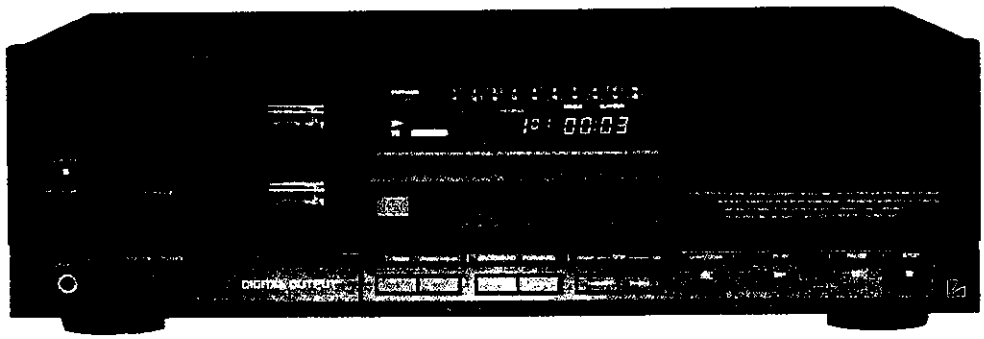
SERVICE MANUAL

Compact Disc Player

D-103u



Adjustment Procedures

1. Compact Disc Section

(1) Connections

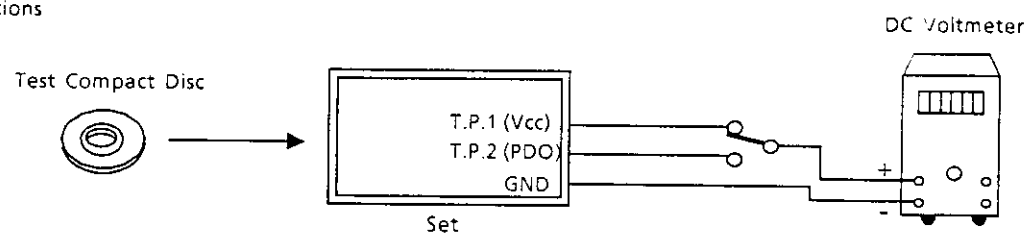


Figure 1

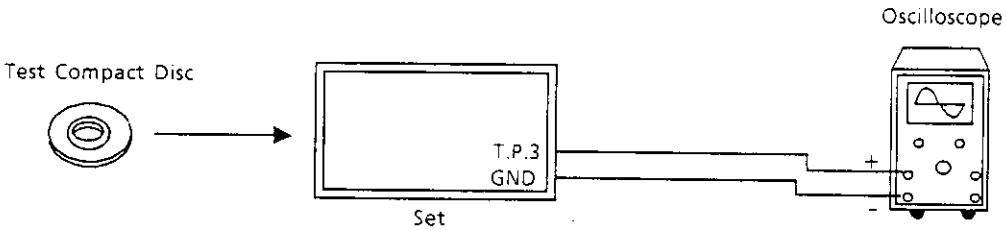


Figure 15

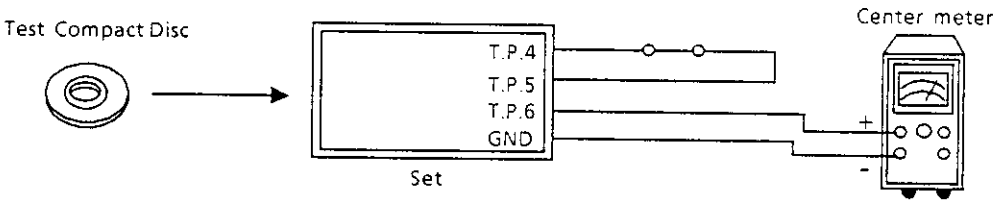


Figure 16

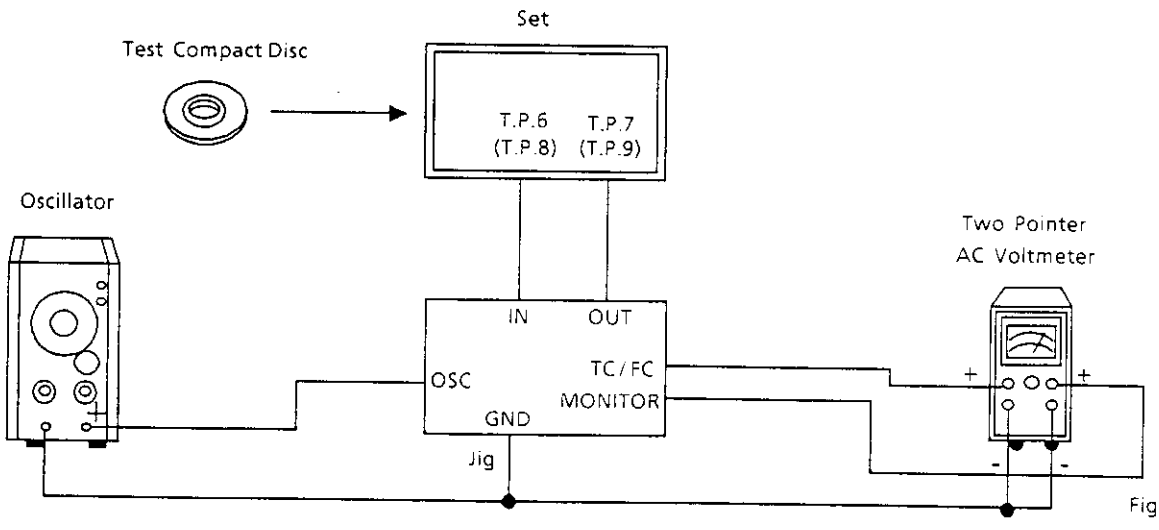


Figure 17

Note : Use the Jig which using for D-105u

(2) Control Settings

Power Switch	ON
Play Switch	ON
Others	OFF

(3) Test CD

Tracking Error Balance Adjustment ..... SONY YEDS-18 (No7)
A-BEX TCD-782 (No8)

Others ..... SONY YEDS-18 (No2)
A-BEX TCD-782 (No2)

(4) Adjustment Procedures

Step	Description	Connections	Oscillator	Test Point	Adjustment
1	VCO Adjustment	Figure 14	-	T.P.1 T.P.2	Take measurement of the voltage at the T.P.1. Then adjust VR202 so that the output voltage at the T.P.2 becomes. 1/2 ±10mV of the voltage at the T.P.1.
2	Focus Bias Adjustment	Figure 15	-	T.P.3	Adjust VR201 so that the T.P.3 (Eye pattern) signal is at its maximum, with a favorable Eye pattern as shown in Figure 18.
3	Tracking Error Balance Adjustment	Figure 16	-	T.P.4 T.P.5 T.P.6	After short circuiting between T.P.4 and T.P.5, turn VR204 fully counterclockwise. When the center meter is connected to the unit, the meter pointer will deflect between "a" and "b" as shown in Figure 19. Adjust VR203 until minimum deflection of the center meter shows "0". In this care, minimum deflection shows "0" stands for that "a". After the adjustment set VR204 to its center position.
4	Tracking Gain Adjustment	Figure 17	1kHz 100mV	T.P.6 T.P.7	Adjust VR204 so that both arms of the voltmeter come at the same position.
5	Focus Gain Adjustment	Figure 17	1kHz 100mV	T.P.8 T.P.9	Adjust VR205 so that both arms of the voltmeter come at the same position.

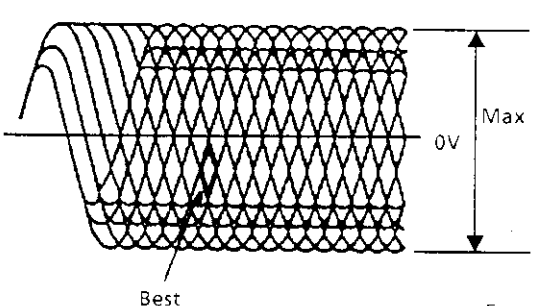


Figure 18

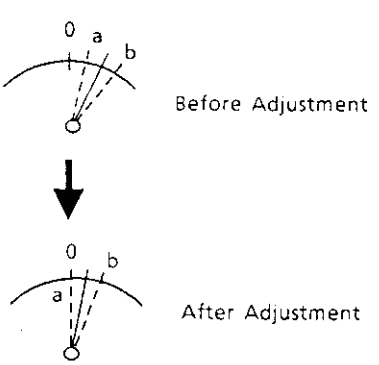
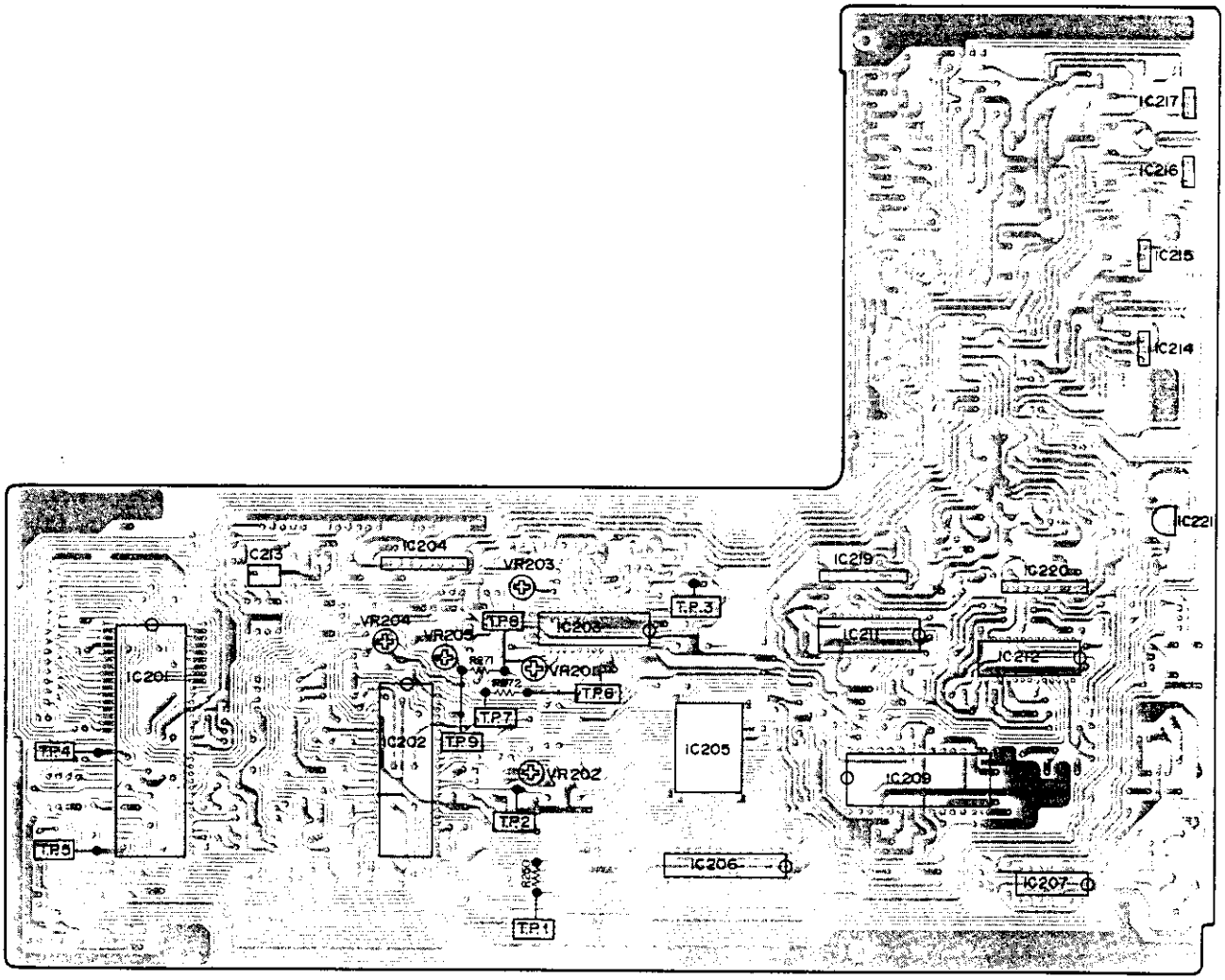


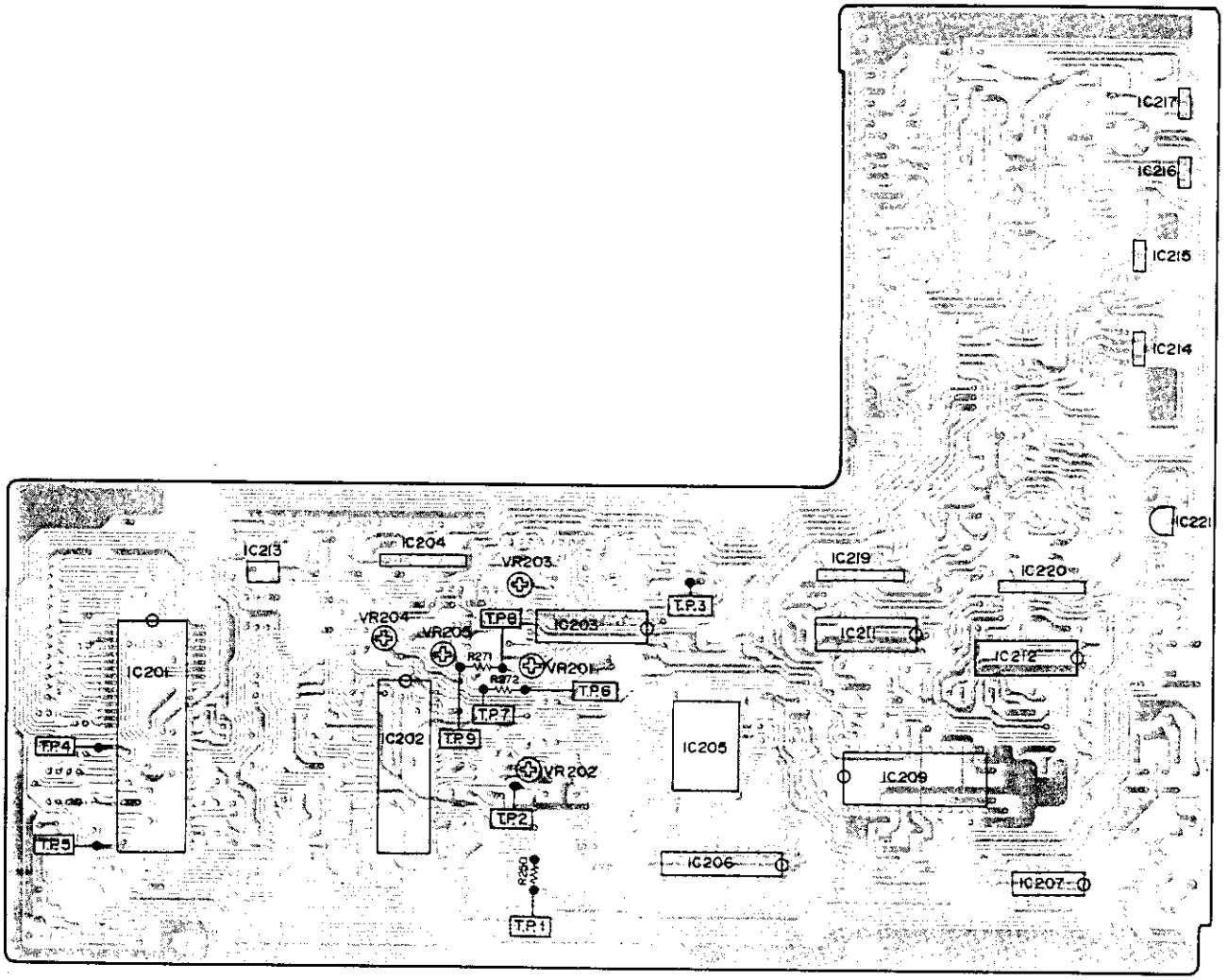
Figure 19

Adjustment Location

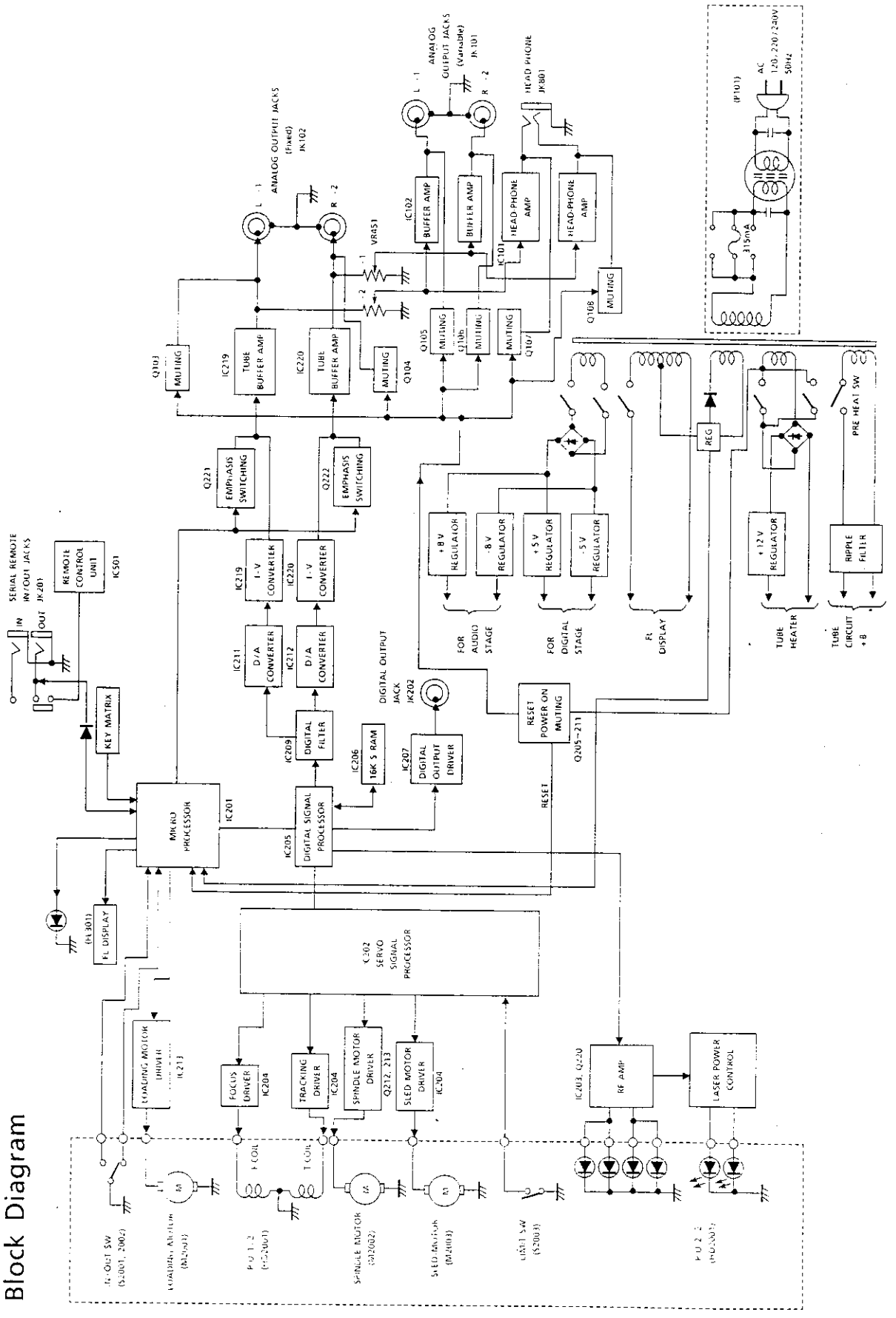
Main P.C. Board (Component Side) AD model



Main P.C. Board (Component Side) EK model



Block Diagram



Schematic Diagram(1/2)

NOTE

1. All resistance values are in ohms K=1,000 M=1,000,000
2. All capacitance values are in microfarads P= 1/1,000,000
3. e:General Foreign mode only(EK)
   ▲:West Germany model only(AD)
   others:common.

Voltage Measuring Conditions

1. Power Supply Voltage : AC120/220/240V/50Hz
2. Measuring Meter : Digital Multimeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : In play mode of non-signal track (TEST CD:SONY YEDS-18 TRACK NO.2)

	E	C	B
Q101	-30.2V	-43.8V	-30.7V
Q102	85.1V	130.5V	85.6V
Q103	0V	0V	-7.6V
Q104	0V	0V	-7.6V
Q105	0V	0V	-7.6V
Q106	0V	0V	-7.6V
Q107	0V	0V	-7.6V
Q108	0V	0V	-7.6V
Q204	0V	0V	2.8V
Q205	11.7V	-7.5V	0V
Q206	4.9V	4.9V	0V
Q207	0V	0V	6.3V
Q208	0V	0V	6.3V
Q209	0V	0V	0V
Q210	0V	0V	0V
Q211	0V	0V	0V
Q212	0.6V	—	1V
Q213	0.6V	-12V	1V
Q220	4V	1.8V	2.8V
Q221	0V	0V	-7.6V
Q222	0V	0V	-7.6V
Q223	4.5V	0V	4.8V
Q224	0V	4.5V	0V
Q225	0V	0V	4.5V
Q226	0V	0V	0V

IC201

1	-25.3V	33	4.9V
2	-22.6V	34	1.4V
3	-27V	35	4.9V
4	-27V	36	0V
5	-22.6V	37	4.8V
6	-32.8V	38	—
7	-32.8V	39	0V
8	-32.8V	40	0V
9	-32.8V	41	0V
10	-32.8V	42	0V
11	-32.8V	43	2.2V
12	-32.8V	44	-18V
13	-32.8V	45	-19.1V
14	-32.8V	46	-18.7V
15	-32.8V	47	0V
16	0V	48	2.3V
17	-7.6V	49	2.3V
18	4.8V	50	0V
19	-35.8V	51	0V
20	-7.4V	52	—
21	0V	53	6V
22	4.9V	54	0V
23	0.4V	55	0V
24	4.9V	56	0V
25	4.9V	57	-22.2V
26	1.4V	58	-24.2V
27	1.4V	59	-23.8V
28	4.9V	60	-17.1V
29	0V	61	-10.1V
30	4.8V	62	-15.6V
31	—	63	-22.6V
32	5V	64	-29.8V

IC202

1	-4.9V	25	-4.9V
2	-4.9V	26	0V
3	0V	27	—
4	0V	28	4.9V
5	0V	29	0V
6	0V	30	4.9V
7	0V	31	4.9V
8	0V	32	0V
9	0V	33	2.4V
10	0V	34	2.5V
11	0.9V	35	2.3V
12	0V	36	2.3V
13	0.3V	37	3.5V
14	0V	38	2.5V
15	0V	39	4.9V
16	4.8V	40	2.5V
17	0V	41	4.8V
18	-3.2V	42	2.5V
19	0V	43	4.9V
20	-1	44	0V
21	0V	45	1.1V
22	-4.9V	46	2.4V
23	-3.8V	47	0V
24	4.8V	48	0V

×1 : -0.7~0.9V

IC204

1	0V
2	0V
3	-4.9V
4	-4.9V
5	-4.9V
6	-4.9V
7	-4.9V
8	-4.8V
9	-4.8V
10	-4.8V
11	-4.8V
12	0V
13	0V
14	0V
15	0V
16	4.9V

IC207

1	2.3V
2	2.4V
3	2.4V
4	2.4V
5	2.3V
6	2.4V
7	0V
8	2.4V
9	2.4V
10	2.4V
11	2.4V
12	2.4V
13	2.4V
14	4.9V

IC203

1	0V
2	1.1V
3	0V
4	2.5V
5	2.8V
6	-4.8V
7	0V
8	0V
9	0V
10	0V
11	0V
12	-0.5V
13	-0.4V
14	0V
15	-2.2V
16	-1.9V
17	-4.9V
18	0V
19	0V
20	0V
21	-4.8V
22	0V
23	-1.7V
24	-1.2V
25	0V
26	2.4V
27	2.4V
28	4.8V
29	0.2V
30	4.9V

IC206

1	2.5V
2	2.5V
3	2.4V
4	2.4V
5	2.4V
6	2.4V
7	2.4V
8	2.4V
9	1.9V
10	1.9V
11	1.9V
12	0V
13	1.9V
14	1.9V
15	1.9V
16	1.9V
17	1.9V
18	2.5V
19	-3
20	2.5V
21	4.3V
22	1.9V
23	2.8V
24	4.9V

×3 1.2~3.5V

IC208

1	2.3V
2	2.4V
3	2.4V
4	2.4V
5	2.3V
6	2.4V
7	0V
8	2.4V
9	2.4V
10	2.4V
11	2.4V
12	2.4V
13	2.4V
14	4.9V

IC501

1	4.8V
2	5V
3	0V

IC205

1	0V	41	2.4V
2	-4.8V	42	2.4V
3	2.5V	43	2.4V
4	2.7V	44	2.5V
5	2.4V	45	2.5V
6	2.4V	46	2.8V
7	4.9V	47	1.9V
8	2.4V	48	×2
9	2.4V	49	4.3V
10	0V	50	2.6V
11	1.5V	51	—
12	0V	52	0V
13	4.8V	53	2.3V
14	4.8V	54	—
15	1.4V	55	0V
16	4.9V	56	0V
17	0V	57	4.9V
18	4.8V	58	0V
19	0V	59	0V
20	—	60	—
21	—	61	—
22	—	62	—
23	1.4V	63	—
24	0V	64	—
25	4.9V	65	—
26	4.9V	66	—
27	2.3V	67	—
28	4.8V	68	—
29	1.8V	69	—
30	1.8V	70	—
31	1.9V	71	—
32	1.9V	72	—
33	4.9V	73	4.9V
34	1.9V	74	—
35	1.9V	75	—
36	1.9V	76	2.3V
37	1.9V	77	—
38	2.4V	78	2.5V
39	2.4V	79	2.4V
40	2.4V	80	2.5V

×2 : 1.2~3.5V

	IC105	IC214	IC215	IC216	IC217	IC221
1	15.7V	5.7V	-4.9V	7.8V	-7.8V	5V
2	0V	0V	-12.8V	0V	-12.8V	0V
3	11.9V	12V	0V	12V	0V	7.9V

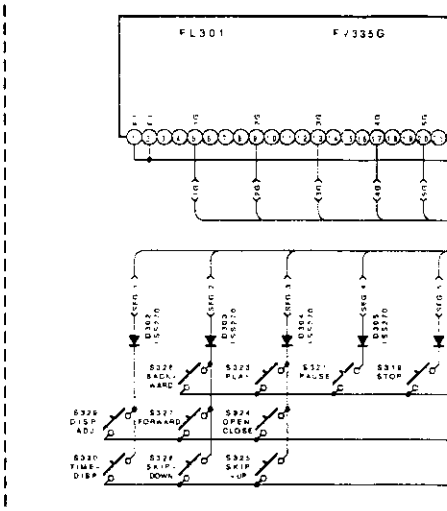
	IC101	IC102	IC219	IC220
1	0V	0V	0V	0V
2	0V	0V	0V	0V
3	0V	0V	0V	0V
4	-7.8V	-7.8V	-7.8V	-7.8V
5	0V	0V	0V	0V
6	0V	0V	0V	0V
7	0V	0V	0V	0V
8	7.9V	7.9V	7.9V	7.9V

	IC213
1	0~4.9V
2	-4.9~4.9V
3	-12.8V
4	-4.9~4.8V
5	12V

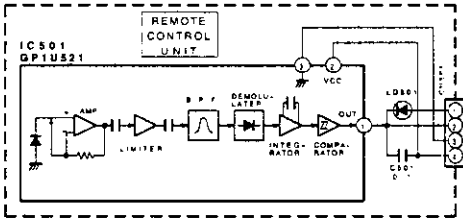
	IC209	IC211	IC212
1	2.5V	—	—
2	2.3V	—	—
3	4.9V	—	—
4	4.9V	—	—
5	—	—	—
6	2.6V	—	—
7	2.6V	—	—
8	0V	2.3V	2.3V
9	2V	5V	5V
10	4.9V	2V	2V
11	—	3V	3V
12	—	0V	0V
13	—	0V	0V
14	4.7V	0V	0V
15	4.9V	0V	0V
16	4.9V	-7.8V	-7.8V
17	4.9V	0V	0V
18	—	0V	0V
19	—	4.9V	4.9V
20	—	—	—
21	0V	—	—
22	4.9V	—	—
23	2.1V	3.4V	3.4V
24	2.1V	1.9V	1.9V
25	3.7V	3.7V	3.7V
26	1.9V	1.9V	1.9V
27	—	-7.8V	-7.8V
28	2.5V		

IC'S	IC501
TRANSISTORS *(Q)	Q101

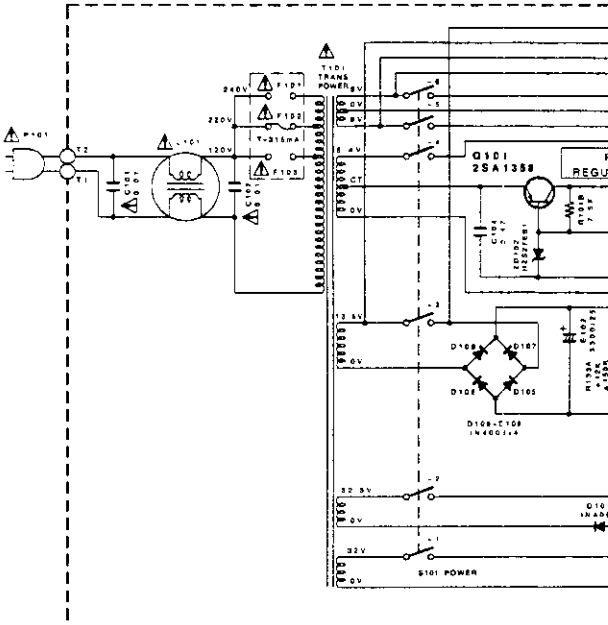
FL/KEY Board P.C.Board

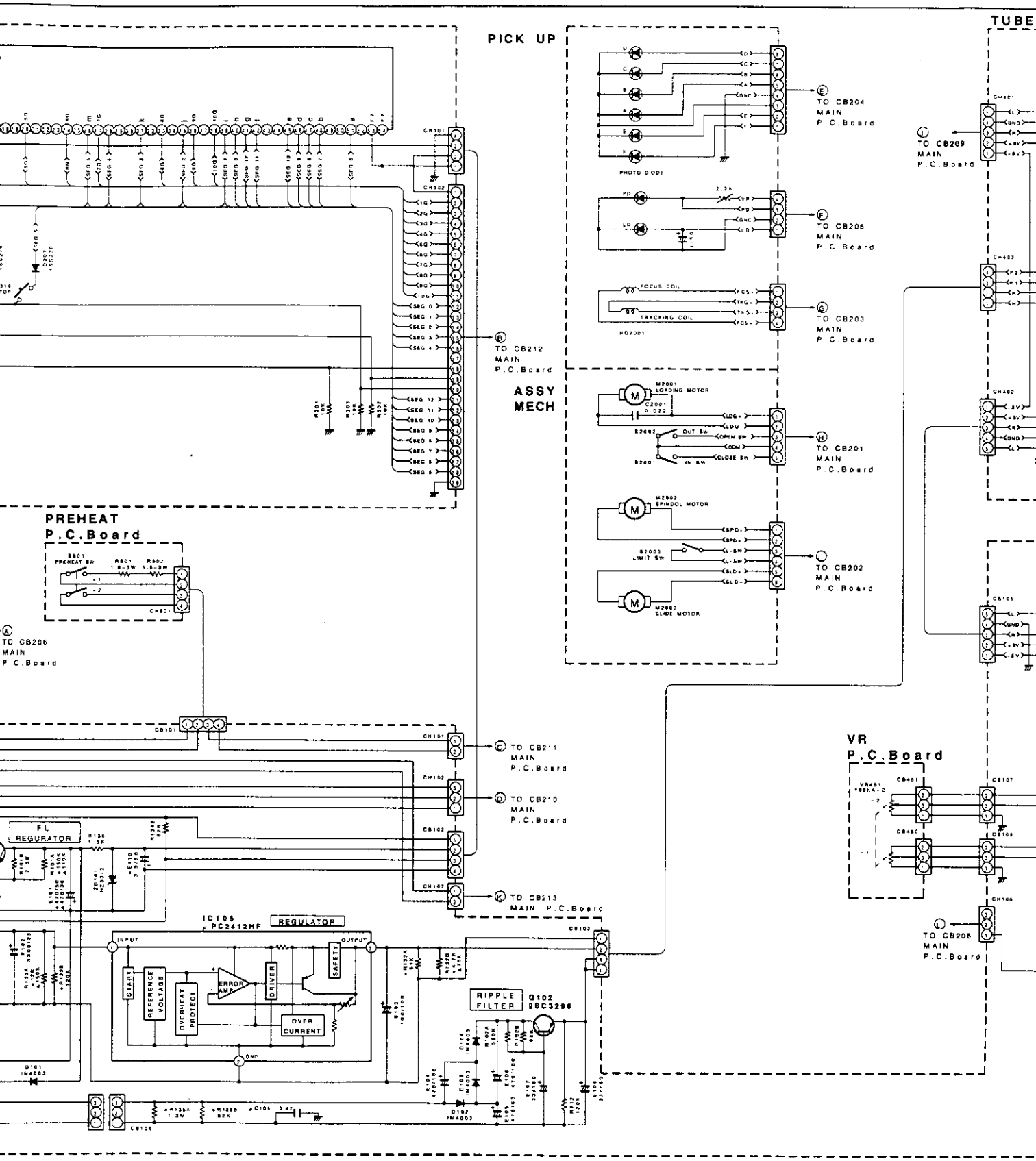


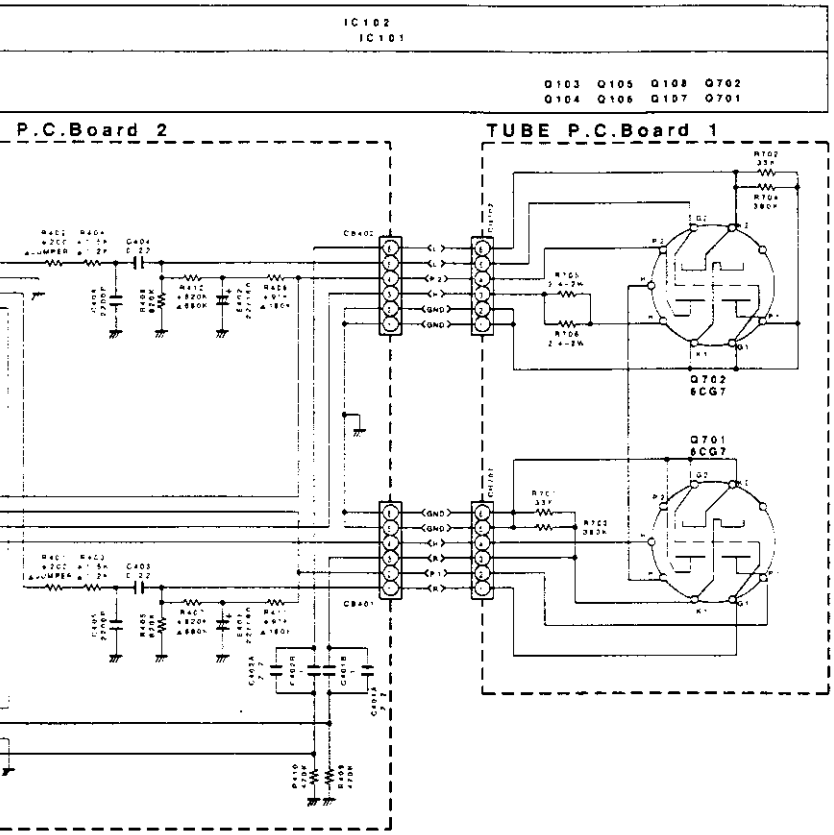
REMOTE P.C.Board

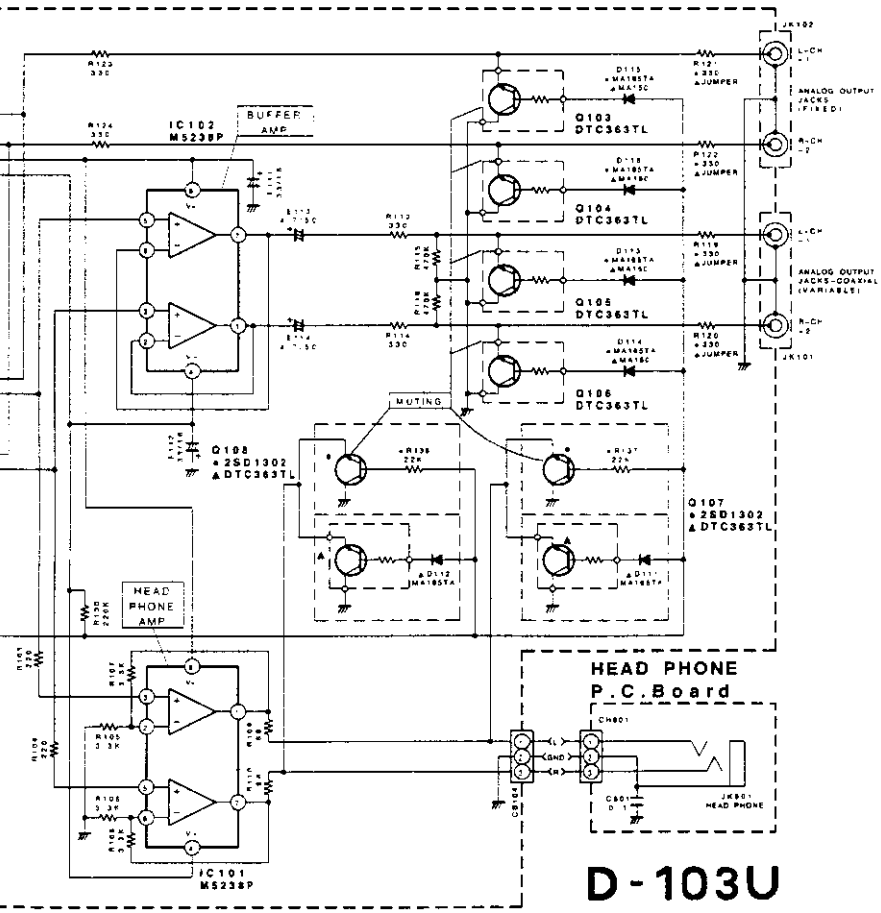


POWER SUPPLY P.C.Board




PICK UP
TUBE
TO CB209 MAIN P.C.Board
PHOTO DIODE
TO CB204 MAIN P.C.Board
TO CB205 MAIN P.C.Board
FOCUS COIL
TRACKING COIL
TO CB203 MAIN P.C.Board
ASSY MECH
M2001 LOADING MOTOR
TO CB201 MAIN P.C.Board
M2002 SPINDOL MOTOR
TO CB202 MAIN P.C.Board
M2003 SLIDE MOTOR
TO CB212 MAIN P.C.Board
PREHEAT P.C.Board
TO CB206 MAIN P.C.Board
TO CB211 MAIN P.C.Board
TO CB210 MAIN P.C.Board
TO CB213 MAIN P.C.Board
TO CB208 MAIN P.C.Board
VR P.C.Board
IC105 PC2412HF
REGULATOR
INPUT
OUTPUT
START
REFERENCE VOLTAGE
OVERHEAT PROTECT
ERROR AMP
DRIVER
SAFETY
OVER CURRENT
RIPPLE FILTER
Q102 2SC3298
FL REGURATOR

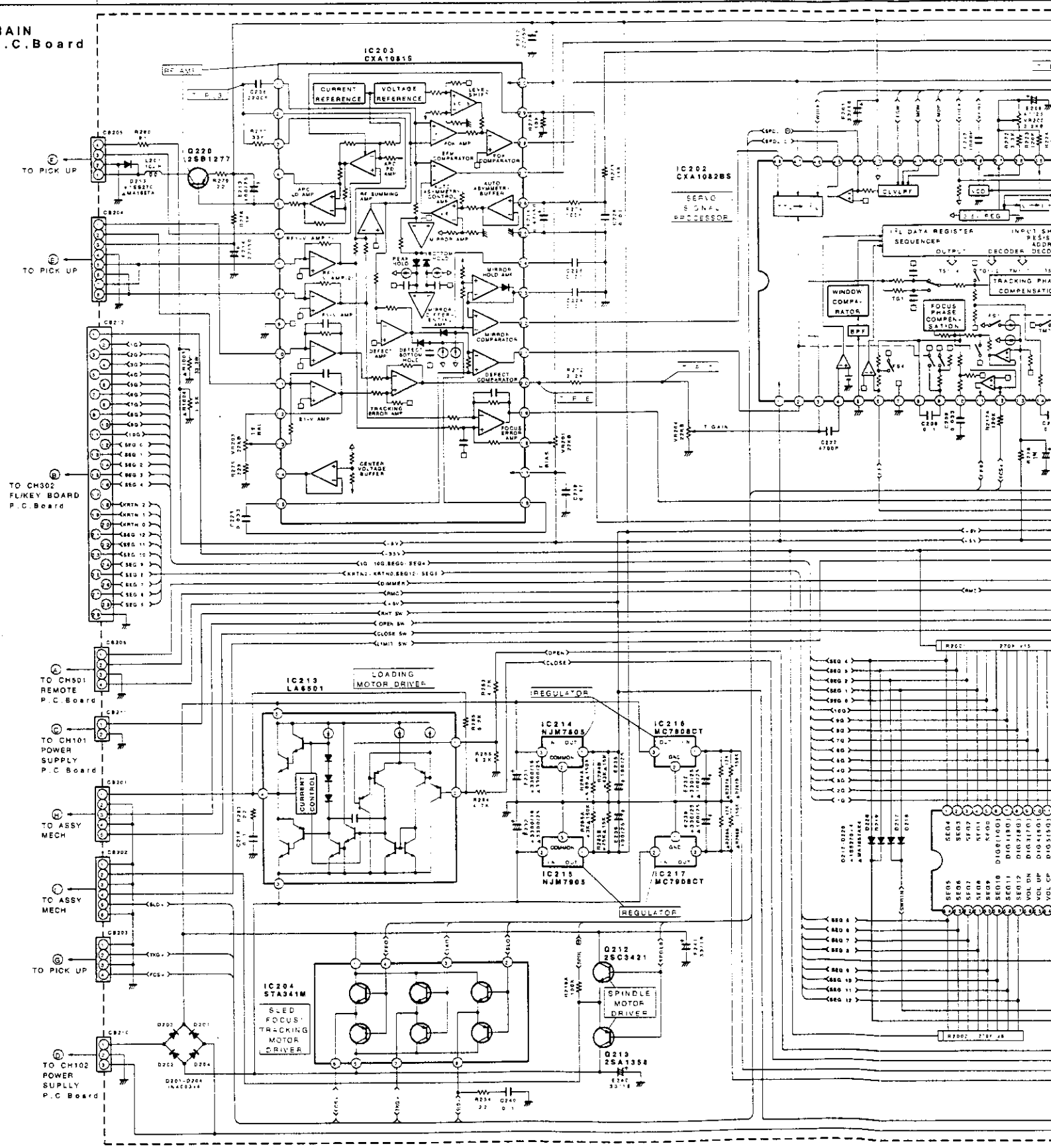

IC102
IC101
Q103 Q105 Q108 Q702
Q104 Q106 Q107 Q701
P.C.Board 2
TUBE P.C.Board 1
Q702
6CG7
Q701
6CG7

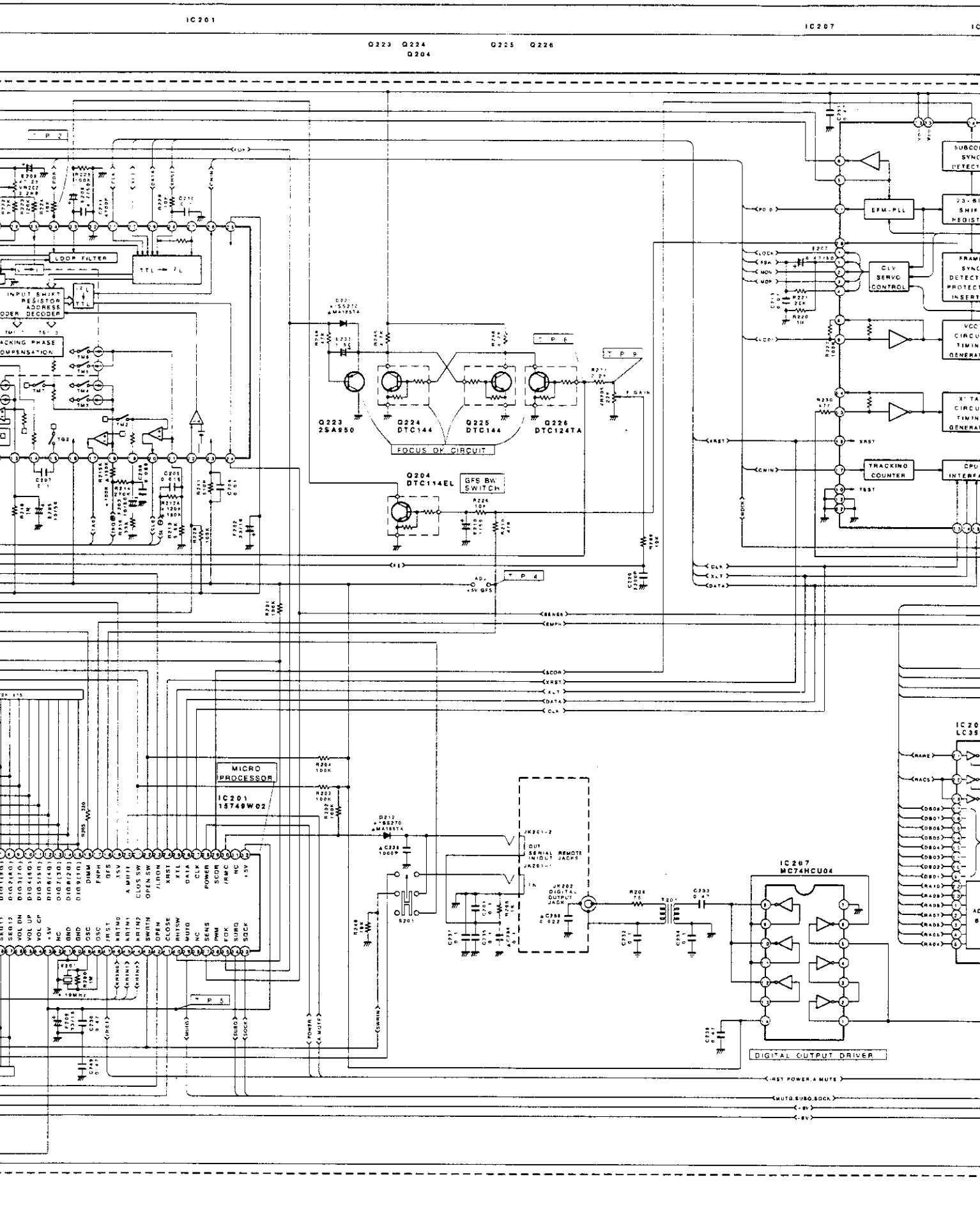

IC102
M5238P
BUFFER AMP
Q103
DTC363TL
Q104
DTC363TL
Q105
DTC363TL
Q106
DTC363TL
MUTING
Q108
2SD1302
DTC363TL
Q107
2SD1302
DTC363TL
HEAD PHONE AMP
IC101
M5238P
HEAD PHONE
P.C.Board
ANALOG OUTPUT JACKS (FIXED)
ANALOG OUTPUT JACKS-COAXIAL (VARIABLE)
JK102
JK101
JK901
HEAD PHONE

D-103U

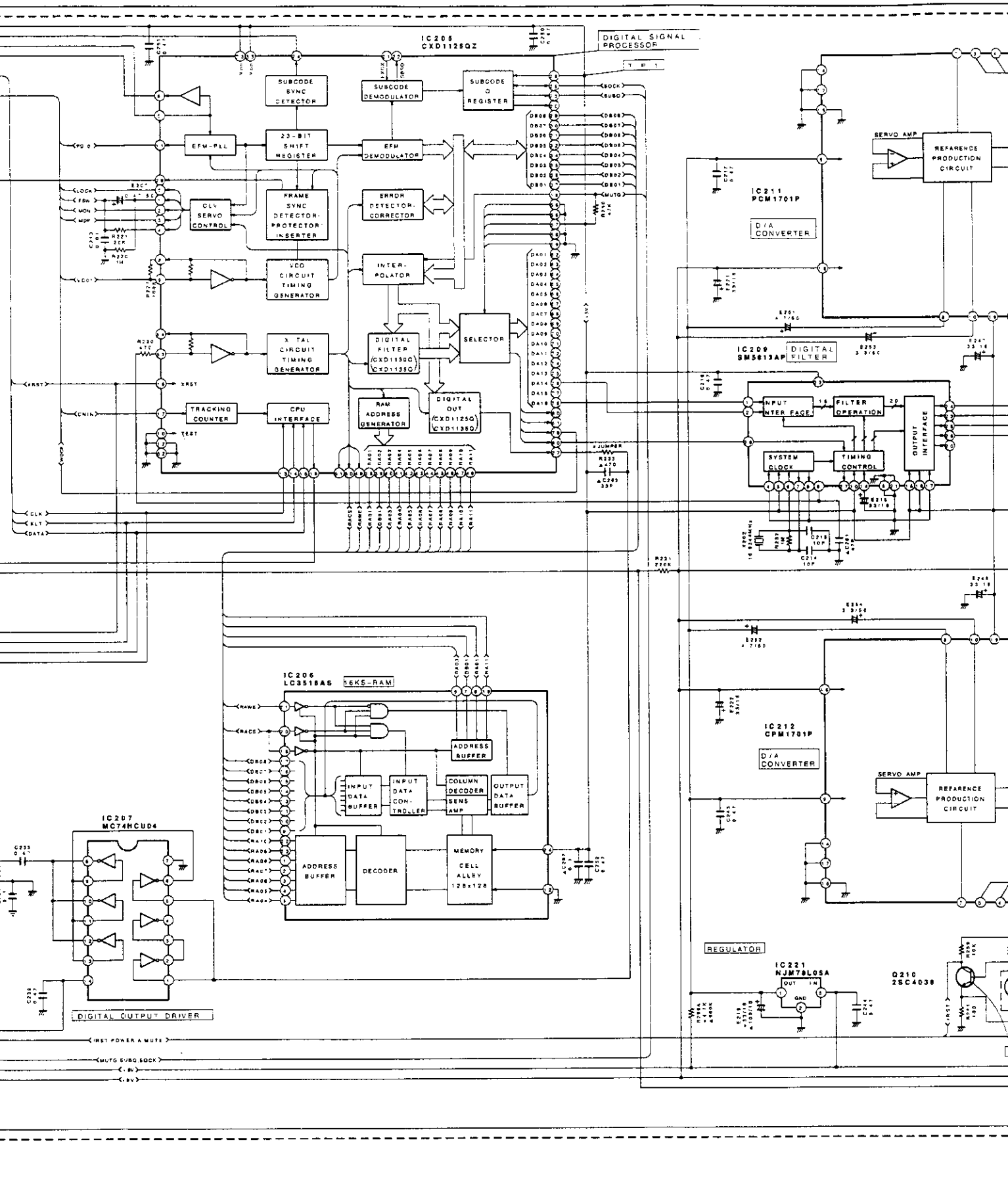
Schematic Diagram (2/2)

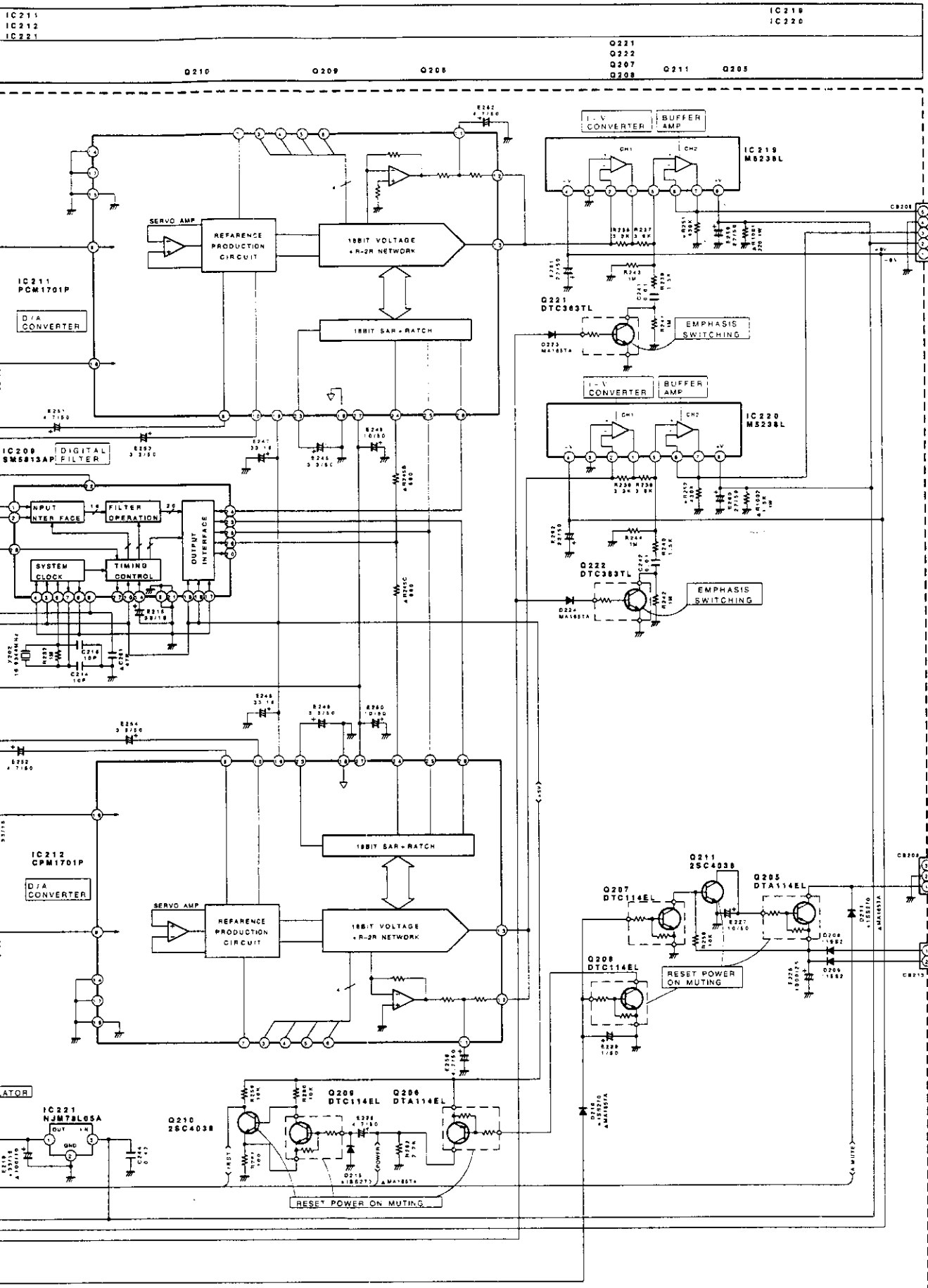
IC's	IC213	IC203 IC204 IC214 IC215 IC202 IC216 IC217
TRANSISTORS (Q)	Q220	Q212 Q213




IC201
IC207
Q223 Q224
Q204
Q225 Q226
LOOP FILTER
TTL → PL
INPUT SHIFT REGISTOR ADDRESS DECODER
Q223 2SA950
Q224 DTC144
Q225 DTC144
Q226 DTC124TA
FOCUS OK CIRCUIT
Q204 DTC114EL
GFS BW SWITCH
EFM-PLL
CLV SERVO CONTROL
TRACKING COUNTER
MICRO PROCESSOR
IC201 15749W02
IC207 MC74HCU04
DIGITAL OUTPUT DRIVER
DIGITAL OUTPUT JACK
OUT SERIAL IN/OUT REMOTE JACKS
TP 2
TP 4
TP 5
TP 6
TP 9

IC207 IC206 IC205 IC209 IC211 IC212 IC221 Q210




IC211
IC212
IC221
IC219
IC220
Q210
Q209
Q205
Q221
Q222
Q207
Q208
Q211
Q205
SERVO AMP
REFARENCE PRODUCTION CIRCUIT
18BIT VOLTAGE +R-2R NETWORK
18BIT SAR+RATCH
IC211
PCM1701P
D/A CONVERTER
I-V CONVERTER
BUFFER AMP
IC219
M5238L
CB208
TO CH401 TUBE2 P.C.Board
Q221
DTC363TL
EMPHASIS SWITCHING
IC220
M5238L
IC209
SM5813AP
DIGITAL FILTER
INPUT INTER FACE
FILTER OPERATION
OUTPUT INTERFACE
SYSTEM CLOCK
TIMING CONTROL
Q222
DTC363TL
EMPHASIS SWITCHING
IC212
CPM1701P
D/A CONVERTER
SERVO AMP
REFARENCE PRODUCTION CIRCUIT
18BIT VOLTAGE +R-2R NETWORK
18BIT SAR+RATCH
Q211
2SC4038
Q207
DTC114EL
Q205
DTA114EL
CB209
TO CH105 POWER SUPPLY P.C.Board
CB213
TO CH107 POWER SUPPLY P.C.Board
Q208
DTC114EL
RESET POWER ON MUTING
IC221
NJM78L05A
Q210
2SC4038
Q208
DTC114EL
Q206
DTA114EL
RESET POWER ON MUTING

D-103U