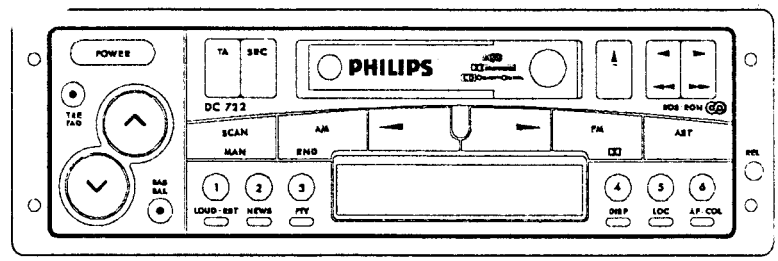
Cassette car radio 22DC712/00

22DC722/00

Service
Service
Service



For repair information of the Cassette deck see Service Manual N° 4822 725 23509 of Auto Cassette Deck SCA-4.4

+4703 2/33

ServiceManual

12 V

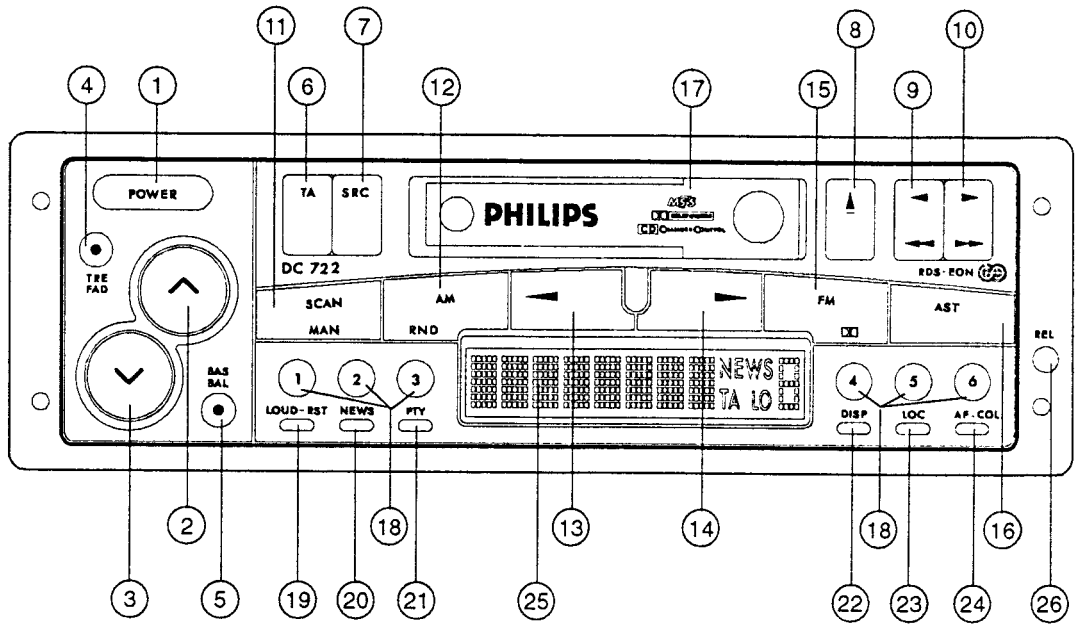
Contents **page**

4822 725 24339

PCS 71 703

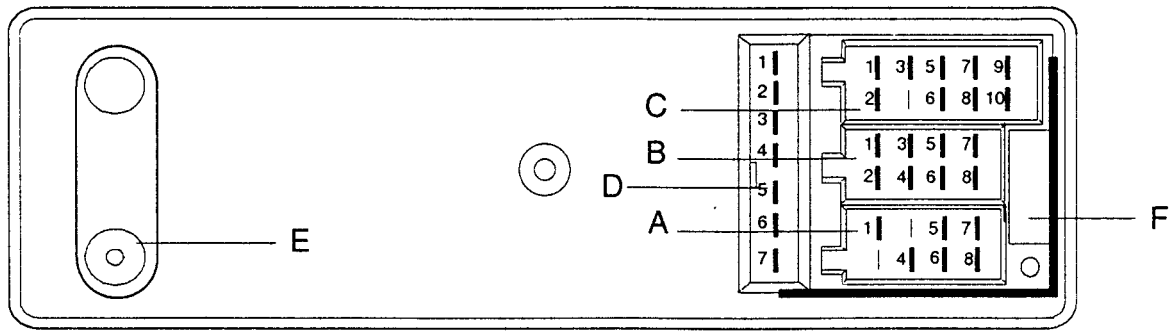
PHILIPS

Front



1	ON / OFF	16	AUTOSTORE
2	UP	17	CASSETTE OPENING
3	DOWN	18	PRESET SELECTION
4	TREBLE / FADER		DISC SELECTION
5	BASS / BALANCE	19	LOUDNESS SELECTION
6	TRAFFIC ANNOUNCEMENT		AUDIO RESET
7	SOURCE SELECTOR	20	NEWS SELECTION
8	EJECT	21	PROGRAM TYPE SELECTION
9	FRW 9 + 10 REVERSE	22	DISPLAY SELECTION (CLOCK)
10	FFW	23	LOCAL MODE SELECTION
11	SCAN PRESETS / TRACKS	24	ALTERNATIVES FREQUENCIES
	MANUAL SEARCH SELECTION		COLOR SELECTION (DC722 only)
12	AM SELECTION / RANDOM TRACKS	25	DISPLAY
13	SEARCH DOWN / TRACK DOWN	26	RELEASE KNOB FOR DETACHABLE UNIT
14	SEARCH UP / TRACK UP		
15	FM SELECTION / DOLBY		

REAR



A1 TELEPHONE MUTE	A : POWER SUPPLY
A2 (NO PIN)	
A3 (NO PIN)	
A4 PERM OR IGNITION KEY +	
A5 ANTENNA SUPPLY	
A6 CAR ILLUMINATION LEVEL	
A7 IGNITION KEY OR PERM +	
A8 POWER GROUND	
B1 REAR RIGHT +	B :LOUDSPEAKER SUPPLY
B2 REAR RIGHT - FRONT RIGHT -	
B3 FRONT RIGHT + FRONT RIGHT +	4 OR 2 LOUDSPEAKERS (DC712 only)
B4 FRONT RIGHT -	
B5 FRONT LEFT + FRONT LEFT +	
B6 FRONT LEFT -	
B7 REAR LEFT +	
B8 REAR LEFT - FRONT LEFT -	
C1 POWER GROUND	C : CD CHANGER CONNECTIONS
C2 BUS +	
C3 BUS -	
C4 (NO PIN)	
C5 C.D.C. SUPPLY	(Linked to A4 and A7)
C6 POWER GROUND	
C7 = A5	
C8 LINE IN RIGHT	
C9 LINE IN LEFT	
C10 LINE IN GROUND	
D1 = A5	D : LINE OUT
D2 BOOSTER DETECTION	
D3 AUDIO GROUND	
D4 FRONT RIGHT OUT	
D5 REAR RIGHT OUT	
D6 FRONT LEFT OUT	
D7 REAR LEFT OUT	
D8 CONNECTOR SHIELD	
E AERIAL PLUG	E : AERIAL PLUG
	According to DIN 41585 with adaptor
	According to ISO/DIS 10599 without adaptor
F FUSE	F : FUSE 10 A(DC722), 5A(DC712)

TECHNICAL DATA

GENERAL

Power supply	:14.4V DC
Dimensions	:180x150x51 mm
Front	: Detachable
Security code	: No

CASSETTE

Cassette mechanism	: SCA-4.4
Number of tracks	: 2x2
Tape speed	: 4.76 cm/sec
Wow and flutter	: ≤ 0.35%
Crosstalk	: ≥ 35dB

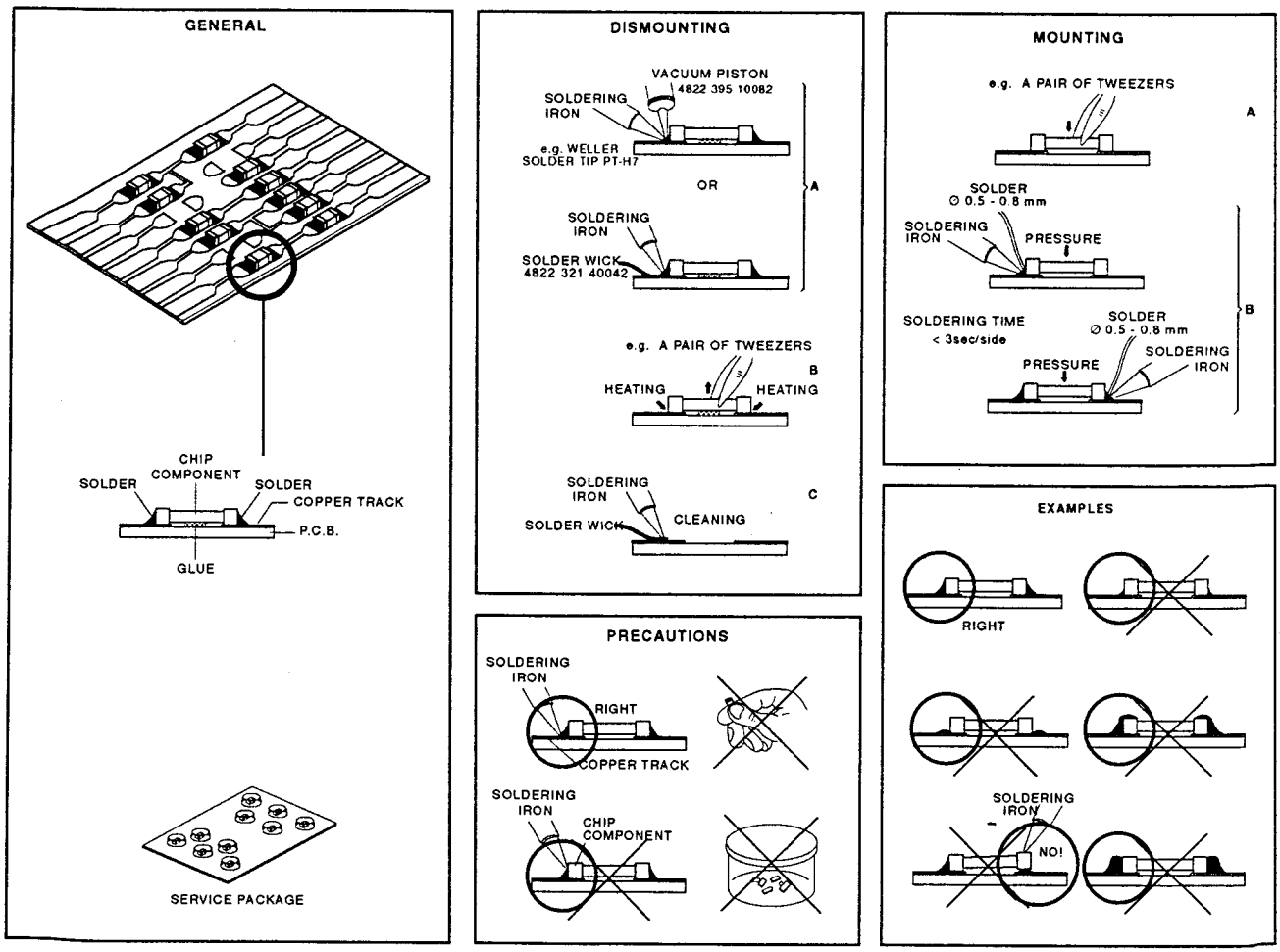
RADIO

LW	: 144-288 KHz
MW	: 531-1611 KHz
FM	: 87.5-108 MHz
SW	: 5.95-6.25 MHz
IF-AM (1/2)	: 10.7 MHz/450KHz
IF-FM (1/2)	: 72.2 MHz/10.7 MHz
Sensivity 26dB S/N	: 38 µV (LW)
	: 30 µV (MW)
	: 25 µV (SW)
	: 3.5 µV (FM)
Limitation α-3dB	: 5.5 ± 2.5 µV

AMPLIFIER

Output power	: 4x14.5W / 4Ω (D = 10%)
Treble control	: +10 / -10 at 10kHz
Bass control	: +15 / -15 at 60Hz
Balance control	: -28dB
Fader	: -28dB
Mute	: -70dB
Loudness	: +12dB at 60Hz
	: +1dB at 1KHz
	: +3dB at 10KHz

HANDLING CHIP COMPONENTS

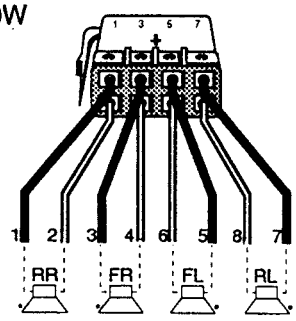


22DC712/00 22DC722/00

Loudspeakers connection

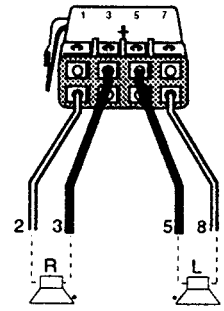
4 Loudspeakers

DC712: 4X12W
DC722: 4X30W



2 Loudspeakers

DC712: 2X30W



WARNING!

The software of the set is splitted in two parts: one in the front microcontroller and the other one in the main microcontroller. Make sure when changing a front or a microcontroller that both main and front are software compatible.

Software release numbers

You can read the 'checksum' of the microcontrollers (main and front) applying the following method:
a) Switch on the "demo mode":
While keeping the preset 1 and preset 5 keys pressed, switch on the set. You are now in the demo mode.
b) Press simultaneously the preset 1 and preset 6 keys. Two 4 digits numbers appear on the display:
first 4 digits: checksum of main micro
second 4 digits : checksum of the front micro.
Quit the demo mode following the same method (keys 1 and 5 and switch on).

A table stating the different checksums related to the software releases and retro-compatibility will be issued regularly in service newsletters.

ESD

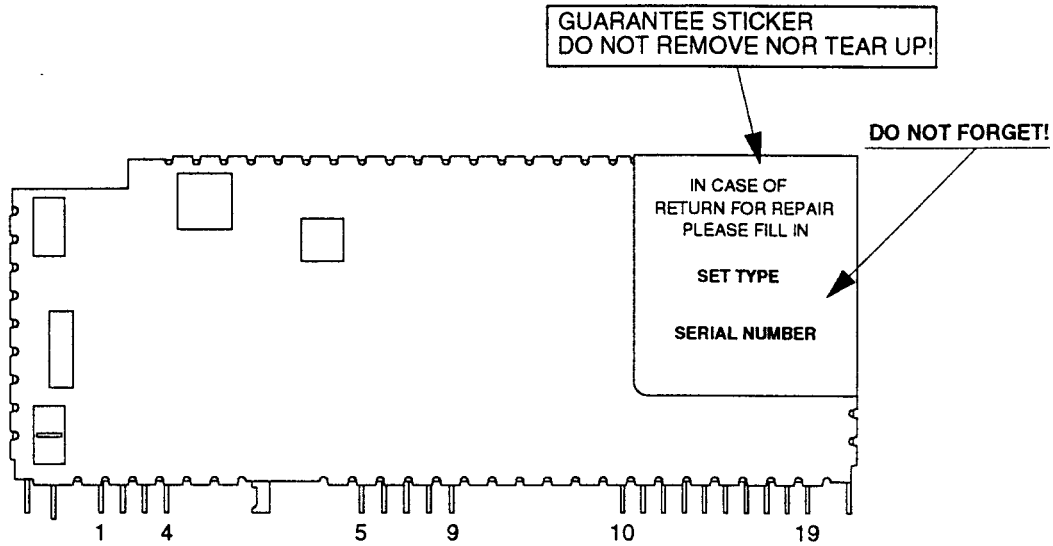
WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

IC91 MODULE

Do not open and do not try to repair yourself!

Send defective modules to **Philips Consumer Service** in Eindhoven, according to the Central Repair procedure.



Connections

1	AM/FM Aerial input	10	Multiplex / RDS output signal
2	Ground	11	Unweighted level output
3	Antenna select 1	12	I^2C SDA
4	Antenna select 2	13	I^2C SCL
		14	PACS on/off
5	Output lock detector	15	Output Left
6	Vcc 8.5V	16	Output Right
7	Ground	17	Ground
8	Vcc 5.0V	18	PACS level out
9	V reference	19	PACS MPX/RDS output signal

Quick reference data:

1) AM part
- -Longwave/Mediumwave 144-1710 KHz
- -Shortwave 5900-6250 KHz
- -AM double super concept
- -AM IF1 10.7MHz
- -AM IF2 450KHz
- -First VCO frequency above input signal frequency
- -Second X-tal oscillator frenquency below IF1
- -Usable sensivity α26dB MW = 14μV typ.

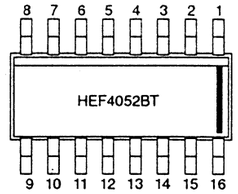
1) FM part
- -FM 87.5 - 108MHz
- -FM double super concept
- -FM IF1 72.2MHz
- -FM IF2 10.7MHz
- -First VCO frequency above input signal frequency
- -Second X-tal oscillator frenquency below IF1
- -Usable sensivity α26dB =2.5μV typ.
- -THD 1mV δf=75KHz = 0.4% typ
- -Signal to noise ratio = 65dB typ
- -Locktime synthetizer <2mSec

SAA6579T Radio Data System demodulator

SYMBOL	PIN	DESCRIPTION
QUAL	1	quality indication output
RDDA	2	RDS data output
V_{ref}	3	reference voltage output (0.5 V_{DDA})
MPX	4	multiplex input signal
V_{DDA}	5	+5V supply voltage for analog part
V_{SSA}	6	ground for analog part (0V)
CIN	7	subcarrier input to comparator
SCOUT	8	subcarrier output for reconstruction filter
TCTR	9	test control
TEN	10	test enable
V_{SSD}	11	ground for digital part (0V)
V_{DDD}	12	+5V supply voltage for digital part
OSCI	13	oscillator input
OSCO	14	oscillator output
T57	15	57kHz clock signal output
RDCL	16	RDS clock output

HEF4052BT Dual 4 channel analogue multi/demultiplexer

SYMBOL	PIN	DESCRIPTION
Y_{0B}	1	independant input/output 0_B
Y_{2B}	2	independant input/output 2_B
Z_B	3	common input/output B
Y_{3B}	4	independant input/output 3_B
Y_{1B}	5	independant input/output 1_B
$\overline{E}$	6	enable input (active LOW)
V_{EE}	7	ground
V_{SS}	8	ground
A_1	9	address input 1
A_0	10	address input 0
Y_{3A}	11	independant input/output 3_A
Y_{0A}	12	independant input/output 0_A
Z_A	13	common input/output A
Y_{1A}	14	independant input/output 1_A
Y_{2A}	15	independant input/output 2_A
V_{DD}	16	supply

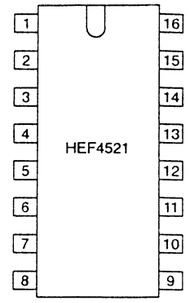


FUNCTION TABLE

inputs			channel ON
$\overline{E}$	A_1	A_0	
L	L	L	Y_{0A}-Z_A; Y_{0B}-Z_B
L	L	H	Y_{1A}-Z_A; Y_{1B}-Z_B
L	H	L	Y_{2A}-Z_A; Y_{2B}-Z_B
L	H	H	Y_{3A}-Z_A; Y_{3B}-Z_B
H	X	X	none

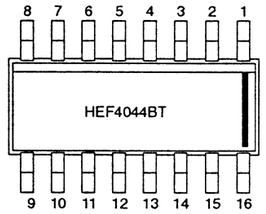
HEF4521BP 24-stage frequency divider

SYMBOL	PIN	DESCRIPTION
O_{24}	1	output 2^{24}
MR	2	asynchronous master reset
V_{SS}	3	
O_2	4	
V_{DD}	5	
I_2	6	
O_1	7	
V_{SS}	8	ground
I_1	9	
O_{18}	10	output 2^{18}
O_{19}	11	output 2^{19}
O_{20}	12	output 2^{20}
O_{21}	13	output 2^{21}
O_{22}	14	output 2^{22}
O_{23}	15	set input 3 (active LOW)
V_{DD}	16	power supply



HEF4044BT Quad R/S latch with 3-state outputs

SYMBOL	PIN	DESCRIPTION
O_3	1	3-state buffered latch output 3
n.c	2	
$\overline{S}_0$	3	set input 0 (active LOW)
$\overline{R}_0$	4	reset input 0 (active LOW)
E0	5	common output enable input
$\overline{R}_1$	6	reset input 1 (active LOW)
$\overline{S}_1$	7	set input 1 (active LOW)
V_{SS}	8	ground
O_1	9	3-state buffered latch output 1
O_2	10	3-state buffered latch output 2
$\overline{S}_2$	11	set input 2 (active LOW)
$\overline{R}_2$	12	reset input 2 (active LOW)
O_0	13	3-state buffered latch output 0
$\overline{R}_3$	14	reset input 3 (active LOW)
$\overline{S}_3$	15	set input 3 (active LOW)
V_{DD}	16	supply

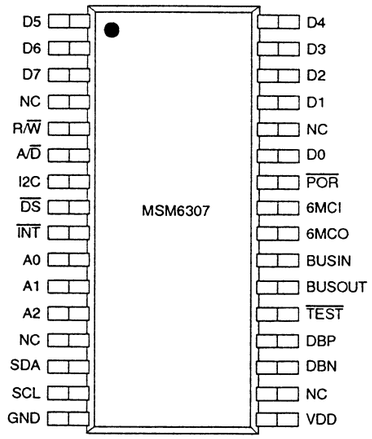


FUNCTION TABLE

inputs			output O_n
E0	$\overline{S}_n$	$\overline{R}_n$	
L	X	X	Z
H	L	H	H
H	X	L	L
H	H	H	latched
Z = high impedance OFF-state			

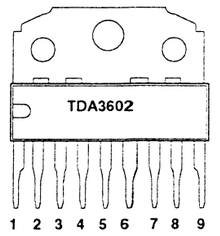
MSM6307GS D^2B IC

SYMBOL	I/O	DESCRIPTION
$\overline{POR}$	I	Power on - reset
R / $\overline{W}$	I	Read / Write selector
$\overline{DS}$	I	Data strobe to access data bus
A / $\overline{D}$	I	Selects address or data on D0 ~ d7
SDA	I/O	I^2C data signal input / output
SCL	I/O	I^2C clock signal input / output
I2C	I	Selects I^2C or parallel interface
$\overline{INT}$	O	Interrupt output
BUSIN	I	D2B input (TTL level)
BUSOUT	O	D2B output (TTL level)
DBN & DBP	I/Os	Differential D2B lines of the internal driver/ receiver, to be terminated with 60Ω
$\overline{TEST}$	I	Selects the test mode for factory purposes
6MCI	I	Clock input 6MHz resonator or X-TAL
6MCO	O	Clock output 6MHz resonator or X-TAL
D0 ~ D7	I/Os	8-bit bi-directional address or data bus
A0 ~ A2	I	Programmables I^2C slave addresses



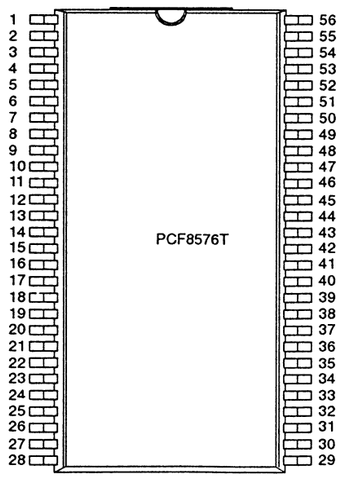
TDA3602 Multiple output voltage regulator

SYMBOL	PIN	DESCRIPTION
V_P	1	positive supply voltage
REG1	2	regulator 1 output
RESET	3	reset output
SCI	4	state control input
HOLD	5	hold output
GND	6	ground
REG3	7	regulator 3 output
V_{bu}	8	back-up
REG2	9	regulator 2 output



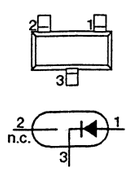
PCF8576T Universal LCD driver for low multiplex rates

SYMBOL	PIN	DESCRIPTION
SDA	1	I^2C bus data input/output
SCL	2	I^2C bus clock input/output
$\overline{SYNC}$	3	cascade synchronization input/output
CLK	4	external clock input/output
V_{DD}	5	positive supply voltage
OSC	6	oscillator input
A0	7	I^2C bus subaddress input
A1	8	I^2C bus subaddress input
A2	9	I^2C bus subaddress input
SA0	10	I^2C bus slave address bit 0 input
V_{SS}	11	logic ground
V_{LCD}	12	LCD supply voltage
BP0	13	LCD backplane outputs
BP2	14	LCD backplane outputs
BP1	15	LCD backplane outputs
BP3	16	LCD backplane outputs
S0 to S39	17 to 56	LCD segment outputs

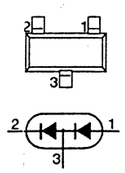


DIODES

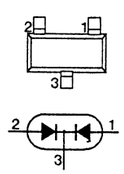
BAS 16



BAV 99

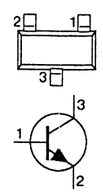


BAV 70

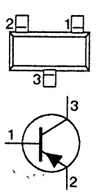


TRANSISTORS

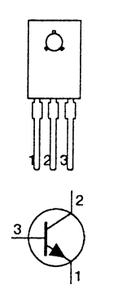
BC847B / BFS19



BC857B

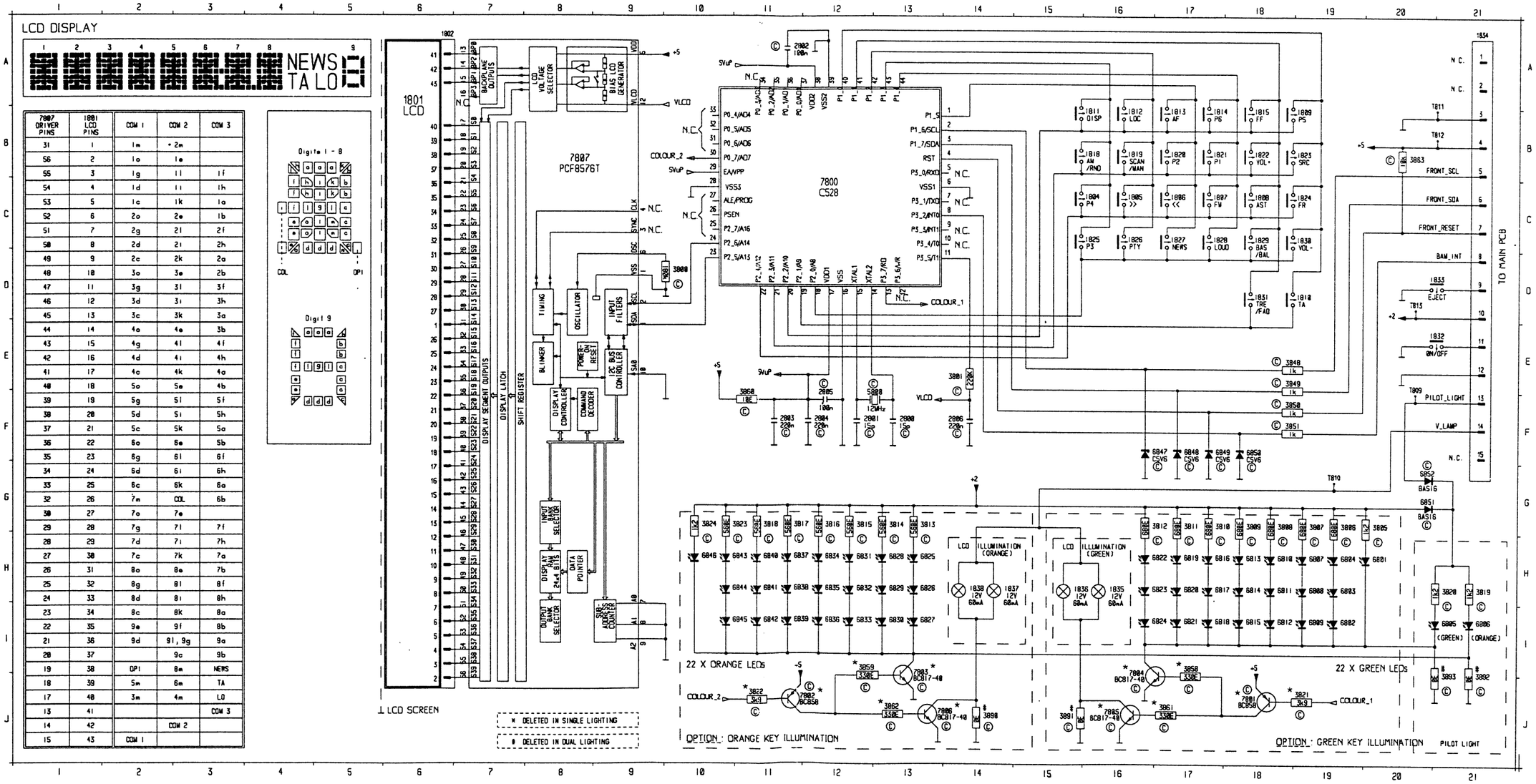


BD437 / BD675

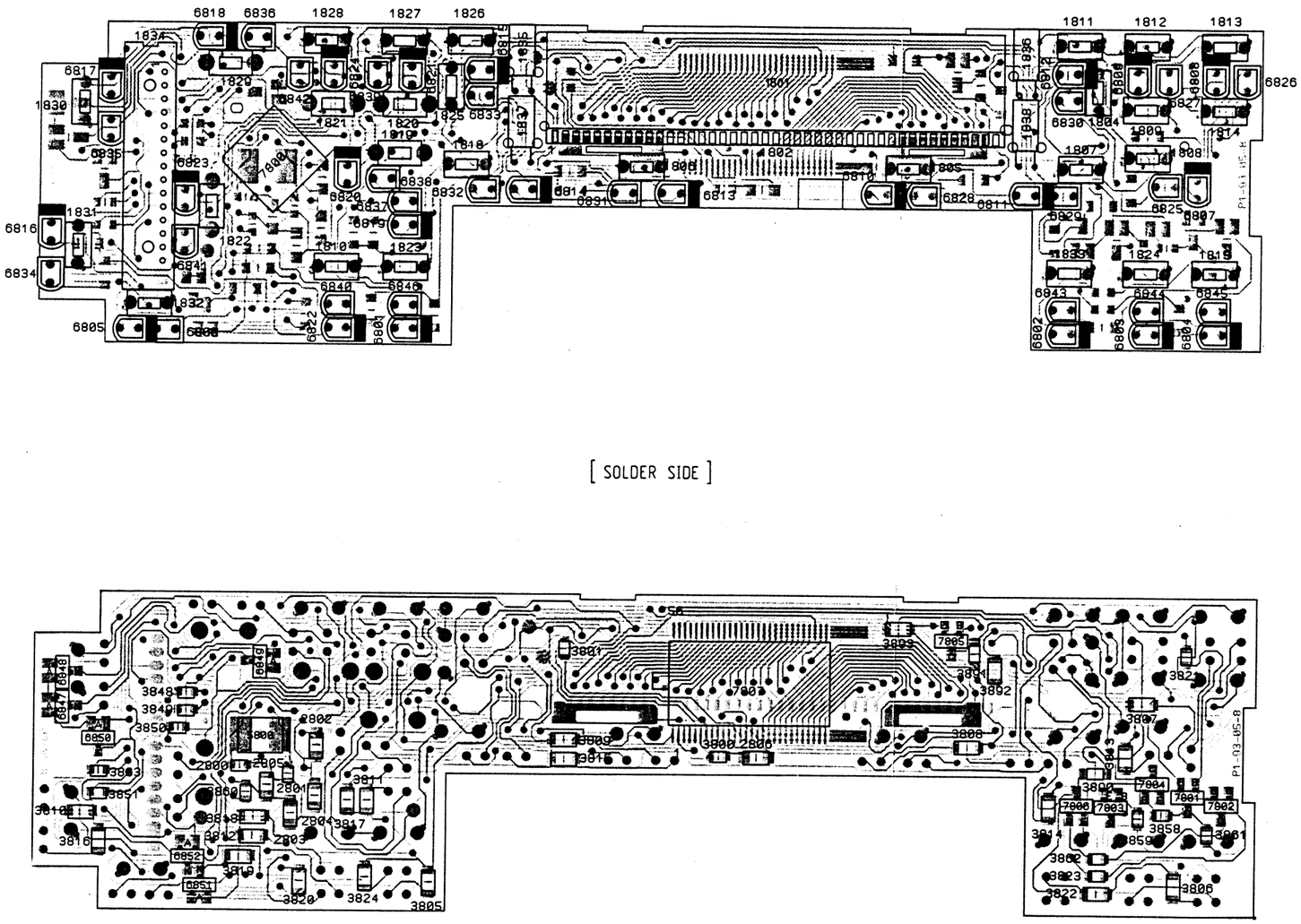


22DC712-22DC722
DETACHABLE FRONT

1802	A 6	1809	B19	1815	B18	1823	B19	1829	C18	1835	H16	2802	A11	3801	E14	3810	G17	3816	G12	3822	J11	3851	F18	3863	B20	6801	H20	6807	H19	6813	H18	6819	H17	6825	H13	6831	H12	6837	H11	6843	H11	6849	F17	7802	J11	T809	E20
1804	C16	1810	D19	1818	B16	1824	C19	1830	C19	1836	H15	2803	F11	3805	G20	3811	G17	3817	G11	3823	G11	3858	I17	3890	J14	6802	I19	6808	H19	6814	H18	6820	H17	6826	H13	6832	H12	6838	H11	6844	H11	6850	F18	7803	J13	T810	G19
1805	C16	1811	B16	1819	B16	1825	C16	1831	D18	1837	H14	2804	F12	3806	G19	3812	G17	3818	G11	3824	G10	3859	I12	3891	J15	6803	H19	6809	I19	6815	I18	6821	I17	6827	I13	6833	I12	6839	I11	6845	I11	6851	G20	7804	J16	T811	A21
1806	C17	1812	B16	1820	B17	1826	C16	1832	E21	1838	H14	2805	F12	3807	G19	3813	G13	3819	H21	3848	E18	3860	F11	3892	J21	6804	H19	6810	H18	6816	H17	6822	H17	6828	H13	6834	H12	6840	H11	6846	H10	6852	G20	7805	J16	T812	B21
1807	C17	1813	B17	1821	B17	1827	C17	1833	D21	2800	F13	2806	F14	3808	G18	3814	G13	3820	H21	3849	E18	3861	J17	3893	J21	6805	I21	6811	H18	6817	H17	6823	H17	6829	H13	6835	H12	6841	H11	6847	F17	7800	C12	7806	J13	T813	D20
1808	C18	1814	B17	1822	B18	1828	C17	1834	A21	2801	F12	3800	D10	3809	G18	3815	G12	3821	J19	3850	F18	3862	J13	5800	F13	6806	I21	6812	I18	6818	I17	6824	I17	6830	I13	6836	I12	6842	I11	6848	F17	7801	J18	7807	B 8		



7807 DRIVER PINS	1801 LCD PINS	COM 1	COM 2	COM 3
31	1	1m	2m	
56	2	1o	1e	
55	3	1g	11	1f
54	4	1d	11	1h
53	5	1c	1k	1a
52	6	2o	2e	1b
51	7	2g	21	2f
50	8	2d	21	2h
49	9	2c	2k	2a
48	10	3o	3e	2b
47	11	3g	31	3f
46	12	3d	31	3h
45	13	3c	3k	3a
44	14	4o	4e	3b
43	15	4g	41	4f
42	16	4d	41	4h
41	17	4c	4k	4a
40	18	5o	5e	4b
39	19	5g	51	5f
38	20	5d	51	5h
37	21	5c	5k	5a
36	22	6o	6e	5b
35	23	6g	61	6f
34	24	6d	61	6h
33	25	6c	6k	6a
32	26	7m	COL	6b
30	27	7o	7e	
29	28	7g	71	7f
28	29	7d	71	7h
27	30	7c	7k	7a
26	31	8o	8e	7b
25	32	8g	81	8f
24	33	8d	81	8h
23	34	8c	8k	8a
22	35	9e	9f	8b
21	36	9d	9l, 9g	9a
20	37		9c	9b
19	38	DP1	8m	NEWS
18	39	5m	6m	TA
17	40	3m	4m	LO
13	41			COM 3
14	42		COM 2	
15	43	COM 1		



[SOLDER SIDE]

1801	C7	3860	I3
1802	C7	3861 *	I11
1804	C10	3862 *	I10
1805	D8	3863	H2
1806	D6	3890 #	H10
1807	D10	3891 # *	G9
1808	C10	3892 #	H9
1809	C10	3893 # *	G8
1810	D4	5800	H3
1811	C10	6801 *	E4
1812	C10	6802 *	E10
1813	C11	6803 *	E10
1814	C11	6804 *	E11
1815	D11	6805 *	E2
1818	D5	6806	E3
1819	C4	6807 *	D11
1820	C4	6808 *	C11
1821	C4	6809 *	C10
1822	D3	6810 *	D8
1823	D4	6811 *	D9
1824	D10	6812 *	C10
1825	C5	6813 *	D7
1826	C5	6814 *	D5
1827	C4	6815 *	C5
1828	C4	6816 *	D2
1829	C3	6817 *	C2
1830	C2	6818 *	C3
1831	D2	6819 *	D4
1832	E2	6820 *	D4
1833	D10	6821 *	C5
1834	C2	6822 *	E4
1835 *	C5	6823 *	D3
1836 *	C9	6824	C4
1837	C5	6825	D11
1838	C9	6826	C11
2800	H3	6827	C11
2801	H4	6828	D9
2802	H4	6829	D10
2803	I4	6830	C10
2804	I4	6831	D6
2805	I3	6832	D5
2806	H7	6833	C5
3800	H7	6834	D2
3801	G6	6835	C2
3805 *	I5	6836	C3
3806 *	I11	6837	D4
3807 *	H10	6838	D4
3808 *	H9	6839	C4
3809 *	H6	6840	E4
3810 *	I2	6841	D3
3811 *	I4	6842 *	C4
3812 *	I3	6843	E10
3813	H10	6844	E10
3814	I10	6845	E11
3815	H6	6846	E4
3816	I2	6847	H2
3817	I4	6848	H2
3818	I3	6849	H3
3819	I3	6850	H2
3820 *	I4	6851	I3
3821 *	G11	6852	I3
3822 *	I10	7800	C3
3823	I10	7801 *	I11
3824	I4	7802 *	I11
3848	H3	7803 *	I10
3849	H3	7804 *	H11
3850	H3	7805 *	G9
3851	I2	7806 *	I10
3858 *	I11	7807	H7
3859 *	I10		

* DELETED IN DC712
# DELETED IN DC722

DC VOLTAGES

IC91 TUNER MODULE

1 = 0.5 V
2 = GND
3 = N.C.
4 = N.C.
5 = N.C.
6 = 5.0 V
7 = 8.5 V
8 = GND
9 = 5.0 V
10 = 5.1 V
11 = 3.2 V
12 = 5.0 V
13 = 5.0 V
14 = 5.0 V
15 = N.C.
16 = 3.8 V
17 = 3.8 V
18 = 0.0 V
19 = N.C.
20 = N.C.

7257 LA2000

1 = 1.8 V
2 = 7.3 V
3 = 2.1 V
4 = N.C.
5 = GND
6 = 5.0 V
7 = N.C.
8 = N.C.
9 = 8.5 V

7354 TEA6320

1 = 5.0 V
2 = GND
3 = 4.0 V
4 = 3.9 V
5 = 3.9 V
6 = 3.9 V
7 = 3.8 V
8 = 3.5 V
9 = 3.8 V
10 = 3.7 V
11 = N.C.
12 = 7.6 V
13 = 6.0 V
14 = 3.8 V
15 = 3.8 V
16 = 3.7 V
17 = 3.7 V
18 = 3.8 V
19 = 7.6 V
20 = 6.0 V
21 = 3.9 V
22 = N.C.
23 = 3.7 V
24 = 3.8 V
25 = 3.5 V
26 = 3.9 V
27 = 3.9 V
28 = 3.9 V
29 = 3.9 V
30 = 3.9 V
31 = 7.6 V
32 = 4.9 V

7355 SAA6579T

1 = N.C.
2 = 3.1 V
3 = 2.5 V
4 = 2.5 V
5 = 4.9 V
6 = GND
7 = 2.3 V
8 = 2.5 V
9 = GND
10 = GND
11 = GND
12 = 4.9 V
13 = 4.332 MHz
14 = 4.332 MHz
15 = N.C.
16 = 3.5 V

7550/7551 TDA7374

1 = 7.4 V
2 = 7.4 V
3 = 14.4 V
4 = 1.0 V
5 = 1.0 V
6 = 1.0 V
7 = 3.5 V
8 = Earth
9 = GND
10 = 0.2 V
11 =1.0 V
12 =1.0 V
13 = 14.4 V
14 = 7.4 V
15 = 7.4 V

7601 ST24C16

1 = 5.0 V
2 = 5.0 V
3 = 5.0 V
4 = GND
5 = 5.0 V SDA
6 = 5.0 V SCL
7 = GND
8 = 5.0 V

7602 HEF4521

1 = N.C.
2 = GND
3 = 0.0 V
4 = 4.194 MHz
5 = 4.194 MHz
6 = 4.194 MHz
7 = N.C.
8 = GND
9 = GND
10 = N.C.
11 = N.C.
12 = N.C.
13 = N.C.
14 = 1 Hz ⎍⎍
15 = N.C.
16 = 5.0 V

7603 MSM6307GS

1 = 5.0 V
2 = 5.0 V
3 = 5.0 V
4 = N.C.
5 = 5.0 V
6 = 5.0 V
7 = 5.0 V
8 = 5.0 V
9 = 5.0 V
10 = 5.0 V
11 = 5.0 V
12 = 5.0 V
13 = N.C.
14 = 4.9 V SDA
15 = 4.9 V SCL
16 = GND
17 = 5.0 V
18 = N.C.
19 = 2.3 V
20 = 2.3 V
21 = 5.0 V
22 = N.C.
23 = 5.0 V
24 = 5.75 MHz
25 = 5.75 MHz
26 = 4.8 V
27 = 5.0 V
28 = N.C.
29 = 5.0 V
30 = 5.0 V
31 = 5.0 V
32 = 5.0 V

7800 TDA3602

1 = 13.4 V
2 = 8.5 V
3 = N.C.
4 = 0.6 V
5 = 5.0 V
6 = GND
7 = 5.0 V
8 = 13.2 V
9 = 5.0 V

7862 HEF 4044BT

1 = 0.0 V
2 = N.C.
3 = 3.5 V
4 = 0.0 V
5 = 5.0 V
6 = 4.0 V
7 = 5.0 V
8 =GND
9 = 5.0 V
10 = 0.0 V
11 = 4.8 V
12 = 5.0 V
13 = 5.0 V
14 = 5.0 V
15 = 4.0 V
16 = 5.0 V

Check and Alignment

No alignment is needed for radio part. IC91 tuner is pre-aligned.

Dolby alignment:

cassette	adjust	
MTT 150 F = 400 Hz 200 nWb	3260 and 3261	AC voltage at pin 1 & 24 of 7251 = 387.5 mV +/- 50mV

Checks:

Reference oscillator frequencies

device	MSM 6307	83CE558	HEF4521	SAA6579T
pin	24 & 25	51 & 52	4 & 6	13 & 14
frequency	5.75 MHz 0.75%	11.5 MHz 0.5%	4.194304 MHz 20 ppm	4.332 MHz 60 ppm

FM mute:

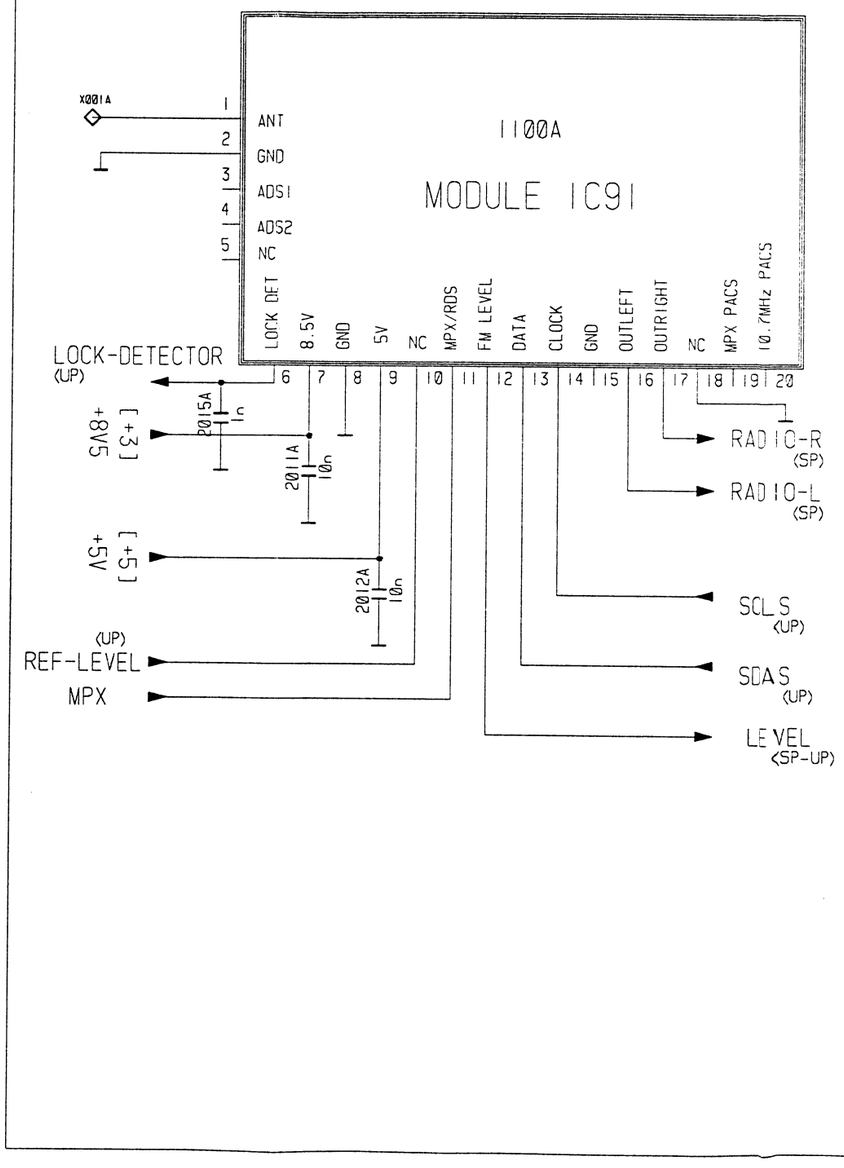
98 MHz 1mV	output at load resistor R & L = 775 mV = REF
no signal	output should be < -24 dB (REF - 24 dB)

Demodulated FM levels

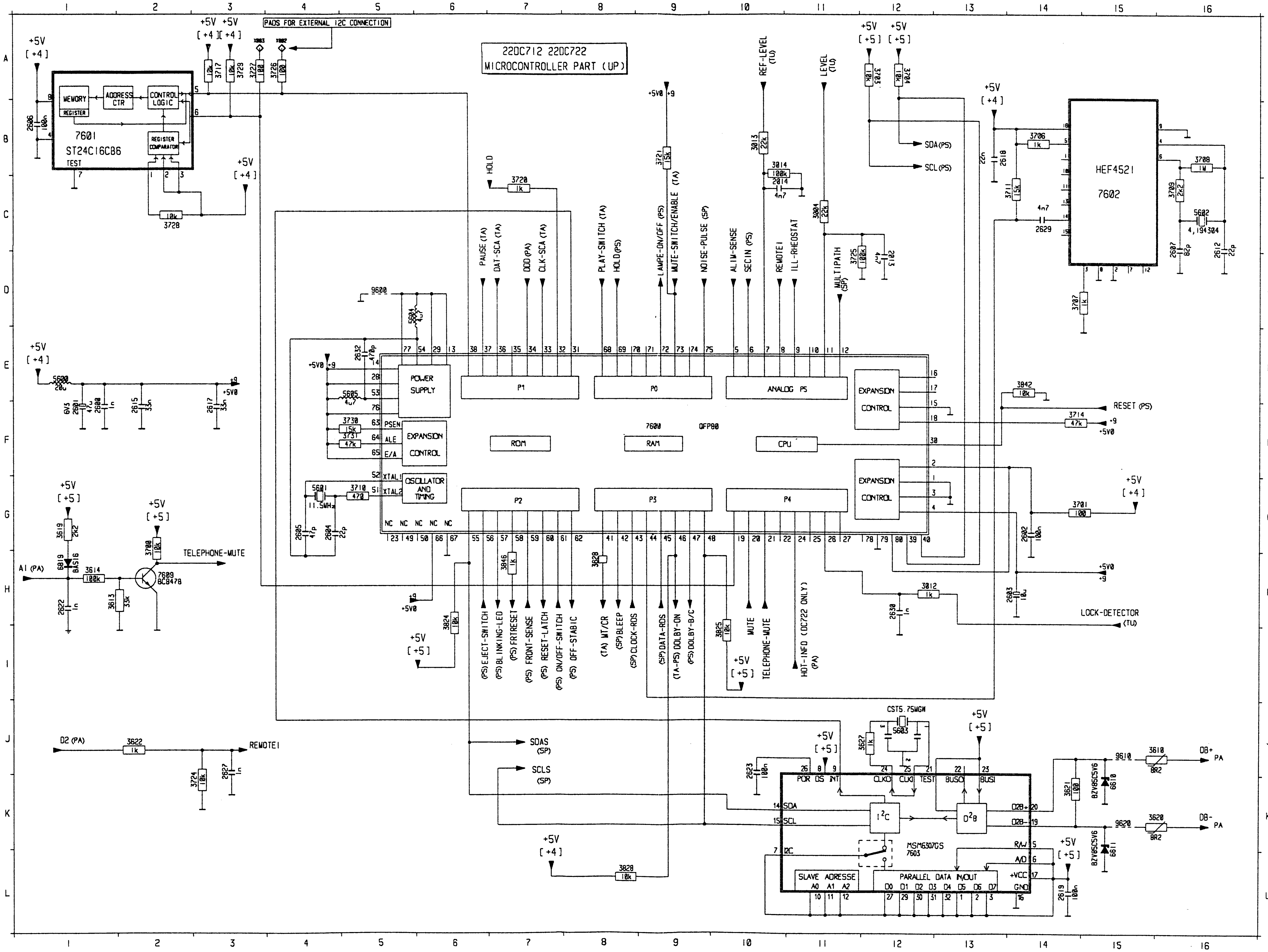
Input	Output of IC91 (pin 16 & 17)
98 MHz	265 mV 30 mV

Technician's remarks

22DC712-22DC722
TUNER PART (TU)



Signal	Location	Signal	Location	Signal	Location	Signal	Location	Signal	Location	Signal	Location	Signal	Location	Signal	Location	Signal	Location
A1	H1	SDAS	H6	CLK-SCA	D7	ON/OFF-SWITCH	H7	CLOCK-RDS	H8	DOLBY-ON	H9	REF-LEVEL	A10	HOT-INFO	I11	DB+	J16
D2	J1	EJECT-SWITCH	H6	BLINKING-LED	H7	PLAY-SWITCH	D8	LAMP-ON/OFF	D9	DOLBY-B/C	H9	REMOTE1	D10	SDA	B12	DB-	K16
TELEPHONE-MUTE	H3-H10	HOLD	C7-D8	FRTRESET	H7	OFF-STABIC	H8	MUTE-SWITCH/ENABLE	D9	SCLS	H9	MUTE	H10	SCL	B12		
REMOTE1	J3	DAT-SCA	D7	FRONT-SENSE	H7	MT/CR	H8	NOISE-PULSE	D9	ALIM-SENSE	D10	TELEPHONE-MUTE	H10	RESET	F15		
PAUSE	D6	DDD	D7	RESET-LATCH	H7	BLEEP	H8	DATA-RDS	H9	SECIN	D10	LEVEL	A11	LOCK-DETECTOR	H15		



Part	Location
2013	D12
2014	C11
2600	F 1
2601	F 1
2602	G14
2603	H14
2604	G 5
2605	G 4
2606	B 1
2607	C16
2612	C16
2615	F 2
2617	F 3
2618	B14
2619	L14
2622	H 1
2623	J10
2627	J 3
2629	C14
2630	H12
2632	E 5
3004	C11
3012	H13
3013	B10
3014	B11
3610	J16
3613	H 2
3614	H 1
3619	G 1
3620	K16
3621	K15
3622	J 2
3627	J12
3628	H 8
3700	G 2
3701	G15
3703	A12
3704	A12
3706	B14
3707	D15
3708	B16
3709	C16
3710	G 5
3711	C14
3714	F15
3717	A 3
3720	C 7
3721	B 9
3724	K 3
3725	D12
3726	A 4
3727	A 3
3728	C 2
3729	A 3
3730	F 5
3731	F 5
3824	H 6
3825	I10
3828	J 9
3842	E14
3846	H 7
5600	E 1
5601	G 4
5602	C16
5603	J12
5604	D 6
5605	E 5
6610	K15
6611	K15
6819	H 1
7600	F 9
7601	B 1
7602	C15
7603	L12
7609	H 2
9600	D 5
9610	J15
9620	K15
X002	A 4
X003	A 4

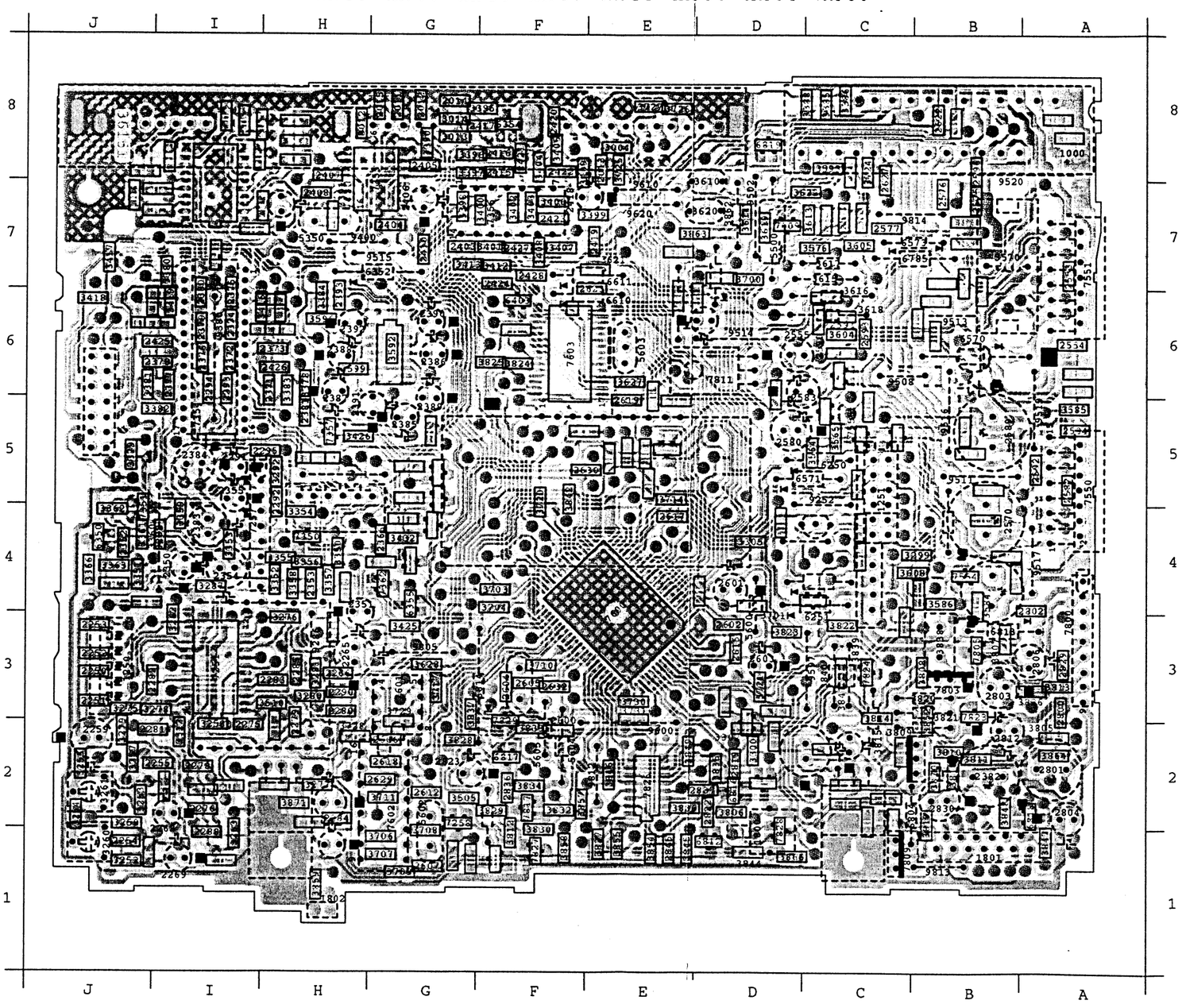
PCS 71 712

22 DC712
22 DC722

MAIN P.W.B.

2259	J 2	2383	I 4	2392	H 6	2804	A 2	5602	G 1	3821	B 3	6251	C 4
2265	H 3	2384	I 5	2406	G 7	2806	A 3	5603	E 6	3839	C 3	6352	G 7
2268	I 2	2385	G 5	2418	E 7	2812	B 2	3615	C 7	3840	C 3	6571	C 5
2269	I 1	2386	G 6	2555	D 6	2823	G 2	3616	C 6	3862	D 7	6573	B 7
2291	I 5	2387	H 6	2580	D 5	2830	B 2	3617	C 7	5500	D 7	6610	E 6
2350	I 4	2388	H 6	2583	D 6	3610	D 7	3618	C 6	5600	D 4	6611	E 7
2351	H 4	2389	G 5	2601	D 4	3620	D 7	3809	B 2	5604	F 2	6785	B 7
2354	I 4	2390	G 6	2603	D 3	3838	B 3	3815	C 3	5605	F 2	6804	B 2
2355	I 5	2391	G 5	2803	B 3	5350	H 7	3820	B 3	6250	C 5	6813	B 3

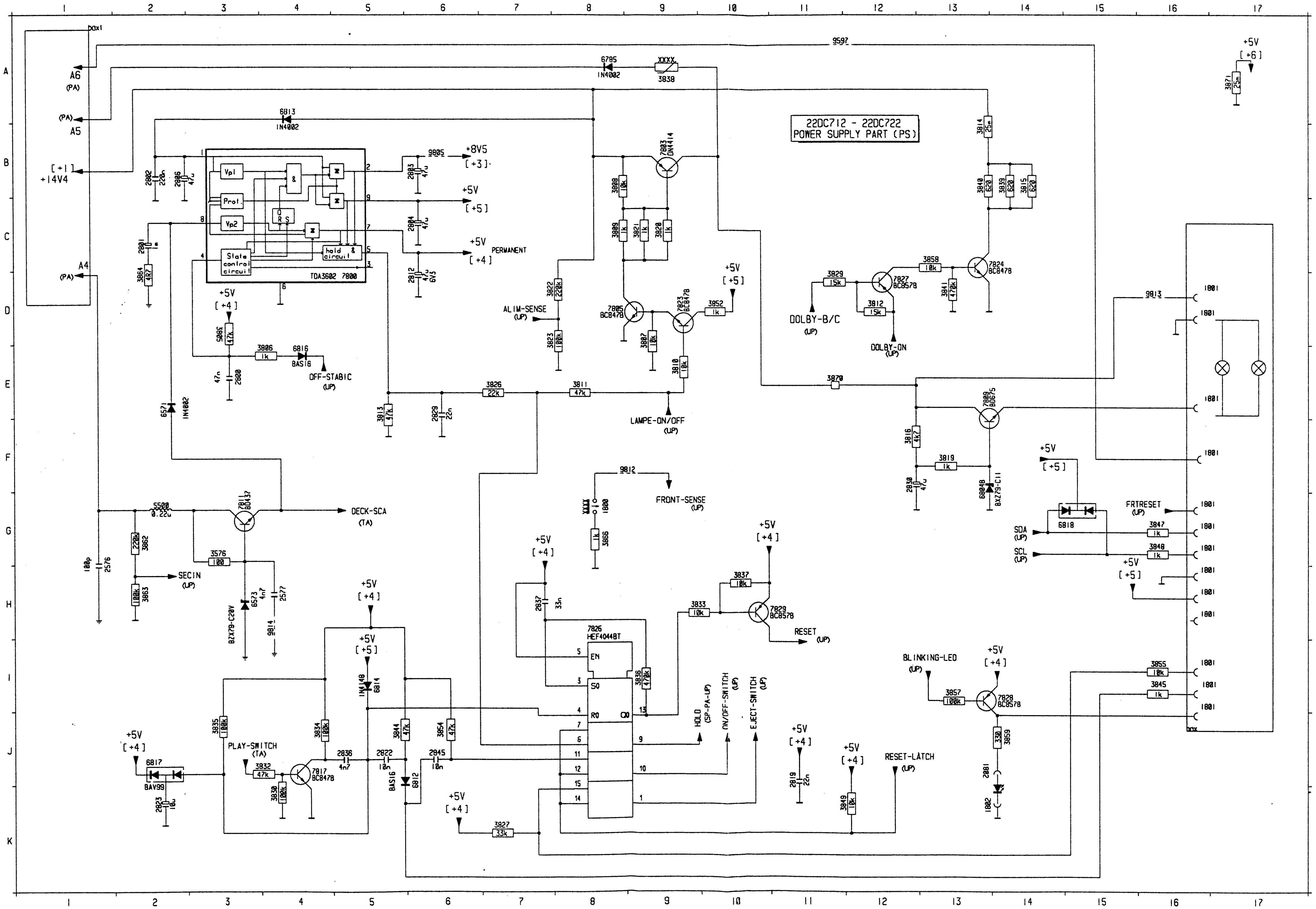
6814	F 3	9513	B 6	9610	E 7	1800	D 1	5570	B 7	7602	G 2		
9252	C 5	9514	D 6	9620	E 7	1801	B 1	5601	F 3	7800	A 3		
9286	H 3	9515	G 7	9805	G 3	1802	H 1	6570	B 6	7803	B 3		
9288	I 4	9516	B 5	9812	E 2	2382	B 2	7257	I 4	7809	C 1		
9380	I 6	9517	A 4	9813	B 1	2570	B 4	7354	I 6	7811	D 6		
9400	H 7	9519	A 5	9814	C 7	2589	B 5	7356	F 7				
9502	D 7	9520	B 8	1000	A 8	2801	A 2	7550	A 5				
9508	C 6	9597	C 3	1250	J 3	3260	J 1	7551	A 7				
9511	B 5	9600	E 2	1251	C 4	3261	J 2	7601	G 3				



2011	G 8	2605	F 3	3397	G 8	3819	B 2						
2012	G 8	2606	G 2	3398	G 7	3822	C 3						
2013	E 8	2607	G 1	3399	E 7	3823	D 3						
2014	G 8	2612	G 2	3400	G 7	3824	F 6						
2015	G 8	2615	D 3	3401	F 7	3825	F 6						
2250	J 3	2617	E 4	3402	F 7	3826	A 3						
2251	J 3	2618	G 2	3403	F 7	3827	E 1						
2252	J 3	2619	E 5	3404	F 8	3828	G 2						
2253	J 3	2622	B 8	3405	F 8	3829	F 2						
2254	J 1	2623	E 6	3406	F 7	3830	F 1						
2255	I 2	2627	C 8	3407	F 7	3832	F 2						
2266	H 3	2629	G 2	3408	F 7	3833	F 2						
2275	I 2	2630	F 5	3409	F 8	3834	F 2						
2276	I 2	2632	F 3	3412	F 7	3835	D 2						
2278	I 2	2800	A 3	3413	G 7	3836	E 2						
2279	H 2	2802	A 4	3416	I 6	3837	G 3						
2280	H 3	2819	D 2	3417	J 7	3841	C 3						
2281	I 2	2822	D 2	3418	J 6	3842	F 5						
2282	J 3	2829	A 3	3419	I 6	3844	D 1						
2283	H 3	2836	F 2	3425	G 3	3845	E 1						
2284	H 2	2837	D 2	3426	H 5	3846	E 2						
2285	H 3	2845	E 1	3432	G 4	3847	A 1						
2288	I 1	3004	E 8	3505	G 2	3848	B 2						
2290	H 3	3012	H 8	3510	H 3	3849	E 2						
2292	H 4	3013	G 8	3512	I 2	3852	B 3						
2293	I 6	3014	G 8	3564	C 5	3854	E 1						
2294	I 6	3252	J 1	3565	C 5	3855	E 1						
2295	H 5	3253	J 2	3576	C 7	3857	F 2						
2352	J 4	3254	J 2	3584	B 4	3858	F 1						
2353	H 4	3255	J 2	3585	A 5	3859	H 1						
2366	G 4	3257	J 2	3586	B 4	3863	E 7						
2371	H 6	3258	I 2	3592	G 6	3864	A 2						
2372	I 6	3259	J 2	3593	C 8	3866	D 1						
2373	H 6	3262	I 3	3596	H 6	3870	B 2						
2374	I 6	3263	I 1	3599	H 6	3871	H 2						
2375	I 6	3275	J 3	3604	C 6	6350	J 4						
2376	I 6	3276	H 3	3605	C 7	6354	F 8						
2377	I 6	3277	H 2	3608	C 4	6355	G 4						
2378	I 6	3278	I 3	3613	C 7	6403	F 6						
2379	I 6	3279	J 2	3614	D 7	6812	D 1						
2380	I 6	3280	H 3	3619	D 7	6816	D 2						
2381	H 5	3281	H 3	3621	E 7	6817	F 2						
2393	H 6	3287	I 4	3622	D 7	6818	A 2						
2403	G 7	3292	H 5	3627	E 6	6819	D 8						
2404	G 7	3299	B 4	3628	G 3	7251	I 3						
2405	G 8	3300	D 2	3700	D 7	7258	G 2						
2407	H 8	3302	D 2	3701	D 4	7350	H 4						
2408	H 7	3305	D 4	3703	F 4	7351	J 4						
2410	G 7	3350	H 4	3704	F 4	7355	G 7						
2415	F 8	3351	J 4	3706	G 1	7357	H 5						
2416	F 8	3352	H 4	3707	G 1	7362	G 4						
2417	F 8	3353	I 4	3708	G 1	7554	B 4						
2419	E 7	3354	H 4	3709	G 1	7555	C 5						
2420	F 8	3355	H 4	3710	F 3	7600	E 3						
2421	F 8	3356	H 4	3711	G 2	7603	F 6						
2422	F 8	3357	H 4	3714	E 5	7609	D 7						
2423	F 7	3358	H 4	3717	G 3	7805	B 3						
2424	F 7	3359	I 4	3720	F 5	7817	F 2						
2425	I 6	3360	I 4	3721	D 3	7823	B 3						
2426	H 6	3361	J 4	3724	C 8	7824	C 3						
2427	F 7	3362	J 4	3725	E 8	7826	E 2						
2428	F 7	3363	J 4	3726	E 8	7827	F 1						
2553	A 7	3366	J 4	3727	E 8	7828	D 1						
2554	A 6	3378	H 6	3728	H 2	7829	F 2						
2575	B 7	3379	J 5	3729	G 2								
2576	B 7	3380	I 7	3730	E 3								
2577	C 7	3381	J 6	3731	E 2								
2582	A 5	3382	I 5	3805	A 2								
2584	A 5	3383	H 6	3806	D 2								
2590	C 6	3384	H 6	3807	B 3								
2591	C 6	3385	C 8	3808	B 3								
2592	A 5	3386	C 8	3810	B 2								
2593	C 6	3388	D 8	3811	B 2								
2596	B 8	3390	G 8	3812	F 1								
2600	F 2	3391	H 7	3813	A 3								
2602	D 3	3395	F 8	3814	C 3								
2604	F 3	3396	G 8	3816	B 2								

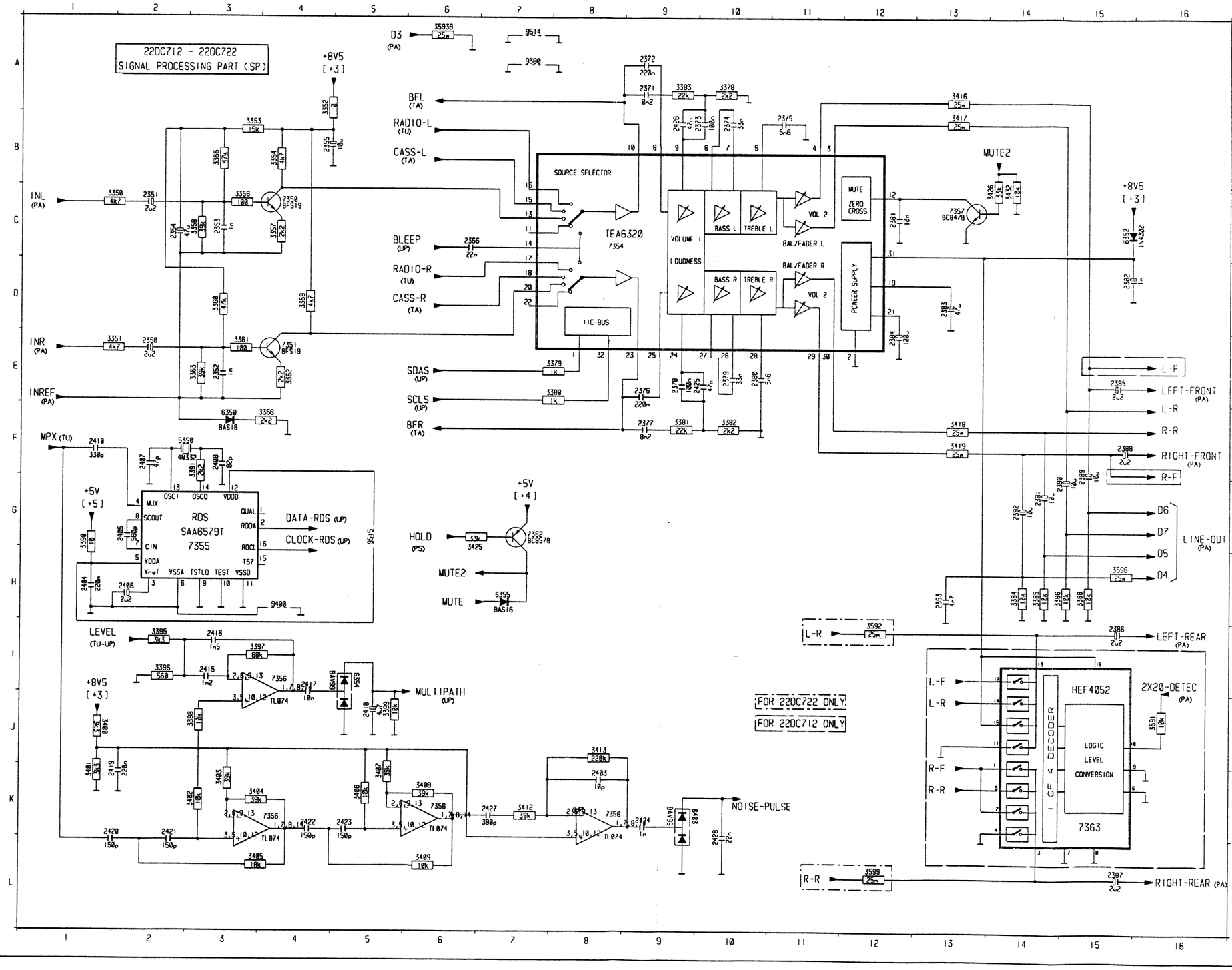
PCS 71 713

A6 ---------- A1	OFF-STABIC -- E4	LAMP-ON/OFF ---- E9	DOLBY-B/C ---- D11	SDA ------- G14	FRTRESET -- G16
A5 ---------- A1	DECK-SCA --- G5	FRONT-SENSE ---- F9	RESET ------- I11	SCL ------- G14	
A4 ---------- D1	ON-OFF ----- K6	HOLD --------- J9	DOLBY-ON ---- D12	EJECT ----- I15	
SECIN ------- H2	ALIM-SENSE -- D7	ON/OFF-SWITCH -- J10	RESET-LATCH -- J12	ON-OFF ----- I15	
PLAY-SWITCH - J3	EJECT ------ K7	EJECT-SWITCH --- J9	BLINKING-LED -- I13	PILOT-LIGHT -- F16	



1800	G 8	6813	A 4
1801	I 17	6814	I 5
1802	K14	6816	E 4
2576	H 2	6817	J 2
2577	H 4	6818	G15
2800	E 3	7800	D 5
2801	C 2	7803	B 9
2802	B 2	7805	D 9
2803	B 6	7809	E14
2804	C 6	7811	G 3
2806	B 3	7817	J 4
2812	D 6	7823	D 9
2819	J11	7824	C14
2822	J 5	7826	H 8
2823	K 2	7827	D12
2829	E 6	7828	I14
2830	F13	7829	H11
2836	J 5	9597	B12
2837	H 7	9805	B 6
2845	J 6	9812	F 9
3576	G 3	9813	D16
3805	D 3	9814	H 4
3806	E 4		
3807	D 9		
3808	B 9		
3809	C 9		
3810	E 9		
3811	E 8		
3812	D12		
3813	E 5		
3814	B14		
3815	B14		
3816	F13		
3819	F13		
3820	C 9		
3821	C 9		
3822	D 8		
3823	D 8		
3826	E 7		
3827	K 7		
3829	D12		
3830	K 4		
3832	J 4		
3833	H10		
3834	J 4		
3835	J 3		
3836	I 9		
3837	H10		
3838	A 9		
3839	B14		
3840	B14		
3841	D13		
3844	J 6		
3845	I16		
3847	G16		
3848	G16		
3849	K12		
3852	D10		
3854	J 6		
3855	I16		
3857	I13		
3858	C13		
3859	J14		
3862	G 2		
3863	H 2		
3864	D 2		
3866	G 8		
3870	E12		
3871	A17		
5500	G 2		
6571	E 2		
6573	H 4		
6785	A 8		
6804B	G14		
6812	J 6		

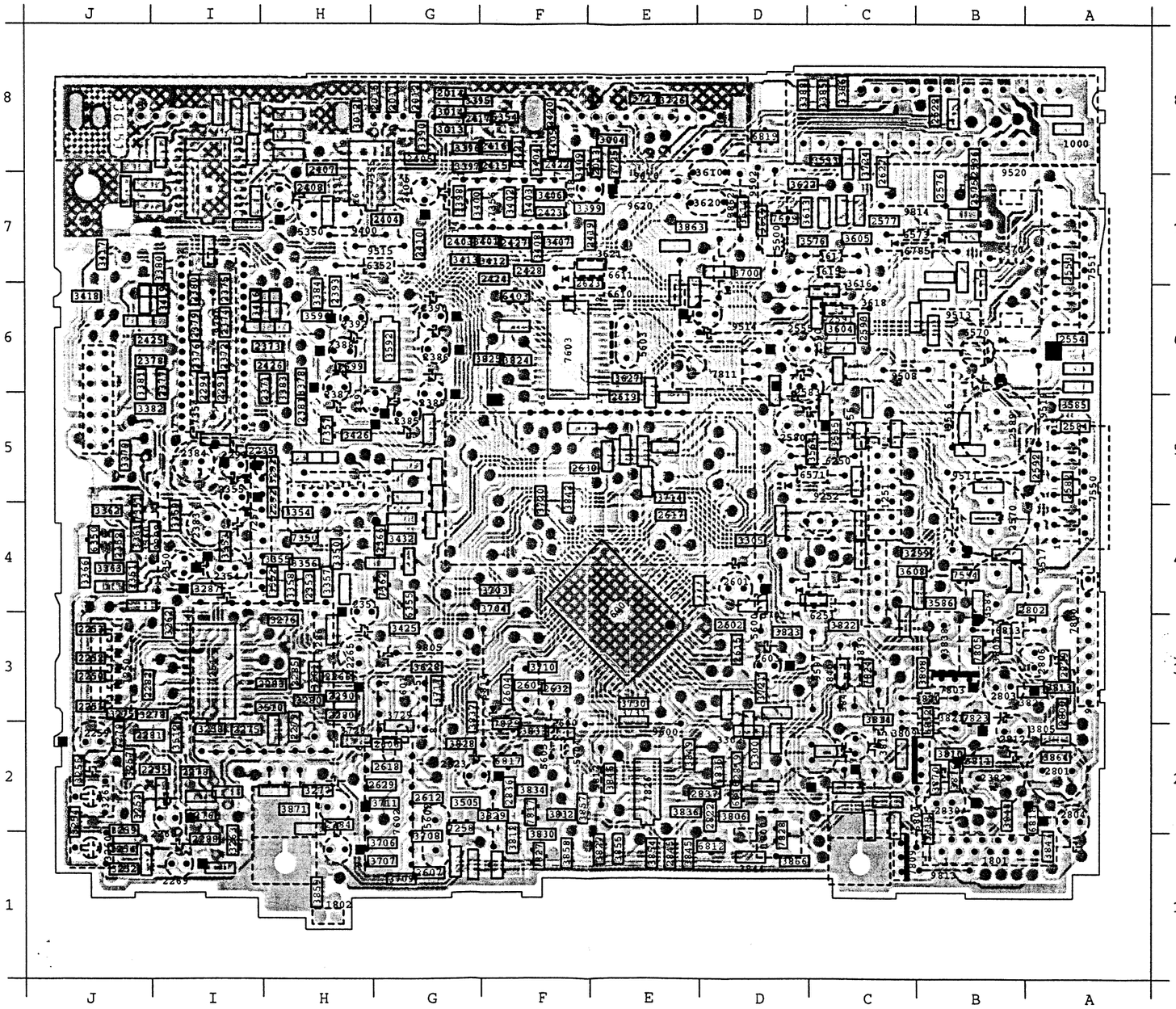
INL . . C1	DATA-RDS . . G4	RADIO-L . . . B6	SDAS E6	MUTE H6-B13	R-F J13-G16	D5 . . . . . H16
INR . . E1	CLOCK-RDS . . H4	CASS-L . . . B6	SCLS E6	NOISE-PULSE . K10	LEFT-FRONT . F16	D4 . . . . . H16
INREF . E1	D3 . . . . . A5	BLEEP C6	BFR F6	L-R I11-I13-F16	RIGHT-FRONT . F16	LEFT-REAR . I16
MPX . . F1	MULTIPATH . I5	RADIO-R . . D6	HOLD G6	R-R L11-K13-F16	D6 . . . . . G16	2X20-DETEC . I16
LEVEL . I1	BFL A6	CASS-R . . . D6	MUTE2 . . . H6	L-F I13-E16	D7 . . . . . G16	RIGHT-REAR . L16



	2350	E 2	3397	I 3									
	2351	C 2	3398	J 3									
	2352	E 3	3399	J 5									
	2353	C 3	3400	J 1									
	2354	C 2	3401	K 1									
A	2355	B 4	3402	K 3									
	2366	C 6	3403	K 3									
	2371	A 9	3404	K 3									
	2372	A 9	3405	L 3									
	2373	B 9	3406	K 5									
	2374	B10	3407	K 5									
	2375	B11	3408	K 6									
B	2376	E 9	3409	L 6									
	2377	F 9	3412	K 7									
	2378	E 9	3413	J 8									
	2379	E10	3416	A15									
	2380	E10	3417	B13									
	2381	C12	3418	F13									
C	2382	D15	3419	F13									
	2383	D13	3425	G 6									
	2384	E12	3426	C13									
	2385	E15	3432	C14									
	2386	I15	3591	J16									
	2387	L15	3592	I12									
D	2388	F15	3593B	A 6									
	2389	F15	3596	H15									
	2390	G14	3599	L12									
	2391	G14	6350	F 2									
	2392	G14	6352	F 3									
	2393	H13	6352	C15									
E	2403	K 8	6354	I 5									
	2404	H 1	6355	H 7									
	2405	G 2	6403	K 9									
	2406	H 2	7350	C 4									
	2407	F 2	7351	E 4									
	2408	F 3	7354	C 8									
	2410	F 1	7355	H 2									
F	2415	I 3	7356	I 4									
	2416	I 3	7356	K 4									
	2417	I 4	7356	K 6									
	2418	J 5	7356	K 8									
	2419	K 1	7357	C13									
	2420	L 1	7362	G 7									
G	2421	L 2	7363	K15									
	2422	K 4	9380	A 7									
	2423	K 5	9400	H 4									
	2424	K 9	9514	A 7									
	2425	E 9	9515	G 5									
	2426	B 9											
H	2427	K 7											
	2428	L10											
	3350	C 1											
	3351	E 1											
	3352	A 4											
	3353	B 3											
I	3354	B 4											
	3355	B 3											
	3356	C 3											
	3357	C 4											
	3358	C 3											
	3359	D 4											
	3360	D 3											
J	3361	E 3											
	3362	E 4											
	3363	E 3											
	3366	F 4											
	3378	A10											
	3379	E 7											
K	3380	E 7											
	3381	F 9											
	3382	F10											
	3383	A 9											
	3384	H14											
	3385	H14											
	3386	H14											
L	3388	H15											
	3390	G 1											
	3391	F 3											
	3395	I 2											
	3396	I 2											

2259 J 2 2383 I 4 2392 H 6 2804 A 2 5602 G 1 3821 B 3 6251 C 4 6814 F 3 9513 B 6 9610 E 7 1800 D 1 5570 B 7 7602 G 2
2265 H 3 2384 I 5 2406 G 7 2806 A 3 5603 E 6 3839 C 3 6352 G 7 9252 C 5 9514 D 6 9620 E 7 1801 B 1 5601 F 3 7800 A 3
2268 I 2 2385 G 5 2418 E 7 2812 B 2 3615 C 7 3840 C 3 6571 C 5 9286 H 3 9515 G 7 9805 G 3 1802 H 1 6570 B 6 7803 B 3
2269 I 1 2386 G 6 2555 D 6 2823 G 2 3616 C 6 3862 D 7 6573 B 7 9288 I 4 9516 B 5 9812 E 2 2382 B 2 7257 I 4 7809 C 1
2291 I 5 2387 H 6 2580 D 5 2830 B 2 3617 C 7 5500 D 7 6610 E 6 9380 I 6 9517 A 4 9813 B 1 2570 B 4 7354 I 6 7811 D 6
2350 I 4 2388 H 6 2583 D 6 3610 D 7 3618 C 6 5600 D 4 6611 E 7 9400 H 7 9519 A 5 9814 C 7 2589 B 5 7356 F 7
2351 H 4 2389 G 5 2601 D 4 3620 D 7 3809 B 2 5604 F 2 6785 B 7 9502 D 7 9520 B 8 1000 A 8 2801 A 2 7550 A 5
2354 I 4 2390 G 6 2603 D 3 3838 B 3 3815 C 3 5605 F 2 6804 B 2 9508 C 6 9597 C 3 1250 J 3 3260 J 1 7551 A 7
2355 I 5 2391 G 5 2803 B 3 5350 H 7 3820 B 3 6250 C 5 6813 B 3 9511 B 5 9600 E 2 1251 C 4 3261 J 2 7601 G 3

22 DC712
22 DC722



MAIN P.W.B.

2011 G 8 2605 F 3 3397 G 8 3819 B 2
2012 G 8 2606 G 2 3398 G 7 3822 C 3
2013 E 8 2607 G 1 3399 E 7 3823 D 3
2014 G 8 2612 G 2 3400 G 7 3824 F 6
2015 G 8 2615 D 3 3401 F 7 3825 F 6

2250 J 3 2617 E 4 3402 F 7 3826 A 3
2251 J 3 2618 G 2 3403 F 7 3827 E 1
2252 J 3 2619 E 5 3404 F 8 3828 G 2
2253 J 3 2622 B 8 3405 F 8 3829 F 2
2254 J 1 2623 E 6 3406 F 7 3830 F 1

2255 I 2 2627 C 8 3407 F 7 3832 F 2
2266 H 3 2629 G 2 3408 F 7 3833 F 2
2275 I 2 2630 F 5 3409 F 8 3834 F 2
2276 I 2 2632 F 3 3412 F 7 3835 D 2
2278 I 2 2800 A 3 3413 G 7 3836 E 2

2279 H 2 2802 A 4 3416 I 6 3837 G 3
2280 H 3 2819 D 2 3417 J 7 3841 C 3
2281 I 2 2822 D 2 3418 J 6 3842 F 5
2282 J 3 2829 A 3 3419 I 6 3844 D 1
2283 H 3 2836 F 2 3425 G 3 3845 E 1

2284 H 2 2837 D 2 3426 H 5 3846 E 2
2285 H 3 2845 E 1 3432 G 4 3847 A 1
2288 I 1 3004 E 8 3505 G 2 3848 B 2
2290 H 3 3012 H 8 3510 H 3 3849 E 2
2292 H 4 3013 G 8 3512 I 2 3852 B 3

2293 I 6 3014 G 8 3564 C 5 3854 E 1
2294 I 6 3252 J 1 3565 C 5 3855 E 1
2295 H 5 3253 J 2 3576 C 7 3857 F 2
2352 J 4 3254 J 2 3584 B 4 3858 F 1
2353 H 4 3255 J 2 3585 A 5 3859 H 1

2366 G 4 3257 J 2 3586 B 4 3863 E 7
2371 H 6 3258 I 2 3592 G 6 3864 A 2
2372 I 6 3259 J 2 3593 C 8 3866 D 1
2373 H 6 3262 I 3 3596 H 6 3870 B 2
2374 I 6 3263 I 1 3599 H 6 3871 H 2

2375 I 6 3275 J 3 3604 C 6 6350 J 4
2376 I 6 3276 H 3 3605 C 7 6354 F 8
2377 I 6 3277 H 2 3608 C 4 6355 G 4
2378 I 6 3278 I 3 3613 C 7 6403 F 6
2379 I 6 3279 J 2 3614 D 7 6812 D 1

2380 I 6 3280 H 3 3619 D 7 6816 D 2
2381 H 5 3281 H 3 3621 E 7 6817 F 2
2393 H 6 3287 I 4 3622 D 7 6818 A 2
2403 G 7 3292 H 5 3627 E 6 6819 D 8
2404 G 7 3299 B 4 3628 G 3 7251 I 3

2405 G 8 3300 D 2 3700 D 7 7258 G 2
2407 H 8 3302 D 2 3701 D 4 7350 H 4
2408 H 7 3305 D 4 3703 F 4 7351 J 4
2410 G 7 3350 H 4 3704 F 4 7355 G 7
2415 F 8 3351 J 4 3706 G 1 7357 H 5

2416 F 8 3352 H 4 3707 G 1 7362 G 4
2417 F 8 3353 I 4 3708 G 1 7554 B 4
2419 E 7 3354 H 4 3709 G 1 7555 C 5
2420 F 8 3355 H 4 3710 F 3 7600 E 3
2421 F 8 3356 H 4 3711 G 2 7603 F 6

2422 F 8 3357 H 4 3714 E 5 7609 D 7
2423 F 7 3358 H 4 3717 G 3 7805 B 3
2424 F 7 3359 I 4 3720 F 5 7817 F 2
2425 I 6 3360 I 4 3721 D 3 7823 B 3
2426 H 6 3361 J 4 3724 C 8 7824 C 3

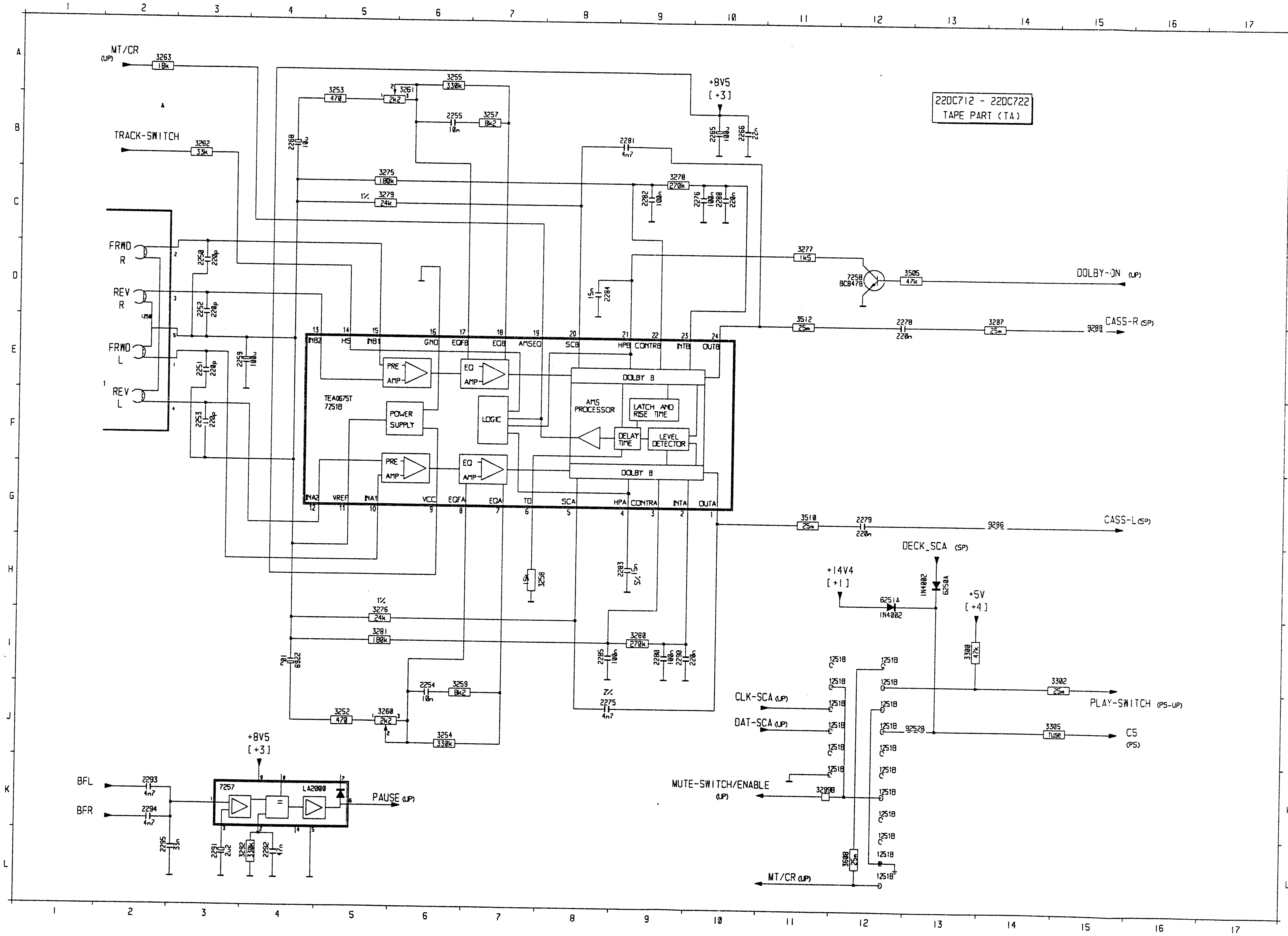
2427 F 7 3362 J 4 3725 E 8 7826 E 2
2428 F 7 3363 J 4 3726 E 8 7827 F 1
2553 A 7 3366 J 4 3727 E 8 7828 D 1
2554 A 6 3378 H 6 3728 H 2 7829 F 2
2575 B 7 3379 J 5 3729 G 2

2576 B 7 3380 I 7 3730 E 3
2577 C 7 3381 J 6 3731 E 2
2582 A 5 3382 I 5 3805 A 2
2584 A 5 3383 H 6 3806 D 2
2590 C 6 3384 H 6 3807 B 3

2591 C 6 3385 C 8 3808 B 3
2592 A 5 3386 C 8 3810 B 2
2593 C 6 3388 D 8 3811 B 2
2596 B 8 3390 G 8 3812 F 1
2600 F 2 3391 H 7 3813 A 3

2602 D 3 3395 F 8 3814 C 3
2604 F 3 3396 G 8 3816 B 2

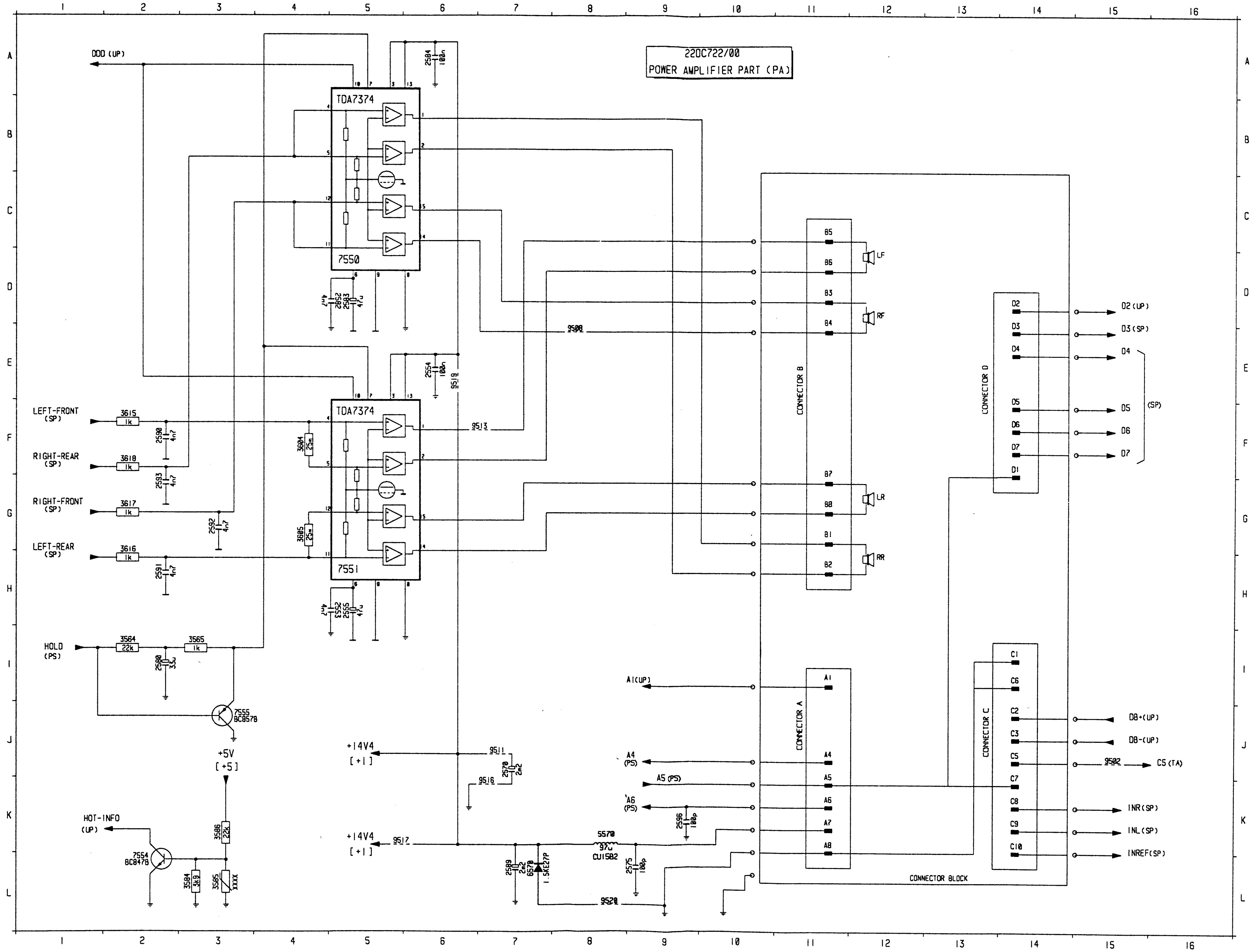
MT/CR	A2	CLK-SCA	J11	DOLBY-ON	D15
TRACK-SWITCH	B2	DAT-SCA	J11	CASS-R	E15
BFL	K2	MUTE-SWITCH/ENABLE	K11	CASS-L	G15
BFR	K2	MT/CR	L11	PLAY-SWITCH	I15
PAUSE	K6	DECK_SCA	H13	CS	J15



1250	E 2
1251B	I12
2250	D 3
2251	E 3
2252	E 3
2253	F 3
2254	J 6
2255	B 6
2259	E 4
2265	B10
2266	B10
2268	B 4
2269	I 4
2275	J 9
2276	C10
2278	E13
2279	G12
2280	I 9
2281	B 9
2282	C 9
2283	H 9
2284	D 9
2285	I 9
2288	C10
2290	I10
2291	L 3
2292	L 4
2293	K 2
2294	K 2
2295	L 3
3252	J 5
3253	B 5
3254	J 6
3255	A 6
3257	B 7
3258	H 8
3259	J 7
3260	J 6
3261	B 6
3262	B 3
3263	A 3
3275	C 6
3276	I 6
3277	D11
3278	C 9
3279	C 6
3280	I 9
3281	I 6
3287	E14
3292	L 4
3299B	K12
3300	I14
3302	I15
3305	J15
3505	D13
3510	G11
3512	E11
3608	L12
6250A	H13
6251A	H12
7251B	F 5
7257	K 3
7258	D12
9252B	J13
9286	G14
9288	E15

PCS 71 717

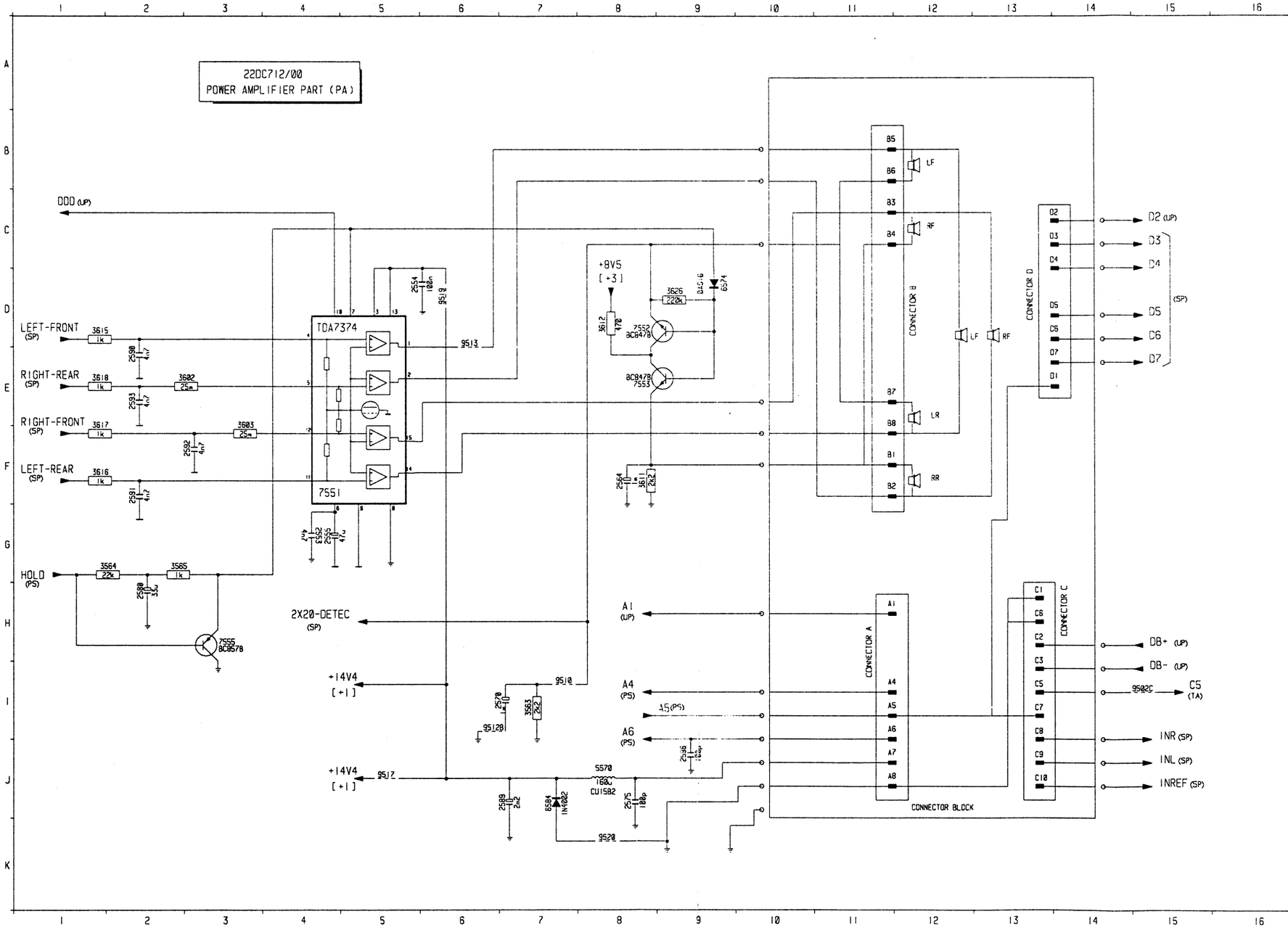
DDD A1	HOLD I1	A6 ... K9	D6 ... F15	INR K15
LEFT-FRONT .. F1	HOT-INFO . K2	D2 ... D15	D7 ... F15	INL K15
RIGHT-REAR .. F1	A1 ...... I9	D3 ... E15	D8+ ... J15	INREF ... K15
RIGHT-FRONT . G1	A4 ...... J9	D4 ... E15	D8- ... J15	
LEFT-REAR .. H1	A5 ...... J9	D5 ... F15	CS ... J15	



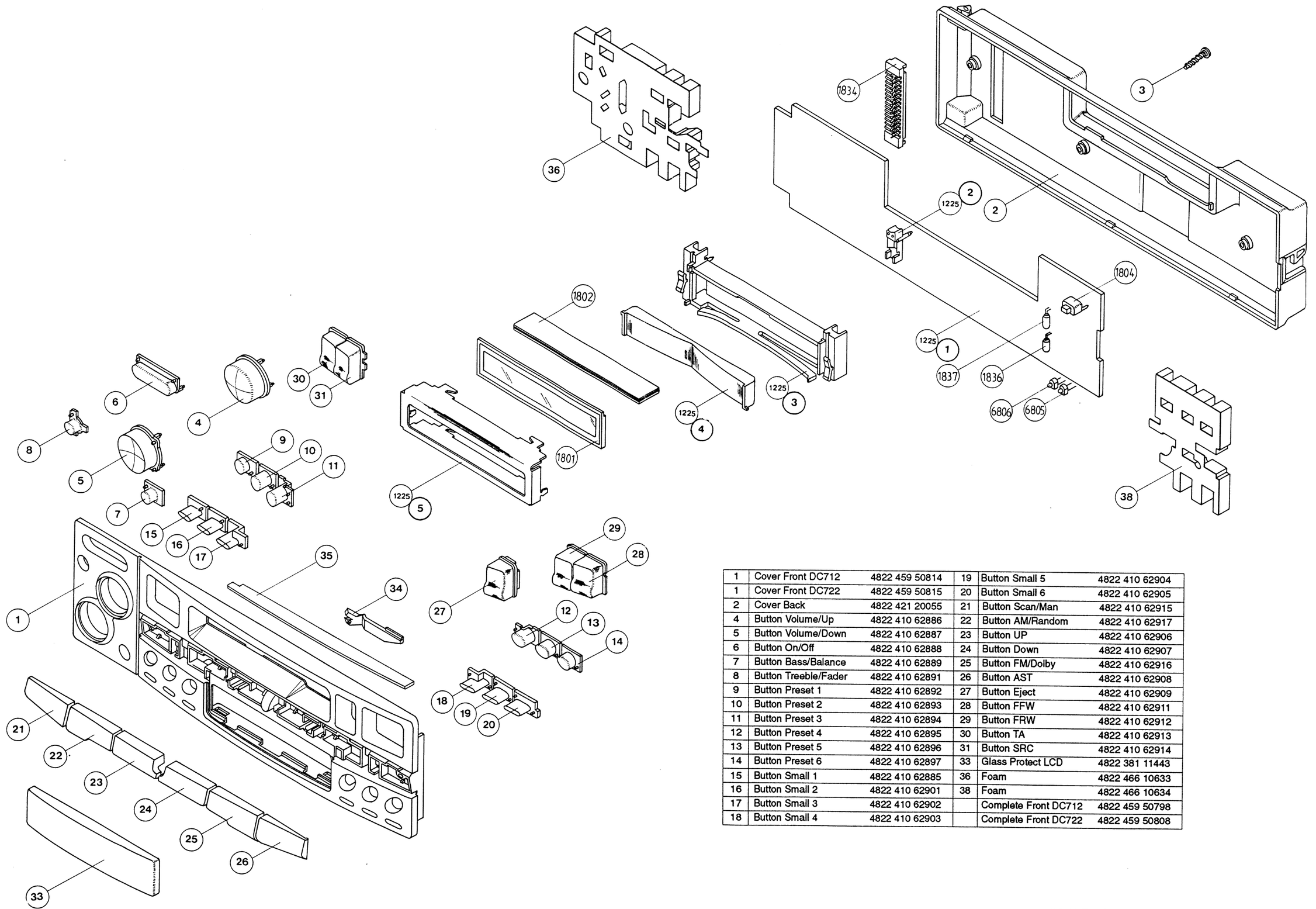
2553	H 4
2554	E 6
2555	H 5
2570	J 7
2575	L 8
2580	I 2
2582	D 4
2583	D 5
2584	A 6
2589	L 7
2590	F 2
2591	H 2
2592	G 3
2593	F 2
2596	K 9
3564	I 2
3565	I 3
3584	L 2
3585	L 3
3586	K 3
3604	F 4
3605	G 4
3615	F 2
3616	G 2
3617	G 2
3618	F 2
5570	K 8
6570	L 7
7550	D 4
7551	H 4
7554	K 2
7555	J 3
9502	J15
9508	D 8
9511	J 7
9513	F 6
9516	J 6
9517	K 5
9519	E 6
9520	L 8

PCS 71 718

DDD C1	HOLD G1	A6 ..... I8	D6 ..... D15	INR I15
LEFT-FRONT .. D1	2X20-DETEC . H5	D2 ..... C15	D7 ..... E15	INL J15
RIGHT-REAR .. E1	A1 ..... H8	D3 ..... C15	D8+ H15	INREF J15
RIGHT-FRONT . F1	A4 ..... I8	D4 ..... C15	D8- I15	
LEFT-REAR .. F1	A5 ..... I8	D5 ..... D15	C5 ..... I15	



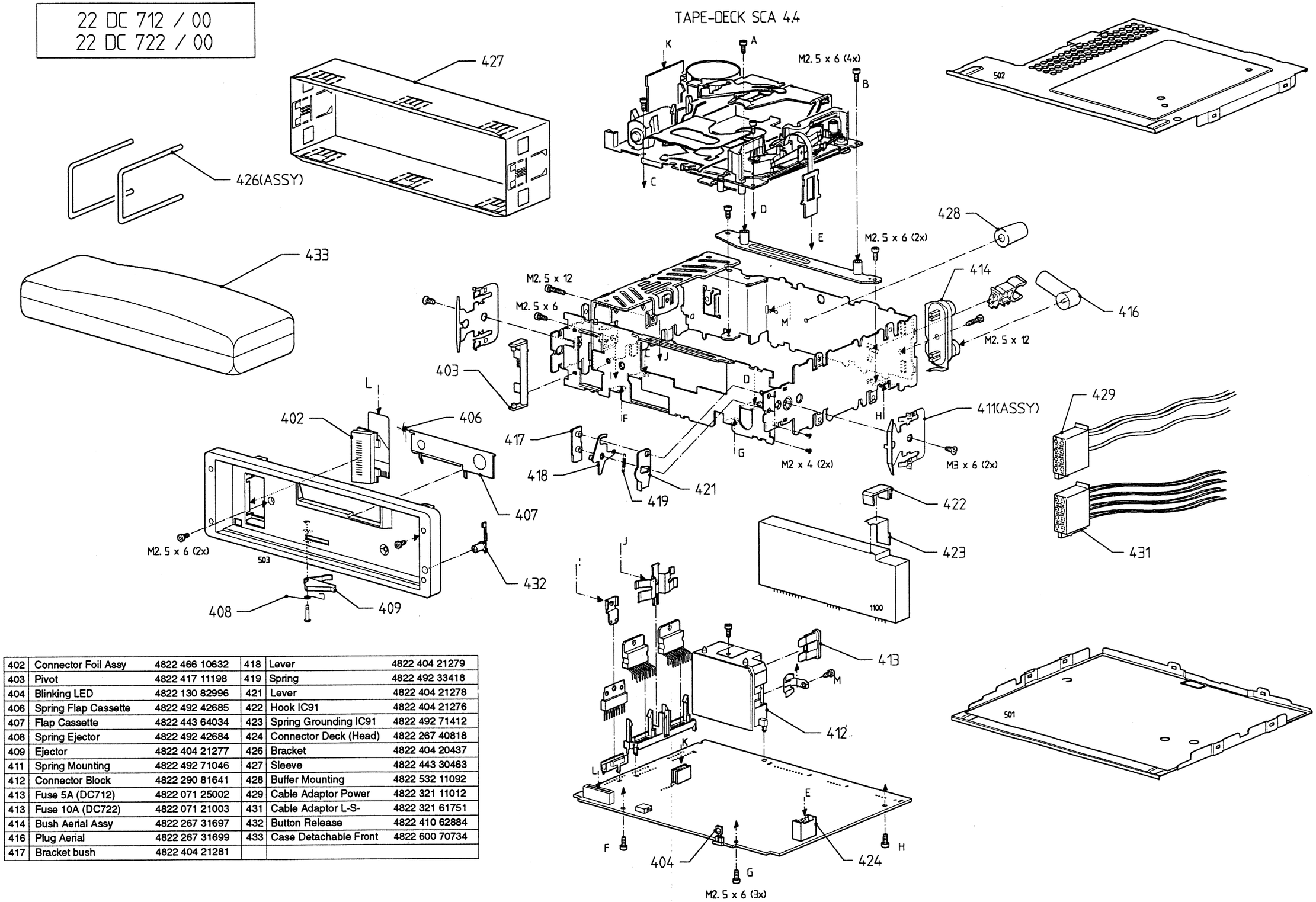
	2553	G 4
	2554	D 6
	2555	G 5
	2564	F 8
A	2570	I 7
	2575	J 8
	2580	H 2
	2589	J 7
	2590	E 2
	2591	F 2
	2592	F 3
B	2593	E 2
	2596	J 9
	3563	I 7
	3564	G 2
	3565	G 2
	3602	E 3
C	3603	F 3
	3611	F 8
	3612	D 8
	3615	D 2
	3616	F 2
	3617	F 2
	3618	E 2
D	3626	D 9
	5570	J 8
	6574	D 9
	6584	J 7
	7551	F 4
	7552	D 9
E	7553	E 9
	7555	H 3
	9502	I 15
	9510	I 7
	9512	I 7
	9513	E 6
F	9517	J 5
	9519	D 6
	9520	K 8



1	Cover Front DC712	4822 459 50814	19	Button Small 5	4822 410 62904
1	Cover Front DC722	4822 459 50815	20	Button Small 6	4822 410 62905
2	Cover Back	4822 421 20055	21	Button Scan/Man	4822 410 62915
4	Button Volume/Up	4822 410 62886	22	Button AM/Random	4822 410 62917
5	Button Volume/Down	4822 410 62887	23	Button UP	4822 410 62906
6	Button On/Off	4822 410 62888	24	Button Down	4822 410 62907
7	Button Bass/Balance	4822 410 62889	25	Button FM/Dolby	4822 410 62916
8	Button Treeble/Fader	4822 410 62891	26	Button AST	4822 410 62908
9	Button Preset 1	4822 410 62892	27	Button Eject	4822 410 62909
10	Button Preset 2	4822 410 62893	28	Button FFW	4822 410 62911
11	Button Preset 3	4822 410 62894	29	Button FRW	4822 410 62912
12	Button Preset 4	4822 410 62895	30	Button TA	4822 410 62913
13	Button Preset 5	4822 410 62896	31	Button SRC	4822 410 62914
14	Button Preset 6	4822 410 62897	33	Glass Protect LCD	4822 381 11443
15	Button Small 1	4822 410 62885	36	Foam	4822 466 10633
16	Button Small 2	4822 410 62901	38	Foam	4822 466 10634
17	Button Small 3	4822 410 62902		Complete Front DC712	4822 459 50798
18	Button Small 4	4822 410 62903		Complete Front DC722	4822 459 50808

22 DC 712 / 00
22 DC 722 / 00

TAPE-DECK SCA 4.4



402	Connector Foil Assy	4822 466 10632	418	Lever	4822 404 21279
403	Pivot	4822 417 11198	419	Spring	4822 492 33418
404	Blinking LED	4822 130 82996	421	Lever	4822 404 21278
406	Spring Flap Cassette	4822 492 42685	422	Hook IC91	4822 404 21276
407	Flap Cassette	4822 443 64034	423	Spring Grounding IC91	4822 492 71412
408	Spring Ejector	4822 492 42684	424	Connector Deck (Head)	4822 267 40818
409	Ejector	4822 404 21277	426	Bracket	4822 404 20437
411	Spring Mounting	4822 492 71046	427	Sleeve	4822 443 30463
412	Connector Block	4822 290 81641	428	Buffer Mounting	4822 532 11092
413	Fuse 5A (DC712)	4822 071 25002	429	Cable Adaptor Power	4822 321 11012
413	Fuse 10A (DC722)	4822 071 21003	431	Cable Adaptor L-S-	4822 321 61751
414	Bush Aerial Assy	4822 267 31697	432	Button Release	4822 410 62884
416	Plug Aerial	4822 267 31699	433	Case Detachable Front	4822 600 70734
417	Bracket bush	4822 404 21281			

PCS 71 721

Miscellaneous					
1100	4822 214 52122	IC91 MODULE	2279	4822 126 12722	220nF 10% X7R 25V
1250	4822 267 40818	TCS83S9V1 BURNDY	2280	4822 122 33496	100nF 10% X7R 63V
1800	4822 242 81588	CSACS12,0MT FRONT	2281	5322 126 12698	4,7nF 2%
1800	4822 276 13453	SWITCH	2282	4822 122 33496	100nF 10% X7R 63V
1801	4822 130 91288	DISPLAY	2283	4822 122 33128	15nF 10% X7R 63V
1802	4822 256 30483	LAMP HOLDER	2284	4822 122 33128	15nF 10% X7R 63V
1802	4822 267 51286	CONNECTOR FRONT	2285	4822 122 33496	100nF 10% X7R 63V
1804	4822 276 13454	SWITCH	2288	4822 126 12722	220nF 10% X7R 25V
1805	4822 276 13454	SWITCH	2290	4822 126 12722	220nF 10% X7R 25V
1806	4822 276 13454	SWITCH	2291	4822 124 23504	2.2µF 20% 50V
1807	4822 276 13454	SWITCH	2292	4822 122 32542	47nF 10% X7R 63V
1808	4822 276 13454	SWITCH	2293	5322 126 10223	4,7nF 10% X7R 63V
1809	4822 276 13454	SWITCH	2294	5322 126 10223	4,7nF 10% X7R 63V
1810	4822 276 13454	SWITCH	2295	4822 122 33342	33nF 10% X7R 63V
1811	4822 276 13454	SWITCH	2350	4822 124 23504	2.2µF 20% 50V
1812	4822 276 13454	SWITCH	2351	4822 124 23504	2.2µF 20% 50V
1813	4822 276 13454	SWITCH	2352	5322 122 34123	1nF 10% X7R 50V
1814	4822 276 13454	SWITCH	2353	5322 122 34123	1nF 10% X7R 50V
1815	4822 276 13454	SWITCH	2354	4822 124 22646	47µF 20% 16V
1818	4822 276 13454	SWITCH	2355	4822 124 41017	10µF 16V
1819	4822 276 13454	SWITCH	2366	5322 122 32654	22nF 10% X7R 63V
1820	4822 276 13454	SWITCH	2371	4822 126 10525	8,2nF 10% X7R 63V
1821	4822 276 13454	SWITCH	2372	4822 126 12722	220nF 10% X7R 25V
1822	4822 276 13454	SWITCH	2373	4822 122 33496	100nF 10% X7R 63V
1823	4822 276 13454	SWITCH	2374	4822 122 33342	33nF 10% X7R 63V
1824	4822 276 13454	SWITCH	2375	4822 122 32646	5,6nF 10% X7R 50V
1825	4822 276 13454	SWITCH	2376	4822 126 12722	220nF 10% X7R 25V
1826	4822 276 13454	SWITCH	2377	4822 126 10525	8,2nF 10% X7R 63V
1827	4822 276 13454	SWITCH	2378	4822 122 33496	100nF 10% X7R 63V
1828	4822 276 13454	SWITCH	2379	4822 122 33342	33nF 10% X7R 63V
1829	4822 276 13454	SWITCH	2380	4822 122 32646	5,6nF 10% X7R 50V
1830	4822 276 13454	SWITCH	2381	5322 122 34098	10nF 10% X7R 63V
1831	4822 276 13454	SWITCH	2382	4822 124 40201	1000µF 20% 16V
1832	4822 276 13454	SWITCH	2383	4822 124 22646	47µF 20% 16V
1833	4822 276 13454	SWITCH	2384	4822 124 80453	100µF 20% 10V
1835	4822 134 41158	LAMP GREEN	2385	4822 124 23504	2.2µF 20% 50V
1836	4822 134 41158	LAMP GREEN	2386	4822 124 23504	2.2µF 20% 50V
1837	4822 134 41157	HRS-7219 ASSY	2387	4822 124 23504	2.2µF 20% 50V
1838	4822 134 41157	HRS-7219 ASSY	2388	4822 124 23504	2.2µF 20% 50V
			2389	4822 124 41017	10µF 16V
2011	5322 122 34098	10nF 10% X7R 63V	2390	4822 124 41017	10µF 16V
2012	5322 122 34098	10nF 10% X7R 63V	2391	4822 124 41017	10µF 16V
2013	5322 126 10223	4,7nF 10% X7R 63V	2392	4822 124 41017	10µF 16V
2014	5322 126 10223	4,7nF 10% X7R 63V	2393	5322 126 10223	4,7nF 10% X7R 63V
2015	5322 122 34123	1nF 10% X7R 50V	2403	5322 122 32448	10pF 5% 50V
2250	4822 122 33575	220pF 5% NPO 50V	2404	4822 126 12722	220nF 10% X7R 25V
2251	4822 122 33575	220pF 5% NPO 50V	2405	5322 116 80853	560pF 5% NP0 63V
2252	4822 122 33575	220pF 5% NPO 50V	2406	4822 124 23504	2.2µF 20% 50V
2253	4822 122 33575	220pF 5% NPO 50V	2407	5322 122 32452	47pF 5% NP0 63V
2254	5322 122 34098	10nF 10% X7R 63V	2408	4822 122 33515	82pF 5% NP0 63V
2255	5322 122 34098	10nF 10% X7R 63V	2410	5322 122 31863	330pF 5% NP0 50V
2259	4822 124 80453	100µF 20% 10V	2415	4822 122 32614	1.2nF 10% X7R 50V
2265	4822 124 80453	100µF 20% 10V	2416	5322 122 31865	1,5nF 10% X7R 63V
2266	5322 122 32654	22nF 10% X7R 63V	2417	5322 122 34098	10nF 10% X7R 63V
2268	4822 124 41017	10µF 16V	2418	4822 124 23401	4.7µF 20% 25V
2269	4822 124 41017	10µF 16V	2419	4822 126 12722	220nF 10% X7R 25V
2275	5322 126 12698	4,7nF 2%	2420	5322 122 33538	150pF 2% NP0 63V
2276	4822 122 33496	100nF 10% X7R 63V	2421	5322 122 33538	150pF 2% NP0 63V
2278	4822 126 12722	220nF 10% X7R 25V	2422	5322 122 33538	150pF 2% NP0 63V
			2423	5322 122 33538	150pF 2% NP0 63V

2424	5322 122 34123	1nF 10% X7R 50V	2830	4822 124 22646	47µF 20% 16V
2425	4822 122 32542	47nF 10% X7R 63V	2836	5322 126 10223	4,7nF 10% X7R 63V
2426	4822 122 32542	47nF 10% X7R 63V	2837	4822 122 33342	33nF 10% X7R 63V
2427	4822 122 33172	390pF 5% NP0 50V	2845	5322 122 34098	10nF 10% X7R 63V
2428	5322 122 32654	22nF 10% X7R 63V			
2553	5322 126 10223	4,7nF 10% X7R 63V			
2554	4822 122 33496	100nF 10% X7R 63V	3004	4822 051 20223	22K 5% 0,1W
2555	5322 124 41938	47µF 6V3	3012	4822 051 20102	1K 5% 0,1W
2564	4822 124 40201	1000 µF 20%	3013	4822 051 20223	22K 5% 0,1W
2570	4822 124 80719	2200µF 20% 16V	3014	4822 051 20104	100K 5% 0,1W
			3252	4822 051 20471	470Ω 5% 0,1W
2570	4822 124 40201	1000 µF 20% DC712			
2575	5322 122 32531	100pF 5% NP0 50V	3253	4822 051 20471	470Ω 5% 0,1W
2576	5322 122 32531	100pF 5% NP0 50V	3254	4822 051 20334	330K 5% 0,1W
2577	5322 126 10223	4,7nF 10% X7R 63V	3255	4822 051 20334	330K 5% 0,1W
2580	4822 124 23281	33µF 20% 16V	3257	4822 051 20822	8K20 5% 0,1W
			3258	4822 051 20153	15K 5% 0,1W
2582	5322 126 10223	4,7nF 10% X7R 63V			
2583	5322 124 41938	47µF 6V3	3259	4822 051 20822	8K20 5% 0,1W
2584	4822 122 33496	100nF 10% X7R 63V	3260	4822 100 11212	2K2 30%lin 0,1W
2589	4822 124 80719	2200µF 20% 16V	3261	4822 100 11212	2K2 30%lin 0,1W
2590	5322 126 10223	4,7nF 10% X7R 63V	3262	4822 051 20333	33K 5% 0,1W
			3263	4822 051 20183	18K 5% 0,1W
2591	5322 126 10223	4,7nF 10% X7R 63V			
2592	5322 126 10223	4,7nF 10% X7R 63V	3275	4822 051 20184	180K 5% 0,1W
2593	5322 126 10223	4,7nF 10% X7R 63V	3276	4822 117 10507	24K 1% 0.1W
2596	5322 122 32531	100pF 5% NP0 50V	3277	4822 051 20152	1K50 5% 0,1W
2600	5322 122 34123	1nF 10% X7R 50V	3278	4822 051 20274	270K 5% 0,1W
			3279	4822 117 10507	24K 1% 0.1W
2601	5322 124 41938	47µF 6V3			
2602	4822 122 33496	100nF 10% X7R 63V	3280	4822 051 20274	270K 5% 0,1W
2603	4822 124 41017	10µF 16V	3281	4822 051 20184	180K 5% 0,1W
2604	5322 122 32658	22pF 5% 50V	3287	4822 051 20008	0Ω JUMP. (0805)
2605	5322 122 32452	47pF 5% NP0 63V	3292	4822 051 20334	330K 5% 0,1W
			3299	4822 051 20008	0Ω JUMP. (0805)
2606	4822 122 33496	100nF 10% X7R 63V			
2607	4822 122 33515	82pF 5% NP0 63V	3300	4822 051 20473	47K 5% 0,1W
2612	5322 122 32658	22pF 5% 50V	3302	4822 051 20008	0Ω JUMP. (0805)
2615	4822 122 33342	33nF 10% X7R 63V	3305	4822 117 10508	1Ω 5%
2617	4822 122 33342	33nF 10% X7R 63V	3350	4822 051 20472	4K70 5% 0,1W
			3351	4822 051 20472	4K70 5% 0,1W
2618	5322 122 32654	22nF 10% X7R 63V			
2619	4822 122 33496	100nF 10% X7R 63V	3352	4822 051 20109	10Ω 5% 0,1W
2622	5322 122 34123	1nF 10% X7R 50V	3353	4822 051 20153	15K 5% 0,1W
2623	4822 122 33496	100nF 10% X7R 63V	3354	4822 051 20472	4K70 5% 0,1W
2627	5322 122 34123	1nF 10% X7R 50V	3355	4822 051 20473	47K 5% 0,1W
			3356	4822 051 20101	100Ω 5% 0,1W
2629	5322 126 10223	4,7nF 10% X7R 63V			
2630	5322 122 34123	1nF 10% X7R 50V	3357	4822 051 20222	2K20 5% 0,1W
2632	5322 122 32268	470pF 10% 50V	3358	4822 051 20393	39K 5% 0,1W
2800	4822 122 32542	47nF 10% X7R	3359	4822 051 20472	4K70 5% 0,1W
2800	5322 122 33869	15pF 5% NP0 FRONT	3360	4822 051 20473	47K 5% 0,1W
			3361	4822 051 20101	100Ω 5% 0,1W
2801	4822 124 40201	1000µF 20% 16V			
2801	5322 122 33869	15pF 5% NP0 FRONT	3362	4822 051 20222	2K20 5% 0,1W
2802	4822 126 12722	220nF 10% X7R	3363	4822 051 20393	39K 5% 0,1W
2802	4822 126 12783	100nF 10% 25V FRONT	3366	4822 051 20222	2K20 5% 0,1W
2803	4822 124 22646	47µF 20% 16V	3378	4822 051 20222	2K20 5% 0,1W
			3379	4822 051 20102	1K 5% 0,1W
2803	4822 126 12722	220nF 10% X7R FRONT			
2804	4822 126 12722	220nF 10% X7R FRONT	3380	4822 051 20102	1K 5% 0,1W
2804	5322 124 41938	47µF 6V3	3381	4822 051 20223	22K 5% 0,1W
2805	4822 126 12783	100nF 10% 25V	3382	4822 051 20222	2K20 5% 0,1W
2806	4822 124 22861	47µF 16V	3383	4822 051 20223	22K 5% 0,1W
			3384	4822 051 20103	10K 5% 0,1W
2812	5322 124 41938	47µF 6V3			
2819	5322 122 32654	22nF 10% X7R 63V	3385	4822 051 20103	10K 5% 0,1W
2822	5322 122 34098	10nF 10% X7R 63V	3386	4822 051 20103	10K 5% 0,1W
2823	4822 124 41017	10µF 16V	3388	4822 051 20103	10K 5% 0,1W
2829	5322 122 32654	22nF 10% X7R 63V	3390	4822 051 20109	10Ω 5% 0,1W

6827	4822 130 82989	TLH02400AS-12Z	
6828	4822 130 82989	TLH02400AS-12Z	
6829	4822 130 82989	TLH02400AS-12Z	
6830	4822 130 82989	TLH02400AS-12Z	
6831	4822 130 82989	TLH02400AS-12Z	
6832	4822 130 82989	TLH02400AS-12Z	
6833	4822 130 82989	TLH02400AS-12Z	
6834	4822 130 82989	TLH02400AS-12Z	
6835	4822 130 82989	TLH02400AS-12Z	
6836	4822 130 82989	TLH02400AS-12Z	
6837	4822 130 82989	TLH02400AS-12Z	
6838	4822 130 82989	TLH02400AS-12Z	
6839	4822 130 82989	TLH02400AS-12Z	
6840	4822 130 82989	TLH02400AS-12Z	
6841	4822 130 82989	TLH02400AS-12Z	
6842	4822 130 82989	TLH02400AS-12Z	
6843	4822 130 82989	TLH02400AS-12Z	
6844	4822 130 82989	TLH02400AS-12Z	
6845	4822 130 82989	TLH02400AS-12Z	
6846	4822 130 82989	TLH02400AS-12Z	
6847	4822 130 80125	BZX84-C5V6	
6848	4822 130 80125	BZX84-C5V6	
6849	4822 130 80125	BZX84-C5V6	
6850	4822 130 80125	BZX84-C5V6	
6851	5322 130 31928	BAS16	
6852	5322 130 31928	BAS16	

7251	4822 209 32744	TEA0675T/V1	
7257	4822 209 83159	LA2000	
7258	4822 130 60511	BC847B	
7350	4822 130 42353	BFS19	
7351	4822 130 42353	BFS19	
7354	4822 209 32745	TEA6320/V1	
7355	4822 209 31981	SAA6579T/V1	
7356	4822 209 32742	TL074IN	
7357	4822 130 60511	BC847B	
7362	5322 130 60508	BC857B	
7363	5322 209 11102	HEF4052BT	
7550	4822 209 31132	TDA7374V	
7551	4822 209 31132	TDA7374V	
7552	4822 130 60511	BC847B	
7553	4822 130 60511	BC847B	
7554	4822 130 60511	BC847B	
7555	5322 130 60508	BC857B	
7602	5322 209 10468	HEF4521BP	
7603	4822 209 32743	MSM6307GS	
7609	4822 130 60511	BC847B	
7800	4822 209 32687	TDA3602/N2	
7800	4822 209 32774	P87C528-FAM3	FRONT
7801	5322 130 41983	BC858B	
7802	5322 130 41983	BC858B	
7803	4822 130 42615	BC817-40	FRONT
7803	4822 130 62651	ON4414	
7804	4822 130 42615	BC817-40	
7805	4822 130 42615	BC817-40	FRONT
7805	4822 130 60511	BC847B	
7806	4822 130 42615	BC817-40	
7807	5322 209 11129	PCF8576T	
7809	5322 130 44786	BD675	

7811	4822 130 40982	BD437
7817	4822 130 60511	BC847B
7823	4822 130 60511	BC847B
7824	4822 130 60511	BC847B
7826	4822 209 10305	HEF4044BT
7827	5322 130 60508	BC857B
7828	5322 130 60508	BC857B
7829	5322 130 60508	BC857B

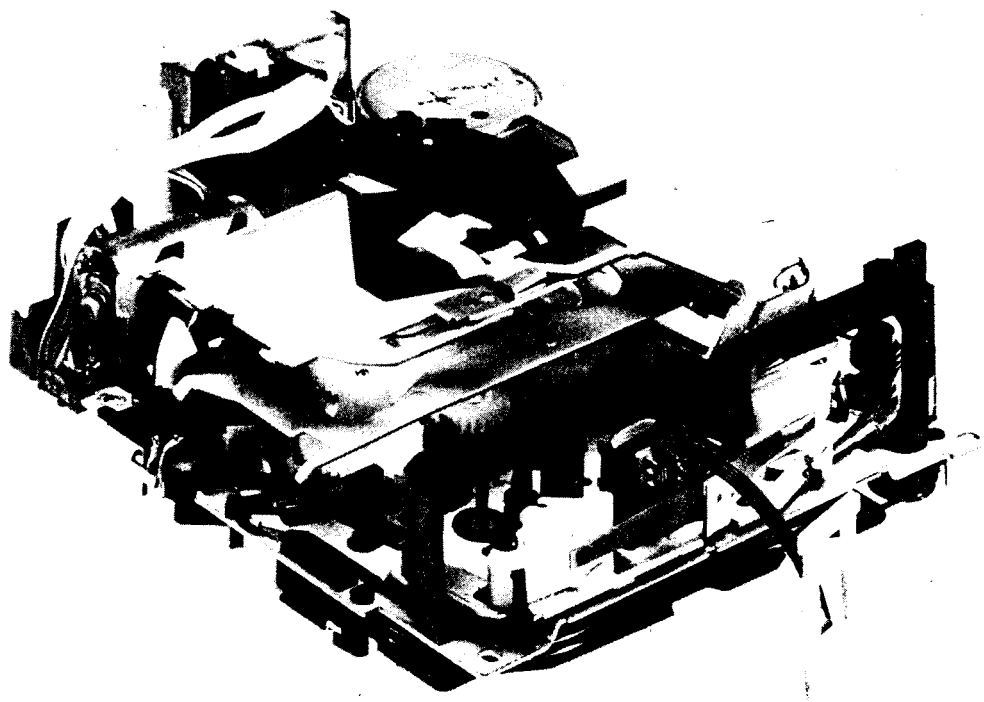
NOTA The service code of the microcontroller pos 7600 and of the EEprom pos 7601 will be issued in the next Service Newsletter or Service Info.

Version 4.4

Service
Service
Service

ServiceManual

12 V



Published by Philips Car Systems Printed in The Netherlands 4822 725 23509

MECHANICAL SPECIFICATION

Operating positions:	Any position from horizontal to 45° standing vertically on the rear side.
Operating temperature:	-20°C to +70°C
Tape speed:	4,76 cm/sec
Wow and flutter:	< 0,5% unweighted
	< 0,3% weighted
Winding time:	
Test tape: RCA 118 (C60)	< 110 sec
Eject and loading time:	< 2 sec

ELECTRICAL SPECIFICATION

Voltage:	min 10,6 V max 16,0 V
Current - playback:	200 mA
Current - fast wind:	150 mA
Current - eject, standby:	100 µA
Hold in voltage:	8,0 V
Capstan motor:	14,4 V
Servo motor:	2 V DC Play
	11,5 V DC Fast, Servo
Playback Crosstalk	
ch. 1 - 2 / 3 - 4	> 36 dB
ch. 2 - 3	> 46 dB

FEATURES

The SCA-4.4 tape deck is usable in several sets. Most of the control functions depend on the hard- and software-configuration of the set in which the deck is installed.
The set µC can control soft eject, emergency eject, standby mode, reverse function, MSS, ME/FE and DOLBY indication.
Some versions of the deck could be equipped with a groved head and/or a preamplifier circuit.

HANDLING AND DEMOUNTING INSTRUCTIONS

GENERAL

- Protect the tape deck against ESD !
- Plastic catches and snap connections must be released careful with screwdriver or tweezers.
- Cables must be laid in the defined cable guidings after mounting.
- For lubrication see indications in the exploded view.
- To clean tape transport and head only use moist cleaning tapes or piece of cloth, take care that no fluid (alcohol) drops into the bearing.
- For transport lift/carrier assy must be in eject position, do not carry the deck by touching the lift/carrier.
- Use a screwdriver 2,5 mm with insulated shaft for adjusting drift.
- Screw the deck into the set in order: Front right, front left, rear left, rear right.

DEMOUNTING

1. Carrier/lift (44)
1.1 Lift in eject position - put leg of eject spring (12) into mounting position acc. fig. 8 and fig. 2 - J
1.2 Lift in play position - unclamp cassette holder (49) from eject lever (48) with a left-upwards motion acc. fig.1-B
1.3 Lift in eject position - push plastic hook (fig.1-D) and pull out eject lever, remember position of ejector spring (55) and switching pin (54) for re-assembly later on
1.4 Release fixation lever (fig.1-F) by clicking out in left direction and then turn to the right
1.5 Lift in mid position - take out carrier and lift by releasing plastic hooks at the left (fig.1-G)

2. Head support
2.1 Take out carrier/lift according 1.
2.2 Remove head carrier spring (37)
2.3 Turn head support fixation lever acc. fig.3-A
2.4 Position pin of switching lever (20) to max. left point, see fig.3-detail I
2.5 Release plastic snapper (fig.3-H) and take out head support assembly
!!! TAKE CARE NOT TO BENT THE HEAD CARRIER !!!
2.6 Press plastic fixation (fig.3-detail E,F) and take out magnetic head
2.7 Push pressure spring (27) acc. fig.3-D and move it out
2.8 Release plastic hooks (fig.3-B,C) to pull pinch rollers (45+68) out
2.9 Take off anchor spring (13), rotate anchor (2) 90°degrees to take it out (fig.4-A,B,C)

3. Capstan motor (32)
Remove belt (30) from driving wheel, desolder connection cables, unscrew the two torx screws at the bottom of chassis and take out capstan motor
!!! TAKE CARE OF CORRECT AND UNTWISTED MOUNTING OF THE BELT !!!

4. Servo motor (14)
Desolder connection cables and lever up motor out of its clamps (fig.2-F,G)

5. Clutch assy (57-59)
5.1 Remove servo motor acc. 4.
5.2 Cut disk (65) and remove it (must be renewed)
5.3 Pull clutch from the axle (fig.2-H,I)

6. Anchor holder (8) and magnet double (1)
6.1 Desolder cables of magnet
6.2 Swivel anchor holder counter-clockwise and press it off applying force near the pivoting point
6.3 Release plastic clamps of magnet holder and press magnet out from top of the chassis (fig.4-E)

7. Driving belt (30), flywheels (23) and bearings (70)
7.1 Release pivot plate (35) by turning the plastic hooks acc.fig.5-A,B
7.2 Remove pivot plate and driving belt
7.3 Pull out flywheels
7.4 Press bearings out of plastic housings from top side of chassis plate, use a plastic tool with diameter 4mm in order not to damage the housings
7.5 After mounting new flywheels, bearings or pivot plate you have to test wow and flutter because every deck is adjusted individual for these components. If the values of wow and flutter are out of specification , you have to exchange complete deck !
7.6 Degrease capstan axis after re-mounting the flywheels

8. Connection wheel (5), take up wheels (6), backtension springs (69)
8.1 Take out carrier/lift acc. 1.
8.2 Lever up connection wheel from axle (must be renewed)
8.3 Cut disks (65) and remove them (must be renewed)
8.4 Unclamp and pull up wheels with puller (fig.2-A,B)
8.5 Take out backtension springs

9. ME/CR Switch (60)
9.1 Desolder connection cables
9.2 Push with a small pin through the hole at the bottom of the chassis, directly under the switch

10. ON/OFF Switch (26)
10.1 Desolder connection cables
10.2 Lever up switch or push with a small pin through the hole at the bottom of the chassis, directly under the switch if servo motor and clutch were removed previously

11. Control pins (16), gear lever (17), play reverse lever (18)
11.1 Remove flywheels acc. 7
11.2 Remove play reverse lever
11.3 Put control pins into mounting position acc. fig.6-D,E
11.4 Take out gear lever
11.5 Pull out control pins

12. Switching lever (20), swivel wheel assembly (7,15,43)
12.1 Release spring (53) from black plastic pin
12.2 Turn switching lever acc. fig.7-A
12.3 Lever up switching lever from axle
12.4 Remove connection wheel acc. 8
12.5 Take out swivel wheel assembly

13. Switching pin (54), transport rod (25), latch (21)
13.1 Remove ON/OFF Switch acc. 10
13.2 Lever up switching pin from axle
13.3 Remove switching lever acc. 12
13.4 Move out transport rod and latch

TOOLS REQUIRED

Test cassette SBC 420	4822 397 30071
Test cassette SBC 419	4822 397 30069
Friction test cassette	4822 395 30054
Puller for clutch (fig.2)	4822 395 60039

ADJUSTMENTS

TORQUE OF REELS (FRICTION)

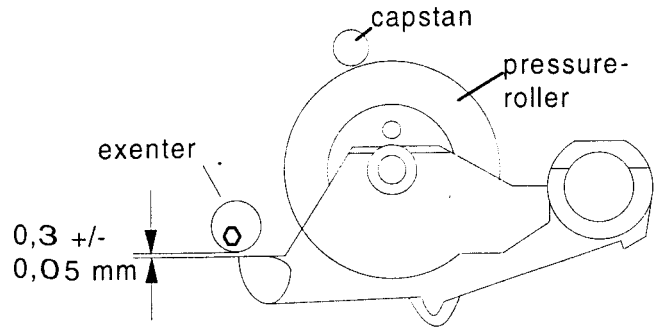
Adjust potmeter pos. 3409 until friction test cassette shows 9,5 +/- 1,5 mNm in NOR direction (after 2 minutes) and 8,5 +/- 1,5 mNm in REV direction. Backtension must be 0,3 to 0,7 mNm.
If values deviate check lubrication, clutch, take up wheels and backtension springs.

WOW AND FLUTTER, TAPE SPEED

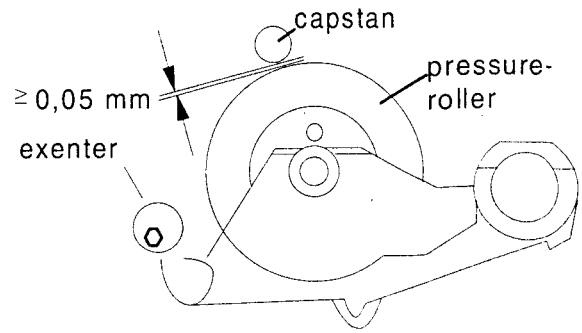
Connect wow and flutter meter to loudspeaker outputs and play the 3150 Hz signal track of test cassette SBC 420.
Value should be max. 0,5% (unweighted).
If value deviates check motors, pressure rollers, flywheels, belt, pulley and backtension springs.
Tape speed can be adjusted with motor potentiometer A (see fig.8). Use a screwdriver with insulated shaft !

PRESSURE ROLLER / CAPSTAN (see figures below)

Adjust clearance play-NOR position between pressure roller and stop head carrier



Adjust clearance FFW position between pressure roller and capstan



EJECTOR 48, HOLDER 49, LIFT 44

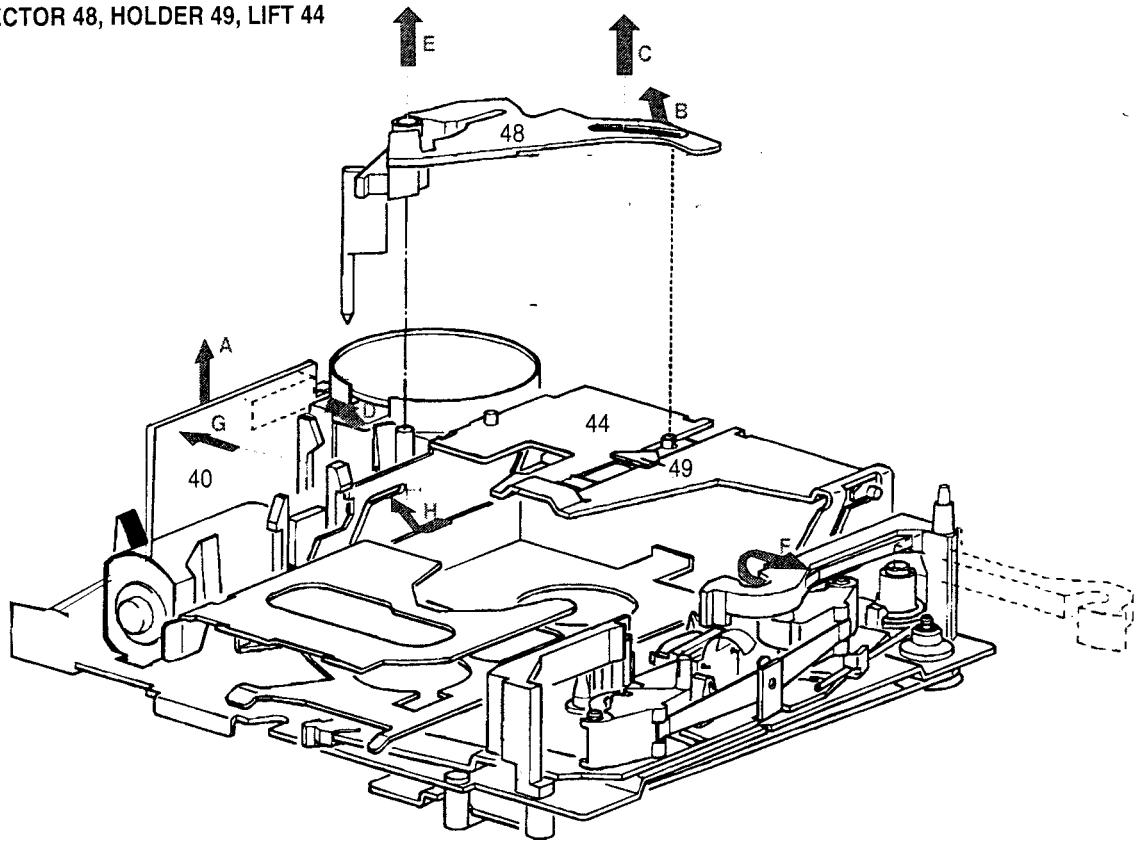


Fig. 1

CLUTCH 59, SWITCH 60, GEAR WHEEL 5, CARRIER 6

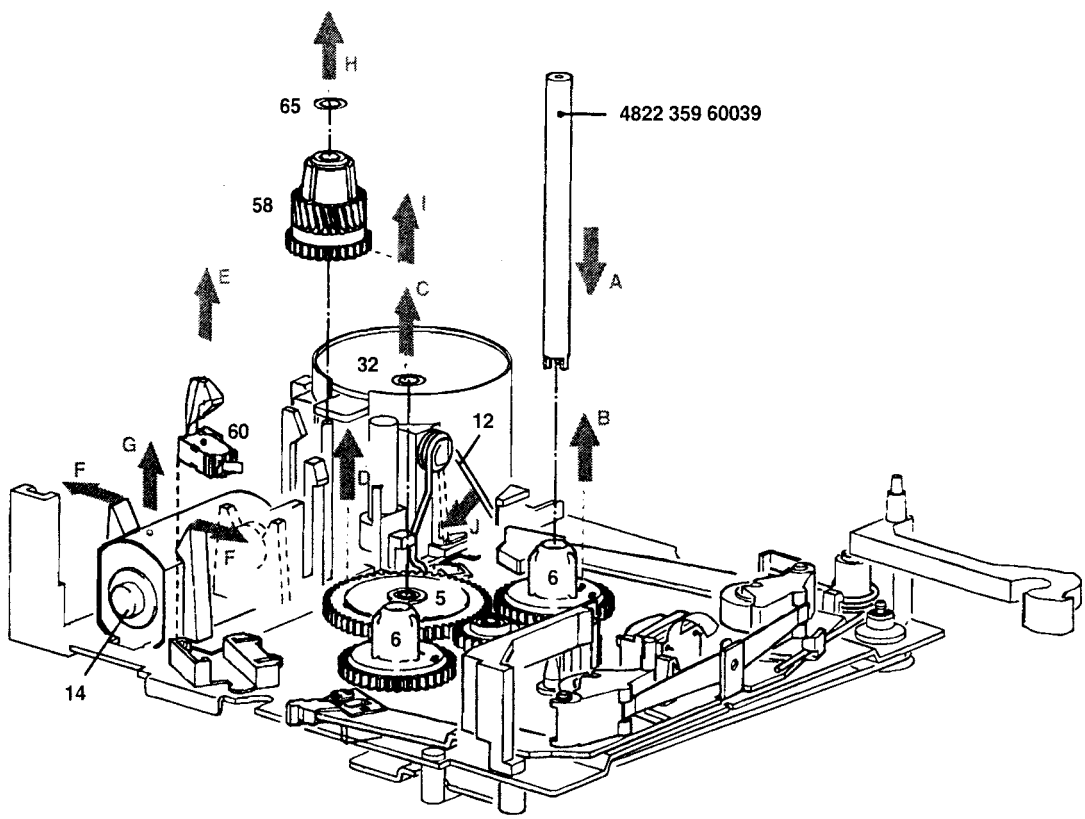


Fig. 2

PRESSURE ROLLER 45, HEAD BRACKET 33, HEAD 34

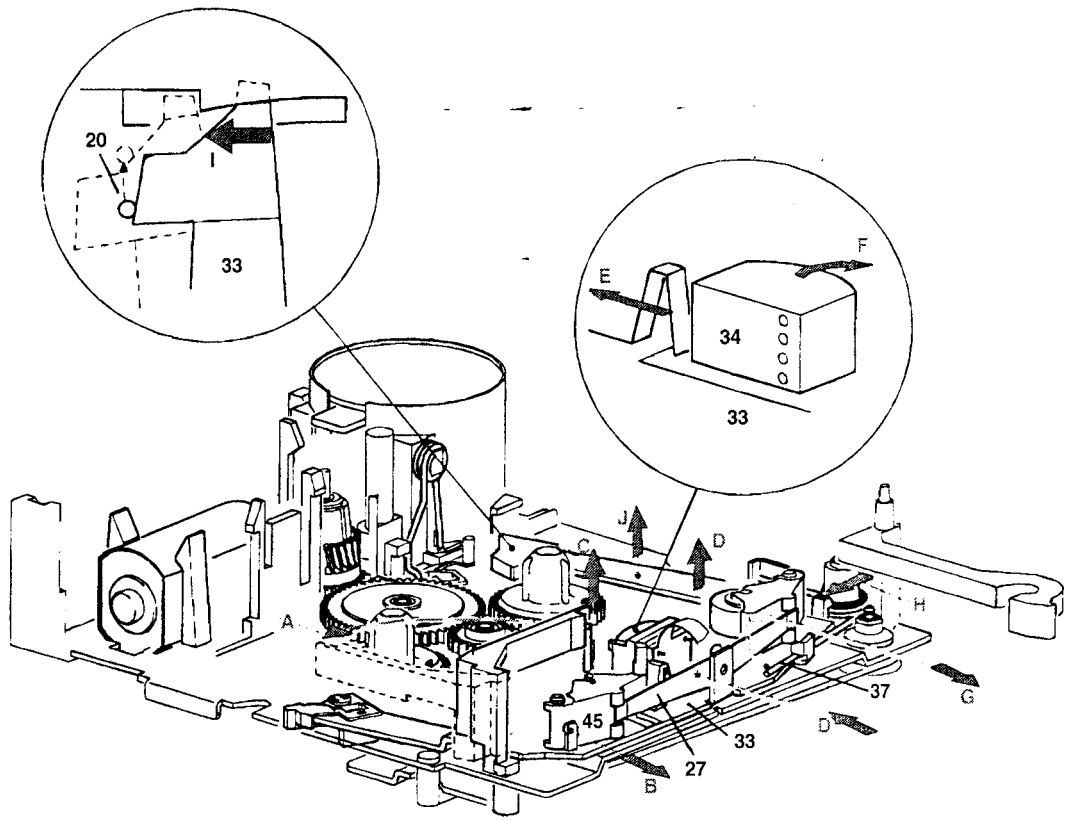


Fig. 3

ANCHOR 3/5, RELAY 1

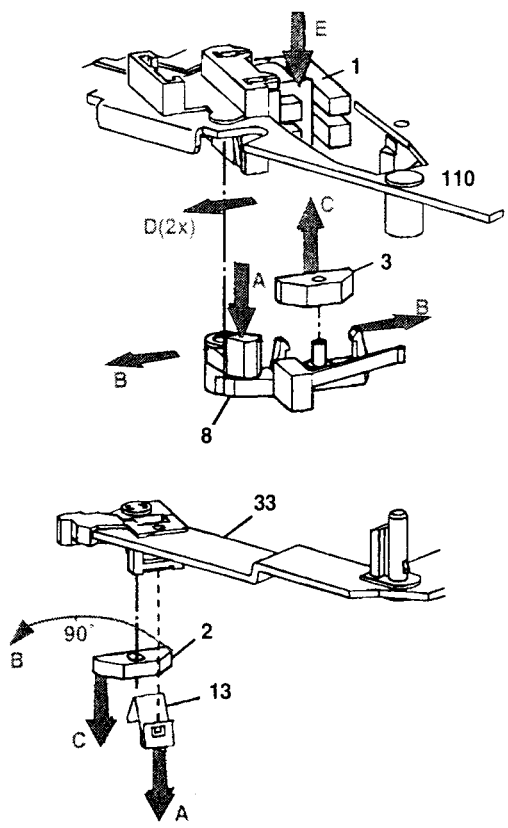


Fig. 4

FLYWHEEL 23, BELT 30

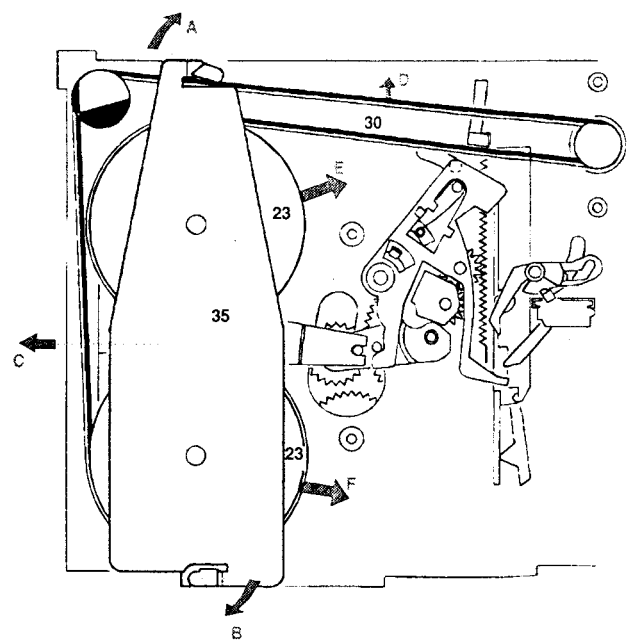


Fig. 5

SEGMENT 16, BRACKET 17, BEARING 70

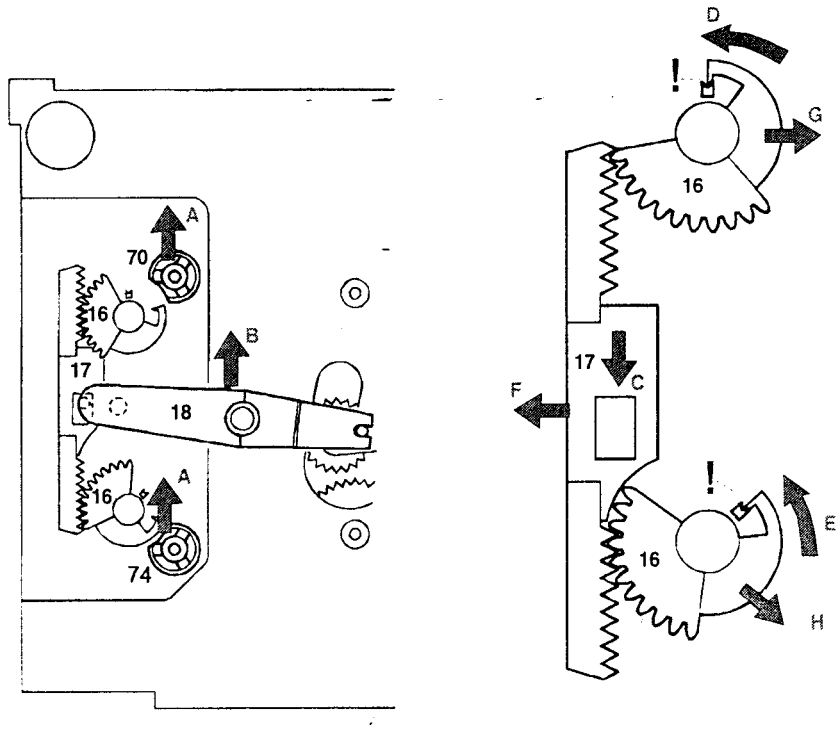


Fig. 6

SWITCH 26, SWIVEL GEAR 7, LEVER 20

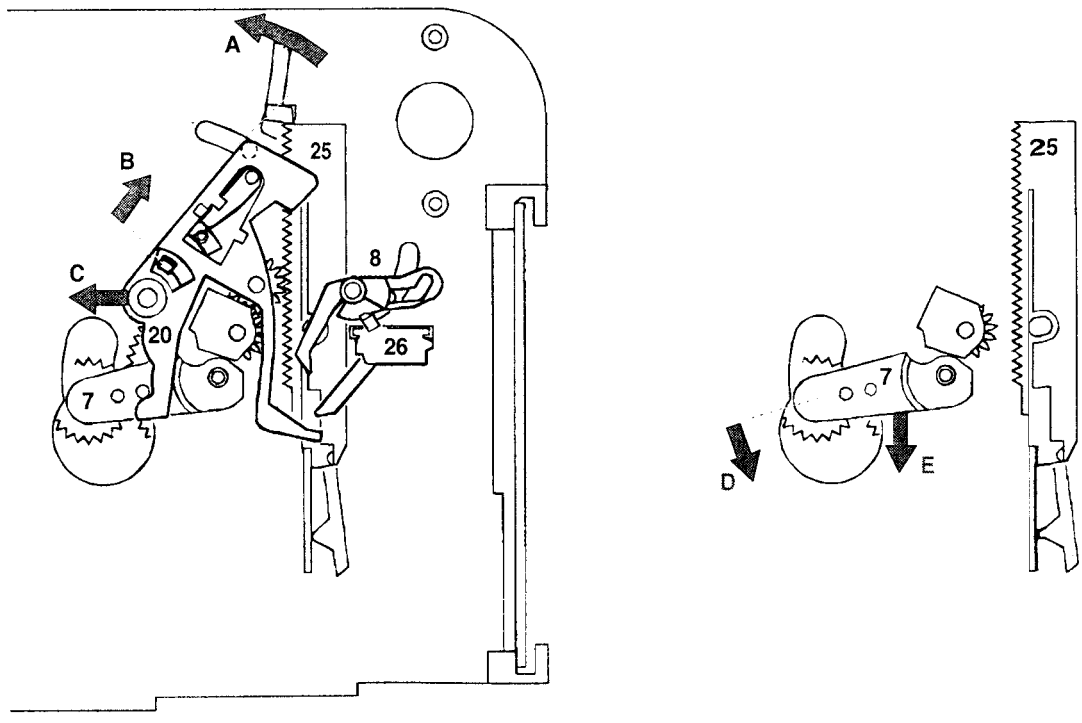


Fig. 7

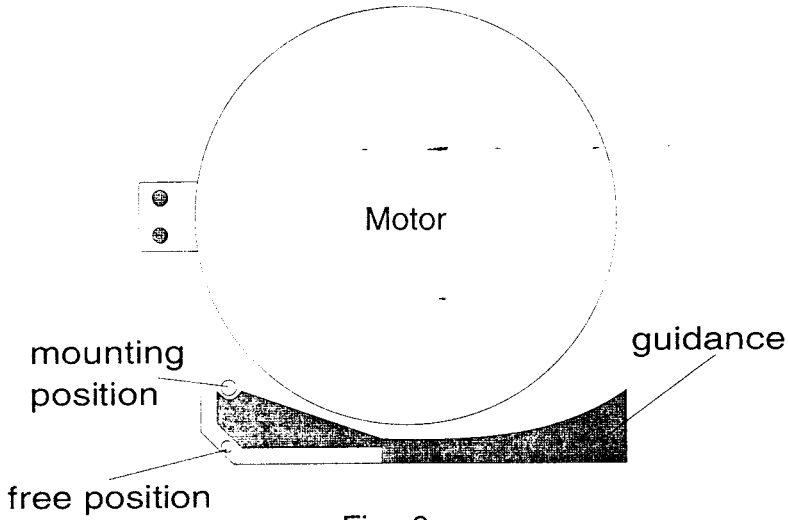
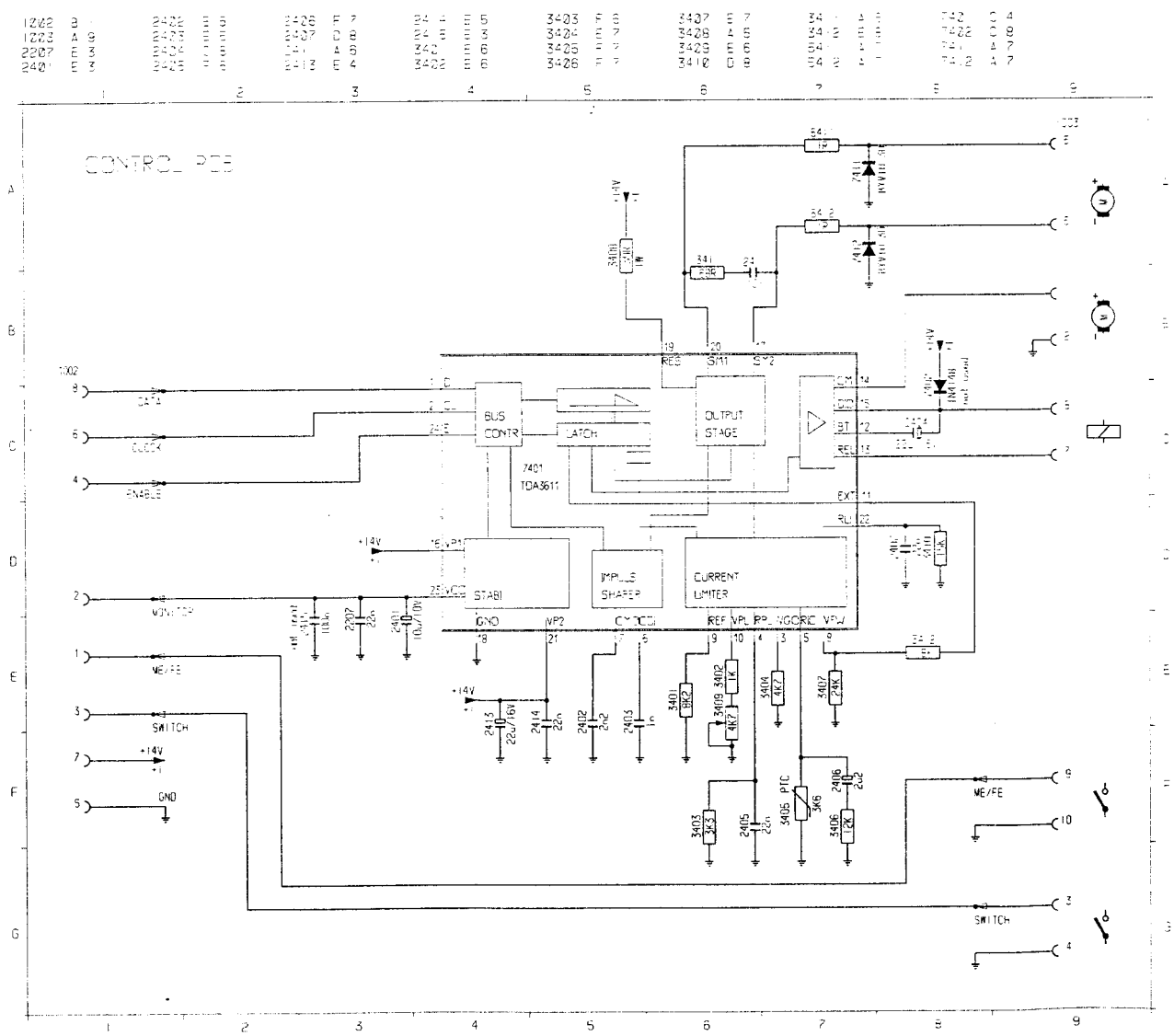

Motor
mounting
position
guidance
free position

Fig. 8


CONTROL PCB
BUS
CONTR
LATCH
OUTPUT
STAGE
7401
TDA3611
STABI
IMPULS
SHAPER
CURRENT
LIMITER
DATA
CLOCK
ENABLE
MONITOR
ME/FE
SWITCH
GND
+14V
ME/FE
SWITCH

MEASUREMENTS ON CONTROL PCB

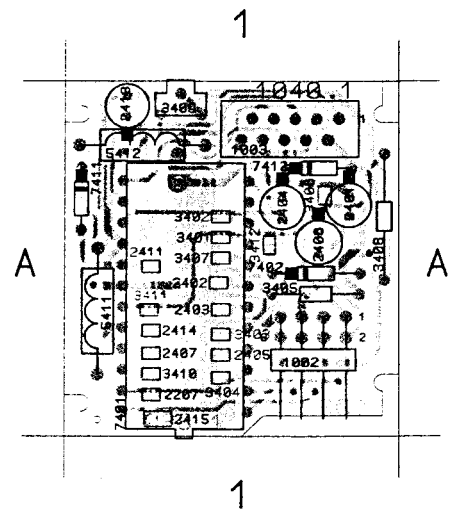
ME/FE: 0,0 V (FE) / 5,0 V (ME/CR)
ON/OFF: 0,0 V (ON) / 5,0 V (OFF)

Pos. 7401 TDA 3611

1: 5,0 V
2: 5,0 V
3: 0,7 V / 0,0 V (Sb)
4: 0,8 V (PN) / 0,9 V (PR) / 0,3 V (W) / 0,0 V (Sb)
5: 0,8 V (PN) / 1,0 V (PR) / 0,4 V (W) / 0,0 V (Sb) / 0,1 V (TA)
6: 0,8 V (PN) / 1,0 V (PR) / 0,4 V (W) / 0,0 V (Sb) / 0,1 V (TA)
7: 0,7 V (P) / 1,8 V (W) / 0,0 V (Sb) / 0,6 V (TA)
8: 3,4 V / 0,0 V (Sb)
9: 1,2 V / 0,0 V (Sb)
10: 0,5 V / 0,0 V (Sb)
11: 3,4 V / 0,0 V (Sb)
12: 12,0 V
13: 0,5 V / 12,0 V (Sb)
14: 0,0 V / 11,5 V (P)
15: 11,5 V / 12,0 V (Sb)
16: 12,0 V
17: 0,1 V (PN) / 2,4 V (PR) / 0,0 V (WN) / 12,0 V (WR) / 0,0 V (Sb)
18: GND
19: 12,0 V / 8,5 V (P)
20: 2,4 V (PN) / 0,1 V (PR) / 12,0 V (WN) / 0,0 V (WR) / 0,0 V (Sb)
21: 12,0 V
22: 3,6 V (P) / 1,3 V (W) / 0,0 V (Sb)
23: 5,0 V
24: 5,0 V
All values measured DC - GND

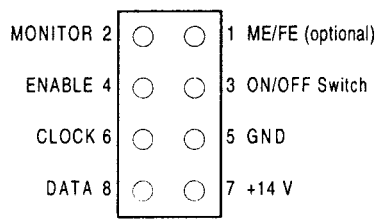
(P) = Play mode both directions
(W) = Wind mode both directions
(PN) = Play NOR direction
(PR) = Play REV direction
(WN) = Wind NOR direction
(WR) = Wind REV direction
(Sb) = Standby
(TA) = Traffic anouncement

1002 A 1 2413 A 1 3409 A 1
1003 A 1 2414 A 1 3410 A 1
2207 A 1 2415 A 1 3411 A 1
2401 A 1 3401 A 1 3412 A 1
2402 A 1 3402 A 1 5411 A 1
2403 A 1 3403 A 1 5412 A 1
2404 A 1 3404 A 1 7401 A 1
2405 A 1 3405 A 1 7402 A 1
2406 A 1 3406 A 1 7411 A 1
2407 A 1 3407 A 1 7412 A 1
2411 A 1 3408 A 1

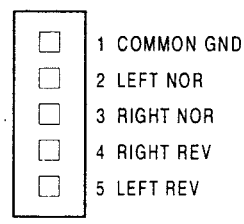


CONNECTORS

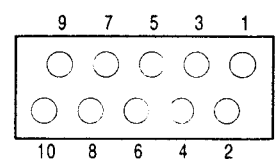
Control Connector
(View onto Radio-PCB)



Head Connector
(View onto Radio-PCB)

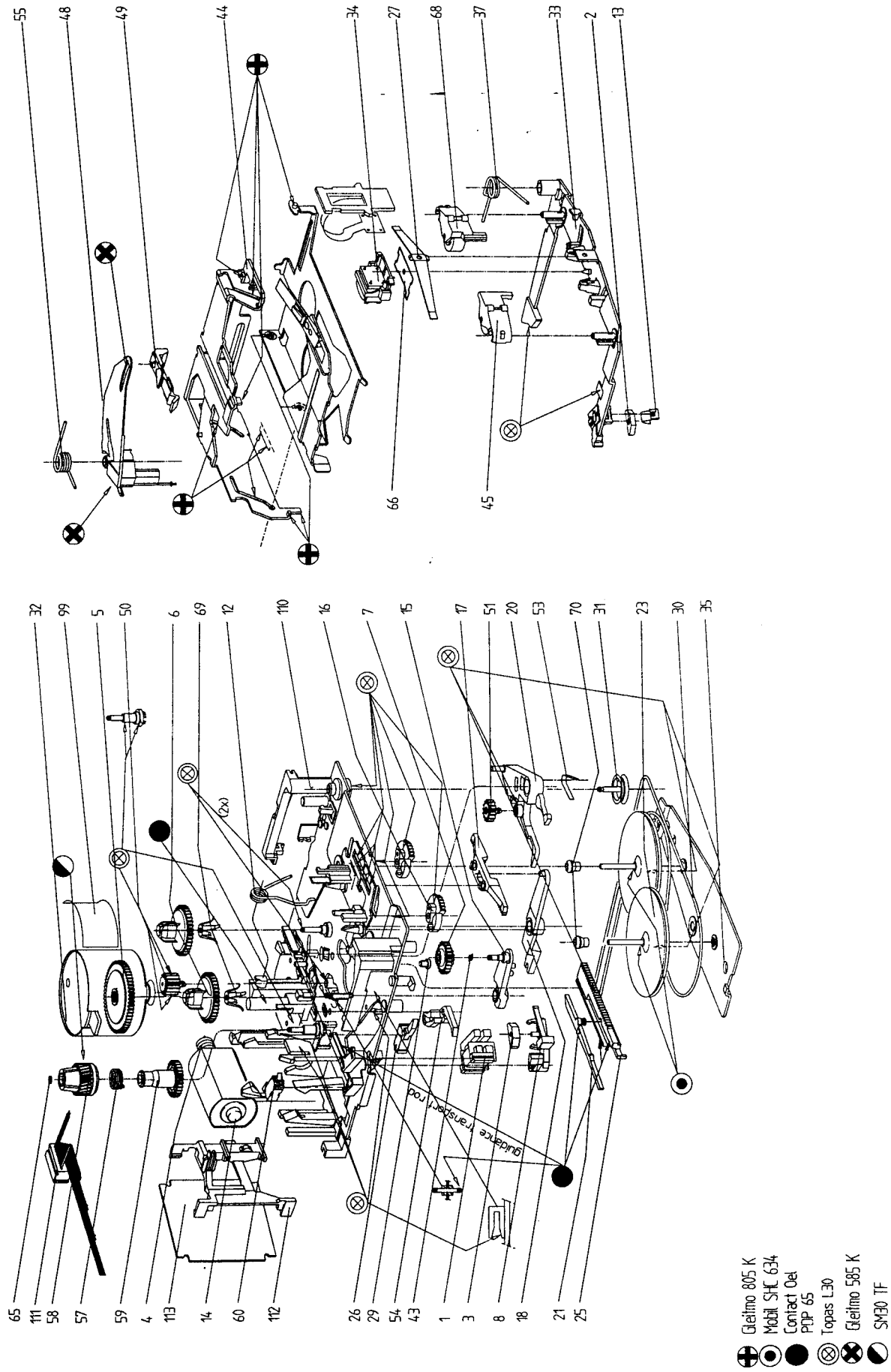


Deck Connector (Pos.1003)
(View onto Control-PCB)



1: Capstan +
2: Capstan -
3: ON/OFF Switch
4: GND
5: Servomotor +
6: Servomotor -
7: Magnet -
8: Magnet +
9: ME/FE Switch
10: GND

Front of Radio


55
48
49
44
34
27
68
37
33
2
13
66
45
32
99
5
50
6
69
12
110
16
7
15
17
51
20
53
70
31
23
30
35
(2x)
Guidance transport rod
65
111
58
57
59
4
113
14
60
112
26
29
54
43
1
3
8
18
21
25
Gleitmo 805 K
Mobil SHC 634
Contact Oel
PDP 65
Topas L30
Gleitmo 585 K
SM30 TF

MECHANICAL PARTS

1	4822 281 11051	DOUBLE
2	4822 404 21083	ANCHOR ON SUPPORT 33
3	4822 404 21084	ANCHOR IN HOLDER 8
5	4822 522 32868	WHEEL IDLER
6	4822 528 10776	CARRIER
7	4822 528 70658	ASSY
8	4822 404 21087	FOR ANCHOR 2
1	4822 492 70556	FOR ANCHOR 2
14	4822 361 30297	SERVO ASSY
16	4822 522 32869	NORMAL/REVERSE
17	4822 404 21089	DRIVING 16
20	4822 404 21086	ASSY SERVO GEARWHEEL
23	4822 528 81378	FLYWHEEL
26	4822 277 11215	ON/OFF
27	4822 492 70557	FOR PRES. ROLLER 45
29	4822 502 12548	FIX MOTOR 32
30	4822 358 31053	BELT, DRIVING
31	4822 528 81144	DIVERTING BELT
32	4822 361 30294	CAPSTAN
33	4822 404 21088	FOR HEAD,PRES.ROLLR
34	4822 249 30157	WITH FLEXPRINT
44	4822 466 82631	FOR CASSETTE
45	4822 528 81377	REVERSE
48	4822 404 21091	EJECT
49	4822 404 21092	HOLDING CASSETTE
50	4822 522 32871	COUPLING
59	4822 522 10435	ASSY
60	4822 277 11216	ME/CR
65	4822 532 52348	FOR CARRIER CLUTCH
68	4822 528 81449	NORMAL
69	4822 492 70926	UNDER CARRIER
70	4822 520 30539	FOR FLYWHEEL
111	4822 321 61954	CABLE, CONNECT
112	4822 256 92048	FOR PCB
113	4822 214 52077	PCB KOMPL.

ELECTRICAL PARTS

2207	5322 122 32654	22NF10%X7R 63V
2401	4822 124 22748	10UF 10V
2402	4822 122 33127	2,2NF10%X7R 63V
2403	4822 122 33178	1NF 20% X7R 50V
2404	4822 124 23279	22UF20% 16V
2405	5322 122 32654	22NF10%X7R 63V
2406	4822 124 41013	2,2UF 25V
2407	5322 122 32654	22NF10%X7R 63V
2411	4822 122 33177	10NF 20% X7R 50V
2413	4822 124 23279	22UF20% 16V
2414	5322 122 32654	22NF10%X7R 63V
3401	4822 051 20822	8K20 5% 0,1W
3402	4822 051 20102	1K00 5% 0,1W
3403	4822 051 20332	3K30 5% 0,1W
3404	4822 051 20472	4K70 5% 0,1W
3405	4822 116 40241	3K6 PTC
3406	4822 051 20123	12K00 5% 0,1W
3407	4822 051 20243	24K00 5% 0,1W
3408	4822 053 10399	39R00 5% 1W
3409	5322 101 11014	5K POTMETER
3410	4822 051 20153	15K00 5% 0,1W
3411	4822 051 20689	68R00 5% 0,1W
3412	4822 051 20183	18K00 5% 0,1W
5411	4822 050 21008	1R00 1% 0,6W
5412	4822 050 21008	1R00 1% 0,6W
7401	4822 209 32207	TDA3611
7411	4822 130 32911	BYV10-30
7412	4822 130 32911	BYV10-30

AIDS AND TOOLS

100	4822 390 10107	ISOFLEX PDP65
101	4822 390 20128	TOPAS L30
103	4822 390 10123	MOBIL OIL SHC 634
104	4822 390 20027	GLEITMO 805K
105	4822 390 20128	L30 TF
107	4822 390 20139	GLEITMO 585K