

GUITAR AMPLIFIER

DG80-112

SERVICE MANUAL



■ CONTENTS

SPECIFICATIONS	3
PANEL LAYOUT	4
CIRCUIT BOARD LAYOUT	5
BLOCK DIAGRAM	6
DISASSEMBLY PROCEDURE	6
LSI PIN DESCRIPTION	9
IC BLOCK DIAGRAM	12
CIRCUIT BOARDS	14
TEST PROGRAM	18
ERROR MESSAGES	21
MIDI IMPLEMENTATION CHART	22
PARTS LIST	

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: This presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss.)

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

LITHIUM BATTERY HANDLING

This product uses a lithium battery for memory back-up.

WARNING: Lithium batteries are dangerous because they can be exploded by improper handling. Observe the following precautions when handling or replacing lithium batteries.

- Leave lithium battery replacement to qualified service personnel.
- Always replace with batteries of the same type.
- When installing on the PC board by soldering, solder using the connection terminals provided on the battery cells.
- Never solder directly to the cells. Perform the soldering as quickly as possible.
- Never reverse the battery polarities when installing.
- Do not short the batteries.
- Do not attempt to recharge these batteries.
- Do not disassemble the batteries.
- Never heat batteries or throw them into fire.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

WARNING

Explosionsfara vid felaktigt batteribyte.

Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.

Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.

Hävittä käytetty paristo valmistajan ohjeiden mukaisesti.

The following information complies with Dutch Official Gazette 1995. 45; ESSENTIALS OF ORDER ON THE COLLECTION OF BATTERIES.

- Please refer to the disassembly procedure for the removal of Back-up Battery.
- Leest u voor het verwijderen van de backup batterij deze beschrijving.

WARNING: CHEMICAL CONTENT NOTICE!


The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

■ SPECIFICATIONS

Digital Section

Complete Digital Signal Processing
 Internal 8 Channel Preset
 Digital Reverb (SPRING, HALL, PLATE)
 Digital Tape Echo
 Speaker Simulator (LINE OUT)



Analog Section

80 W (8 Ω) Solid State Power Amp
 30 cm Speaker (Celestion G12H100) x 1

MIDI Function

Receive : Program change, Control Change (No. 7, 91, 94), Bulk In
Transmit : Bulk Out, Merge Out

Controller/Switch

Front Panel : TRIM, OUTPUT, GAIN, MASTER, TREBLE, HIGH MID, LOW MID, BASS (TIME), PRESENCE (FEED BACK), REVERB (LEVEL)
Rear Panel : LINE OUT volume, EFFECT BLEND
Switch : AMP SELECT (LEAD1, LEAD2, DRIVE1, DRIVE2, CRUNCH1, CRUNCH2, CLEAN1, CLEAN2), REVERB, MODE, , , STORE, RECALL

Display

AMP SELECT display LED x 8
 MODE display LED x 3
 REVERB type display x 3
 7 segment LED x 2 digits

Indicator

Trim Level Display LED (Green)
 Trim Clip Display LED (Red)

Connection Jacks

INPUT HIGH/LOW: Standard Phone Mono Jack
 SPEAKER x2: Standard Phone Mono Jack
 EFFECT SEND/RETURN: Standard Phone Mono Jack
 LINE OUT: Cannon Jack
 MIDI IN, MIDI OUT: 5 pin DIN

A/D Converter 20 bit

D/A Converter 20 bit

Sampling Frequency 48 kHz

Memory Number 128

Input Level/Impedance

INPUT HIGH: -30 dBm (THRU)/1 MΩ
 INPUT LOW: -20 dBm (THRU)/1 MΩ
 EFFECT RETURN: 0 dBm/120 kΩ

Output Level/Impedance

SPEAKER: 80 W RMS/8 Ω, 100 W RMS/4 Ω
 LINE OUT: +4 dBm/600 Ω
 EFFECT SEND: 0 dBm/2.2 kΩ

Power Requirements

U.S. and Canadian models : 120 V, 60 Hz
 General model : 230 V, 50 Hz

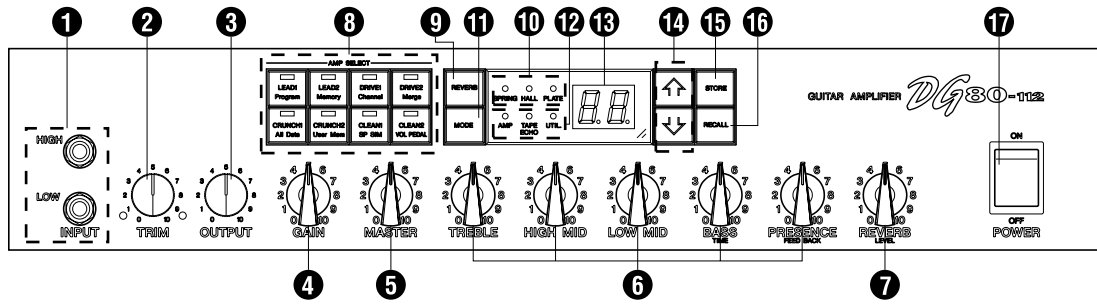
Power Consumption 100 W

Dimensions (W x H x D) 542 x 510 x 284 mm (21.3" x 20.1" x 11.2")

Weight 25.0 kg (55 lbs 2 oz)

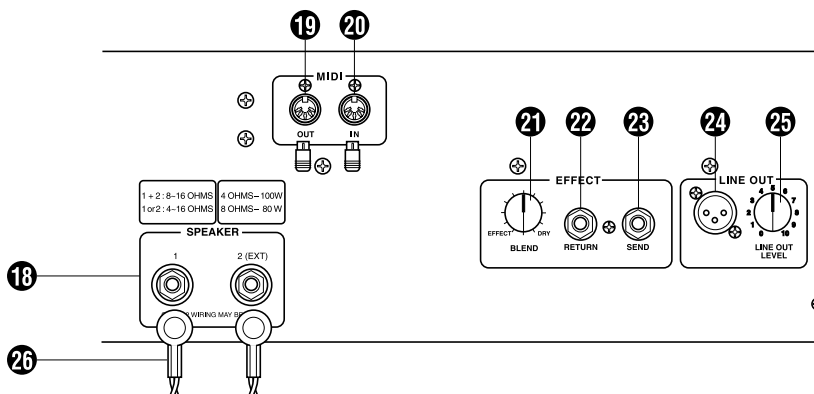
■ PANEL LAYOUT

● Front Panel



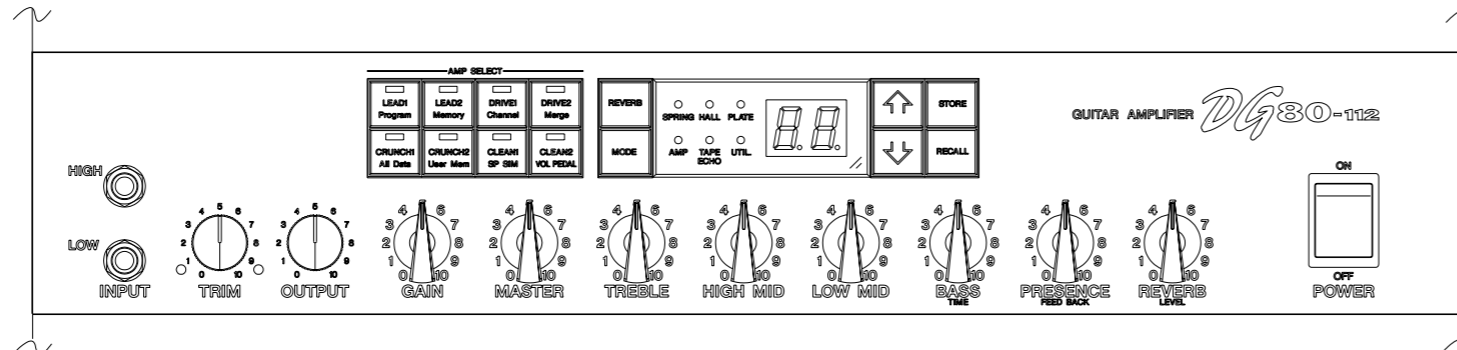
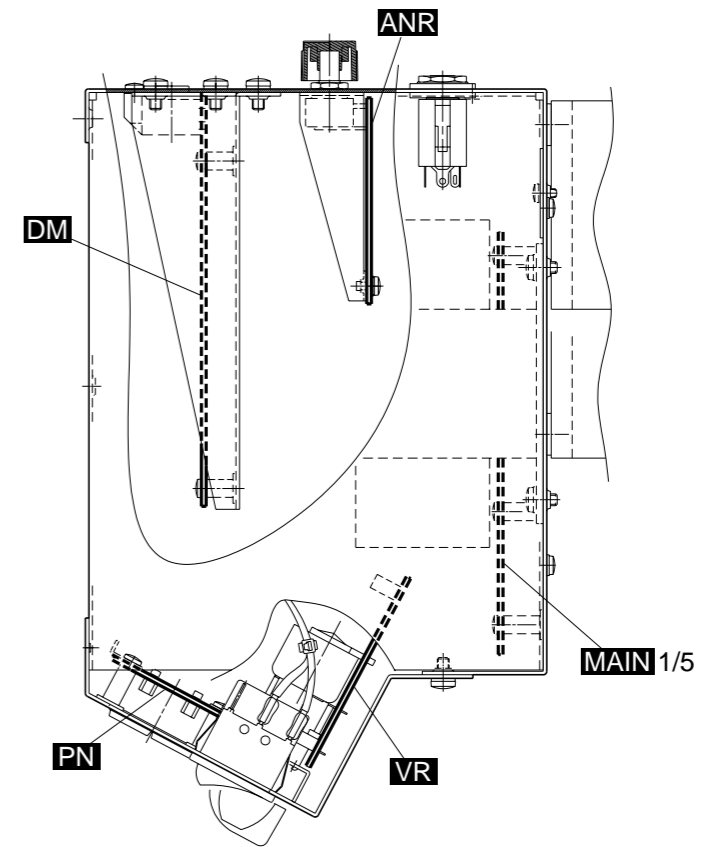
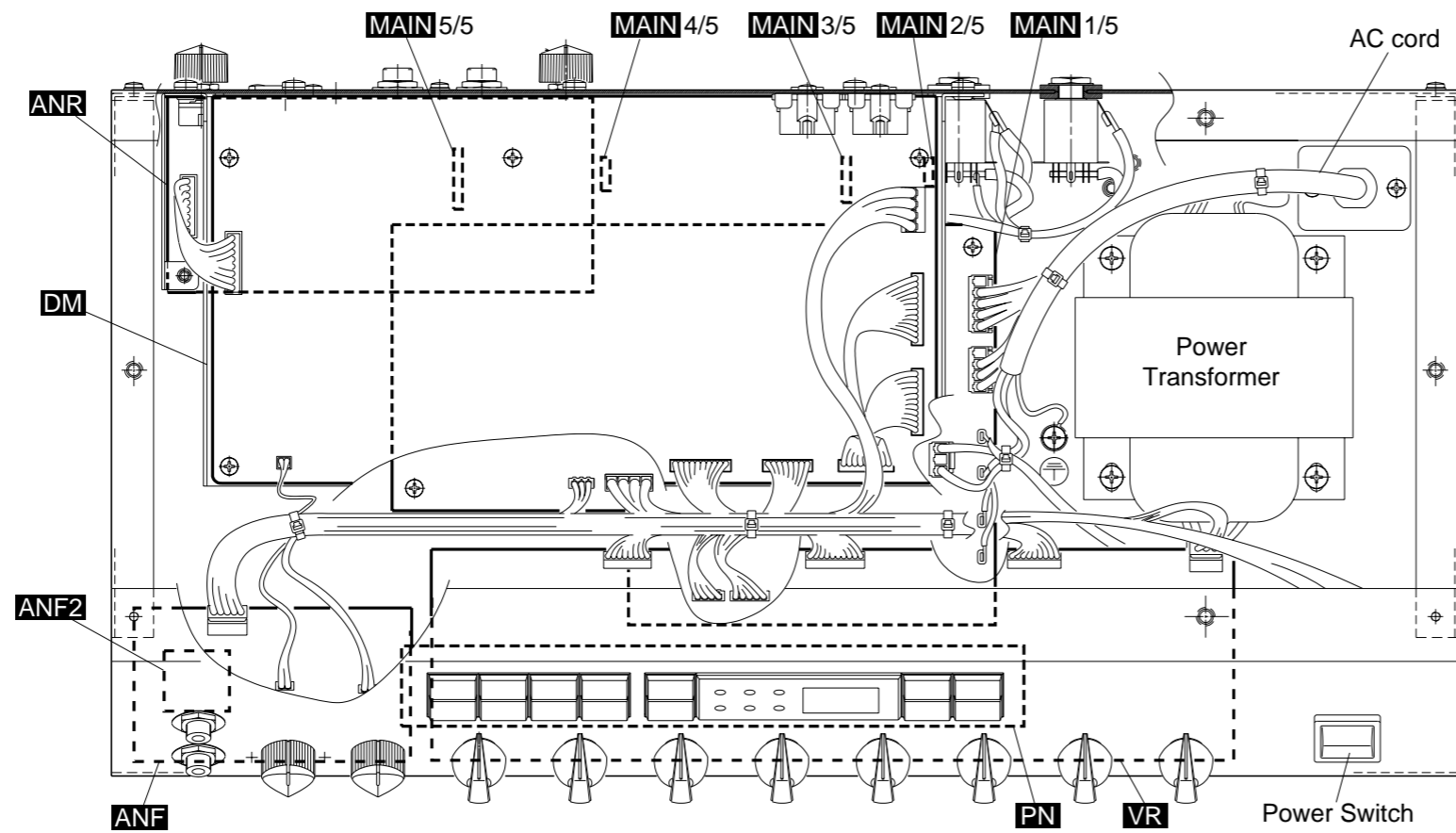
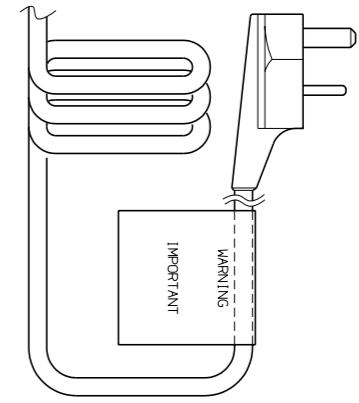
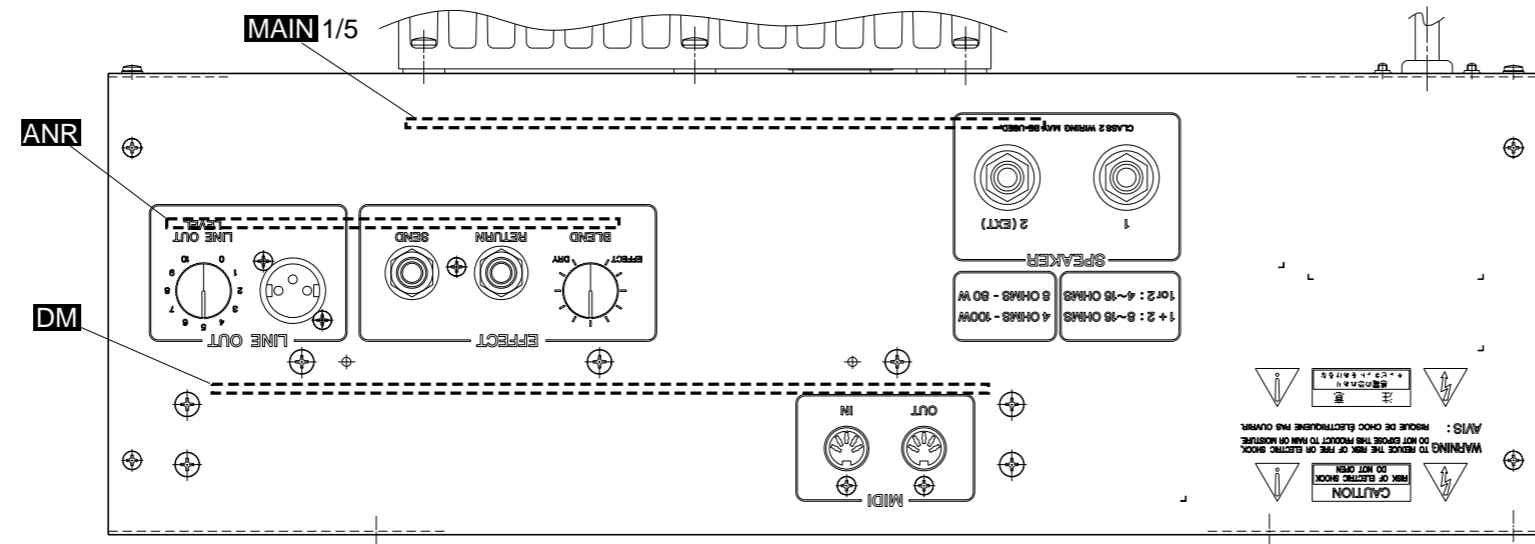
- 1 Input Jacks (INPUT HIGH, LOW)
- 2 Trim Control (TRIM)
- 3 Output Level Control (OUTPUT)
- 4 Gain Volume (GAIN)
- 5 Master Volume (MASTER)
- 6 Tone Controls (TREBLE, HIGH MID, LOW MID, BASS, PRESENCE)
- 7 Reverb Volume (REVERB)
- 8 Amp Select Button/Amp Select Display (LEAD 1, 2/DRIVE 1, 2/CRUNCH 1, 2/CLEAN 1, 2)
- 9 Reverb Type Select Button (REVERB)
- 10 Reverb Type Display Lamp (SPRING, HALL, PLATE)
- 11 Mode Select Button (MODE)
- 12 Mode Display Lamp (AMP/TAPE ECHO/UTIL.)
- 13 Display
- 14 Buttons
- 15 Store Button (STORE)
- 16 Recall Button (RECALL)
- 17 Power Switch (POWER)

● Rear Panel

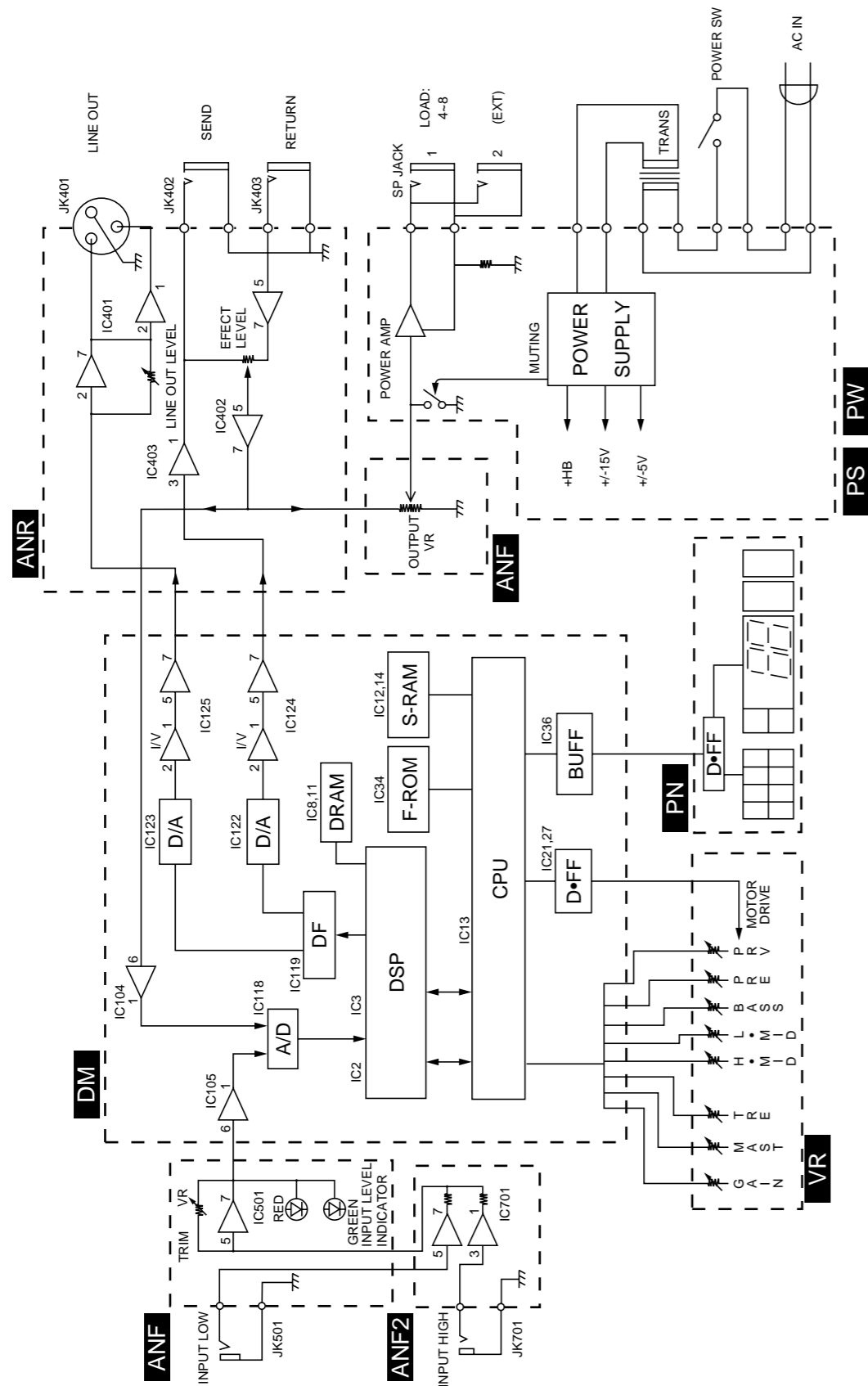


- 18 Speaker Jacks (SPEAKER1, 2 (EXT))
- 19 MIDI OUT Jack
- 20 MIDI IN Jack
- 21 Effect Blend Control (EFFECT BLEND)
- 22 Effect Return Jack (EFFECT RETURN)
- 23 Effect Send Jack (EFFECT SEND)
- 24 Line Out Jack (LINE OUT)
- 25 Line Out Level Control (LINE OUT LEVEL)
- 26 Speaker Plug

■ CIRCUIT BOARD LAYOUT



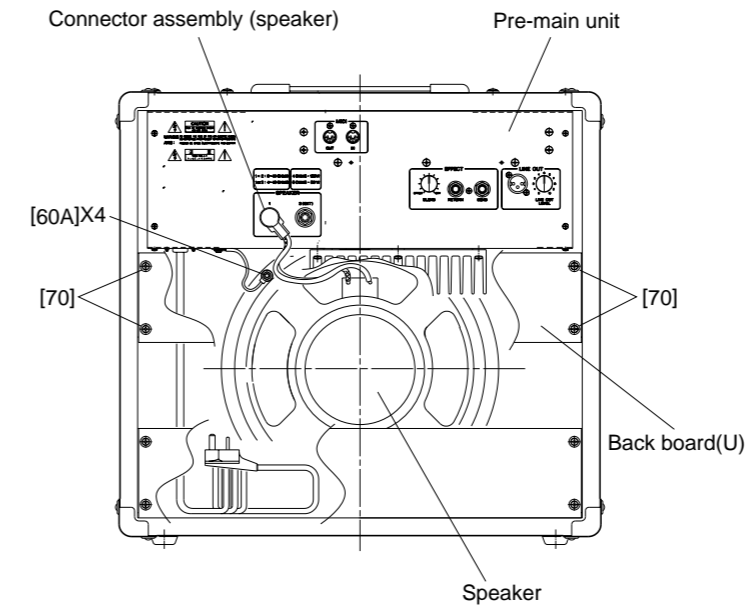
■ BLOCK DIAGRAM



KEC-54160

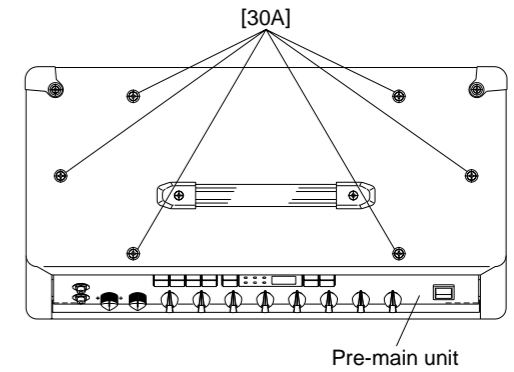
■ DISASSEMBLY PROCEDURE

1. **Pre-Main Unit**
 - 1-1 Remove the four (4) screws marked [70]. The back board (U) can then be removed. (Fig. 1)
 - 1-2 Remove the plug of the connector assembly (speaker) located on the rear panel and the six (6) screws marked [30A]. The pre-main unit can then be removed by sliding it backward. (Fig. 1, Fig. 2)
2. **Speaker**
 - 2-1 Remove the pre-main unit. (See Procedure 1.)
 - 2-2 Remove the four (4) hexagonal nuts with flanges marked [60A]. The speaker can then be removed. (Fig. 1)



- [60]: Hexagonal Nut 5.0 MFC2BL (20040400)
- [70]: Oval Head Tapping Screw-1 4.0X30 MFC2BL (EN240090)

(Fig. 1)



- [30A]: Oval Head Screw 5.0X35 MFC2BL (VP104600)

(Fig. 2)

3. **Front Panel Assembly**

- 3-1 Remove the pre-main unit. (See Procedure 1.)
- 3-2 Remove the five (5) screws marked [30B]. The front panel assembly can then be removed. (Fig. 3)

4. DM Circuit Board

- 4-1 Remove the pre-main unit. (See Procedure 1.)
- 4-2 Remove the two (2) screws marked [150A] and the six (6) screws marked [40c]. The DM circuit board can then be removed. (Fig. 3)

5. Power Transformer

- 5-1 Remove the pre-main unit. (See Procedure 1.)
- 5-2 Remove the four (4) screws marked [80]. The Transformer can then be removed. (Fig. 3)

6. ANR Circuit Board

- 6-1 Remove the pre-main unit. (See Procedure 1.)
- 6-2 Remove the two (2) screws marked [150A] and the seven (7) screws marked [50]. The DM circuit board assembly can then be removed. (Fig. 3)
- 6-3 Remove the screw marked [30C], the two (2) screws marked [40], the two (2) knobs marked [60B] and the two (2) hexagonal nuts marked [A]. The ANR circuit board assembly can then be removed. (Fig. 3)
- 6-4 Remove the two (2) screws marked [20d]. The ANR circuit board can then be removed from the ANR circuit board assembly. (Fig. 3)

7. Main (1/5-2/5) Circuit Board

- 7-1 Remove the pre-main unit. (See Procedure 1.)
- 7-2 Remove the front panel assembly. (See Procedure 3.)
- 7-3 Remove the DM circuit board assembly. (See Procedure 6-2.)
- 7-4 Remove the ANR circuit board assembly. (See Procedure 6-3.)
- 7-5 Each circuit board can then be removed in its manner as below.

Main 1/5 Circuit Board

Remove the six (6) screws marked [60C]. The main 1/5 circuit board can then be removed. (Fig. 4)

Main 2/5 Circuit Board

Remove the screw marked [150B]. The main 2/5 circuit board can then be removed. (Fig. 4)

Main 3/5 Circuit Board

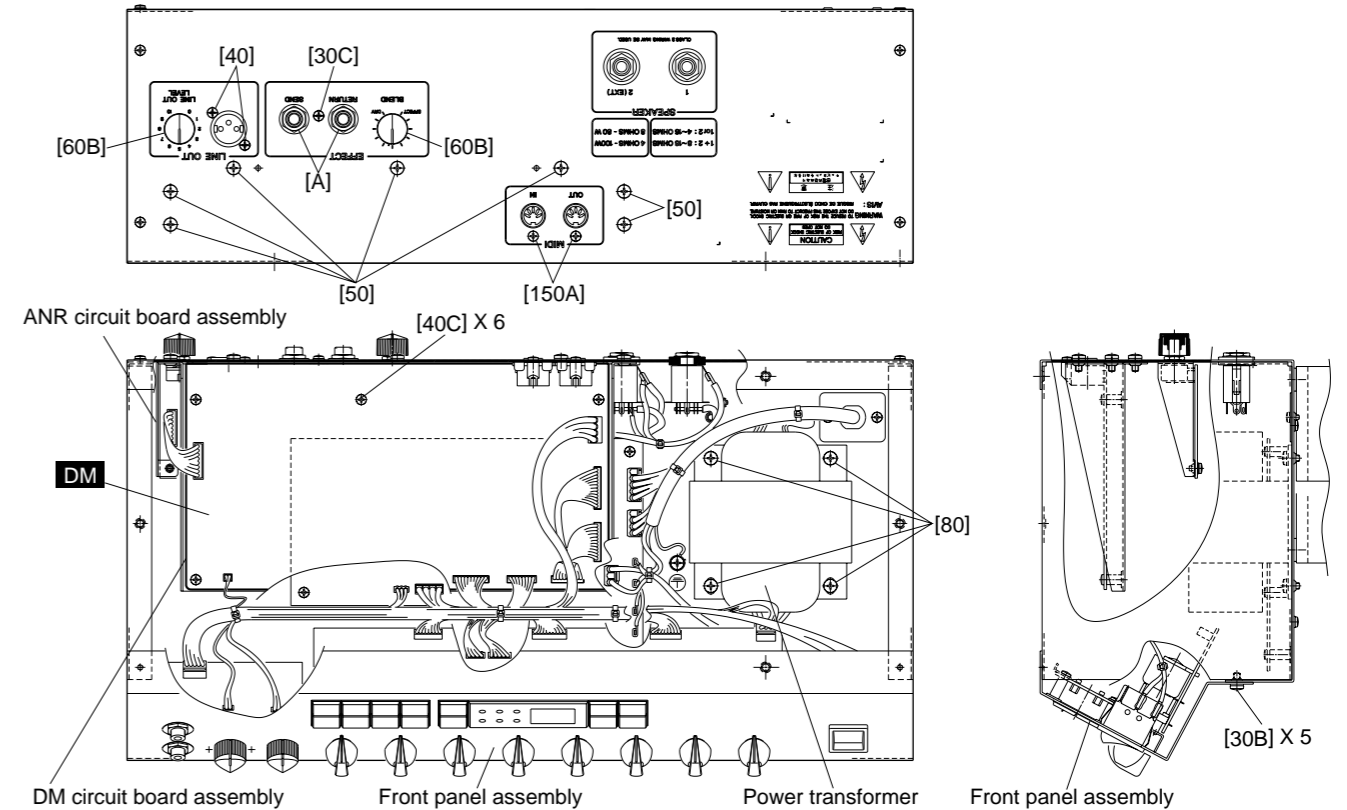
Remove the screw marked [150C]. The main 3/5 circuit board can then be removed. (Fig. 4)

Main 4/5 Circuit Board

Remove the screw marked [150D]. The main 4/5 circuit board can then be removed. (Fig. 4)

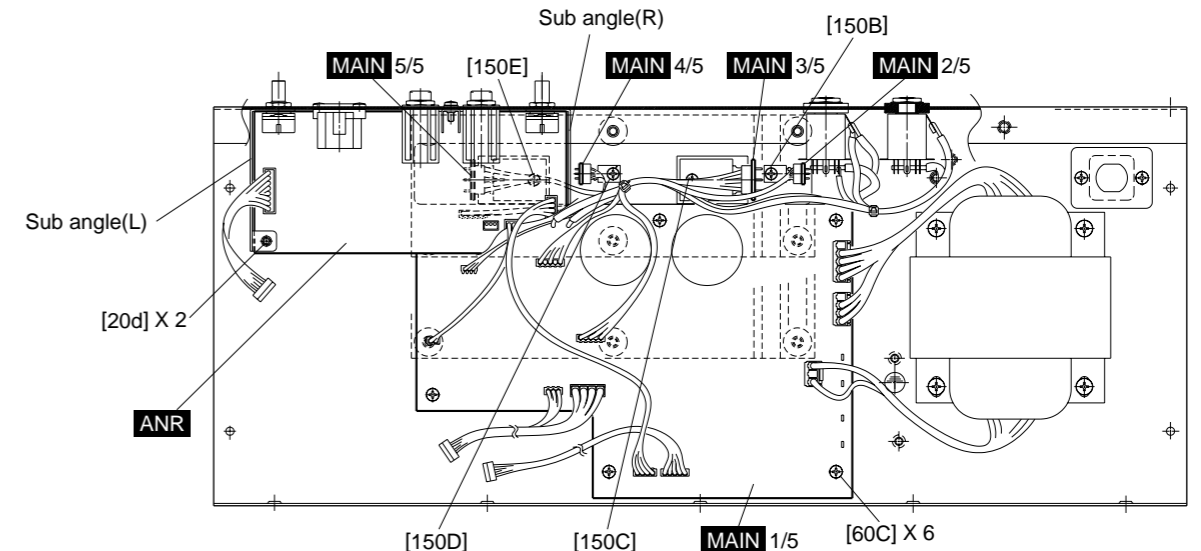
Main 5/5 Circuit Board

Remove the screw marked [150E]. The main 5/5 circuit board can then be removed. (Fig. 4)



- [30B]: Bind Head Screw A4.0X8 MFZN2BL (VP156800)
- [30C]: Bind Head Screw A3.0X8 MFZN2BL (VP156700)
- [40]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)
- [40c]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [50]: Bind Head Screw A4.0X8 MFZN2BL (VP156800)
- [80]: Bind Head Screw A4.0X8 MFZN2BL (VP156800)
- [150A,B]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)

(Fig. 3)



- [20d]: Pan Head Screw SP3.0X8 MFZN2Y (EK400500)
- [60C]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [150B-E]: Pan Head Screw SP3.0X12 MFZN2Y (EL200070)

(Fig. 4)

8. PN Circuit Board

- 8-1 Remove the pre-main unit. (See Procedure 1.)
- 8-2 Remove the front panel assembly. (See Procedure 3.)
- 8-3 Remove the six (6) screws marked [90]. The PN circuit board assembly can then be removed. (Fig. 5)
- 8-4 Remove the seven (7) top cap assemblies from the PN circuit board assembly.

9. ANF Circuit Board

- 9-1 Remove the pre-main unit. (See Procedure 1.)
- 9-2 Remove the front panel assembly. (See Procedure 3.)
- 9-3 Remove the two (2) knobs marked [110], the two (2) hexagonal nuts marked [B] and the hexagonal nut marked [120A]. The ANF circuit board can then be removed. (Fig. 5)

10. ANF2 Circuit Board

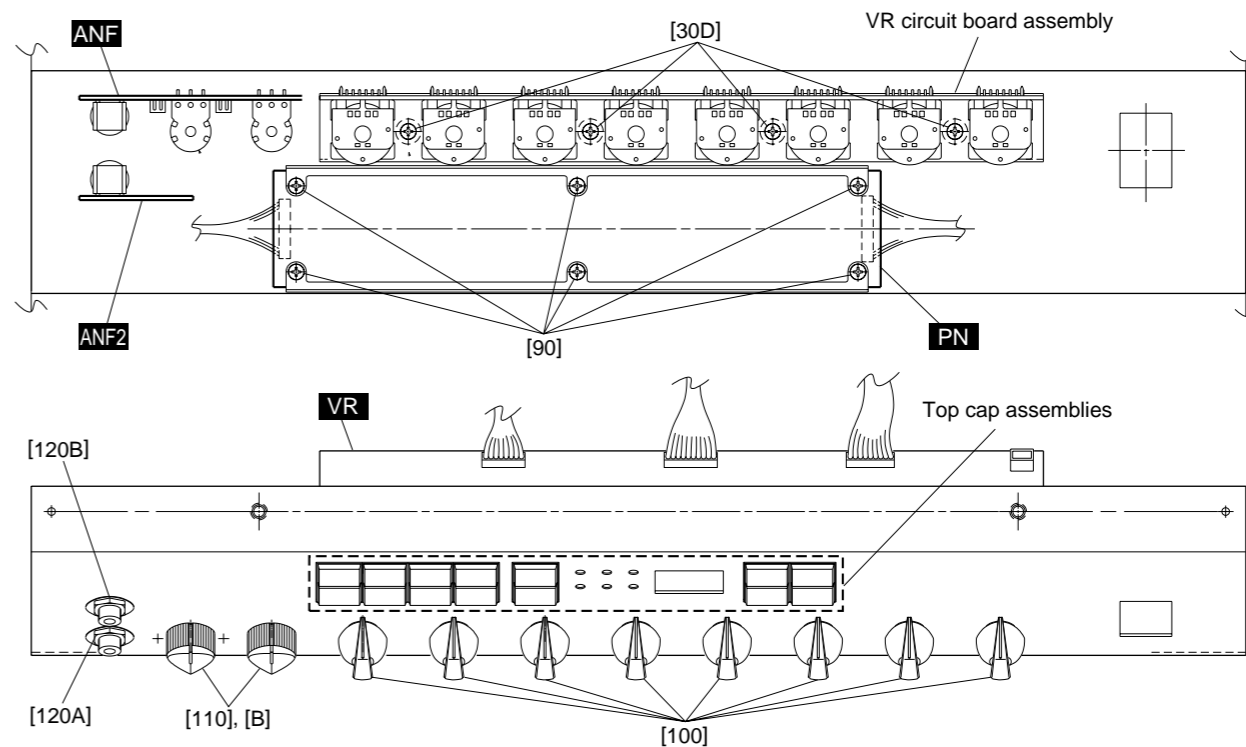
- 10-1 Remove the pre-main unit. (See Procedure 1.)
- 10-2 Remove the hexagonal nut marked [120B]. The ANF2 circuit board can then be removed. (Fig. 5)

11. VR Circuit Board

- 11-1 Remove the pre-main unit. (See Procedure 1.)
- 11-2 Remove the front panel assembly. (See Procedure 3.)
- 11-3 Remove the eight (8) knobs marked [100] and the four (4) screws marked [30D]. The VR circuit board assembly can then be removed. (Fig. 5)
- 11-4 Remove the eight (8) hexagonal nuts marked [C]. The VR circuit board can then be removed from the VR circuit board assembly. (Fig. 6)

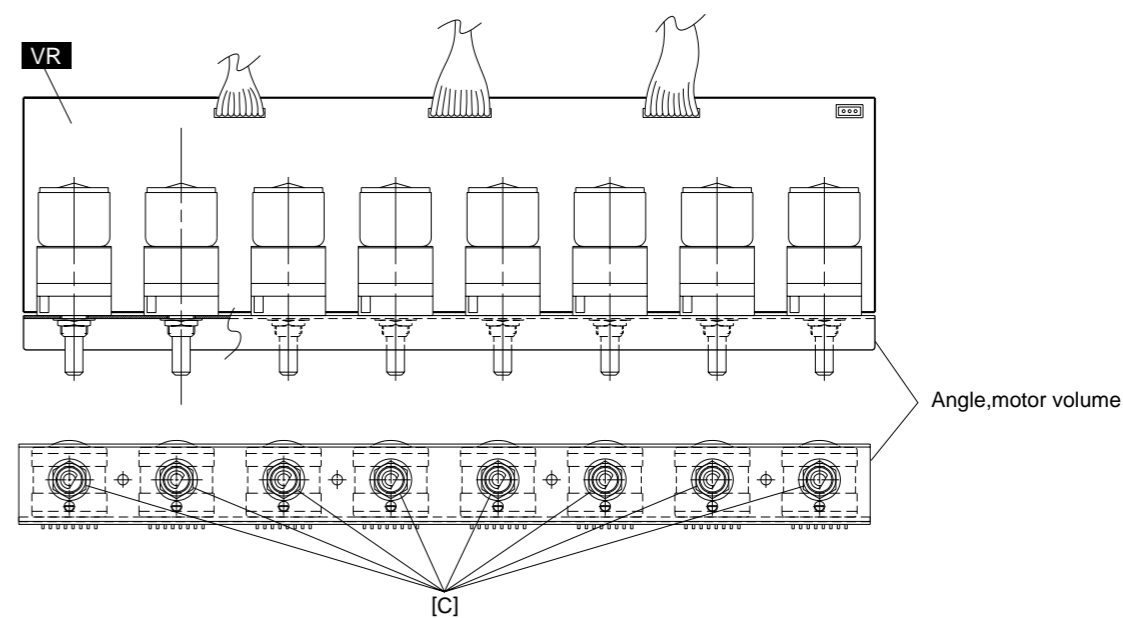
12. Replacement of The Lithium Battery

- 12-1 Remove the pre-main unit. (See Procedure 1.)
- 12-2 The lithium battery marked [D], on the DM circuit board, can be replaced.



- [30D]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [90]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [120A,B]:Hexagonal Nut 9.0X12X2 MFNI33 (LX200060)

(Fig. 5)



(Fig. 6)

Battery VS246400
 VS246300(Battery holder for VS246400)

- Notice for back-up battery removal
 Push against the holder hook, then the battery will pop up.
- Druk tegen de houder, de batterij springt dan naar voren.

Battery [D]
 Battery holder

LSI PIN DESCRIPTION

● HD6413002FP16 (XQ375A00) CPU <H8/3002>

DM : IC13

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION	
1	PA6	O	Port A Address bus Power supply	51	A12	O	Address bus	
2	PA7	O		52	A13	O		
3	VCC			53	A14	O		
4	PB0	I	Port B	54	A15	O		
5	PB1	I		55	A16	O		
6	PB2	I		56	A17	O		
7	PB3	I		57	A18	O		
8	PB4	I		58	A19	O		
9	PB5	I		59	VSS		Ground	
10	PB6//DREQ0	I	Reset Ground	60	P60//WAIT	I	Port 6	
11	PB7//DREQ1	I		61	P61//BREQ	I		
12	/RESO	O		62	P62//BACK	I		
13	VSS			63	∅	O	∅ out	
14	P90/TXD0	O	Transmit data (MIDI OUT)	64	/STBY	I	Stand-by mode signal	
15	P91/TXD1	O	KSN-ACK	65	/RES	I	Reset	
16	P92/RXD0	I	Receive data (MIDI IN)	66	NMI	I	Non-maskable interrupt	
17	P93/RXD1	I	KSN-RX	67	VSS		Ground	
18	P94/SCK0	O	Port 9	68	EXTAL	I	Clock	
19	P95/SCK1	I	Port 9	69	XTAL	O	Clock	
20	P40/D0	I/O	Data bus	70	VCC		Power supply	
21	P41/D1	I/O			71	/AS	O	Address strobe
22	P42/D2	I/O			72	/RD	O	Read strobe
23	P43/D3	I/O			73	/HWR	O	Write strobe (High)
24	VSS			(Ground)	74	/LWR	O	Write strobe (Low)
25	P44/D4	I/O			75	MD0	I	Mode select
26	P45/D5	I/O			76	MD1	I	
27	P46/D6	I/O			77	MD2	I	
28	P47/D7	I/O			78	AVCC		Analog power supply
29	D8	I/O			79	VREF	I	Reference voltage
30	D9	I/O		80	P70/AN0	I	Analog data input (EQ)	
31	D10	I/O		81	P71/AN1	I	Analog input (EQ)	
32	D11	I/O		82	P72/AN2	I	Analog data input	
33	D12	I/O		83	P73/AN3	I	Analog input (CS)	
34	D13	I/O		84	P74/AN4	I	Analog data input (BEND)	
35	D14	I/O		85	P75/AN5	I	Analog input (MOD)	
36	D15	I/O		86	P76/AN6	I	Analog input (FC)	
37	VCC		Power supply	87	P77/AN7	I	Analog input (BAT)	
38	A0	O	Address bus	88	AVSS		Analog ground	
39	A1	O			89	P80	O	Port 8
40	A2	O			90	P81//CS3	O	Chip select
41	A3	O			91	P82//CS2	O	
42	A4	O			92	P83//CS1	O	
43	A5	O			93	P84//CS0	O	
44	A6	O			94	VSS		Ground
45	A7	O		95	PA0	I	Port A	
46	VSS		(Ground)	96	PA1	I		
47	A8	O		97	PA2	I		
48	A9	O		98	PA3	O		
49	A10	O		99	PA4	O		
50	A11	O		100	PA5	O		

● YSS228E-F (XQ962D00) DSP3 (Digital Signal Processor) DM : IC2, 3

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION																
1	VSS		Ground	81	VSS	I/O	Ground																
2	XI	I	System master clock input (60 M or30 MHz)	82	DB13	I/O	}																
3	XO		System master clock input (60 M or30 MHz)	83	DB14	I/O																	
4	VDD		Power supply	84	DB15	I/O																	
5	/SYNCl	I	System synch. input	85	DB16	I/O																	
6	/SYNCO	O	System synch. output	86	DB17	I/O																	
7	CKI	I	System clock input (30 MHz)	87	DB18	I/O																	
8	CKO	O	System clock output (30 MHz)	88	DB19	I/O																	
9	CKSL	I	System master clock select (0:60 M,1:30 MHz)	89	DB20	I/O																	
10	VSS		Ground	90	DB21	I/O																	
11	MCKS	I	Master clock for serial I/O(128 xFs)	91	DB22	I/O		}															
12	/SSYNCl	I	Synch. signal for serial I/O	92	DB23	I/O																	
13	/IC	I	Initial clear	93	DB24	I/O																	
14	/TEST	I	Test mode setting	94	DB25	I/O																	
15	BTYP	I	CPU data bus 8/16 bit select(0:8,1:16)	95	DB26	I/O																	
16	/IRQ	O	Interrupt request	96	DB27	I/O																	
17	TRIG	I/O	Trigger signal	97	DB28	I/O																	
18	VDD		Power supply	98	DB29	I/O																	
19	VSS		Ground	99	DB30	I/O																	
20	/CS	I	Chip select	100	DB31	I/O																	
21	/DS	I	Data strobe	101	TIMO/DBOE	I/O	}																
22	R/W	I	Read/Write select	102	VSS			Timing signal/Parallel data bus control															
23	CA7	I	}	103	VDD		}																
24	CA6	I		CPU address bus	104	DA00		I/O	}														
25	CA5	I			105	DA01	I/O	}															
26	CA4	I			106	DA02	I/O		}														
27	CA3	I			107	DA03	I/O	}															
28	CA2	I			108	DA04	I/O		}														
29	CA1	I			109	DA05	I/O	}															
30	CA0/CD15	I/O	CPU address/data bus		110	DA06	I/O		}														
31	CD14	I/O	}	111	DA07	I/O	External memory data bus																
32	CD13	I/O		}	112	DA08		I/O															
33	CD12	I/O			}	113		DA09		I/O													
34	CD11	I/O				}		114		DA10	I/O												
35	CD10	I/O						}		115	DA11	I/O											
36	CD09	I/O								}	116	DA12	I/O										
37	CD08	I/O									}	117	DA13	I/O									
38	CD07	I/O										}	118	DA14	I/O								
39	CD06	I/O											}	119	DA15	I/O							
40	VSS								Ground					120	VSS		}						
41	VDD		Power supply				121		VDD						Ground								
42	CD05	I/O	}	122			DA16		I/O					}									
43	CD04	I/O		}	123		DA17		I/O						}								
44	CD03	I/O			}	124	DA18		I/O							}							
45	CD02	I/O				}	125	DA19	I/O								}						
46	CD01	I/O					}	126	DA20	I/O								}					
47	CD00	I/O						}	127	DA21	I/O								}				
48	/DTACK	O							DTACK signal output	128	DA22	I/O								}			
49	SI0	I							}	129	DA23	I/O	}										
50	SI1	I								}	130	DA24									I/O	}	
51	SI2	I									}	131									DA25		I/O
52	SI3	I	}									132		DA26							I/O		}
53	SI4	I		}								133		DA27	I/O						}		
54	SI5	I			}							134		DA28	I/O	}							
55	SI6	I				}						135		DA29	I/O		}						
56	SI7	I					}					136		DA30	I/O			}					
57	VSS							Ground				137		DA31	I/O				}				
58	VDD							Power supply				138		VDD						}			
59	SO0	O						}	139			VSS		}									
60	SO1	O							}	140		A00	O		}								
61	SO2	O								}	141	A01	O									}	
62	SO3	O	}								142	A02	O										}
63	SO4	O		}							143	A03	O								}		
64	SO5	O			}						144	A04	O			}							
65	SO6	O				}					145	A05	O				}						
66	SO7	O					}				146	A06	O					}					
67	DB00	I/O									}	147	A07						O				
68	DB01	I/O										}	148						A08	O			
69	DB02	I/O						}					149	A09					O	}			
70	DB03	I/O							}				150	A10	O				}				
71	DB04	I/O								}			151	A11	O							}	
72	DB05	I/O	}										152	A12	O								}
73	DB06	I/O		}									153	A13	O						}		
74	DB07	I/O			}								154	A14	O	}							
75	DB08	I/O				}							155	A15/RAS	O		}						
76	DB09	I/O					}						156	A16/CAS	O			}					
77	DB10	I/O									}		157	A17/CE	O								
78	DB11	I/O										}	158	/WE	O								
79	DB12	I/O						}					159	/OE	O					}			
80	VDD								Power supply				160	VDD					External memory address bus/Row address strobe				
															External memory address bus/Column address strobe								
														External memory address bus/Chip enable									
													External memory write enable										
										External memory output enable													
									Power supply														

● YSF210-M (XK280A00) Digital Filter

DM : IC119

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION																												
1	XO	O	} System clock	13	OBIT1	I	} Output bit selection																												
2	XI	I		14	OBIT2	I																													
3	VSS2	I	Ground				<table border="1"> <tr> <td></td> <td>22 bit</td> <td>20 bit</td> <td>18 bit</td> <td>16 bit</td> <td>AV DSP</td> <td>MEL</td> </tr> <tr> <td>OBIT 1</td> <td>H</td> <td>L</td> <td>H</td> <td>L</td> <td>H</td> <td>H</td> </tr> <tr> <td>OBIT 2</td> <td>H</td> <td>H</td> <td>L</td> <td>L</td> <td>H</td> <td>H</td> </tr> <tr> <td>OBIT 3</td> <td>H</td> <td>H</td> <td>H</td> <td>H</td> <td>L</td> <td>L</td> </tr> </table>		22 bit	20 bit	18 bit	16 bit	AV DSP	MEL	OBIT 1	H	L	H	L	H	H	OBIT 2	H	H	L	L	H	H	OBIT 3	H	H	H	H	L	L
	22 bit	20 bit	18 bit	16 bit	AV DSP	MEL																													
OBIT 1	H	L	H	L	H	H																													
OBIT 2	H	H	L	L	H	H																													
OBIT 3	H	H	H	H	L	L																													
4	BCI	I	Bit clock	15	NC	-	No connection																												
5	SDSY	I	L/R select and input timing	16	ASY	I	Synchronous/Asynchronous system clock section																												
6	IBIT1	I	} Input bit selection	17	VSS1	I	Ground																												
7	IBIT2	I		18	BCO	O	Bit clock of DLO, DRO																												
8	IBIT3	I		19	WCO	O	Word clock of DLO, DRO																												
9	MUTE	I	Mute	20	SHL	O	Deglich signal of L/R channel																												
10	NC	-	No connection	21	DRO	O	Output data of R channel																												
11	SDI	I	Input data	22	NC	-	No connection																												
12	VDD2	I	Power supply	23	DLO	O	Output data of L channel																												
				24	VDD1	O	Power supply																												

● AK5390-VP (XQ199A00) ADC (Analog.Digita Converter)

DM : IC118

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	AGND	I	Analog ground	15	SDATA	O	Serial data output
2	APD	I		16	FSYNC	I/O	Frame synch. clock
3	AINL+	I	Analog signal input (L channel -)	17	VD+	I	Digital power supply (+)
4	AINL-	I	Analog signal input (L channel +)	18	DGND	I	Digital ground
5	ACAL	I	Analog calibration	19	CLK	I	Master clock
6	LGND	I	Analog logic ground	20	OCLK	O	128 fs clock output
7	VL+	I	Analog logic power supply	21	NC	-	
8	NC	-		22	ICLK	I	128 fs clock input
9	DACL	O	Digital calibration	23	VA+	I	Analog power supply (+)
10	DPD	I	Digital power down	24	VA-	I	Analog power supply (-)
11	CMODE	I	Master clock select (L: CLK=256 fs, H:CLK=384 fs)	25	AINR-	I	Analog signal input (R channel -)
12	SMODE	I	Interface clock select (L: slave mode, H: master mode)	26	AINR+	I	Analog signal input (R channel +)
13	L/R	I/O	Input channel select	27	VREF-	O	Reference voltage (-)
14	SCLK	I/O	Serial data clock	28	VREF+	O	Reference voltage (+)

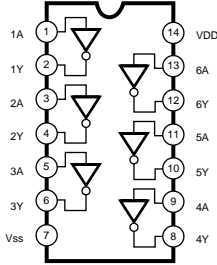
● PCM1702P (XN136A00) DAC (Digital to Analog Converter)

DM : IC122, 123

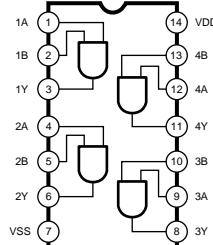
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DATA	I	Serial data input	9	+Vcc	I	Analog power supply (+5 V)
2	CLOCK	I	Bit clock	10	BPO DC	I/O	BPO decouple
3	+Vdd	I	Digital power supply (+5 V)	11	I OUT	O	Current output
4	DGND	I	Digital ground	12	AGND	I	Analog ground
5	-Vdd	I	Digital power supply (-5 V)	13	AGND	I	Analog ground
6	LE	I	Latch enable	14	SERVO DC	I/O	Servo decouple
7	NC	-	Reserved	15	REF DC	I/O	Ref. decouple
8	NC	-	Reserved	16	-Vcc	I	Analog power supply (-5 V)

IC BLOCK DIAGRAM

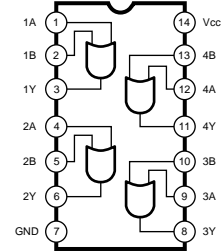
- **TCHCU04AF-TP1(XD660A00)**
Hex Inverter
DM : IC 101



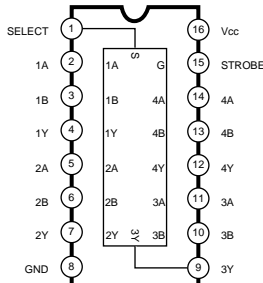
- **SN74HC08NSR(XD831A00)**
Quad 2 Input AND
DM : IC 33



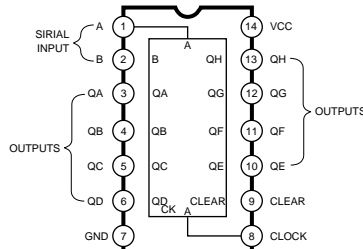
- **TC74VHC32F(XN963A00)**
Quad 2 Input OR
DM : IC 28, 29



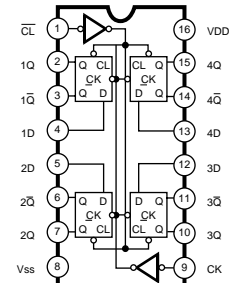
- **TC74HC157AF-TP1(XH603A00)**
Quad 2 to 1 Multiplexer
DM : IC 18



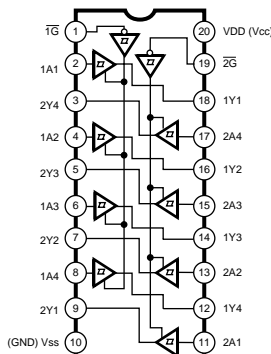
- **TC74HC164AF(XQ967A00)**
8-Bit Shift Register
DM : IC 110



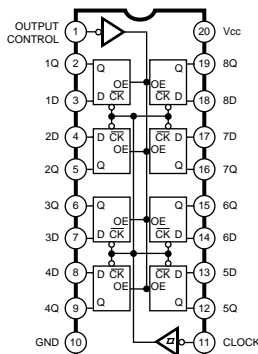
- **TC74HC175AF-TP1(XD658A00)**
Quad D-Type Flip-Flop
DM : IC 117



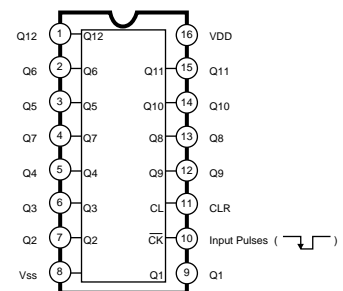
- **SN74HC244NSR(XD233A00)**
Octal 3-State Bus Buffer
DM : IC 35, 36



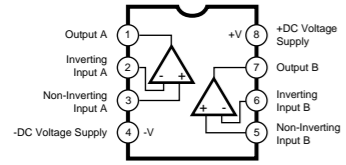
- **SN74HC374ANSR(XQ042A00)**
Octal 3-State D-Type Flip-Flop
DM : IC 21, 27
DN : IC 202 - 205



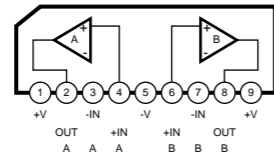
- **TC74HC4040F(XR684A00)**
12-Stage Binary Ripple Counter
DM : IC 102



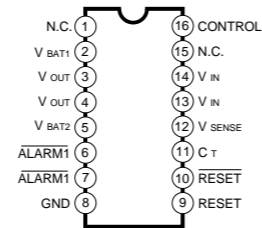
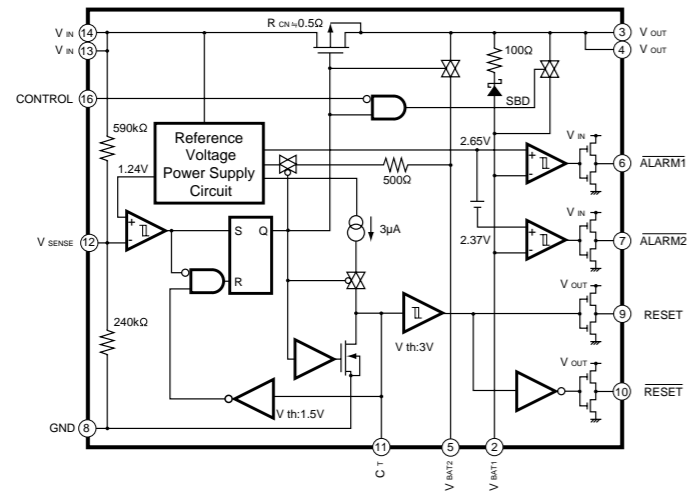
- **NE5532P(IG102500)**
Dual Operational Amplifier
DM : IC 104, 105, 124, 125



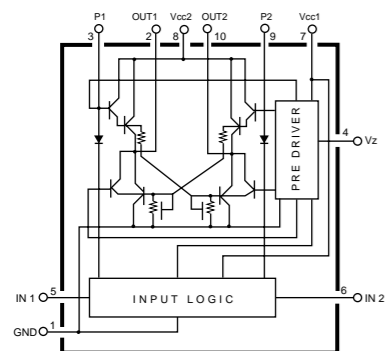
- **NJM072D(IG107000)**
Dual Operational Amplifier
ANF : IC 501 ANF2 : IC 701
ANR : IC 401 – 403



- **MB3790PF(XR967A00)**
ASSP
DM : IC 19



- **LB1641(XF494A00)**
Motor Driver
VR : IC 601 – 608



■ TEST PROGRAM

A. SET-UP

1. If no specific frequency is required, set the test frequency at 1 kHz.
2. If no specific TRIM and OUTPUT settings are required, set the volumes of TRIM and OUTPUT at maximum.
3. Before turning the [POWER] switch on, set the Idling Adjustment Volume (VR303, 470 ohms) at minimum.

B. HOW TO ENTER THE TEST PROGRAM

While simultaneously pressing the [MODE], the [REVERB] and the [DRIVE2] switches, turn the [POWER] switch on. The DG80-112 will enter the self test mode.

C. FACTORY PRESET OF RAM

While simultaneously pressing the [LEAD1] and the [RECALL] switches, turn [POWER] switch on. The RAM will be cleared, the factory setting data are restored on the RAM, and the DG80-112 will enter the normal mode.

D. PROCEEDING THROUGH THE TESTS

1. Switch Functions

Increment : test no. select upward
 Decrement : test no. select downward
 RECALL : start of the selected test
 STORE : exit (in case of error)
 LEAD1
 – CLEAN2 : no effect
 REVERB, MODE : no effect

2. LED Display Functions

When the DG80-112 is in the self test mode, the LED display shows the number for the status as below.

Function (status)	LED display	
	upper num.	lower num.
test no. selection	(test no.)	(blank)
test execution	(test no.)	(check no.)
ok	8.	8.
error	E	(error no.)

If the LED displays “**E**” and “(error no.)”, the DG80-112 status can be changed to “test no. selection” by pressing the [STORE] key. When the status has been changed, the LED display shows a next test no.

When the DG80-112 is in “test no. selection”, the test no. can be changed by using the increment and the decrement keys.

E. TEST PROGRAM

(Relay Check)

Check that the relay is switched ON within 2 – 3 minutes after the [POWER] switch is turned on.

(Menu of Test Program)

0. LED Check
1. Switch Check
2. Motor Drive Volume check
3. Volume Center Check
4. Battery Check
5. MIDI Check
6. SRAM Check
7. Flash Memory Erase/Write Check
8. Sound Check
9. TEST END

0. LED Check

(Test Contents)

When the DG80-112 enters the self test mode, the LED Check is started and the LEDs light automatically for the check in the sequence as below.

- All the LEDs light simultaneously.
- All the LEDs go out simultaneously.
- The LEDs light one by one in the sequence as below.

LEAD1 Program
 LEAD2 Memory
 DRIVE1 Channel
 DRIVE2 Merge
 CRUNCH1 All Data
 CRUNCH2 User Mem.
 CLEAN1 SP SIM
 CLEAN2 VOL PEDAL
 SPRING
 HALL
 PLATE
 AMP
 TAPE ECHO
 UTIL.

LED display upper num. top
 LED display upper num. right upper
 LED display upper num. right lower
 LED display upper num. bottom
 LED display upper num. left lower
 LED display upper num. left upper
 LED display upper num. center
 LED display upper num. dot
 LED display lower num. top
 LED display lower num. right upper
 LED display lower num. right lower
 LED display lower num. bottom
 LED display lower num. left lower
 LED display lower num. left upper
 LED display lower num. center
 LED display lower num. dot

- All the LEDs go out simultaneously
- All the LEDs light simultaneously

The LED Check is finished and the DG80-112 selects the next test no., so the LED shows a “**I**”.

(Error Number)

not appearing

1. Switch Check

Press the [RECALL] key when the LED display shows “**I**”. The Switch Check is started and the LED display shows the first check number “**II**”.

(Test Contents)

Press the keys according to the LED display guide in the order as below.

(The Exit function of the [STORE] key is available on the error status.)

- II** LEAD1 Program Switch
- 12** LEAD2 Memory Switch
- 13** DRIVE1 Channel Switch
- 14** DRIVE2 Merge Switch
- 15** CRUNCH1 All Data Switch
- 16** CRUNCH2 User Mem. Switch
- 17** CLEAN1 SP SIM Switch
- 18** CLEAN2 VOL PEDAL Switch
- 19** REVERB Switch
- 1A** MODE Switch
- 1B** Increment Switch
- 1C** Decrement Switch
- 1D** STORE Switch
- 1E** RECALL Switch

When all the LEDs display light simultaneously, the Switch Check is finished. Then the DG80-112 selects the next test no., so the LED display shows a “**2**”.

(Error Number)

E1 – EE

The switch corresponding to the error number has a problem or the wrong switch was pressed.

2. Motor Drive Volume Check

Press the [RECALL] key when the LED display shows “**2**”. The Motor Drive Volume Check is started and the LED display shows the first check number “**2I**”.

(Test Contents)

Once the Motor Drive Check has been started, all the volumes rotate automatically as below.

- 21** to the Minimum
- 22** to the Maximum
- 23** to the Center

When all the LEDs light simultaneously, the Volume Check is finished. Then the DG80-112 selects the next test no., so the LED display shows a “**3**”.

(Error Number)

E0 – E3

If a Motor Drive Volume Check operation has not been finished in 20 seconds, the LED display shows “**E0 – E3**” by replacing “**2**” to “**E**”.

3. Volume Center Check

Press the [RECALL] key when the LED display shows “**3**”, and the Volume Check is started and the LED display shows one of the numbers from “**3I**” to “**38**”.

(Test Contents)

Select the knob that requires adjustment and turn it until the LED display shows the next volume check number.

- 33** TREBLE
- 34** HIGH MID
- 35** LOW MID
- 36** BASS
- 37** PRESENCE

The A/D converter value is shown with binary digits by using the AMP SELECT LEDs. Set the knob to the center and turn the trimmer potentiometer to adjust the AMP SELECT LEDs as shown on the list below.

AMP SELECT LED	LEAD1 Program On	LEAD2 Memory Off	DRIVE1 Channel Off	DRIVE2 Merge Off
LED	On	Off	Off	Off

AMP SELECT LED	CRUNCH1 All Data Off	CRUNCH2 User Mem. Off	CLEAN1 Off	CLEAN2 Off
LED	Off	Off	Off	Off

If the knob data is the same as the data of the list above, the adjustment of that knob can be passed. The trimmer potentiometer numbers are shown below.

TREBLE : VR603
 HIGH MID : VR605
 LOW MID : VR607
 BASS : VR609
 PRESENCE : VR611

Once the required Volume Center Check has been finished, press the [RECALL] key and the DG80-112 selects the next test no., so the LED display shows “**4**”.

(Error Number)

not appearing

4. Battery Check

Press the [RECALL] key when the LED display shows “**5**”. The Battery Check is started.

(Test Contents)

The RAM Backup Battery check is executed automatically.

When all the LEDs light simultaneously, the Battery Check is finished. Then the 80-112 selects the next test no., so the LED display shows “5”.

(Error Number)

- E0** : Battery Low (RAM DATA are kept.)
- E1** : Unknown Error
- E2** : Battery Low (RAM DATA are not kept.) or Not Installed

5. MIDI Check

Connect the MIDI IN and the MIDI OUT terminals with a MIDI cable. Press the [RECALL] key when the LED display shows “5”. The MIDI Check is started.

(Test Contents)

The loop back MIDI check is executed automatically. When the MIDI check is started, the LED display shows “51” and then “52”. When all the LEDs light simultaneously, the MIDI Check is finished. Then the DG80-112 selects the next test no., so the LED display shows “6”.

(Error Number)

- E0** : MIDI Error
- E1** : MIDI Error

6. SRAM Check

Press the [RECALL] key when the LED display shows “6”. The SRAM Check is started.

(Test Contents)

The SRAM read/write check is executed automatically. When the SRAM Check is started, the LED display shows “61” and then “62”. When all the LEDs light simultaneously, the SRAM Check is finished. Then the DG80-112 selects the next test no., so the LED display shows “7”.

(Error Number)

- E0** : RAM Address Error
- E1** : RAM Read/Write Error

7. Flash Memory Erase/Write Check

Press the [RECALL] key when the LED display shows “7”. The Flash Memory Erase/Write Check is started.

(Attention)

When the result of the test number 6 has already been “Error”, don’t execute this test, or the DG80-112 won’t set up at normal mode by the rewritten wrong data in the Flash Memory. Don’t turn the [POWER] switch off while executing this test, the DG80-112 won’t set up at normal mode by no data in the Flash Memory.

(Test Contents)

The Flash Memory Erase/Write check is executed automatically. When the check is started, the LED display shows from “70” to “73” successively. When all the LEDs light simultaneously, the Flash Memory Erase/Write check is finished. Then the DG80-112 selects the next test no., so the LED display shows “8”.

(Error Number)

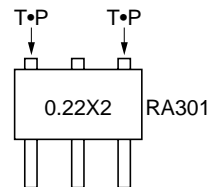
- E0, E1** : Flash Erase Error
- E2, E3** : Flash Write Error

8. Sound Check

Before executing this sound check, the idling adjustment, the output wave adjustment and center voltage adjustment must be finished. the three adjustments can be done while the LED display shows “8”.

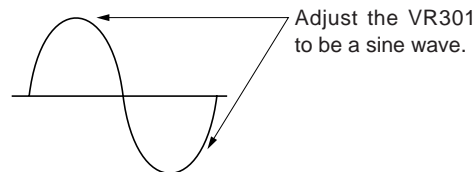
(Idling Adjustment)

1. Set the idling adjustment volume (VR303) at minimum.
2. Connect the 4 ohm load to the speaker terminals.
3. Set the output volume at minimum.
4. Adjust the VR303 so that the DC voltage between the terminals of the RA301 should be 5 +/-1 mV.



(Output Wave Adjustment)

1. After adjusting the idling adjustment, set the OUTPUT VR at maximum.
2. When the signal of -2 dBm / 1 kHz is inputted from the RETURN terminal, adjust the VR 301 (4.7 k ohms) so that the wave shape should be a sine wave symmetrical for upper and lower as below.



(Center Voltage Adjustment)

1. Adjust the VR302 so that the voltage of the output circuit (RA301) should be 38 +/- 2 V.
- * By adjusting the output adjustment and the center voltage adjustment alternatively, search the best point. After finishing the adjustments above, press the [RECALL] key when the LED display shows “8”. The Sound Check is started.

(Test Contents)

The DG80-112 sets the conditions for the signal Sound Check through the analogue circuit, the A/D converter, the DSP-3 and the D/A Converter.

When the Sound Check is started, the LED display shows “81”. The Sound Check has two conditions. If the [RECALL] key is pressed when the LED display shows “81”, the LED display changes to “82” and the condition changes to the next as below.

- 81 : DSP3-1
- 82 : DSP3-2

Check the following items in each condition of “81” and “82”.

Items	Conditions	Responses (standards)
1. Input Sensitivity (High)	1 kHz, -30 dBm	+28 dBm +/-2 dB
2. Input Sensitivity (Low)	1 kHz, -20 dBm	+28 dBm +/-2 dB
3. RETURN Level	1 kHz, 0 dBm	+28 dBm +/-2 dB
4. SEND Level	Condition of 1. and 100 k ohms SEND load	-1 dBm +/-2 dB
5. LINE OUT Level	Condition of 1. and 100 k ohms LINE OUT load	+3 dBm +/-2 dB
6. Frequency Response (HIGH IN)	-40 dBm Input 1 kHz standard SP Output Terminal	100 Hz: 0.5 +/-1 dB 10 kHz: 0.5 +/-1 dB
7. Remain Noise	TRIM, OUTPUT VR MIN IHF A net	less than -60 dBm
8. Sensitivity of LED for Input Level	Lo Input TRIM Vol: maximum OUTPUT Vol: maximum	Input LED -30 dBm: no light -20 dBm: GR only +4 dBm: both lit
9. Output	RETURN, 10 % THD	more than +28 dBm (95 W)

* 0 dBm = 0.775 V Load = 4 ohms

If the Sound Check has been finished, press the [RECALL] key when the LED display shows “82”. The LED display shows “9”.

(Error Number)

not appearing

9. TEST END

A “9” on the LED display signals the end of the TEST and the exit of the Test Program. Press the [RECALL] key when the LED display shows “9”. The mode of the DG80-112 changes to the normal mode and all of the function data are set to the condition of the latest program number in normal mode. The Motor Drive Volumes rotate automatically to the settings of that data.

■ ERROR MESSAGES

If an error occurs during operation, one of the following error message numbers will appear on the display.

E 1 : Motor Drive Error

- CAUSE:** The volume knob has not returned to its assigned position after 20 seconds has elapsed from the start of the recall operation or, the device does not recognize the recall command.
- SOLUTION:** Turn off the power and check the circuit for Motor Drive.

E 2 : MIDI Receive Buffer Full

- CAUSE:** Too much MIDI data is being received by the DG80-112 at one time.
- SOLUTION:** Try reducing the amount of data being sent or, break the data into smaller blocks.

E 3 : Communication Error

- CAUSE:** An abnormality is detected during MIDI communications.
- SOLUTION:** Check all connections, etc. and try again.

E 4 : Bulk Receive Check Sum Error

- CAUSE:** The check sum does not match the received MIDI bulk data.
- SOLUTION:** Check all connections and data, and try again.

E 5 : Bulk Receive Data Abnormality

- CAUSE:** An abnormality is detected in the received MIDI bulk data.
- SOLUTION:** Check all connections and data, and try again.

E 6 : Backup Battery Error

- CAUSE:** Backup battery power is depleted.
- SOLUTION:** Continued use of the device will result in the loss of data. Replace the battery with a new one.

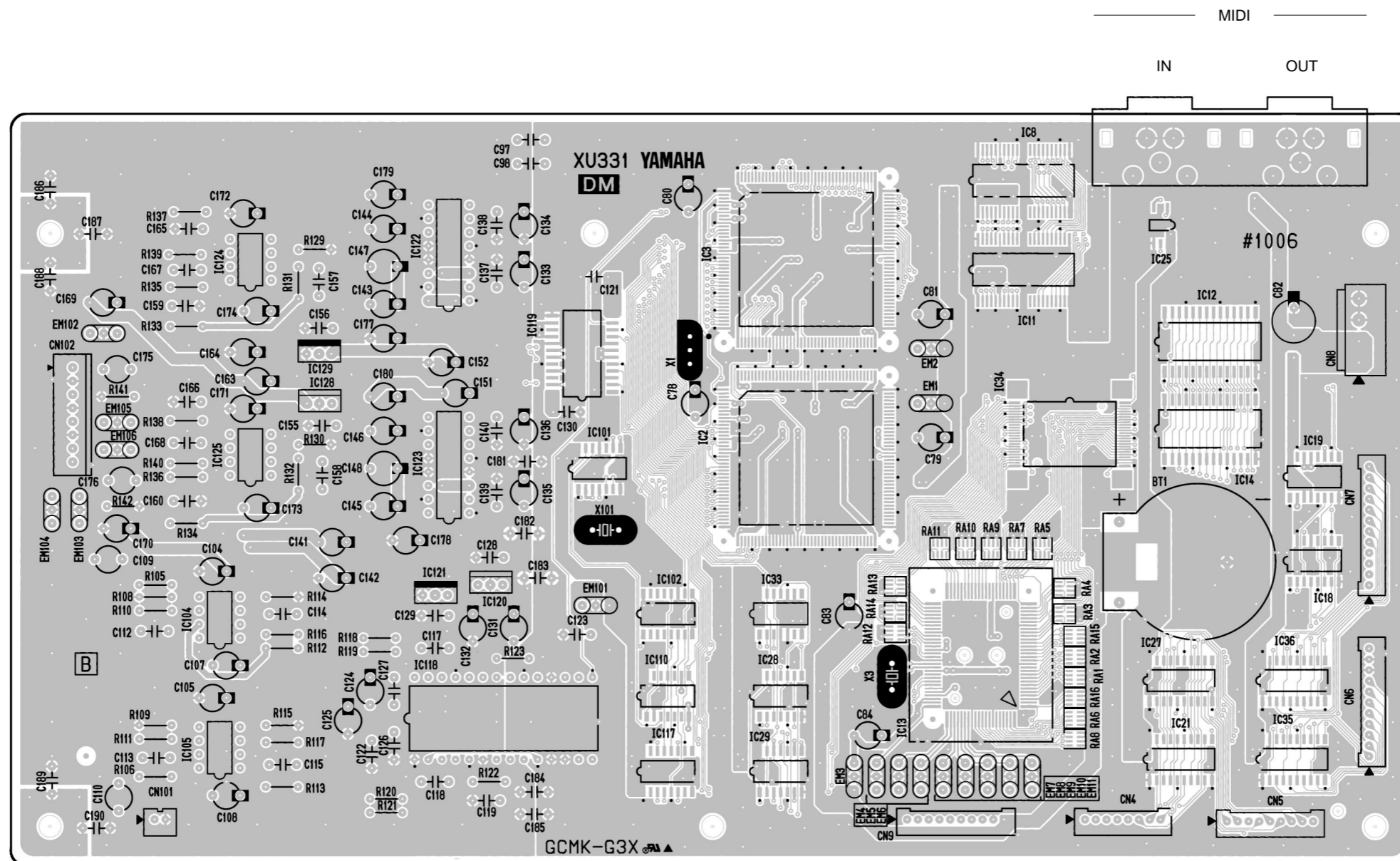
YAMAHA [Digital Guitar Amplifier]
 Model DG80-112 MIDI Implementation Chart

Date:1-Dec-1998
 Version : 1.0

Function ...	Transmitted	Recognized	Remarks
Basic Default	: x	: 1 - 16, off	: memorized
Channel Changed	: x	: 1 - 16, off	:
Mode Default	: x	: 1,3	: memorized
Mode Messages	: x	: x	:
Mode Altered	: *****	: x	:
Note	: x	: x	:
Number : True voice	: *****	: x	:
Velocity Note ON	: x	: x	:
Velocity Note OFF	: x	: x	:
After Key's	: x	: x	:
Touch Ch's	: x	: x	:
Pitch Bender	: x	: x	:
Control 0 - 6	: x	: x	:
Control 7	: x	: o	: Main Volume
Control 8 - 90	: x	: x	:
Control 91	: x	: o	: Reverb SW.
Control 92,93	: x	: x	:
Control 94	: x	: o	: Tape Echo SW.
Change 95 - 127	: x	: x	:
Prog Change : True #	: *****	: o 0 - 127	: Program Change Number 1-128
System Exclusive	: o	: o	: Bulk Dump
System : Song Pos.	: x	: x	:
System : Song Sel.	: x	: x	:
common : Tune	: x	: x	:
System :Clock	: x	: x	:
Real Time :Commands	: x	: x	:
Aux :All Sound OFF	: x	: x	:
Aux :Reset All Cntrls	: x	: x	:
Aux :Local ON/OFF	: x	: x	:
Aux :All Notes OFF	: x	: x	:
Mes- :Active Sense	: o	: x	:
sages:Reset	: x	: x	:
Mode 1 : OMNI ON, POLY		Mode 2 : OMNI ON, MONO	o : Yes
Mode 3 : OMNI OFF, POLY		Mode 4 : OMNI OFF, MONO	x : No

■ CIRCUIT BOARDS

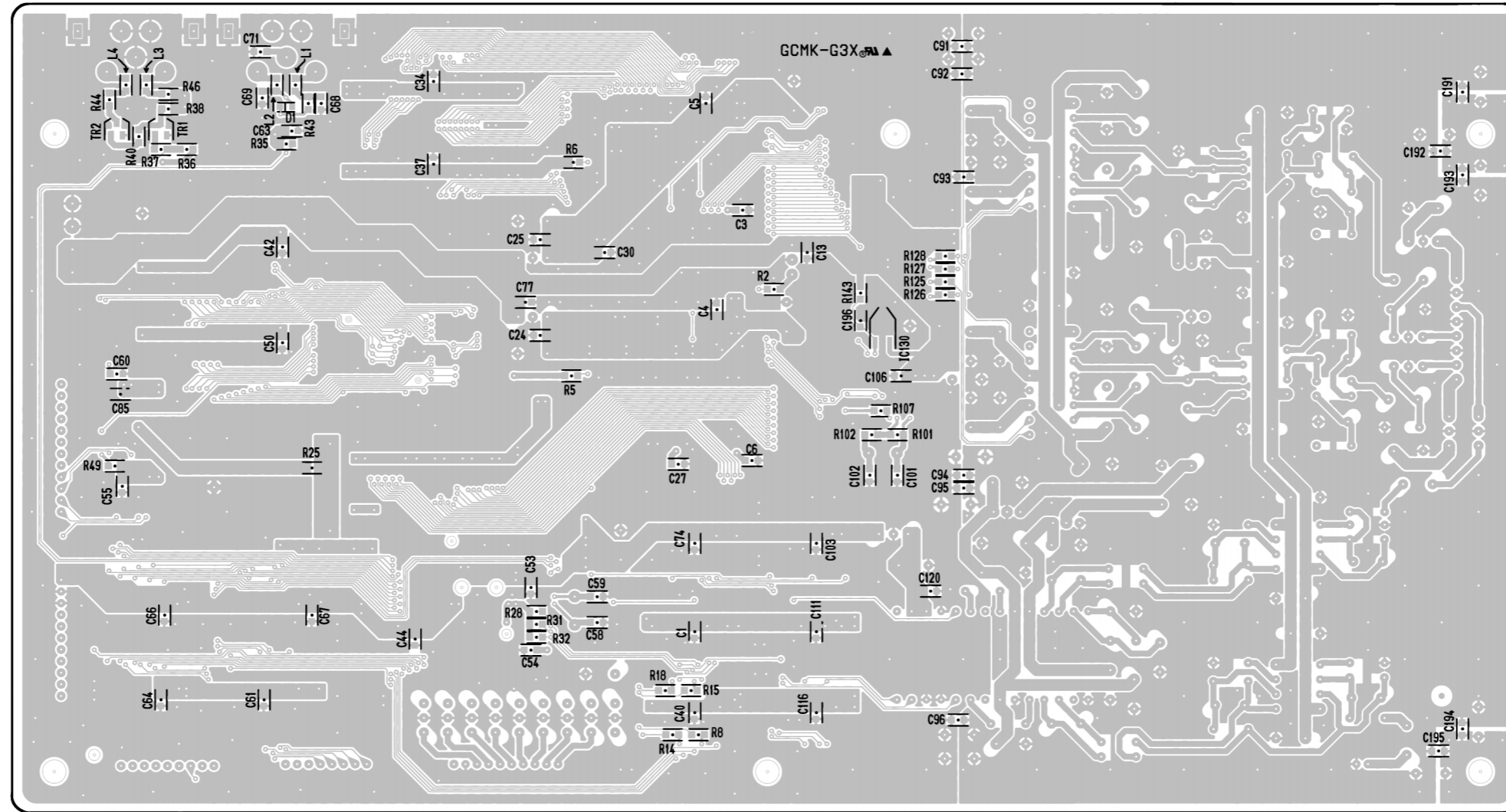
- DM Circuit Board



Component side

Note : See parts list for details of circuit board component parts.

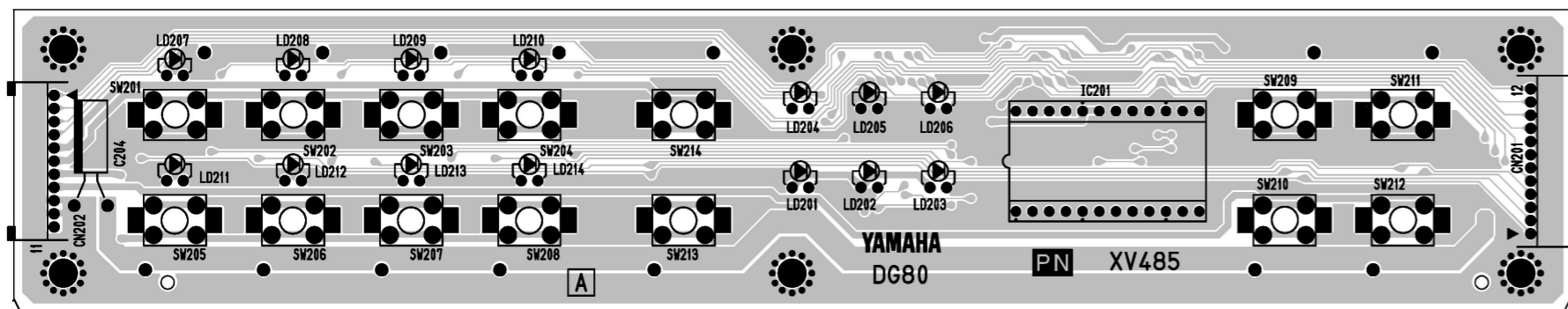
• DM Circuit Board



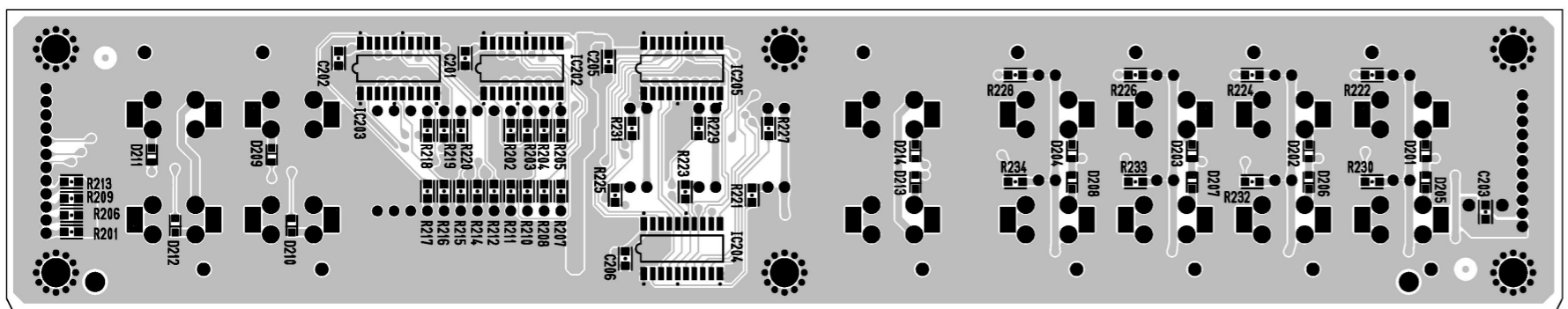
Pattern side

Note : See parts list for details of circuit board component parts.

• PN Circuit Board

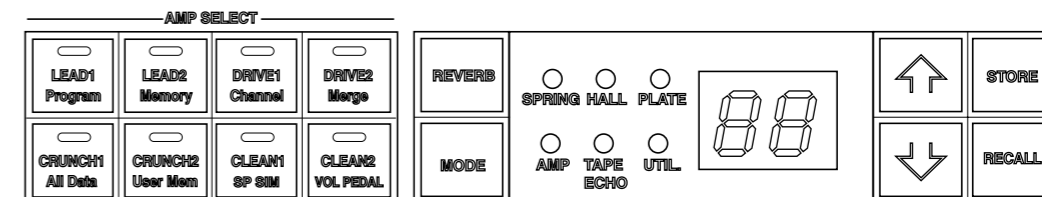


Component side



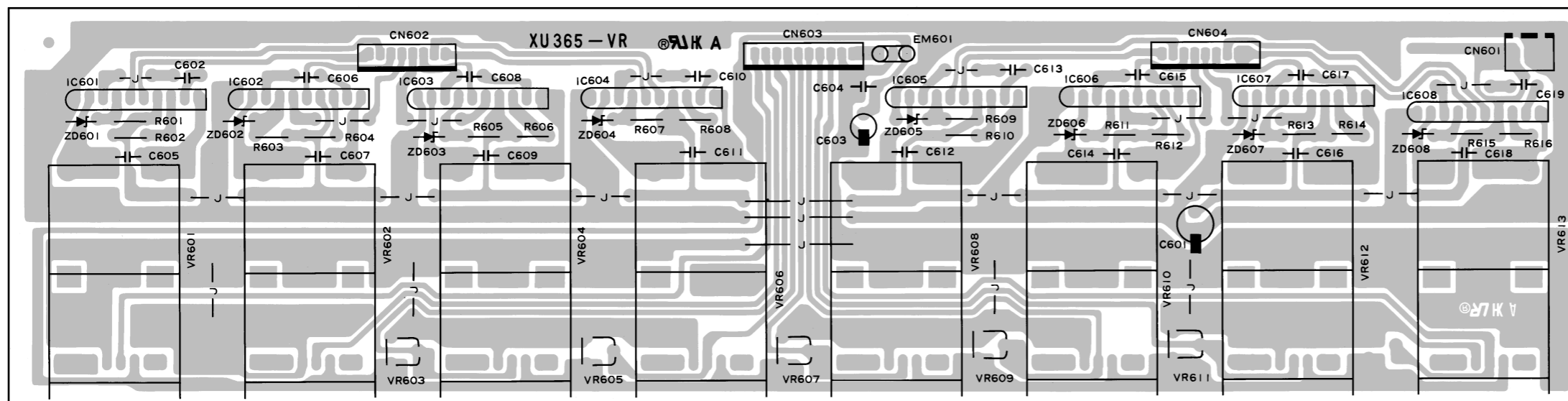
Pattern side

• Panel Layout



GUITAR AMPLIFIER *DG80-112*

• VR Circuit Board

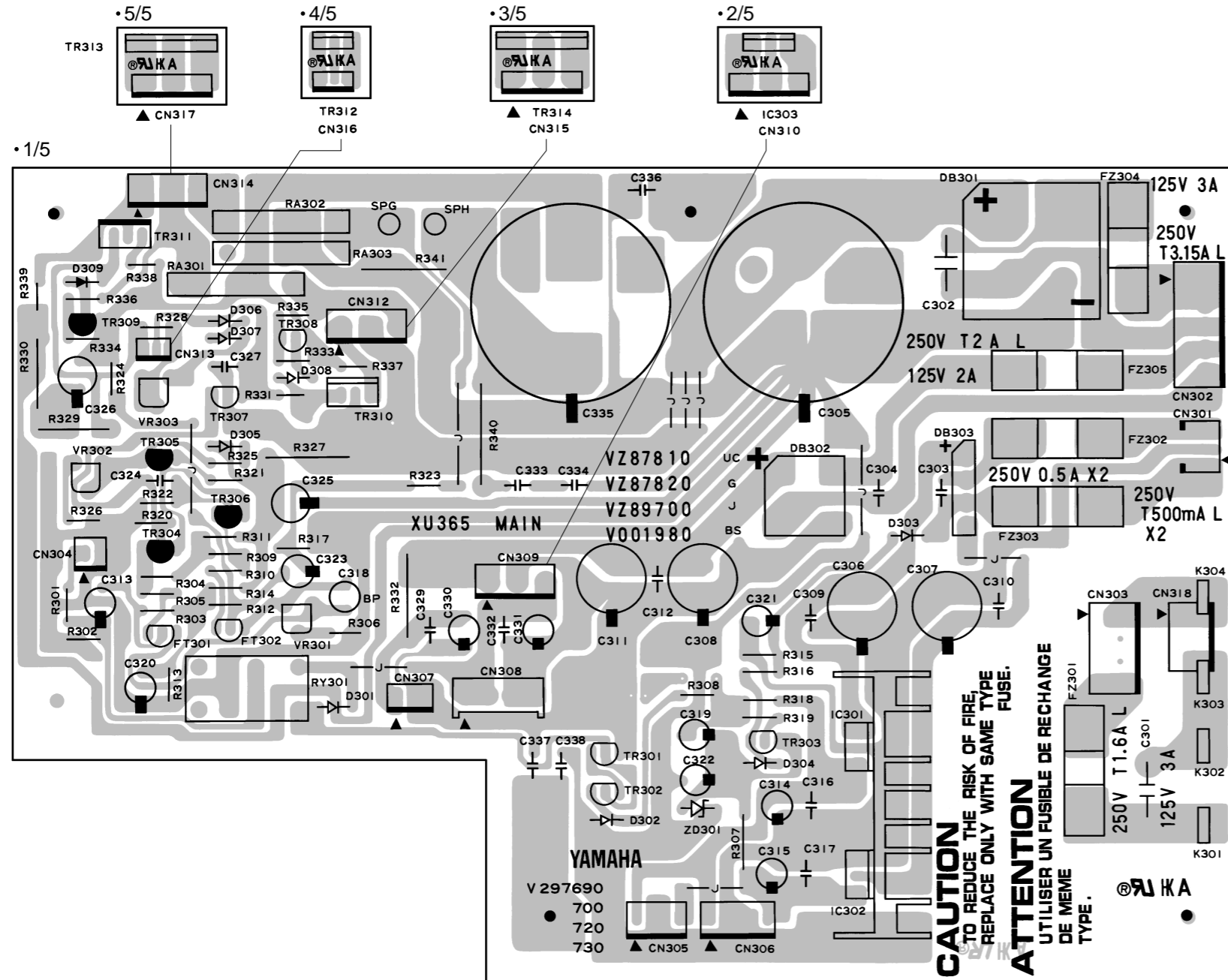


GAIN MASTER TREBLE HIGH MID LOW MID BASS TIME PRESENCE FEED BACK REVERB LEVEL
Component side

Note : See parts list for details of circuit board component parts.

PN : CNA-V297070-1/5△,2/5△
VR : CNA-V297690-1/10△

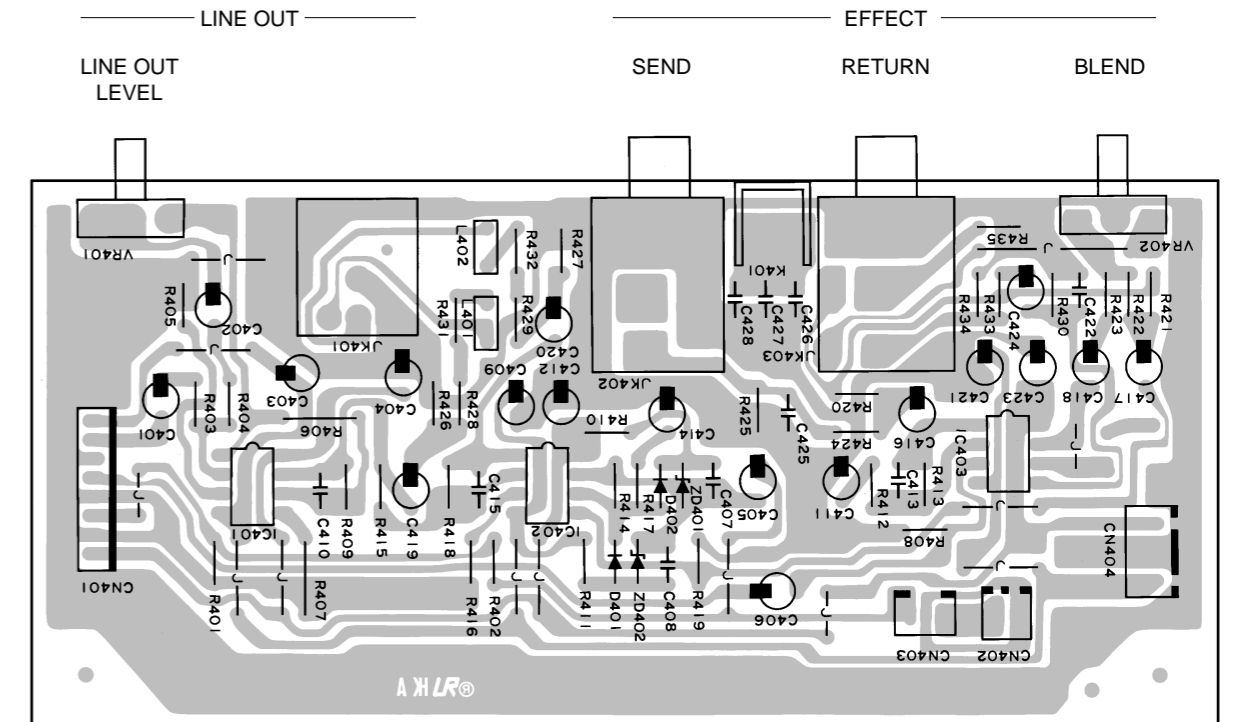
• MAIN Circuit Board



Component side

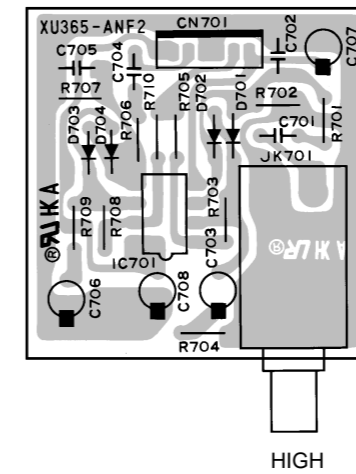
Note : See parts list for details of circuit board component parts.

• ANR Circuit Board



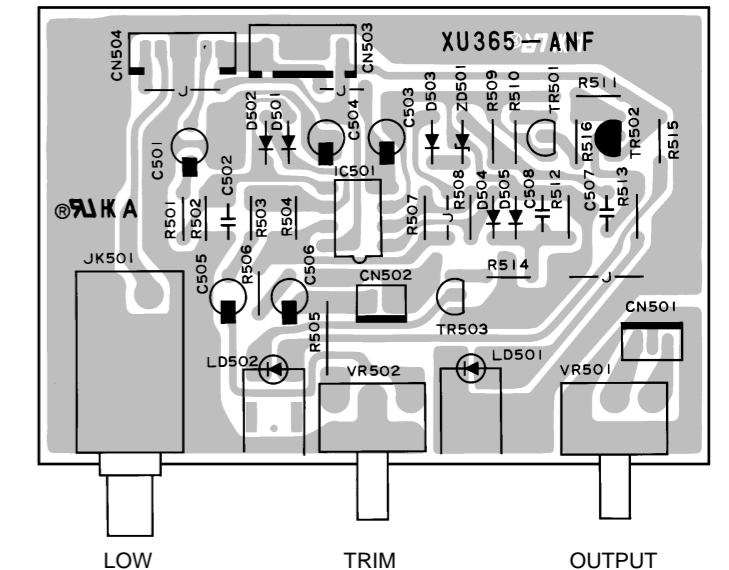
Component side

• ANF2 Circuit Board



Component side

• ANF Circuit Board



Component side

GUITAR AMPLIFIER

DG80-112

PARTS LIST


■ CONTENTS

OVERALL ASSEMBLY.....	2
PRE-MAIN UNIT.....	4
FRONT PANEL ASSEMBLY.....	6
CHASSIS ASSEMBLY.....	8
OVERALL CABINET ASSEMBLY.....	10
ELECTRICAL PARTS.....	11 ~ 20

Notes : DESTINATION ABBREVIATIONS

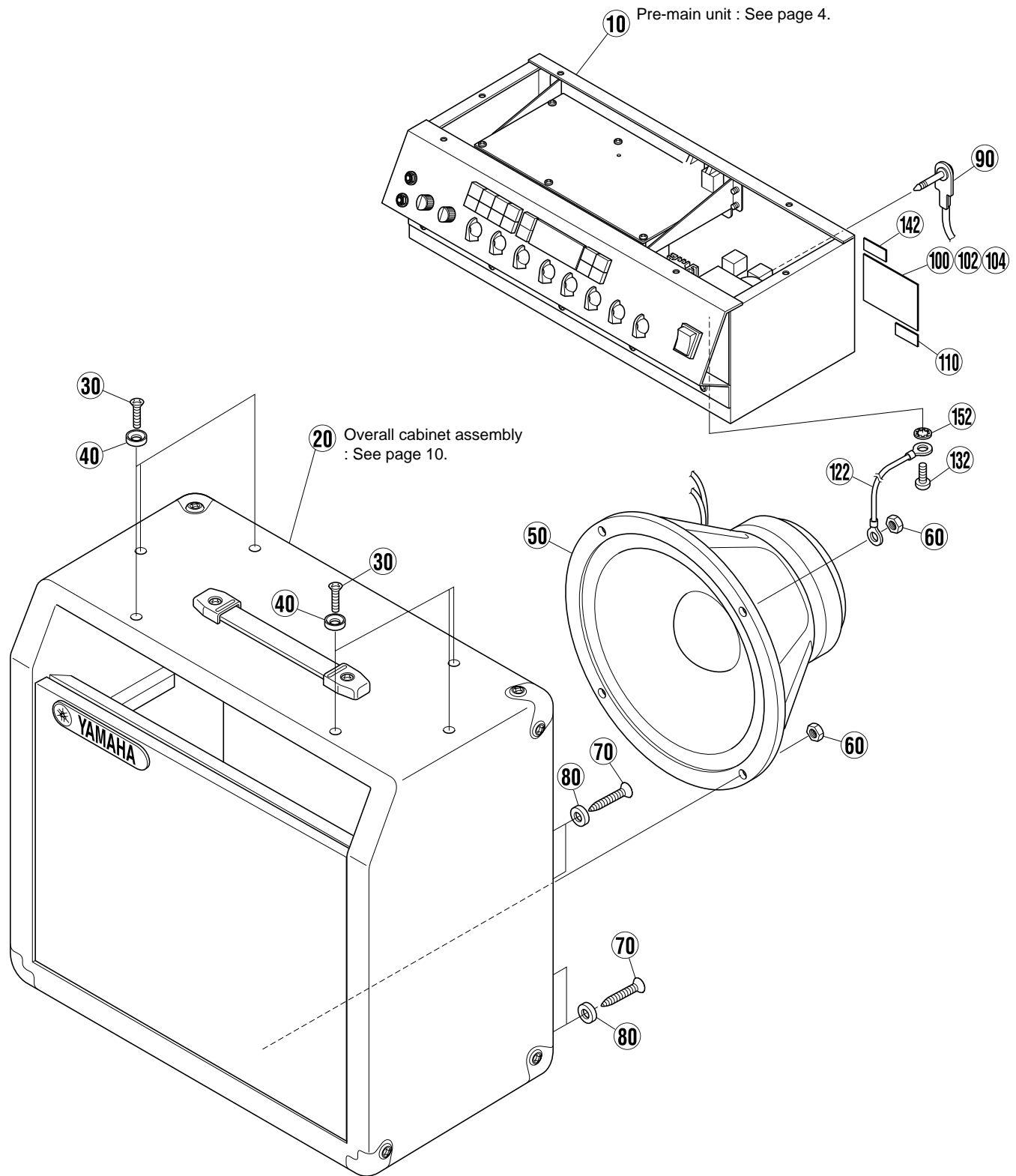
A : Australian model	M : South African model
B : British model	O : Chinese model
C : Canadian model	Q : South-east Asia model
D : German model	T : Taiwan model
E : European model	U : U.S.A. model
F : French model	V : General export model (110V)
H : North European model	W : General export model (220V)
I : Indonesian model	X : General export model
J : Japanese model	Y : Export model

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

- The numbers in "QTY" show quantities for each unit.
- The parts with "--" in "PART NO." are not available as spare parts.
- The mark "}" in the remarks column indicates that these parts are interchangeable.

OVERALL ASSEMBLY

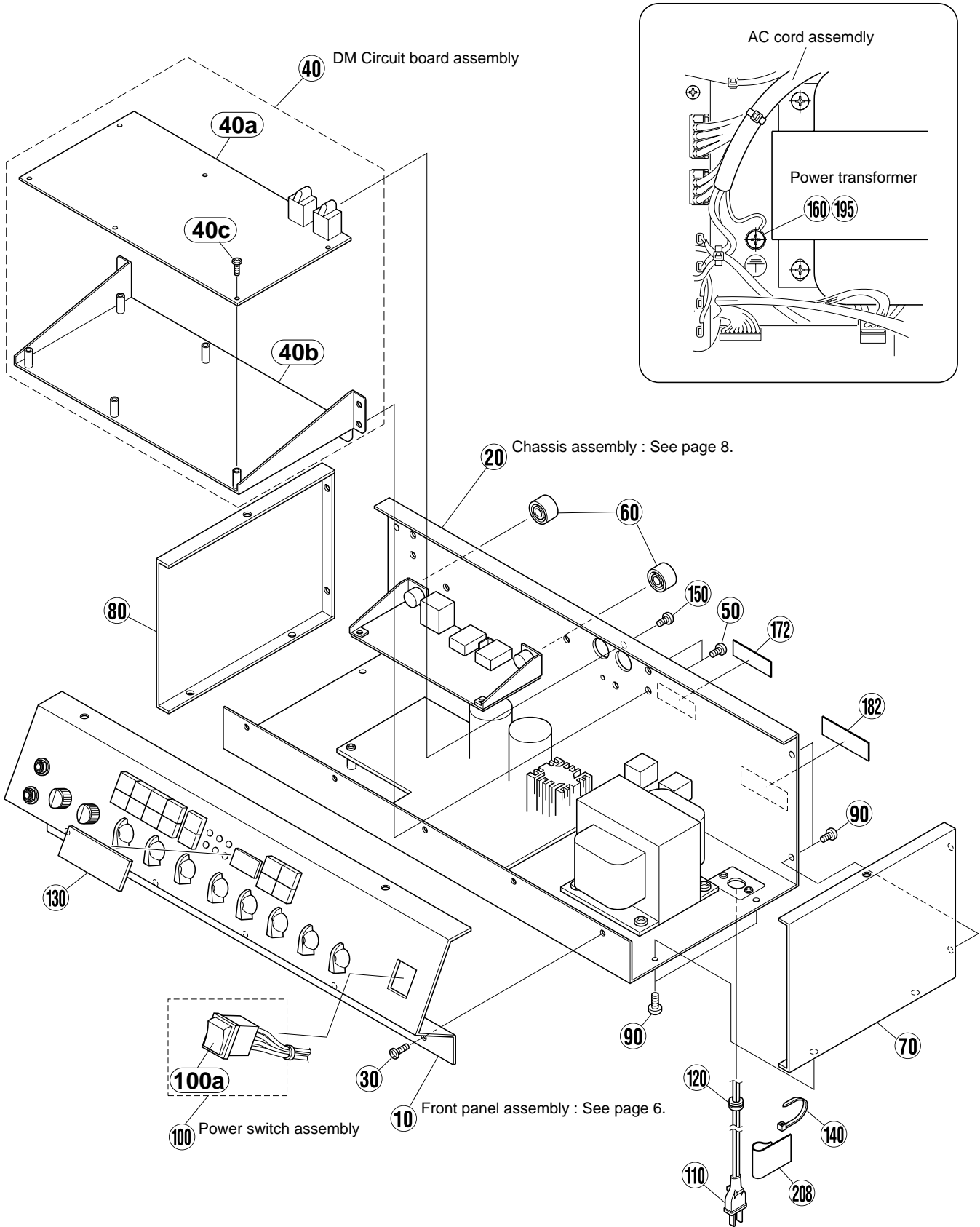


REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	OVERALL ASSEMBLY		DG80-112 J (V304070)		
	--	OVERALL ASSEMBLY		DG80-112 U (V304080)		
	--	OVERALL ASSEMBLY		DG80-112 E (V304090)		
	--	OVERALL ASSEMBLY		DG80-112 B (V304120)		
10	--	Pre-main Unit		J (V304030)		
10	--	Pre-main Unit		U (V304040)		
10	--	Pre-main Unit		E (V304050)		
10	--	Pre-main Unit		B (V304060)		
20	V3063000	Overall Cabinet Assembly				
30	VP104600	Oval Head Screw	5.0X35 MFC2BL		6	01
40	EW300020	Washer	5S MFC2BL		6	01
50	XV536A00	Speaker	G12H-100			
* 60	20040400	Hexagonal Nut	5.0 MFZN2BL		4	
* 70	EN240090	Oval Head Tapping Screw-1	4.0X30 MFC2BL		8	01
80	VB890200	Washer	4S MFC2BL		8	01
90	VR144600	Connector Assembly	L=500mm			06
100	--	Name Plate		J (V305380)		
102	--	Name Plate		U (V305440)		
104	--	Name Plate		E,B (V305510)		
110	--	Label, Serial Number		(CB06869)	2	01
122	--	Connector Assembly	SP frame	U (V298620)		
132	VP156800	Bind Head Screw	A4.0X8 MFZN2BL	U		01
142	VA039300	Label		U		03
152	ET800070	Toothed Lock Washer-A	4.0 MFZN2BL	U		01

*:New Parts

RANK:Japan only

PRE-MAIN UNIT

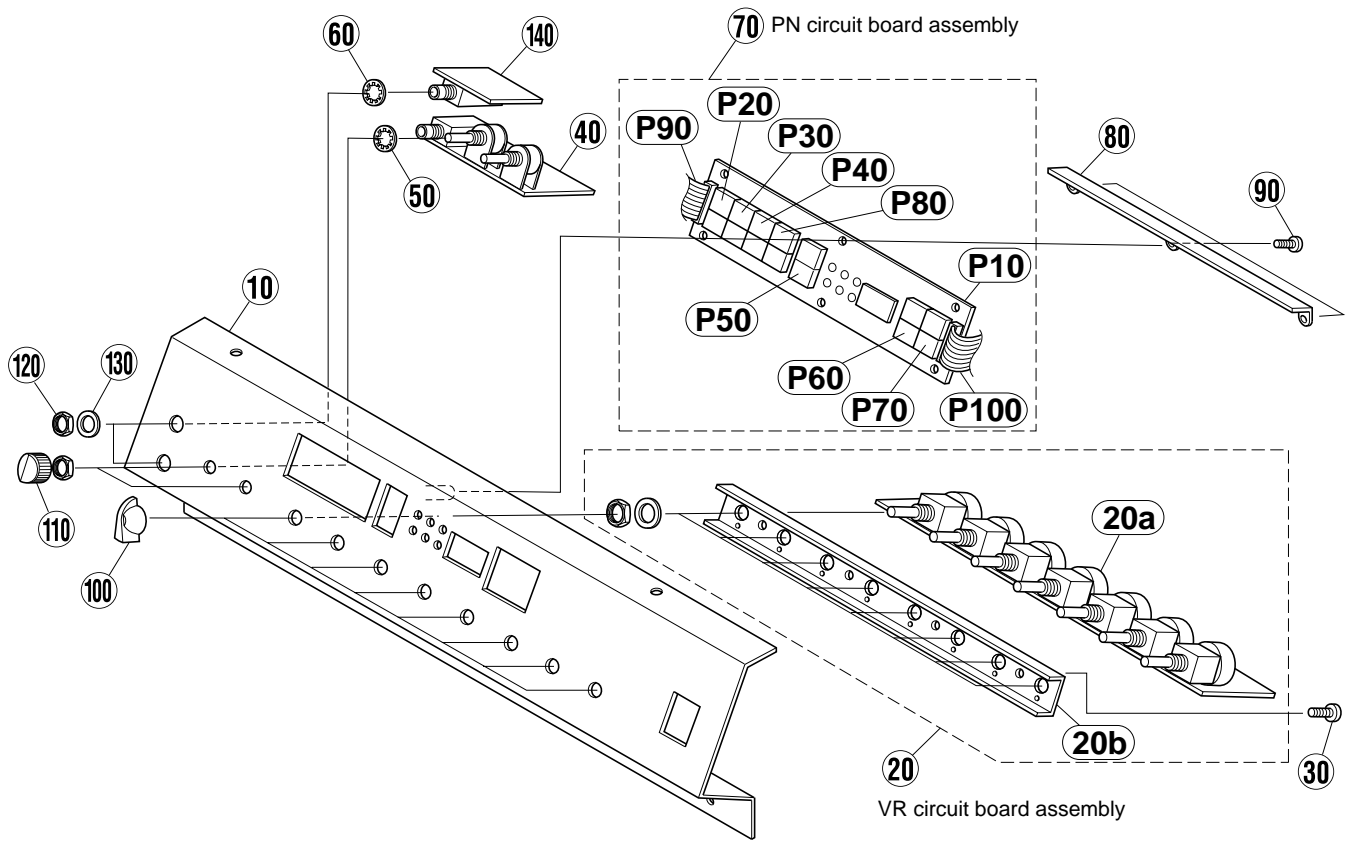


REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	PRE-MAIN UNIT		DG80-112 J (V304030)		
	--	PRE-MAIN UNIT		DG80-112 U (V304040)		
	--	PRE-MAIN UNIT		DG80-112 E (V304050)		
	--	PRE-MAIN UNIT		DG80-112 B (V304060)		
10	--	Front Panel Assembly		J (V303830)		
10	--	Front Panel Assembly		U (V303840)		
10	--	Front Panel Assembly		E (V303850)		
10	--	Front Panel Assembly		B (V303860)		
20	--	Chassis Assembly		J (V303990)		
20	--	Chassis Assembly		U (V304000)		
20	--	Chassis Assembly		E (V304100)		
20	--	Chassis Assembly		B (V304200)		
30	VP156800	Bind Head Screw	A4.0X8 MFZN2BL		5	01
40	--	DM Circuit Board Assembly		(V303800)		
40a	VZ771800	Circuit Board	DM			52
* 40b	V3034500	Angle Bracket, DM				
40c	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		6	01
50	VP156800	Bind Head Screw	A4.0X8 MFZN2BL		7	01
60	VU578300	Volume knob	S DSTA-1	BLEND, LINE OUT LEVEL	2	04
* 70	V3034600	Side Angle	Left			
* 80	V3034700	Side Angle	Right			
90	VP156700	Bind Head Screw	A3.0X8 MFZN2BL		8	01
100	--	Power Switch Assembly		(V225770)		
△ 100a	V2217000	Switch	JW	POWER switch		07
△ 110	MG000610	AC Cord	2P 15A 2.1m	J		06
△ 110	VZ176600	AC Cord Assembly	3P SJT VAR	U		07
△ 110	VZ971600	AC Cord Assembly	3P 6A VAR	E		08
△ 110	V2017600	AC Cord Assembly	3P 10A 2.5m	B		09
120	CB806850	Cord Strain Relief	SR-6N3-4	J,U		02
120	CB032840	Cord Strain Relief	SR-5N-4	E,B		03
130	VZ735700	Meter Cover				09
140	CB069250	Cord Holder	BK-1		8	01
150	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		2	01
160	VP156800	Bind Head Screw	A4.0X8 MFZN2BL	U,E,B		01
172	--	Label	C.UL	U (V306440)		
182	--	FCC Label		U (V222070)		
195	ET800070	Toothed Lock Washer-A	4.0 MFZN2BL	U,E,B		01
208	VH096700	Caution Label, Cord		B		01

*:New Parts

RANK:Japan only

FRONT PANEL ASSEMBLY

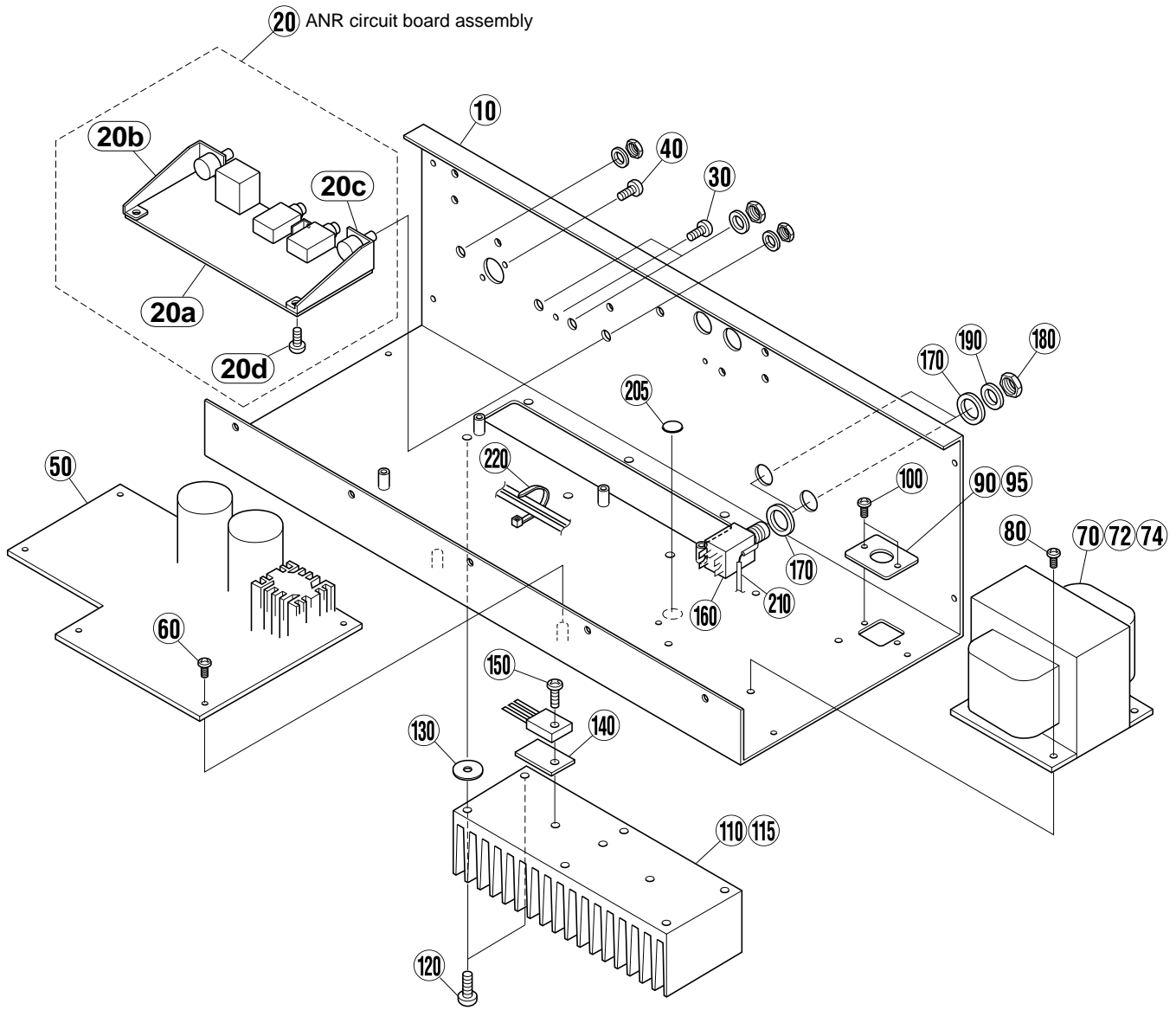


REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	FRONT PANEL ASSEMBLY		DG80-112 J (V303830)		
	--	FRONT PANEL ASSEMBLY		DG80-112 U (V303840)		
	--	FRONT PANEL ASSEMBLY		DG80-112 E (V303850)		
	--	FRONT PANEL ASSEMBLY		DG80-112 B (V303860)		
* 10	V3034300	Front Panel				
20	--	VR Circuit Board Assembly		J (V305940)		
20	--	VR Circuit Board Assembly		U (V305950)		
20	--	VR Circuit Board Assembly		E (V305960)		
20	--	VR Circuit Board Assembly		B (V305970)		
* 20a	V2979400	Circuit Board	VR	J		
* 20a	V2979500	Circuit Board	VR	U		
* 20a	V2979600	Circuit Board	VR	E		
* 20a	V2979700	Circuit Board	VR	B		
20b	VZ736100	Angle, Motor Volume				05
30	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		4	01
* 40	V2978000	Circuit Board	ANF	J		
* 40	V2978100	Circuit Board	ANF	U		
* 40	V2978200	Circuit Board	ANF	E		
* 40	V2978300	Circuit Board	ANF	B		
50	ET800080	Toothed Lock Washer-A	7.0 MFZN2Y		2	01
60	ET800150	Toothed Lock Washer-A	9.0 MFZN2Y		2	01
70	--	PN Circuit Board Assembly				(V305930)
* 80	V3034800	Stay			2	
90	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		6	01
100	VV945400	Knob, VOLUME(CH)		GAIN, REVERB	8	05
110	VU578300	Knob, VOLUME(S)	DSTA-1	TRIM, OUTPUT	2	04
120	LX200060	Hexagonal Nut	9.0 12X2 MFNI33		2	01
130	VL802300	Flat Washer	9X14 0.5 FNM3		2	01
* 140	V2978400	Circuit Board	ANF2	J		
* 140	V2978700	Circuit Board	ANF2	U		
* 140	V2978800	Circuit Board	ANF2	E		
* 140	V2978900	Circuit Board	ANF2	B		
	--	PN Circuit Board Assembly				(V305930)
* P10	V2970700	Circuit Board	PN			
P20	VV374000	Top Cap Assembly		LEAD1/CRUNCH1		06
P30	VV374100	Top Cap Assembly		LEAD2/CRUNCH2		06
P40	VZ739800	Top Cap Assembly		DRIVE1/CLEAN1		06
P50	VZ739900	Top Cap Assembly		REVERB/MODE		06
P60	VV374500	Top Cap Assembly		cursor(up/down)		06
P70	VV374600	Top Cap Assembly		STORE/RECALL		06
P80	V2134000	Top Cap Assembly		DRIVE2/CLEAN2		06
P90	--	PH Connector Assembly	11P L=300 C&C			(VZ97520)
P100	--	PH Connector Assembly	12P L=300 C&C			(VZ97530)

*:New Parts

RANK:Japan only

■ CHASSIS ASSEMBLY

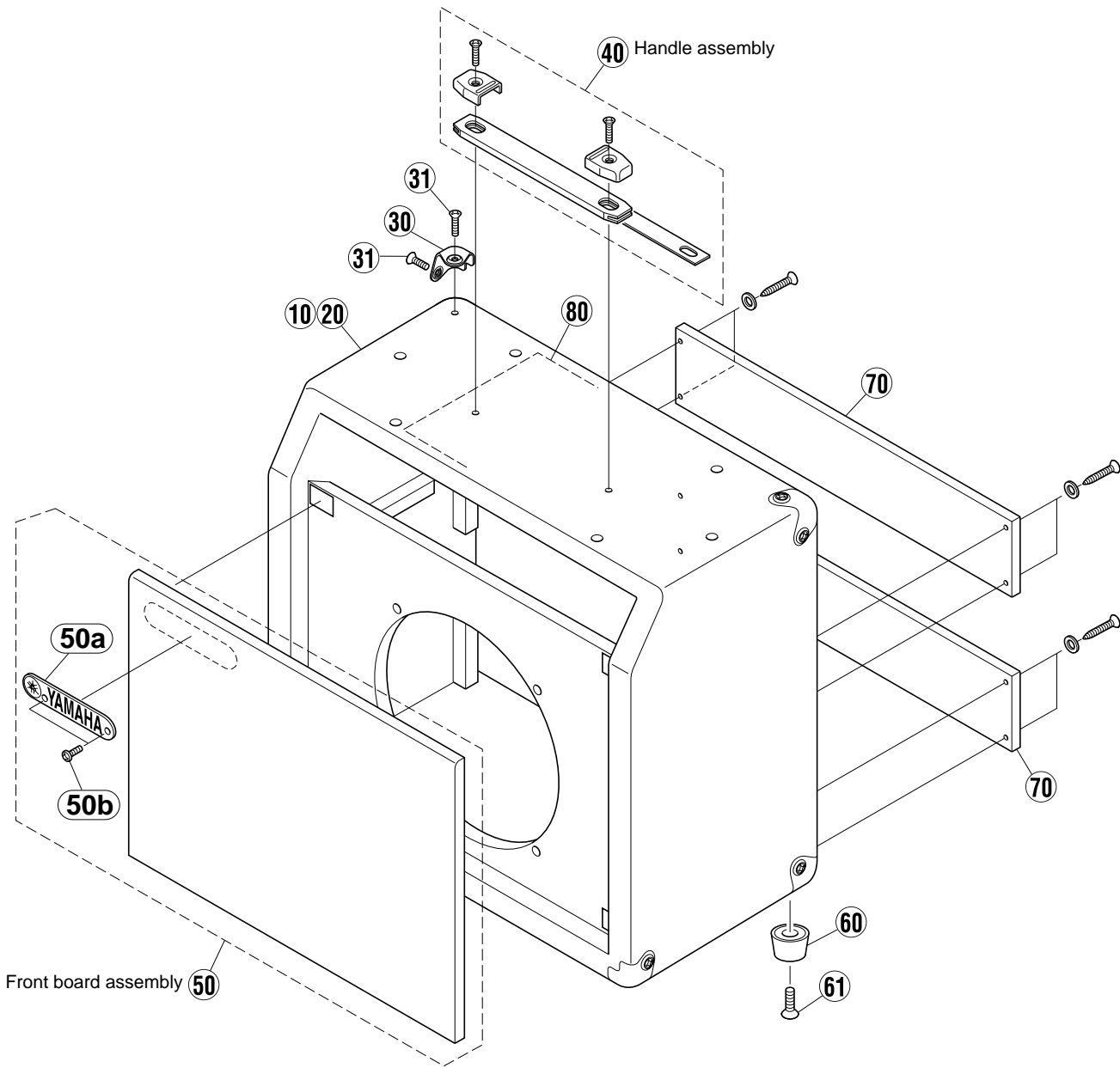


REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	CHASSIS ASSEMBLY		DG80-112 J (V303990)		
	--	CHASSIS ASSEMBLY		DG80-112 U (V304000)		
	--	CHASSIS ASSEMBLY		DG80-112 E (V304100)		
	--	CHASSIS ASSEMBLY		DG80-112 B (V304200)		
* 10	V3034400	Chassis				
20	--	ANR Circuit Board Assembly		J (V303760)		
20	--	ANR Circuit Board Assembly		U (V306410)		
20	--	ANR Circuit Board Assembly		E (V306420)		
20	--	ANR Circuit Board Assembly		B (V306430)		
* 20a	V2977400	Circuit Board	ANR	J		
* 20a	V2977500	Circuit Board	ANR	U		
* 20a	V2977700	Circuit Board	ANR	E		
* 20a	V2977900	Circuit Board	ANR	B		
20b	VZ746600	Sub Angle	Left			04
20c	VZ746500	Sub Angle	Right			04
20d	EK400500	Pan Head Screw	SP 3.0X8 MFZN2Y		2	01
30	VP156700	Bind Head Screw	A3.0X8 MFZN2BL			01
40	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		2	01
* 50	V2979000	Circuit Board	MAIN	J		
* 50	V2979100	Circuit Board	MAIN	U		
* 50	V2979200	Circuit Board	MAIN	E		
* 50	V2979300	Circuit Board	MAIN	B		
60	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		6	01
△ 70	XU118A00	Power Transformer		J		16
△ 72	XU295A00	Power Transformer		U		16
△ 74	XU296A00	Power Transformer		E,B		16
80	VP156800	Bind Head Screw	A4.0X8 MFZN2BL		4	01
90	VZ735900	Bush Plate		J,U		04
95	VZ736000	Bush Plate		E,B		04
100	VP156600	Bind Head Screw	A3.0X6 MFZN2BL		2	01
110	VZ739200	Heat Sink		J,U		15
115	V0029700	Heat Sink		E,B		17
120	VP156900	Bind Head Screw	A4.0X12 MFZN2BL		6	01
130	VZ736400	Spacer, Heat Sink			6	03
140	VK196000	Sheet	BFG-20ADH-6 22X29		2	01
150	EL200070	Pan Head Screw	SP 3.0X12 MFZN2Y		4	01
160	LB201120	Phone Jack	JL2B X-G7639	SPEAKER1, 2(EXT)	2	03
170	VL786300	Spacer, Speaker Out	SR400B300G		4	04
180	LX200060	Hexagonal Nut	9.0 12X2 MFNI33		2	01
190	VL802300	Flat Washer	9X14 0.5 FNM33G		2	01
205	CA060690	Earth Mark		U,E,B		01
210	--	Connector Assembly	UL1672 RE WH	(V306910)		
220	CB069250	Cord Holder	BK-1		2	01

*:New Parts

RANK:Japan only

OVERALL CABINET ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	V3063000	OVERALL CABINET ASSEMBLY		DG80-112		
10	--	Cabinet Assembly		(V306280)		
20	--	Vinyl	BL	(V306320)		
30	AA809050	Corner			6	05
31	EX808230	Round Head Wood Screw	3.5X16 FNM33G		12	
40	NB812640	Handle Assembly				07
*	V3062900	Front Board Assembly				
50a	V2237300	Name Plate				09
50b	V3623800	Trus Head Tapping Screw-1	3.0X10 MFZN2BL		2	
60	CB023200	Foot	BL		4	01
61	03702420	Flat Head Wood Screw	3.5X25 MFZN2BL		4	
*	V3063300	Back Board			2	
*	V3053400	Shield Sheet				

*:New Parts

RANK:Japan only

ELECTRICAL PARTS

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		ELECTRICAL PARTS		DG80-112		
	VZ771800	Circuit Board	DM	(XU331B0)		52
*	V2979400	Circuit Board	VR	J (XU365C0)		
*	V2979500	Circuit Board	VR	U (XU365C0)		
*	V2979600	Circuit Board	VR	E (XU365C0)		
*	V2979700	Circuit Board	VR	B (XU365C0)		
*	V2978000	Circuit Board	ANF	J (XU365C0)		
*	V2978100	Circuit Board	ANF	U (XU365C0)		
*	V2978200	Circuit Board	ANF	E (XU365C0)		
*	V2978300	Circuit Board	ANF	B (XU365C0)		
*	V2978400	Circuit Board	ANF2	J (XU365C0)		
*	V2978700	Circuit Board	ANF2	U (XU365C0)		
*	V2978800	Circuit Board	ANF2	E (XU365C0)		
*	V2978900	Circuit Board	ANF2	B (XU365C0)		
*	V2977400	Circuit Board	ANR	J (XU365C0)		
*	V2977500	Circuit Board	ANR	U (XU365C0)		
*	V2977700	Circuit Board	ANR	E (XU365C0)		
*	V2977900	Circuit Board	ANR	B (XU365C0)		
*	V2979000	Circuit Board	MAIN	J (XU365C0)		
*	V2979100	Circuit Board	MAIN	U (XU365C0)		
*	V2979200	Circuit Board	MAIN	E (XU365C0)		
*	V2979300	Circuit Board	MAIN	B (XU365C0)		
*	V2970700	Circuit Board	PN	(XV485A0)		
	VZ771800	Circuit Board	DM	(XU331B0)		52
BT1	VS246300	Battery Holder	CR2450BH			03
BT1	VS246400	Lithium Battery	CR2450			03
C1	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C3-6	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C13	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C24	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C25	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C27	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C30	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C34	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C37	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C40	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C42	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C44	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C50	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C53	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-55	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C58	UB051120	Monolithic Ceramic Cap.	SL 12P 50V J			01
C59	UB051120	Monolithic Ceramic Cap.	SL 12P 50V J			01
C60	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C61	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C63	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C64	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C66	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C67	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C68	UB044100	Monolithic Ceramic Cap.	F 0.010 50V Z			01
C69	UB044100	Monolithic Ceramic Cap.	F 0.010 50V Z			01
C71	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C74	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C77	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C78	UR828100	Electrolytic Cap.	100.00 10.0V			01
-81	UR828100	Electrolytic Cap.	100.00 10.0V			01
C82	UR848220	Electrolytic Cap.	220.00 25.0V			01
C83	UR847100	Electrolytic Cap.	10.00 25.0V			01
C84	UR847100	Electrolytic Cap.	10.00 25.0V			01
C85	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C91	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-96	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C97	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C98	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C101	VJ899000	Monolithic Ceramic Cap.	CH 5P 50V C			01
C102	VJ899000	Monolithic Ceramic Cap.	CH 5P 50V C			01
C103	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C104	UR847100	Electrolytic Cap.	10.00 25.0V			01
C105	UR847100	Electrolytic Cap.	10.00 25.0V			01

*:New Parts

RANK:Japan only

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C106	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C107	UR847100	Electrolytic Cap.	10.00 25.0V			01
C108	UR847100	Electrolytic Cap.	10.00 25.0V			01
C109	UN847100	Electrolytic Cap.-BP	10.00 25.0V			01
C110	UN847100	Electrolytic Cap.-BP	10.00 25.0V			01
C111	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C112	FG651680	Ceramic Capacitor-SL	68P 50V J			01
C113	FG651680	Ceramic Capacitor-SL	68P 50V J			01
C114	FG651220	Ceramic Capacitor-SL	22P 50V J			01
C115	FG651220	Ceramic Capacitor-SL	22P 50V J			01
C116	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C117	UA353680	Mylar Capacitor	6800P 50V J			01
C118	UA353680	Mylar Capacitor	6800P 50V J			01
C119	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C120	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C121	VD534400	Monolithic Ceramic Cap.	1.500 25V Z			01
C122	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C123	VD534400	Monolithic Ceramic Cap.	1.500 25V Z			01
C124	UR847100	Electrolytic Cap.	10.00 25.0V			01
C125	UR847100	Electrolytic Cap.	10.00 25.0V			01
C126	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
-129	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C130	VD534400	Monolithic Ceramic Cap.	1.500 25V Z			01
C131	UR847220	Electrolytic Cap.	22.00 25.0V			01
C132	UR847220	Electrolytic Cap.	22.00 25.0V			01
C133	UR847100	Electrolytic Cap.	10.00 25.0V			01
-136	UR847100	Electrolytic Cap.	10.00 25.0V			01
C137	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
-140	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C141	UR847220	Electrolytic Cap.	22.00 25.0V			01
-143	UR847220	Electrolytic Cap.	22.00 25.0V			01
C144	UR847470	Electrolytic Cap.	47.00 25.0V			01
C145	UR847220	Electrolytic Cap.	22.00 25.0V			01
C146	UR847470	Electrolytic Cap.	47.00 25.0V			01
C147	UR848100	Electrolytic Cap.	100.00 25.0V			01
C148	UR848100	Electrolytic Cap.	100.00 25.0V			01
C151	UR847220	Electrolytic Cap.	22.00 25.0V			01
C152	UR847220	Electrolytic Cap.	22.00 25.0V			01
C155	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C156	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C157	FG651680	Ceramic Capacitor-SL	68P 50V J			01
C158	FG651680	Ceramic Capacitor-SL	68P 50V J			01
C159	UA353330	Mylar Capacitor	3300P 50V J			01
C160	UA353330	Mylar Capacitor	3300P 50V J			01
C163	UR847220	Electrolytic Cap.	22.00 25.0V			01
C164	UR847220	Electrolytic Cap.	22.00 25.0V			01
C165	UA352470	Mylar Capacitor	470P 50V J			01
C166	UA352470	Mylar Capacitor	470P 50V J			01
C167	UA353820	Mylar Capacitor	8200P 50V J			01
C168	UA353820	Mylar Capacitor	8200P 50V J			01
C169	UR847220	Electrolytic Cap.	22.00 25.0V			01
C170	UR847220	Electrolytic Cap.	22.00 25.0V			01
C171	UR847100	Electrolytic Cap.	10.00 25.0V			01
-174	UR847100	Electrolytic Cap.	10.00 25.0V			01
C175	UN847100	Electrolytic Cap.-BP	10.00 25.0V			01
C176	UN847100	Electrolytic Cap.-BP	10.00 25.0V			01
C177	UR847100	Electrolytic Cap.	10.00 25.0V			01
-180	UR847100	Electrolytic Cap.	10.00 25.0V			01
C181	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
-190	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C191	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-195	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C196	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J			01
CN4	VB390400	Connector Base Post	PH- 8P TE			01
CN5	VB390500	Connector Base Post	PH- 9P TE			03
CN6	VB390700	Connector Base Post	PH-11P TE			01
CN7	VB390800	Connector Base Post	PH-12P TE			01
CN8	LB932040	Base Post Connector	VH- 4P TE			01
CN9	VB390600	Connector Base Post	PH-10P TE			01
CN101	VB389800	Connector Base Post	PH- 2P TE			01

*:New Parts

RANK:Japan only

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
CN102	LB918080	Base Post Connector	XH 8P TE			01
D1	VT332900	Diode (chip)	1SS355 TE-17			01
EM1	FZ006970	LC Filter	LS MT Y223NB			02
-11	FZ006970	LC Filter	LS MT Y223NB			02
EM101	FZ006970	LC Filter	LS MT Y223NB			02
-103	FZ006970	LC Filter	LS MT Y223NB			02
EM104	FZ006920	LC Filter	LS MT B271KB			01
-106	FZ006920	LC Filter	LS MT B271KB			01
IC2	XQ962D00	IC	YSS228E-F	DSP3		20
IC3	XQ962D00	IC	YSS228E-F	DSP3		20
IC8	XT776A00	IC	UPD424260G5-70-7JF	} DRAM 4M		16
IC8	XU462A00	IC	MSM514260C-60TS-K			16
IC11	XT776A00	IC	UPD424260G5-70-7JF	} DRAM 4M		16
IC11	XU462A00	IC	MSM514260C-60TS-K			16
IC12	XT090A00	IC	SRM2B256SLMX70	} SRAM 256K		07
IC12	XV411A00	IC	W24258S-70LE-EL10			07
IC13	XQ375A00	IC	HD6413002FP16	CPU H8-3002		09
IC14	XT090A00	IC	SRM2B256SLMX70	} SRAM 256K		07
IC14	XV411A00	IC	W24258S-70LE-EL10			07
IC18	XH603A00	IC	TC74HC157AF-TP1	DATA SELECTOR		03
IC19	XR967A00	IC	MB3790PF	ASSP		05
IC21	XQ042A00	IC	SN74HC374ANSR	D-FF		03
IC25	VR903700	Photo Coupler	HCPL-M600			04
IC27	XQ042A00	IC	SN74HC374ANSR	D-FF		03
IC28	XN963A00	IC	TC74VHC32F	OR		01
IC29	XN963A00	IC	TC74VHC32F	OR		01
IC33	XD831A00	IC	SN74HC08NSR	AND		01
* IC34	XU707C00	IC		ROM 4M		
IC35	XD233A00	IC	SN74HC244NSR	BUFFER		03
IC36	XD233A00	IC	SN74HC244NSR	BUFFER		03
IC101	XD660A00	IC	TC74HCU04AF-TP1	INVERTER		01
IC102	XR684A00	IC	TC74HC4040F	COUNTER		03
IC104	IG102500	IC	NE5532P	OP AMP		06
IC105	IG102500	IC	NE5532P	OP AMP		06
IC110	XQ967A00	IC	TC74HC164AF	SHIFT REGISTER		03
IC117	XD658A00	IC	TC74HC175AF-TP1	D-FF		02
IC118	XQ199A00	IC	AK5390-VP	A/D CONVERTER		14
IC119	XK280A00	IC	YSF210	DIGITAL FILTER		10
IC120	XA507A00	IC	AN78N05	REGULATOR +5V		02
IC121	XG780A00	IC	AN79N05	REGULATOR -5V		02
IC122	XN136A00	IC	PCM1702P	D/A CONVERTER		08
IC123	XN136A00	IC	PCM1702P	D/A CONVERTER		08
IC124	IG102500	IC	NE5532P	OP AMP		06
IC125	IG102500	IC	NE5532P	OP AMP		06
IC128	XA507A00	IC	AN78N05	REGULATOR +5V		02
IC129	XG780A00	IC	AN79N05	REGULATOR -5V		02
IC130	XT384A00	IC	PST600C-MMP3P	SYSTEM RESET		03
JK1	VK519000	DIN Connector	5P3 YKF51-5058	MIDI IN/OUT		04
L1-4	VS740100	Chip Inductance	BLM21B751S			03
R2	RD255270	Carbon Resistor (chip)	270.0 0.1 J			01
R5	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R6	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R8	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R14	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R15	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R18	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
R25	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R28	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R31	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R32	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R35	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R36	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R38	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R40	RD256220	Carbon Resistor (chip)	2.2K 0.1 J			01
R43	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R44	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R46	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R49	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R101	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
R102	RD255680	Carbon Resistor (chip)	680.0 0.1 J			01

*:New Parts

RANK:Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R105	HF757100	Carbon Resistor	10.0K 1/4 J			01
R106	HF757100	Carbon Resistor	10.0K 1/4 J			01
R107	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
R108	HF756330	Carbon Resistor	3.3K 1/4 J			01
-111	HF756330	Carbon Resistor	3.3K 1/4 J			01
R112	HF756560	Carbon Resistor	5.6K 1/4 J			01
-117	HF756560	Carbon Resistor	5.6K 1/4 J			01
R118	HF754470	Carbon Resistor	47.0 1/4 J			01
-121	HF754470	Carbon Resistor	47.0 1/4 J			01
R122	HF756100	Carbon Resistor	1.0K 1/4 J			01
R123	HF754100	Carbon Resistor	10.0 1/4 J			01
R125	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
-128	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
R129	HF755820	Carbon Resistor	820.0 1/4 J			01
R130	HF755820	Carbon Resistor	820.0 1/4 J			01
R131	HF756470	Carbon Resistor	4.7K 1/4 J			01
R132	HF756470	Carbon Resistor	4.7K 1/4 J			01
R133	HF756220	Carbon Resistor	2.2K 1/4 J			01
-138	HF756220	Carbon Resistor	2.2K 1/4 J			01
R139	HF756100	Carbon Resistor	1.0K 1/4 J			01
R140	HF756100	Carbon Resistor	1.0K 1/4 J			01
R141	HF758100	Carbon Resistor	100.0K 1/4 J			01
R142	HF758100	Carbon Resistor	100.0K 1/4 J			01
R143	RD256470	Carbon Resistor (chip)	4.7K 0.1 J			01
RA1	RE047100	Resistor Array	10KX4			01
-16	RE047100	Resistor Array	10KX4			01
TR1,2	VV556400	Transistor	2SC2412K Q,R,S			01
X1	VU682100	Quartz Crystal Unit	30.00MHz DOC-49S2			06
X3	VE463500	Quartz Crystal Unit	AT-49/12.0000MHz			03
X101	VN277000	Quartz Crystal Unit	24.576MH AF3817CQA			03
*	V2979400	Circuit Board	VR	J (XU365C0)		
*	V2979500	Circuit Board	VR	U (XU365C0)		
*	V2979600	Circuit Board	VR	E (XU365C0)		
*	V2979700	Circuit Board	VR	B (XU365C0)		
C601	UR848220	Electrolytic Cap.	220.00 25.0V			01
C602	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C603	UR847100	Electrolytic Cap.	10.00 25.0V			01
C604	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C605	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C606	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C607	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C608	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C609	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C610	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C611	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C612	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C613	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C614	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C615	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C616	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C617	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C618	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
C619	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
CN601	LB918030	Base Post Connector	XH 3P TE			01
CN602	--	PH Connector assembly	8P L=150 B&C	(V298670)		
CN603	--	PH Connector Assembly	10P L=120 B&C	(V298690)		
CN604	--	PH Connector Assembly	9P L=150 B&C	(V298980)		
EM601	FZ006970	LC Filter	LS MT Y223NB			02
IC601	XF494A00	IC	LB1641	MOTOR DRIVER		03
-608	XF494A00	IC	LB1641	MOTOR DRIVER		03
J	VA078900	Jumper Wire	0.55			
R601	HF756470	Carbon Resistor	4.7K 1/4 J			01
R602	HF754100	Carbon Resistor	10.0 1/4 J			01
R603	HF756470	Carbon Resistor	4.7K 1/4 J			01
R604	HF754100	Carbon Resistor	10.0 1/4 J			01
R605	HF756470	Carbon Resistor	4.7K 1/4 J			01
R606	HF754100	Carbon Resistor	10.0 1/4 J			01
R607	HF756470	Carbon Resistor	4.7K 1/4 J			01
R608	HF754100	Carbon Resistor	10.0 1/4 J			01

*:New Parts

RANK:Japan only

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R609	HF756470	Carbon Resistor	4.7K 1/4 J			01
R610	HF754100	Carbon Resistor	10.0 1/4 J			01
R611	HF756470	Carbon Resistor	4.7K 1/4 J			01
R612	HF754100	Carbon Resistor	10.0 1/4 J			01
R613	HF756470	Carbon Resistor	4.7K 1/4 J			01
R614	HF754100	Carbon Resistor	10.0 1/4 J			01
R615	HF756470	Carbon Resistor	4.7K 1/4 J			01
R616	HF754100	Carbon Resistor	10.0 1/4 J			01
VR601	VU647600	Motor Drive Volume	RK16812MG 10KB	GAIN		07
VR602	VU647600	Motor Drive Volume	RK16812MG 10KB	MASTER		07
VR603	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE			01
VR604	VU647600	Motor Drive Volume	RK16812MG 10KB	TREBLE		07
VR605	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE			01
VR606	VU647600	Motor Drive Volume	RK16812MG 10KB	HIGH MID		07
VR607	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE			01
VR608	VU647600	Motor Drive Volume	RK16812MG 10KB	LOW MID		07
VR609	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE			01
VR610	VU647600	Motor Drive Volume	RK16812MG 10KB	BASS/TIME		07
VR611	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE			01
VR612	VU647600	Motor Drive Volume	RK16812MG 10KB	PRESENCE/FEED BACK		07
VR613	VU647600	Motor Drive Volume	RK16812MG 10KB	REBERB/LEVEL		07
ZD601	VQ451000	Zener Diode	MTZJ5.1B 5.1V			01
-608	VQ451000	Zener Diode	MTZJ5.1B 5.1V			01
*	V2978000	Circuit Board	ANF	J (XU365C0)		
*	V2978100	Circuit Board	ANF	U (XU365C0)		
*	V2978200	Circuit Board	ANF	E (XU365C0)		
*	V2978300	Circuit Board	ANF	B (XU365C0)		
C501	UR866100	Electrolytic Cap.	1.00 50.0V			01
C502	FG652100	Ceramic Capacitor-SL	100P 50V J			01
C503	UR847100	Electrolytic Cap.	10.00 25.0V			01
-506	UR847100	Electrolytic Cap.	10.00 25.0V			01
C507	UA354100	Mylar Capacitor	0.0100 50V J			01
C508	UA355100	Mylar Capacitor	0.1000 50V J			01
CN501	--	PH Shield Wire	3P L=200 B&C		(V298760)	
CN502	--	PH Shield Wire	2P L=150 B&C		(V298720)	
CN503	LB918050	Base Post Connector	XH 5P TE			01
CN504	VB390200	Connector Base Post	PH- 6P TE			01
D501	VB941200	Diode	1SS133,1SS176			01
-505	VB941200	Diode	1SS133,1SS176			01
IC501	IG107000	IC	NJM072D	OP AMP		04
J	VA078900	Jumper Wire	0.55			
JK501	LB301800	Phone Jack	HLJ0544 MONO	INPUT LOW		03
LD501	VR080200	LED	SLR-342VR3F RE	OUTPUT		01
LD501	VH870600	LED Socket	PM2800M			01
LD502	VR080300	LED	SLR-342MG3F GR	TRIM		01
LD502	VH870600	LED Socket	PM2800M			01
R501	HF756100	Carbon Resistor	1.0K 1/4 J			01
R502	HF758100	Carbon Resistor	100.0K 1/4 J			01
R503	HF756470	Carbon Resistor	4.7K 1/4 J			01
R504	HF757390	Carbon Resistor	39.0K 1/4 J			01
R505	HF756680	Carbon Resistor	6.8K 1/4 J			01
R506	HF756100	Carbon Resistor	1.0K 1/4 J			01
R507	HF757100	Carbon Resistor	10.0K 1/4 J			01
R508	HF757150	Carbon Resistor	15.0K 1/4 J			01
R509	HF758100	Carbon Resistor	100.0K 1/4 J			01
R510	HF757330	Carbon Resistor	33.0K 1/4 J			01
R511	HF758100	Carbon Resistor	100.0K 1/4 J			01
R512	HF758100	Carbon Resistor	100.0K 1/4 J			01
R513	HF756330	Carbon Resistor	3.3K 1/4 J			01
R514	HF757330	Carbon Resistor	33.0K 1/4 J			01
R515	HF756150	Carbon Resistor	1.5K 1/4 J			01
R516	HF757330	Carbon Resistor	33.0K 1/4 J			01
TR501	IC174070	Transistor	2SC1740S R,S			01
TR502	VV912400	Transistor	2SA933ASTP R.S			01
TR503	IC174070	Transistor	2SC1740S R,S			01
VR501	V2212700	Rotary Variable Resistor	RK1631210 50KB	OUTPUT		04
VR502	VU647700	Rotary Variable Resistor	RK1631210 50KC	TRIM		04
ZD501	VP764200	Zener Diode	MTZJ12A 12.0V			01

*:New Parts

RANK:Japan only

REF. NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	V2978400	Circuit Board	ANF2	J (XU365C0)		
*	V2978700	Circuit Board	ANF2	U (XU365C0)		
*	V2978800	Circuit Board	ANF2	E (XU365C0)		
*	V2978900	Circuit Board	ANF2	B (XU365C0)		
C701	VR168700	Monolithic Mylar Capacitor	ECQ-V1H224JL3 50V			01
C702	FG652100	Ceramic Capacitor-SL	100P 50V J			01
C703	UR847100	Electrolytic Cap.	10.00 25.0V			01
C704	VR168700	Monolithic Mylar Capacitor	ECQ-V1H224JL3 50V			01
C705	FG652100	Ceramic Capacitor-SL	100P 50V J			01
C706	UR847100	Electrolytic Cap.	10.00 25.0V			01
-708	UR847100	Electrolytic Cap.	10.00 25.0V			01
CN701	--	PH Connector Assembly	6P L=70 B&C	(V207050)		
D701	VB941200	Diode	1SS133,1SS176			01
-704	VB941200	Diode	1SS133,1SS176			01
IC701	IG107000	IC	NJM072D	OP AMP		04
JK701	LB301800	Phone Jack	HLJ0544 MONO	INPUT HIGH		03
R701	HF757100	Carbon Resistor	10.0K 1/4 J			01
R702	HF759100	Carbon Resistor	1.0M 1/4 J			01
R703	HF757270	Carbon Resistor	27.0K 1/4 J			01
R704	HF756470	Carbon Resistor	4.7K 1/4 J			01
R705	HF757100	Carbon Resistor	10.0K 1/4 J			01
R706	HF757100	Carbon Resistor	10.0K 1/4 J			01
R707	HF759100	Carbon Resistor	1.0M 1/4 J			01
R708	HF756470	Carbon Resistor	4.7K 1/4 J			01
R709	HF756470	Carbon Resistor	4.7K 1/4 J			01
R710	HF759100	Carbon Resistor	1.0M 1/4 J			01
*	V2977400	Circuit Board	ANR	J (XU365C0)		
*	V2977500	Circuit Board	ANR	U (XU365C0)		
*	V2977700	Circuit Board	ANR	E (XU365C0)		
*	V2977900	Circuit Board	ANR	B (XU365C0)		
C401	UR866100	Electrolytic Cap.	1.00 50.0V			01
C402	UR847100	Electrolytic Cap.	10.00 25.0V			01
-405	UR847100	Electrolytic Cap.	10.00 25.0V			01
C406	UR866100	Electrolytic Cap.	1.00 50.0V			01
C407	UA355100	Mylar Capacitor	0.1000 50V J			01
C408	UA355100	Mylar Capacitor	0.1000 50V J			01
C409	UR847100	Electrolytic Cap.	10.00 25.0V			01
C410	FG652100	Ceramic Capacitor-SL	100P 50V J			01
C411	UR847330	Electrolytic Cap.	33.00 25.0V			01
C412	UR847100	Electrolytic Cap.	10.00 25.0V			01
C413	FG613100	Ceramic Capacitor-B	1000P 50V K			01
C414	UR866100	Electrolytic Cap.	1.00 50.0V			01
C415	FG652100	Ceramic Capacitor-SL	100P 50V J			01
C416	UR847100	Electrolytic Cap.	10.00 25.0V			01
-418	UR847100	Electrolytic Cap.	10.00 25.0V			01
C419	UR847220	Electrolytic Cap.	22.00 25.0V			01
C420	UR847220	Electrolytic Cap.	22.00 25.0V			01
C421	UR847100	Electrolytic Cap.	10.00 25.0V			01
C422	FG652100	Ceramic Capacitor-SL	100P 50V J			01
C423	UR847100	Electrolytic Cap.	10.00 25.0V			01
C424	UR847100	Electrolytic Cap.	10.00 25.0V			01
C425	FG652100	Ceramic Capacitor-SL	100P 50V J			01
C426	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
-428	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
CN401	--	Shield Wire	8P L=100 B&C	(V297580)		
CN402	LB918020	Base Post Connector	XH 2P TE			01
CN403	VB389900	Connector Base Post	PH- 3P TE			01
CN404	LB918040	Base Post Connector	XH 4P TE			01
D401	VB941200	Diode	1SS133,1SS176			01
D402	VB941200	Diode	1SS133,1SS176			01
J	VA078900	Jumper Wire	0.55			
JK401	VS133700	XML Connector	NC3MAH	LINE OUT		04
JK402	VL790300	Jack	HLJ3305-01-3000	EFFECT SEND		03
JK403	VL830500	Jack	HLJ3305-01-3030	EFFECT RETURN		03
IC401	IG107000	IC	NJM072D	OP AMP		04
-403	IG107000	IC	NJM072D	OP AMP		04
K401	VC719300	Terminal Plate	P-424			01
L401	VB971100	Coil	FL5R200QN 20uH			01
L402	VB971100	Coil	FL5R200QN 20uH			01

*:New Parts

RANK:Japan only

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R401	HF756220	Carbon Resistor	2.2K 1/4 J			01
R402	HF756220	Carbon Resistor	2.2K 1/4 J			01
R403	HF757120	Carbon Resistor	12.0K 1/4 J			01
R404	HF757100	Carbon Resistor	10.0K 1/4 J			01
R405	HF757100	Carbon Resistor	10.0K 1/4 J			01
R406	HF757470	Carbon Resistor	47.0K 1/4 J			01
R407	HF757470	Carbon Resistor	47.0K 1/4 J			01
R408	HF758470	Carbon Resistor	470.0K 1/4 J			01
R409	HF757470	Carbon Resistor	47.0K 1/4 J			01
R410	HF757100	Carbon Resistor	10.0K 1/4 J			01
R411	HF757100	Carbon Resistor	10.0K 1/4 J			01
R412	HF756100	Carbon Resistor	1.0K 1/4 J			01
R413	HF756100	Carbon Resistor	1.0K 1/4 J			01
R414	HF757560	Carbon Resistor	56.0K 1/4 J			01
R415	HF757470	Carbon Resistor	47.0K 1/4 J			01
R416	HF757470	Carbon Resistor	47.0K 1/4 J			01
R417	HF757100	Carbon Resistor	10.0K 1/4 J			01
R418	HF757470	Carbon Resistor	47.0K 1/4 J			01
R419	HF758470	Carbon Resistor	470.0K 1/4 J			01
R420	HF757100	Carbon Resistor	10.0K 1/4 J			01
-423	HF757100	Carbon Resistor	10.0K 1/4 J			01
R424	HF756220	Carbon Resistor	2.2K 1/4 J			01
R425	HF758100	Carbon Resistor	100.0K 1/4 J			01
-427	HF758100	Carbon Resistor	100.0K 1/4 J			01
R428	HF755330	Carbon Resistor	330.0 1/4 J			01
R429	HF755330	Carbon Resistor	330.0 1/4 J			01
R430	HF758220	Carbon Resistor	220.0K 1/4 J			01
R431	HF755270	Carbon Resistor	270.0 1/4 J			01
R432	HF755270	Carbon Resistor	270.0 1/4 J			01
R433	HF757220	Carbon Resistor	22.0K 1/4 J			01
R434	HF758220	Carbon Resistor	220.0K 1/4 J			01
R435	HF757100	Carbon Resistor	10.0K 1/4 J			01
VR401	VZ658600	Rotary Variable Resistor	16MM 50K A	LINE OUT LEVEL		03
VR402	VZ658700	Rotary Variable Resistor	16MM 20K B	EFFECT BLEND		03
ZD401	VQ313000	Zener Diode	MTZJ5.6B 5.6V			01
ZD402	VQ313000	Zener Diode	MTZJ5.6B 5.6V			01
* * * *	V2979000 V2979100 V2979200 V2979300	Circuit Board Circuit Board Circuit Board Circuit Board	MAIN MAIN MAIN MAIN	J U E B	(XU365C0) (XU365C0) (XU365C0) (XU365C0)	
	EP630230	Bind Head Tapping Screw-C	3.0X8 MFZN2BL			01
	VE646600	Heat Sink	OSH-4725C-SP			03
△ C301	FI383470	Capacitor	4700P 400V U.C.S.V			01
C302	VL802400	Polypropylene Capacitor	0.022U/630V			01
C303	VS819200	Monolithic Ceramic Cap.	0.100 50V Z			01
C304	VS819200	Monolithic Ceramic Cap.	0.100 50V Z			01
C305	VZ878800	Electrolytic Cap.	2200U 160V			07
C306	UR759100	Electrolytic Cap.	1000 35.0V			01
C307	UR759100	Electrolytic Cap.	1000 35.0V			01
C308	UR739330	Electrolytic Cap.	3300 16.0V			01
C309	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C310	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C311	UR739330	Electrolytic Cap.	3300 16.0V			01
C312	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C313	UR866100	Electrolytic Cap.	1.00 50.0V			01
C314	UR847100	Electrolytic Cap.	10.00 25.0V			01
C315	UR847100	Electrolytic Cap.	10.00 25.0V			01
C316	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C317	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C318	UN847100	Electrolytic Cap.-BP	10.00 25.0V			01
C319	UR867220	Electrolytic Cap.	22.00 50.0V			01
C320	UR896100	Electrolytic Cap.	1.0 100.0V			01
C321	UR866100	Electrolytic Cap.	1.00 50.0V			01
C322	UR847100	Electrolytic Cap.	10.00 25.0V			01
C323	UR896100	Electrolytic Cap.	1.0 100.0V			01
C324	FH211470	Ceramic Capacitor-SL	47P 500V K			01
C325	UR897470	Electrolytic Cap.	47.0 100.0V			01
C326	UR897100	Electrolytic Cap.	10.0 100.0V			01
C327	FH211470	Ceramic Capacitor-SL	47P 500V K			01

*:New Parts

RANK:Japan only

REF. NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C329	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C330	UR847100	Electrolytic Cap.	10.00 25.0V			01
C331	UR847100	Electrolytic Cap.	10.00 25.0V			01
C332	FG644100	Ceramic Capacitor-F	0.0100 50V Z			01
C333	UA355100	Mylar Capacitor	0.1000 50V J			01
C334	UA355100	Mylar Capacitor	0.1000 50V J			01
C335	VZ878800	Electrolytic Cap.	2200U 160V			07
C336	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
-338	VD930900	Semiconductive Cera. Cap.	0.1000 25V M			01
CN301	LB918030	Base Post Connector	XH 3P TE			01
CN302	LB932050	Base Post Connector	VH- 5P TE			01
CN303	LB932040	Base Post Connector	VH- 4P TE			01
CN304	--	XH Shield Wire	2P L=100 B&C	(V298740)		
CN305	--	XH Connector Assembly	4P L=200 B&C	(V298650)		
CN306	--	XH Connector Assembly	5P L=250 B&C	(V298660)		
CN307	--	XH Connector Assembly	3P L=270 B&C	(V298640)		
CN308	--	VH Connector Assembly	4P L=250 B&C 105fIC	(VZ97390)		
CN309	--	Connector Assembly	3P L=200mm	(VR14290)		
CN310	--	Connector Assembly	3P L=200mm	(VR14290)		
CN312	--	Connector Assembly	3P L=200mm	(VR14290)		
CN313	--	Connector Assembly	3P 120mm B&B 2mm	(VQ60190)		
CN314	--	Connector Assembly	3P L=200mm	(VR14290)		
CN315	--	Connector Assembly	3P L=200mm	(VR14290)		
CN316	--	Connector Assembly	3P 120mm B&B 2mm	(VQ60190)		
CN317	--	Connector Assembly	3P L=200mm	(VR14290)		
CN318	VG879900	Base Post Connector	VA- 2P TE	U,E,B		01
D301	VB941200	Diode	1SS133,1SS176			01
-309	VB941200	Diode	1SS133,1SS176			01
△ DB301	IH001370	Diode Stack	D5FB20 5.0A 200V			05
△ DB302	IH001090	Diode Stack	S4VB20 2.6A 200V			05
△ DB303	VS197600	Diode Stack	S1VB20 1.0A 200V			02
FT301	IE000010	FET	2SK30ATM Y			03
FT302	IE000010	FET	2SK30ATM Y			03
△ FZ301	V0014600	Fuse	3.00A 125V	J,U		01
△ FZ301	KB001660	Fuse	T 1.60AL/250V S	E,B		01
△ FZ302	VZ093400	Fuse	0.5A 250V	J,U		01
△ FZ302	KB000710	Fuse	T 500AL/250V S	E,B		02
△ FZ303	VZ093400	Fuse	0.5A 250V	J,U		01
△ FZ303	KB000710	Fuse	T 500AL/250V S	E,B		02
△ FZ304	V0014600	Fuse	3.00A 125V	J,U		01
△ FZ304	KB000760	Fuse	T 3.15AL/250V S	E,B		01
△ FZ305	VS822500	Fuse	2.00A 125V	J,U		02
△ FZ305	KB000750	Fuse	T 2.00AL/250V	E,B		01
FZ301	LB201530	Fuse Holder	PC-PH1			01
-305	LB201530	Fuse Holder	PC-PH1			01
△ IC301	XD853A00	IC	NJM7815FA	REGULATOR +15V		03
△ IC302	XD854A00	IC	NJM7915FA	REGULATOR -15V		03
IC303	XJ607A00	IC	NJM7805FA	REGULATOR +5V		02
J	VA078900	Jumper Wire	0.55			
K301	VA855400	Terminal				01
K302	VA855400	Terminal				01
K303	VA855400	Terminal		J		01
K304	VA855400	Terminal		J		01
R301	HF756220	Carbon Resistor	2.2K 1/4 J			01
R302	HF757100	Carbon Resistor	10.0K 1/4 J			01
R303	HF758100	Carbon Resistor	100.0K 1/4 J			01
R304	HF755220	Carbon Resistor	220.0 1/4 J			01
R305	HF758100	Carbon Resistor	100.0K 1/4 J			01
R306	HF758120	Carbon Resistor	120.0K 1/4 J			01
R307	HF756220	Carbon Resistor	2.2K 1/4 J			01
R308	HF758100	Carbon Resistor	100.0K 1/4 J			01
R309	HF755220	Carbon Resistor	220.0 1/4 J			01
R310	HF758100	Carbon Resistor	100.0K 1/4 J			01
R311	HF756390	Carbon Resistor	3.9K 1/4 J			01
R312	HF758100	Carbon Resistor	100.0K 1/4 J			01
-315	HF758100	Carbon Resistor	100.0K 1/4 J			01
R316	HF757220	Carbon Resistor	22.0K 1/4 J			01
R317	HF757330	Carbon Resistor	33.0K 1/4 J			01
R318	HF758150	Carbon Resistor	150.0K 1/4 J			01
R319	HF756100	Carbon Resistor	1.0K 1/4 J			01

*:New Parts

RANK:Japan only

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R320	HF758100	Carbon Resistor	100.0K 1/4 J			01
R321	HF755100	Carbon Resistor	100.0 1/4 J			01
R322	HF757680	Carbon Resistor	68.0K 1/4 J			01
R323	HF756470	Carbon Resistor	4.7K 1/4 J			01
R324	HF759220	Carbon Resistor	2.2M 1/4 J			01
R325	HF756270	Carbon Resistor	2.7K 1/4 J			01
R326	HF758680	Carbon Resistor	680.0K 1/4 J			01
R327	VC761800	Metal Oxide Film Resistor	1.5K 2W J			01
R328	HF756680	Carbon Resistor	6.8K 1/4 J			01
R329	VC750000	Metal Oxide Film Resistor	10.0K 1W J			01
R330	VC749400	Metal Oxide Film Resistor	5.6K 1W J			01
R331	HV755220	Flame Proof C. Resistor	220.0 1/4 J			01
R332	VC753800	Metal Oxide Film Resistor	1.0 2W J			01
R333	HF755470	Carbon Resistor	470.0 1/4 J			01
R334	HF755470	Carbon Resistor	470.0 1/4 J			01
R335	HF755680	Carbon Resistor	680.0 1/4 J			01
R336	HF755680	Carbon Resistor	680.0 1/4 J			01
R337	HV755150	Flame Proof C. Resistor	150.0 1/4 J			01
R338	HV754100	Flame Proof C. Resistor	10.0 1/4 J			01
R339	HV755150	Flame Proof C. Resistor	150.0 1/4 J			01
R340	VC755500	Metal Oxide Film Resistor	4.7 2W J			01
R341	VC761800	Metal Oxide Film Resistor	1.5K 2W J			01
RA301	VJ787600	Metal Plate Resistor	MPC725 0.22+0.22	5W		02
-303	VJ787600	Metal Plate Resistor	MPC725 0.22+0.22	5W		02
RY301	VL369700	Relay	DC RY5W-K	5V		07
SPG,H	--	Connector Assembly	#18 SP	1set (WH,RE)	(VZ87890)	
TR301	IC174070	Transistor	2SC1740S R,S			01
-303	IC174070	Transistor	2SC1740S R,S			01
TR304	IA097030	Transistor	2SA970 GR,BL			01
-306	IA097030	Transistor	2SA970 GR,BL			01
TR307	VE198800	Transistor	2SC2705 O,Y			01
TR308	VE198800	Transistor	2SC2705 O,Y			01
TR309	VE198700	Transistor	2SA1145 O,Y			01
TR310	VQ116600	Pair Transistor	A1837/C4793			04
TR311	VQ116600	Pair Transistor	A1837/C4793			04
TR312	VA107000	Transistor	2SC3423 O,Y			02
TR313	VY705000	Transistor	2SC5200 R,O			05
TR314	VY705000	Transistor	2SC5200 R,O			05
VR301	VA787900	Trimmer Potentiometer	B 4.7K 3P RHE			01
VR302	VB244500	Trimmer Potentiometer	B 470.0K 3P KVS			01
VR303	VA787700	Trimmer Potentiometer	B 2.2K 3P RHO			01
ZD301	VQ554700	Zener Diode	MTZJ9.1B 9.1V			01
*	V2970700	Circuit Board	PN		(XV485A0)	
	V2176100	LED Spacer	BL	AMP SELECT		03
C201	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
-203	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C204	UR847100	Electrolytic Cap.	10.00 25.0V			01
C205	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
C206	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
CN201	VC166500	Connector Base Post	PH-12P SE			01
CN202	VB389600	Connector Base Post	PH-11P SE			01
D201	VT332900	Diode (chip)	1SS355 TE-17			01
-214	VT332900	Diode (chip)	1SS355 TE-17			01
IC201	VH630700	LED Display	HDSP-5521 7seg.X2			04
IC201	VU647500	IC Socket	100-024-000			04
IC202	XQ042A00	IC	SN74HC374ANSR	D-FF		03
-205	XQ042A00	IC	SN74HC374ANSR	D-FF		03
LD201	VG261500	LED	GL3PR8 RE	SPRING,HALL,PLATE		01
-206	VG261500	LED	GL3PR8 RE	AMP,TAPE ECHO,UTIL		01
LD201	VA277900	LED Spacer				01
-206	VA277900	LED Spacer				01
LD207	VN327300	LED	SLP-155B-81 RE	AMP SELECT		01
-214	VN327300	LED	SLP-155B-81 RE			01
R201	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R202	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01
-205	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01
R206	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R207	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01
R208	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01

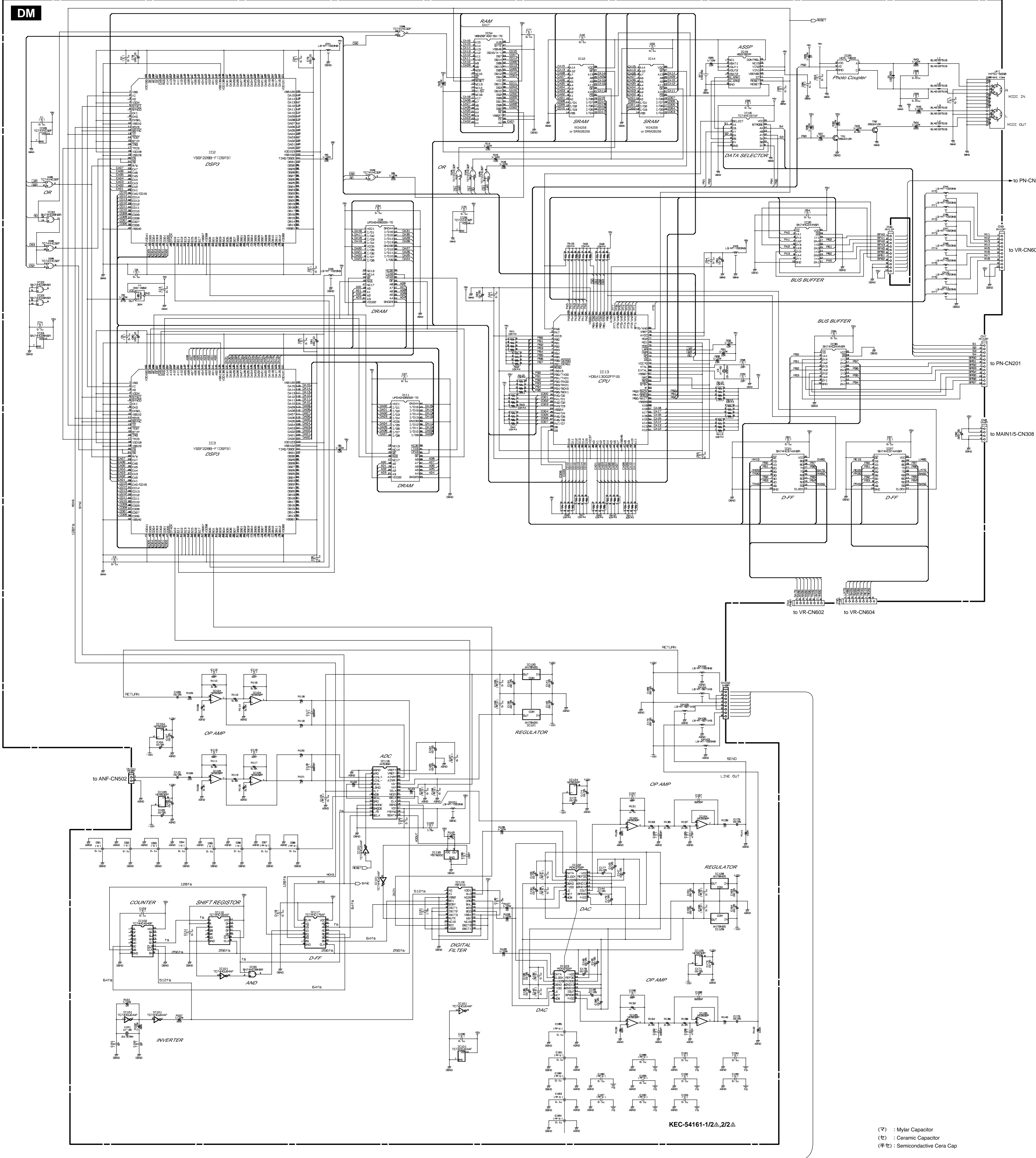
*:New Parts

RANK:Japan only

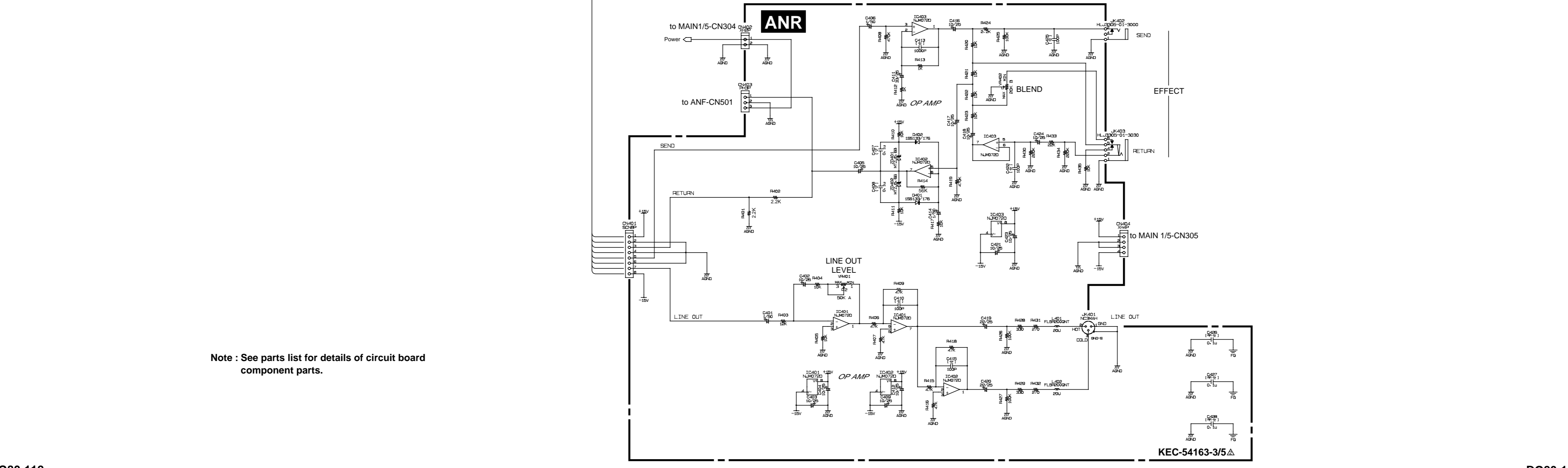
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R209	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R210	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01
-212	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01
R213	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R214	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01
-220	RD255820	Carbon Resistor (chip)	820.0 0.1 J			01
R221	RD255560	Carbon Resistor (chip)	560.0 0.1 J			01
-234	RD255560	Carbon Resistor (chip)	560.0 0.1 J			01
SW201	KA907030	Push Switch	SKHHAL	AMP SELECT, REVERB, up,		01
-214	KA907030	Push Switch	SKHHAL	down, MODE, STORE, RECALL		01
*	XV536A00	Speaker	G12H-100			
	VR144600	Connector Assembly	L=500mm			
	--	Connector Assembly	SP frame	U (V298620)		06
	--	Power Switch Assembly		(V225770)		
△	V2217000	Switch	JW	POWER switch		07
△	MG000610	AC Cord	2P 15A 2.1m	J		06
△	VZ176600	AC Cord Assembly	3P SJT VAR	U		07
△	VZ971600	AC Cord Assembly	3P 6A VAR	E		08
△	V2017600	AC Cord Assembly	3P 10A 2.5m	B		09
	--	PH Connector Assembly	11P L=300 C&C	(VZ97520)		
	--	PH Connector Assembly	12P L=300 C&C	(VZ97530)		
△	XU118A00	Power Transformer		J		16
△	XU295A00	Power Transformer		U		16
△	XU296A00	Power Transformer		E, B		16
	LB201120	Phone Jack	JL2B X-G7639	SPEAKER1, 2(EXT)		03
	--	Connector Assembly	UL1672 RE WH	(V306910)		

*:New Parts

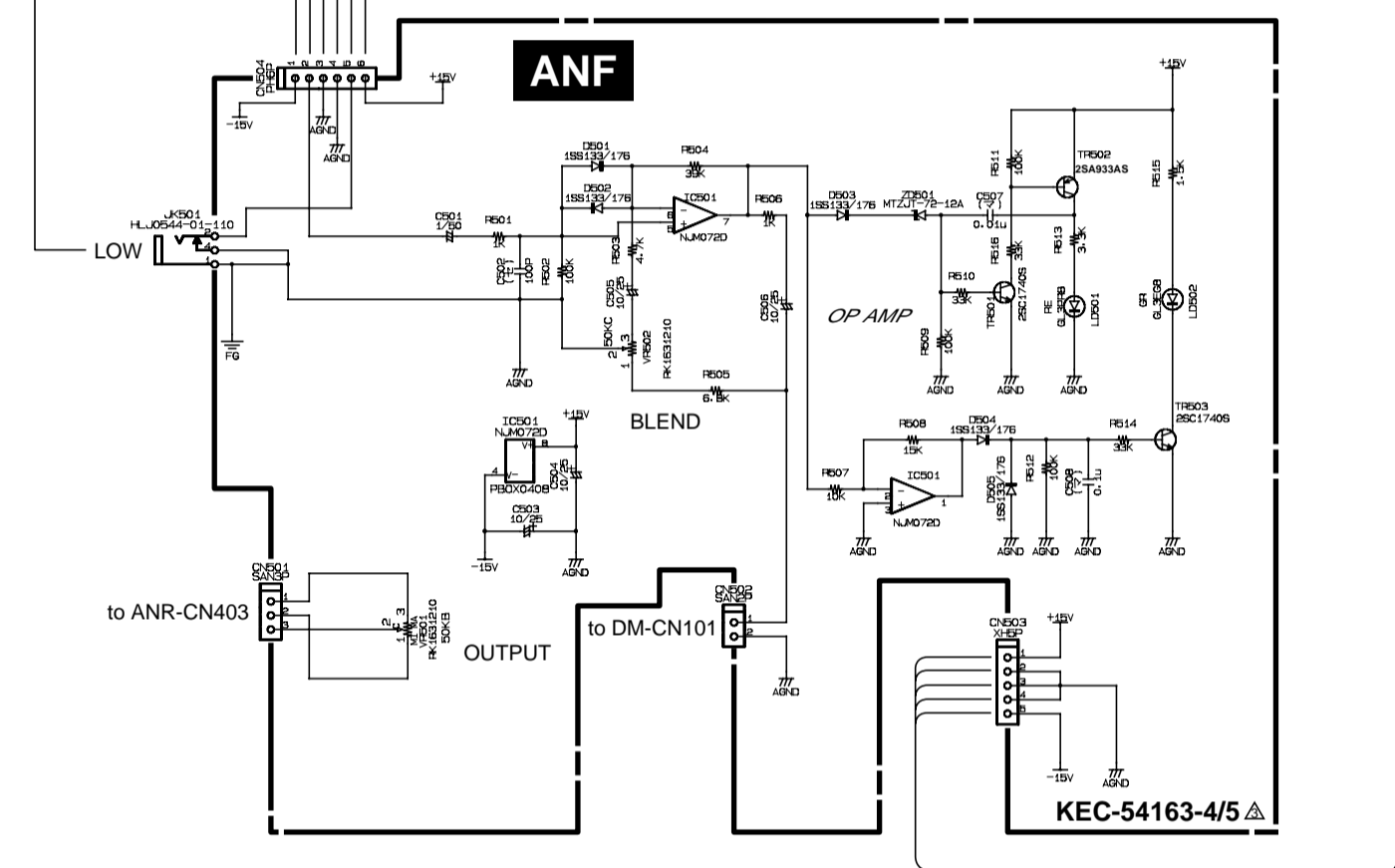
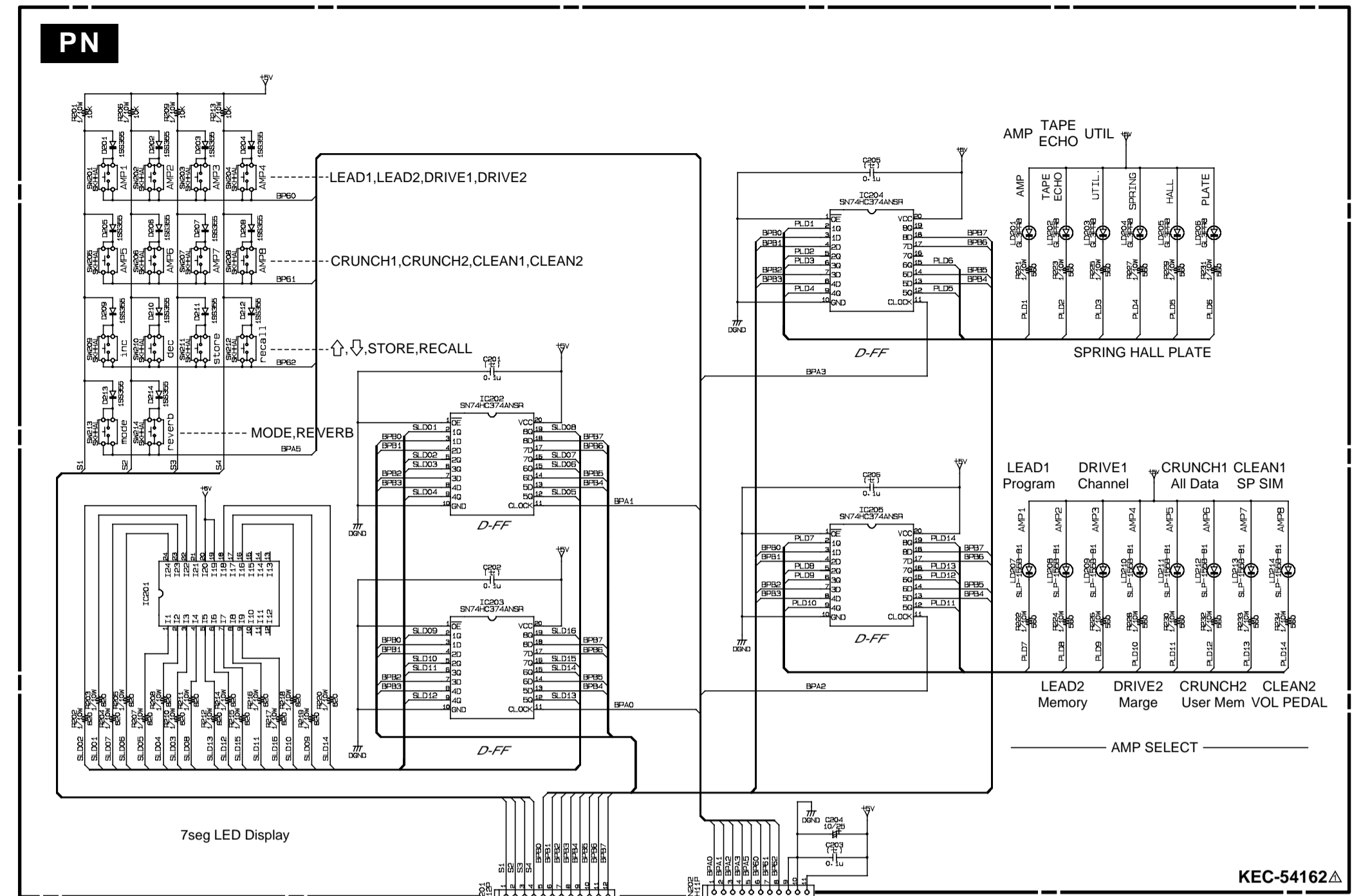
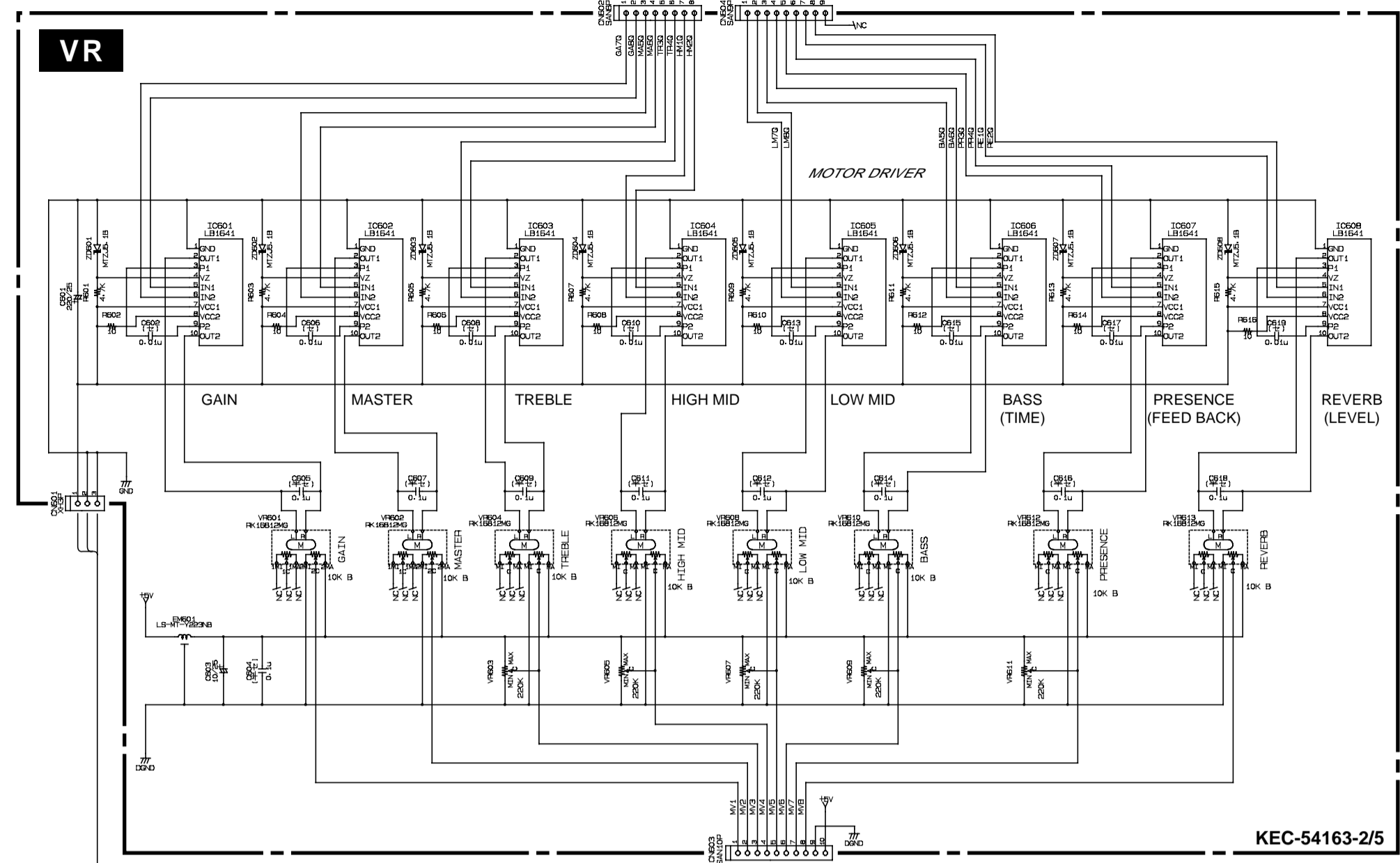
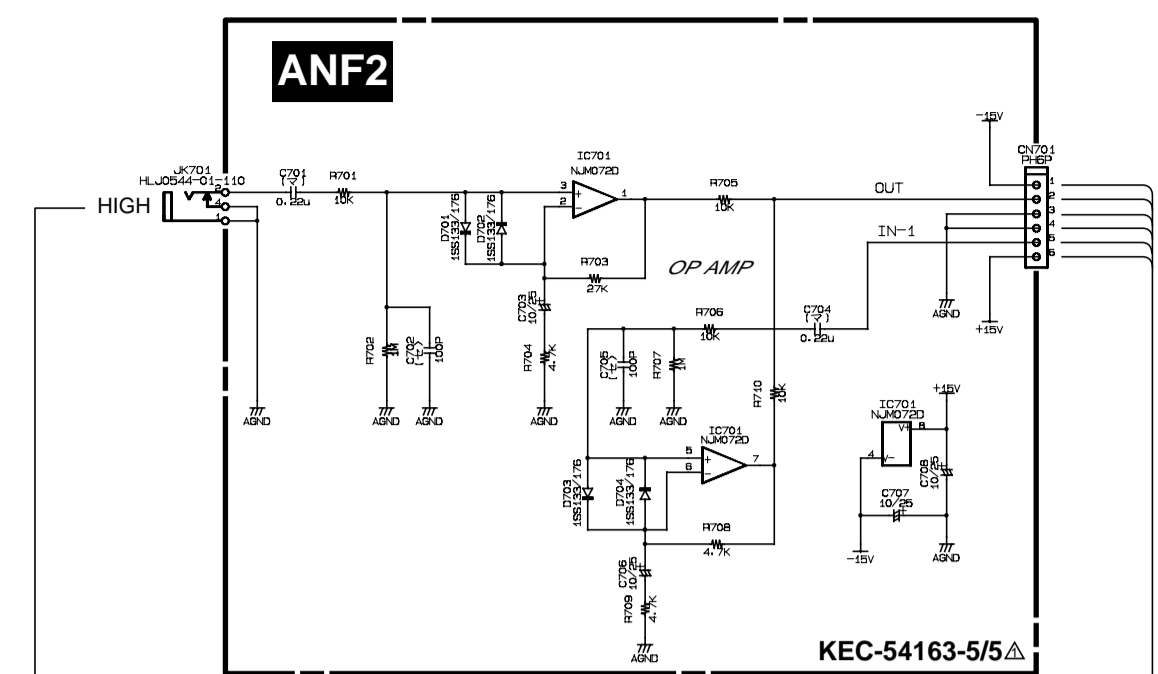
RANK:Japan only



(M) : Mylar Capacitor
 (C) : Ceramic Capacitor
 (半C) : Semiconductive Cera Cap

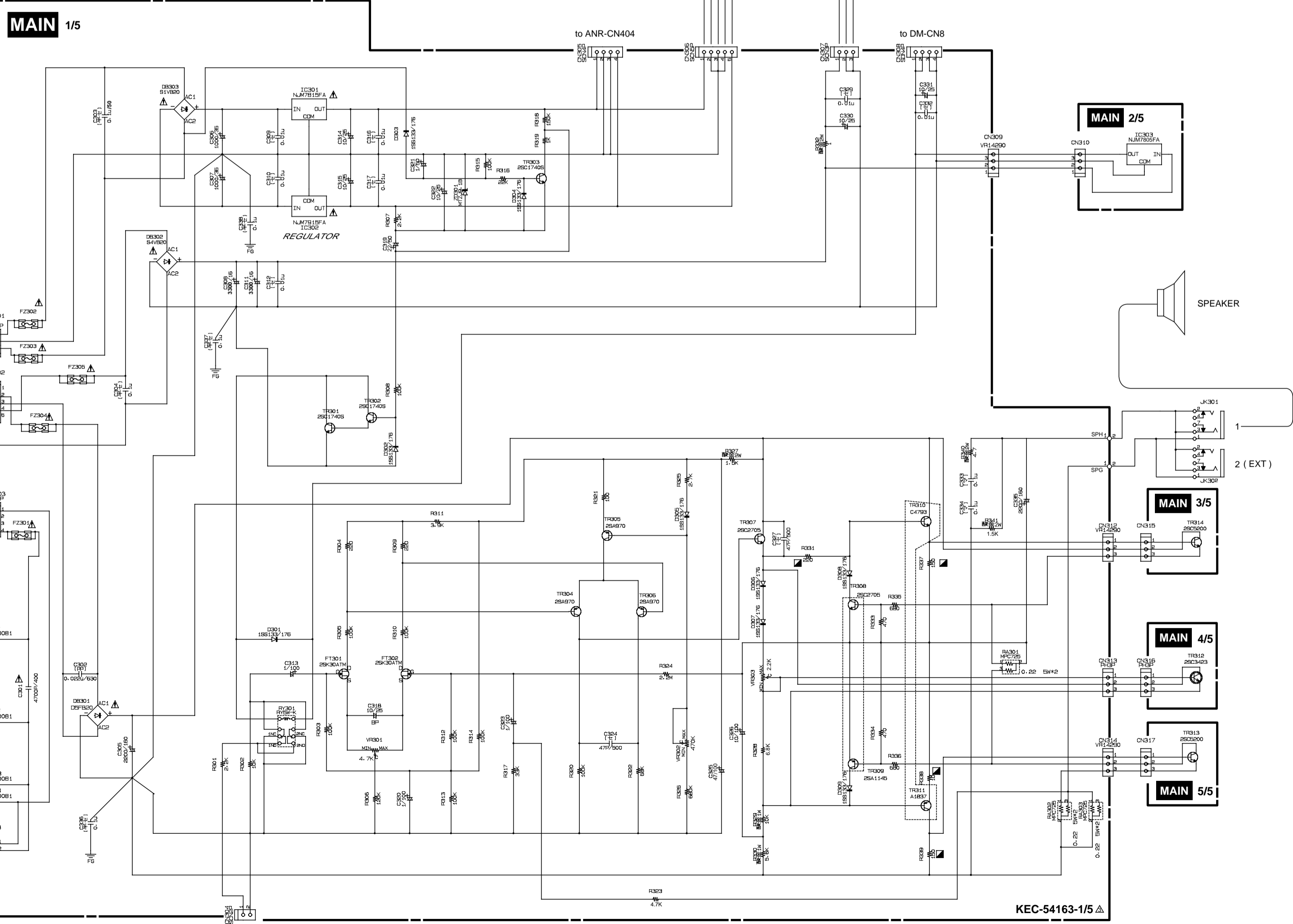


Note : See parts list for details of circuit board component parts.

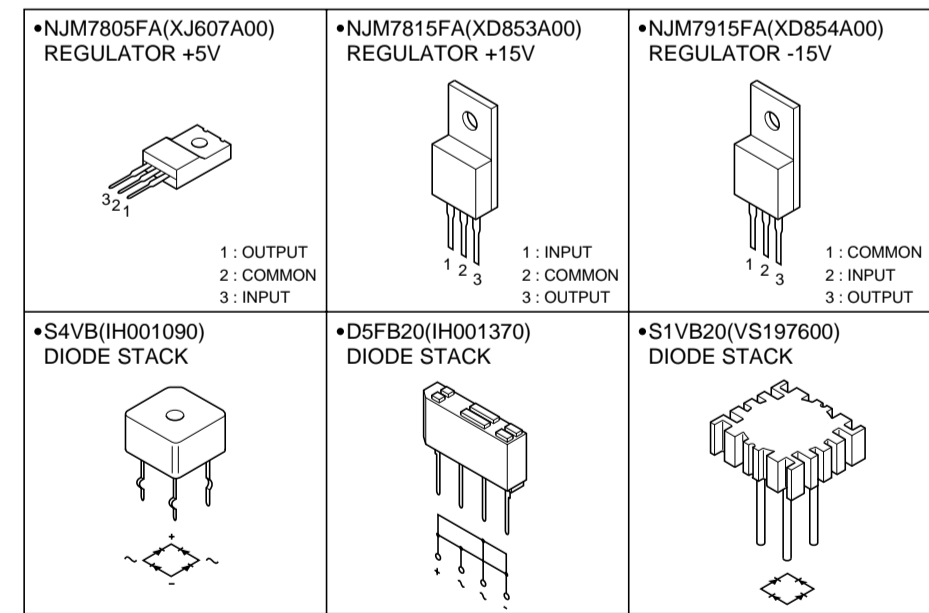


	Power transformer	AC Cord	Cord relief
Japanese model	XU118A00	MS006.10	CB056850
U.S & Canadian models	XU295A00	V2176600	CB056850
General export model	XU296A00	V2971600	CB032842
British model	XU296A00	V2017600	CB032842

	Japanese models	U.S & Canadian models	General export model & British model
FZ300 FZ303	V2093400 250V	TLO-3A 125V	KB000710 250V T500M-L
FZ305	V9822500 125V	T2A 250V	KB000750 T3A L
FZ304	V0014500 125V	T3A 250V	KB000750 T3.15AL
FZ301	V0014500 125V	T3A 250V	KB001560 T1-6A L



- (M) : Mylar Capacitor
- (C) : Ceramic Capacitor
- (半C) : Semiconductive Cera Cap
- (PP) : Polypropylene Capacitor
- : Flame Proof Carbon Resistor
- : Metal Oxide Film Resistor



WARNING
Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.

Note : See parts list for details of circuit board component parts.

