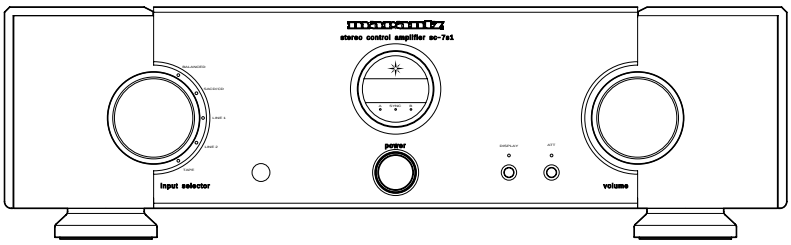
Service Manual

SC7S1 /F1N/N1G/U1G

Stereo Control Amplifier



SC-7S1

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Please use this service manual with referring to the user guide (D.F.U.) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

SC-7S1

Part no 340J855020
First Issue 2003.09
ecm

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Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

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The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

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1100 MAPLEWOOD DRIVE
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USA
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FAX : 630 - 741 - 0301

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MARANTZ EUROPE B.V.
P. O. BOX 8744, BUILDING SILVERPOINT
BEEMDSTRAAT 11, 5653 MA EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2507844
FAX : +31 - 40 - 2507860

CANADA

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 905 - 831 - 6333
FAX : 905 - 831 - 6936

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SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
2640 WHITE OAK CIRCLE, SUITE A
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

PROFESSIONAL **AUSTRALIA**

TECHNICAL AUDIO GROUP PTY, LTD
43-53 Bridge Rd.,
STANMORE NSW 2048
AUSTRALIA
PHONE : +61 - (0)2 - 9519 - 0900
FAX : +61 - (0)2 - 9519 - 0600

PROFESSIONAL **HONG KONG**

Jolly ProAudio Broadcast Engineering Ltd.
UNIT 2, 10F, WAH HUNG CENTRE,
41 HUNG TO ROAD, KWUN TONG, KLN.,
HONG KONG
PHONE : 852 - 21913660
FAX : 852 - 21913990

AUSTRALIA

QualiFi Pty Ltd,
24 LIONEL ROAD,
MT. WAVERLEY VIC 3149
AUSTRALIA
PHONE : +61 - (0)3 - 9543 - 1522
FAX : +61 - (0)3 - 9543 - 3677

THAILAND

MRZ STANDARD CO., LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 9181
FAX : +66 - 2 - 224 6795

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WO KEE HONG DISTRIBUTION PTE LTD
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FAX : +65 6858 6078

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14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
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FAX : +64 - 9 - 8463554

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PAI- YUING CO., LTD.
6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 - 2 - 25221304
FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
2ND FLOOR BANGUNAN INFINITE CENTRE
LOT 1, JALAN 13/6, 46200 PETALING JAYA
SELANGOR DARUL EHSAN, MALAYSIA
PHONE : +60 - 3 - 7954 8088
FAX : +60 - 3 - 7954 7088

JAPAN *Technical*

MARANTZ JAPAN, INC.
35- 1, 7- CHOME, SAGAMIONO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 42 748 1013
FAX : +81 42 741 9190

日本マランツ株式会社

本 社 〒228-8505
神奈川県相模原市相模大野7-35-1

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

Audio Characteristics

Rated Output (20Hz - 20kHz) ..... 1.7V (Balanced)
..... 1.7V (Unbalanced)
Maximum Output (20Hz - 20kHz) ..... 13.5V (Balanced)
..... 13.5V (Unbalanced)
Total Harmonic Distortion (20Hz - 20kHz) ..... 0.0015% (Balanced)
..... 0.003% (Unbalanced)
Frequency Response (+0/-3dB) ..... 3 Hz - 150 kHz(Balanced)
..... 3 Hz - 150 kHz(Unbalanced)
Input Sensitivity / Input Impedance ..... 420mV / 20kΩ(Balanced)
..... 420mV / 20kΩ(Unbalanced)
Output Impedance ..... 220Ω(Balanced)
..... 220Ω(Unbalanced)
Signal-to-Noise Ratio (IHF-A Network) ..... 103dB(Balanced)
..... 105dB(Unbalanced)
Channel Separation (20kHz) ..... ≥100dB(Balanced)
..... ≥100dB(Unbalanced)
Volume Adjustment Range ..... -∞,-100 - 0dB(0.5dB step)
Trim Level Adjustment Range ..... ±6dB(0.5dB step)
Attenuator Levels ..... -20, -40, -60, -∞dB

Power Supply

Power Requirement [/F] ..... AC 100V 50/60Hz
[/N] ..... AC 230V 50Hz
[/U] ..... AC 120V 60Hz
Power Consumption [/F] ..... 18 W
[/N] ..... 22 W
[/U] ..... 0.2 A

General

Maximum Dimensions ..... 459(W) x 136(H) x 441 (D) mm
Weight 21kg

Caution

The layout of this amplifier is well concerned for sound quality.

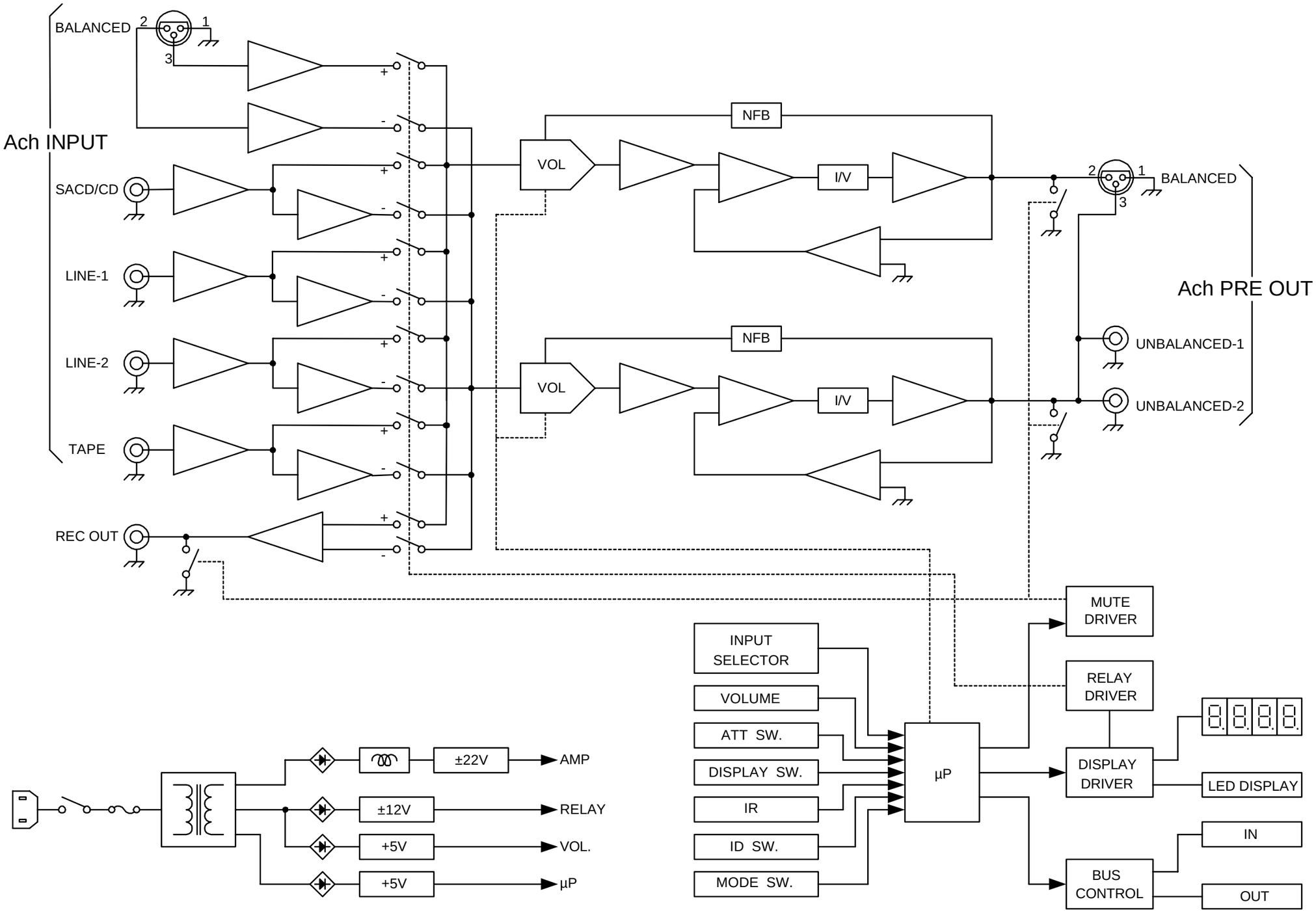
1. When screws and washers are removed, those parts must be set to the same places.
2. When wires are removed, the wires must be installed in the same roots, same places.
3. Do not hold the side panels (001D, 002D) and the bracket (914G) to move the unit when the unit is disassembled.

注意

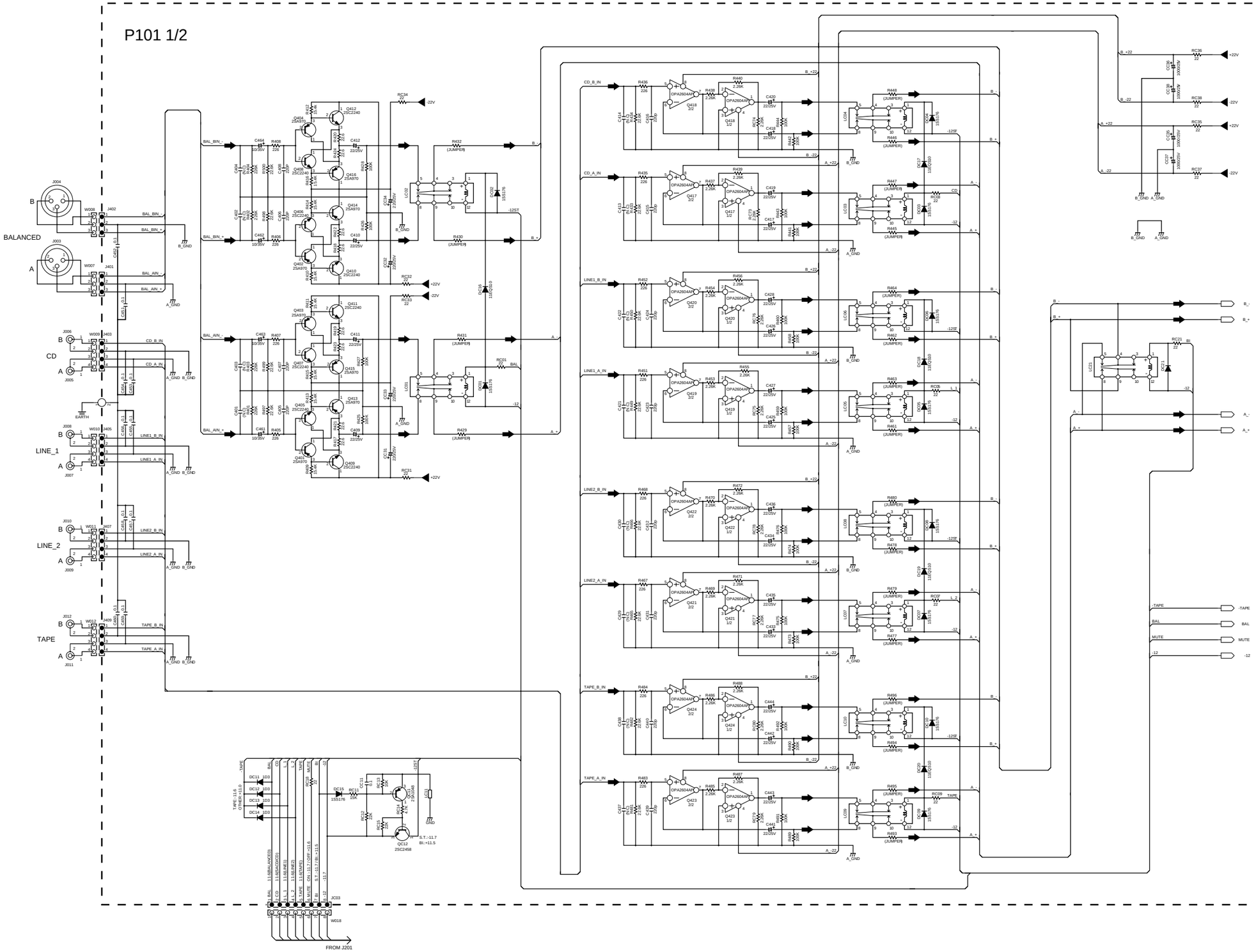
当機は音質を考慮したレイアウトになっています。

1. ネジやワッシャ類を取り外した場合、元の位置に取り付けてください。
2. ワイヤ類を取り外した場合の配線ルートは、元のルート通りに戻してください。
3. 当機を分解した状態で移動するときは、サイドパネル（001D, 002D）及び ブラケット（915G）を持たないでください。。

2. BLOCK DIAGRAM



3. SCHEMATIC DIAGRAM



P101 2/2

FROM J805

FROM J205

BALANCED OUT

PREOUT1

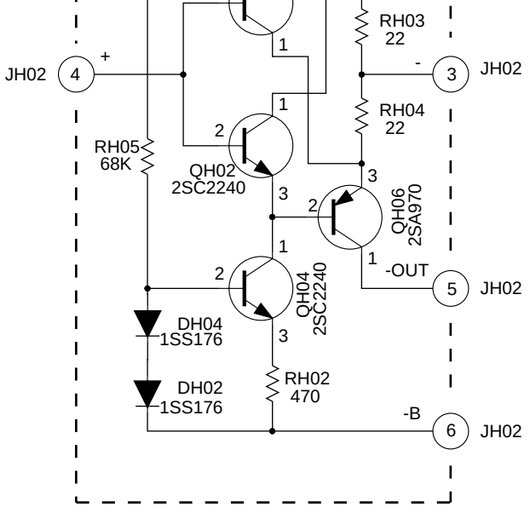
PREOUT2

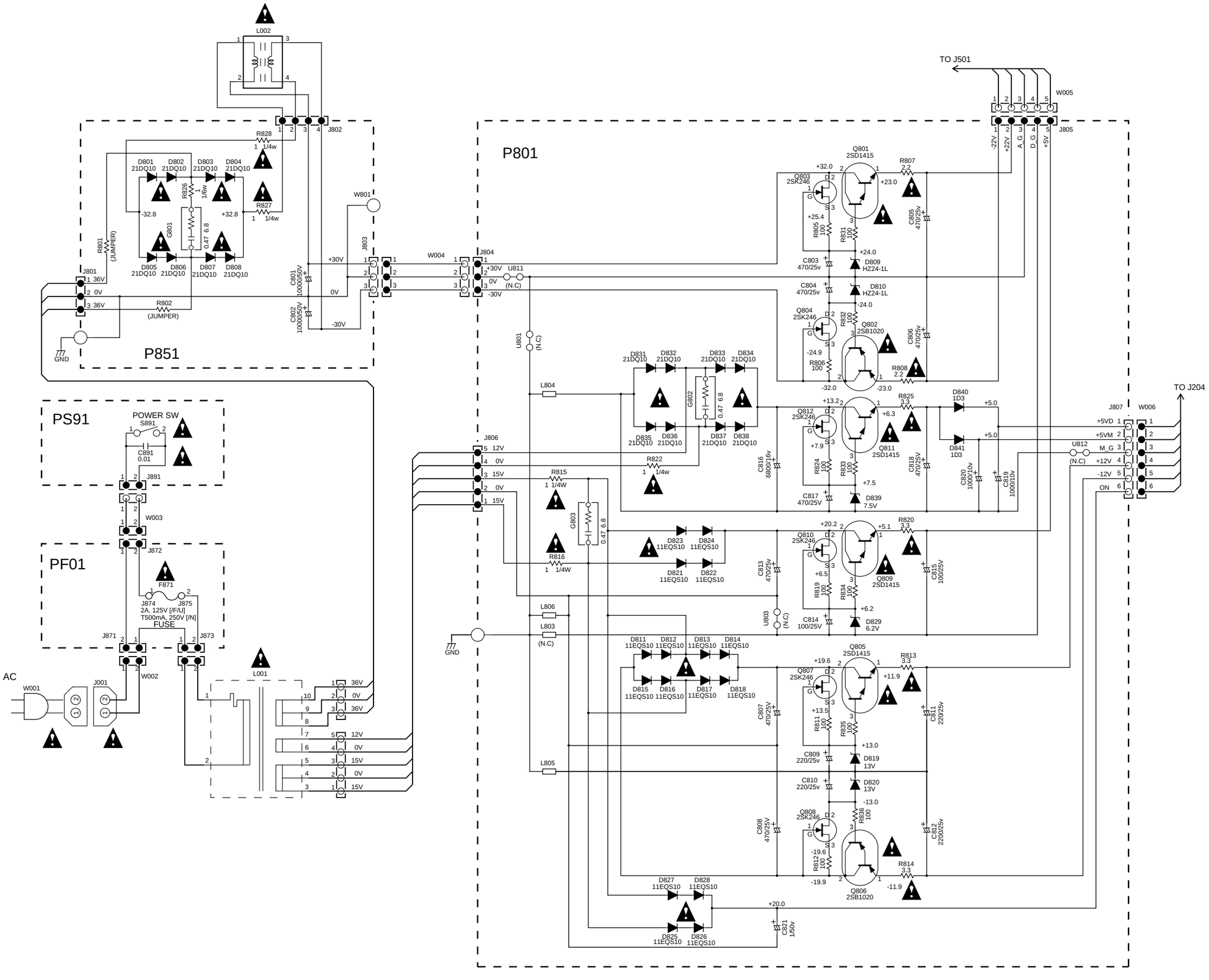
B

A

REC OUT

HDAM-SA




P801
P851
PS91
POWER SW
S891
C891
0.01
J891
W003
PF01
F871
J872
J874
J875
2A, 125V [/F/U]
T500mA, 250V [/N]
FUSE
J871
J873
W002
W001
J001
AC
L001
L002
J802
R828
1 1/4w
D801 21DQ10
D802 21DQ10
D803 21DQ10
D804 21DQ10
D805 21DQ10
D806 21DQ10
D807 21DQ10
D808 21DQ10
R826 1/6w
R827
1 1/4w
G801
0.47 6.8
-32.8
+32.8
R801 (JUMPER)
R802 (JUMPER)
J801
1 36V
2 0V
3 36V
GND
W801
J803
C901 10000/50V
C902 10000/50V
+30V
0V
-30V
W004
J804
U811
(N.C)
U801
(N.C)
L804
J806
5 12V
4 0V
3 15V
2 0V
1 15V
R815
1 1/4W
R816
1 1/4W
G803
0.47 6.8
L806
L803
(N.C)
L805
GND
D831 21DQ10
D832 21DQ10
D833 21DQ10
D834 21DQ10
D835 21DQ10
D836 21DQ10
D837 21DQ10
D838 21DQ10
G802
0.47 6.8
R822
1 1/4w
D823 11EQS10
D824 11EQS10
D821 11EQS10
D822 11EQS10
D811 11EQS10
D812 11EQS10
D813 11EQS10
D814 11EQS10
D815 11EQS10
D816 11EQS10
D817 11EQS10
D818 11EQS10
D827 11EQS10
D828 11EQS10
D825 11EQS10
D826 11EQS10
C816 6800/16v
C813 470/25v
C807 470/25v
C808 470/25v
C821 1/50v
TO J501
W005
J805
-22V
+22V
A_G
D_G
+5V
Q801 2SD1415
Q803 2SK246
Q804 2SK246
Q802 2SB1020
Q812 2SK246
Q811 2SD1415
Q810 2SK246
Q809 2SD1415
Q805 2SD1415
Q807 2SK246
Q808 2SK246
Q806 2SB1020
+32.0
+23.0
+25.4
+24.0
-24.0
-32.0
-23.0
+13.2
+6.3
+7.9
+7.5
+20.2
+5.1
+6.5
+6.2
+19.6
+11.9
+13.5
+13.0
-13.0
-19.6
-19.9
-11.9
R805 100
R831 100
R832 100
R806 100
R824 100
R833 100
R819 100
R834 100
R811 100
R835 100
R836 100
R812 100
R807 2.2
R808 2.2
R825 3.3
R820 3.3
R813 3.3
R814 3.3
C805 470/25v
C806 470/25v
C818 470/25v
C815 100/25V
C811 220/25v
C812 220/25v
C803 470/25v
C804 470/25v
C817 470/25V
C814 100/25V
C809 220/25v
C810 220/25v
D809 HZ24-1L
D810 HZ24-1L
D839 7.5V
D829 6.2V
D819 13V
D820 13V
D840 1D3
D841 1D3
C820 1000/10v
C819 1000/10v
+5.0
+5.0
+20.0
TO J204
J807
W006
+5VD 1
+5VM 2
M_G 3
+12V 4
-12V 5
ON 6
U812
(N.C)

PU01

P301

P251

VOLUME

INPUT SELECTOR

P261

PU51

DISPLAY LIGHT

PU61

DISPLAY LIGHT

PS01

ID SW

PU71

IR SENSOR

PS71

STEREO

BI-AMP

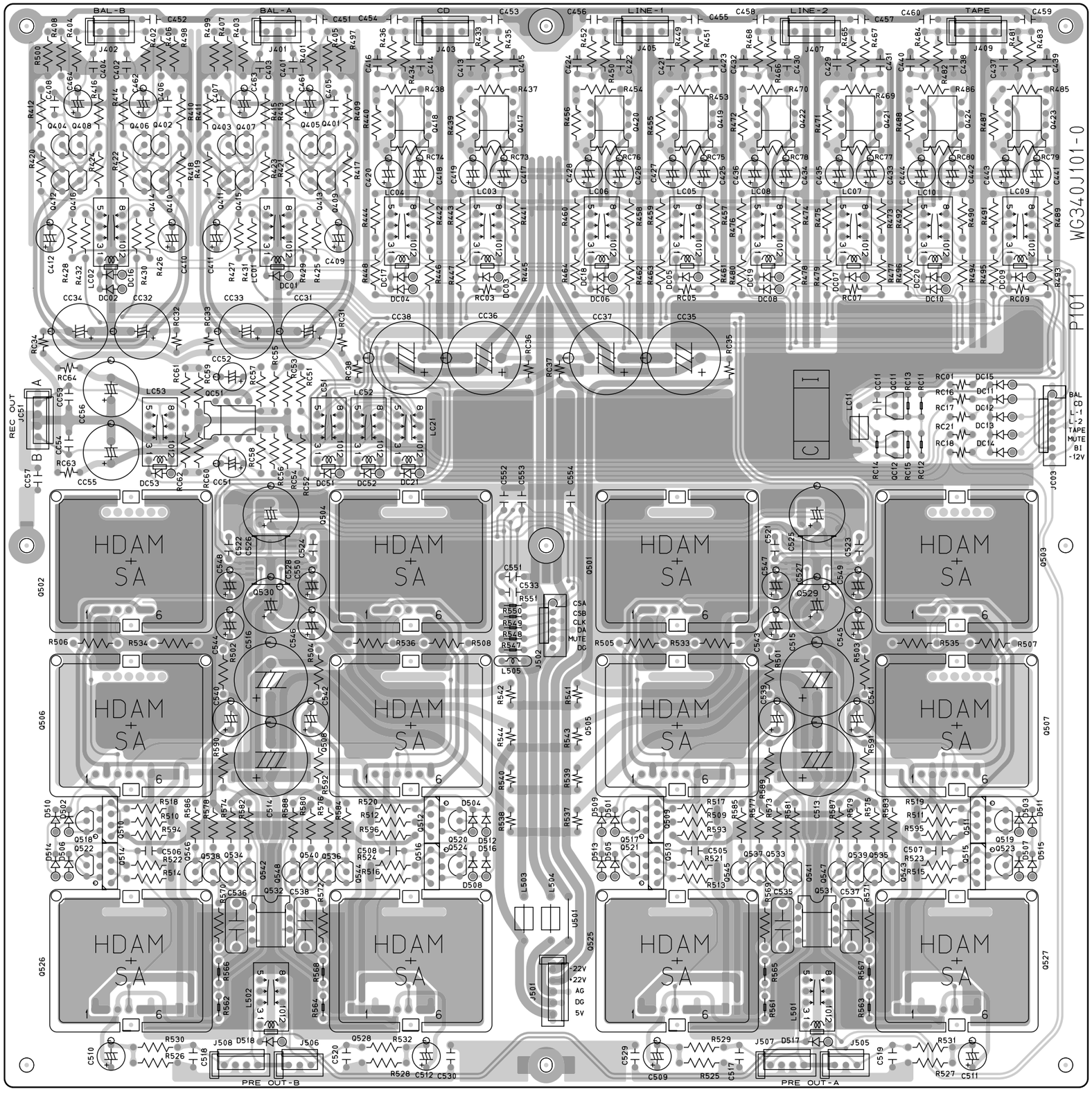
P271

REMOTE IN

REMOTE OUT

4. PARTS LOCATION

P101



Q418 Q417

Q408 Q402 Q407 Q401
Q404 Q406 Q403 Q405

Q416 Q410 Q415 Q409
Q412 Q414 Q411 Q413

Q420 Q419 Q422 Q421 Q424 Q423

DC16
DC02

DC01 DC17 DC03
DC04

DC18 DC05 DC19 DC07 DC20 DC09
DC06 DC08 DC10

QC51

QC11 DC15 DC11 DC12

QC12 DC13 DC14

DC53

DC51 DC52 DC21

Q502

Q530 Q504

Q501 Q529 Q503

Q506

Q508

Q505

Q507

D502 Q518
D510 Q510

Q520 D512
Q512 D504

D501 Q517
D509 Q509

Q519 D511
Q511 D503

Q542 Q544
D506 Q522 Q534 Q536 Q524 D516
D514 Q514 Q538 Q540 Q516 D508
Q546 Q548

Q541 Q543
Q533 Q535 Q523 D515
Q537 Q539 Q515 D507
Q545 Q547

Q532

Q531

Q526

Q528

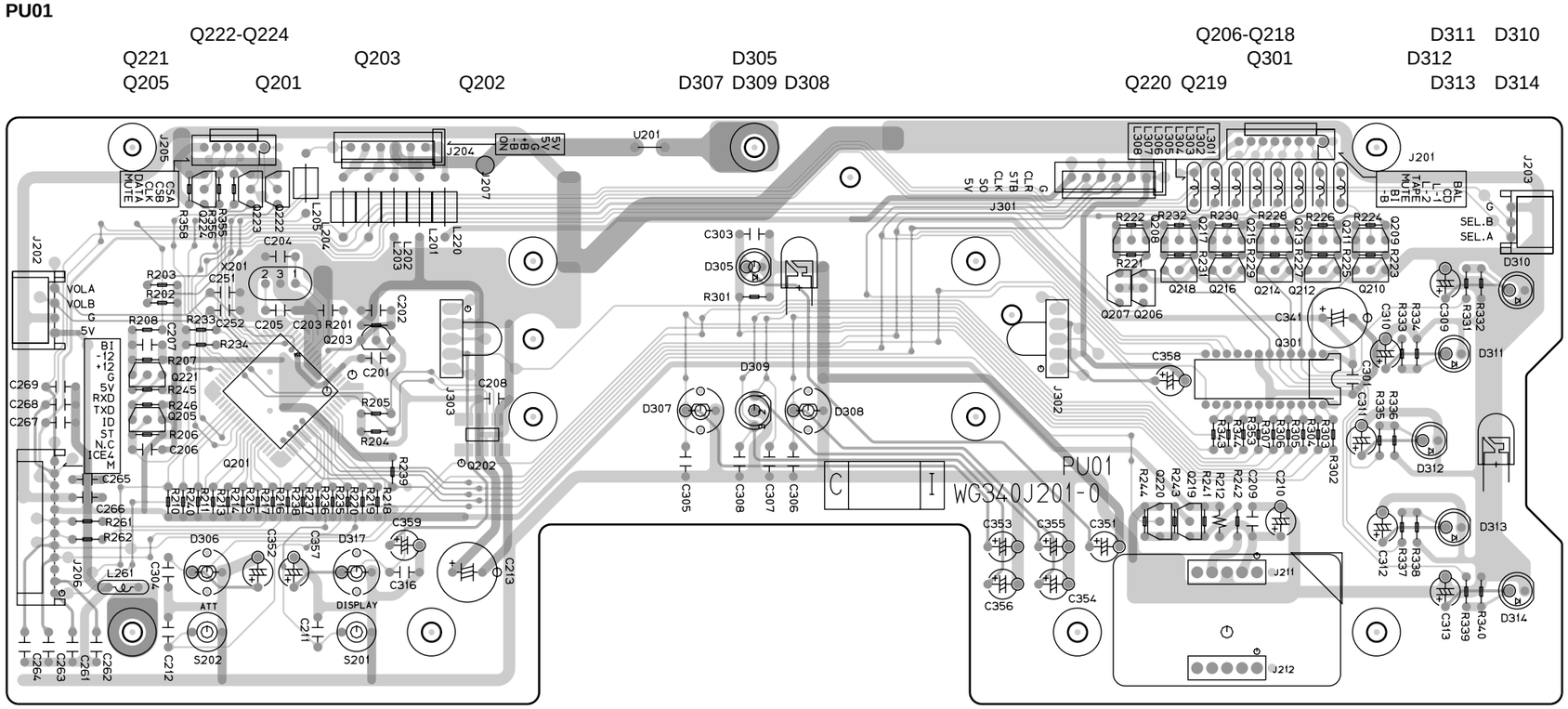
Q525

Q527

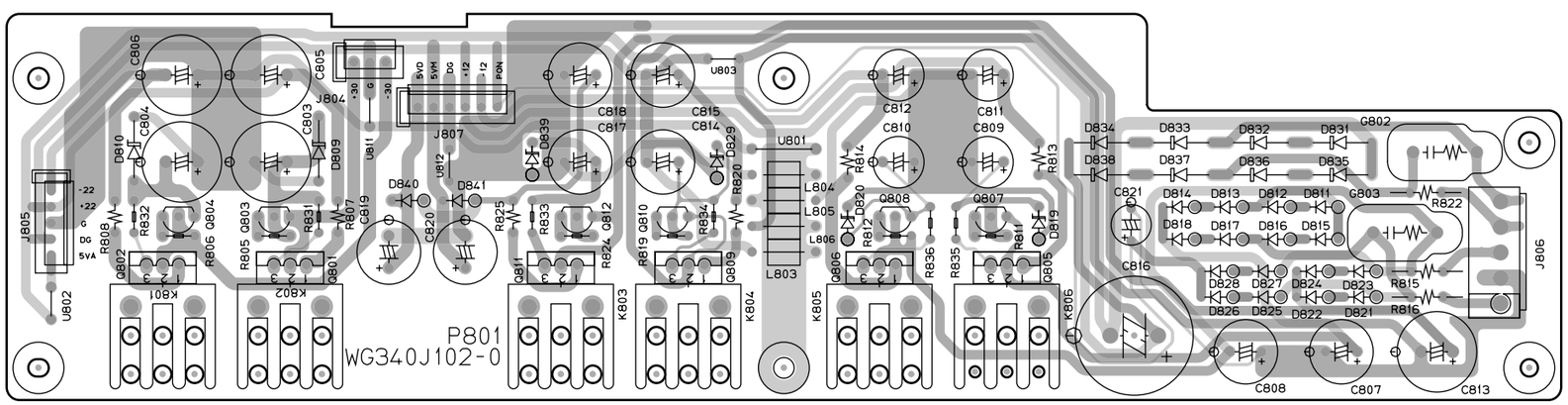
D518

D517

PU01


Q222-Q224
Q221
Q205
Q201
Q203
Q202
D305
D307 D309 D308
Q206-Q218
Q301
Q220 Q219
D311 D310
D312
D313 D314
PU01
WG340J201-0

P801


D810
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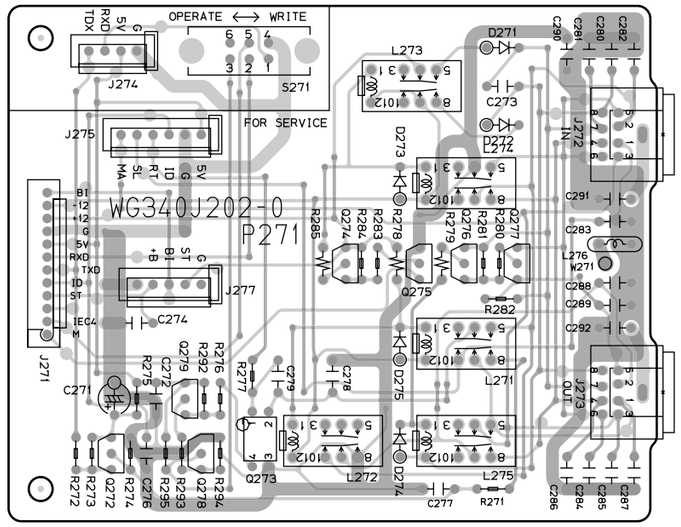
Q802
D809
Q803
Q801
D840 D841
D839
Q812
Q811
D829
Q810
Q809
D820 Q808
Q806
Q807 D819
Q805
D831-D838
D811-D818
D821-D828
P801
WG340J102-0

P271

D271-D273
Q274-Q277
Q279 D275
Q272 Q278 Q273 D274



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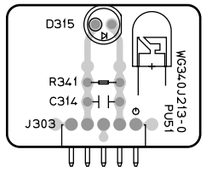
D315



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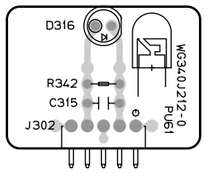
D316



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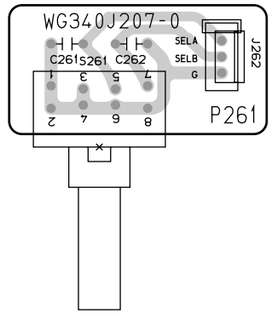

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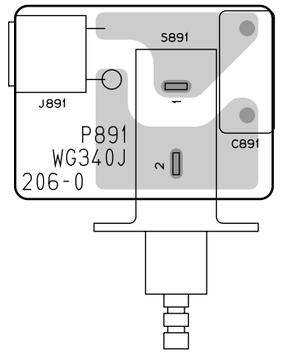

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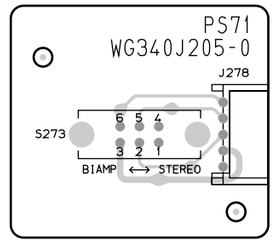

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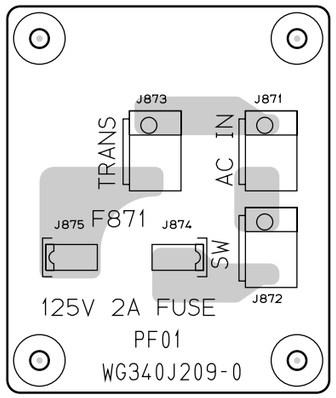

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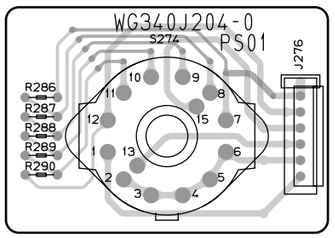
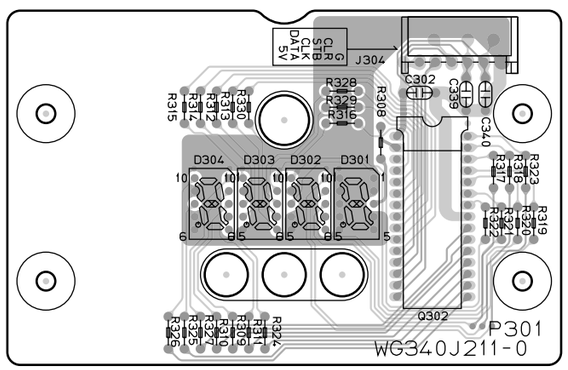


P301

D301- D304



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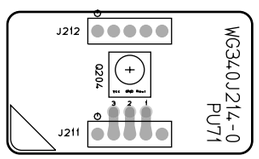
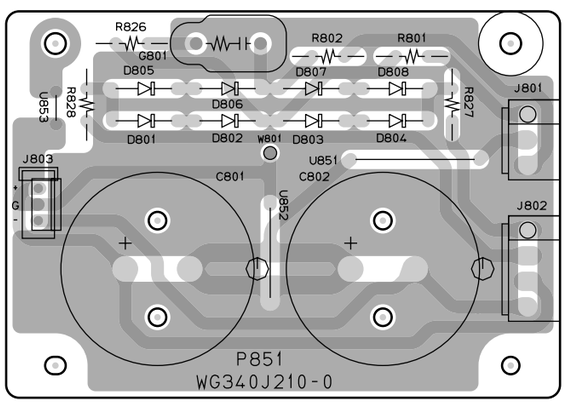


P851

D805 D806 D807 D808
D801 D802 D803 D804



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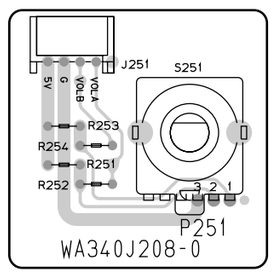
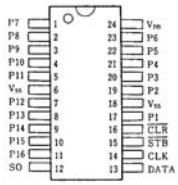


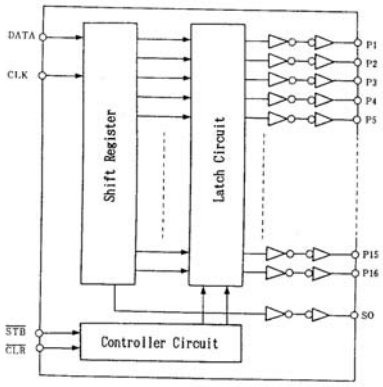
5. IC DATA

Q301:NJU3716

Pin Assignment



Block Diagram



Q302:NJU3719

Pin Description

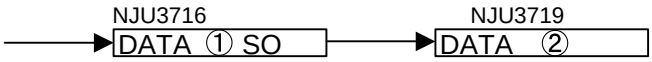
NO.	SYMBOL	FUNCTION	NO.	SYMBOL	FUNCTION
1	P11	Parallel Converts Data Output Terminals	16	DATA	Serial Data Input Terminal
2	P12		17	CLK	Clock Signal Input Terminal
3	P13		18	$\overline{STB}$	Strove Signal Input Terminal
4	P14		19	$\overline{CLR}$	Clear Signal Input Terminal
5	P15		20	P1	Parallel Converts Data Output Terminals
6	P16		21	P2	
7	P17		22	P3	
8	V_{SS}	GND	23	P4	
9	P18	Parallel Converts Data Output Terminals	24	P5	
10	P19		25	P6	
11	P20		26	P7	
12	P21		27	P8	
13	P22		28	P9	
14	P23		29	P10	
15	P24		30	V_{DD}	Power Supply Terminal

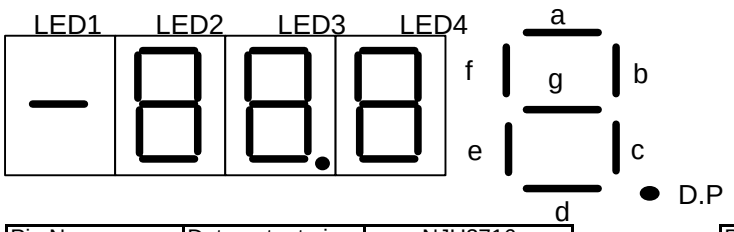
Q526/Q529:WN8816

Pin Description

PIN	NAME	TYPE	DESCRIPTION
1	AVDD	Supply	Supply Voltage for Analogue Circuitry
2	LMO	Analogue Output	External Op-amp Inverting Input (Left Channel)
3	LFO	Analogue Input	External Op-amp Feedback Signal (Left Channel)
4	LIN	Analogue Input	Input Signal (Left Channel)
5	LGND	Analogue Input	Input Signal Ground (Left Channel)
6	CSB	Digital Input	Chip Select (active low)
7	DVDD	Supply	Supply Voltage for Digital Circuitry
8	MUTEB	Digital Input	Mute (active low)
9	DATA	Digital In / Out	Serial Interface Data Input / Output (tri-state)
10	CCLK	Digital Input	Serial Interface Clock
11	DGND	Supply	Digital Ground
12	RGND	Analogue Input	Input Signal Ground (Right Channel)
13	RIN	Analogue Input	Input Signal (Right Channel)
14	RFO	Analogue Input	External Op-amp Feedback Signal (Right Channel)
15	RMO	Analogue Output	External Op-amp Inverting Input (Right Channel)
16	AGND	Supply	Analogue Ground

LED Port Assignment





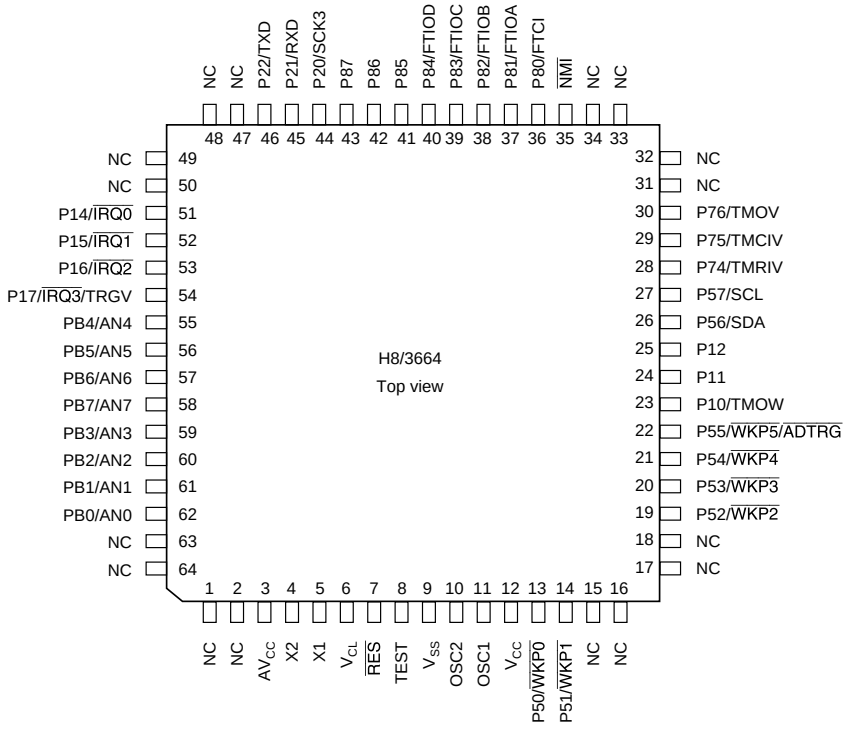
Pin No.	Data output pin	NJU3716
*17	P1	NON
*19	P2	TAPE LED
*20	P3	LINE-2 LED
*21	P4	LINE-1 LED
*22	P5	SACD/CD LED
*23	P6	BALANCED LED
*1	P7	POWER LED
*2	P8	ATT LED
*3	P9	B-CH LED
*4	P10	A-CH LED
*5	P11	SYNK-RED LED
*7	P12	SYNK-GR LED
*8	P13	DISPLAY LED
*9	P14	LIGHT-A
*10	P15	LIGHT-B
*11	P16	NON
*12	SO	

.

Pin No.	Data output pin	NJU3719
*20	P1	LED3b
*21	P2	LED3c
*22	P3	LED3-DP
*23	P4	LED3d
*24	P5	LED3e
*25	P6	LED3g
*26	P7	LED3f
*27	P8	LED3a
*28	P9	NON
*29	P10	LED1g
*1	P11	LED2a
*2	P12	LED2f
*3	P13	LED2g
*4	P14	LED2e
*5	P15	LED2d
*6	P16	LED2c
*7	P17	LED2b
*9	P18	LED4a
*10	P19	LED4f
*11	P20	LED4g
*12	P21	LED4e
*13	P22	LED4d
*14	P23	LED4c
*15	P24	LED4b

Q201:HD64F3664H

Pin Assignment



Note: Do not connect NC pins (* these pins are not connected to the internal circuitry).

Pin Description

Pin	PORT	Name	I/O	Function	Description
1		N.C.	--		
2		N.C.	--		
3	(AVcc)	AVcc	I	Analog power	
4	(X2)	X2	O	Sub clock	
5	(X1)	X1	I	Sub clock	Connect to GND
6	(VCL)	Vcl	I	Internal less voltage power pin	
7	(RES)	RES	I	Reset pin	
8	(TEST)	TEST	I	Test pin	Connect to GND
9	(VSS)	GND	I	Ground	
10	(OSC2)	OSC2	O	System clock	
11	(OSC1)	OSC1	I	System clock	
12	(Vcc)	+5	I	Power supply	
13	P50(WKP0)	Volume A	I	External Interrupt Req.	Active H
14	P51(WKP1)	Volume B	I	External Interrupt Req.	Active H
15		N.C.	--		
16		N.C.	--		
17		N.C.	--		
18		N.C.	--		
19	P52(WKP2)	Selector A	I	External Interrupt Req.	Active H
20	P53(WKP3)	Selector B	I	External Interrupt Req.	Active H
21	P54(WKP4)	Mute-1	O	Output port	L(MUTE ON)
22	P55 (WKP5/ADTRG)	Mute-2	O	Output port	L(MUTE ON)
23	P10(TMOW)	Mute-B	O	Output port	WM8816 Mute
24	P11	N.C.	I		
25	P12	N.C.	I		
26	(SDA)	SDA	I/O	I2C data output port	Serial data to AT24C04 EEPROM
27	(SCL)	SCL	O	I2C clock I/O port	Serial clock to AT24C04 EEPROM
28	P74(TMRIV)	VOL-CS A	O	Output port	WM8816 Chip Select
29	P75(TMCIV)	VOL-CS B	O	Output port	WM8816 Chip Select
30	P76(TMOV)	Power Off	I	External Interrupt Req.	H(POWER OFF)
31		N.C.	--		
32		N.C.	--		

Pin	PORT	Name	I/O	Function	Description
33		N.C.	--		
34		N.C.	--		
35	(NMI)	ICE4			Pull Up
36	P80(FTCI)	N.C.	I		
37	P81(FTIOA)	RC5	I	Capture input port	IR capture
38	P82(FTIOB)	VOL-CLK	O	Output port	WM8816 Clock
39	P83(FTIOC)	VOL-DAT	O	Output port	WM8816 Data Input / Output
40	P84(FTIOD)	Master_H	O	Output port	BUS control
41	P85	ICE1			For ICE connection
42	P86	ICE2			For ICE connection
43	P87	ICE3			For ICE connection
44	P20(SCK3)	N.C.	I		
45	P21(RXD)	RXD	I	Data input port	SYSTEM Control bus input
46	P22(TXD)	TXD	O	Data output port	SYSTEM Control bus output
47		N.C.	--		
48		N.C.	--		
49		N.C.	--		
50		N.C.	--		
51	P14(IRQ0)	DISP-CLR	O	Output port	NJU3716,NJU3719 Clear signal input
52	P15(IRQ1)	DISP-CLK	O	Output port	NJU3716,NJU3719 Clock signal input
53	P16(IRQ2)	DISP-DAT	O	Output port	NJU3716,NJU3719 Serial data input
54	P17 (IRQ3/TRGV)	DISP-STB	O	Output port	NJU3716,NJU3719 Strobe signal input
55	(PB4/AN4)	N.C.	I		
56	(PB5/AN5)	N.C.	I		
57	(PB6/AN6)	N.C.	I		
58	(PB7/AN7)	N.C.	I		
59	(PB3/AN3)	DISPLAY	I	Input port	L(SW ON)
60	(PB2/AN2)	N.C.	I		
61	(PB1/AN1)	ATT	I	Input port	L(SW ON)
62	(PB0/AN0)	ID Switch	I	Analog input port	1=4.5~5.0V 2=3.7~4.5V 3=2.9~3.7V 4=2.2~2.9V 5=1.4~2.2V 6=0.0~1.4V
63		N.C.	--		
64		N.C.	--		

6. EXPLODED VIEW AND PARTS LIST

SYMBOL	STYLE	PARTS NAME
5104		+F. H. M. SCREW
5110		+B. H. M. SCREW
5126		+B. H. TAP TITE SCREW W/WASHER
5128		+B. H. TAP TITE SCREW(B TYPE)
5129		+B. H. TAP TITE SCREW(W/T. L. WASHER)
5146		+B. H. M. SCREW(W/T. L. WASHER)
5150		+F. H. TAP TITE SCREW(B TYPE)
5204		+H. H. TAPT. BOLTS WITH FLANGE(S TITE)
5405		TOOTHED LOCK WASHERS

MARK	MATERIAL/ FINISH
(M)	STEEL/ COPPER
(U)	STEEL/ BLACK
(A),(B)	STEEL/ CHROMATE

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
001B		340J248510	FRONT PANEL ASSY	340J248510
002B		340J248110	FRONT PANEL	340J248110
003B		340J063110	ESCUTCHEON LEFT	340J063110
004B		340J063120	ESCUTCHEON RIGHT	340J063120
006B		339J353110	RING FOR METER	339J353110
007B		339J158010	WINDOW FOR METER	339J158010
008B		339J353120	RING FOR POWER SW.	339J353120
009B		340J355010	LENS FOR IR	340J355010
010B		269J355010	LENS FOR INPUT SEL /ATT	269J355010
015B		339J270110	BUTTON FOR POWER SW.	339J270110
020B		340J270110	BUTTON FOR DISPLAY /ATT	340J270110
033B		340J154110	KNOB INPUT SEL /VOLUME	340J154110
001D		340J249110	SIDE PANEL LEFT	340J249110
002D		340J249120	SIDE PANEL RIGHT	340J249120
003D		340J063130	ESCUTCHEON	340J063130
007D		339J257110	TOP LID	339J257110
013D		339J063130	ESCUTCHEON FOR TOP LID	339J063130
015D		339J202010	NET FOR ESCUTCHEON	339J202010
002G		163J057220	LEG (CUPPER)	163J057220
906G		426T154010	KNOB FOR ID NO.SW.	426T154010
⚠ J001		YJ04002550	JACK AC INLET TYPE HF-301	YJ04002550
⚠ L001	/F	nsp	POWER TRANSF.	TS40701010
			SURPER RING RT-75 FOR /F	
⚠ L001	/N	TS40701020	POWER TRANSF.	TS40701020
⚠ L001	/U	nsp	POWER TRANSF.	TS40701030
L002		FN21010030	0.18H CHOKE COIL	FN21010030
L003		FC50160030	FERRITE CORE FOR W018	FC50160030
L004		FC50160030	FERRITE CORE FOR W020	FC50160030
L005		FC50160030	FERRITE CORE FOR W019	FC50160030

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			PACKING	
001T	/F	nsp	USER GUIDE SC-7S1 /F	340J851110
001T	/N/U	340J851310	USER GUIDE SC-7S1	340J851310
T100		ZK340J0010	REMOTE CONTROLLER RC-7S1SC	ZK340J0010
⚠ W001	/F	nsp	MAINS CORD FOR /F OFC 2P	ZC01803130
⚠ W001	/N	ZC01803080	MAINS CORD 10A 250V 2P CLASS2	ZC01803080
⚠ W001	/U	nsp	MAINS CORD 13A 125V UL/CSA	ZC01802100
			NOT STANDARD SPARE PARTS	
001S		nsp	PACKING CASE	340J801010
003S		nsp	CUSHION F	339J809010
004S		nsp	CUSHION R	339J809020
010S		nsp	PACKING CASE MASTER CARTON	340J805010
W091		nsp	CONNECTIVE CORD TCP8580 REMOTE CABLE	ZD01000910

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

7. SERVICE MODE

1. To enter the Service Mode, press the **POWER** switch with pressing the **DISPLAY** and **ATT** buttons on the main unit to switch power ON, or when the remote code '**166363**' is received while power is ON.

2. The version number is displayed as '×××' on the 7-segment LED.
   The Light-up LED is lit (other LEDs lit off).
   "×××" means version ×.××.

3. Press the **ATT** button to light the LEDs one by one (except the Light-up LED which is always lit) , and 'LEd' is displayed.

4. Press the **ATT** button to light each 7-segment LED one by one.
   All LEDs (including the Light-up LED) are lit off.

5. Press the **ATT** button to light all the 7-segment LEDs and the LEDs.

6. Press the **ATT** button to display the ID number.
   If the ID number switch on the rear panel is changed, the displayed ID number also changes (polling at 250ms intervals).

7. Press the **ATT** button to display 'BUS', one second after followed by 'BOK' or 'BNG'.
   'BNG' is displayed if the unit is unable to receive the command that has issued by the unit itself.
   'BOK' is displayed if the unit is able to receive the command that has issued by the unit itself.
   The circuit is designed to go through the command, so 'BOK' is displayed even if the remote cable is not connected. 'BNG' is displayed when the cable is in a closed-loop and the unit is the Master , or when the cable is not connected and the unit is a Slave.

8. Press the **ATT** button to display 'Uol'.
   The display changes to 'Up' if the Volume knob is turned clockwise, and to 'dUn' if it is turned counter-clockwise.

9. Press the **ATT** button to display 'SEI'.
   When the **INPUT SELECTOR** is changed the corresponding LED is lit.

10. Press the **ATT** button to display 'Att'.
    The corresponding text is displayed for the operation buttons and knobs as shown below.

SW	Key	Displayed text	7Seg
Front	Display	DSP	dSp
Front	ATT	ATT	Att
RC	BALANCE	RC	rC
RC	SACD/CD	RC	rC
RC	LINE-1	RC	rC
RC	LINE-2	RC	rC
RC	TAPE	RC	rC
RC	Volume UP	RC	rC
RC	Volume Down	RC	rC
RC	ATT	RC	rC
RC	Trim	RC	rC
RC	EXIT	RC	rC
RC	A-Trim Up	RC	rC
RC	A-Trim Down	RC	rC
RC	B-Trim Up	RC	rC
RC	B-Trim Down	RC	rC

7. サービスモード

1. 本体の**DISPLAY**ボタンと**ATT**ボタンを押しながら、**POWER**スイッチを押して電源をＯＮにしてください。
   または、電源ＯＮ中にリモコンコード “**166363**” を受信した時。
   これでサービスモードに入ります。

2. ７ Seg. LEDにバージョンが「***」と表示されます。
   ライトアップLEDのみ点灯（その他のLEDは消灯）
   「***」はVersion *.**の意味

3. 次に**ATT**ボタンを押すとLEDが順次点灯し、ディスプレイには「LEd」と表示されます。
   対象はライトアップLED以外（ライトアップLEDは常時点灯）

4. 次に**ATT**ボタンを押すと7Seg LEDが順次点灯表示されます。
   ライトアップLEDを含む全てのLEDは消灯

5. 次に**ATT**ボタンを押すと7Seg LED及びLEDが全点灯します。

6. 次に**ATT**ボタンを押すとディスプレイにID No.が表示されます。
   この時にリアパネルのID No.スイッチを切換えると、対応したID No.の表示に切換ります。
   (２５０ｍｓでのポーリング判定)

7. 次に**ATT**ボタンを押すとディスプレイに「BUS」と表示され、１秒後に「BOK」または「BNG」と表示されます。
   「BNG」自己発行コマンドを受信できなかった場合。
   「BOK」自己発行コマンドを受信できた場合。
   回路的にスルー機能を有しているので、リモートケーブルを接続しなくても「BOK」となる。「BNG」となるのは,Master時にケーブルを自己ループした場合、または、Slave時にケーブルを接続していない場合。

8. 次に**ATT**ボタンを押すとディスプレイに「Uol」と表示されます。
   Volumeつまみを時計方向に回すと表示が「Up」に切換り、半時計方向に回すと表示は「dUn」に切換ります。

9. 次に**ATT**ボタンを押すとディスプレイに「SEl」と表示されます。
   この時、**INPUT SELECTOR**を切換えると対応したLEDが点灯します。

10. 次に**ATT**ボタンを押すとディスプレイに「Att」と表示されます。
    この時、以下の表のとおり、操作ボタン及びつまみに対応した文字を表示します。

SW	Key	表示文字	7Seg
Front	Display	DSP	dSp
Front	ATT	ATT	Att
RC	BALANCE	RC	rC
RC	SACD/CD	RC	rC
RC	LINE-1	RC	rC
RC	LINE-2	RC	rC
RC	TAPE	RC	rC
RC	Volume UP	RC	rC
RC	Volume Down	RC	rC
RC	ATT	RC	rC
RC	Trim	RC	rC
RC	EXIT	RC	rC
RC	A-Trim Up	RC	rC
RC	A-Trim Down	RC	rC
RC	B-Trim Up	RC	rC
RC	B-Trim Down	RC	rC

11. This completes all the tests. Press the **DISPLAY** and **ATT** buttons to return to Step1., or press the **POWER** switch to turn power OFF. Note that the Service Mode is terminated if power is turned OFF at any point during steps 1. to 10.
When the Service Mode is terminated the memory is cleared and the system is initialized.

The Input Selector, Volume level, ATT level, and TRIM level are stored in memory, therfore use this Service Mode to initialize the system.

[Microcomputer Initial Setup]
Input Selector: SACD/CD
Volume: -∞
TRIM setup value: +/-0dB (for channels A and B)
ATT setup value: -20dB

REMOTE COMMANDS TABLE

No.	Key name		RC code	Operation details
1	BALANCED	[BALANCE]	16 00 20	Select balanced input terminal
2	SACD/CD	[CD]	20 63	Select SACD/CD input terminal
3	LINE-1	[AUX 1]	16 00 06	Select Line-1 input terminal
4	LINE-2	[AUX 2]	16 00 07	Select Line-2 input terminal
5	TAPE	[TAPE]	18 63	Select Tape input terminal
6	VOLUME UP	[VOL+]	16 16	Master Volume UP
7	VOLUME DOWN	[VOL-]	16 17	Master Volume DOWN
8	ATT	[MUTE]	16 13 (toggle)	The value that subtracted the ATT value from the Vol. value. Press again to return to the original setup value.
9	TRIM SELECT	[CH SEL]	16 37 33	Change TRIM Mode/TRIM setup unit.
10	EXIT	[MENU OFF	16 83	Exit from TRIM Mode.
11	A-TRIM UP	[Lch level+]	16 26 01	In TRIM mode: TRIM level UP
12	A-TRIM DOWN	[Lch level-]	16 26 02	In TRIM mode: TRIM level DOWN
13	B-TRIM UP	[Rch level+]	16 26 03	In TRIM mode: TRIM level UP
14	B-TRIM DOWN	[Rch level-]	16 26 04	In TRIM mode: TRIM level DOWN

11. これで確認が全て終了しましたので、さらに**DISPLAY**ボタン、**ATT**ボタンを押して１に戻るか**POWER**スイッチを押して電源をOFFにして下さい。
（上記１～１０のどのステージにおいても電源をOFFするとサービス モードは終了します。）
サービスモードを終了するとメモリーはオールクリアーされ初期状態に戻ります。

Input Selector、Volumeレベル、ATTレベル、TRIMレベルなどはメモリーされていますので、初期状態に戻すには、サービスモードを使用します。

［マイコン初期設定］
Input Selector： SACD/CD
Volume： －∞
TRIM設定値： ±0 dB (A ch / B ch共)
ATT設定値： -20 dB

REMOTE COMMANDS TABLE				
No.	Key name		RC code	動作内容
1	BALANCED	[BALANCE]	16 00 20	BALANCED入力端子選択
2	SACD/CD	[CD]	20 63	SACD/CD入力端子選択
3	LINE-1	[AUX 1]	16 00 06	LINE-1入力端子選択
4	LINE-2	[AUX 2]	16 00 07	LINE-2入力端子選択
5	TAPE	[TAPE]	18 63	TAPE入力端子選択
6	VOLUME UP	[VOL+]	16 16	Master Volume UP
7	VOLUME DOWN	[VOL-]	16 17	Master Volume DOWN
8	ATT	[MUTE]	16 13 (toggle)	Vol.値からATT設定値を引いた値にする。再度押すと元の設定値に戻る。
9	TRIM SELECT	[CH SEL]	16 37 33	TRIMモードTRIM設定機変更
10	EXIT	[MENU OFF]	16 83	Exit from TRIMモード
11	A-TRIM UP	[Lch level+]	16 26 01	TRIMモード時 :TRIMレベル UP
12	A-TRIM DOWN	[Lch level-]	16 26 02	TRIMモード時 :TRIMレベルDOWN
13	B-TRIM UP	[Rch level+]	16 26 03	TRIMモード時 :TRIMレベル UP
14	B-TRIM DOWN	[Rch level-]	16 26 04	TRIMモード時 :TRIMレベルDOWN

8. BUS SPECIFICATIONS

< Features >
This unit employs a bus system incorporating the 'e-Bus' (bi-directional packet communications) concept, and is used for control of independent and system operation.

The Master unit controls all the bus sysytem.

The bus system provides for mutual recognition, with control commands and status information being sent and received between units, thus allowing linked operation of multiple units.

When multiple Slave units are connected to the Master unit and power is switched ON, the system is set up (volume value, functions) automatically, and setup for each Slave unit is therefore unnecessary.

The Master unit manages system operation when the ID number switch is set to [1]. Slave units are managed and controlled by the Master when the ID number switch is set to [2] to [6].

Up to six units can be connected to the bus.

< Connections >
This bus system uses hardware relays for bus communications unrestricted by ON/OFF switching of multiple SC-7S1 power supplies. The first and last units need not be directly connected, and units are connected by a single remote cable (Mini DIN cable).

A slave unit can be added to the existing system anywhere in the bus loop. ID numbers are not required to be set in the order of the connection. The master can recognize the slave units regardless of the connection order of the ID numbers.

As the SC-7S1 bus system is unique, only SC-7S1s can be connected.

< Operation >
Only units in operation (power ON) are recognized and treated as existing units on the bus. When power for a Slave unit is OFF the hardware relay lets through the unit on the bus.

ID numbers are set with the ID number switches on the rear panel.

Button commands and remote commands received by the Master unit are transmitted to the slaves depending on the command content.

Commands from remote controller are received only by the Master unit (not by Slave units).

When the Master unit receives the command without any modification,the command is what has been transmitted by the Master itself to the bus upon power on, the Master assumes that no slave is connected and turns into stand alone operation.

RS-232C interface specifications (4800bps, 8 data bits, non-parity, 1 stop bit) is used as the specifications for this bus system communication. For sound quality, communication occurs only when an operation is made. Polling is not used.

When multiple units are connected, the bus loop is established regardless of whether Slave unit power is ON or OFF. The only case in which data is not returned to the Master unit is therefore when the connection is not phisically made.

The critical point fot service is whether or not data sent from TXD (pin 46 on the microcomputer) while Master unit power is ON is received at RXD (pin 45 on the microcomputer). If there is a problem and data is lost, 'E12' error is displayed on the Master unit. In this case, there may be a short circuit in the pattern or a part may be broken . Check the Data Flow diagram and trace the TXD data.

8. ＢＵＳ仕様について

＜特徴＞
本機器は〝e-BUS〟（双方向パケット通信）の概念を盛り込んだBUSシステムを用いて、単独動作、システム動作の制御を行っています。

マスター（Master）機器によってBUSシステムの一元管理を行う事が出来ます。

BUSシステムは相互に認識でき、各機器間にて制御コマンド及びステータス情報等の受け渡しを行う事が出来、複数台で連動した動作が可能です。

マスター機器と各スレーブ（Slave）機器を接続し電源を入れるだけで、システム設定（Volume値、Function）が自動的に行われる為、各スレーブ機器の設定は必要ありません。

マスター機器は、ID NO．スイッチが「１」：システムの全動作を管理する。
スレーブ機器は、ID NO．スイッチが「２」～「６」：マスターによって管理制御される。

BUSの接続数は、最大６台まで可能です。

＜接続＞
本BUSシステムは、ハード的にリレーを用いることで、複数台接続されたSC-7S1の電源のON／OFFに制限されないＢＵＳ通信を可能としている。また最終機と先頭機を直接接続する必要を無くし、機器間の接続はリモートケーブル（Mini DINケーブル）1本で可能としています。

構築されているシステムに新しくスレーブ機器を追加する場合、BUSループ内のどの場所においても追加可能です。
つまり、接続するSC-7S1の順番とID No.は一致しなくてもマスター機器は認識することができます。

SC-7S1のBUSシステムは固有であるため、SC-7S1以外と接続することはできません。

＜動作＞
稼動中(電源ON中)の機器のみがBUS上、存在して認識できます。
電源OFF状態でSlave機が接続しているときは、ハードウェアのリレーによってスルーパスします。

ID No.はリアパネルに設けたID NO．スイッチにて設定します。

マスター機器が、各ボタン又はリモコン受光部で受信されたコマンドは、コマンドの内容に応じてスレーブ機器に転送されます。

リモコンセンサーはマスター機器のみが受信可能とし、スレーブ機器は受信不可となります。

マスター機器は電源ON時に自ら発行したコマンドを何の加工もされないままスルーで受信した場合は、スレーブ機器が未接続とし、単独で動作を行ないます。

BUSシステムに用いる通信仕様は、RS-232Cインターフェイスに準拠し、4800bps、Data Bit=8bit、Non Parity、Stop Bit=1bitです。
音質のことを考慮し、操作した時のみ通信を行い、ポーリング通信はしません。

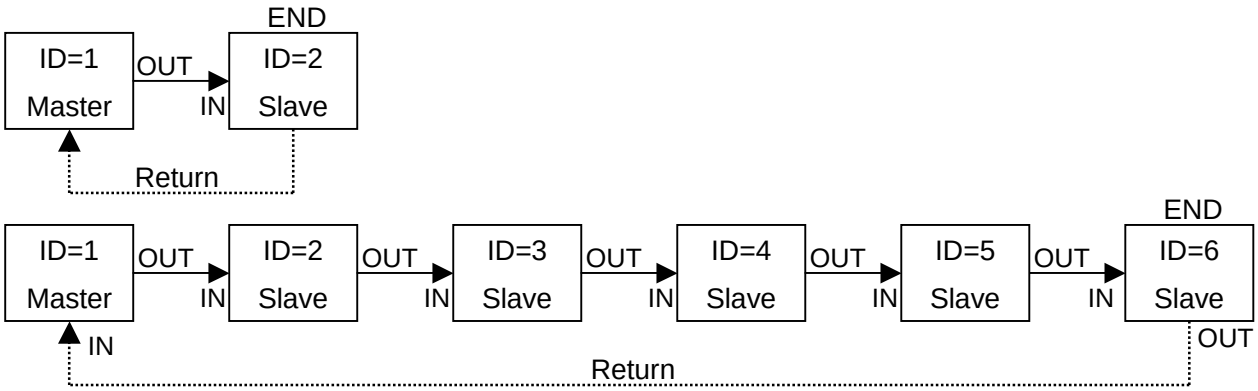
複数台接続された状態ではスレーブ機器の電源の状態(ON/OFF)にかかわらずBUSのループは確保されています。そのため、マスター機器にDATAが戻らないのは、回路的に接続がされていない状態のみとなります。

サービス上ポイントとなる点は、マスター機器が電源ON時にTXD（マイコンPin46）より送出するDATAがRXD（マイコンPin45）で受信できているかどうかです。
不具合があり途中で、DATAが途切れてしまうと、マスター機器は”Ｅ１２”表示になり、エラーとなります。
この場合、部品不良やパターンショートが考えられるのでDATA FLOW図を参考にTXD DATAを追っていく必要があります。

Remote Bus Connection

ID Numbers
Each unit is identified by a set ID number.
Each ID number is set by the user.
The unit with ID=1 is as the Master. ID=1 is also used for stand-alone (single-unit) operation.
If there are multiple units with the same ID number, connection error occurs and the error code is displayed,
The Master must be at the top in the bus connection.
ID numbers 2 to 6 connected after the Master are assumed to be for Slave units.
The Master controls all the Slave units connected to the bus.
Units with the ID numbers 2 to 6 cannot be operated independently. Those units require control signals from the Master unit for operation. The last unit connected on the bus is referred to as the End Slave unit.

Outline of Bus Connections



The units are connected to the bus with the supplied remote cable (Mini DIN 8p).
The units are connected via photocouplers (Q273) and that is floated for sound quality, so a Hot and Cold pair is used for communication.
The bus connection is established by receipt of the Return signal (dotted line) from the End Slave.
The circuit is designed to detect automatically if the unit is the End Slave. And if so the unit sends the Return signal to the Master.
The circuit is designed that the bus connection is established even if power of a Slave unit is OFF.

Actually, the remote cable (dotted line arrow) from the End Slave to the Master is not necessary, the bus (solid line arrows) is bidirectional so the Return signal returns to Master through the bus.

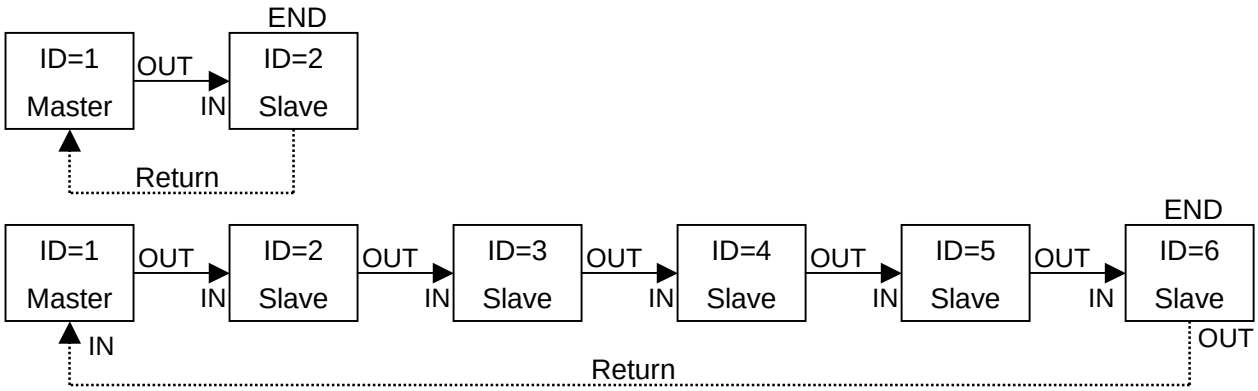
The ID numbers are displayed for approximately 3 seconds upon power ON, after that the volume level is displayed for approximately 5 seconds. Mute is released approximately 8 seconds after power ON.
Bus communication begins at power ON. The Sync LEDs on the display are lit if there is no problem with the communication.
Master and Slave units are identified by the green and read sync LEDs respectively.
If making communication is impossible the Sync LED does not light and the error code is displayed.

As the Master unit controls all the units connected on the bus, Slave units cannot be operated directly (except for power switches). Only the Master unit accepts commands from the remote controller.

リモートＢｕｓ接続

ID番号について
各機器はID番号の設定により識別されます。
それぞれのID番号はユーザーが設定します。
ID=1に設定した機器をMasterとします。単体使用時もID=1で使用します。
ID番号が重複した場合には接続エラーとしエラーコードを表示します。
Masterは必ずBus接続の先頭である必要があります。
Master以降に接続されるID=2～6をSlaveとします。
MasterはBus接続された全てのSlaveを集中コントロールします。
ID=2～6に設定された機器は単独では動作はしません。Masterからのコントロール信号でのみ動作します。Bus接続の最終端に位置する機器をEND Slaveとします。

Bus接続の概略



機器間は付属のリモートケーブル(MINI DIN 8p)でBus接続されます。
音質への配慮から機器間はフォトカップラー(Q273)によりフローティングされていますので、通信にはHotとClodの2本が使用されます。
Bus接続は点線で示したEND SlaveからのReturn信号がMasterに戻ることで確立されます。
END Slaveは自動的に検出されMasterにReturn信号を戻すよう回路的に対応しています。
Slaveが電源OFFになっていてもBus接続が確立されるように回路対応されています。

実際の機器では点線矢印のEND SlaveからMasterへのリモートケーブルを使った接続は省略されます。実線矢印の接続が双方向通信になっていますのでReturn信号はMasterに戻ります。

電源ONすると約3秒間ID番号がディスプレイに表示され、その後約5秒間ボリュームレベル表示します。電源ONして約8秒後にMuteを解除します。
また、電源をONするとBusの通信を開始します。通信に問題無ければディスプレイのSYNC LEDが点灯します。Sync LEDはMasterが緑、Slaveが赤に点灯して視覚的に識別できます。
通信ができなかった場合はSync LEDは点灯せず、ディスプレイにエラーコードを表示します。

MasterがBus接続されている全ての機器のコントロールをおこないますので、Slaveは操作を受け付けません（Power SWを除く）。リモコンもMasterのみ受信可能です。

Circuit Description

The P271 board is the bus connection interface board. The 8-pin Mini DIN cable is used for the reomote bus connection between the units.

IN (J272)

Number	Terminal	Terminal description
1	IN-H	Remote IN Hot
2	IN-C	Remote IN Cold
3	Return-H	Return Hot from End Slave
4	Return-C	Return Cold from End Slave
5	M-G ND	Master GND
6	M-G ND	Master GND
7	+12V	Relay drive +12V supplied from Master
8	-12V	Relay drive -12V supplied from Master

OUT (J273)

Number	Terminal	Terminal description
1	OUT-H	Remote OUT Hot
2	OUT-C	Remote OUT Cold
3	Return-H	Return Hot from End Slave
4	Return-C	Return Cold from End Slave
5	Det ect	End Slave detect
6	M-G ND	Master GND
7	+12V	Relay drive +12V supplied from Master
8	-12V	Relay drive -12V supplied from Master

Signal 3 and 4 are Return signals from the End Slave to the Master, so the remote cable connectiong from the End Slave to the Master is not necessary.
The +12V (7) and -12V (8) are supplied from the Master, and drive the End relay (L275) when the End Slave is detected. M-GND is also connected to Master GND as with the 12V power supply.

Relay L275 is switched ON when the unit is the End Slave. As this relay is driven from the Master, it is switched ON even if the End Slave power is OFF.
Relays L273 and L274 are ON when the unit is set as the Master.
Relays L271 and L272 are ON when power is turned ON. This establishes the communications route even if Slave power is OFF.

The photocoupler Q273 is the interface which sends the signal input to J272 to the microcomputer. It is being floated for sound quality.

End Slave Detection

The End Slave is detected from the voltage difference between OUT (J273) 5 and 6.
When a further slave is connected, OUT (J273) is connected to the IN (J272) of this unit.
As IN (J272) 5 and 6 are short-circuited, the transistor (Q277) and the End relay (L275) are switched OFF.
When a further slave is not connected, 5 and 6 are not short-circuited so the unit is detected as the End Slave. The transistor (Q277) and the End relay (L275) are switched ON.
When the End relay (L275) is switched ON the circuit is switched to send Return signal to the Master, so that the bus connection is established.

ID number	Set voltage
1	4.5 to 5.0V
2	3.7 to 4.5V
3	2.9 to 3.7V
4	2.2 to 2.9V
5	1.4 to 2.2V
6	0 to 1.4V

回路説明
P271基板はBus接続のインターフェース基板です。機器間のリモートBus接続は8ピンのMini DINケーブルで接続されます。

IN(J272)

番号	端子名	端子説明
1	IN-H	Remote in Hot
2	IN-C	Remote in Cold
3	Return-H	END Slave からの Return Hot
4	Return-C	END Slave からの Return Cold
5	M-GND	Master の GND
6	M-GND	Master の GND
7	+12V	Master が供給するリレー駆動用+12V
8	-12V	Master が供給するリレー駆動用-12V

OUT(J273)

番号	端子名	端子説明
1	OUT-H	Remote OUT Hot
2	OUT-C	Remote OUT Cold
3	Return-H	END Slave からの Return Hot
4	Return-C	END Slave からの Return Cold
5	Detect	END Slave であることを検出。
6	M-GND	Master の GND
7	+12V	Master が供給するリレー駆動用+12V
8	-12V	Master が供給するリレー駆動用-12V

3番と4番はEND SlaveからMasterへのReturn信号です。このため、END SlaveからMasterへのリモートケーブルを使った接続が省略されます。
7番の+12Vと8番の-12VはMasterが供給する電源でEND Slaveを検出してENDリレー(L275)を駆動します。M-GNDも12V電源同様MasterのGNDに接続されます。

リレーL275は最終端のEND Slave時にONします。このリレーはMasterが駆動しますので、END Slaveが電源OFFしていてもリレーはONします。
リレーL273とL274はMasterに設定されるとONします。
リレーL271とL272は電源ON時にONします。これはSlaveが電源OFFしていても通信経路を確保します。

フォトカップラーQ273は、J272に入力された信号をマイコンに伝えるインターフェースです。音質への配慮からフローティングされています。

END Slaveの検出方法
OUT(J273)の5番と6番の電位差によりEND Slaveであることを検出します。
後ろにSlaveが接続されている場合には、OUT(J273)は後ろの機器のIN(J272)に接続されます。IN(J272)の5番と6番はショートされていますので、トランジスタ(Q277)はOFFしENDリレー(L275)もOFFします。
後ろにSlaveが接続されていない場合は5番と6番がショートしていませんので、END Slaveとして検出されます。この時トランジスタ(Q277)がONしENDリレー(L275)がONします。
ENDリレー(L275)がONすることでReturn信号がMasterに戻るよう回路が切換りBus接続が確立します。

ID番号の設定電圧
PS01基板のロータリースイッチによりID番号が設定されます。マイコン(Q201)の62番ピンのA/Dポートは下記のように電圧設定されています。

ID 番号	設定電圧
1	4.5～5.0V
2	3.7～4.5V
3	2.9～3.7V
4	2.2～2.9V
5	1.4～2.2V
6	0～1.4V

Error Messages

Switch power OFF if any of the following error messages are displayed while multiple units are in use and connected to the bus via the remote terminal.

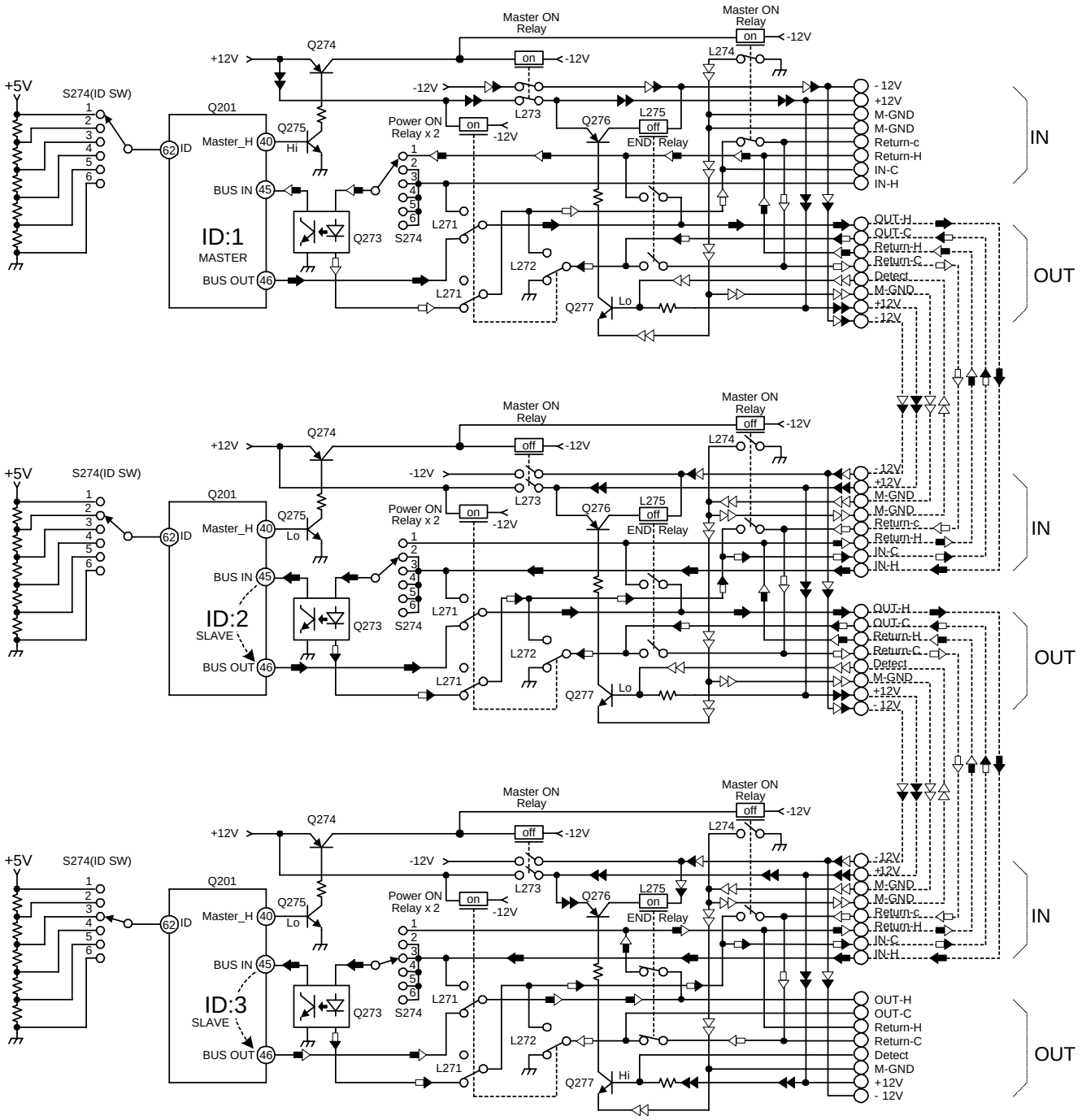
	Error Code	Meaning Me	asures required
1	E02	Multiple units set for ID No.2.	Change the ID number on the ID number selector switch to avoid duplication.
2	E03	Multiple units set for ID No.3.	
3	E04	Multiple units set for ID No.4.	
4	E05	Multiple units set for ID No.5.	
5	E06	Multiple units set for ID No.6.	
6	E07	Communication between ID No.1 (Master) and ID No.2 to 6 (Slave) impossible.	Check IN and OUT, and make sure that the bus connection cable is inserted correctly.
7	E08	Multiple units set for ID No.1 (Master).	Change the ID number on the ID number selector switch to avoid duplication.

＜エラーメッセージ＞

リモートコントロール端子を用いてバス接続し、本機を複数台使用した時に、以下のようなエラー表示が出たら電源をＯＦＦにして、下の表にしたがって確認してください。

	表示	意味	対策
１	Ｅ０２	ＩＤＮｏ．２に設定された本機が複数台あります。	ＩＤＮｏ．が重複しないようにＩＤＮｏ．切替スイッチを設定し直してください。
２	Ｅ０３	ＩＤＮｏ．３に設定された本機が複数台あります。	
３	Ｅ０４	ＩＤＮｏ．４に設定された本機が複数台あります。	
４	Ｅ０５	ＩＤＮｏ．５に設定された本機が複数台あります。	
５	Ｅ０６	ＩＤＮｏ．６に設定された本機が複数台あります。	
６	Ｅ１１	ＩＤＮｏ．１（マスター）とＩＤＮｏ．２～６（スレーブ）との間で通信できなかった。	ＩＮ、ＯＵＴを確認しバス接続ケーブルを確実に差し込んでください。
７	Ｅ１２	ＩＤＮｏ．１（マスター）に設定された本機が複数台あります。	ＩＤＮｏ．が重複しないようにＩＤＮｏ．切替スイッチを設定し直してください。

Bus Connection System Data Flow



: OUT- H, IN- H (BUS IN/OUT)

: Return-H (BUS Return)

BUS Loop

: Return-C (Master BUS GND)

: OUT-C, IN-C (Slave BUS GND)

: +12V (END Relay Supply)

: -12V (END Relay Supply)

: M-GND (END Relay Detect GND)

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R✻✻✻: 1) GD05×××140, Carbon film fixed resistor, ±5% 1/4W
R✻✻✻: 2) GD05×××160, Carbon film fixed resistor, ±5% 1/6W
① —— Resistance value

Examples ;
①Resistance value

0.1 Ω 001	10 Ω 100	1 kΩ 102	100 kΩ 104
0.5 Ω 005	18 Ω 180	2.7 kΩ 272	680 kΩ 684
1 Ω 010	100 Ω 101	10 kΩ 103	1 MΩ 105
6.8 Ω 068	390 Ω 391	22 kΩ 223	4.7 MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C✻✻✻: CERAMIC CAP.
3) DD1××××370, Ceramic capacitor
② ③ Disc type
Temp.coeff.P350 ～N1000, 50V
③ —— Capacity value
② —— Tolerance

Examples ;
② Tolerance (Capacity deviation)
±0.25 pF 0
±0.5 pF 1
±5% 5
✻ Tolerance of COMMON PARTS handled here are as follows :
0.5 pF～ 5 pF .... ±0.25 pF
6 pF～ 10 pF .... ±0.5 pF
12 pF～ 560 pF .... ±5%
③ Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C✻✻✻ : CERAMIC CAP.
4) DK16××× 300, High dielectric constant ceramic capacitor
④ Disc type
Temp.chara. 2B4, 50V
④ —— Capacity value

Examples ;
④ Capacity value

100 pF 101	1000 pF 102	10000 pF 103
470 pF 471	2200 pF 222	

C✻✻✻ : 5) ELECTROLY CAP. (⧺), 6) FILM CAP. (⫩)
5) EA××××××10, Electrolytic capacitor
⑤ ⑥ One-way lead type, Tolerance ±20%
⑥ —— Working voltage
⑤ —— Capacity value

Examples ;
⑤ Capacity value

0.1 µF 104	4.7 µF 475	100 µF 107
0.33 µF 334	10 µF 106	330 µF 337
1 µF 105	22 µF 226	1100 µF 118
		2200 µF 228

⑥ Working voltage

6.3V 006	25V 025
10V 010	35V 035
16V 016	50V 050

6) DF15××× 350 → Plastic film capacitor
DF15××× 310 One-way type, Mylar ±5% 50V
DF16××× 310 → Plastic film capacitor
⑦ One-way type, Mylar ±10% 50V
⑦ —— Capacity value

Examples ;
⑦ Capacity value

0.001 µF (1000 pF) 102	0.1 µF 104
0.0018 µF 182	0.56 µF 564
0.01 µF 103	1 µF 105
0.015 µF 153	

NOTE : 1) The above CODES (R✻✻✻ , R✻✻✻ , C✻✻✻ , C✻✻✻ and C ✻✻✻) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed the common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts (**RI05**, **DD4**, **DK4**).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05×××140	→ RF25S××××ΩJ	(±5% 1/4W)
NH05×××120	→ RF50S××××ΩJ	(±5% 1/2W)
NH85×××110	→ RF73B2A××××ΩJ	(±5% 1/10W)
NH95×××140	→ RF73B2E××××ΩJ	(±5% 1/4W)

✻ Resistance value — Resistance value (0.1 Ω – 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05×××140	→ ERD-2FCJ×××	(±5% 1/4W)
RF05×××140		
NF02×××140	→ ERD-2FCG×××	(±2% 1/4W)
RF02×××140		

✻Resistance value — ✻Resistance value

Examples ;
✻Resistance value

0.1 Ω 001	10 Ω 100	1 kΩ 102	100 kΩ 104
0.5 Ω 005	18 Ω 180	2.7 kΩ 272	680 kΩ 684
1 Ω 010	100 Ω 101	10 kΩ 103	1 MΩ 105
6.8 Ω 068	390 Ω 391	22 kΩ 223	4.7 MΩ 475

ABBREVIATION AND MARKS

ANT.	: ANTENNA	BATT.	: BATTERY
CAP.	: CAPACITOR	CER.	: CERAMIC
CONN.	: CONNECTING	DIG.	: DIGITAL
HP	: HEADPHONE	MIC.	: MICROPHONE
µ-PRO	: MICROPROCESSOR	REC.	: RECORDING
RES.	: RESISTOR	SPK	: SPEAKER
SW	: SWITCH	TRANSF.	: TRANSFORMER
TRIM.	: TRIMMING	TRS.	: TRANSISTOR
VAR.	: VARIABLE	X'TAL	: CRYSTAL

NOTE ON FUSE :

Regarding to all parts of parts code **FS20**xxx**2**xx, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意：

⚠がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
			P101 - MAIN UNIT	
			CIRCUIT BOARD	
			P101- CAPACITORS	
CC11		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
CC31		nsp		
⟆		nsp	ELECT.220µF ±20% 25V ARA	OA22702550
CC34		nsp		
CC35		nsp		
⟆		nsp	ELECT.1000µF/25V ARA	OA10802550
CC38		nsp		
CC51		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
CC52		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
CC55		nsp	ELECT.220µF ±20% 25V ARS	OA22702540
CC56		nsp	ELECT.220µF ±20% 25V ARS	OA22702540
CC57		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C405				
⟆		OF55221590	FILM 220pF 200V	OF55221590
C408				
C409				
⟆		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
C412				
C415		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C416		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C417				
⟆		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
C420				
C423		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C424		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C425				
⟆		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
C428				
C431		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C432		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C433				
⟆		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
C436				
C439		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C440		OF55221590	FILM 220pF 200V ±5% FAS	OF55221590
C441				
⟆		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
C444				
C451				
⟆		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C460				
C461				
⟆		nsp	ELECT.10µF 35V ARS	OA10603540
C464				
C505				
⟆		OF55101590	FILM 100pF 200V ±5% FAS	OF55101590
C508				
C509				
⟆		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
C512				
C513				
⟆		nsp	ELECT.470µF 25V ARS	OA47702540
C516				
C525				
⟆		nsp	ELECT.220µF ±20% 25V ARA	OA22702550
C528				
C529		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C530		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C533		OF15103540	FILM APSV 103J, 0.01µF(TP) 100V PP	OF15103540

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
C535				
⟆		OF55104580	FILM 0.1µF 100V ±5% FNS	OF55104580
C538				
C539				
⟆		nsp	ELECT.22µF 25V ARA	OA22602550
C542				
C543				
⟆		nsp	ELECT.22µF ±20% 25V ARS	OA22602540
C550				
C551				
⟆		OF15102540	FILM 1000pF ±5% 100V APSV	OF15102540
C554				
			P101- RESISTORS	
RC01		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC03		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC05		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC07		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC09		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC16		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC17		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC18		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC21		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC31				
⟆		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC38				
RC51				
⟆		nsp	RES.10kΩ ±1% 1/4W	GM11410020
RC58				
RC59		nsp	RES.100kΩ ±1% 1/4W	GM11410030
RC60		nsp	RES.100kΩ ±1% 1/4W	GM11410030
RC61		nsp	RES.226Ω ±1% 1/4W	GM11422600
RC62		nsp	RES.226Ω ±1% 1/4W	GM11422600
RC63		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC64		nsp	RES.22Ω ±5% 1/6W	GG05220160
RC73				
⟆		nsp	RES.2.26kΩ ±1% 1/4W	GM11422610
RC80				
R401				
⟆		nsp	RES.226kΩ ±1% 1/4W	GM11422630
R404				
R405				
⟆		nsp	RES.226Ω ±1% 1/4W	GM11422600
R408				
R409				
⟆		nsp	RES.15.4kΩ ±1% 1/4W	GM11415420
R416				
R417				
⟆		nsp	RES.22.6Ω ±1% 1/4W	GM114226G0
R424				
R425				
⟆		nsp	RES.100kΩ ±1% 1/4W	GM11410030
R428				
R433		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R434		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R435		nsp	RES.226Ω ±1% 1/4W	GM11422600
R436		nsp	RES.226Ω ±1% 1/4W	GM11422600
R437				
⟆		nsp	RES.2.26kΩ ±1% 1/4W	GM11422610
R440				
R441				
⟆		nsp	RES.100kΩ ±1% 1/4W	GM11410030
R444				
R449		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
R450		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R451		nsp	RES.226Ω ±1% 1/4W	GM11422600
R452		nsp	RES.226Ω ±1% 1/4W	GM11422600
R453 ⟆ R456		nsp	RES.2.26kΩ ±1% 1/4W	GM11422610
R457 ⟆ R460		nsp	RES.100kΩ ±1% 1/4W	GM11410030
R465		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R466		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R467		nsp	RES.226Ω ±1% 1/4W	GM11422600
R468		nsp	RES.226Ω ±1% 1/4W	GM11422600
R469 ⟆ R472		nsp	RES.2.26kΩ ±1% 1/4W	GM11422610
R473 ⟆ R476		nsp	RES.100kΩ ±1% 1/4W	GM11410030
R481		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R482		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R483		nsp	RES.226Ω ±1% 1/4W	GM11422600
R484		nsp	RES.226Ω ±1% 1/4W	GM11422600
R485 ⟆ R488		nsp	RES.2.26kΩ ±1% 1/4W	GM11422610
R489 ⟆ R492		nsp	RES.100kΩ ±1% 1/4W	GM11410030
R497 ⟆ R500		nsp	RES.22.6kΩ ±1% 1/4W	GM11422620
R501 ⟆ R504		nsp	RES.1.21kΩ ±1% 1/4W	GM11412110
R505 ⟆ R508		nsp	RES.100Ω ±1% 1/4W	GM11410000
R509 ⟆ R516		nsp	RES.681Ω ±1% 1/4W	GM11468100
R517 ⟆ R524		nsp	RES.332Ω ±1% 1/4W	GM11433200
R525 ⟆ R528		nsp	RES.100kΩ ±1% 1/4W	GM11410030
R529 ⟆ R532		nsp	RES.226Ω ±1% 1/4W	GM11422600
R533 ⟆ R536		nsp	RES.100kΩ ±1% 1/4W	GM11410030
R541		nsp	RES.47Ω ±5% 1/6W	GG05470160
R542		nsp	RES.47Ω ±5% 1/6W	GG05470160
R561 ⟆ R568		nsp	RES.3.3MΩ ±5% 1/6W	GD05335160
R569 ⟆ R572		nsp	RES.100Ω ±1% 1/4W	GM11410000
R573 ⟆ R580		nsp	RES.15.4kΩ ±1% 1/4W	GM11415420

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
R581 ⟆ R588		nsp	RES.22.6Ω ±1% 1/4W	GM114226G0
R589 ⟆ R592		nsp	RES.46.4Ω ±1% 1/4W	GM114464G0
R593 ⟆ R596		nsp	RES.100Ω ±1% 1/4W	GM11410000
R***			**P101- RESISTORS(COMMON)** CARBON FILM FIXED RES. ±5% 1/6W : R001 R002 R201-R208	
			P101- SEMICONDUCTORS	
DC01 ⟆ DC10		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
DC11 ⟆ DC14		nsp	DIODE 1D3 1A/200V	HD20002710
DC15		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
⚠ DC16 ⟆ ⚠ DC20		HD20055100	SHOTTKY 11EQS10 1A 100V	HD20055100
DC21		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
DC51		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
DC52		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
DC53		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
D501 ⟆ D516		nsp	DIODE HSS81TD 150V 150MA AXIAL TAPG.	HD20027010
D517		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
D518		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
QC11		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
QC12		HT324582B0	TRS.2SC2458 Y OR GR	HT324582B0
QC51		HC10008610	IC OPA2604AP	HC10008610
Q401 ⟆ Q404		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
Q405		HT322402A0	TRS.2SC2240 GR OR BL	HT322402A0
⟆ Q412		HT322402A0	TRS.2SC2240 GR OR BL	HT322402A0
Q413 ⟆ Q416		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
Q417 ⟆ Q424		HC10008610	IC OPA2604AP	HC10008610
Q501 ⟆ Q508		KH339J1010	UNIT HDAM-SA (PH01 - PCB ASSY)	KH339J1010
Q509 ⟆ Q512		HT113492A0	TRS.2SA1349 GR BL DUAL TR.	HT113492A0

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
Q513				
⟆		HT333812A0	TRS.2SC3381 GR OR BL	HT333812A0
Q516				
Q517				
⟆		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
Q520				
Q521				
⟆		HT322402A0	TRS.2SC2240 GR OR BL	HT322402A0
Q524				
Q525				
⟆		KH339J1010	UNIT HDAM-SA	KH339J1010
Q528			(PH01 - PCB ASSY)	
Q529		HC10211990	IC WM8816	HC10211990
Q530		HC10211990	IC WM8816	HC10211990
Q531		HC10008610	IC OPA2604AP	HC10008610
Q532		HC10008610	IC OPA2604AP	HC10008610
Q533				
⟆		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
Q536				
Q537				
⟆		HT322402A0	TRS.2SC2240 GR OR BL	HT322402A0
Q544				
Q545				
⟆		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
Q548				
			P101- MISCELLANEOUS	
LC01				
⟆		LY20240470	RELAY ED2-24	LY20240470
LC10				
LC11		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
LC21		LY20240470	RELAY ED2-24	LY20240470
LC51		LY20240470	RELAY ED2-24	LY20240470
LC52		LY20240470	RELAY ED2-24	LY20240470
LC53		LY20240470	RELAY ED2-24	LY20240470
L501		LY20240470	RELAY ED2-24	LY20240470
L502		LY20240470	RELAY ED2-24	LY20240470
L503		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
L504		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
			P251 - VR	
			CIRCUIT BOARD	
			P251- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES. ±5% 1/6W : R210-R214	
			P251 - MISCELLANEOU	
S251		SR02010070	ROTALY ENCODER 36PULSE EC16B	SR02010070
			P261 - FUNCTION SW.	
			CIRCUIT BOARD	
			P261 - CAPACITORS	
C261		nsp	CER.0.01µF DC50V +80%-20%	DD38103010
C262		nsp	CER.0.01µF DC50V +80%-20%	DD38103010
			P261 - MISCELLANEOUS	
S261		SR01120070	ROTARY SW.SRRSIC	SR01120070
			P271 - XLR IN/OUT	
			CIRCUIT BOARD	
			P271 - CAPACITORS	
C271		nsp	ELECT.10µF ±20% 25V RA-2	OA10602520

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
C272				
⟆		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C276				
C280		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C282		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C282		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C283		OF15102540	FILM 1000pF ±5% 100V APSV	OF15102540
C284		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C285		OF15102540	FILM 1000pF ±5% 100V APSV	OF15102540
C286		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C287		OF15102540	FILM 1000pF ±5% 100V APSV	OF15102540
C288				
⟆		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C292				
			P271 - RESISTORS	
R275		nsp	RES.22Ω ±5% 1/6W	GG05220160
R278		nsp	RES.22Ω ±5% 1/6W	GG05220160
R279		nsp	RES.22Ω ±5% 1/6W	GG05220160
R285		nsp	RES.22Ω ±5% 1/6W	GG05220160
			P271- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES. ±5% 1/6W : R215-R229	
			P271 - SEMICONDUCTORS	
⚠ D271		HD20055100	SHOTTKY 11EQS10 1A 100V	HD20055100
⚠ D272		HD20055100	SHOTTKY 11EQS10 1A 100V	HD20055100
D273		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
D274		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
D275		nsp	DIODE 1SS176,MA165, 1SS254 30V 0.1A	HD20002000
Q272		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
⚠ Q273		HW10006320	PHOTO CUPLER PC-817 1PAIR	HW10006320
Q274		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q275		BA20001000	DIG.TRS.DTC114ES/UN4211 10K,10K	BA20001000
Q276		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q277		BA20001000	DIG.TRS.DTC114ES/UN4211 10K,10K	BA20001000
Q278		HT324582B0	TRS.2SC2458 Y OR GR	HT324582B0
Q279		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
			P271 - MISCELLANEOUS	
J272		YJ11000500	JACK 8PIN H-TYPE TCS7927-18-401	YJ11000500
J273		YJ11000500	JACK 8PIN H-TYPE TCS7927-18-401	YJ11000500
L271				
⟆		LY20240500	RELAY NA-24WK 2T 24V	LY20240500
L275				
L276		FC90090010	FERRITE CORE ZBF503D-00TA	FC90090010
S271		SS02021610	SLIDE SW.SSSU022-S06N1	SS02021610
			P301 - 7SEG LED	
			CIRCUIT BOARD	
			P301 - CAPACITORS	
C302		nsp	CER.CERMIC 0.1µF Z 50V	DA17104110
C339		nsp	CER.10000pF	DA17103110
C340		nsp	CER.10000pF	DA17103110

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
			P301- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES.	
			±5% 1/6W : R230-R246	
			R251-R254 R261 R262	
			R308-R330	
			P301 - SEMICONDUCTORS	
D301				
∫		HQ10104060	DISPLAY UNIT TLS336T	HQ10104060
D304				
Q302		HC10142090	IC NJU3719L	HC10142090
			P801 - POWER SUPPLY	
			CIRCUIT BOARD	
			P801 - CAPACITORS	
C803				
∫		nsp	ELECT.470µF ±20% 25V ARA	OA47702550
C806				
C807		nsp	ELECT.470µF 25V ±20% RA-2	OA47702520
C808		nsp	ELECT.470µF 25V ±20% RA-2	OA47702520
C809				
∫		nsp	ELECT.220µF ±20% 25V RA-2	OA22702520
C812				
C813		nsp	ELECT.470µF ±20% 25V ARA	OA47702550
C814		nsp	ELECT.100µF 25V ARA	OA10702550
C815		nsp	ELECT.100µF 25V ARA	OA10702550
C816		nsp	ELECT.6800µF 16V RA2 TYPE	OA68801620
C817		nsp	ELECT.470µF 25V ±20% RA-2	OA47702520
C818		nsp	ELECT.470µF 25V ±20% RA-2	OA47702520
C819		nsp	ELECT.1000µF 10V ±20% RA-2	OA10801020
C820		nsp	ELECT.1000µF 10V ±20% RA-2	OA10801020
C821		nsp	ELECT.1µF ±20% 50V RA-2	OA10505020
			P801 - RESISTORS	
R807		nsp	RES.2.2Ω ±5% 1/6W	GG05022160
R808		nsp	RES.2.2Ω ±5% 1/6W	GG05022160
R813		nsp	RES.3.3Ω ±5% 1/6W	GG05033160
R814		nsp	RES.3.3Ω ±5% 1/6W	GG05033160
R815		nsp	RES.1Ω ±5% 1/4W	GG05010140
R816		nsp	RES.1Ω ±5% 1/4W	GG05010140
R820		nsp	RES.3.3Ω ±5% 1/6W	GG05033160
R822		nsp	RES.1Ω ±5% 1/4W	GG05010140
R825		nsp	RES.3.3Ω ±5% 1/6W	GG05033160
			P801- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES.	
			±5% 1/6W : R271-R274 R276	
			R277 R280-R284 R286	
			P801 - SEMICONDUCTORS	
D809		HD30012010	ZENER HZ24-2L	HD30012010
D810		HD30012010	ZENER HZ24-2L	HD30012010
⚠ D811				
∫		HD20055100	SHOTTKY 11EQS10 1A 100V	HD20055100
⚠ D818				
D819		HD31301000	ZENER 13V EQUIVALENT	HD31301000
D820		HD31301000	ZENER 13V EQUIVALENT	HD31301000
⚠ D821				
∫		HD20055100	SHOTTKY 11EQS10 1A 100V	HD20055100
⚠ D828				
D829		HD30621000	ZENER 6.2V EQUIVALENT	HD30621000
D831				
∫		nsp	DIODE 21DQ10	HD20059100
D838				
D839		HD30751000	ZENER 7.5V EQUIVALENT	HD30751000

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
D840		nsp	DIODE 1D3 1A/200V	HD20002710
D841		nsp	DIODE 1D3 1A/200V	HD20002710
Q801		HT41415100	TRS.2SD1415	HT41415100
Q802		HT21020100	TRS.2SB1020	HT21020100
Q803		HF202461C0	F.E.T.2SK246 (GR)	HF202461C0
Q804		HF202461C0	F.E.T.2SK246 (GR)	HF202461C0
Q805		HT41415100	TRS.2SD1415	HT41415100
Q806		HT21020100	TRS.2SB1020	HT21020100
Q807		HF202461C0	F.E.T.2SK246 (GR)	HF202461C0
Q808		HF202461C0	F.E.T.2SK246 (GR)	HF202461C0
Q809		HT41415100	TRS.2SD1415	HT41415100
Q810		HF202461C0	F.E.T.2SK246 (GR)	HF202461C0
Q811		HT41415100	TRS.2SD1415	HT41415100
Q812		HF202461C0	F.E.T.2SK246 (GR)	HF202461C0
			P801 - MISCELLANEOUS	
G802		BF47400020	COMP.0.47µF+6.8Ω	BF47400020
			RFD2B474K	
G803		BF47400020	COMP.0.47µF+6.8Ω	BF47400020
			RFD2B474K	
L804		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
L805		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
L806		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
			P851 - FILTER	
			CIRCUIT BOARD	
			P851 - CAPACITORS	
C801		nsp	ELECT.10000/50V	OA10905010
C802		nsp	ELECT.10000/50V	OA10905010
			P851 - RESISTORS	
R826		nsp	RES.1Ω ±5% 1/4W	GG05010140
R827		nsp	RES.1Ω ±5% 1/4W	GG05010140
R828		nsp	RES.1Ω ±5% 1/4W	GG05010140
			P851 - SEMICONDUCTORS	
D801				
∫		nsp	DIODE 21DQ10	HD20059100
D808				
			P851 - MISCELLANEOU	
G801		BF47400020	COMP.0.47µF+6.8Ω	BF47400020
			RFD2B474K	
			P891 - POWER SW.	
			CIRCUIT BOARD	
			P891 - CAPACITOR	
C891		nsp	FILM 0.01µF ±20% 250V AC	DF77103500
			P891 - MISCELLANEOU	
S891		SP01010830	PUSH SW. POWER	SP01010830
			TV-8 UL.CSA	
			PF01 - FUSE CIRCUIT BOARD	
			PF01 - MISCELLANEOUS	
⚠ F871	/F/U	nsp	FUSE 2A 125V UL,CSA,	FS10200350
			MITI TYPE FBT	
⚠ F871	/N	FS10050850	FUSE 500mA 250V BS LISTED	FS10050850
			PH01 - NEW MDAM	
			CIRCUIT BOARD	
			PH01- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES.	
			±5% 1/6W : R287-R290 R292	

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
			PH01 - SEMICONDUCTORS	
DH01				
⟆		nsp	DIODE 1SS176,MA165,	HD20002000
DH04			1SS254 30V 0.1A	
QH01		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
QH02		HT322402A0	TRS.2SC2240 GR OR BL	HT322402A0
QH03		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
QH04		HT322402A0	TRS.2SC2240 GR OR BL	HT322402A0
QH05		HT322402A0	TRS.2SC2240 GR OR BL	HT322402A0
QH06		HT109702A0	TRS.2SA970 (GR) OR (BL)	HT109702A0
			PH01 - MISCELLANEOUS	
JH01		YP07002860	PLUG IMSA-1068-06A	YP07002860
JH02		YP07002850	PLUG IMSA-1068-05-T	YP07002850
			PS01 - XLR INPUT	
			CIRCUIT BOARD	
			PS01- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES.	
			±5% 1/6W : R293 R294 R295	
			R301 R302	
			PS01 - MISCELLANEOU	
S274		SR02060190	SRRM ROTARY SW.	SR02060190
			PS71 - MODE SW	
			CIRCUIT BOARD	
			PS71 - MISCELLANEOU	
S273		SS02021610	SLIDE SW.SSSU022-S06N1	SS02021610
			PU01 - µ-COM	
			CIRCUIT BOARD	
			PU01 - CAPACITORS	
C201		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C202		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C203		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C204		nsp	CER.30pF ±5% CH 50V BLK	DD15300300
C205		nsp	CER.30pF ±5% CH 50V BLK	DD15300300
C206				
⟆		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C209				
C210		nsp	ELECT.22µF ±20% 25V RA-2	OA22602520
C211		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C212		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C213		nsp	ELECT.470µF ±20% 10V RA-2	OA47701020
C251		nsp	CER.0.01µF DC50V +80%-20%	DD38103010
C252		nsp	CER.0.01µF DC50V +80%-20%	DD38103010
C261				
⟆		nsp	CER.10000pF	DA17103110
C269				
C301				
⟆		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C308				
C309				
⟆		nsp	ELECT.10µF ±20% 25V RA-2	OA10602520
C313				
C316		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
C341		nsp	ELECT.470µF ±20% 10V RA-2	OA47701020
C351				
⟆		nsp	ELECT.10µF ±20% 25V RA-2	OA10602520
C359				
			PU01 - RESISTOR	
R212		nsp	RES.22Ω ±5% 1/6W	GG05220160

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
			PU01- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES.	
			±5% 1/6W : R303-R344 R353	
			R355 R356 R547-R551 R805	
			R806 R811 R812 R819 R824	
			R831-R836 RC11-RC15 RH01	
			PU01 - SEMICONDUCTORS	
D305		HI10040080	L.E.D.SELU1E10CXM-S BLUE	HI10040080
D306		HI10062320	L.E.D.LT3D8B RED 3O	HI10062320
D307		HI10062320	L.E.D.LT3D8B RED 3O	HI10062320
D308		HI10062320	L.E.D.LT3D8B RED 3O	HI10062320
D309		HI10043080	L.E.D.SML11516C	HI10043080
D310				
⟆		HI10040080	L.E.D.SELU1E10CXM-S BLUE	HI10040080
D314				
D317		HI10062320	L.E.D.LT3D8B RED 3O	HI10062320
Q201		*HS340JH0R	IC HD64F3664H FLASH	*HS340JH0R
Q202		HC10033990	IC AT24C04N-10SI-2.5	HC10033990
Q203		HC10098550	IC PST600D-2 RESET TAPING	HC10098550
Q205		HT324582B0	TRS.2SC2458 Y OR GR	HT324582B0
Q206		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q207		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q208		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q209		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q210		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q211		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q212		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q213		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q214		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q215		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q216		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q217		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q218		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q219		HT110482B0	TRS.2SA1048 Y OR GR	HT110482B0
Q220		HT324582B0	TRS.2SC2458 Y OR GR	HT324582B0
Q221		HT324582B0	TRS.2SC2458 Y OR GR	HT324582B0
Q222		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q223		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q224		BA20001000	DIG.TRS.DTC114ES/UN4211	BA20001000
			10K,10K	
Q301		HC10165090	IC NJU3716L	HC10165090
			PU01 - MISCELLANEOUS	
L201				
⟆		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
L205				
L220		FC90050060	FERRIT BEADS (B-01-RT)	FC90050060
L261		FC90090010	FERRITE CORE ZBF503D-00TA	FC90090010
L301				
⟆		FC90090010	FERRITE CORE ZBF503D-00TA	FC90090010
L308				
S201		SP01013370	PUSH SW.EVQ11L05R H/	SP01013370
			5MM,160GF	

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	DESCRIPTION	PART NO. (MJI)
S202		SP01013370	PUSH SW.EVQ11L05R H/ 5MM,160GF	SP01013370
X201		FQ08004010	SERAMIC VIB.CRYSTAL 8.0MHZ (MT) TAPING	FQ08004010
			PU51 - L LED CIRCUIT BOARD	
			PU51 - CAPACITOR	
C314		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
			PU51- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES. ±5% 1/6W : RH02	
			PU51 - SEMICONDUCTOR	
D315		HI10040080	L.E.D.SELU1E10CXM-S BLUE	HI10040080
			PU61 - R LED CIRCUIT BOARD	
			PU61 - CAPACITOR	
C315		nsp	CER.50V DC 0.1µF +80%-20%	DD38104010
			PU61- RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES. ±5% 1/6W : RH03	
			PU61 - SEMICONDUCTORS	
D316		HI10040080	L.E.D.SELU1E10CXM-S BLUE	HI10040080
			PU71 - IR SENSOR CIRCUIT BOARD	
			PU71 - SEMICONDUCTOR	
Q204		HW10004210	PHOTO UNIT RPM6936-V4	HW10004210

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