

EF-303

GROOVE EFFECTS

SERVICE NOTES

Issued by RJA

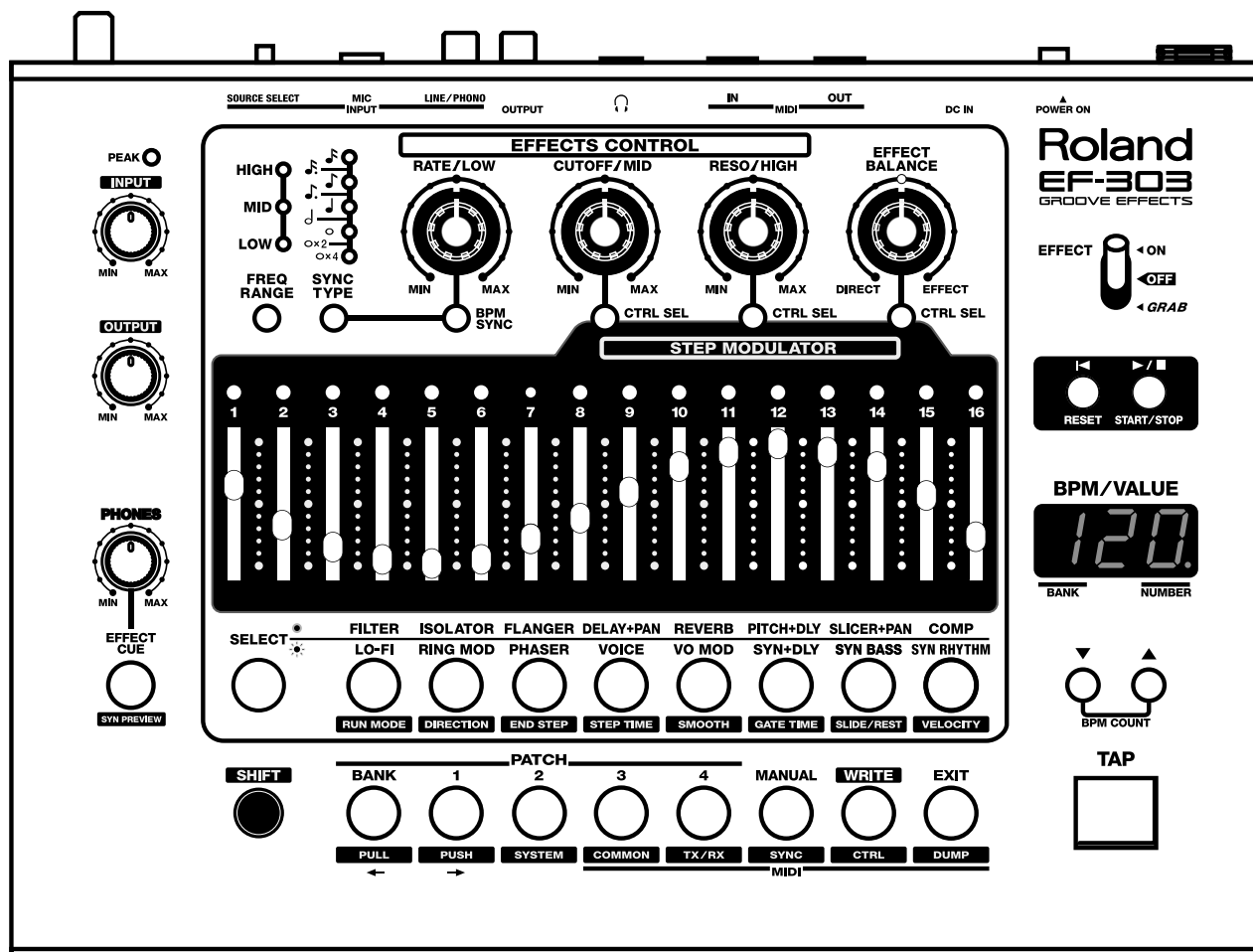
SPECIFICATIONS

EF-303:GROOVE EFFECTS

- Effects
16
- Step Modulator
Track:1
Steps:16(MAX)
Resolution:Triplet 16th note (Internal:480 ticks per quarter note)
Tempo:Quarter note=20-240
- Patch Memory
16(effect+Step Modulator)
- AD Conversion
20 bit linear(64 times oversampling)
- DA Conversion
20 bit linear(128 times over sampling)
- Sampling Frequency
44.1k Hz
- Frequency Responce
20 Hz-20k Hz +/-1 dB(Typ.)(Input gain = MAX,Input level = 20 dBu)
- Rated Input Level
INPUT(LINE): -20 dBu
INPUT(PHONO): -55 dBu
INPUT(MIC): -50 dBu
- Rated Input Impedance
INPUT(LINE): 64k ohm
INPUT(PHONO): 64k ohm
INPUT(MIC): 2.7k ohm
- Rated Output Level
OUTPUT: -20 dBu
- Output Impedance
OUTPUT: 600 ohms
PHONES: 100 ohms
- Residual Noise Level
(Input terminated with 150ohms,IHF-A,Typ.)
LINE: -88 dBu
PHONO: -80 dBu
MIC: -82 dBu
- Connectors
INPUT(LINE/PHONO): RCA type(L/R)
INPUT(MIC): 1/4"TRS phone(UNBAL)
OUTPUT: RCA type(L/R)
PHONES: Stereo 1/4"phone
MINI(IN/OUT)
DC IN for AC Adaptor
GND Terminal
- Power Supply
DC 9V
- Current Draw
600 mA
- Dimentions
303(W)X235(D)X92.5(H)mm
11-15/16(W)X9-1/4(D)X3-11/16(H)inches
- Weight
1.9kg/4lbs 9oz(without AC adaptor)
- Accessories
Owner's Manual English (71673490)
Marking Stickers (40349234)
AC Adaptor ACI-120C (00905767)
AC Adaptor ACI-230C (01018312)
AC Adaptor PSB-1U UNIVERSAL (01901578)
AC Cord Set 230V 1.0m for PSB-1U (01903356)
AC Cord Set 240V 1.0m for PSB-1U (01905234)
EURO CONVERTER PLUG ECP01-5A (00905234)
- Options
Audio cable: PCS-31/33
MIDI cable: MSC-15/25/50

Table of Contents

SPECIFICATIONS	1
LOCATION OF CONTROLS	2
LOCATION OF CONTROLS PARTS LIST	2
EXPLODED VIEW PARTS LIST	3
EXPLODED VIEW	3
WIRING DIAGRAM	4
PARTS LIST	5
IDENTIFYING THE VERSION NUMBER	7
USER DATA SAVE AND LOAD	7
FACTORY RESET	8
HOW TO UPDATE THE FLASH ROM	8
TEST MODE	10
BLOCK DIAGRAM	13
CIRCUIT BOARD MAIN BOARD ASSY)	14
CIRCUIT DIAGRAM MAIN BOARD ASSY (1/2)	15
CIRCUIT DIAGRAM MAIN BOARD ASSY (2/2)	16
CIRCUIT BOARD PANEL BOARD ASSY	17
CIRCUIT DIAGRAM PANEL BOARD ASSY	18
ERROR MESSAGES	19



Copyright ©2000 ROLAND CORPORATION

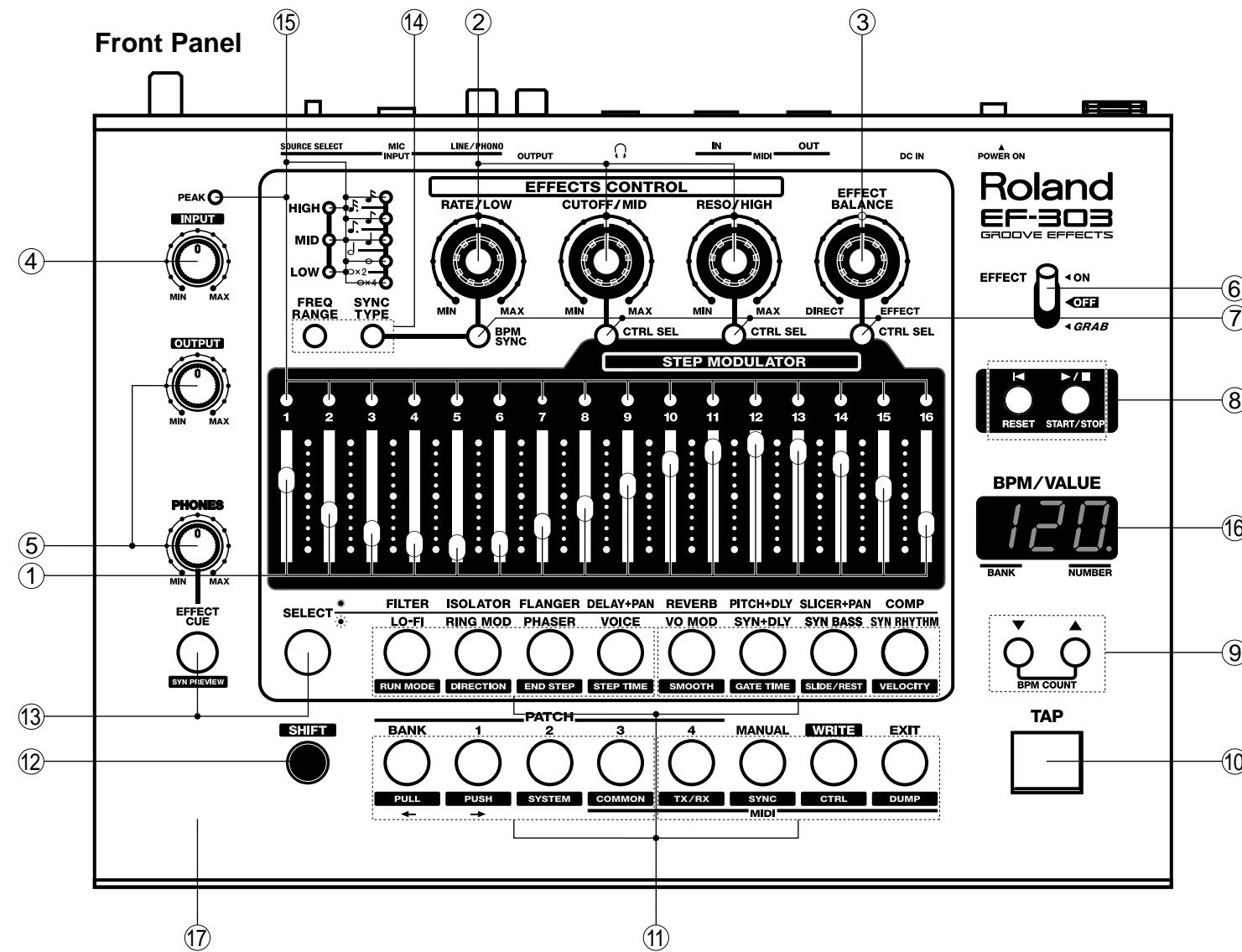
All rights reserved. No part of this publication may be reproduced in any form without the written permission of ROLAND CORPORATION.

0 dBu = 0.775 Vrms

* 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

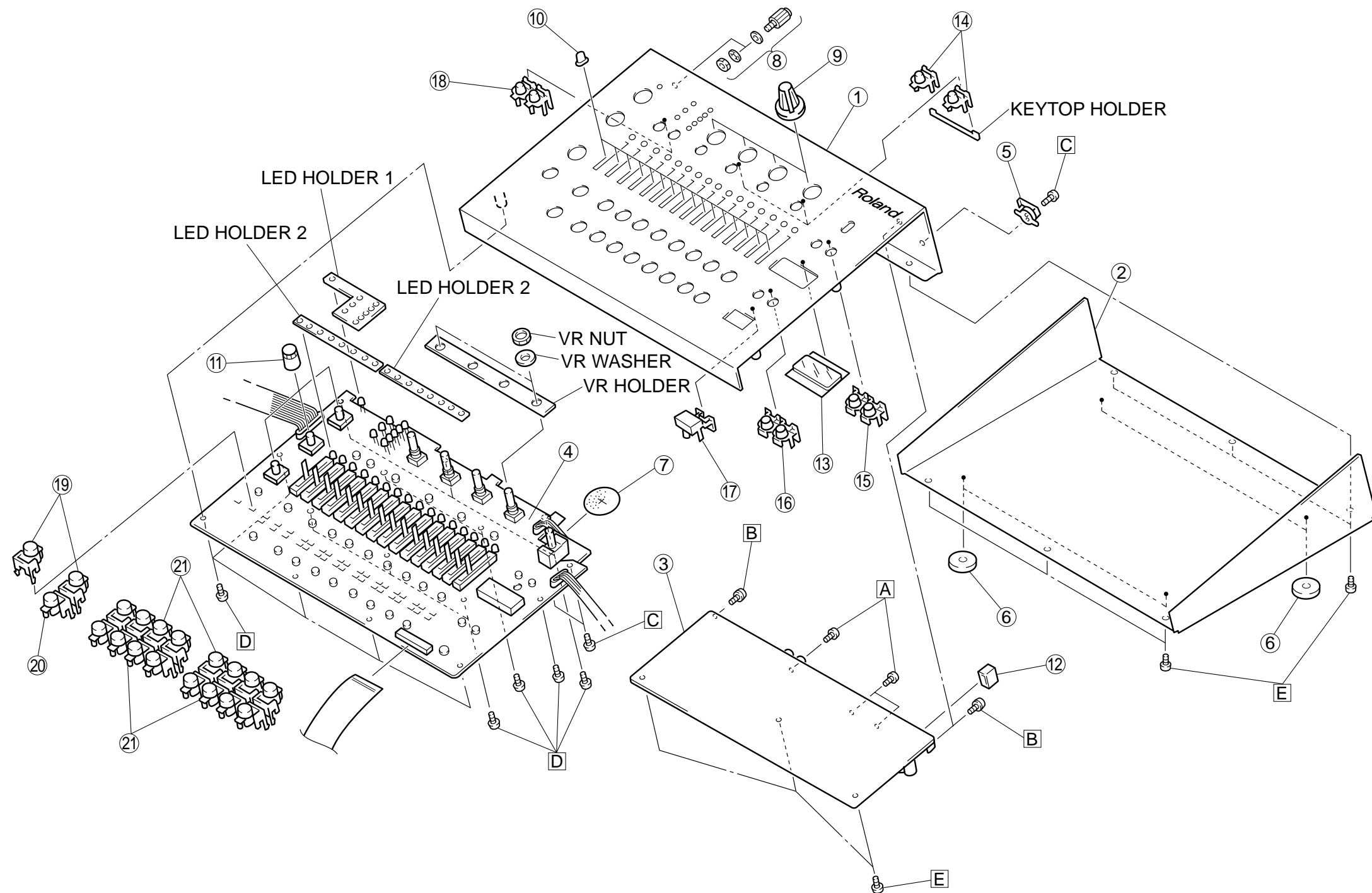


[PARTS]

No.	Part Code	Part Name	Q'ty
①	02239523	30M/M SLIDE POT. EWAN1AC15B14	1
	02239723	KNOB LCG	1
②	01670289	9M/M ROTARY POT. EVUJDCFL3B14 W/NUT	1
	01343112	J R-KNOB MF BLK/LCG	1
③	02239534	9M/M ROTARY POT. EVUJDLFL3B14 W/CLK	1
	01343112	J R-KNOB MF BLK/LCG	1
④	02239545	12M/M ROTARY POT. RK12L12C0 100KC	1
	22480260	P R-KNOB MF BLK/LCG	1
⑤	02127545	12M/M ROTARY POT. RK12L12C0 100KA	1
	22480260	P R-KNOB MF BLK/LCG	1
⑥	01348990	LEVER SWITCH LS001-C23OAB-LFA15B	1
	01455401	DUST COVER SW	1
⑦	02239567	LED SLR-342VRT32	1
	01340290	TACT SWITCH EVQ11A H=5.0	1
	01670490	F C-KEYTOP SX1H CLR	1
⑧	02239567	LED SLR-342VRT32	1
	01340290	TACT SWITCH EVQ11A H=5.0	2
	02239701	Y C-KEYTOP MX2H CLR	1
⑨	01340290	TACT SWITCH EVQ11A H=5.0	2
	02016245	Y C-KEYTOP MX2H BLK	1
⑩	00125590	TACT SWITCH EVQ QJJ 05Q	1
	02016390	Y S-KEYTOP LX1H BLK	1
⑪	02239567	LED SLR-342VRT32	4
	01340290	TACT SWITCH EVQ11A H=5.0	4
	01904134	F C-KEYTOP MX4H CLR	1
⑫	01340290	TACT SWITCH EVQ11A H=5.0	1
	02123467	F C-KEYTOP MX1H BLK	1
⑬	02239567	LED SLR-342VRT32	1
	01340290	TACT SWITCH EVQ11A H=5.0	1
	02013090	F C-KEYTOP MX1H CLR	1
⑭	01340290	TACT SWITCH EVQ11A H=5.0	2
	01902734	F C-KEYTOP SX2H BLK	1
⑮	02126912	LED SLR-342VR-TG7	1
⑯	15029567	7SEG LED LB-603VP	1
	02239690	DISPLAY COVER	1
⑰	02239689	TOP PANEL	1
⑱	01235378	FOOT	1
	01676512	PUSH SWITCH SDKLA1-B	1
	12499175	G S-BUTTON S1H BLK	1
⑳	13449720	ADAPTOR JACK HEC2305-01-250	1
㉑	13429825	MIDI CONNECTOR YKF51-5054	1
㉒	02239589	PIN JACK (RCA) YKC21-3282	1
㉓	00569278	6.5MM JACK LGR4609-7100	1
㉔	13159362	SLIDE SWITCH SSSF123-S09N-1	1
㉕	02239834	GROUNDING TERMINAL MT-903CS	1
㉖	22360712	CORD HOOK 236-712	1
㉗	02239678	BOTTOM CHASSIS	1



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

[PARTS]

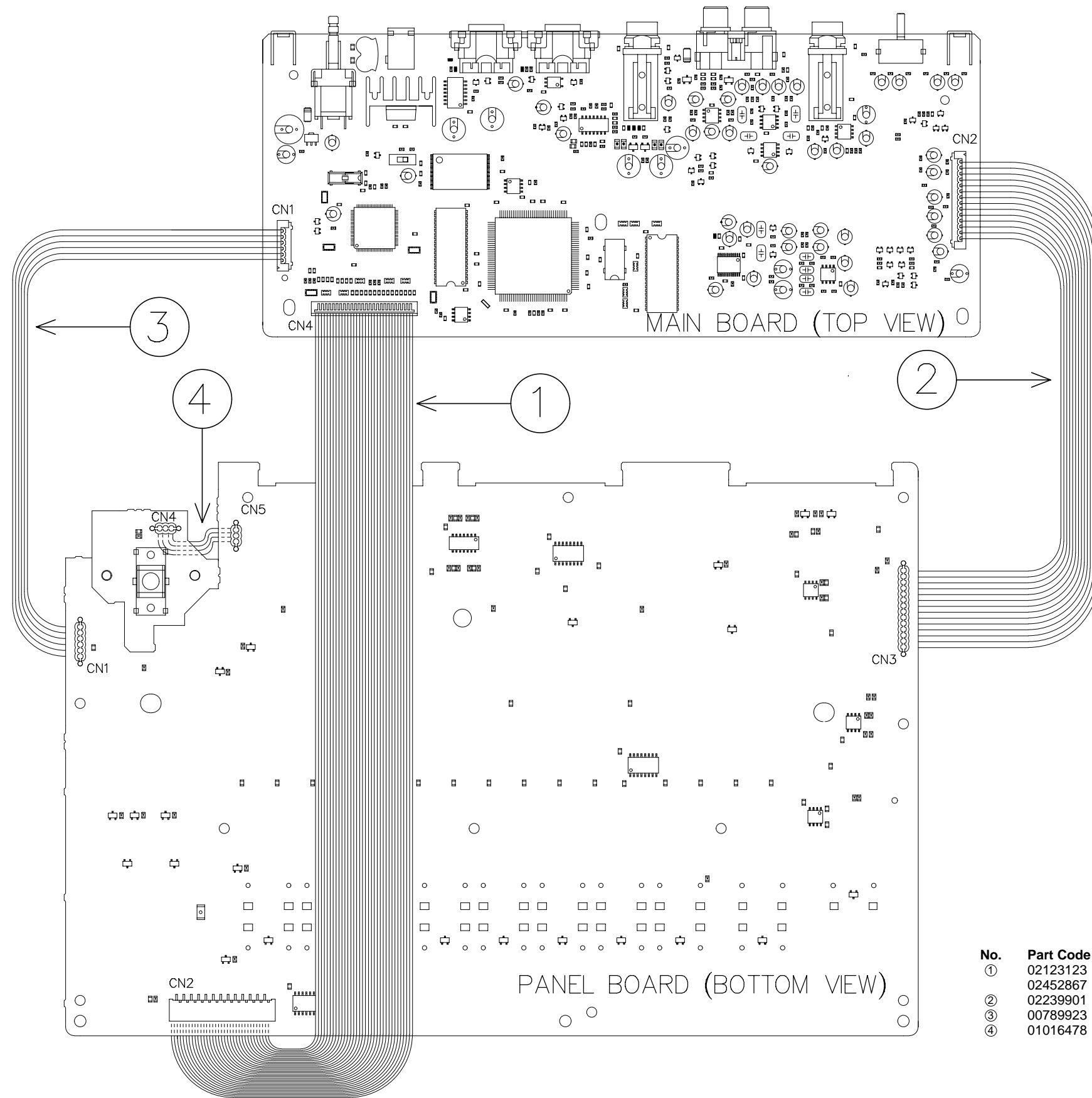
No.	Part Code	Part Name	Q'ty
①	02239689	TOP PANEL	1
②	02239678	BOTTOM CHASSIS	1
③	71673456	MAIN BOARD ASSY	1
④	71673478	PANEL BOARD ASSY	1
	*****	LED HOLDER 1	1
	*****	LED HOLDER 2	2
	*****	VR HOLDER	1
	*****	VR NUT	2
	*****	VR WASHER	2
	*****	KEYTOP HOLDER	2
⑤	22360712	CORD HOOK 236-712	1
⑥	01235378	FOOT	4
⑦	01455401	DUST COVER SW	1
⑧	02239834	GROUNDING TERMINAL MT-903CS	1
⑨	01343112	J R-KNOB MF BLK/LCG	4

⑩	02239723	KNOB LCG	16
⑪	22480260	P R-KNOB MF BLK/LCG	3
⑫	12499175	G S-BUTTON S1H BLK	1
⑬	02239690	DISPLAY COVER	1
⑭	01670490	F C-KEYTOP SX1H CLR	4
⑮	02239701	Y C-KEYTOP MX2H CLR	1
⑯	02016245	Y C-KEYTOP MX2H BLK	1
⑰	02016390	Y S-KEYTOP LX1H BLK	1
⑱	01902734	F C-KEYTOP SX2H BLK	1
⑲	02013090	F C-KEYTOP MX1H CLR	2
⑳	02123467	F C-KEYTOP MX1H BLK	1
㉑	01904134	F C-KEYTOP MX4H CLR	4

[SCREWS]

No.	Part Code	Part Name	Q'ty
A	40011312	SCREW 3x8 BINDING TAPTITE P BZC	3
B	40011501	SCREW M3x8 PAN MACHINE W/SW+PW BZC	2
C	40011101	SCREW 3x8 BINDING TAPTITE B BZC	3
D	40011056	SCREW 3x6 BINDING TAPTITE B ZC	14
E	40011090	SCREW 3x6 BINDING TAPTITE B BZC	9

WIRING DIAGRAM



No.	Part Code	Part Name
①	02123123	BNCD-P=1.25-K-26-170 (up to S/No.ZN71199)
	02452867	BNCD-P=1.25-K-26 160 (S/No.ZN81200-UP)
②	02239901	RIBBON CABLE 14x100-P2.0
③	00789923	RIBBON CABLE 6x100-P2.0
④	01016478	RIBBON CABLE 3x50-P2.0

PARTS LIST

<p>SAFETY PRECAUTIONS: The parts marked have safety-related characteristics. Use only listed parts for replacement.</p>	<p>The parts marked # are new (initial parts). *2</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 style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">QTY</th> <th style="text-align: left;">PART NUMBER</th> <th style="text-align: left;">DESCRIPTION</th> <th style="text-align: left;">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	<p>MAIN BOARD ASSY ----->MB PANEL BOARD ASSY ----->PB</p>
QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER												
Ex. 10	22575241	Sharp key	C-20/50												
15	2247017300	Knob (orange)	DAC-15D												

CASING				Q'ty
#	02239689	TOP PANEL		1
	01455401	DUST COVER SW		1
#	02239690	DISPLAY COVER		1
#	02239678	BOTTOM CHASSIS		1
KNOB, BUTTON				
	01670490	F C-KEYTOP	SX1H CLR	4
	01904134	F C-KEYTOP	MX4H CLR	4
	02013090	F C-KEYTOP	MX1H CLR	2
	02123467	F C-KEYTOP MX1H BLK		1
	01902734	F C-KEYTOP SX2H BLK		1
	12499175	G S-BUTTON	S1H BLK 249-175	1
	01343112	J R-KNOB	J R-KNOB MF BLK/LCG	4
#	02239723	KNOB	LCG	16
	22480260	P R-KNOB	MF BLK/LCG	3
	02016245	Y C-KEYTOP	MX2H BLK	1
#	02239701	Y C-KEYTOP MX2H CLR		1
	02016390	Y S-KEYTOP	LX1H BLK	1
SWITCH				
	01676512	SDKLA1-B	PUSH SWITCH (POWER)	1
	01340290	EVQ11A H=5.0	TACT SWITCH	29
	00125590	EVQ QJJ 05Q	TACT SWITCH	1
	13159362	SSSF123-S09N-1	SLIDE SWITCH	1
	13159187	SSSS2-22-01	SLIDE SWITCH	1
	01348990	LS001-C23OAB-LFA15B	LEVER SWITCH	1
JACK, EXP TERMINAL				
	00569278	LGR4609-7100	6.5MM JACK	2
	13449720	HEC2305-01-250	ADAPTOR JACK	1
	13429825	YKF51-5054 2PZ	MIDI CONNECTOR	1
#	02239589	YKC21-3282	PIN JACK (RCA)	1
DISPLAY UNIT				
	15029567	LB-603VP	LED (7SEG.)	1
	NOTE : Replacement LB-603VP should be made on a unit base.			
PCB ASSY				
#	<input checked="" type="checkbox"/> 71673456	MAIN BOARD ASSY	(EXG)	1
	NOTE : 'MAIN BOARD ASSY' includes the following parts.			
	22465224	HEATSINK	246-224	1
	12199584	GROUNDING TERMINAL	M1698	2
	40011501	SCREW M3x8	PAN MACHINE W/SW+PW FE BZC	1
#	71673478	PANEL BOARD ASSY		1
	NOTE : 'PANEL BOARD ASSY' includes the following parts.			
	01016478	RIBBON CABLE	3x50-P2.0	1
	00789923	RIBBON CABLE	6x100-P2.0	1
	02339901	RIBBON CABEL	14x100-P2.0	1

IC				
	01786667	HD6413006F20	IC (CPU)	1
	00892556	TC170C140AF-003 (ESP2)	IC (CUSTOM)	1
	02232367	HN58X2432FPI	IC (EEPROM)	1
	*****	LH28F800BVE-BV85 (BLANK)	IC (FLASH MEMORY)	1
	01906712	LC324260AJ-60-TLM	IC (DRAM)	2
	01780112	AK4522VF	IC (AD/DA)	1
	15269219H0	HD74LS05FPEL	IC (TTL)	1
	15259704H0	HD74HC138FPEL	IC (CMOS)	1
	15259863H0	HD74HC4051FPEL	IC (CMOS)	2
	01783589	HD74HC4052FPEL	IC (CMOS)	1
	15189261	M5218AFP-600E	IC (BIPOLAR OP AMP)	5 +3
	15289128	BA10324AF	IC (OP AMP)	1 +1
	15289125	PC-410KT 178FAY	IC (PHOTO COUPLER)	1
	15199106M0	AN7805	IC (REGULATOR)	1
	15289123	M51953AFP-600C	IC (RESET)	1
TRANSISTOR				
	15309104	2SA1586-GR(TE85R)	TRANSISTOR	4
	15319101	2SC2412KR T146	TRANSISTOR	1
	15319102	2SC2882-Y(TE12L.C)	TRANSISTOR	1
	15319105	2SC3326-A	TRANSISTOR	2
	15319107	2SC4116-GR(TE85R)	TRANSISTOR	6
	15329103T0	2SK880-GR(TE85R)	FET TRANSISTOR	8
	00679312	RN1402(TE85L)	TRANSISTOR	8
	15119163	RN2227(TPE4)	TRANSISTOR	9
DIODE				
	15339412	U1BC44(TE12L)	RECTIFIER DIODE	1
#	02014778	U1GC44(TE12L)	RECTIFIER DIODE	1
	15339105	DAN202K T146 (CHIP)	DIODE ARRAY	16
	15339130	MA142WK-(TX)	DIODE ARRAY	19
	01897189	MA147-(TX)	DIODE ARRAY	4
#	02239567	SLR-342VRT32	LED(REDF)	23
			LED3,LED15,LED19,LED6,LED4,LED5,LED7,LED9,LED14,LED45,LED29,LED10,LED24,LED34,LED44,LED20,LED1,LED25,LED2,LED30,LED35,LED39,LED40 on PB	
#	02126912	SLR-342VR-TG7	LED(REDF)	25
			LED42,LED16,LED11,LED12,LED49,LED48,LED47,LED46,LED43,LED41,LED38,LED37,LED13,LED17,LED18,LED21,LED22,LED26,LED28,LED31,LED32,LED33,LED27,LED36,LED23 on PB	
RESISTOR				
#	15399565	RPC18T 470 J	CARBON RESISTOR	4
	01011856	RPC05T 0R0 J	MTL.FILM RESISTOR	1
	00566967	RPC05T 470 J	MTL.FILM RESISTOR	1
	00567023	RPC05T 101 J	MTL.FILM RESISTOR	13
			R102,R103,R110,R111 on MB	
	00567034	RPC05T 121 J	MTL.FILM RESISTOR	1
	00567067	RPC05T 221 J	MTL.FILM RESISTOR	3
	00567089	RPC05T 331 J	MTL.FILM RESISTOR	2
	00567101	RPC05T 391 J	MTL.FILM RESISTOR	2
	00567112	RPC05T 471 J	MTL.FILM RESISTOR	7
	00567156	RPC05T 102 J	MTL.FILM RESISTOR	6
	00567178	RPC05T 152 J	MTL.FILM RESISTOR	3
	00567190	RPC05T 222 J	MTL.FILM RESISTOR	3
	00567212	RPC05T 332 J	MTL.FILM RESISTOR	2
	00567245	RPC05T 472 J	MTL.FILM RESISTOR	10
			R14,R15,R33,R34,R58,R77,R89,R134,R159,R137 on MB	
	00567256	RPC05T 562 J	MTL.FILM RESISTOR	2
	00567267	RPC05T 682 J	MTL.FILM RESISTOR	3
	00567289	RPC05T 103 J	MTL.FILM RESISTOR	22
			R148,R177,R124,R147,R141,R139,R83,R130,R86,R184,R65,R48,R80,R51,R47,R66,R67,R68,R70,R95,R2,R49 on MB	
	00567301	RPC05T 153 J	MTL.FILM RESISTOR	1
	00567312	RPC05T 183 J	MTL.FILM RESISTOR	2
	00567323	RPC05T 223 J	MTL.FILM RESISTOR	2
	00567345	RPC05T 333 J	MTL.FILM RESISTOR	2
	00567378	RPC05T 473 J	MTL.FILM RESISTOR	8
	00567390	RPC05T 683 J	MTL.FILM RESISTOR	2
	00567412	RPC05T 104 J	MTL.FILM RESISTOR	28
			R19,R6,R8,R9,R169,R11,R18,R179,R178,R171,R170,R162,R161,R126,R113,R105,R96,R20,R74,R61,R60,R56,R55,R39,R75,R38,R37,R30 on MB	
	00567445	RPC05T 184 J	MTL.FILM RESISTOR	2
	00567456	RPC05T 224 J	MTL.FILM RESISTOR	4
	00567467	RPC05T 274 J	MTL.FILM RESISTOR	2
			R132,R122,R118,R131 on MB	
			R42,R23 on MB	

	00567478	RPC05T 334 J	MTL.FILM RESISTOR	R28,R63 on MB	2
	00567501	RPC05T 474 J	MTL.FILM RESISTOR	R21,R40,R93,R107,R114,R165,R166 on MB	7
	00567556	RPC05T 105 J	MTL.FILM RESISTOR	R183,R64,R62 on MB	3
#	00903956	MCR100 JZH J 4R7	MTL.FILM RESISTOR	R2 on PB	1
	15399373	RPC10T 101 J 1/10W	MTL.FILM RESISTOR	R25,R42,R30,R29,R52,R14,R12,R10,R5,R4,R24, R3,R54 on PB	13
	15399381	RPC10T 221 J 1/10W	MTL.FILM RESISTOR	R26,R27,R28 on PB	3
	15399385	RPC10T 331 J 1/10W	MTL.FILM RESISTOR	R33,R31,R32 on PB	3
	15399397	RPC10T 102 J 1/10W	MTL.FILM RESISTOR	R48,R60 on PB	2
	15399413	RPC10T 472 J 1/10W	MTL.FILM RESISTOR	R46,R56 on PB	2
	15399421	RPC10T 103 J 1/10W	MTL.FILM RESISTOR	R50,R45,R55 on PB	3
	15399433	RPC10T 333 J 1/10W	MTL.FILM RESISTOR	R64,R51,R44,R61 on PB	4
	15399445	RPC10T 104 J 1/10W	MTL.FILM RESISTOR	R23,R13,R43,R53,R62,R63,R11 on PB	7
	15399461	RPC10T 474 J 1/10W	MTL.FILM RESISTOR	R49,R59 on PB	2
	15399469	RPC10T 105 J 1/10W	MTL.FILM RESISTOR	R47,R57 on PB	2
	01457145	EXBE10C103J	RESISTOR ARRAY	RA6,RA4,RA3,RA5,RA2 on MB	5
#	02239645	MNR14 E0AB J 102	RESISTOR ARRAY	RA10 on MB	1
	01906678	MNR14 E0AB J 103	RESISTOR ARRAY	RA1 on MB	1
	01906945	MNR14 E0AB J 101	RESISTOR ARRAY	RA8,RA7,RA9,RA11 on MB	4
POTENTIOMETER					
	01670289	EVUJDCFL3B14 W/NUT	9M/M ROTARY POT.	VR1,VR2,VR3 on PB	3
#	02239534	EVUJDLFL3B14 W/CLK	9M/M ROTARY POT.	VR4 on PB	1
#	02127545	RK12L12C0 100KA	12M/M ROTARY POT.	VR22,VR23 on PB	2
#	02239545	RK12L12C0 100KC	12M/M ROTARY POT.	VR21 on PB	1
#	02239523	EWAN1AC15B14	30M/M SLIDE POT.	VR5-VR20 on PB	16
CAPACITOR					
	15359741	ECUV1H101JCG 100 PF/50 V	CERAMIC CAPACITOR	C35,C43 on PB	2
	01672412	GRM39CH150J50PT	CERAMIC CAPACITOR	C142,C141 on MB	2
	01674334	ECUV1H101JCV	CERAMIC CAPACITOR	C172,C157,C134,C151,C152,C154,C174, C156,C175,C158,C159,C160,C168,C169, C170,C171,C155,C173 on MB	18
	01674389	ECUV1H221JCV	CERAMIC CAPACITOR	C28,C64,C87,C108,C109,C47,C7 on MB	7
	01674612	ECJ1VB1H103K	CERAMIC CAPACITOR	C166,C164,C163,C177,C88,C93,C161, C162,C179,C180,C178,C165 on MB	12
	01674689	ECJ1VF1H473Z	CERAMIC CAPACITOR	C67,C66,C65,C34 on MB	4
	01674701	ECJ1VF1E104Z 0.1 UF/16 VK	CERAMIC CAPACITOR	C167,C86,C97,C99,C101,C110,C111,C131, C82,C48,C130,C150,C140,C135,C133,C10, C13,C132,C148,C69,C19,C81,C153,C32,C43, C44,C45,C53,C72,C79,C18 on MB	31
	01674712	ECJ1VF1A105Z	CERAMIC CAPACITOR	C127,C92,C12,C128,C124,C125,C123,C122, C129,C121,C117,C126,C119,C136,C137,C138, C145,C146,C147,C181,C120,C183,C184,C118 on MB	24
	02014890	RA2-16V221MT2	CERAMIC CAPACITOR	C3,C115 on MB	2
	02231323	ECJ2VF1C105Z	CERAMIC CAPACITOR	C90,C89,C16,C15 on MB.	4 +7
	15359448	ECJ2VB1H103K 0.01 UF/50 V	CERAMIC CAPACITOR	C59,C65,C64,C63,C62,C60,C61 on PB	4
	15359707	ECJ2VF1H104Z	CERAMIC CAPACITOR	C8,C34,C15,C10 on PB	4
	01454889	RA2-16V470MT2 470 UF/16 V	CHEMICAL CAPACITOR	C25,C2,C3,C12,C39,C53,C11,C55,C41, C49,C48,C47,C46,C45 on PB	14
	01787745	ECEA0JKA331B	CHEMICAL CAPACITOR	C83,C8,C9,C22,C25,C41,C38 on MB	7
	01900823	RA2-16V100M-T2	CHEMICAL CAPACITOR	C9,C13,C1,C24 on PB	4
	01900834	RA2-16V101M-T2	CHEMICAL CAPACITOR	C74,C2,C21,C5,C144,C59,C58,C42,C40, C39,C61,C68,C149,C23,C112,C105,C100, C73,C91,C80,C76,C24,C26,C35,C36,C37, C98 on MB	27
	01902612	RA2-6V471M-T2	CHEMICAL CAPACITOR	C6,C107,C71,C57,C54,C11,C114 on MB	7
#	01909678	RA2-16V330M-T2	CHEMICAL CAPACITOR	C20 on MB	1
#	02230667	RA2-35V4R7MT2	CHEMICAL CAPACITOR	C49,C116,C139,C29 on MB	4
#	02239623	RA2-16V102M-T2	CHEMICAL CAPACITOR	C52,C56,C94 on MB	3
	13639546M0	ECEA1CKA100B 10 UF/16 V	CHEMICAL CAPACITOR	C17 on MB	1
	13639549M0	ECEA1CKA470B	CHEMICAL CAPACITOR	C56,C37,C38,C40,C42,C51,C50 on PB	7
	13639550M0	ECEA1CKA101B 100 UF/16 V	CHEMICAL CAPACITOR	C58,C57 on PB	2
	00236267	AMZV0050J102 0200 1000 PF/50 V	POLYEST. CAPACITOR	C14,C54 on PB	2
	00236301	AMZV0050J222 0200	POLYEST. CAPACITOR	C55,C62,C70,C77 on MB	4
	00239456	AMZV0050J392 0200	POLYEST. CAPACITOR	C27,C46 on MB	2
	00239512	AMZV0050J153 0200	POLYEST. CAPACITOR	C50,C30 on MB	2
				C51,C31 on MB	2
INDUCTOR, COIL, FILTER					
	01565612	DSS310-93D223S50	EMI FILTER	FL1 on MB	1
	01565589	N1608ZA601T01	FERRITE-BEAD	L3,L8,L9,L10,L11,L12,L15 on MB	7
CRYSTAL, RESONATOR					
	00894023	MA-406 20.000MHZ TE24	CRYSTAL	X1 on MB	1
	01453167	SG-8002DC 67.7376MHZ PHC	OSCILLATOR	X2 on MB	1

CONNECTOR					
	13429292	51048-0300 3PIN	CABLE HOLDER	CN5,CN4 on PB	2
	13429295	51048-0600(6P)	CABLE HOLDER	CN1 on PB	1
	13429318	51048-1400 14PIN	CABLE HOLDER	CN3 on PB	1
	02018723	26FE-ST-VK-N	CONNECTOR	CN2 on PB	1
	02019012	26FE-BT-VK-N	CONNECTOR	CN4 on MB	1
	13369601	52147-0610(6P)	WIRE TRAP	CN1 on MB	1
	13369679	52147-1410	WIRE TRAP	CN2 on MB	1
WIRING, CABLE					
	02123123	BNCD-P=1.25-K-26-170	BAN CARD	CN2 on PB to CN4 on MB (up to S/No.ZN71199)	1
#	02452867	BNCD-P=1.25-K-26-160	BAN CARD	CN2 on PB to CN4 on MB (S/No.ZN81200-UP)	1
	01016478	3x50-P2.0	RIBBON CABLE	CN4 on PB to CN5 on PB	1
	00789923	6x100-P2.0	RIBBON CABLE	CN1 on PB to CN1 on MB	1
#	02239901	14x100-P2.0	RIBBON CABLE	CN3 on PB to CN2 on MB	1
SCREW					
	40011056	SCREW 3x6	BINDING TAPTITE B ZC		14
	40011090	SCREW 3x6	BINDING TAPTITE B BZC		9
	40011101	SCREW 3x8	BINDING TAPTITE B BZC		3
	40011312	SCREW 3x8	BINDING TAPTITE P BZC		3
	40011501	SCREW M3x8	PAN MACHINE W/SW+PW BZC		3
PACKING					
#	02239789	ADAPTOR PAD	for PACKING CASE		1
#	02239778	PAD R	for PACKING CASE		1
#	02239756	PAD L	for PACKING CASE		1
#	02239790	PACKING CASE			1
#	02452434	OUTER PACKING CASE			1
MISCELLANEOUS					
	40122812	ACETATE TAPE	NITTO No.5 BLK W15MM 30M		5
	22360712	CORD HOOK	236-712		1
	40122490	DOUBLE-FACED TAPE	#500 W5MM 20M 40P		29
	01235378	FOOT			4
#	02239834	GROUNDING TERMINAL	MT-903CS		1
	12199584	GROUNDING TERMINAL	M1698	TER1,TER2 on MB	2
	22465224	HEATSINK	246-224		1
ACCESSORIES (STANDARD)					
#	71673434	OWNER'S MANUAL	JAPANESE		1
#	71673490	OWNER'S MANUAL	ENGLISH		1
#	40349234	MARKING STICKERS			1
△	00905756	AC ADAPTOR	ACI-100C		1
△	00905767	AC ADAPTOR	ACI-120C		1
△	01018312	AC ADAPTOR	ACI-230C		1
△	01901578	AC ADAPTOR	PSB-1U UNIVERSAL		1
△	01903356	AC CORD SET	230V 1.0M FOR PSB-1U		1
△	01903367	AC CORD SET	240V 1.0M FOR PSB-1U		1
△	00905234	EURO CONVERTER PLUG	ECP01-5A		1
	40232334		(JAPAN ONLY)		1

IDENTIFYING THE VERSION NUMBER

1. Turn off the unit power.
2. Turn on the unit power while pressing down the [EFFECT CUE], [FREQ RANGE] and [SYNC TYPE] buttons all at the same time.
3. The software's version number appears on the display as follows, then the unit starts in the test mode.



When the version is "1.01"

4. After confirming the version number, turn off the unit power to terminate the test mode.

USER DATA SAVE AND LOAD

■ Saving EF-303 settings on an external sequencer(BULK DUMP)

Sets of data containing the settings of the currently selected patch or of all patches and settings can be transmitted from the EF-303, and saved on an external device. This function is called "bulk dump". Bulk dump allows EF-303 data to be saved on an external MIDI sequencer.



■ Saving EF-303 data on an external MIDI sequencer

Before you begin, use a MIDI cable to connect the EF-303's MIDI OUT to the MIDI IN of the external sequencer.

1. Hold down the [SHIFT] button, and press the [EXIT] button to enter Bulk Dump mode. You can exit this mode by pressing the [EXIT] button.
2. Use the [←], [→] buttons to select the type of data that you wish to transmit, and press the [WRITE] button.



<Values>

- PATCH:Settings of the currently selected patch will be transmitted.
- ALL:Settings for all patches and system settings will be transmitted.

3. Press the [WRITE] button, and the display screen will ask you to confirm the operation.



4. Begin real-time recording on the external sequencer.
5. Press the [WRITE] button, and bulk dump transmission will begin. If you press the [EXIT] button, the operation will be halted. While the bulk dump is being transmitted, the BPM display will blink. When transmission is completed, the display will indicate this.



Notes : Do not turn off the power while the display is blinking. The data will not be transmitted correctly.

Contents of the transmitted data

PATCH:

- Effect settings
- Step modulator slider settings
- ASSIGN settings

ALL:

- Settings for all patches
- SYSTEM settings

■ Restoring EF-303 data from the external sequencer to the EF-303

Use the following procedure to restore previously-saved bulk data to the EF-303.

Before you begin, use a MIDI cable to connect the EF-303's MIDI IN to the MIDI OUT of the external sequencer.

1. Hold down the [SHIFT] button, and press the [EXIT] button to enter Bulk Dump mode. To exit this mode, press the [EXIT] button.
2. Use the [←], [→] buttons to select RECEIVE, and press the [WRITE] button.



3. To receive the data, press the [WRITE] button. The EF-303 enters the bulk data reception mode, and BPM display will blink.



If you press the [EXIT] button, reception will be halted, and you will return to step 1.

4. Begin playback(start) on the external sequencer.
5. After the transmission is complete, press the [EXIT] button on EF-303, and a screen concerned with the saving of data will appear.



6. To save the data, press the [WRITE] button, and the bulk data will be stored in memory. If you press the [EXIT] button, the saving of data will be halted.

- * Do not turn off the power while the display is blinking. The data will not be received correctly.
- * When a bulk data is received, the data will overwrite all existing patch and setting data. Be careful not to overwrite important data that you wish to keep.

Contents of the received data

PATCH:

- Effect settings
- Step modulator slider settings
- ASSIGN settings

ALL:

- Settings for all patches
- SYSTEM settings

FACTORY RESET

You can return the following settings of the EF-303 to their factory-set values.

Setting that are reset

- System settings
- Patch memory

1. While holding down the [SHIFT] button, turn on the power.



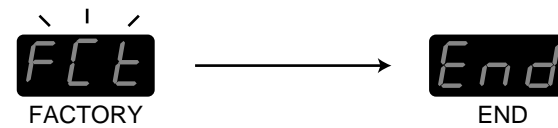
Fct
FACTORY

2. Press the [WRITE] button.
If you decide not to execute the operation, press the [EXIT] button.
3. A message will ask you to confirm the operation.
If you wish to execute, press the [WRITE] button once again.
To cancel without executing, press the [EXIT] button.



SURE

The BPM display area will blink while the Factory Reset is being performed.
When it is completed, the display indicate "END".



Fct → End
FACTORY → END

4. Turn the power on once again.

Notes: Do not turn off the power while the BPM display is blinking. Doing so may damage the system.

HOW TO UPDATE THE FLASH ROM

■ Overview

- The EF-303 uses a flash memory for programming.
- The flash memory up-data (control program) is stored inside it.
- Usually, the data for update is supplied in the form of SMF data divided into several parts.
By connecting a sequencer (MC-80 for example) to the EF-303 via a MIDI cable and loading data to it, the program version can be updated.
- The flash memory consists of two areas: FIX area storing the update data program and test mode program and USER area storing the main program. And it has two modes: ALL update mode for updating both the FIX and USER areas and USER update mode for updating the USER area only.
- Updating is only possible via a MIDI cable.

Note If updating fails in the ALL update mode, the unit may not be able to start again. In this case, the flash memory must be replaced with a new one that already contains the programs.
After updating, factory resetting is required.
At this time, all the user data will be reset so advance backup is needed. For details, refer to the sections describing data saving and loading.

■ Required items

- EF-303 + AC Adaptor
- MIDI Sequencer (MC-80 etc.)
- MIDI Cable x1
- Update SMF Disk Setv (17048588)

The files stored on each SMF disk are as follows.
File names remain the same even if the version changes.

Update Disk (1/2)
EF_ALLUP.MID
EF_USRUP.MID
EF000000.MID
EF000001.MID
EF000002.MID
EF000003.MID
EF000004.MID
EF000005.MID
EF000006.MID
EF000007.MID

Update Disk (2/2)
EF000008.MID
EF000009.MID
EF000010.MID

■ Updating procedure common to ALL and USER update modes

1. Connect the power supply cable of each device to be used to confirm that power is being supplied properly.
2. If necessary, confirm the version of the EF-303 before updating.
3. Open the bottom cover of the EF-303, and slide the SW3 (the switch nearest the jack as viewed from the CPU) on the main board to "Ver.up".
4. Connect the MIDI OUT of the sequencer and the MIDI IN of the EF-303 using a MIDI cable.

Then, proceed according to the updating mode.

■ Updating procedure in ALL update mode

1. While pressing down the [FLANGER/PHASER], [REVERB/VO MOD], [PATCH 1] and [WRITE] buttons simultaneously, turn on the unit power. "ALL" will appear on the display.

2. Load the SMF data "EF_ALLUP.MID" from the sequencer.
3. "Ers" appears on the display and the flash memory is initialized.
After about 10 seconds, "UPd" will appear on the display.
(While "Ers" is displayed, wait without loading any data.)

4. Load the SMF data for updating from the sequencer.
Playback the 11 files, from EF000000.MID to EF000010.MID, sequentially.
5. While data is being loaded, the [START/STOP] button LED blinks and the number shown on the display is incremented.
When incrementing ends, loading of one file is completed.
It takes about one minute to load one SMF file.
6. When all the files have been loaded, "CmP" appears on the display indicating that updating is completed.

7. After updating is completed, restart the main unit in the test mode, confirm the version and perform a FLASH check.
Then, perform factory resetting.
8. Slide main board switch 3 (switch on the jack side when viewed from the CPU) to the opposite side of "Ver.up" before closing the bottom cover of the body.

■ Updating procedure in the USER update mode

1. Turn on the unit power while pressing down the [FLANGER/PHASER], [PATCH 1] and [PATCH 3] buttons all at the same time. "Usr" will appear on the display.

2. Load the SMF data "EF_USRUP.MID" from the sequencer.
3. "Ers" appears on the display and the flash memory is initialized.
After about 10 seconds, "UPd" will appear on the display.
(While "Ers" is displayed, wait without loading any data.)

4. Load the SMF data for updating from the sequencer.
Playback the 10 files, from EF000000.MID to EF000010.MID, sequentially.
5. While data is being loaded, the [START/STOP] button LED blinks and the number shown on the display is incremented.
When incrementing ends, loading of one file is completed.
It takes about one minute to load one SMF file.
6. When all the files have been loaded, "CmP" appears on the display indicating that updating is completed.

7. After updating is completed, restart the main unit in the test mode, confirm the version and perform a FLASH MEMORY check.
Then, perform factory resetting.
8. Slide main board switch 3 (switch on the jack side when viewed from the CPU) to the opposite side of "Ver.up" before closing the bottom cover of the body.

■ Action to take when startup is disabled

- If the unit power is turned off accidentally while updating is in progress, the unit may not startup properly.
1. If startup is disabled after updating in ALL update mode.
Replace the board.
 2. If startup is disabled after updating in USER update mode.
Perform updating in USER mode again.

■ List of error messages on update

- Er0: Erase Error
This is displayed if the flash memory cannot be initialized.
There's a possibility that no power is being supplied to the VPP terminal of the flash memory. Open the bottom cover of the EF-303, and slide the SW3 (the switch nearest the jack as viewed from the CPU) on the main board to "Ver.up".

- Er1: Write Error
This is displayed if an error occurs while attempting to write data to the flash memory.

- Er2: Message Error
This is displayed if received MIDI data such as SumCheck is defective.

- Er3: FIFO Over Flow
This is displayed if the EF-303 cannot process data due to too much MIDI data being received at a time.

- Er4: Overrun Error
This is displayed if the EF-303 fails to receive MIDI data.

- Er5: Framing Error
This is displayed if received MIDI data such as transfer rate or jitter is defective.

- Er6: Compare Error
This is displayed if the data actually written to the flash memory and the data that was to be written to the flash memory do not match.

TEST MODE

■ Required items

- MIDI Cable x1
- Audio Signal Generator
- Noise Meter
- Oscilloscope
- Audio Cable x2

■ How to start in test mode

Turn on the unit power while pressing down the [FREQ RANGE], [SYNC TYPE] and [EFFECT CUE] buttons all at the same time.

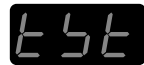

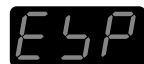












After the version number is displayed, "tSt" will be displayed.

* Selecting test item

Select test item using the [▲] and [▼] buttons.

The selected test item and its item number are displayed by the LED on the STEP MODULATOR section.

Pressing the [TAP] button enables testing of the selected item only

Item number	testing item	display indication
1	AUTO check	
2	MEMORY check	
3	ESP check	
4	FLASH check	
5	MIDI check	
6	SW check	
7	Rotary Volume check	
8	Slide FADER check	
9	7SEG LED check	
10	LED check	
11	EFFECT check	
12	BPM check	
13	INITIALIZE check	
14	DSP THRU check	
15	For Function check	

1. AUTO check

Performs 2: MEMORY check to 13: INITIALIZE check in order.

In case of testing item capable of internal check, checking proceeds to the next item automatically upon completion of that item.

In case of error, "nG" is displayed, then checking proceeds to the next item while the LED on the STEP MODULATOR section is blinking.



When operation is executed properly, "ok" is displayed, then checking proceeds to the next item while the LED on the STEP MODULATOR section is lit.



Note: In case of AUTO check, checking of items will not be retried.

2. MEMORY check

Checks operation of DRAM (IC3) and EEPROM (IC7).

"drm" is displayed on DRAM checking, and "EEP" is displayed on EEPROM checking.



Results are displayed by the 7-seg LED and STEP MODULATOR sections.

OK→ "ok" is displayed by the 7-seg LED, and the STEP LED lights up.

NG→ "nG" is displayed by the 7-seg LED, and the STEP LED blinks.







3. ESP check

Checks operation of DSP (ESP(IC2)) internal memory and 4M DRAM (IC6).

Results are displayed by the 7-seg LED and STEP MODULATOR sections.

OK→ "ok" is displayed by the 7-seg LED, and the STEP LED lights up.

NG→ "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

display indication	Error number list
	IRAM0 Error
	IRAM1 Error
	GRAMi Error
	ERAMi Error
	INT1 Error (interrupt occurs despite no signal being generated by ESP)
	INT1 Error (no signal from ESP)

4. FLASH check

Checks operation of FLASH ROM and whether or not the program is correctly written (check sum).

Results are displayed by the 7-seg LED and STEP MODULATOR sections.
OK → "ok" is displayed by the 7-seg LED, and the STEP LED lights up.
NG → "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

5. MIDI check

Checks the MIDI circuit. Connect a MIDI cable to the MIDI IN/OUT connector beforehand to make a loop circuit.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.
OK → "ok" is displayed by the 7-seg LED, and the STEP LED lights up.
NG → "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

6. SW check

Checks operation of SW.

First, the LEDs corresponding to all of the switches light up. By pressing one switch at a time, the corresponding LED goes off and the counter on the display counts down. When all the LEDs go off and the counter shows zero, checking is completed.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.
OK → "ok" is displayed by the 7-seg LED, and the STEP LED lights up.
NG → "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

To abort checking or in case of an error, press the [SHIFT] button first, then press the [EXIT] button while pressing down the [SHIFT] button. This turns the indication to "NG". Pressing the [EXIT] button again resumes selecting of testing item.

7. Rotary Volume check

Checks whether or not the 4 rotary VRs are operating correctly. Turn the rotary VR and check if the readout is within the correct variable range.

First, the LED corresponding to each of the rotary VRs lights up. Turn the rotary VRs, one at a time, clockwise or counterclockwise all the way. The value of the rotary VR being turned "(0-127)" is shown on the display. If a correct value "(0 & 127)" is obtained, the corresponding LED goes off. When all the LEDs have gone off, checking of the rotary VRs is completed.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.
OK → "ok" is displayed by the 7-seg LED, and the STEP LED lights up.
NG → "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

To abort checking or in case of an error, pressing the [EXIT] button turns the display indication to "NG", and pressing it again resumes selecting of testing items.

8. Slide FADER check

Checks whether or not the 16 slide faders operate correctly. Turn the slide fader and check if the readout is within the correct variable range.

First, the LED corresponding to each of the slide faders lights up. Operate the slide faders, one at a time. The value of the slide fader being turned "(0-127)" is shown on the display. If a correct value "(0 & 127)" is obtained, the corresponding LED goes off. When all the LEDs have gone off, checking of the slide faders is completed.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.
OK → "ok" is displayed by the 7-seg LED, and the STEP LED lights up.
NG → "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

To abort checking or in case of an error, pressing the [EXIT] button turns the display indication to "NG", and pressing it again resumes selecting of testing items.

9. 7SEG LED check

Checks whether or not the 7-seg LEDs light up correctly. The 7-seg LEDs light up in the following order.

All blink → All go off → light up one by one (fast) → All light up (for 1 second) → (repeat)

After visual checking, press the [TAP] button.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.
OK → "ok" is displayed by the 7-seg LED, and the STEP LED lights up.
NG → "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

To abort checking or in case of an error, pressing the [EXIT] button turns the display indication to "NG", and pressing it again resumes selecting of testing items.

10.LED check

Checks whether or not the LEDs light up correctly. The LEDs light up in the following order.

All blink → All go off → light up one by one (fast) → All light up (for 1 second) → (repeat)

After visual checking, press the [TAP] button.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.
OK → "ok" is displayed by the 7-seg LED, and the STEP LED lights up.
NG → "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

To abort checking or in case of an error, pressing the [EXIT] button turns the display indication to "NG", and pressing it again resumes selecting of testing items.

11.EFFECT check

Checks operation of ESP (IC2) and the [EFFECT (GRAB)] switch.

11-1.Checking of the [EFFECT (GRAB)] switch operation

Check that "EFX" is shown on the display when the [EFFECT (GRAB)] switch is turned to ON and GRAB.

Check that "thU" is shown on the display when the [EFFECT (GRAB)] switch is turned to OFF.

11-2.Checking of the ESP operation

The following signals are output from the OUTPUT jack when the [EFFECT (GRAB)] switch is turned to ON and GRAB.

Lch: 0.25 [mSec] Delay signal only

Rch: 0.25 [mSec] Delay and direct signals mixed at a ratio of 1:1.

Input a sine wave of about 1kHz beforehand, then raise the frequency.

Check that only the Rch signal level changes as follows when the [EFFECT (GRAB)] switch is turned to ON and GRAB.

Signal level becomes minimum at 2k Hz

Signal level becomes maximum at 4k Hz

Signal level becomes minimum at 8k Hz

After checking, press the [TAP] button.

To abort checking or in case of an error, pressing the [EXIT] button resumes selecting of testing items.

12.BPM check

Checks operation of the AUTO BPM circuit.

Checks that the display indication changes as follows by inputting a short wave or sound of about 100 Hz and varying the INPUT knob (GAIN).

After checking, press the [TAP] button.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.

OK→ "ok" is displayed by the 7-seg LED, and the STEP LED lights up.

NG→ "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

To abort checking or in case of an error, press the [EXIT] button.

Pressing the [EXIT] button again resumes selecting of testing items.

13.INITIALIZE

Resets the EEPROM (IC7) settings to the ones at shipping.

"wrF" (Write Factory Preset) is shown on the display and the factory preset settings are written to the EEPROM.

Results are displayed by the 7-seg LED and STEP MODULATOR sections.

OK→ "ok" is displayed by the 7-seg LED, and the STEP LED lights up.

NG→ "nG" is displayed by the 7-seg LED, and the STEP LED blinks.

Note Be sure to turn off the unit power after execution is completed.

14.DSP THRU (GRAB SW)

Checks the output signal from the OUTPUT jack (L/R) via DSP and residual noise of the main unit.

14-1.Checking of output signal

- Set the [SOURCE SELECT] switch to LINE, set the [INPUT] and [OUTPUT] knobs to the maximum position, then input a signal to the rear INPUT jack.
- Input signal: Short wave, 200 Hz, 200 mVp-p
- Output signal [GRAB] switch ON: Short wave, 200 Hz, 500 mVp-p (+/- 20 %)
- Output signal [GRAB] switch OFF: Short wave, 200 Hz, 1500 mVp-p (+/- 20 %)
- Check the output waveform with an oscilloscope.

14-2.Checking of residual noise

- Set the [INPUT] and [OUTPUT] knobs to the maximum position and measure without signal at the rear INPUT jack. The residual noise levels are as follows:
When the [SOURCE SELECT] switch is set to LINE: -60 dBm or less (JIS-A)
When the [SOURCE SELECT] switch is set to PHONO: -50 dBm or less (JIS-A)
When the [SOURCE SELECT] switch is set to MIC: -50 dBm or less (JIS-A)

15.For Function check

This is used when operating the function tester during manufacturing. No testing is needed at the servicing site.

Performs testing items 2: MEMORY check → 3: ESP check → 4: FLASH check → 5: MIDI check → 11: AUDIO check → 12: BPM check → 13: INITIALIZE check in order.

In case of testing item capable of internal check, checking proceeds to the next item automatically upon completion of that item.

In case of error, "nG" is displayed, then checking proceeds to the next item while the LED on the STEP MODULATOR section is blinking.

When operation is executed properly, "ok" is displayed, then checking proceeds to the next item while the LED on the STEP MODULATOR section is lit.

Note In case of Function check, checking of items will not be retried.

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 BLOCK DIAGRAM

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

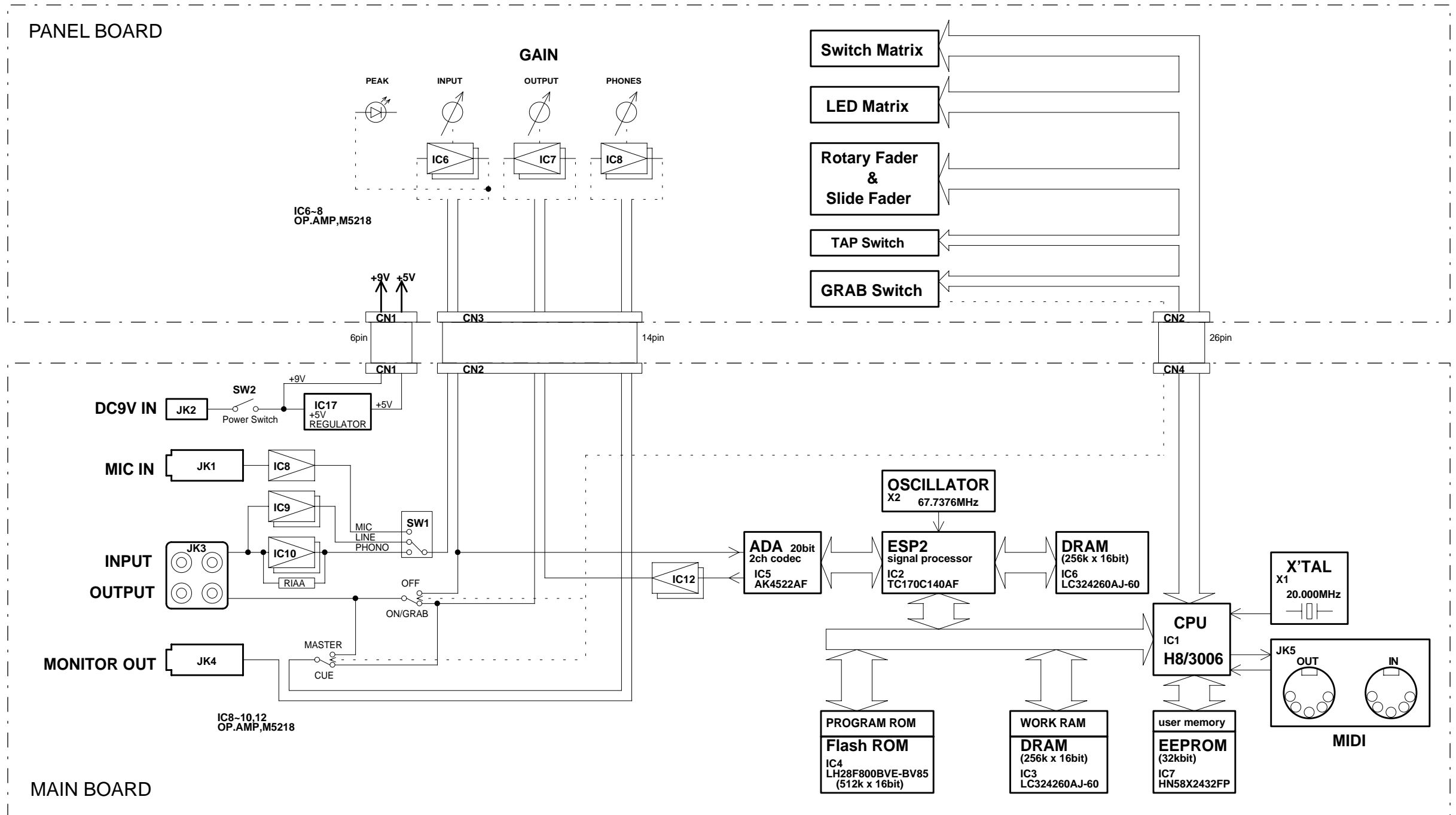
Q

R

S

T

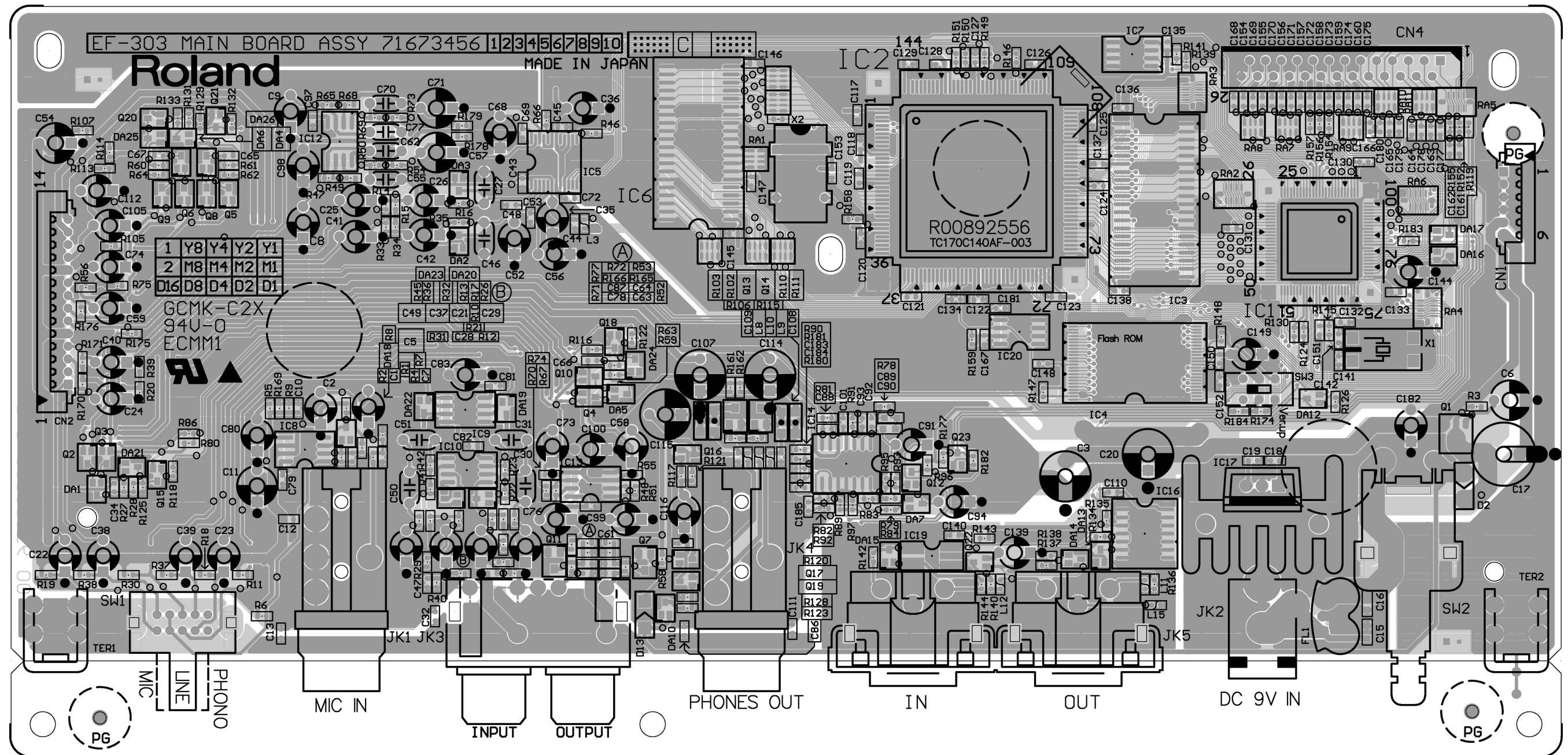
U



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 CIRCUIT BOARD MAIN BOARD ASSY (71673456)

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

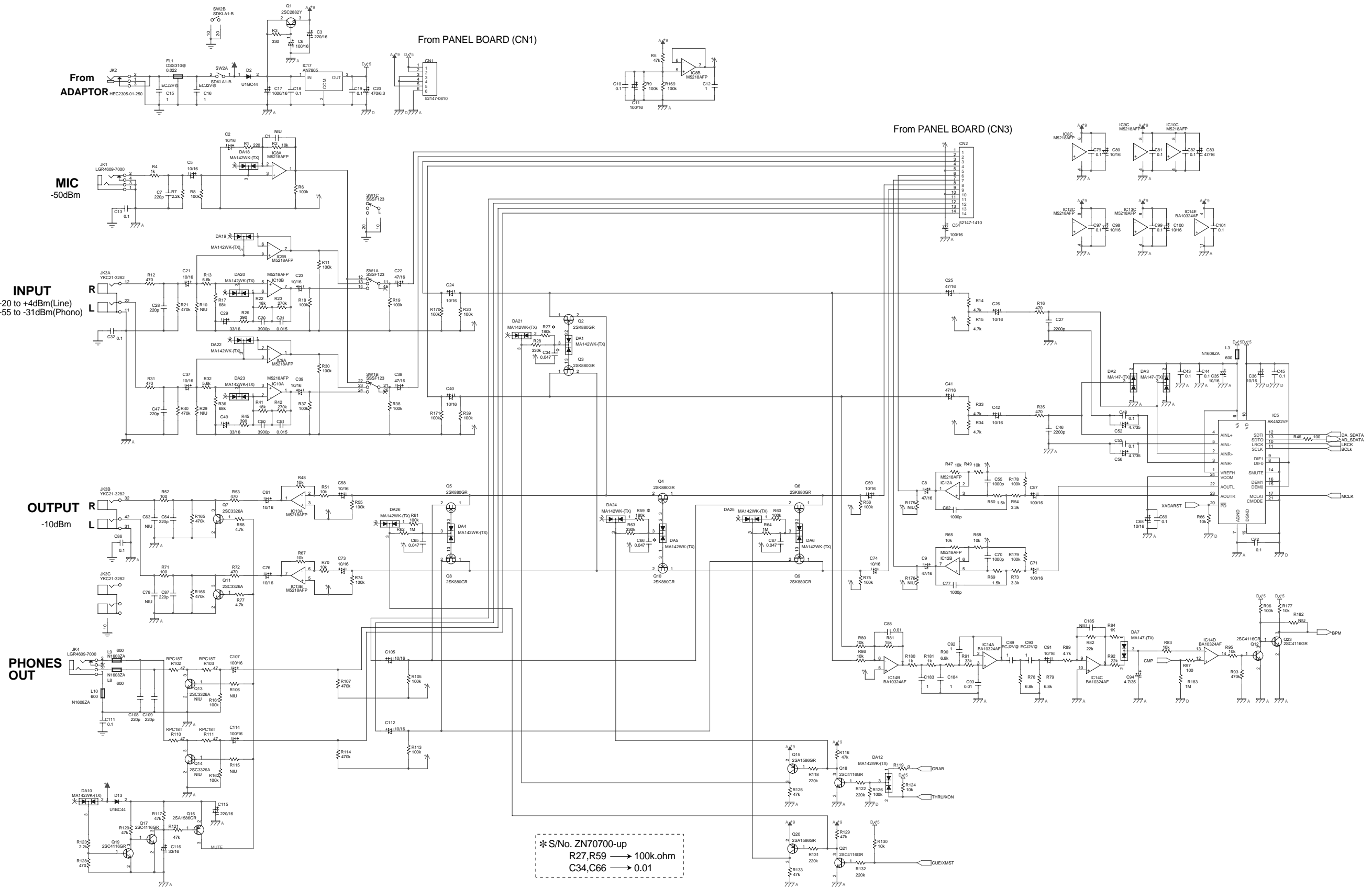


View from components side

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 CIRCUIT DIAGRAM MAIN BOARD ASSY (2/2)

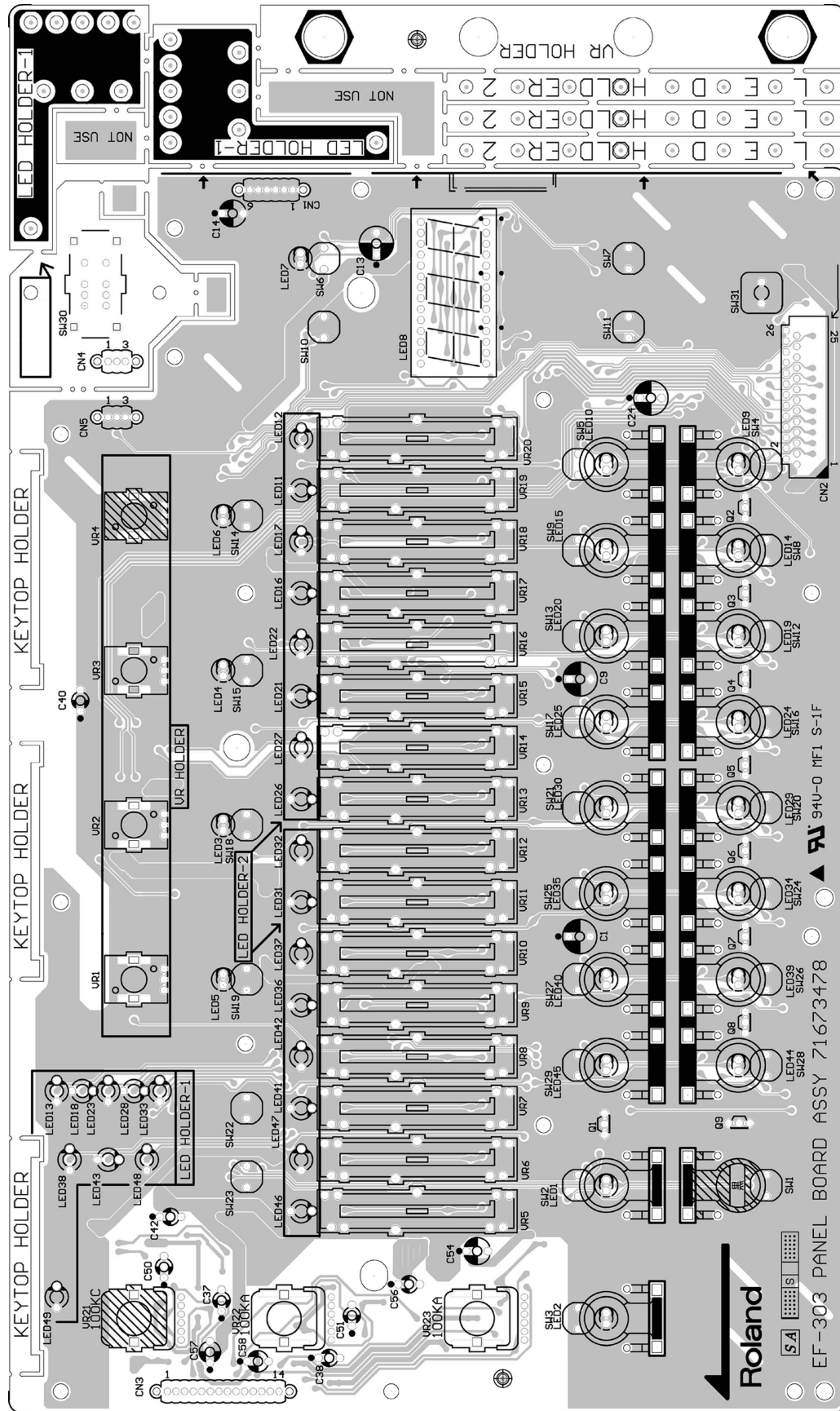
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



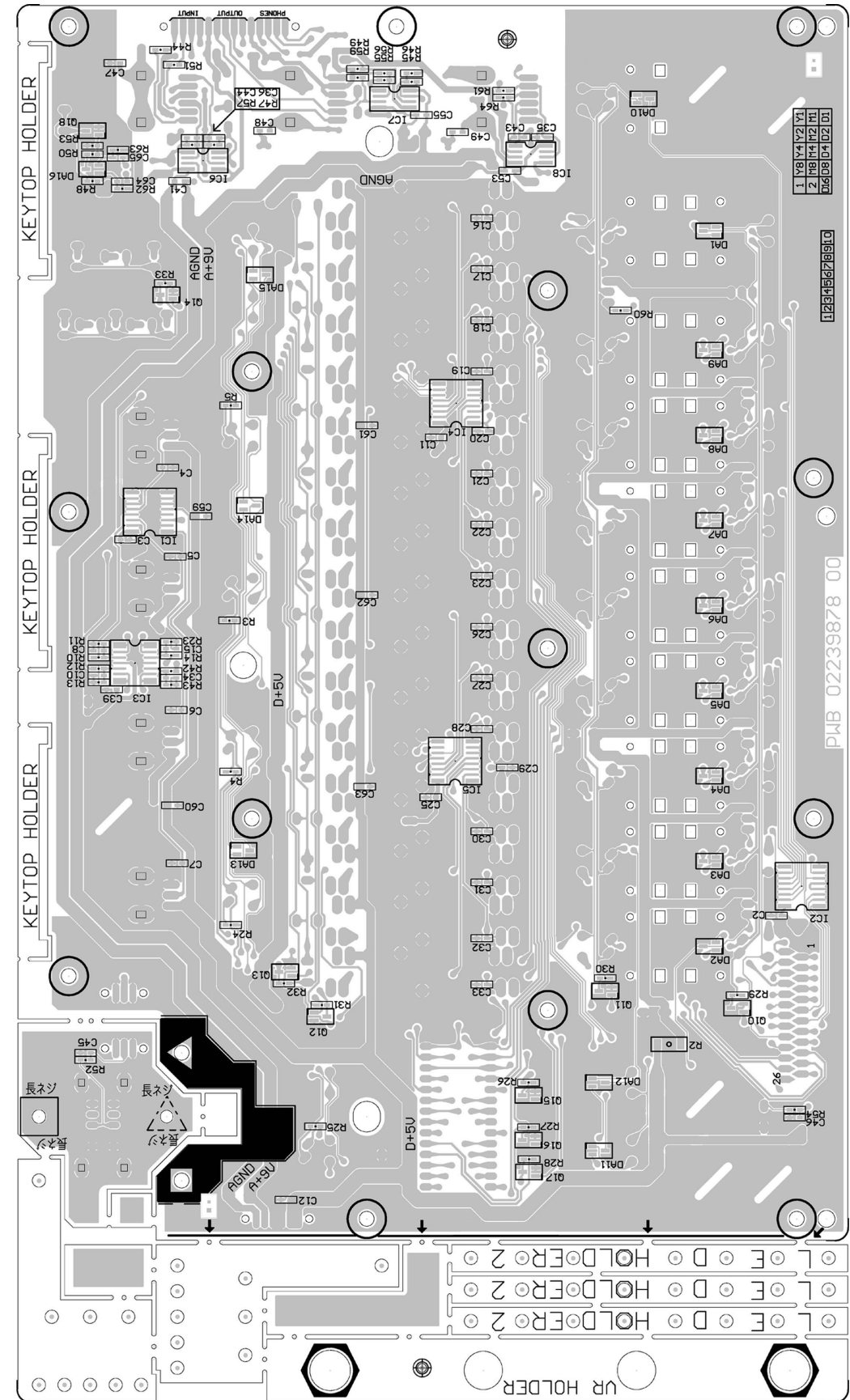
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A CIRCUIT BOARD PANEL BOARD ASSY (71673478)

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



View from components side



View from foil side

ERROR MESSAGES

An error message will be displayed if the EF-303 is operated incorrectly, or if it is unable to perform an operation successfully. Take the appropriate action for the error message that appears.



Cause : Too many MIDI messages were received all at once, and the EF-303 was unable to process them.
Action : Reduce the amount of recorded data that is being sent to the EF-303.



Cause : There is a problem with the MIDI cable connection.
Action : Check to make sure the MIDI cable has not been disconnected or severed.



Cause : An exclusive message with an incorrect checksum value was received.
Action : Correct the checksum value.



Cause : An exclusive message with an incorrect format was received.
Action : Check the transmitted data, and perform the operation once again. Also make sure that the MIDI cable has not been disconnected or broken.



Cause : The contents of internal memory may have become corrupted.
Action : Try carrying out a factory reset. If this does not resolve the problem, replace with the new Main Board Assy.