

# CDP-EX100

## SERVICE MANUAL

*AEP Model*  
*UK Model*  
*E Model*



This set is the CD player section in  
MHC-EX50/EX70AV/EX100AV.

Model Name Using Similar Mechanism	CDP-EX10
CD Mechanism Type	CDM28-5BD19
Base Unit Name	BU-5BD19

### SPECIFICATIONS

#### CD player

System	Compact disc and digital audio system
Laser	Semiconductor laser ( $\lambda=780$ nm) Emission duration: continuous
Laser output	Max 44.6 $\mu$ W* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Wavelength	780 - 790 nm
Frequency response	2 Hz - 20 kHz ( $\pm 0.5$ dB)
Signal-to-noise ratio	More than 105 dB
Dynamic range	More than 95 dB
Outputs	CD OUT (phono jacks): Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms CD DIGITAL OPTICAL OUT (Square optical connector jack, rear panel): wave length 660 nm output level -18 dBm

#### Dimensions

Approx. 280 x 82.5 x 280 mm (11 1/8 x 3 1/4 x 11 1/8 in) (w/h/d) incl. projecting parts and controls	
Mass	Approx. 2.1 kg (4 lb 10 oz)

Design and specifications are subject to change without notice.



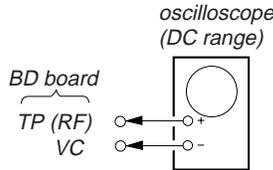
COMPACT DISC PLAYER  
**SONY**®

# SECTION 4 ELECTRICAL ADJUSTMENTS

**Note :**

1. Basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the objective lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

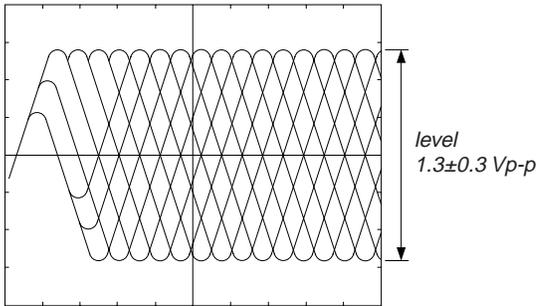
**Focus Bias Adjustment**



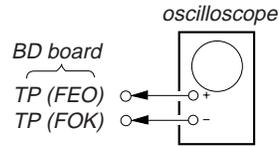
**Procedure:**

1. Connect oscilloscope to test point TP (RF). (GND terminal : VC)
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Adjust RV101 so that the waveform is clear.  
(Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

- RF signal  
VOLT/DIV : 200 mV  
TIME/DIV : 500 nS



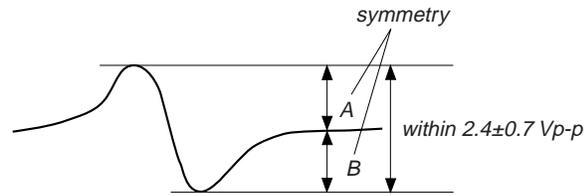
**S Curve Check**



**Procedure:**

1. Connect oscilloscope to test point TP(FEO).
2. Connect between test point TP(FOK)and GND by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turn Power switch on again and actuate the focus search. (In case of using SERVICE BOX actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4±0.7 Vp-p.

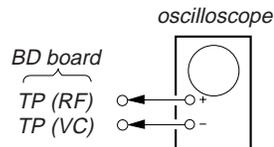
*S-curve waveform*



6. After check, remove the lead wire connected in step 2.

- Note :**
- Try to measure several times to make sure that the ratio of A:B or B:A is more than 10:7.
  - Take sweep time as long as possible and light up the brightness to obtain best waveform.

**RF Level Check**



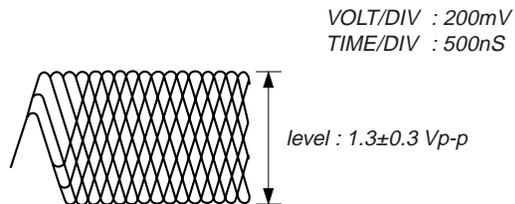
**Procedure:**

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

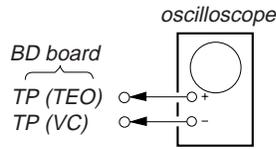
**Note :**

Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.

*RF signal waveform*



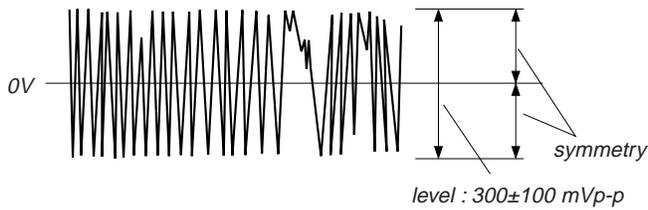
**E-F Balance Check**



**Procedure:**

1. Connect oscilloscope to test point TP (TEO).
2. Turn Power switch on.
3. Connect pin ② of IC60I on the PANEL board to GND with a lead wire.
4. Put disc (YEDS-18) in and playback.
5. Push TIME button.
6. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

*Traverse waveform*



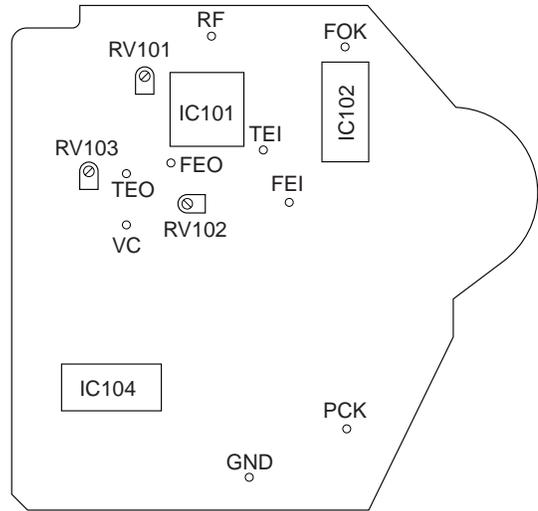
7. Remove the lead wire connected in step 3.

**Focus/Tracking Gain Adjustment (RV102, 103)**

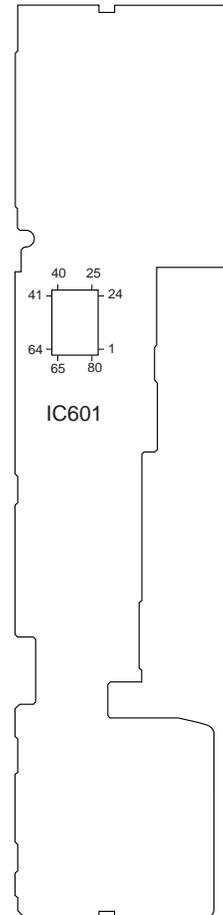
This gain has a margin, so even if it is slightly off. There is no problem. Therefore, do not perform this adjustment. Please note that it should be fixed to mechanical center position when you moved and do not know original position.

**Adjustment Location :**

**[BD BOARD] (Conductor Side)**



**[PANEL BOARD] (Conductor Side)**



## SECTION 5 DIAGRAMS

### 5-1. IC PIN FUNCTION

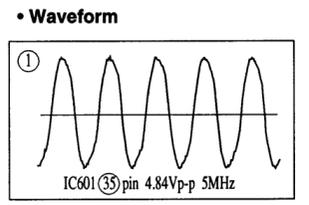
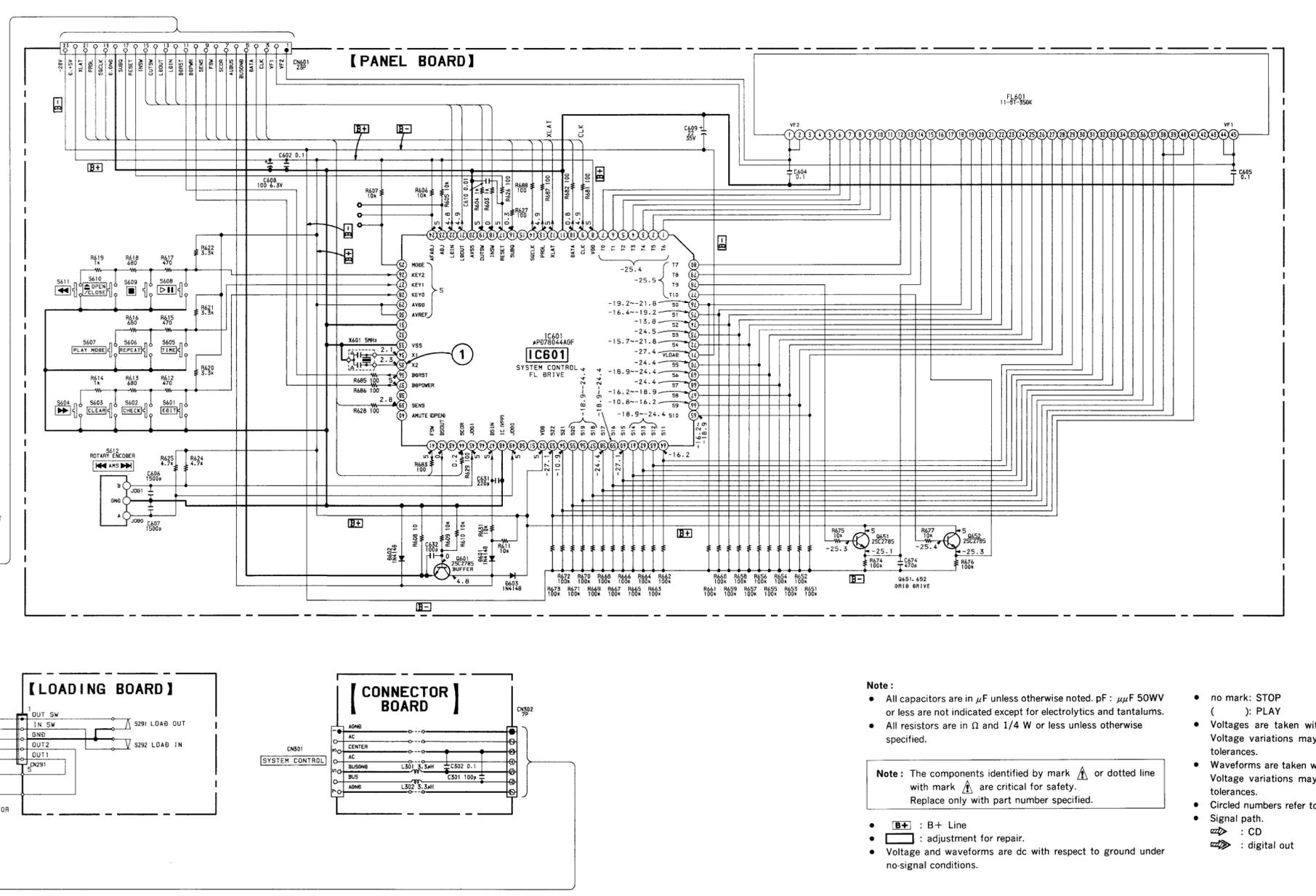
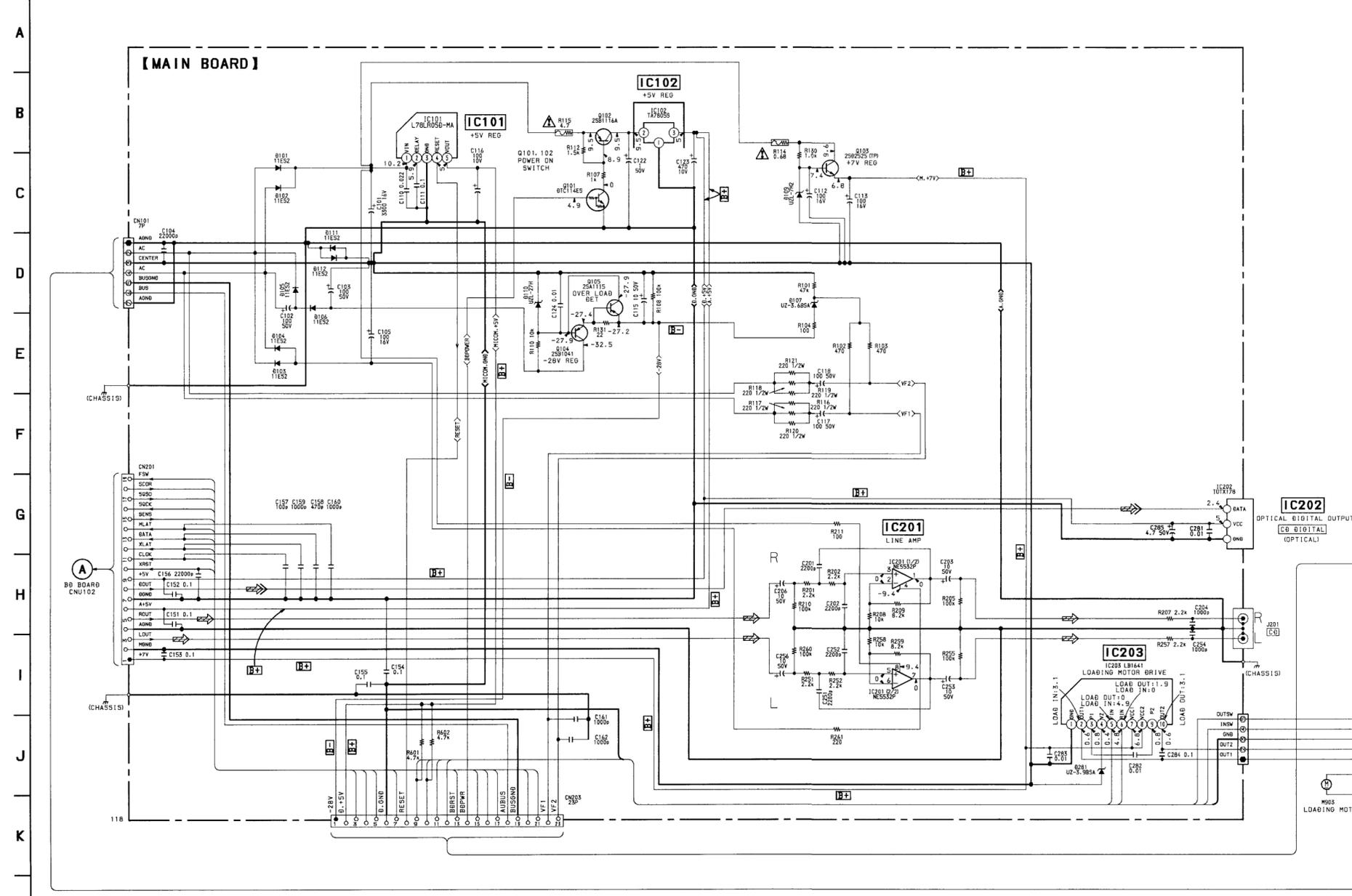
#### • IC601 $\mu$ PD78044AGF (SYSTEM CONTROL, FL DRIVER)

Pin No.	Pin Name	I/O	Function
1-7	T6-T0	O	FL display grid output
8	VDD	—	+5V power supply
9	CLK	O	Serial clock output to DSP (CXD2507AQ).
10	DATA	O	Serial data output to DSP (CXD2507AQ).
11	—	—	Fixed at Ground.
12	XLAT	O	Serial data latch pulse output to DSP (CXD2507AQ).
13	PRGL	O	Serial data latch pulse output to D/F DAC (PCM1710U).
14	SQCLK	O	Sub code Q data read clock output to DSP (CXD2507AQ).
15	—	—	Not used. (Open)
16	SUBQ	I	Sub code Q data input from DSP (CXD2507AQ).
17	RESET	I	System reset input (“L”= Active)
18	INSW	I	S292 (load in switch) input
19	OUTSW	I	S291 (load out switch) input
20	AVSS	—	Ground
21	LDOUT	O	Output for rotating M903 (loading motor) in the loading out direction.
22	LDIN	O	Output for rotating M903 (loading motor) in the loading in direction.
23	ADJ	I	Test mode input. (“L”= Stops GFS check)
24	AFADJ	I	Test mode input. Fixed at “H”. (“L”= Test mode)
25	MODE	I	Not used. (Fixed at “H”.)
26-28	KEY2-KEY0	I	Key AD input
29	AVDD	—	+5V power supply
30	AVREF	—	+5V power supply
31	—	—	Fixed at Ground.
32	—	—	Not used. (Open)
33	VSS	—	Ground
34	X1	I	Clock input (5MHz)
35	X2	O	Clock output (5MHz)
36	BDRST	O	BD reset output
37	BDPOWER	O	BD power ON/OFF output
38	—	—	Not used. (Open)
39	SENS	I	SENS input from DSP (CXD2507AQ).
40	AMUTE	O	Not used. (Open)
41	FSW	O	Focus switch output
42	BSOUT	O	Audio bus output
43	—	—	Not used. (Open)
44	SCOR	I	Sub code sync S0+S1 detection input
45	JOG1	I	JOG input
46	—	—	Not used. (Open)
47	BSIN	I	Audio bus input
48	IC (VPP)	—	Connected to Ground.
49	JOG0	I	JOG input
50, 51	—	—	Not used. (Open)
52	VDD	—	+5V power supply
53-70	S22-S5	O	FL display segment output
71	VLOAD	—	-28V power supply for driving FL display.
72-76	S4-S0	O	FL display segment output
77-80	T10-T7	O	FL display grid output



5-6. SCHEMATIC DIAGRAM — MAIN SECTION — • Refer to page 23 for IC Block Diagrams.

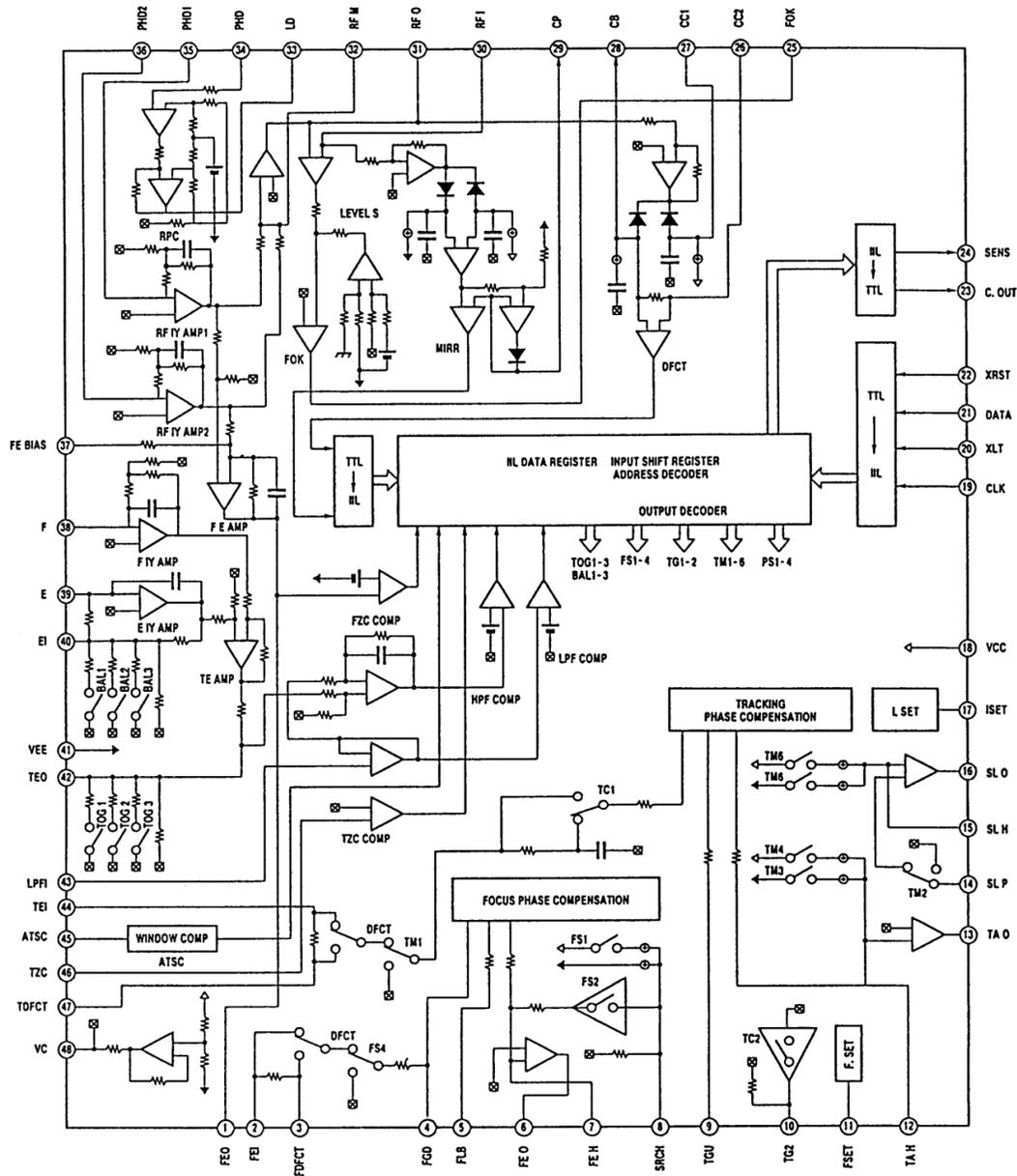
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33



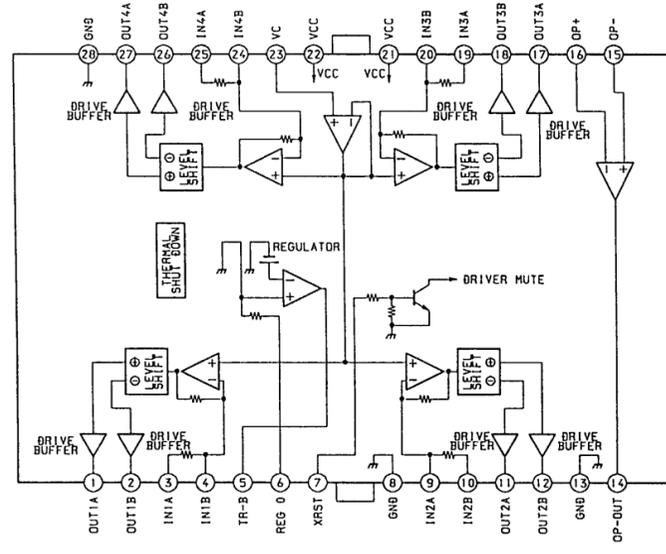
- Note:**
- All capacitors are in  $\mu$ F unless otherwise noted. pF :  $\mu$ F 50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and 1/4 W or less unless otherwise specified.
  - no mark: STOP ( ) : PLAY
  - Voltages are taken with a VOM (Input Impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
  - Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
  - Circled numbers refer to waveforms.
  - Signal path.
  - CD
  - digital out
- Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.
- $B+$  : B+ Line
  - $\square$  : adjustment for repair.
  - Voltage and waveforms are dc with respect to ground under no-signal conditions.

• IC Block Diagrams

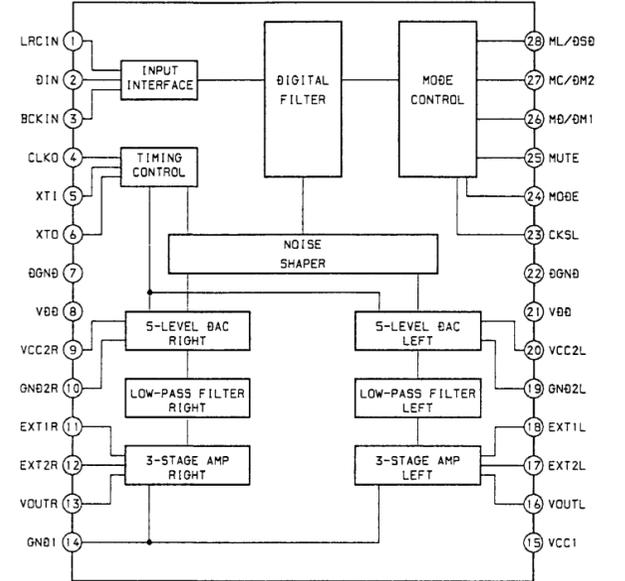
IC101 CXA1782BQ (BD Board)



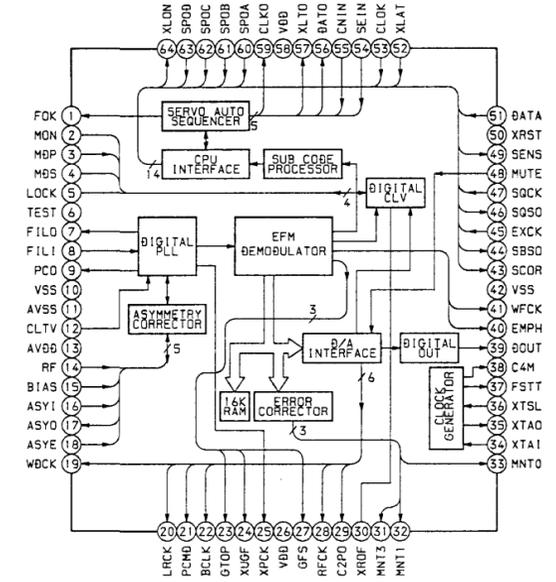
IC102 BA6397FP



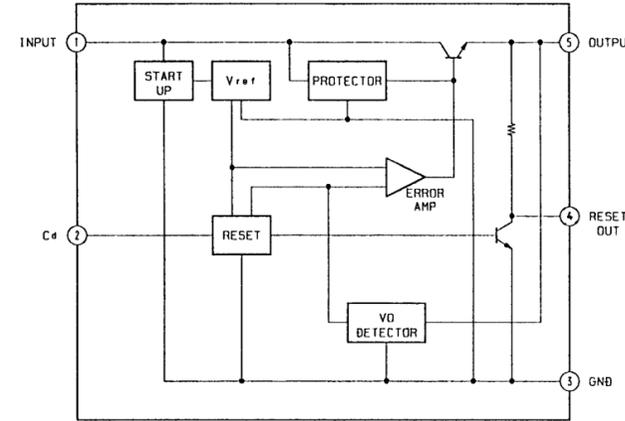
IC104 PCM1710U



IC103 CXD2507AR



IC101 L78LR05D (Main Board)



IC203 LB1641

