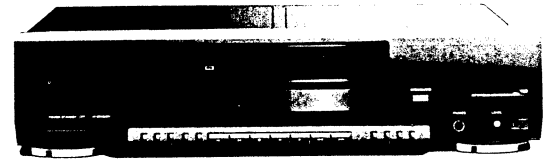


Service



Service Manual

For the apparatus CD951/00S/01S/06S/13S, we refer to Service Manual 4822 725 24007 of CD950/00S.
Differences: IR SENSOR switch SK-2 has been integrated in ESI BUS sockets 1704 and 1705.
Fast search has been added, Audio specifications have been improved and lay-out of main panel has been changed.

The following mechanical parts are different:

ITEM 1	4822 444 40551	ALU FRONT /00S/01S/06S
	4822 444 40629	ALU FRONT /13S
ITEM 13	4822 444 40549	FRONT /00S/01S/06S
	4822 444 40739	FRONT /13S
ITEM 71	4822 444 30482	TRAY FRONT
ITEM 283	4822 532 60948	CORD BUSHING /00S
	4822 325 60329	CORD BUSHING /01S/06S/13S
ITEM 300	4822 321 10809	MAINS CORD /00S
	4822 321 10845	MAINS CORD /01S
ITEM 304	4822 321 10917	MAINS CORD /13S
ITEM 305	4822 321 10919	MAINS CORD /06S
ITEM 306	4822 263 50179	SOCKET ADAPTER MAINS /13S
ITEM 340	4822 736 21961	INSTRUCTIONS FOR USE /00S
	4822 736 22031	INSTRUCTIONS FOR USE /01S
	4822 736 22029	INSTRUCTIONS FOR USE /06S
	4822 736 21961	INSTRUCTIONS FOR USE /13S

For difference of electrical parts, see modified circuit diagrams, Main Panel drawing and electrical parts list.

Power supply: changed: D6543, D6544.
Servo: added: R3069,3070,3071; IC7005; T7088.(fast search)
Decoder: R3110,3111,3112,3113,3114,3115,3221,3222,3223,3224,3225 changed into wire bridge.
added: C2205,2216,2217; R3217,3226,3227.
changed: IC7202,7203,7204,7211.
Audio: deleted: SK-2.
added: C2256; R3253,3732; socket 1705(BU-3).
changed: sockets 1201(BU-4),1301(BU-2),1704(BU-3), IC 7302,7303.
General: All elcaps of 33 μ F 16V are changed into 47 μ F.

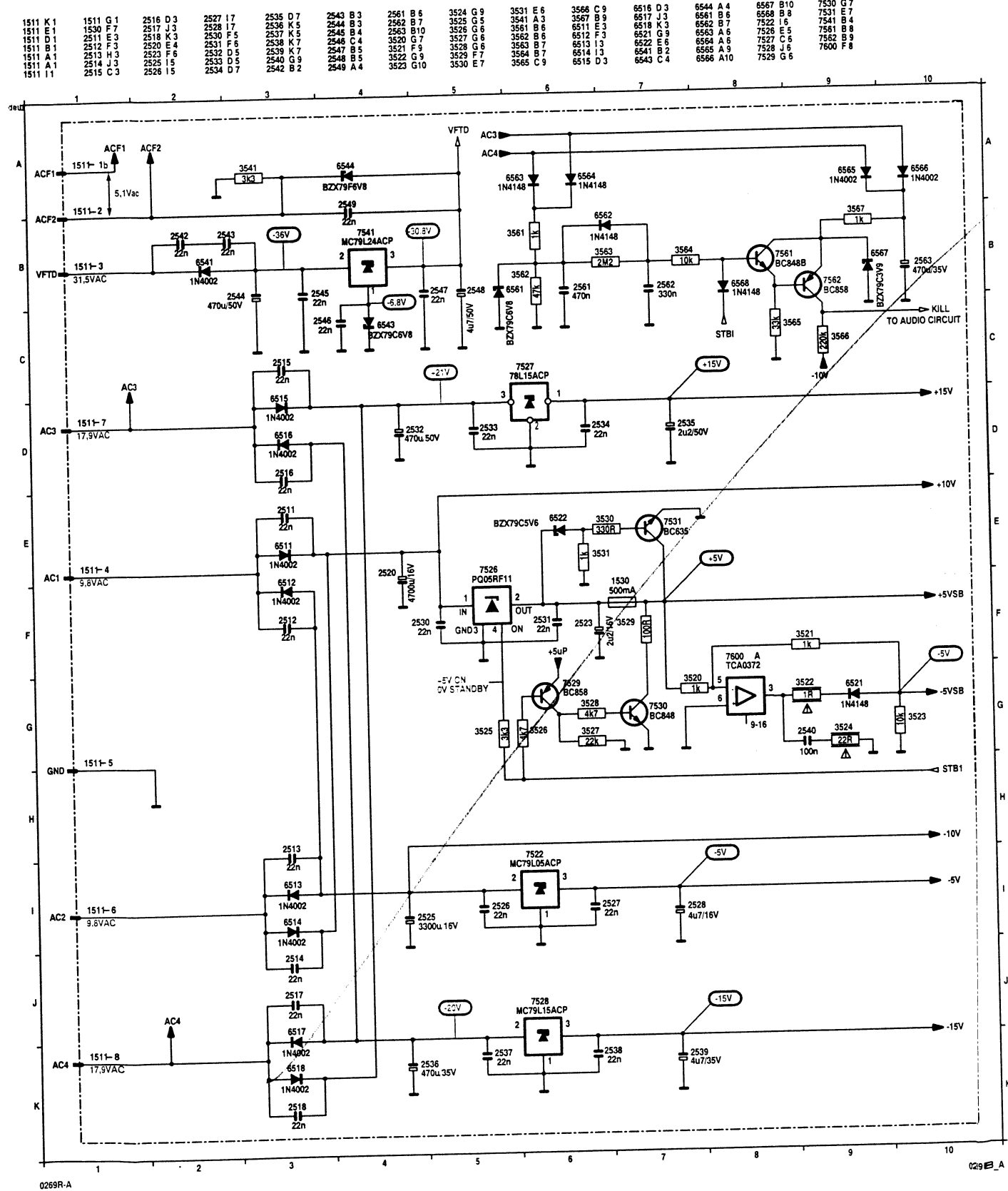
4822 725 24055



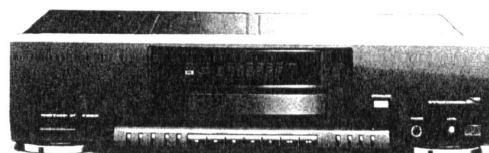
PHILIPS

PCS 60 652

POWER SUPPLY CD951



Service
Service
Service



Service Manual

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4822 725 24007



PHILIPS

PCS 60 130

TECHNICAL SPECIFICATIONS

General

1. Mains voltage	/00S	:	230V (+6 -10%)
	/05S/10S	:	240V ($\pm 10\%$)
	/17S	:	117V ($\pm 10\%$)
2. Mains frequency		:	50-60 Hz
3. Mains voltage selection		:	See circuit diagram Power Supply
4. Power consumption mains, operated		:	10W

External RC-5 connection

Specification: V-in Low	:	from -2,0V to +1.6V
V-in High	:	from +3V to +7,5V
R-in	:	from 47k Ω to 68k Ω

Line output

1. Number of channels	:	2
2. Output voltage	:	2 V _{rms} $\pm$ 1.5dB
3. Unbalance left-right	:	max. 0,2dB
4. Output resistance	:	200 Ω
5. Amplitude linearity	:	max. $\pm$ 0,2dB from 20 Hz to 20 kHz
6. Phase non-linearity	:	max. $\pm$ 1,5° from 20 Hz to 20 kHz
7. Signal to noise ratio	:	min. 105dB from 20 Hz to 20 kHz
8. Dynamic range (-60dB)	:	min. 92dB from 20 Hz to 20 kHz
9. Total harmonic distortion + noise	:	min. 90dB from 20 Hz to 20 kHz
10. Intermodulation distortion	:	min. 90dB from 20 Hz to 20 kHz
11. Out-band attenuation	:	min. 55dB (above 24,2 kHz)
12. Channel separation	:	min. 105dB (1 kHz)
13. Automatic switched de-emphasis with time constants	:	15/50 μ s
14. Non-linearity on -90dB	:	$\pm$ 1dB

Variable headphone

1. Output voltage	:	max. 5 V _{rms} $\pm$ 2dB
2. Unbalance left-right	:	max. $\pm$ 0,6dB
3. Output resistance	:	120 Ω
4. Load impedance range	:	32 Ω to 600 Ω load
5. Output power	:	0 to 50 mW into 30 Ω load
	:	0 to 90 mW into 120 Ω load
	:	0 to 50 mW into 600 Ω load

Audio specs in case of 600 Ω load at 4 V_{rms} voltage output

6. Signal to noise ratio	:	min 95 dB
7. Dynamic range	:	min 90 dB (20 Hz - 20 kHz)
8. Total harmonic distortion	:	min 88 dB (20 Hz - 20 kHz)
9. Intermodulation distortion	:	min 88 dB (20 Hz - 20 kHz)
10. Channel separation	:	min 70 dB (1 kHz)
	:	min 65 dB (31,5 Hz - 16 kHz)

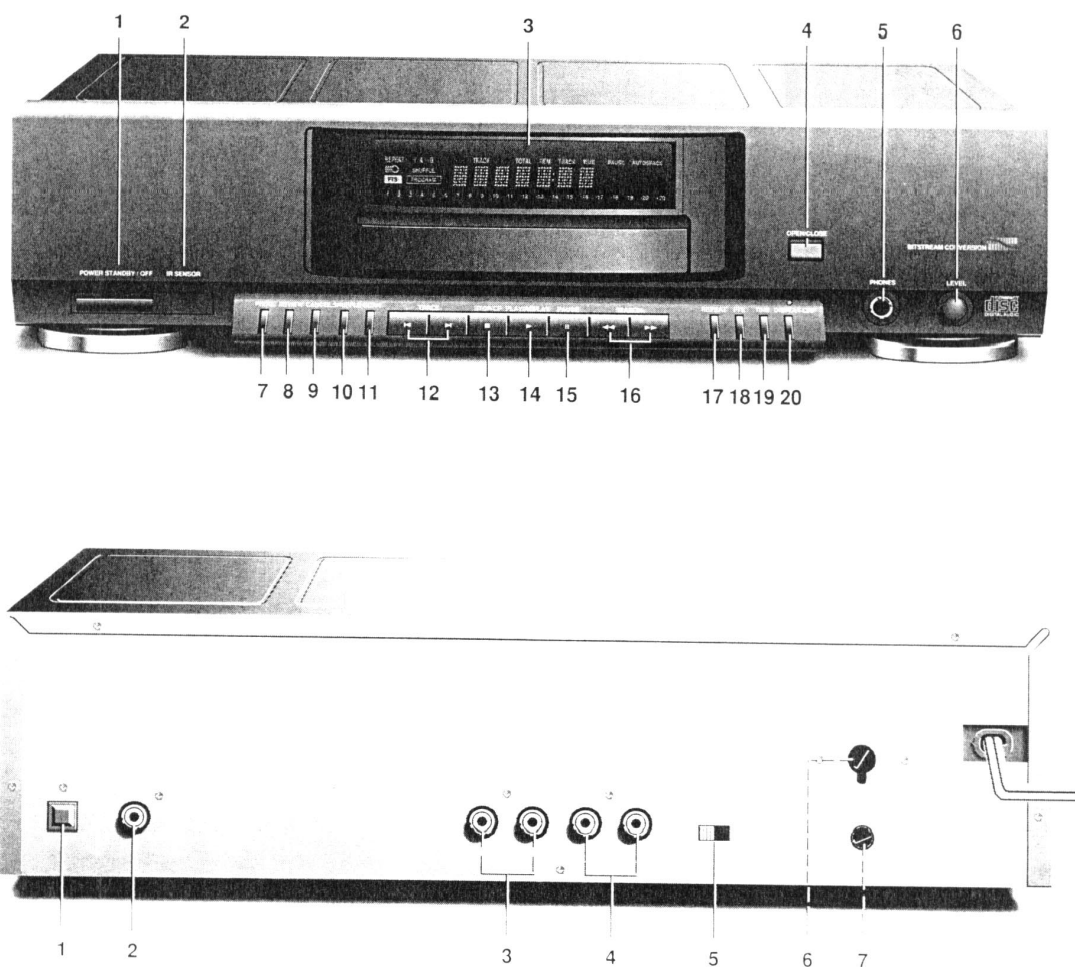
Dimensions and weight

1. Apparatus tray closed	:	WxDxH 435 x 300 x 90/106 mm
2. Apparatus tray open	:	WxDxH 435 x 445 x 90/106 mm
3. Weight	:	4 kg

Optical read-out system

1. Laser type	:	Semiconductor AlGaAs
2. Wavelength	:	780 nm $\pm$ 20 nm
3. Light output (c.w.)	:	max. 0,5 mW

CONTROLS & CONNECTIONS



CONTROLS

Indication
on App.Indication
in diagram

1. POWER STANDBY/OFF	SK-1
2. I(nfra)R(ed)SENSOR	1451
3. Display	1402
3. OPEN/CLOSE	1426
5. PHONES	BU-5
6. LEVEL	3381
7. PROG(ram)	1413
8. REVIEW	1411
9. CANCEL	1410
10. SHUFFLE	1412
11. SCAN	1416
12. < TRACK >	1414 1415
13. STOP/CP	1417
14. PLAY/REPLAY	1421
15. PAUSE	1420
16. << SEARCH >>	1419 1418
17. REPEAT	1422
18. FTS	1425
19. TIME	1424
20. DISPLAY OFF	1423

CONNECTIONS

Indication
on App.Indication
in diagram

1. DIGITAL OUT OPTICAL	BU-6
2. DIGITAL OUT	BU-4
3. ANALOG OUT	BU-2
4. ESI BUS	BU-3
5. IR SENSOR OFF ON	SK-2
6. Voltage selector(not all versions)	
7. Mains fuse holder(not all versions)	

GB 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.

ESD**NL WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilier le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio identici a quelli specificati.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

S Varning!

Osynlig laserstrålning när apparaten är öppnad och spärrenär urkopplad.
Betrakta ej strålen.

SF Varo!

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Adversel!

Usynlig laserstråling ved åbning. Undgå unsættelse for stråling.

DANGER

Invisible laser radiation when open.
Avoid direct exposure to beam

CAUTION

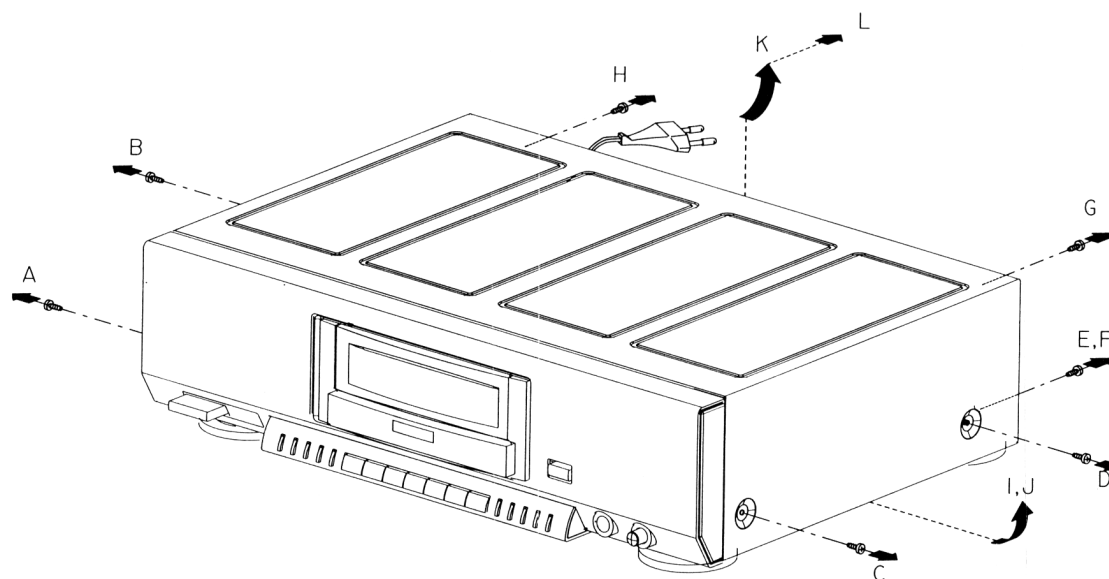
Invisible laser radiation when open.
Avoid exposure to beam.

DISMANTLING INSTRUCTIONS

DEMOUNTING OF COVER

5

6

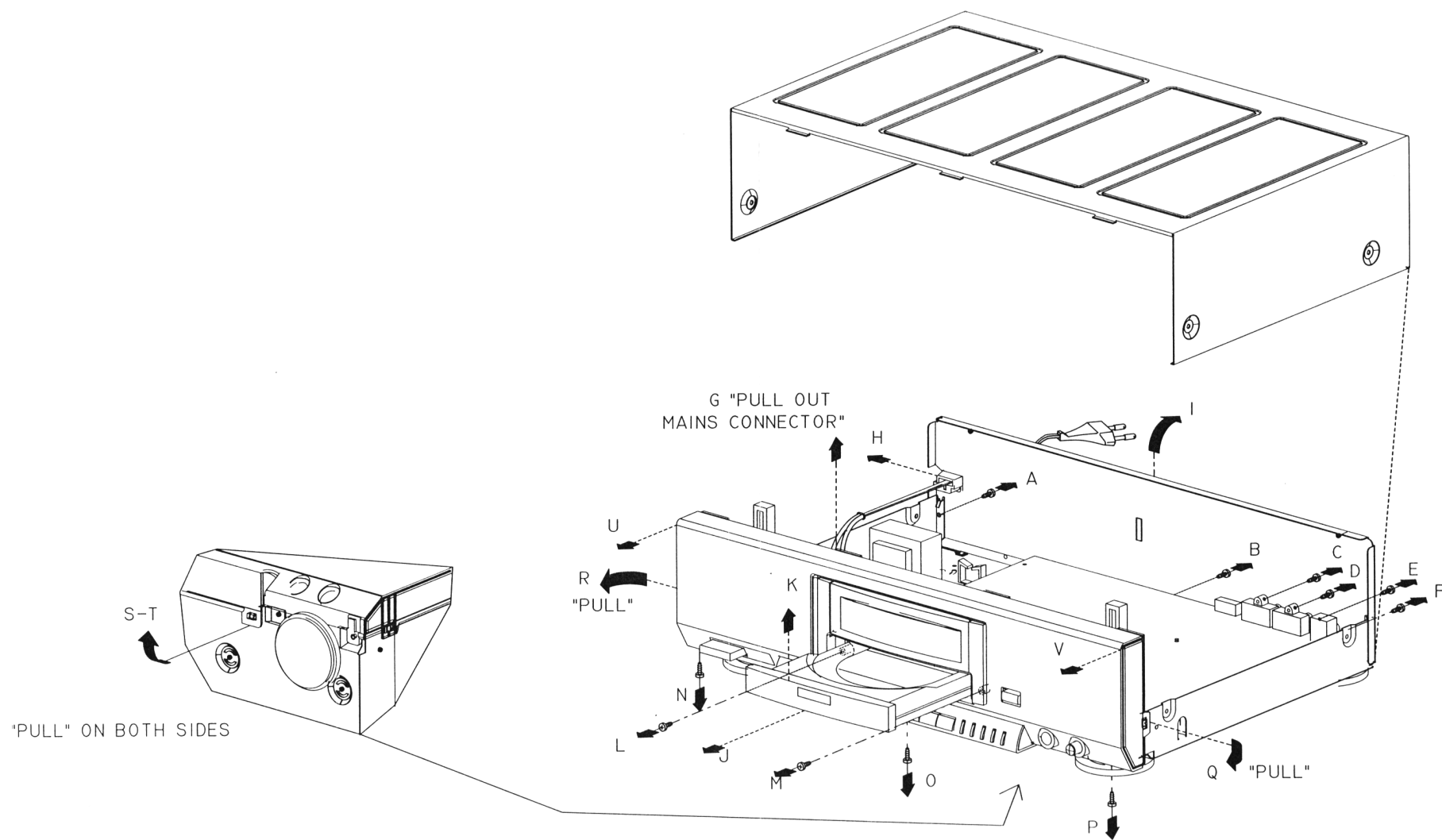


HAS 1050

DEMOUNTING OF BACKPLATE AND FRONT

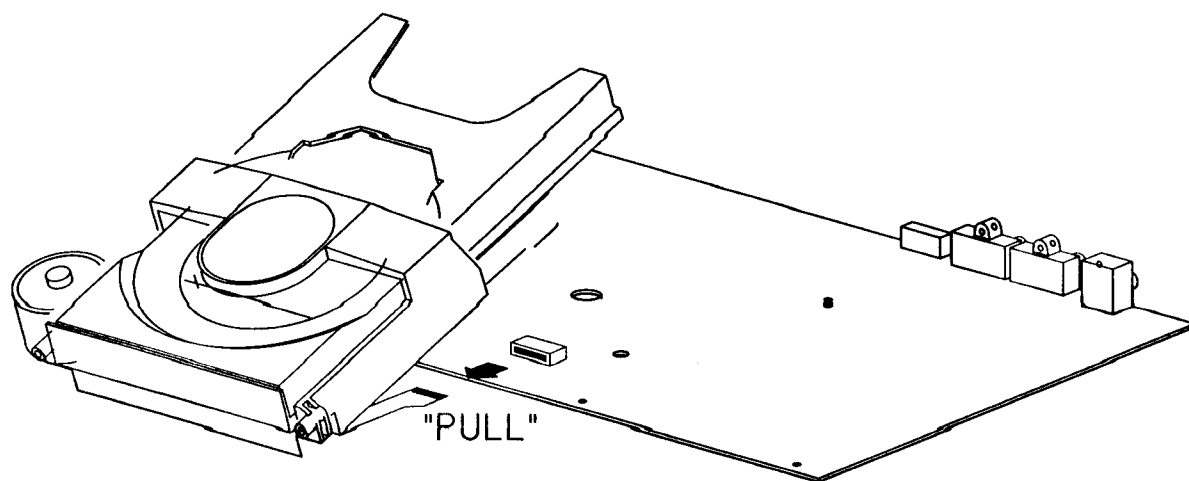
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8



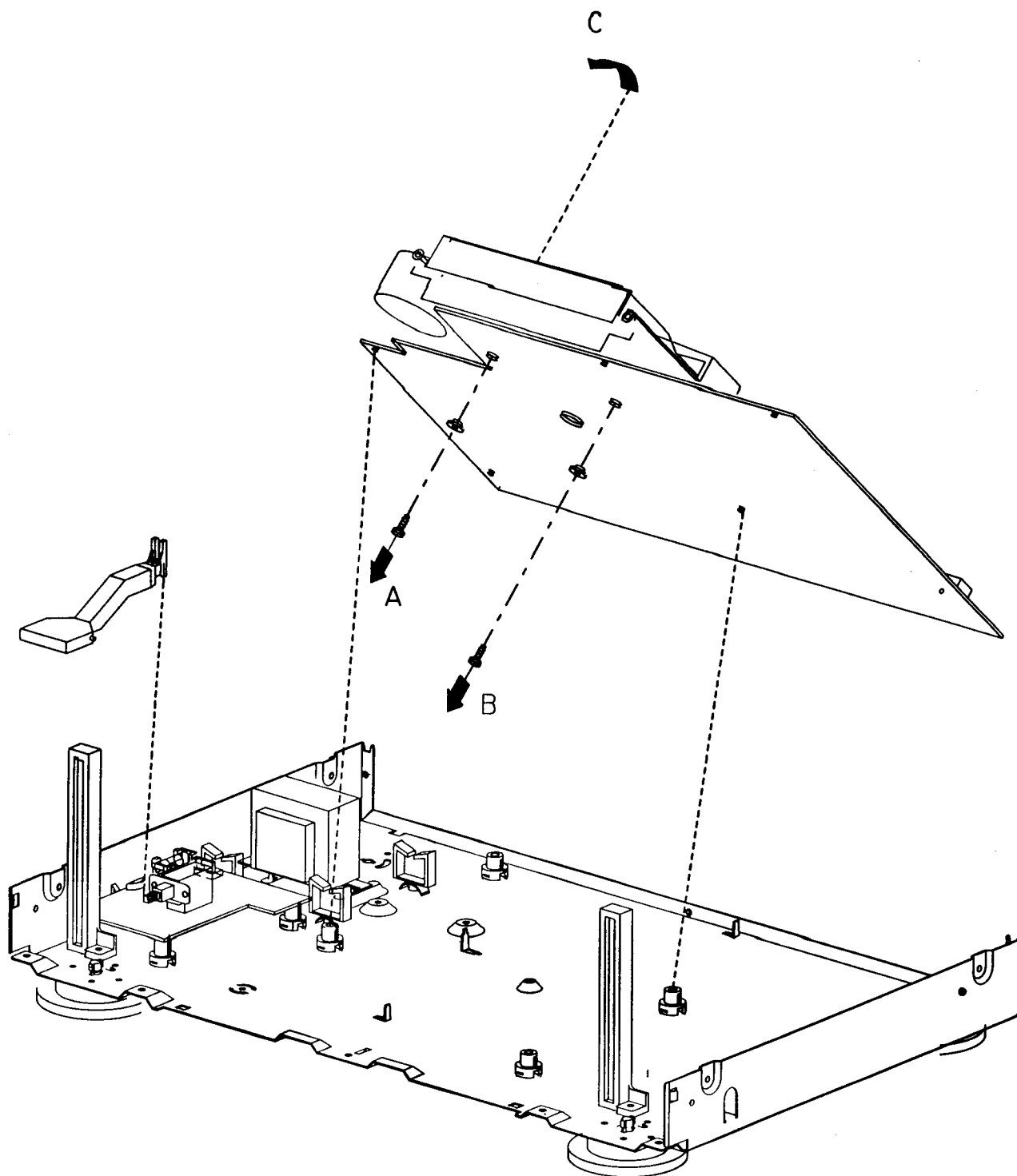
HAS 1051

REMOVING FLEX FROM CONNECTOR



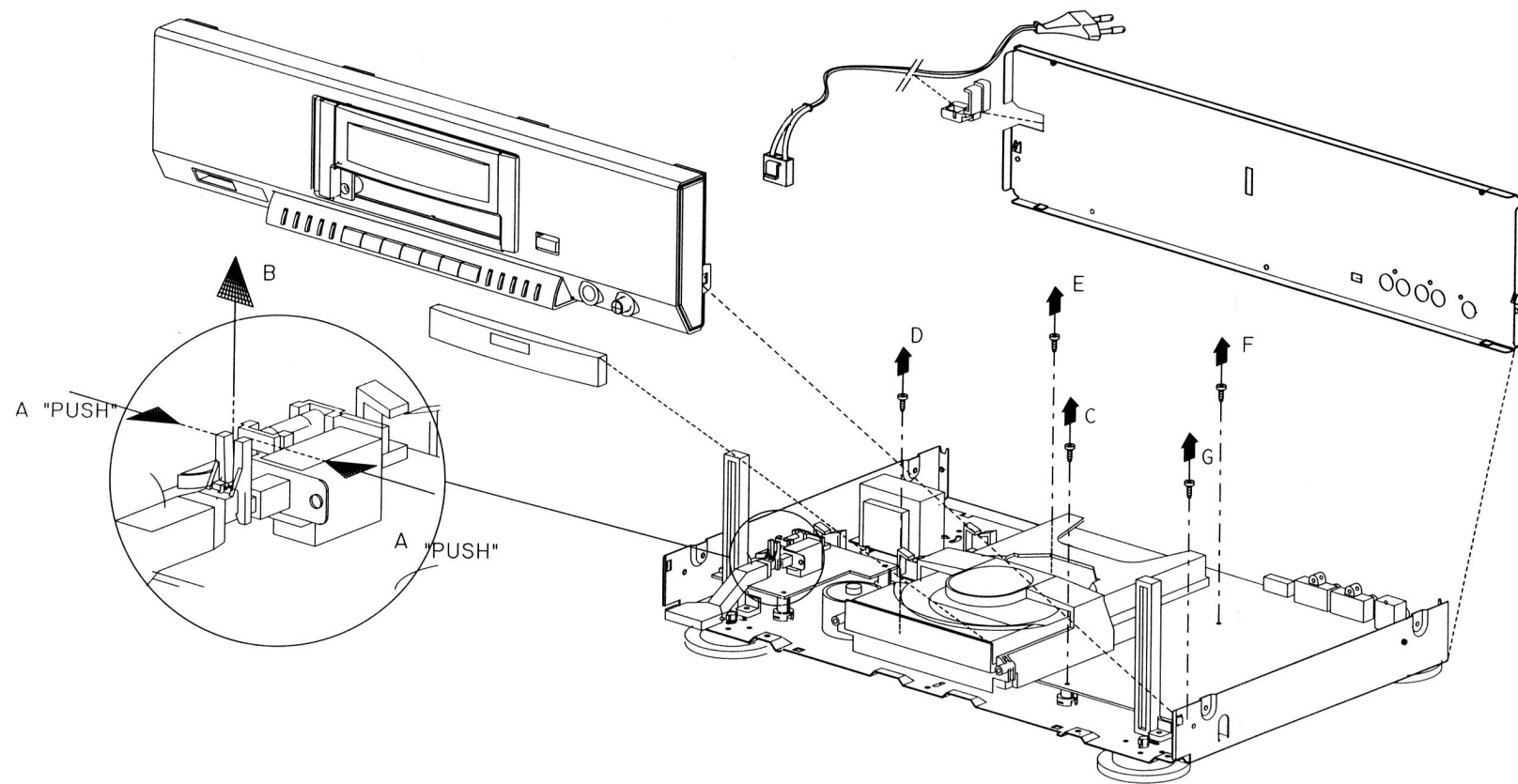
HAS.1054

DEMOUNTING OF LOADER



HAS.1053

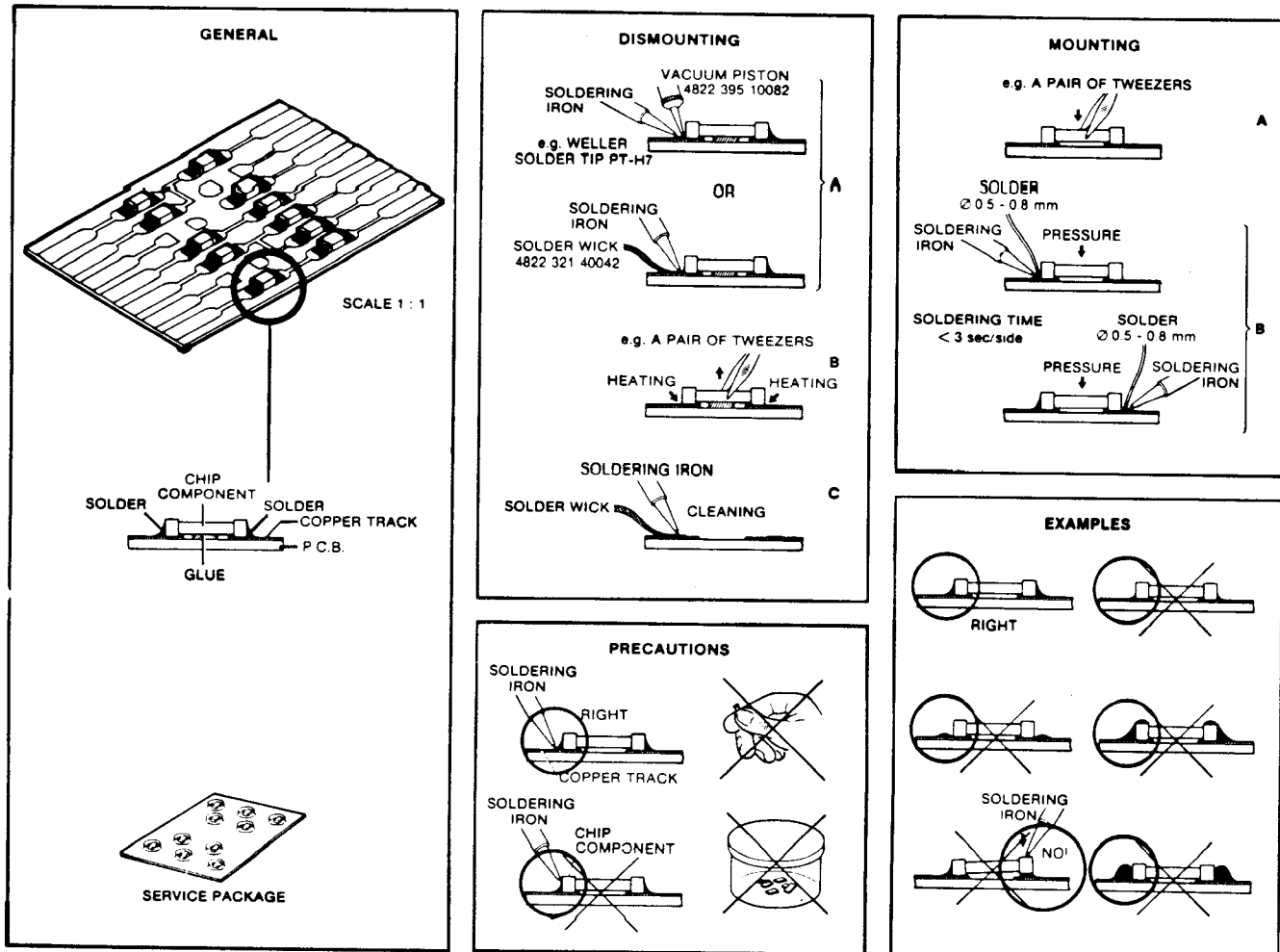
DEMOUNTING OF POWERROD AND MONOBOARD



HAS.1052

SERVICING HINTS

In the set chip components have been applied. For disassembly and assembly of chip components see the figure below.



27 012C12

SERVICE TOOLS

Audio signal disc
 Disc without errors (test disc 5) +
 disc with DO errors,
 black spots and fingerprints (test
 disc 5A
 Disc (65 min 1kHz) without pause
 Max. diameter disc (58.0 mm)
 Torx screwdrivers
 Set (straight)
 Set (square)
 13th order filter
 Service cable (4p)
 Service flexfoil (14p)
 Service connector (14p)
 Green LED CQY G11
 Infra red remote control e.g.

4822 397 30184

4822 397 30096

4822 397 30155

4822 397 60141

4822 395 50145

4822 395 50132

4822 395 30204

4822 321 21284

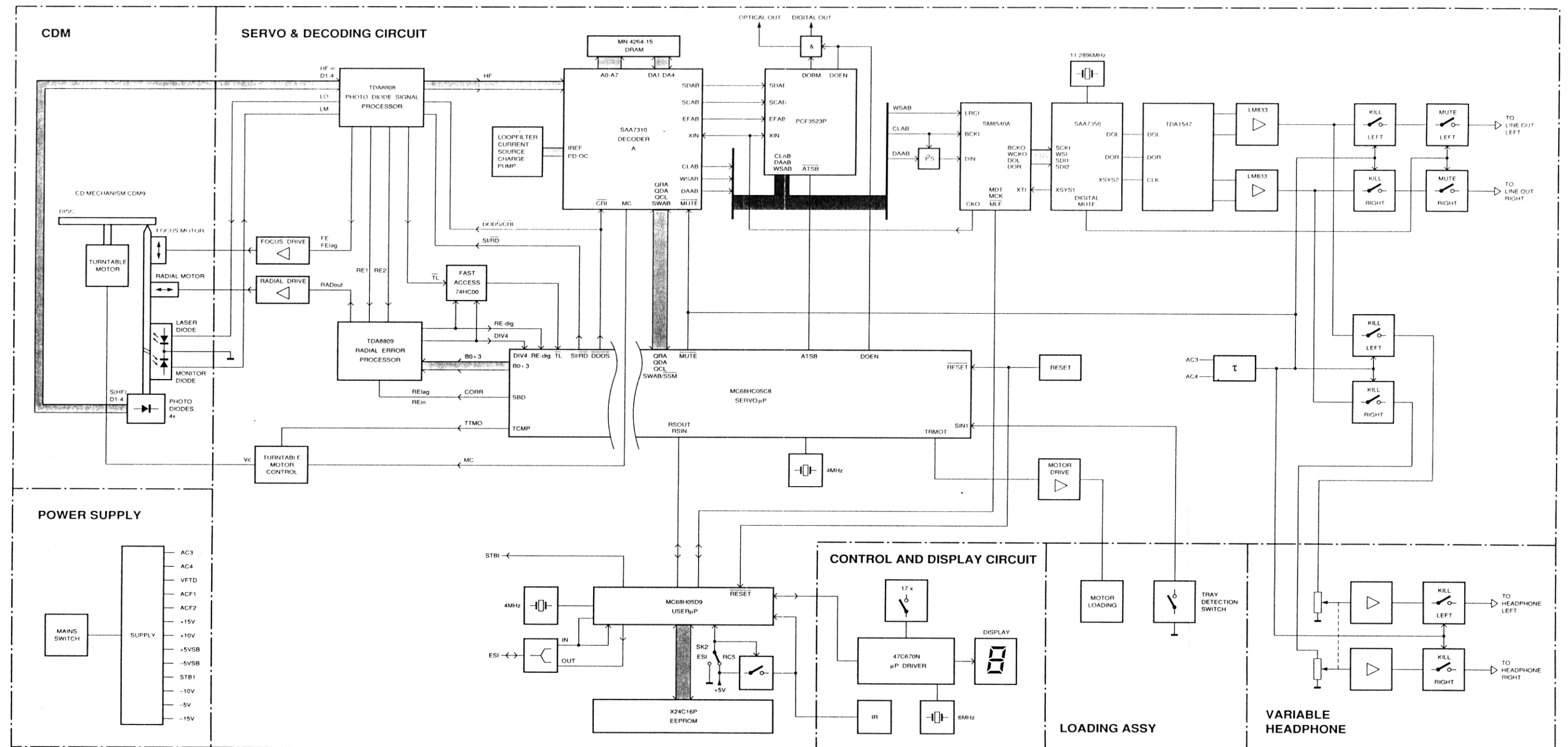
4822 322 40066

4822 267 50676

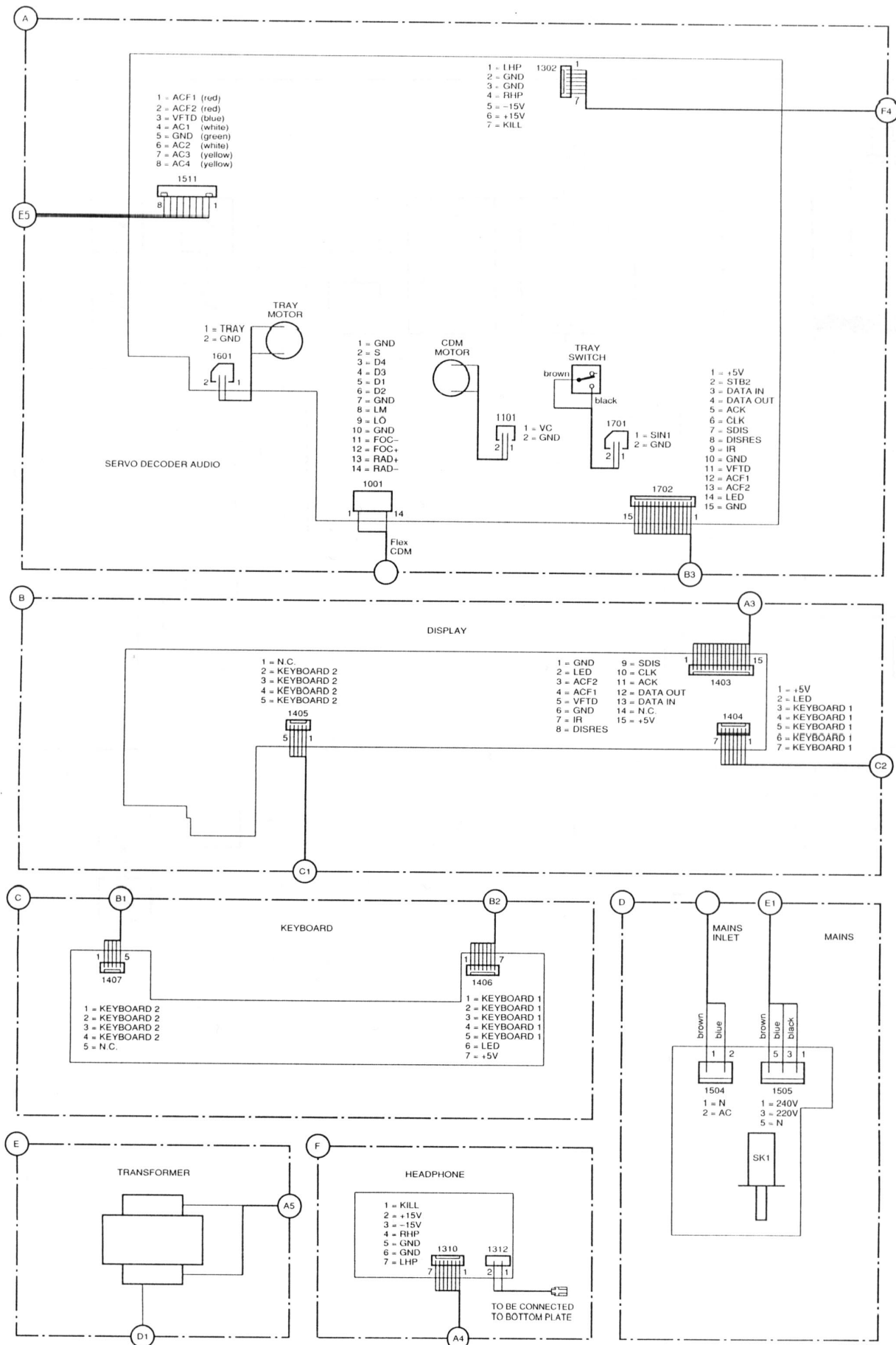
5322 130 32182

4822 218 10324

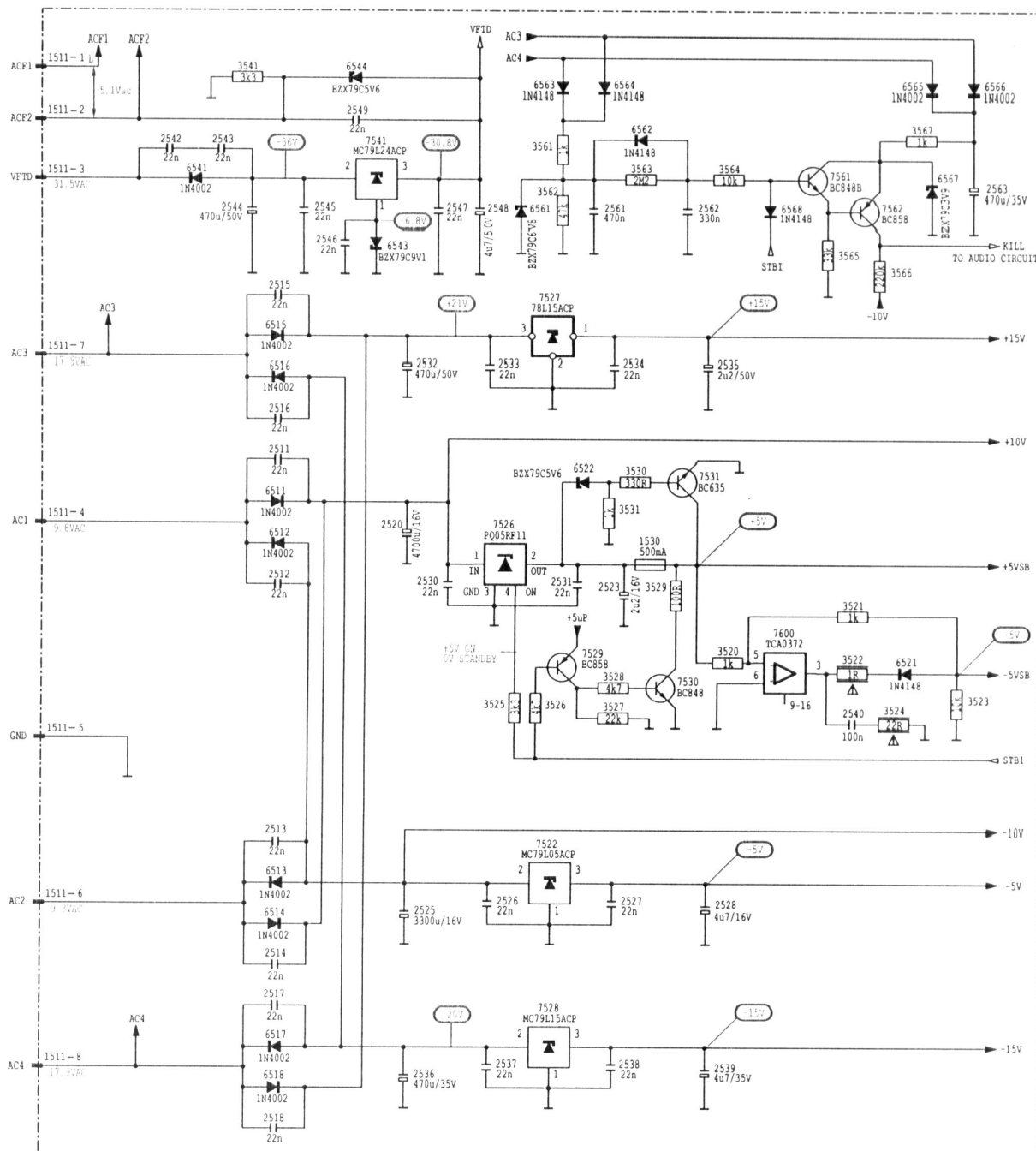
<u>AGC</u>	- Automatic Gain Control	<u>OUTDL</u>	- Output from the left positive switched capacitor DAC; feedback connection for the left positive OPAMP
<u>AM</u>	- Additional mute	<u>OUTDNL</u>	- Output from the left negative switched capacitor DAC; feedback connection for the left negative OPAMP
<u>ATSB</u>	- Attenuation of Audio level in Search position	<u>OUTDR</u>	- Output from the right positive switched capacitor DAC; feedback connection for the right positive OPAMP
<u>ATT</u>	- Attenuation	<u>OUTDNR</u>	- Output from the right negative switched capacitor DAC; feedback connection for the right negative OPAMP
<u>B0-B3</u>	- Control bits for radial circuit	<u>OUTOPAL</u>	- +Output of the switched capacitor OPAMP
<u>BEQ</u>	- Equalizer reference current input	<u>OUTNOPAL</u>	- -Output of the switched capacitor OPAMP
<u>BCKI</u>	- Input data bit clock	<u>OUTOPAR</u>	- +Output of the switched capacitor OPAMP
<u>BCKO</u>	- Output data bit clock	<u>OUTNOPAR</u>	- -Output of the switched capacitor OPAMP
<u>BGC</u>	- DC and LF gain control reference input	<u>PD/OC</u>	- Phase detector - oscillator control
<u>BSW</u>	- Bandwidth switch turntable motor circuit	<u>PLLH</u>	- PLL on hold reset
<u>CD ROM</u>	- Digital Data information in disc signal switch	<u>QCL</u>	- Q-channel clock signal
<u>CEFM</u>	- Clock Eight-to-Fourteen Modulator	<u>QQDA</u>	- Q-channel data signal
<u>CKO</u>	- Oscillator output clock	<u>QRA</u>	- Q-channel request acknowledge
<u>CKSL</u>	- Clock frequency	<u>RADout</u>	- Output of RE2-RE1 input
<u>CLAB</u>	- Clock signal Detector-A to Filter-B	<u>RE</u>	- Radial error signal (Amplified RE2-RE1 currents)
<u>CLBD</u>	- Clock signal Filter-B to DAC	<u>Rosc</u>	- Resistor wobble oscillator
<u>CLI</u>	- I ² S serial bit clock input	<u>Rwob</u>	- Wobble generator input
<u>CORR</u>	- 1/2 bit DAC	<u>RE1</u>	- Radial error signal 1
<u>Cosc1</u>	- Capacitor wobble oscillator	<u>RE2</u>	- Radial error signal 2
<u>Cosc2</u>	- Capacitor wobble oscillator	<u>RE dig</u>	- Radial error digital
<u>CREF</u>	- Reference current	<u>RE lag</u>	- Radial error signal for LAG network
<u>CRI</u>	- Counter Reset Inhibit	<u>RST</u>	- Device reset
<u>DAAB</u>	- Data signal Decoder-A to Filter-B	<u>SBD</u>	- Single Bit Deviation correction
<u>DABD</u>	- Data signal Filter-B to DAC	<u>Sc</u>	- Starting up capacitor input
<u>DAI</u>	- I ² S serial data input	<u>SCAB</u>	- Subcode clock Decoder-A to Filter-B
<u>DAO</u>	- I ² S serial data output	<u>SCKI</u>	- Bit clock input for serial input interface
<u>DEC</u>	- Decoupling input internal bypass	<u>SDAB</u>	- Subcode data Decoder-A to Filter-B
<u>DEEM</u>	- Deemphasis	<u>SDI1-2</u>	- Serial data input
<u>DET</u>	- HF detector voltage input	<u>SIN</u>	- Tray switch
<u>DIN</u>	- Input data	<u>Si/RD</u>	- On/off control for laser supply and focus circuit. Ready signal. Starting up procedure succesfull
<u>DIV4</u>	- Divide by 4 input	<u>SWAB/SSM</u>	- Subcode word/start-stop motor signal
<u>DMUTE</u>	- Digital mute	<u>TL</u>	- Track loss output signal
<u>DOBM</u>	- Digital out signal	<u>TRMOT</u>	- Tray motor drive
<u>DOEN</u>	- Digital out enable	<u>TTM+</u>	- Control voltage for turntable motor
<u>DODS</u>	- Drop out detector suppression	<u>TTM-</u>	- Control voltage for turntable motor
<u>D1-4</u>	- Photodiode currents	<u>TTMO</u>	- Motor offset and bandwidth switch
<u>DOL</u>	- Left channel data output	<u>VDACL-R</u>	- Reference voltage supply left(right) channel DAC
<u>DOR</u>	- Right channel data output	<u>Vext+</u>	- Supply connection
<u>EFAB</u>	- Error flag Decoder-A to Filter-B	<u>Vext-</u>	- Supply connection
<u>FBL+ -</u>	- Feedback for left positive (negative) switched capacitor integrator	<u>VRCL-R</u>	- High impedance voltage refence for left (right) channel inputs
<u>FBR+ -</u>	- Feedback for right positive (negative) switched capacitor integrator	<u>VROL-R</u>	- Left (right) channel voltage reference output
<u>FE</u>	- Focus error signal	<u>WCKO</u>	- Output word clock
<u>FE lag</u>	- Focus error signal for LAG network	<u>WSAB</u>	- Word select Decoder-A to Filter-B
<u>HF</u>	- HF output for DEMOD	<u>WSBD</u>	- Word select Filter-B to DAC
<u>HFD</u>	- HF detector output for DEMOD	<u>WSI</u>	- I ² S word select input
<u>HF-in</u>	- HF current input to HF amplifier	<u>WSO</u>	- I ² S word select output
<u>HF-out</u>	- HF amplifier and equalizer voltage output	<u>XIN</u>	- Oscillator signal input
<u>IDF1-3</u>	- Input data format	<u>XOUT</u>	- Oscillator output
<u>INTL+ -</u>	- Output from left positive (negative) switched capacitor integrator	<u>XSEL</u>	- Crystal frequency select
<u>INTR+ -</u>	- Output from right positive (negative) switched capacitor integrator	<u>XSYS</u>	- Oscillator signal
<u>LM</u>	- Laser monitor diode input	<u>XTI</u>	- Crystal oscillator input
<u>LO</u>	- Laser amplifier current output	<u>XTO</u>	- Crystal oscillator output
<u>LRCI</u>	- Input data word clock		
<u>MC</u>	- Motor control signal		
<u>MCES</u>	- Motor speed control		
<u>MCK</u>	- Mode set bit clock		
<u>MDT</u>	- Mode set serial data input		
<u>MLE</u>	- Mode set latch enable		
<u>MUSB</u>	- Soft mute signal		
<u>MUTE</u>	- Mute signal		



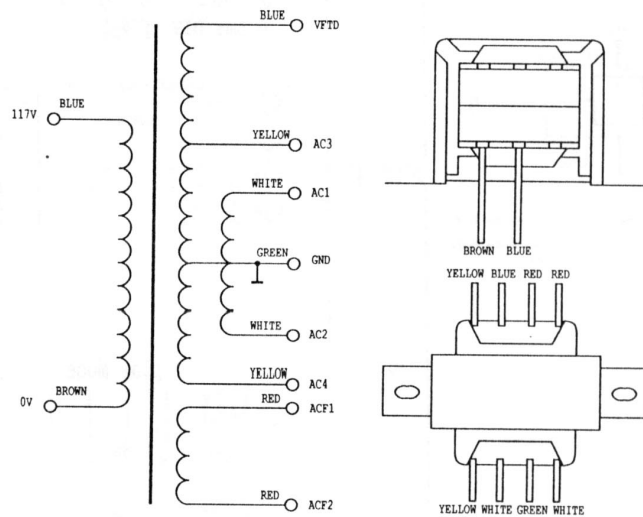
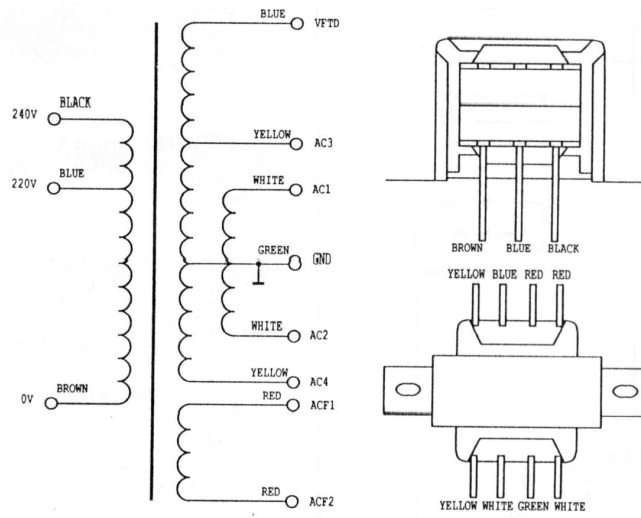
WIRING DIAGRAM



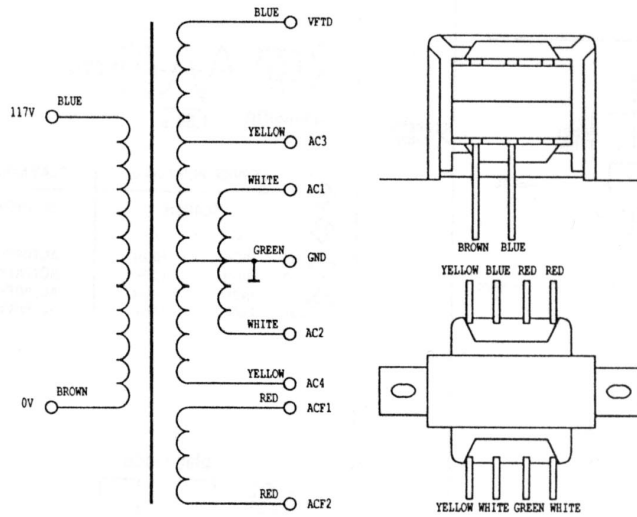
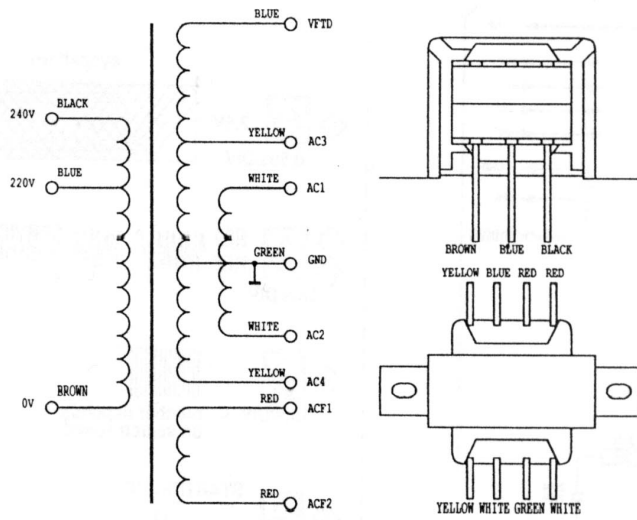
POWER SUPPLY



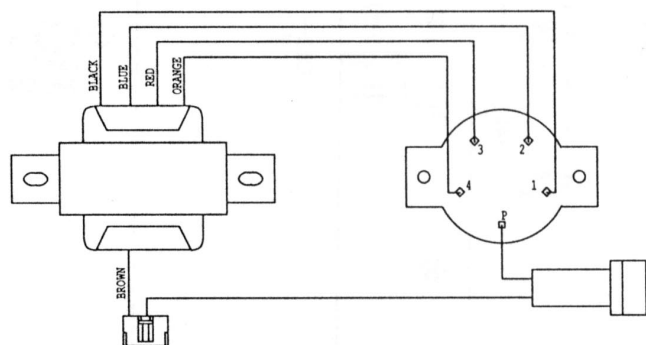
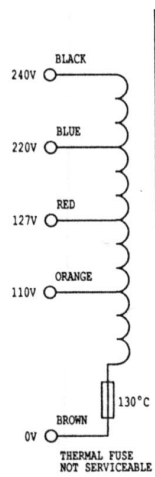
TRANSFORMER CONNECTIONS



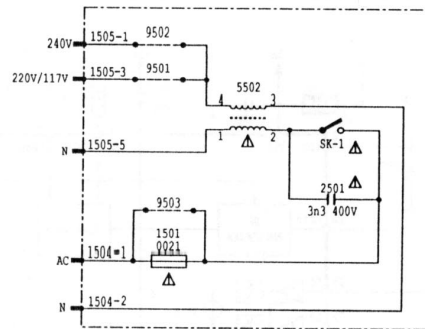
TRANSFORMER CONNECTIONS

HAS1040
9212

VOLTAGE SELECTOR

HAS1055
9234

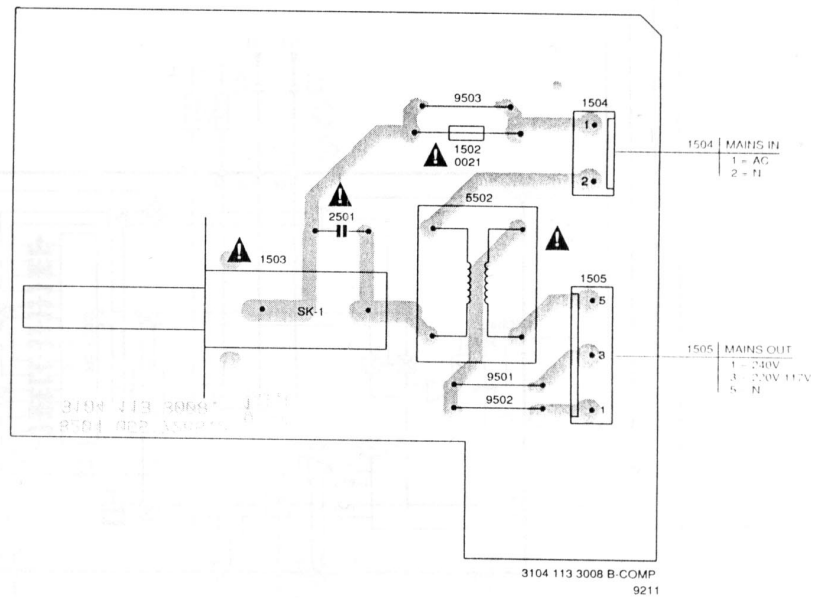
MAINS SWITCH DIAGRAM



CD950/	00S	01S	05S	10S	17S
0021	X		X	X	X
1501	125mA	var.	125mA	125mA	200mA
9501	X	X			X
9502			X	X	
9503		X			

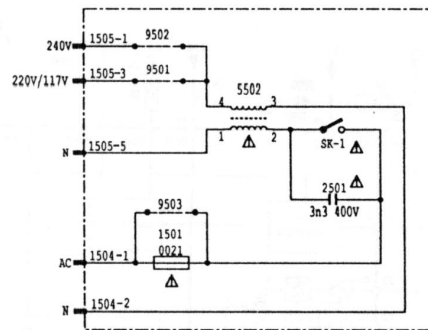
3104 118 00641S-E
9212

MAINS SWITCH PANEL



20a

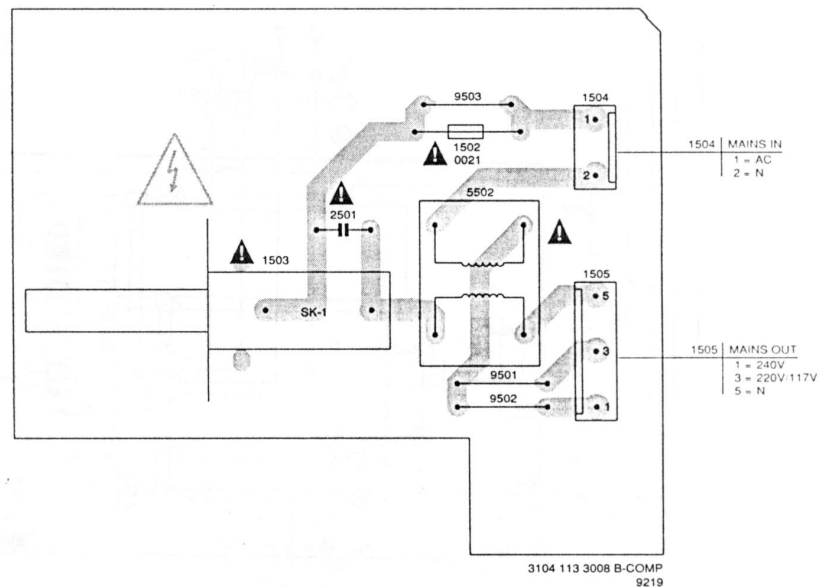
MAINS SWITCH DIAGRAM



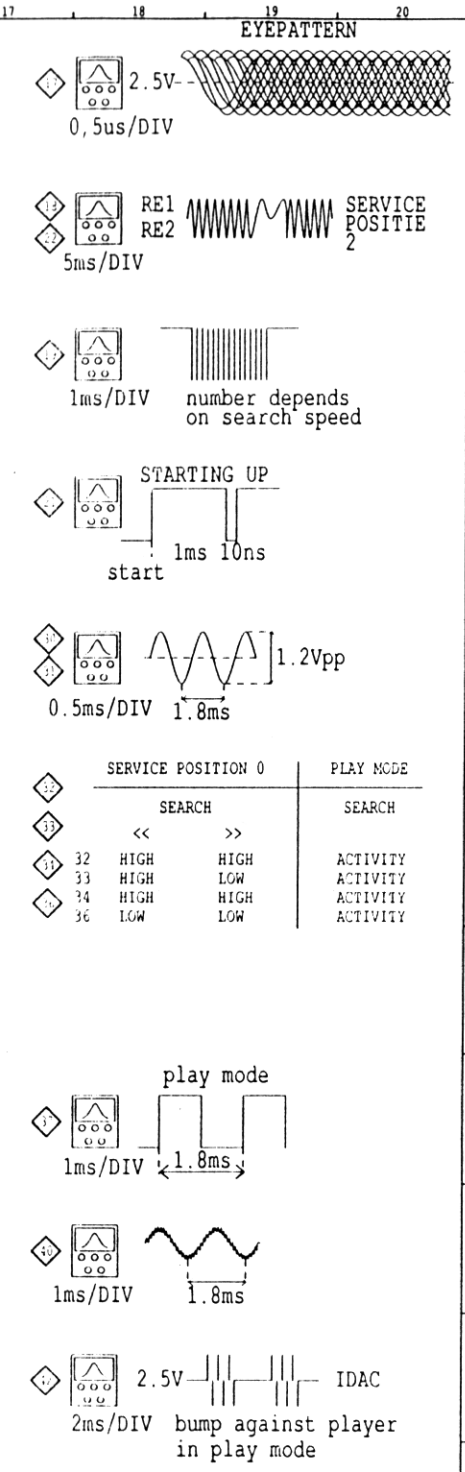
CD950/	005	015	055	105	175
0021	X		X	X	X
1501	125mA	var.	125mA	125mA	200mA
9501	X	X			X
9502			X	X	
9503		X			

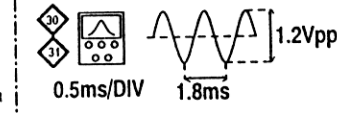
3104 118 006418-E
9212

MAINS SWITCH PANEL

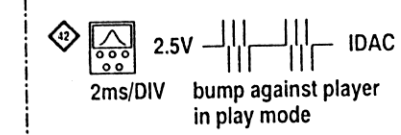
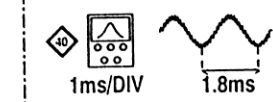


3104 113 3008 B-COMP
9219



[illegible]

		SERVICE POSITION 0		PLAY MODE
32		SEARCH		SEARCH
33	<<	>>		
34	32	HIGH	HIGH	ACTIVITY
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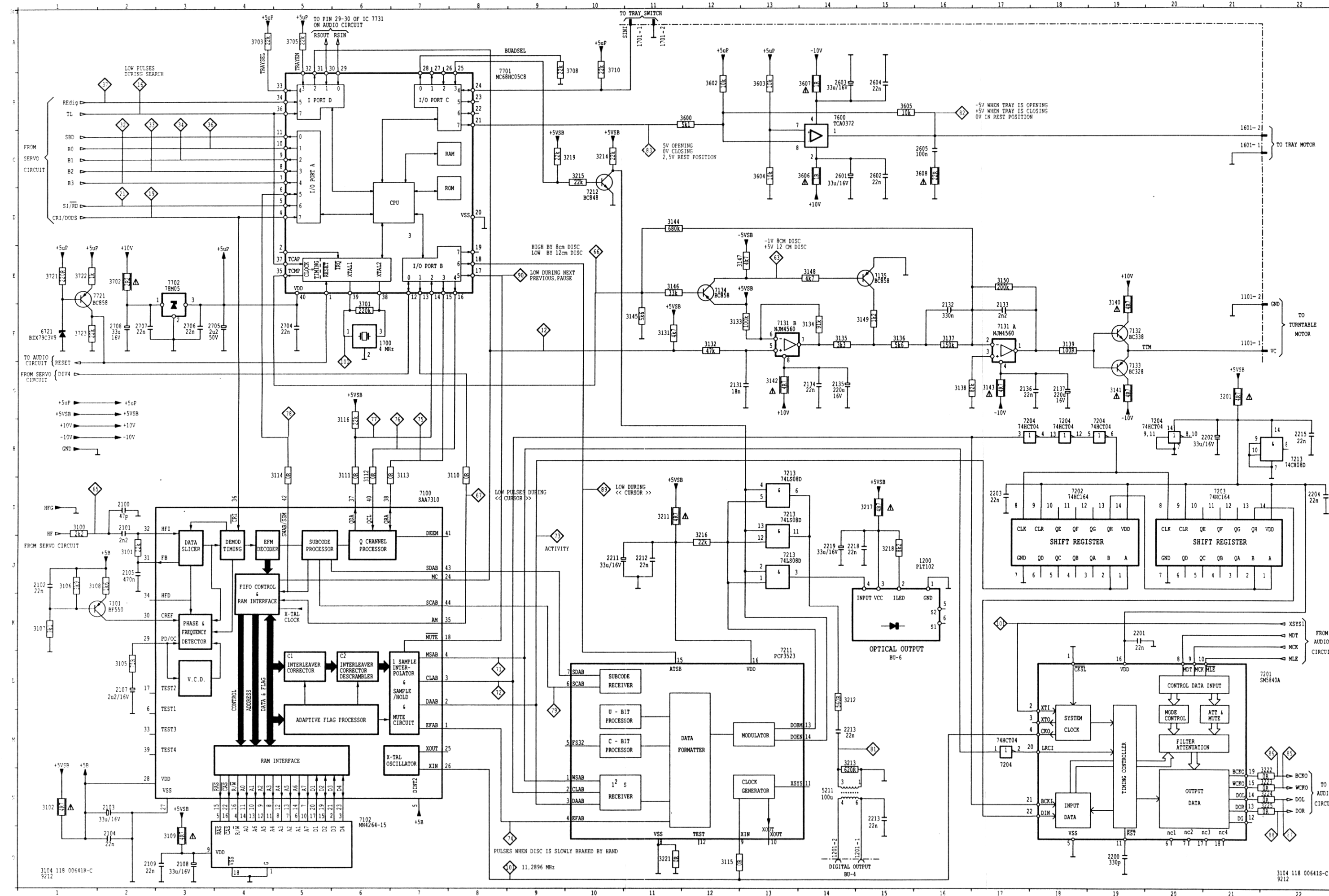


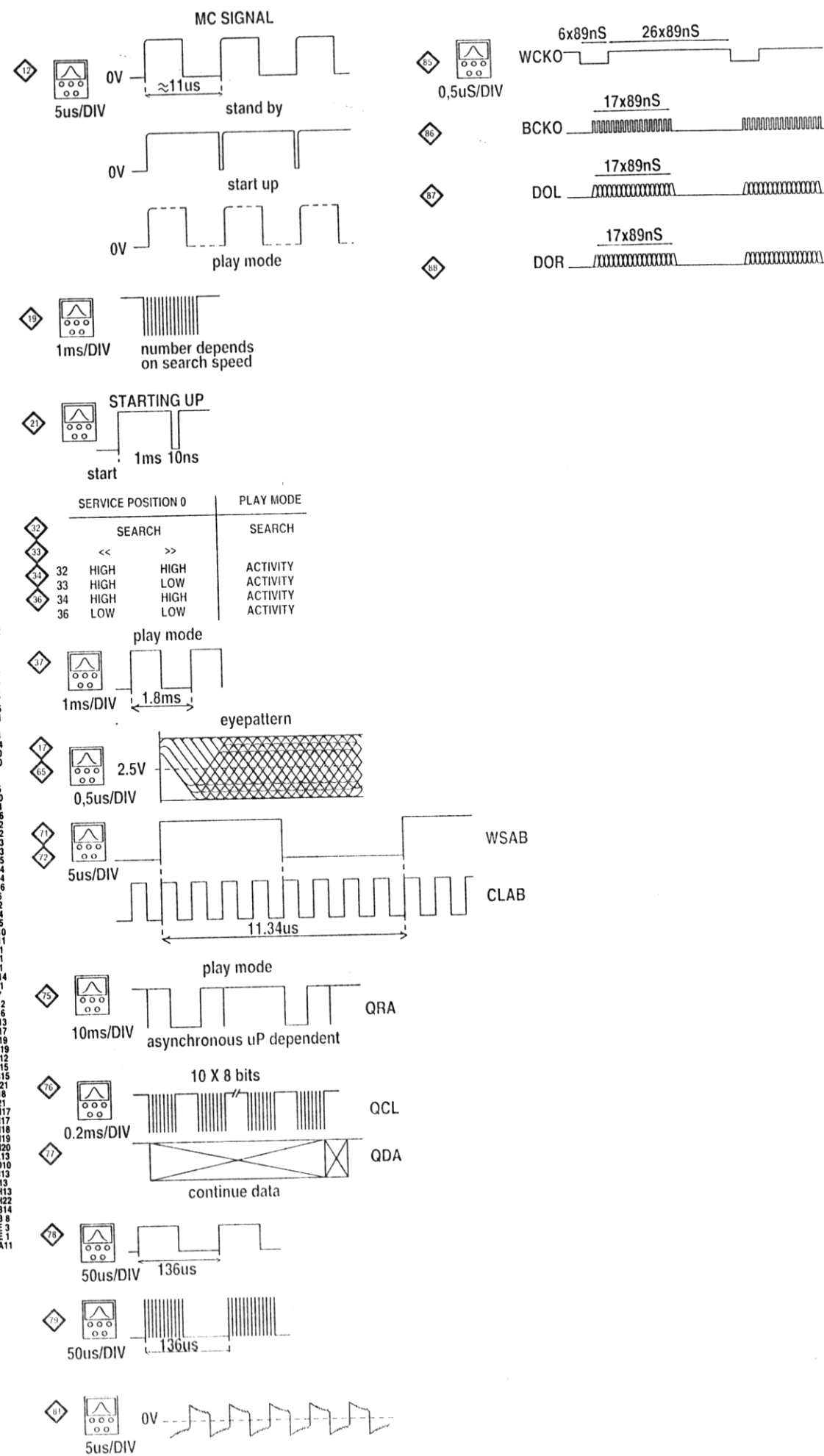
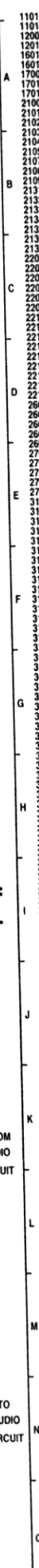
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2023 K10
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3070 I11
3071 I11
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3081 G1
3081 C3
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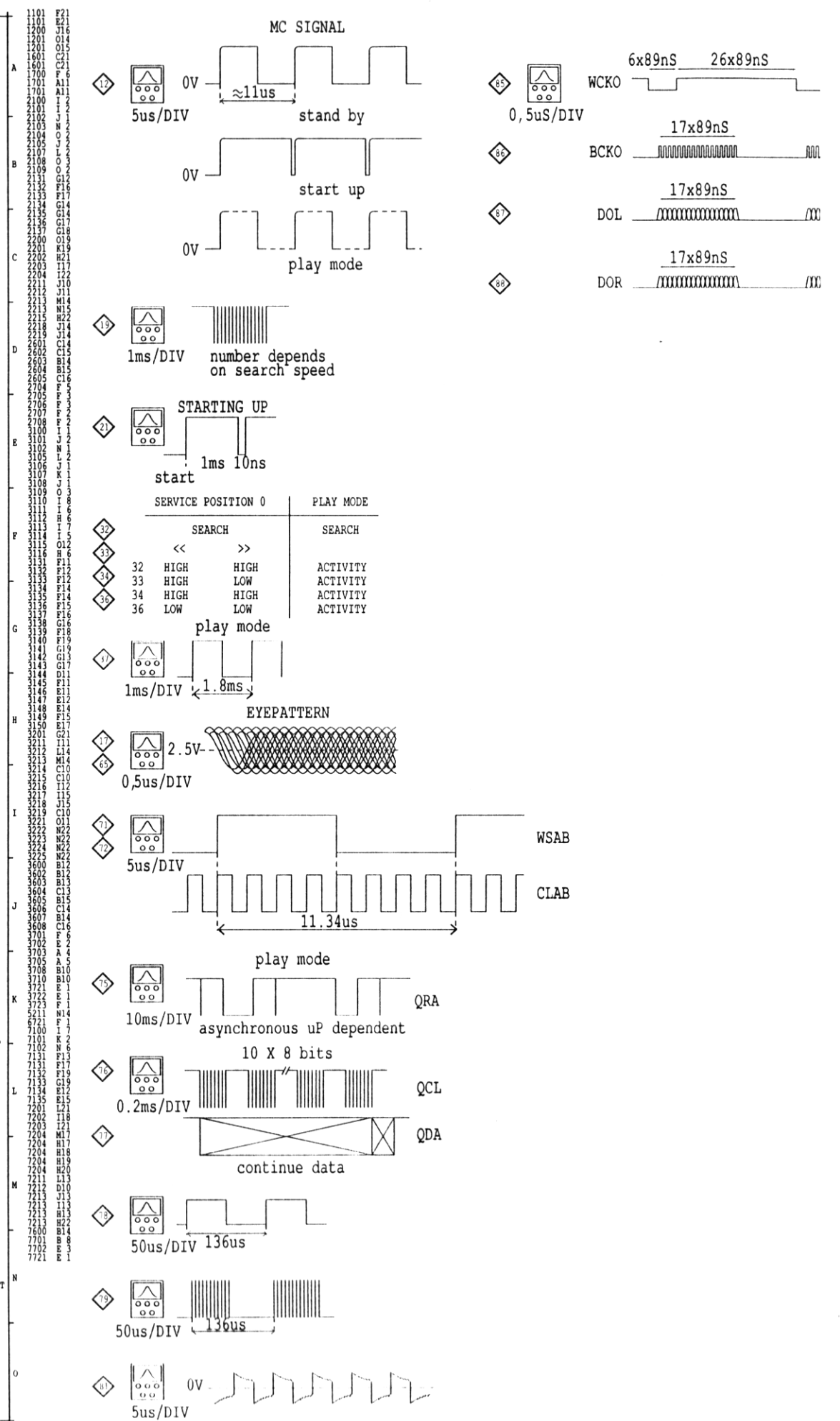
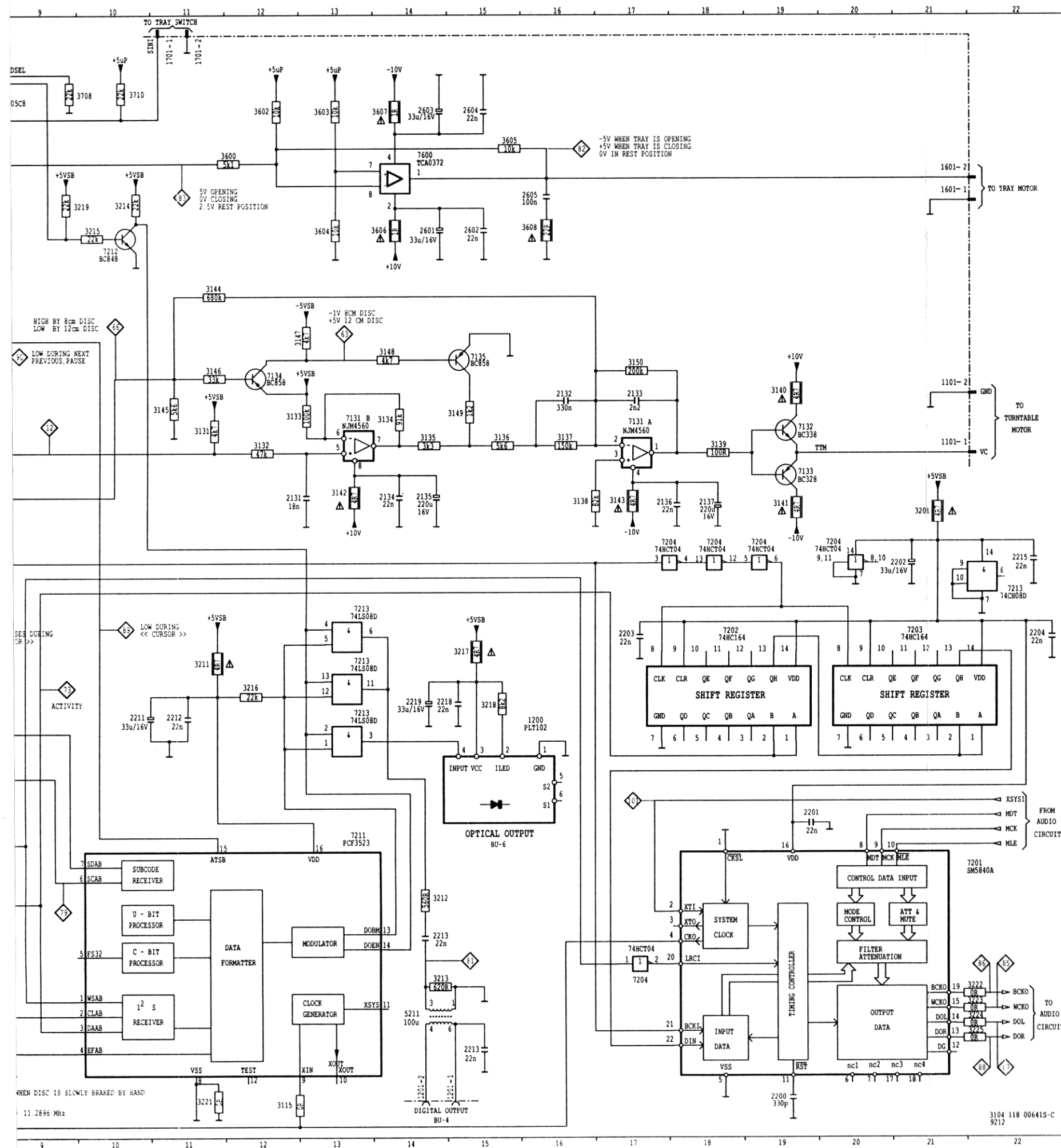
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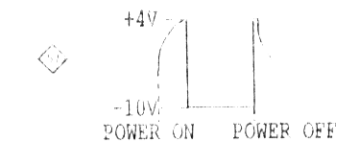
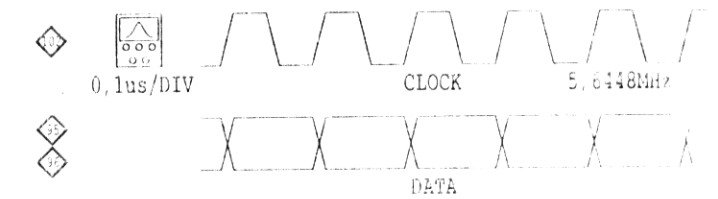
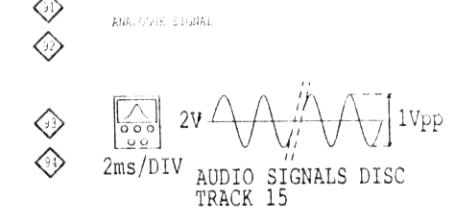
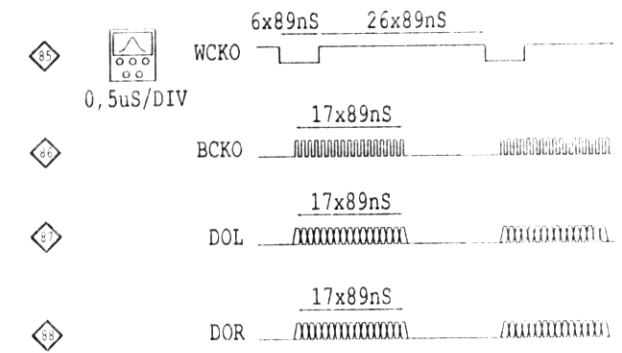
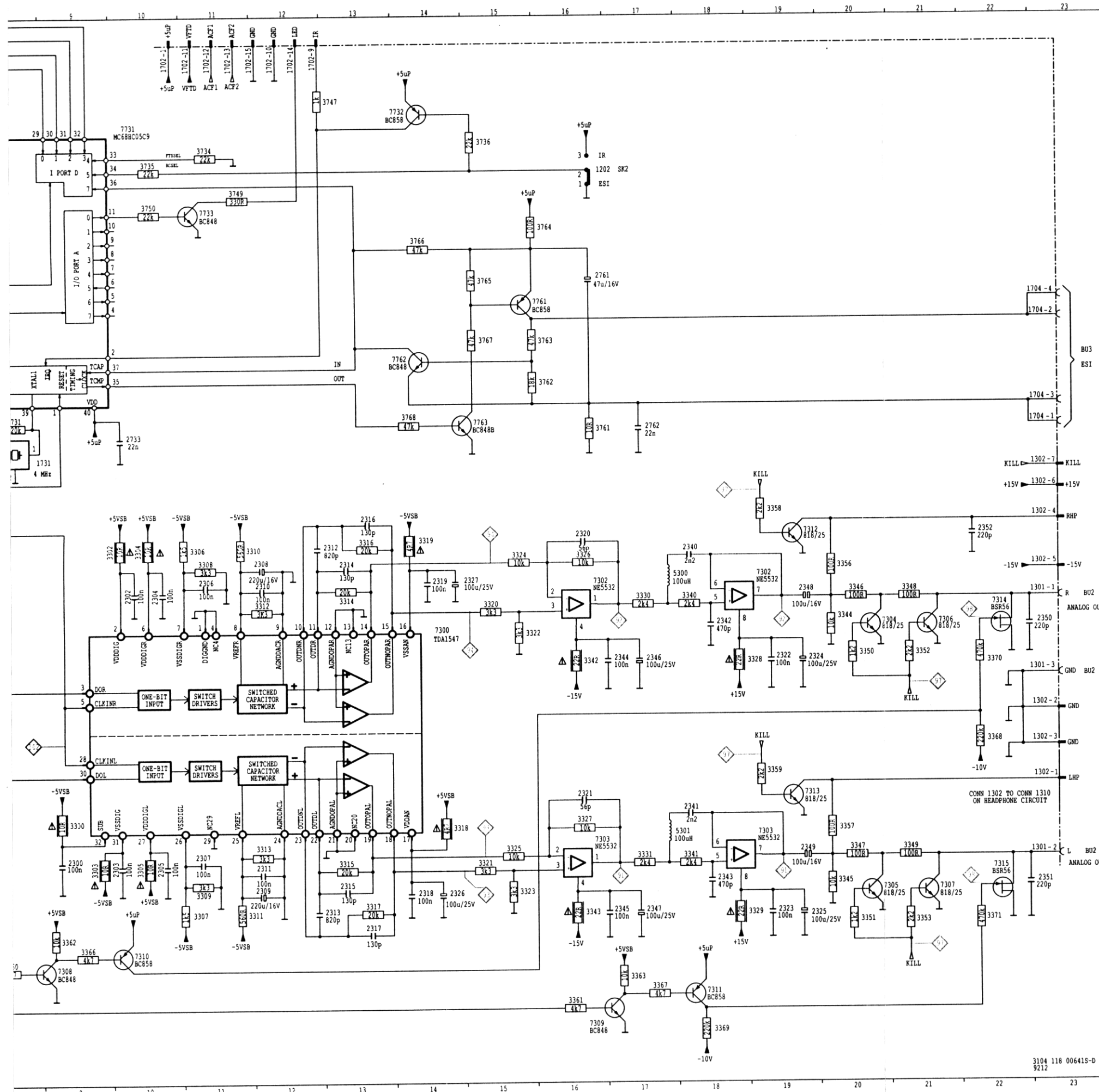


DECODER CIRCUIT DIAGRAM

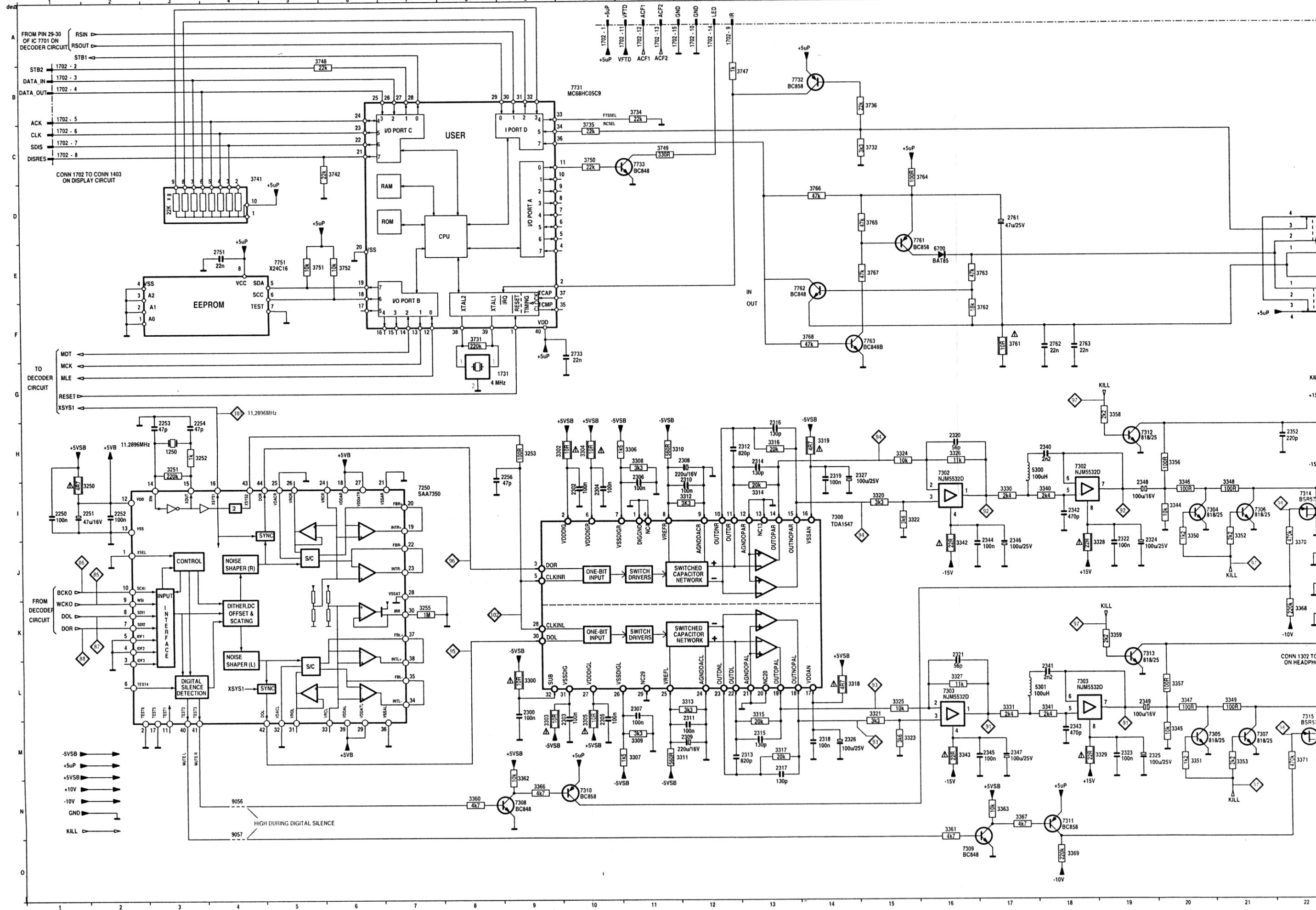


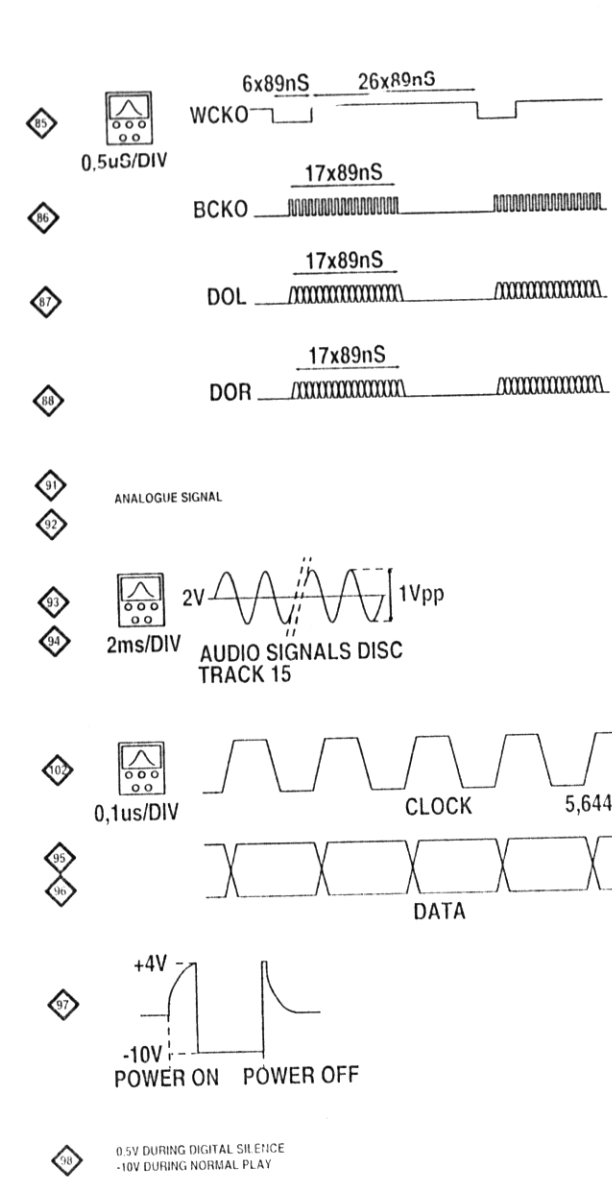
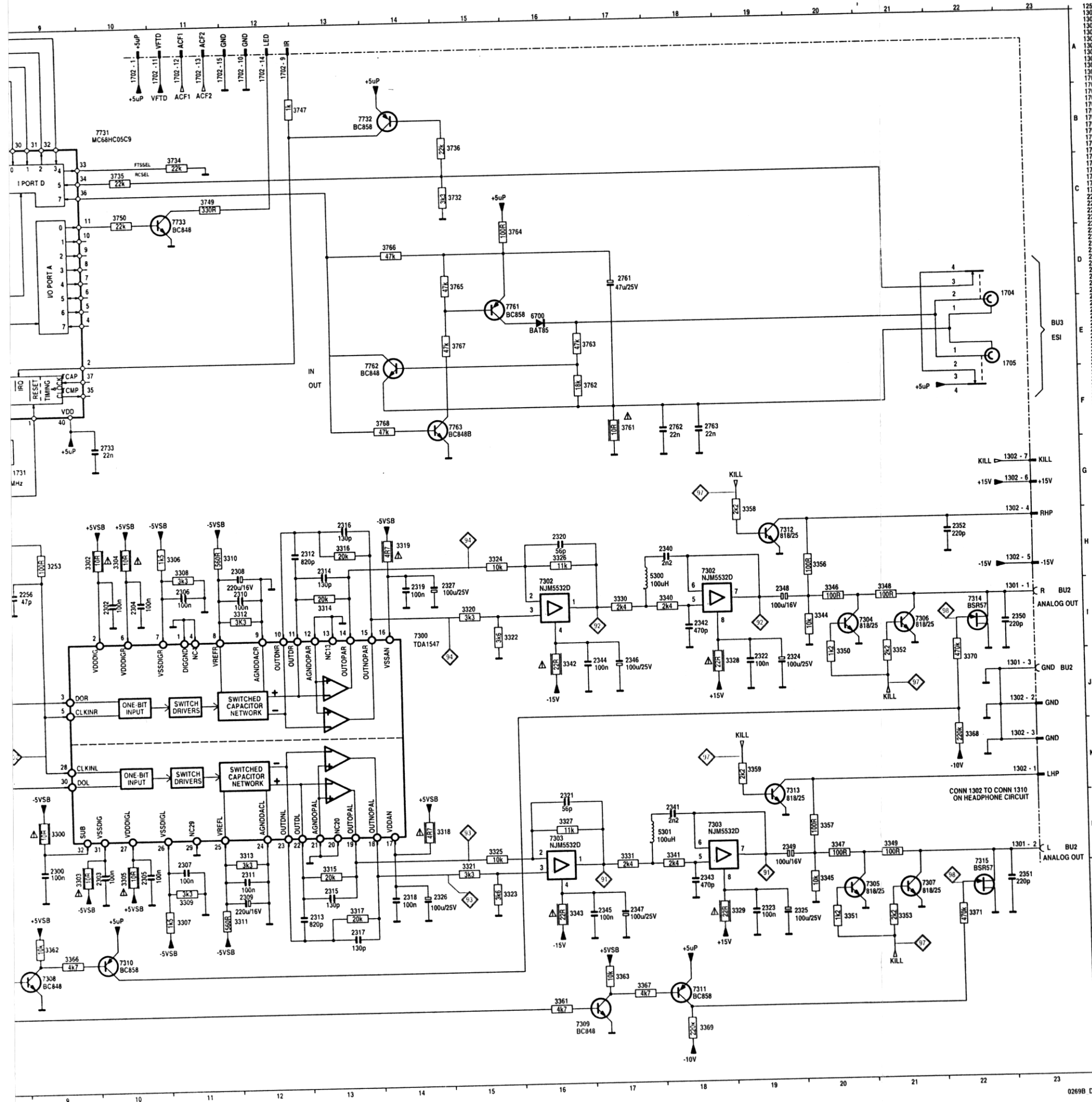


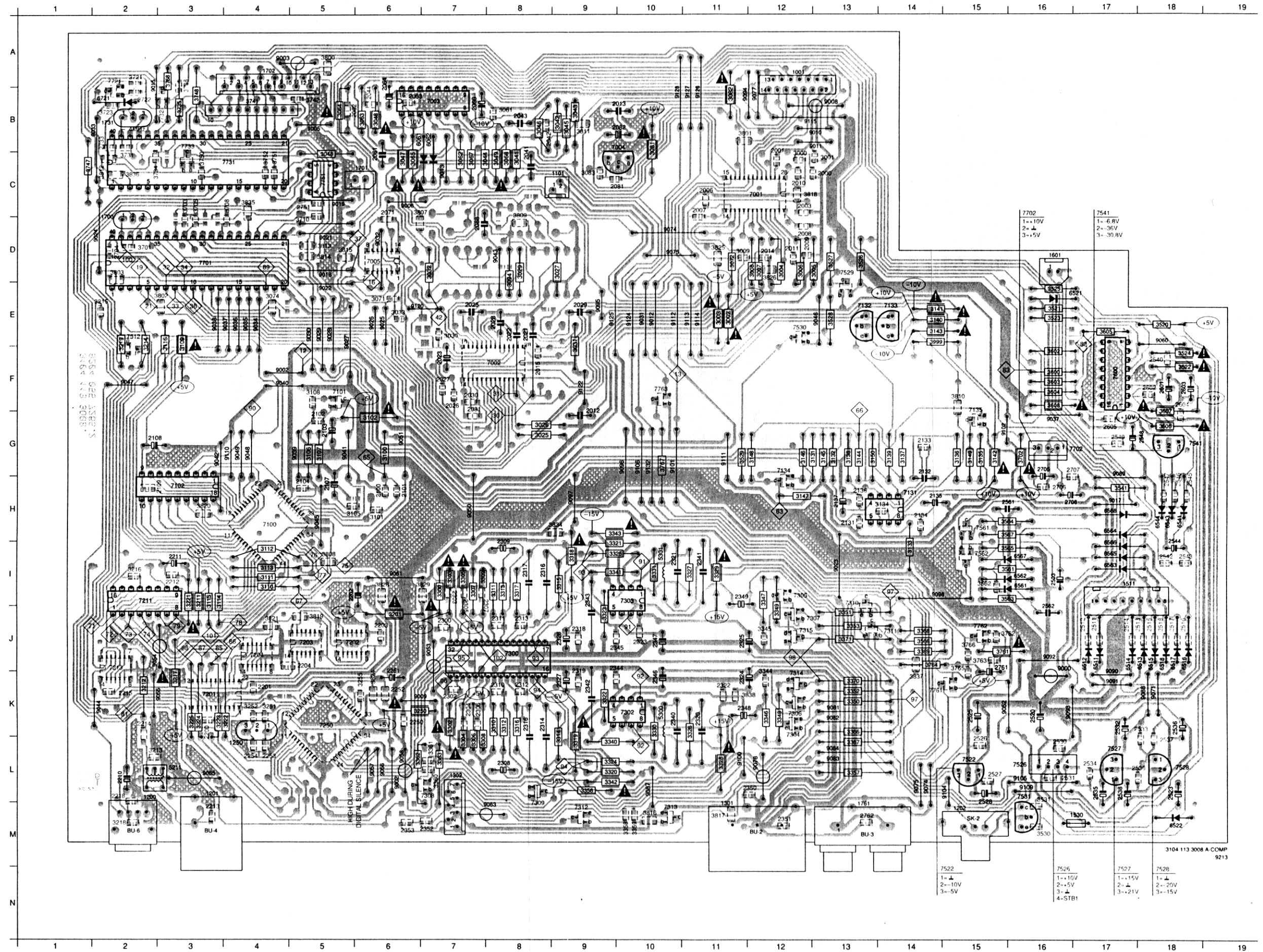




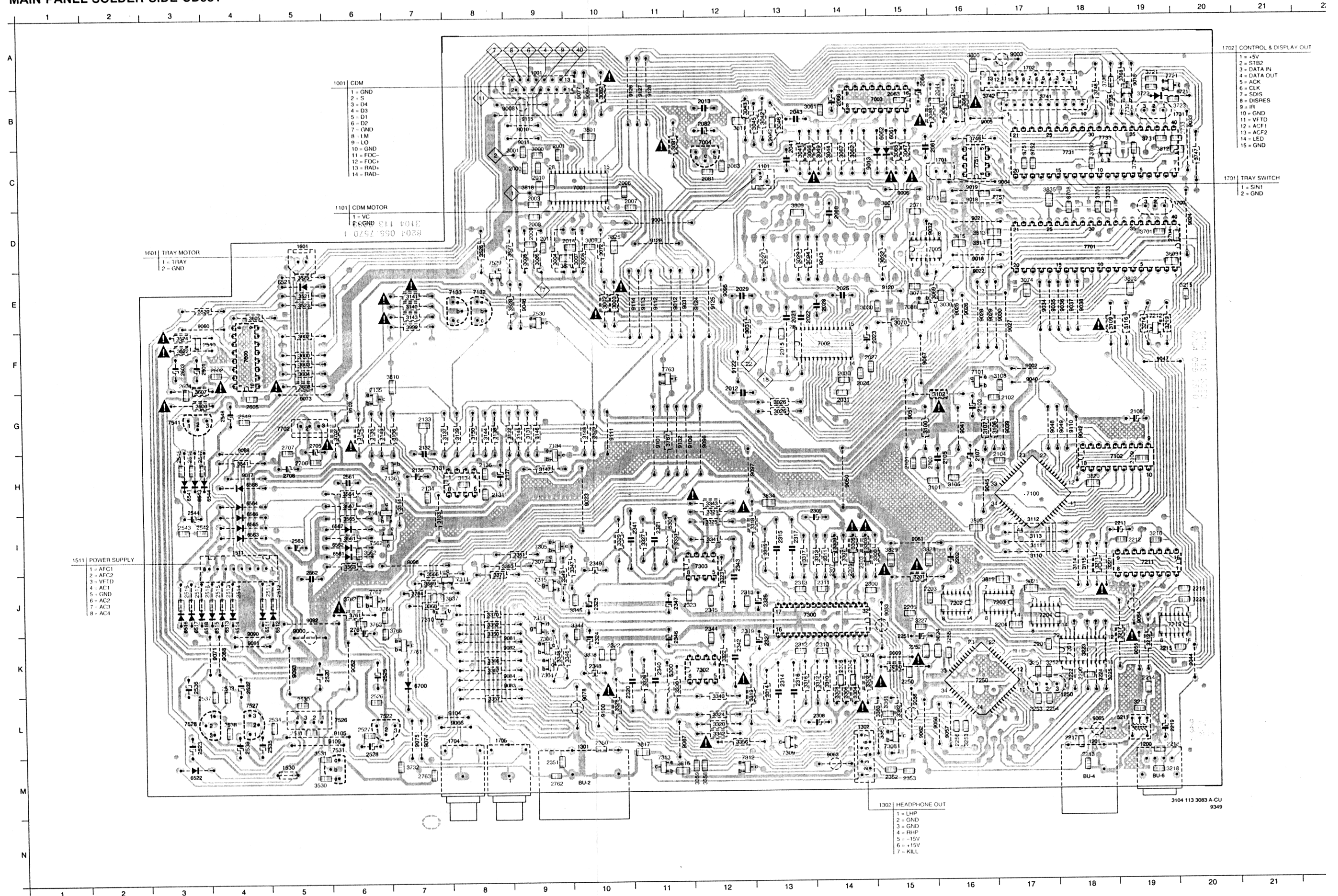
AUDIO CIRCUIT DIAGRAM CD951





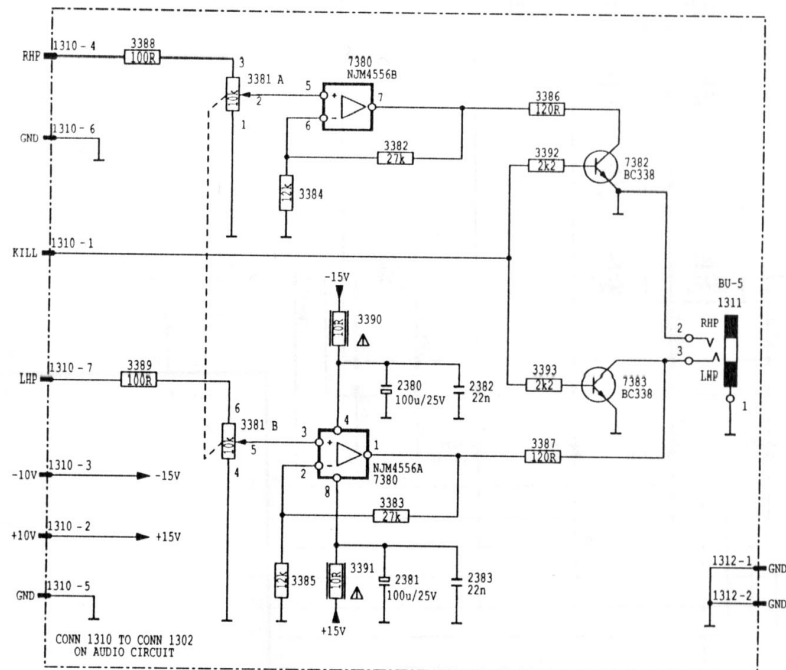


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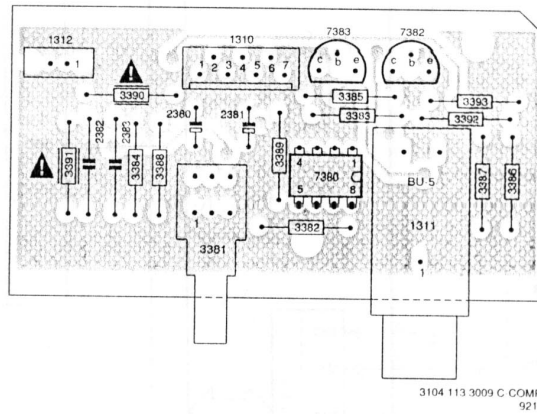
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2131	H8	2708	H5	3307	I14	3803	D19	9002	F17		
2132	G7	2733	B20	3308	L14	3807	C15	9003	A17		
2133	G7	2751	C17	3309	I14	3808	I16	9004	D11		
2134	H7	2761	J6	3310	K14	3809	D13	9005	B16		
2135	H7	2762	M9	3311	I14	3810	F6	9006	C15		
2136	H8	2763	M7	3312	K14	3811	B12	9008	B8		
2137	H8	3000	C9	3313	I14	3812	C19	9009	K15		
2200	L18	3001	C9	3314	L13	3813	D16	9010	B9		
2201	K17	3002	E10	3315	I13	3814	D16	9011	B9		
2202	I16	3003	E10	3316	K13	3815	D16	9012	E11		
2203	J15	3004	D9	3317	I13	3816	M11	9013	C15		
2204	J16	3005	D9	3318	I13	3817	L11	9015	B19		
2205	J15	3006	D9	3319	L12	3818	C9	9016	D16		
2211	I18	3007	D10	3320	L12	3819	J16	9017	H4		
2212	I19	3008	D10	3321	I12	3820	H18	9018	C16		
2213	M18	3009	D10	3322	K12	3821	J17	9019	C16		
2214	K19	3025	G13	3323	J12	3824	K16	9021	D16		
2215	K19	3026	G13	3324	L12	3825	D10	9022	E16		
2216	J20	3027	D13	3325	I12	3826	D9	9023	H10		
2217	L18	3029	D13	3326	K11	3828	I15	9024	D20		
2218	L19	3030	E14	3327	I11	3829	I15	9025	E16		
2219	L19	3030	E16	3328	L10	3834	H13	9026	E16		
2250	K15	3031	F13	3329	I10	3835	C17	9027	F17		
2251	K15	3032	D15	3330	L11	3837	J7	9028	E16		
2252	K15	3033	E16	3331	I11	3838	K10	9029	E17		
2253	L17	3041	C13	3340	L12	3999	E7	9030	E17		
2254	L17	3042	B13	3341	I12	5211	L18	9031	E11		
2256	L16	3043	B13	3342	L12	5300	K11	9032	D16		
2300	J14	3044	C14	3343	H12	5301	I11	9033	B20		
2302	K14	3045	B13	3344	J9	6061	B15	9034	E17		
2303	I14	3046	B13	3345	J9	6062	B15	9035	E18		
2304	K14	3047	C15	3346	K9	6511	J4	9036	E18		
2305	J14	3048	B16	3347	J10	6512	J5	9037	E18		
2306	K14	3049	C14	3348	K9	6513	J4	9038	E18		
2307	J14	3061	B13	3349	J9	6514	J4	9039	G17		
2308	L13	3062	C14	3350	K8	6515	J4	9040	F17		
2309	I13	3063	B16	3351	I9	6516	J3	9041	G16		
2310	K14	3064	B16	3352	J8	6517	J3	9042	G18		
2311	J14	3065	C15	3353	I8	6518	J3	9043	D14		
2312	K13	3066	C14	3356	L12	6521	E5	9044	K20		
2313	J13	3067	C14	3357	L8	6522	M3	9045	H16		
2314	K13	3069	E16	3358	M12	6541	H3	9046	E9		
2315	I13	3070	E15	3359	M12	6543	H3	9047	F19		
2316	K13	3071	E15	3360	L15	6544	H4	9048	G17		
2317	I13	3072	D10	3361	L15	6561	I6	9049	G18		
2318	J12	3074	E17	3362	L15	6562	I6	9050	H14		
2319	K12	3081	C11	3363	L15	6563	I4	9051	G15		
2320	L10	3082	B10	3366	K8	6564	H4	9052	K6		
2321	I11	3083	C12	3367	K8	6565	I4	9053	J15		
2322	K10	3094	D14	3368	J7	6566	I4	9054	J19		
2323	J11	3100	G15	3370	J8	6567	I6	9055	K19		
2324	K10	3101	H15	3371	J8	6568	H4	9056	L16		
2325	J10	3102	G16	3520	E3	6700	K7	9057	L16		

VARIABLE HEADPHONE CIRCUIT DIAGRAM

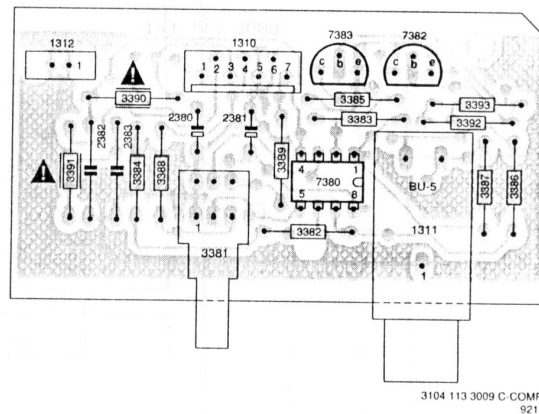


3104 118 00651S-B
9210

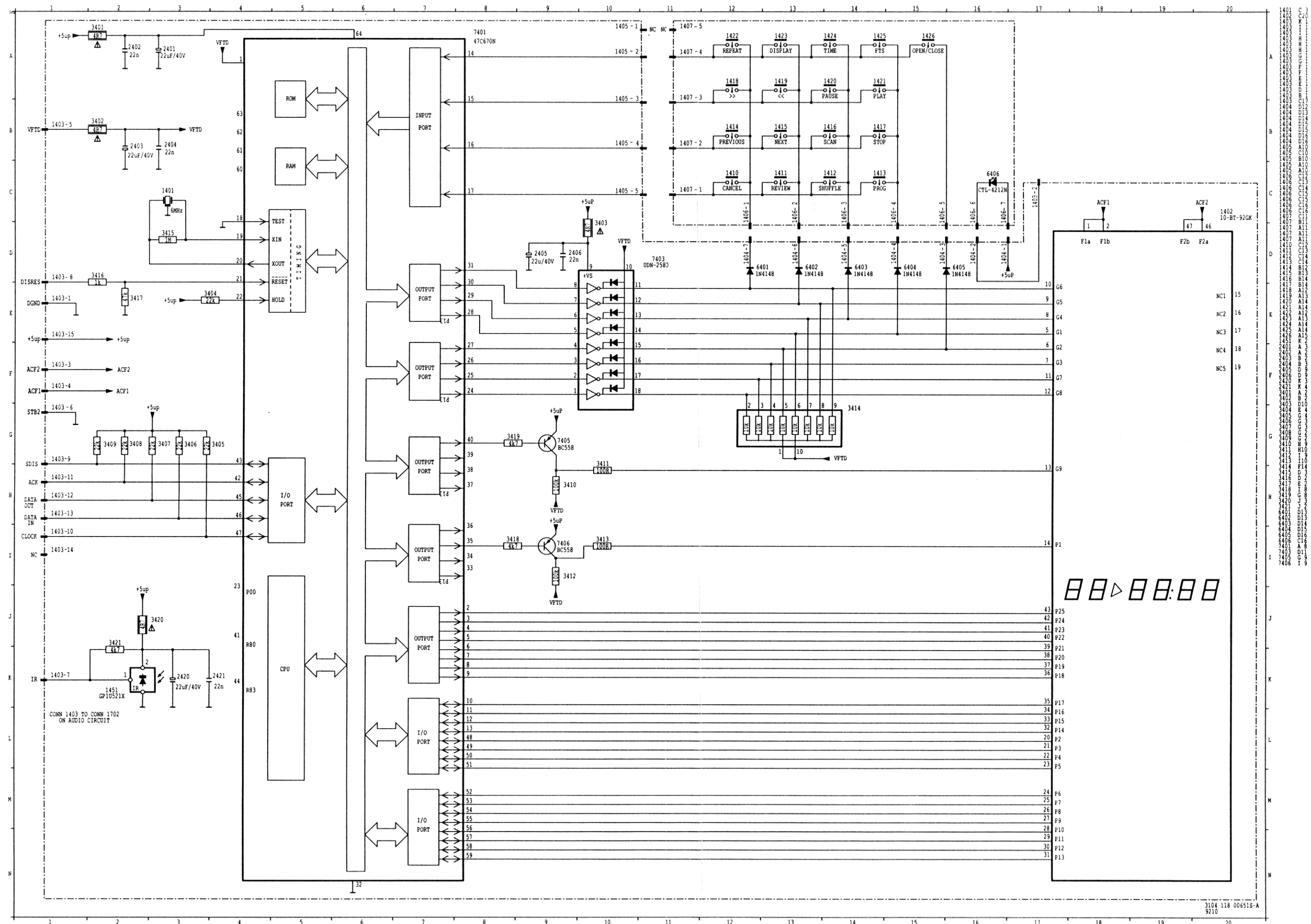
VARIABLE HEADPHONE PANEL



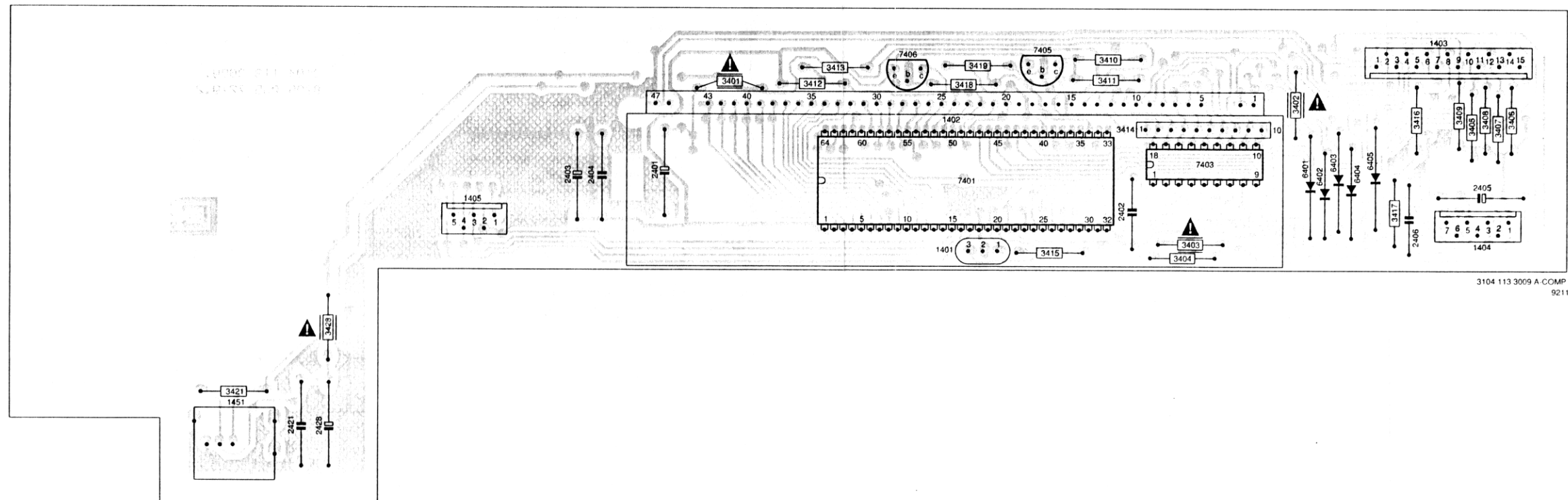
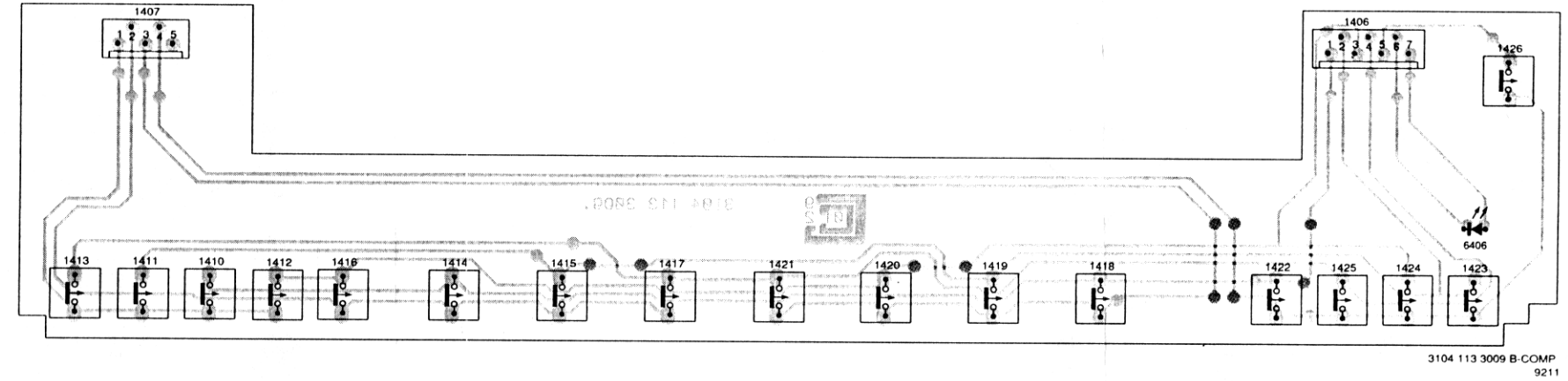
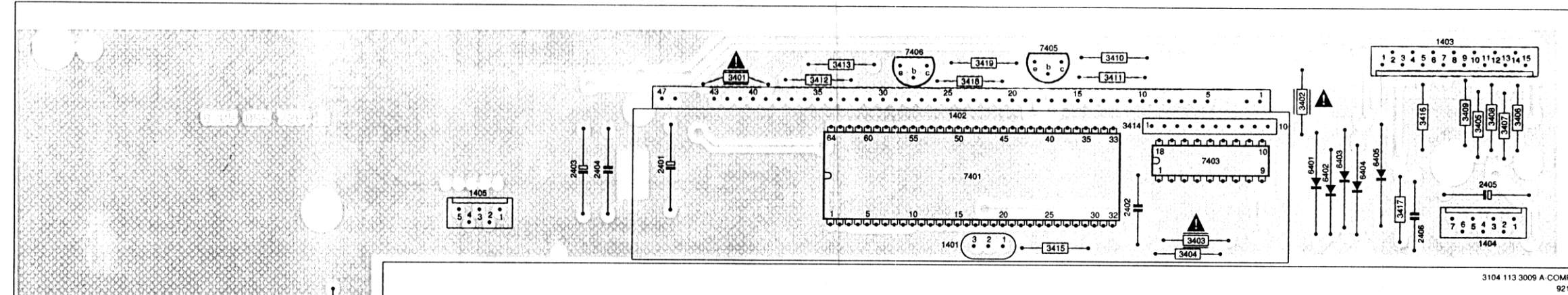
3104 113 3009 C COMP
9211



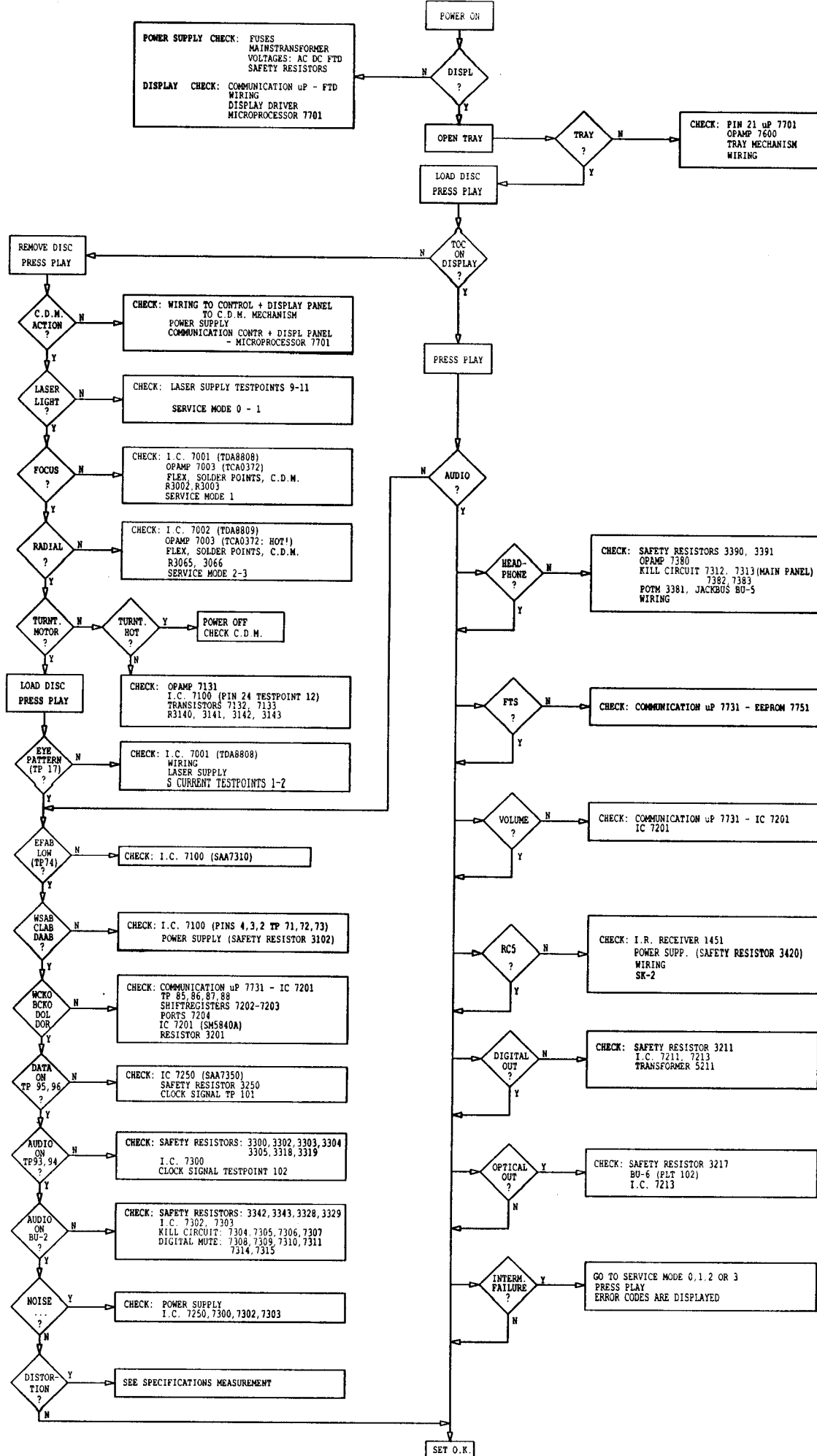
3104 113 3009 C-COMP
9211



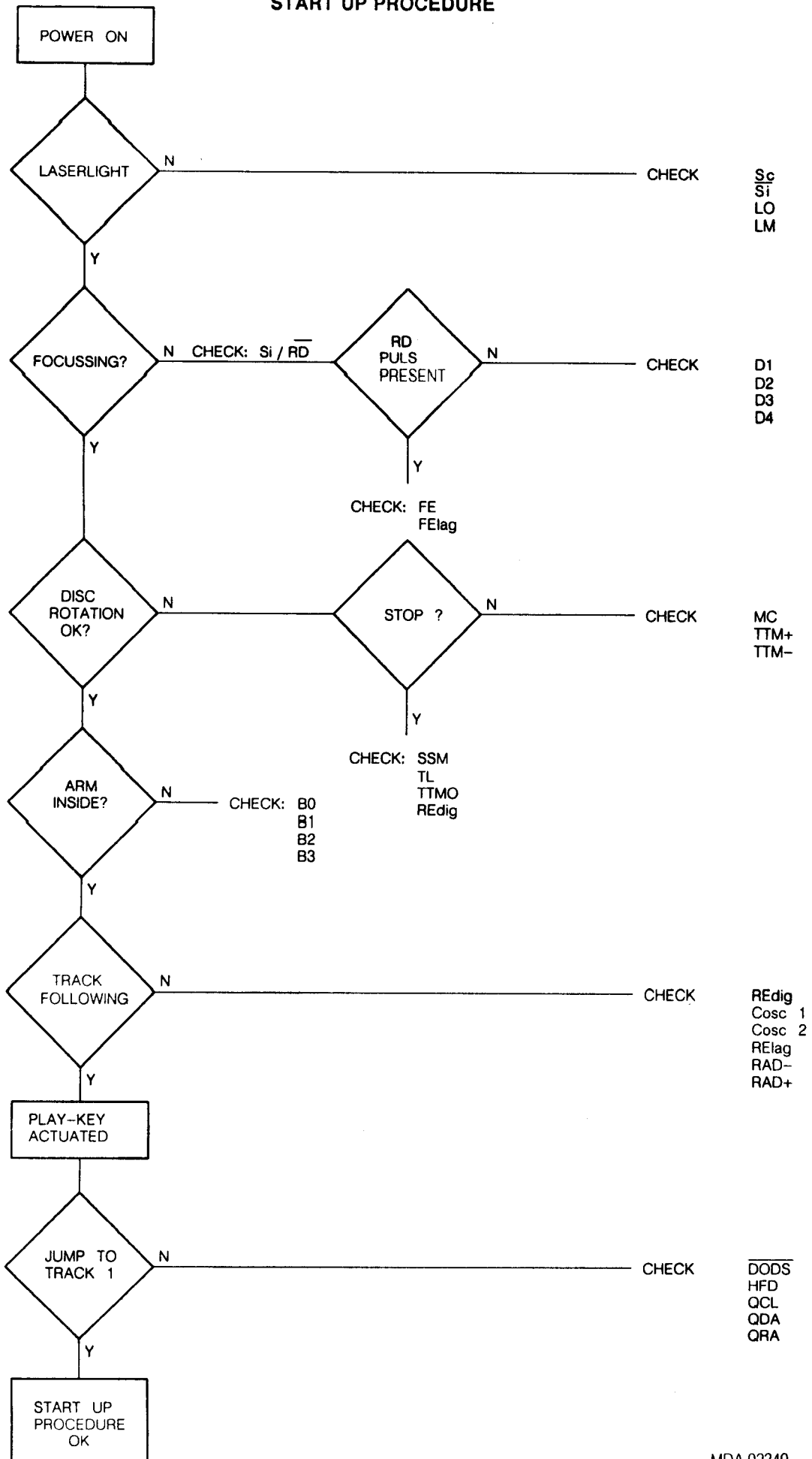
DISPLAY PANEL KEYBOARD PANEL



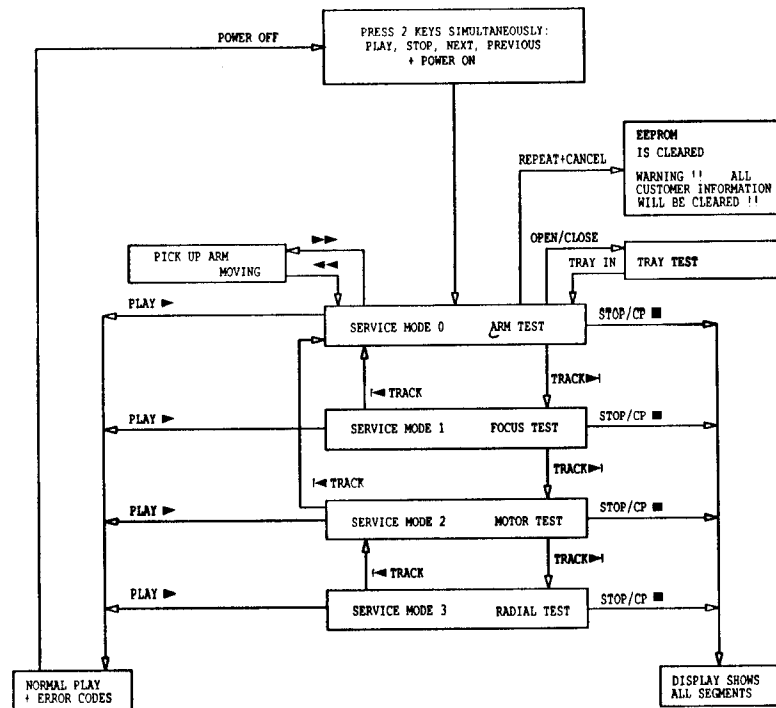
FAULT FINDING GUIDE



START UP PROCEDURE



SERVICE TEST PROGRAM

HAS1020
9143

ERROR CODE TABLE

SYSTEM ERRORS

ER02	Focus error
ER03	Radial error
ER04	Too many TL
ER05	TL low to long
ER06	Jump error
ER07	Subcode error
ER08	TOC error
ER60	EEPROM error during initialisation
ER61	EEPROM error during read or write
ER67	No or bad communication between SERVO and USER μ P

CHECK OF THE PHOTODIODES

Step	Signal	Mode					Remarks
1	D2	power on		-	-	signal $4 \pm 6 \pm 7 \pm 8$	Signal depends on Distance lens $\leftrightarrow$ IR LED of remote control
	D1						
	D3						
	D4						

T-23366A

CHECK OF LASER SUPPLY

The laser, the lasersupply plus the monitor diode form a feedback system.

A defect in the lasersupply may result in the destruction of the laser. If, in that case, the laser is replaced, (= complete C.D.M.-unit) the new laser will also become defective. However, it is impossible to check and repair a feedback system if a link is missing. For this reason the laser supply can be checked with the replacement circuit for laser assembly.

Step	Signal	Mode			Remarks
1	LO	serv. pos. 2 SK		$1.8 < V < 2.3$	REPLACEMENT CIRCUIT FOR LASER ASSEMBLY
	LM			$170 < mV < 220$	
2	LO	serv. pos. 2 SK		$1.8 < V < 2.3$	
	LM			$170 < mV < 220$	
3	LO	Power on		$0V \pm 0.2V$	No light

After opening SK, the led will emit more light for a short moment.

T-23366B

CHECK OF CDM9

Step	Signal	Mode		
1	S current = voltage across R3000	Test disc 5A play		$56 < mV < 76$ mV DC

WARNINGS

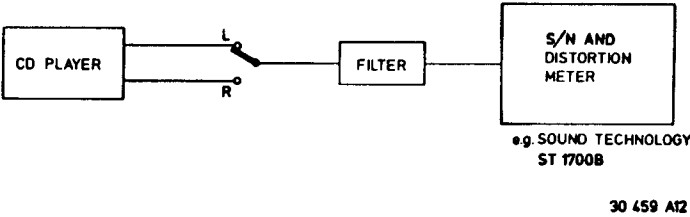
1. Never disconnect flex when power is on.
2. Laser power is adjusted during the production process and may not be readjusted.

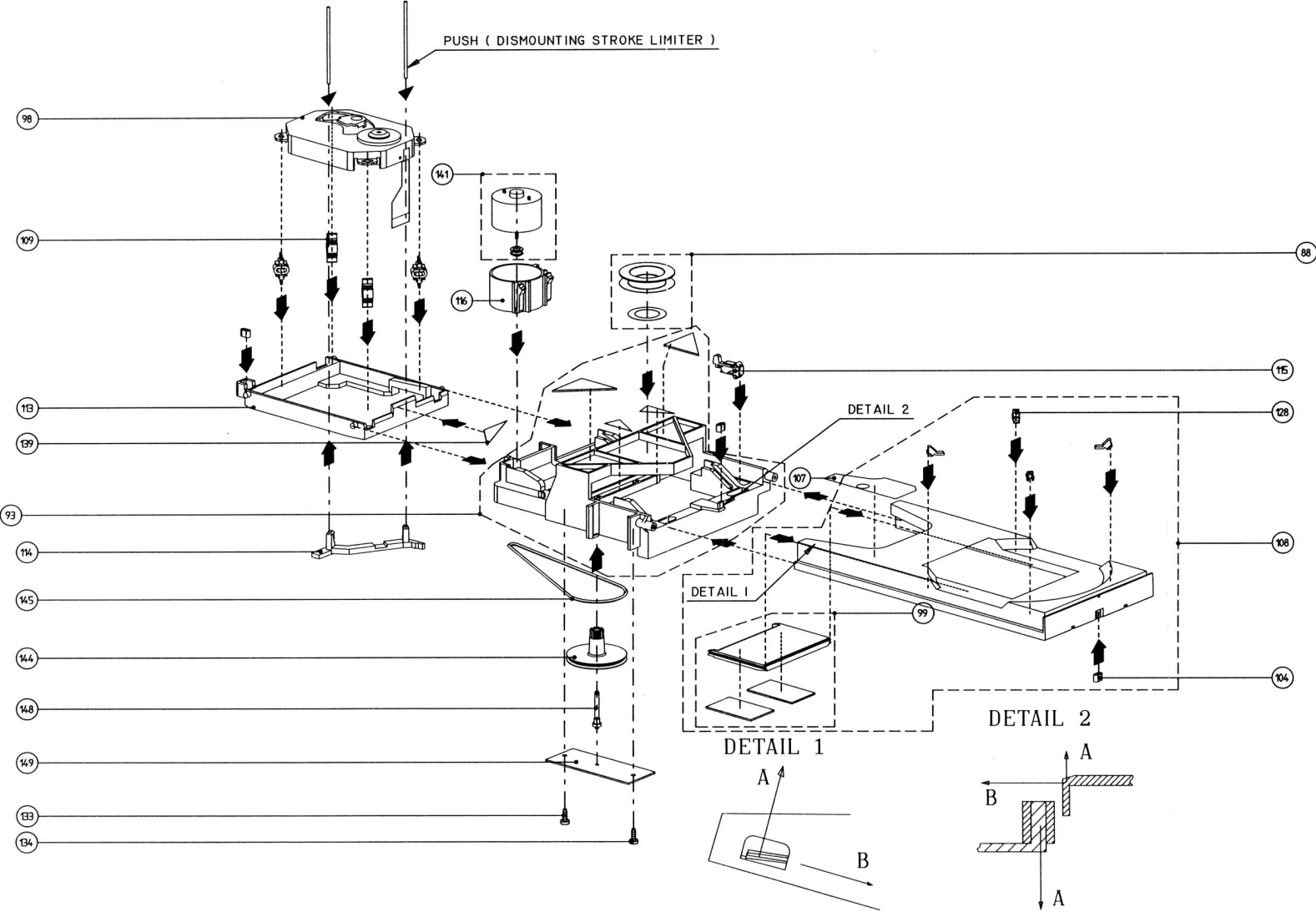
SPECIFICATIONS MEASUREMENT

Signal	Mode				Remarks
BU2-L	Test disc 3, play, total harmonic distortion	filter output	See technical data		See drawing 30459A12
BU2-R	Test disc 3, play, total harmonic distortion	filter output	See technical data		See drawing 30459A12
BU2-L	Test disc 3, play signal-to-noise ratio	filter output	See technical data		See drawing 30459A12
BU2-R	Test disc 3, play signal-to-noise ratio	filter output	See technical data		See drawing 30459A12

T-23366M

Filter = 13th order filter 4822 395 30204





MECHANICAL PARTSLIST**Cabinet**

1▲	4822 444 40551	ALU FRONT
13▲	4822 444 40549	FRONT
15	4822 410 61885	KNOB UNIT(NOSE)
23	4822 450 61891	IR-WINDOW
24	4822 380 20425	REFLECTOR
52	4822 535 93283	POWER ROD
53	4822 410 61705	KNOB
54	4822 462 71808	CAP
57	4822 454 12828	BITSTREAM LOGO
60	4822 444 60815	COVER PLATE
71	4822 444 40552	ALU TRAY FRONT
151	4822 444 60837	COVER
251	4822 462 41888	FOOT
255	4822 462 41887	FELT
283▲	4822 532 60948	BUSHING
300▲	4822 321 10791	MAINS FLEX /00S
301▲	4822 321 10823	MAINS FLEX /05S
302▲	4822 321 10825	MAINS FLEX /17S
303▲	4822 321 10828	MAINS FLEX /10S
308	4822 321 23116	CINCH CABLE
314	4822 321 61452	CABLE DIGITAL OUT
340	4822 736 21416	INSTRUCTION FOR USE CD950/17S
340	4822 736 21413	INSTRUCTION FOR USE CD950
365	4822 218 10459	REMOTE CONTROL RD6910/00

Loader

88	4822 402 61406	CLAMPING PIECE
93	4822 464 50886	FRAME
98	4822 691 30275	CDM-9
99	4822 444 60808	COVER PLATE
104	4822 325 60379	DAMPING GROMMET
108	4822 444 30441	TRAY
109	4822 466 93065	SUSPENSION
113	4822 464 50884	CHASSIS
114	4822 466 93066	STROKE LIMITER
115	4822 276 13222	SWITCH
116	4822 464 50885	MOTOR FRAME
128	4822 460 20801	ORNAMENTAL PROFILE
141	4822 361 21423	MOTOR
144	4822 522 33192	GEAR WHEEL
145	4822 358 10115	BELT

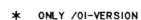
The following parts are only available during production period on special request.

181	Frame
189,190	Support bracket
266	Back plate

SCREWS

		Plastite M3x10:	30,31,32,33 34,35 36,37,38,39,40 41,42 209,210 268 272 273 274
Taptite M3x6:	83 211,212		
Taptite M3x10:	6,7,8,9,10 171,172,173,174 175,176 200,201 204,205,206,207,208 259,260,261,262 269,270,271		
Taptite M3x15:	202,203	Plastite M3x16:	30,31,32,33 43

49



50



MAIN PANEL					
MISCELLANEOUS					
▲	4822 492 63076	CLAMPING SPRING	2063	4822 122 33809	22nF 20% 50V
BU-2	4822 267 31485	ANALOG OUT SOCKET	2064	4822 124 40272	33μF 20% 16V
BU-3	4822 267 31455	ESI IN/OUT SOCKET	2066	4822 124 40272	33μF 20% 16V
BU-4	4822 267 31457	DIGITAL OUT SOCKET	2071	4822 122 33496	100nF 10% 63V
BU-6	4822 218 21019	OPTICAL OUT	2081	4822 122 32575	220pF 10% 500V
SK-2	4822 276 12339	SWITCH ESI ON/OFF	2082	4822 124 40433	47μF 20% 25V
1101	4822 265 30525	RFK5 CONNECTOR	2088	4822 121 43526	47nF 5% 100V
1302	4822 267 50621	CONNECTOR 7P	2100	5322 122 32452	47pF 5% 63V
1702	4822 265 41115	CONNECTOR 15P	2101	4822 122 33175	2,2nF 20% 50V
1530	4822 071 55001	FUSE 500MA	2102	4822 122 33809	22nF 20% 50V
CRYSTAL			2103	4822 124 40272	33μF 20% 16V
1250	4822 242 71349	CRYSTAL 11,2896 MHz	2104	4822 122 33809	22nF 20% 50V
1700	4822 242 72527	RESONATOR 4 MHz	2105	4822 121 51252	470nF 5% 63V
1731	4822 242 72527	RESONATOR 4 MHz	2107	4822 124 41576	2,2μF 20% 50V
			2108	4822 124 40272	33μF 20% 16V
CAPACITORS			2109	4822 122 33809	22nF 20% 50V
2000	4822 122 33809	22nF 20% 50V	2131	4822 122 33893	18nF 10% 63V
2001	5322 122 32268	470pF 10% 50V	2132	5322 121 42661	330nF 5% 63V
2003	4822 122 33496	100nF 10% 63V	2133	4822 122 33175	2,2nF 20% 50V
2006	4822 122 33496	100nF 10% 63V	2134	4822 122 33809	22nF 20% 50V
2007	4822 122 33175	2,2nF 20% 50V	2135	4822 124 40196	220μF 20% 16V
2008	4822 122 32542	47nF 10% 63V	2136	4822 122 33809	22nF 20% 50V
2009	5322 122 32531	100pF 5% 50V	2137	4822 124 40196	220μF 20% 16V
2010	4822 122 33177	10nF 20% 50V	2200	5322 122 31863	330pF 5% 50V
2011	5322 122 34123	1nF 10% 50V	2201	4822 122 33809	22nF 20% 50V
2012	4822 121 42408	220nF 5% 63V	2202	4822 124 40272	33μF 20% 16V
2013	4822 121 51252	470nF 5% 63V	2203	4822 122 33809	22nF 20% 50V
2014	4822 122 32575	220pF 10% 500V	2204	4822 122 33809	22nF 20% 50V
2015	5322 122 34123	1nF 10% 50V	2211	4822 124 40272	33μF 20% 16V
2021	4822 121 51321	8,2μF 1% 63V	2212	4822 122 33809	22nF 20% 50V
2022	4822 121 51321	8,2μF 1% 63V	2213	4822 122 33809	22nF 20% 50V
2023	4822 124 40433	47μF 20% 25V	2214	4822 122 33496	100nF 10% 63V
2025	5322 121 42661	330nF 5% 63V	2215	4822 122 33809	22nF 20% 50V
2026	4822 122 33342	33nF 10% 63V	2218	4822 122 33809	22nF 20% 50V
2027	4822 122 33342	33nF 10% 63V	2219	4822 124 40272	33μF 20% 16V
2028	4822 121 42408	220nF 5% 63V	2250	4822 122 33496	100nF 10% 63V
2029	4822 121 42408	220nF 5% 63V	2251	4822 124 40272	33μF 20% 16V
2030	4822 122 33496	100nF 10% 63V	2252	4822 122 33496	100nF 10% 63V
2031	4822 122 33496	100nF 10% 63V	2253	5322 122 32452	47pF 5% 63V
2041	4822 121 51252	470nF 5% 63V	2254	5322 122 32452	47pF 5% 63V
2042	5322 126 10223	4,7nF 10% 63V	2300	4822 122 33496	100nF 10% 63V
2043	4822 121 42408	220nF 5% 63V	2302	4822 122 33496	100nF 10% 63V
2044	4822 122 33496	100nF 10% 63V	2303	4822 122 33496	100nF 10% 63V
2061	4822 121 51252	470nF 5% 63V	2304	4822 122 33496	100nF 10% 63V
2062	4822 122 33496	100nF 10% 63V	2305	4822 122 33496	100nF 10% 63V
			2306	4822 122 33496	100nF 10% 63V
			2307	4822 122 33496	100nF 10% 63V
			2308	4822 124 40196	220μF 20% 16V
			2309	4822 124 40196	220μF 20% 16V
			2310	4822 122 33496	100nF 10% 63V
			2311	4822 122 33496	100nF 10% 63V
			2312	4822 122 33806	820pF 10% 63V
			2313	4822 122 33806	820pF 10% 63V
			2314	5322 121 70125	130pF 630V

2315	5322 121 70125	130pF 630V
2316	5322 121 70125	130pF 630V
2317	5322 121 70125	130pF 630V
2318	4822 122 33496	100nF 10% 63V
2319	4822 122 33496	100nF 10% 63V
2320	4822 121 43861	56pF 1% 630V
2321	4822 121 43861	56pF 1% 630V
2322	4822 122 33496	100nF 10% 63V
2323	4822 122 33496	100nF 10% 63V
2324	4822 124 22473	100μF 25V
2325	4822 124 22473	100μF 25V
2326	4822 124 22473	100μF 25V
2327	4822 124 22473	100μF 25V
2340	4822 121 42783	2.2nF 1% 250V
2341	4822 121 42783	2.2nF 1% 250V
2342	5322 121 50999	470pF 1% 400V
2343	5322 121 50999	470pF 1% 400V
2344	4822 122 33496	100nF 10% 63V
2345	4822 122 33496	100nF 10% 63V
2346	4822 124 22473	100μF 25V
2347	4822 124 22473	100μF 25V
2348	4822 124 22339	100μF 16V
2349	4822 124 22339	100μF 16V
2350	4822 122 32575	220pF 10% 500V
2351	4822 122 32575	220pF 10% 500V
2352	4822 122 32575	220pF 10% 500V
2353	4822 122 32575	220pF 10% 500V
2501▲	4822 126 10454	3,3nF 20% 400V
2511	4822 122 33809	22nF 20% 50V
2512	4822 122 33809	22nF 20% 50V
2513	4822 122 33809	22nF 20% 50V
2514	4822 122 33809	22nF 20% 50V
2515	4822 122 33809	22nF 20% 50V
2516	4822 122 33809	22nF 20% 50V
2517	4822 122 33809	22nF 20% 50V
2518	4822 122 33809	22nF 20% 50V
2520	4822 124 23183	4700μF 20% 16V
2523	4822 124 41576	2,2μF 20% 50V
2525	4822 124 23268	3300μF 20% 16V
2526	4822 122 33809	22nF 20% 50V
2527	4822 122 33809	22nF 20% 50V
2528	4822 124 41577	4,7μF 20% 50V
2530	4822 122 33809	22nF 20% 50V
2531	4822 122 33809	22nF 20% 50V
2532	4822 124 23172	470μF 20% 50V
2533	4822 122 33809	22nF 20% 50V
2534	4822 122 33809	22nF 20% 50V
2535	4822 124 41576	2,2μF 20% 50V
2536	4822 124 23172	470μF 20% 50V
2537	4822 122 33809	22nF 20% 50V
2538	4822 122 33809	22nF 20% 50V
2539	4822 124 41577	4,7μF 20% 50V
2540	4822 122 33496	100nF 10% 63V
2542	4822 122 33809	22nF 20% 50V

2543	4822 122 33809	22nF 20% 50V
2544	4822 124 23172	470μF 20% 50V
2545	4822 122 33809	22nF 20% 50V
2546	4822 122 33809	22nF 20% 50V
2547	4822 122 33809	22nF 20% 50V
2548	4822 124 41577	4,7μF 20% 50V
2549	4822 122 33809	22nF 20% 50V
2561	4822 121 51252	470nF 5% 63V
2562	5322 121 42661	330nF 5% 63V
2563	4822 124 23172	470μF 20% 50V
2601	4822 124 40272	33μF 20% 16V
2602	4822 122 33809	22nF 20% 50V
2603	4822 124 40272	33μF 20% 16V
2604	4822 122 33809	22nF 20% 50V
2605	4822 122 33496	100nF 10% 63V
2704	4822 122 33809	22nF 20% 50V
2705	4822 124 41576	2,2μF 20% 50V
2706	4822 122 33809	22nF 20% 50V
2707	4822 122 33809	22nF 20% 50V
2708	4822 124 40272	33μF 20% 16V
2733	4822 122 33809	22nF 20% 50V
2751	4822 122 33809	22nF 20% 50V
2761	4822 124 40433	47μF 20% 25V
2762	4822 122 33809	22nF 20% 50V

RESISTORS

3000	4822 051 20472	4k7 5% 0,1W
3001	4822 051 20104	100k 5% 0,1W
3002▲	4822 052 10478	4Ω7 5% 0,33W
3003▲	4822 052 10478	4Ω7 5% 0,33W
3004	4822 050 21503	15k 1% 0,6W
3005	4822 051 10101	100Ω 2% 0,25W
3006	4822 050 21002	1k 1% 0,6W
3007	4822 050 22403	24k 1% 0,6W
3008	4822 050 25602	5k6 1% 0,6W
3009	4822 051 20103	10k 5% 0,1W
3025	4822 050 24703	47k 1% 0,6W
3026	4822 050 22203	22k 1% 0,6W
3027	4822 050 21802	1k8 1% 0,6W
3029	4822 050 25102	5k1 1% 0,6W
3030	4822 051 20224	220k 5% 0,1W
3031	4822 050 21203	12k 1% 0,6W
3032	4822 050 21504	150k 1% 0,6W
3033	4822 051 20223	22k 5% 0,1W
3041	4822 050 21103	11k 1% 0,6W
3042	4822 050 21504	150k 1% 0,6W
3043	4822 050 21204	120k 1% 0,6W
3044	4822 116 52234	100k 5% 0,5W
3045	4822 050 23904	390k 1% 0,6W
3046	4822 050 25603	56k 1% 0,6W
3047▲	4822 052 10828	8Ω2 5% 0,33W

MAIN PANEL			
MISCELLANEOUS			
21	▲	4822 256 30274	FUSE HOLDER
	▲	4822 492 63076	CLAMPING SPRING
1101		4822 265 30525	CONNECTOR 2P
1200		4822 218 21019	OPTICAL OUT
1201		4822 267 31626	DIGITAL OUT SOCKET
1250		4822 242 71349	CRYSTAL 11.2896MHZ
1301		4822 267 31755	ANALOG OUT SOCKET
1302		4822 267 50621	CONNECTOR 7P
1503	▲	4822 276 13216	MAINS SWITCH
1530	▲	4822 071 55001	FUSE 500mA
1700		4822 242 72527	RESONATOR 4MHZ
1702		4822 265 41115	CONNECTOR 15P
1704		4822 267 31728	ESI BUS SOCKET
1705		4822 267 31728	ESI BUS SOCKET
1731		4822 242 72527	RESONATOR 4MHZ
CAPACITORS			
2000		4822 122 33809	22nF 20% 50V
2001		5322 122 32268	470pF 10% 50V
2003		4822 122 33496	100nF 10% 63V
2006		4822 122 33496	100nF 10% 63V
2007		4822 122 33175	2,2nF 20% 50V
2008		4822 122 32542	47nF 10% 63V
2009		5322 122 32531	100pF 5% 50V
2010		4822 122 33177	10nF 20% 50V
2011		5322 122 34123	1nF 10% 50V
2012		4822 121 42408	220nF 5% 63V
2013		4822 121 51252	470nF 5% 63V
2014		4822 122 33575	220pF 5%NPO 50V
2015		5322 122 34123	1nF 10% 50V
2021		4822 121 51321	8,2nF 1% 63V
2022		4822 121 51321	8,2nF 1% 63V
2023		4822 124 40433	47μF 20% 25V
2025		5322 121 42661	330nF 5% 63V
2026		4822 122 33342	33nF 10% 63V
2027		4822 122 33342	33nF 10% 63V
2028		4822 121 42408	220nF 5% 63V
2029		4822 121 42408	220nF 5% 63V
2030		4822 122 33496	100nF 10% 63V
2031		4822 122 33496	100nF 10% 63V
2041		4822 121 51252	470nF 5% 63V
2042		5322 126 10223	4,7nF 10% 63V
2043		4822 121 42408	220nF 5% 63V
2044		4822 122 33496	100nF 10% 63V
2061		4822 121 51252	470nF 5% 63V
2062		4822 122 33496	100nF 10% 63V
2063		4822 122 33809	22nF 20% 50V
2064		4822 124 40433	47μF 20% 25V
2066		4822 124 40433	47μF 20% 25V
2071		4822 122 33496	100nF 10% 63V
2081		4822 122 33575	220pF 5%NPO 50V
2082		4822 124 40433	47μF 20% 25V
2088		4822 121 43526	47nF 5% 250V
2100		5322 122 32452	47pF 5% 63V
2101		4822 122 33175	2,2nF 20% 50V
2102		4822 122 33809	22nF 20% 50V
2103		4822 124 40433	47μF 20% 25V
2104		4822 122 33809	22nF 20% 50V
2105		4822 121 51252	470nF 5% 63V
2107		4822 124 40244	2,2μF 20% 63V
2108		4822 124 40433	47μF 20% 25V
2109		4822 122 33809	22nF 20% 50V
2131		4822 122 33893	18nF 10% 63V
2132		5322 121 42661	330nF 5% 63V
2133		4822 122 33175	2,2nF 20% 50V
2134		4822 122 33809	22nF 20% 50V
2135		4822 124 40196	220μF 20% 16V
2136		4822 122 33809	22nF 20% 50V
2137		4822 124 40196	220μF 20% 16V
2200		5322 122 31863	330pF 5% 50V
2201		4822 122 33809	22nF 20% 50V
2202		4822 124 40433	47μF 20% 25V
2203		4822 122 33809	22nF 20% 50V
2204		4822 122 33809	22nF 20% 50V
2205		5322 122 32452	47pF 5% 63V
2211		4822 124 40433	47μF 20% 25V
2212		4822 122 33809	22nF 20% 50V
2213		4822 122 33809	22nF 20% 50V
2214		4822 122 33496	100nF 10% 63V
2215		4822 122 33809	22nF 20% 50V
2216		5322 122 32452	47pF 5% 63V
2217		4822 122 33809	22nF 20% 50V
2218		4822 122 33809	22nF 20% 50V
2219		4822 124 40433	47μF 20% 25V
2250		4822 122 33496	100nF 10% 63V
2251		4822 124 40433	47μF 20% 25V
2252		4822 122 33496	100nF 10% 63V
2253		5322 122 32452	47pF 5% 63V
2254		5322 122 32452	47pF 5% 63V
2256		5322 122 32452	47pF 5% 63V
2300		4822 122 33496	100nF 10% 63V
2302		4822 122 33496	100nF 10% 63V
2303		4822 122 33496	100nF 10% 63V
2304		4822 122 33496	100nF 10% 63V
2305		4822 122 33496	100nF 10% 63V
2306		4822 122 33496	100nF 10% 63V
2307		4822 122 33496	100nF 10% 63V
2308		4822 124 40196	220μF 20% 16V
2309		4822 124 40196	220μF 20% 16V
2310		4822 122 33496	100nF 10% 63V
2311		4822 122 33496	100nF 10% 63V

2312	4822 122 33806	820pF 10% 63V
2313	4822 122 33806	820pF 10% 63V
2314	5322 121 70125	130pF 630V
2315	5322 121 70125	130pF 630V
2316	5322 121 70125	130pF 630V
2317	5322 121 70125	130pF 630V
2318	4822 122 33496	100nF 10% 63V
2319	4822 122 33496	100nF 10% 63V
2320	4822 121 43861	56pF 1% 630V
2321	4822 121 43861	56pF 1% 630V
2322	4822 122 33496	100nF 10% 63V
2323	4822 122 33496	100nF 10% 63V
2324	4822 124 22473	100μF 25V
2325	4822 124 22473	100μF 25V
2326	4822 124 22473	100μF 25V
2327	4822 124 22473	100μF 25V
2340	4822 121 42783	2.2nF 1% 250V
2341	4822 121 42783	2.2nF 1% 250V
2342	5322 121 50999	470pF 1% 400V
2343	5322 121 50999	470pF 1% 400V
2344	4822 122 33496	100nF 10% 63V
2345	4822 122 33496	100nF 10% 63V
2346	4822 124 22473	100μF 25V
2347	4822 124 22473	100μF 25V
2348	4822 124 22339	100μF 16V
2349	4822 124 22339	100μF 16V
2350	4822 122 33575	220pF 5%NPO 50V
2351	4822 122 33575	220pF 5%NPO 50V
2352	4822 122 33575	220pF 5%NPO 50V
2353	4822 122 33575	220pF 5%NPO 50V
2501	4822 126 10454	3,3nF 20% 400V
2511	4822 122 33809	22nF 20% 50V
2512	4822 122 33809	22nF 20% 50V
2513	4822 122 33809	22nF 20% 50V
2514	4822 122 33809	22nF 20% 50V
2515	4822 122 33809	22nF 20% 50V
2516	4822 122 33809	22nF 20% 50V
2517	4822 122 33809	22nF 20% 50V
2518	4822 122 33809	22nF 20% 50V
2520	4822 124 41458	4700μF 20% 16V
2523	4822 124 40244	2,2μF 20% 63V
2525	4822 124 80294	3300μF 20% 16V
2526	4822 122 33809	22nF 20% 50V
2527	4822 122 33809	22nF 20% 50V
2528	4822 124 40246	4,7μF 20% 63V
2530	4822 122 33809	22nF 20% 50V
2531	4822 122 33809	22nF 20% 50V
2532	4822 124 41184	470μF 20% 63V
2533	4822 122 33809	22nF 20% 50V
2534	4822 122 33809	22nF 20% 50V
2535	4822 124 40244	2U2 20% 50V
2536	4822 124 41184	470U 20% 50V
2537	4822 122 33809	22nF 20% 50V

2538	4822 122 33809	22nF 20% 50V
2539	4822 124 40246	4,7μF 20% 63V
2540	4822 122 33496	100nF 10% 63V
2542	4822 122 33809	22nF 20% 50V
2543	4822 122 33809	22nF 20% 50V
2544	4822 124 42392	470μF 20% 50V
2545	4822 122 33809	22nF 20% 50V
2546	4822 122 33809	22nF 20% 50V
2547	4822 122 33809	22nF 20% 50V
2548	4822 124 40246	4,7μF 20% 63V
2549	4822 122 33809	22nF 20% 50V
2561	4822 121 51252	470nF 5% 63V
2562	5322 121 42661	330nF 5% 63V
2563	4822 124 42392	470μF 20% 50V
2601	4822 124 40433	47μF 20% 25V
2602	4822 122 33809	22nF 20% 50V
2603	4822 124 40433	47μF 20% 25V
2604	4822 122 33809	22nF 20% 50V
2605	4822 122 33496	100nF 10% 63V
2704	4822 122 33809	22nF 20% 50V
2705	4822 124 40244	2,2μF 20% 63V
2706	4822 122 33809	22nF 20% 50V
2707	4822 122 33809	22nF 20% 50V
2708	4822 124 40433	47μF 20% 25V
2733	4822 122 33809	22nF 20% 50V
2751	4822 122 33809	22nF 20% 50V
2761	4822 124 40433	47μF 20% 25V
2762	4822 122 33809	22nF 20% 50V
2763	4822 122 33809	22nF 20% 50V

RESISTORS

3000	4822 051 20472	4k7 5% 0,1W
3001	4822 051 20104	100k 5% 0,1W
3002 ▲	4822 052 10478	4Ω 5% 0,33W
3003 ▲	4822 052 10478	4Ω 5% 0,33W
3004	4822 050 21503	15k 1% 0,6W
3005	4822 116 52175	100Ω 5% 0,5W
3006	4822 050 11002	1k 1% 0,4W
3007	4822 050 22403	24k 1% 0,6W
3008	4822 050 25602	5k6 1% 0,6W
3009	4822 117 10833	10k 1% 0,1W
3025	4822 050 24703	47k 1% 0,6W
3026	4822 050 22203	22k 1% 0,6W
3027	4822 050 21802	1k8 1% 0,6W
3029	4822 050 25102	5k1 1% 0,6W
3030	4822 051 20224	220k 5% 0,1W
3031	4822 116 52238	12k 5% 0,5W
3032	4822 116 52245	150k 5% 0,5W
3033	4822 051 20223	22k 5% 0,1W
3041	4822 050 21103	11k 1% 0,6W
3042	4822 050 21504	150k 1% 0,6W

3043	4822 050 21204	120k 1% 0,6W
3044	4822 116 52234	100k 5% 0,5W
3045	4822 050 23904	390k 1% 0,6W
3046	4822 050 25603	56k 1% 0,6W
3047 ▲	4822 052 10828	8Ω 5% 0,33W
3048 ▲	4822 052 10229	22Ω 5% 0,33W
3049	4822 050 23305	3M3 1% 0,6W
3061	4822 051 20332	3k3 5% 0,1W
3062	4822 050 23002	3k 1% 0,6W
3063	4822 050 23308	3Ω 3 1% 0,6W
3064 ▲	4822 052 10339	33Ω 5% 0,33W
3065 ▲	4822 052 10108	1Ω 5% 0,33W
3066 ▲	4822 052 10108	1Ω 5% 0,33W
3067	4822 116 52175	100Ω 5% 0,5W
3069	4822 116 52238	12k 5% 0,5W
3070	4822 116 52238	12k 5% 0,5W
3071	4822 051 20223	22k 5% 0,1W
3072	4822 116 52257	22k 5% 0,5W
3074	4822 051 10008	0Ω 5% 0,25W
3081 ▲	4822 052 10189	18Ω 5% 0,33W
3082 ▲	4822 052 10129	12Ω 5% 0,33W
3083	4822 051 20101	100Ω 5% 0,1W
3094	4822 116 52251	18k 5% 0,5W
3100	4822 116 52256	2k2 5% 0,5W
3101	4822 051 20223	22k 5% 0,1W
3102 ▲	4822 052 10478	4Ω 7 5% 0,33W
3105	4822 051 20759	75Ω 5% 0,1W
3106	4822 116 52276	3k9 5% 0,5W
3107	4822 116 52306	9k1 5% 0,5W
3108	4822 051 20162	1k6 5% 0,1W
3109 ▲	4822 052 10478	4Ω 7 5% 0,33W
3116	4822 116 52257	22k 5% 0,5W
3131	4822 116 52283	4k7 5% 0,5W
3132	4822 116 52284	47k 5% 0,5W
3133	4822 116 52234	100k 5% 0,5W
3134	4822 051 20913	91k 5% 0,1W
3135	4822 116 52269	3k3 5% 0,5W
3136	4822 116 52289	5k6 5% 0,5W
3137	4822 116 52245	150k 5% 0,5W
3138	4822 116 52304	82k 5% 0,5W
3139	4822 116 52175	100Ω 5% 0,5W
3140 ▲	4822 052 10478	4Ω 7 5% 0,33W
3141 ▲	4822 052 10478	4Ω 7 5% 0,33W
3142 ▲	4822 052 10478	4Ω 7 5% 0,33W
3143 ▲	4822 052 10478	4Ω 7 5% 0,33W
3144	4822 116 52298	680k 5% 0,5W
3145	4822 116 52289	5k6 5% 0,5W
3146	4822 116 52271	33k 5% 0,5W
3147	4822 116 52283	4k7 5% 0,5W
3148	4822 116 52283	4k7 5% 0,5W
3149	4822 116 52207	1k2 5% 0,5W
3150	4822 116 52248	160k 5% 0,5W
3151	4822 116 52283	4k7 5% 0,5W
3201 ▲	4822 052 10478	4Ω 7 5% 0,33W

3211 ▲	4822 052 10478	4Ω 7 5% 0,33W
3212	4822 116 52226	560Ω 5% 0,5W
3213	4822 051 20621	620Ω 5% 0,1W
3214	4822 116 52257	22k 5% 0,5W
3215	4822 051 20472	4k7 5% 0,1W
3216	4822 051 20223	22k 5% 0,1W
3217 ▲	4822 052 10478	4Ω 7 5% 0,33W
3218	4822 051 20822	8k2 5% 0,1W
3219	4822 116 52257	22k 5% 0,5W
3226	4822 051 20101	100Ω 5% 0,1W
3227	4822 051 20101	100Ω 5% 0,1W
3250 ▲	4822 052 10478	4Ω 7 5% 0,33W
3251	4822 051 20224	220k 5% 0,1W
3252	4822 051 10102	1k 2% 0,25W
3253	4822 051 20101	100Ω 5% 0,1W
3255	4822 051 20105	1M 5% 0,1W
3300 ▲	4822 052 10109	10Ω 5% 0,33W
3302 ▲	4822 052 10109	10Ω 5% 0,33W
3303 ▲	4822 052 10109	10Ω 5% 0,33W
3304 ▲	4822 052 10109	10Ω 5% 0,33W
3305 ▲	4822 052 10109	10Ω 5% 0,33W
3306	4822 116 52243	1k5 5% 0,5W
3307	4822 116 52243	1k5 5% 0,5W
3308	4822 116 52269	3k3 5% 0,5W
3309	4822 116 52269	3k3 5% 0,5W
3310	4822 050 25601	560Ω 1% 0,6W
3311	4822 050 25601	560Ω 1% 0,6W
3312	4822 050 23302	3k3 1% 0,6W
3313	4822 050 23302	3k3 1% 0,6W
3314	4822 050 22003	20k 1% 0,6W
3315	4822 050 22003	20k 1% 0,6W
3316	4822 050 22003	20k 1% 0,6W
3317	4822 050 22003	20k 1% 0,6W
3318 ▲	4822 052 10478	4Ω 7 5% 0,33W
3319 ▲	4822 052 10478	4Ω 7 5% 0,33W
3320	4822 050 23302	3k3 1% 0,6W
3321	4822 050 23302	3k3 1% 0,6W
3322	4822 050 23602	3k6 1% 0,6W
3323	4822 050 23602	3k6 1% 0,6W
3324	4822 050 21003	10k 1% 0,6W
3325	4822 050 21003	10k 1% 0,6W
3326	4822 050 21103	11k 1% 0,6W
3327	4822 050 21103	11k 1% 0,6W
3328 ▲	4822 052 10229	22Ω 5% 0,33W
3329 ▲	4822 052 10229	22Ω 5% 0,33W
3330	4822 050 22402	2k4 1% 0,6W
3331	4822 050 22402	2k4 1% 0,6W
3340	4822 050 22402	2k4 1% 0,6W
3341	4822 050 22402	2k4 1% 0,6W
3342 ▲	4822 052 10229	22Ω 5% 0,33W
3343 ▲	4822 052 10229	22Ω 5% 0,33W
3344	4822 117 10833	10k 1% 0,1W
3345	4822 117 10833	10k 1% 0,1W

3346	4822 116 52175	100Ω 5% 0,5W
3347	4822 116 52175	100Ω 5% 0,5W
3348	4822 116 52175	100Ω 5% 0,5W
3349	4822 116 52175	100Ω 5% 0,5W
3350	4822 116 52207	1k2 5% 0,5W
3351	4822 116 52207	1k2 5% 0,5W
3352	4822 116 52256	2k2 5% 0,5W
3353	4822 116 52256	2k2 5% 0,5W
3356	4822 116 52175	100Ω 5% 0,5W
3357	4822 116 52175	100Ω 5% 0,5W
3358	4822 051 20222	2k2 5% 0,1W
3359	4822 051 20222	2k2 5% 0,1W
3360	4822 051 20472	4k7 5% 0,1W
3361	4822 051 20472	4k7 5% 0,1W
3362	4822 116 52233	10k 5% 0,5W
3363	4822 116 52233	10k 5% 0,5W
3366	4822 116 52283	4k7 5% 0,5W
3367	4822 116 52283	4k7 5% 0,5W
3368	4822 116 52258	220k 5% 0,5W
3369	4822 116 52258	220k 5% 0,5W
3370	4822 116 52285	470k 5% 0,5W
3371	4822 116 52285	470k 5% 0,5W
3520	4822 050 11002	1k 1% 0,4W
3521	4822 050 11002	1k 1% 0,4W
3522 ▲	4822 052 10108	1Ω 5% 0,33W
3523	4822 116 52233	10k 5% 0,5W
3524 ▲	4822 052 10229	22Ω 5% 0,33W
3525	4822 116 52269	3k3 5% 0,5W
3526	4822 116 52283	4k7 5% 0,5W
3527	4822 116 52257	22k 5% 0,5W
3528	4822 116 52283	4k7 5% 0,5W
3529	4822 116 52175	100Ω 5% 0,5W
3530	4822 051 20331	330Ω 5% 0,1W
3531	4822 051 10102	1k 2% 0,25W
3541	4822 116 52269	3k3 5% 0,5W
3561	4822 050 11002	1k 1% 0,4W
3562	4822 117 10834	47k 1% 0,1W
3563	4822 050 22205	2M2 1% 0,6W
3564	4822 116 52233	10k 5% 0,5W
3565	4822 116 52271	33k 5% 0,5W
3566	4822 116 52258	220k 5% 0,5W
3567	4822 050 11002	1k 1% 0,4W
3600	4822 050 25102	5k1 1% 0,6W
3602	4822 116 52233	10k 5% 0,5W
3603	4822 116 52233	10k 5% 0,5W
3604	4822 116 52233	10k 5% 0,5W
3605	4822 116 52233	10k 5% 0,5W
3606 ▲	4822 052 10108	1Ω 5% 0,33W
3607 ▲	4822 052 10108	1Ω 5% 0,33W
3608 ▲	4822 052 10229	22Ω 5% 0,33W
3701	4822 051 20224	220k 5% 0,1W
3702 ▲	4822 052 10228	2Ω2 5% 0,33W
3703	4822 051 20223	22k 5% 0,1W

3705	4822 051 20223	22k 5% 0,1W
3708	4822 051 20223	22k 5% 0,1W
3711	4822 051 20223	22k 5% 0,1W
3721	4822 051 20221	220Ω 5% 0,1W
3722	4822 051 10102	1k 2% 0,25W
3723	4822 051 20223	22k 5% 0,1W
3731	4822 051 20224	220k 5% 0,1W
3732	4822 051 20332	3k3 5% 0,1W
3734	4822 051 20223	22k 5% 0,1W
3735	4822 116 52257	22k 5% 0,5W
3736	4822 051 20223	22k 5% 0,1W
3741	5322 111 90473	RES.NETWORK
3742	4822 051 20223	22k 5% 0,1W
3747	4822 050 11002	1k 1% 0,4W
3748	4822 116 52257	22k 5% 0,5W
3749	4822 116 52219	330Ω 5% 0,5W
3750	4822 051 20223	22k 5% 0,1W
3751	4822 117 10833	10k 1% 0,1W
3752	4822 117 10833	10k 1% 0,1W
3761 ▲	4822 052 10109	10Ω 5% 0,33W
3762	4822 051 20183	18k 5% 0,1W
3763	4822 117 10834	47k 1% 0,1W
3764	4822 116 52175	100Ω 5% 0,5W
3765	4822 117 10834	47k 1% 0,1W
3766	4822 117 10834	47k 1% 0,1W
3767	4822 116 52284	47k 5% 0,5W
3768	4822 116 52284	47k 5% 0,5W
3800	4822 051 10008	0Ω 5% 0,25W
....		
3838	4822 051 10008	0Ω 5% 0,25W

COILS

5211	4822 148 80281	DIG.OUT TRANSFORMER
5300	4822 157 50964	100μH
5301	4822 157 50964	100μH
5502 ▲	4822 214 51841	MAINS FILTER

3048▲	4822 052 10229	22Ω	5%	0,33W
3049	4822 050 23305	3M3	1%	0,6W
3061	4822 051 20332	3k3	5%	0,1W
3062	4822 050 23002	3k	1%	0,6W
3063	4822 050 23308	3Ω3	1%	0,6W
3064▲	4822 052 10339	33Ω	5%	0,33W
3065▲	4822 052 10108	1Ω	5%	0,33W
3066▲	4822 052 10108	1Ω	5%	0,33W
3067	4822 051 10101	100Ω	2%	0,25W
3071	4822 051 20223	22k	5%	0,1W
3072	4822 050 22203	22k	1%	0,6W
3074	4822 051 10008	chip jumper	0Ω	
3081▲	4822 052 10189	18Ω	5%	0,33W
3082▲	4822 052 10129	12Ω	5%	0,33W
3083	4822 051 20101	100Ω	5%	0,1W
3094	4822 050 21803	18k	1%	0,6W
3100	4822 050 22202	2k2	1%	0,6W
3101	4822 051 20223	22k	5%	0,1W
3102▲	4822 052 10478	4Ω7	5%	0,33W
3105	4822 051 20759	75Ω	5%	0,1W
3106	4822 050 23902	3k9	1%	0,6W
3107	4822 050 29102	9k1	1%	0,6W
3108	4822 051 20162	1k6	5%	0,1W
3109▲	4822 052 10478	4Ω7	5%	0,33W
3110	5322 116 51882	0Ω		
3111	5322 116 51882	0Ω		
3112	5322 116 51882	0Ω		
3113	5322 116 51882	0Ω		
3114	5322 116 51882	0Ω		
3115	5322 116 51882	0Ω		
3116	4822 050 22203	22k	1%	0,6W
3131	4822 050 24702	4k7	1%	0,6W
3132	4822 050 24703	47k	1%	0,6W
3133	4822 116 52234	100k	5%	0,5W
3134	4822 051 20913	91k	5%	0,1W
3135	4822 050 23302	3k3	1%	0,6W
3136	4822 050 15602	5k6	1%	0,4W
3137	4822 050 21504	150k	1%	0,6W
3138	4822 050 28203	82k	1%	0,6W
3139	4822 051 10101	100Ω	2%	0,25W
3140▲	4822 052 10478	4Ω7	5%	0,33W
3141▲	4822 052 10478	4Ω7	5%	0,33W
3142▲	4822 052 10478	4Ω7	5%	0,33W
3143▲	4822 052 10478	4Ω7	5%	0,33W
3144	4822 050 26804	680k	1%	0,6W
3145	4822 050 15602	5k6	1%	0,4W
3146	4822 050 13303	33k	1%	0,4W
3147	4822 050 24702	4k7	1%	0,6W
3148	4822 050 24702	4k7	1%	0,6W
3149	4822 051 10122	1k2	2%	0,25W

3150	4822 050 22004	200k	1%	0,6W
3201▲	4822 052 10478	4Ω7	5%	0,33W
3211▲	4822 052 10478	4Ω7	5%	0,33W
3212	4822 051 10561	560Ω	2%	0,25W
3213	4822 051 20621	620Ω	5%	0,1W
3214	4822 050 22203	22k	1%	0,6W
3215	4822 051 20223	22k	5%	0,1W
3216	4822 051 20223	22k	5%	0,1W
3217▲	4822 052 10478	4Ω7	5%	0,33W
3218	4822 051 20822	8k2	5%	0,1W
3219	4822 050 22203	22k	1%	0,6W
3221	5322 116 51882	0Ω		
3222	5322 116 51882	0Ω		
3223	5322 116 51882	0Ω		
3224	5322 116 51882	0Ω		
3225	5322 116 51882	0Ω		
3250▲	4822 052 10478	4Ω7	5%	0,33W
3251	4822 051 20224	220k	5%	0,1W
3252	4822 051 10102	1k	2%	0,25W
3255	4822 051 20105	1M	5%	0,1W
3300▲	4822 052 10109	10Ω	5%	0,33W
3302▲	4822 052 10109	10Ω	5%	0,33W
3303▲	4822 052 10109	10Ω	5%	0,33W
3304▲	4822 052 10109	10Ω	5%	0,33W
3305▲	4822 052 10109	10Ω	5%	0,33W
3306	4822 050 21502	1k5	1%	0,6W
3307	4822 050 21502	1k5	1%	0,6W
3308	4822 050 23302	3k3	1%	0,6W
3309	4822 050 23302	3k3	1%	0,6W
3310	4822 050 25601	560Ω	1%	0,6W
3311	4822 050 25601	560Ω	1%	0,6W
3312	4822 050 23302	3k3	1%	0,6W
3313	4822 050 23302	3k3	1%	0,6W
3314	4822 050 22003	20k	1%	0,6W
3315	4822 050 22003	20k	1%	0,6W
3316	4822 050 22003	20k	1%	0,6W
3317	4822 050 22003	20k	1%	0,6W
3318▲	4822 052 10478	4Ω7	5%	0,33W
3319▲	4822 052 10478	4Ω7	5%	0,33W
3320	4822 050 23302	3k3	1%	0,6W
3321	4822 050 23302	3k3	1%	0,6W
3322	4822 050 23302	3k3	1%	0,6W
3323	4822 050 23302	3k3	1%	0,6W
3324	4822 050 21003	10k	1%	0,6W
3325	4822 050 21003	10k	1%	0,6W
3326	4822 050 21003	10k	1%	0,6W
3327	4822 050 21003	10k	1%	0,6W
3328▲	4822 052 10229	22Ω	5%	0,33W
3329▲	4822 052 10229	22Ω	5%	0,33W
3330	4822 050 22402	2k4	1%	0,6W

COILS			7203	5322 209 12099	MC74HC164D
			7204	4822 209 30739	MC74HC04AD
			7211	4822 209 62588	PCF3523P
			7212	4822 130 61207	BC848
			7213	4822 209 31284	MC74HC08ADR2
5211	4822 148 80281	DIG.OUT TRANSFORMER	7250	4822 209 31356	SAA7350
5300	4822 156 21452	100μH	7300	4822 209 31355	TDA1547
5301	4822 156 21452	100μH	7302	5322 209 86234	NE5532N
DIODES			7303	5322 209 86234	NE5532N
			7304	4822 130 42696	BC818-25
6061	4822 130 30861	BZX79-C7V5	7305	4822 130 42696	BC818-25
6062	4822 130 30861	BZX79-C7V5	7306	4822 130 42696	BC818-25
6511	5322 130 30684	1N4002	7307	4822 130 42696	BC818-25
6512	5322 130 30684	1N4002	7308	4822 130 61207	BC848
6513	5322 130 30684	1N4002	7309	4822 130 61207	BC848
6514	5322 130 30684	1N4002	7310	5322 130 42012	BC858
6515	5322 130 30684	1N4002	7311	5322 130 42012	BC858
6516	5322 130 30684	1N4002	7312	4822 130 42696	BC818-25
6517	5322 130 30684	1N4002	7313	4822 130 42696	BC818-25
6518	5322 130 30684	1N4002	7314	4822 130 42633	BSR56
6521	5322 130 30684	1N4002	7315	4822 130 42633	BSR56
6522	4822 130 34173	BZX79-C5V6	7522▲	4822 209 73233	MC79L05ACP
6541	5322 130 30684	1N4002	7526	4822 209 31354	PQ05ΩF11
6543	4822 130 34278	BZX79-F6V8	7527	4822 209 80889	MC78L15ACP
6544	4822 130 34173	BZX79-C5V6	7528	5322 209 62115	MC79L15AC
6561	4822 130 34278	BZX79-F6V8	7529	5322 130 42012	BC858
6562	4822 130 30621	1N4148	7530	4822 130 61207	BC848
6563	4822 130 30621	1N4148	7531	5322 130 44349	BC635
6564	4822 130 30621	1N4148	7541	4822 209 31257	MC79L24ACP
6565	5322 130 30684	1N4002	7561▲	5322 130 41982	BC848B
6566	5322 130 30684	1N4002	7562	5322 130 42012	BC858
6567	4822 130 31981	BZX79-C3V9	7600	4822 209 72587	TCA0372DP2-
6568	4822 130 30621	1N4148	7701	4822 209 30938	MC68HC05C8P-ZC405027
6721	4822 130 31981	BZX79-C3V9	7702	4822 209 80891	MC78M05CT
TRANSISTORS & IC's			7721	5322 130 42012	BC858
7001	4822 209 73234	TDA8808T/C3	7731	4822 209 31351	MC68HC05D9P-P138
7002	4822 209 73235	TDA8809T/C2	7732	5322 130 42012	BC858
7003	4822 209 72587	TCA0372DP2-	7733	4822 130 61207	BC848
7004	5322 130 44349	BC635	7751	4822 209 62524	X24C16P
7005	4822 209 30719	MC74HC00AD	7761	5322 130 42012	BC858
7100	4822 209 61759	SAA7310GP/H5	7762	4822 130 61207	BC848
7101	4822 130 42131	BF550	7763	4822 130 61207	BC848
7102▲	4822 209 70422	MN4264-15			
7131	4822 209 83274	NJM4560D			
7132	4822 130 44121	BC338			
7133	4822 130 44104	BC328			
7134	5322 130 42012	BC858A			
7135	5322 130 42012	BC858A			
7201	4822 209 30939	SM5840AS			
7202	5322 209 12099	MC74HC164D			

DISPLAY & KEYBOARD PANEL					
MISCELLANEOUS					
1310	4822 256 91848	DISPLAY HOLDER	3406	4822 050 22203	22k 1% 0.6W
BU-5	4822 267 50621	CONNECTOR 7P	3407	4822 050 22203	22k 1% 0.6W
1401	4822 267 31453	HEADPHONE SOCKET	3408	4822 050 22203	22k 1% 0.6W
1402	4822 242 81002	RESONATOR 6MHz	3409	4822 050 22203	22k 1% 0.6W
	4822 130 91115	DISPLAY	3410	4822 116 52234	100k 5% 0.5W
1403	4822 265 41115	CONNECTOR 15P	3411	4822 051 10101	100Ω 2% 0.25W
1404	4822 267 50621	CONNECTOR 7P	3412	4822 116 52234	100k 5% 0.5W
1405	4822 267 40624	CONNECTOR 5P	3413	4822 051 10101	100Ω 2% 0.25W
1406	4822 267 50621	CONNECTOR 7P	3414	5322 111 90473	8x10k 2% NETWORK
1407	4822 267 40624	CONNECTOR 5P	3415	4822 116 52235	1M 5% 0.5W
1410	4822 276 13114	TACT SWITCH	3416	4822 050 21002	1k 1% 0.6W
1411	4822 276 13114	TACT SWITCH	3417	4822 050 24703	47k 1% 0.6W
1412	4822 276 13114	TACT SWITCH	3418	4822 050 24702	4k7 1% 0.6W
1413	4822 276 13114	TACT SWITCH	3419	4822 050 24702	4k7 1% 0.6W
1414	4822 276 13213	TACT SWITCH	3420▲	4822 052 10478	4Ω7 5% 0.33W
1415	4822 276 13213	TACT SWITCH	3421	4822 050 24702	4k7 1% 0.6W
1416	4822 276 13114	TACT SWITCH	DIODES		
1417	4822 276 13213	TACT SWITCH	6401	4822 130 30621	1N4148
1418	4822 276 13213	TACT SWITCH	6402	4822 130 30621	1N4148
1419	4822 276 13213	TACT SWITCH	6403	4822 130 30621	1N4148
1420	4822 276 13213	TACT SWITCH	6404	4822 130 30621	1N4148
1421	4822 276 13213	TACT SWITCH	6405	4822 130 30621	1N4148
1422	4822 276 13114	TACT SWITCH	6406	4822 130 83029	LED CTL-4212N
1423	4822 276 13114	TACT SWITCH	TRANSISTORS & IC'S		
1424	4822 276 13114	TACT SWITCH	7401	4822 209 31251	TMP47C670P-FTDD007
1425	4822 276 13114	TACT SWITCH	7403	4822 209 60886	UDN-2580A
1426	4822 276 13114	TACT SWITCH	7405	4822 130 40941	BC558
1451	4822 214 51772	TACT SWITCH	7406	4822 130 40941	BC558
CAPACITORS					
2401	5322 124 21643	22μF 20% 40V			
2402	4822 122 10166	22nF 30% 16V			
2403	5322 124 21643	22μF 20% 40V			
2404	4822 122 10166	22nF 30% 16V			
2405	5322 124 21643	22μF 20% 40V			
2406	4822 122 10166	22nF 30% 16V			
2420	5322 124 21643	22μF 20% 40V			
2421	4822 122 10166	22nF 30% 16V			
RESISTORS					
3401▲	4822 052 10478	4Ω7 5% 0.33W			
3402▲	4822 052 10478	4Ω7 5% 0.33W			
3403▲	4822 052 10478	4Ω7 5% 0.33W			
3404	4822 050 22203	22k 1% 0.6W			
3405	4822 050 22203	22k 1% 0.6W			

HEADPHONE PANEL			MISCELLANEOUS	
MISCELLANEOUS			SK-1▲ 4822 276 13216	MAINS SWITCH
			21▲ 4822 256 30274	FUSE HOLDER
1310	4822 267 50621	CONNECTOR 7P	1501▲ 4822 070 31251	FUSE 125mA
BU-5	4822 267 31453	HEADPHONE SOCKET	1501▲ 4822 253 30322	FUSE 200mA
			5001▲ 4822 146 31101	MAINS TRANSFORMER
			5001▲ 4822 146 31103	MAINS TRAFO /17S
			5502▲ 4822 214 51841	MAINS FILTER
CAPACITORS				
2380	4822 124 41525	100μF 20% 25V		
2381	4822 124 41525	100μF 20% 25V		
2382	4822 122 10166	22nF 30% 16V		
2383	4822 122 10166	22nF 30% 16V		
RESISTORS				
3381	4822 101 21199	10k LOG POTMETER		
3382	4822 116 52264	27k 5% 0,5W		
3383	4822 116 52264	27k 5% 0,5W		
3384	4822 050 21203	12k 1% 0,6W		
3385	4822 050 21203	12k 1% 0,6W		
3386	4822 050 21201	120Ω 1% 0,6W		
3387	4822 050 21201	120Ω 1% 0,6W		
3388	4822 051 10101	100Ω 2% 0,25W		
3389	4822 051 10101	100Ω 2% 0,25W		
3390▲	4822 052 10109	10Ω 5% 0,33W		
3391▲	4822 052 10109	10Ω 5% 0,33W		
3392	4822 050 22202	2k2 1% 0,6W		
3393	4822 050 22202	2k2 1% 0,6W		
TRANSISTORS & IC				
7380	4822 209 82362	NJM4556D		
7382	4822 130 44121	BC338		
7383	4822 130 44121	BC338		