

Service
Service
Service



AZ7262/00/05

AZ7263/11

AZ7264/06/11/13

AZ7266/17

AZ7267/00/05/06

AZ7268/00/01/05/10/11/17

SHARON PLATFORM 1

Service Manual



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**CLASS 1
LASER PRODUCT**

TECHNICAL SPECIFICATION

General

Dimensions (WxHxD)	: 134x30.5x154mm
Weight without batteries	: 250g

Power supply modes

DC-in socket	: 4.5-5.5V
Battery 2xLR6	: 1.8-3.6V
Accu-pack AY3361 (NiCd)	: 1.8-3.6V

Battery lifetime

Battery 2xLR6	: 6hrs typ.
Accu-pack AY3361 (NiCd)	: 3hrs typ.

Battery empty detection

Battery weak level	: 2.0V nom. $\pm 200\text{mV}$
Battery empty level	: 1.8V nom. $\pm 100\text{mV}$

Charge circuit

Charge current	: 200mA nom. $\pm 10\%$
Charge time for 80%	: 3.5hrs nom.
Max. charge time	: 7hrs nom.
Temperature protection	: $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$

Current consumption (DC-in=4.5V)

PLAY-mode	: 210mA typ.
JUMP-mode	: 485mA typ.
Stand-by (excl. recharge)	: 150mA typ.

Current consumption (Batt. supply=2.25V)

PLAY-mode	: 270mA typ.
JUMP-mode	: 460mA typ.
Stand-by (excl. recharge)	: $50\mu\text{A}$ typ.

Shock resistance

+X/-X direction	: $>4\text{G}$
+Y/-Y direction	: $>4\text{G}$
+Z/-Z direction	: $>3\text{G}$

Shock resistance by use of car base

+X/-X direction	: $>6\text{G}$
+Y/-Y direction	: $>6\text{G}$
+Z/-Z direction	: $>6\text{G}$

Headphone out (load impedance 16Ω , except crosstalk)

Output power	: $2 \times 10\text{mW} \pm 2\text{dB}$
Frequency response (max vol.)	: 20Hz-20kHz within 8dB
S/N ratio (unw.)	: $>80\text{dB}$ (83dB typ.)
S/N ratio (A-wght)	: $>82\text{dB}$ (85dB typ.)
THD+N (1kHz, 1mW)	: $<0.3\%$ (0.05% typ.)
Channel crosstalk (1kHz, no load)	: $<-40\text{dB}$
Channel unbalance (-40dB)	: $<5\text{dB}$
Volume attenuation (1kHz)	: $>70\text{dB}$

CD out (not on all versions)

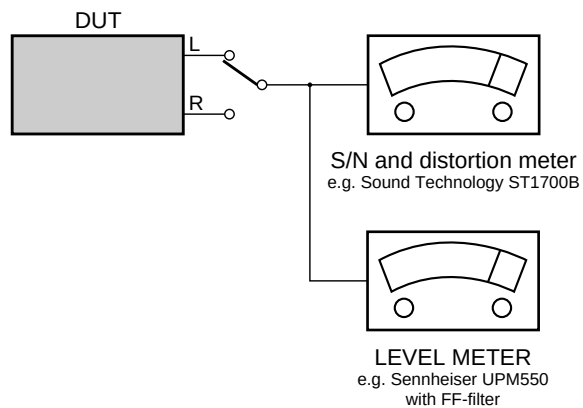
Output level (1kHz, 0dB)	: $900\text{mV} \pm 2\text{dB}$
Frequency response	: 20Hz-20kHz within 6dB
S/N ratio (unw.)	: $>80\text{dB}$ (83dB typ.)
S/N ratio (A-wght)	: $>85\text{dB}$ (88dB typ.)
THD+N (1kHz, 0dB)	: $<0.2\%$ (0.05% typ.)
THD+N (10kHz, -20dB)	: 0.5% typ.
Channel crosstalk (1kHz)	: $<-45\text{dB}$ (-50dB typ.)
Channel crosstalk (10kHz)	: -40dB typ.
Channel unbalance (1kHz, 0dB)	: $<1\text{dB}$ (0.5dB typ.)
Dynamic range (1kHz, -60dB)	: 90dB typ.

Laser

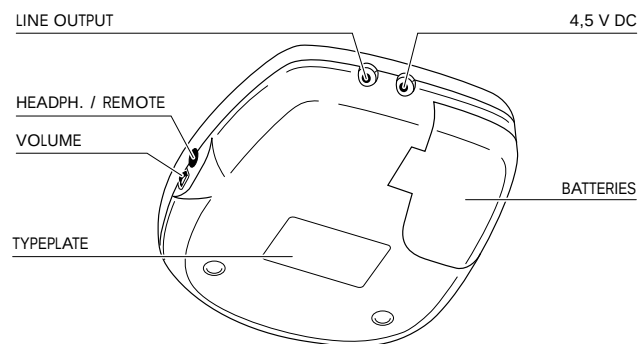
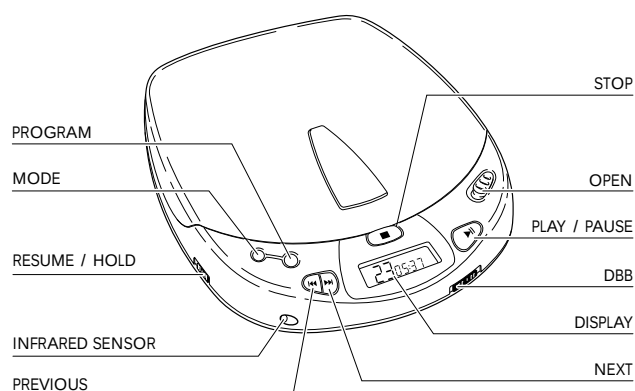
Output power	: $<5\text{mW}$ (3mW typ.)
Wavelength	: 780nm

Measurement setup

Use Audio Signal disc SBC429 4822 397 30184



CONNECTIONS AND CONTROLS



- DISPLAY**Window for showing the different playing modes, tracks and times
- ▶▶**Button for selecting the next music track or, if held down, for searching forward for a particular passage on the CD
- ◀◀**Button for selecting the previous music track or, if held down, for searching backward for a particular passage on the CD
- VOLUME**Control for adjusting the volume at the headphone output
- RESUME/HOLD**Switch for activating the RESUME function (resuming CD play) and/or HOLD (blocking all buttons) function
- MODE** ○Button for selecting the different playing modes:
SHUFFLE → SHUFFLE REPEAT ALL → REPEAT 1 → REPEAT ALL → SCAN → off
- PROG**Button for storing tracks in a program and for reviewing the program
- DBB**Dynamic Bass Boost: Button for boosting the bass response
- STOP** ■Button for stopping CD play, deleting various settings, switching off the CD player and activating charging.
- OPEN**Slide control for opening the lid of the CD player
- ▶||**Button for starting and pausing CD play
- 🔌 / CD OUT**Headphone and remote control socket (3.5mm)
- 4.5 V DC**Socket for external power supply
- Battery compartment**for inserting batteries

FEATURES SHARON PLATFORM 1

FEATURES SHARON 1	AZ7261	AZ7262	AZ7263	AZ7264	AZ7266	AZ7267	AZ7268
RESUME FUNCTION	X	X	X	X	X	X	X
DYNAMIC BASS BOOST	X	X	X	X	X	X	X
RECHARGE FUNCTION NiCd	X	X	X	X	X	X	X
CORD REMOTE CONTROL PREPARED	—	—	—	X	—	—	—
IR-REMOTE CONTROL PREPARED	—	—	X	—	—	—	—
LINE OUTPUT	—	—	X	—	—	—	—

ACCESSORIES SHARON PLATFORM 1

ACCESSORIES SHARON PLATFORM 1		AZ7261						AZ7262		AZ7263	AZ7264			AZ7266	AZ7267			AZ7268					
		/00	/01	/01Z	/11	/14	/17	/00	/05	/11	/06	/11	/13	/17	/00	/05	/06	/00	/01	/05	/10	/11	/17
AY3160/00	AC/DC ADAPTOR	4822 219 10018	X				X								X			X					
AY3160/01	AC/DC ADAPTOR	4822 219 10025		X	X														X				
AY3160/05	AC/DC ADAPTOR	4822 219 10014						X									X			X			
AY3160/06	AC/DC ADAPTOR	4822 219 10016									X						X						
AY3160/10	AC/DC ADAPTOR	4822 219 10026																			X		
AY3160/11	AC/DC ADAPTOR	4822 219 10015				X	X			X		X										X	
AY3160/13	AC/DC ADAPTOR	local Korean supplier											X										
AY3160/17	AC/DC ADAPTOR	4822 219 10017												X									X
AY3260/00	POUCH	4822 600 10398	O	O	O	O	O	O	O	X	O	X	X				O	O	O	O	O	O	
AY3270/17	POUCH	4822 600 10447							O								X						O
AY3361/00	BATTERY PACK NiCd	4822 138 10615	O	O	O	O	O	X	X	X	O	O	X				X	O	O	O	O	O	
AY3501/00	CAR ADAPTOR CASSETTE	4822 397 10059	O	O	O	O	O	O	O	O	O	O	O				O	O	O	X	X	X	
AY3501/17	CAR ADAPTOR CASSETTE	4822 397 10058									O						O						X
AY3545/00	CAR DC/DC CONVERTER	4822 219 10033	O	O	O	O	O	O	O	O	O	O	O				O	X	X	X	X	X	
AY3545/17	CAR DC/DC CONVERTER	4822 219 10031												O									X
AY3563/00	CAR ADAPTOR PLATE	4822 263 21096	O	O	O	O	O	O	O	O	O	O	O				O	O	O	O	O	O	
AY3563/17	CAR ADAPTOR PLATE	4822 263 21101												O									O
AY3671/00	EARPHONE	4822 242 10304	X	X	X	X	X	X	X	X								X	X	X	X	X	
AY3671/00s	EARPHONE	4822 242 10319																					
AY3680/17	HEADPHONE	4822 242 10291											X				X						X
AY3762/00	IN-CORD REMOTE CONTROL	4822 218 10662											X	X	X								
AY3763/00	IN-CORD LCD REM. CONTROL	4822 218 10712											O	O	O								
AY3771/00	INFRARED REM. CONTROL	4822 218 10793										X											
AY3860/00	ACTIVE SPEAKER BOX	4822 445 10513	O	O	O	O	O	O	O	O	O	O	O				X	X	X	X	X	X	
AY3860/17	ACTIVE SPEAKER BOX	4822 445 10514												O									X
SBC1059	HIFI CORD (3.5mm → cinch)	4822 321 21602	X	O	O	O	O	O	O	X	O	O	O	O	O	O	X	X	X	X	X	X	X

X...supplied with the set
O...optional available

SAFETY WARNINGS

(GB) WARNING

All ICs and many other semiconductors 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 at this potential.

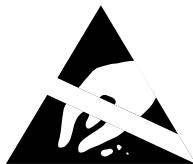
(F) ATTENTION

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 enfilez le braceleterti 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 gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
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.

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 ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta 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 del 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.
Safety components are marked by the symbol 

(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.
Les composants de sécurité sont marqués 

SAFETY



(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol  markiert.

(NL)

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

(I)

Le norme di sicurezza estigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.
Componenti di sicurezza sono marcati con 

(GB) DANGER: Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.

**CLASS 1
LASER PRODUCT**

(S) Varning !

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

(DK) Advarsel !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

(SF) Varoitus !

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

(GB)

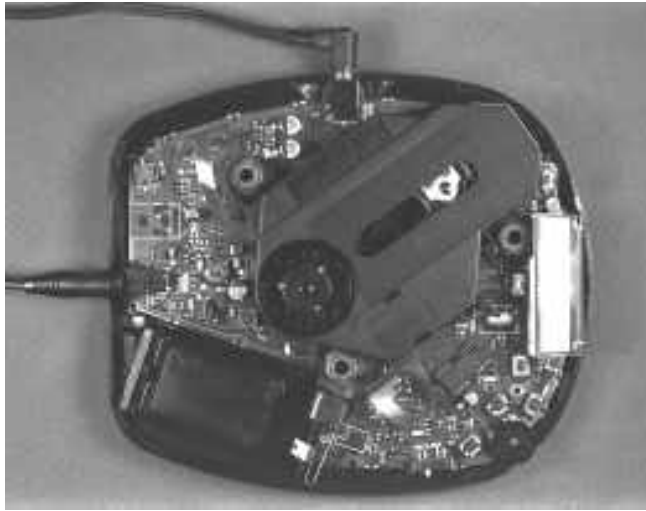
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

SERVICE HINTS

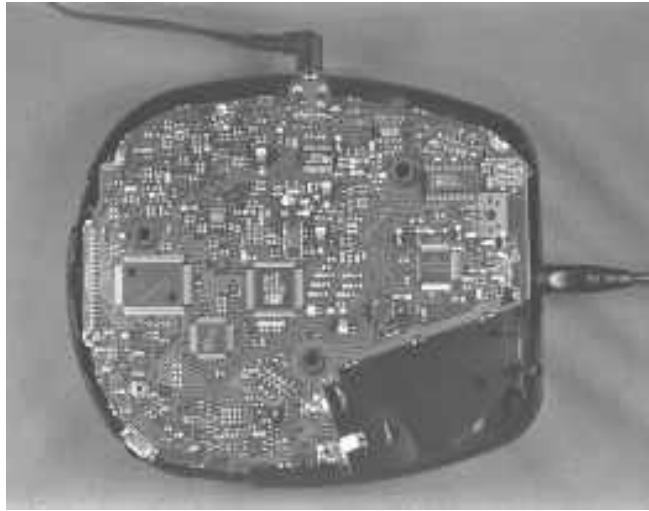
REPAIR POSITION COMPONENTSIDE



To get access to the componentside of the printed circuit board proceed as follows:

1. Disconnect DC-cable and headphone
2. Remove bottom screws
(remember hidden screw in battery compartment)
3. Open the CD-door
4. Lift the top-cabinet
5. Close the door-switch (e.g. paper-clip)
6. Supply the unit via external DC-socket

REPAIR POSITION COPPERSIDE



To get access to the copperside of the printed circuit board proceed as follows:

1. Disconnect DC-cable and headphone
2. Remove bottom screws
(remember hidden screw in battery compartment)
3. Open the CD-door
4. Lift the top-cabinet
5. Take the printed circuit board/drive unit out of the bottom
(take care of battery springs)
6. Position printed circuit board/drive unit into top-cabinet
7. Supply the unit via external DC-socket

The unit is now in a proper working position and can be turned in all directions necessary to get access for measurements.

SERVICE TOOLS

Audio signal disc **SBC429**

Playability test disc **SBC444**

Test disc **5** (disc without errors) + Test disc **5A** (disc with dropout errors,
black spots and fingerprints) **SBC426/SBC426A**

4822 397 30184

4822 397 30245

4822 397 30096

HANDLING CHIP COMPONENTS

GENERAL

SOLDER

CHIP COMPONENT

SOLDER

COPPER TRACK

P.C.B.

GLUE

SERVICE PACKAGE

DISMOUNTING

SOLDERING IRON

VACUUM PISTON 4822 395 10082

e.g. WELDER solder tip PT-H7

SOLDERING IRON

SOLDER WICK 4822 321 40042

e.g. A PAIR OF TWEEZERS

HEATING

HEATING

SOLDERING IRON

SOLDER WICK

CLEANING

A

B

C

MOUNTING

e.g. A PAIR OF TWEEZERS

SOLDER $\varnothing 0.5-0.8\text{mm}$

PRESSURE

SOLDERING IRON

SOLDERING TIME < 3 sec/side

PRESSURE

SOLDER $\varnothing 0.5-0.8\text{mm}$

SOLDERING IRON

A

B

EXAMPLES

CORRECT

INCORRECT

INCORRECT

INCORRECT

INCORRECT

INCORRECT

PRECAUTIONS

SOLDERING IRON

CORRECT

COPPER TRACK

INCORRECT

SOLDERING IRON

INCORRECT

CHIP COMPONENT

INCORRECT

SERVICE TEST PROGRAM

1. PRELIMINARY SETUP

- To enter the service test program hold the keys "PLAY" and "STOP" depressed while turning POWER ON.
- The display shows the software-version of the built-in microprocessor (e.g. "855").
- The program is now in the main menu – various tests can be entered by pressing the corresponding buttons (see flow chart on next page or detailed description of test programs below).

2. DISPLAY TEST

Purpose: Check the internal display driver of the μ P and the display segments.

- To enter the display test start service test program and press the "NEXT" button.
- The display shows test pattern 1, all display segments are switched on.
- To exit the display test and return to the main menu press the "STOP" button.

3. KEY & REMOTE CONTROL TEST

Purpose: Check operation of keys, cord remote control and IR-remote control.

- To enter the key & remote control test start service test program and press the "MODE" button.
- The display shows "--".
- Hold keys on the set resp. the remote control depressed and check corresponding key codes on the display of the CD-player resp. the test patterns on the display of the remote control. Codes and patterns can be found in table 1 (see flow chart on next page).
- To exit the key & remote control test and return to the main menu press the "STOP" button.

4. PLAYBACK TEST WITH ERROR ANALYSIS

Purpose: Analyse errors that occur during playback.

- To enter the playback test start service test program and press the "PROG" button. Note that the playback test can only be entered if the CD-door is closed.
- The set reads the TOC and switches to stand-by mode.
- Press the "PLAY" button to start the error analysis.

As long as the playback is free of errors the display shows track and time information as in normal play-mode. In case of an error a corresponding error code will be displayed. The meaning of this error code can be found in table 2 (see flow chart on next page).

Note: Errors can either be "fatal" or "non fatal". Fatal errors lead to a stop of the playback while non-fatal errors only cause a short interruption of music. Fatal errors are displayed as long as the set is connected to the power source, non fatal errors are displayed until a new error occurs or a button is pressed.

- To stop the playback test disconnect the set from the power source.

5. SERVO TEST

Purpose: Check door- and inner-switch, movement of slide servo and acceleration of discmotor.

- To enter the servo test start service test program and press the "PLAY" button.
- The display shows "5 xy". "x" indicates state of door-switch; "y" indicates state of inner-switch. x,y = " / " means switch is open.
- To move slide outside hold the "NEXT" button depressed.
- To move slide inside hold the "PREV" button depressed.
- To accelerate the discmotor clockwise hold the "MODE" button depressed.
- To accelerate the discmotor counter-clockwise hold the "PROG" button depressed.
- To enter the focus test press the "PLAY" button, to exit the servo test and return to the main menu press the "STOP" button.

6. FOCUS TEST

Purpose: Check movement of lens and operation of focus servo.

- The focus servo loop is switched on and the set starts searching the focus. If the focus is OK the display shows " F ", else " - F ".
- When the disc is turned manually "focus noise" is audible.
- To move slide outside hold the "NEXT" button depressed.
- To move slide inside hold the "PREV" button depressed.
- To accelerate the discmotor clockwise hold the "MODE" button depressed.
- To accelerate the discmotor counter-clockwise hold the "PROG" button depressed.
- In case the focus is OK the discmotor test can be entered by pressing the "PLAY" button, to exit the focus test and return to the main menu press the "STOP" button.

7. DISCMOTOR TEST

Purpose: Check speed regulation of discmotor.

- The speed regulation is switched on and the discmotor starts rotating. If the speed reaches 75% of the nom. speed the display shows " d ", else " - d ".

Note: During this test the μ P displays the speed-flag of the CD7. As this IC can only monitor a small range of speed deviation the displayed information is not very reliable. In case of doubt check disc motor control circuit.

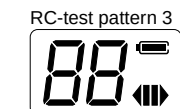
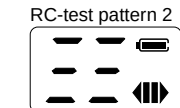
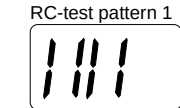
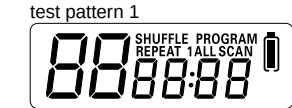
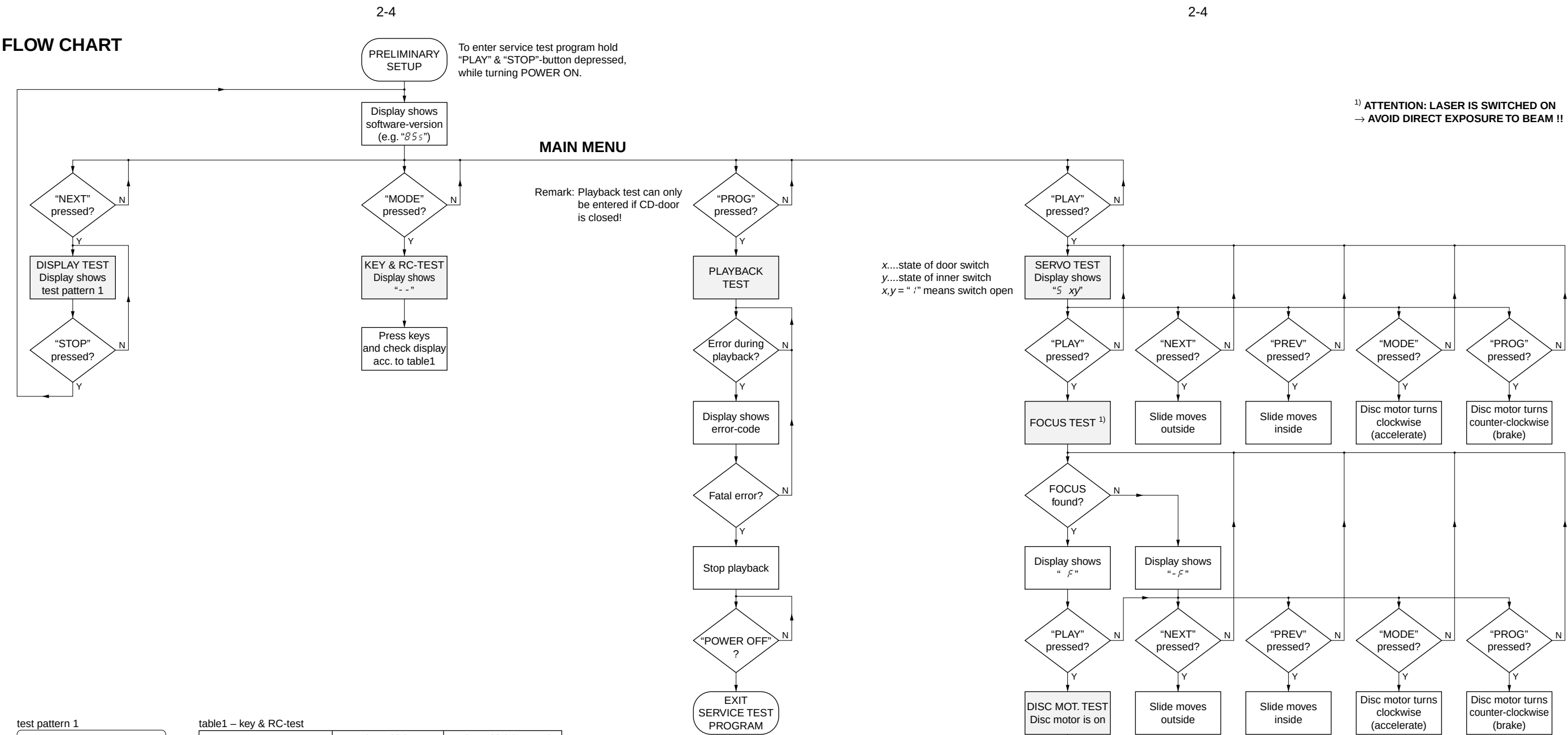
- To enter the radial test press the "PLAY" button, to exit the discmotor test and return to the main menu press the "STOP" button.

8. RADIAL TEST

Purpose: Check if radial loop locks and an audio signal is output.

- The display shows " r d ".
- The radial servo loop is switched on, mute is released and an audio signal is audible.
- To jump 10 tracks outside press the "NEXT" button.
- To jump 10 tracks inside press the "PREV" button.
- To exit the radial test and return to the main menu press the "STOP" button.

FLOW CHART

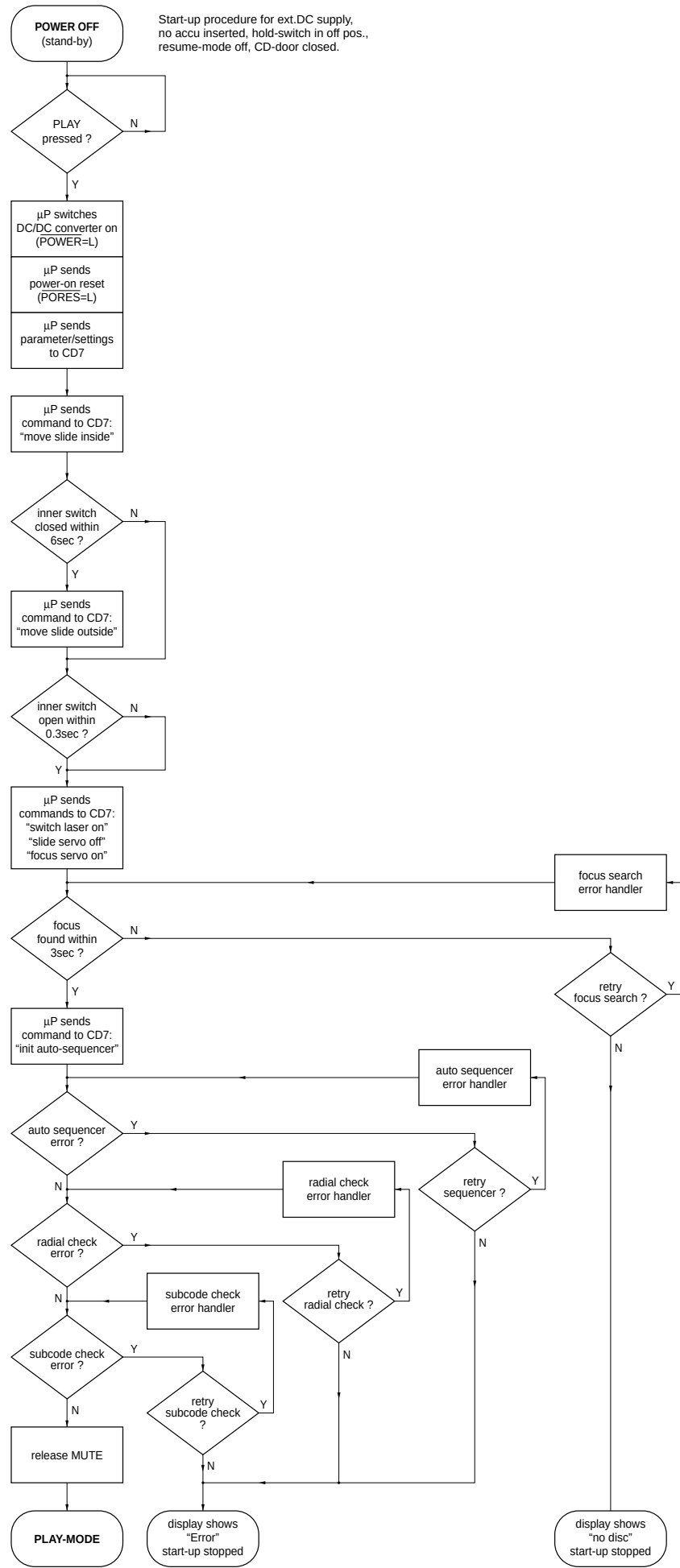


		DISPLAY SET	DISPLAY CORD RC
KEYS OF SET			
PLAY		0 1	no change
MODE		0 2	
NEXT		0 3	
PREVIOUS		0 5	
PROGRAM		0 7	
KEYS OF CORD-REMOTE CONTROL (not on all versions)			
PLAY		r C 0 1	RC-test pattern 1
NEXT		r C 0 3	RC-test pattern 2
PREVIOUS		r C 0 5	RC-test pattern 3
STOP		r C 0 6	no change
KEYS OF IR-REMOTE CONTROL (not on all versions)			
DIGIT 0..9		1 r 2 0 0 0 ... 1 r 2 0 0 9	no change
STAND-BY		1 r 2 0 1 2	
SHUFFLE		1 r 2 0 2 8	
REPEAT		1 r 2 0 2 9	
NEXT		1 r 2 0 3 2	
PREVIOUS		1 r 2 0 3 3	
SCAN		1 r 2 0 4 3	
PAUSE		1 r 2 0 4 8	
BACKWARD		1 r 2 0 5 0	
FORWARD		1 r 2 0 5 2	
PLAY		1 r 2 0 5 3	
STOP		1 r 2 0 5 4	
Press "STOP" on the CD-player to exit the key & RC-test.			

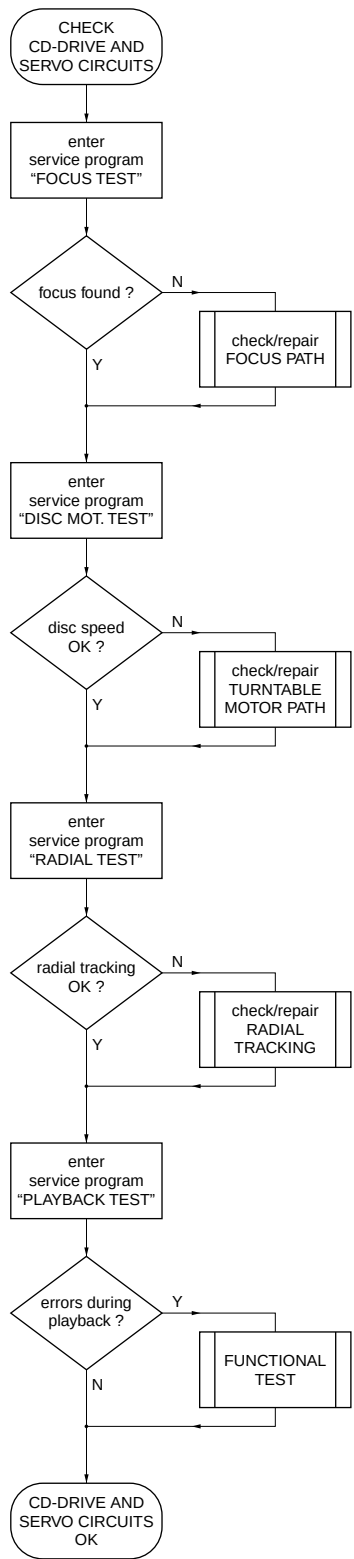
table2 – playback error analysis

CODE	ERROR	TYPE	CAUSE
E 1001	sledge out error	non fatal	The slide did not come out of it's inner position (inner switch of CDM12 doesn't open) before 160ms have passed by.
E 1002	focus error	non fatal	Focus point lost.
E 1003	radial error	non fatal	The offtrack values of CD7 don't decrease properly when jumping tracks, or CD7 indicates offtrack while radial tracking is switched on.
E 1004	subcode error	non fatal	No valid subcode information for 250ms.
E 1011	sledge in error	fatal	The slide did not reach it's inner pos. (inner switch of CDM12 doesn't close) before 4 seconds have passed by.
E 1012	focus search error	fatal	The focus point could not be found inbetween 4 seconds.
E 1013	fatal radial error	fatal	Radial error ocured 25 times.
E 1014	fatal subcode error	fatal	No valid subcode information for 6 seconds.
E 1018	motor N1 error	fatal	The disc didn't reach 75% of the nom. speed inbetween 3 sec.

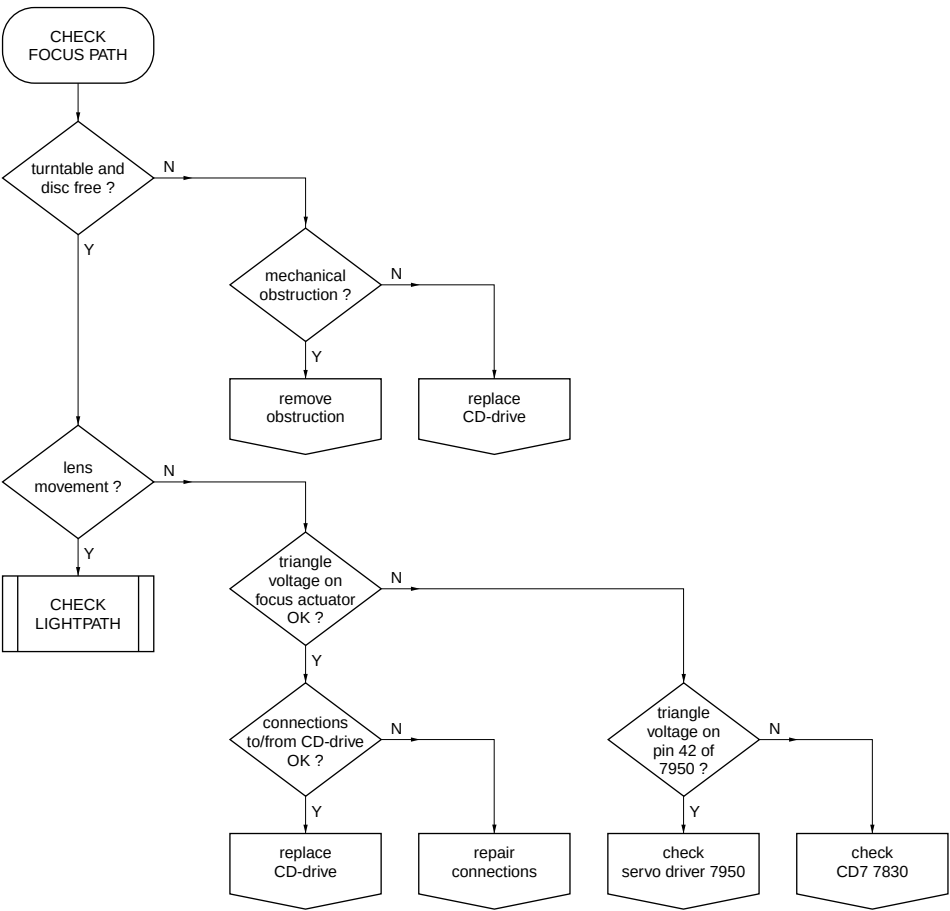
START-UP PROCEDURE



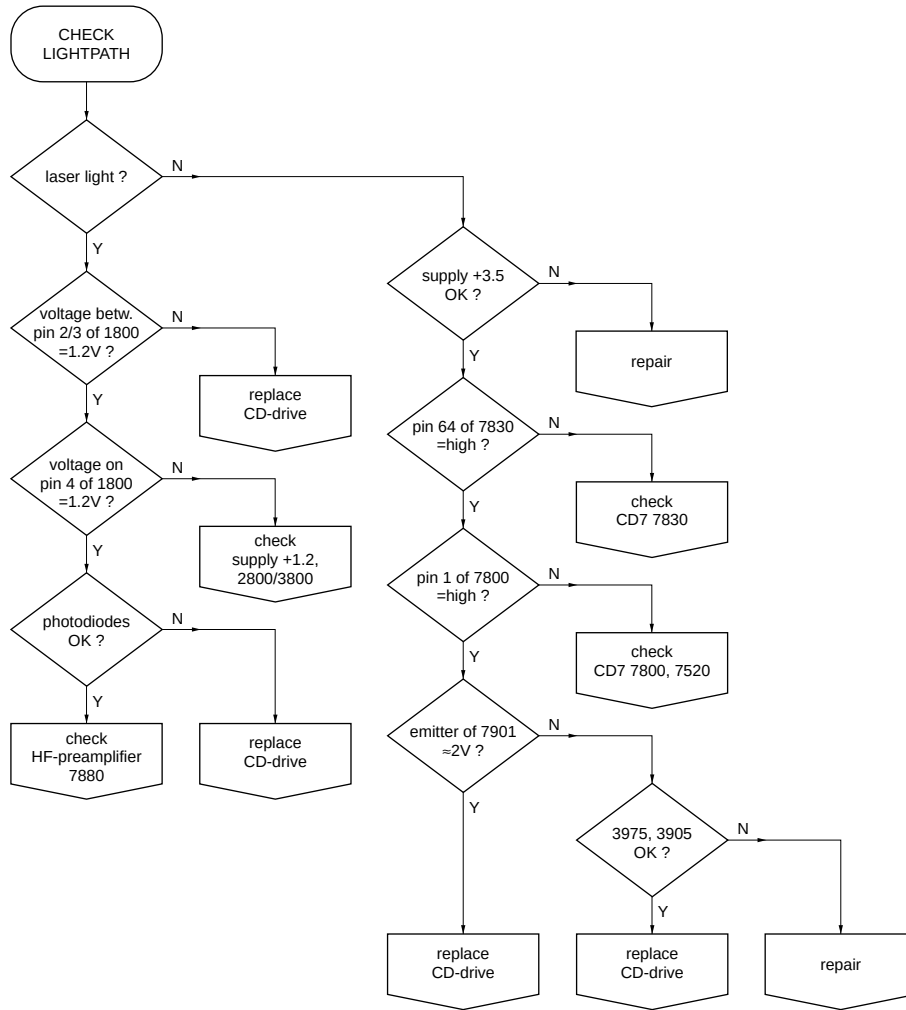
MAIN FAULT FINDING GUIDE



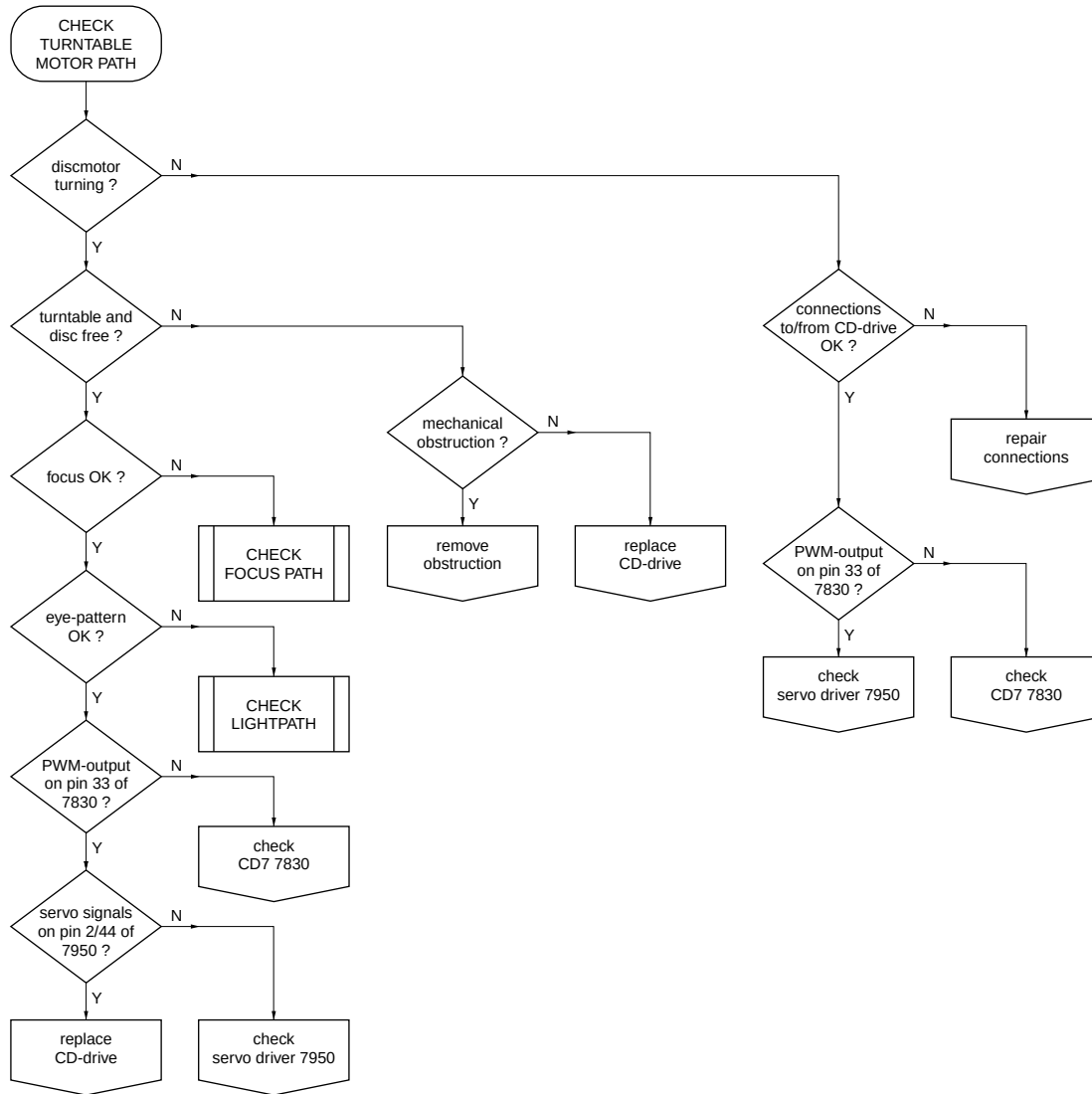
FAULT FINDING GUIDE FOCUS PATH



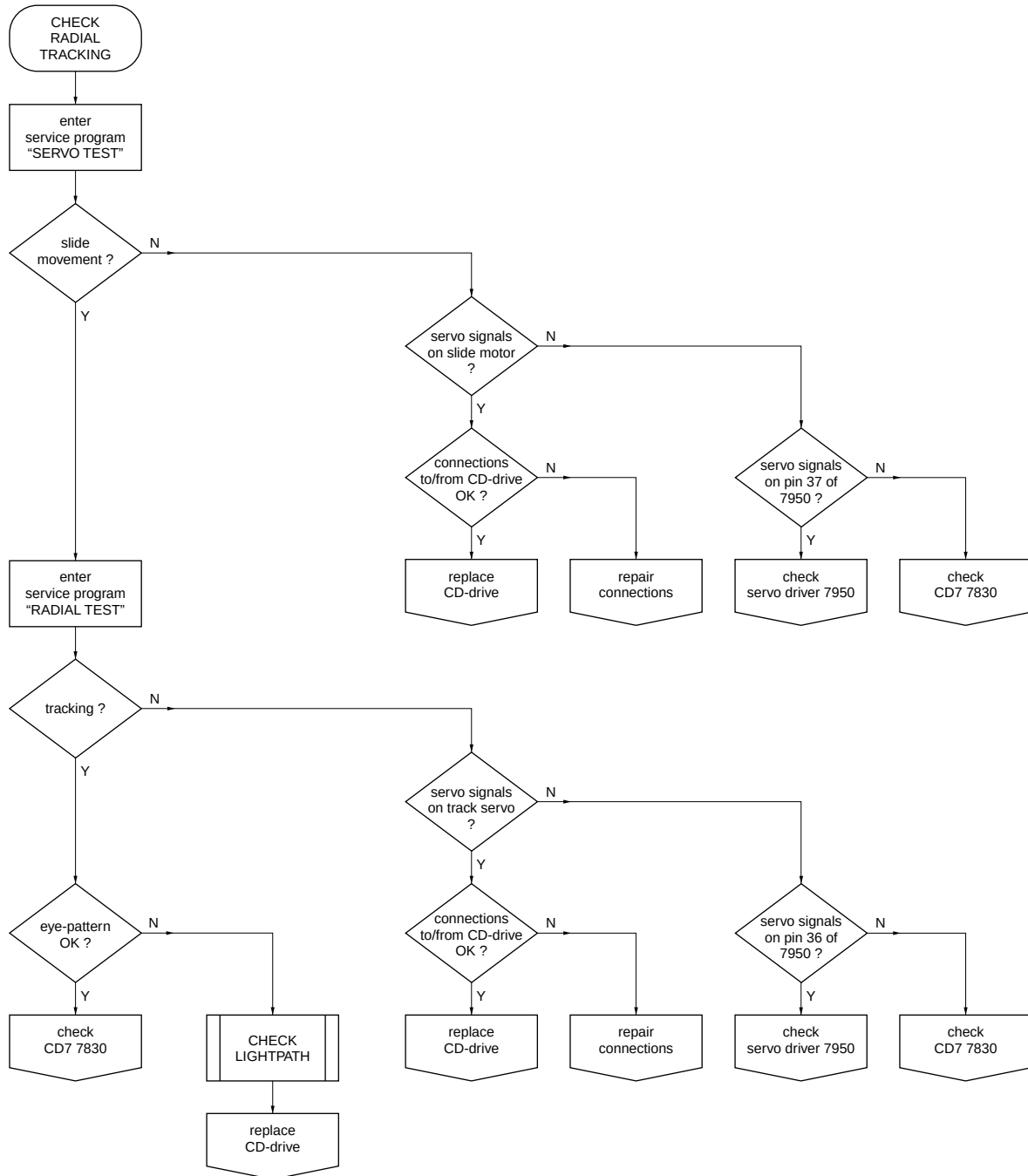
FAULT FINDING GUIDE LIGHTPATH

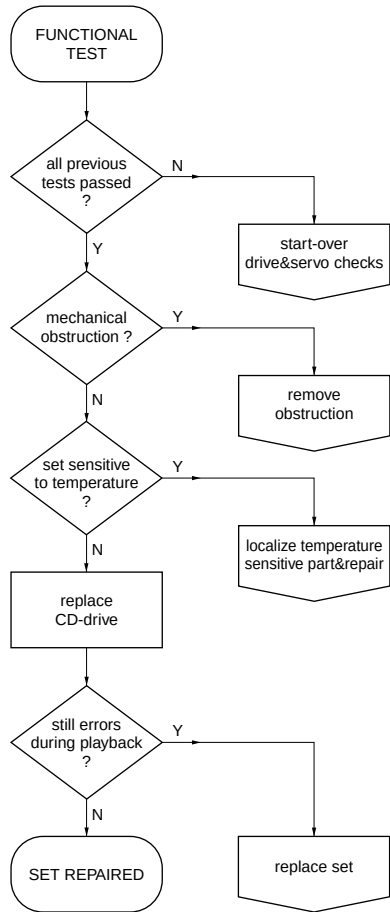


FAULT FINDING GUIDE TURNTABLE MOTOR PATH

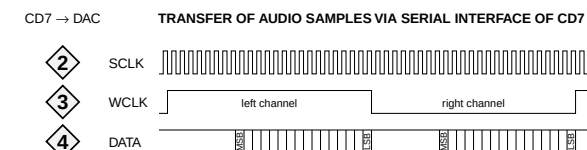
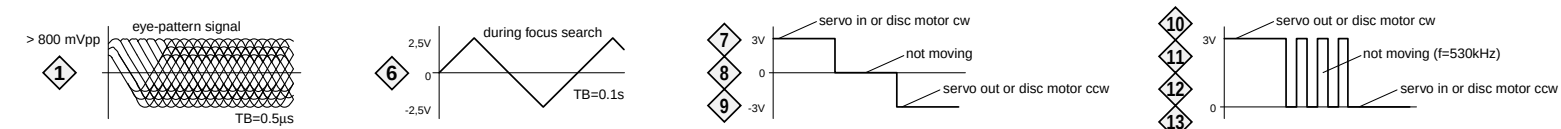
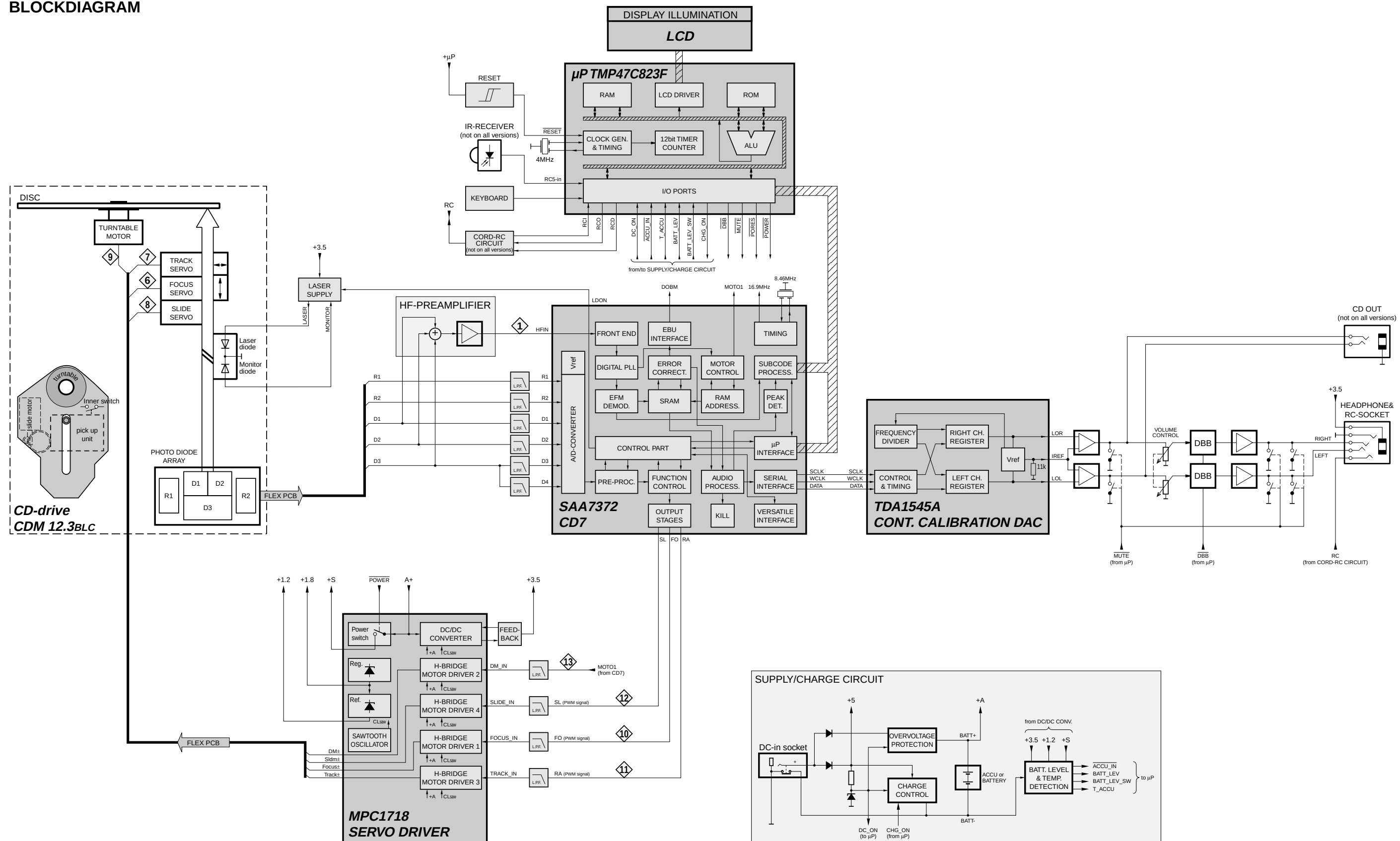


FAULT FINDING GUIDE RADIAL TRACKING



FAULT FINDING GUIDE FUNCTIONAL TEST

BLOCKDIAGRAM



PINNING OF INTEGRATED CIRCUITS

SAA7372 – DECODER AND DIGITAL SERVO IC CD7

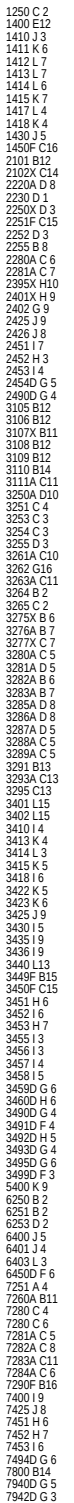
<i>Pin</i>	<i>Name</i>	<i>Direction</i>	<i>Description</i>
1	VSSA1	GND	supply (analog) of CD7
2	VDDA1	+3.5	supply (analog) of CD7
3	D1	CD-drive → CD7	unipolar current input (central diode signal input)
4	D2	CD-drive → CD7	unipolar current input (central diode signal input)
5	D3	CD-drive → CD7	unipolar current input (central diode signal input)
6	VRL	GND	reference input for ADC
7	D4	CD-drive → CD7	unipolar current input (central diode signal input)
8	R1	CD-drive → CD7	unipolar current input (satellite diode signal input)
9	R2	CD-drive → CD7	unipolar current input (satellite diode signal input)
10	IREFT	→ CD7	current reference for calibration ADC
11	VRH		reference output from ADC
12	VSSA2	GND	supply (analog) of CD7
13	SELPLL	+3.5	selects whether internal clock multiplier PLL is used
14	ISLICE	CD7 →	current feedback from data slicer
15	HFIN	→ CD7	comparator signal input
16	VSSA3	GND	supply (analog) of CD7
17	HFREF	→ CD7	comparator common mode input
18	IREF	→ CD7	reference current pin (nom. VDD/2)
19	VDDA2	+3.5	supply (analog) of CD7
20	TEST1	GND	test control input
21	CRIN	X-Tal → CD7	crystal/resonator input
22	CDOUT	X-Tal → CD7	crystal/resonator output
23	TEST2	GND	test control input
24	CL16	CD7 →	16.9344MHz system clock output
25	CL11	CD7 →	11.2896MHz or 5.6448MHz clock output (3-state)
26	RA	CD7 → servo driver	radial actuator output
27	FO	CD7 → servo driver	focus actuator output
28	SL	CD7 → servo driver	slide actuator output
29	TEST3	GND	test control input
30	VDD1P	+3.5	supply (digital) of CD7
31	DOBM	CD7 →	bi-phase mark output (3-state)
32	VSS1	GND	supply (digital) of CD7
33	MOTO1	CD7 → servo driver	motor output1 of CD7; versatile (3-state)
34	MOTO2	CD7 →	motor output2 of CD7; versatile (3-state)
35	SBSY	CD7 →	subcode block sync (3-state)
36	SFSY	CD7 →	subcode frame sync (3-state)
37	RCK	→ CD7	subcode clock input
38	SUB	CD7 →	P to W subcode bits (3-state)
39	VSS2	GND	supply (digital) of CD7
40	V5	CD7 →	versatile output pin of CD7
41	V4	CD7 →	versatile output pin of CD7
42	V3	CD7 →	versatile output pin of CD7 (open drain)
43	KILL	CD7 →	kill output; programmable (open drain)
44	MISC	CD7 →	C2 error flag; output only defined in CD-ROM modes (3-state)
45	DATA	CD7 → DAC	serial data output (3-state)
46	WCLK	CD7 → DAC	word clock output (3-state)
47	VDD2P	+3.5	supply (digital) of CD7
48	SCLK	CD7 → DAC	serial bit clock output (3-state)
49	VSS3	GND	supply (digital) of CD7
50	CL4	CD7 →	4.2336MHz µP clock output
51	SDA	µP → CD7	µP interface data I/O line (open drain output)
52	SCL	µP → CD7	µP interface clock line
53	RAB	µP → CD7	µP interface R/W and load control line
54	SILD	µP → CD7	µP interface R/W and load control line
55	NC		no connection
56	VSS4	GND	supply (digital) of CD7
57	RESET	µP → CD7	power-on reset input (active low)
58	STATUS	CD7 → µP	servo interrupt request line/CD7 status register output (open drain)
59	VDD3C	+3.5	supply core (digital)
60	C2FAIL	CD7 →	indication of correction failure (open drain)
61	CFLG	CD7 →	correction flag output (open drain)
62	V1	→ CD7	versatile input pin
63	V2	→ CD7	versatile input pin
64	LDON	CD7 → Laser supply	laser drive on output (open drain)

MPC1718 – 4-STAGE PWM SERVODRIVER

<i>Pin</i>	<i>Name</i>	<i>Direction</i>	<i>Description</i>
1	Hin2	→ servo driver	power supply for H-bridge output section 2
2	Hout2A	servo driver → disc motor	H-bridge PWM output 2A
3	DCout2	DC/DC converter 2 → LC-filter	connects H-bridge DC/DC converter 2 to LC-filter
4	Vin	+A	power supply for servo driver
5	DCout1	DC/DC converter 1 → LC-filter	connects H-bridge DC/DC converter 1 to LC-filter
6	Gnd1,2	GND	ground for H-bridge section 1 and 2
7	Hout1A	servo driver → focus servo	H-bridge PWM output 1A
8	Hin1	→ servo driver	power supply for H-bridge output section 1
9	Hout1B	servo driver → focus servo	H-bridge PWM output 1B
10	Vout	servo driver →	PWM output of DC/DC converter of VLG power supply
11	DTC	→ servo driver	dead time control pin (used to set duty value of Vout output)
12	FBout	servo driver →	feedback for DC/DC converter of VLG power supply
13	INM	→ servo driver	inverting input for DC/DC converter of VLG power supply
14	INP	→ servo driver	non-inverting input for DC/DC converter of VLG power supply
15	VBias	servo driver →	bias stabilizing capacitor connection pin for DC/DC converter
16	Vd	servo driver → +S	power switch output pin of servo driver
17	S.Gnd	GND	ground for internal logic of servo driver
18	Vref	servo driver → +1.2	band-gap reference voltage output of servo driver
19	VG	+VG → servo driver	gate drive power supply for output transistor, power is supplied by using the Cg pin to form a charge pump.
20	Cg	servo driver →	charge pump step-up capacitor connection
21	Vreg	servo driver → +1.8	regulator output pin
22	Cosc	servo driver →	sawtooth waveform output, synchronized to the clock
23	Sync	→ servo driver	external clock input for separate excitation
24	Power	µP → servo driver	power control pin (low-active)
25	Hout3B	servo driver → track servo	H-bridge PWM output 3B
26	Hin3	→ servo driver	power supply for H-bridge output section 3
27	Hout3A	servo driver → track servo	H-bridge PWM output 3A
28	Gnd3,4	GND	ground for H-bridge section 3 and 4
29	DCout3	DC/DC converter 3 → LC-filter	connects H-bridge DC/DC converter 3 to LC-filter
30	Vin	+A	power supply for servo driver
31	DCout4	DC/DC converter 4 → LC-filter	connects H-bridge DC/DC converter 4 to LC-filter
32	Hout4A	servo driver → slide servo	H-bridge PWM output 4A
33	Hin4	→ servo driver	power supply for H-bridge output section 4
34	Hout4B	servo driver → slide servo	H-bridge PWM output 4B
35	Lim2,4	+LF	input pin, limits LC-filter output voltages of sections 2 and 4
36	Vinp3	CD7 → servo driver	control input pin, receives track servo signals from CD7
37	Vinp4	CD7 → servo driver	H-bridge output is controlled by voltage between this pin and Vc
38	VLG	+3.5	control input pin, receives slide servo signals from CD7
39	S.Gnd	GND	H-bridge output is controlled by voltage between this pin and Vc
40	Vc	DR_REF	power supply for motor control circuit
41	Vinp2	CD7 → servo driver	ground for internal logic of servo driver
42	Vinp1	CD7 → servo driver	reference voltage for motor control circuit
43	Lim1,3	+LF → servo driver	control input pin, receives disc motor control signals from CD7
44	Hout2B	servo driver → disc motor	H-bridge output is controlled by voltage between this pin and Vc

TDA1545A – CONTINUOUS CALIBRATION DAC

<i>Pin</i>	<i>Name</i>	<i>Direction</i>	<i>Description</i>
1	BCK	CD7 → DAC	bit clock input of DAC
2	WS	CD7 → DAC	word select input of DAC
3	DATA	CD7 → DAC	data input of DAC
4	GND	GND	ground
5	VDD	+LFD	supply voltage
6	IOL	DAC →	left channel output
7	IREF	DAC →	reference voltage output
8	IOR	DAC →	right channel output



SERVODRIVER PART

This circuit diagram shows a summary of all possible versions. For components used in specific versions see table below.

Explanation of itemnumber extensions:

AZ7261,AZ7262,AZ7266,AZ7267,AZ7268 A
 AZ7263 A+F+J
 AZ7264 A+D
 A recharge circuit
 D wired remote control
 F IR - sensor
 J Line out

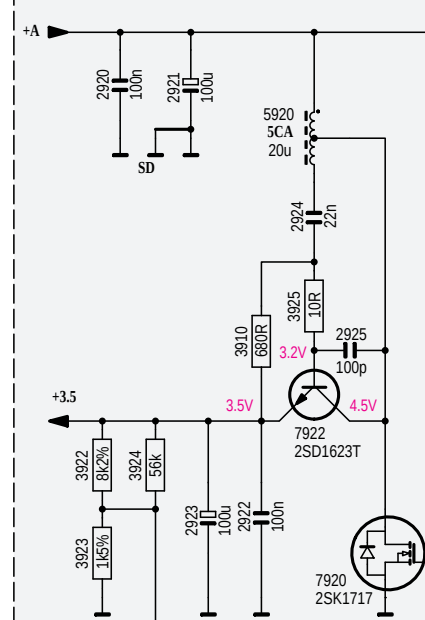
Explanation of abbreviations:

X Components only forseen (not in use)
 % Tolerance of resistor is only 1%

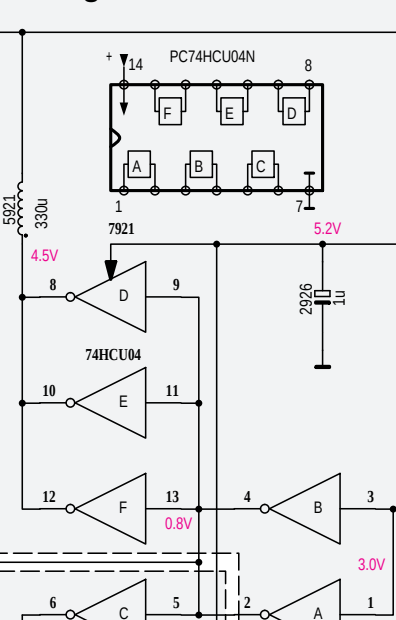
Supply voltages

+A Battery or ext. DC
 +S Switched +A
 +3.5 Stabilized voltage of DC/DC converter
 +1.2 Reference-voltage (only if power on)
 +5 Ext. DC

+3.5V DC/DC Converter



Voltage Doubler

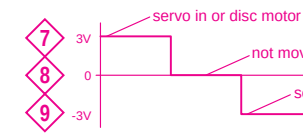
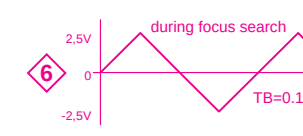
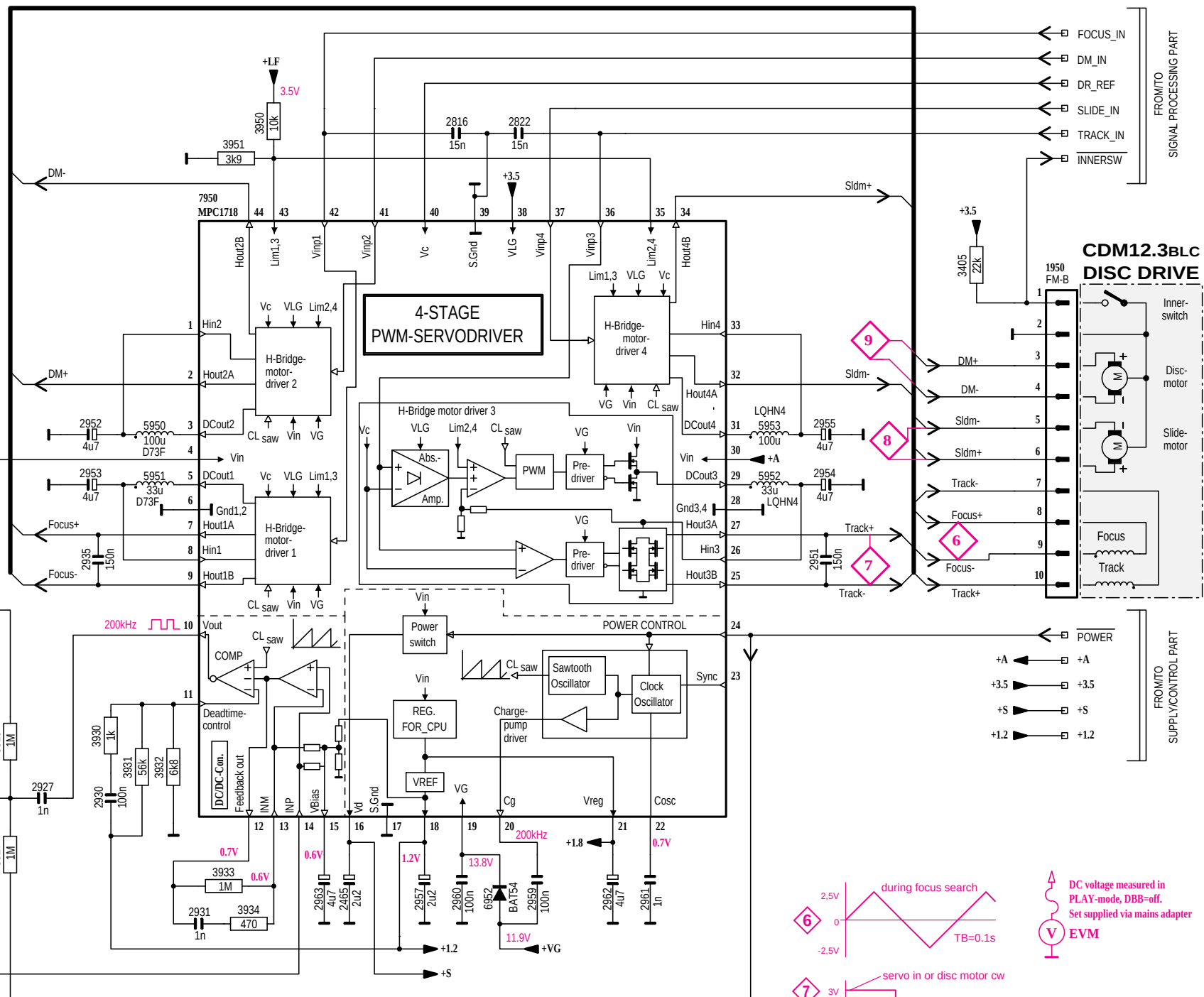


Voltage Doubler (4X)



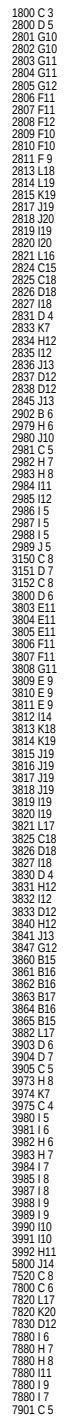
Supply: +3.5, +VG

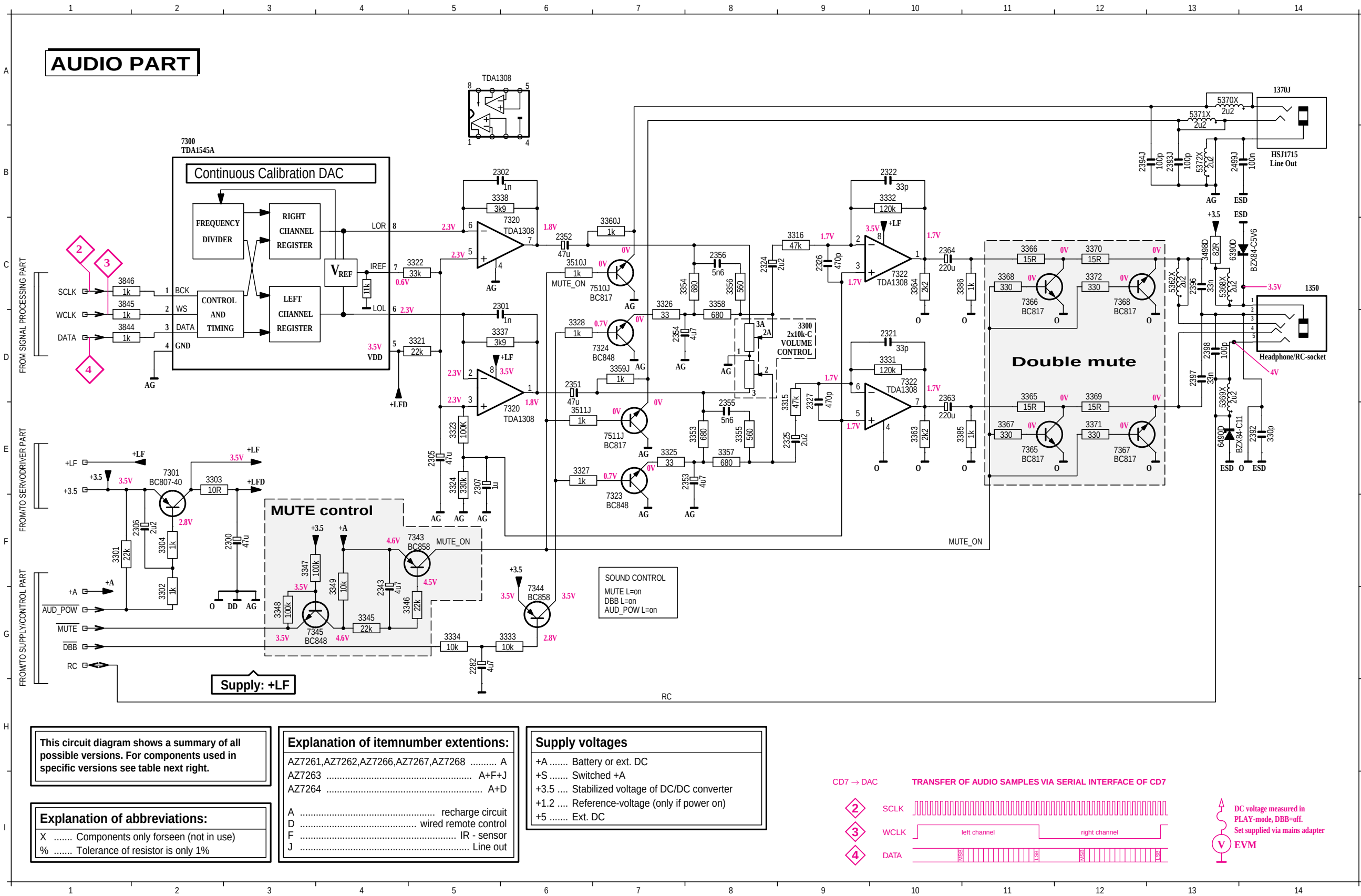
Supply: +S, +1.2



DC voltage measured in PLAY-mode, DBB-off.
 Set supplied via mains adapter
 EVM

- 1950 C14
- 2465 H 9
- 2816 B10
- 2822 B10
- 2920 F 2
- 2921 E 2
- 2922 H 3
- 2923 H 2
- 2924 F 3
- 2925 G 3
- 2926 F 5
- 2927 H 6
- 2930 H 7
- 2931 I 8
- 2935 F 7
- 2951 F12
- 2952 E 7
- 2953 E 7
- 2954 E12
- 2955 E12
- 2957 H 9
- 2958 H 4
- 2959 H10
- 2960 H10
- 2961 H11
- 2962 H11
- 2963 H 8
- 3405 C14
- 3910 G 3
- 3922 G 2
- 3923 H 2
- 3924 G 2
- 3925 F 3
- 3926 G 6
- 3927 H 6
- 3930 G 7
- 3931 G 7
- 3932 G 7
- 3933 H 8
- 3934 I 8
- 3950 B 8
- 3951 B 8
- 5920 E 3
- 5921 F 4
- 5950 E 7
- 5951 E 7
- 5952 E12
- 5953 E12
- 6951 I 3
- 6952 H10
- 7920 H 3
- 7921 F 4
- 7922 G 3
- 7950 C 7

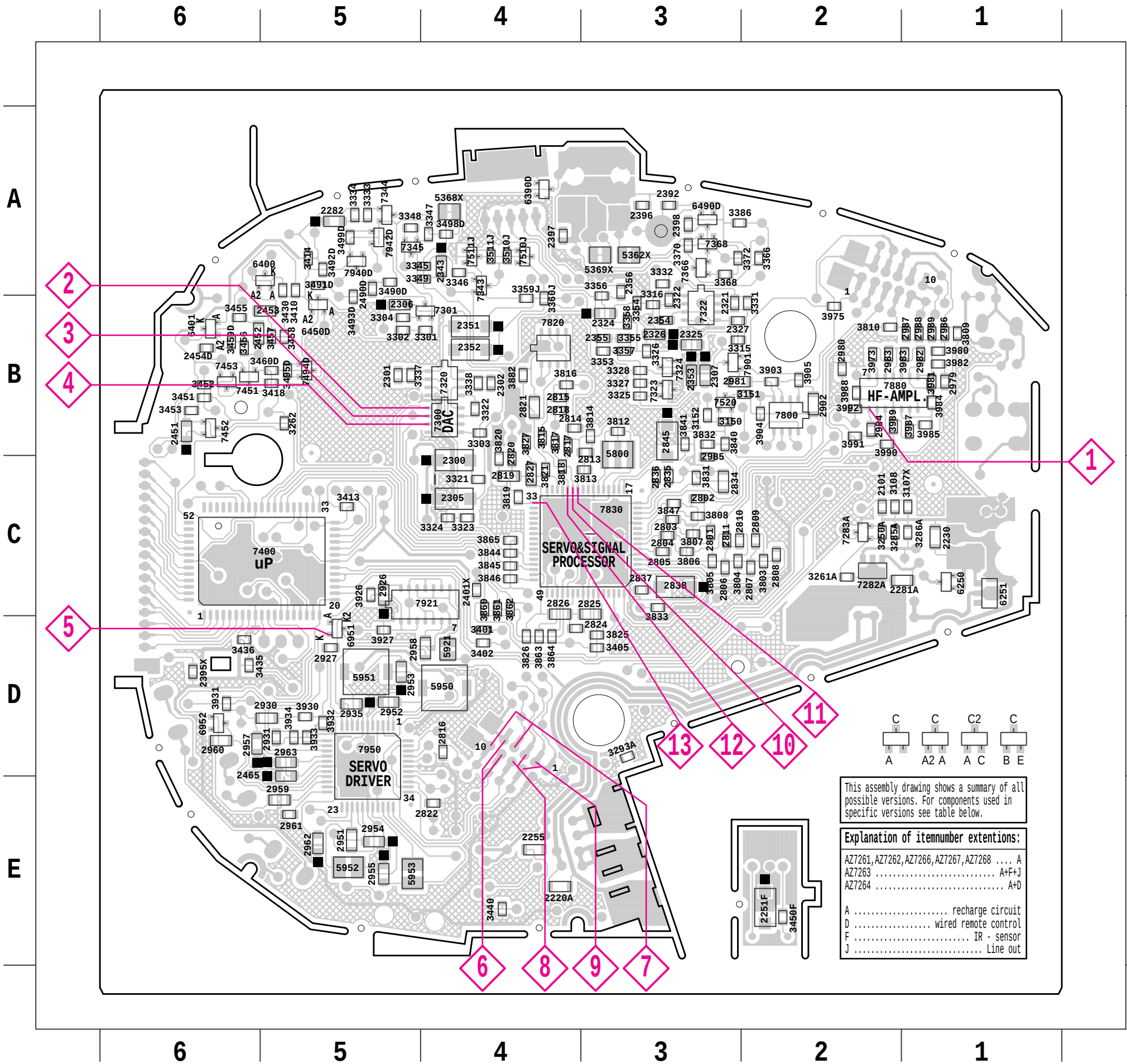




1350 C14
1370J A14
2282 G 5
2300 F 3
2301 C 6
2302 B 6
2305 E 5
2306 F 2
2307 E 5
2321 D10
2322 B10
2324 C 8
2325 E 9
2326 C 9
2327 D 9
2343 F 4
2351 D 6
2352 C 6
2353 E 8
2354 D 7
2355 E 8
2356 C 8
2363 D10
2364 C10
2392 E14
2393J B13
2394J B12
2396 C13
2397 D13
2398 D13
2499J B13
3300 D 8
3301 F 1
3302 G 2
3303 E 2
3304 F 2
3315 D 9
3316 C 9
3321 D 5
3322 C 5
3323 E 5
3324 E 5
3325 F 7
3326 C 7
3327 E 6
3328 D 6
3331 D10
3332 B10
3333 G 5
3334 G 5
3337 D 5
3338 B 5
3345 G 5
3346 G 5
3347 G 5
3348 F 3
3349 F 4
3353 E 8
3354 C 8
3355 E 8
3356 C 8
3357 E 8
3358 C 8
3359J D 7
3360J C 7
3363 E10
3364 C10
3365 D11
3366 C11
3367 E11
3368 C11
3369 D12
3370 C12
3371 E12
3372 C12
3385 E11
3386 C11
3498D C13
3510J C 6
3511J E 6
3844 D 1
3845 C 1
3846 C 1
5362X C13
5368X C13
5369X D13
5370X A13
5371X A13
5372X B13
6390D C13
6490D E13
7300 B 2
7301 E 2
7320 D 5
7320 C 5
7322 C10
7322 D10
7323 F 7
7324 D 6
7343 F 4

7344 F 6
7345 G 4
7365 E11
7366 C11
7367 E12
7368 C12
7510J C 6
7511J E 7

PRINTED CIRCUIT BOARD – COPPERSIDE VIEW



2101 C 2	2835 C 3	3338 B 4	3819 C 4	7282A C 2
2220A E 4	2836 C 3	3345 A 4	3820 C 4	7283A C 2
2230 C 1	2837 C 3	3346 A 4	3821 C 4	7300 B 4
2251F E 2	2838 C 3	3347 A 4	3825 D 3	7301 B 4
2255 E 4	2845 B 3	3348 A 5	3826 D 4	7320 B 4
2281A C 1	2902 B 2	3349 A 4	3827 B 4	7322 B 3
2282 A 5	2926 C 5	3353 B 3	3831 C 3	7323 B 3
2300 C 4	2927 D 5	3354 B 3	3832 B 3	7324 B 3
2301 B 5	2930 D 5	3355 B 3	3833 C 3	7343 A 4
2302 B 4	2931 D 5	3356 B 3	3840 B 3	7344 A 5
2305 C 4	2935 D 5	3357 B 3	3841 B 3	7345 A 5
2306 B 5	2951 E 5	3358 B 3	3844 C 4	7366 A 3
2307 B 3	2952 D 5	3359J B 4	3845 C 4	7368 A 3
2321 B 3	2953 D 5	3360J B 4	3846 C 4	7400 C 5
2322 B 3	2954 E 5	3366 A 2	3847 C 3	7451 B 6
2324 B 3	2955 E 5	3368 A 3	3860 C 4	7452 B 6
2325 B 3	2957 D 6	3370 A 3	3861 C 4	7453 B 6
2326 B 3	2958 D 4	3372 A 3	3862 C 4	7494D B 5
2327 B 3	2959 E 5	3386 A 3	3863 D 4	7510J A 4
2343 A 4	2960 D 6	3401 D 4	3864 D 4	7511J A 4
2351 B 4	2961 E 5	3402 D 4	3865 C 4	7520 B 3
2352 B 4	2962 E 5	3405 D 3	3882 B 4	7800 B 2
2353 B 3	2963 D 5	3410 A 5	3903 B 2	7820 B 4
2354 B 3	2979 B 1	3413 C 5	3904 B 2	7830 C 3
2355 B 3	2980 B 2	3414 A 5	3905 B 2	7880 B 2
2356 A 3	2981 B 3	3418 B 5	3926 C 5	7901 B 3
2392 A 3	2982 B 1	3430 A 5	3927 D 5	7921 C 4
2395X D 6	2983 B 2	3435 D 6	3930 D 5	7940D A 5
2396 A 3	2984 B 2	3436 D 6	3931 D 6	7942D A 5
2397 A 4	2985 C 3	3440 E 4	3932 D 5	7950 D 5
2398 A 3	2986 B 1	3450F E 2	3933 D 5	
2401X C 4	2987 B 1	3451 B 6	3934 D 5	
2451 B 6	2988 B 1	3452 B 6	3973 B 2	
2452 B 6	2989 B 1	3453 B 6	3975 B 2	
2453 B 5	3107X C 1	3455 B 6	3980 B 1	
2454D B 6	3108 C 2	3456 B 6	3981 B 1	
2465 E 5	3150 B 3	3457 B 5	3982 B 1	
2490D A 5	3151 B 2	3458 B 5	3983 B 1	
2801 C 3	3152 B 3	3459D B 6	3984 B 1	
2802 C 3	3250A C 2	3460D B 5	3985 B 1	
2803 C 3	3261A C 2	3490D A 5	3987 B 1	
2804 C 3	3262 B 5	3491D A 5	3988 B 2	
2805 C 3	3285A C 2	3492D A 5	3989 B 2	
2806 C 3	3286A C 1	3493D B 5	3990 B 2	
2807 C 2	3293A D 3	3495D B 5	3991 B 2	
2808 C 2	3301 B 4	3498D A 4	3992 B 2	
2809 C 2	3302 B 5	3499D A 5	5362X A 3	
2810 C 3	3303 B 4	3510J A 4	5368X A 4	
2811 C 3	3304 B 5	3511J A 4	5369X A 3	
2813 B 3	3315 B 3	3803 C 2	5800 B 3	
2814 B 4	3316 B 3	3804 C 3	5921 D 4	
2815 B 4	3321 C 4	3805 C 3	5950 D 4	
2816 D 4	3322 B 4	3806 C 3	5951 D 5	
2817 B 4	3323 C 4	3807 C 3	5952 E 5	
2818 B 4	3324 C 4	3808 C 3	5953 E 5	
2819 C 4	3325 B 3	3809 B 1	6250 C 1	
2820 C 4	3326 B 3	3810 B 2	6251 C 1	
2821 B 4	3327 B 3	3812 B 3	6390D A 4	
2822 E 4	3328 B 3	3813 C 3	6400 A 5	
2824 D 4	3331 B 2	3814 B 3	6401 B 6	
2825 C 3	3332 A 3	3815 B 4	6450D B 5	
2826 C 4	3333 A 5	3816 B 4	6490D A 3	
2827 C 4	3334 A 5	3817 B 4	6951 D 5	
2834 C 3	3337 B 5	3818 C 4	6952 D 6	

1 2 3 4 5 6

A

B

C

D

E

1 2 3 4 5 6

1430 DOOR

1370J LINE-OUT

1250 EXT.-DC

5400 4MHZ

HEADPHONE SOCKET 1350

VOLUME POTMETER 3300

PLAY 1410

STOP 1411

NEXT 1413

PREV 1412

MODE 1414

HOLD-RES 1418

DBB 1417

1400

0002

1950 9

1450F IR-EYE

+DC GND RC5

Explanation of item number extensions:

AZ7261, AZ7262, AZ7266, AZ7267, AZ7268 A

AZ7263 A+F+J

AZ7264 A+D

A recharge circuit

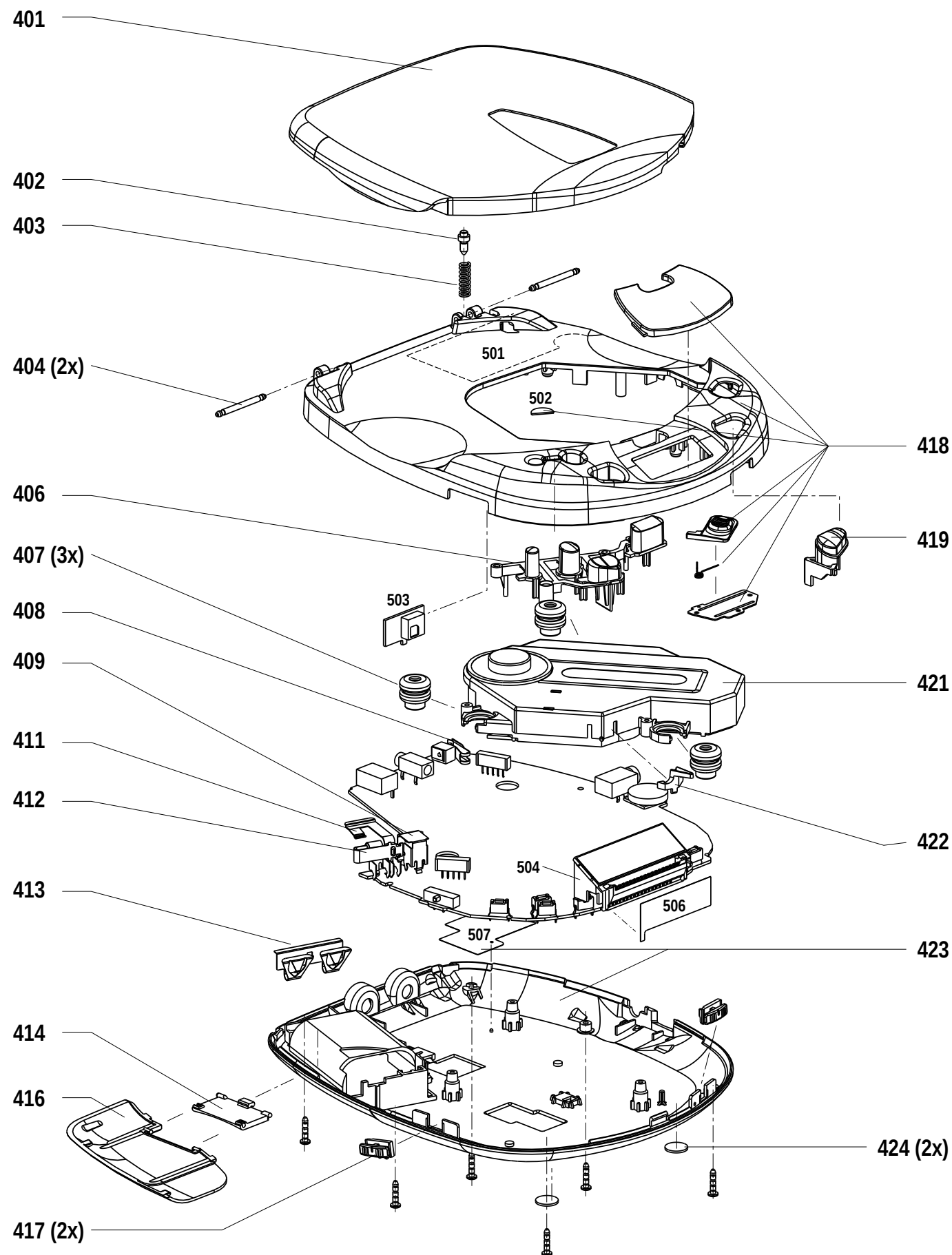
D wired remote control

F IR - sensor

J Line out

CS 46 179

EXPLODED VIEW



MECHANICAL PARTSLIST

401	4822 443 10305	DOOR-CD ASSEMBLY AZ7261, AZ7263, AZ7266, AZ7267, AZ7268 (not for /17)
401	4822 443 10306	DOOR-CD ASSEMBLY AZ7261, AZ7263, AZ7266, AZ7267, AZ7268 (only for /17)
401	4822 443 10311	DOOR-CD ASSEMBLY AZ7262, AZ7264 (not for /17)
401	4822 443 10312	DOOR-CD ASSEMBLY AZ7262, AZ7264 (only for /17)
402	4822 402 10347	PIN-OPEN
403	4822 492 11071	SPRING-OPEN
404	4822 535 10247	SPINDLE
406	4822 410 10532	BUTTON-SET-PRINTED
407	4822 529 10346	RUBBER DAMPER
408	4822 492 11169	SPRING-SWITCH
409	4822 492 11066	SPRING-BATTERY +
411	4822 492 11171	SPRING-DETECTION
412	4822 492 11067	SPRING-BATTERY -
413	4822 492 11065	SPRING-BATTERY-SHORT
414	4822 417 11281	HINGE-DOOR-BATTERY-LACQUERED
416	4822 443 10236	DOOR-BATTERY-LACQUERED
417	4822 463 11028	SLIDER
418	4822 449 80075	CABINET ASSEMBLY AZ7261, AZ7263, AZ7266, AZ7267, AZ7268
418	4822 449 80076	CABINET ASSEMBLY AZ7262
418	4822 449 80077	CABINET ASSEMBLY AZ7263
418	4822 449 80078	CABINET ASSEMBLY AZ7264
419	4822 410 10531	BUTTON-PLAY-PRINTED
421	4822 691 10487	CDM-12.3BLC DISC DRIVE
422	4822 402 61554	PROTECTION BRACKET
423	4822 442 00384	BOTTOM ASSEMBLY AZ7261, AZ7263, AZ7266, AZ7267, AZ7268
423	4822 442 00385	BOTTOM ASSEMBLY AZ7262
423	4822 442 00386	BOTTOM ASSEMBLY AZ7263
423	4822 442 00387	BOTTOM ASSEMBLY AZ7264
424	4822 462 41819	RUBBER FOOT
502	4822 466 62624	RUBBER PAD CABINET
4822 502 21247	SCREW M1,7x9	

ELECTRICAL PARTSLIST

MISCELLANEOUS		
for accessories see separate list chapter 1-3		
421	4822 691 10487	CDM-12.3BLC DISC DRIVE
1250	4822 267 31354	SOCKET, EXT. SUPPLY
1350	4822 267 41192	HEADPHONE&RC SOCKET
1370	4822 267 31515	LINE-OUT SOCKET
1400	4822 135 00049	LCD LP-6365-C
1410	4822 276 13694	SWITCH-TACT
1411	4822 276 13694	SWITCH-TACT
1412	4822 276 13694	SWITCH-TACT
1413	4822 276 12469	SWITCH-TACT
1414	4822 276 12469	SWITCH-TACT
1415	4822 276 12469	SWITCH-TACT
1417	4822 277 21757	SWITCH-SLIDE
1418	4822 277 21705	SWITCH-SLIDE
1430	4822 276 13695	DOOR SWITCH
1800	4822 320 11479	CONNECTOR-FLEXFOIL
1950	4822 320 11479	CONNECTOR-FLEXFOIL
CAPACITORS		
2101 ©	5322 122 34099	470pF 10% 63V
2220 ©	4822 122 33496	100nF 10% 63V
2230 ©	4822 122 33496	100nF 10% 63V
2251 ©	4822 124 11518	22µF 20% 6,3V
2252 ©	4822 122 33496	100nF 10% 63V
2255 ©	4822 122 33496	100nF 10% 63V
2280 ©	4822 122 33891	3,3nF 10% 63V
2281 ©	4822 122 33496	100nF 10% 63V
2282 ©	5322 124 23675	4,7µF 20% 4V
2300 ©	4822 124 11456	47µF 20% 4V
2301 ©	5322 122 34123	1nF 10% 50V
2302 ©	5322 122 34123	1nF 10% 50V
2305 ©	4822 124 11456	47µF 20% 4V
2306 ©	4822 124 10965	2,2µF 20% 6,3V
2307 ©	5322 124 10798	1µF 20% 16V
2321 ©	5322 122 32659	33pF 5% 50V
2322 ©	5322 122 32659	33pF 5% 50V
2324 ©	4822 124 11348	2,2µF 20% 10V
2325 ©	4822 124 11348	2,2µF 20% 10V
2326 ©	5322 122 34099	470pF 10% 63V
2327 ©	5322 122 34099	470pF 10% 63V
2343 ©	5322 124 23675	4,7µF 20% 4V
2351 ©	4822 124 11456	47µF 20% 4V
2352 ©	4822 124 11456	47µF 20% 4V
2353 ©	5322 124 23675	4,7µF 20% 4V
2354 ©	5322 124 23675	4,7µF 20% 4V
2355 ©	4822 122 32646	5,6nF 10% 50V
2356 ©	4822 122 32646	5,6nF 10% 50V
2363 ©	4822 124 81059	220µF 20% 4V
2364 ©	4822 124 81059	220µF 20% 4V
2392 ©	5322 122 31863	330pF 5% 50V
2393 ©	5322 122 32531	100pF 5% 50V
2394 ©	5322 122 32531	100pF 5% 50V
2396 ©	4822 122 33342	33nF 10% 63V
2397 ©	4822 122 33342	33nF 10% 63V
2398 ©	5322 122 32531	100pF 5% 50V
2402 ©	4822 122 33496	100nF 10% 63V
2425 ©	5322 116 80853	560pF 5% 63V
2426 ©	4822 122 33496	100nF 10% 63V
2451 ©	4822 124 11348	2,2µF 20% 10V
2452 ©	4822 122 33496	100nF 10% 63V
CS 46 181		

CAPACITORS					
2453 ©	4822 122 33496	100nF	10%	63V	
2454 ©	4822 122 33891	3,3nF	10%	63V	
2465 ©	4822 124 11348	2,2µF	20%	10V	
2490 ©	5322 122 31865	1,5nF	10%	63V	
2499 ©	4822 122 33496	100nF	10%	63V	
2800 ©	4822 124 11348	2,2µF	20%	10V	
2801 ©	5322 122 31865	1,5nF	10%	63V	
2802 ©	5322 116 80853	560pF	5%	63V	
2803 ©	4822 122 33575	220pF	5%	50V	
2804 ©	4822 122 33575	220pF	5%	50V	
2805 ©	4822 122 33575	220pF	5%	50V	
2806 ©	4822 122 33575	220pF	5%	50V	
2807 ©	4822 122 33575	220pF	5%	50V	
2808 ©	4822 122 33575	220pF	5%	50V	
2809 ©	5322 122 32268	470pF	10%	50V	
2810 ©	5322 122 32268	470pF	10%	50V	
2811 ©	5322 122 34123	1nF	10%	50V	
2813 ©	4822 122 33891	3,3nF	10%	63V	
2814 ©	5322 122 31865	1,5nF	10%	63V	
2815 ©	4822 122 33893	18nF	10%	63V	
2816 ©	4822 122 33128	15nF	10%	63V	
2817 ©	4822 122 33891	3,3nF	10%	63V	
2818 ©	4822 122 33891	3,3nF	10%	63V	
2819 ©	4822 122 33064	330nF	20%	25V	
2820 ©	4822 122 33342	33nF	10%	63V	
2821 ©	4822 126 11692	1µF	20%	16V	
2822 ©	4822 122 33128	15nF	10%	63V	
2824 ©	4822 122 33342	33nF	10%	63V	
2825 ©	4822 122 33496	100nF	10%	63V	
2826 ©	4822 122 33496	100nF	10%	63V	
2827 ©	4822 122 33496	100nF	10%	63V	
2831 ©	4822 124 11348	2,2µF	20%	10V	
2833 ©	4822 126 11692	1µF	20%	16V	
2834 ©	4822 122 32542	47nF	10%	63V	
2835 ©	5322 122 32452	47pF	5%	50V	
2836 ©	5322 122 32654	22nF	10%	63V	
2837 ©	4822 122 33342	33nF	10%	63V	
2838 ©	4822 124 11456	47µF	20%	4V	
2845 ©	4822 124 11456	47µF	20%	4V	
2902 ©	4822 126 11692	1µF	20%	16V	
2920 ©	4822 122 33496	100nF	10%	63V	
2921 ©	4822 124 11519	100µF	20%	10V	
2922 ©	4822 122 33496	100nF	10%	63V	
2923 ©	4822 124 41897	100µF	20%	4V	
2924 ©	5322 122 32654	22nF	10%	63V	
2925 ©	5322 122 32531	100pF	5%	50V	
2926 ©	5322 124 10798	1µF	20%	16V	
2927 ©	5322 122 34123	1nF	10%	50V	
2930 ©	4822 122 33496	100nF	10%	63V	
2931 ©	5322 122 34123	1nF	10%	50V	
2935 ©	4822 126 11691	150nF	10%		
2951 ©	4822 126 11691	150nF	10%		
2952 ©	5322 124 23675	4,7µF	20%	4V	
2953 ©	5322 124 23675	4,7µF	20%	4V	
2954 ©	5322 124 23675	4,7µF	20%	4V	
2955 ©	5322 124 23675	4,7µF	20%	4V	
2957 ©	4822 124 11348	2,2µF	20%	10V	
2958 ©	4822 122 33496	100nF	10%	63V	
2959 ©	4822 122 33496	100nF	10%	63V	
2960 ©	4822 122 33496	100nF	10%	63V	
2961 ©	5322 122 34123	1nF	10%	50V	
2962 ©	5322 124 23675	4,7µF	20%	4V	
2963 ©	5322 124 23675	4,7µF	20%	4V	
2979 ©	5322 122 33538	150pF	5%	63V	

CAPACITORS				
2980 ©	5322 122 32452	47pF	5%	50V
2981 ©	4822 122 33496	100nF	10%	63V
2982 ©	5322 122 32452	47pF	5%	50V
2983 ©	5322 122 32452	47pF	5%	50V
2984 ©	5322 122 32481	15pF	5%	50V
2985 ©	4822 122 33175	2,2nF	20%	50V
2986 ©	4822 122 33515	82pF	5%	50V
2987 ©	4822 122 33515	82pF	5%	50V
2988 ©	5322 122 33538	150pF	5%	63V
2989 ©	5322 122 31946	27pF	5%	63V
RESISTORS				
3105 ©	4822 051 20474	470kΩ	5%	0,1W
3106 ©	4822 117 10834	47kΩ	1%	0,1W
3108 ©	4822 117 11137	68kΩ	1%	0,1W
3109 ©	4822 117 12306	150kΩ	1%	0,1W
3110 ©	4822 051 20335	3,3MΩ	5%	0,1W
3111 ©	4822 051 20223	22kΩ	5%	0,1W
3150 ©	4822 051 20103	10kΩ	5%	0,1W
3151 ©	4822 051 20103	10kΩ	5%	0,1W
3152 ©	4822 051 20103	10kΩ	5%	0,1W
3250 ©	4822 051 20474	470kΩ	5%	0,1W
3251 ©	4822 051 20331	330Ω	5%	0,1W
3253 ©	4822 051 20223	22kΩ	5%	0,1W
3254 ©	4822 051 20183	18kΩ	5%	0,1W
3255 ©	4822 051 20223	22kΩ	5%	0,1W
3261 ©	4822 051 20103	10kΩ	5%	0,1W
3262 ©	4822 051 20104	100kΩ	5%	0,1W
3263 ©	4822 051 20104	100kΩ	5%	0,1W
3264 ©	4822 051 20271	270Ω	5%	0,1W
3265 ©	4822 051 20271	270Ω	5%	0,1W
3276 ©	4822 051 20223	22kΩ	5%	0,1W
3280 ©	4822 051 20104	100kΩ	5%	0,1W
3281 ©	4822 051 20223	22kΩ	5%	0,1W
3282 ©	4822 051 20104	100kΩ	5%	0,1W
3283 ©	4822 117 11449	2,2kΩ	1%	0,1W
3285 ©	4822 051 20228	2,2Ω	5%	0,1W
3286 ©	4822 051 20228	2,2Ω	5%	0,1W
3287 ©	4822 051 20104	100kΩ	5%	0,1W
3288 ©	4822 051 20105	1MΩ	5%	0,1W
3289 ©	4822 051 10102	1kΩ	2%	0,25W
3291 ©	4822 117 10358	5,6kΩ	1%	0,1W
3293 ©	4822 116 30467	10kΩ	5%	NTC
3295 ©	4822 117 11449	2,2kΩ	1%	0,1W
3300 ©	4822 101 11428	2x10kΩ		POTMETER
3301 ©	4822 051 20223	22kΩ	5%	0,1W
3302 ©	4822 051 10102	1kΩ	2%	0,25W
3303 ©	4822 051 20109	10Ω	5%	0,1W
3304 ©	4822 051 10102	1kΩ	2%	0,25W
3315 ©	4822 051 20473	47kΩ	5%	0,1W
3316 ©	4822 051 20473	47kΩ	5%	0,1W
3321 ©	4822 051 20223	22kΩ	5%	0,1W
3322 ©	4822 051 20333	33kΩ	5%	0,1W
3323 ©	4822 051 20104	100kΩ	5%	0,1W
3324 ©	4822 051 20334	330kΩ	5%	0,1W
3325 ©	4822 051 20339	33Ω	5%	0,1W
3326 ©	4822 051 20339	33Ω	5%	0,1W
3327 ©	4822 051 10102	1kΩ	2%	0,25W
3328 ©	4822 051 10102	1kΩ	2%	0,25W
3331 ©	4822 051 20124	120kΩ	5%	0,1W
3332 ©	4822 051 20124	120kΩ	5%	0,1W
3333 ©	4822 051 20103	10kΩ	5%	0,1W
3334 ©	4822 051 20103	10kΩ	5%	0,1W
3337 ©	4822 051 20392	3,9kΩ	5%	0,1W

RESISTORS				
3338 ©	4822 051 20392	3,9kΩ	5%	0,1W
3345 ©	4822 051 20223	22kΩ	5%	0,1W
3346 ©	4822 051 20223	22kΩ	5%	0,1W
3347 ©	4822 051 20104	100kΩ	5%	0,1W
3348 ©	4822 051 20104	100kΩ	5%	0,1W
3349 ©	4822 051 20103	10kΩ	5%	0,1W
3353 ©	4822 051 20681	680Ω	5%	0,1W
3354 ©	4822 051 20681	680Ω	5%	0,1W
3355 ©	4822 051 20561	560Ω	5%	0,1W
3356 ©	4822 051 20561	560Ω	5%	0,1W
3357 ©	4822 051 20681	680Ω	5%	0,1W
3358 ©	4822 051 20681	680Ω	5%	0,1W
3359 ©	4822 051 10102	1kΩ	2%	0,25W
3360 ©	4822 051 10102	1kΩ	2%	0,25W
3363 ©	4822 117 11449	2,2kΩ	1%	0,1W
3364 ©	4822 117 11449	2,2kΩ	1%	0,1W
3365 ©	4822 051 20159	15Ω	5%	0,1W
3366 ©	4822 051 20159	15Ω	5%	0,1W
3367 ©	4822 051 20331	330Ω	5%	0,1W
3368 ©	4822 051 20331	330Ω	5%	0,1W
3369 ©	4822 051 20159	15Ω	5%	0,1W
3370 ©	4822 051 20159	15Ω	5%	0,1W
3371 ©	4822 051 20331	330Ω	5%	0,1W
3372 ©	4822 051 20331	330Ω	5%	0,1W
3385 ©	4822 051 10102	1kΩ	2%	0,25W
3386 ©	4822 051 10102	1kΩ	2%	0,25W
3401 ©	4822 051 10102	1kΩ	2%	0,25W
3402 ©	4822 051 10102	1kΩ	2%	0,25W
3405 ©	4822 051 20223	22kΩ	5%	0,1W
3410 ©	4822 051 20474	470kΩ	5%	0,1W
3413 ©	4822 051 20474	470kΩ	5%	0,1W
3414 ©	4822 051 20473	47kΩ	5%	0,1W
3415 ©	4822 051 20474	470kΩ	5%	0,1W
3418 ©	4822 051 20104	100kΩ	5%	0,1W
3422 ©	4822 051 20473	47kΩ	5%	0,1W
3423 ©	4822 051 20473	47kΩ	5%	0,1W
3425 ©	4822 117 11449	2,2kΩ	1%	0,1W
3430 ©	4822 051 20474	470kΩ	5%	0,1W
3435 ©	4822 051 20104	100kΩ	5%	0,1W
3436 ©	4822 051 20103	10kΩ	5%	0,1W
3440 ©	4822 051 20223	22kΩ	5%	0,1W
3449 ©	4822 051 20103	10kΩ	5%	0,1W
3450 ©	4822 051 20229	22Ω	5%	0,1W
3451 ©	4822 051 20104	100kΩ	5%	0,1W
3452 ©	4822 051 20474	470kΩ	5%	0,1W
3453 ©	4822 051 20474	470kΩ	5%	0,1W
3455 ©	4822 117 11449	2,2kΩ	1%	0,1W
3456 ©	4822 051 20335	3,3MΩ	5%	0,1W
3457 ©	4822 117 11449	2,2kΩ	1%	0,1W
3458 ©	4822 051 20335	3,3MΩ	5%	0,1W
3459 ©	4822 051 20105	1MΩ	5%	0,1W
3460 ©	4822 051 20473	47kΩ	5%	0,1W
3490 ©	4822 051 20103	10kΩ	5%	0,1W
3491 ©	4822 051 20472	4,7kΩ	5%	0,1W
3492 ©	4822 051 20563	56kΩ	5%	0,1W
3493 ©	4822 051 20105	1MΩ	5%	0,1W
3495 ©	4822 051 20105	1MΩ	5%	0,1W
3498 ©	4822 051 20829	82Ω	5%	0,1W
3499 ©	4822 051 20103	10kΩ	5%	0,1W
3510 ©	4822 051 10102	1kΩ	2%	0,25W
3511 ©	4822 051 10102	1kΩ	2%	0,25W
3800 ©	4822 051 10102	1kΩ	2%	0,25W
3803 ©	4822 051 20103	10kΩ	5%	0,1W
3804 ©	4822 051 20103	10kΩ	5%	0,1W

RESISTORS

3805 ©	4822 051 20103	10kΩ	5%	0,1W
3806 ©	4822 051 20103	10kΩ	5%	0,1W
3807 ©	4822 051 20103	10kΩ	5%	0,1W
3808 ©	4822 051 20103	10kΩ	5%	0,1W
3809 ©	4822 117 11149	82kΩ	1%	0,1W
3810 ©	4822 117 11149	82kΩ	1%	0,1W
3811 ©	4822 051 20393	39kΩ	5%	0,1W
3812 ©	4822 051 20105	1MΩ	5%	0,1W
3813 ©	4822 117 11449	2,2kΩ	1%	0,1W
3814 ©	4822 117 11449	2,2kΩ	1%	0,1W
3815 ©	4822 051 20221	220Ω	5%	0,1W
3816 ©	4822 051 20331	330Ω	5%	0,1W
3817 ©	4822 117 11449	2,2kΩ	1%	0,1W
3818 ©	4822 117 11449	2,2kΩ	1%	0,1W
3819 ©	4822 051 10102	1kΩ	2%	0,25W
3820 ©	4822 051 20332	3,3kΩ	5%	0,1W
3821 ©	4822 117 11437	8,2kΩ	1%	0,1W
3825 ©	4822 051 20478	4,7Ω	5%	0,1W
3826 ©	4822 051 20229	22Ω	5%	0,1W
3827 ©	4822 051 20229	22Ω	5%	0,1W
3830 ©	4822 051 20101	100Ω	5%	0,1W
3831 ©	4822 051 20223	22kΩ	5%	0,1W
3832 ©	4822 051 10102	1kΩ	2%	0,25W
3833 ©	4822 051 20229	22Ω	5%	0,1W
3840 ©	4822 051 20008	CHIP JUMPER 0805		
3841 ©	4822 051 20229	22Ω	5%	0,1W
3844 ©	4822 051 10102	1kΩ	2%	0,25W
3845 ©	4822 051 10102	1kΩ	2%	0,25W
3846 ©	4822 051 10102	1kΩ	2%	0,25W
3847 ©	4822 051 20394	390kΩ	5%	0,1W
3860 ©	4822 051 20223	22kΩ	5%	0,1W
3861 ©	4822 051 20223	22kΩ	5%	0,1W
3862 ©	4822 051 20223	22kΩ	5%	0,1W
3863 ©	4822 051 20223	22kΩ	5%	0,1W
3864 ©	4822 051 20223	22kΩ	5%	0,1W
3865 ©	4822 051 20103	10kΩ	5%	0,1W
3882 ©	4822 117 11437	8,2kΩ	1%	0,1W
3903 ©	4822 051 20103	10kΩ	5%	0,1W
3904 ©	4822 051 20103	10kΩ	5%	0,1W
3905 ©	4822 051 20101	100Ω	5%	0,1W
3910 ©	4822 051 20681	680Ω	5%	0,1W
3922 ©	4822 117 11437	8,2kΩ	1%	0,1W
3923 ©	4822 117 11139	1,5kΩ	1%	0,1W
3924 ©	4822 051 20563	56kΩ	5%	0,1W
3925 ©	4822 051 20109	10Ω	5%	0,1W
3926 ©	4822 051 20105	1MΩ	5%	0,1W
3927 ©	4822 051 20105	1MΩ	5%	0,1W
3930 ©	4822 051 10102	1kΩ	2%	0,25W
3931 ©	4822 051 20563	56kΩ	5%	0,1W
3932 ©	4822 051 20682	6,8kΩ	5%	0,1W
3933 ©	4822 051 20105	1MΩ	5%	0,1W
3934 ©	4822 051 20471	470Ω	5%	0,1W
3950 ©	4822 051 20103	10kΩ	5%	0,1W
3951 ©	4822 051 20392	3,9kΩ	5%	0,1W
3973 ©	4822 051 20103	10kΩ	5%	0,1W
3974 ©	4822 051 20471	470Ω	5%	0,1W
3975 ©	4822 051 20478	4,7Ω	5%	0,1W
3980 ©	4822 117 11449	2,2kΩ	1%	0,1W
3981 ©	4822 051 20474	470kΩ	5%	0,1W
3982 ©	4822 051 20473	47kΩ	5%	0,1W
3983 ©	4822 051 20103	10kΩ	5%	0,1W
3984 ©	4822 051 20682	6,8kΩ	5%	0,1W
3985 ©	4822 051 20223	22kΩ	5%	0,1W
3987 ©	4822 051 20332	3,3kΩ	5%	0,1W

RESISTORS

3988 ©	4822 051 20332	3,3kΩ	5%	0,1W
3989 ©	4822 051 20223	22kΩ	5%	0,1W
3990 ©	4822 051 20332	3,3kΩ	5%	0,1W
3991 ©	4822 051 20332	3,3kΩ	5%	0,1W
3992 ©	4822 051 20332	3,3kΩ	5%	0,1W

COILS

5400	4822 242 72527	CERAMIC RES. 4,0MHz		
5800 ©	4822 242 81546	CERAMIC RES. 8,46MHz		
5920 ©	4822 146 10412	20μH		395HN-A002EG
5921 ©	4822 157 10393	330μH	10%	LQH3N
5950 ©	4822 157 10394	100μH	20%	D73F
5951 ©	4822 157 10395	33μH	20%	D73F
5952 ©	4822 157 10396	33μH	10%	LQH4N
5953 ©	4822 157 70753	100μH	10%	LQH4N

DIODES

1450 ©	4822 214 11453	GP1UC10P RC5-RECEIVER
6250 ©	4822 130 80622	BAT54
6251 ©	4822 130 82588	SB10-05PCP
6253 ©	4822 130 33003	BZX84-C3V3
6390 ©	4822 130 80125	BZX84-C5V6
6400 ©	5322 130 34331	BAV70
6401 ©	5322 130 34331	BAV70
6403 ©	5322 130 34331	BAV70
6450 ©	4822 130 82594	BAT54C
6490 ©	4822 130 81338	BZX84-C11
6951 ©	4822 130 82262	BAT54S
6952 ©	4822 130 80622	BAT54

TRANSISTORS

7251 ©	4822 130 62808	2SB1123
7260 ©	5322 130 42012	BC858
7281 ©	5322 130 42012	BC858
7282 ©	4822 130 63646	2SD1623T
7283 ©	4822 130 61207	BC848
7284 ©	4822 130 61207	BC848
7290 ©	4822 130 61207	BC848
7301 ©	5322 130 60123	BC807-40
7323 ©	4822 130 61207	BC848
7324 ©	4822 130 61207	BC848
7343 ©	5322 130 42012	BC858
7344 ©	5322 130 42012	BC858
7345 ©	4822 130 61207	BC848
7365 ©	4822 130 42133	BC817
7366 ©	4822 130 42133	BC817
7367 ©	4822 130 42133	BC817
7368 ©	4822 130 42133	BC817
7451 ©	4822 130 61207	BC848
7452 ©	4822 130 61207	BC848
7453 ©	4822 130 61207	BC848
7494 ©	5322 130 42012	BC858
7510 ©	4822 130 42133	BC817
7511 ©	4822 130 42133	BC817
7520 ©	5322 130 42012	BC858
7901 ©	4822 130 61207	BC848
7920 ©	4822 130 63357	2SK1717
7922 ©	4822 130 63646	2SD1623T
7940 ©	5322 130 42012	BC858
7942 ©	4822 130 61207	BC848

INTEGRATED CIRCUITS

7280 ©	4822 209 71448	NJM2903M
7300 ©	4822 209 33164	TDA1545AT/N2
7320 ©	4822 209 33165	TDA1308T/N1
7322 ©	4822 209 33165	TDA1308T/N1
7400 ©	4822 209 13566	µP TMP47C823F SHARON1-PB1
7425 ©	4822 209 12991	PST9127N
7800 ©	4822 209 33165	TDA1308T/N1
7820 ©	4822 209 33165	TDA1308T/N1
7830 ©	4822 209 13554	SAA7376GP/M1
7880 ©	5322 209 11517	PC74HCU04T
7921 ©	5322 209 11517	PC74HCU04T
7950 ©	4822 209 12994	MPC1718FB