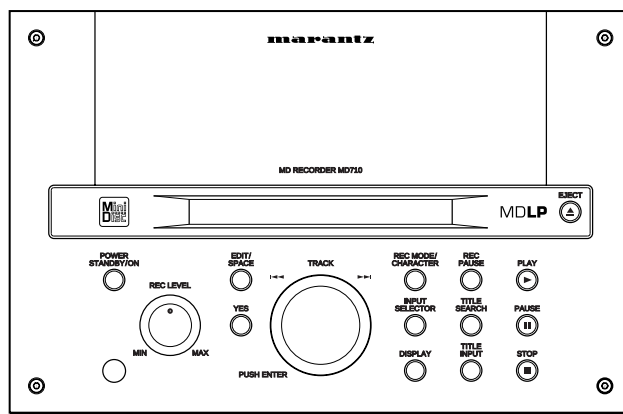


Service Manual

MD710/F1W

MD Recorder



MDLP



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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下さい。

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MD710

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

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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MARANTZ AMERICA, INC.
1100 MAPLEWOOD DRIVE
ITASCA, IL. 60143
USA
PHONE : 630 - 741 - 0300
FAX : 630 - 741 - 0301

EUROPE / TRADING

MARANTZ EUROPE B.V.
P.O.BOX 80002, BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2732241
FAX : +31 - 40 - 2735578

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PHILIPS DA AMAZONIA IND. ELET. ITDA
CENTRO DE INFORMACOES AO
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SAO PAULO, SP, BRAZIL
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FAX : +55 11 534. 8988

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

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TECHNICAL AUDIO GROUP PTY, LTD
558 DARLING STREET,
BALMAIN, NSW 2041,
AUSTRALIA
PHONE : 61 - 2 - 9810 - 5300
FAX : 61 - 2 - 9810 - 5355

CANADA

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

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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#03-02 OLIVINE BUILDING
SINGAPORE 368357
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WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
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FAX : +64 - 9 - 8463554

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PAI- YUING CO., LTD.
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TAIPEI, 10429, TAIWAN R.O.C.
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FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
SUITE 8.1, LEVEL 8, MENARA GENESIS,
NO. 33, JALAN SULTAN ISMAIL,
50250 KUALA LUMPUR, MALAYSIA
PHONE : +60 3 - 2457677
FAX : +60 3 - 2458180

JAPAN Technical

MARANTZ JAPAN, INC.
35- 1, 7- CHOME, SAGAMIJO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 42 748 1013
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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
営業本部 〒150-0022
東京都渋谷区恵比寿南1-11-9

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

形式	ミニディスクデジタルオーディオシステム
レーザー	半導体レーザー
記録方式	磁界変調オーバーライト方式
回転数	約 400rpm ~ 900rpm (CLV)
サンプリング周波数	44.1 kHz
周波数特性	20Hz ~ 20 kHz (± 1dB)
S/N	92dB 以上
ワウフラッター	測定限界値以下
ライン出力レベル	2.0 Vrms

一般事項

電源	AC 100V, 50/60Hz
消費電力 <電気用品取締法>	14W
最大外形寸法 (幅×高さ×奥行)	175 × 115 × 313mm
質量	2.6kg

付属品

リモコン送信機 (RC710MD)	1 個
外形寸法 (幅×高さ×奥行)	57 × 161 × 147mm
質量	80g
単 4 形乾電池 (SUM4)	2 本
オーディオケーブル	2 本
リモートコントロールケーブル	1 本
光デジタルケーブル	1 本
取扱説明書	1 冊
保証書	1 部

仕様および外観は改善のため、予告なく変更されることがあります。

2. TAKING THE MD OUT

1. Removed the top cover with 6 screws.
2. Slide the (A) portion to the direction of arrow by screwdriver. (See fig.1)
3. Raise the (B) portion to open the door completely. (See fig.2)
4. Slide the (C) portion to the direction of arrow by small minus screwdriver. (See fig.3)
5. Then MD comes out. (See fig.4)

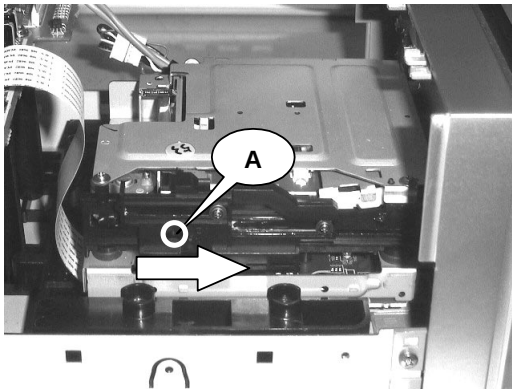


Fig. 1

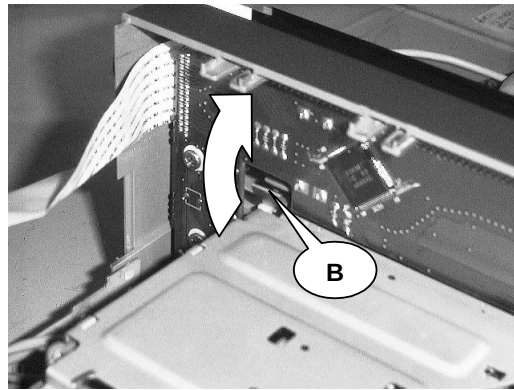


Fig. 2

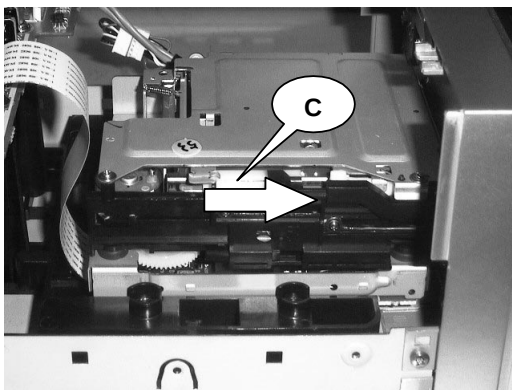


Fig. 3

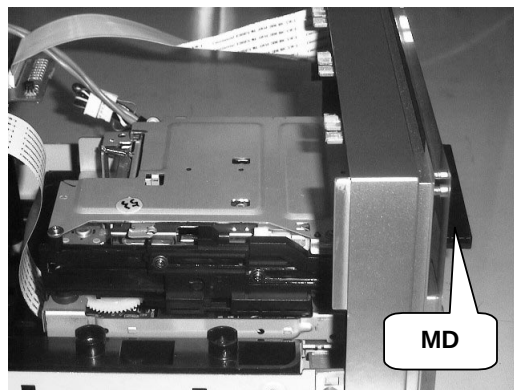
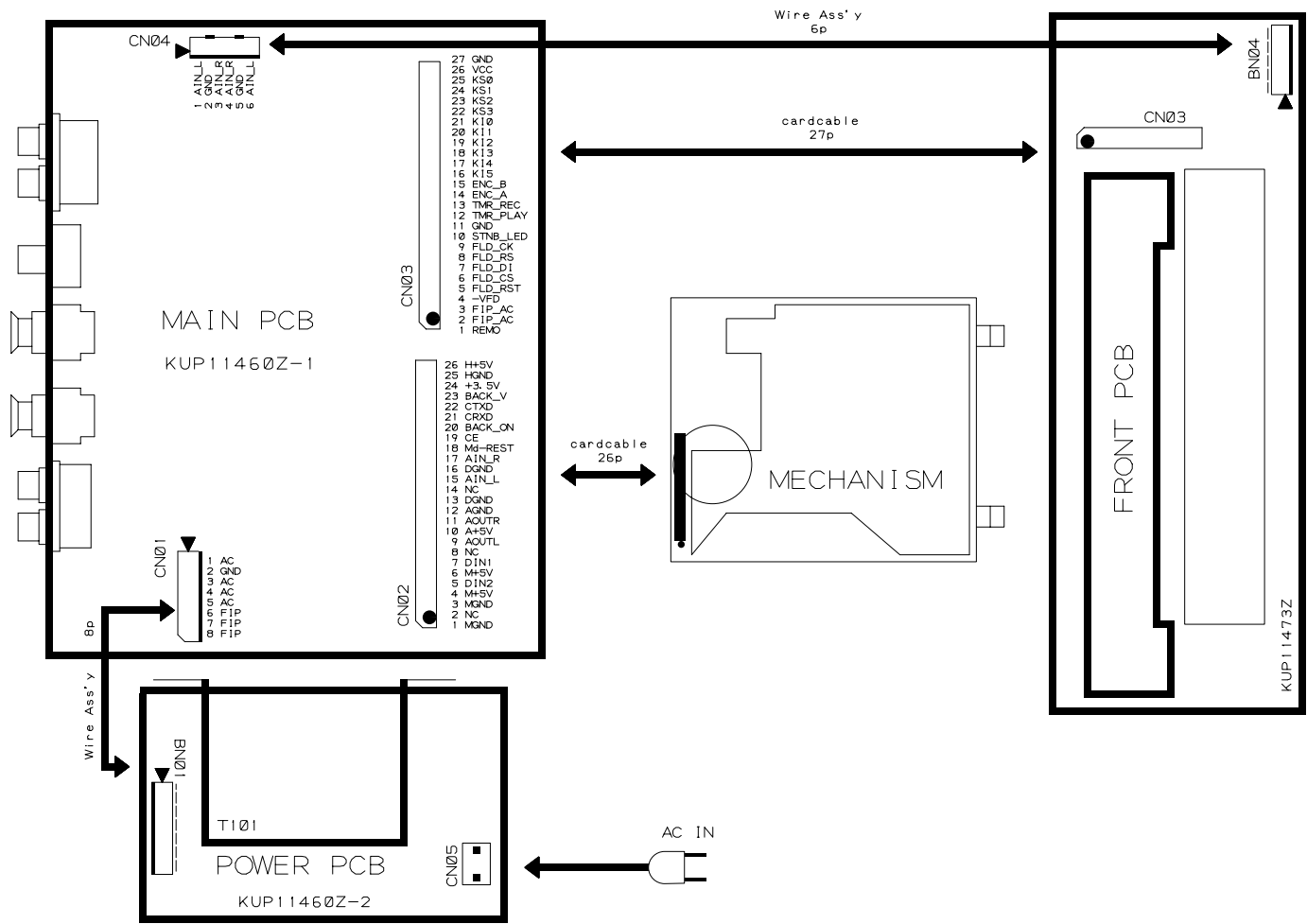
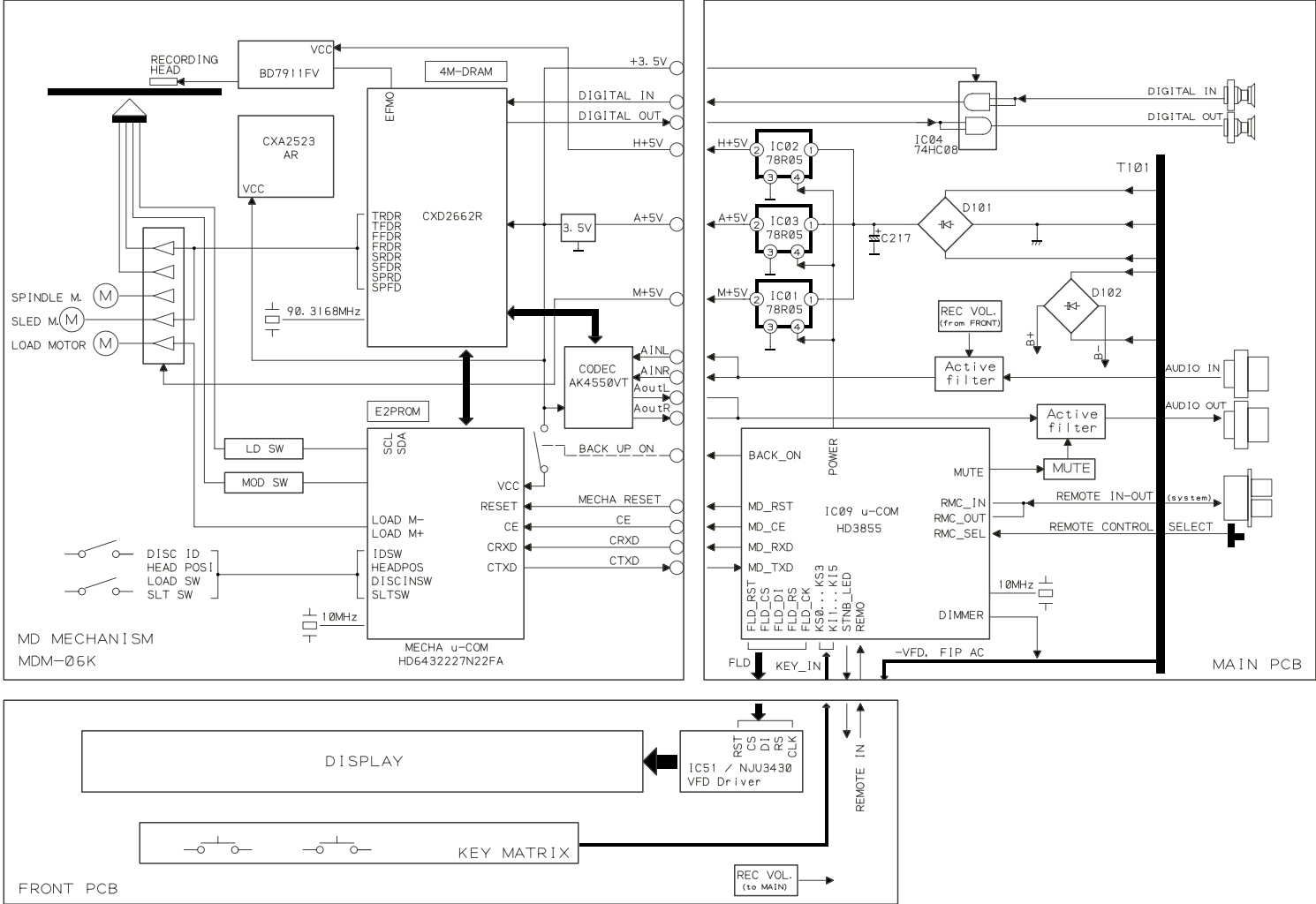


Fig. 4

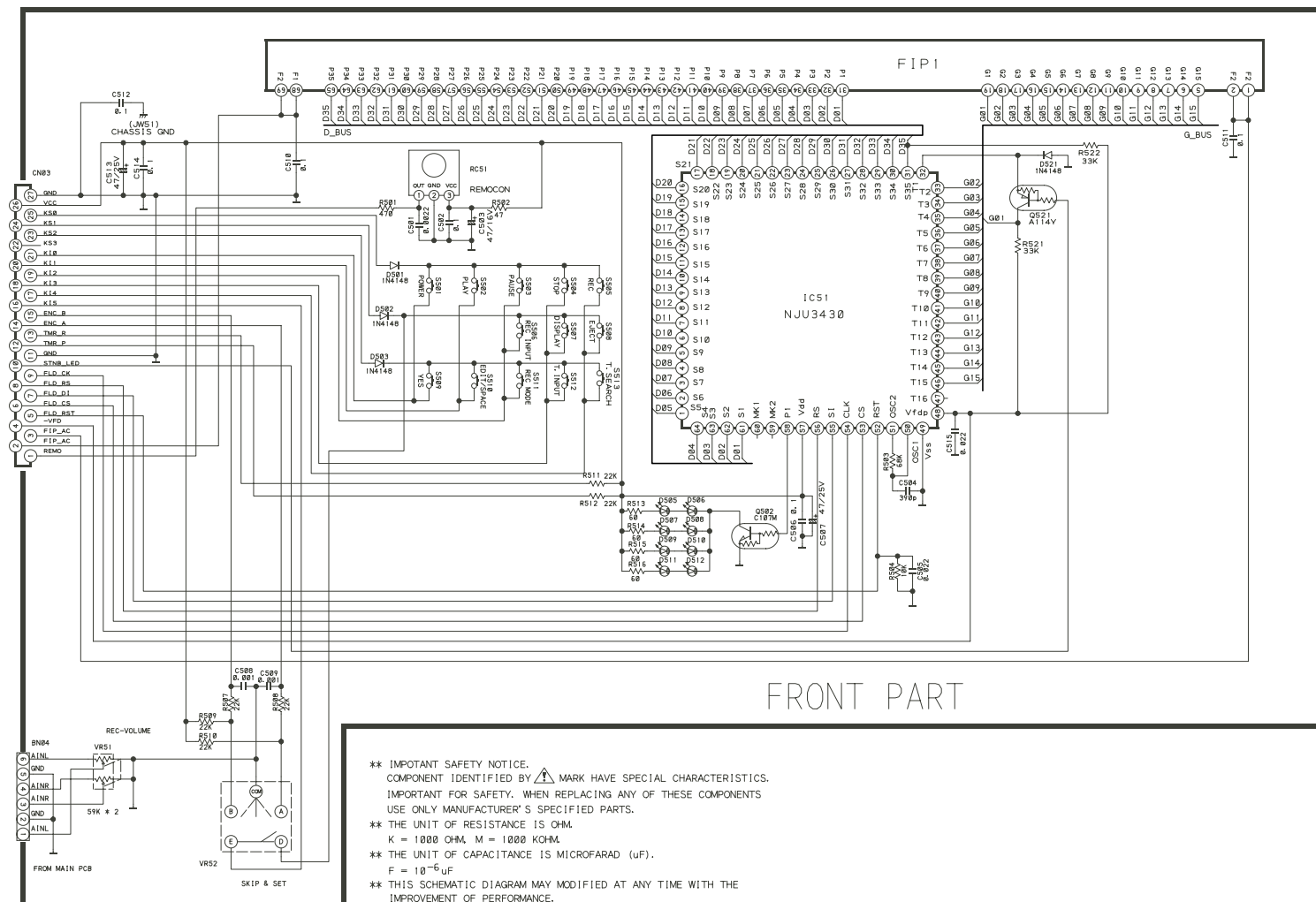
3. WIRING DIAGRAM

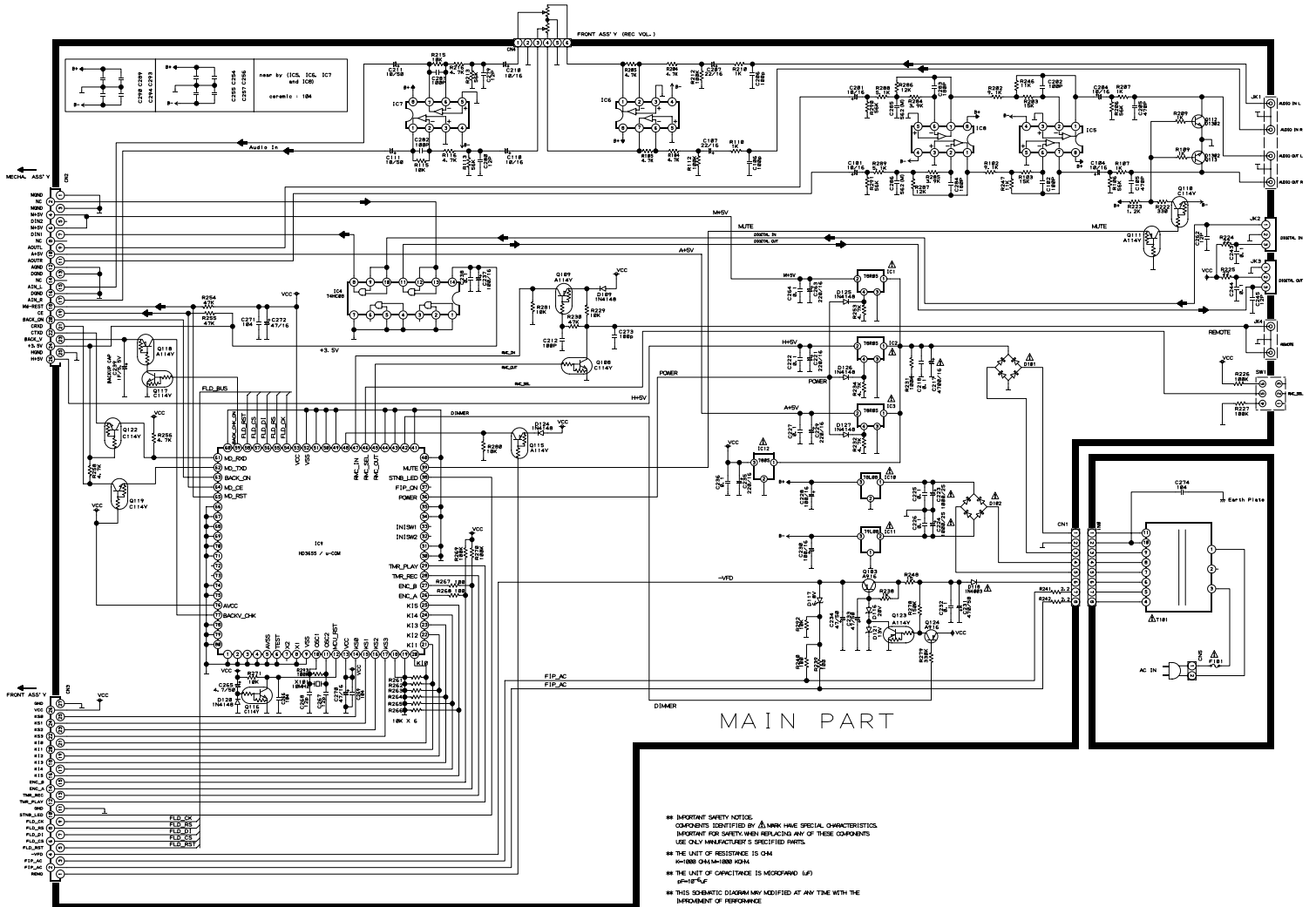


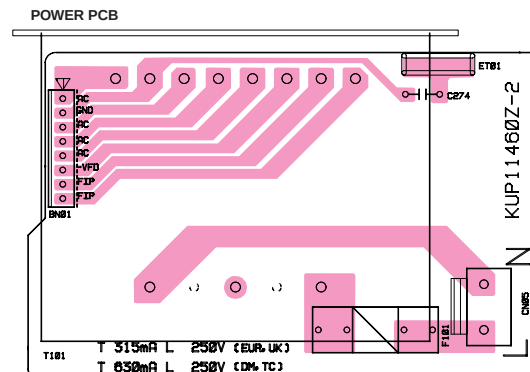
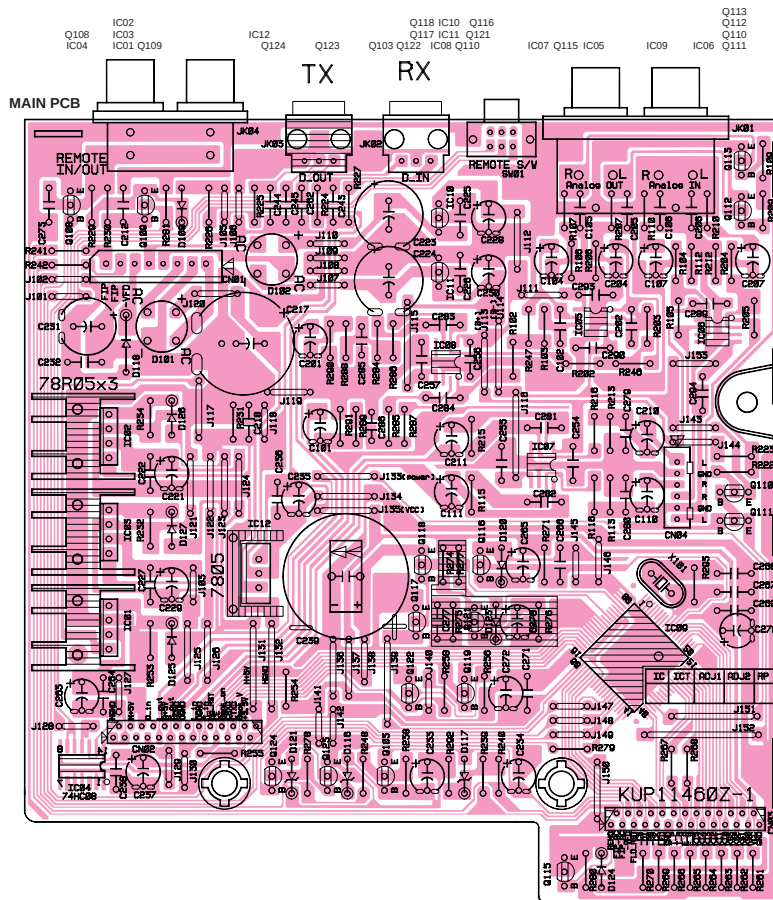
4. BLOCK DIAGRAM

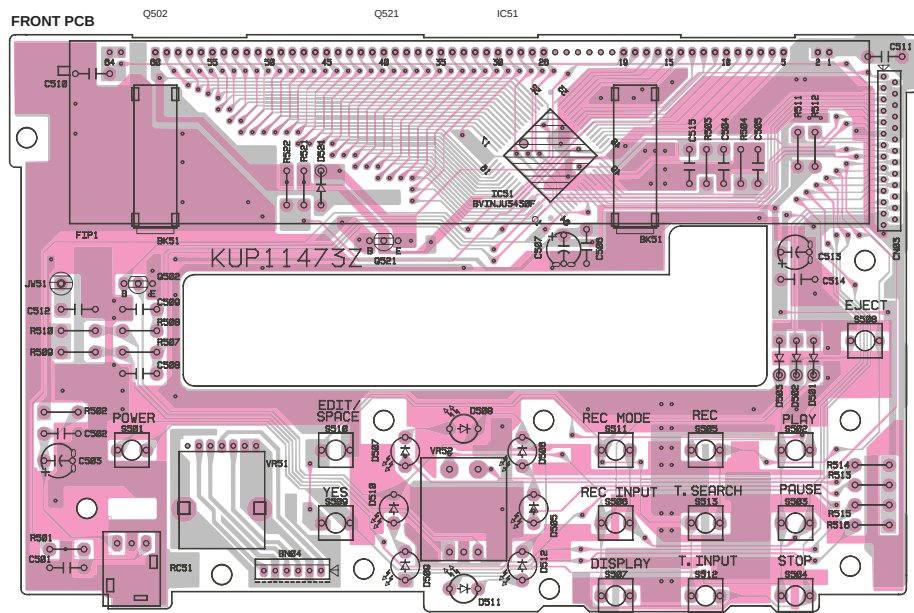


5. SCHEMATIC DIAGRAM AND PARTS LOCATION (Parts side)

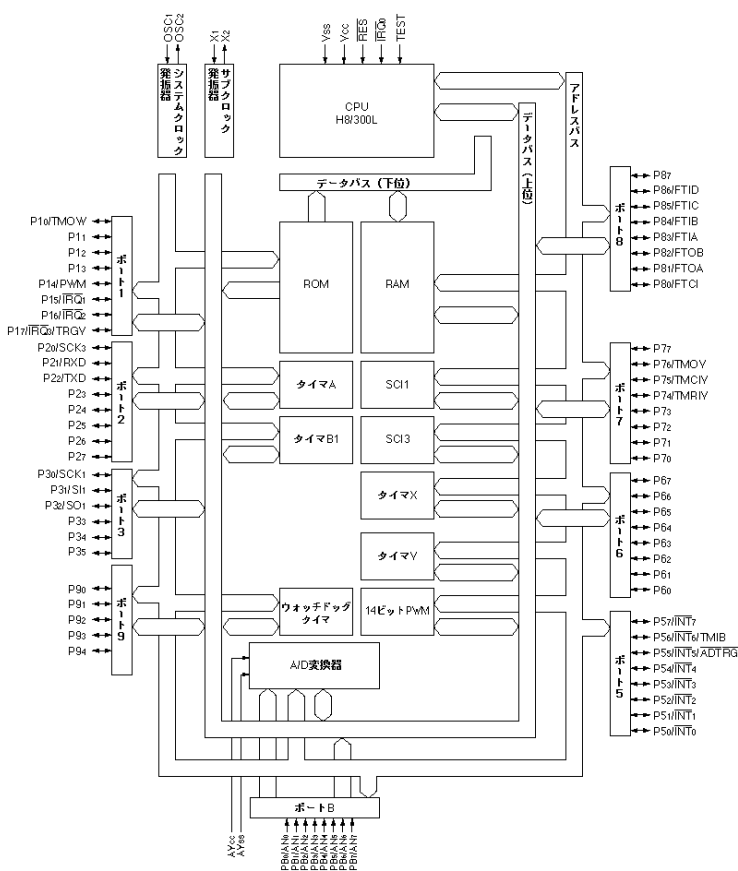








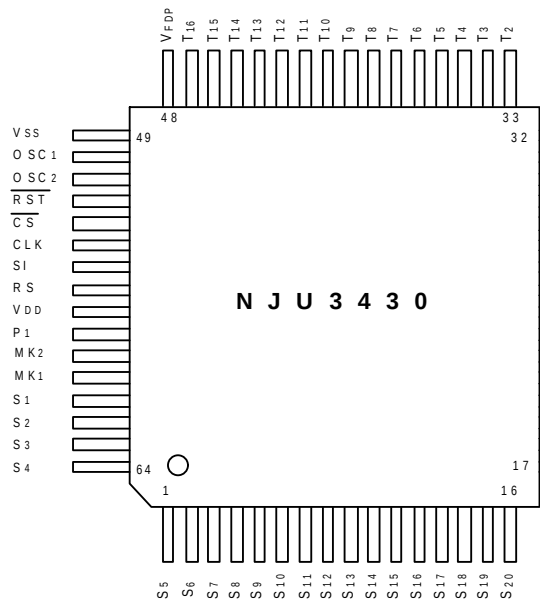
IC09 : HD6473657H
PIN CONFIGURATION



PIN No.	SYMBOL	I/O	DESCRIPTION
1~6	GND	-	GND
7	X2	O	Not Use (Open)
8	X1	I	GND
9	VSS	I	GND (VSS)
10	OSC1	I	Oscillator 10MHz
11	OSC2	O	Oscillator 10MHz
12	RESET	I	MCU RESET
13	VDD	I	u-COM CPU VCC (+5V)
14	KS_0	O	Key Scan
15	KS_1	O	Key Scan
16	KS_2	O	Key Scan
17	KS_3	O	Key Scan
18	GND	-	GND
19	GND	-	GND
20	KI_0	I	Key In
21	KI_1	I	Key In
22	KI_2	I	Key In
23	KI_3	I	Key In
24	KI_4	I	Key In
25	KI_5	I	Key In
26	ENC_A	I	ENCORDER (SKIP AND SET)
27	ENC_B	I	ENCORDER (SKIP AND SET)
28	TIMER_REC	I	TIMER REC SELECT
29	TIMER_PLAY	I	TIMER PLAY SELECT
30	GND	-	GND
31	GND	-	GND
32	NC	-	Not Use (Open)
33	NC	-	Not Use (Open)
34	GND	-	GND
35	GND	-	GND
36	POWER_ON	O	POWER ON/OFF
37	NC	-	Not Use (Open)
38	ST_BY LED	O	STANDBY LED ON/OFF
39	MUTE	O	AUDIO MUTE ON/OFF
40	GND	-	GND
41	GND	-	GND
42	DIMMER	O	DIMMER ON/OFF
43	GND	-	GND
44	GND	-	GND
45	REMOCON_OUT	O	(SYSTEM) REMOCON OUT
46	REMOCON_SELECT	I	(SYSTEM) REMOCON IN/OUT SELECT
47	REMOCON_IN	I	(SYSTEM) REMOCON IN
48	REMOCON_SENSOR	I	REMOCON SENSOR SIGNAL IN
49	GND	-	GND
50	GND	-	GND
51	GND	-	GND
52	GND	I	GND (VSS)
53	VDD	I	u-COM VCC (+5V)
54	FLD_CLK	O	FLD CLK (to VFD Driver)
55	FLD_RS	O	FLD RS (to VFD Driver)
56	FLD_DI	O	FLD DI (to VFD Driver)
57	FLD_CS	O	FLD CS (to VFD Driver)
58	FLD_RST	O	FLD RESET (to VFD Driver)
59	BACKUP_CHK_ON	O	BACK-UP CAP CHECK ON
60	GND	-	GND
61	MD_RXD	O	MD RXD (to MD MECHANISM)
62	MD_TXD	I	MD TXD (to MD MECHANISM)
63	BACK_ON	O	MD BACKUP ON (to MD MECHANISM)
64	MD_CE	O	MD CE (to MD MECHANISM)
65	MD_RST	O	MD RESET (to MD MECHANISM)
66	GND	-	GND
67	GND	-	GND
68	GND	-	GND
69	GND	-	GND
70	GND	-	GND
71	GND	-	GND
72	NC	-	Not Use (Open)
73	POWER_FAIL_DETECT	I	POWER FAIL DETECT PIN
74	GND	-	GND
75	GND	-	GND
76	VDD	I	AVCC (+5V)
77	BACKUP_CHK	I	BACK-UP CAP CHECK
78	GND	-	GND
79	GND	-	GND
80	GND	-	GND

IC51 : NJU3430

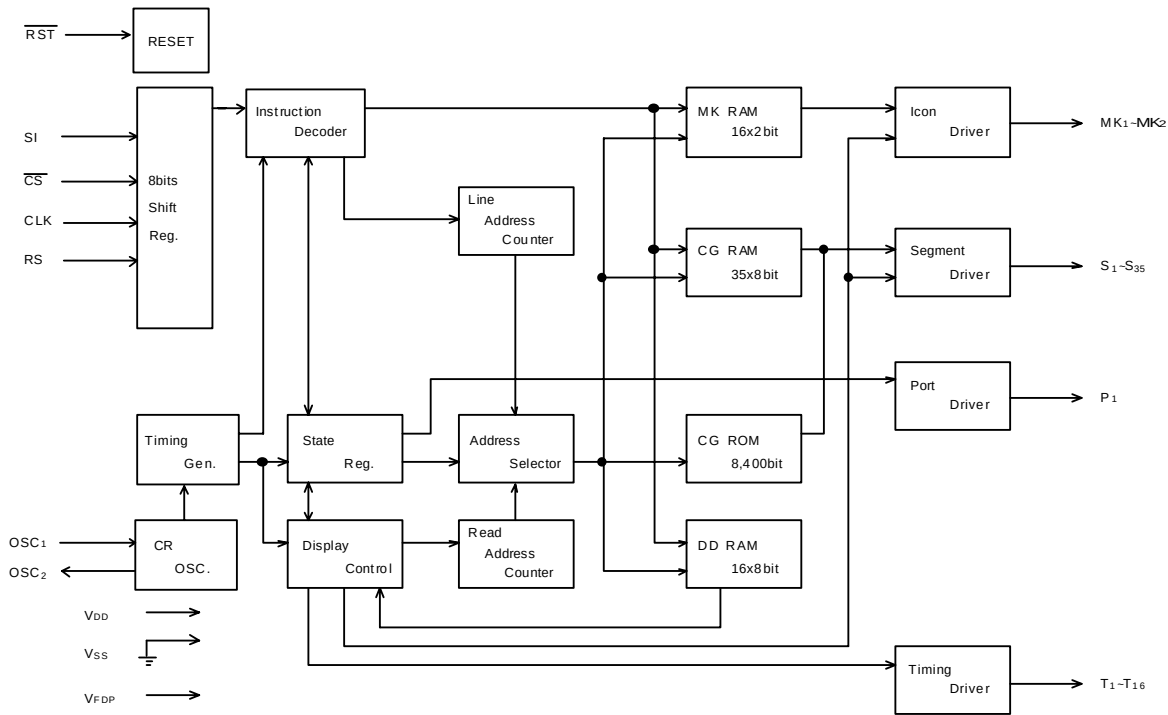
PIN CONFIGURATION



PIN FUNCTION

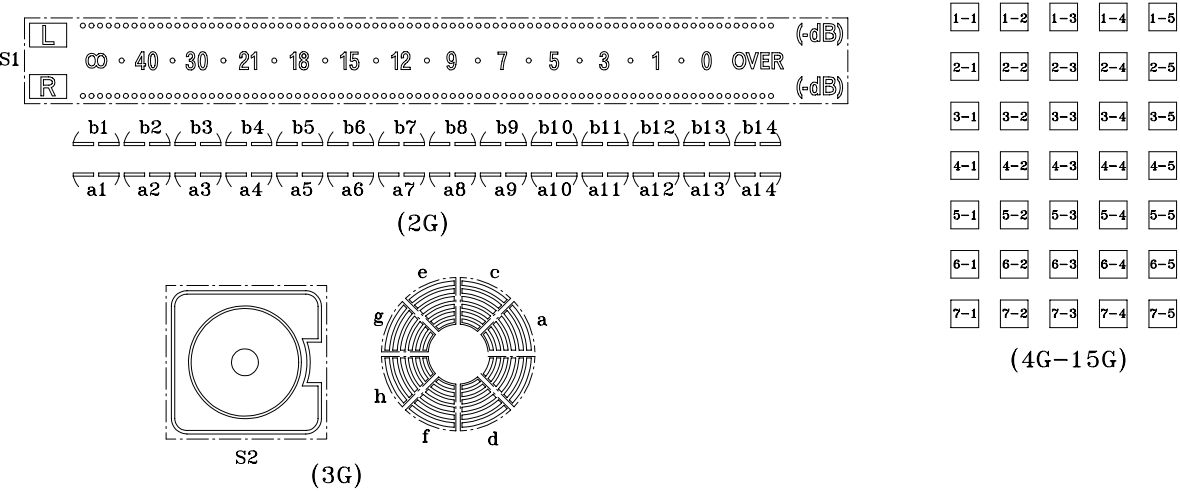
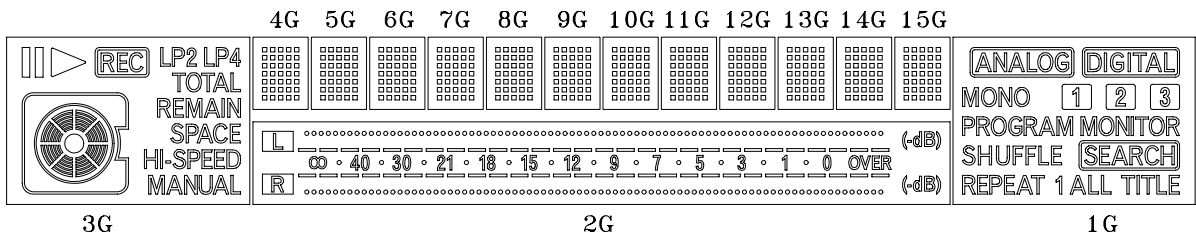
No.	SYMBOL	I/O	F U N C T I O N
57	VDD	-	Power Source : VDD=+3.0 to 5.5V
49	VSS	-	GND : VSS=0V
48	VDDP	-	VFD Driving Power Source VDD-20V to VDD-45V
50	OSC1	I	CR Oscillation Terminal External R and C connect to these terminals.
51	OSC2	O	(Target fosc=360kHz)
54	CLK	I	Serial Clock Input Terminal The serial data input synchronizing the rise edge of this terminal.
53	CS	I	Chip Select Terminal When the CS terminal is "H" the serial data input is not available.
55	SI	I	Serial Data Input Terminal The data input is MSB first.
56	RS	I	Register Selection Signal Input Terminal RS="0" : Instruction Register RS="1" : Data Register
52	RST	I	Reset Terminal RST="L" : Reset -Each Address : (00)H -Each RAM Data : Unfixed -Display Digits : 16-digit -Contrast Control : 8/16 Duty -All Display Off -All Outputs are "L"
61 to 64, 1 to 31	S1 to S35	O	Segment Output Terminals (Internal Pull-down Resistance)
32 to 47	T1 to T16	O	Timing Output Terminals (Internal Pull-down Resistance)
60 59	MK1 MK2	O	Icon Output Terminals (Internal Pull-down Resistance)
58	P1	O	Output Port Terminal This terminal is suitable for LED.

BLOCK DIAGRAM



7. FIP DISPLAY DATA

GRID ASSIGNMENT



ANODE CONNECTION

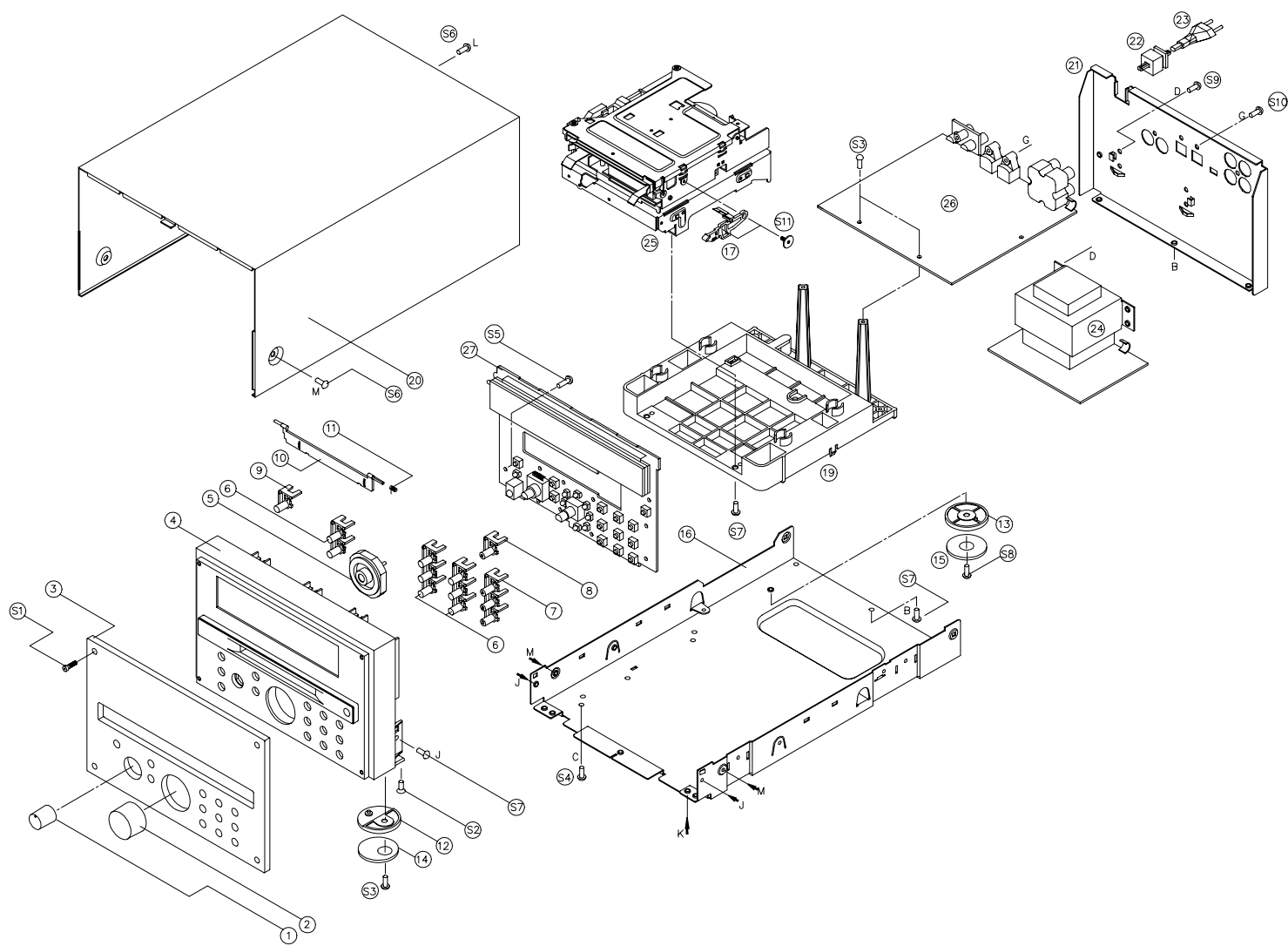
	1G	2G	3G	4G - 15G
P1	DIGITAL			1-1
P2	ANALOG			1-2
P3	3			1-3
P4	2			1-4
P5	1			1-5
P6	MONITOR			2-1
P7	SEARCH	a1		2-2
P8	TITLE	a2		2-3
P9	ALL	a3		2-4
P10	1	a4		2-5
P11	REPEAT	a5		3-1
P12	SHUFFLE	a6		3-2
P13	PROGRAM	a7		3-3
P14	MONO	a8		3-4
P15		a9		3-5
P16		a10		4-1
P17		a11	LP4	4-2
P18		a12	LP2	4-3
P19		a13	TOTAL	4-4
P20		a14	REMAIN	4-5
P21		b14	SPACE	5-1
P22		b13	HI-SPEED	5-2
P23		b12	MANUAL	5-3
P24		b11	REC	5-4
P25		b10		5-5

	1G	2G	3G	4G - 15G
P26		b9		6-1
P27		b8	a	6-2
P28		b7	b	6-3
P29		b6	c	6-4
P30		b5	d	6-5
P31		b4	e	7-1
P32		b3	f	7-2
P33		b2	g	7-3
P34		b1	h	7-4
P35		S1	S2	7-5

8. EXPLODED VIEW AND PARTS LIST

POS. NO	VERS. COLOR	DESCRIPTION	PART NO. (MJI)
1		KBN1A137M7K102 KNOB, ROTARY	308W154020
2		KBN1A136M7K102 KNOB, TRACK	308W154010
3		KGU1A246Z WINDOW, FRONT	308W063010
4		KGW2A300MLZK102 PANEL, SUB	308W248010
5		KGL1A189 INDICATOR, DISPLAY	308W355010
6		KBT1A747M7K102 KNOB, FUNCTION	308W270010
7		KBT1A748M7K102 KNOB, PLAY	308W270020
8		KBT2A748M7K102 KNOB, OPEN	308W270060
9		KBT1A747MBC22 KNOB, POWER	308W270050
10		KGR2A215M7K102 DOOR, ORNAMENT	308W162010
11		KUS2A120 SPRING, DOOR	308W115010
12		KKL1A062M7 FOOT (A)	307W057010
13		KKL2A062M7 FOOT (B)	307W057020
14		KHG1A179 CUSHION, FOOT	nsp
15		KHG1A165 CUSHION, FOOT	nsp
16		KUA3A170 CHASSIS, BOTTOM	nsp
17		BGR1A262 LEVER	308W354010
19		KMH1A132 SUPPORT, MECHA	nsp
20		KKC5B100S35 CABINET, TOP	nsp
21		KKF1A179U PANEL, REAR	nsp
22		KHR1A028 BUSHING, MAINS CORD	nsp
▲ 23		BJA2J049Z MAINS CORD, POWER FOR F	*YC000520R
▲ 24		KLT5M024ZJ MAINS TRANSF. (AC100V 50/60Hz)	*TS001490R
25		BJDMDM06K MD MECHANISM (MDM06K)	308W304500
26		KOP11460B MAIN PCB ASS'Y	nsp
27		KOP11473B SUB PCB ASS'Y	nsp
S1		KHD1A028FC SCREW, SPECIAL	308W010010
S2		KTS3+8J SCREW	nsp
S3		KTW3+10G SCREW	nsp
S4		KTB3+8G SCREW	nsp
S5		KTB3+10G SCREW	nsp
S6		KTB3+8JFC SCREW	nsp
S7		KTB3+6J SCREW	nsp
S8		KTW3+8J SCREW	nsp
S9		KTB3+8JFZ SCREW	nsp
S10		KTB3+10GFZ SCREW	nsp
S11		BHD1A039 SCREW	nsp
PACKING			
Z001		KARTMD710 REMOTE CONTROLLER (RC710MD)	ZK308W0010
001T		KQX1A652Y USER GUIDE FOR MD710	308W851110
NOT STANDARD SPARE PARTS			
		KPB1A134Z BAG, POLY(SET)	nsp
		KPG1A624Z BOX, OUT CARTON	nsp
		KPS1A504 PAD, SNOW	nsp
		KABAAAM1.5V BATTERY	nsp
		KJS4M014Y CORD, PIN	nsp
		KJS4N001Y CORD, PIN	nsp
		KJS8H002Z OPTICAL FIBER CABLE	nsp

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



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

CAPACITORS

C***: CERAMIC CAP
3) DD1××××370, Ceramic capacitor
Disc type
Temp.coeff P350 ~N1000, 50V
Capacity value
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
Disc type
Temp.chara. 2B4, 50V
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
One-way lead type, Tolerance ±20%
Working voltage
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
DF15××××310 Plastic film capacitor
One-way type, Mylar ±10% 50V
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 (R105, 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. (MJJ) 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. (MJJ) Type No. (MEC) Description
NF05×××140 ERD-2FCJ××× (±5% 1/4W)
NF05×××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	BAT : BATTERY		
CAP : CAPACITOR	CER : CERAMIC		
CONN. : CONNECTING	DIG. : DIGITAL		
HP : HEADPHONE	MIC. : MICROPHONE		
μPRO : MICROPROCESSOR	REC. : RECORDING		
RES. : RESISTOR	SPK : SPEAKER		
SW : SWITCH	TRANSF. : TRANSFORMER		
TRIM. : TRIMMING	TRS. : TRANSISTOR		
VAR. : VARIABLE	XTAL : CRYSTAL		

NOTE ON FUSE :
Regarding to all parts of code parts FS20xxx2xx, 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	DESCRIPTION	PART NO. (MJJ)	POS. NO	VERS. COLOR	DESCRIPTION	PART NO. (MJJ)
FRONT CIRCUIT BOARD							
CAPACITORS							
C501		KCBS1C222MYT CER. 2200pF 16V	nsp	C106		KCBS1H101KBT CER. 100pF	nsp
C502		KCBS1H104ZFT CER. 0.1μF 50V	nsp	C107		KCEA1VH100T ELECT 10μF 35V	nsp
C503		KCEA1CK5470T ELECT 47pF 16V	nsp	C110		KCEA1VH100T ELECT 10μF 35V	nsp
C504		KCBS1H391KBT CER. 390pF 50V	nsp	C111		KCEA1VH100T ELECT 10μF 35V	nsp
C505		KCBS1H223ZFT CER. 22000pF 50V	nsp	C201		KCEA1CH100T ELECT 10μF 35V	nsp
C506		KCBS1H104ZFT CER. 0.1μF 50V	nsp	C202		KCBS1H271KBT CER. 270pF 50V	nsp
C507		KCEA1CK5470T ELECT 47pF 16V	nsp	C204		KCEA1CH100T ELECT 10μF 35V	nsp
C508		KCBS1H102KBT CER. 1000pF 50V	nsp	C205		KCBS1H471KBT CER. 470pF 50V	nsp
C509		KCBS1H102KBT CER. 1000pF 50V	nsp	C206		KCBS1H101KBT CER. 100pF	nsp
C510		KCBS1H104ZFT CER. 0.1μF 50V	nsp	C207		KCEA1VH100T ELECT 10μF 35V	nsp
C511		KCBS1H104ZFT CER. 0.1μF 50V	nsp	C210		KCEA1VH100T ELECT 10μF 35V	nsp
C512		KCBS1H104ZFT CER. 0.1μF 50V	nsp	C211		KCEA1VH100T ELECT 10μF 35V	nsp
C513		KCEA1CK5470T ELECT 47pF 16V	nsp	C212		KCBS1H101KBT CER. 100pF	nsp
C514		KCBS1H104ZFT CER. 0.1μF 50V	nsp	C217		BCEA1CH472E ELECT 4700pF 16V	*EA00990R
C515		KCBS1H223ZFT CER. 22000pF 50V	nsp	C218		KCBS1H104ZFT CER. 0.1μF 50V	nsp
RESISTORS				C221		KCEA1CH221T ELECT 220pF 16V	nsp
R501		KRD20T3471T 470 Ω ±5% 1/6W	nsp	C222		KCBS1H104ZFT CER. 0.1μF 50V	nsp
R502		KRD20T3470T 47 Ω ±5% 1/6W	nsp	C223		KCEA1EH102E ELECT 1000pF 25V	nsp
R503		KRD20T3683T 68k Ω ±5% 1/6W	nsp	C224		KCEA1EH102E ELECT 1000pF 25V	nsp
R504		KRD20T3103T 10k Ω ±5% 1/6W	nsp	C225		KCBS1H104ZFT CER. 0.1μF 50V	nsp
R507				C226		KCBS1H104ZFT CER. 0.1μF 50V	nsp
R512		KRD20T3223T 22k Ω ±5% 1/6W	nsp	C227		KCBS1H104ZFT CER. 0.1μF 50V	nsp
R513				C228		KCEA1CH221T ELECT 220pF 16V	nsp
R516				C229		KCEA1CH221T ELECT 220pF 16V	nsp
R521		KRD20T3560T 56 Ω ±5% 1/6W	nsp	C230		KCEA1CH221T ELECT 220pF 16V	nsp
R522		KRD20T3333T 33k Ω ±5% 1/6W	nsp	C231		KCEA1H471E ELECT 470pF 50V	nsp
VR51		BVV201A503Z VARIABLE ENCODER VOLUME (TACT) EC11B ROALY	*RA001030R SR30300030	C232		KCBS1H104ZFT CER. 0.1μF 50V	nsp
VR52				C233		KCEA1H470T ELECT 47pF 50V	nsp
D501		KVD1N4148MT DIODE 1N4148M	*HD201550R	C234		KCEA1H470T ELECT 47pF 50V	nsp
D502		KVD1N4148MT DIODE 1N4148M	*HD201550R	C235		KCEA1CH221T ELECT 220pF 16V	nsp
D503		KVD1N4148MT DIODE 1N4148M	*HD201550R	C236		KCBS1H104ZFT CER. 0.1μF 50V	nsp
D505				C237		KCEA1CK5101T ELECT 100pF 16V	nsp
D512		BVDLN3401NT L.E.D LNJ401NT	*HI100960R	C238		KCBS1H104ZFT CER. 0.1μF 50V	nsp
D521				C239		KABSEC95RMJ05Z BATTERY RECHAGABLE 5.5WV 1.0F	*ZB000030R
IC51		BVINJ3U3430F IC VFD DRIVER JU3430F	*HC107210R	C243		KCBS1H104ZFT CER. 0.1μF 50V	nsp
Q502		KVTKRC107MT TRS. KRC107M	*BA001070R	C244		KCBS1H104ZFT CER. 0.1μF 50V	nsp
Q521		KVTKRA107MT TRS. KRA107M	*BA001060R	C245		KCBS1H120JCT CER. 12pF 50V	nsp
MISCELLANEOUS				C254		KCBS1H104ZFT CER. 0.1μF 50V	nsp
BK51		KMD1A374 BRACKET FLT	nsp	C257			
BN04		KWZMD710BN04 WIRE ASSY	nsp	C262		KCBS1H120JCT CER. 12pF 50V	nsp
CN03		KJP27GA1172G WAFER CARD CABLE	nsp	C263		KCEA1CH221T ELECT 220pF 16V	nsp
FIP1		KFLH1A15MM23 FL TUBE	*HQ300500R	C264		KCBS1H104ZFT CER. 0.1μF 50V	nsp
JW51		KWE8202120RV WIRE ASSY	nsp	C265		KCEA1H471T ELECT 47pF 50V	nsp
RC51		KRVHM082H32 SENSOR REMOTE	*HW100510R	C266		KCBS1H104ZFT CER. 0.1μF 50V	nsp
SS01				C267		KCBS1H330JUT CER. 33pF 50V	nsp
SS13		KST1A0122T SW TACT	*SP000890R	C268		KCBS1H330JUT CER. 33pF 50V	nsp
MAIN CIRCUIT BOARD				C269		KCBS1H104ZFT CER. 0.1μF 50V	nsp
CAPACITORS				C270		KCEA1CH470T ELECT 47pF 16V	nsp
C101		KCEA1CH100T ELECT 10pF 16V	nsp	C271		KCBS1H104ZFT CER. 0.1μF 50V	nsp
C102		KCBS1H271KBT CER. 270pF 50V	nsp	C272		KCEA1CH470T ELECT 47pF 16V	nsp
C104		KCEA1CH100T ELECT 10pF 16V	nsp	C273		KCBS1H101KBT CER. 100pF	nsp
C105		KCBS1H471KBT CER. 470pF 50V	nsp	C274		KCBS1H104ZFT CER. 0.1μF 50V	nsp

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

POS. NO	VERS. COLOR	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	DESCRIPTION	PART NO. (MJI)
RESISTORS							
R102		KRD20TJ912T 9.1k Ω $\pm 5\%$ 1/5W	nsp	R291		KRD20TJ563T 56k Ω $\pm 5\%$ 1/5W	nsp
R103		KRD20TJ123T 12k Ω $\pm 5\%$ 1/5W	nsp	R292		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp
R104		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	R293		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp
R105		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	SEMICONDUCTORS			
R106		KRD20TJ563T 56k Ω $\pm 5\%$ 1/5W	nsp	▲ D101		BVDW02GF DIODE BRIDGE W02GF	*HE200230R
R107		KRD20TJ102T 1k Ω $\pm 5\%$ 1/6W	nsp	▲ D102		BVDW02GF DIODE BRIDGE W02GF	*HE200230R
R109		KRD20TJ102T 1k Ω $\pm 5\%$ 1/6W	nsp	D109		KVD1N4148MT DIODE 1N4148M	*HD201550R
R110		KRD20TJ102T 1k Ω $\pm 5\%$ 1/6W	nsp	D116		KVDMTJ20BT DIODE ZENER MTJ20B	*HD301950R
R112		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp	D117		KVDMTJ6.8BT DIODE ZENER MTJ6.8B	*HD301620R
R113		KRD20TJ563T 56k Ω $\pm 5\%$ 1/5W	nsp	D118		KVD1N4003ST DIODE 1N4003S	HD200010AR
R115		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp	D120		KVD1N4148MT DIODE 1N4148M	*HD201550R
R116		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	D121		KVDMTJ13BT DIODE ZENER MTJ13B	HD31301000
R202		KRD20TJ912T 9.1k Ω $\pm 5\%$ 1/5W	nsp	D124			
R203		KRD20TJ123T 12k Ω $\pm 5\%$ 1/5W	nsp	}		KVD1N4148MT DIODE 1N4148M	*HD201550R
R204		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	D127			
R205		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	▲ IC01		KVIKA78R05 IC REGULATOR +5V KA78R05	*HC300370R
R206		KRD20TJ563T 56k Ω $\pm 5\%$ 1/5W	nsp	▲ IC02		KVIKA78R05 IC REGULATOR +5V KA78R05	*HC300370R
R207		KRD20TJ102T 1k Ω $\pm 5\%$ 1/6W	nsp	▲ IC03		KVIKA78R05 IC REGULATOR +5V KA78R05	*HC300370R
R209		KRD20TJ102T 1k Ω $\pm 5\%$ 1/6W	nsp	IC04		BVIMC74LCX08D IC LOGIC MC74LCX08D	*HC107220R
R210		KRD20TJ102T 1k Ω $\pm 5\%$ 1/6W	nsp	IC05			
R212		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp	}		BVINJM2068MDTE1 IC OP AMP NJM2068M	*HC107090R
R213		KRD20TJ563T 56k Ω $\pm 5\%$ 1/5W	nsp	IC08			
R215		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp	IC09		BVIHD6473657H IC OTP (PROGRAMMED) HD6473657H / H8	*HS308WH1R
R216		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	IC10		KVIKA78L08AZT REGULATOR +8V KA78L08	*HC300350R
R222		KRD20TJ331T 330 Ω $\pm 5\%$ 1/6W	nsp	IC11		KVIKA79L08AZT REGULATOR -8V KA79L08	*HC300360R
R223		KRD20TJ122T 1.2k Ω $\pm 5\%$ 1/6W	nsp	▲ IC12		KVIMC7805C IC REGULATOR +5V MC7805	*HC300210R
R224		KRD20TJ220T 22 Ω $\pm 5\%$ 1/6W	nsp	Q103		KVTKSA916YT TRS. KSA916Y	*HT100460R
R225		KRD20TJ220T 22 Ω $\pm 5\%$ 1/6W	nsp	Q108			
R226		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp	}		KVTKRA107MT TRS. KRA107M	*BA001060R
R227		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp	Q111			
R229		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp	Q112		KVTKTD1302T TRS. KTD1302	*HT400400R
R230		KRD20TJ473T 47k Ω $\pm 5\%$ 1/6W	nsp	Q113		KVTKTD1302T TRS. KTD1302	*HT400400R
R231		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp	Q115			
R232		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	}		KVTKRC107MT TRS. KRC107M	*BA001070R
R234		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	Q119			
R238		KRD20TJ102T 1k Ω $\pm 5\%$ 1/6W	nsp	Q122		KVTKRC107MT TRS. KRC107M	*BA001070R
R239		KRD20TJ101T 100 Ω $\pm 5\%$ 1/6W	nsp	Q123		KVTKRA107MT TRS. KRA107M	*BA001060R
R240		KRD20TJ101T 100 Ω $\pm 5\%$ 1/6W	nsp	Q124		KVTKSA916YT TRS. KSA916Y	*HT100460R
R241		KRD20TJ2R2T 2.2k Ω $\pm 5\%$ 1/5W	nsp	MISCELLANEOUS			
R242		KRD20TJ2R2T 2.2k Ω $\pm 5\%$ 1/5W	nsp	BN01		KWB1C908120BM WIRE ASS'Y	nsp
R246		KRD20TJ113T 11k Ω $\pm 5\%$ 1/5W	nsp	BN02		KWC1B2A26A140A CARD CABLE (26P)	*YB001860R
R247		KRD20TJ113T 11k Ω $\pm 5\%$ 1/5W	nsp	BN03		KWC1B2A27A180B CARD CABLE (27P)	*YB001870R
R248		KRD20TJ150T 15 Ω $\pm 5\%$ 1/5W	nsp	CN01		KJP08GA012M WAFER	nsp
R253		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	CN02		KJP26GA117ZG WAFER CARD CABLE	nsp
R254		KRD20TJ473T 47k Ω $\pm 5\%$ 1/6W	nsp	CN03		KJP27GA117ZG WAFER CARD CABLE	nsp
R255		KRD20TJ473T 47k Ω $\pm 5\%$ 1/6W	nsp	CN04		KJP06GA192M WAFER	nsp
R256		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	CN05		KJP02KA060ZY WAFER	nsp
R258		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp	ET01		KMC1A111 PLATE EARTH	nsp
R261				▲ F101		KBA2C0630TLU FUSE (250V / 630mA)	*FS000860R
}		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp	JK01		KJJ4P019Y JACK BOARD	*YT002520R
R266				JK02		BJSTORX178B MODULE OPTICAL (RX)	*YJ002460R
R267		KRD20TJ101T 100 Ω $\pm 5\%$ 1/6W	nsp	JK03		BJS9L001Z MODULE OPTICAL (TX)	*YJ002440R
R268		KRD20TJ101T 100 Ω $\pm 5\%$ 1/6W	nsp	JK04		KJJ4N023Z JACK REMOTE(2P)	*YT002510R
R269		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp	SW01		KSS2B016Z SWITCH SLIDE	*SS000710R
R270		KRD20TJ104T 100k Ω $\pm 5\%$ 1/6W	nsp	X101		KOX10000D330FZ CRYSTAL 10.000MHz	*JX000760R
R271		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp				
R278		KRD20TJ154T 150k Ω $\pm 5\%$ 1/5W	nsp				
R279		KRD20TJ334T 330k Ω $\pm 5\%$ 1/5W	nsp				
R280		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp				
R281		KRD20TJ103T 10k Ω $\pm 5\%$ 1/6W	nsp				
R284		KRD20TJ392T 3.9k Ω $\pm 5\%$ 1/6W	nsp				
R285		KRD20TJ392T 3.9k Ω $\pm 5\%$ 1/6W	nsp				
R286		KRD20TJ123T 12k Ω $\pm 5\%$ 1/5W	nsp				
R287		KRD20TJ123T 12k Ω $\pm 5\%$ 1/5W	nsp				
R288		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp				
R289		KRD20TJ472T 4.7k Ω $\pm 5\%$ 1/6W	nsp				
R290		KRD20TJ563T 56k Ω $\pm 5\%$ 1/5W	nsp				

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