

DCCassette Car Radio 22 DC 811/00R**22 DC 821/00R**

Service
Service
Service

Service Manual



12 V



**DIGITAL
ccc
COMPACT CASSETTE**

**PHILIPS**

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TECHNICAL DATA

GENERAL

Power supply:	14,4 V
Quiescent current:	< 2.0 mA
Playback current:	2,8 A (4x5 W)

TUNER

FM	87.5 - 108 MHz	grid: 100 kHz search, 100 kHz manual
MW	531 - 1611 kHz (565 - 186 m)	grid: 9 kHz search, 1 kHz manual
LW	144 - 288 kHz (2083 - 1042 m)	grid: 9 kHz search, 9 kHz manual
SW	5.95 - 6.2 MHz (50.4 - 48.4 m)	grid: 5 kHz search, 5 kHz manual
Presets: 6 FM1, 6 FM2, 6 FM-AST, 6 SW, 6 MW, 6 LW		
Sensitivity 26 dB S/N:	FM: 4 μ V SW: 28 μ V MW: 28 μ V LW: 56 μ V	
IF (FM / AM):	10.7 MHz	

COMPACT CASSETTE

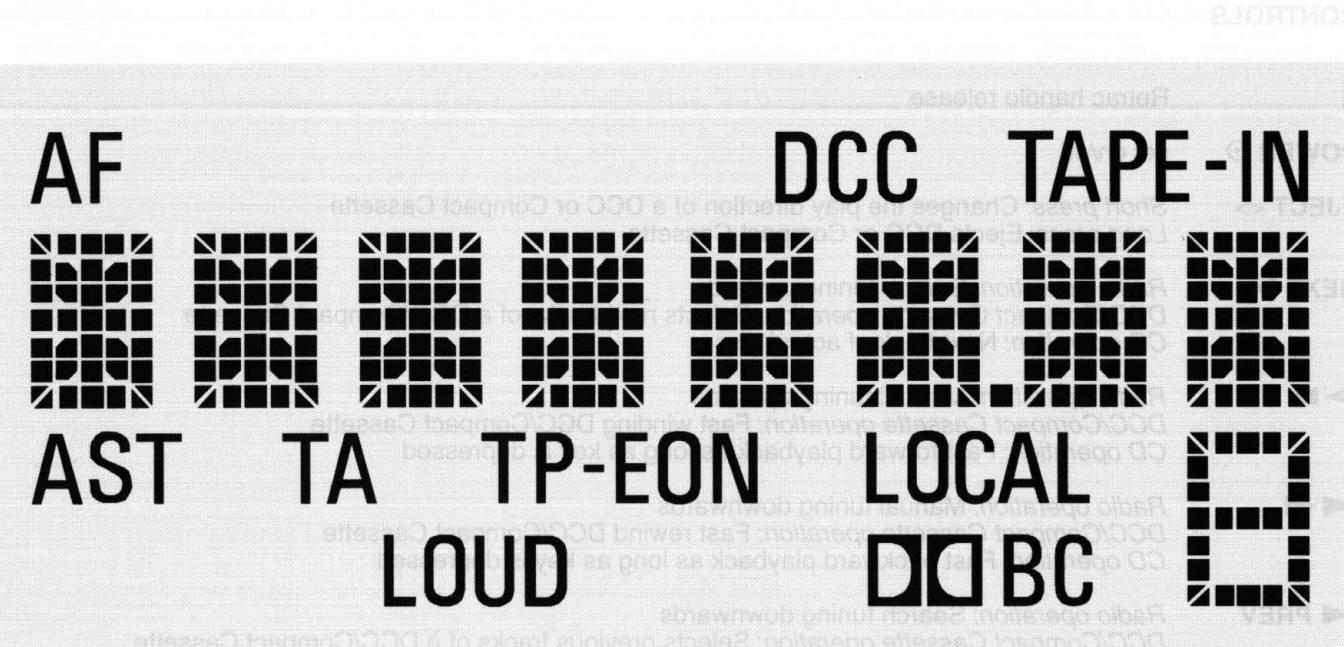
Number of tracks:	2x2
Tape speed:	4,75 cm/s
Winding time:	100 s (C60)
Frequency response:	40 - 14.000 Hz
Wow and flutter:	0.2% (IEC 386 / DIN 45507)
S/N ratio (DOLBY OFF):	FE: 48 dB (weighted) CR: 53 dB (weighted)

AMPLIFIER

Output:	4 x 4.5 W sinus (at 10% THD)
Bass:	+/- 12 dB (100 Hz), 2 dB steps
Treble:	+/- 12 dB (10 KHz), 2 dB steps
Channel separation:	> 30 dB
Telefonmute:	> -40 dB

CONTROLS

■	Retrac handle release
POWER ◎	set on/off
EJECT <>	<i>Short press:</i> Changes the play direction of a DCC or Compact Cassette <i>Long press:</i> Ejects DCC or Compact Cassette
NEXT ►	<i>Radio operation:</i> Search tuning upwards <i>DCC/Compact Cassette operation:</i> Selects next tracks of a DCC/Compact Cassette <i>CD operation:</i> Next track of actual disc
►►	<i>Radio operation:</i> Manual tuning upwards <i>DCC/Compact Cassette operation:</i> Fast winding DCC/Compact Cassette <i>CD operation:</i> Fast forward playback as long as key is depressed
◀◀	<i>Radio operation:</i> Manual tuning downwards <i>DCC/Compact Cassette operation:</i> Fast rewind DCC/Compact Cassette <i>CD operation:</i> Fast backward playback as long as key is depressed
◀ PREV	<i>Radio operation:</i> Search tuning downwards <i>DCC/Compact Cassette operation:</i> Selects previous tracks of a DCC/Compact Cassette <i>CD operation:</i> Previous track of actual disc
⊖	Volume, Bass or Treble down; Balance to left; Fader to rear
⊕	Volume, Bass or Treble up; Balance to right; Fader to front
BASS BAL	Bass/Balance selector
TREB FAD	Treble/Fader selector
MUTE	Audio Mute; interrupts playback of DCC, Compact Cassette or CD (pause)
100 ... 6	<i>Radio operation:</i> Station presets <i>CD operation:</i> Disc selection
100	Dolby Noise Reduction B or C type (only for Compact Cassette)
LOUD RST	<i>Short press:</i> Loudness <i>Long press:</i> Audio reset
DISP	<i>Radio operation:</i> Shows the frequency and the selected wave band instead of the station-name <i>DCC operation:</i> Selects the DCC text mode (only with pre-recorded DCC's) <i>CD operation:</i> Shows total number of tracks and total play time of actual disc
LOC	Selector for strong (local) stations
TA	<i>Short press:</i> Traffic information/announcement <i>Long press:</i> Skips a traffic message
BAND RND	<i>Radio operation:</i> Selects the desired wave band (FM1, FM2, FM3, MW, LW, SW) <i>CD operation:</i> Random track selection of actual disc <i>Long press:</i> Enters the 'INIT' mode
AST SCAN	<i>Radio operation:</i> Auto-Store to program the six strongest stations of the current reception area <i>CD operation:</i> 10 sec.- playback of each track of actual disc
SRC	Selects source (Radio, DCC/Compact Cassette or CD-Changer)

**DISPLAY INDICATIONS**

AF	Tuned station broadcasts RDS information with Alternative Frequencies
DCC	A Digital Compact Cassette is in the cassette deck
TAPE-IN	A Compact Cassette is in the cassette deck
	<i>Radio operation: Preset station (1 out of 6) is selected</i>
	<i>DCC/Compact Cassette operation: Indicates side A or B of the DCC/Compact Cassette</i>
LOCAL	Searches for strong (local) stations only
	Dolby Noise Reduction B or C is switched on (only Compact Cassette)
TP TP-EON	Traffic Program: Indicates that the station broadcasts traffic information A Traffic message is received via Enhanced Other Networks
LOUD	Loudness is switched on
TA	Traffic Announcement mode is switched on
	<i>Radio operation: Wave band and frequency or (FM only) the station name Audio adjustment: Shows the current settings of Bass, Balance, Treble or Fader DCC operation: Shows track number and elapsed time or text mode (only prerecorded DCC's) INIT mode: Shows initialization parameters and their settings</i>
AST	Auto-Store band chosen (on FM3)

INIT MODE

Select INIT MODE by pressing the BAND key for at least 3 seconds, until a bleep is heard.

The following parameters can be changed when the set is in INIT MODE:

1. Illumination colour

After entering INIT MODE, the display shows 'COLOR'. Toggle between 'green' or 'orange' colour with the \uparrow / \downarrow keys.

2. Viewing angle

After entering INIT MODE, select the 'VIEW' parameter with the \blacktriangleleft PREV or \triangleright NEXT keys. The display should show 'VIEW 0'. Select the viewing angle between -1 and 2 with the \uparrow / \downarrow keys for best legibility of the display.

3. AF mode

After entering INIT MODE, select the 'AF' parameter with the \blacktriangleleft PREV or \triangleright NEXT keys. The display should show e.g. 'AF ON'. Select between 'AF ON' or 'AF OFF' with the \uparrow or \downarrow keys.

If you want to store an RDS station without automatic retuning, you have to do the following:
Tune to the desired station.

After entering INIT MODE, select 'AF OFF'.

Leave the INIT MODE (see below) and store this station.

4. AM wave bands on/off

If you don't want to use the AM wave bands (MW, LW and SW), those bands can be switched off. After entering INIT MODE, select the 'AM' parameter with the \blacktriangleleft PREV or \triangleright NEXT keys.

The display should show e.g. 'AM ON'.

Select between 'AM ON' and 'AM OFF' with the \uparrow or \downarrow keys.

When you select 'AM OFF', you can choose only between FM1, FM2 and FM3.

To leave the INIT MODE, press briefly the BAND key.

The INIT MODE will be left automatically, when no keys are depressed within 10 seconds.

NOTE: For informations about how to use the set see the 'Operating Instructions'.

NOTE: The handling of flat pack IC's is described in Service Information A86-100, dated 1986-07-01.

NOTE: Switch off power supply before connecting or disconnecting the cassette deck.

NOTE: Extension cables for front unit and cassette deck are NOT available as serviceparts.
You can build these by using the coded sockets and plugs.

NOTE: Single buttons of the ornamental plate are NOT available.
If there is an absolute need for single buttons you can take apart a complete delivered plate.

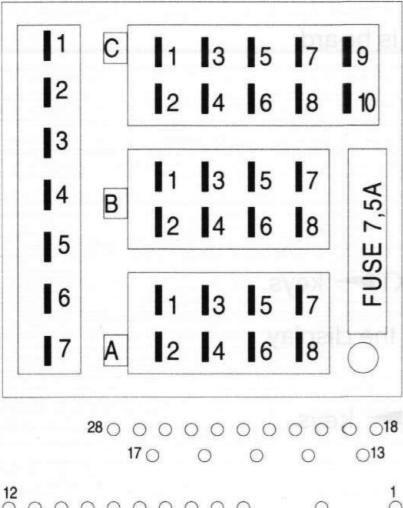
NOTE: For more information about the RDS feature use the 'computer based training course RDS' which is available at Philips Consumer Service.

Contact:

Philips Consumer Electronics
Philips International Support Centre
Building SBP6
NL 5600 MD Eindhoven

tlx routing indicator: NLMEVAB
FAX: + 31 40 73 35 53

CONNECTORBLOCK 22DC811+22DC821



Key- and Display-test, Romcode version front µC

- Separate the front unit assy from the set.
- Connector 1801: connect pin 1 + 10 to ground and pin 4 to 5 V - Display shows 'KEY TEST'.

Key-test

When pushing the buttons the concerned indication must be displayed.

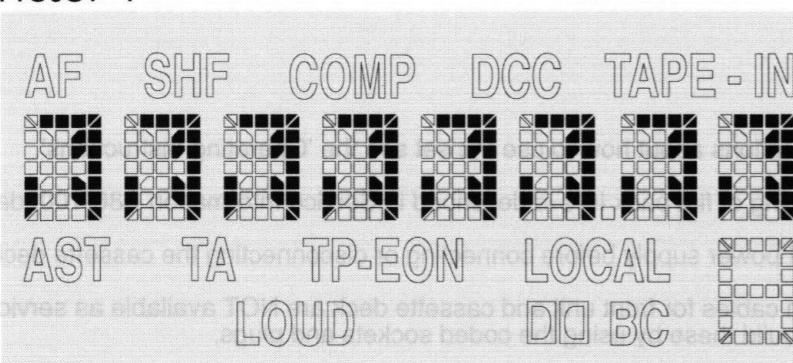
Display-test

- Hold preset 1 - figure Preset 1 must be displayed
- Hold preset 2 - all display-segments are blanked
- Hold preset 3 - figure Preset 2 must be displayed

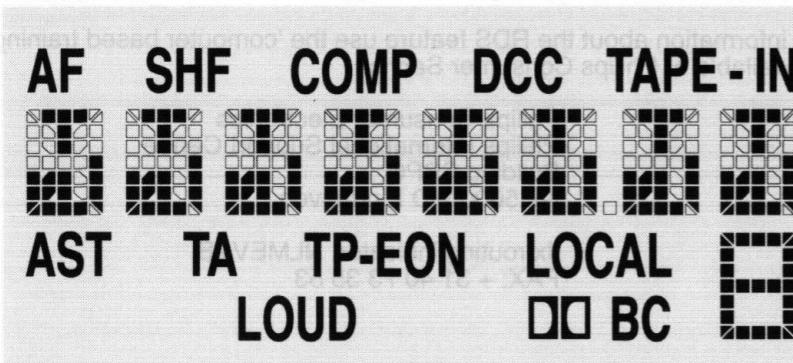
Romcode version

- Hold preset 4 - the software version of the front µC must be displayed (e.g. RC 04)

Preset 1



Preset 3



Checks 22DC811 + 22DC821

Check	Band							
Varicap-voltage	AM					IC 7251 PIN 15	> 2,2 V	
	FM						< 6,0 V	
						FM 1008 PIN 15	> 1,0 V	
							< 6,0 V	
Demodulated AM - level	AM	990 KHz, 10 mV 1 KHz, 30% AM				IC 7201 PIN 12	350 +/- 100 mV	
Demodulated FM - level	FM	93,0 MHz, 1 mV $\Delta f = 22,5$ KHz f mod = 1 KHz				FM 1008 PIN 2	160 mV	
		93,0 MHz, 1 mV $\Delta f = 6,75$ KHz f mod = 19 KHz					45 mV	
		93,0 MHz, 1 mV $\Delta f = 3,75$ KHz f mod = 57 KHz					20 mV	
S/N ratio	FM	93,0 MHz, 1 mV $\Delta f = 22,5$ KHz f mod = 1 KHz				Connectorblock Section B PIN 3 + PIN 5	1,4 V => Referencelevel (dB)	
		93,0 MHz, 1 mV $\Delta f = 22,5$ KHz unmodulated					Referencelevel > - 50 dB	
	AM	990 KHz, 2mV 30 % mod., 1KHz					1,4 V => Referencelevel (dB)	
		990 KHz, 2mV unmodulated					Referencelevel > - 48 dB	
Wide band AGC switch	AM	990 KHz, 2mV without modulation				IC 7201 PIN 1	V1 ~ 6,5 V	
		990 KHz, 200mV without modulation					V2 ~ 7,0 V (V2 - V1 > 0,5 V)	
FM - search - sensitivity	FM	94,1 MHz, 160 μ V $\Delta f = 22,5$ KHz f mod = 1 KHz				LO - Search tuning	tuning stop after 2. run	
		94,1 MHz, 250 μ V $\Delta f = 22,5$ KHz f mod = 1 KHz				LO - Search tuning	tuning stop after 1. run	
		94,1 MHz, 4 μ V $\Delta f = 22,5$ KHz f mod = 1 KHz				DX - Search tuning	no tuning stop	
		94,1 MHz, 10 μ V $\Delta f = 22,5$ KHz f mod = 1 KHz				DX - Search tuning	tuning stop after 1. run	
AM - search-sensitivity	AM	990 KHz, 240 μ V 1 KHz, 30% AM				LO - Search tuning	tuning stop after 2. run	
		990 KHz, 370 μ V 1 KHz, 30% AM				LO - Search tuning	tuning stop after 1. run	
		990 KHz, 22 μ V 1 KHz, 30% AM				DX - Search tuning	no tuning stop	
		990 KHz, 50 μ V 1 KHz, 30% AM				DX - Search tuning	tuning stop after 1. run	

CHECK LOW VOLTAGE CONTROL CIRCUIT

- 1: Supply voltage 14.4 V
Set switched on
Pos. 7701, pin 7 = 4.7 V +/- 400 mV
- 2: Supply voltage 8.3 V +/- 900 mV
Set switches off automatically
Pos. 7701, pin 7 = 0.5 V +/- 500 mV
- 3: Supply voltage 14.4 V
Set switches on
Pos. 7701, pin 7 = 4.7 V +/- 400 mV

Adjustments 22DC811 + 22DC821

Adjustment	Band	Symbol	Symbol	Symbol	Symbol	Symbol
$\alpha - 3 \text{ dB}$	FM	94,1 MHz, 1 mV $\Delta f = 22,5 \text{ KHz}$ f mod = 1 KHz		Connectorblock Section B PIN 3 + PIN 5	1,4 V => Referencelevel (dB)	
		94,1 MHz, 7 μV $\Delta f = 22,5 \text{ KHz}$ f mod = 1 KHz			Referencelevel - 3 dB	
10 dB Channel-separation	FM	94,1 MHz, 120 μV $\Delta f = 22,5 \text{ KHz}$ f mod = 1 KHz (right channel only) Stereo-Pilot 10%		R 3630	Connectorblock Section B PIN 3 <> PIN 5	10 dB (+/- 1 dB)
Channel-separation maximum	FM	94,1 MHz, 10 mV $\Delta f = 22,5 \text{ KHz}$ f mod = 1 KHz (right channel only) Stereo-Pilot 10%		R 3608	Connectorblock Section B PIN 3 <> PIN 5	max. (ca. 34 dB)
Noise - detector	FM	98,0 MHz, 1 mV $\Delta f = 75 \text{ KHz}$ f mod = 40 KHz		R 3426	IC 7420 PIN 14	850 +/- 50 mV (AC)

Check $\alpha - 3 \text{ dB}$ again and adjust if necessary

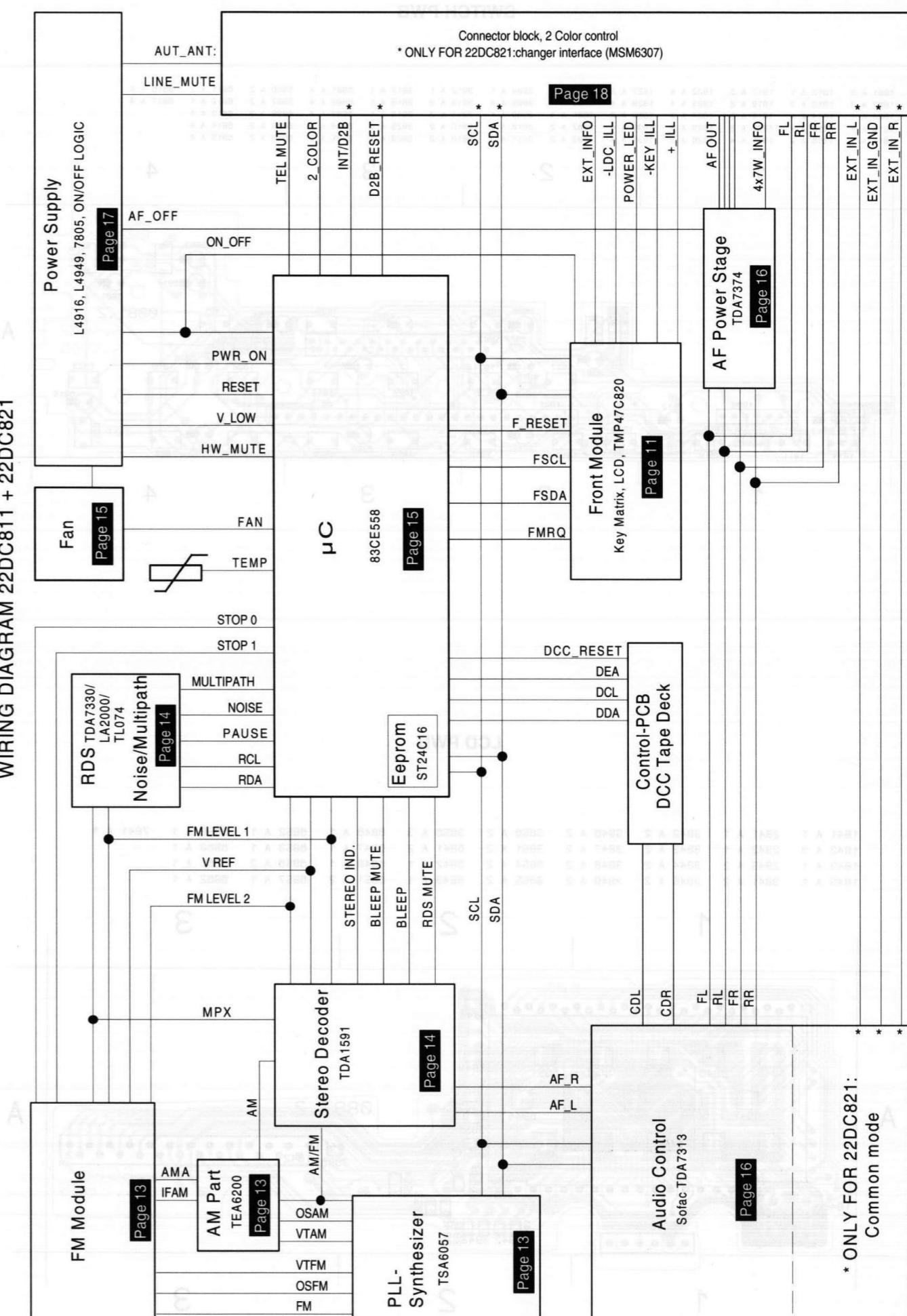
Do not adjust coils 5210 and 5228 (AM-PART), because they are correctly preadjusted by supplier !

! NOTE

FM- and AM- search sensitivities are only adjustable with a special equipment via software.

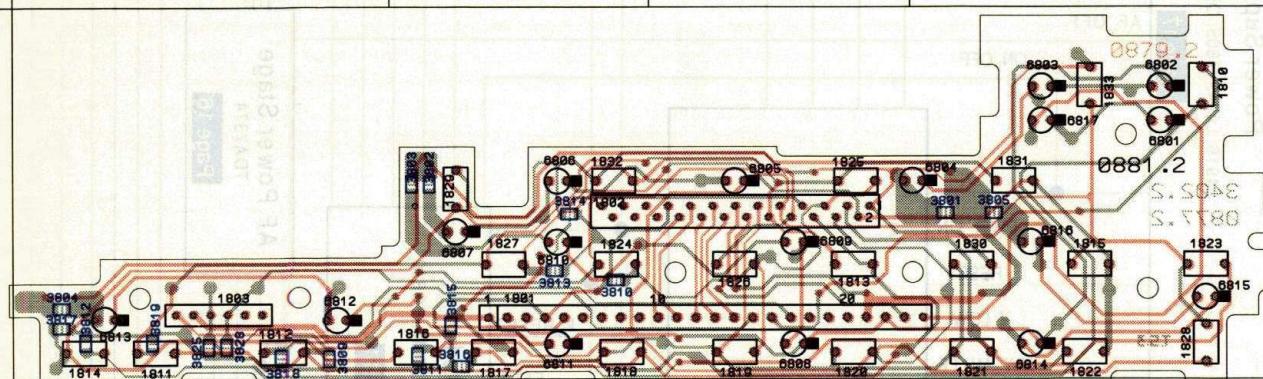
If you get sets with search sensitivities out of specification, send them to factory-service in Wetzlar until further notice.

Philips Apparatefabrik Wetzlar
Department SP-CS
Philipstrasse 1
D - 35576 Wetzlar
GERMANY



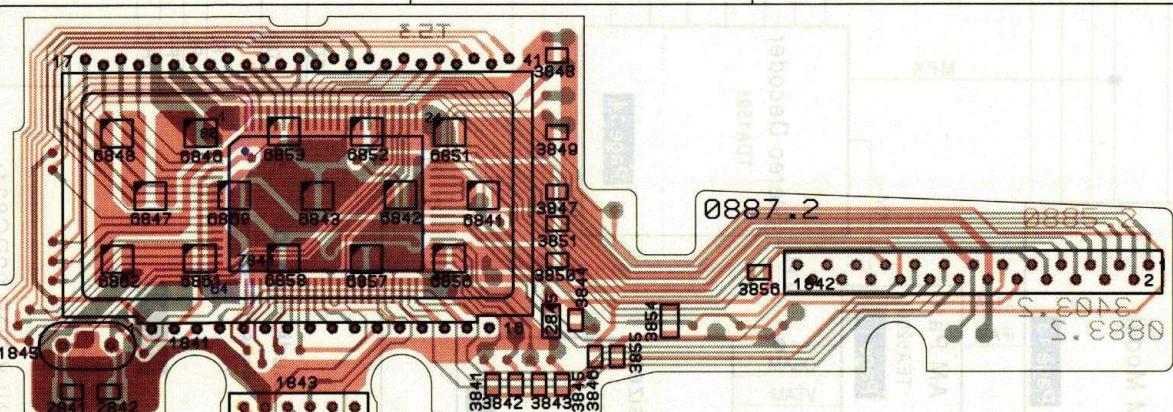
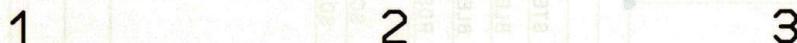
* ONLY FOR 22DC821:
Common mode

1881 A 3	1812 A 1	1817 A 2	1822 A 4	1827 A 2	1832 A 2	3804 A 1	3812 A 1	3817 A 1	6801 A 4	6806 A 2	6811 A 2	6816 A 4
1882 A 3	1813 A 3	1818 A 2	1823 A 4	1828 A 4	1833 A 4	3805 A 4	3813 A 2	3818 A 1	6802 A 4	6807 A 2	6812 A 1	6817 A 4
1883 A 1	1814 A 1	1819 A 3	1824 A 2	1829 A 2	3806 A 4	3809 A 1	3814 A 2	3819 A 1	6803 A 4	6808 A 3	6813 A 1	
1810 A 4	1815 A 4	1820 A 3	1825 A 3	1830 A 4	3802 A 2	3810 A 2	3815 A 2	3825 A 1	6804 A 4	6809 A 3	6814 A 4	
1811 A 1	1816 A 2	1821 A 4	1826 A 3	1831 A 4	3803 A 2	3811 A 2	3816 A 2	3828 A 1	6805 A 3	6810 A 2	6815 A 4	



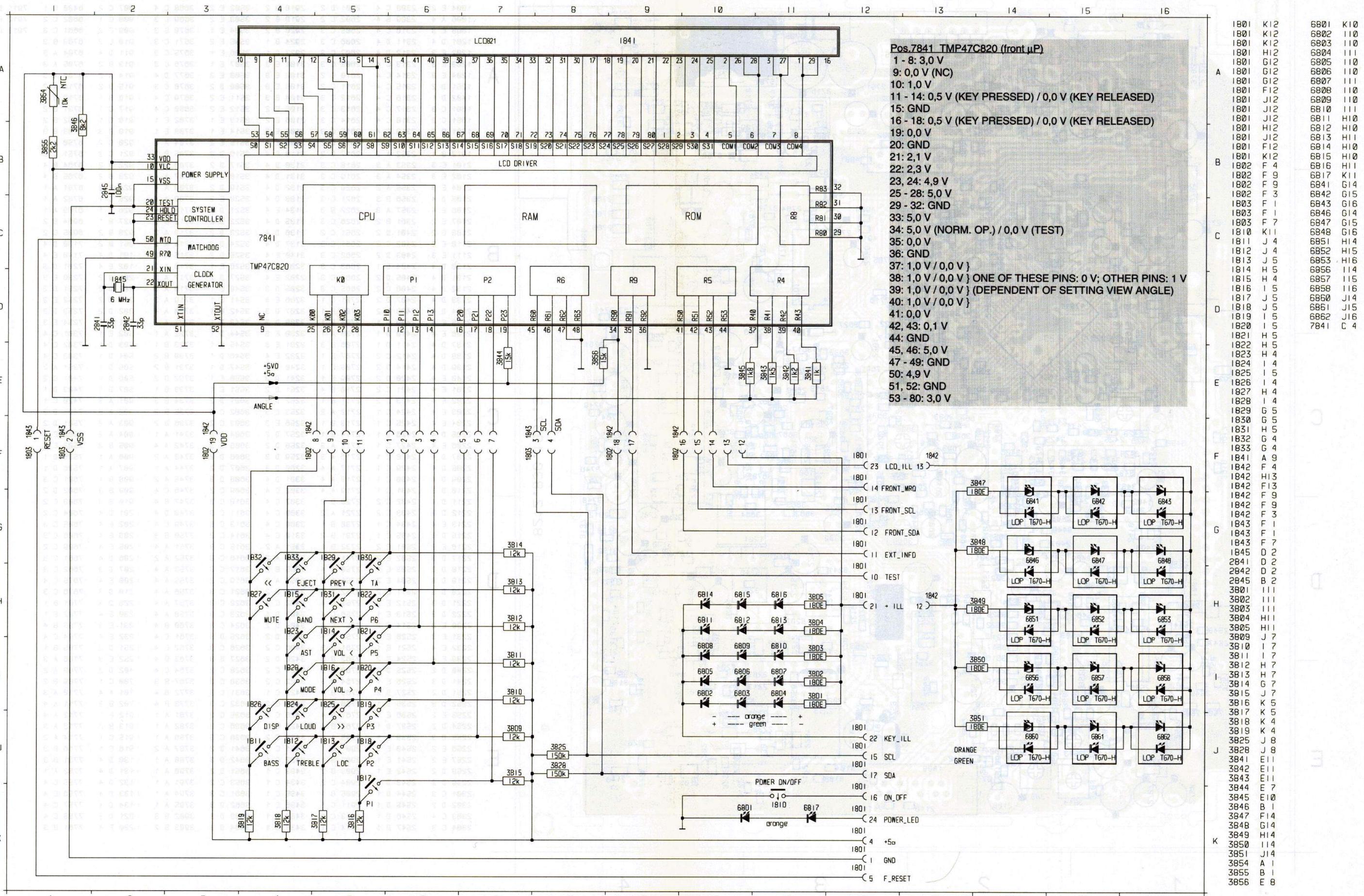
1 2 3 4

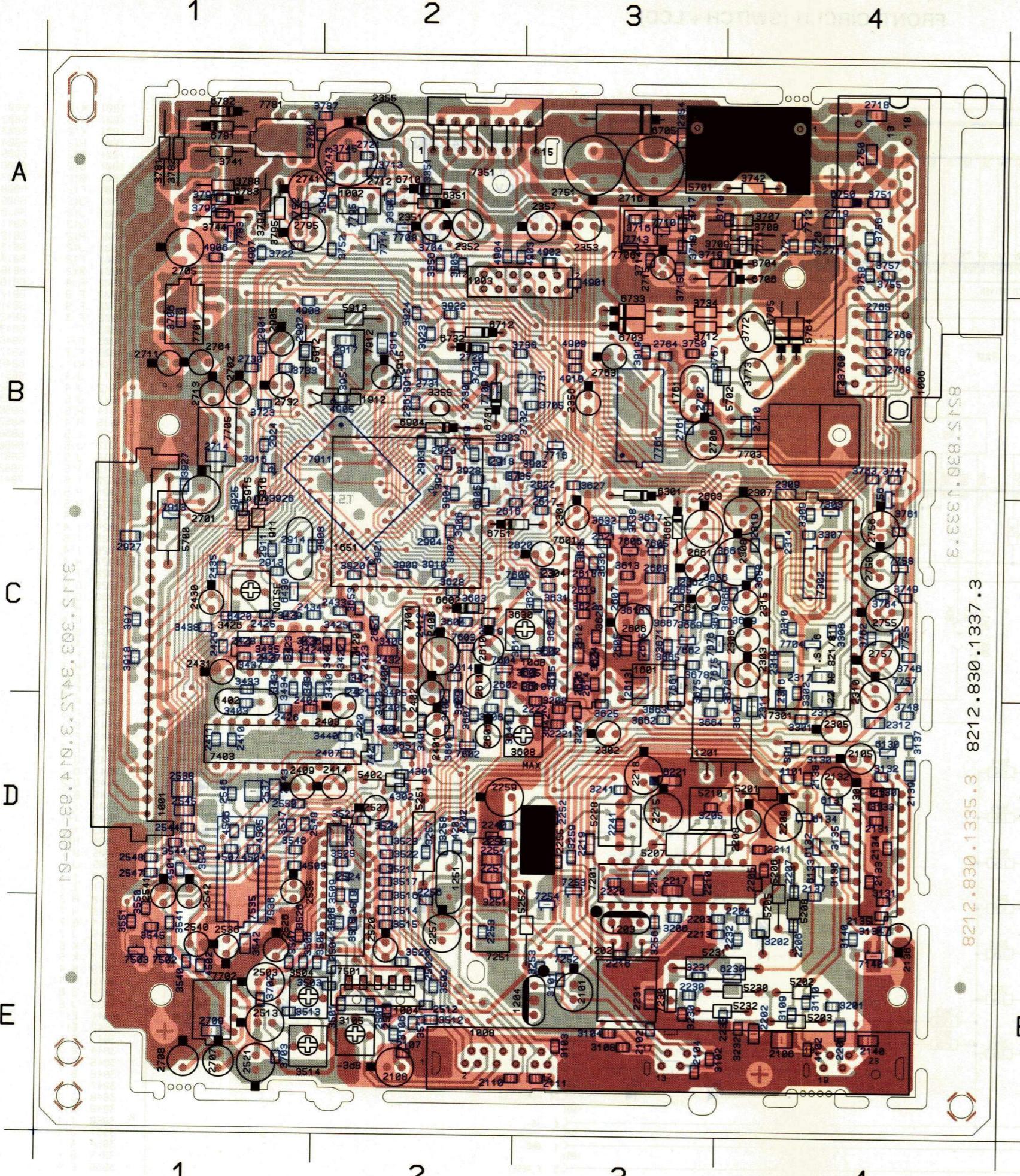
1841 A 1	2841 A 1	3842 A 2	3846 A 2	3850 A 2	3856 A 3	6846 A 1	6852 A 1	6858 A 1	7841 A 1
1842 A 3	2842 A 1	3843 A 2	3847 A 2	3851 A 2	6841 A 2	6847 A 1	6853 A 1	6860 A 1	
1843 A 1	2845 A 2	3844 A 2	3848 A 2	3854 A 2	6842 A 1	6848 A 1	6856 A 2	6861 A 1	
1845 A 1	3841 A 2	3845 A 2	3849 A 2	3855 A 2	6843 A 1	6851 A 2	6857 A 1	6862 A 1	



1 3 3

FRONT CIRCUIT (SWITCH + LCD)





8212 .830 :1 335 .3 8212 830 1337 3

855 * 830 * 333 * 3

1

2

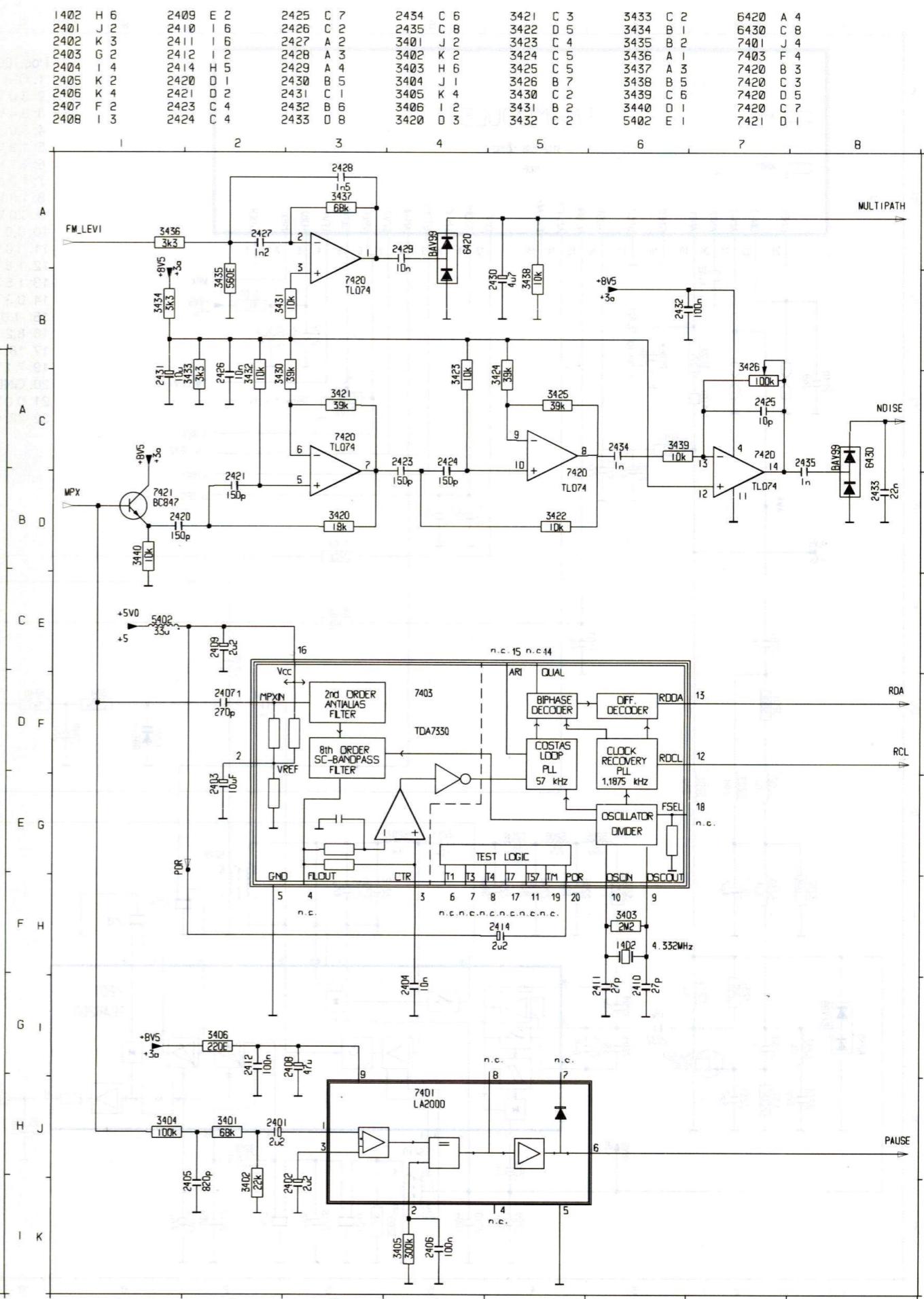
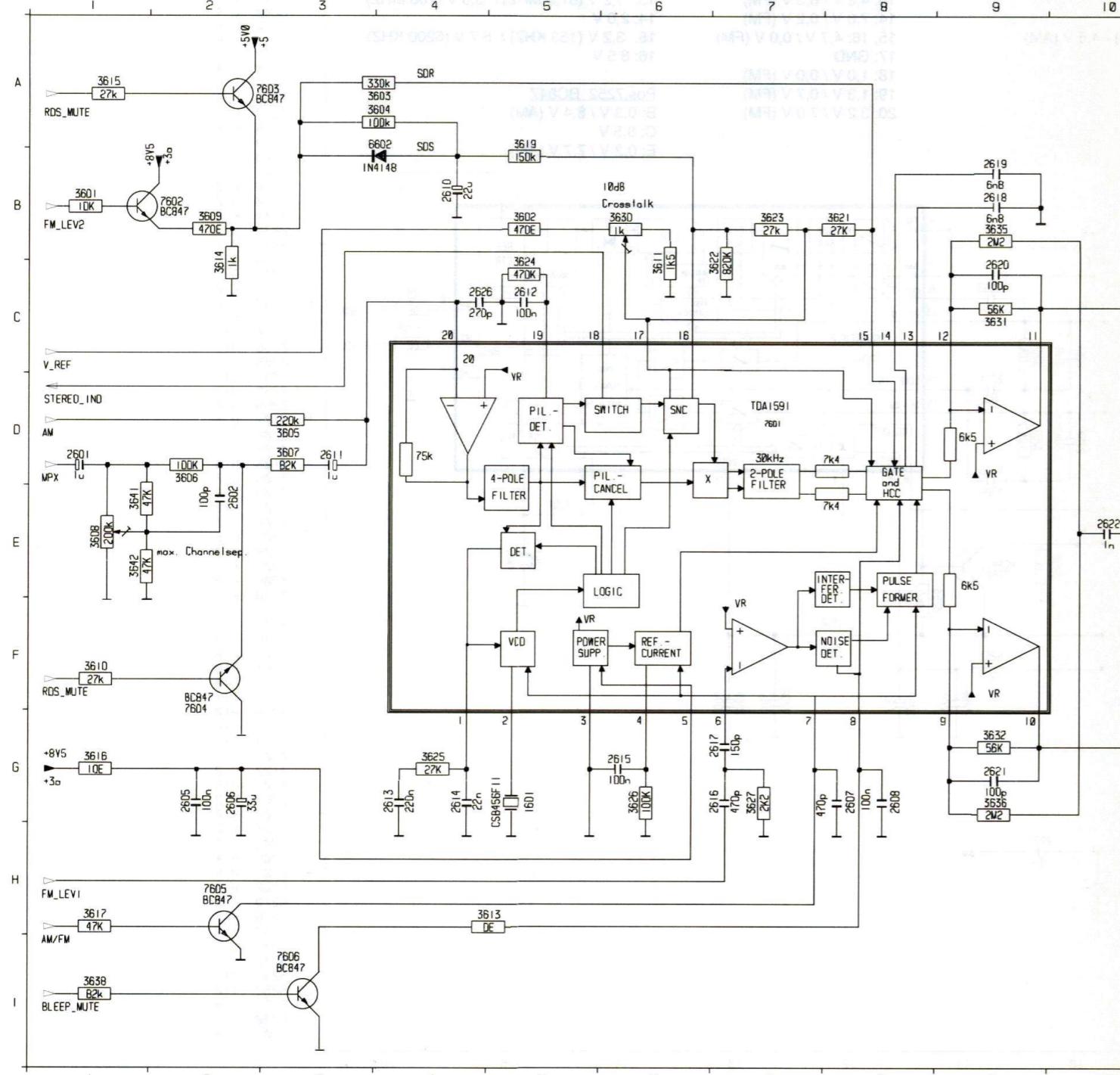
1001	C	1	2305	D	4	2548	D	1	2915	B	2	3439	C	1	3665	C	3	3904	B	2	6301	B	3	7781	A	1
1002	A	2	2306	C	4	2549	D	1	2916	B	2	3440	D	2	3666	C	3	3905	A	2	6351	A	2	7783	A	1
1003	B	2	2307	C	4	2550	D	1	2917	B	2	3501	E	2	3667	C	3	3906	C	2	6420	C	1	7795	A	2
1004	E	2	2308	C	4	2601	D	2	2918	B	2	3502	E	2	3668	C	4	3907	C	2	6430	C	1	7911	B	2
1005	A	4	2309	B	4	2602	C	2	2919	B	2	3503	E	2	3669	C	3	3908	C	1	6602	C	2	7912	B	2
1006	E	3	2310	C	4	2605	C	3	2920	B	2	3504	E	1	3670	C	3	3909	C	2	6661	C	3	7913	C	1
1201	D	4	2311	D	4	2606	C	3	2924	B	1	3505	E	2	3671	C	3	3910	C	2	6703	B	3			
1202	E	3	2312	D	4	2607	C	3	2927	C	1	3506	E	1	3675	C	3	3911	D	4	6704	A	3			
1203	E	3	2313	C	4	2608	C	3	3101	E	3	3507	E	1	3676	C	3	3913	B	2	6705	A	3			
1204	E	3	2314	C	4	2610	C	2	3102	E	3	3508	E	2	3677	D	4	3914	A	2	6706	A	3			
1251	D	2	2315	C	4	2611	C	2	3103	E	3	3509	D	2	3678	C	3	3915	B	2	6710	A	2			
1402	D	1	2316	C	4	2612	C	3	3104	E	3	3511	E	2	3679	C	4	3916	B	1	6712	B	2			
1601	C	3	2317	C	4	2613	C	3	3105	E	2	3512	E	2	3680	C	4	3917	C	1	6731	B	2			
1651	C	2	2318	C	4	2614	C	3	3106	E	2	3513	E	1	3702	E	1	3918	C	1	6732	B	2			
1761	B	3	2319	C	4	2615	C	3	3108	E	3	3514	E	1	3703	E	1	3919	B	3	6733	B	3			
1911	C	1	2351	A	2	2616	C	2	3109	E	4	3515	E	2	3704	A	2	3920	C	2	6750	A	4			
1912	B	1	2352	A	2	2617	C	3	3110	E	4	3516	D	2	3705	B	3	3921	C	2	6751	C	2			
2101	E	3	2353	A	3	2618	C	3	3130	D	4	3517	D	2	3706	B	1	3922	B	2	6764	B	4			
2102	E	3	2354	A	3	2619	C	3	3131	D	4	3518	E	2	3707	A	4	3923	B	2	6765	B	4			
2104	E	3	2355	A	2	2620	C	3	3132	D	4	3519	D	2	3708	A	4	3924	B	2	6781	A	1			
2105	D	4	2356	B	3	2621	C	3	3133	D	4	3520	E	2	3709	A	4	3925	C	1	6782	A	1			
2106	E	4	2357	A	3	2622	B	3	3134	E	4	3521	D	2	3710	A	4	3926	C	1	6783	A	1			
2107	E	2	2361	B	2	2626	C	3	3135	D	4	3522	D	2	3712	B	3	3927	B	1	6904	B	2			
2108	E	2	2401	D	2	2651	C	2	3136	D	4	3523	D	2	3713	A	2	3928	B	2	6905	C	2			
2110	E	2	2402	C	2	2661	C	3	3137	D	4	3524	D	2	3714	A	3	3951	B	2	7130	D	4			
2111	E	3	2403	D	2	2662	C	3	3140	E	4	3525	D	2	3715	A	3	4101	D	4	7140	E	4			
2130	D	4	2404	D	1	2663	C	3	3201	E	4	3528	E	1	3716	A	3	4102	E	4	7201	D	3			
2131	D	4	2405	D	2	2664	C	3	3202	E	4	3527	D	2	3717	A	3	4201	D	2	7230	E	3			
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2134	D	4	2408	C	2	2702	B	1	3207	D	3	3542	E	1	3720	A	4	4302	D	2	7253	D	3			
2135	E	4	2409	D	1	2704	B	1	3208	D	3	3543	D	1	3721	A	4	4501	D	1	7254	E	3			
2136	E	4	2410	D	1	2705	A	1	3230	E	3	3544	D	1	3722	A	1	4502	E	1	7301	C	4			
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2140	E	4	2420	D	2	2709	E	1	3241	D	3	3550	E	1	3732	B	2	4506	D	1	7401	C	2			
2201	E	4	2421	C	2	2710	B	4	3251	D	2	3551	E	1	3733	B	1	4507	D	1	7403	D	1			
2202	E	4	2423	C	2	2711	B	1	3252	D	3	3601	D	2	3734	B	3	4901	A	3	7420	C	1			
2203	E	4	2424	C	1	2712	A	2	3253	E	3	3602	C	3	3735	B	2	4902	A	3	7421	D	2			
2204	E	4	2425	C	1	2713	B	1	3256	E	3	3603	C	2	3736	B	2	4903	A	2	7501	D	2			
2205	D	4	2426	D	1	2714	B	1	3257	D	2	3604	C	2	3741	A	1	4904	A	2	7502	E	1			
2206	E	4	2427	C	1	2715	A	3	3258	D	2	3605	C	3	3742	A	4	4905	B	2	7503	E	1			
2207	D	4	2428	C	1	2716	A	3	3259	D	3	3606	D	2	3743	A	2	4906	A	1	7535	D	1			
2208	D	4	2429	C	1	2717	A	4	3260	D	3	3607	D	2	3744	A	1	4907	A	1	7536	D	1			
2209	D	4	2430	C	1	2718	A	4	3301	D	4	3608	D	3	3745	A	2	4908	B	1	7601	C	3			
2210	D	3	2431	C	1	2719	A	4	3302	C	4	3609	C	2	3746	C	4	4909	B	3	7602	D	2			
2211	D	4	2432	C	2	2720	B	2	3307	C	4	3610	C	3	3747	B	4	4910	B	3	7603	C	2			
2212	D	3	2433	C	2	2721	A	2	3308	C	4	3611	C	3	3748	D	4	5201	D	4	7604	C	2			
2213	E	4	2434	C	1	2730	B	1	3309	C	4	3613	C	3	3749	C	4	5202	E	4	7605	C	3			
2215	D	3	2435	C	1	2731	B	2	3310	C	4	3614	C	2	3750	B	3	5203	E	4	7606	C	3			
2216	E	3	2501	E	2	2732	B	1	3351	A	2	3615	C	3	3751	A	4	5205	E	4	7609	C	2			
2217	D	3	2502	E	2	2741	A	1	3354	A	2	3616	C	3	3752	A	2	5206	D	4	7601	C	3			
2218	D	3	2503	E	1	2750	A	4	3355	B	2	3617	C	3	3753	A	4	5207	D	3	7602	C	3			
2219	D	3	2504	E	2	2751	A	3	3356	A	2	3619	C	2	3755	A	4	5208	E	4	7675	C	4			
2220	D	3	2511	E	2	2752	A	4	3401	D	2	3621	C	3	3756	A	4	5210	D	3	7876	C	3			
2221	D	3	2512	E	2	2755	C	4	3402	C	2	3622	C	3	3757	A	4	5228	D	3	7701	B	1			
2222	D	3	2513	E	1	2756	C	4	3403	D	1	3623	C	3	3758	A	4	5230	E	3	7702	E	1			
2230	E	3	2514	E	2	2757	C	4	3404	D	2	3624	C	3	3760	B	4	5231	E	3	7703	B	4			
2231	E	3	2520	E	2	2758	C	4	3405	D	2	3625	D	3	3761	C	4	5232	E	4	7704	C	4			
2232	E	4	2521	E	1	2761	B	3	3406	C	2	3626	C	3	3762	C	4	5251	D	2	7705	B	1			
2233	E	4	2524	D	2	2762	B	3	3420	D	2	3627	B	3	3763	B	4	5252	E	3	7706	A	3			
2240	D	2	2525	D	2	2763	B	3	3421	C	2	3628	C	2	3764	C	4	5402	D	2	7708	A	2			
2241	D	3	2526	E	1	2764	B	3	3422	C	2	3630	C	3	3765	B	3	5700	C	1	7709	B	2			
2251	D	2	2527	D	2	2765	B	4	3423	C	1	3631	C	3	3772	B	4	5701	A	4	7710	A	3			
2252	D	3	2535	D	1	2766	B	4	3424	C	2	3632	C	3	3773	B	4	5702	B	3	7711	A	4			
2253	E	2	2536	E	1	2767	B	4	3425	C	2	3635	C	3	3781	A	1	5912	B	1	7712	A	4			
2254	D	2	2537	D	1	2768	B	4	3426	C	1	3636	C	3	3782	A	1	5913	B</td							

STEREO DECODER

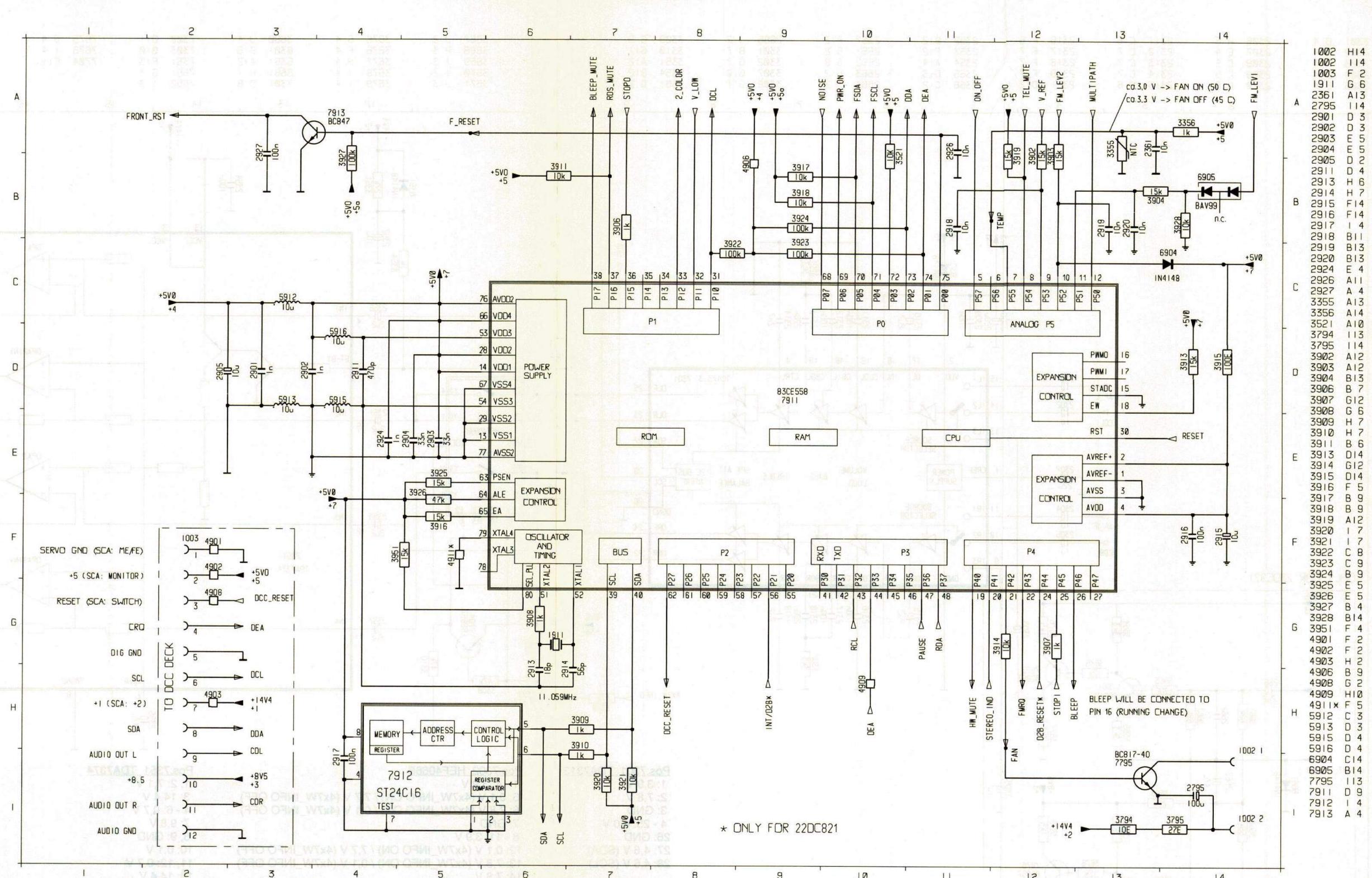
RDS / NOISE / MULTIPATH

Pos.7601	TDA1591	Pos.7602	BC847	Pos.7605	BC847
1: 4,6 V		B: 1,0...6,0 V (LEVELDEP.)		B: 0,3 V	
2: 4,3 V		C: 8,4 V		C: 2,3 V	
3: GND		E: 0,0...5,0 V (LEVELDEP.)		E: GND	
4: 3,0 V					
5: 8,4 V					
6: 2,2 V					
7: 2,2 V / 0,0 V (AM)					
8: 6,3 V					
9 - 14: 3,8 V					
15 - 17: 2,8 V					
18: 5,0 V / 0,0 V (MONO)					
19: 0,5 V					
20: 3,0 V					

1601	G 5	2610	B 4	2617	G 7	3601	B 1	3608	E 1	3616	G 4	3625	G 9	7603	A 2
2601	D 1	2611	D 3	2618	B 9	3602	B 5	3609	B 2	3617	H 1	3626	G 6	7604	F 2
2602	E 2	2612	C 5	2619	B 9	3603	A 4	3610	F 1	3619	A 5	3627	G 7	7605	H 2
2605	G 2	2613	G 4	2620	C 9	3604	A 4	3611	C 6	3621	B 8	3630	B 6	7606	I 3
2606	G 2	2614	G 4	2621	G 9	3605	D 3	3613	H 5	3622	C 7	3631	C 9	6602	B 4
2607	G 8	2615	G 6	2622	E 10	3606	D 2	3614	C 2	3623	B 7	3632	G 9	7601	D 7
2608	G 8	2616	G 7	2626	C 4	3607	D 3	3615	A 1	3624	C 5	3635	B 9	7602	B 2



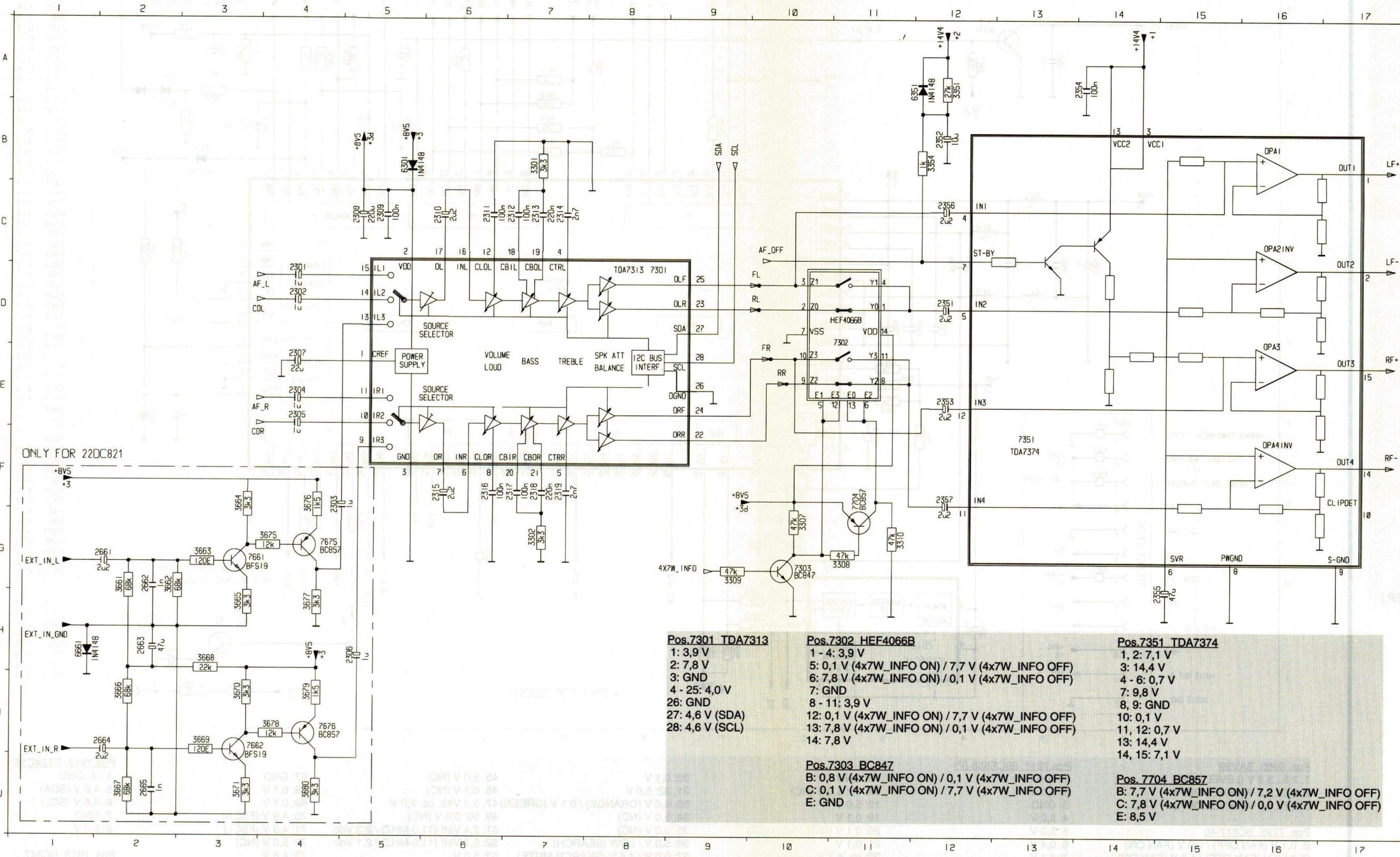
uC / EEPROM / FAN / DCC CONNECTOR

Pos.6420_BAV991: 0,0 V
2: GND
3: 0,0 V**Pos.6430_BAV99**1: 0,0 V
2: GND
3: 0,0 V**Pos.7401_LA2000**1: 1,9 V
2: 7,1 V / 0,0 V (AM)
3: 2,0 V
4: 0,0 V (NC)
5: GND
6: 5,0 V
7: 4,3 V (NC)
8: 3,0 V (NC)
9: 7,5 V**Pos.7403_TDA7330**1, 2: 2,2 V
3: 1,5 V
4: 1,5 V (NC)
5: GND
6 - 8: NC
9, 10: 2,4 V (4,3 MHz)
11: 2,4 V (NC)
12: 2,5 V
13: ca. 1,8 V
14: 5,0 V (NC)
15: 0,1 V (NC)
16: 5,0 V
17: 0,1 V (NC)
18: 0,1 V (NC)
19: 0,1 V (NC)
20: 0,1 V**Pos.7420_TL074**1 - 3: 4,2 V
4: 8,5 V
5 - 8: 4,2 V
9: 4,3 V
10: 4,2 V
11: GND
12 - 14: 4,2 V**Pos.7421_BC847**B: 3,1 V
C: 8,5 V
E: 2,2...2,8 V (LEVEL DEP.)**Pos. 6905_BAV99**1: 2,5...3,5 V (LEVEL DEP.)
2: 3,0...4,3 V (LEVEL DEP.)
3: 2,7...4,0 V (LEVEL DEP.)

Pos. 7795 BC817-40
B: 0,1 V (FAN OFF) / 0,6 V (FAN ON)
C: 14,2 V (FAN OFF) / 1,6 V (FAN ON)
E: GND**Pos.7911_89CE558 (P)**1: GND
2: 5,0 V
3: GND
4: 5,0 V
5: 5,0 V
6: 0,4 V
7: 4,1 V
8: 4,6 V / 0,6 V (PHONE)
9: 4,0 V
10: 1,0...6,0 V (LEVEL DEP.)
11: 3,0...5,0 V (LEVEL DEP.)
12: 0,0 V
13: GND
14: 5,0 V
15: GND
16, 17: 5,0 V (NC)
18: 5,0 V
19: 0,1 V
20: 0,1 V (MO) / 5,0 V (ST)
21: 0,1 V
22: ca. 4,7 V
23: 0,1 V (NC)
24: 5,0 V (NC)
25: 5,0 V / LOW (SEARCH)
26: 0 5 V OR 5 0 V (AT BEEP)
27: 5,0 V (NC)
28: 5,0 V
29: GND30: 0,1 V
31, 32: 5,0 V
33: 5,0 V (ORANGE) / 0,1 V (GREEN)
34: 5,0 V (NC)
35: 0,0 V (NC)
36: 5,0 V / LOW (SEARCH)
37: 0,0 V / 4,4 V (SEARCH MUTE)
38: 0,1 V
39: 4,9 V (SCL)
40: 4,9 V (SDA)
41: 5,0 V (NC)
42: 5,0 V (NC)
43: 2,5 V
44: 5,0 V (RADIO OP.)45: 5,0 V (NC)
46: 0,1 V (NC)
47: 5,0 V48: ca. 2,0 V
49, 50: 0,0 V (NC)
51: 2,4 Veff (11,0 MHZ) / 2,3 Vdc
52: 0,7 Veff (11,0 MHZ) / 2,1 Vdc
53: 5,0 V
54: 0,1 V
55 - 61: 5,0 V (NC)
62: 5,0 V
63: 5,0 V
64: 0,0 V (ON) / 5,0 V (OFF)
65: 5,0 V
66: 5,0 V**Pos.7912_ST24C16**1 - 4: GND
5: 4,6 V (SDA)
6: 4,6 V (SCL)
7: GND
8: 5,0 V**Pos. 7913_BC847**
B: 0,1 V / 0,6 V (F_RES.)
C: 4,9 V
E: GND

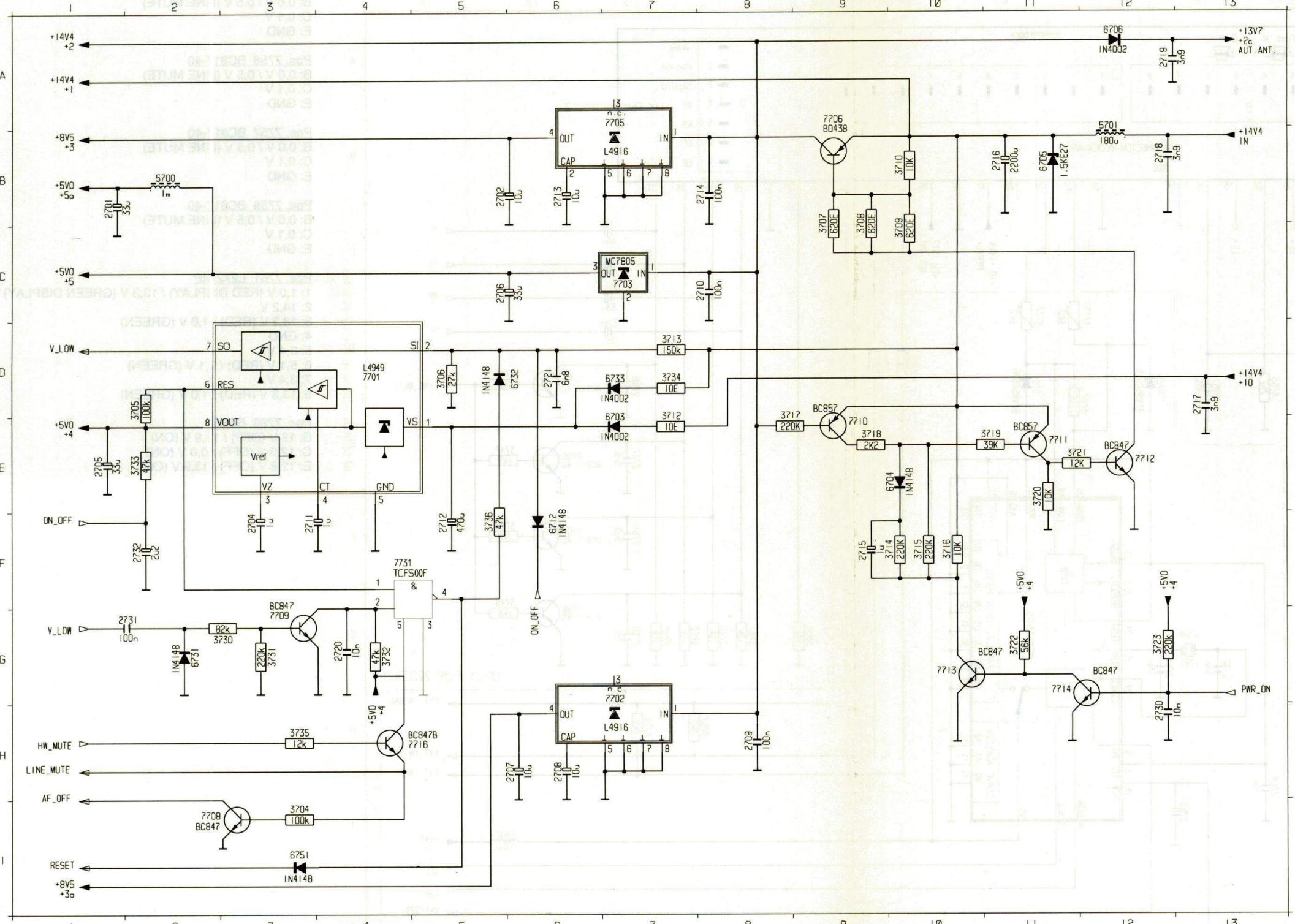
AUDIO CONTROL / AF POWER STAGE

2301	D 4	2306	H 5	2311	C 6	2316	F 6	2352	B12	2357	F12	2665	J 2	3309	G 9	3662	G 2	3667	J 2	3675	G 4	3680	J 4	7302	D11	7675	G 4
2302	D 4	2307	E 4	2312	C 7	2317	F 7	2353	E12	2661	G 2	3301	B 7	3310	G11	3663	G 3	3668	H 3	3676	F 4	6301	B 5	7303	G10	7676	I 4
2303	F 4	2308	C 5	2313	C 7	2318	F 7	2354	A14	2662	G 2	3302	G 7	3351	A12	3664	F 3	3669	I 3	3677	H 4	6351	A12	7351	F13	7704	F11
2304	E 4	2309	C 5	2314	C 7	2319	F 7	2355	G15	2663	H 2	3307	G10	3354	B12	3665	H 3	3670	I 3	3678	I 4	6661	H 1	7661	G 3		
2305	E 4	2310	C 6	2315	F 6	2351	D12	2356	C12	2664	I 2	3308	G11	3661	G 2	3666	I 2	3671	J 3	3679	I 4	7301	D 8	7662	I 3		



POWER SUPPLY

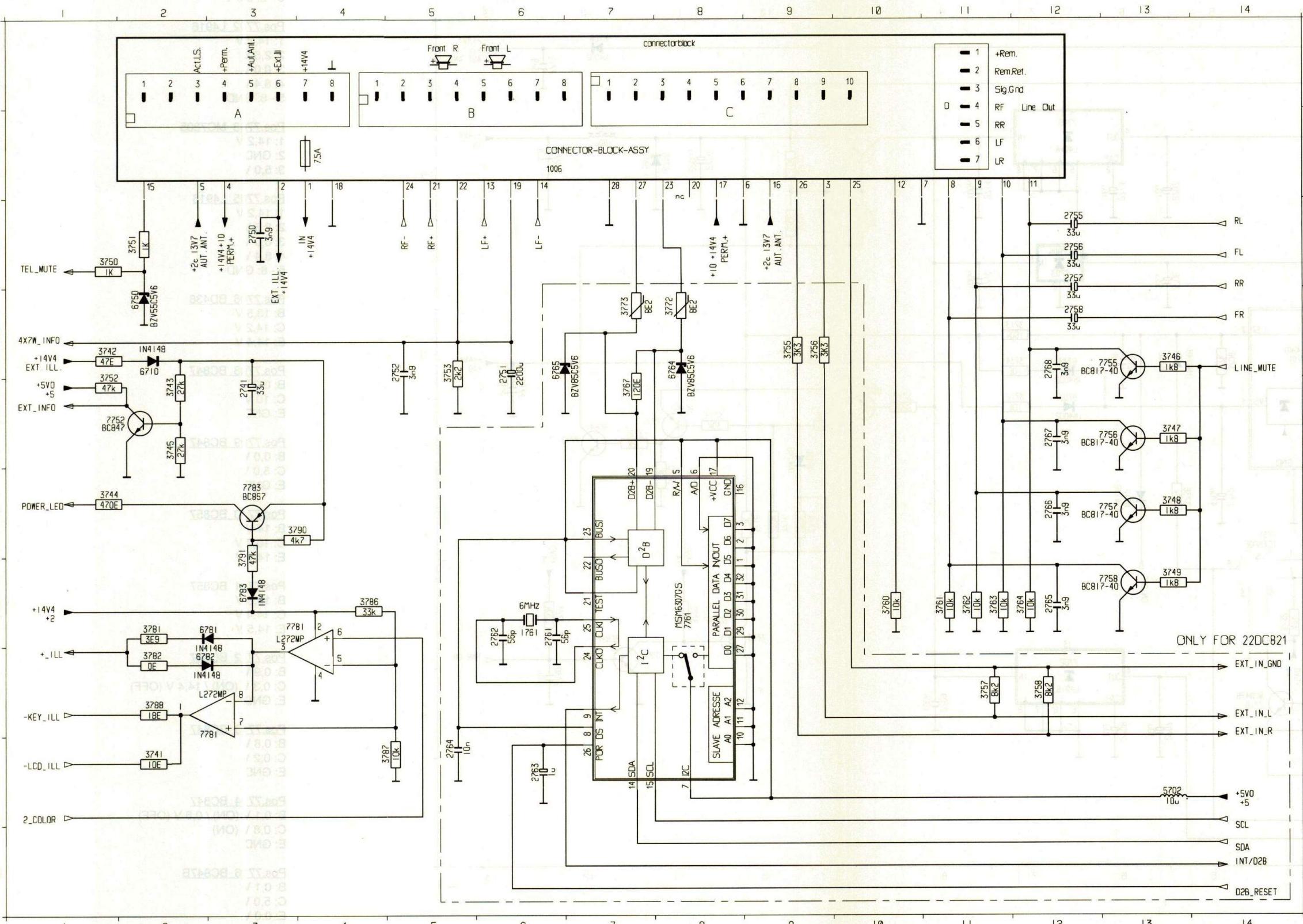
2701	B 1	2709	H 8	2716	B11	2731	G 2	3709	C10	3717	E 8	3730	G 3	5700	B 2	6731	G 2	7705	A 7	7713	G10
2702	B 5	2710	C 8	2717	D13	2732	F 2	3710	B10	3718	E 9	3731	G 3	5701	B12	6732	D 6	7706	A 9	7714	G11
2704	F 3	2711	F 3	2718	B12	3704	I 3	3712	E 7	3719	E11	3732	G 4	6703	E 7	6733	D 7	7708	I 3	7716	H 4
2705	E 1	2712	F 5	2719	A12	3705	D 2	3713	D 7	3720	E11	3733	E 2	6704	E10	6751	I 3	7709	G 3	7731	F 4
2706	C 5	2713	B 6	2720	G 4	3706	D 5	3714	F10	3721	E11	3734	D 7	6705	B11	7701	D 4	7710	E 9	7732	E12
2707	H 6	2714	B 8	2721	B 9	3707	D 6	3715	F10	3722	G11	3735	H 3	6706	A12	7702	G 7	7711	E11	7733	F 4
2708	H 6	2715	F 9	2730	H12	3708	B 9	3716	F10	3723	G12	3736	F 5	6712	F 6	7703	C 7	7712	E12	7734	F 4



- Pos.7701 L4949**
 - 1: 13,6 V
 - 2: 2,2 V
 - 3: 7,0 V
 - 4: 2,3 V
 - 5: GND
 - 6 - 8: 5,0 V
- Pos.7702 L4916**
 - 1: 14,2 V
 - 2: 2,5 V
 - 3: 0,0 V
 - 4: 8,4 V
 - 5 - 8: GND
- Pos.7703 MC7805**
 - 1: 14,2 V
 - 2: GND
 - 3: 5,0 V
- Pos.7705 L4916**
 - 1: 14,2 V
 - 2: 2,5 V
 - 3: 0,0 V
 - 4: 8,4 V
 - 5 - 8: GND
- Pos.7706 BD438**
 - B: 13,5 V
 - C: 14,2 V
 - E: 14,4 V
- Pos.7708 BC847**
 - B: 0,0 V
 - C: 10 V
 - E: GND
- Pos.7709 BC847**
 - B: 0,0 V
 - C: 5,0 V
 - E: GND
- Pos.7710 BC857**
 - B: 14 V
 - C: 10,2 V
 - E: 14,4 V
- Pos.7711 BC857**
 - B: 13,8 V
 - C: 14,4 V
 - E: 14,5 V
- Pos.7712 BC847**
 - B: 0,9 V
 - C: 0,3 V (ON) / 14,4 V (OFF)
 - E: GND
- Pos.7713 BC847**
 - B: 0,8 V
 - C: 0,2 V
 - E: GND
- Pos.7714 BC847**
 - B: 0,1 V (ON) / 0,6 V (OFF)
 - C: 0,8 V (ON)
 - E: GND
- Pos.7716 BC847B**
 - B: 0,1 V
 - C: 5,0 V
 - E: 0,0 V
- Pos.7731 TCFS00F**
 - 1: 5,0 V }
 - 2: 5,0 V }
 - 3: 0,1 V } NORMAL OPERATION
 - 4: 0,1 V }
 - 5: 5,0 V }

30/12/2012
CONNECTOR / CHANGER INTERFACE

1006	B 6	2755	C12	2763	I 6	3741	I 2	3747	E13	3753	D 5	3761	G11	3773	D 7	3790	F 4	6765	D 6	7756	E13	7783	F 3
1761	G 6	2756	C12	2764	I 5	3742	D 1	3748	F13	3754	G13	3762	G11	3781	G 2	3791	F 3	6781	G 3	7757	F13	7784	G 5
2741	E 3	2757	C12	2765	F12	3743	E 2	3749	F 1	3750	C 1	3757	H11	3763	G11	3782	H 2	5702	H13	7758	G13	7785	G 7
2750	C 3	2758	D12	2766	F12	3744	F 2	3751	C 2	3758	H12	3764	G12	3786	G 4	6710	D 2	6750	D 2	7752	E 2	7781	G 4
2751	D 6	2761	G 6	2767	E12	3745	E 2	3752	E 1	3759	G10	3772	D 8	3787	I 5	6750	D 2	7755	D13	7781	H 3	7786	G 6
2752	D 5	2762	G 6	2768	D12	3746	D13	3752	E 1	3760	G10	3772	D 8	3788	H 2	6764	D 8	7755	D13	7781	H 3	7786	G 6



Pos. 7752 BC847

B: 0,7 V (OFF) / 0,8 V (ON)
C: 0,0 V (OFF) / 0,1 V (ON)
E: GND

Pos. 7755 BC817-40

B: 0,0 V / 0,5 V (LINE MUTE)
C: 0,1 V
E: GND

Pos. 7756 BC817-40

B: 0,0 V / 0,5 V (LINE MUTE)
C: 0,1 V
E: GND

Pos. 7757 BC817-40

B: 0,0 V / 0,5 V (LINE MUTE)
C: 0,1 V
E: GND

Pos. 7758 BC817-40

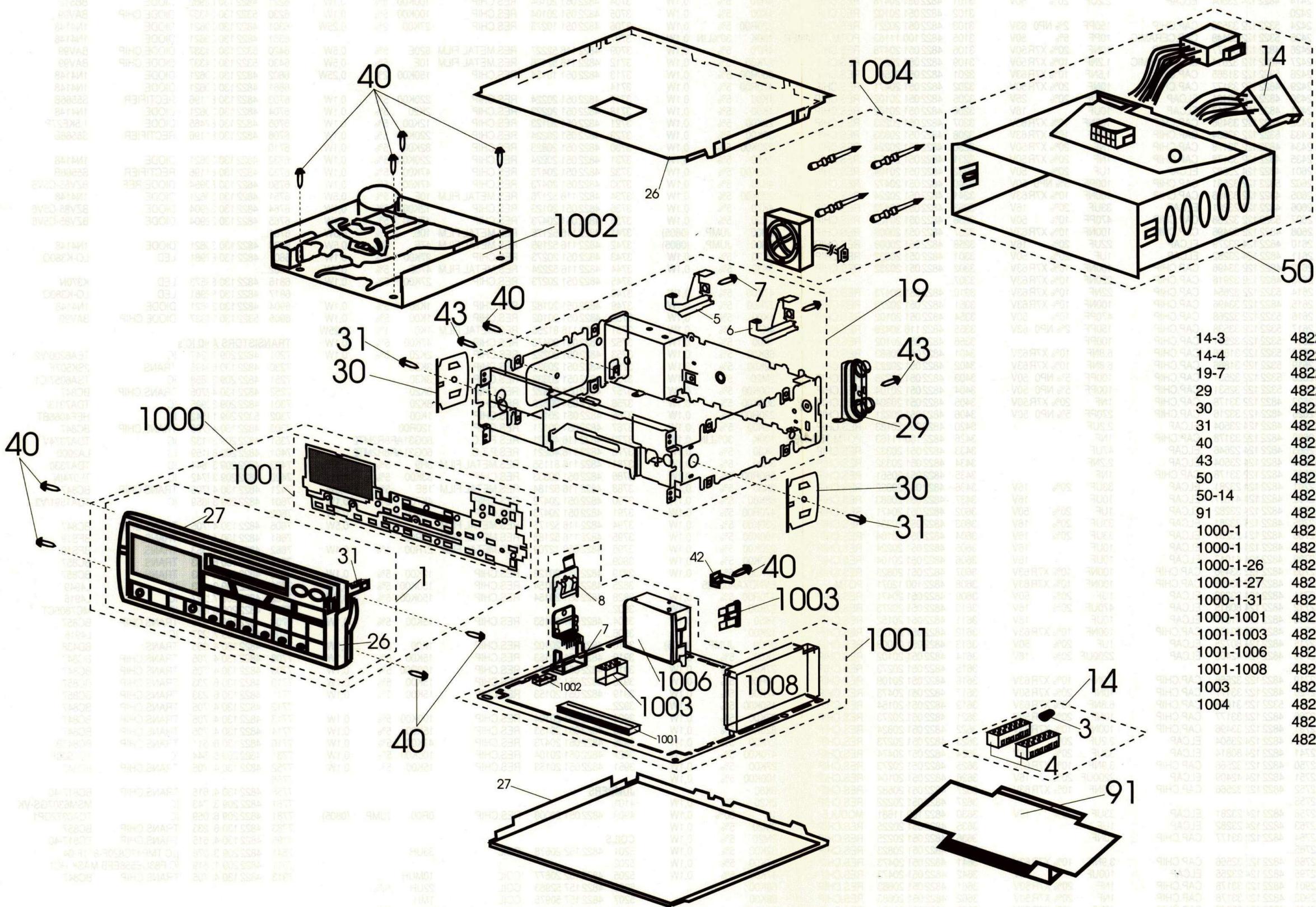
B: 0,0 V / 0,5 V (LINE MUTE)
C: 0,1 V
E: GND

Pos. 7781 L272 MP

1: 1,0 V (RED DISPLAY) / 13,3 V (GREEN DISPLAY)
2: 14,2 V
3: 13,3 V (RED) / 1,0 V (GREEN)
4: GND
5: 3,4 V
6: 5,1 V (RED) / 0,1 V (GREEN)
7: 3,4 V
8: 13,3 V (RED) / 1,0 V (GREEN)

Pos. 7783 BC857

B: 12 V (OFF) / 13,9 V (ON)
C: 12,3 V (OFF) / 0,0 V (ON)
E: 12,8 V (OFF) / 13,9 V (ON)



14-3	4822	532	11092
14-4	4822	267	41036
19-7	4822	502	11715
29	4822	268	20224
30	4822	404	21234
31	4822	502	12866
40	4822	502	11715
43	4822	502	12796
50	4822	691	10414
50-14	4822	321	61534
91	4822	015	20646
1000-1	4822	459	50818
1000-1	4822	701	13894
1000-1-26	4822	498	40585
1000-1-27	4822	464	70588
1000-1-31	4822	492	71083
1000-1001	4822	214	52171
1001-1003	4822	267	51329
1001-1006	4822	290	61114
1001-1008	4822	210	10589
1003	4822	071	27502
1004	4822	515	20135
	4822	736	21941
	4822	736	22038

BUFFER MOUNTING
CONNECTOR MOUNTING 6P
SCREW M2,5X5
AERIAL SOCKET
SPRING FIXATION
SCREW M3X5
SCREW M2,5X5
SCREW M2,5X5
SCREW M2,5X12
SLEEVE RETRAC
CABLE,CONNECT.POWER
DCC CLEANING CASS.SBC3500
ORN.PLATE ASSY DC811
ORN.PLATE ASSY DC821
RETRAC HANDLE
FRAME COVER
SPRING FOR HANDLE
FRONT PWB COMBINATION
CONNECTOR 12P
CONNECTORBLOCK ASSY
FM MODUL
FUSE 7.5A
COOLING FAN ASSY
DIRECT. FOR USE DC811
DIRECT. FOR USE DC821

MISCELLANEOUS

1201	4822 242 72076	CRYSTAL	10,7 MHZ	2405	4822 122 33218	CAP.CHIP	820PF	10% X7R	2916	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	3670	4822 051 20332	RES.CHIP	3K30	5252	4822 152 20678	COIL	33UH							
1202	4822 242 72076	CRYSTAL	10,7 MHZ	2406	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	2917	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	3671	4822 051 20332	RES.CHIP	3K30	5402	4822 152 20678	COIL	33UH							
1203	4822 242 71883	CERAM FILTER	SFE10,7MS318-D	2407	4822 122 33216	CAP.CHIP	270PF	5% NPO 50V	2918...						3675	4822 051 20213	RES.CHIP	12K00	5700	4822 157 50975	COIL	1MH						
1204	4822 242 71883	CERAM FILTER	SFE10,7MS318-D	2408	4822 124 22646	ELCAP	47UF	20% 16V	2920	4822 122 33177	CAP.CHIP	10NF	20% X7R50V	3676	4822 051 20152	RES.CHIP	1K50	5701	4822 157 53669	COIL ASSY	POWER SUPPLY							
1251	4822 242 71874	CRYSTAL	4,000 MHZ	2409	4822 124 23504	ELCAP	2.2UF	20% 50V	2924	4822 122 33178	CAP.CHIP	1NF	20% X7R50V	3677	4822 051 20332	RES.CHIP	3K30	5702...										
1402	4822 242 72195	CRYSTAL	4,332 MHZ	2410	5322 122 31946	CAP.CHIP	27PF	10% 50V	2927	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	3678	4822 051 20123	RES.CHIP	12K00	5916	4822 152 20677	COIL	10MUH							
1601	4822 242 81117	RESONATOR	CSB456F11	2411	5322 122 31946	CAP.CHIP	27PF	10% 50V	2928	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	3679	4822 051 20152	RES.CHIP	1K50											
1761	4822 242 81659	RESONATOR	CST 5,75 MHZ	2412	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	2929	4822 124 23504	ELCAP	2.2UF	20% 50V	3680	4822 051 20332	RES.CHIP	3K30											
1810...				2414	4822 124 23504	ELCAP			3101	4822 051 20478	RES.CHIP	4R70	5% 0,1W	3704	4822 051 20104	RES.CHIP	100K00	5%	0,1W	6221	4822 130 82982	DIODE	BB512					
1833	4822 276 20521	SWITCH,PUSHBUT.		2420...					3102	4822 051 20102	RES.CHIP	1K00	5% 0,1W	3705	4822 051 20104	RES.CHIP	100K00	5%	0,1W	6230	5322 130 34337	DIODE,CHIP	BAV99					
1911	4822 242 81646	CRYSTAL	11.059 MHZ	2424	5322 122 33538	CAP.CHIP	150PF	2% NPO 63V	3103	4822 051 20221	RES.CHIP	220R00	5% 0,1W	3706	4822 051 10273	RES.CHIP	27K00	2%	0,25W	6301	4822 130 30621	DIODE	1N4148					
				2425	5322 122 32448	CAP.CERAMIC	10PF	5% 50V	3105	4822 100 11163	POTM,TRIMMER	100K	30%LIN 0,1W	3707...				6351	4822 130 30621	DIODE	1N4148							
				2426	4822 122 33177	CAP.CHIP	10NF	20% X7R50V	3106	4822 051 20478	RES.CHIP	4R70	5% 0,1W	3709	4822 116 52227	RES.METAL FILM	620E	5%	0,5W	6420	5322 130 34337	DIODE,CHIP	BAV99					
				2427	4822 122 32614	CAP.CERAMIC	1.2NF	10% X7R50V	3109	4822 051 20273	RES.CHIP	27K00	5% 0,1W	3712	4822 116 52176	RES.METAL FILM	10E	5%	0,5W	6430	5322 130 34337	DIODE,CHIP	BAV99					
				2428	5322 122 31865	CAP.CHIP	1,5NF	10% X7R63V	3201	4822 051 20561	RES.CHIP	560R00	5% 0,1W	3713	4822 051 10154	RES.CHIP	150K00	2%	0,25W	6602	4822 130 30621	DIODE	1N4148					
				2429	4822 122 33177	CAP.CHIP	10NF	20% X7R50V	3202	4822 051 20471	RES.CHIP	470R00	5% 0,1W	3714...				6661	4822 130 30621	DIODE	1N4148							
				2430	4822 124 23401	ELCAP	4.7UF	20% 25V	3205	4822 051 20102	RES.CHIP	1K00	5% 0,1W	3717	4822 051 20224	RES.CHIP	220K00	5%	0,1W	6703	4822 130 81196	RECTIFIER	S5566B					
				2431	4822 124 41017	ELCAP	10UF	16V	3206	4822 051 20102	RES.CHIP	1K00	5% 0,1W	3718	4822 051 20222	RES.CHIP	2K20	5%	0,1W	6704	4822 130 30621	DIODE	1N4148					
				2432	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	3207	4822 051 20223	RES.CHIP	22K00	5% 0,1W	3721	4822 051 20123	RES.CHIP	12K00	5%	0,1W	6705	4822 130 82465	DIODE	1.5KE27P					
				2433	5322 122 32654	CAP.CHIP	22NF	10% X7R63V	3208	4822 051 20333	RES.CHIP	33K00	5% 0,1W	3723	4822 051 20224	RES.CHIP	220K00	5%	0,1W	6706	4822 130 81196	RECTIFIER	S5566B					
				2434	4822 122 33178	CAP.CHIP	1NF	20% X7R50V	3230	4822 051 20224	RES.CHIP	220K00	5% 0,1W	3730	4822 051 20823	RES.CHIP	82K00	5%	0,1W	6710...								
				2435	4822 122 33178	CAP.CHIP	1NF	20% X7R50V	3231	4822 051 20152	RES.CHIP	1K50	5% 0,1W	3731	4822 051 20224	RES.CHIP	220K00	5%	0,1W	6732	4822 130 30621	DIODE	1N4148					
				2436	4822 124 23282	ELCAP	1UF	20%	3232	4822 051 20104	RES.CHIP	100K00	5% 0,1W	3732	4822 051 20473	RES.CHIP	47K00	5%	0,1W	6733	4822 130 81196	RECTIFIER	S5566B					
				2437	4822 122 32659	CAP.CHIP	3,9NF	10% X7R63V	32602	5322 122 32531	CAP.CHIP	100PF	5% NPO 50V	3240	4822 051 20472	RES.CHIP	4K70	5% 0,1W	3733	4822 051 20473	RES.CHIP	47K00	5%	0,1W	6750	4822 130 80954	DIODE,REF.	BZV55-C5V6
				2438	4822 122 32448	CAP.CERAMIC	68PF	5% NPO 50V	32610	4822 124 23504	ELCAP	22UF	20% 16V	3258	4822 051 20008	RES.CHIP	OR00	JUMP. (0805)	3741	4822 116 52176	RES.METAL FILM	10E	5%	0,5W	6781...			
				2439	4822 122 33514	CAP.CHIP	82PF	5% NPO 63V	32611	4822 124 23282	ELCAP	1UF	20% 50V	3301	4822 051 20332	RES.CHIP	3K30	5% 0,1W	3743	4822 051 20273	RES.CHIP	27K00	5%	0,1W	6801	4822 130 82981	LED	K370N
				2440	4822 122 33514	CAP.CHIP	68PF	5% NPO 50V	32612	4822 122 33496	CAP.CHIP	100NF	10% X7R63V	3302	4822 051 20332	RES.CHIP	3K30	5% 0,1W	3744	4822 116 52224	RES.METAL FILM	470E	5%	0,5W	6802...			
				2441	4822 124 23282	ELCAP	1UF	20% 50V	32613	4822 122 32916	CAP.CHIP	220NF	10% X7R63V	3307...				3745	4822 051 20273	RES.CHIP	27K00	5%	0,1W	6816	4822 130 83573	LED	K370N	
				2442	4822 124 33496	CAP.CHIP	100NF	10% X7R63V	32614	4822 122 33264	CAP.CHIP	22NF	10% X7R63V	3310	4822 051 20473	RES.CHIP	47K00	5% 0,1W	3746...				6817					