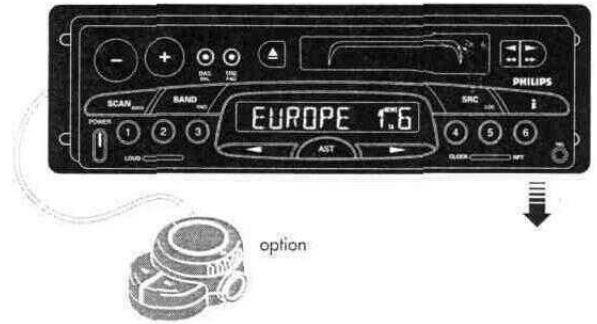


Service
Service
Service



Service Manual

For repair information of the Cassette deck see Service Manual of Auto Cassette Deck CDS-36PS3.

12 V 

Table of contents	Page
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Reference Table

	RDS (TA)	2CH LINE OUT	REMOTE CONTROL	CDCC	TEL_MUTE	CLOCK	INSTALL
RC438/00	X	X	X	X	X	X	
RC438/10		X	X	X	X	X	X
RC438/12		X	X	X	X	X	X
RC408/00	X		X		X	X	
RC408/10					X	X	X
RC408/12					X		X

Technical Specifications

General

Power Supply : 10.5 - 16.0V
 Quiescent Current (at 12.6V) : < 3.0mA
 Fuse : 10A

Radio

FM : 87.5 - 108MHz
 LW : 144 - 288kHz
 MW : 531 - 1629kHz
 IF-FM (1/2) : 10.7MHz/72.2MHz
 IF-AM(1/2) : 10.7MHz/450kHz
 α - 3dB : 5 ± 3μV
 FM sensitivity for 26dB S/N : <=5μV
 MW sensitivity for 26dB S/N : <=50μV
 LW sensitivity for 26dB S/N : <=38μV

Cassette Deck CDS-AST

Number : 2 X 2
 Tapespeed : 4.76cm/second +3% - 1%
 Wow and Flutter : 0.3%
 Cross talk : > 45dB

Amplifier

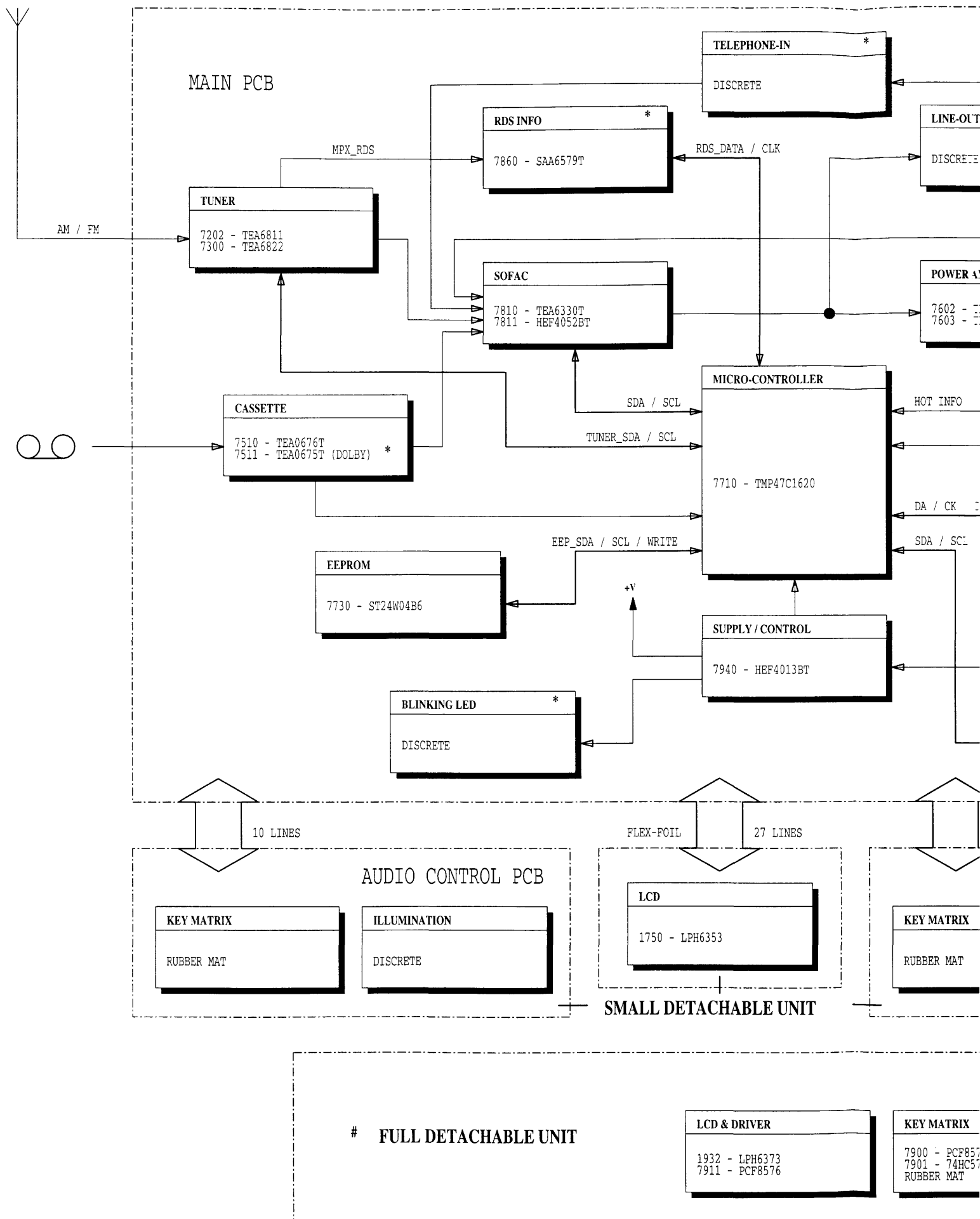
Output Power (D=10%) : 4x20W ± 1dB/4Ω
 Loudness : 8 ± 2dB at 60Hz
 Bass : 12 ± 2dB at 60Hz
 Treble : 10 ± 2dB at 10kHz
 Max. line out current *) : 500mA
 Max. line out voltage *) : 1V

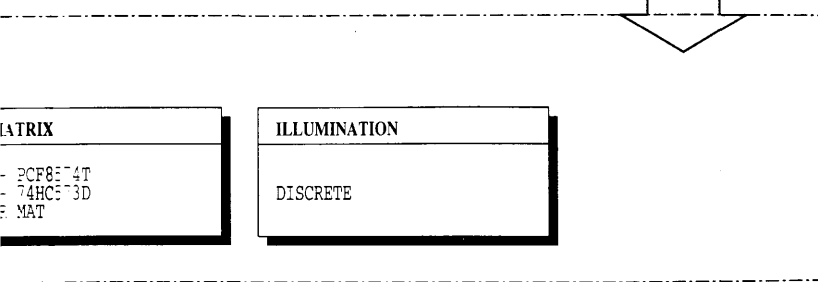
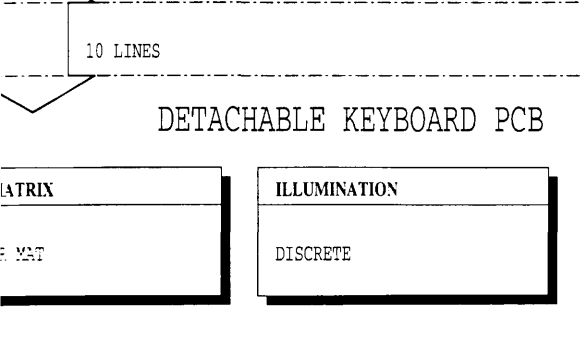
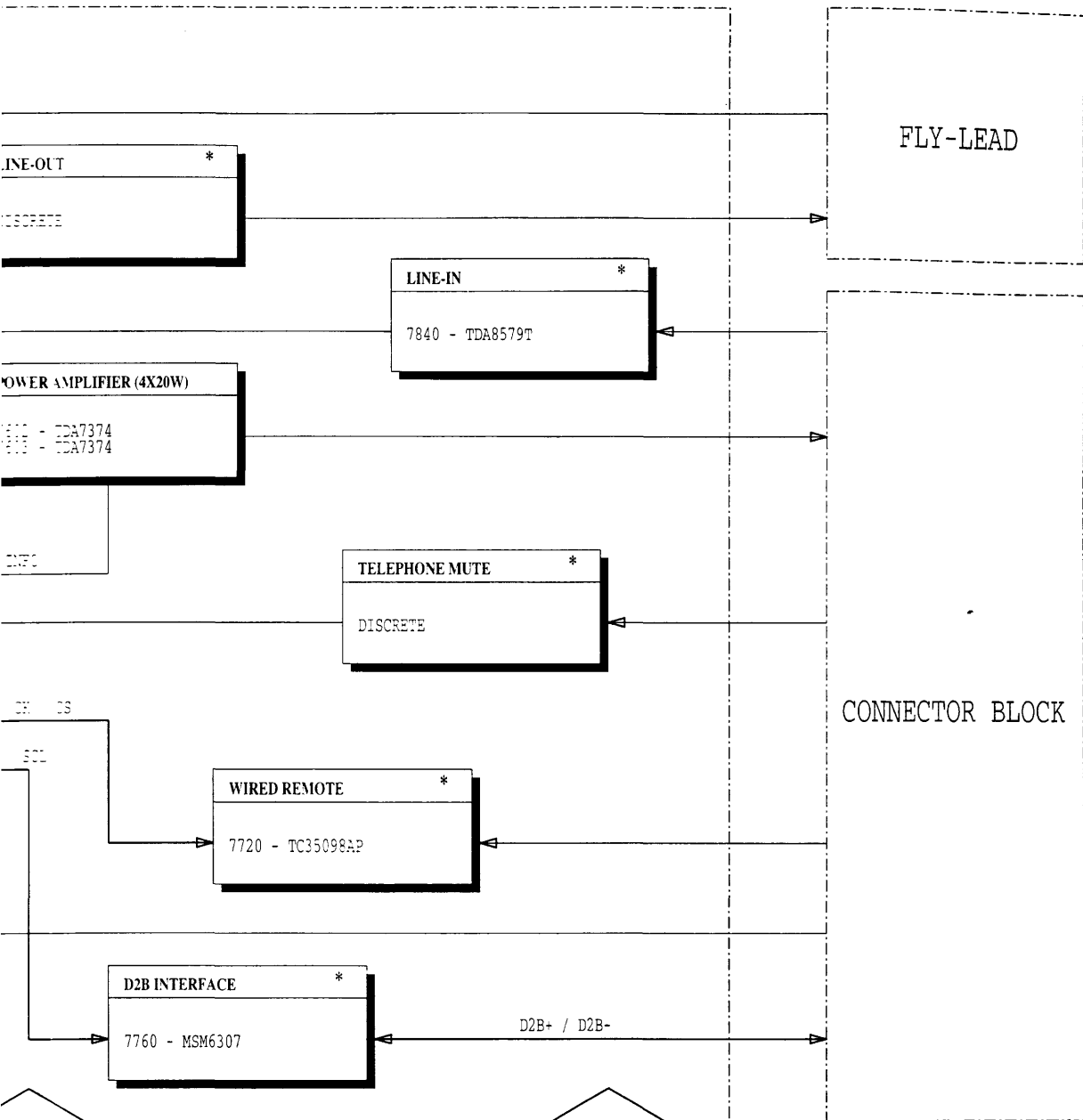
Tuner range table

Area	Bands	Frequency	Grids Manual/Search
Europe	FM	87.5 - 108MHz	50kHz/100kHz
	LW	144 - 288kHz	1kHz
	MW	531 - 1629kHz	1kHz/9kHz
USA	FM	87.5 - 108MHz	50kHz/100kHz
	AM	530 - 1710kHz	1kHz/10kHz
JAPAN	FM	76.0 - 90MHz	50kHz/100kHz
	MW	531 - 1629kHz	1kHz/9kHz

*) See Reference Table

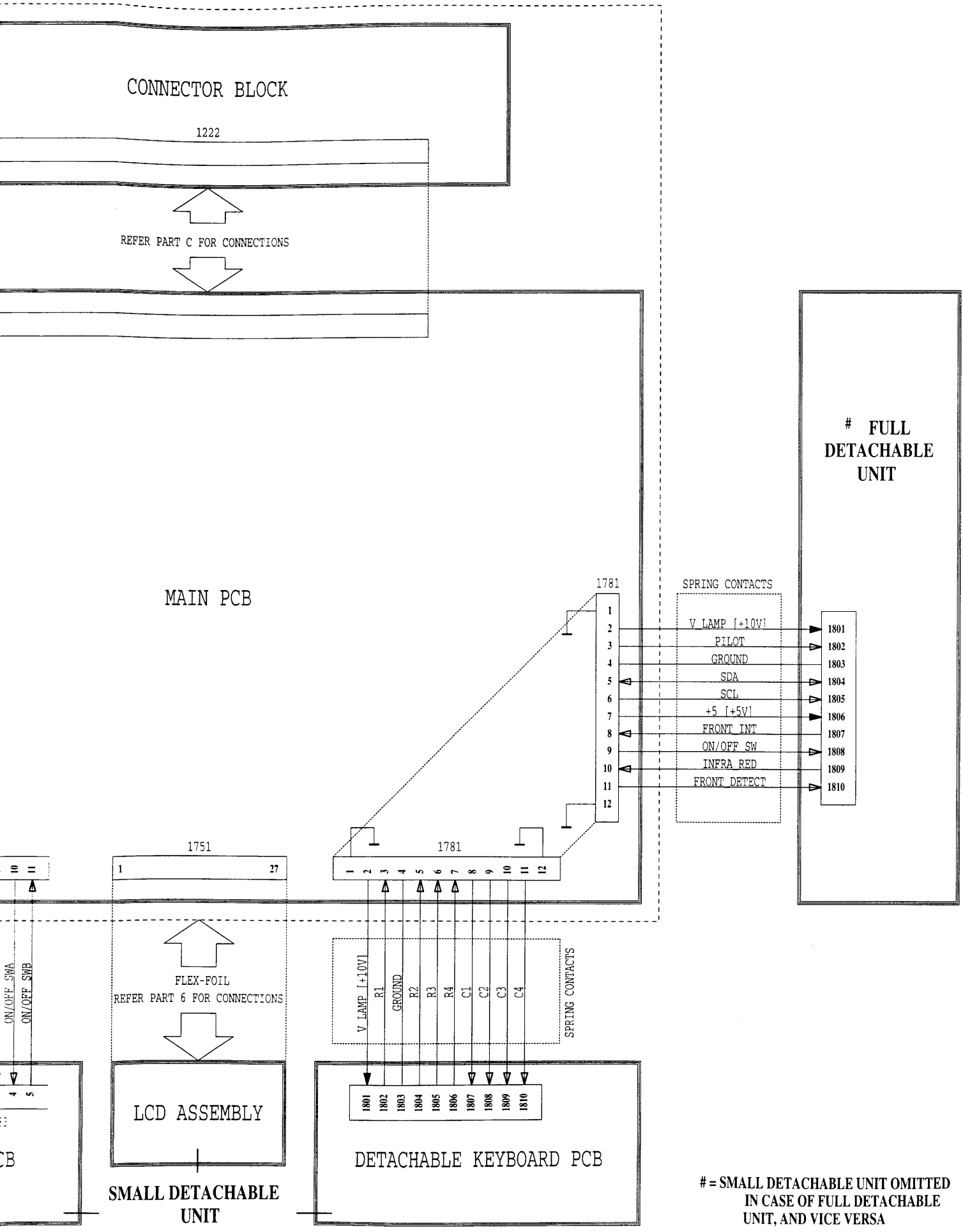
ART A : ELECTRICAL ARCHITECTURE





* = OPTION

= SMALL DETACHABLE UNIT OMITTED IN CASE OF FULL DETACHABLE UNIT, AND VICE VERSA



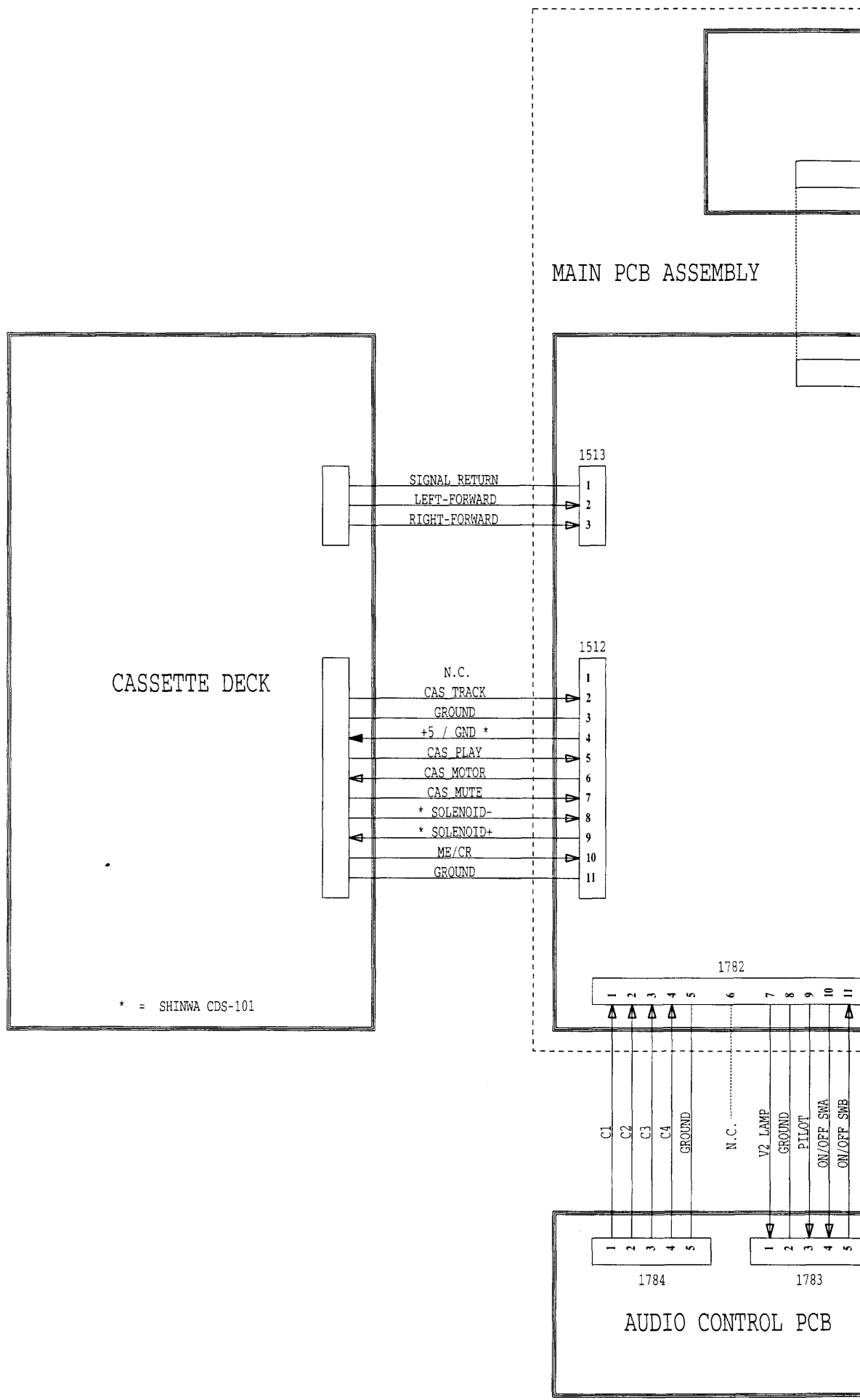
= SMALL DETACHABLE UNIT OMITTED
IN CASE OF FULL DETACHABLE
UNIT, AND VICE VERSA

PART B : WIRING DIAGRAM

to dashboard/centre console

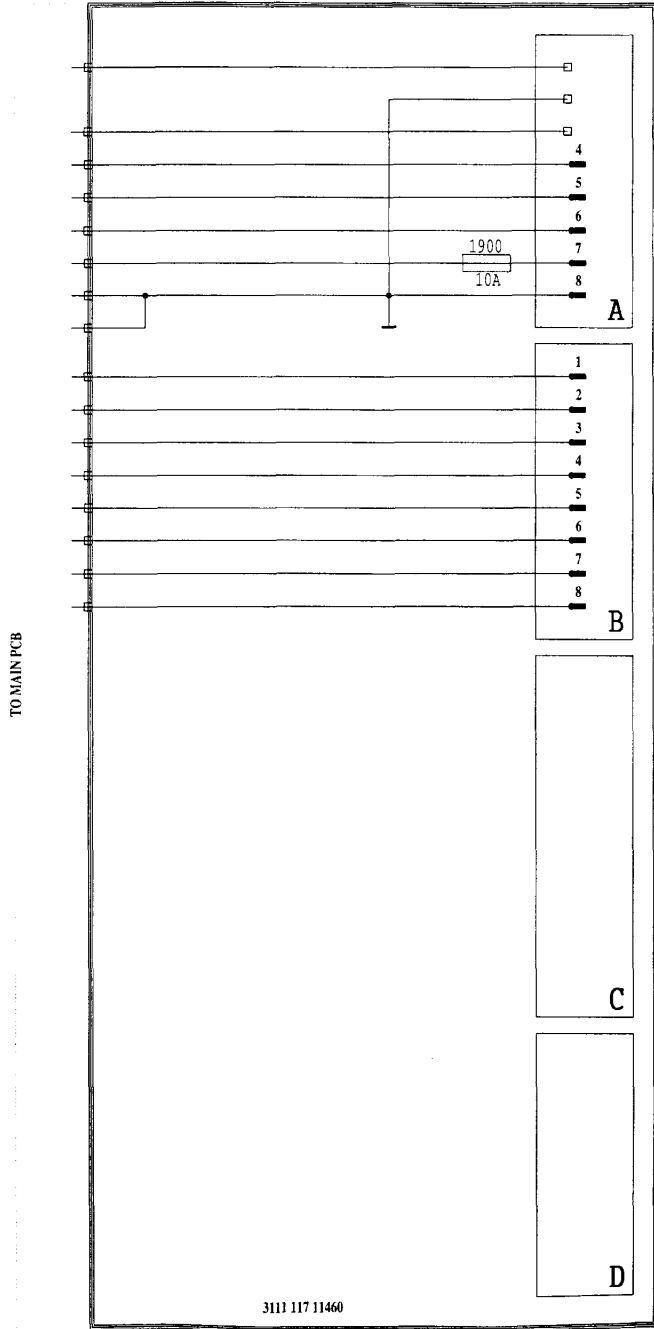
Replace with a blade-type fuse of the correct rating.
INTERFERENCE SUPPRESSION
 Most modern cars have sufficient interference suppression. If you experience interference generated by the car, consult your garage.

Note : Do not use improper screw. The maximum usable size is 'M5x6 screw'. Using other screw can result in damage of the unit.



PART C : CONNECTOR BLOCK

4X20W CONNECTOR BLOCK

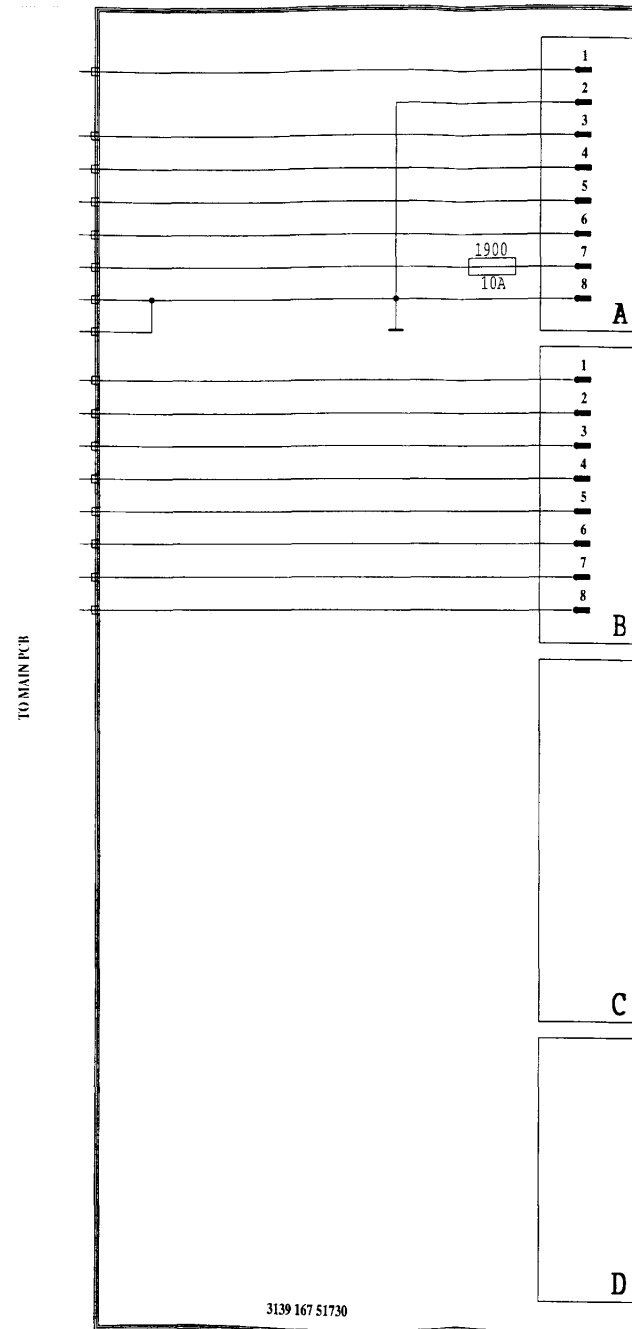


- N.C.
- N.C.
- N.C.
- PERMANENT PLUS
- AUTO AERIAL
- PILOT / EXTERNAL ILLUMINATION
- IGNITION PLUS
- POWER GROUND
- + REAR RIGHT
- + FRONT RIGHT
- + FRONT LEFT
- + REAR LEFT

3111 117 11460

FOR RC628/00, RC638/10, RC638/80, RC408/10, RC408/12

4X20W CONNECTOR BLOCK

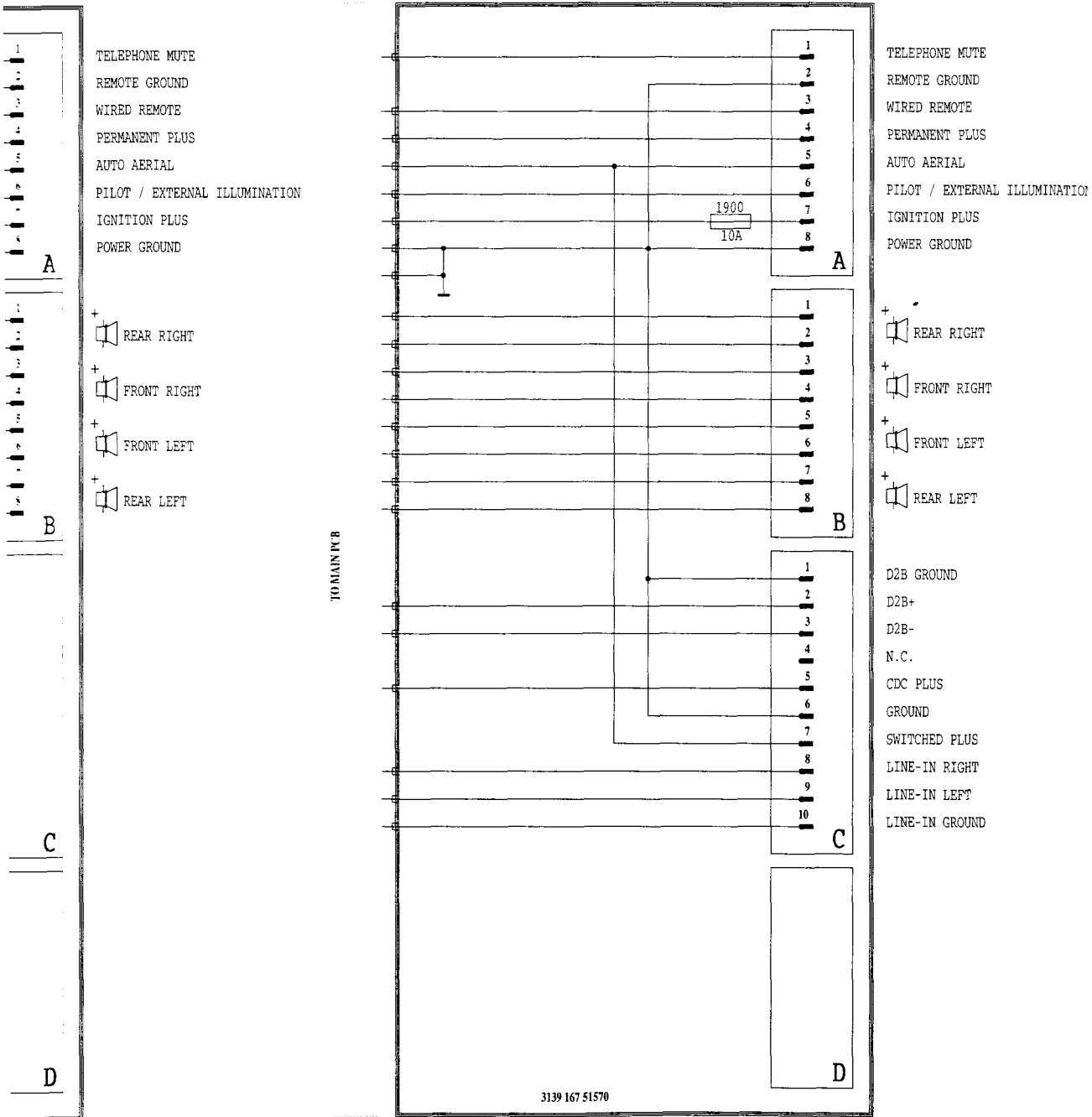


TO MAIN PCB

3139 167 51730

FOR RC638/12, RC648/00, RC408/00

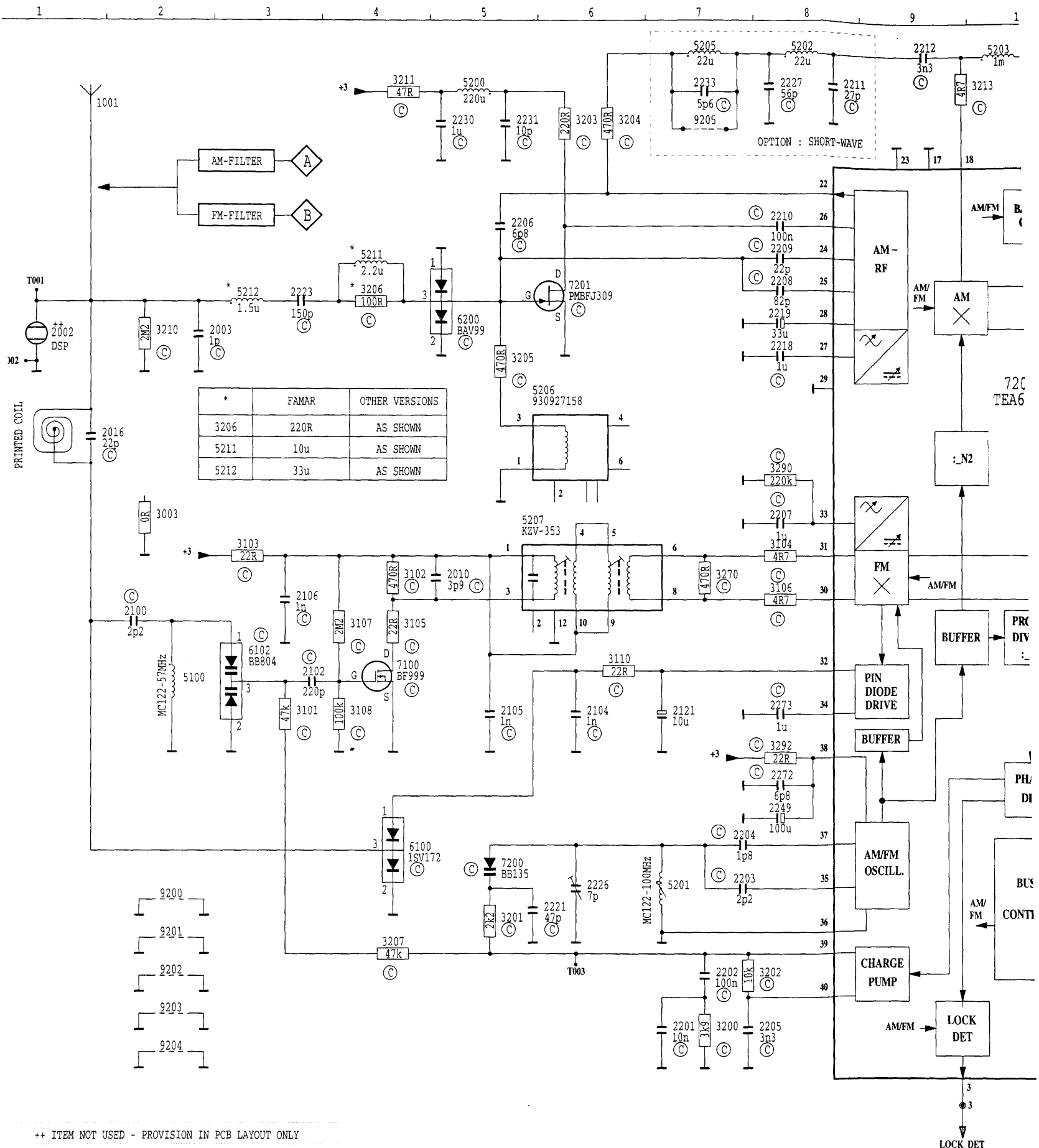
4X20W CONNECTOR BLOCK



3139 167 51570

FOR RC348/00, RC348/30, RC348/97, RC388/00, RC448/30, RC468/00
RC338/10, RC438/00, RC438/10, RC438/12

RT 1 : TUNER IC91 (MAIN PCB)



++ ITEM NOT USED - PROVISION IN PCB LAYOUT ONLY

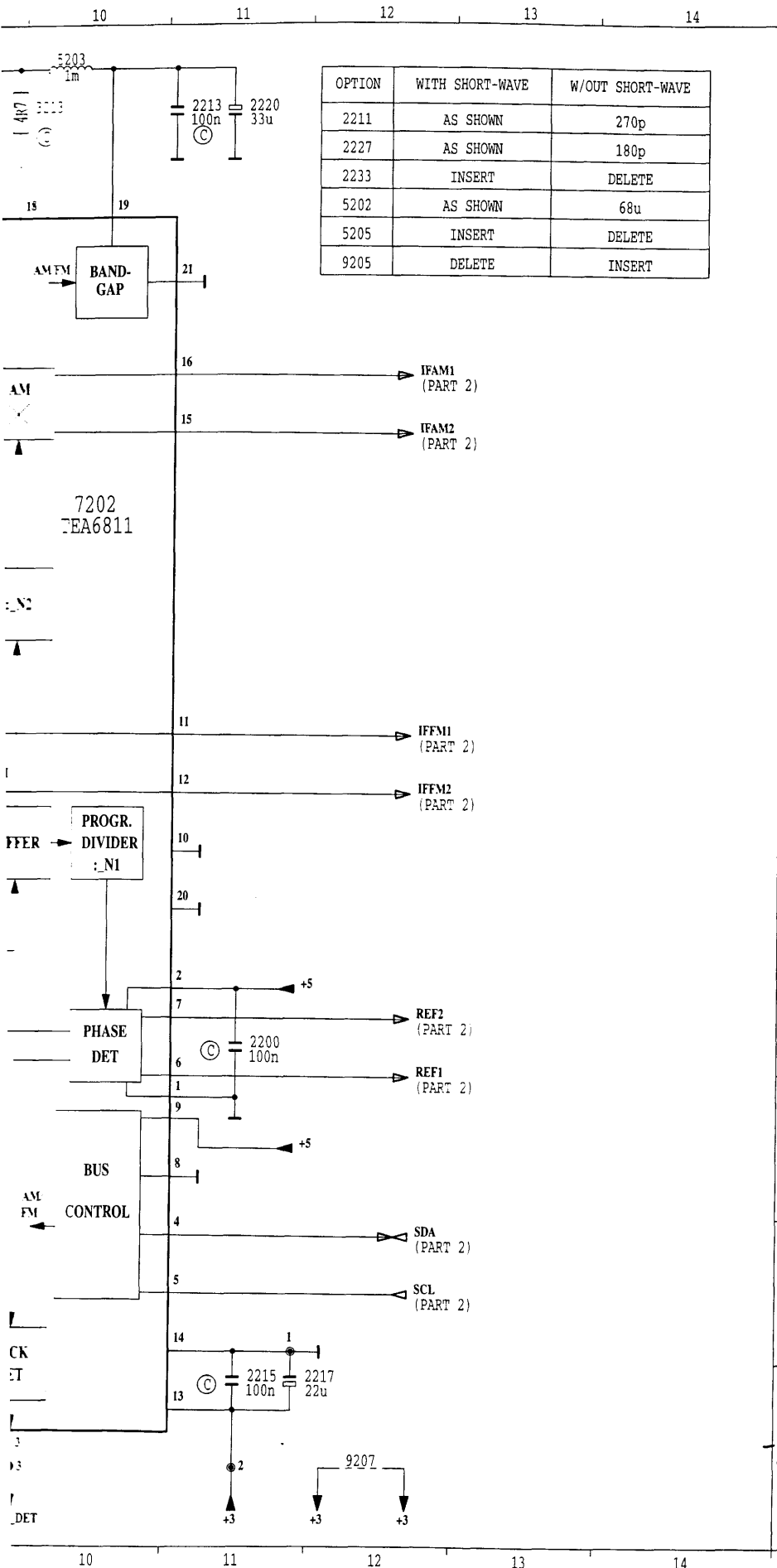
..... J11/A4/E2/G7
 G12/H6
 C12

IFAM2 C12
 IFFM1 E12
 IFFM2 F12

LOCK_DET J9
 REF1 H12
 REF2 G12

SCL I12
 SDA I12
 T001 C1

T002
 T003



OPTION	WITH SHORT-WAVE	W/OUT SHORT-WAVE
2211	AS SHOWN	270p
2227	AS SHOWN	180p
2233	INSERT	DELETE
5202	AS SHOWN	68u
5205	INSERT	DELETE
9205	DELETE	INSERT

- 1001 A 2
- 2002 C 1
- 2003 C 1
- 2010 D 1
- 2016 D 1
- 2100 F 1
- 2102 F 1
- 2104 G 1
- 2105 G 1
- 2106 F 1
- 2121 G 1
- 2200 G 11
- 2201 J 7
- 2202 J 7
- 2203 J 7
- 2204 H 7
- 2205 H 7
- 2206 J 7
- 2207 E 5
- 2208 C 6
- 2209 B 6
- 2210 B 6
- 2211 A 4
- 2212 A 4
- 2213 A 11
- 2215 J 12
- 2217 J 12
- 2218 C 4
- 2219 C 4
- 2220 A 11
- 2221 H 10
- 2223 C 4
- 2226 H 4
- 2227 A 4
- 2230 A 4
- 2231 A 4
- 2233 A 4
- 2249 H 8
- 2272 G 8
- 2273 G 8
- 3003 E 3
- 3101 G 3
- 3102 E 4
- 3103 E 4
- 3104 E 4
- 3105 F 4
- 3106 E 4
- 3107 F 4
- 3108 G 4
- 3110 F 6
- 3200 J 7
- 3201 I 5
- 3202 I 8
- 3203 A 6
- 3204 A 6
- 3205 C 5
- 3206 C 4
- 3207 I 4
- 3210 C 2
- 3211 A 4
- 3213 A 10
- 3270 E 7
- 3290 D 8
- 3292 G 8
- 5100 F 2
- 5200 A 5
- 5201 H 7
- 5202 A 8
- 5203 A 10
- 5205 A 7
- 5206 D 5
- 5207 E 5
- 5211 B 4
- 5212 C 3
- 6100 H 4
- 6102 F 4
- 6200 C 5
- 7100 H 5
- 7200 H 5
- 7201 C 5
- 7202 D 10
- 9200 H 2
- 9201 I 2
- 9202 I 2
- 9203 I 2
- 9204 J 2
- 9205 A 7
- 9207 J 12

Voltage measured in FM mode with
A4 = 14.4V
A7 = 14.4V
 unless otherwise stated.

(OFF) = Power off
 (ON) = Power on

- +1 +14.4V
- +2 +13.8V
- +3a, +3b 8.5V
- +4 +5V
- +5, +5a, +5b +5V
- +7 +5V
- +CDCC 14.4V
- Vref 5V
- V_LAMP 10V

7100 BF999
 G 0.4V
 D 8V
 S 0V

7201 PMBF J309
 G 5V
 D 8V
 S 0V

T002 C1
 T003 I6

Voltage measured in FM mode with
A4 = 14.4V
A7 = 14.4V
unless otherwise stated.

(OFF) = Power off
(ON) = Power on

+1	+14.4V
+2	+13.8V
+3a, +3b	8.5V
+4	+5V
+5, +5a,+5b	+5V
+7	+5V
+CDCC	14.4V
Vref	5V
V_LAMP	10V

7100 BF999

G	0.4V
D	8V
S	0V

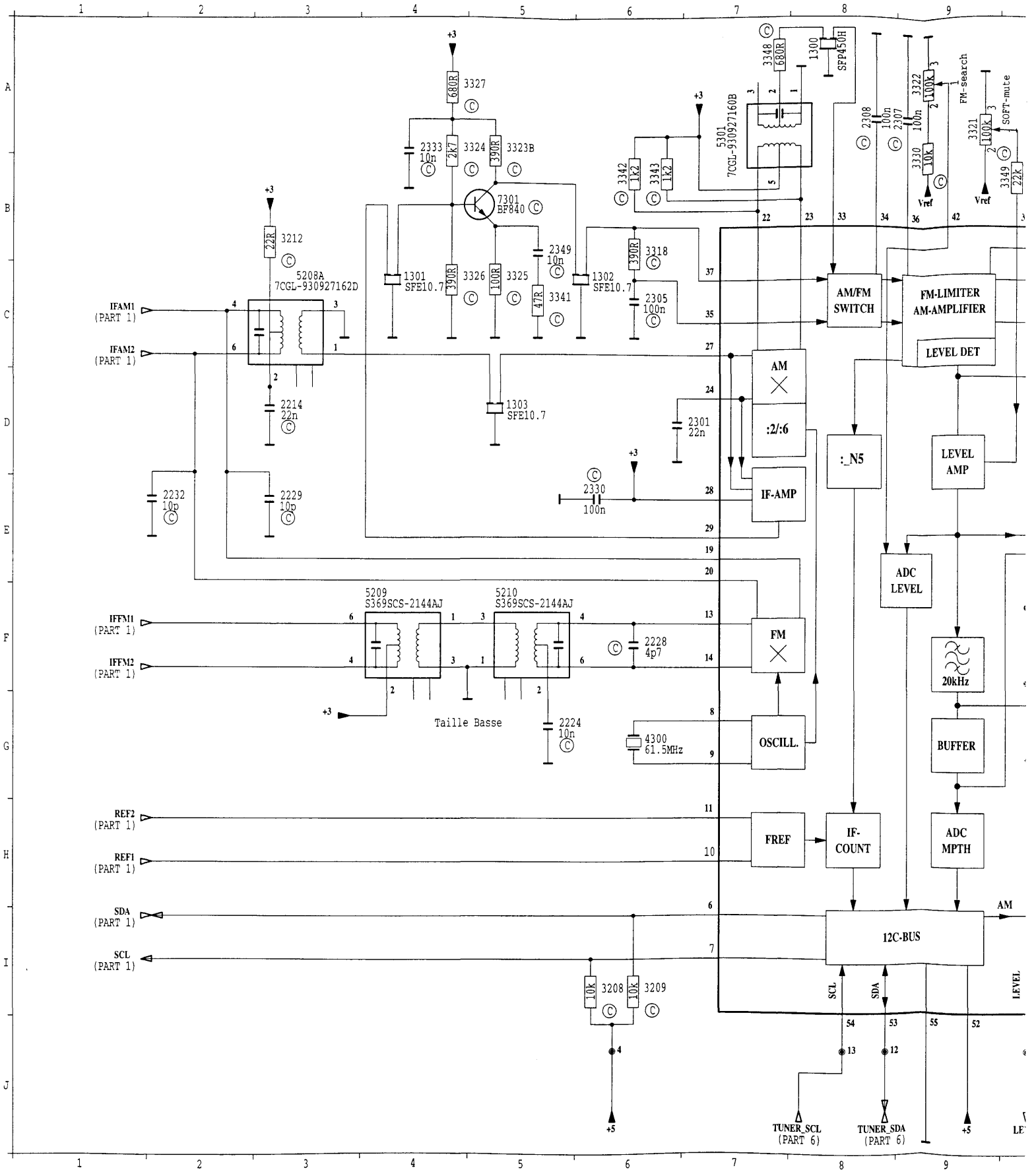
7201 PMBF J309

G	5V
D	8V
S	0V

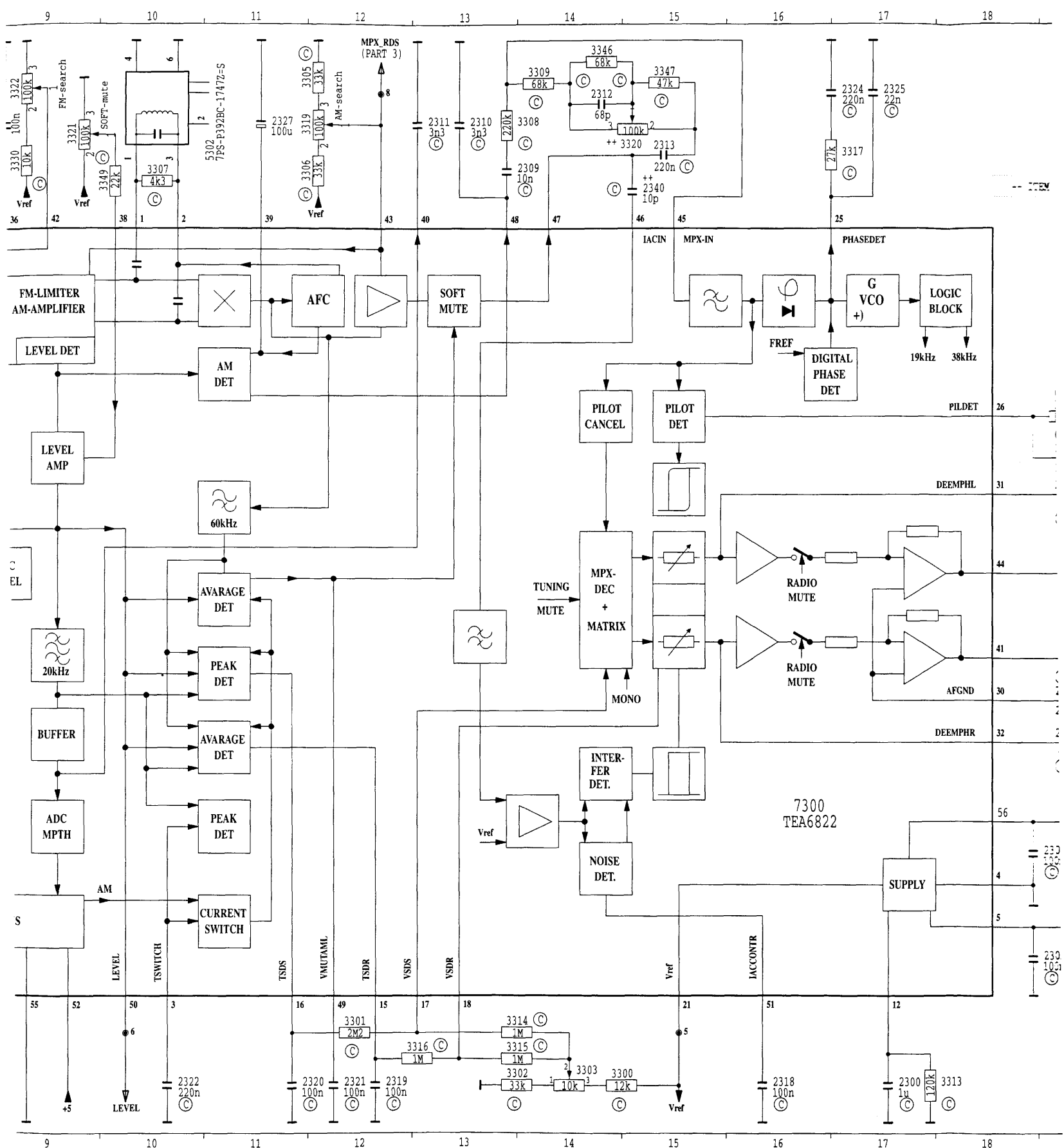
7202 TEA6811

1	0V
2	5V
3	5V
4	5V
5	5V
6	Pulse waveform 0.24v p-p 5V dc
7	Pulse waveform 0.24v p-p 5V dc
8	0V
9	5V
10	0V
11	8.5V
12	8.5V
13	8.5V
14	0V
15	8.5V
16	8.5V
17	0V
18	0V
19	0V
20	0V
21	0V
22	0V
23	0V
24	0V
25	0V
26	0V
27	0V
28	0V
29	0V
30	3.1V
31	3.1V
32	0V
33	4.3V
34	4.2V
35	2.6V
36	0V
37	6.1V
38	8.2V
39	3.6V
40	3.6V

PART 2 : TUNER IC91 (MAIN PCB)

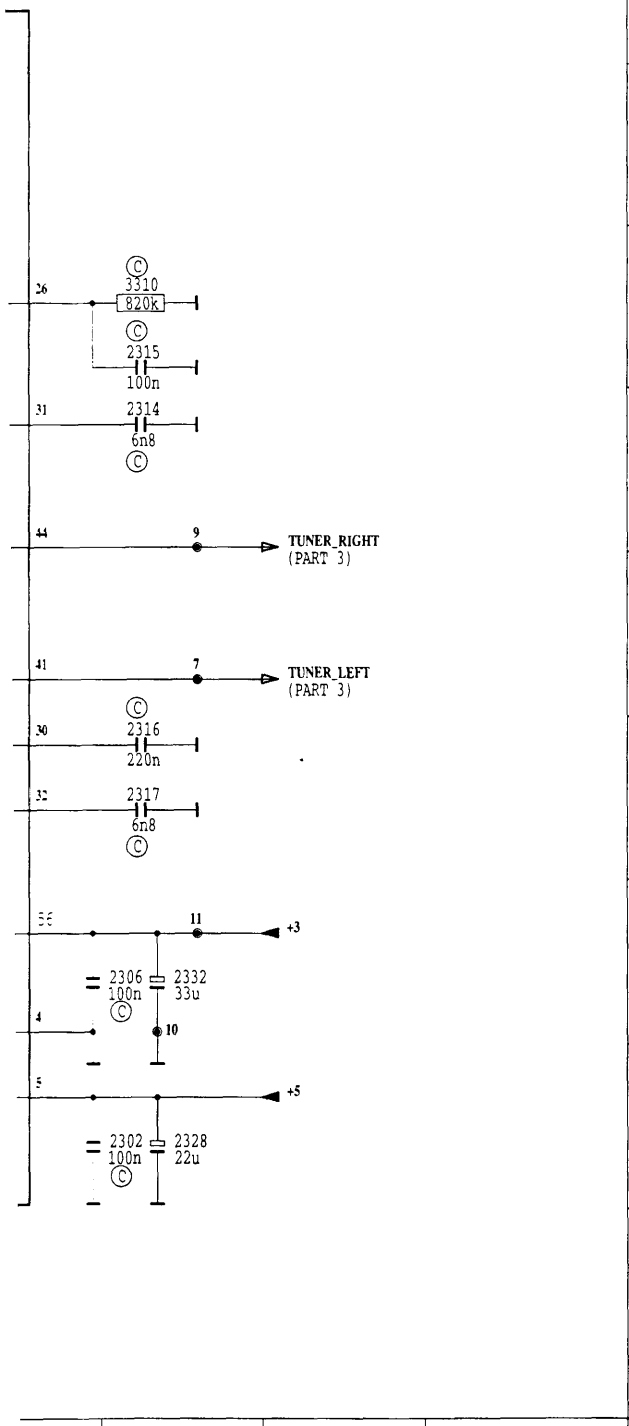


- | | | | | | | | |
|-------------|--------------------|-------------|----|-------------|-----|------------|----|
| +3b | H20/G3/D6/B3/A4/A6 | IFAM2 | C1 | LEVEL | J10 | REF2 | H1 |
| +5b | I20/J9/J6 | IFFM1 | F1 | MPX_RDS... | A12 | SCL | I1 |
| IFAM1 | C1 | IFFM2 | F1 | REF1 | H1 | SDA | I1 |



..... H1 TUNER_LEFT F20 TUNER_SDA J8
 I1 TUNER_RIGHT E20 Vref J15/B9/B12
 I1 TUNER_SCL J8

-- ITEM NOT USED - PROVISION IN PCB LAYOUT ONLY



Voltage measured in FM mode with
A4 = 14.4V
A7 = 14.4V
unless otherwise stated.

(OFF) = Power off
 (ON) = Power on

1300	A 8
1301	C 4
1302	C 6
1303	D 5
2214	D 3
2224	G 5
2228	F 6
2229	E 3
2232	F 2
2300	J 7
2301	D 7
2302	I 9
2305	C 6
2306	H 9
2307	A 9
2308	A 8
2309	B 14
2310	A 13
2311	A 13
2312	A 14
2313	A 15
2314	E 19
2315	D 19
2316	G 19
2317	G 19
2318	J 16
2319	J 12
2320	J 12
2321	J 12
2322	J 10
2324	A 17
2325	A 17
2327	A 10
2328	I 6
2330	E 6
2332	H 9
2333	A 4
2340	E 15
2349	B 5
3208	I 6
3209	I 6
3212	B 3
3300	J 15
3301	J 12
3302	J 14
3303	J 14
3305	A 12
3306	B 12
3307	B 10
3308	A 14
3309	A 14
3310	D 19
3313	J 18
3314	J 14
3315	J 14
3316	J 13
3317	A 7
3318	B 6
3319	A 11
3320	A 8
3321	A 9
3322	A 9
3323	B 5
3324	A 5
3325	C 5
3326	C 5
3327	A 5
3330	B 9
3341	C 5
3342	B 6
3343	B 6
3346	A 14
3347	A 15
3348	A 7
3349	B 10
4300	G 6
5208A	C 3
5209	F 4
5210	F 5
5301	A 7
5302	B 11
7300	H 16
7301	B 5

7300 TEA6822

33	0.7V
34	1V
35	2.8V
36	2.8V
37	2.8V
38	2.6V
39	3.2V
40	0.6V
41	Radio Left
42	0V
43	MPX_RDS
44	Radio Right
45	2.9V
46	0V
47	Audio signal
48	5V
49	5V
50	4.5V
51	6V
52	5V
53	Data
54	Data
55	0V
56	8.5V

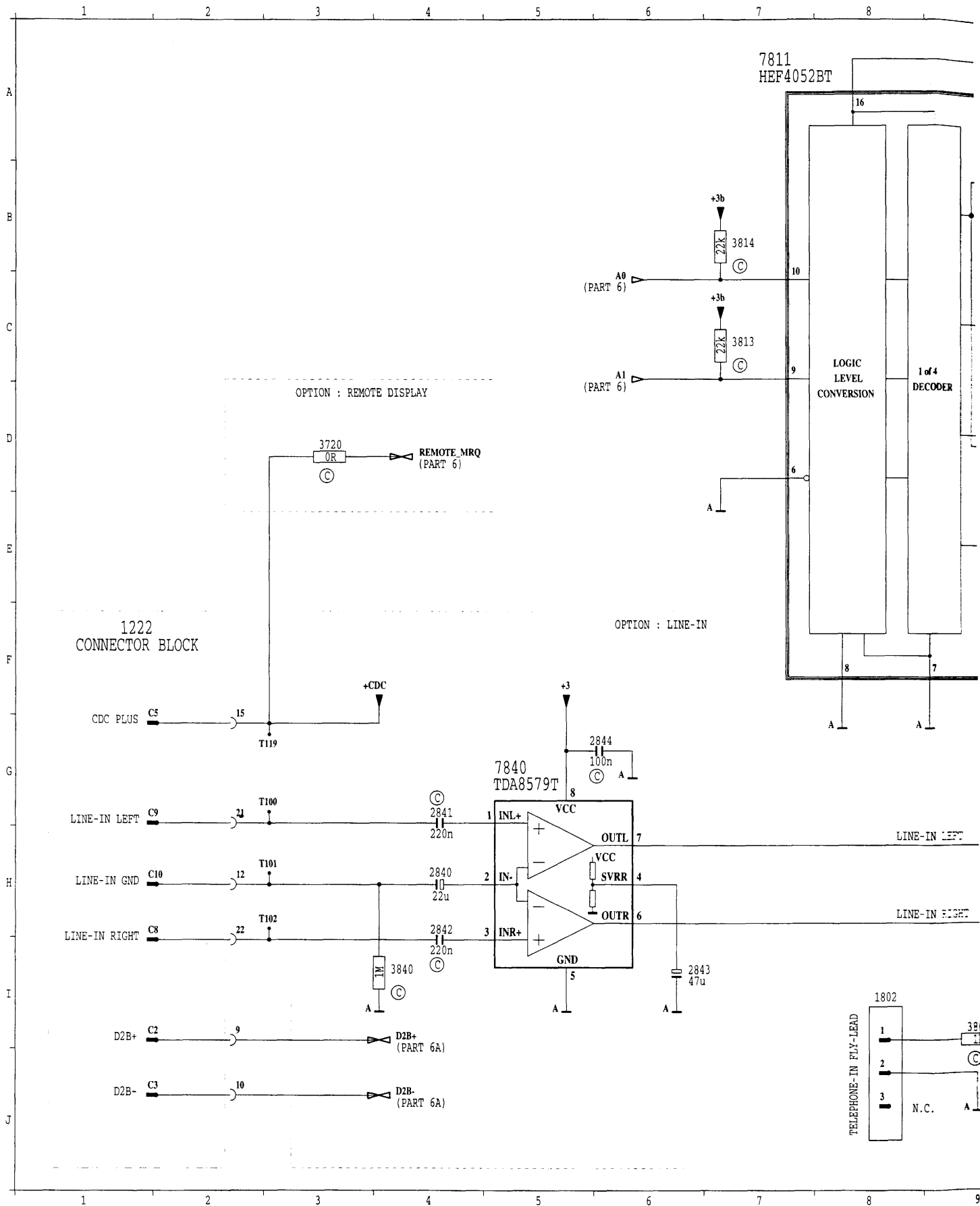
7301 BF840

12	5V
13	2.2V
14	2.2V
15	4.5V
16	4.5V
17	2.5V
18	2.5V
19	8.5V
20	8.5V
21	5V
22	8.5V
23	8.5V
24	3V
25	5V
26	3.6V
27	3V
28	8.5V
29	6V
30	1.8V
31	2.3V
32	2.3V

7300 TEA6822
(continue.....)

7301 BF840
 C 6.4V
 B 1V
 E 0.2V

PART 3 : RDS, SOFAC, LINE-IN & TELEPHONE-IN (MAIN PCB)

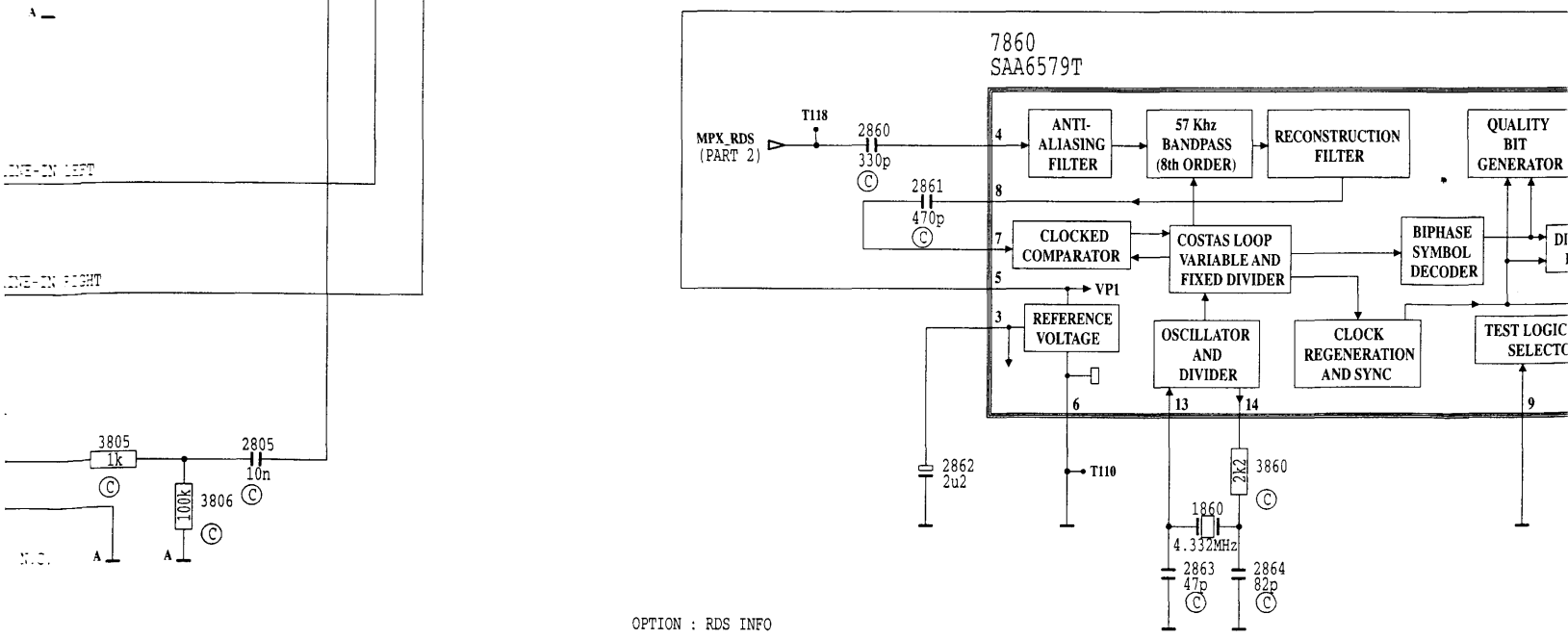
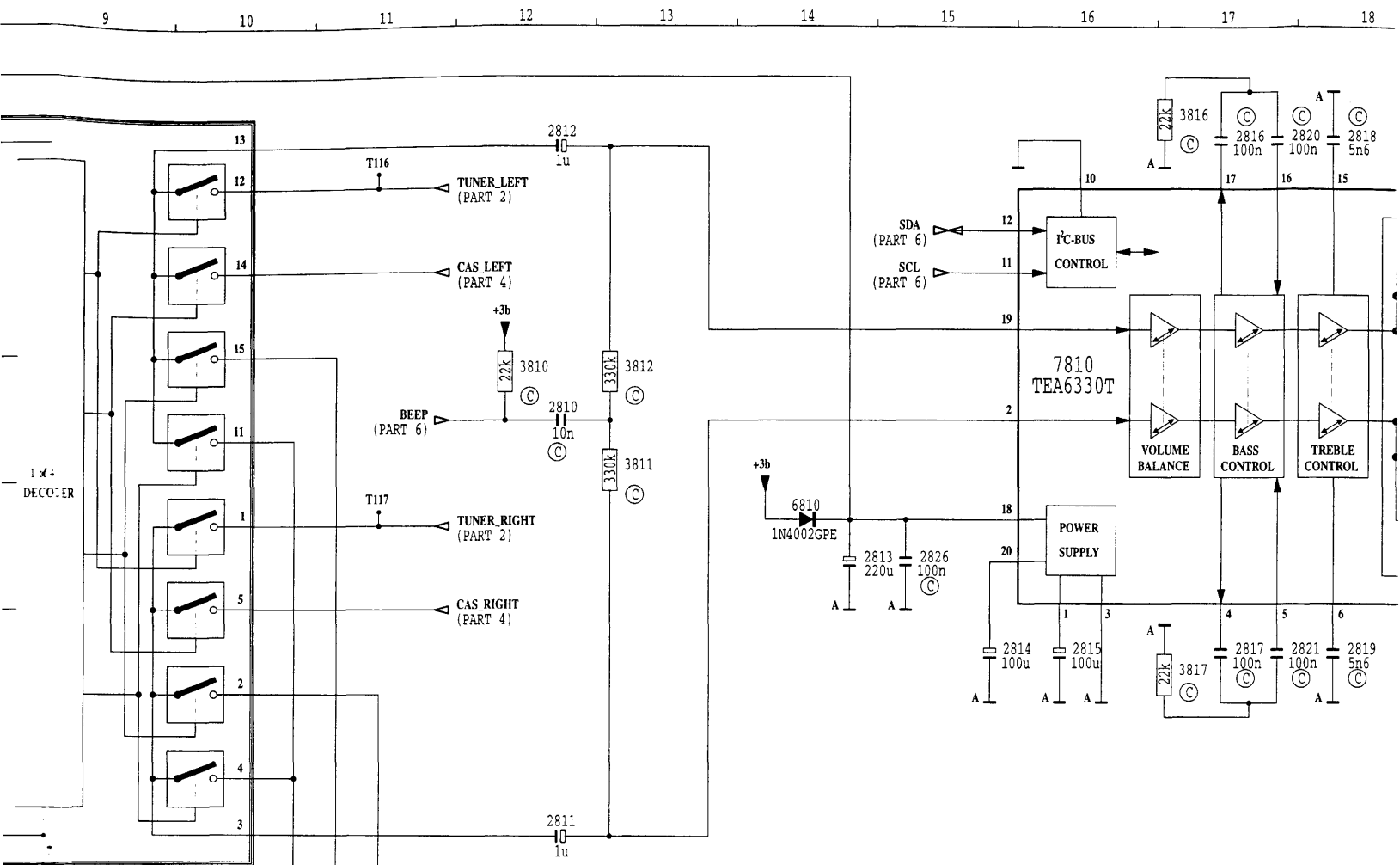


+3b B7/F5/D14
 +5 G21
 +CDC F4
 A0 B6
 A1 C6

BEEP C11
 CAS_LEFT B12
 CAS_RIGHT D12
 CDC PLUS F1
 D2B+ I1

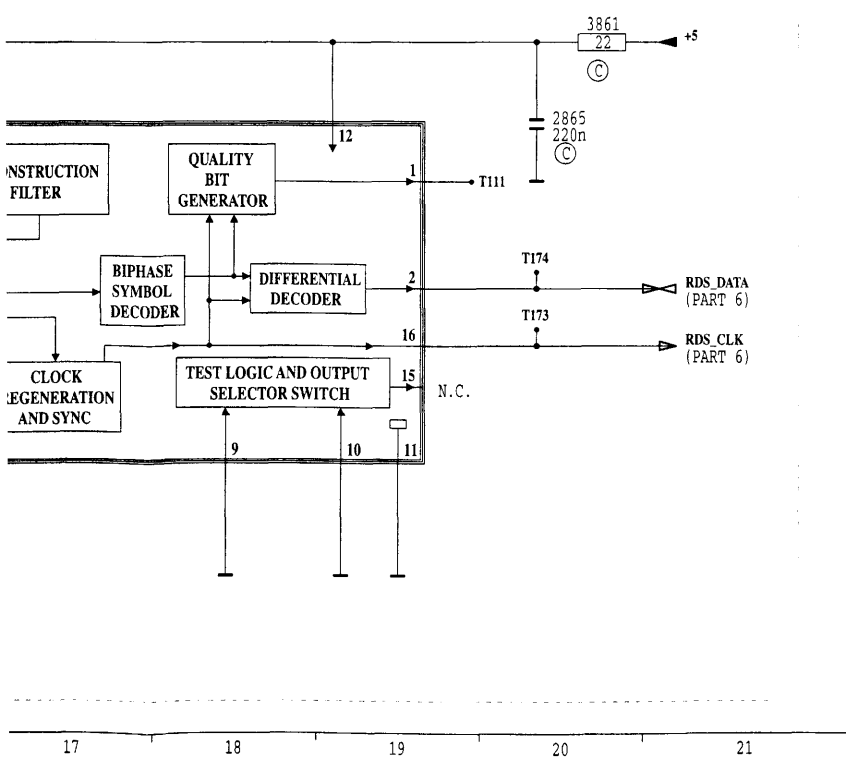
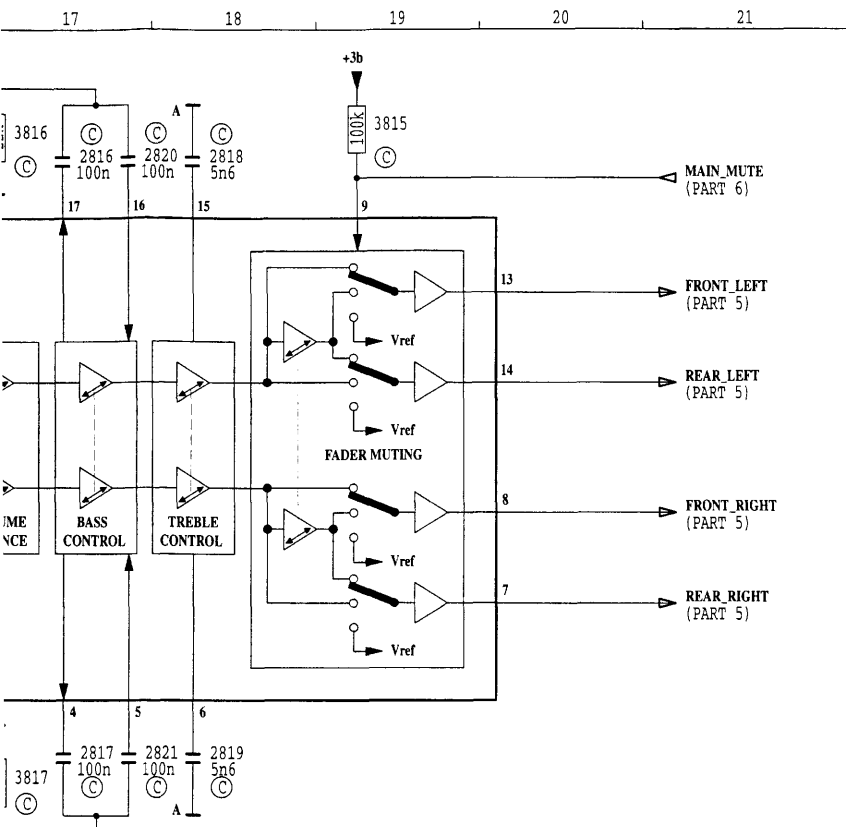
D2B- J1
 FRONT_LEFT B21
 FRONT_RIGHT C21
 LINE-IN GND H1
 LINE-IN LEFT G1

LINE-IN L
 LINE-IN F
 LINE-IN F
 MAN_MU
 MPX_RD



OPTION : RDS INFO

LINE-IN LEFT	H9	RDS_CLK	H21	SCL	B15	T117	D11
LINE-IN RIGHT	H1	RDS_DATA	H21	SDA	B15	T118	G14
LINE-IN RIGHT	H9	REAR_LEFT	B21	T110	J15	T173	H20
MAN_MUTE	A21	REAR_RIGHT	D21	T111	H19	T174	H20
MPX_RDS	G13	REMOTE_MRQ	D4	T116	A11	TUNER_LEFT	A12



Voltage measured in FM mode with
A4 = 14.4V
A7 = 14.4V
 unless otherwise stated.

(OFF) = Power off
 (ON) = Power on

- 1222 F 1
- 1802 I 8
- 1860 J16
- 2805 I10
- 2810 C12
- 2811 F12
- 2812 D13
- 2813 D15
- 2814 E15
- 2815 E16
- 2816 A17
- 2817 E17
- 2818 A18
- 2819 E18
- 2820 A18
- 2821 E18
- 2826 D15
- 2840 H 4
- 2841 G 4
- 2842 H 4
- 2843 I 6
- 2844 G 6
- 2860 G14
- 2861 H14
- 2862 I14
- 2863 J16
- 2864 J16
- 2865 G20
- 3720 D 3
- 3805 I 9
- 3806 J10
- 3810 C12
- 3811 C13
- 3812 C13
- 3813 C 7
- 3814 B 7
- 3815 A19
- 3816 A17
- 3817 E17
- 3840 I 4
- 3860 I16
- 3861 F20
- 6810 D14
- 7810 C16
- 7811 A 7
- 7840 G 5
- 7860 G15

7811 HEF4052BT

1	4V
2	4.48V
3	4V
4	0V
5	4V
6	GND
7	GND
8	GND
9	0V
10	0V
11	0V

7860 SAA6579T/V1

1	Square wave 5Vp-p
2	Square wave 5Vp-p
3	2.5V
4	Audio signal
5	5V
6	<0.5V
7	Audio signal
8	Audio signal
9	0V
10	0V
11	0V
12	5V
13	Sine wave 0.6Vp-p
14	Sine wave 3.2Vp-p
15	N.C.
16	Square wave 5Vp-p

7840 TDA8579T

1	4.9V
2	5.1V
3	4.9V
4	5.3V
5	GND
6	4.5V
7	4.5V
8	8.5V

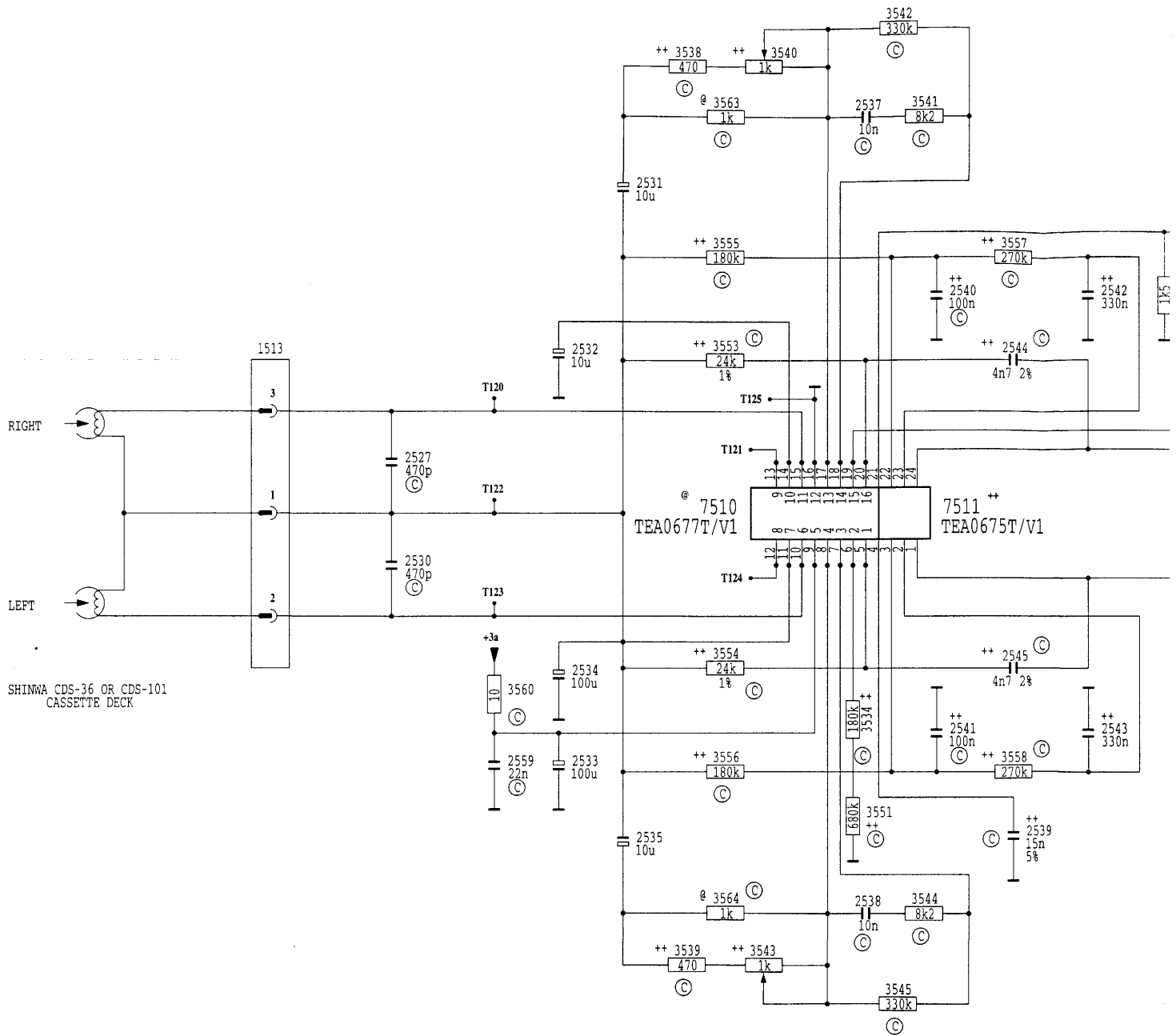
7810 TEA6330T

1	7.8V
2	4V
3	0V
4	3.9V
5	3.9V
6	3.9V
7	3.9V
8	3.9V
9	8.5V
10	0V
11	4.9V
12	4.9V
13	3.9V
14	3.9V
15	3.9V
16	3.9V
17	3.9V
18	7.85V
19	3.9V
20	3.9V

- 7 D11
- 8 G14
- 3 H20
- 4 H20
- FRONT_LEFT A12
- TUNER_RIGHT D12

PART 4 : CASSETTE PRE-AMPLIFIER & DOLBY (MAIN PCB)

1 2 3 4 5 6 7 8 9



INSERT IN CASE OF SHINWA CDS-36 CASSETTE DECK
 * INSERT IN CASE OF SHINWA CDS-101 CASSETTE DECK

++ INSERT ONLY IN SETS WITH DOLBY
 @ INSERT ONLY IN SETS WITHOUT DOLBY

1 2 3 4 5 6 7 8 9

+2 E16/E17

+3a G10

+3b G11/F5

+5 E15/E20/F17/G18/J20/I12

CAS_LEFT E12

CAS_RIGHT D12

DOLBY_ON C13

LEFT_REV E1

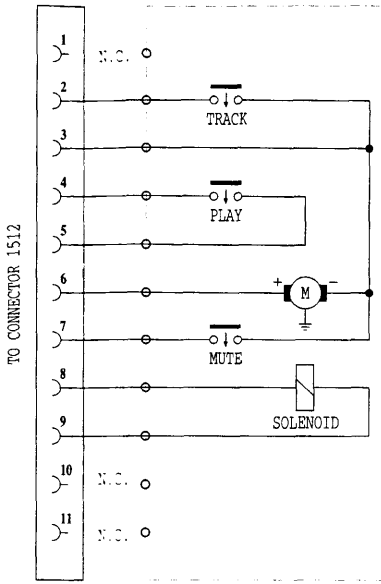
LEFT_FWD E1

LEFT B1

MSS H12

MSS_OUT B5

OPTION : SHINWA CDS-101 CASSETTE DECK



Voltage measured in FM mode with

A4 = 14.4V

A7 = 14.4V

unless otherwise stated.

(OFF) = Power off

(ON) = Power on

7513 BC847

Voltage measured in

Tape play mode.

+1 +14.4V

C 5V (ME/CR on)

+2 +13.8V

0V (ME/CR off)

+3a, +3b 8.5V

B 0V (ME/CR on)

+4 +5V

0.7V (ME/CR off)

+5, +5a, +5b +5V

E 0V

+7 +5V

+CDCC 14.4V

Vref 5V

7503 BC847

V_LAMP 10V

C 0.12V (CASS. PLAY)

11.5V (CASS. EJECT)

B 0.7V (CASS. PLAY)

0V (CASS. EJECT)

7509 BC847

Voltage measured in

Tape play mode.

E 0V

C 4V (Dolby on)

0V (Dolby off)

7507 BC847

B 0V (Dolby on)

C 4.9V (CASS. PLAY)

0.7V (Dolby off)

0V (CASS. EJECT)

E 0V

B 0V (CASS. PLAY)

0.7V (CASS. EJECT)

7511 TEA0675T

Voltage measured in

Tape play mode.

7506 BC636

1 Tape left

C 13.06V (CASS. PLAY)

2 3.6V

0.13V (CASS. EJECT)

3 4.2V

B 13.1V (CASS. PLAY)

4 4.2V

13.36V (CASS. EJECT)

5 Tape left

E 12.36V (CASS. PLAY)

6 6.8V

13.36V (CASS. EJECT)

7 4V

8 4V

9 8.4V

10 4.2V

11 4.2V

12 4V

13 4V

14 6.6V

15 4.2V

16 0V

17 4.2V

18 4.2V

19 4.8V (ME/CR off)

5V (ME/CR on)

20 Tape right

21 0.8V (Dolby off)

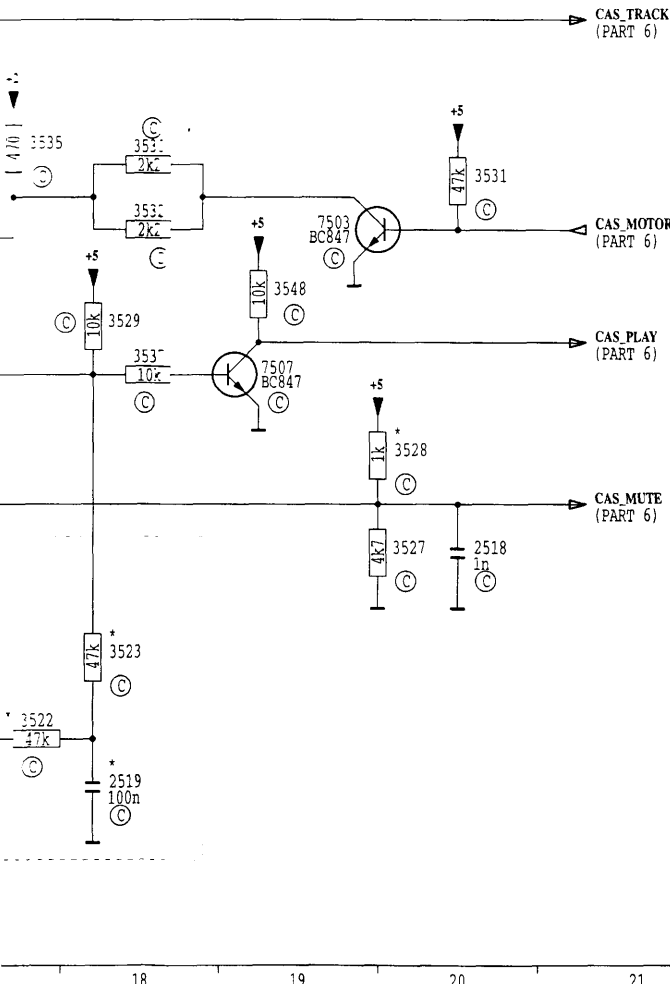
4V (Dolby on)

22 3.6V

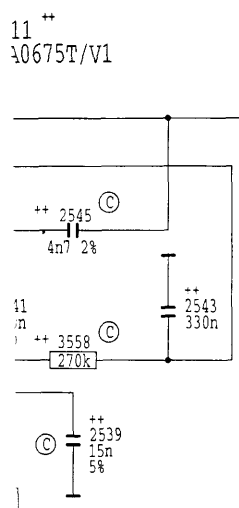
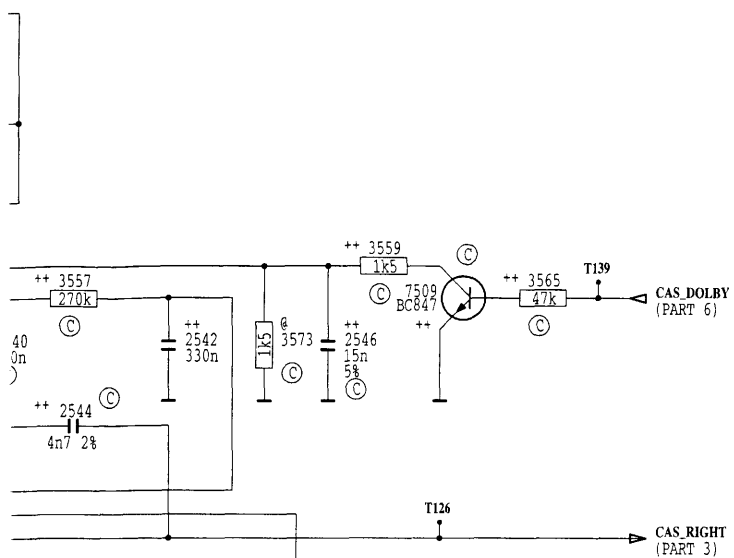
23 3.2V

24 Tape right

1512 E13
1513 C 3
2518 H20
2519 J18
2527 D 4
2530 E 4
2531 B 6
2532 C 5
2533 G 5
2534 F 5
2535 G 6
2537 A 6
2538 C 6
2539 C 6
2540 B 6
2541 F 6
2542 C 10
2543 F 10
2544 C 9
2545 F 9
2546 C 11
2559 G 5
3519 I 16
3520 J 12
3521 I 17
3522 I 17
3523 I 18
3524 F 17
3525 F 17
3526 F 16
3527 H 20
3528 H 20
3529 G 18
3530 F 18
3531 F 20
3532 F 18
3533 F 15
3534 F 8
3535 F 17
3536 G 15
3537 G 18
3538 A 6
3539 H 6
3540 A 7
3541 A 8
3542 A 8
3543 H 9
3544 H 9
3545 G 10
3546 C 6
3547 C 6
3548 C 6
3549 C 6
3550 J 11
3551 C 6
3552 C 6
3553 C 6
3554 F 6
3555 C 6
3556 G 6
3557 C 6
3558 G 9
3559 B 11
3560 F 5
3562 F 14
3563 A 6
3564 H 6
3565 C 12
3573 C 10
3581 J 10
6510 I 11
7503 F 12
7504 I 17
7505 F 17
7506 F 19
7507 C 11
7509 E 7
7510 E 7
7511 E 8
7513 J 12

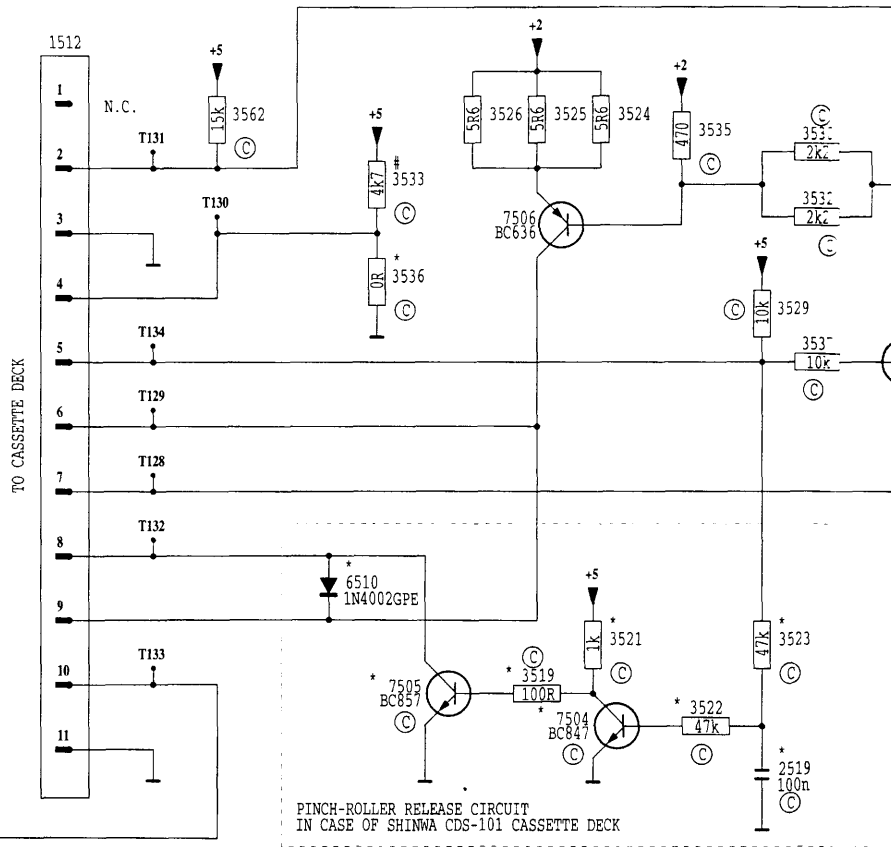
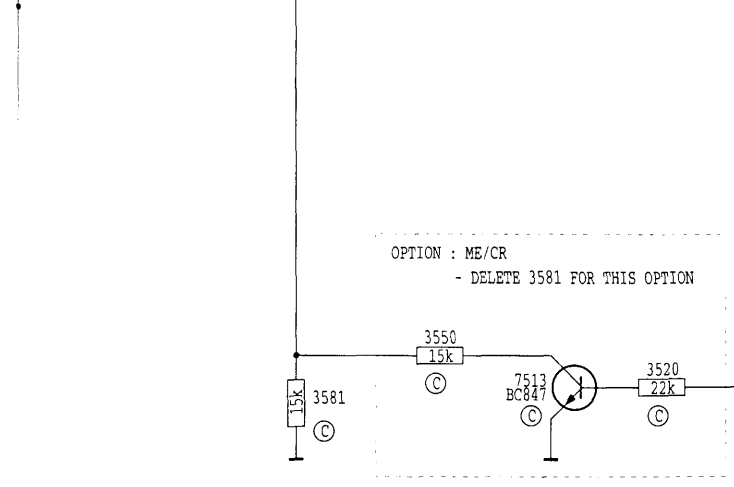
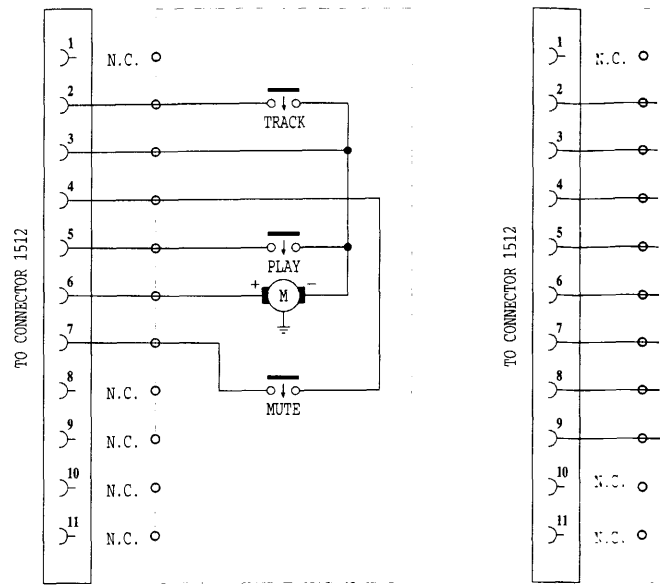


- '131 F14
- '130 F14
- '134 G14
- '129 G14
- T128 H14
- T132 H14
- T133 I14



OPTION : SHINWA CDS-36 CASSETTE DECK

OPTION : SHINWA

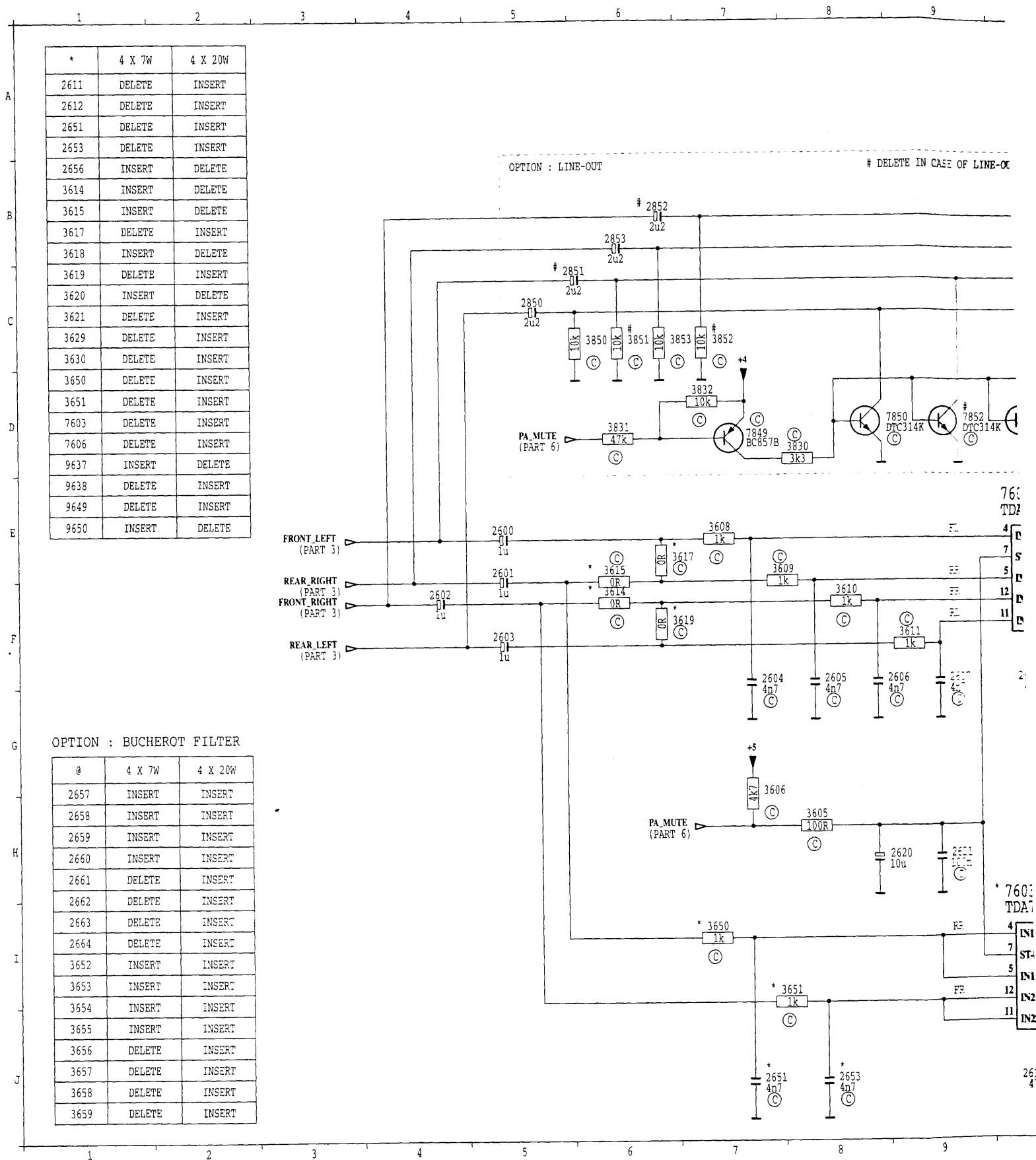


OPTION : ME/CR
- DELETE 3581 FOR THIS OPTION

PINCH-ROLLER RELEASE CIRCUIT
IN CASE OF SHINWA CDS-101 CASSETTE DECK

. E1	RIGHT FWD	D1	T122	E5	T124	E6	T131	F14
. B1	RIGHT REV	D1	T123	E5	T139	B12	T130	F14
. H12	RIGHT	A1	T125	D7	T126	D11	T134	G14
. B5	T120	D5	T121	D7	T127	E11	T129	G14

PART 5 : POWER AMPLIFIER & LINE-OUT (MAIN PCB)

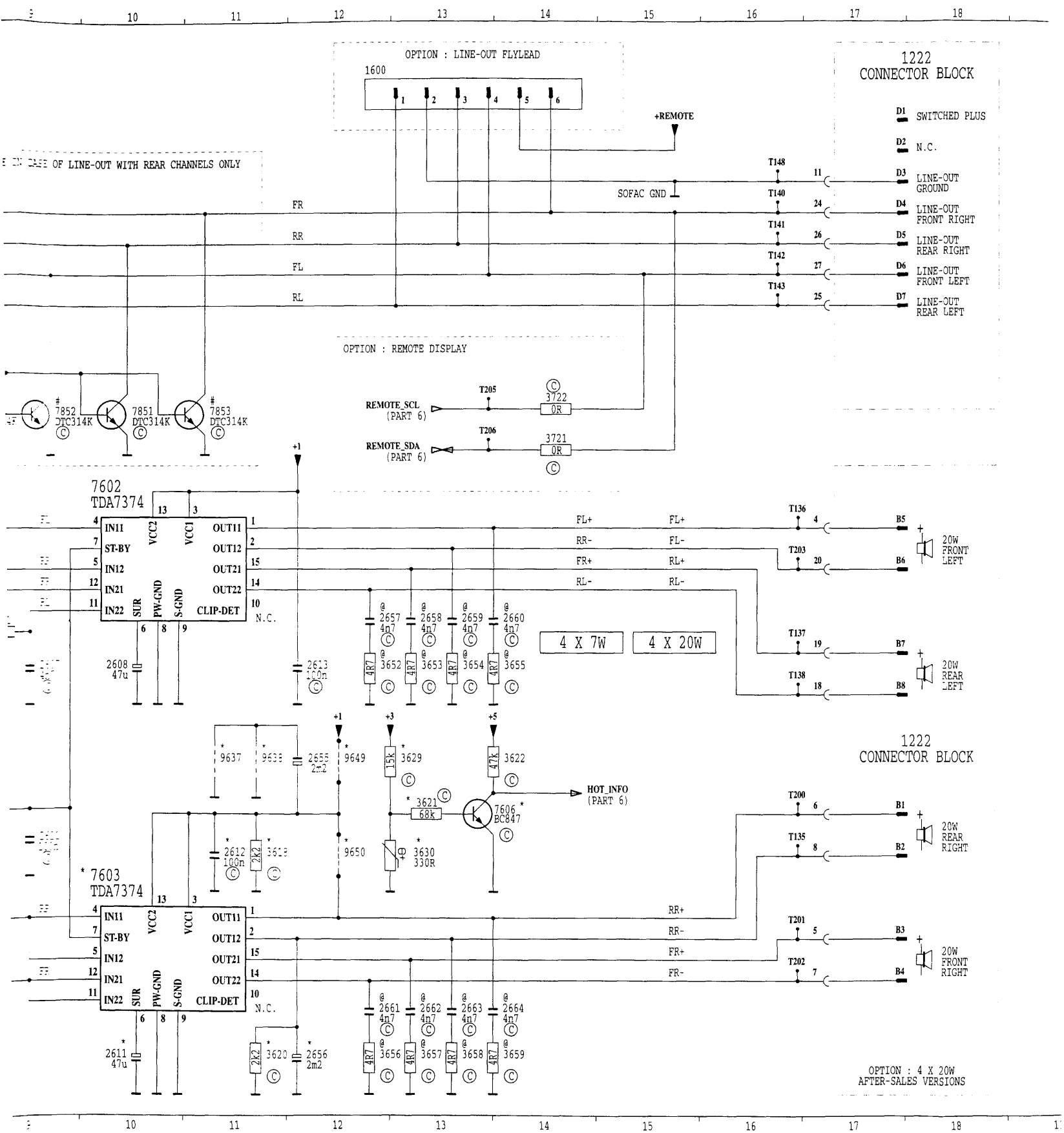


*	4 X 7W	4 X 20W
2611	DELETE	INSERT
2612	DELETE	INSERT
2651	DELETE	INSERT
2653	DELETE	INSERT
2656	INSERT	DELETE
3614	INSERT	DELETE
3615	INSERT	DELETE
3617	DELETE	INSERT
3618	INSERT	DELETE
3619	DELETE	INSERT
3620	INSERT	DELETE
3621	DELETE	INSERT
3629	DELETE	INSERT
3630	DELETE	INSERT
3650	DELETE	INSERT
3651	DELETE	INSERT
7603	DELETE	INSERT
7606	DELETE	INSERT
9637	INSERT	DELETE
9638	DELETE	INSERT
9649	DELETE	INSERT
9650	INSERT	DELETE

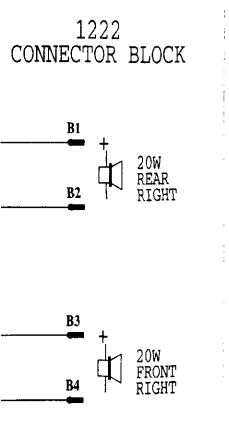
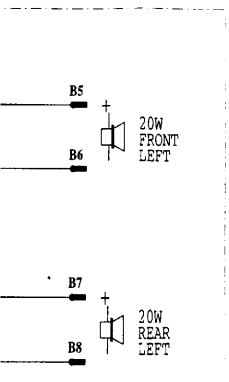
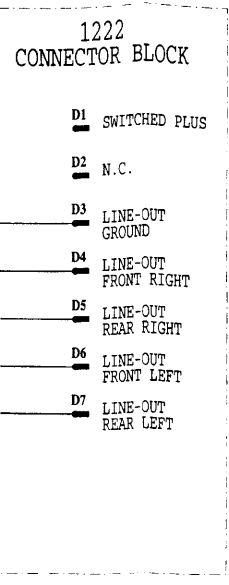
OPTION : BUCHEROT FILTER

@	4 X 7W	4 X 20W
2657	INSERT	INSERT
2658	INSERT	INSERT
2659	INSERT	INSERT
2660	INSERT	INSERT
2661	DELETE	INSERT
2662	DELETE	INSERT
2663	DELETE	INSERT
2664	DELETE	INSERT
3652	INSERT	INSERT
3653	INSERT	INSERT
3654	INSERT	INSERT
3655	INSERT	INSERT
3656	DELETE	INSERT
3657	DELETE	INSERT
3658	DELETE	INSERT
3659	DELETE	INSERT

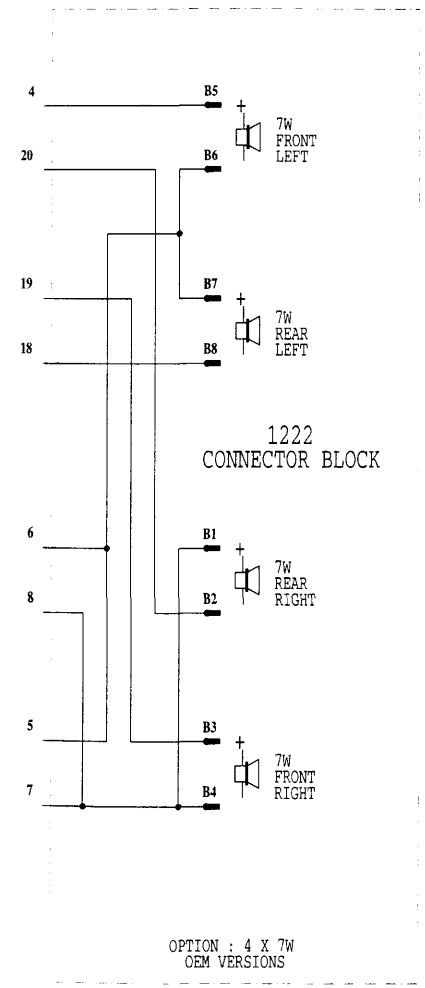
- +REMOTE A15
- FRONT_LEFT E3
- FRONT_RIGHT F3
- HOT_INFO H15
- PA_MUTE H6/D5
- REAR_LEFT F3
- REAR_RIGHT E3
- REMOTE_SCL D12
- REMOTE_SDA D12
- SOFAC GND B15
- T135 H16
- T136 E16
- T137 H16
- T138 H16
- T140 H16
- T141 H16



- | | | | |
|----------------|----------------|----------------|----------------|
| T137 F16 | T142 C16 | T201 I16 | T206 D13 |
| T138 F16 | T143 C16 | T202 I16 | |
| T140 B16 | T148 B16 | T203 E16 | |
| T141 B16 | T200 H16 | T205 D13 | |



OPTION : 4 X 20W AFTER-SALES VERSIONS



OPTION : 4 X 7W OEM VERSIONS

- 1222 A17
- 1222 G17
- 1600 A12
- 2600 E 5
- 2601 E 5
- 2602 F 4
- 2603 F 5
- 2604 F 7
- 2605 F 8
- 2606 F 9
- 2607 F 9
- 2608 F10
- 2611 J10
- 2612 H11
- 2613 F12
- 2620 H 8
- 2621 H 9
- 2651 J 7
- 2653 J 8
- 2655 G12
- 2656 J12
- 2657 F12
- 2658 F13
- 2659 F13
- 2660 F14
- 2661 J12
- 2662 J13
- 2663 J13
- 2664 J14
- 2850 C 5
- 2851 C 6
- 2852 B 6
- 2853 B 6
- 3605 H 8
- 3606 H 7
- 3608 E 7
- 3609 E 8
- 3610 F 8
- 3611 F 9
- 3614 F 6
- 3615 E 6
- 3617 E 7
- 3618 H17
- 3619 F 7
- 3620 J11
- 3621 H13
- 3622 G14
- 3629 G13
- 3630 H13
- 3650 I 7
- 3651 I 8
- 3652 F13
- 3653 F13
- 3654 F13
- 3655 F14
- 3656 J13
- 3657 J13
- 3658 J13
- 3659 J14
- 7221 D14
- 7222 D14
- 3830 D 8
- 3831 D 6
- 3832 D 7
- 3850 C 6
- 3851 C 6
- 3852 C 7
- 3853 C 7
- 7602 E10
- 7603 I10
- 7606 H14
- 7849 D 7
- 7850 D 8
- 7851 D10
- 7852 D 9
- 9637 G11
- 9638 G11
- 9649 C12
- 9650 H12

Voltage measured in FM mode with

A4 = 14.4V
A7 = 14.4V

unless otherwise stated.

(OFF) = Power off
(ON) = Power on

+1	+14.4V
+2	+13.8V
+3a, +3b	8.5V
+4	+5V
+5, +5a, +5b	+5V
+7	+5V
+CDCC	14.4V
Vref	5V
V_LAMP	10V

7606 BC847

C	5V	0V ("hot")
B	0V	0.7V ("hot")
E	0V	

7849 BC857B

C	0V (ON)	4.8V (OFF)
B	4.8V (ON)	4.2V (OFF)
E	4.9V (ON)	4.83V (OFF)

7850 - 7853 DTC314K

C	0V (ON)	GND (OFF)
B	0V (ON)	3.1V (OFF)
E	GND	

7602 TDA7374

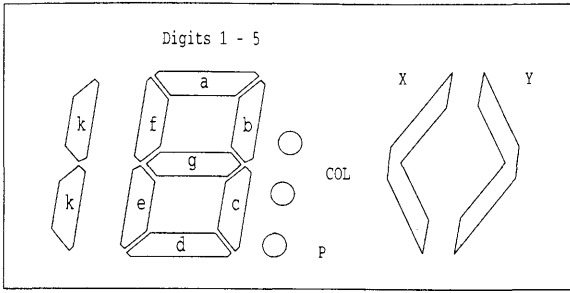
1	6V
2	6V
3	12.3V
4	4.5V
5	0.6V
6	0.6V
7	4.5V
8	GND
9	GND
10	N.C.
11	0.6V
12	0.6V
13	12.3V
14	6V
15	6V

7603 TDA7374

1	6V
2	6V
3	12.3V
4	4.5V
5	0.6V
6	0.6V
7	4.5V
8	GND
9	GND
10	N.C.
11	0.6V
12	0.6V
13	12.3V
14	6V
15	6V

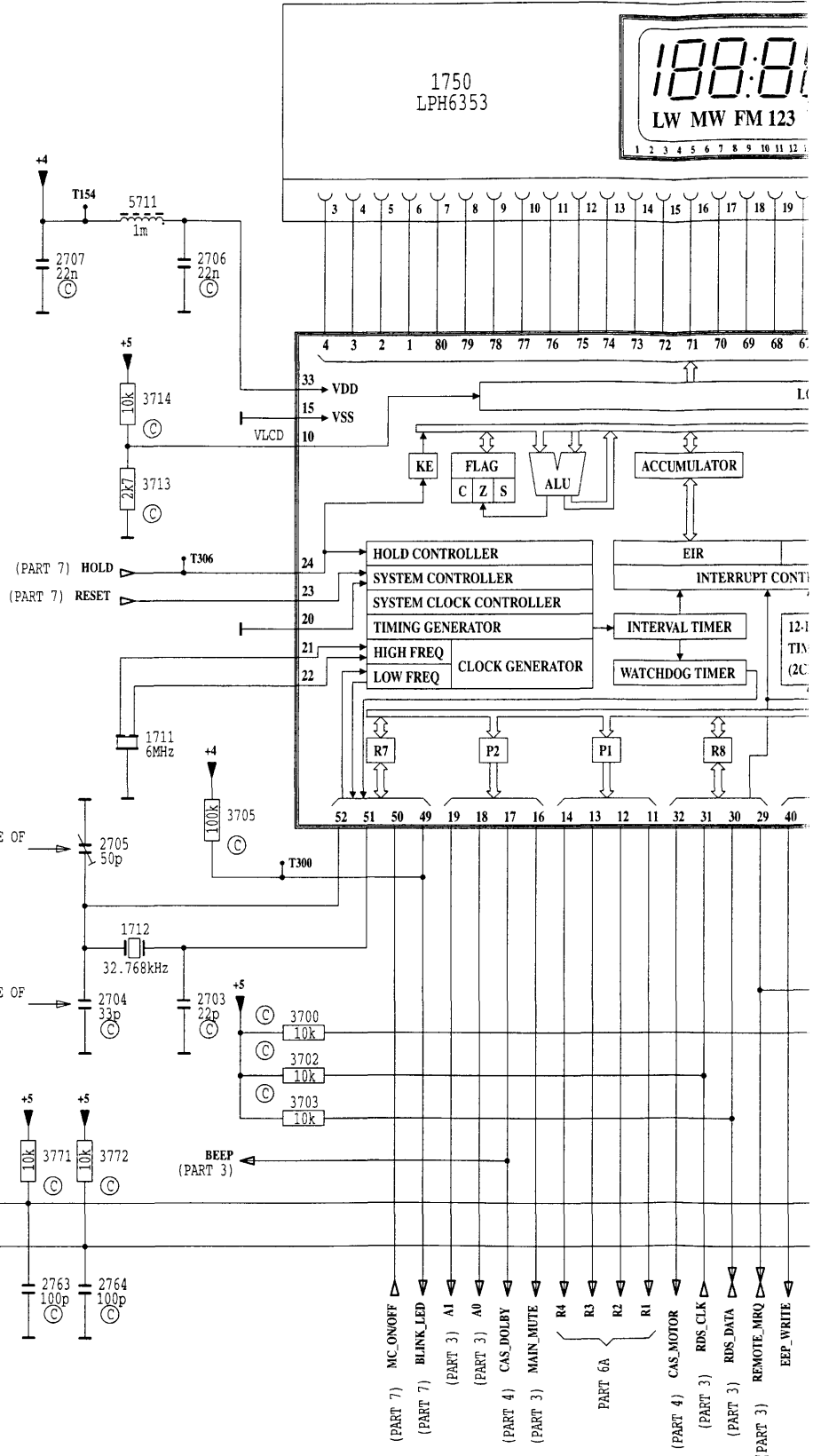
..... D13

PART 6 : MICRO-CONTROLLER, EEPROM, LCD, REMOTE CONTROL & TELEPHONE MUTE (MAIN PCB)



LCD PINOUT TABLE

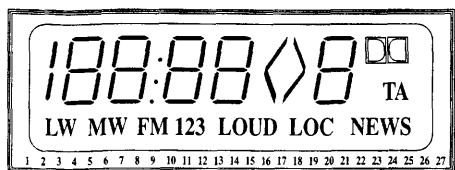
7710 DRIVER PINS	1750 LCD PINS	COM 1	COM 2
6	1	COM 1	
5	2		COM 2
4	3	1e	LW
3	4	1d	1c
2	5	1f	1g
1	6	1a	1b
80	7	2e	MW
79	8	2d	2c
78	9	2f	2g
77	10	2a	2b
76	11	k	FM, P
75	12	2	1
74	13	3e	3
73	14	3d	3c
72	15	3f	3g
71	16	3a	3b
70	17	4e	TA
69	18	4d	4c
68	19	4f	4g
67	20	4a	4b
66	21	X	NEWS
65	22	Y	LOC
64	23	5e	LOUD
63	24	5d	5c
62	25	5f	5g
61	26	5a	5b
60	27	COL	COL



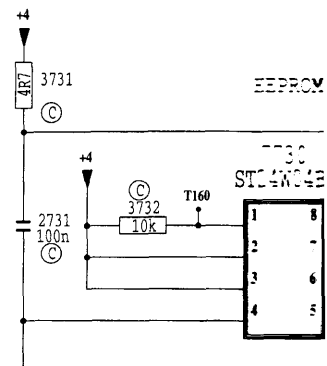
- +4 A19/B19/A15/H15/F6
- +5 G20/D17/G15/G6/I4
- A0 J8
- A1 A7
- BEEP H6
- BLINK_LED A7
- C1 C20
- C1 J11
- PCS 77 660
- C2 C20
- C2 J11
- C3 C20
- C3 J12
- C4 C20
- C4 J12
- CAS_DOLBY J8
- CAS_MOTOR J9
- CAS_MUTE J13
- CAS_PLAY J13
- CAS_TRACK J13
- D2B_INT J11
- EEP_SCL B19
- EEP_SCL J13
- EEP_SDA B19
- EEP_SDA J13
- EEP_WRITE
- EEP_WRITE
- HOLD
- HOT_INFC
- MAN_MUT
- MC_ON/O
- ONN/OFF
- PA_MUTE

7 8 9 10 11 12 13 14 15 16

1750
LPH6353

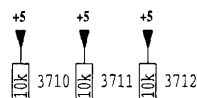
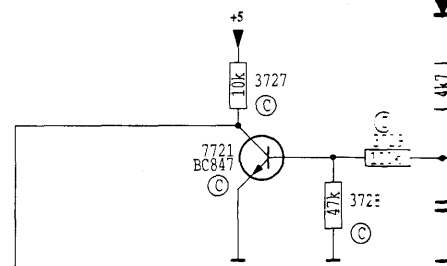


7710
TMP47C1620
N.C.

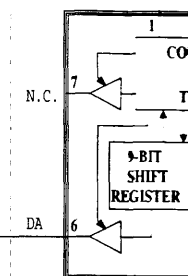


INSERT IN CASE OF NO WRITE PROTECTION

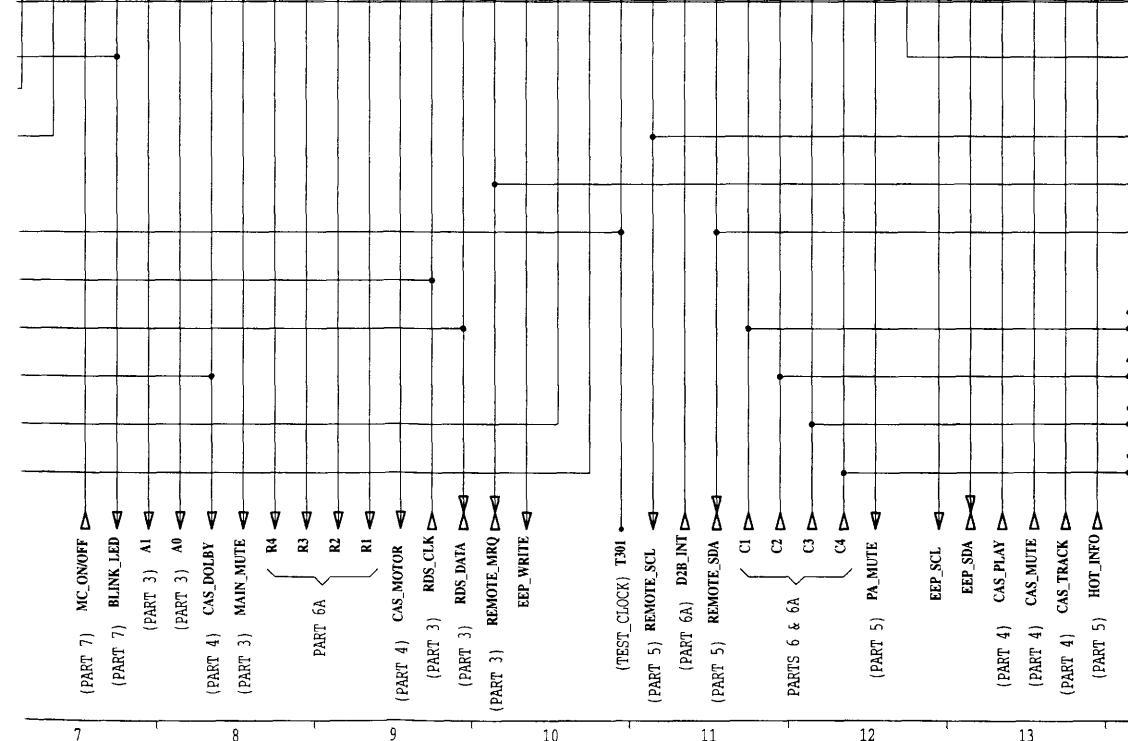
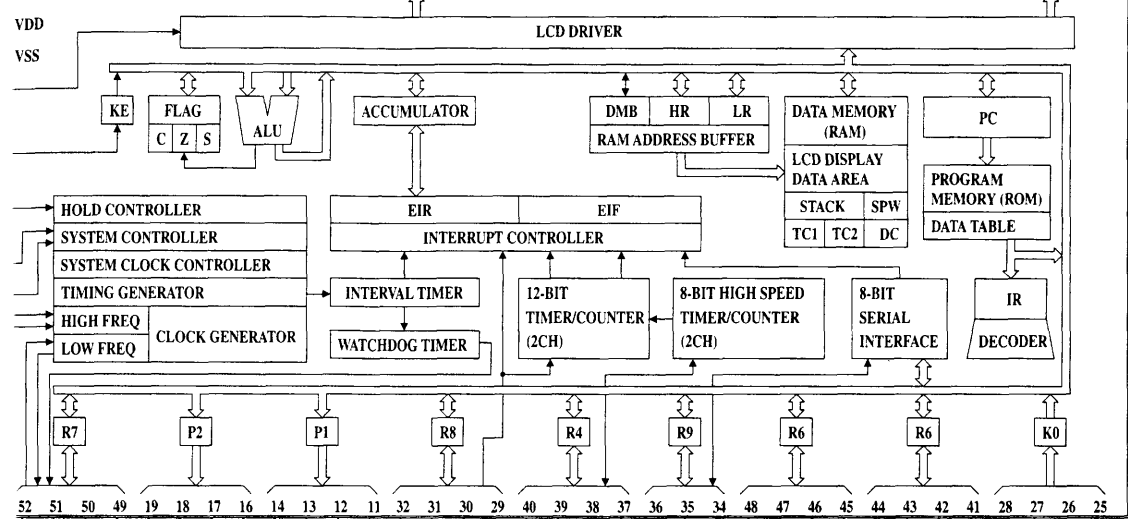
OPTION : TELEPHONE MUTE



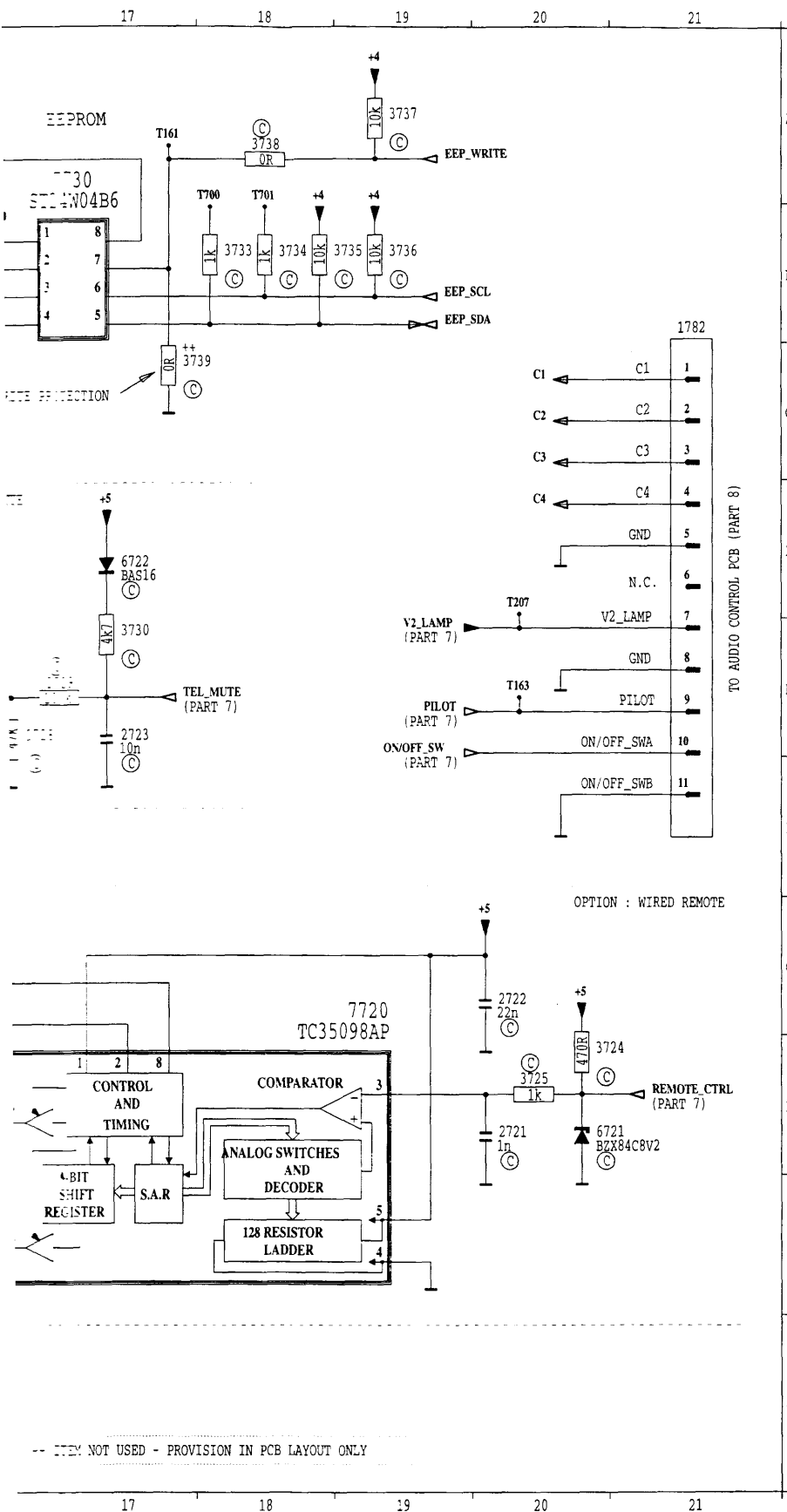
T168



++ ITEM NO.:



- | | | | |
|--------------------|----------------------|----------------------|----------------------|
| AS_MUTE J13 | EEP_WRITE A19 | PILOT E19 | REMOTE_SCL J11 |
| AS_PLAY J13 | EEP_WRITE J10 | R1 J9 | REMOTE_SDA J11 |
| AS_TRACK J13 | HOLD D5 | R2 J9 | RESET D5 |
| 2B_INT J11 | HOT_INFO J13 | R3 J8 | SCL I1 |
| EP_SCL B19 | MAN_MUTE J8 | R4 J8 | SDA I1 |
| EP_SCL J13 | MC_ON/OFF A7 | RDS_CLK J9 | T163 E20 |
| EP_SDA B19 | ONN/OFF_SW F19 | RDS_DATA J9 | T157 I3 |
| EP_SDA J13 | PA_MUTE J12 | REMOTE_MQR J10 | T158 I3 |



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3739
3769
3770
3771
3772
5711
6221
6222
7710
7720
7721
7730

Voltage measured in FM mode with
A4 = 14.4V
A7 = 14.4V
 unless otherwise stated.

(OFF) = Power off
 (ON) = Power on

7760 MSM630
 (continue.....)

+1	+14.4V	16	GND
+2	+13.8V	17	5V
+3a, +3b	8.5V	18	N.C.
+4	+5V	19	2.5V
+5, +5a, +5b	+5V	20	2.5V
+7	+5V	21	5V
+CDCC	14.4V	22	N.C.
Vref	5V	23	5V
V_LAMP	10V	24	2.3V
		25	2.3V
		26	5V
		27	5V
		28	N.C.
		29	5V
		30	5V
		31	5V
		32	5V

7704 ST24W04B6

1	5V
2	5V
3	5V
4	0V
5	5V
6	5V
7	5V
8	5V

7721 BC847

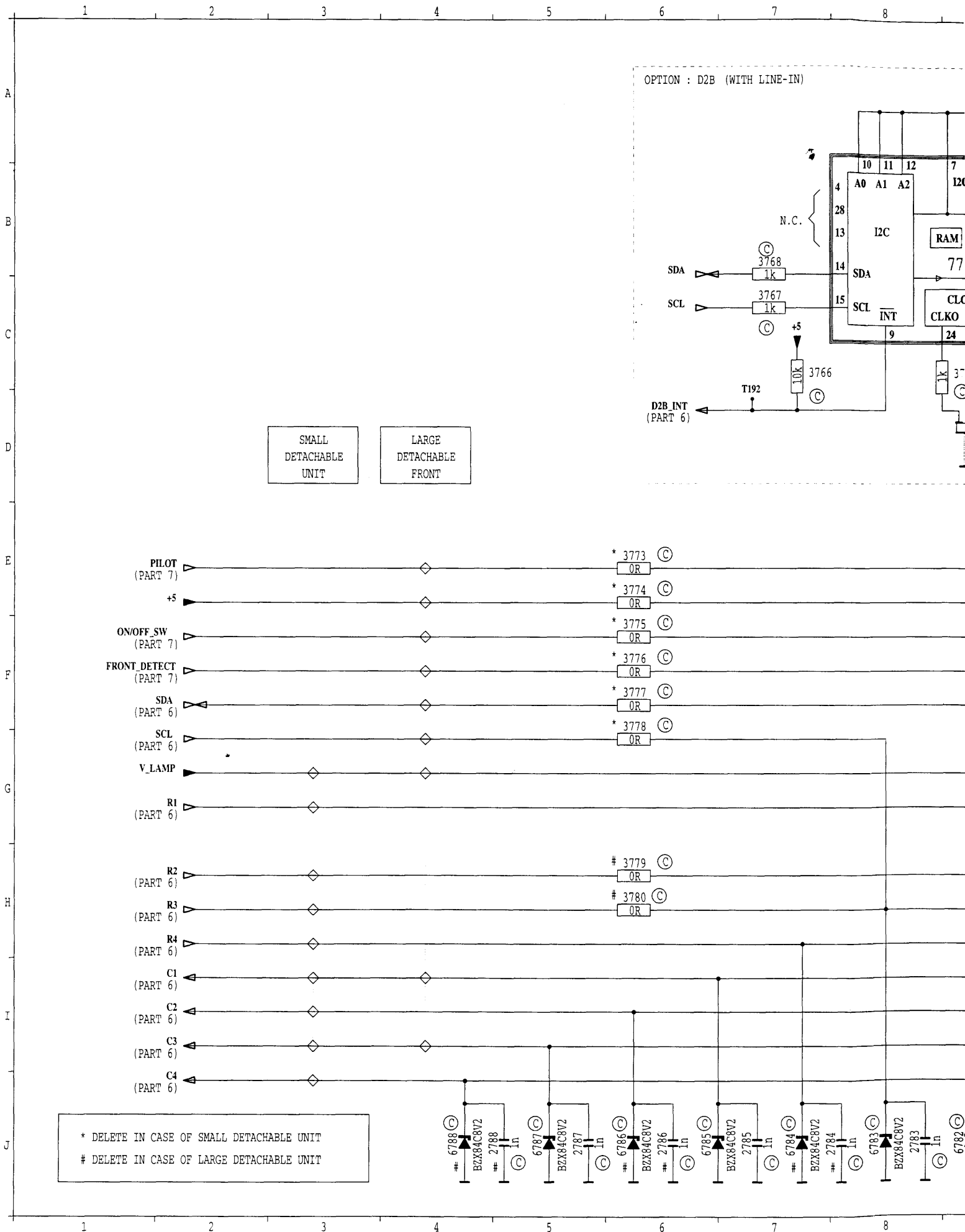
C	0V
B	0.6V
E	0V

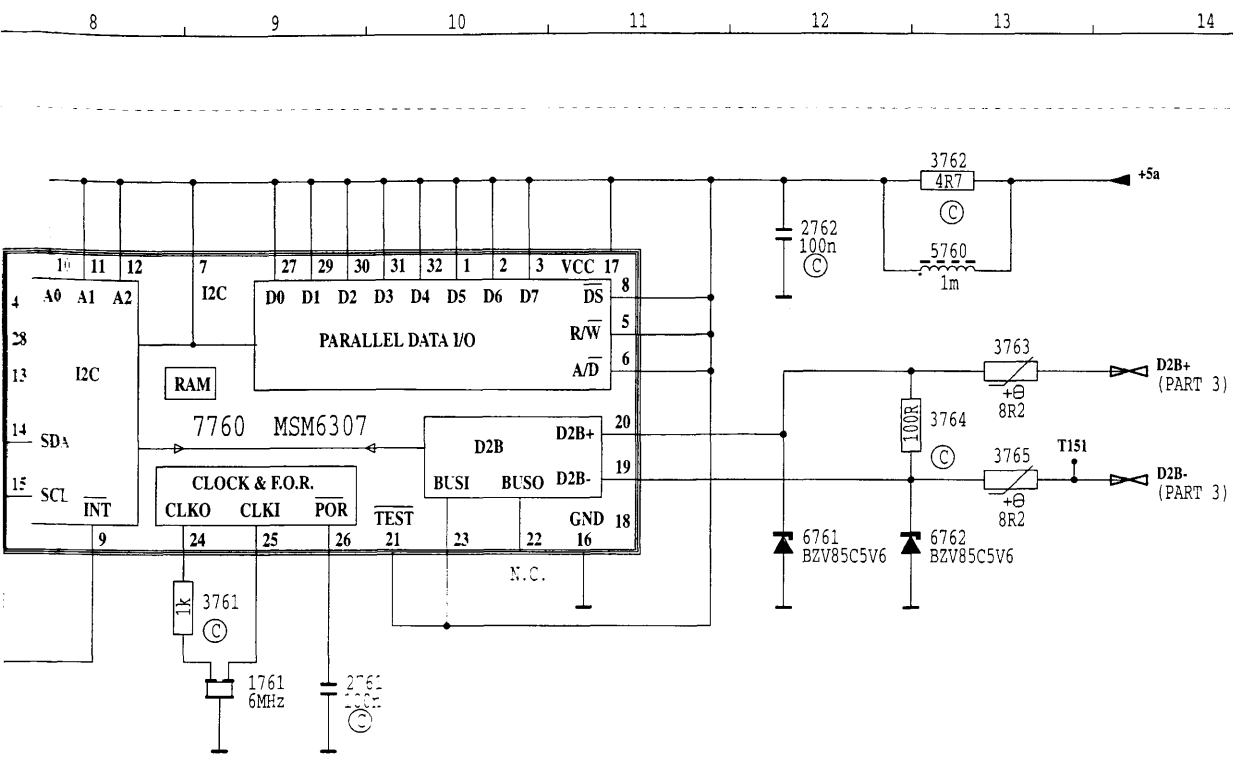
7760 MSM6307

1	5V
2	5V
3	5V
4	N.C.
5	5V
6	5V
7	5V
8	5V
9	5V
10	5V
11	5V
12	5V
13	N.C.
14	5V
15	5V

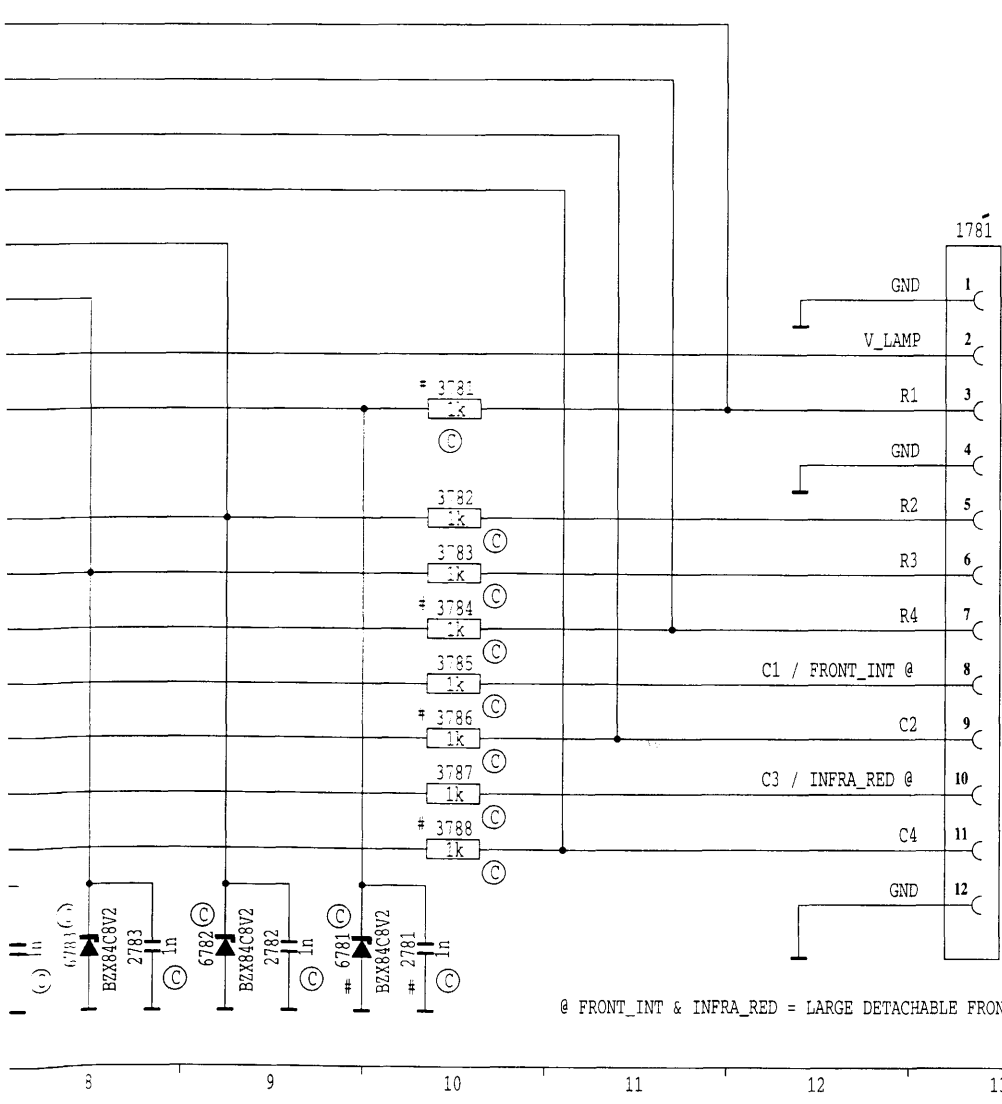
1	T161	A17	T306	D6
1	T168	G15	T700	B18
5	T207	D20	T701	B18
	T301	J10	TEL_MUTE	E17
	T302	I14	TUNER_SCL	J1
10	T303	I14	TUNER_SDA	I1
	T304	I14	V2_LAMP	E19
	T305	I14		

PART 6A : D2B & DETACHABLE FRONT CONNECTOR (MAIN PCB)





1761 D 9
 1781 F13
 2761 D 9
 2762 A12
 2781 J10
 2782 C 9
 2783 C 9
 2784 C 9
 2785 C 9
 2786 C 9
 2787 C 9
 2788 C 9
 3761 C 9
 3762 A13
 3763 B13
 3764 B13
 3765 C13
 3766 C 7
 3767 C 7
 3768 C 7
 3773 F 6
 3774 F 6
 3775 F 6
 3776 F 6
 3777 F 6
 3778 F 6
 3779 H 6
 3780 H 6
 3781 G10
 3782 H10
 3783 H10
 3784 H10
 3785 I10
 3786 I10
 3787 I10
 3788 I10
 5760 A13
 6761 C13
 6762 C13
 6781 J 9
 6782 J 9
 6783 C 9
 6784 C 9
 6785 C 9
 6786 C 9
 6787 C 9
 6788 C 9
 7760 B 9



E
 F
 G
 H
 I
 J

@ FRONT_INT & INFRA_RED = LARGE DETACHABLE FRONT

Some useful tips on Micro-processor

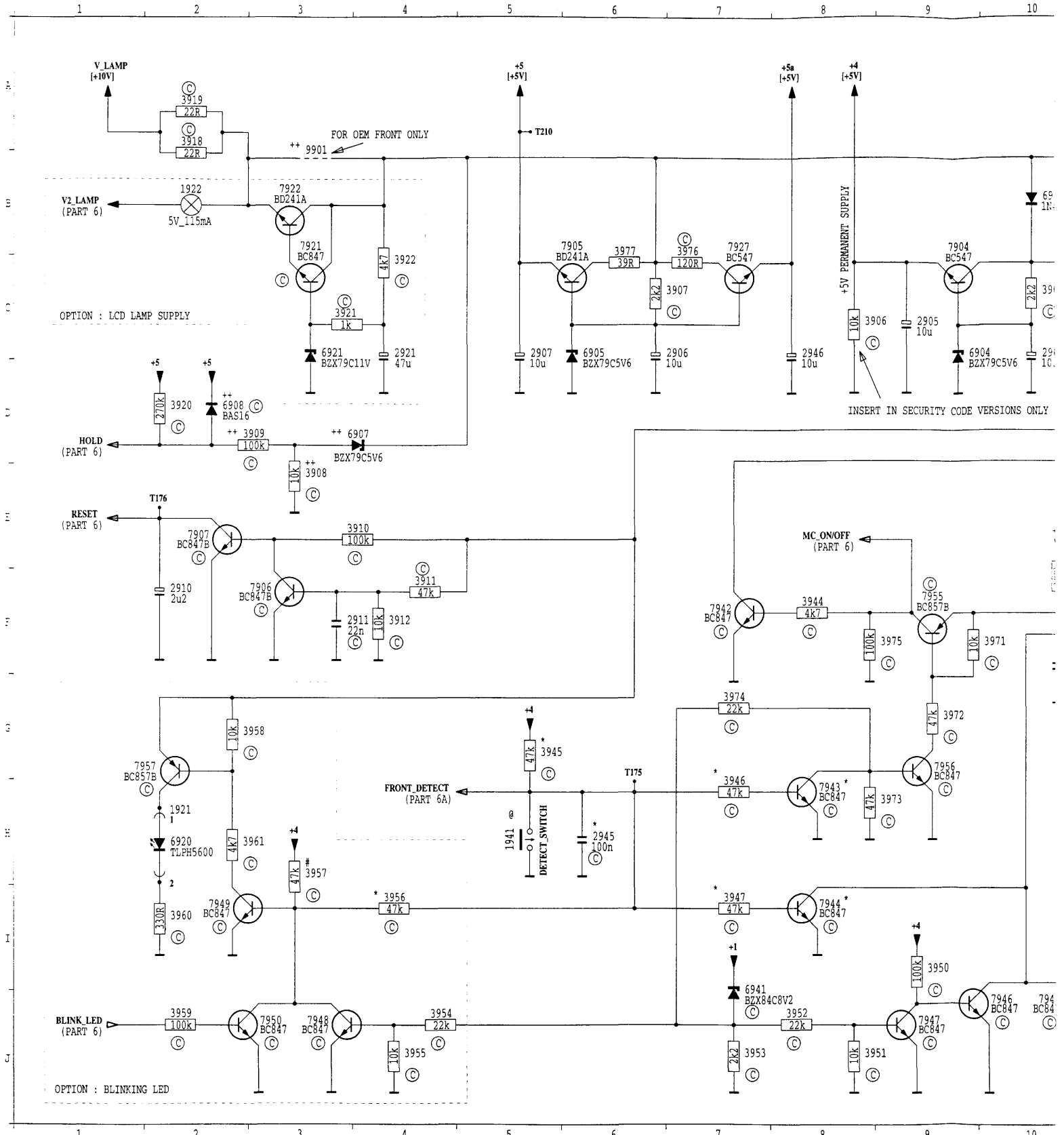
Voltage and waveform are measured with A4 and A7 connected with 14.4V unless otherwise stated.

(on) = Power on

(off) = Power off

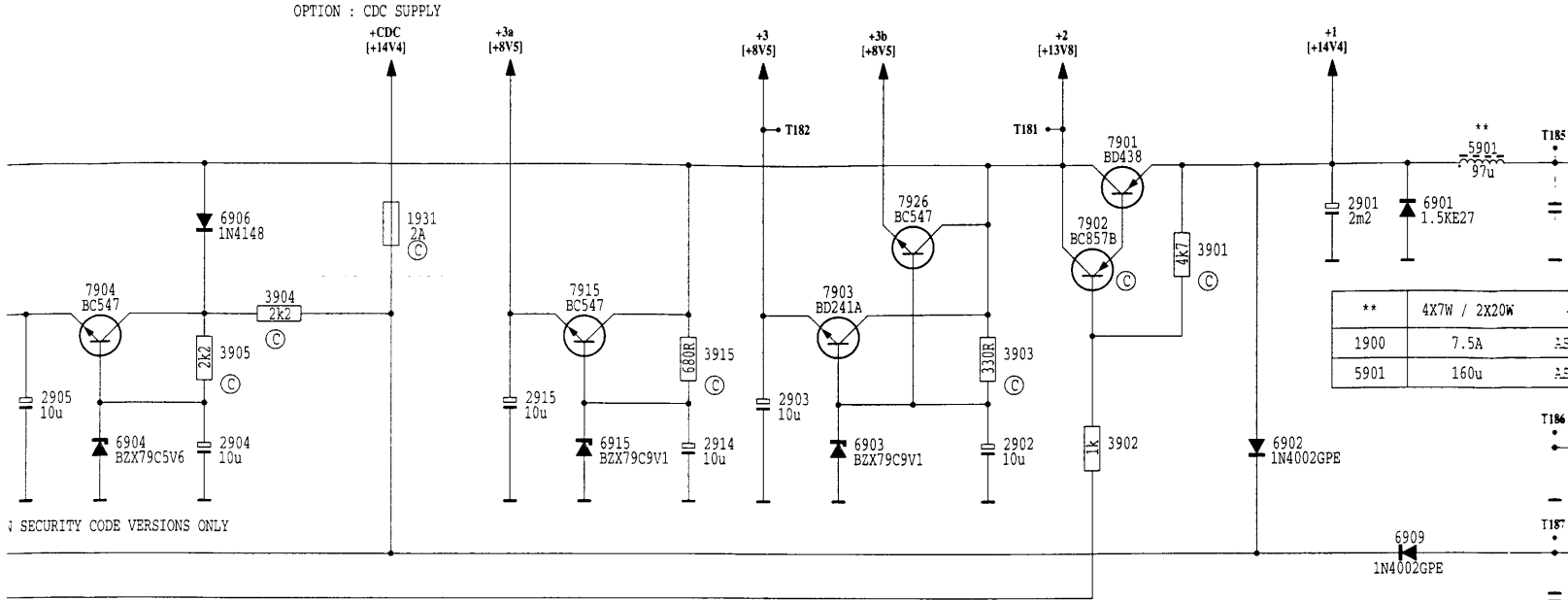
Pin. No.	Name	I/O	Function / Description	Voltage/Waveform
1-4		O	LCD segment driver output.	Square wave, 1.2Vdc, 50% duty cycle (on) Square wave, 0Vdc, 50% duty cycle (off)
5-6		O	Common drive output.	Staircase waveform, 1.2Vdc (on) Staircase waveform, 0Vdc (off)
7-9			No connection	
10	VLCD		LCD drive power supply	1.7V (on), 0V (off)
11	R1	O	Row Keyboard scan	
12	R2	O	Row Keyboard scan	
13	R3	O	Row Keyboard scan	
14	R4	O	Row Keyboard scan	
15			uP ground	
16	MAN_MUTE	O	To mute SOFAC	0V (Mute), 8.5V (non mute)
17	CAS_DOLBY / Beep	O		0V (Dolby on), 5V (Dolby off)
18	A0	O	Source selector	
19	A1	O	Source selector	
20	GND		Ground	
21			Crystal oscillator for clock	
22			Crystal oscillator for clock	
23	RESET		uP Reset	4V when either A4 or A7 is connected.
24	HOLD			4.8V (on), 0V (off)
25	HOT_INFO	I	For Thermal shutdown.	5V when temperature of set is ok. 0V when temperature of set is too high. Display shows "hot". Volume will be reduce automatically.
26	CAS_TRACK	I	To indicate Track direction	0V (Reverse direction), 5V (Forward direction)
27	CAS_MUTE	I	Mute cass. during Fast mode.	5V (Cass. in Fast mode)
28	CAS_PLAY	I	To indicate cass. play	0V (Cass. play), 5V (Cass play)
29	REMOTE_MRQ	I/O	For wire remote control	4.9V (on), 0V (off)
30	RDS_DATA	I/O		4.9V (on), 0V (off)
31	RDS_CLK	I		4.8V (on), 0V (off)
32	CAS_MOTOR	O		5V (Cass. play), 0V (Cass. Stop)
33			uP supply	4.58V (on) & (off)
34	REMOTE_SDA	I/O	For wire remote control	5V (on), 0V (off)
35	D ² B_INT	I	D ² B interrupt when CDC is connected	At 5V & 5ms/Div setting on scope, you can see a dip in voltage which represent D ² B interrupt when CDC is connected.
36	REMOTE_SCL	O	For wire remote control	5V (on), 0V (off)
37	TEST CLOCK		For Clock accuracy alignment	
38	SDA	I/O	Serial data	5V (on), 0V (off)
39	SCL	O	General I2C bus control	5V (on), 0V (off)
40	EEP_WRITE	O	EEProm write enable	0V (Write enable), 5V (write disable)
41	EEP_SDA	I/O	EEProm serial data	5V (on), 0V (off)
42	EEP_SCL	O	EEProm clock	5V (on), 0V (off)
43		I	TEL_MUTE (Phone "Lo")	5V (set is muted and display shows "CALL") 0V (set play as normal)
			TEL_MUTE (Phone "HI")	5V (set play as normal) 0V (set is muted and display shows "CALL")
44	PA_MUTE	O	Power amplifier line out mute.	0V (mute), 5V (non mute)
45	C4	I	Column Keyboard scan	
46	C3	I	Column Keyboard scan	
47	C2	I	Column Keyboard scan	
48	C1	I	Column Keyboard scan	
49	BLINK_LED	O	Send pulses to blink LED when FRONT_DET is high	
50	MC_ON/OFF	I		4.4V (on), 0V (off)
51			Crystal oscillator	Sine wave, 0.5Vdc
52			Crystal oscillator	Sine wave, 2Vdc.
53-59			No connection	
60-80		O	LCD driver output	Square wave, 1.2Vdc, 50% duty cycle (on) Square wave, 0Vdc, 50% duty cycle (off)

PART 7 : SUPPLY/CONTROL & BLINKING LED (MAIN PCB)



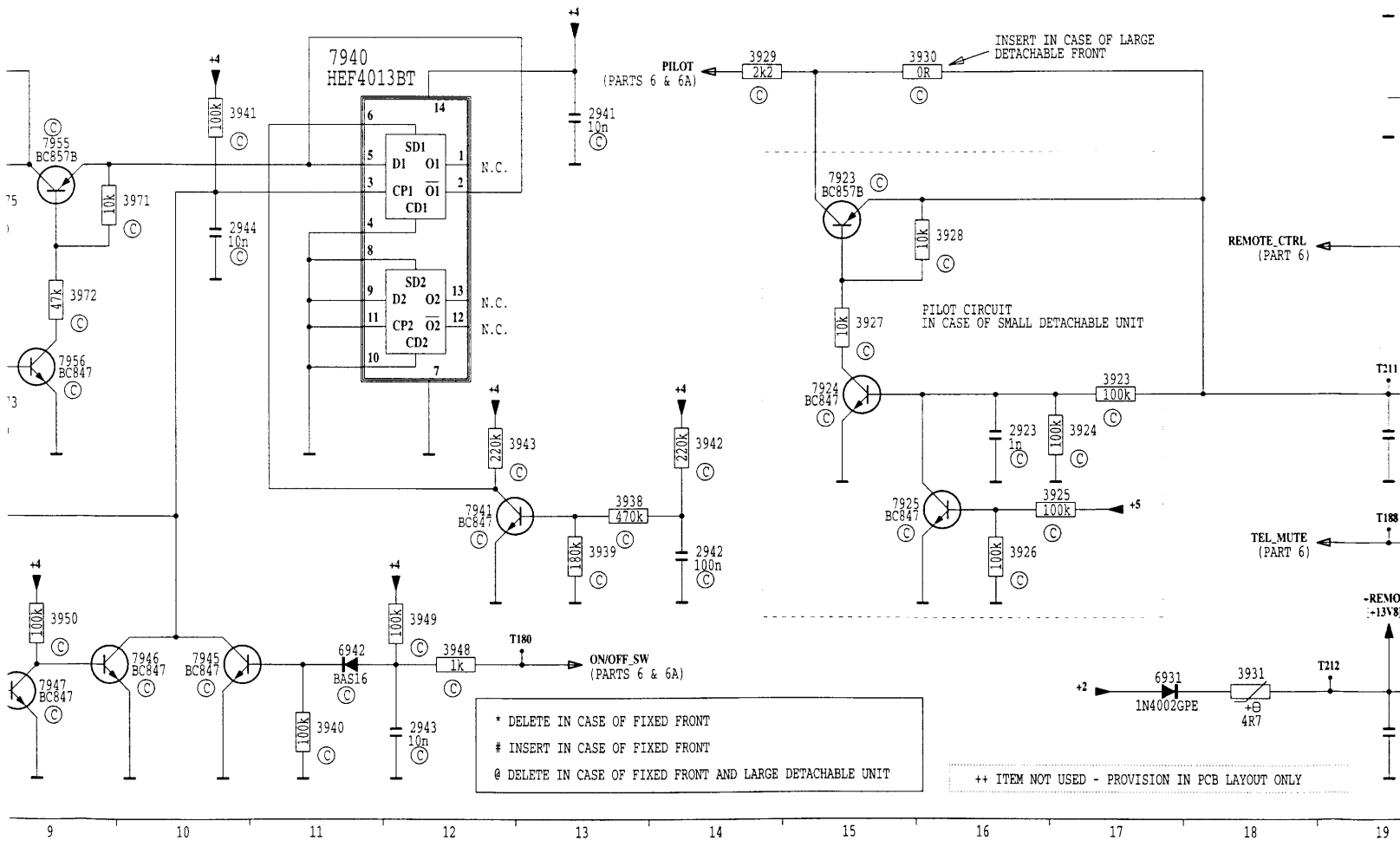
- T185 B19
- T186 C19
- T187 D19
- T211 H19
- T188 I19
- T212 J19
- +REMOTE I19
- +1 A18
- TEL_MUTE I18
- +2 J17

OPTION : CDC SUPPLY



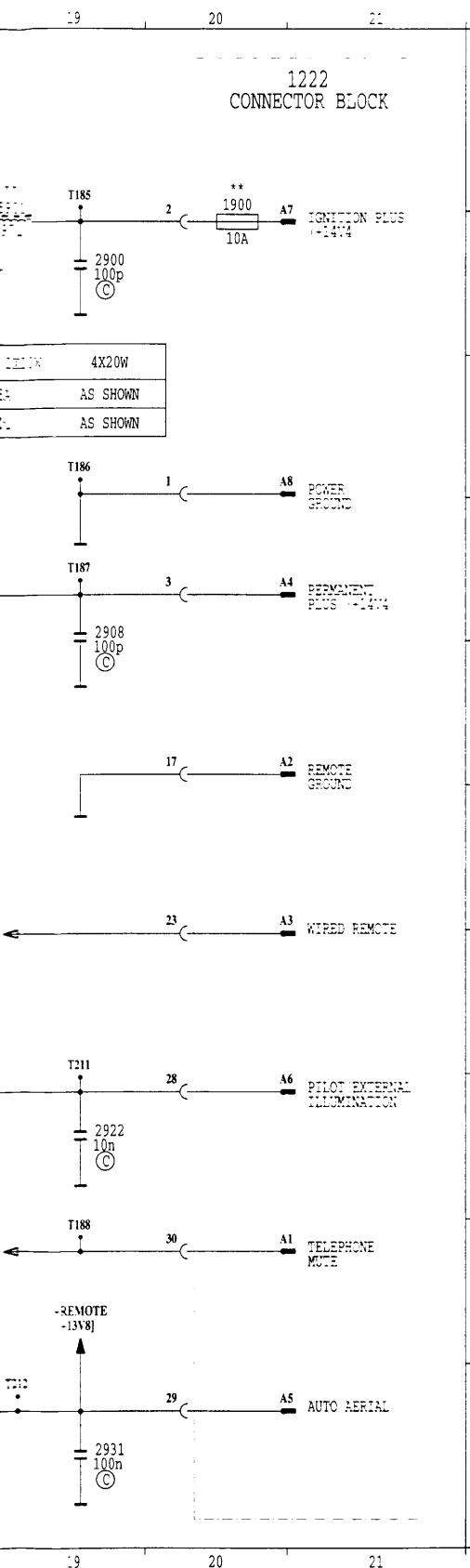
**	4X7W / 2X20W	4.5
1900	7.5A	1.5
5901	160u	1.5

SECURITY CODE VERSIONS ONLY



* DELETE IN CASE OF FIXED FRONT
 # INSERT IN CASE OF FIXED FRONT
 @ DELETE IN CASE OF FIXED FRONT AND LARGE DETACHABLE UNIT

** ITEM NOT USED - PROVISION IN PCB LAYOUT ONLY



1222	A20	7923	F15
1921	H 2	7924	H15
1922	B 2	7925	H16
1931	B11	7926	B15
1941	H 5	7927	B 7
2900	B19	7940	E11
2901	B18	7941	I12
2902	C15	7942	F 7
2903	C14	7943	H 8
2904	C10	7944	I 8
2905	C 7	7945	J10
2906	C 7	7946	J10
2907	C 5	7947	J 9
2908	D19	7948	J 3
2910	F 2	7949	I 3
2911	F 4	7950	J 3
2914	C13	7955	F 9
2915	C12	7956	G 9
2921	C 4	7957	G 2
2922	H15	9901	B 3
2923	H16		
2931	T19		
2941	F13		
2942	I14		
2943	J12		
2944	F10		
2945	H 6		
2946	C 8		
3901	B17		
3902	C16		
3903	B11		
3904	B11		
3905	C10		
3906	C 9		
3907	C 7		
3908	E 3		
3909	D 3		
3910	F 3		
3911	F 4		
3912	F 4		
3913	C11		
3914	A 5		
3915	D 3		
3920	D 3		
3921	C 3		
3922	C 4		
3923	H17		
3924	H17		
3925	H17		
3926	F11		
3927	F16		
3928	G11		
3929	E14		
3930	E16		
3931	J18		
3938	H13		
3939	I13		
3940	C11		
3941	F10		
3942	H14		
3943	H14		
3944	H14		
3945	H 7		
3946	H 7		
3947	H 7		
3948	C12		
3949	I12		
3950	F 9		
3951	J 9		
3952	C 6		
3953	C 6		
3954	C 6		
3955	C 6		
3956	C 6		
3957	C 6		
3958	H 3		
3959	H 3		
3960	F 2		
3961	H 3		
3971	F10		
3972	G 9		
3973	H 9		
3974	G 9		
3975	B 3		
3976	B 6		
3977	B 6		
5901	B19		
6901	B18		
6902	C17		
6903	C14		
6904	C10		
6905	C 6		
6906	E10		
6907	D 4		
6908	D 8		
6909	D13		
6915	C13		
6920	H 2		
6921	C 3		
6931	J17		
6941	J 7		
6942	J11		
7901	A16		
7902	B16		
7903	E14		
7904	B 6		
7905	B 6		
7906	B 6		
7907	E 3		
7915	B12		
7921	B 3		
7922	B 3		

Voltage measured in FM mode with

A4 = 14.4V
A7 = 14.4V

unless otherwise stated.

(OFF) = Power off
(ON) = Power on

+1	+14.4V
+2	+13.8V
+3a, +3b	8.5V
+4	+5V
+5, +5a,+5b	+5V
+7	+5V
+CDCC	14.4V
Vref	5V
V_LAMP	10V
+REMOTE	+13.8V

7940 HEF4013BT

1	N.C.
2	4.56V
3	0V
4	GND
5	4.56V
6	0V
7	GND
8	GND
9	GND
10	GND
11	GND
12	N.C.
13	N.C.
14	5V

7901 BD438

C	13.8V (ON)
	0V (OFF)
B	13.7V (ON)
	14.4V (OFF)
E	14.4V

7902 BC857B

C	13.8V (ON)
	0V (OFF)
B	12.9V (ON)
	14.4V (OFF)
E	13.7V (ON)
	14.4V (OFF)

7925 BC847

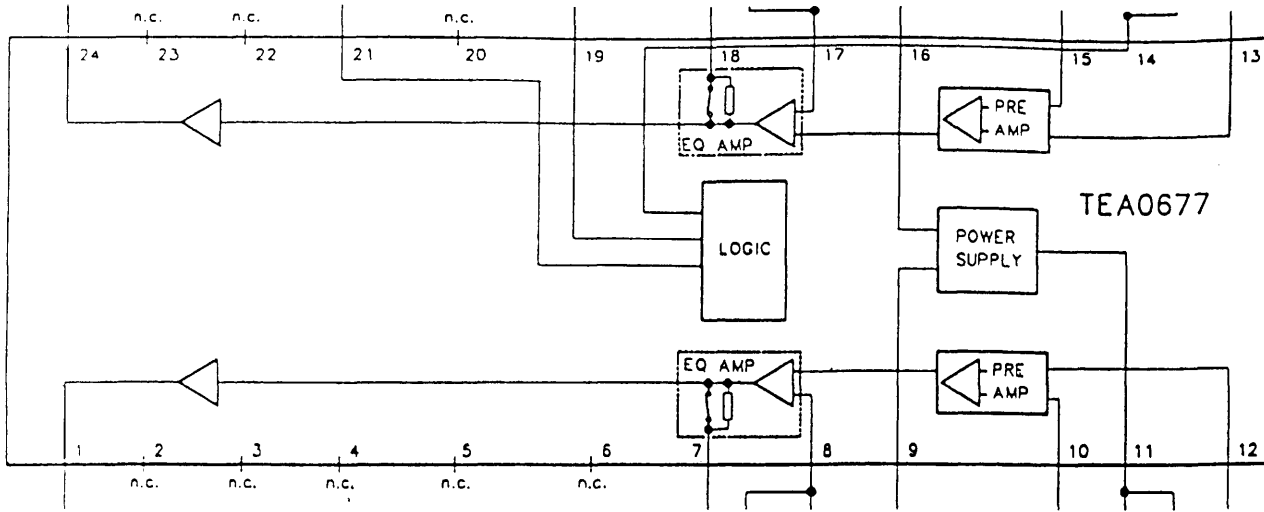
(ON) = Set is turn on.	
(OFF) = Set is turn off and apply 14.4V at pinA6.	
C	0V (ON)
	0.6V (OFF)
B	0.6V (ON)
	0V (OFF)
E	GND

7924 BC847

(ON) = Set is turn on.	
(OFF) = Set is turn off and apply 14.4V at pinA6.	
C	0V (ON)
	0V (OFF)
B	0V (ON)
	0.6V (OFF)
E	GND

7923 BC857B

(ON) = Set is turn on.	
(OFF) = Set is turn off and apply 14.4V at pinA6.	
C	0V (ON)
	14.37V (OFF)
B	0V (ON)
	13.36V (OFF)
E	0V (ON)
	14.4V (OFF)



PINNING

SYMBOL	PIN	DESCRIPTION
OUTA	1	output channel A
n.c.	2	not connected
n.c.	3	not connected
n.c.	4	not connected
n.c.	5	not connected
n.c.	6	not connected
EQA	7	equalizing output channel A
EQFA	8	equalizing input channel A
V _{CC}	9	voltage supply
INA1	10	input channel A1 (forward or reverse)
V _{REF}	11	reference voltage
INA2	12	input channel A2 (reverse or forward)
INB2	13	input channel B2 (reverse or forward)
HS	14	headswitch input
INB1	15	input channel B1 (forward or reverse)
GND	16	ground
EQFB	17	equalizing input channel B
EQB	18	equalizing output channel B
EQS	19	equalizing switch input
n.c.	20	not connected
ACUR	21	auxiliary current
n.c.	22	not connected
n.c.	23	not connected
OUTB	24	output channel B

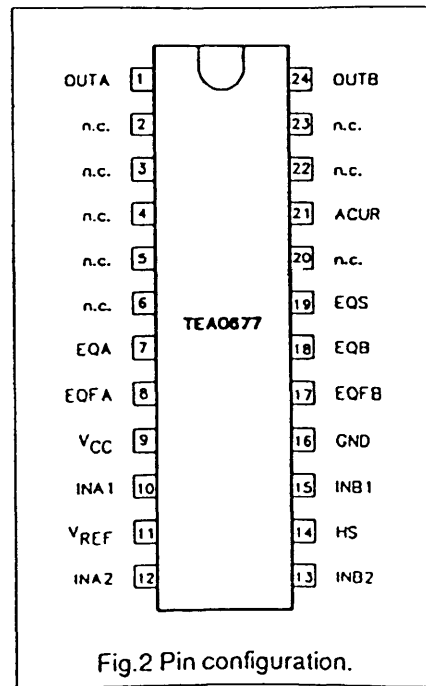
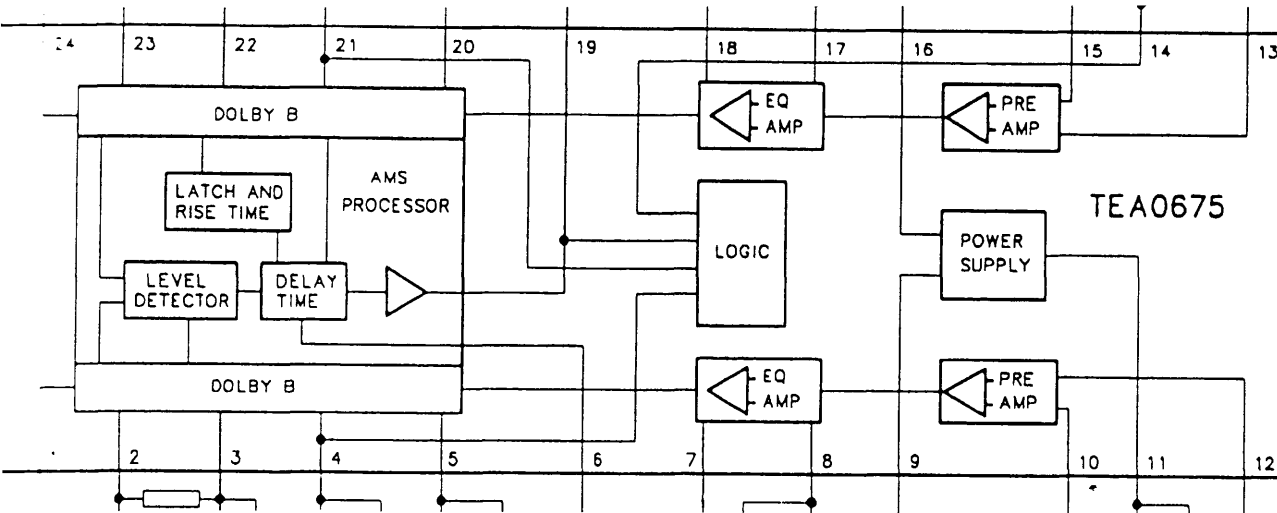


Fig.2 Pin configuration.

PINNING

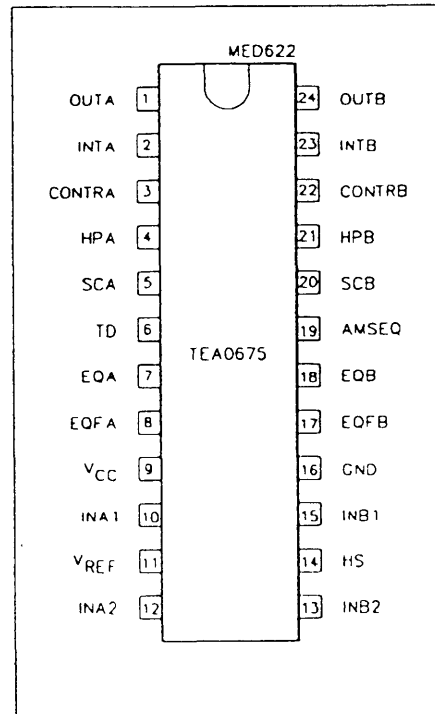
SYMBOL	PIN	DESCRIPTION
OUTA	1	output channel A
INTA	2	not connected
CONTRA	3	not connected
HPA	4	not connected
SCA	5	not connected
TD	6	not connected
EQA	7	equalizing output channel A
EQFA	8	equalizing input channel A
V _{CC}	9	voltage supply
INA1	10	input channel A1 (forward or reverse)
V _{REF}	11	reference voltage
INA2	12	input channel A2 (reverse or forward)
INB2	13	input channel B2 (reverse or forward)
HS	14	headswitch input
INB1	15	input channel B1 (forward or reverse)
GND	16	ground
EQFB	17	equalizing input channel B
EQB	18	equalizing output channel B
AMSEQ	19	equalizing switch input
SCB	20	not connected
HPB	21	auxiliary current
CONTRB	22	not connected
INTB	23	not connected
OUTB	24	output channel B

11 TEA0675

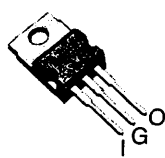
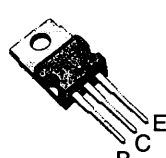
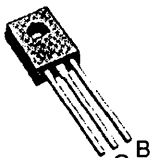
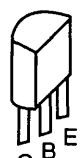

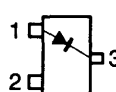
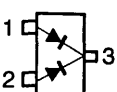
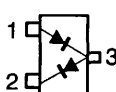


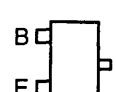
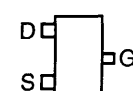


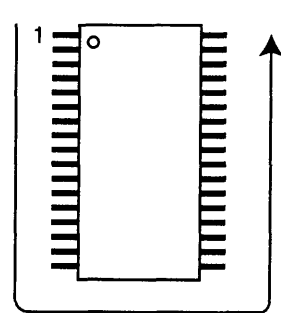
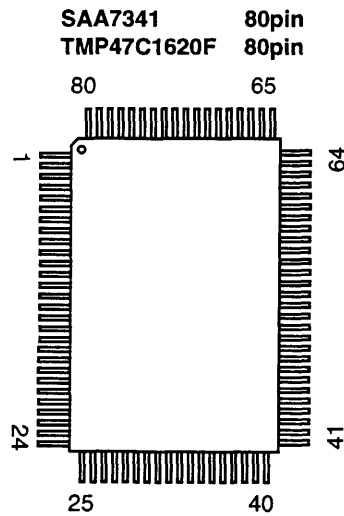
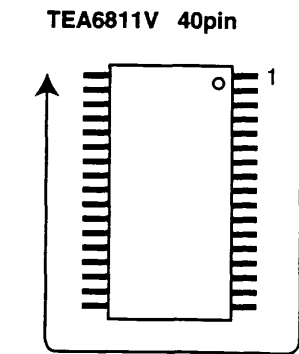
PINNING

SYMBOL	PIN	DESCRIPTION
OUTA	1	output channel A
INTA	2	integrating filter channel A
CONTRA	3	control voltage channel A
HPA	4	high-pass filter channel A
SCA	5	side chain channel A
	6	delay time constant
EQOA	7	equalizing output channel A
EQFA	8	equalizing input channel A
VCC	9	voltage supply
IN1	10	input channel A1 (forward or reverse)
VREF	11	reference voltage
IN2	12	input channel A2 (reverse or forward)
	13	input channel B2 (reverse or forward)
	14	headswitch input
IN3	15	input channel B1 (forward or reverse)
ND	16	ground
EQFB	17	equalizing input channel B
EQOB	18	equalizing output channel B
AMSEQ	19	AMS output and EQ-switch input
SCB	20	side chain channel B
HPB	21	high-pass filter channel B
CONTRB	22	control voltage channel B
INTB	23	integrating filter channel B
OUTB	24	output channel B

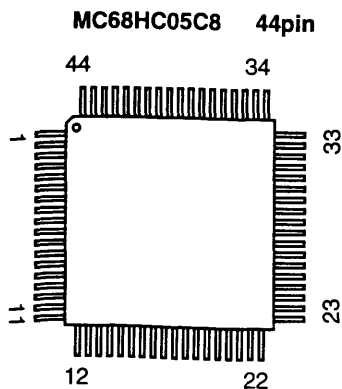


TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

<p>LM7800</p> 	<p>BD241 BD242</p> 	<p>BD433/434 BD435/436 BD437/438</p> 	<p>BC547 BD241</p> 	<p>BC636</p> 
<p>BZX84C5V6 BAS16</p>  <p>1. Anode 2. Cathode</p>	<p>BA779 BB804</p>  <p>1. Anode 2. Anode 3. Cathode</p>	<p>1SV172 BAV99</p>  <p>1. Anode 1 2. Cathode 2 3. Cathode 1/Anode 2</p>	<p>BB135</p> 	
<p>BF999</p> 	<p>BC807 BC847 BC856 BF840 BC857 BFS18 BC858 BFS19 DTC314TK</p> 	<p>PMBFJ309 BF861A</p> 		



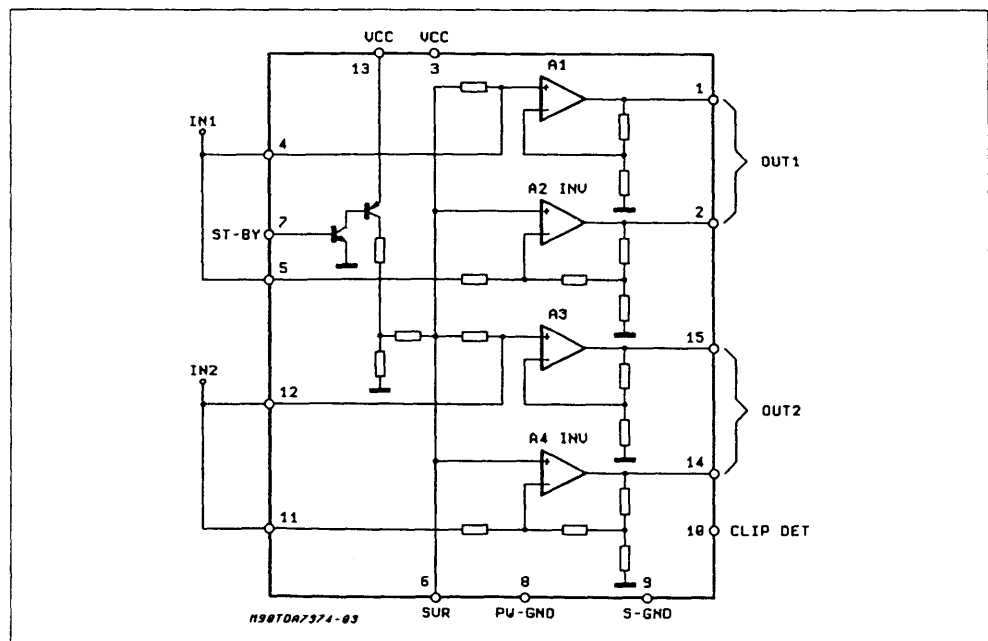
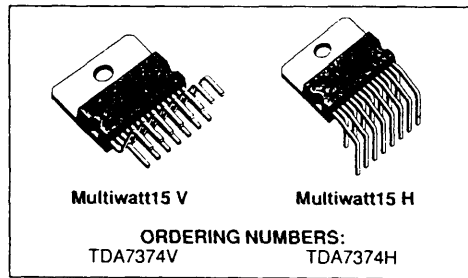
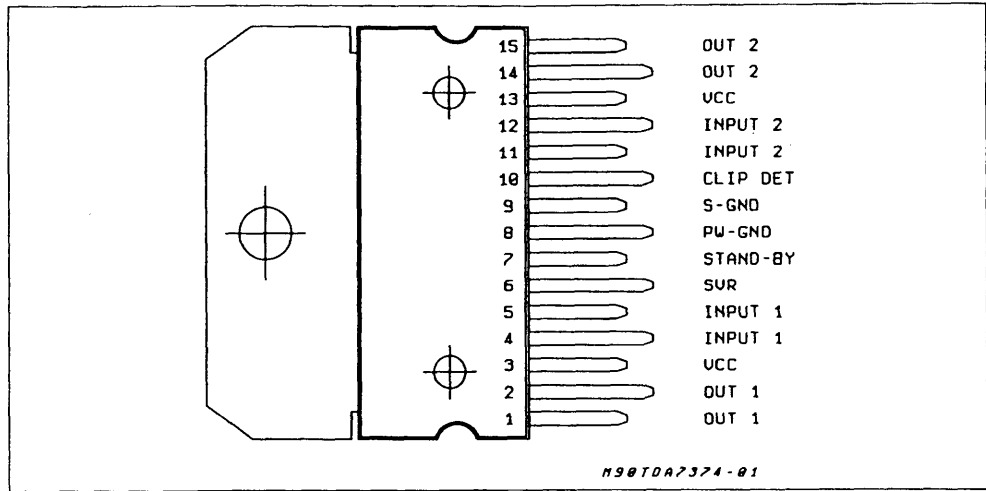
- 24W04C6** 8pin
- 35098A** 8pin
- L2722** 8pin
- LM258** 8pin
- TCA0372DPI** 8pin
- MC45581DT** 8pin
- TC35098AP** 8pin
- TDA8579T/N1** 8pin
- HEF4013BT** 14pin
- HEF4053BT** 16pin
- SAA6579T** 16pin
- HEF4052BT** 16pin
- TEA6330T/V1** 20pin
- TDA8808T/C3** 28pin
- TDA8809/C2** 28pin
- MSM5165AL** 28pin
- TEA6320** 32pin
- MSM6307GS** 32pin
- TEA6822T** 56pin



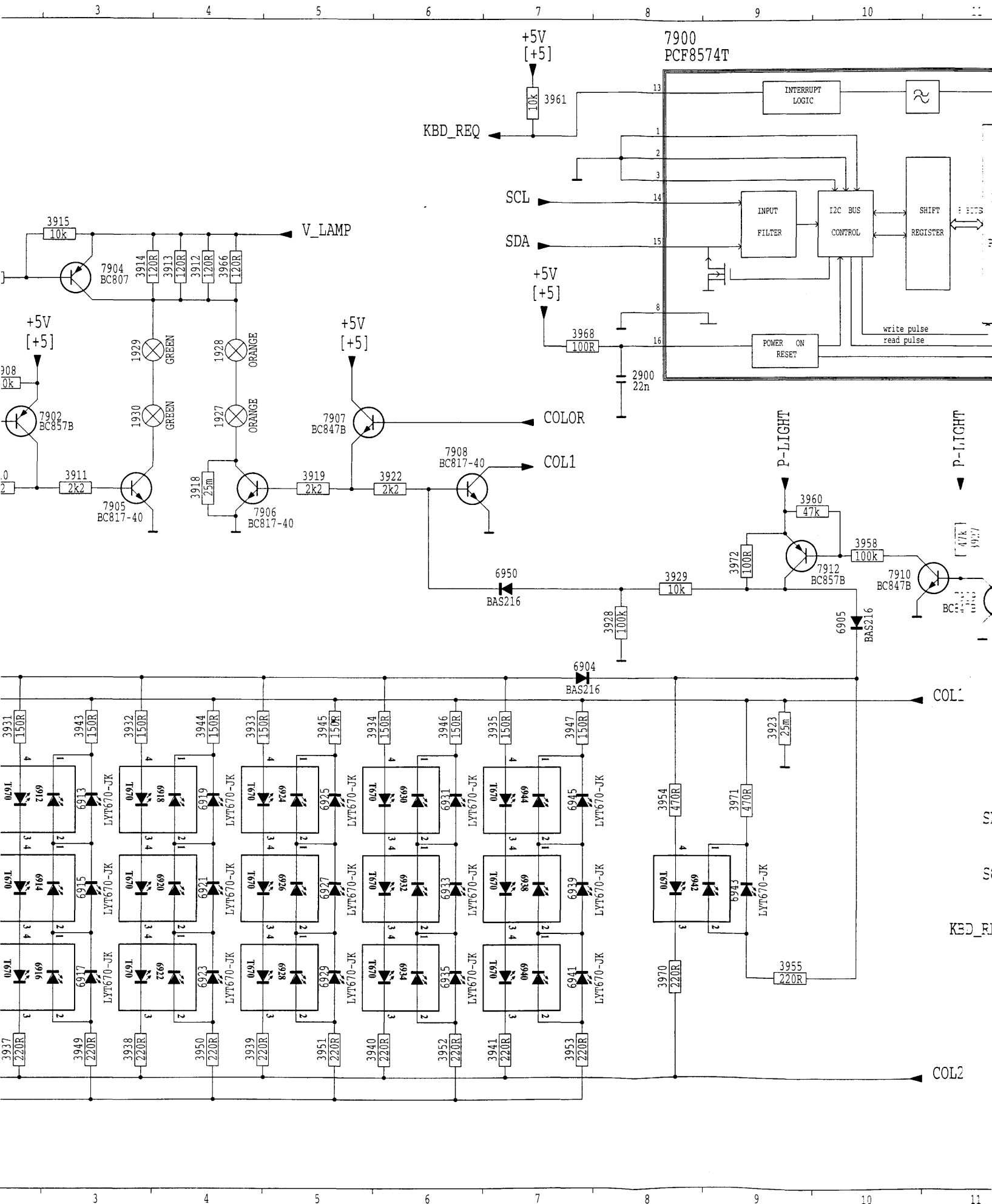
7602 TDA 7374

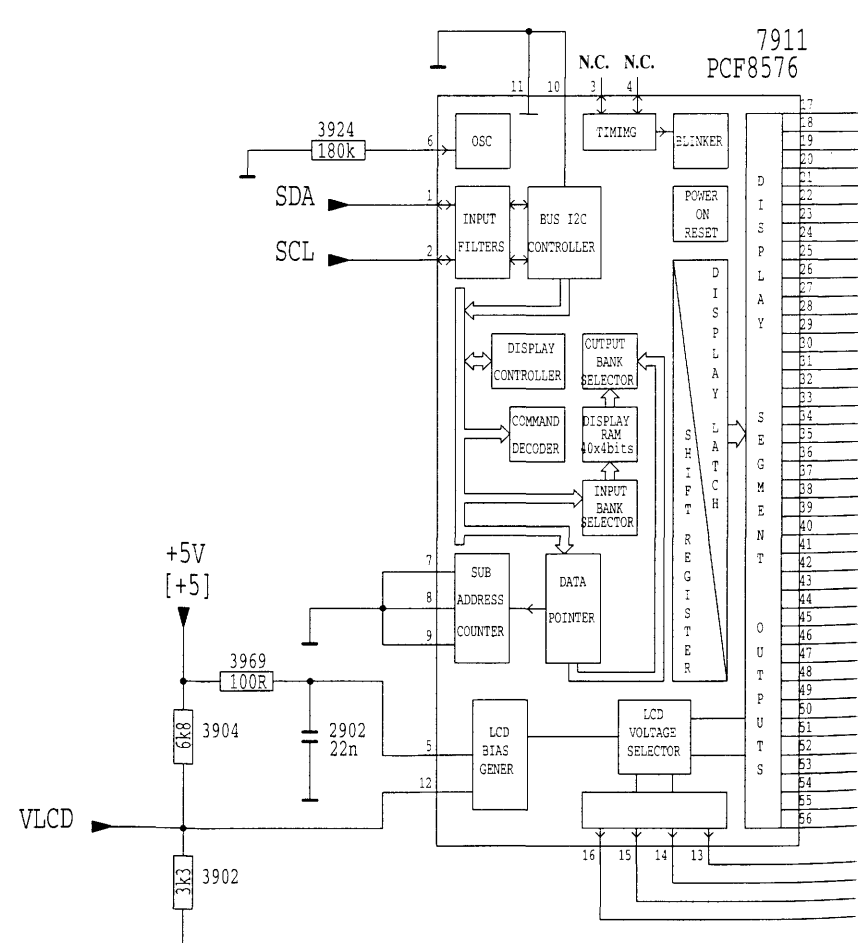
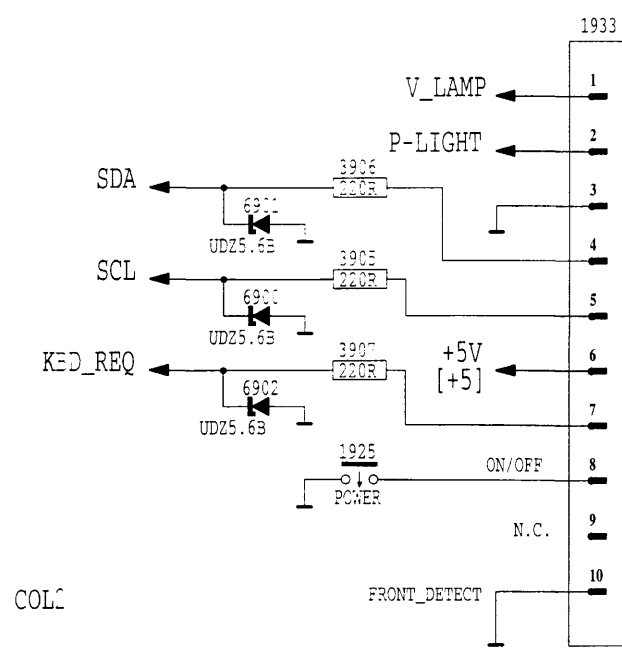
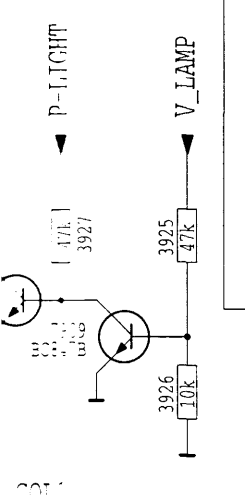
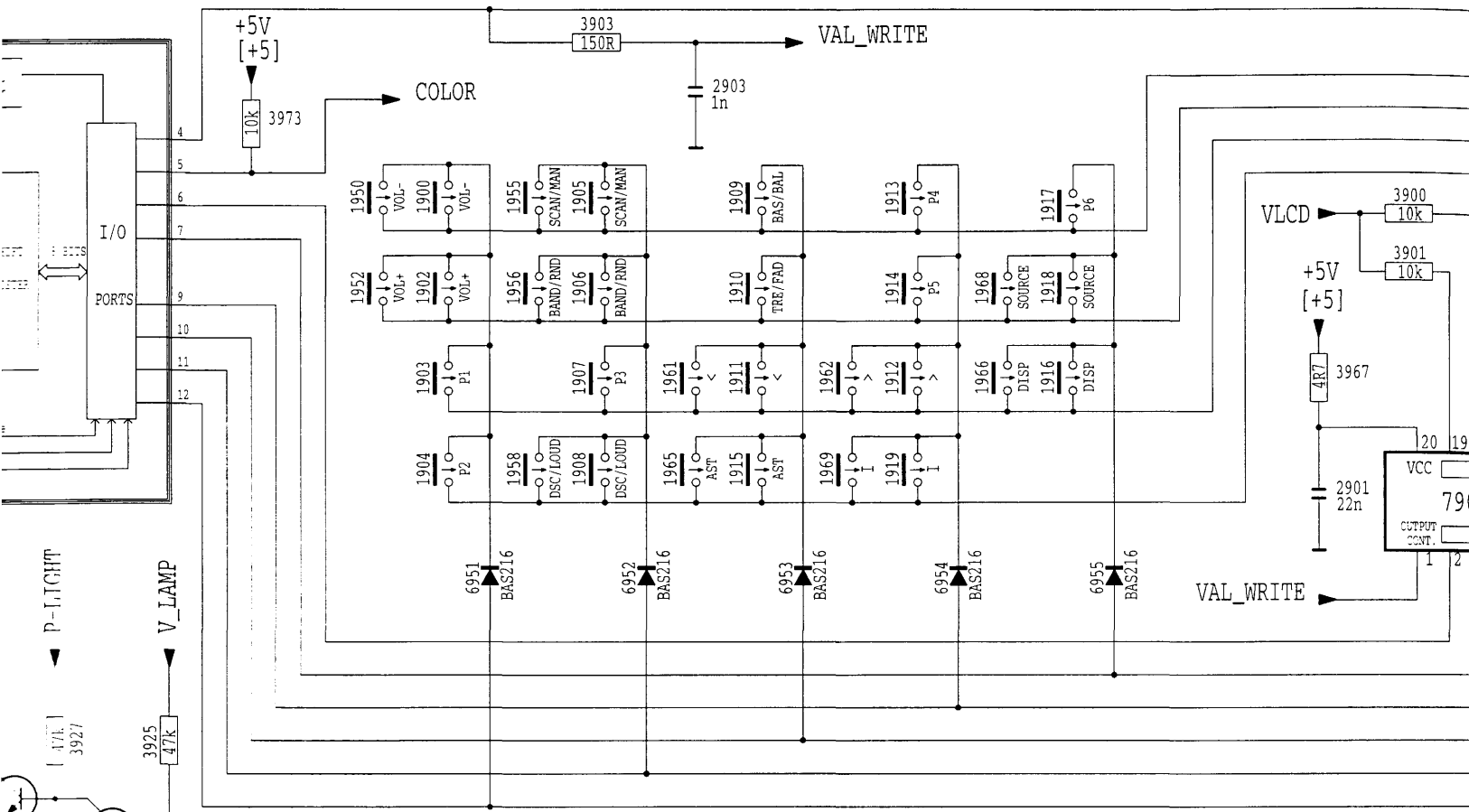
TDA7374

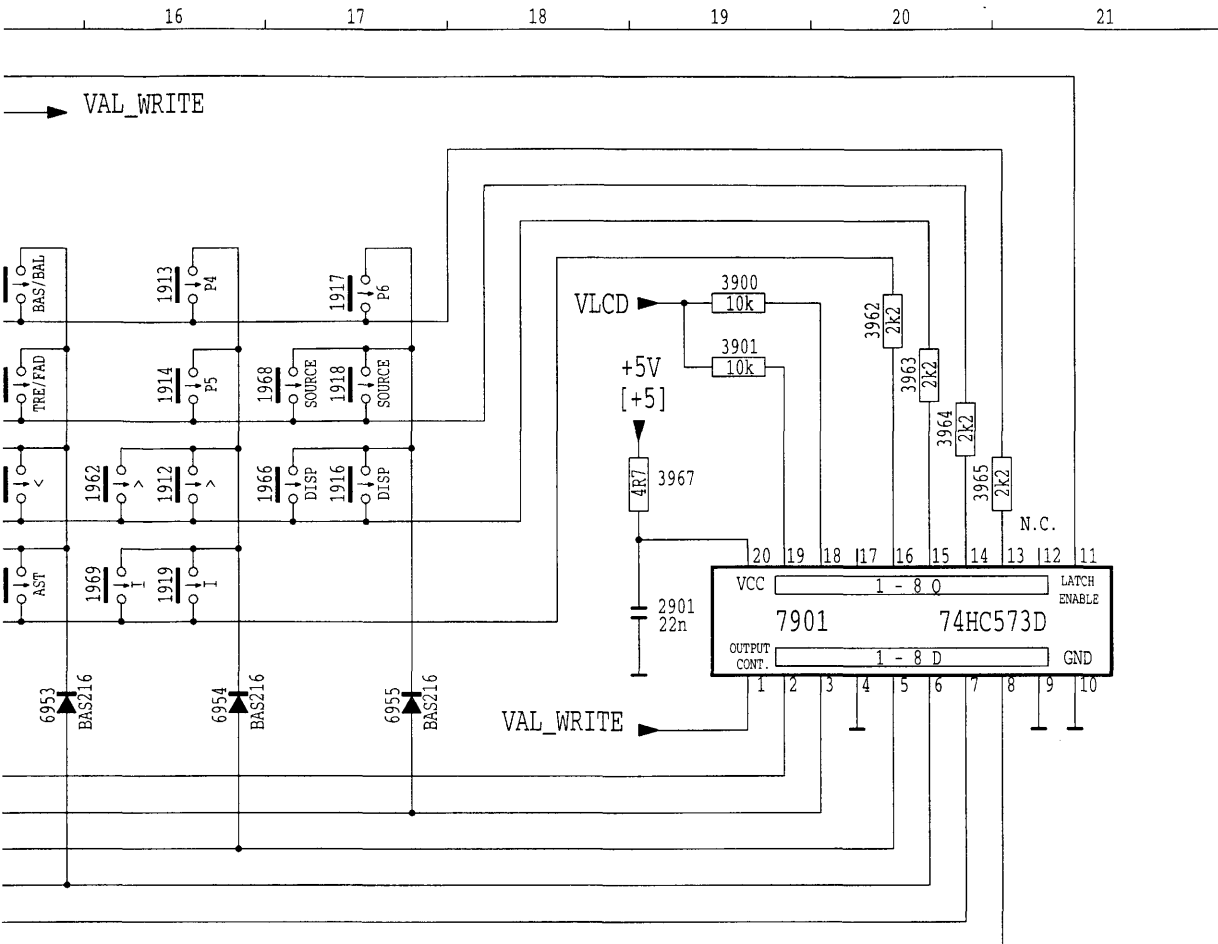
PIN CONNECTION (Top view)



LE UNIT (FRONT PCB)







1900	B13	6902	I12
1902	B13	6904	F17
1903	C13	6905	F10
1904	C13	6906	G1
1905	B14	6907	G2
1906	B14	6908	H1
1907	C14	6909	H2
1908	C14	6910	I1
1909	B15	6911	I2
1910	B15	6912	G2
1911	C15	6913	G3
1912	C16	6914	H2
1913	B16	6915	H3
1914	B16	6916	I1
1915	C15	6917	I3
1916	C17	6918	G4
1917	B17	6919	G4
1918	B17	6920	H4
1919	C16	6921	H4
1920	C16	6922	I1
1921	I12	6923	I4
1922	D4	6924	G5
1923	D4	6925	G5
1924	D3	6926	G5
1925	D3	6927	H5
1926	F20	6928	H5
1927	G14	6929	I5
1928	G14	6930	I5
1929	B13	6931	G6
1930	B13	6932	G6
1931	B14	6933	H6
1932	B14	6934	H6
1933	C15	6935	I6
1934	C15	6936	I6
1935	C17	6937	H7
1936	C17	6938	H7
1937	B17	6939	I7
1938	B17	6940	I7
1939	C16	6941	I7
1940	C16	6942	H8
1941	C8	6943	H8
1942	C8	6944	G7
1943	C19	6945	G7
1944	I17	6946	E7
1945	A15	6947	D13
1946	B19	6948	D14
1947	B19	6949	D15
1948	J16	6950	D16
1949	A14	6951	D17
1950	I16	6952	A8
1951	H12	6953	D19
1952	H12	6954	D20
1953	G12	6955	D20
1954	H12	6956	C22
1955	H12	6957	C22
1956	D22	6958	F22
1957	D22	6959	C23
1958	D22	6960	C23
1959	D22	6961	E23
1960	B22	6962	E23
1961	B22	6963	E23
1962	B22	6964	E23
1963	B22	6965	E23
1964	B22	6966	E23
1965	B22	6967	E23
1966	B22	6968	E23
1967	B22	6969	E23
1968	B22	6970	E23
1969	B22	6971	E23
1970	B22	6972	E23
1971	B22	6973	E23
1972	B22	6974	E23
1973	B22	6975	E23
1974	B22	6976	E23
1975	B22	6977	E23
1976	B22	6978	E23
1977	B22	6979	E23
1978	B22	6980	E23
1979	B22	6981	E23
1980	B22	6982	E23
1981	B22	6983	E23
1982	B22	6984	E23
1983	B22	6985	E23
1984	B22	6986	E23
1985	B22	6987	E23
1986	B22	6988	E23
1987	B22	6989	E23
1988	B22	6990	E23
1989	B22	6991	E23

