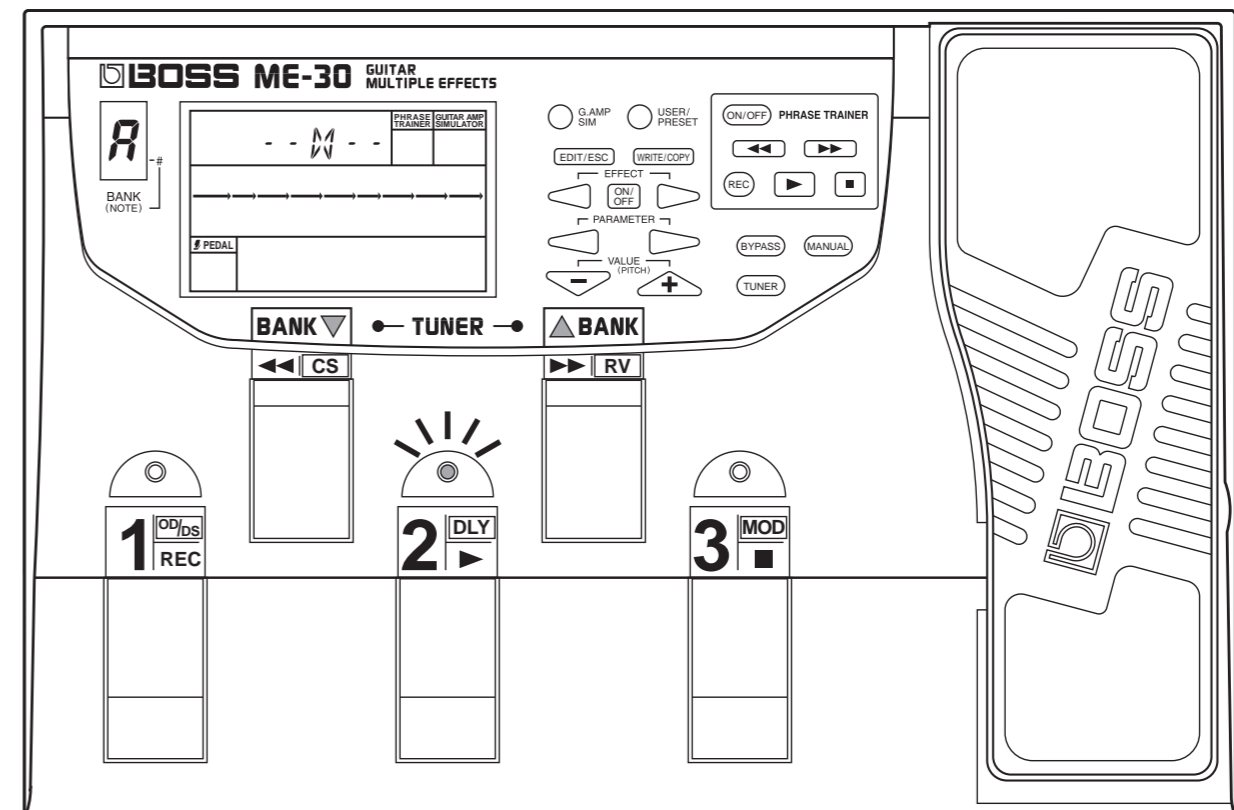
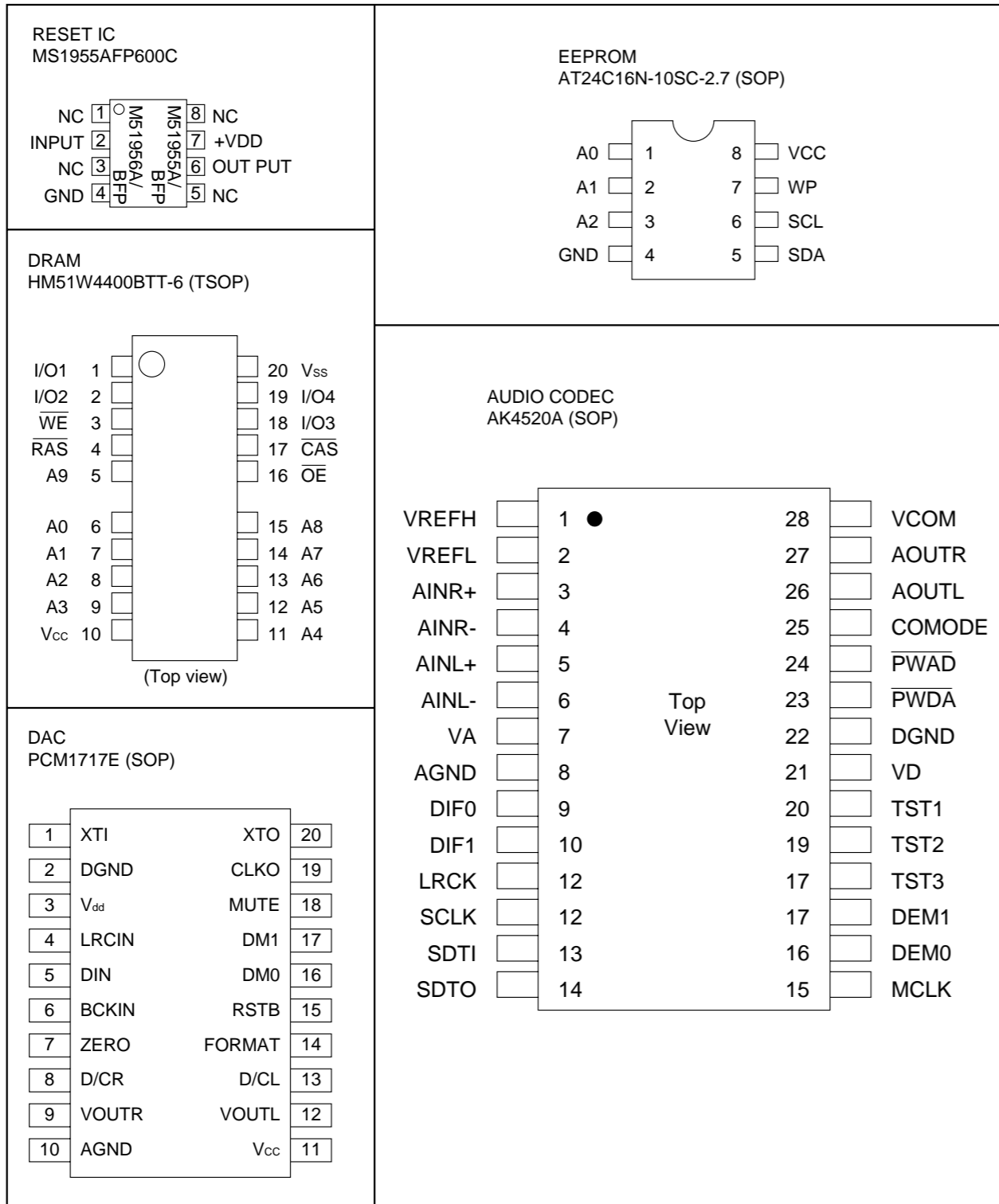


Fig.10. TUNER TEST

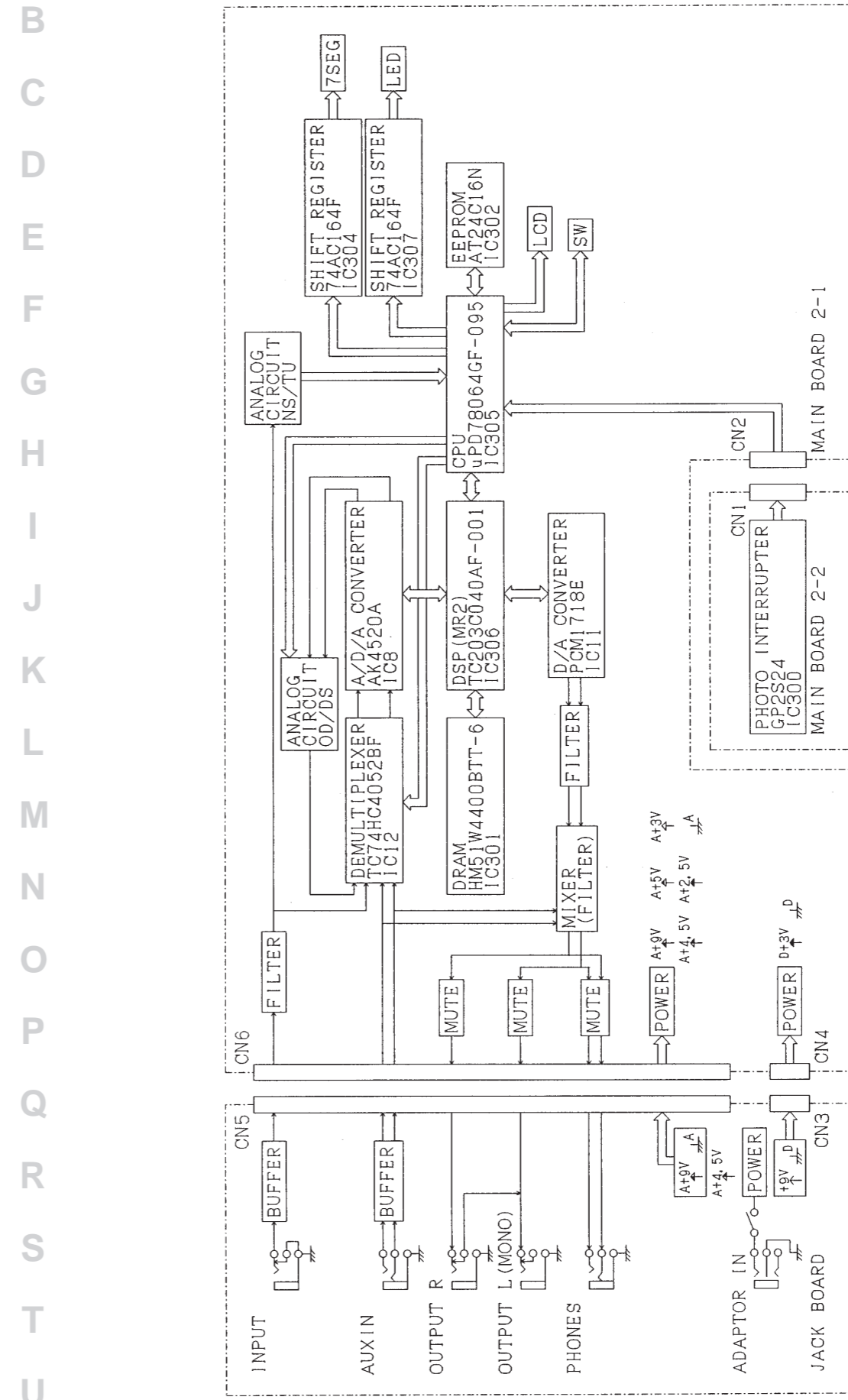


IC DATA



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

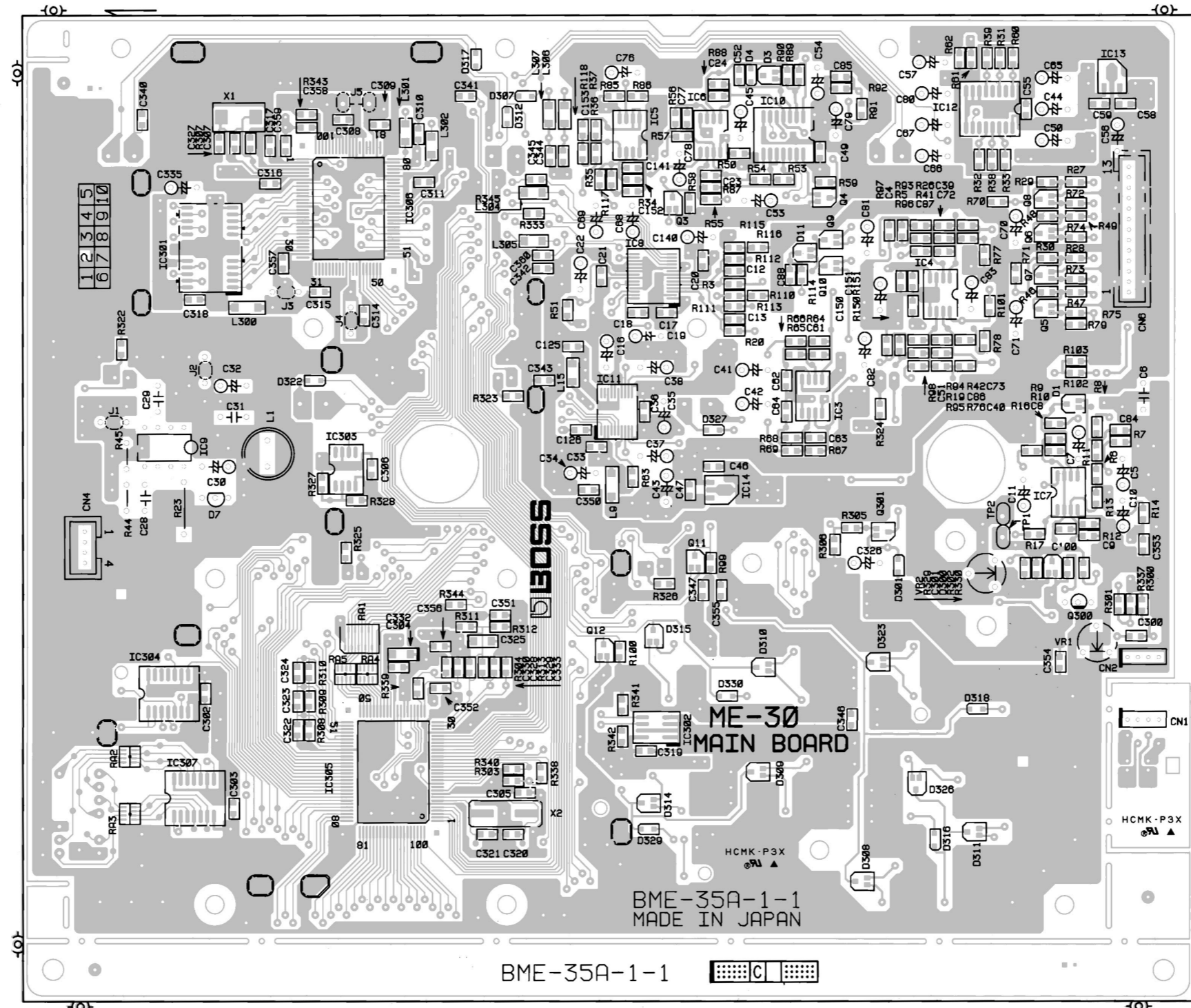
A BLOCK DIAGRAM



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A E MAIN BOARD ASSY (COMPONENT SIDE)

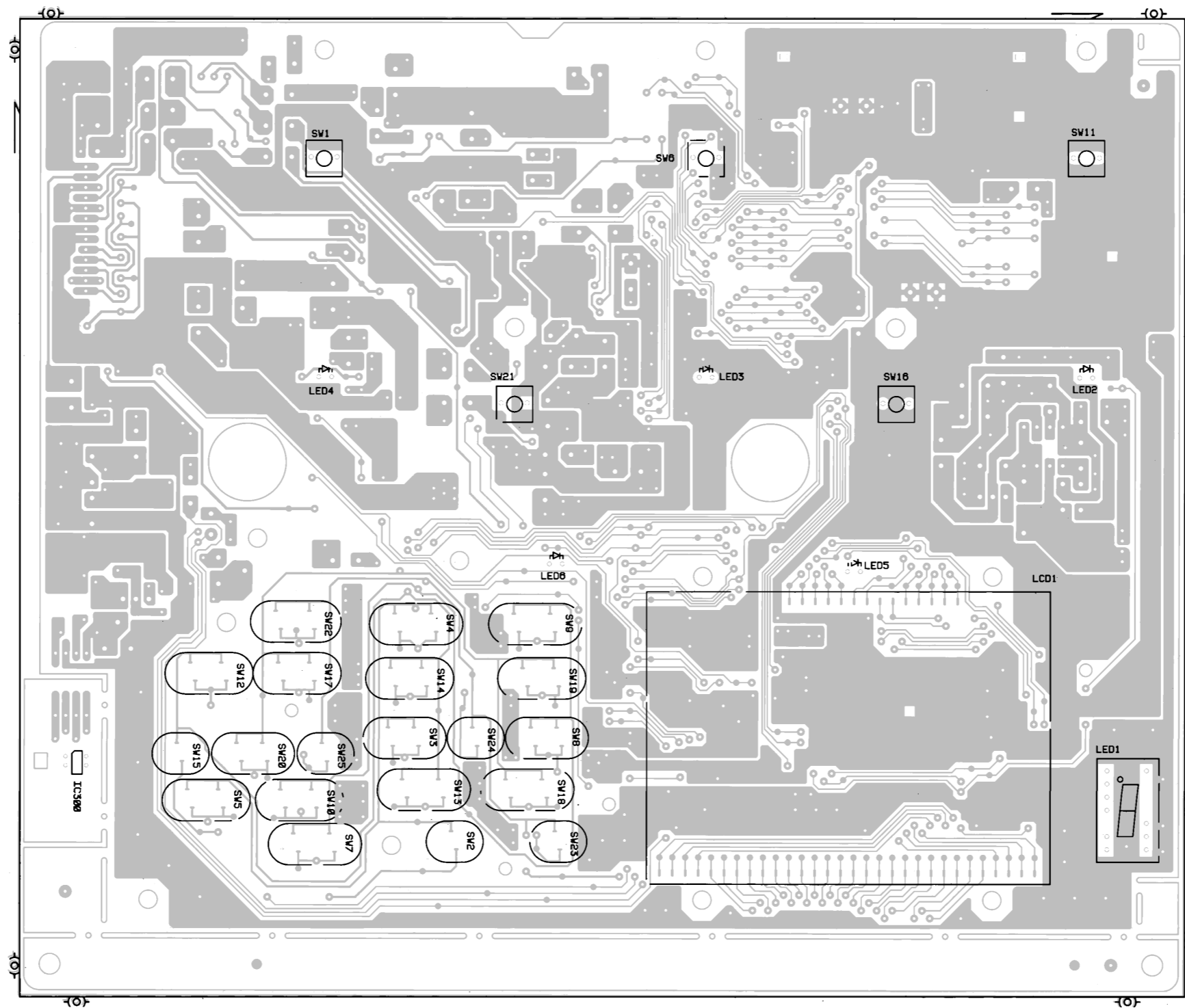
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A **E** MAIN BOARD ASSY (SOLDER SIDE)

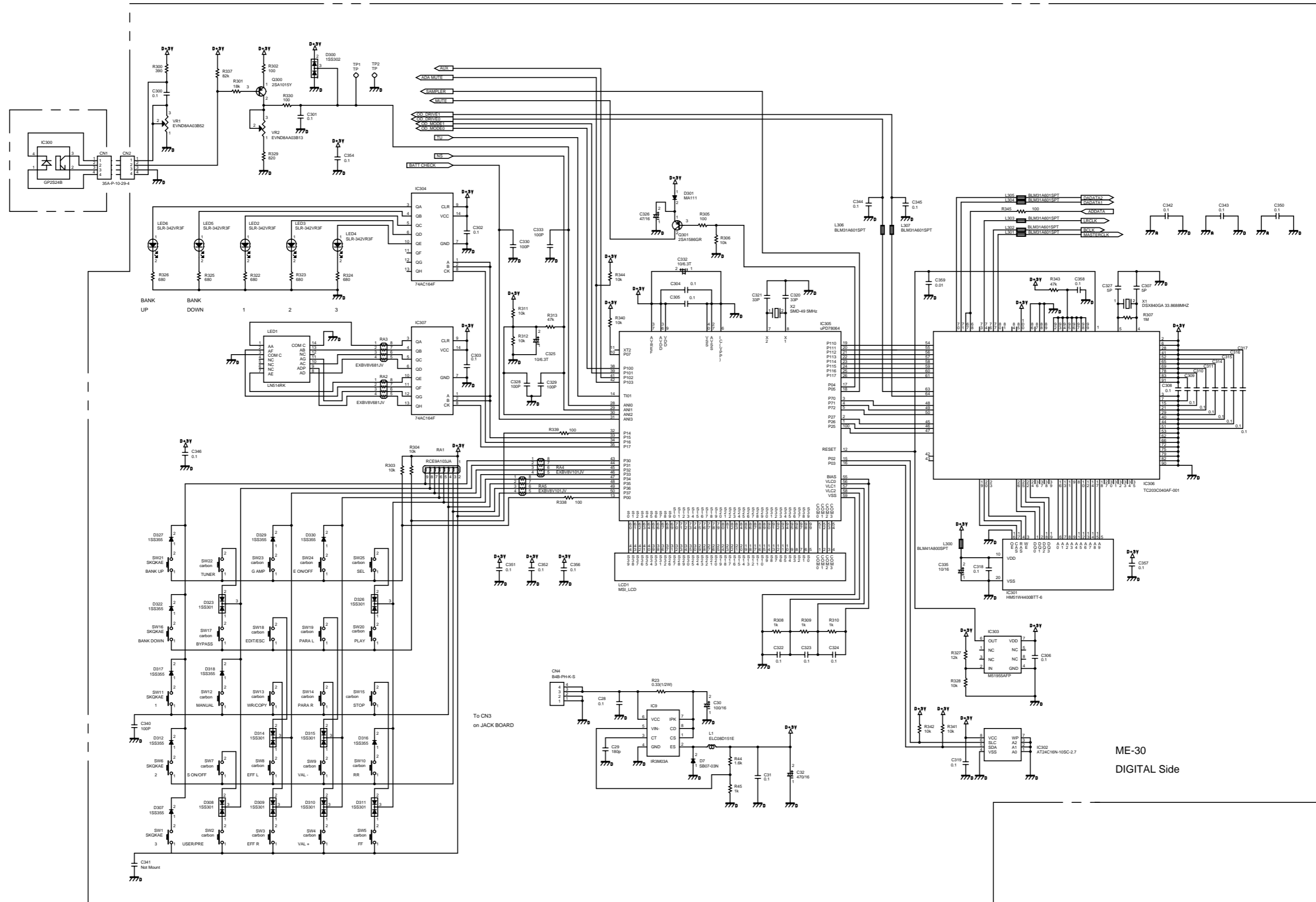
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A MAIN BOARD ASSY (1/2)

B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

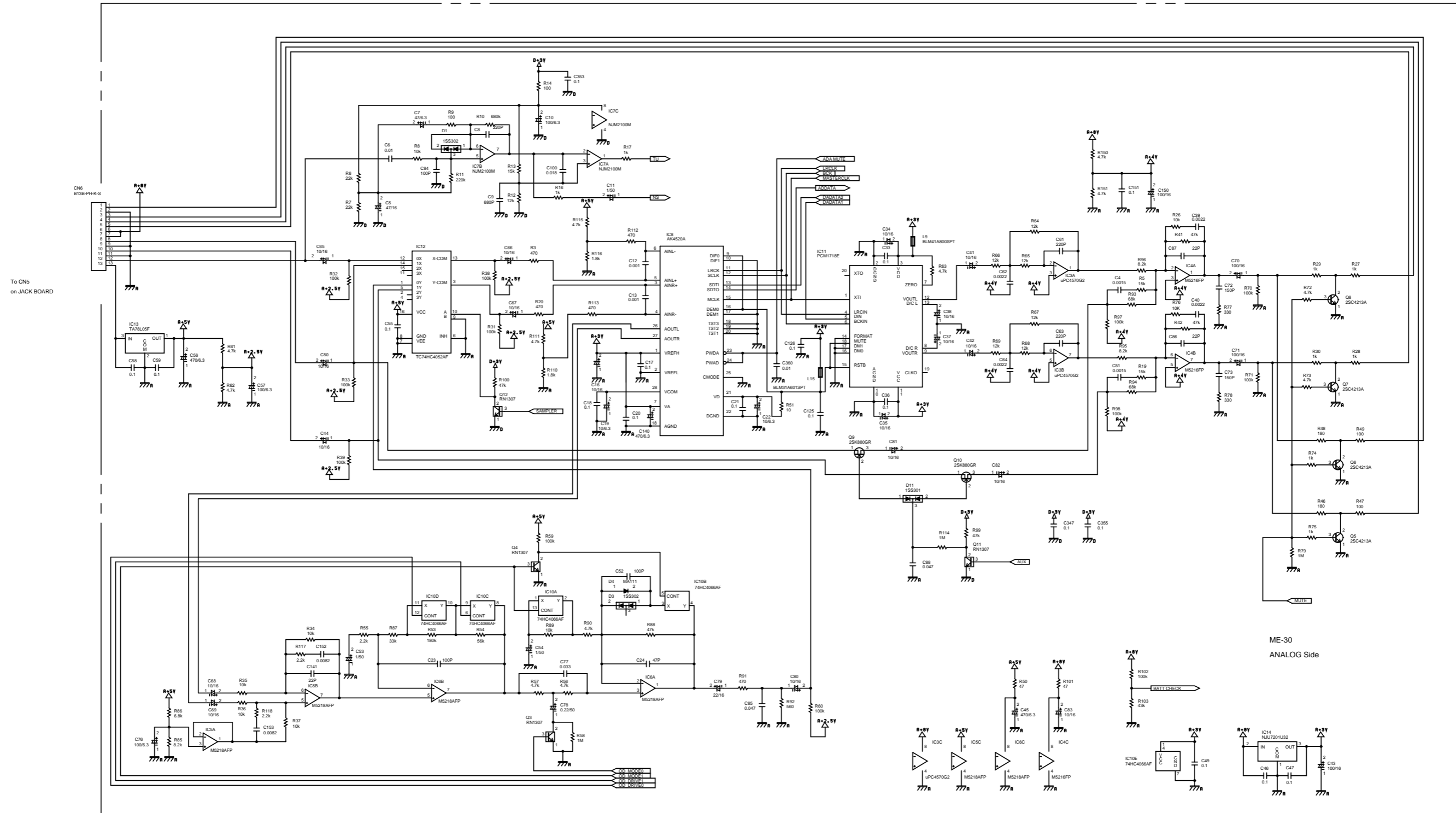


ME-30
DIGITAL Side

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A MAIN BOARD ASSY (2/2)

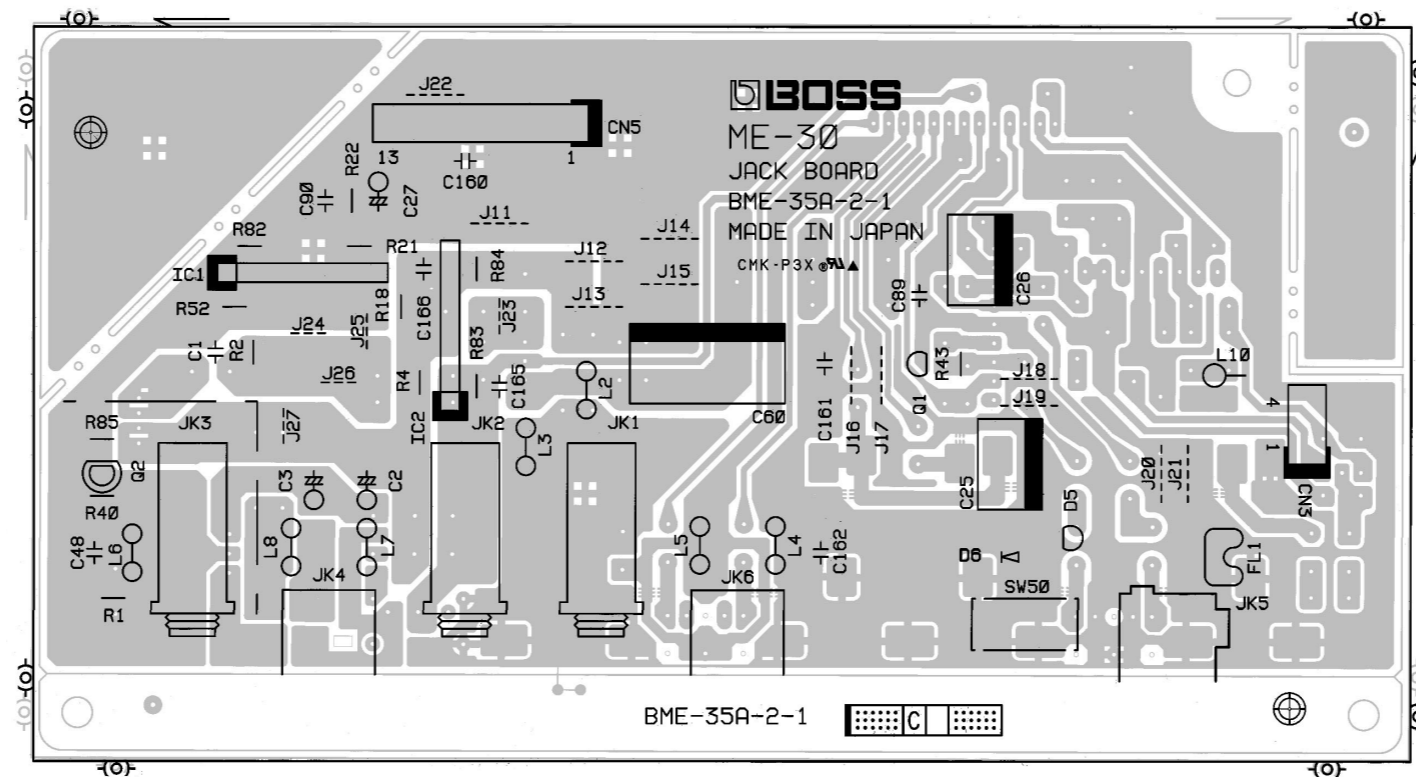
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A JACK BOARD ASSY

B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A JACK BOARD ASSY

B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

