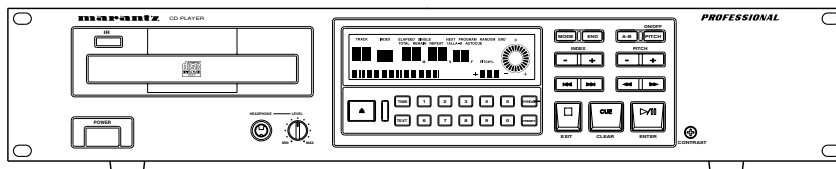


# Service Manual

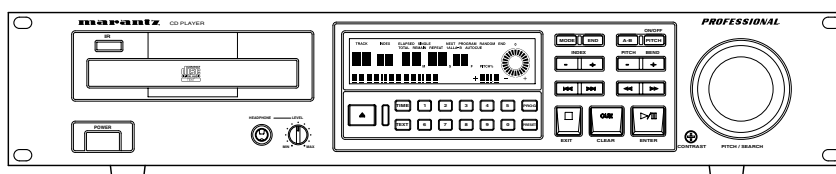
PMD330 /N1M, /U1B, /F1B  
PMD331 /N1M, /U1B, /F1B  
PMD340 /N1M, /U1B, /F1M  
CD Player

PMD330/331/340

PMD330



PMD331 / 340



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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®

## PMD330 / 331 / 340

371K855010 MIT  
3120 785 22250  
First Issue 1999.12

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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. 813.

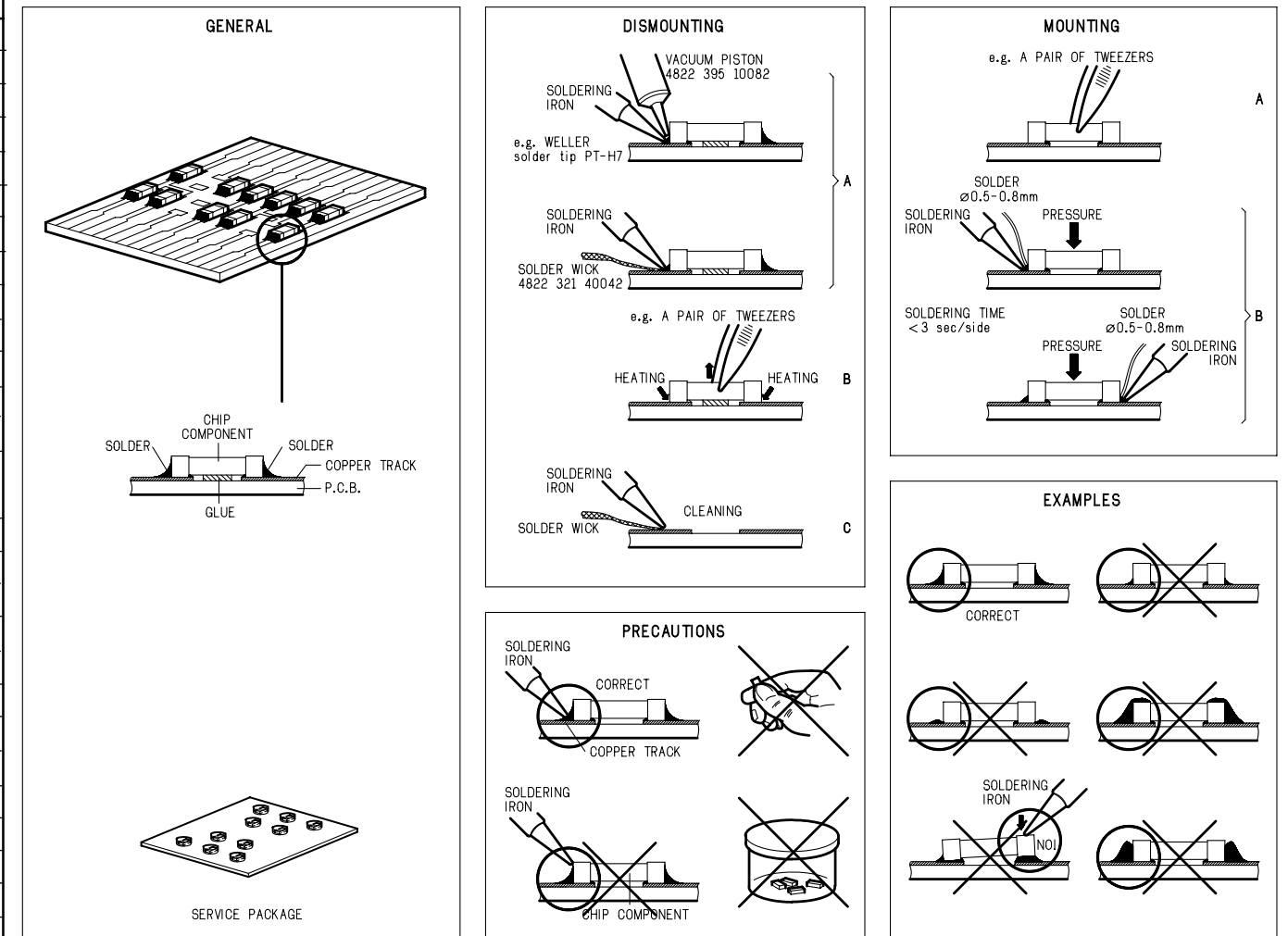
In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

## 1. TECHNICAL SPECIFICATIONS

		PMD330	PMD331 / PMD340
<b>General specifications</b>			
System	Compact Disc - Digital Audio		
Number of channels	2		
Compatible discs	CD-DA, CD-R, CD-RW (12 cm, 8 cm)		
<b>Audio characteristics</b>			
Channels	2 channels		
Frequency characteristics	20 Hz to 20 kHz +/- 0.3 dB		
Dynamic range	≥ 90 dB (1 kHz)		
S/N ratio	≥ 100 dB (1 kHz)		
Total harmonic distortion (THD)	0.005 % (1 kHz)		
Wow and flutter	Quartz precision		
Error correction method	Cross-interleave Read-Solomon code (CIRC)		
Analog output	Pin jack, unbalanced (RCA)	2.0V RMS Stereo	
	XLR jack, balanced (XLR) (variable range)	—	+16 dBu /600 Ω, @ 0 dB FS (-11 dBu to +21 dBu, variable)
Digital output	Pin jack (SPDIF)	0.5 Vp-p/75 Ω	
	XLR jack (SPDIF)	—	3.5 Vp-p/110 Ω
	optical connector	—	-19 dBm
Search precision	1 frame		
Pitch control	Maximum: +/-12% in 0.1% steps		
Pitch bend control	—	+/- 8 %	
Strat timing	—	20 ms	
<b>Remote control</b>			
Infrared remote control input	IN (IR sensor)		
RC5 remote control input/output	— RCA IN (INT/EXT switch)/OUT		
Remote control input/output	— D-SUB 25-Pin female		
<b>Optical anning method</b>			
Laser	AlGaAs semiconductor		
Wavelength	780 nm		
<b>Signal system</b>			
Sampling frequency	44.1 kHz		
Quantization	16-bit linear/channel		
<b>Power supply section</b>			
AC power supply	/F : 100V, AC 50/60Hz, /N : 230V, AC 50Hz, /U : 120V, AC 60Hz		
Power consumption	12 W	17 W	
<b>Cabinet, etc.</b>			
External dimensions (W x H x D)	483 x 100 x 325 mm (19 x 3-15/16 x 12- 13/16 inches)		
Weight	4.8 kg (10.6 lbs)	4.9 kg (10.8 lbs)	
Operating temperature range	+ 5°C to + 35°C		
Operating humidity range	5% to 90% (without dew)		

Due to our continuing efforts to improve our products, the specifications and appearance of this product are subject to change without prior notice.

## 2. SERVICE HINTS



## 3. SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors (SBC444)+	
Disc with DO errors, black spots and fingerprints (SBC444A)	4822 397 30245
Disc (65 min 1kHz) without no pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204

## 4. ADJUSTMENT AND SERVICE MODE

### 1.1. Digital Output (Coaxial) Check

On the preset menu, set "D.OUT" to "ON".(PMD331/PMD340)  
Do waveform observation with the oscilloscope, and confirm the digital output level of JT01 to be 0.5Vp-p, square wave within ±20% .

### 1.2. Balanced Output Adjustment (PMD331/PMD340)

1kHz, 0 dB are played back by using TEST disc.  
Turn RB01 on the rear panel, and adjust the output of JB53 (Balanced Out L-Ch).  
Turn RB02 on the rear panel, and adjust the output of JB54 (Balanced Out R-Ch).  
Adjust each output level to 16 dBu, within ±0.5dB.

### 1.3. Service Mode

- 1) With power off, simultaneously press the PLAY/PAUSE, MODE and TIME buttons, and at the same time, press the power button. At this time the LCD shows the model name and firmware version.
- 2) Next, press CUE button.
- 3) At this time the LCD shows " Test : Version ". (TEST MODE select menu)
- 4) The NEXT and PREVIOUS buttons change the TEST MODE(refer to the chart below). The PLAY button selects it.
- 5) Pressing the CUE button returns to the TEST MODE select menu.
- 6) Press the STOP button to exit the service mode.

INDEX	TEST MODE	CONTENTS
1.3.1	Version	MPU firmware version check
1.3.2	Display	LCD&LED test
1.3.3	Key&GPI	Confirmation of Buttons, GPI Control I/O and RC5
1.3.4 *	EE-PROM	Check of EEPROM Read/Write
1.3.5 *	Pickup	Manual moving of the pickup

\* It is not usually necessary to confirm.

#### 1.3.1. Model name and firmware version check

When the LCD shows "Test : Version", press the PLAY button, to see the model name and the MPU firmware version.  
Pressing the CUE button returns to the TEST MODE select menu.

#### 1.3.2. LCD and LED test

- 1) Set the LCD panel contrast adjustment screw to mechanical center. (you will feel a click.)
- 2) When the LCD shows "Test : Display", press the PLAY button.
- 3) The LCD and LED lights as the chart below.
- 4) Each time the PLAY/PAUSE button is pressed the LCD and LED change as shown in the chart below.
- 5) Pressing the CUE button returns to the TEST MODE select menu.

	LCD	BUTTON				GPI Control I/O					
		END	PITCH	PLAY	CUE	PLAY TALLY	PAUSE TALLY	CUE TALLY	FADER TALLY	INDEX	END TALLY
①	PATTERN 1	○	×	○	×	○	×	○	×	○	×
②	PATTERN 2	×	○	×	○	×	○	×	○	×	○
③	All light up	○	○	○	○	○	○	○	○	○	○
④	None light up	×	×	×	×	×	×	×	×	×	×

○ : Light X : Not Light

## 4. 調整とサービスモード

### 1.1. Digital Output (Coax) 確認

Preset Menuで "D.OUT" を "ON" に設定する。(PMD331/PMD340)  
JT01のデジタル出力レベルをオシロスコープで波形観測をおこない 0.5Vp-p, +/-20%以内の矩形波である事を確認する。

### 1.2. Balanced Output 調整 (PMD331/PMD340)

TEST Disc を使用し 1kHz, 0dB を再生する。  
背面パネルのRB01を回して JB53 (Balanced Out L-Ch)の出力を調整する。  
背面パネルのRB02を回して JB54 (Balanced Out R-Ch)の出力を調整する。  
各々の出力レベルを 16dBu, +/-0.5dB 以内に調整する。

### 1.3. SERVICE モードでの確認

電源OFFの状態、Play/Pause ボタン、Modeボタン、Time ボタンを同時に押しながら電源を入れる。  
または電源ONの状態、赤外線リモコンからサービスコードを送ることにより、サービスモードに入る。この時、LCDにはモデル名とMPUファームウェアのバージョン表示される。  
次に、CUEボタンを押す。  
この時、LCDの表示が " Test : Version " となる。(Test mode 選択画面)  
NextとPrevious ボタンで Test mode(下表参照)を切り替え、Play ボタンで選択する。  
CUEボタンで Test mode 選択画面の状態に戻る。  
Stopボタンでサービスモードを終了する。

確認項目	Test mode	内容
1.3.1	Version	MPU のファームウェアのバージョン表示
1.3.2	Display	LCD&LED 表示点灯テスト
1.3.3	Key&GPI	ボタン、GPI Control I/O、RC5 の入力表示
1.3.4 *	EE-PROM	EEPROM Read/Write のチェック
1.3.5 *	Pickup	ピックアップを手動で動作させる

\* 印の項目は通常確認の必要は無い。

#### 1.3.1. モデル名/プログラムバージョンの確認

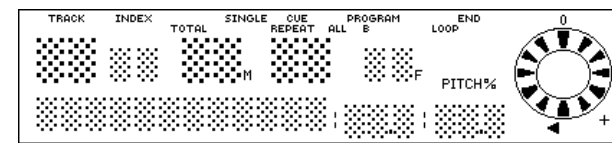
"Test : Version" と表示されているときに、Play ボタン押すと、モデル名とMPUファームウェアのバージョンが表示される。  
CUEボタンを押すと Test mode 選択画面 の状態に戻ります。

#### 1.3.2. LCD 表示 & LED点灯の確認

あらかじめ前面パネルのコントラスト調整用ボリューム RY01 をメカニカルセンターでクリックする位置に調整する。  
"Test : Display " と表示されているときに、Play ボタン押すと、下記表に従ってLCDとLEDが点灯される。 Play ボタンを押す毎にLCDとLEDは下表の順に表示・点灯が切り替わる。  
CUEボタンを押すと Test mode 選択画面 の状態に戻ります。

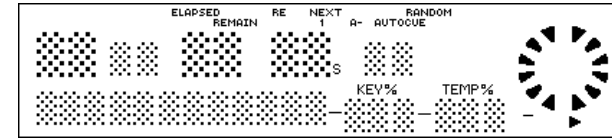
### PATTERN 1

-パターン1表示



### PATTERN 2

-パターン2表示



### 1.3.3. Confirmation of Buttons, GPI Control I/O and RC5

- 1) When the LCD shows "Test : Key&GPI", press the PLAY button.
- 2) The LCD shows "No Signal".
- 3) Press a button, GPI Control I/O and RC5 are input, and the LCD changes as shown in the chart below.

FUNCTION	SW Input	GPI * Input	RC5 Input	FUNCTION	SW Input	GPI * Input	RC5 Input
Open/Close	28	--	29	Preset	33	--	34
Time	29	--	30	Index +	17	8	18
CD-Text	30	--	31	Index -	18	9	19
Mode	31	--	32	0	1	--	2
Stop ***	--	--	--	1	2	--	3
Cue ****	--	--	--	2	3	--	4
Play/Pause	11	--	--	3	4	--	5
Play	--	1	12	4	5	--	6
Cue + Play	13	4	--	5	6	--	7
Pause	--	2	13	6	7	--	8
Next	15	10	16	7	8	--	9
Previous	16	11	17	8	9	--	10
FF	19	6	20	9	10	--	11
REW	20	7	21	Pitch Bend +*	26	--	27
END	22	--	23	Pitch Bend -*	27	--	28
A-B Repeat	21	--	22	Service	--	--	35
Pitch +	24 **	13	25	Fader (Normal)	--	Fader Input	--
Pitch -	25 **	14	26	Program	32	--	33
Program	32	--	33	Pitch On/Off	23	15	24
Pitch On/Off	23	15	24	Fader (Invert)	--	Fader Input	--

\* : PMD331, PMD340 only. \*\* : PMD330 only.

\*\*\* : The service mode is exited.

\*\*\*\* : The TEST MODE select menu is returned.

#### 1.3.4. Check of EEPROM Read/Write

- 1) When the LCD shows "Test : EE-PROM", press the PLAY button.
- 2) Check of EEPROM Read/Write begins. The check takes about 1 minute. During the check pressing any button has no effect.
- 3) At this time the LCD shows as the following order.  
"ADDR (LOW)"--->"WRITE (LOW)"--->"WRITE (HIGH)"  
--->"PAGE WRITE"--->"EEPROM OK!"
- 4) If there is an error in the EEPROM, the LCD shows "EEPROM NG!".
- 5) Pressing the CUE button returns to the TEST MODE select menu.

#### 1.3.5. Manual moving of Pick up

- 1) When the LCD shows "Test : Pickup", press the PLAY button.
- 2) The LCD shows "Laser power". The laser diode turns on.
- 3) Press the NEXT button. The sled will move to the outside.
- 4) Press the PREVIOUS button. The sled will move to the inside.
- 5) Pressing the CUE button returns to the TEST MODE select menu.

### 1.3.3. ボタン、GPI Control I/O、RC5の確認

"Test : Key&GPI" と表示されているときに、Play ボタン押すと "No Signal" と表示が変わり入力された信号源と種類を下記の表に従いLCDに表示する。

\* : PMD331, PMD340 のみ。

\*\* : PMD330 のみ。

\*\*\* : サービスモードが終了する。

\*\*\*\* : Test mode 選択画面 の状態に戻ります。

#### 1.3.4. EEPROMのRead/Writeチェック

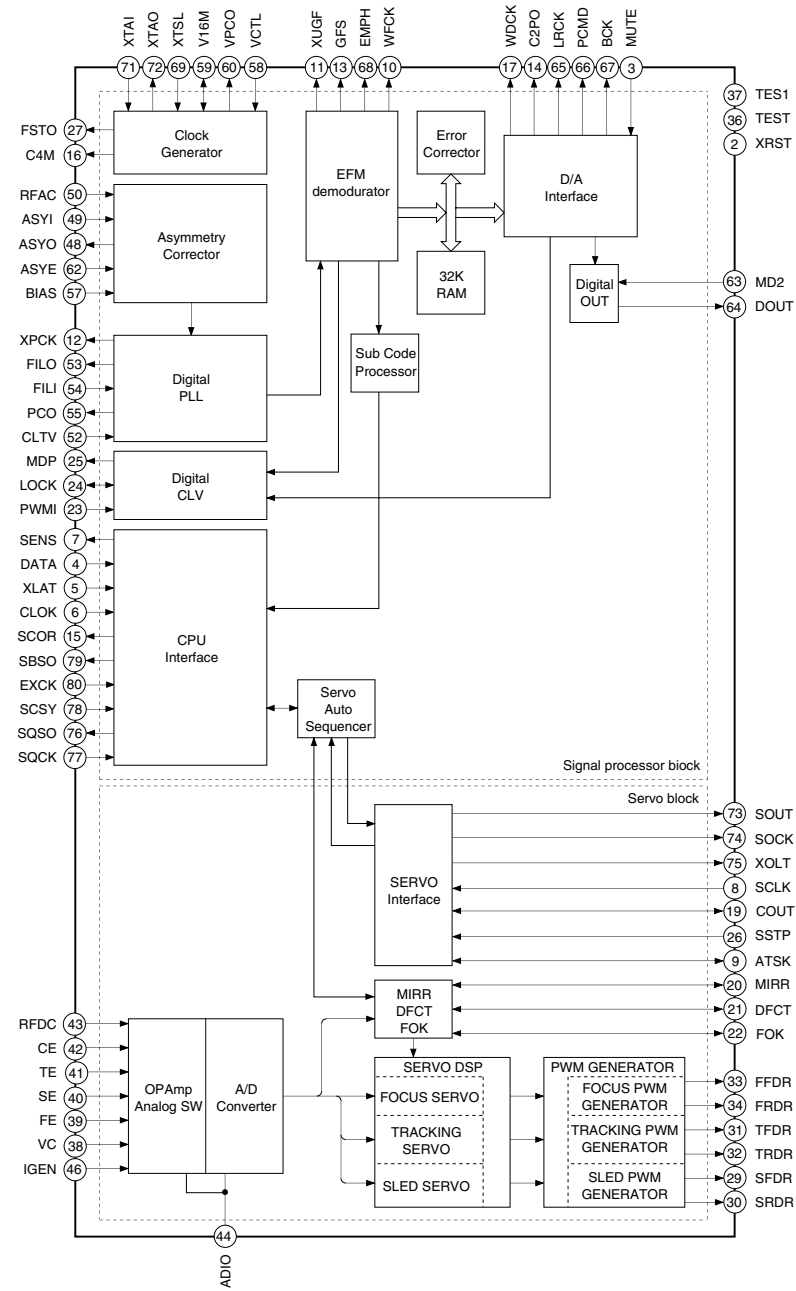
"Test : EE-PROM" と表示されているときに、Play ボタン押すとEEPROMのRead/Write チェックを始めます。チェックに要する時間は約1分間です。  
チェック中は一切のボタン操作が無効となります。  
この時LCDには "ADDR (LOW)" --> "WRITE (LOW)" --> WRITE (HIGH) --> "PAGE WRITE" --> "EEPROM OK!" のように表示されます。  
EEPROMに不具合がある場合は、"EEPROM NG!" が表示されます。  
CUEボタンを押すと Test mode 選択画面 の状態に戻ります。

#### 1.3.5. Pickup の手動移動

"Test :Pickup" と表示されているときに、Play ボタン押すと "Laser power" と表示が変わり Laser Diode がONします。  
Next ボタンで外周へ、Previous ボタンで内周へスレッドが移動します。  
CUEボタンを押すと Test mode 選択画面 の状態に戻ります。



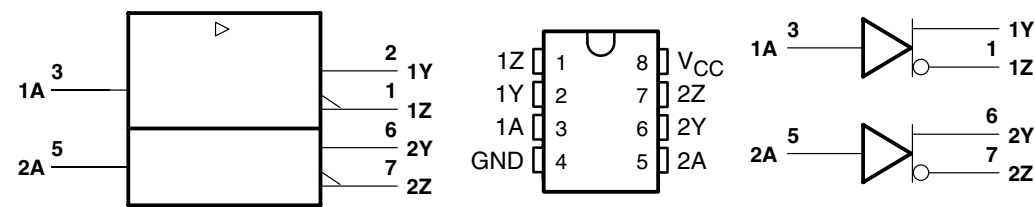
**QD01 : CXD2585Q**



Pin No.	Symbol	I/O	Description
1	DVDD0	-	Power supply.
2	XRST	I	System reset. Reset when low.
3	MUTE	I	Mute input (low: off, high: on)
4	DATA	I	Serial data input from CPU.
5	XLAT	I	Latch input from CPU. Serial data is latched at the falling edge.
6	CLOCK	I	Serial data transfer clock input from CPU.
7	SENS	O 1, 0	SENS output to CPU.
8	SCLK	I	SENS serial data readout clock input.
9	ATSK	I/O 1, 0	Anti-shock input/output.
10	WFCK	O 1, 0	WFCK output.
11	XUGF	O 1, 0	XUGF output. MNT0 or RFCK is output by switching with the command.
12	XPCK	O 1, 0	XPCK output. MNT1 is output by switching with the command.
13	GFS	O 1, 0	GFS output. MNT2 or XROF is output by switching with the command.
14	C2PO	O 1, 0	C2PO output. MNT3 or GTOP is output by switching with the command.
15	SCOR	O 1, 0	Outputs a high signal when either subcode sync SO or S1 is detected.
16	C4M	O 1, 0	4.2336MHz output. 1/4 frequency division output for V16M in CAV-W mode or variable pitch mode.
17	WDCK	O 1, 0	Word clock output. f = 2Fs. GRSCOR is output by the command switching.
18	DVss0	- -	Digital GND.
19	COUT	I/O 1, 0	Track count ,signal I/O.
20	MIRR	I/O 1, 0	Mirror signal I/O.
21	DFCT	I/O 1, 0	Detect signal I/O.
22	FOK	I/O 1, 0	Focus OK signal I/O.
23	PWMI	I	Spindle motor external control input.
24	LOCK	I/O 1, 0	GFS is sampled at 460Hz; when GFS is high, this pin outputs a high signal. If GFS is low eight consecutive samples, this pin outputs low. Input when LKIN=1.
25	MDP	O 1, Z, 0	Spindle motor servo control output.
26	SSTP	I	Disc innermost track detection signal input.
27	FSTO	O 1, 0	2/3 frequency division output for XTAI pin.
28	DVDD1	- -	Digital power supply.
29	SFDR	O 1, 0	Sled drive output.
30	SRDR	O 1, 0	Sled drive output.
31	TFDR	O 1, 0	Tracking drive output.
32	TRDR	O 1, 0	Tracking drive output.
33	FFDR	O 1, 0	Focus drive output.
34	FRDR	O 1, 0	Focus drive output.
35	DVss1	- -	Digital GND.
36	TEST	I	Test. Normally, GND.

Pin NO.	Symbol	I/O	Description
37	TES1	I	Test. Normally, GND.
38	VC	I	Center voltage input.
39	FE	I	Focus error signal input.
40	SE	I	Sled error signal input.
41	TE	I	Tracking error signal input.
42	CE	I	Center servo analog input.
43	RFDC	I	RF signal input.
44	ADIO	O Analog	Test. No connected.
45	AVss0	- -	Analog GND.
46	IGEN	I	Constant current input for operational amplifier.
47	AVDD0		Analog power supply.
48	ASYO	O 1, 0	EFM full-swing output. (low = Vss, high = VDD)
49	ASYI	I	Asymmetry comparator voltage input.
50	RFAC	I	EFM signal input.
51	AVss1	- -	Analog GND.
52	CLTV	I	Multiplier VCO1 control voltage input.
53	FILO	O Analog	Master PLL filter output (slave = digital PLL).
54	FILI	I	Master PLL filter input.
55	PCO	O 1, Z, 0	Master PLL charge pump output.
56	AVDD1	- -	Analog power supply.
57	BIAS	I	Asymmetry circuit constant current input.
58	VCTL	I	Wide-band EFM PLL VC02 control voltage input.
59	V16M	I/O 1, 0	Wide-band EFM PLL VC02 oscillation output. Serves as wide-band EFM PLL clock input by switching with the command.
60	VPCO	O 1, Z, 0	Wide-band EFM PLL charge pump output.
61	DVDD2	- -	Digital power supply.
62	ASYE	I	Asymmetry circuit on/off (low = oft, high = on).
63	MD2	I	Digital Out on/off control (low = off, high = on).
64	DOUT	O 1, 0	Digital Out output.
65	LRCK	O 1, 0	D/A interface. LR clock output. f = Fs
66	PCMD	O 1, 0	D/A interface. Serial data output (two's complement, MSB first).
67	BCK	O 1, 0	D/A interface. Bit clock output.
68	EMPH	O 1, 0	Outputs a high signal when the playback disc has emphasis, and a low signal when there is no emphasis.
69	XTSL	I	Crystal selection input. Low when the crystal is 16.9344MHZ; high when it is 33.8688MHZ.
70	DVss2	- -	Digital GND.
71	XTAI	I	Crystal oscillation circuit input. When the master clock is input externally, input it from this pin.
72	XTAO	O	Crystal oscillation circuit output.

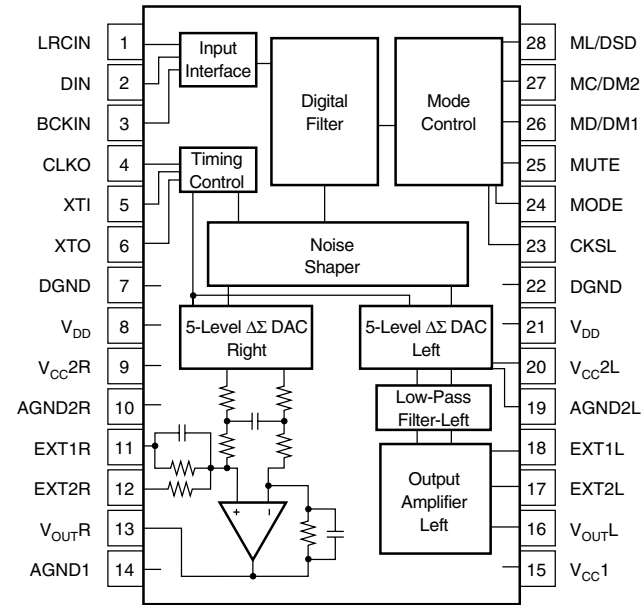
**QT52 : SN75158**



Pin NO.	Symbol	I/O	Description
73	SOUT	O 1, 0	Serial data output in servo block.
74	SOCK	O 1, 0	Serial data readout clock output in servo block.
75	XOLT	O 1, 0	Serial data latch output in servo block.
76	SQSO	O 1, 0	Sub-Q 80-bit, PCM peak or level data outputs. CD TEXT data output.
77	SQCK	I	SQSO readout clock input.
78	SCSY	I	GRSCOR resynchronization input.
79	SBSO	O 1, 0	Sub-Q P to W serial output.
80	EXCK	I	SBSO readout clock input.

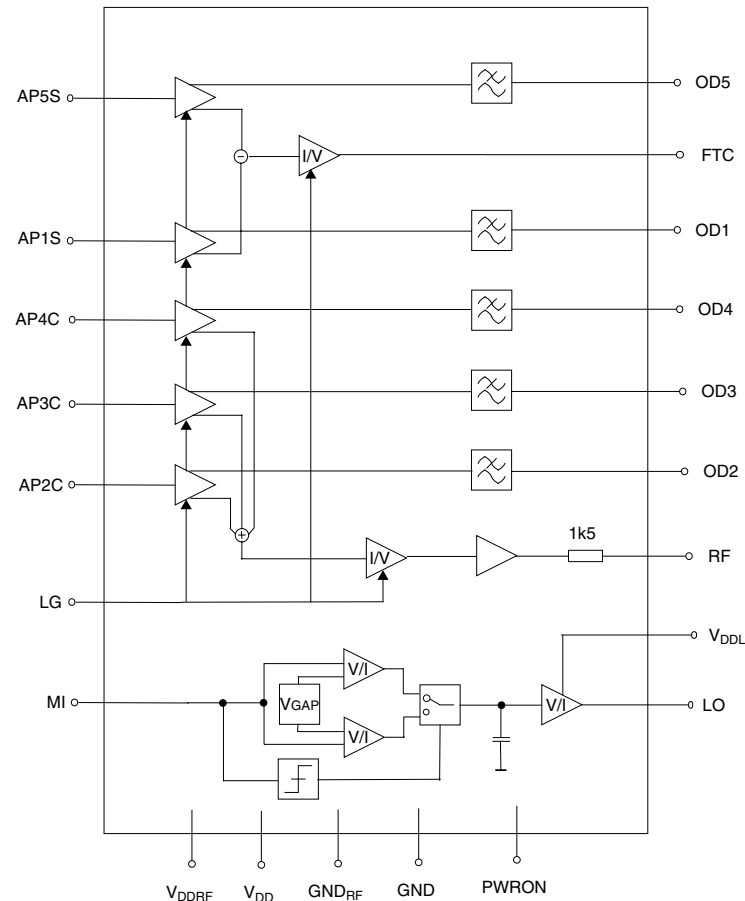
- Notes)
- \* PCMD is a MSB first, two's complement output.
  - \* GTOP is used to monitor the frame sync protection status. (High: sync protection window released.)
  - \* XUGF is the frame sync obtained from the EFM signal, and is negative pulse. It is the signal before sync protection.
  - \* XPCK is the inverse of the EFM PLL clock. The PLL is designed so that the falling edge and the EFM signal transition point coincide.
  - \* The GFS signal goes high when the frame sync and the insertion protection timing match.
  - \* RFCK is derived from the crystal accuracy, and has a cycle of 136us. (during normal speed)
  - \* C2PO represents the data error status.
  - \* XROF is generated when the 32K RAM exceeds the +-28F jitter margin.

**Q501 : PCM1710**



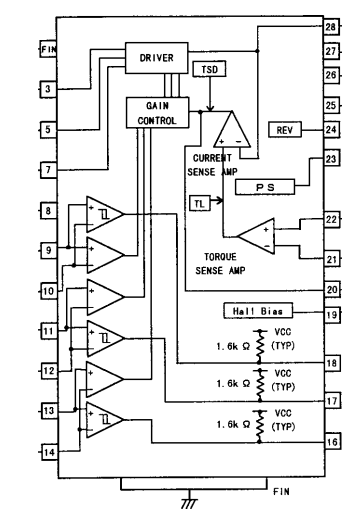
PIN NAME	NUMBER	FUNCTION
<b>Input Interface Pins</b>		
LRCIN	1	Sample Rate Clock Input. Controls the update rate (fs).
DIN	2	Serial Data Input. MSB first, right justified format contains a frame of 16-bit or 20-bit data.
BCKIN	3	Bit Clock Input. Clocks in the data present on DIN input.
<b>Mode Controls and Clock Signals</b>		
CLKO	4	Buffered Output of Oscillator. Equivalent to fs.
XTI	5	Oscillator Input (External Clock Input). For an internal clock, tie XTI to one side of the crystal oscillator. For an external clock, tie XTI to the output of the chosen external clock.
XTO	6	Oscillator Output. When using the internal clock, tie to the opposite side (from pin 5) of the crystal oscillator. When using an external clock, leave XTO open.
CKSL	23	System Clock Select. For 384fs, tie CKSL "High". For 256fs, tie CKSL "Low".
MODE	24	Operation Mode Select. For serial mode, tie MODE "High". For parallel mode, tie MODE "Low".
MUTE	25	Mute Control. To disable soft mute, tie MUTE "High". To enable soft mute, tie MUTE "Low".
MD/DM1	26	Mode Control for Data/De-emphasis. See "Mode Control Functions" on page 11.
MC/DM2	27	Mode Control for BCKIN/De-emphasis. See "Mode Control Functions" on page 11.
ML/DSD	28	Mode Control for WDCK/Double speed dubbing. See "Mode Control Functions" on page 11.
<b>Analog Functions</b>		
V <sub>OUTR</sub>	13	Right Channel Analog Output.
V <sub>OUTL</sub>	16	Left Channel Analog Output.
<b>Power Supply Connections</b>		
DGND	7, 22	Digital Ground.
V <sub>DD</sub>	8, 21	Digital Power Supply (+5V).
V <sub>CC2R</sub>	9	Analog Power Supply (+5V), Right Channel DAC.
AGND2R	10	Analog Ground (DAC), Right Channel.
EXT1R	11	Output Amplifier Common, Right Channel. Bypass to ground with a 10μF capacitor.
EXT2R	12	Output Amplifier Bias, Right Channel. Connect to EXT1R.
AGND	14	Analog Ground.
V <sub>CC</sub>	15	Analog Power Supply (+5V).
EXT2L	17	Output Amplifier Bias, Left Channel. Connect to EXT1L.
EXT1L	18	Output Amplifier Common, Left Channel. Bypass to ground with a 10μF capacitor.
AGND2L	19	Analog Ground (DAC), Left Channel.
V <sub>CC2L</sub>	20	Analog Power Supply (+5V), Left Channel DAC.

**Q101 : TZA1022**



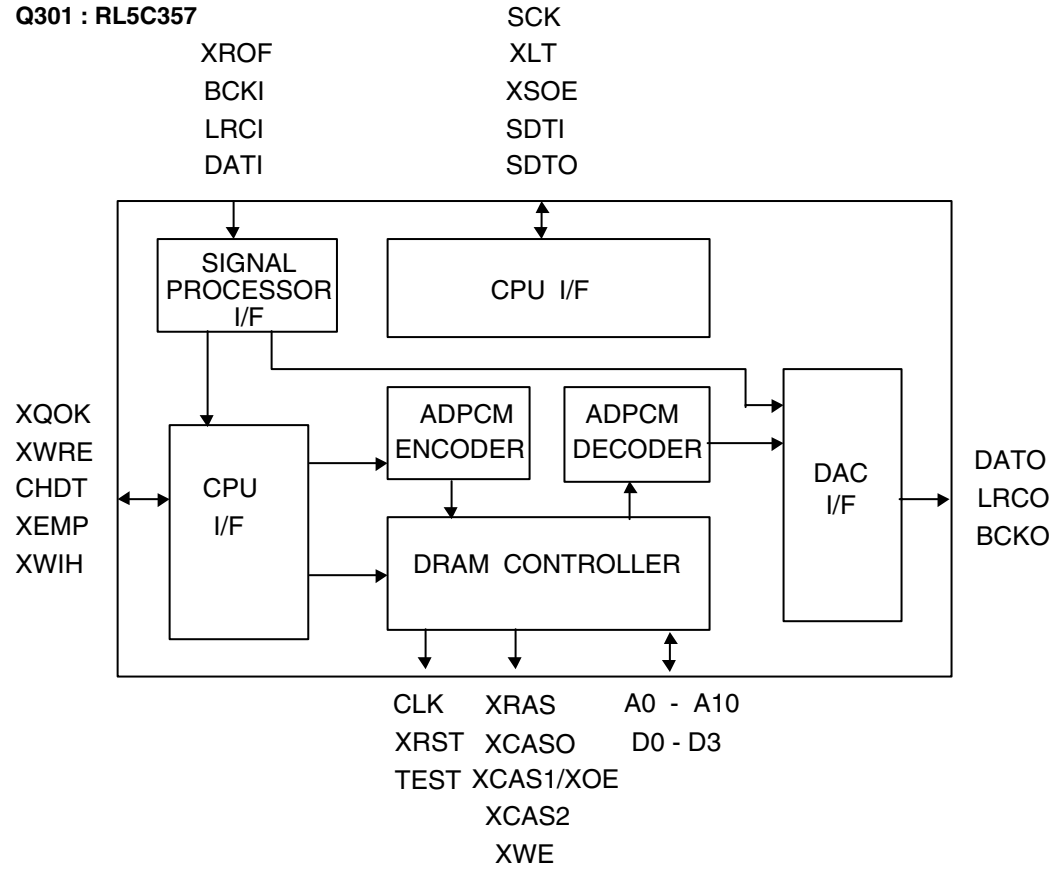
SYMBOL	PIN	DESCRIPTION
OD2	1	output photo diode amplifier 2
OD3	2	output photo diode amplifier 3
OD4	3	output photo diode amplifier 4
OD5	4	output photo diode amplifier 5
OD1	5	output photo diode amplifier 1
PWRON	6	power on switch
RF	7	output data signal
V <sub>DDRF</sub>	8	RF amplifier supply voltage
V <sub>DD</sub>	9	supply voltage
GND	10	ground
GND <sub>RF</sub>	11	ground RF amplifier
V <sub>DDL</sub>	12	laser supply voltage
LO	13	current output for the laser diode
MI	14	Monitor input
n.c.	15	not connected
n.c.	16	not connected
AP1S	17	Input photo diode amplifier (satellite)
AP2C	18	Input photo diode amplifier (central)
n.c.	19	not connected
FTC	20	output fast track counting
LG	21	CD/CDRW gain switch
AP3C	22	Input photo diode amplifier (central)
AP5S	23	Input photo diode amplifier (satellite)
AP4C	24	Input photo diode amplifier (central)

**Q251 : BA6856FP**



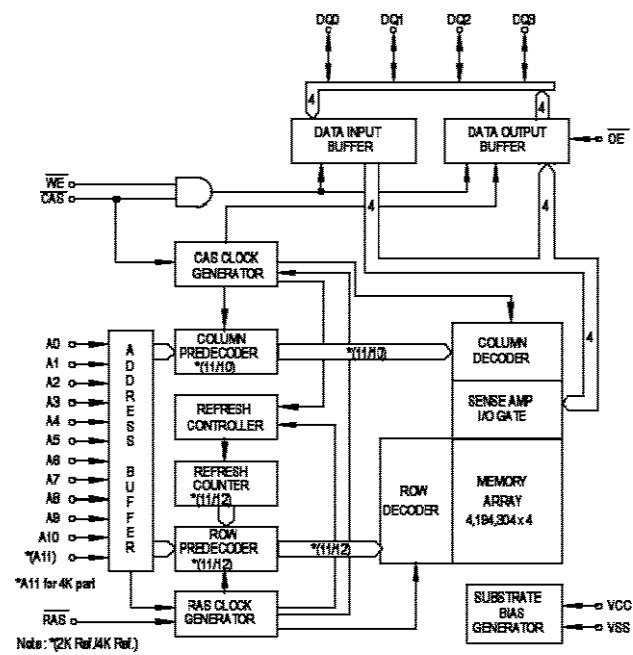
PIN No	端子名 /Pin Name	機能 /Function
1	N.C.	N.C.
2	N.C.	N.C.
3	A <sub>2</sub>	出力端子/Output3 for motor
4	N.C.	N.C.
5	A <sub>2</sub>	出力端子/Output2 for motor
6	N.C.	N.C.
7	A <sub>1</sub>	出力端子/Output1 for motor
8	GND	GND端子/GND
9	H <sub>1</sub> <sup>+</sup>	ホール信号入力端子/Hall input Amp1. positive input
10	H <sub>1</sub> <sup>-</sup>	ホール信号入力端子/Hall input Amp1. negative input
11	H <sub>2</sub> <sup>+</sup>	ホール信号入力端子/Hall input Amp2. positive input
12	H <sub>2</sub> <sup>-</sup>	ホール信号入力端子/Hall input Amp2. negative input
13	H <sub>3</sub> <sup>+</sup>	ホール信号入力端子/Hall input Amp3. positive input
14	H <sub>3</sub> <sup>-</sup>	ホール信号入力端子/Hall input Amp3. negative input
15	N.C.	N.C.
16	FG3	FG信号出力端子/FG3 signal output terminal
17	FG2	FG信号出力端子/FG2 signal output terminal
18	FG1	FG信号出力端子/FG1 signal output terminal
19	V <sub>H</sub>	ホールバイアス端子/Hall Bias
20	C <sub>NP</sub>	位相補償用コンデンサ接続端子 /Capacitor connection pin for phase compensation
21	E <sub>CR</sub>	出力電圧制御標準端子 /Torque control standard voltage input terminal
22	E <sub>C</sub>	出力電圧制御端子/Torque control voltage input terminal
23	PS	パワーセーブ端子/ POWER SAVE switch
24	REV	逆転端子/Reverse terminal
25	V <sub>CC</sub>	電源端子/Power supply for signal division
26	V <sub>M2</sub>	12V用電源端子/Power supply2 for driver
27	V <sub>M1</sub>	モータ電源端子/Power supply1 for driver
28	R <sub>HP</sub>	出力電流検出用抵抗接続端子 /Power supply for driver division
FIN	FIN	GND

**Q301 : RL5C357**

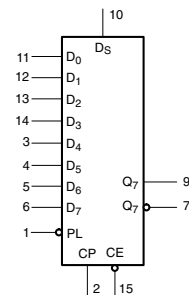


Pin	PIN NAME	I/O	FUNCTION	LOGIC	
				H	L
1	VCC	--	POWER SUPPLY	--	--
2	XQOK	Ipu	SUB CODE-Q OK SIGNAL FROM CPU	--	OK
3	XWRE	Ipu	WRITE ENABLE SIGNAL FROM CPU	--	PERMIT
4	XEMP	O	READ INHIBIT SIGNAL TO CPU	--	INHIBIT
5	XWIH	O	WRITE INHIBIT SIGNAL TO CPU	--	INHIBIT
6	XCAS2	O	DRAM CAS2 CONTROL	--	--
7	CHDT	O	DATA COMPARATIVE MONITOR SIGNAL OUTPUT TO CPU	COMPARE	--
8	A10	O	DRAM ADDRESS 10	--	--
9	CLK	I	16.9344MHz CLOCK INPUT	--	--
10	GND	--	GROUND	--	--
11	DATI	Ics	AUDIO DATA INPUT	--	--
12	LRCI	Ics	AUDIO L/R CLOCK INPUT	Lch	Rch
13	BCKI	Ics	AUDIO BIT CLOCK INPUT	--	--
14	BCKO	O	AUDIO BIT CLOCK OUTPUT	--	--
15	LRCO	O	AUDIO L/R CLOCK OUTPUT	Lch	Rch
16	DATO	O	AUDIO DATA OUTPUT	--	--
17	XROF	Ics	RAM OVERFLOW FROM SIGNAL PROCESSOR IC	--	OVER FLOW
18	RFCK	Ipu	FRAME CLOCK FROM SIGNAL PROCESSOR IC, DERIVED FROM THE CRYSTAL ACCURACY	--	--
19	SCOR	I	SUB CODE SYNC DETECT SIGNAL FROM SIGNAL PROCESSOR IC	--	--
20	XRST	Ics	SYSTEM RESET	--	RESET
21	SDTO	O	SERIAL DATA OUTPUT TO CPU	--	--
22	XSOE	Ipu	SERIAL DATA OUTPUT PERMISSION SIGNAL INPUT FROM CPU	--	PERMIT
23	TEST	Ipd	TEST MODE	--	--
24	XLT	Ics	LATCH INPUT FROM CPU	--	--
25	SDTI	Ics	SERIAL DATA INPUT FROM CPU	--	--
26	SCK	Ics	SERIAL DATA TRANSFER CLOCK INPUT FROM CPU	--	--
27	XCAS1/XOE	O	DRAM CAS1/OE CONTROL	--	--
28	XCAS0	O	DRAM CAS0 CONTROL	--	--
29	D2	I/O	DRAM DATA 2	--	--
30	D3	I/O	DRAM DATA 3	--	--
31	D0	I/O	DRAM DATA 0	--	--
32	D1	I/O	DRAM DATA 1	--	--
33	XWE	O	DRAM WE CONTROL	--	--
34	XRAS	O	DRAM RAS CONTROL	--	--
35	A9	O	DRAM ADDRESS 9		
36	A8	O	DRAM ADDRESS 8		
37	A7	O	DRAM ADDRESS 7		
38	A6	O	DRAM ADDRESS 6		
39	A5	O	DRAM ADDRESS 5		
40	A4	O	DRAM ADDRESS 4		
41	A0	O	DRAM ADDRESS 0		
42	A1	O	DRAM ADDRESS 1		
43	A2	O	DRAM ADDRESS 2		
44	A3	O	DRAM ADDRESS 3		

**Q302 : HY5117400BJ-60**



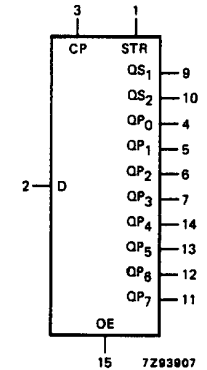
**QU57 QU58 : 74HC165**



PIN NUMBER	SYMBOL	FUNCTION
1	$\overline{PL}$	Asynchronous parallel load input (active LOW)
2	CP	Clock input (LOW to HIGH, edge-triggered)
7	$\overline{Q_7}$	Complementary output from the last stage
8	GND	Ground (0 V)
9	$Q_7$	Serial output from last stage
10	$D_S$	Serial data input
11, 12, 13, 14, 3, 4, 5, 6	$D_0$ to $D_7$	Parallel data inputs
15	$\overline{CE}$	Clock enable input (active LOW)
16	$V_{CC}$	Positive supply voltage

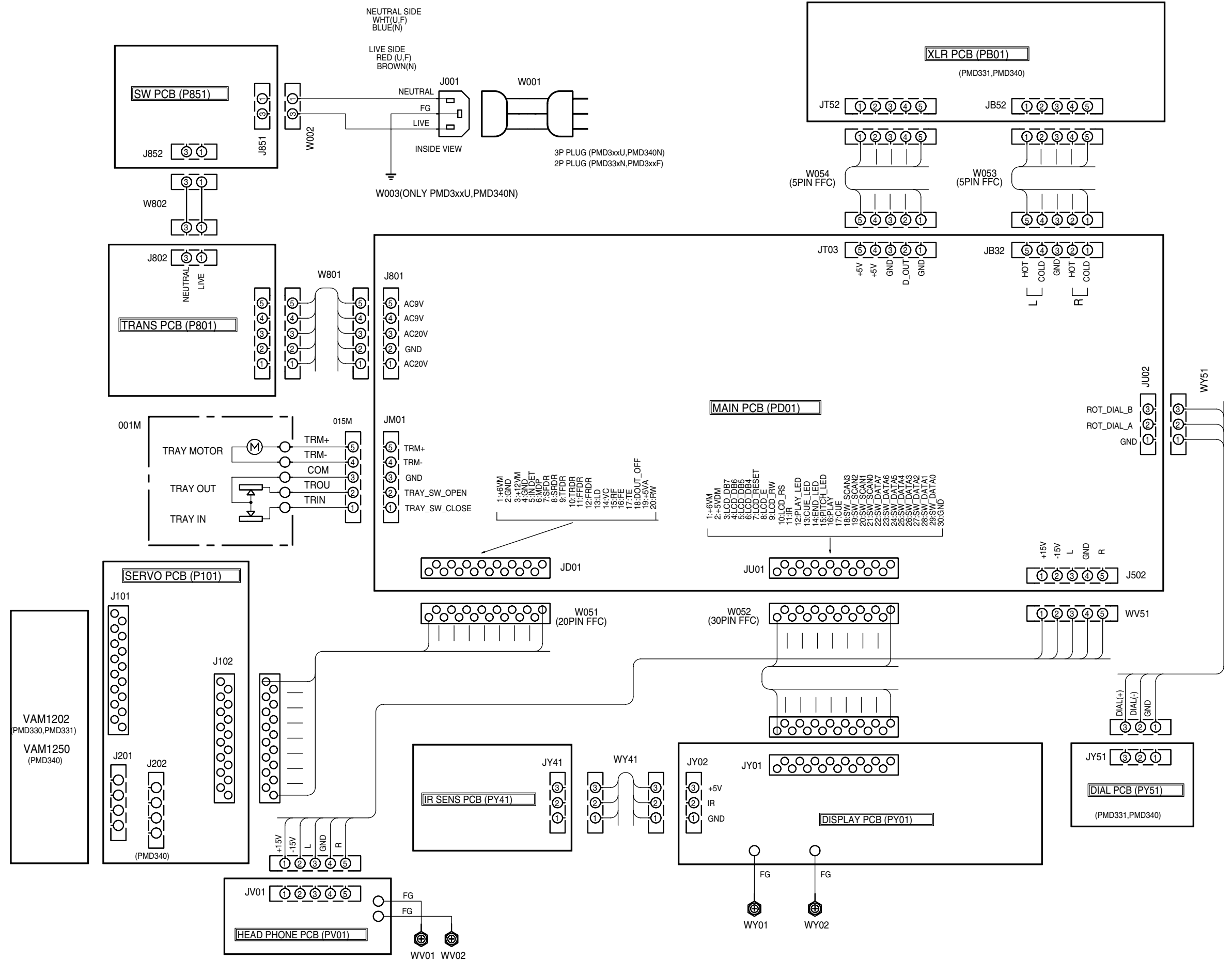
**QU04 QU56 : 74HC4094**

PIN NO.	SYMBOL	NAME AND FUNCTION
1	STR	strobe input
2	D	serial input
3	CP	clock input
4, 5, 6, 7, 14, 13, 12, 11	$QP_0$ to $QP_7$	parallel outputs
8	GND	ground (0 V)
9, 10	$QS_1, QS_2$	serial outputs
15	OE	output enable input
16	$V_{CC}$	positive supply voltage

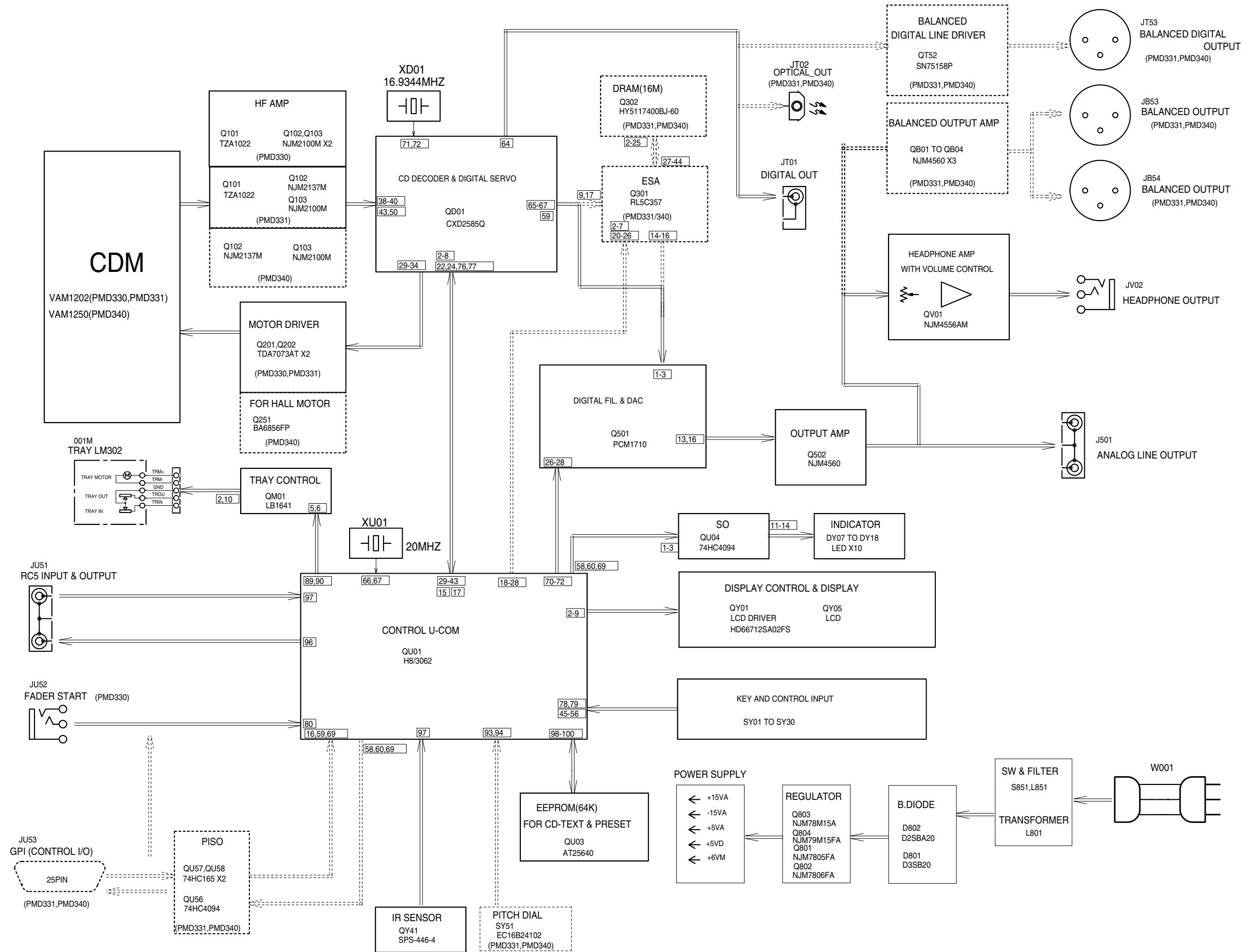




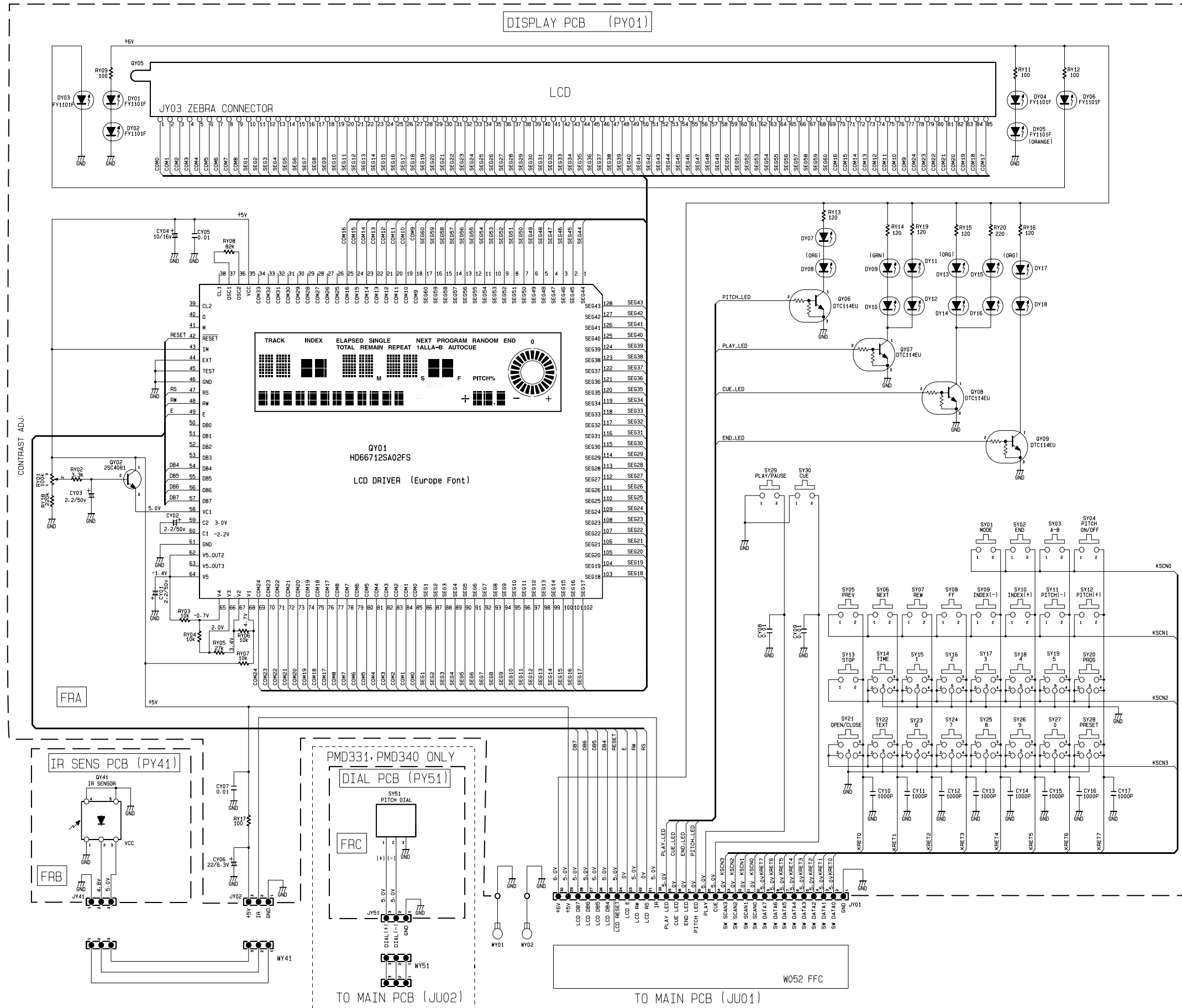
# 6. WIRING DIAGRAM

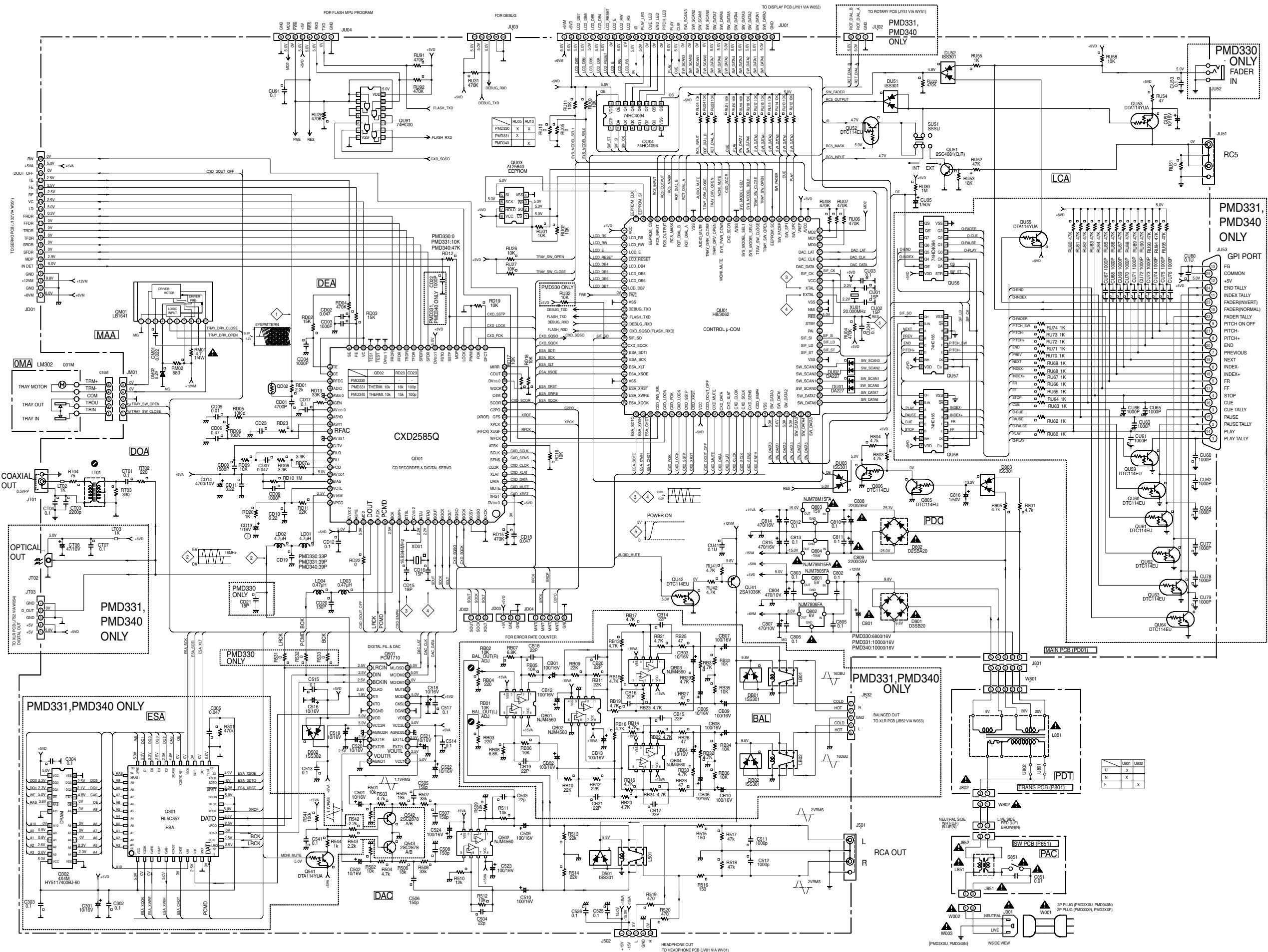


# 7. BLOCK DIAGRAM

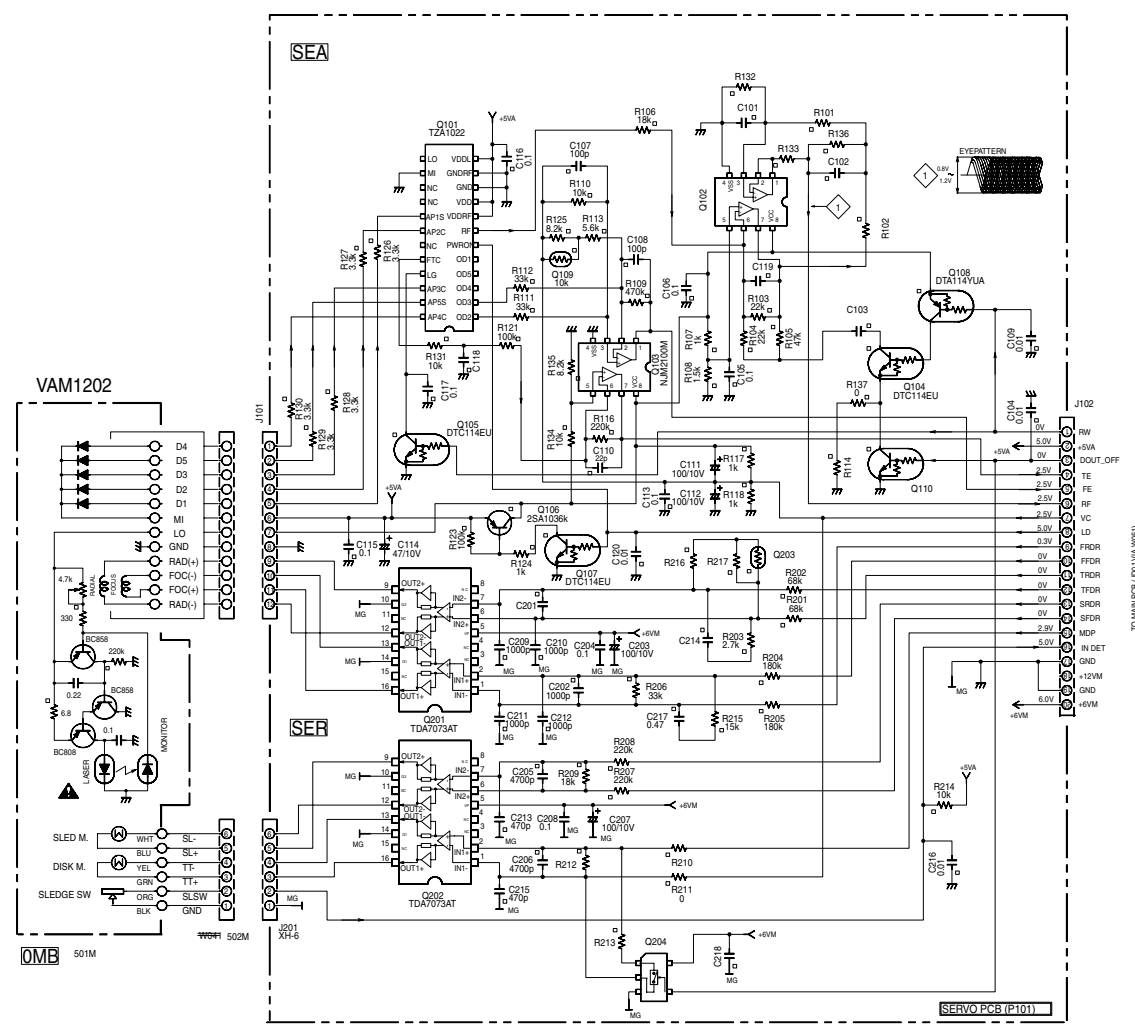


# 8. SCHEMATIC DIAGRAM





PMD330, PMD331 ONLY

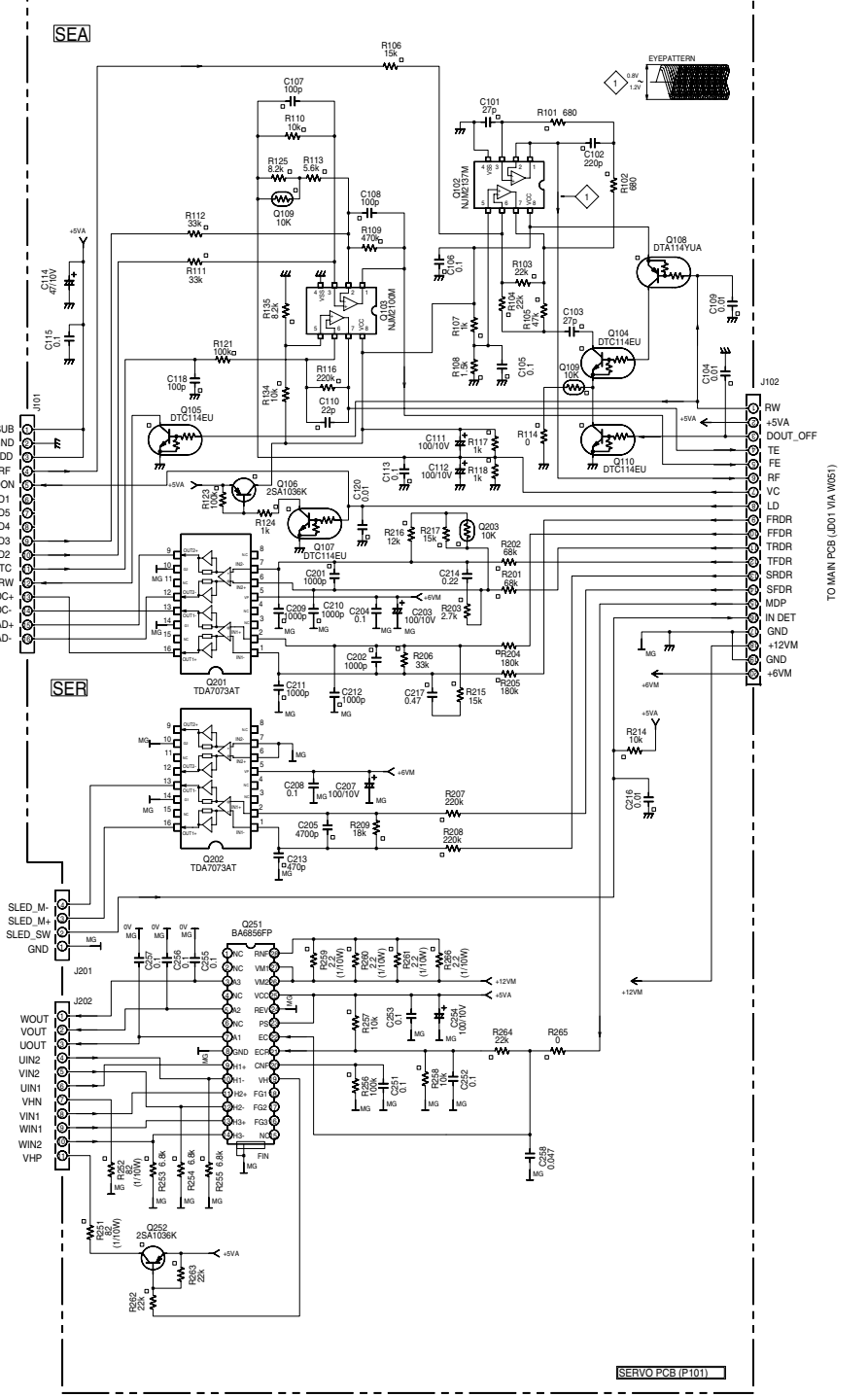
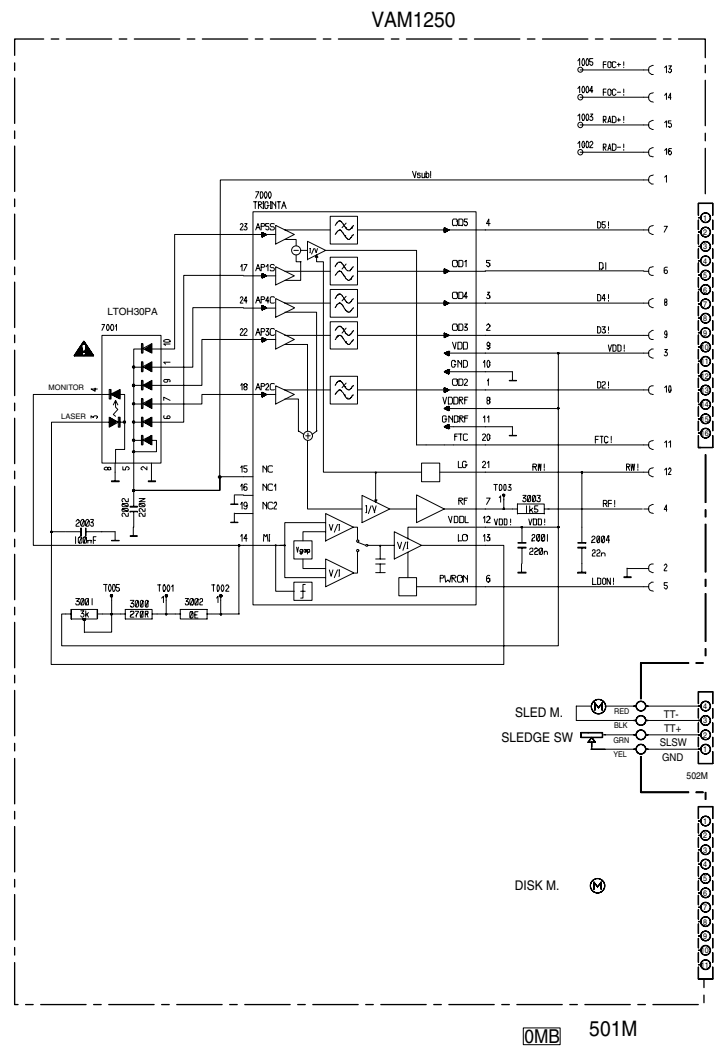


	Q102	R101	R102	R132	R133	R136	C101	C102	C103	C119	Q110	R114	C118
PMD330	NJM2100M	—	0	0	—	0	—	—	10p	2p	—	0	100p
PMD331	NJM2137M	680	680	—	0	—	27p	220p	27p	—	DTC114EU	47k	47p

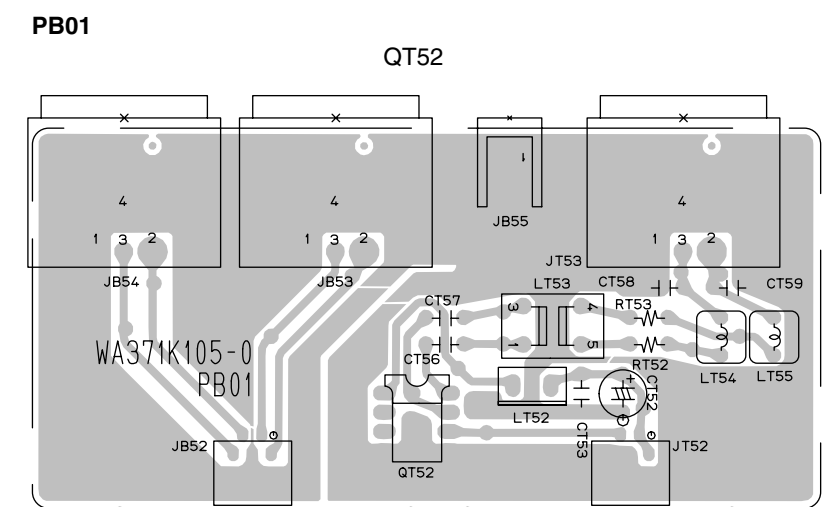
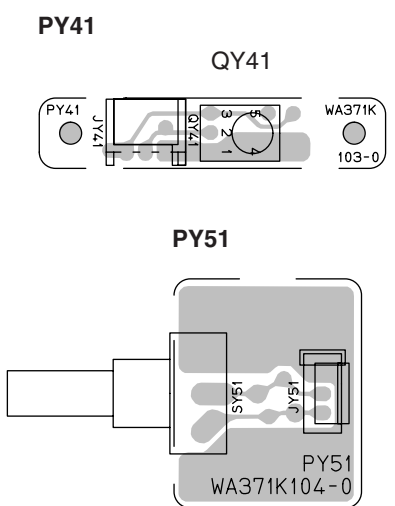
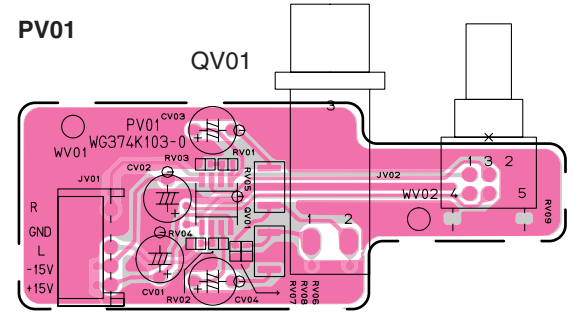
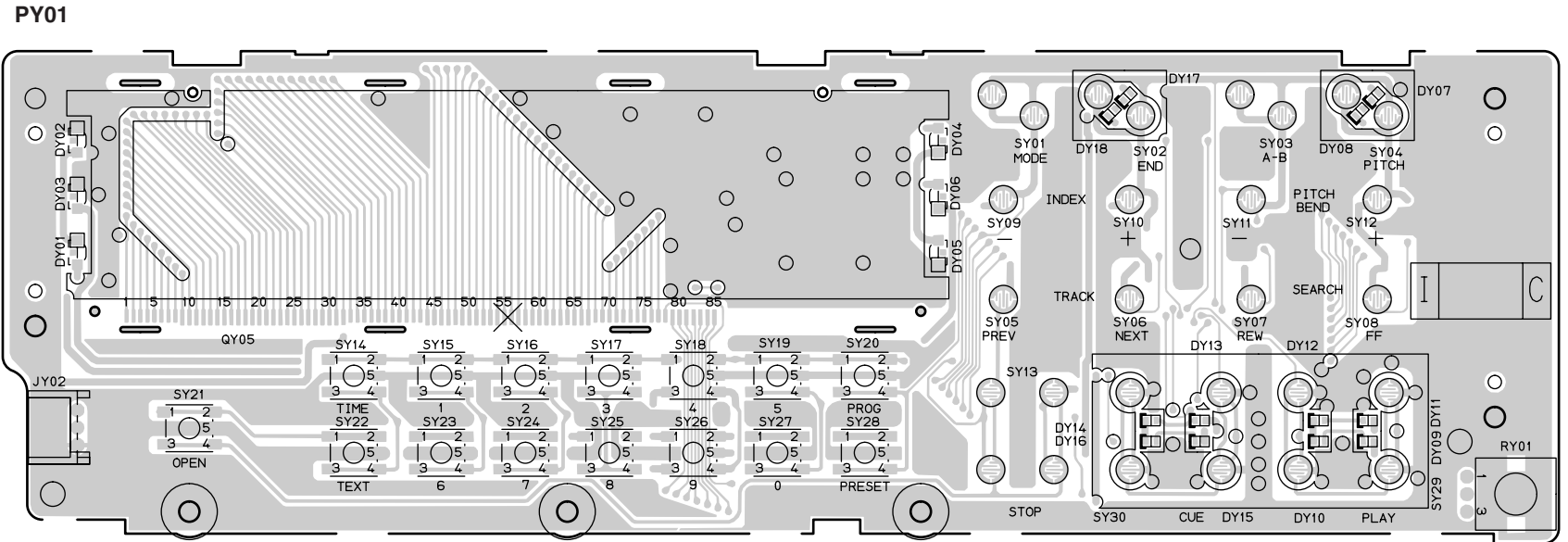
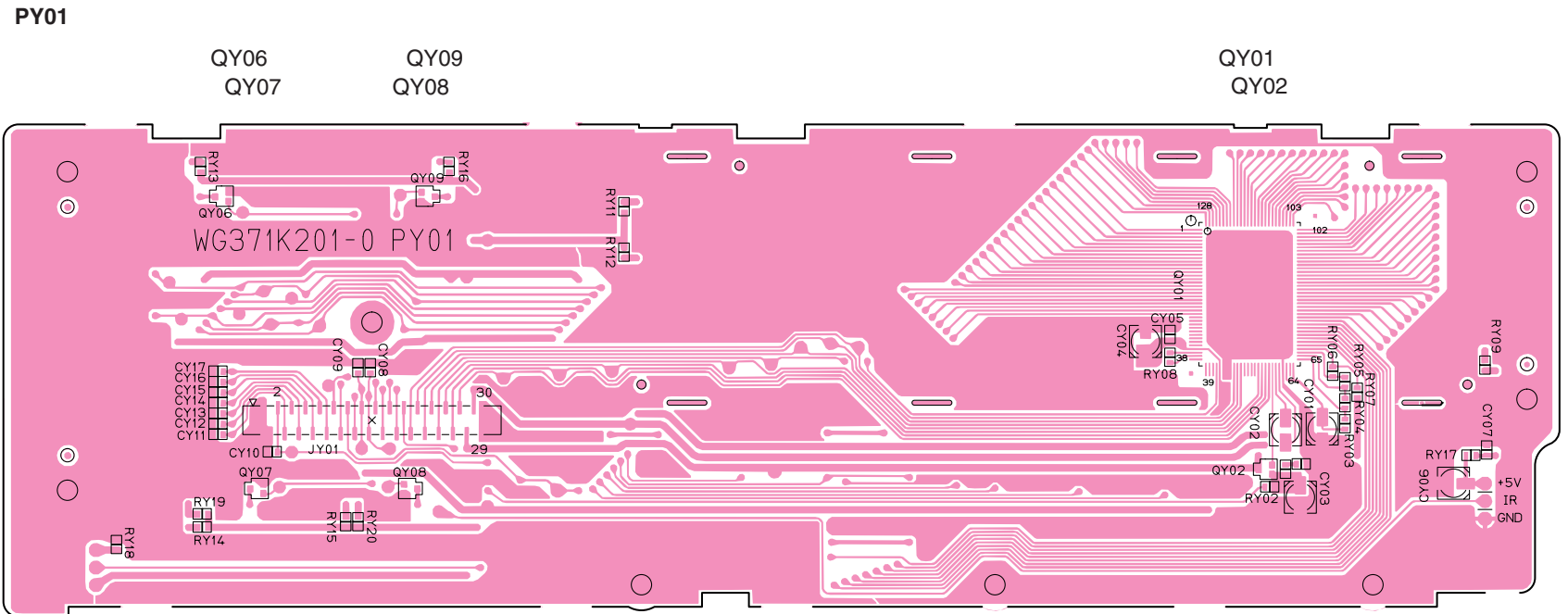
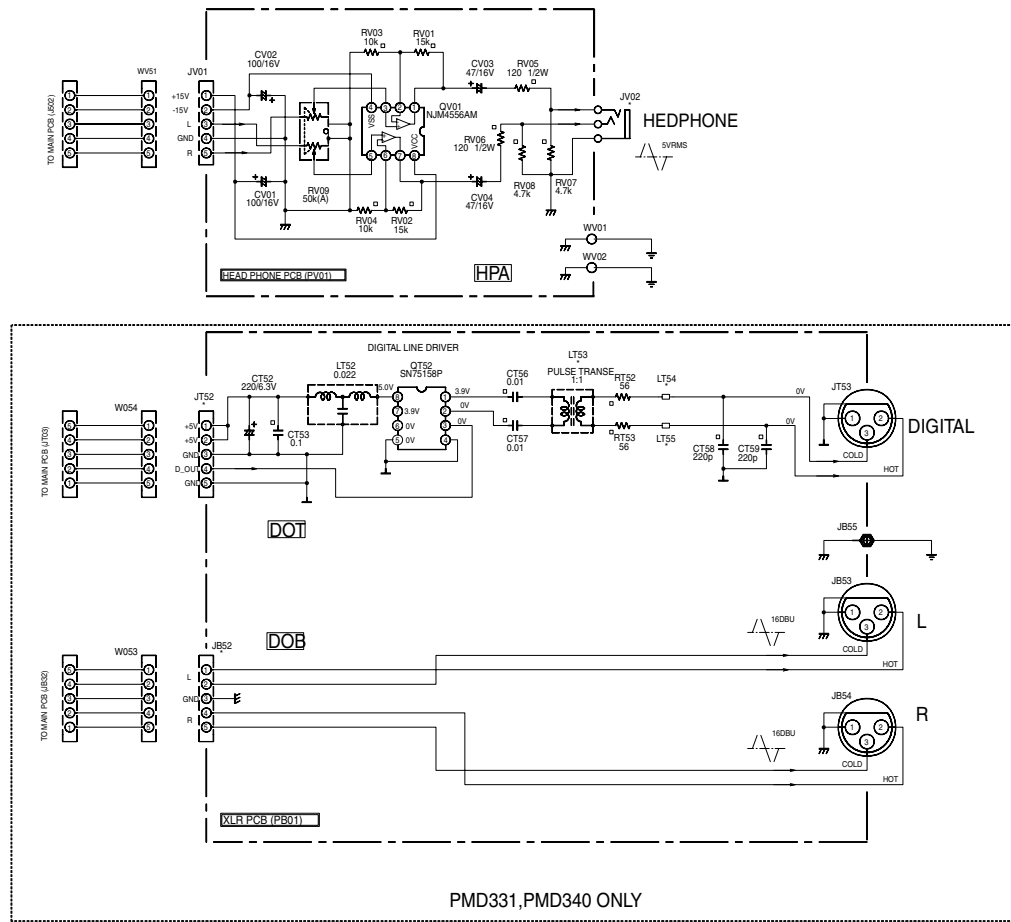
  

	Q203	R216	R217	C201	C214	Q204	R210	R212	R213	C218
PMD330	—	0	8.2k	4700p	0.47	—	22k	1k	—	—
PMD331	10k 7H	12k	15k	1000p	0.22	TC4566F	0	4.7k	1k	0.1

PMD340 ONLY



### 9. PARTS LOCATION



PD01

Q301 Q302  
Q501 Q541  
Q502

QB03 QB02  
QB01

QU41 QU42  
QB04

QU91

QU04

QU01

QD01

QU03  
QU52 QU51

Q802 Q801  
Q804

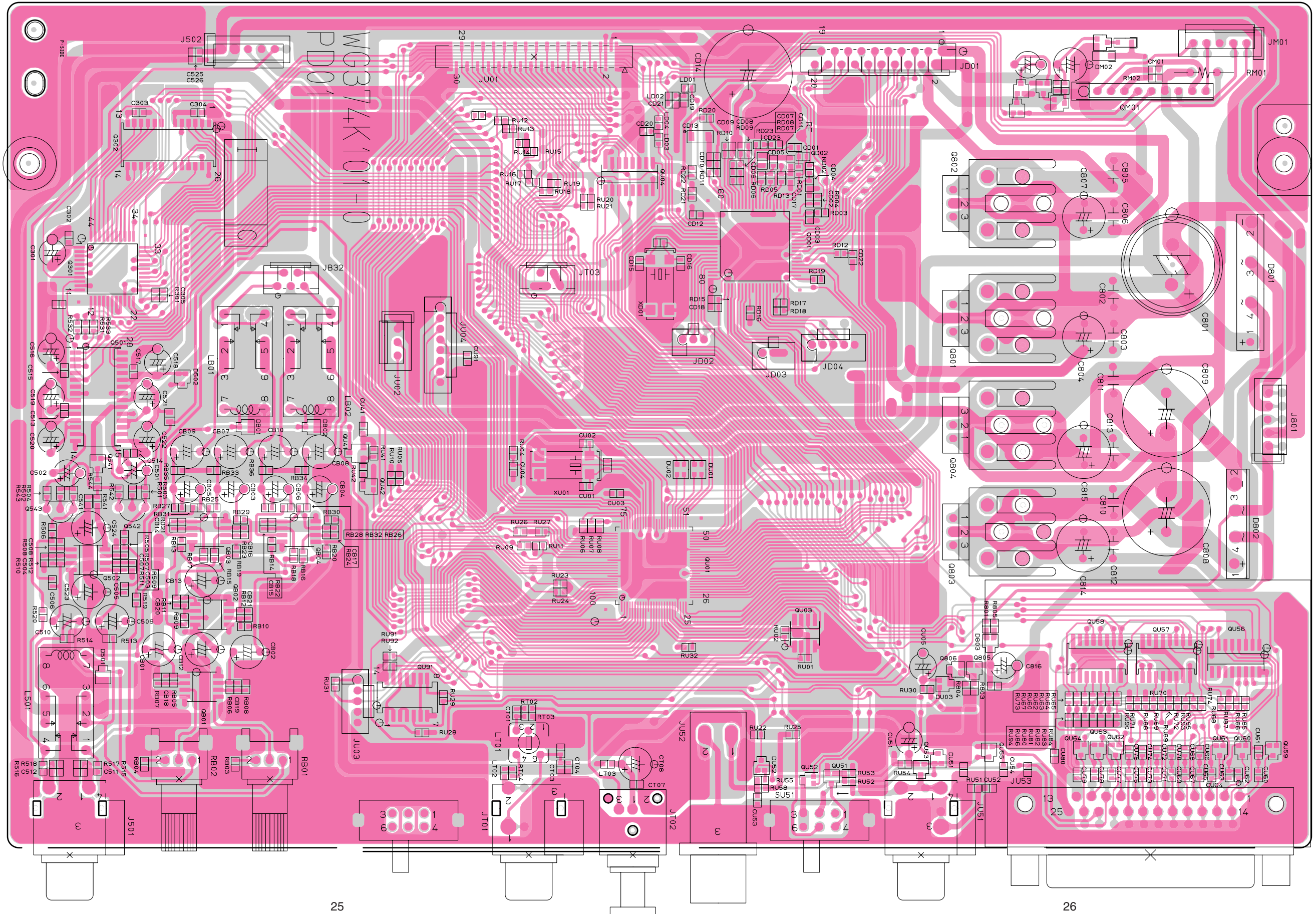
Q803  
Q806 Q805

QM01

QU58  
QU64 QU63 QU62

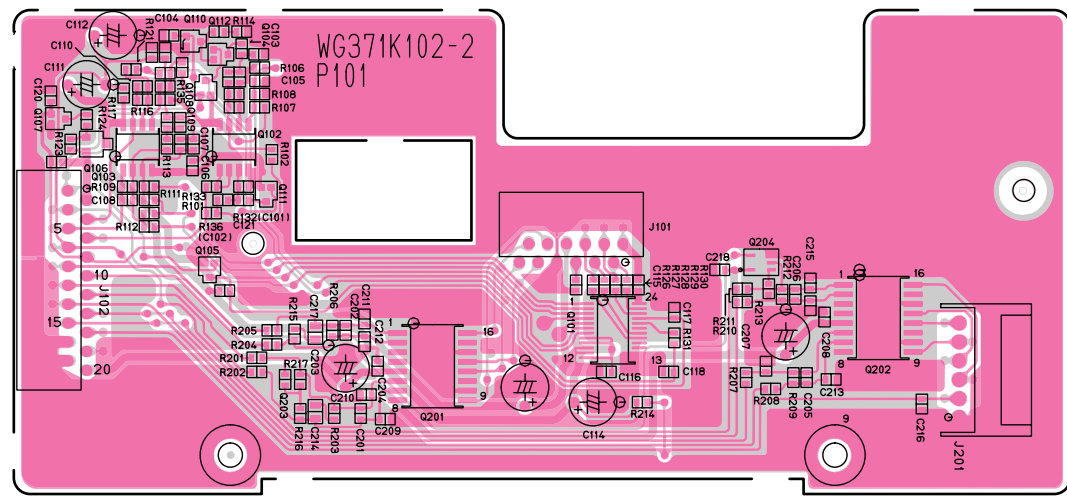
QU57

QU56  
Q61 QU60 QU59

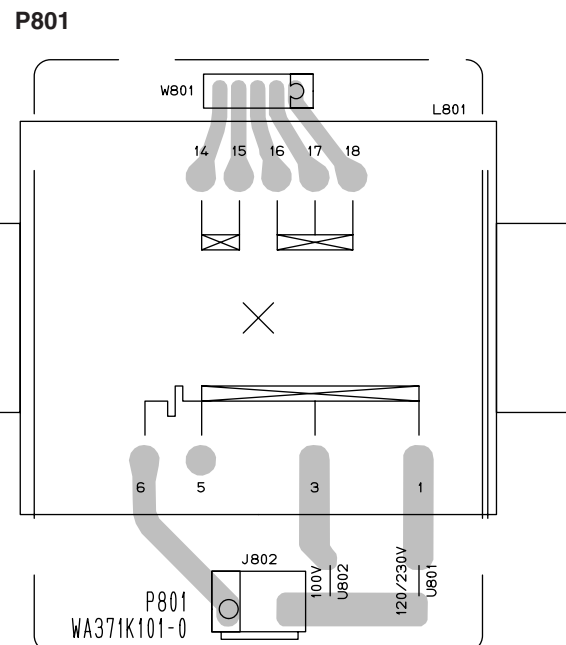
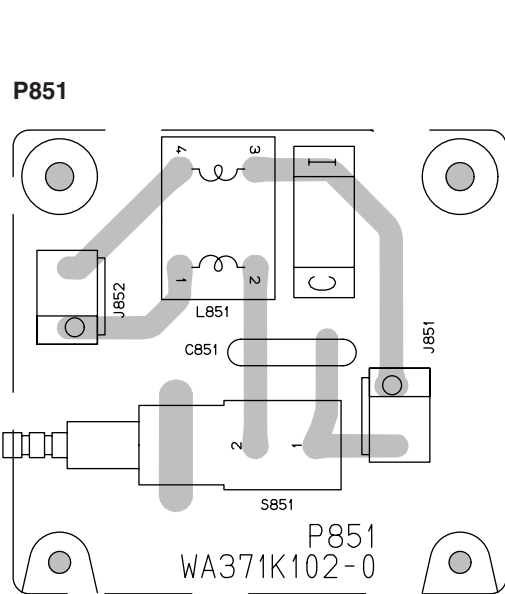
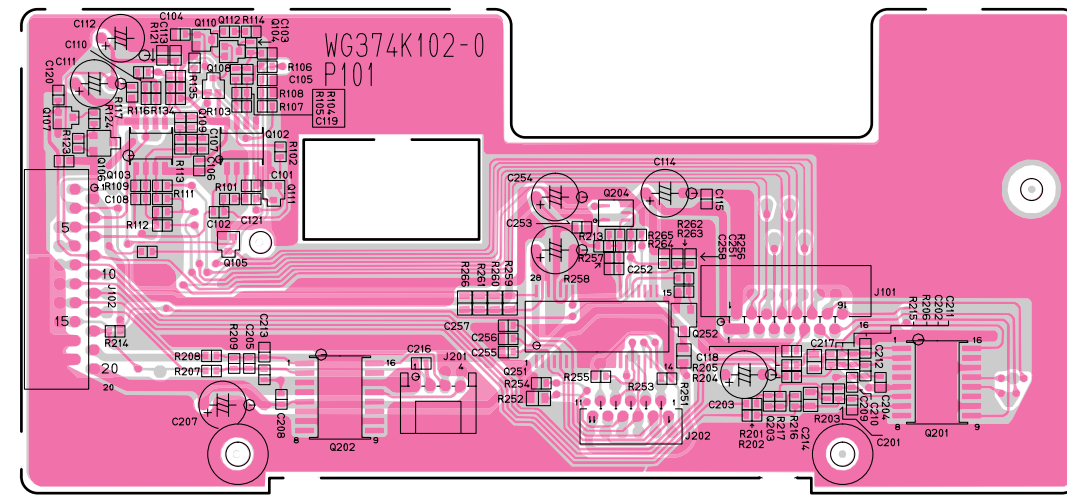


10. EXPLODED VIEW AND PARTS LIST

**P101 (PMD330, PMD331)**  
Q110 Q108 Q112  
Q107 Q106 Q103 Q102  
Q105 Q111 Q201 Q101 Q204 Q202



**P101 (PMD340)**  
Q110 Q108 Q112  
Q107 Q106 Q103 Q102  
Q105 Q111 Q202 Q251 Q204 Q252 Q201

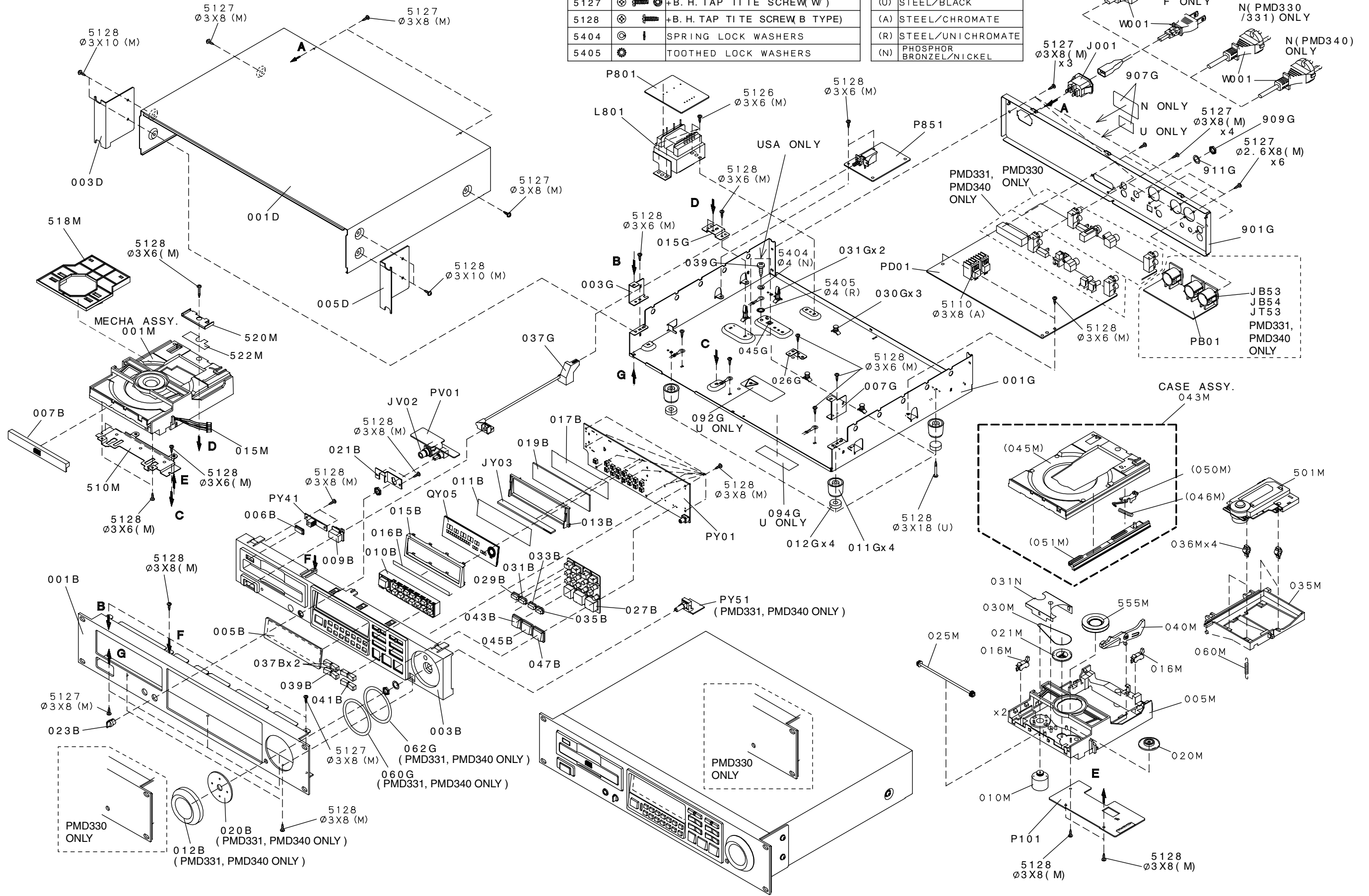


POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MUJ)
001B	BLACK		FRONT PANEL PMD330 BLK	371K248010	062G			STICKER	***
001B	GRAY	9965 000 01604	FRONT PANEL PMD330 GRAY	371K248020	092G			INNER LASER CAUTION	***
001B	BLACK		FRONT PANEL PMD331 BLK	371K248110	094G			LABEL LASER CAUTION	***
001B	GRAY	9965 000 01726	FRONT PANEL PMD331 GRAY	371K248120	901G			REAR PANEL	***
001B	BLACK		FRONT PANEL PMD340 BLK	371K248210	907G			LABEL	***
001B	GRAY	9965 000 01721	FRONT PANEL PMD340 GRAY	371K248220	909G			B.H. TAP. SCREW	***
					911G			PH.TAP.SCREW	***
003B	BLACK		FRONT CHASSIS PMD330 BLK	371K105020	001M		9965 000 01625	NEW LOADER LM302	305K304680
003B	GRAY	9965 000 01605	FRONT CHASSIS PMD330 GRAY	371K105030				OLD TRAY BLK	
003B	BLACK		FRONT CHASSIS BLACK	371K105040	005M		4822 464 10054	FRAME K	305K401500
003B	GRAY	9965 000 01722	FRONT CHASSIS PMD331/340 GRAY	371K105050	010M		4822 361 21741	MOTOR	MM0030002R
003B	340/U		FRONT CHASSIS PMD340 USA BLACK	371K105060	015M		4822 321 63208	CABLE	YB00380590
005B	BLACK		WINDOW BLK	371K158010	016M		4822 271 30873	MINI SWITCH	SM01020620
005B	GRAY	9965 000 01606	WINDOW GRAY	371K158020	020M		4822 522 33521	GEAR	305K058030
006B		9965 000 01607	IR LENS	371K355020	021M		4822 528 81537	PULLEY	305K262010
007B	BLACK		ESCUTCHEON	292K063220	025M		4822 522 33522	GEAR K	305K058500
007B	340/U		ESCUTCHEON PMD340 USA	292K063260	030M		4822 358 31325	BELT	305K264010
007B	GRAY	9965 000 01608	ESCUTCHEON	292K063230	031M		4822 459 50976	MASK	305K303010
009B	BLACK		POWER BUTTON	371K270150	035M		4822 443 51265	CASE	305K064110
009B	GRAY	9965 000 01609	POWER BUTTON	371K270160	036M		9965 000 01626	SUSPENSION	371K056010
010B	BLACK		BUTTON	371K270170	040M		4822 402 11212	NEW LIFT ARM	305K002050
010B	GRAY	9965 000 01610	BUTTON	371K270180	043M		9965 000 00234	CASE K NEW GEAR/OLD TRAY	305K064600
011B			LCD SHEET	***	045M			CASE BLACK	305K064010
012B	BLACK		ROTARY KNOB PMD331/340 BLACK	372K154010	046M			SPRING	305K115010
012B	GRAY	9965 000 01723	ROTARY KNOB PMD331/340 GRAY	372K154020	050M			CAM	305K054010
013B			LCD SPACER	***	051M			NEW SLIDER GEAR	305K058050
015B			LCD HOLDER	***	051M			SPRING	305K115020
016B			INSULATOR FOR 015B	***	060M	4822 492 33495		MECHANISM VAM 1202	371K304500
017B			LCD REFLECTOR	***	501M	330,331	9965 000 01627	9305 022 20200	
019B			LCD LENS	***	501M	340	9965 000 01724	MECHANISM VAM 1250	374K304500
020B			WEIGHT FOR KNOB	***				9305 022 25001	
021B			BRACKET FOR PHONE JACK	***	510M			BRACKET	***
023B	BLACK		KNOB FOR PHONE VOLUME	284T154310	518M			STOPPER FOR DISC	371K114010
023B	GRAY	9965 000 01611	KNOB FOR PHONE VOLUME	284T154050	520M			STOPPER FOR DISC	371K114020
027B		9965 000 01612	BUTTON RUBBER	371K270010	522M			ADHESIVE FOR 520M	371K122010
029B		9965 000 01614	BUTTON MODE KEY	371K270020	555M	330,331		CLAMPER ASSY VAM1202	371K005500
031B		9965 000 01615	BUTTON END KEY	371K270030	555M	340	9965 000 01725	CLAMPER ASSY VAM1250	374K005500
033B		9965 000 01616	BUTTON A-B KEY	371K270040	▲ J001	/F	9965 000 01313	JACK 2P AC INLET M1910-H	YJ04002440
035B		9965 000 01617	BUTTON PITCH KEY	371K270050	▲ J001	/N	9965 000 01313	JACK 2P AC INLET M1910-H	YJ04002440
037B		9965 000 01618	BUTTON +/- KEY	371K270070	▲ J001	/U		JACK 3P AC INLET M1910-D	YJ04002450
039B		9965 000 01619	BUTTON NEXT/PREV KEY	371K270080	W051		9965 000 01602	JUMPER LEAD 20P FFC	YU20170500
041B		9965 000 01620	BUTTON FF/FR KEY	371K270090	W052		9965 000 01603	JUMPER LEAD 30P FFC	YU30170520
043B		9965 000 01621	BUTTON STOP KEY	371K270100	W053	331,340		JUMPER LEAD 5P FPC	YU05090500
045B		9965 000 01622	BUTTON CUE KEY	371K270110	W054	331,340		JUMPER LEAD 5P FPC	YU05090500
047B		9965 000 01623	BUTTON PLAY KEY	371K270120					
001D	/U1B		LID TOP COVER BLACK	292J257030				<b>PACKING</b>	
003D	/U1B		MOUNT BRACKET L	371K160040	001T	/F		USER MANUAL	371K851110
005D	/U1B		MOUNT BRACKET R	371K160050	001T	/N	9965 000 01628	USER MANUAL	371K851310
					001T	/U		USER MANUAL	371K851250
001G			CHASSIS	***	▲ W001	/F		MAINS CORD 2P 12A 125V	ZC02001180
003G			SIDE BRACKET L	***	▲ W001	330/N	4822 321 11439	MAINS CORD 2P 10A 250V	ZC01803080
007G			SIDE BRACKET R	***		331/N		CLASS2	
011G		9965 000 01624	LEG BLACK	371K057010	▲ W001	340/N	4822	MAINS CORD 3P 10A 250V	ZC02003180
012G			BUFFER FOR LEG	371K056020	▲ W001	/U		CLASS1	
015G			LOADER BRACKET	***				MAINS CORD 3P 10A 125V	ZC02002180
026G			BRACKET FOR PD01	***					
030G			SUPPORT FOR PD01	***					
031G			SUPPORT FOR P801	***	001S	330		<b>NOT STANDARD</b>	
037G		4822 402 10913	LINK	318K121010	001S	331		<b>SPEAR PARTS</b>	
039G	/U		SCREW FOR GND	***	001S	340		PACKING CASE PMD330	371K801010
045G			LABEL FOR GND	***	003S			PACKING CASE PMD331	372K801010
060G			SHEET	***	001S			PACKING CASE PMD340	374K801010
					003S			CUSHION	371K809010
					W004	/U		AUDIO CABLE	ZD01000330

NOTE : \*\*\* =PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.



SYMBOL	STYLE	PARTS NAME	MARK	MATERIAL/FINISH
5110		+B. H. M. SCREW	(M)	STEEL/COPPER
5127		+B. H. TAP TITE SCREW (W )	(U)	STEEL/BLACK
5128		+B. H. TAP TITE SCREW (B TYPE)	(A)	STEEL/CHROMATE
5404		SPRING LOCK WASHERS	(R)	STEEL/UNICHROMATE
5405		TOOTHED LOCK WASHERS	(N)	PHOSPHOR BRONZE/NICKEL



# 11. TECHNICAL DESCRIPTION

## 1. RC5 Code

This product is able to communicate to the other MARANTZ products with the RCA Pin cable.

## 1. RC5コード

RCA Pinコードを介して他の機器と通信できる。

Command Name	Code	Decode			Binary			
		SYS	COM	DATA	START	SYS	COM	DATA
Play	2053	20	53		11	10100	110101	
Pause	2048	20	48		11	10100	110000	
Cue	2059-10	20	59	10	11	10100	111011	1010
Stop	2054	20	54		11	10100	110110	
FF	2052	20	52		11	10100	110100	
FR(REW)	2050	20	50		11	10100	110010	
Index+	2034	20	34		11	10100	100010	
Index-	2035	20	35		11	10100	100011	
Next	2032	20	32		11	10100	100000	
Previous	2033	20	33		11	10100	100001	
Pitch+	2038	20	38		11	10100	100110	
Pitch-	2039	20	39		11	10100	100111	
Pitch Bend+ *2 *3	2038-10	20	38	10	11	10100	100110	1010
Pitch Bend- *2 *3	2039-10	20	39	10	11	10100	100111	1010
A-B	2059	20	59		11	10111	111011	
Program	2041	20	41		11	10100	101001	
Pitch On/Off	2037	20	37		11	1010	100101	
Open/Close	2045	20	45		11	10100	101101	
Time	2011	20	11		11	10100	1011	
Mode	2036-10	20	36	10	11	10100	100100	1010
Preset	2041-12	20	41	12	11	10100	101001	1100
END monitor	2043-10	20	43	10	11	10100	101011	1010
CD-TEXT	2088	20	88		10	10100	110000	
0	2000	20	00		11	10100	0	
1	2001	20	01		11	10100	1	
2	2002	20	02		11	10100	10	
3	2003	20	03		11	10100	11	
4	2004	20	04		11	10100	100	
5	2005	20	05		11	10100	101	
6	2006	20	06		11	10100	110	
7	2007	20	07		11	10100	111	
8	2008	20	08		11	10100	1000	
9	2009	20	09		11	10100	1001	
SERVICE *1	166363	16	63	63	11	10000	111111	111111
OUTPUT Connect	1856	18	56		11	10010	111000	
OUTPUT Disconnect	1857	18	57		11	10010	111001	

- \*1 The service code is available during STOP mode only.
- \*2 The Pitch Bend+ and Pitch Bend- are not available with the digital out on.
- \*3 The Pitch Bend+ and Pitch Bend- are not available on PMD330.

- \*1 サービスコードは STOP状態の時のみ受け付ける。
- \*2 Pitch Bend+、Pitch Bend- はデジタルアウト On時には受け付けない。
- \*3 表内の Pitch Bend+、Pitch Bend- は PMD330では No Action とする。

## 5. GPI code

The GPI code is input from external controller with D-Sub 25 Pin connector.

## 2. GPI コード

D-Sub25Pinコネクタで外部のコントローラーより入力される。

Pin	Name	I/O	Active
1	PLAY TALLY	O	Low
2	PAUSE TALLY	O	Low
3	CUE TALLY	O	Low
4	STOP	I	Low
5	FR	I	Low
6	INDEX-	I	Low
7	PREVIOUS	I	Low
8	PITCH+	I	Low
9	PITCH ON/OFF	I	Low
10	FADER(NORMAL)	I	Low
11	INDEX #2/#3 TALLY	O	Low
12	+5V	-	---
13	FG COMMON	-	---
14	PLAY	I	Low
15	PAUSE	I	Low
16	CUE	I	Low
17	FF	I	Low
18	INDEX+	I	Low
19	NEXT	I	Low
20	END	I	Low
21	PITCH-	I	Low
22	FADER TALLY	O	Low
23	FADER(INVERT)	I	High
24	END TALLY	O	Low
25	TALLY COMMON	-	---

\* The fader start is on during PLAY, and off during PAUSE.

\* The index is output by pulse signal.

When the index #2 is selected, the pulse signal of 200ms is output at the top of index #2.

```

1 1 1 1 2 2 2 2 2 2 2
-----
200ms

```

When the index #3 is selected, the pulse signal of 200ms is output at the top of index #3.

```

2 2 2 2 3 3 3 3 3 3 3
-----
200ms

```

### 3. Double speed Reading

The disc (spindle) motor of PMD331/340 rotates at double speed for the Instant start & Anti-shock (shockproof) behavior function.

The data that is read out at double speed from a CD is put into the shockproof memory control & DRAM.

The data that is in the shockproof memory is forwarded to the DAC and is played back at normal speed.

When it is set Digital Out to "ON" on the preset menu, the disc (spindle) motor rotates at normal speed, and the data is read at normal speed.

Therefore, Digital output is always outputted at normal speed.

PMD330 doesn't have the shockproof memory control. Therefore the disc (spindle) motor of PMD330 always rotates at normal speed.

※ Fader Start は、PlayでOnし、Pause状態でOffとなる。

※ Indexはパルスで出力する。

Index #2選択時、Index #2の頭で200msのパルスを出力する。

```

1 1 1 1 2 2 2 2 2 2 2
-----
200ms

```

Index #3選択時、Index #3の頭で200msのパルスを出力する。

```

2 2 2 2 3 3 3 3 3 3 3
-----
200ms

```

### 3. 2倍速について

PMD331/340は、Instant start & Anti-shock (shockproof) behavior 機能の為に、2倍速でDisc (Spindle) Motor を回転させています。

CDから2倍速にて読み出されたデータは、Shokproof memory control & DRAMにいったんメモリーします。

ここでメモリーされたデータは1倍速にてShokproof memory control よりDACに転送され通常のスピードで再生されます。

但し、Preset MenuにてDigital Out "ON" に設定した場合は、1倍速でDisk (Spindle) Motor は回転し1倍速でデータの読み出しが行われます。

よって、Digital 出力は常に1倍速で出力されます。

PMD330はShokproof memory control を搭載していないので常にDisc (Spindle) Motor は1倍速にて回転します。

## 12. 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  
 ② — Capacity value  
 ③ — 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  
 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. (  $\text{⏏}$  ), 6) FILM CAP. (  $\text{⏏}$  )

5) EA × × × × × 10, Electrolytic capacitor  
 One-way lead type, Tolerance ±20%  
 ⑤ — Working voltage  
 ⑥ — 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  
 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 (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. (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	ERD-2FCG × × ×	(±2% 1/4W)
NF02 × × × 140		
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 SAFETY :

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

### 安全上の注意 :

$\text{⚠}$  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 PCS)	DESCRIPTION	PART NO. (MJI)
			<b>P101-SERVO CIRCUIT BOARD</b>	
			<b>P101-CAPACITORS</b>	
C101	331/340	4822 126 11669	CER. CHIP 27pF ±5%	DD95270300
C102	331/340	4822 126 13883	CER. CHIP 220pF ±5% CG 50V	DD95221300
C103		4822 126 11669	CER. CHIP 27pF ±5%	DD95270300
C104		4822 126 14417	CER. CHIP 0.01µF ±10% 50V	DK96103300
C105		4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C106		4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C107		4822 122 31765	CER. CHIP 100pF ±5% CG 50V	DD95101300
C108		4822 122 31765	CER. CHIP 100pF ±5% CG50V	DD95101300
C109		4822 126 14417	CER. CHIP 0.01µF ±10% 50V	DK96103300
C110		4822 122 33761	CER. CHIP 22pF ±5% CG 50V	DD95220300
C111			ELECT 100µF 10V	EJ10701010
C112			ELECT 100µF 10V	EJ10701010
C113		4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C114			ELECT 47µF 10V	EJ47601010
C115		4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C116	330/331	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C117	330/331	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C118		4822 122 31765	CER. CHIP 100pF ±5% CG 50V	DD95101300
C119	330		CER. CHIP 2pF ±0.25pF 50V	DD90020300
C120		4822 126 14417	CER. CHIP 0.01µF ±10% 50V K	DK96103300
C201		5322 126 11578	CER. CHIP 1000pF ±10% B	DK96102300
C202		5322 126 11578	CER. CHIP 1000pF ±10% B	DK96102300
C203			ELECT 100µF 10V	EJ10701010
C204		4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C205		4822 126 11685	CER. CHIP 4700P ±10% 50V	DK96472300
C206	330/331	4822 126 11685	CER. CHIP 4700P ±10% 50V	DK96472300
C207			ELECT 100µF 10V	EJ10701010
C208		4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C209		5322 126 11578	CER. CHIP 1000pF ±10% B	DK96102300
C210		5322 126 11578	CER. CHIP 1000pF ±10% B	DK96102300
C211		5322 126 11578	CER. CHIP 1000pF ±10% B	DK96102300
C212		5322 126 11578	CER. CHIP 1000pF ±10% B	DK96102300
C213		4822 126 11568	CER. CHIP 470pF ±10%	DK96471300
C214			CER. CHIP 0.22µF ±10% B 16V	DK56224200
C215	330/331	4822 126 11568	CER. CHIP 470pF ±10%	DK96471300
C216		4822 126 14417	CER. CHIP 0.01µF ±10% 50V K	DK96103300
C217			CER. CHIP 0.47µF ±10% 16V B	DK56474200
C218	331	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C251	340	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C252	340	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C253	340	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C254	340		ELECT 100µF 10V	EJ10701010
C255	340	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C256	340	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C257	340	4822 126 13837	CER. CHIP 0.1µF ±10% B 10V	DK96104200
C258	340	4822 126 13396	CER. CHIP 0.047µF ±10% 16V	DK96473200
			<b>P101-RESISTORS</b>	
R101		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
R102		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
R103		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
R104		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
R105		4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
R106		4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610
R107		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
R108		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610
R109		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
R110		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
R111		4822 051 30333	CHIP 33kΩ ±5% 1/16W	NN05333610
R112		4822 051 30333	CHIP 33kΩ ±5% 1/16W	NN05333610
R113		4822 051 30562	CHIP 5.6kΩ ±5% 1/16W	NN05562610
R114		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
R116		4822 117 12891	CHIP 220kΩ ±5% 1/16W	NN05224610
R117		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
R118		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
R121		4822 117 13632	CHIP 100kΩ ±5% 1/16W	NN05104610
R123		4822 117 13632	CHIP 100kΩ ±5% 1/16W	NN05104610

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
R124		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
R125		4822 117 12902	CHIP 8.2kΩ ±5% 1/16W	NN05822610
R126				
	330/331	4822 051 30332	CHIP 3.3kΩ ±5% 1/16W	NN05332610
R130	330/331	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
R131	330/331	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
R133	330/331	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
R134		4822 117 12902	CHIP 8.2kΩ ±5% 1/16W	NN05822610
R135		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
R137	330/331	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
R201		4822 051 30683	CHIP 68kΩ ±5% 1/16W	NN05683610
R202		4822 051 30683	CHIP 68kΩ ±5% 1/16W	NN05683610
R203		4822 051 30272	CHIP 2.7kΩ ±5% 1/16W	NN05272610
R204		4822 051 30184	CHIP 180kΩ ±5% 1/16W	NN05184610
R205		4822 051 30184	CHIP 180kΩ ±5% 1/16W	NN05184610
R206		4822 051 30333	CHIP 33kΩ ±5% 1/16W	NN05333610
R207		4822 117 12891	CHIP 220kΩ ±5% 1/16W	NN05224610
R208		4822 117 12891	CHIP 220kΩ ±5% 1/16W	NN05224610
R209		4822 116 83819	CHIP 18kΩ ±5% 1/16W	NN05183610
R210	330/331	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
R211	330/331	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
R212	330/331	4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
R213	330/331	4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
R214		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
R215		4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610
R216		4822 051 30123	CHIP 12kΩ ±5% 1/16W	NN05123610
R217	331/340	4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610
R251	340		CHIP 82Ω ±5% 1/10W	NI05820110
R252	340		CHIP 82Ω ±5% 1/10W	NI05820110
R253	340	4822 051 30682	CHIP 6.8kΩ ±5% 1/16W	NN05682610
R254	340	4822 051 30682	CHIP 6.8kΩ ±5% 1/16W	NN05682610
R255	340	4822 051 30682	CHIP 6.8kΩ ±5% 1/16W	NN05682610
R256	340	4822 117 13632	CHIP 100kΩ ±5% 1/16W	NN05104610
R257	340	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
R258	340	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
R259	340		CHIP 2.2Ω ±5% 1/10W	NI05022110
R260	340		CHIP 2.2Ω ±5% 1/10W	NI05022110
R261	340		CHIP 2.2Ω ±5% 1/10W	NI05022110
R262	340	4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
R263	340	4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
R264	340	4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
R265	340	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
R266	340		CHIP 2.2Ω ±5% 1/10W	NI05022110
			<b>P101-SEMICONDUCTORS</b>	
Q101	330/331	9965 000 01600	IC TZA1022 HF AMPL/A CONT	HC10180490
Q102		9965 000 01720	IC NJM2137M-TE1 DUAL OP	HC10206090
Q103		4822 209 30455	IC NJM2100M JRC	HC10085090
Q104		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210
Q105		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210
Q106		4822 130 60731	CHIP TR.S. 2SA1036K Q R	HX110362B0
Q107		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210
Q108		4822 130 11357	DIG.TR.S. RN2307 DTA114YU	BA12307000
Q109		9965 000 01601	THERMISTOR	HH50005780
			TN10-4C103JT 10k	
Q110	331/340	4822 130 61906	DIG.TR.S. DTC114EU	BA20035210
Q112	340	9965 000 01601	THERMISTOR	HH50005780
			TN10-4C103JT 10k	
Q201		4822 209 16372	IC TDA7073AT	HC10165490
			SOP DUAL BTL DRIVER	
Q202		4822 209 16372	IC TDA7073AT	HC10165490
			SOP DUAL BTL DRIVER	
Q203	331/340	9965 000 01601	THERMISTOR	HH50005780
			TN10-4C103JT 10k	
Q251	340	4822 209 16877	IC BA6856FP	HC10213210
			3PH-MOTOR DRIVER	
Q252	340	4822 130 60731	CHIP TR.S. 2SA1036K Q R	HX110362B0

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
J101			<b>P101-MISCELLANEOUS</b>		CD10		9965 000 00599	CER. CHIP 0.22 $\mu$ F $\pm$ 10% B 10V	DK96224200
J102			JACK 16FMZ-ST FFC CONN.	YJ07020820	CD11		9965 000 00599	CER. CHIP 0.22 $\mu$ F $\pm$ 10% B 10V	DK96224200
J202			JACK 20FE-ST-VK-N 20PIN	YJ07020160	CD12		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
			JACK 11FM-1.0ST FFC CONN.	YJ07020830	CD13		4822 122 32672	TANTL.CHIP 1 $\mu$ F 16V	EY10501610
					CD14		5322 124 41744	ELECT. 4700 $\mu$ F 10V RA-2	OA47801020
			<b>P801-TRANS CIRCUIT BOARD</b>		CD15		4822 126 13689	CER. CHIP 18pF $\pm$ 5%	DD95180300
▲ L801	/F, /U		MAINS TRANSF. EI-57	TS15747010	CD16		4822 122 33752	CER. CHIP 15pF $\pm$ 5% CG 50V	DD95150300
			100V/120V		CD17		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
▲ L801	/N	9965 000 01599	MAINS TRANSF. EI-57 230V	TS15747020	CD18		4822 126 13396	CER. CHIP 0.047 $\mu$ F $\pm$ 10% X7R	DK96473200
					CD19	330	4822 126 11671	CER. CHIP 33pF $\pm$ 5% CG 50V	DD95330300
			<b>P851-POWER SW CIRCUIT BOARD</b>		CD19	331/340	5322 126 14449	CER. CHIP 39pF $\pm$ 5% CG 50V	DD95390300
▲ C851		4822 122 33276	CER. DE7150 F 103M VA1 KC	DK17103840	CD20		4822 122 33753	CER. CHIP 150pF $\pm$ 5% CG 50V	DD95151300
▲ L851		4822 157 70419	LF-4D-102	FN01020020	CD21	330	4822 126 13689	CER. CHIP 18pF $\pm$ 5% CG 50V	DD95180300
▲ S851		4822 276 13364	PUSH SWITCH SDDL1	SP01011990	CD22	331/340	5322 126 11578	CER. CHIP 1000pF $\pm$ 10% B	DK96102300
			POWER TV-3		CD23	331/340	4822 122 31765	CER. CHIP 100pF $\pm$ 5% CG 50V	DD95101300
			<b>PB01-XLR CONN. CIRCUIT BOARD [PMD331/340]</b>		CM01		5322 122 32654	CER. CHIP 0.022 $\mu$ F $\pm$ 10% 16V	DK96223200
			<b>PB01-CAPACITORS</b>		CT01		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
CT52	331/340	4822 124 41537	ELECT. 220 $\mu$ F M 6.3V RA-2	OA22700620	CT03		4822 126 12339	CER. CHIP 2200P $\pm$ 10% 50V	DK96223200
CT53	331/340		CER. 50V DC 0.1 $\mu$ F +80 -20%	DD38104010	CT04		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
CT56	331/340		CER. 0.01 $\mu$ F $\pm$ 10% 50V	DK16103300	CT07	331/340	4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
CT57	331/340		CER. 0.01 $\mu$ F $\pm$ 10% 50V	DK16103300	CT08	331/340	4822 124 22275	ELECT. 47 $\mu$ F M 10V RA-2	OA47601020
CT58	331/340		CER. 220pF $\pm$ 10% 50V	DK16221300					
CT59	331/340		CER. 220pF $\pm$ 10% 50V	DK16221300					
			<b>PB01-RESISTORS</b>		CU01		4822 122 33752	CER. CHIP 15pF $\pm$ 5% CG 50V	DD95150300
RT52	331/340		56 $\Omega$ $\pm$ 5% 1/6W	GG05560160	CU02		4822 122 33752	CER. CHIP 15pF $\pm$ 5% CG 50V	DD95150300
RT53	331/340		56 $\Omega$ $\pm$ 5% 1/6W	GG05560160	CU03		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
			<b>PB01-SEMICONDUCTOR</b>		CU04		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
QT52	331/340	5322 209 60473	IC SN75158/P TEXAS INST.	HC10071370	CU05		4822 124 41543	ELECT. 1 $\mu$ F M 50V RA-2	OA10505020
					CU41		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
			<b>PB01-MISCELLANEOUS</b>		CU51		4822 124 90352	ELECT. 10 $\mu$ F M 16V RA-2	OA10601620
JB53	331/340		JACK NC3MAH 3P CANNON	YJ01004070	CU53		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
JB54	331/340		JACK NC3MAH 3P CANNON	YJ01004070	CU54	331/340	5322 126 11578	CER. CHIP 1000pF $\pm$ 10% B	DK96102300
JT53	331/340		JACK NC3MAH 3P CANNON	YJ01004070	CU60	331/340	5322 126 11578	CER. CHIP 1000pF $\pm$ 10% B	DK96102300
					CU79				
			<b>PD01-MAIN CIRCUIT BOARD</b>		CU80	331/340	4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
LT52	331/340	4822 242 73843	EMI FILTER DSS306-91-F-223Z	FM12223010	CU91		4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
LT53	331/340	4822 148 81381	PULSE TRANSF. TC-1086-26	TP33842010					
LT54	331/340		FERRITE CORE	FC90050040					
			BL02RN1-R62T2						
LT55	331/340		FERRITE CORE	FC90050040					
			BL02RN1-R62T2						
			<b>PD01-CAPACITORS</b>						
CB01	331/340	4822 124 90354	ELECT. 100 $\mu$ F M 16V RA-2	OA10701620	C301	331/340	4822 124 90352	ELECT. 10 $\mu$ F M 16V RA-2	OA10601620
CB02	331/340	4822 124 90352	ELECT. 10 $\mu$ F M 16V RA-2	OA10601620	C302	331/340	4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
CB06	331/340	4822 124 90354	ELECT. 100 $\mu$ F M 16V RA-2	OA10701620	C303	331/340	4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
CB07	331/340	4822 124 90354	ELECT. 100 $\mu$ F M 16V RA-2	OA10701620	C304	331/340	4822 126 13837	CER. CHIP 0.1 $\mu$ F $\pm$ 10% B 10V	DK96104200
CB13	331/340	4822 122 33761	CER. CHIP 22pF $\pm$ 5% CG 50V	DD95220300	C305	331/340	4822 126 13396	CER. CHIP 0.047 $\mu$ F $\pm$ 10% X7R	DK96473200
CB14	331/340	4822 122 33761	CER. CHIP 22pF $\pm$ 5% CG 50V	DD95220300					
CB21	331/340	4822 122 33761	CER. CHIP 22pF $\pm$ 5% CG 50V	DD95220300	C501		4822 124 90352	ELECT. 10 $\mu$ F M 16V RA-2	OA10601620
					C502		4822 124 90352	ELECT. 10 $\mu$ F M 16V RA-2	OA10601620
CD01	330/331	4822 126 11685	CER. CHIP 4700pF $\pm$ 10% B 50V	DK96472300	C503		4822 122 33761	CER. CHIP 22pF $\pm$ 5% CG 50V	DD95220300
CD01	340	4822 126	CER. CHIP 3300pF $\pm$ 10% B 50V	DK96332300	C504		4822 122 33761	CER. CHIP 22pF $\pm$ 5% CG 50V	DD95220300
CD02		4822 126 13396	CER. CHIP 0.047 $\mu$ F $\pm$ 10% X7R	DK96473200	C505		4822 122 33753	CER. CHIP 150pF $\pm$ 5% 50V	DD95151300
CD03		5322 126 11578	CER. CHIP 1000pF $\pm$ 10% B	DK96102300	C506		4822 122 33753	CER. CHIP 150pF $\pm$ 5% 50V	DD95151300
CD04		5322 126 11578	CER. CHIP 1000pF $\pm$ 10% B	DK96102300	C507		4822 122 33753	CER. CHIP 150pF $\pm$ 5% 50V	DD95151300
CD05		4822 126 14417	CER. CHIP 0.01 $\mu$ F $\pm$ 10% 50V K	DK96103300	C508		4822 122 33753	CER. CHIP 150pF $\pm$ 5% 50V	DD95151300
CD06			CER. CHIP 0.47 $\mu$ F $\pm$ 10% 16V B	DK56474200	C509		4822 124 90354	ELECT. 100 $\mu$ F M 16V RA-2	OA10701620
CD07		4822 126 13396	CER. CHIP 0.047 $\mu$ F $\pm$ 10% X7R	DK96473200	C510		4822 124 90354	ELECT. 100 $\mu$ F M 16V RA-2	OA10701620
CD08		4822 126 12495	CER. CHIP 1500P $\pm$ 10% 50V	DK96152300	C511		5322 126 11578	CER. CHIP 1000pF $\pm$ 10% B	DK96102300
CD09		5322 126 11578	CER. CHIP 1000P $\pm$ 10% 50V	DK96102300	C512		5322 126 11578	CER. CHIP 1000pF $\pm$ 10% B	DK96102300

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)
C801	330	4822 124 22243	ELECT 6800µF 16V RE3	OA68801620	RT03		4822 051 30331	CHIP 330Ω ±5% 1/16W	NN05331610
C801	331/340		ELECT 10000µF 16V RE3	EA10901670	RT04		4822 051 30759	CHIP 75Ω ±5% 1/16W	NN05750610
C802			CER. 0.1µF +80%-20% 50V	DD38104010					
C803			CER. 0.1µF +80%-20% 50V	DD38104010	RU01		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
C804		4822 124 90371	ELECT. 470µF M 10V RA-2	OA47701020	RU02		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
C805			CER. 0.1µF +80%-20% 50V	DD38104010	RU04		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
C806			CER. 0.1µF +80%-20% 50V	DD38104010	RU05	330/331	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
C807		4822 124 90371	ELECT. 470µF M 10V RA-2	OA47701020	RU06		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
C808		4822 124 11583	ELECT. 2200µF M 35V RA-2	OA22803520	RU07		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
C809		4822 124 11583	ELECT. 2200µF M 35V RA-2	OA22803520	RU08		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
C810			CER. 0.1µF +80%-20% 50V	DD38104010	RU09		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
C811			CER. 0.1µF +80%-20% 50V	DD38104010	RU10	330/340	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
C812			CER. 0.1µF +80%-20% 50V	DD38104010	RU11				
C813			CER. 0.1µF +80%-20% 50V	DD38104010	RU11				
C814		4822 124 22277	ELECT. 470µF 16V M RA-2	OA47701620	RU21		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
C815		4822 124 22277	ELECT. 470µF 16V M RA-2	OA47701620	RU22		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
C816		4822 124 41543	ELECT. 1µF M 50V RA-2	OA10505020	RU23				
			<b>PD01-RESISTORS</b>		RU23				
RB01	331/340	9965 000 01716	VARIABLE 10kΩ B	RK01031580	RU27		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RB02	331/340	9965 000 01716	VARIABLE 10kΩ B	RK01031580	RU28		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
RB03	331/340	4822 051 30221	CHIP 220Ω ±5% 1/16W	NN05221610	RU30		4822 051 30105	CHIP 1MΩ ±5% 1/16W	NN05105610
RB04	331/340	4822 051 30221	CHIP 220Ω ±5% 1/16W	NN05221610	RU31		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
RB05	331/340	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	RU32	330	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RB06	331/340	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	RU41		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
RB07	331/340	4822 051 30682	CHIP 6.8kΩ ±5% 1/16W	NN05682610	RU42		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
RB08	331/340	4822 051 30682	CHIP 6.8kΩ ±5% 1/16W	NN05682610	RU51		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
RB09	331/340	4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	RU52		4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
RB10	331/340	4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	RU53		4822 116 83819	CHIP 18kΩ ±5% 1/16W	NN05183610
RB11	331/340	4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	RU54		4822 051 30479	CHIP 47kΩ ±5% 1/16W	NN05470610
RB12	331/340	4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	RU55		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
RB13					RU58		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RB13	331/340	4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610	RU60	331/340	4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
RB24					RU62				
RB25					RU62	331/340	4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
RB25	331/340	4822 051 30479	CHIP 47Ω ±5% 1/16W	NN05470610	RU74				
RB28					RU80				
RB29					RU80	331/340	4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
RB32	331/340	4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610	RU90				
RB33					RU91		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
RB33	331/340	4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	RU92		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
RB36					RU93	331/340	4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
RD01		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	RU94	331/340	4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
RD02		4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610	RU95	331/340	4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
RD03		4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610	R301	331/340	4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610
RD04		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610	R501		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RD05		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	R502		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RD06		4822 117 13632	CHIP 100kΩ ±5% 1/16W	NN05104610	R503		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
RD07		4822 051 30332	CHIP 3.3kΩ ±5% 1/16W	NN05332610	R504		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
RD08		4822 051 30332	CHIP 3.3kΩ ±5% 1/16W	NN05332610	R505		4822 116 83819	CHIP 18kΩ ±5% 1/16W	NN05183610
RD09		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	R506		4822 116 83819	CHIP 18kΩ ±5% 1/16W	NN05183610
RD10		4822 051 30105	CHIP 1MΩ ±5% 1/16W	NN05105610	R507		4822 051 30333	CHIP 33kΩ ±5% 1/16W	NN05333610
RD11		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	R508		4822 051 30333	CHIP 33kΩ ±5% 1/16W	NN05333610
RD12		4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610	R509		4822 051 30123	CHIP 12kΩ ±5% 1/16W	NN05123610
RD13		4822 051 30333	CHIP 33kΩ ±5% 1/16W	NN05333610	R510		4822 051 30123	CHIP 12kΩ ±5% 1/16W	NN05123610
RD15		4822 051 30474	CHIP 470kΩ ±5% 1/16W	NN05474610	R511		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RD16		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	R512		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RD17		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	R513		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
RD18		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	R514		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
RD19		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	R515		4822 051 30151	CHIP 150Ω ±5% 1/16W	NN05151610
RD20		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	R516		4822 051 30151	CHIP 150Ω ±5% 1/16W	NN05151610
RD22		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610	R517		4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
RD23	331	4822 116 83819	CHIP 18kΩ ±5% 1/16W	NN05183610	R518		4822 117 12925	CHIP 47kΩ ±5% 1/16W	NN05473610
RD23	340	4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610	R519		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610
▲ RM01		4822 111 90967	FUSE 4.7Ω J 1/4W	NF05047140	R520		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610
RM02		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610	R531	330	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
RT02		4822 051 30221	CHIP 220Ω ±5% 1/16W	NN05221610	R532	330	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
					R533	330	4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
					R541	331/340	4822 117 13632	CHIP 100kΩ ±5% 1/16W	NN05104610
					R542	331/340	4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
R543	331/340	4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610				<b>PD01-MISCELLANEOUS</b>	
R544	331/340	4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	JD01			JACK 20FE-BT-VK-N 20PIN	YJ07020530
R801					JT01		4822 267 31729	TERMINAL 14X14 RA 1L1P BLK	YT02010780
R805		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610	JT02	331/340	4822 267 31369	OPT. CONN.GP1F32T	YJ15000090
								OPTICAL OUTPUT	
					JU01			JACK 30PIN 30FMN-BMTTR-TB	YJ07016500
			<b>PD01-SEMICONDUCTORS</b>		JU51			TERMINAL RCA JACK ORG	YT02021090
DB01	331/340	4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	JU53	331/340	4822 265 11401	PLUG D-SUB 25P FEMALE	YP11000180
DB02	331/340	4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	J501		4822 267 31727	TERMINAL 14X14 RCA 2L2P	YT02021210
DM02		9965 000 01598	CHIP DIODE	HZ30821000					
			UDZS8.2B MA8082-M		LB01	331/340	9965 000 01343	RELAY RELAY MR62-12SR	LY20120510
DU01		9965 000 01491	CHIP DIODE DA227	HZ20032210	LB02	331/340	9965 000 01343	RELAY RELAY MR62-12SR	LY20120510
DU02		9965 000 01491	ARRAY 2PIECES-2125		LD01			CHIP INDUCTANCE	LU04472010
			ARRAY 2PIECES-2125					4.7μH ±10% 1608 TYPE	
DU03		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	LD02			CHIP INDUCTANCE	LU04472010
DU51		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000				4.7μH ±10% 1608 TYPE	
DU52		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	LD03			CHIP INDUCTANCE	LU04471010
D501		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000				0.47μH ±10% MLF1608	
D502		4822 130 81324	CHIP DIODE 1SS302	HZ20018050	LD04			CHIP INDUCTANCE	LU04471010
▲ D801		4822 130 83067	DIODE D3SB 20	HE20020290	LT01		4822 142 60388	0.47μH ±10% MLF1608	
			V=200V IO=3.0A		LT02			PULSE TRANSF. FOR CD	TP41042010
▲ D802		4822 130 10413	DIODE BRIDGE D2SBA20	HE20027290				FERRIT BEADS	FC90020120
D803		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	LT03	331/340		BK1608HM102-T	FC90020120
								FERRIT BEADS	
								BK1608HM102-T	
QB01					L501		9965 000 01343	RELAY MR62-12SR	LY20120510
QB04	331/340	4822 209 83357	IC NJM4560M JRC	HC10029090					
QD01		9965 000 01437	IC CXD2585Q CD DECODER	HC10069250	SU51		4822 277 21789	SLIDE SWITCH SSSUI-6MM	SS02020970
QD02	331/340	9965 000 01601	THERMISTOR	HH50005780	XD01		4822 242 10883	CRYSTAL CM309S	JX16002360
			TN10-4C103JT 10k					16.9344MHz CITIZEN	
QM01		4822 209 30193	IC LB1641 MOTOR DRIVER	HC10279030	XU01		9965 000 01597	CRYSTAL CM309S 20MHz	JX20001360
QU01		9965 000 01492	MICROPROCESSOR	HU371KH00F					
			HD643306ZF MPU					<b>PV01-HEAD PHONE</b>	
QU03		9965 000 01595	IC AT25640	HC10074990				<b>CIRCUIT BOARD</b>	
			64K EEPROM		CV01			<b>PV01-CAPACITORS</b>	
QU04		9965 000 01596	IC 74HC4094BT FLAT	HC809449R0	CV02			ELECT 100μF 16V RC-2	EJ10701610
QU41		4822 130 60731	CHIP TRS. 2SA1036K Q R	HX110362B0	CV03			ELECT 100μF 16V RC-2	EJ10701610
QU42		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210	CV04			ELECT 47μF 16V	EJ47601610
QU51		4822 130 60669	CHIP TRS. 2SC4081 Q R	HX300012A0				ELECT 47μF 16V	EJ47601610
			2SC4116 Y GR						
QU52		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210	RV01		4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610
QU53		4822 130 11357	DIG.TR.S. RN2307 DTA114YU	BA12307000	RV02		4822 051 30153	CHIP 15kΩ ±5% 1/16W	NN05153610
QU55		4822 130 11357	DIG.TR.S. RN2307 DTA114YU	BA12307000	RV03		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
QU56		9965 000 01596	IC 74HC4094BT FLAT	HC809449R0	RV04		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
QU57		4822 209 17428	IC 74HC165F	HC716500R0	RV05		9965 000 01489	CHIP 120Ω ±5% 1/2W	RI05121120
QU58		4822 209 17428	IC 74HC165F	HC716500R0	RV06		9965 000 01489	CHIP 120Ω ±5% 1/2W	RI05121120
QU59					RV07		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
QU64		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210	RV08		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
QU91		4822 209 30426	IC CMOS 74HC00 FLAT	HC700000Z0	RV09		9965 000 01490	VARIABLE 50kΩ A L=15MM	RM05033070
Q301	331/340	9965 000 01717	IC RL5C357 SHOCK PROOF	HC10042770					
Q302	331/340	9965 000 01718	IC HY5117400BJ-60 DRAM	HC10089990	QV01		4822 209 31378	<b>PV01-SEMICONDUCTOR</b>	HC10045090
Q501		4822 209 15226	IC PCM1710U 16/20BIT DAC	HC10004610				IC NJM4556AM JRC	
Q502		4822 209 83357	IC NJM4560 FLAT PACK JRC	HC10029090					
Q541	331/340	4822 130 11357	DIG.TR.S. RN2307 DTA114YU	BA12307000	JV02		4822 267 31126	<b>PV01-MISCELLANEOU</b>	YJ01003020
Q542	331/340	4822 130 43818	TRS. 2SC2878 A OR B	HT328782A0				JACK ST HEADPHONE BL/GL	
Q543	331/340	4822 130 43818	TRS. 2SC2878 A OR B	HT328782A0					
▲ Q801		4822 209 83824	IC NJM7805FA +5V 1A JRC	HC38905090				<b>PY01-DISPLAY</b>	
▲ Q802		4822 209 73674	IC NJM7806FA +6V 1A JRC	HC38906090				<b>CIRCUIT BOARD</b>	
▲ Q803		4822 209 82829	IC NJM78M15FA +15V 0.5A	HC38515090				<b>PV01-CAPACITORS</b>	
▲ Q804		4822 209 83828	IC NJM79M15FA -15V 0.5A	HC39515090	CY01		9965 000 01438	TANTL.CHIP 2.2μF 50V	EY22505020
Q805		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210	CY02		9965 000 01438	TANTL.CHIP 2.2μF 50V	EY22505020
Q806		4822 130 61906	DIG.TR.S. DTC114EU	BA20035210	CY03		9965 000 01438	TANTL.CHIP 2.2μF 50V	EY22505020
					CY04		4822 124 23002	TANTL.CHIP 10μF 16V	EY10601620
					CY05		4822 126 14417	CER. CHIP 0.01μF ±10% 50V K	DK96103300
					CY06		4822 124 11226	TANTL.CHIP 22μF 6.3V	EY22600620
					CY07		4822 126 14417	CER. CHIP 0.01μF ±10% 50V K	DK96103300
					CY08		4822 126 14417	CER. CHIP 0.01μF ±10% 50V K	DK96103300
					CY09		4822 126 14417	CER. CHIP 0.01μF ±10% 50V K	DK96103300

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
CY10 }		5322 126 11578	CER. CHIP 1000pF ±10% B	DK96102300
CY17				
			<b>PY01-RESISTORS</b>	
RY01		9965 000 01444	VARIABLE 100kΩ B W/CLIC	RB01040080
RY02		4822 051 30332	CHIP 3.3kΩ ±5% 1/16W	NN05332610
RY03		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RY04		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RY05		4822 051 30273	CHIP 27kΩ ±5% 1/16W	NN05273610
RY06		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RY07		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RY08		4822 117 12864	CHIP 82kΩ ±5% 1/16W	NN05823610
RY09		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610
RY11		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610
RY12		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610
RY13		4822 051 30121	CHIP 120Ω ±5% 1/16W	NN05121610
RY14		4822 051 30121	CHIP 120Ω ±5% 1/16W	NN05121610
RY15		4822 051 30121	CHIP 120Ω ±5% 1/16W	NN05121610
RY16		4822 051 30121	CHIP 120Ω ±5% 1/16W	NN05121610
RY17		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610
RY18		4822 117 12891	CHIP 220kΩ ±5% 1/16W	NN05224610
RY19		4822 051 30121	CHIP 120Ω ±5% 1/16W	NN05121610
RY20		4822 051 30221	CHIP 220Ω ±5% 1/16W	NN05221610
			<b>PY01-SEMICONDUCTORS</b>	
DY01 }		9965 000 01439	L.E.D. FY1101F-TX	HI10010300
DY06			YELLOW CHIP	
DY07		9965 000 01440	L.E.D. SML-310DT	HI10103210
			ORANGE CHIP	
DY08		9965 000 01440	L.E.D. SML-310DT	HI10103210
			ORANGE CHIP	
DY09 }		9965 000 01441	L.E.D. SML-310MT	HI10104210
DY12			GREEN CHIP	
DY13 }		9965 000 01440	L.E.D. SML-310DT	HI10103210
DY18			ORANGE CHIP	
QY01		9965 000 01442	IC HD66712SA02FS LCD DRIV.	HC10132010
QY02		4822 130 60669	CHIP TRS. 2SC4081 Q R	HX300012A0
			2SC4116 Y GR	
QY05		9965 000 01443	DISPLAY UNIT LCD	HQ22801800
QY06		4822 130 61906	DIG. TRS. DTC114EU	BA20035210
QY07		4822 130 61906	DIG. TRS. DTC114EU	BA20035210
QY08		4822 130 61906	DIG. TRS. DTC114EU	BA20035210
QY09		4822 130 61906	DIG. TRS. DTC114EU	BA20035210
			<b>PY01MISCELLANEOUS</b>	
JY01			JACK 30PIN 30FMN-BMTTR-TB	YJ07016500
JY03			JUMPER LEAD ZEBRA CONN.	YU01009700
SY14 }		9965 000 01445	TACT SWITCH SKHMPW	SP01013320
SY28				
			<b>PY41-IR SENSOR</b>	
QY41		4822 130 10161	CIRCUIT BOARD PHOTO UNIT SPS-446-4	HW10005030
			IR SENSOR SANYO	
			<b>PY51-PITCH DIAL CIRCUIT</b>	
SY51	331/340	9965 000 01719	BOARD FOR PMD331/340 ROTARY SWITCH	SR01240020
			EC16B2410207 L=20 HOL	