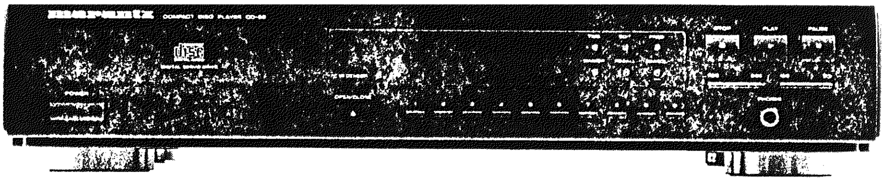
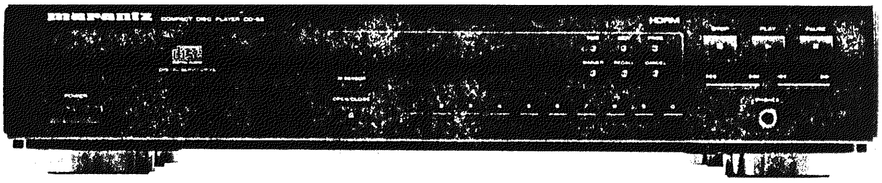
Service Manual

CD53 U
CD63 U/K/F
Compact disc player

Volta ao Menu





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marantz®

model CD-53/CD-63

First issue : 1993/9
286K855110
4806 725 27066

MARANTZ DESIGN AND SERVICE

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.
Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can ordered either by mail or by telex. 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 telex must be signed, otherwise such part order will be considered as null and void.

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 return to user/customer.
Ref. UL Standard NO.1492.

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MARANTZ PROFESSIONAL PRODUCTS
1000 CORPORATE BLVD.
SUITE D
AURORA, I1. 60504
PHONE : 708 – 820 – 4800
FAX : 708 – 820 – 8103

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
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TC ELECTRONICS CANADA LTD
540 FIRING AVE.
BAIE D'URFÉ, QUEBEC
H9X 3T2
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In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

MODEL CD-53/CD-63 TECHNICAL SPECIFICATIONS

	CD-53	CD-63
Digital system		
D/A conversion	Bitstream 1 bit Δ-Σ Delta Sigma modulation	Bitstream 1 bit Δ-Σ Delta Sigma modulation
Digital filter		
Noise shaping	4th order	4th order
Oversampling rate	8 times	8 times
Final oversampling rate	32 times	32 times
Analog output stage	—	HDAM
Audio characteristics		
Frequency response	5 Hz – 20 kHz ±0.5 dB	5 Hz – 20 kHz ±0.5 dB
Dynamic range	> 96 dB	> 96 dB
Signal to noise ratio	>104 dB	>104 dB
Channel separation	>100 dB	>102 dB
Total harmonic distortion	<0.0025 %	<0.0025 %
Wow & flutter	unmeasurable	unmeasurable
Analog output jacks		**gold plated**
Output level	2 V RMS	2 V RMS
Output impedance	200 Ω	200 Ω
Digital output		
coaxial	0.5 Vp-p/75 Ω	(gold plated) 0.5 Vp-p/75 Ω
optical	—	Toslink
Power Supply		
Power Requirements	120 V AC 60 Hz [U]	120 V AC 60 Hz [U] 110-120/220-240 V AC 50/60 Hz [K
Power Consumption	11 W	13 W
Cabinet, etc.		
Dimensions (MAX)		
Width	16-3/4 inches (426 mm)	16-3/4 inches (426 mm)
Height	3-3/8 inches (86 mm)	3-3/8 inches (86 mm)
Depth	12-1/4 inches (312 mm)	12-1/4 inches (312 mm)
Net weight	9 lbs. (4.1 kg)	9 lbs. (4.1 kg)
Operating temperatures	+5 °C ~ +35 °C	+5 °C ~ +35 °C
Operating humidity	5 % ~ 90 % (without dew)	5 % ~ 90 % (without dew)
Accessories		
Remote control unit (RC-63CD)	1	1
AA (R6) Batteries	2	2
Stereo audio cable with RCA pins	1	1

Specifications subject to change without prior notice.

2. CAUTION

LASER NOTE:	
DANGER —	Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION —	Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION —	The use of optical instruments with this product will increase eye hazard.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPELY QUALIFIED SERVICE PERSONNEL.

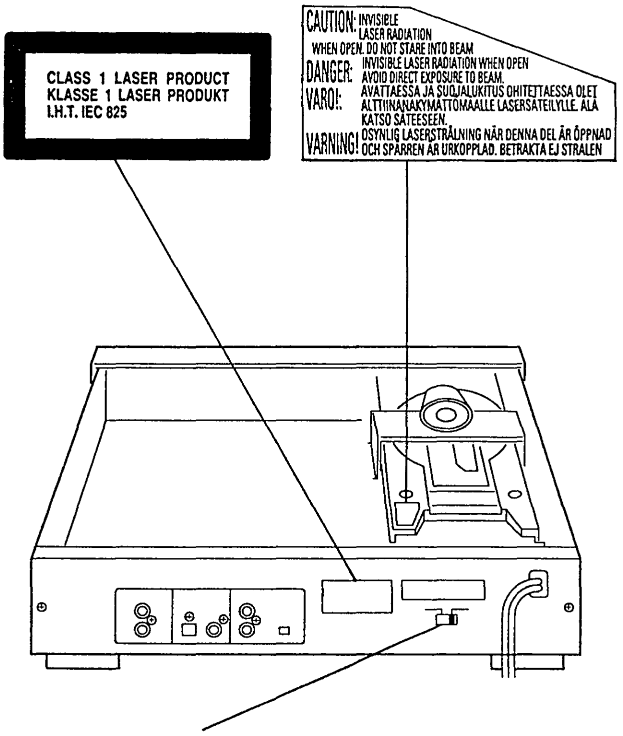
LASER BEAM RADIATION SPOT

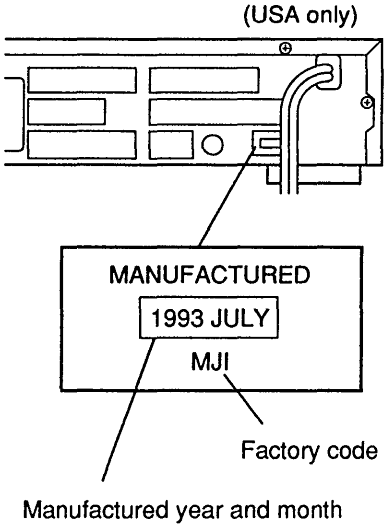
Laser Diode Properties
Material: Al GaAs
Wavelength: 780nm ± 20nm
Laser Output: Continuous Wave max. 0.5mW

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

ESD

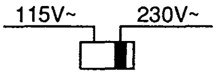
All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.


CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
I.H.T. IEC 825
CAUTION: INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM
DANGER: INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM.
VARO!: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINANAKYMATTOMAALLE LASERSATEILYLLE. ALA KATSO SATEESEEN.
VARNING! OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN

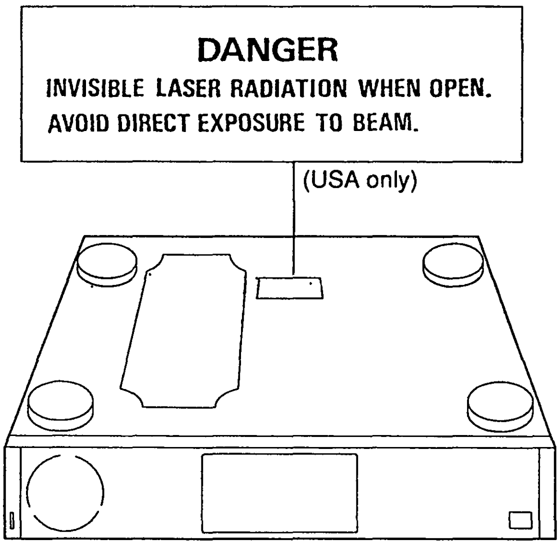

(USA only)
MANUFACTURED
1993 JULY
MJI
Factory code
Manufactured year and month

VOLTAGE CONVERSION (/01B version only)
To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

VOLTAGE SELECTOR



CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.


DANGER
INVISIBLE LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.
(USA only)

3. サービスモード

1. サービスモードへの入り方

- [STOP]、[PLAY]、[NEXT]、[PREV] keyのうち２つ以上を押して電源を入れる。

2. モード０　（表示　Ｐ　００）

状態：[FOCUS OFF] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]

- [CUE] / [REVIEW] keyを押すとスレッドが外周へ移動します。
- [NEXT] keyを押すとモード１へ移行します。

3. モード１　（表示　Ｐ　０１）

状態：[FOCUS ON] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]

- [NEXT] keyを押すとモード２へ移行します。
- [PREV] keyを押すとモード０へ移行します。

4. モード２　（表示　Ｐ　０２）

状態：[FOCUS ON] [SPINDLE ON] [RADIAL OFF] [MUTE ON]

- [NEXT] keyを押すとモード３へ移行します。
- [PREV]keyを押すとモード０へ移行します。

5. モード３　（表示　Ｐ　０３）

状態：[FOCUS ON] [SPINDLE ON] [RADIAL ON] [MUTE OFF]

- [CUE] keyを押すとスレッドが外周へ移動します。
- [REVIEW] keyを押すとスレッドが内周へ移動します。
- [PREV] keyを押すとモード２へ移行します。

＊ サービスモードの全ての状態で以下のキーが有効です。

1) [STOP] keyを押すとFLが全点灯します。
2) [PAUSE] keyを押すとモデル番号とバージョンを表示します。

Cd - □ □

プロセッサーバージョン番号

モデル番号

1=CD1010　3=CD63/53/43

2=CD1020

3) [PLAY] keyを押すと通常（サービスモード以外）と同じ動作となります。
ただし、異常が確認された時にエラー番号が表示されます。（例：Err 10）
右の表を参考にしてください。

6. サービスモードの解除

- 電源を切るとサービスモードが解除されます。

3. SERVICE MODE

1. How to enter into the Service Mode
   - Turn the power on while pressing at least 2 of [STOP], [PLAY], [NEXT], [PREV] keys.

2. Mode 0 (Display P 00)
   Condition: [FOCUS OFF] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - The sled moves outside when pressing [CUE]/[REVIEW] keys.
   - The function moves to Mode 1 when pressing [NEXT] key.

3. Mode 1 (Display P 01)
   Condition: [FOCUS ON] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]
   - The function moves to Mode 2 when pressing [NEXT] key.
   - The function moves to Mode 0 when pressing [PREV] key.

4. Mode 2 (Display P 02)
   Condition: [FOCUS ON] [SPINDLE ON] [RADIAL OFF] [MUTE ON]
   - The function moves to Mode 3 when pressing [NEXT] key.
   - The function moves to Mode 0 when pressing [PREV] key.

5. Mode 3 (Display P 03)
   Condition: [FOCUS ON] [SPINDLE ON] [RADIAL ON] [MUTE OFF]
   - The Sled moves outside when pressing [CUE] key.
   - The Sled moves inside when pressing [REVIEW] key.
   - The function moves to Mode 2 when pressing [PREV] key.

* The following key operation can be available at all of the conditions of the service mode.

1) All of FL display light by pressing [STOP] key.
2) Model Number and Version Nbr of the μ-processor are displayed by pressing [PAUSE] key.

Cd - □ □

μ-Processor Version Nbr.

Model Number

1=CD1010　3=CD-63/53/43

2=CD1020

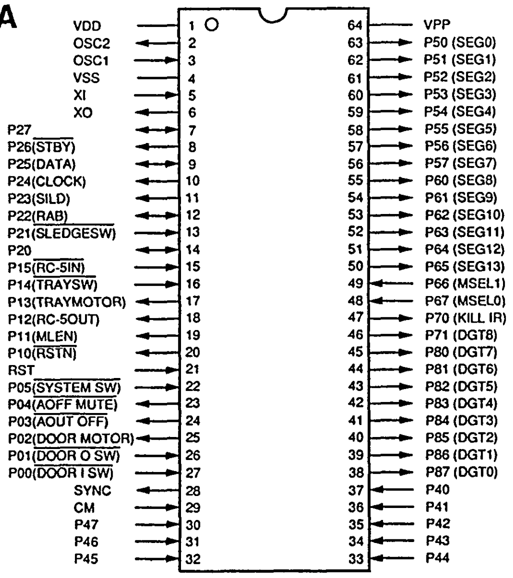
3) The same as Normal operation (except Service mode) is performed by pressing [PLAY] key.
However if some default is detected, an error code is displayed. (For example: Err 10)
The content for each error code is shown below.

Error Code	Error
Err 02	FOCUS Error
Err 07	SUB CODE Error
Err 08	T. O. C Error
Err 09	DECODER Error
Err 10	RADIAL Error
Err 11, 12	SLED Error
Err 13	SPINDLE Error
Err 16 ~ 20	SEARCH Error
Err 30	DOOR Error
Err 31	TRAY Error
Err 32 ~ 47	KEY INPUT Error

6. Cancelling the Service Mode
   - The Service Mode is cancelled by turning the power off.

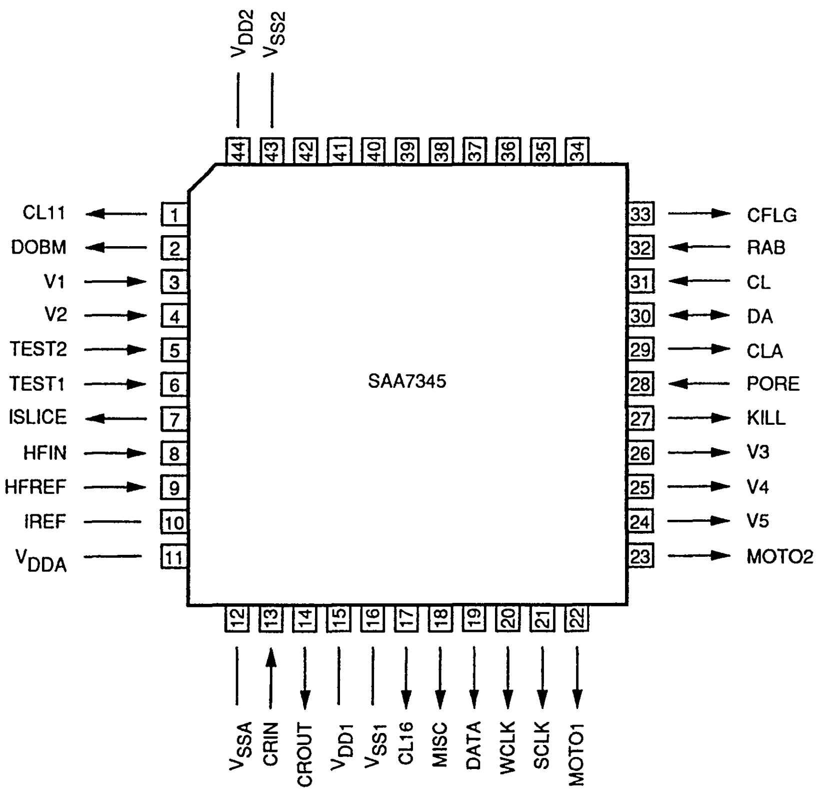
4. MICROPROCESSOR AND IC DATA

MN187164 (MICROPROCESSOR)


VDD 1
OSC2 2
OSC1 3
VSS 4
XI 5
XO 6
P27 7
P26(STBY) 8
P25(DATA) 9
P24(CLOCK) 10
P23(SILD) 11
P22(RAB) 12
P21(SLEDGESW) 13
P20 14
P15(RC-5IN) 15
P14(TRAYSW) 16
P13(TRAYMOTOR) 17
P12(RC-5OUT) 18
P11(MLEN) 19
P10(RSTN) 20
RST 21
P05(SYSTEM SW) 22
P04(AOFF MUTE) 23
P03(AOUT OFF) 24
P02(DOOR MOTOR) 25
P01(DOOR O SW) 26
P00(DOOR I SW) 27
SYNC 28
CM 29
P47 30
P46 31
P45 32
64 VPP
63 P50 (SEG0)
62 P51 (SEG1)
61 P52 (SEG2)
60 P53 (SEG3)
59 P54 (SEG4)
58 P55 (SEG5)
57 P56 (SEG6)
56 P57 (SEG7)
55 P60 (SEG8)
54 P61 (SEG9)
53 P62 (SEG10)
52 P63 (SEG11)
51 P64 (SEG12)
50 P65 (SEG13)
49 P66 (MSEL1)
48 P67 (MSEL0)
47 P70 (KILL IR)
46 P71 (DGT8)
45 P80 (DGT7)
44 P81 (DGT6)
43 P82 (DGT5)
42 P83 (DGT4)
41 P84 (DGT3)
40 P85 (DGT2)
39 P86 (DGT1)
38 P87 (DGT0)
37 P40
36 P41
35 P42
34 P43
33 P44

Pin Nbr	Pin Name	I/O	Function	Pin Nbr	Pin Name	I/O	Function
1	Vdd	-	Power Supply +5V	33	P44	I	Key Input, KEY 5
2	OSC2	O	Clock out (8.0MHz)	34	P43	I	Key Input, KEY 4
3	OSC1	I	Clock in (8.0MHz)	35	P42	I	Key Input, KEY 3
4	Vss	-	GND 0V	36	P41	I	Key Input, KEY 2
5	XI	I	0V	37	P40	I	Key Input, KEY 1
6	XO	O	Not Used	38	P87 (DGT0)	O	FL Digit Data, G9
7	P27	I/O	Not Used	39	P86 (DGT1)	O	FL Digit Data, G8
8	P26 STBY	O	TDA1301 RESET, NRST	40	P85 (DGT2)	O	FL Digit Data, G7
9	P25 DATA	I/O	Data Bus Data, SIDA	41	P84 (DGT3)	O	FL Digit Data, G6
10	P24 CLOCK	O	Data Bus Clock, SICK	42	P83 (DGT4)	O	FL Digit Data, G5
11	P23 SILD	O	TDA1301 SILD (latch)	43	P82 (DGT5)	O	FL Digit Data, G4
12	P22 RAB	I/O	SAA7345 RAB	44	P81 (DGT6)	O	FL Digit Data, G3
13	P21 SLEDGESW	I	Sledge SW, SLSW	45	P80 (DGT7)	O	FL Digit Data, G2
14	P20 MUTE	I/O	Not Used	46	P71 (DGT8)	O	FL Digit Data, G1
15	P15 RC5IN	I	RC-5 code Input	47	P70 KILL IR	O	Kill IR, N.C.
16	P14 TRAYSW	I	Tray In/Out SW, TRSW	48	P67 MSEL0	I	Model Select SW 0
17	P13 TRAYMOTOR	O	Tray Motor	49	P66 MSEL1	I	Model Select SW 1
18	P12 RC5OUT	O	RC-5 code Output	50	P65 (SEG13)	O	FL Segment Data, P1
19	P11 MLEN	O	SM5872 MLEN (latch)	51	P64 (SEG12)	O	FL Segment Data, P2
20	P10 RSTN	O	SM5872 RSTN (reset)	52	P63 (SEG11)	O	FL Segment Data, P3
21	RST	I	RESET	53	P62 (SEG10)	O	FL Segment Data, P4
22	P05 SYSTEM SW	I	System SW	54	P61 (SEG9)	O	FL Segment Data, P5
23	P04 AOFF MUTE	O	Audio OFF Mute, N.C.	55	P60 (SEG8)	O	FL Segment Data, P6
24	P03 AOUT OFF	O	Audio Out OFF	56	P57 (SEG7)	O	FL Segment Data, P7
25	P02 DOORMOTOR	O	Door Motor	57	P56 (SEG6)	O	FL Segment Data, P8
26	P01 DOOR O SW	I	Door Out SW	58	P55 (SEG5)	O	FL Segment Data, P9
27	P00 DOOR I SW	I	Door In SW	59	P54 (SEG4)	O	FL Segment Data, P10
28	SYNC	O	Not Used	60	P53 (SEG3)	O	FL Segment Data, P11
29	CM	I	0V	61	P52 (SEG2)	O	FL Segment Data, P12
30	P47	I	Key Input, KEY 8	62	P51 (SEG1)	O	FL Segment Data, P13
31	P46	I	Key Input, KEY 7	63	P50 (SEG0)	O	FL Segment Data, P14
32	P45	I	Key Input, KEY 6	64	Vpp	-	Power Supply -25V, VFTD

SAA7345GP (DIGITAL DECODING IC WITH RAM)


SAA7345
CL11
DOBM
V1
V2
TEST2
TEST1
ISLICE
HFIN
HFREF
IREF
VDDA
CFLG
RAB
CL
DA
CLA
PORE
KILL
V3
V4
V5
MOTO2
VDD2
VSS2
VSSA
CRIN
CROUT
VDD1
VSS1
CL16
MISC
DATA
WCLK
SCLK
MOTO1
1
2
3
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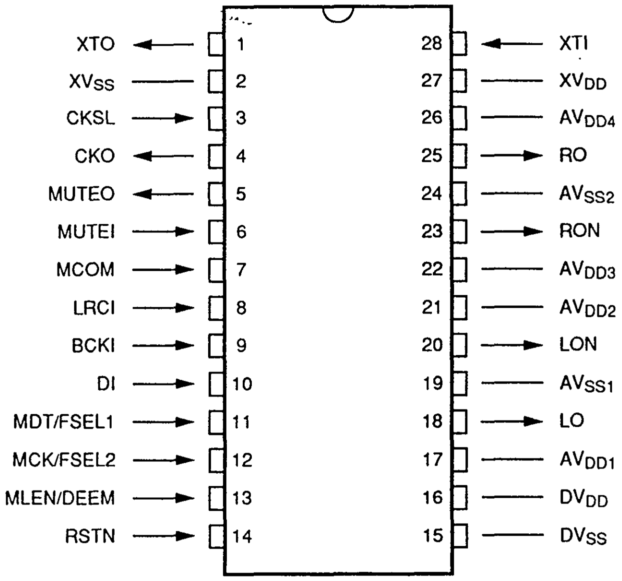
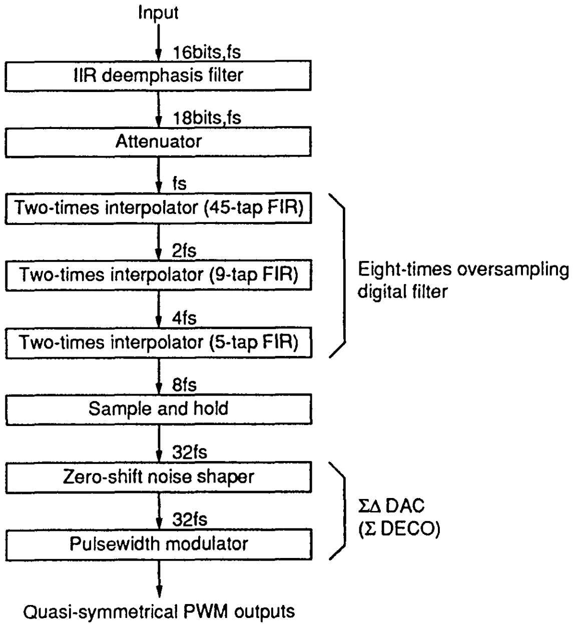
Pin Nbr	Pin Name	I/O	Function	Pin Nbr	Pin Name	I/O	Function
1	CL11	O	11.2896MHz clock output (3-state)	23	MOTO2	O	Motor output 2; versatile (3-state)
2	DOBM	O	Bi-phase mark output (externally buffered; 3-state)	24	V5	O	Versatile output pin
3	V1	I	Versatile input pin	25	V4	O	Versatile output pin
4	V2	I	Versatile input pin	26	V3	O	Versatile output pin (open-drain)
5	TEST2	I	Test input: this pin should be tied LOW	27	KILL	O	Kill output; programmable (open-drain)
6	TEST1	I	Test input; this pin should be tied LOW	28	PORE	I	Power-on reset enable input (active LOW)
7	ISLICE	O	Current feedback from data slicer	29	CLA	O	4.2336MHz microprocessor clock output
8	HFIN	I	Comparator signal input	30	DA	I/O	Interface data I/O line
9	HFREF	I	Comparator common-mode input	31	CL	I	Interface clock input line
10	IREF	-	Reference current pin (nominally $V_{DD}/2$)	32	RAB	I	Interface $R/\overline{W}$ and acknowledge input
11	V_{DDA}	-	Power supply (Analogue)	33	CFLG	O	Correction flag output (open-drain)
12	V_{SSA}	-	GND (Analogue)	34	—	-	No internal connection
13	CRIN	I	Crystal/resonator input, 16.9344 MHz	35	—	-	
14	CROUT	O	Crystal/resonator output	36	—	-	
15	V_{DD1}	-	Power supply 1 (Digital)	37	—	-	
16	V_{SS1}	-	GND 1 (Digital)	38	—	-	
17	CL16	O	16.9344MHz system clock output	39	—	-	
18	MISC	O	General purpose DAC output (3-state)	40	—	-	
19	DATA	O	Serial data output (3-state)	41	—	-	
20	WCLK	O	Word clock output (3-state)	42	—	-	
21	SCLK	O	Serial bit clock output (3-state)	43	V_{SS2}	-	GND 2 (Digital)
22	MOTO1	O	Motor output 1; versatile (3-state)	44	V_{DD2}	-	Power supply 2 (Digital)

SM5872BS (DIGITAL FILTER AND D/A CONVERTER)



XTO 1
XV$_{SS}$ 2
CKSL 3
CKO 4
MUTEO 5
MUTEI 6
MCOM 7
LRCI 8
BCKI 9
DI 10
MDT/FSEL1 11
MCK/FSEL2 12
MLEN/DEEM 13
RSTN 14
15 DV$_{SS}$
16 DV$_{DD}$
17 AV$_{DD1}$
18 LO
19 AV$_{SS1}$
20 LON
21 AV$_{DD2}$
22 AV$_{DD3}$
23 RON
24 AV$_{SS2}$
25 RO
26 AV$_{DD4}$
27 XV$_{DD}$
28 XTI

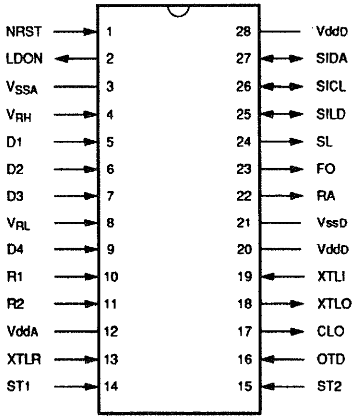


Input
16bits,fs
IIR deemphasis filter
18bits,fs
Attenuator
fs
Two-times interpolator (45-tap FIR)
2fs
Two-times interpolator (9-tap FIR)
4fs
Two-times interpolator (5-tap FIR)
Eight-times oversampling digital filter
8fs
Sample and hold
32fs
Zero-shift noise shaper
32fs
Pulsewidth modulator
ΣΔ DAC (Σ DECO)
Quasi-symmetrical PWM outputs

Arithmetic operation

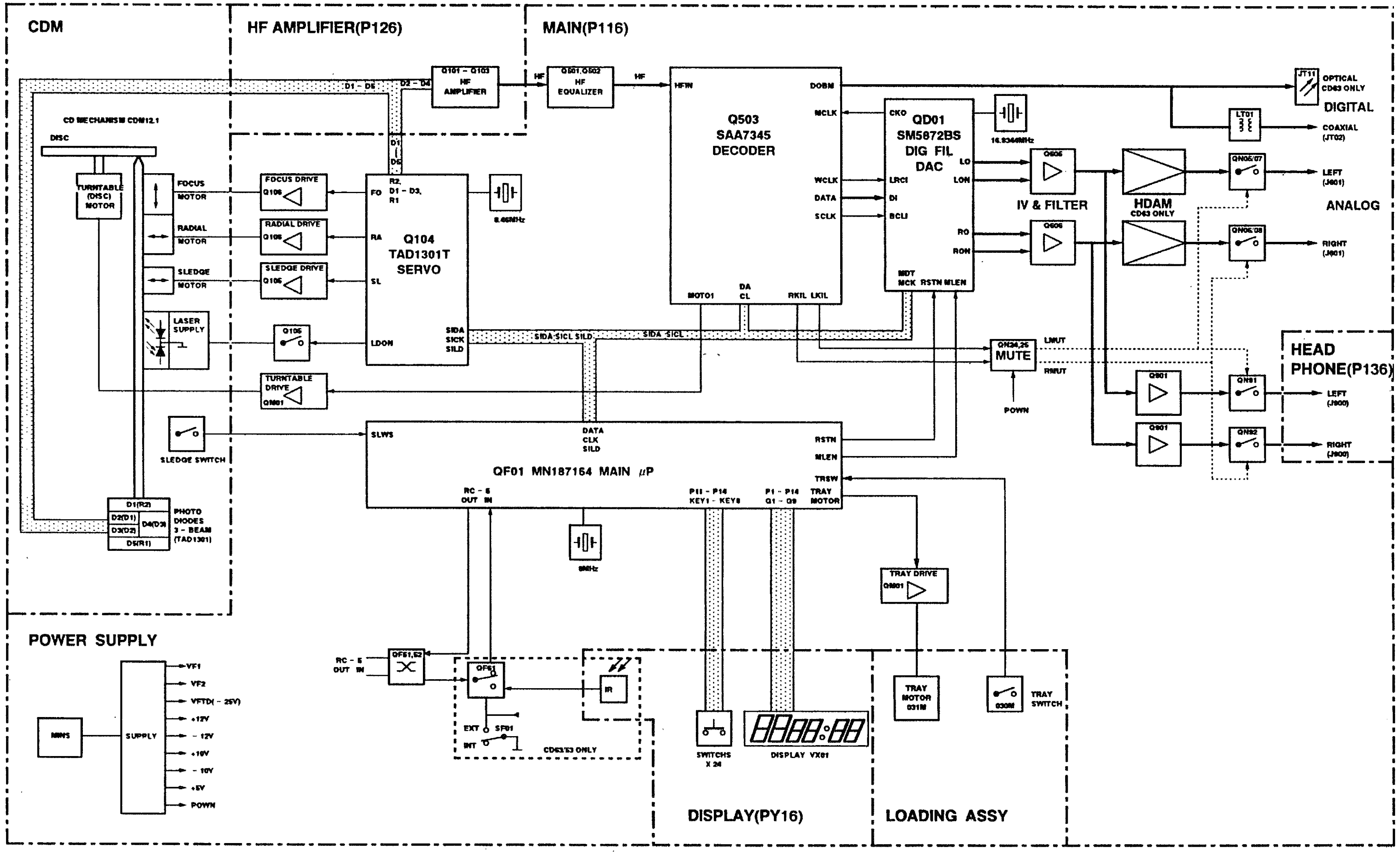
Pin Nbr	Pin Name	I/O	Function
1	XTO	O	Crystal oscillator output
2	XV$_{SS}$	-	GND (X'TAL)
3	CKSL	I	This pin should be tied HIGH for normal operation. Internal pull-up resistor
4	CKO	O	Clock output (384fs)
5	MUTEO	O	Mute detect output
6	MUTEI	I	Mute input. Internal pull-resistor
7	MCOM	I	Interface mode select input. Internal pull-up resistor : H = Interface mode L = Local
8	LRCI	I	Data sample rate clock input. Internal pull-up resistor : H = L ch L = R ch
9	BCKI	I	Bit clock input. Internal pull-up resistor
10	DI	I	Serial data input. Internal pull-up resistor
11	MDT/FSEL1	I	Microprocessor interface data input (and local mode frequency select input). Internal pull-up resistor
12	MCK/FSEL2	I	Microprocessor interface clock input (and local mode frequency select input). Internal pull-up resistor
13	MLEN/DEEM	I	Microprocessor interface latch enable input (and local mode deemphasis control input). Internal pull-up resistor
14	RSTN	I	Reset input. Internal pull-up resistor
15	DV$_{SS}$	-	GND (Digital)
16	DV$_{DD}$	-	Power supply (Digital)
17	AV$_{DD1}$	-	Power supply 1 (Analogue)
18	LO	O	Left-channel positive PWM output
19	AV$_{SS1}$	-	GND 1 (Analogue)
20	LON	O	Left-channel negative PWM output
21	AV$_{DD2}$	-	Power supply 2 (Analogue)
22	AV$_{DD3}$	-	Power supply 3 (Analogue)
23	RON	O	Right-channel negative PWM output
24	AV$_{SS2}$	-	GND 2 (Analogue)
25	RO	O	Right-channel positive PWM output
26	AV$_{DD4}$	-	Power supply 4 (Analogue)
27	XV$_{DD}$	-	Power supply (X'TAL)
28	XTI	I	Crystal oscillator or external clock input, 384fs (16.9344 MHz)

TDA1301T (DIGITAL SERVO CONTROL)

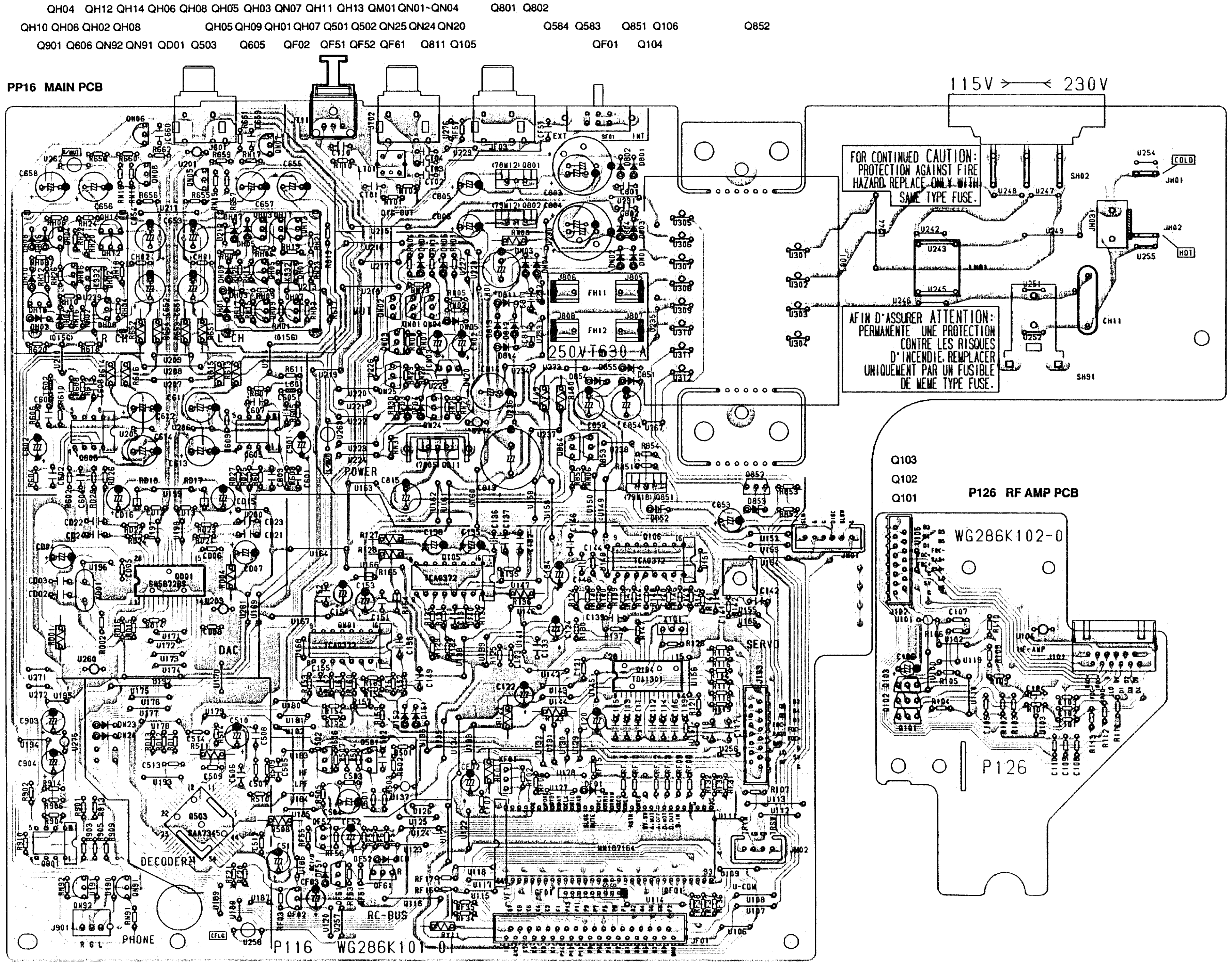

NRST
1
LDON
2
V_{SSA}
3
V_{RH}
4
D1
5
D2
6
D3
7
V_{RL}
8
D4
9
R1
10
R2
11
VddA
12
XTLR
13
ST1
14
28
VddD
27
SIDA
26
SICL
25
SILD
24
SL
23
FO
22
RA
21
VssD
20
VddD
19
XTLI
18
XTLO
17
CLO
16
OTD
15
ST2

Pin Nbr	Pin Name	I/O	Function
1	NRST	I	Reset input
2	LDON	O	Laser drive on
3	V_{SSA}	-	GND (Analog)
4	V_{RH}	I	A/D converter reference input
5	D1	I	Unipolar current input (Center diode signal input)
6	D2	I	
7	D3	I	
8	V_{RL}	I	A/D converter reference input
9	D4	I	Unipolar current input (Center diode signal input)
10	R1	I	Unipolar current input (Tracking diode signal input)
11	R2	I	
12	V_{ddA}	-	Power supply (Analog)
13	XTLR	I	Oscillator reference
14	ST1	I	Test input 1
15	ST2	I	Test input 2
16	OTD	I	Off-track detection
17	CLO	O	Clock output
18	XTLO	O	Oscillator output
19	XTLI	I	Oscillator input
20	V_{ddD}	-	Power supply (Digital)
21	V_{SSD}	-	GND (Digital)
22	RA	O	Radial actuater output
23	FO	O	Focus actuater output
24	SL	O	Sledge output
25	SILD	I/O	Serial interface load
26	SICL	I/O	Serial interface clock
27	SIDA	I/O	Serial interface data
28	V_{ddD}	-	Power supply (Digital)

– BLOCK DIAGRAM


CDM
HF AMPLIFIER(P126)
MAIN(P116)
CD MECHANISM CDM12.1
DISC
TURNTABLE (DISC) MOTOR
FOCUS MOTOR
RADIAL MOTOR
SLEDGE MOTOR
LASER SUPPLY
SLEDGE SWITCH
D1(R2)
D2(D1)
D3(D2)
D4(D3)
D5(R1)
PHOTO DIODES 3 - BEAM (TAD1301)
D1 - D5
D2 - D4
Q101 - Q103 HF AMPLIFIER
D1 D5
FOCUS DRIVE Q106
RADIAL DRIVE Q106
SLEDGE DRIVE Q106
Q106
TURNTABLE DRIVE QM01
FO
RA
SL
LDON
R2, D1 - D3, R1
Q104 TAD1301T SERVO
SIDA SICK SILD
8.46MHz
HF
Q501,Q502 HF EQUALIZER
HF
HFIN
Q503 SAA7345 DECODER
DOBM
MCLK
WCLK
DATA
SCLK
MOTO1
DA CL
RKIL LKIL
CKO
QD01 SM5872BS DIG FIL DAC
LRCI
DI
BCLI
LO
LON
RO
RON
MDT MCK RSTN MLEN
16.9344MHz
Q606
Q606
IV & FILTER
HDAM CD63 ONLY
JT11 OPTICAL CD63 ONLY
DIGITAL
LT01
COAXIAL (JT02)
QN05/07
QN06/08
LEFT (J601)
RIGHT (J601)
ANALOG
SIDA SICL SILD
SIDA SICL
QN24,25 MUTE
LMUT
RMUT
POWN
HEAD PHONE(P136)
Q901
Q901
QN91
QN92
LEFT (J900)
RIGHT (J900)
SLWS
DATA CLK SILD
QF01 MN187164 MAIN µP
RSTN
MLEN
TRSW
RC - 5 OUT IN
P11 - P14 KEY1 - KEY8
P1 - P14 Q1 - Q9
TRAY MOTOR
8MHz
TRAY DRIVE QM01
POWER SUPPLY
MINS
SUPPLY
VF1
VF2
VFTD(- 25V)
+12V
- 12V
+10V
- 10V
+5V
POWN
RC - 5 OUT IN
QF51,52
QF61
IR
EXT SF01
INT
CD63/53 ONLY
SWITCHS X 24
88888:88
DISPLAY VX01
DISPLAY(PY16)
TRAY MOTOR 031M
030M
TRAY SWITCH
LOADING ASSY

6. SCHEMATIC DIAGRAMS AND PARTS LOCATIONS (PATTERN SIDE)

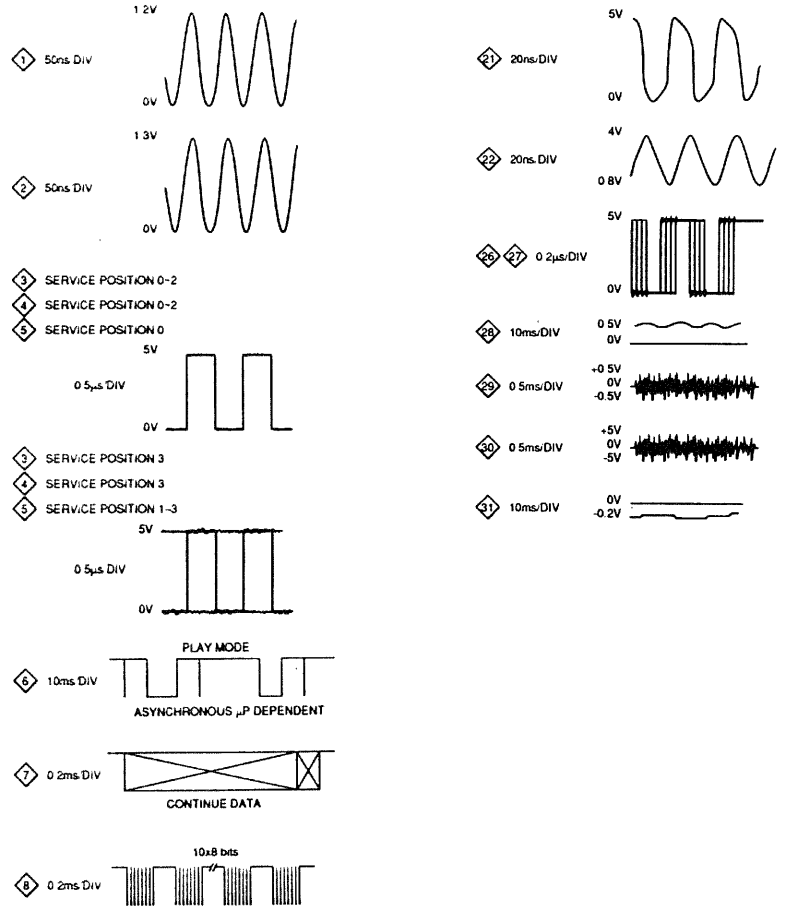

QH04 QH12 QH14 QH06 QH08 QH05 QH03 QN07 QH11 QH13 QM01 QN01~QN04
Q801 Q802
QH10 QH06 QH02 QH08
QH05 QH09 QH01 QH07 Q501 Q502 QN25 QN24 QN20
Q584 Q583 Q851 Q106
Q852
Q901 Q606 QN92 QN91 QD01 Q503
Q605 QF02 QF51 QF52 QF61 Q811 Q105
QF01 Q104
PP16 MAIN PCB
115V > < 230V
250V T630 A
POWER
DAC
SERVO
DECODER
PHONE
RC-BUS
P116 WG286K101-01
Q103
Q102
Q101
P126 RF AMP PCB
WG286K102-0
P126

FOR CONTINUED CAUTION: PROTECTION AGAINST FIRE HAZARD REPLACE ONLY WITH SAME TYPE FUSE.

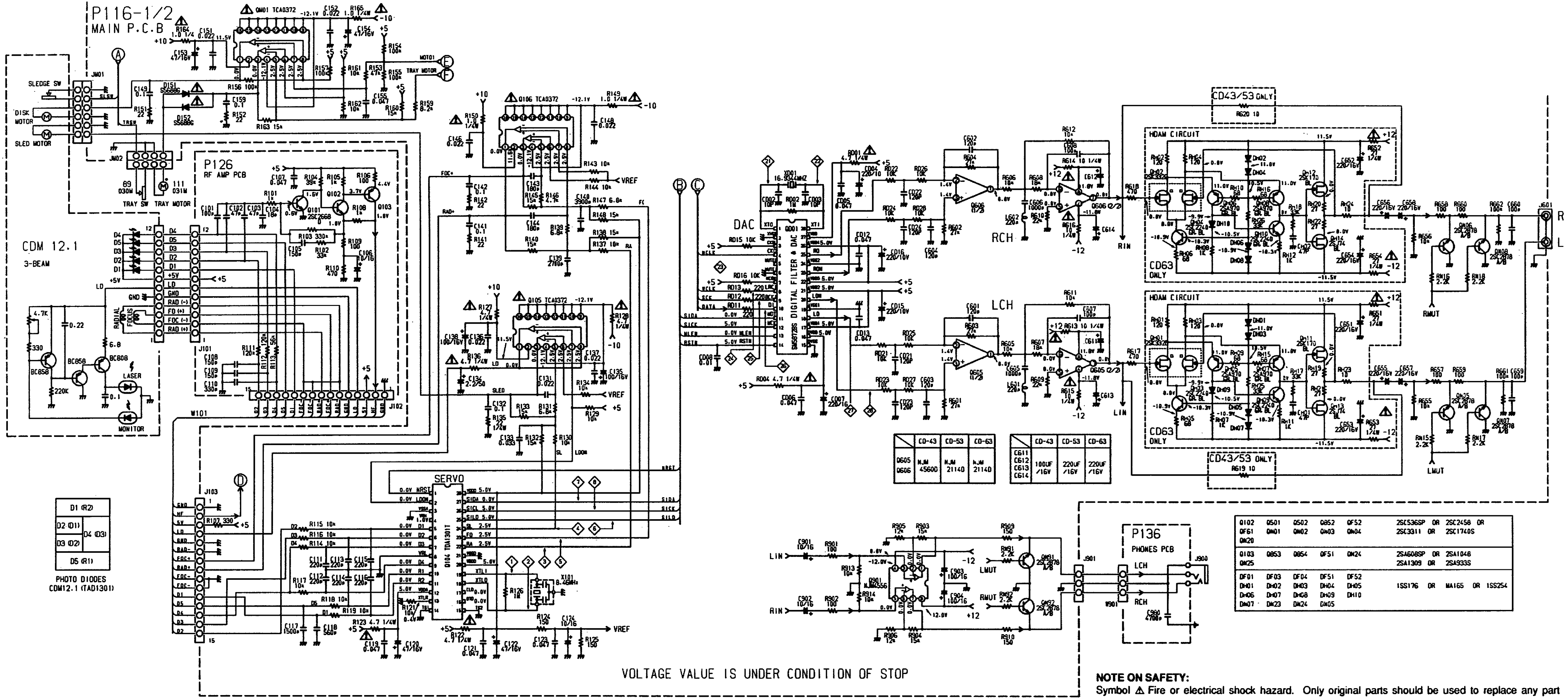
AFIN D'ASSURER ATTENTION: PERMANENTE UNE PROTECTION CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE FUSE.

WAVE FORM

All of the wave forms are monitored with PLAY mode.



PP16 (1/2) - POWER/AUDIO/DIGITAL PCB


P116-1/2
MAIN P.C.B
P126
RF AMP PCB
CDM 12.1
3-BEAM
SLEDGE SW
DISK MOTOR
SLED MOTOR
TRAY SW
TRAY MOTOR
QN01 TCA0372
Q106 TCA0372
Q105 TCA0372
SERVO
Q104 TDA1301T
DAC
QD01 DIGITAL FILTER & DAC
XD01 16.9344MHZ
X101 8.4672MHz
RCH
LCH
RIN
LIN
HDAM CIRCUIT
CD63 ONLY
CD43/53 ONLY
R620 10
R619 10
RMUT
LMUT
J601
R
L
P136
PHONES PCB
J900
J901
W901
W101
J101
J102
J103
LASER
MONITOR
D1 (R2)
D2 (D1)
D4 (D3)
D3 (D2)
D5 (R1)
PHOTO DIODES
CDM12.1 (TAD1301)

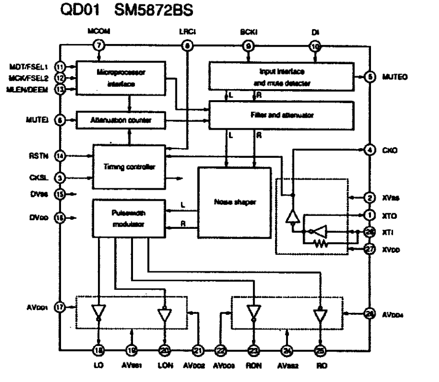
	CD-43	CD-53	CD-63
Q605 Q606	NJM 45600	NJM 21140	NJM 21140

	CD-43	CD-53	CD-63
C611 C612 C613 C614	100UF /16V	220UF /16V	220UF /16V

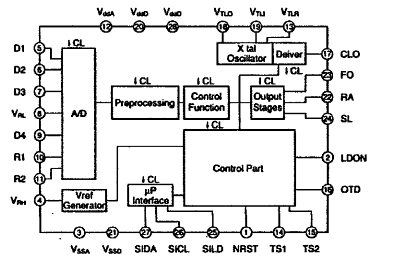
Q102 Q501 Q502 Q852 QF52 QF61 QN01 QN02 QN03 QN04 QN20	2SC536SP OR 2SC2458 OR 2SC3311 OR 2SC1740S
Q103 Q853 Q854 QF51 QN24 QN25	2SA608SP OR 2SA1048 2SA1309 OR 2SA933S
DF01 DF03 DF04 DF51 DF52 DH01 DH02 DH03 DH04 DH05 DH06 DH07 DH08 DH09 DH10 DN07 DN23 DN24 DN05	1SS176 OR MA165 OR 1SS254

VOLTAGE VALUE IS UNDER CONDITION OF STOP

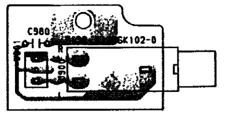
QD01 SM5872BS


MCOM
LRCI
BCKI
DI
MDT/FSEL1
MCK/FSEL2
MLEN/DEEM
MUTEI
RSTN
CKSL
DVSS
DVDD
Microprocessor interface
Input interface and mute detector
Attenuation counter
Filter and attenuator
Timing controller
Noise shaper
Pulsewidth modulator
MUTEO
CKO
XVSS
XTO
XTI
XVDD
AVDDL
AVDDR
LO
AVSSL
LON
AVDD2
AVDD1
RON
AVSSR
RO

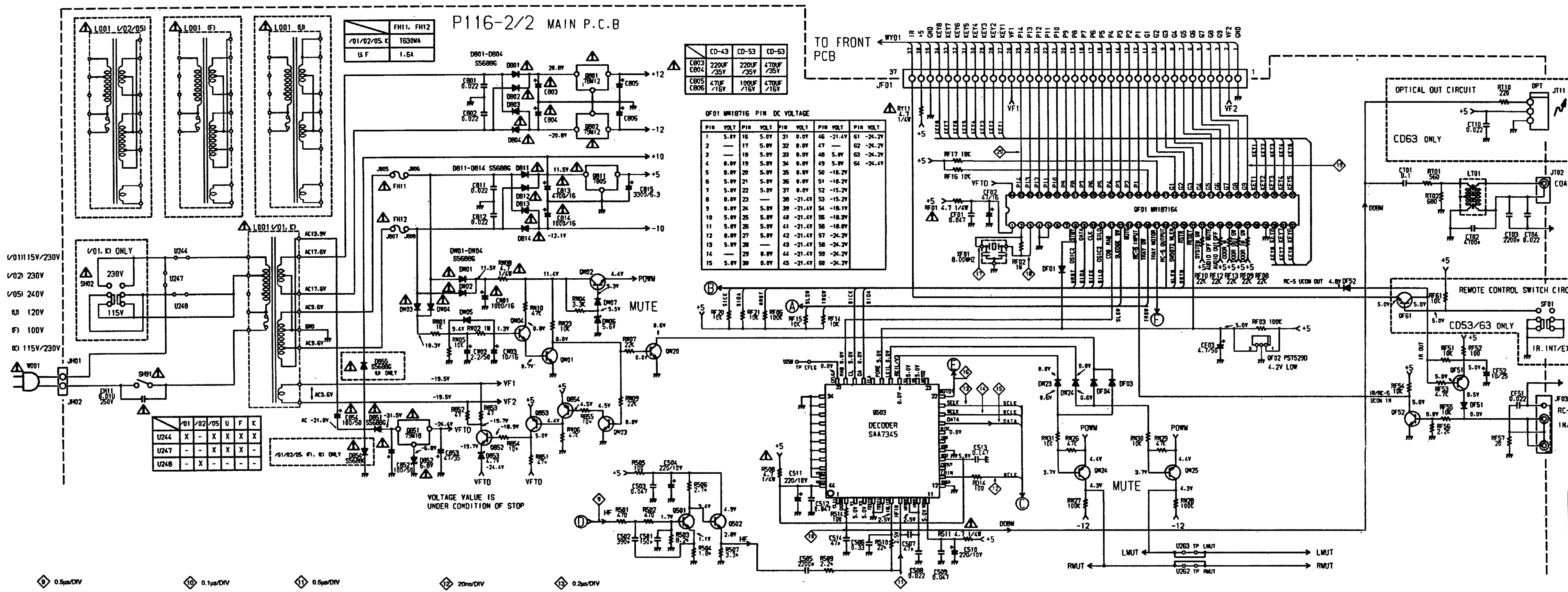
Q104 TDA1301T


VSSA
VDDD
VDDA
VTLO
VTLI
VDLR
CLO
FO
RA
SL
LDON
OTD
D1
D2
D3
VRL
D4
R1
R2
VRH
A/D
Preprocessing
Control Function
Output Stages
X tal Oscillator
Deivder
Vref Generator
μP Interface
Control Part
VSSA
VSSD
SIDA
SICL
SILD
NRST
TS1
TS2

P136 PHONES PCB


C980
CK102-0

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


P116-2/2 MAIN P.C.B
TO FRONT PCB
JF01
OPTICAL OUT CIRCUIT
CD63 ONLY
REMOTE CONTROL SWITCH CIRCUIT
CD53/63 ONLY
COAXIAL
RC-5 IN/OUT
EXT
INT
IR. INT/EXT
DECODER SAA7345
Q503
QF01 MN187164
MUTE
POWM
LMUT
RMUT
VF1
VF2
VFTD
+12
-12
+10
+5
-10
(/01)115V/230V
(/02) 230V
(/05) 240V
(U) 120V
(F) 100V
(K) 115V/230V
(/01. K) ONLY
115V
230V
VOLTAGE VALUE IS UNDER CONDITION OF STOP
/01/02/05. (F). (K) ONLY

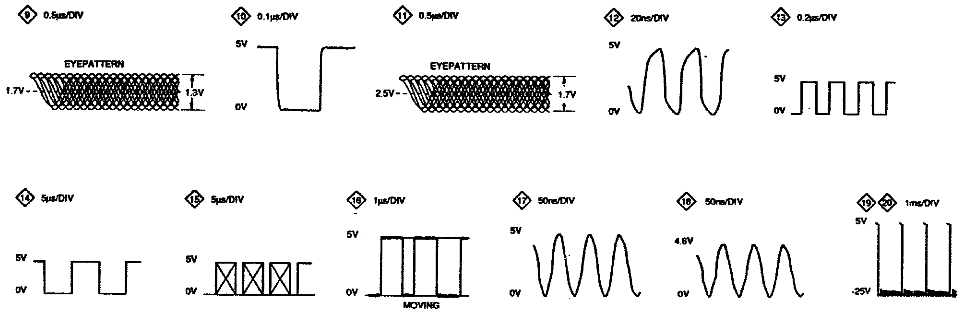
	FH11. FH12
/01/02/05. K	T630MA
U. F	1.6A

	CD-43	CD-53	CD-63
C803 C804	220UF /35V	220UF /35V	470UF /35V
C805 C806	47UF /16V	100UF /16V	470UF /16V

QF01 MN18716 PIN DC VOLTAGE

PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT
1	5.0V	16	5.0V	31	0.0V	46	-21.4V	61	-24.2V
2	—	17	5.0V	32	0.0V	47	—	62	-24.2V
3	—	18	5.0V	33	0.0V	48	5.0V	63	-24.2V
4	0.0V	19	5.0V	34	0.0V	49	5.0V	64	-24.4V
5	0.0V	20	5.0V	35	0.0V	50	-18.2V		
6	5.0V	21	5.0V	36	0.0V	51	-18.2V		
7	5.0V	22	5.0V	37	0.0V	52	-15.2V		
8	0.0V	23	—	38	-21.4V	53	-15.2V		
9	0.0V	24	5.0V	39	-21.4V	54	-18.1V		
10	5.0V	25	5.0V	40	-21.4V	55	-18.3V		
11	5.0V	26	5.0V	41	-21.4V	56	-18.0V		
12	0.0V	27	5.0V	42	-21.4V	57	-24.2V		
13	5.0V	28	—	43	-21.4V	58	-24.2V		
14	—	29	0.0V	44	-21.4V	59	-24.2V		
15	5.0V	30	0.0V	45	-21.4V	60	-24.2V		

	/01	/02	/05	U	F	K
U244	X	-	X	X	X	X
U247	-	-	X	X	X	-
U248	-	X	-	-	-	-

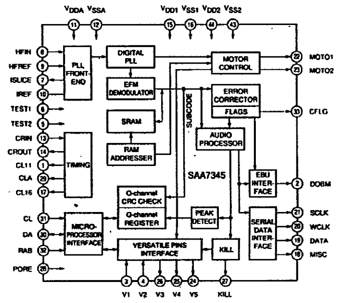


Q102 QF61 QW20	Q501 QW01	Q502 QW02	Q852 QW03	QF52 QW04	2SC536SP OR 2SC2458 OR 2SC3311 OR 2SC1740S
Q103 QW25	Q853	Q854	QF51	QW24	2SA608SP OR 2SA1048 2SA1309 OR 2SA933S
DF01 DH01 DH06 DW07	DF03 DH02 DH07 DW23	DF04 DH03 DH08 DW24	DF51 DH04 DH09 DW05	DF52 DH05 DH10	1SS176 OR MA165 OR 1SS254

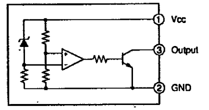
NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意：
⚠が付いている部品は、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ください。

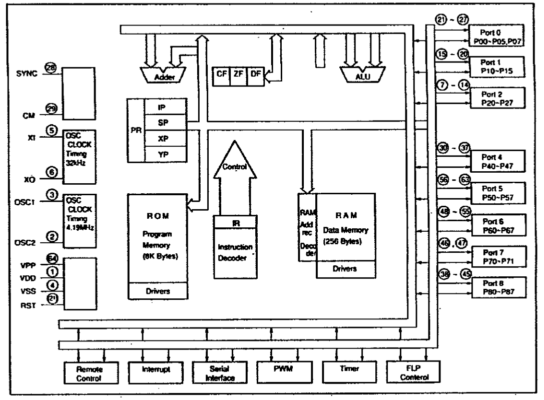
Q503 SAA7345

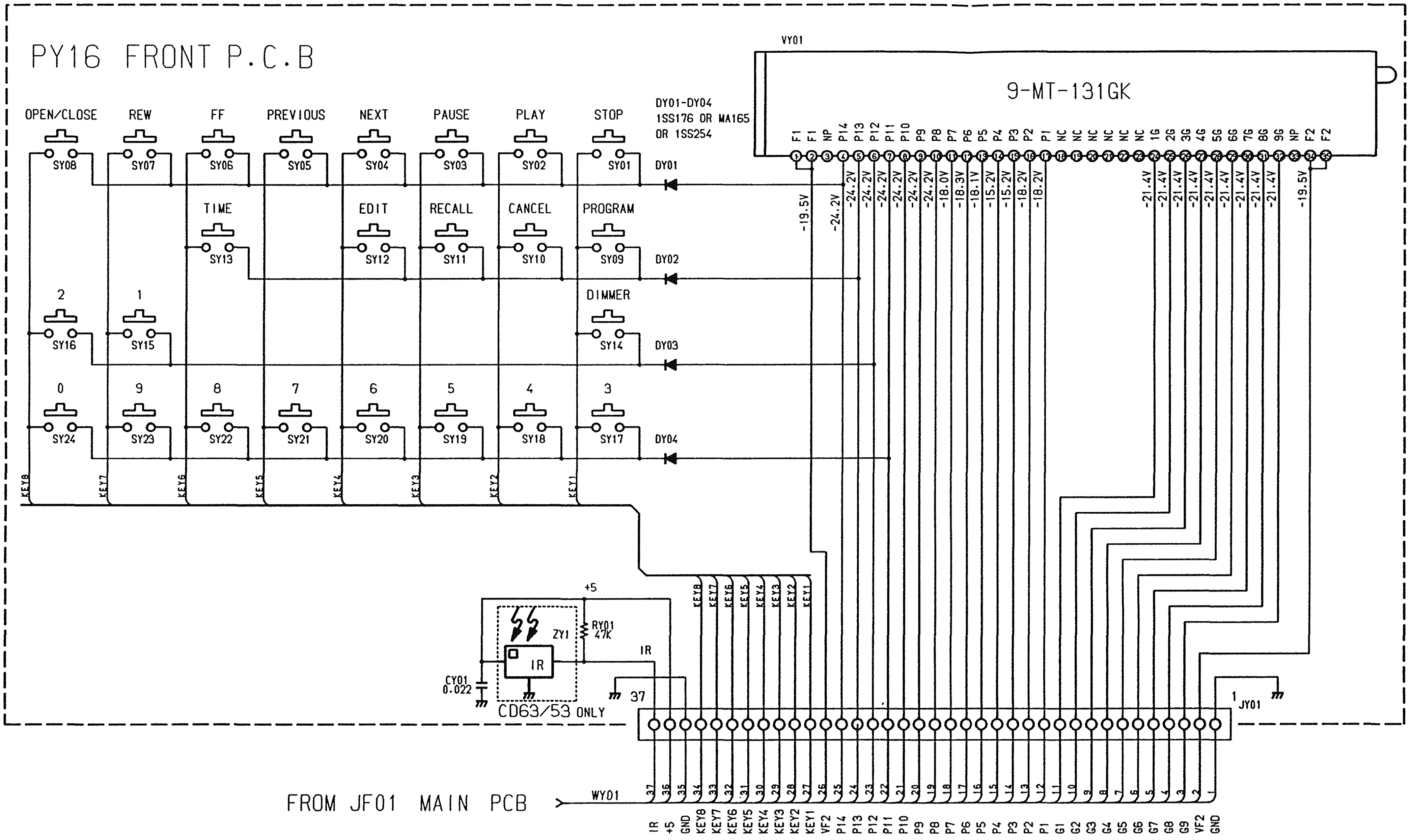

VDDA VSSA
VDD1 VSS1 VDD2 VSS2
HFIN
HFREF
ISLICE
IREF
TEST1
TEST2
CRIN
CROUT
CL11
CLA
CL16
CL
DA
RAB
PORE
PLL FRONT END
DIGITAL PLL
EFM DEMODULATOR
SRAM
RAM ADDRESSER
TIMING
MOTOR CONTROL
ERROR CORRECTOR FLAGS
AUDIO PROCESSOR
SUBCODE
SAA7345
EBU INTERFACE
C-channel CRC CHECK
Q-channel REGISTER
PEAK DETECT
SERIAL DATA INTERFACE
MICRO-PROCESSOR INTERFACE
VERSATILE PINS INTERFACE
KILL
MOTO1
MOTO2
CFLG
DOBM
SCLK
WCLK
DATA
MISC
V1 V2 V3 V4 V5 KILL

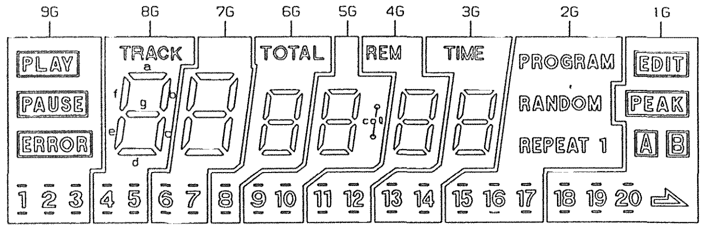
QF02 PST532D


Vcc
Output
GND

QF01 MN187164


SYNC
CM
XI
XO
OSC1
OSC2
VPP
VDD
VSS
RST
OSC CLOCK Timing 32kHz
OSC CLOCK Timing 4.19MHz
Adder
CF
ZF
DF
ALU
PR
IP
SP
XP
YP
Control
ROM Program Memory (8K Bytes)
Drivers
IR Instruction Decoder
RAM Address Decoder
RAM Data Memory (256 Bytes)
Drivers
Port 0 P00-P05,P07
Port 1 P10-P15
Port 2 P20-P27
Port 4 P40-P47
Port 5 P50-P57
Port 6 P60-P67
Port 7 P70-P71
Port 8 P80-P87
Remote Control
Interrupt
Serial Interface
PWM
Timer
FLP Control


PY16 FRONT P.C.B
OPEN/CLOSE
REW
FF
PREVIOUS
NEXT
PAUSE
PLAY
STOP
SY08
SY07
SY06
SY05
SY04
SY03
SY02
SY01
TIME
EDIT
RECALL
CANCEL
PROGRAM
SY13
SY12
SY11
SY10
SY09
DIMMER
SY16
SY15
SY14
SY24
SY23
SY22
SY21
SY20
SY19
SY18
SY17
DY01-DY04
1SS176 OR MA165
OR 1SS254
DY01
DY02
DY03
DY04
KEY8
KEY7
KEY6
KEY5
KEY4
KEY3
KEY2
KEY1
VY01
9-MT-131GK
F1 F1 NP P14 P13 P12 P11 P10 P9 P8 P7 P6 P5 P4 P3 P2 P1 NC NC NC NC NC 1G 2G 3G 4G 5G 6G 7G 8G 9G NP F2 F2
-19.5V
-24.2V
-18.0V
-18.3V
-18.1V
-15.2V
-18.2V
-21.4V
+5
ZY1
RY01
47K
IR
CY01
0.022
CD63/53 ONLY
37
1
JY01
FROM JF01 MAIN PCB
WY01
IR +5 GND KEY8 KEY7 KEY6 KEY5 KEY4 KEY3 KEY2 KEY1 VF2 P14 P13 P12 P11 P10 P9 P8 P7 P6 P5 P4 P3 P2 P1 G1 G2 G3 G4 G5 G6 G7 G8 G9 VF2 GND

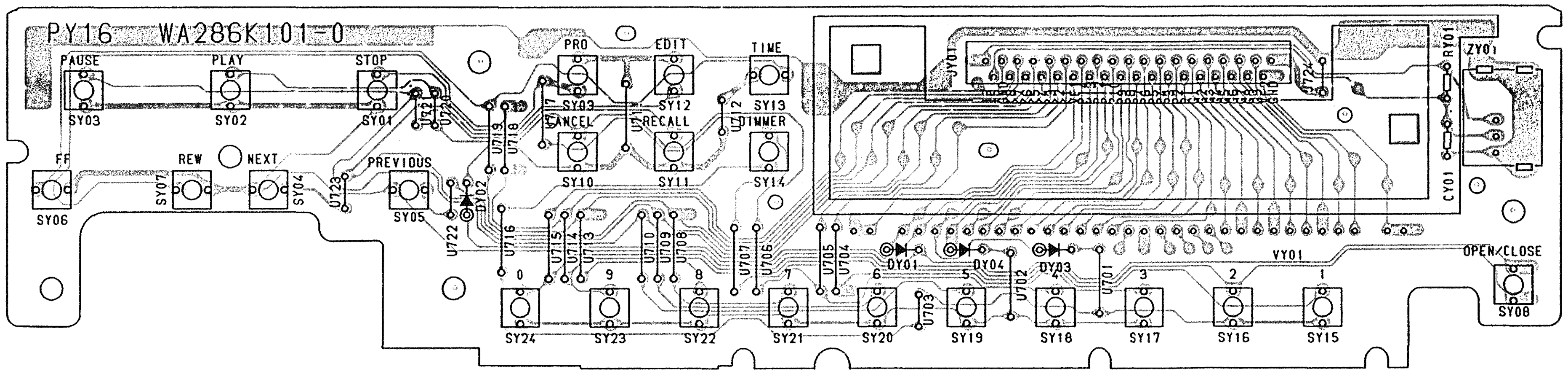

9G
8G
7G
6G
5G
4G
3G
2G
1G
PLAY
PAUSE
ERROR
TRACK
TOTAL
REM
TIME
PROGRAM
RANDOM
REPEAT 1
EDIT
PEAK
A
B
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	-	a	a	a	a	a	a	PROGRAM	PEAK
P2	(1)	b	b	b	b	b	b	15	18
P3	1	c	c	c	c	c	c	(15)	(18)
P4	(1)	d	d	d	d	d	d	1	⏏
P5	-	e	e	e	e	e	e	REPEAT	B
P6	ERROR	f	f	f	f	f	f	-	A
P7	(2)	g	g	g	g	g	g	(15)	(18)
P8	2	(4)	-	TOTAL	col	REM	(13)	(16)	(19)
P9	(2)	4	(6)	-	(9)	(11)	13	16	19
P10	(3)	(4)	6	(8)	9	11	(13)	(16)	(19)
P11	3	(5)	(6)	8	(9)	(11)	(14)	(17)	(20)
P12	(3)	5	(7)	(8)	(10)	(12)	14	17	20
P13	PLAY	(5)	7	-	10	12	(14)	(17)	(20)
P14	PAUSE	TRACK	(7)	-	(10)	(12)	TIME	RANDOM	EDIT

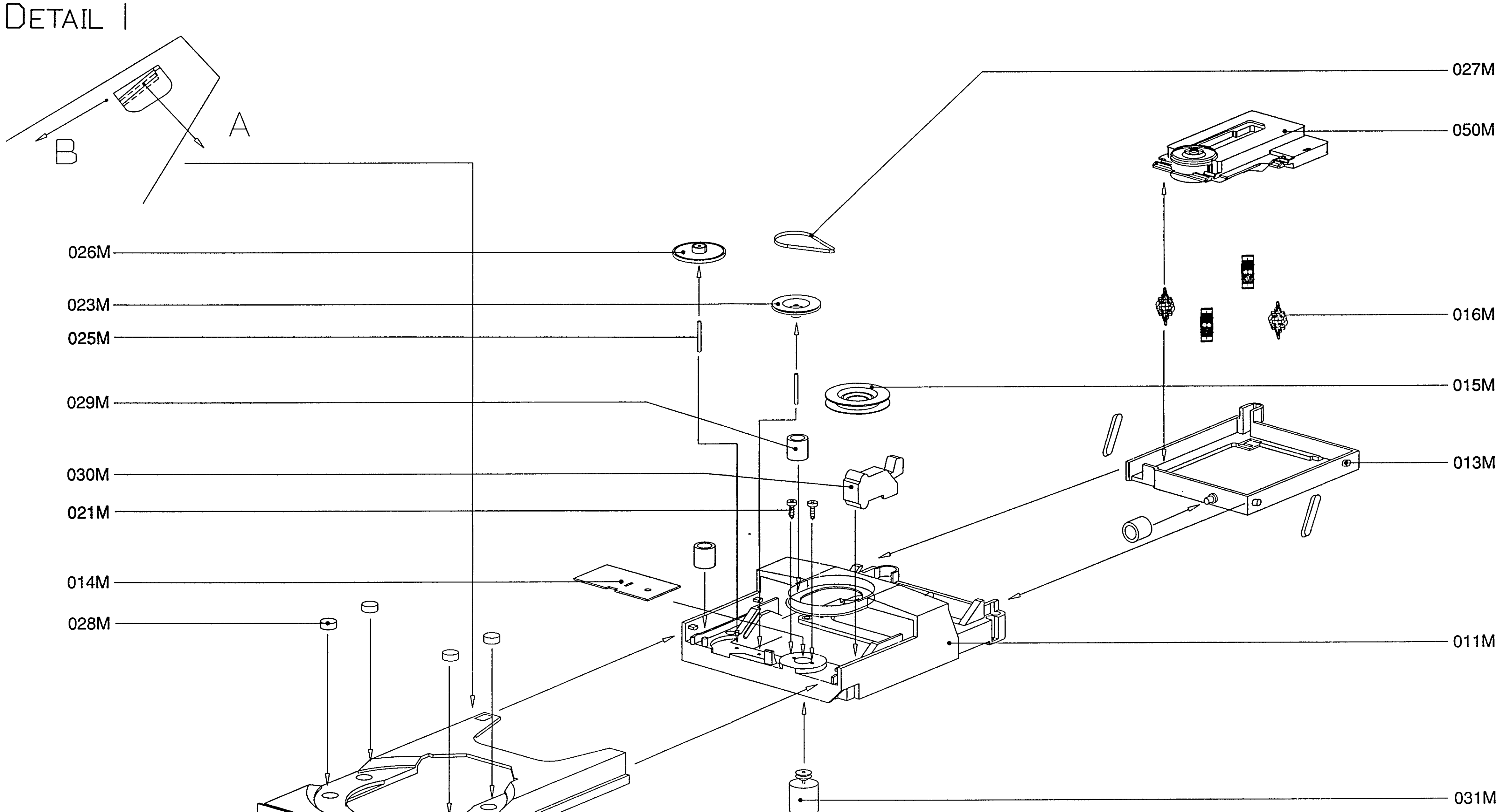
9-MT-131GK
ANODE CONNECTION

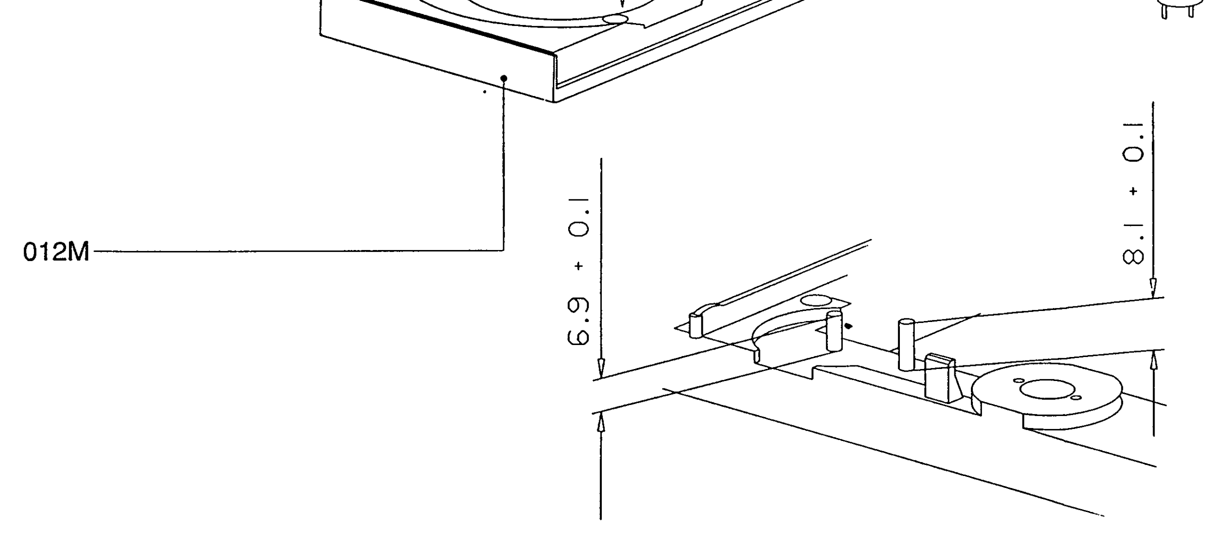
PY16 FRONT PCB


PY16 WA286K101-0
PAUSE
PLAY
STOP
SY03
SY02
SY01
PRO
EDIT
TIME
SY09
SY12
SY13
CANCEL
RECALL
DIMMER
SY10
SY11
SY14
FF
REW
NEXT
PREVIOUS
SY06
SY07
SY04
SY05
DY02
DY01
DY04
DY03
VY01
ZY01
RY01
CY01
OPEN/CLOSE
SY08
0 9 8 7 6 5 4 3 2 1
SY24
SY23
SY22
SY21
SY20
SY19
SY18
SY17
SY16
SY15

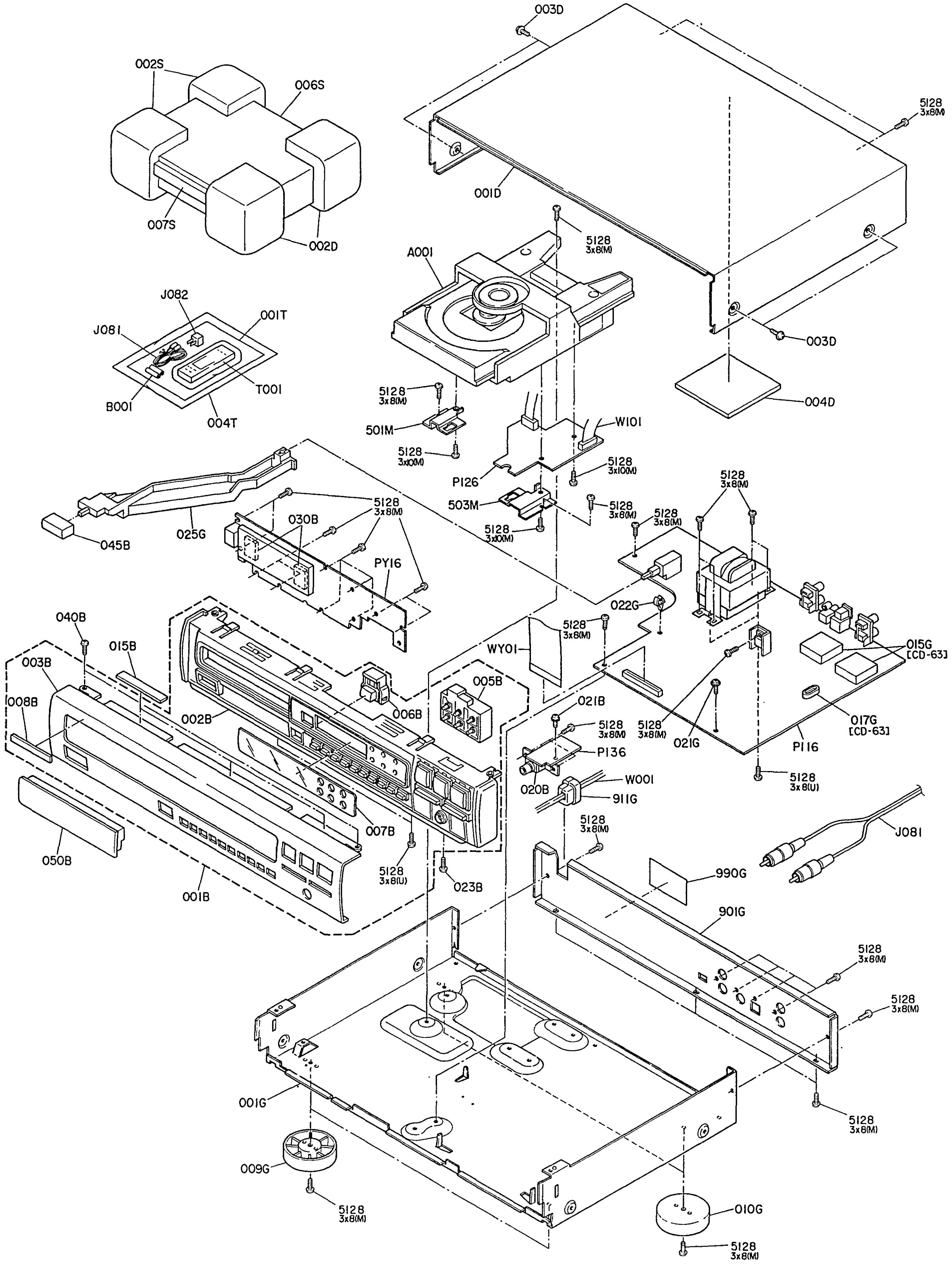
7. EXPLODED VIEW AND PARTS LIST

LOADER


DETAIL I
A
B
026M
023M
025M
029M
030M
021M
014M
028M
027M
050M
016M
015M
013M
011M
031M


012M
6.9 + 0.1
8.1 + 0.1

REF. DESIG.	PART NO.	DESCRIPTION
011M	271K105030	CHASSIS
012M	271K163010	TRAY, SLIDE
013M	271K105040	CHASSIS, SUB
014M	271K303010	MASK, COVER PLATE
015M	271K005010	CLAMPER ASSY
016M	271K056010	BUFFER, SUSPENSION
021M	271K010010	SCREW, TORX M2X4
023M	271K262010	PULLEY
025M	271K112010	SHAFT, SPINDLE
026M	271K058010	GEAR, DRIVE PINION
027M	271K264010	BELT, DRIVE
028M	271K056030	BUFFER, ORNAMENTAL TULE
029M	271K056020	BUFFER, DAMPING GROMMET
030M	*SM000300R	MINI SWITCH
031M	*MM000660R	D.C.MOTOR
050M (CDM)	271K304560	MECHANISM, CDM12.1 EX.WIRE


003D
002S
006S
5128 3x8(M)
007S
002D
001D
A001
5128 3x8(M)
J082
001T
J081
T001
B001
004T
003D
004D
5128 3x8(M)
501M
W101
5128 3x10(M)
P126
5128 3x10(M)
5128 3x8(M)
503M
5128 3x8(M)
5128 3x8(M)
5128 3x10(M)
5128 3x8(M)
045B
025G
030B
5128 3x8(M)
PY16
022G
040B
015B
5128 3x8(M)
WY01
015G [CD-63]
003B
008B
005B
002B
006B
021B
5128 3x8(M)
5128 3x8(M)
P136
021G
P116
017G [CD-63]
W001
020B
911G
5128 3x8(U)
007B
5128 3x8(M)
J081
050B
5128 3x8(U)
023B
990G
001B
901G
5128 3x8(M)
5128 3x8(M)
001G
5128 3x8(M)
009G
010G
5128 3x8(M)
5128 3x8(M)

[F]: JAPAN
[K]: FAR EAST
[U]: U.S.A

REF. DESIG.	PART NO.	DESCRIPTION
001B	285K248510	FRONT PANEL ASSY, (BLACK) [CD63] [F, U]
001B	285K248560	FRONT PANEL ASSY, (GOLD) [CD63] [K]
001B	285K248500	FRONT PANEL ASSY, (BLACK) [CD53] [U]
002B	285K105020	CHASSIS, FRONT (BLACK) [F, U]
002B	285K105120	CHASSIS, FRONT (GOLD) [K]
003B	285K248110	FRONT PANEL (BLACK) [CD63] [F, U]
003B	285K248120	FRONT PANEL (GOLD) [CD63] [K]
003B	285K248010	FRONT PANEL (BLACK) [CD53] [U]
005B	285K270020	BUTTON, D3
006B	285K270030	BUTTON, OPEN/CLOSE (BLACK) [F, U]
006B	285K270130	BUTTON, OPEN/CLOSE (GOLD) [K]
007B	285K158010	WINDOW
008B	185J251010	BADGE [F, U]
008B	185J251110	BADGE [K]
015B	221K056160	BUFFER
020B	285K160010	BRACKET, HEAD PHONE
021B	51290308M0	B.T.SCREW (W/TL)
023B	51270310U0	PH.TAP.SCREW
030B	285K118020	SPACER
045B	285K270010	BUTTON, POWER (BLACK) [F, U]
045B	285K270110	BUTTON, POWER (GOLD) [K]
050B	285K063010	ESCUTCHEON (BLACK) [F, U]
050B	285K063110	ESCUTCHEON (GOLD) [K]
001D	285K257010	LID, TOP COVER (BLACK) [F, U]
001D	285K257110	LID, TOP COVER (GOLD) [K]
003D	51260308M0	B.T.SCREW (W/W)
004D	285K056010	RUBBER SHEET
001G	285K105010	MAIN CHASSIS
009G	183J057010	LEG, FRONT
010G	183J057110	LEG, REAR
015G	288K109020	SHIELD (P116)
017G	257K056030	BUFFER
021G	51260308M0	B.T. SCREW (W/W)
022G	303V005010	CLAMPER
025G	285K121010	LINK, POWER SW.
901G	285K250140	REAR PANEL (BLACK) [CD63] [F]
901G	285K250180	REAR PANEL (GOLD) [CD63] [K]
901G	285K250160	REAR PANEL (BLACK) [CD63] [U]
901G	285K250060	REAR PANEL (BLACK) [CD53] [U]
911G	085J259010	BUSHING, AC CORD [F, K]
911G	450H259010	BUSHING, AC CORD [U]
A001	271K304500	MECHANISM, LOADING 1210
W001	YC01900140	A.C.POWER CORD [F, K]
W001	YC01800330	A.C.POWER CORD [U]
W101	YU15090520	JUMPER LEAD, SUMI-CARD 15P
WY01	YU37120500	JUMPER LEAD, SUMI-CARD 37P/120MM
		PACKING
001S	286K801010	PACKING CASE (BLACK) [CD63] [F, U]
001S	286K801020	PACKING CASE (GOLD) [CD63] [K]
001S	285K801010	PACKING CASE (BLACK) [CD53] [U]
002S	285K809010	CUSHION
006S	9014330300	POLYETHY BAG
001T	286K851110	USER MANUAL, [CD63] [F]
001T	286K851350	USER MANUAL, [CD63] [K]
001T	286K851250	USER MANUAL, [CD53/63] COMB. [U]
002T	9631000150	WARRANTY CARD [F]
004T	9012540010	POLYETHY BAG FOR INST

REF. DESIG.	PART NO.	DESCRIPTION
B001	ZF23102000	BATTERY SUM-3NG-2P
J081	ZD01000550	CONNECTIVE CORD RCA 2P [CD63]
J081	ZD01000330	CONNECTIVE CORD RCA 2P [CD53]
J082	YJ04001240	JACK, AC ADAPTER [K]
T100	ZK286K0010	IR COMANDER (RC-63CD)

8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR
R * * * : (1) GD05 xxx 140, Carbon film fixed resistor, ±5% 1/4W
R * * * : (2) GD05 xxx 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.

C * * * : CERAMIC CAP.
(1) DD1x xxx 370, Ceramic capacitor
① ② Disc type
Temp. coeff. P350 ~ N1000, 50V
② —— Capacity value
① —— Tolerance

Examples ;
① Tolerance (Capacity deviation)
± 0.25pF 0
± 0.5pF 1
± 5% 5

* Tolerance of COMMON PARTS handled here are as follows :
0.5pF ~ 5pF ....± 0.25pF
6pF ~ 10pF ....± 0.5pF
12pF ~ 560pF ....± 5%

② 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.
(1) DK16 xxx 300, High dielectric constant ceramic capacitor
① Disc type
Temp. chara. 2B4, 50V
① —— Capacity value

Examples ;
② Capacity value
100 pF ....101 1000 pF ....102 10000 pF 103
470 pF ....471 2200 pF 222

C * * * : ELECTROLY CAP. (⊥⊥), FILM CAP. (⊥)
(1) EA xxx xxx 10, Electrolytic capacitor
① ② One-way lead type,
Tolerance ± 20%
② —— Working voltage
① —— Capacity value

Examples ;
① 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

② Working voltage
6.3 V ....006 25 V 025
10 V ....010 35 V 035
16 V ....016 50 V 050

(2) DF15 xxx 350, Plastic film capacitor
① One-way type, Mylar ± 5% 50V
① —— Capacity value

Examples ;
① Capacity value
0.001 µF (1000pF) ....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 : The above CODES (R * * *, R * * *, C * * *, C * * * and C * * *) are omitted on the schematic diagram in some case.
On the occasion, be confirmed common parts on the parts list.

REF. DESIG.	PART NO.	DESCRIPTION
		P116-MAIN CIRCUIT BOARD
P116	WG286K1010	P. W. BOARD, MAIN
		P116-CAPACITORS
CD02	DD11100300	CERAMIC 10PF ±0.5PF 50V
CD03	DD11100300	CERAMIC 10PF ±0.5PF 50V
CD04	OA22701020	ELECT 220 µF 10V
CD05	DA17473110	CERAMIC 0.047µF ± 20% 50V
CD06	DA17473110	CERAMIC 0.047µF ± 20% 50V
CD07	OA22701020	ELECT 220 µF 10V
CD08	DA17473110	CERAMIC 0.047µF ± 20% 50V
CD12	DA17473110	CERAMIC 0.047µF ± 20% 50V
CD13	DA17473110	CERAMIC 0.047µF ± 20% 50V
CD15	OA22701020	ELECT 220 µF 10V
CD16	OA22701020	ELECT 220 µF 10V
CD21	OF15121540	FILM 120PF ± 5% 100V [CD63]
CD21	DD15121300	CERAMIC 120PF ± 5% 50V [CD53]
CD22	OF15121540	FILM 120PF ± 5% 100V [CD63]
CD22	DD15121300	CERAMIC 120PF ± 5% 50V [CD53]
CD23	OF15121540	FILM 120PF ± 5% 100V [CD63]
CD23	DD15121300	CERAMIC 120PF ± 5% 50V [CD53]
CD24	OF15121540	FILM 120PF ± 5% 100V [CD63]
CD24	DD15121300	CERAMIC 120PF ± 5% 50V [CD53]
CF01	DA17473110	CERAMIC 0.047µF ± 20% 50V
CF02	OA47601620	ELECT 47 µF 16V
CF03	OA47505020	ELECT 4.7 µF 50V
CF51	DK18223310	CERAMIC0.022 µF +80%-20% 50V
CF52	OA10602520	ELECT 10 µF 25V
CH01	DA15470110	CERAMIC 47PF ± 5% [CD63]
CH02	DA15470110	CERAMIC 47PF ± 5% [CD63]
⚠CH11	DF77103500	FILM 0.01µF ± 20% 250V AC
⚠CN01	OA47701620	ELECT 470 µF 16V
CN02	OA22505020	ELECT 2.2 µF 50V
CN03	OA10602520	ELECT 10 µF 25V
CT02	DK18472310	CERAMIC 4700PF +80%-20% 50V
CT04	DK18223310	CERAMIC 0.022µF +80%-20% 50V
CT10	DK18223310	CERAMIC 0.022µF +80%-20% 50V [CD63]
C111 ~ C116	DD15221300	CERAMIC 220PF ± 5% 50V
C119	DA17473110	CERAMIC 0.047µF ± 20% 50V
C120	OA47601620	ELECT 47 µF 16V
C121	DA17473110	CERAMIC 0.047µF ± 20% 50V
C122	OA47601620	ELECT 47 µF 16V
C123	DA17473110	CERAMIC 0.047µF ± 20% 50V
C124	OA10602520	ELECT 10 µF 25V
C134	OA22505020	ELECT 2.2 µF 50V
C135	OA47601620	ELECT 47 µF 16V
C136	DK18223310	CERAMIC 0.022µF +80%-20% 50V
C137	DK18223310	CERAMIC 0.022µF +80%-20% 50V
C138	OA47601620	ELECT 47 µF 16V
C143	DA16151110	CERAMIC 150PF ± 10%
C144	DA16151110	CERAMIC 150PF ± 10%
C146	DK18223310	CERAMIC 0.022µF +80%-20% 50V
C148	DK18223310	CERAMIC 0.022µF +80%-20% 50V
C151	DK18223310	CERAMIC 0.022µF +80%-20% 50V
C152	DK18223310	CERAMIC 0.022µF +80%-20% 50V
C153	OA47601620	ELECT 47 µF 16V
C154	OA47601620	ELECT 47 µF 16V
C501	DA16151110	CERAMIC 150PF ± 10%
C503	DA17473110	CERAMIC 0.047µF ± 20% 50V
C504	OA22701020	ELECT 220 µF 10V
C507	DA15470110	CERAMIC 47PF ± 5%
C508	DK18223310	CERAMIC 0.022µF +80%-20% 50V
C509	DA17473110	CERAMIC 0.047µF ± 20% 50V
C510	OA22701020	ELECT 220 µF 10V
C511	OA22701020	ELECT 220 µF 10V
C512	DA17473110	CERAMIC 0.047µF ± 20% 50V
C513	DA17473110	CERAMIC 0.047µF ± 20% 50V
C514	DA16101110	CERAMIC 100PF ± 10%
C601 ~ C604	OF15121540	FILM 120PF ± 5% 100V [CD63]
C601 ~ C604	DD15121300	CERAMIC 120PF ± 5% 50V [CD53]
C607	OF15101540	FILM 100PF ± 5% 100V [CD63]
C607	DD15101300	CERAMIC 100PF ± 5% 50V [CD53]
C608	OF15101540	FILM 100PF ± 5% 100V [CD63]
C608	DD15101300	CERAMIC 100PF ± 5% 50V [CD53]
C611 ~ C614	OA22701620	ELECT 220 µF 16V
C651 ~ C654	OA22701620	ELECT 220 µF 16V [CD63]
C655 ~ C658	OA22701620	ELECT 220 µF 16V
C659	DA16101110	CERAMIC 100PF ± 10% [CD63]
C659	DD15101300	CDRAMIC 100PF ± 5% 50V [CD53]
C660	DA16101110	CERAMIC 100PF ± 10% [CD63]
C660	DD15101300	CERAMIC 100PF ± 5% 50V [CD53]
C801	DK18223310	CERAMIC0.022 µF +80%-20% 50V
C802	DK18223310	CERAMIC0.022 µF +80%-20% 50V
⚠C803	OA47703520	ELECT 470 µF 35V [CD63]
⚠C803	OA22703520	ELECT 220 µF 35V [CD53]
⚠C804	OA47703520	ELECT 470 µF 35V [CD63]
⚠C804	OA22703520	ELECT 220 µF 35V [CD53]
⚠C805	OA47701620	ELECT 470 µF 16V [CD63]
⚠C805	OA10701620	ELECT 100 µF 16V [CD53]
⚠C806	OA47701620	ELECT 470 µF 16V [CD63]
⚠C806	OA10701620	ELECT 100 µF 16V [CD53]
C811	DA17473110	CERAMIC 0.047µF ± 20% 50V
C812	DA17473110	CERAMIC 0.047µF ± 20% 50V
⚠C813	OA47801620	ELECT 4700 µF 16V
⚠C814	OA10801620	ELECT 1000 µF 16V
C815	OA33800620	ELECT 3300 µF 6.3V
⚠C852	OA10705020	ELECT 100 µF 50V
C853	OA47603520	ELECT 47 µF 35V
⚠C854	OA10705020	ELECT 100 µF 50V
C901	OA10602520	ELECT 10 µF 25V
C902	OA10602520	ELECT 10 µF 25V
C903	OA10701620	ELECT 100 µF 16V
C904	OA10701620	ELECT 100 µF 16V
		P116-CAPACITORS (COMMON)
C***		PLASTIC FILM CAPACITOR ONE-WAY TYPE, MYLER ± 5% 50V: CT01, C131, C132, C133, C139~C142, C149, C155, C156, C506, C605, C606
C***		HIGH DIELECTRIC CONSTANT CERAMIC CAPACITOR, 50V: CT03, C117, C118, C505
C***		CERAMIC CAPACITOR: C502
		P116-RESISTORS
⚠RD01	NF05047140	4.7Ω ± 5% 1/4W, FUSE
⚠RD04	NF05047140	4.7Ω ± 5% 1/4W, FUSE
⚠RF01	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠RN08	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠RY11	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R122	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R123	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R127	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R128	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R136	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R149	NH05010140	1Ω ± 5%1/4W, FUSE
⚠R150	NH05010140	1Ω ± 5%1/4W, FUSE
⚠R164	NH05010140	1Ω ± 5%1/4W, FUSE
⚠R165	NH05010140	1Ω ± 5%1/4W, FUSE
⚠R508	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R511	NF05047140	4.7Ω ± 5%1/4W, FUSE
⚠R613 ~ ⚠R616	GG05100140	10Ω ± 5% 1/4W, FUSE
⚠R651 ~ ⚠R654	NF02270140	27Ω ± 2% 1/4W, FUSE [CD63]
		P116-RESISTORS (COMMON)
R***		CARBON FILM FIXED RESISTOR ±5% 1/6W: RD02, RD11~RD16, RD21~RD28, RF02, RF03, RF06, RF08~RF10, RF12~RF17, RF20, RF21, RF51~RF57, RF61, RH01~RH12[CD63], RH15~RH26[CD63], RN01, RN02, RN04~RN07, RN09, RN10, RN15~RN18, RN23, RN26,~RN31, RN91, RN92, RT01, RT02, RT10[CD63], R107, R114~R119, R121, R124~R126, R129~R135, R137~R148, R151~R157, R159~R163, R501~R507, RR509, R510, R514, R601~R612, R617[CD63], R618[CD63], R619[CD53], R620[CD53], R655~R662, R8512~R855, R901~R906, R909, R910, R913, R914
		P116-SEMICONDUCTORS
DF01	HD20002000	DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DF03	HD20002000	DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DF04	HD20002000	DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DF51	HD20002000	DIODE, 1SS176, MA165,1SS254 30V 0.1A
DF52	HD20002000	DIODE, 1SS176, MA165,1SS254 30V 0.1A
DH01 ~ DH10	HD20002000	DIODE, 1SS176, MA165,1SS254 30V 0.1A [CD63]
⚠DN01 ~ ⚠DN04	HD20029050	DIODE, S5688G VRM=400V I0=1A
DN05	HD20002000	DIODE, 1SS176,MA165,1SS254 30V 0.1A
DN06	HD30561000	ZENER DIODE 04AZ5.6-Y 5.6V
DN07	HD20002000	DIODE, 1SS176,MA165,1SS254 30V 0.1A
DN23	HD20002000	DIODE, 1SS176,MA165,1SS254 30V 0.1A
DN24	HD20002000	DIODE, 1SS176,MA165,1SS254 30V 0.1A
⚠D151	HD20029050	DIODE, S5688G VRM=400V IO=1A
⚠D152	HD20029050	DIODE, S5688G VRM=400V IO=1A
⚠D801 ~ ⚠D804	HD20029050	DIODE, S5688G VRM=400V IO=1A

[F]: JAPAN
[K]: FAR EAST
[U]: U.S.A

REF. DESIG.	PART NO.	DESCRIPTION
⚠D811 ≀ ⚠D814	HD20029050	DIODE, S5688G VRM=400V IO=1A
⚠D851	HD20029050	DIODE, S5688G VRM=400V IO=1A
⚠D852	HD30681000	ZENER DIODE, 04AZ6.8-Z 6.8V
D853	HD30471000	ZENER DIODE, 04AZ4.7-Y 4.7V
⚠D854	HD20029050	DIODE, S5688G VRM=400V IO=1A [F, K]
D855	HD20029050	DIODE, S5688G VRM=400V IO=1A [U]
QD01	HC10010350	IC, DIG.FIL & DAC SM5872BS
QF01	HU286KA020	IC, MAIN CPU MN187164
QF02	HC10010550	IC, RESET IC PST523D (4.2V) LOW
QF51	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QF52	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QF61	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QH01	HF203321D0	F.E.T. 2SK332D-6A [CD63]
QH02	HF203321D0	F.E.T. 2SK332D-6A [CD63]
QH03	HT322402A0	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH04	HT322402A0	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH05 ≀ QH08	HT109702A0	TRANSISTOR 2SA970 (GR, BL) [CD63]
QH09	HT322402A0	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH10	HT322402A0	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH11	HF201701G0	F.E.T. 2SK170 BL VGDS=-40V PD=0.4V [CD63]
QH12	HF201701G0	F.E.T. 2SK170 BL VGDS=-40V PD=0.4V [CD63]
QH13	HF100741G0	F.E.T. 2SJ74 BL VGDS=25V PD=24W [CD63]
QH14	HF100741G0	F.E.T. 2SJ74 BL VGDS=25V PD=24W [CD63]
⚠QM01	HC10034170	IC, DUAL POWER OP AMP TCA0372
QN01 ≀ QN04	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QN05 ≀ QN08	HT328782A0	TRANSISTOR 2SC2878 (A, BRANK)
QN20	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QN24	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QN25	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QN91	HT328782A0	TRANSISTOR 2SC2878 (A, BRANK)
QN92	HT328782A0	TRANSISTOR 2SC2878 (A, BRANK)
Q104	HC10106490	IC, DIGITAL SERVO CONT. TDA1301T
⚠Q105	HC10034170	IC, DUAL POWER OP AMP TCA0372
⚠Q106	HC10034170	IC, DUAL POWER OP AMP TCA0372
Q501	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
Q502	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
Q503	HC10107490	IC, CD DECODER SAA7345
Q605	HC10111090	IC, DUAL LOW NOISE OP-AMP NJM2114D
Q606	HC10111090	IC, DUAL LOW NOISE OP-AMP NJM2114D
⚠Q801	HC38512090	IC, +12V 0.5A NJM78M12FA

REF. DESIG.	PART NO.	DESCRIPTION
⚠Q802	HC39512090	IC, -12V 0.5A NJM79M12FA
⚠Q811	HC38905090	IC, +5V NJM7805FA
⚠Q851	HC39518090	IC, -18V 500MA REG.NJM79M18FA JRC
Q852	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
Q853	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
Q854	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
Q901	HC10016090	IC, NJM4556D
		P116-MISCELLANEOUS
⚠FH11	FS10063850	FUSE 630 MA 250V [K]
⚠FH11	FS10160310	FUSE 1.6A 125V [F, U]
⚠FH12	FS10063850	FUSE 630 MA 250V [K]
⚠FH12	FS10160310	FUSE 1.6A 125V [F, U]
JF01	YJ06011070	JACK 37 PIN FFC
JF03	YT02020890	TERMINAL 2P RCA PIN JACK (RC-5 IN/OUT)
JT11	YJ15000090	JACK, OPTICAL OUTPUT GP1F32T [CD63]
J103	YJ07007960	JACK, 15P
J601	YT02021080	TERMINAL, RCA 2P OUTPUT [CD63]
J601	YT02021210	TERMINAL, RCA 2P OUTPUT [CD53]
J805	YJ08000430	JACK, FUSE CLIP
J806	YJ08000450	JACK, FUSE CLIP
J807	YJ08000430	JACK, FUSE CLIP
J808	YJ08000450	JACK, FUSE CLIP
LT01	TP41042010	PULSE TRANSFORMER
⚠L001	TS15734020	POWER TRANSFORMER [K]
⚠L001	TS15734040	POWER TRANSFORMER [F]
⚠L001	TS15734030	POWER TRANSFORMER [U]
L601	LC12243800	CHOKE COIL 220μH
L602	LC12243800	CHOKE COIL 220μH
SF01	SS02021150	SLIDE SWITCH, IR INT/EXT
⚠SH02	SS0202124R	SLIDE SWITCH, VOLTAGE SELECTOR [K]
⚠SH91	SP01011990	PUSH SWITCH, POWER
XD01	JX16002260	CRYSTAL 16.9344MHZ
XF01	FQ08004010	CERAMIC VIBRATOR CST8.0MHZ
X101	FQ08464010	CERAMIC VIBRATOR CST8.46MTW
		P126-HF CIRCUIT BOARD
P126	WG286K1020	P. W. BOARD, HF
		P126-CAPACITORS
C101	DA16101110	CERAMIC 100PF ± 10%
C102	DA15470110	CERAMIC 47PF ± 5%
C103	DA15470110	CERAMIC 47PF ± 5%
C104	DA15180120	CERAMIC 18PF ± 5%
C105	DA16151110	CERAMIC 150PF ± 10%
C106	OA10602520	ELECT 10 μF 25V
C107	DA17473110	CERAMIC 0.047μF ± 20% 50V
C108	DA16151110	CERAMIC 150PF ± 10%
C109	DA16151110	CERAMIC 150PF ± 10%
C110	DA16331110	CERAMIC 330PF ± 10%
		P126-RESISTORS (COMMON)
R***		CARBON FILM FIXED RESISTOR ±5% 1/6W: R101~R106, R108~R113
		P126-SEMICONDUCTORS
Q101	HT326681O0	TRANSISTOR 2SC2668 (O)

REF. DESIG.	PART NO.	DESCRIPTION
Q102	HT30001000	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
Q103	HT10001000	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
		P126-MISCELLANEOUS
J101	YJ07007950	JACK, 12P
J102	YJ07007960	JACK, 15P
		P136-HEADPHONE CIRCUIT BOARD
P136	WA286K1020	P. W. BOARD, HEADPHONE
		P136-CAPACITORS
C980	DK18223310	CERAMIC 0.022µF +80%-20% 50V
		P136-MISCELLANEOUS
J900	YJ01003870	JACK, HEAD PHONE [F, U]
J900	YJ01003880	JACK, HEAD PHONE [K]
		PY16-FRONT CIRCUIT BOARD
PY16	WA286K1010	P. W. BOARD, FRONT
		PY16-CAPACITORS
CY01	DA17473110	CERAMIC 0.047µF +80%-20% 50V
		PY16-RESISTORS (COMMON)
R***		CARBON FILM FIXED RESISTOR ±5% 1/6W: RY01
		PY16-SEMICONDUCTORS
DY01 ~ DY04	HD20002000	DIODE, 1SS176,MA165,1SS254 30V 0.1A
JY01	YJ06011470	JACK 37 PIN
SY01 ~ SY14	SP01011280	PUSH SWITCH
SY15 ~ SY24	SP01011880	PUSH SWITCH
VY01	HQ30914410	DISPLAY UNIT
ZY01	HW10026320	PHOTO UNIT GP1U58XP

安全上の注意：

⚠が付いている部品は、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ください。

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

NOTE ON SAFETY FOR FUSIBLE RESISTOR:
The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

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

∗ Resistance value　　Resistance value(0.1 - 10kΩ)

2. Matsushita Electronic Components Co., Ltd

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

∗ Resistance value　　∗ Resistance value

Examples;
∗ Resistance value

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

Service Manual

CD-63SE K/U

Compact Disc Player

This service manual explains them by extracting the different specifications from those of the model CD - 63SE, based on the model CD - 63. For both electrical and mechanical information on the after-sales service which is not stated, all information is described in the model CD-53/63 service manual(Code number :286K855110).
The dispatch of the parts for after-sales service has to be referred to this service manual, with the first priority.
For this reason, please use this service manual with referring to the model CD - 53/63 service manual, without fail.

marantz®

model CD-63SE

Printed in Japan

286K855120
1994/9 (MJI)

Different Parts between model CD-63 and CD-63SE

[K] : FAR EST
[U] : USA

CD-63			CD-63SE	DESCRIPTION
PAGE	POS. NO.	PART NO.	PART NO.	
24	001B	285K248510	285K248530	FRONT PANEL ASSY. (BLACK) [K,U]
	001B	285K248560	285K248540	FRONT PANEL ASSY. (GOLD) [K]
	003B	285K248110	285K248030	FRONT PANEL. AL (BLACK) [K,U]
	003B	285K248120	285K248040	FRONT PANEL. AL (GOLD) [K]
	001G	285K105010	285K105110	MAIN CHASSIS
	015G	288K109020	288K109010	SHIELD (P116)
	901G	285K250160	285K250130	REAR PANEL [U]
	901G	285K250180	285K250130	REAR PANEL [K]
	WY01	YU37120500	YU37120520	JUMPER LEAD. SUMI-CARD 37P/120MM [U]
	001S	286K801010	286K801040	PACKING CASE [CD-63SE] (BLACK)
	001S	286K801020	286K801050	PACKING CASE [CD-63SE] (GOLD)
	001T	286K851250	286K851252	USER MANUAL [CD-63/CD-63SE] [U]
	001T	286K851350	286K851352	USER MANUAL [CD-63/CD-63SE] [K]

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

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

1. KOA Corporation

Part No.	Type No.	Description
NH05 x x x 140 →	RF25S x x x x Ω J	(±5% 1/4W)
NH05 x x x 120 →	RF50S x x x x Ω J	(±5% 1/2W)
NH85 x x x 110 →	RF73B2A x x x x Ω J	(±5% 1/10W)
NH95 x x x 140 →	RF73B2E x x x x Ω J	(±5% 1/4W)

└ * Resistance value └ Resistance value (0.1-10kΩ)

2. Matsushita Electronic Components Co., Ltd

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

└ * Resistance value └ * Resistance value

Examples :

* Resistance value

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

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.

Different Parts between model CD-63 and CD-63SE

[K] : FAR EST
[U] : USA

	CD-63		CD-63SE	DESCRIPTION
PAGE	POS. NO.	PART NO.	PART NO.	
25	CD15	OA22701020	OA47701020	ELECT CAP. 470 μF 10V AR-2 TYPE
	CD16	OA22701020	OA47701020	ELECT CAP. 470 μF 10V AR-2 TYPE
26	C514	DA16101110	DA15470110	CERAMIC CAP. 47PF ±5%
	C605	COMMON	OF15102540	FILM CAP. 100PF ±5%
	C606	COMMON	OF15102540	FILM CAP. 100PF ±5%
	C611 ~ C614	OA22701620	OA10702550	ELECT CAP. 100 μF 25V ARA TYPE
	C651 ~ C654	OA22701620	OA47701620	ELECT CAP. 470 μF 16V AR-2 TYPE
	C655 ~ C658	OA22701620	OA22701640	ELECT CAP. 270 μF 16V ARS TYPE
	C801	DK18223310	– – –	DEL.
	C802	DK18223310	– – –	DEL.
	⚠ C803	OA47703520	OA47703540	ELECT CAP. 470 μF 35V ARS TYPE
	⚠ C804	OA47703520	OA47703540	ELECT CAP. 470 μF 35V ARS TYPE
	⚠ C853	OA47603510	OA47603520	ELECT CAP. 47 μF 35V AR-2 TYPE
	⚠ RD01	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ RD04	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	RD14	COMMON	GD05471160	COMMON : 470Ω ±5% 1/6W
	⚠ RF01	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ RN08	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ RY11	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ R122	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ R123	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ R127	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ R128	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ R136	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	R149	NH05010140	– – –	JUMPER WIRE
	R150	NH05010140	– – –	JUMPER WIRE
	R164	NH05010140	– – –	JUMPER WIRE
	R165	NH05010140	– – –	JUMPER WIRE
	⚠ R508	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ R511	NF05047140	RF05047140	4.7Ω ±5% 1/4W FUSE
	⚠ R613 ~ ⚠ R616	GG05100140	RF02270140	27Ω ±2% 1/4W FUSE
	⚠ R651 ⚠ R654	NF022700140	RF02270140	27Ω ±2% 1/4W FUSE
27	⚠ L001	TS15734030	TS15734070	POWER TRANSFORMER [CD-63SE] [U]
	⚠ L001	TS15734020	TS15734060	POWER TRANSFORMER [CD-63SE] [K]
	⚠ FH11	FS10160310	FS10160360	FUSE 1.6A 125V [U]
	⚠ FH12	FS10160310	FS10160360	FUSE 1.6A 125V [U]