

Service Service Service

CDR786/00



Service Manual

SERVICING

For servicing CDR785/CDR786, the sets can be divided into two parts:

1. Except for the Power board (Switched Mode Power Supply) and the CD-R/W module the set has to be repaired on component level.
2. The **Power board** and the **CD-R/W module** will be **exchanged completely** in case of a failure. The defective CD-R/W module has to be returned for central repair.

Available circuit descriptions: *The Basics of Compact Disc Recordable/Rewritable* 4822 725 25242
3rd generation Compact Disc Recording 3104 125 40100



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**CLASS 1
LASER PRODUCT**

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PHILIPS

TECHNICAL SPECIFICATION

General:

Mains voltage	: 220V-230V / 50-60Hz for /00 110V-240V /50-60Hz for /01C 120V / 60Hz for /17
Power consumption	: ≤ 18W ≤ 1W in stand by

Input / Output:

Analog in:	
input sensitivity	: ≤500mV _{rms}
max. input voltage	: 2,8V _{rms}
input impedance	: 47kΩ

Analog out:	
output level	: 2V _{rms} ±2dB at no load
output impedance	: 200Ω

Microphone in:	
input sensitivity	: ≤1mV _{rms}
max. input voltage	: 50mV _{rms}
input impedance	: 2kΩ

Digital in (acc. IEC958):	
input level	: 0,5V _{pp}
input impedance	: 75Ω

Digital out (acc. IEC958):	
output level	: 0,5V _{pp}
output impedance	: 75Ω

Headphone:	
output level	: 4,4V _{pp} at no load
output impedance	: 120Ω
frequency response:	20 - 20.000 Hz ±3dB
distortion	: 0,01% at 1 kHz and -6dB output level at 120Ω
channel difference	: ≤ 3dB at 1 kHz
channel crosstalk	: -50dB at 1kHz

AUDIO PERFORMANCE

3CDC module: To be measured on ANALOG OUT socket.

frequency response	: 20 - 20.000 Hz ±0,6dB
signal/noise ratio	: ≥ 115dB (120dB A-weighted)
distortion	: -88dB at 1 kHz (-91dB typ.)
channel difference	: ≤ 0,5dB at 1 kHz
channel crosstalk	: -115dB at 1kHz(-120dB typ.)
de emphasis	: 0 or 15/50μs switched automatically by subcode on the disc

laser	
output power	: 500μW
wave length	: 780 ±20nm

CD-RW module: To be measured on ANALOG OUT socket.

frequency response	: 20 - 20.000 Hz ±0,3dB (±1dB recording)
signal/noise ratio	: ≥ 95dB (98dB A-weighted)
distortion	: -86dB at 1 kHz (-83dB recording)
channel difference	: ≤ 0,5dB at 1 kHz
channel crosstalk	: -86dB at 1kHz (-74dB recording)
de emphasis	: 0 or 15/50μs switched automatically by subcode on the disc

laser (laser class 3B)	
output power	: 1mW max. during reading 20mW max. during writing
wave length	: 780 ±20nm

Remote Control:

RC5 commands *RC283505*

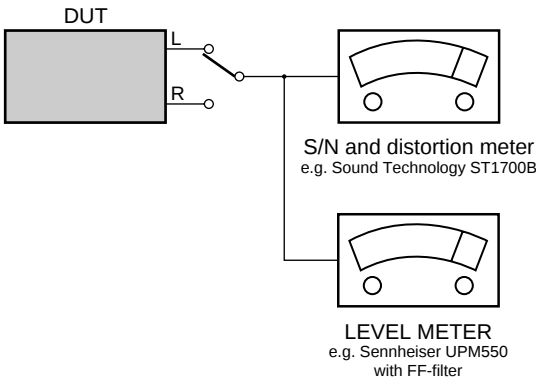
RC KEY	SYSTEM CODE		COMMAND CODE
	CD	CDR	
⏻ Standby	20	26	12
BRIGHTNESS	20	26	71
TRACK INCR.	-	26	114
CD TEXT	20	26	88
1	20	26	01
2	20	26	02
3	20	26	03
4	20	26	04
5	20	26	05
6	20	26	06
7	20	26	07
8	20	26	08
9	20	26	09
TEXT EDIT	20	26	82
0	20	26	00
PROGRAM	20	26	36
NO	20	26	49
YES	20	26	87
▶ PLAY	20	26	53
◀	20	26	33
▶	20	26	32
■ STOP	20	26	54
◀◀	20	26	50
▶▶	20	26	52
 PAUSE	20	26	48
SHUFFLE	20	26	28
REPEAT	20	26	29
CD1	20	20	55
CD2	20	20	56
CD3	20	20	57
CDR	26	26	63

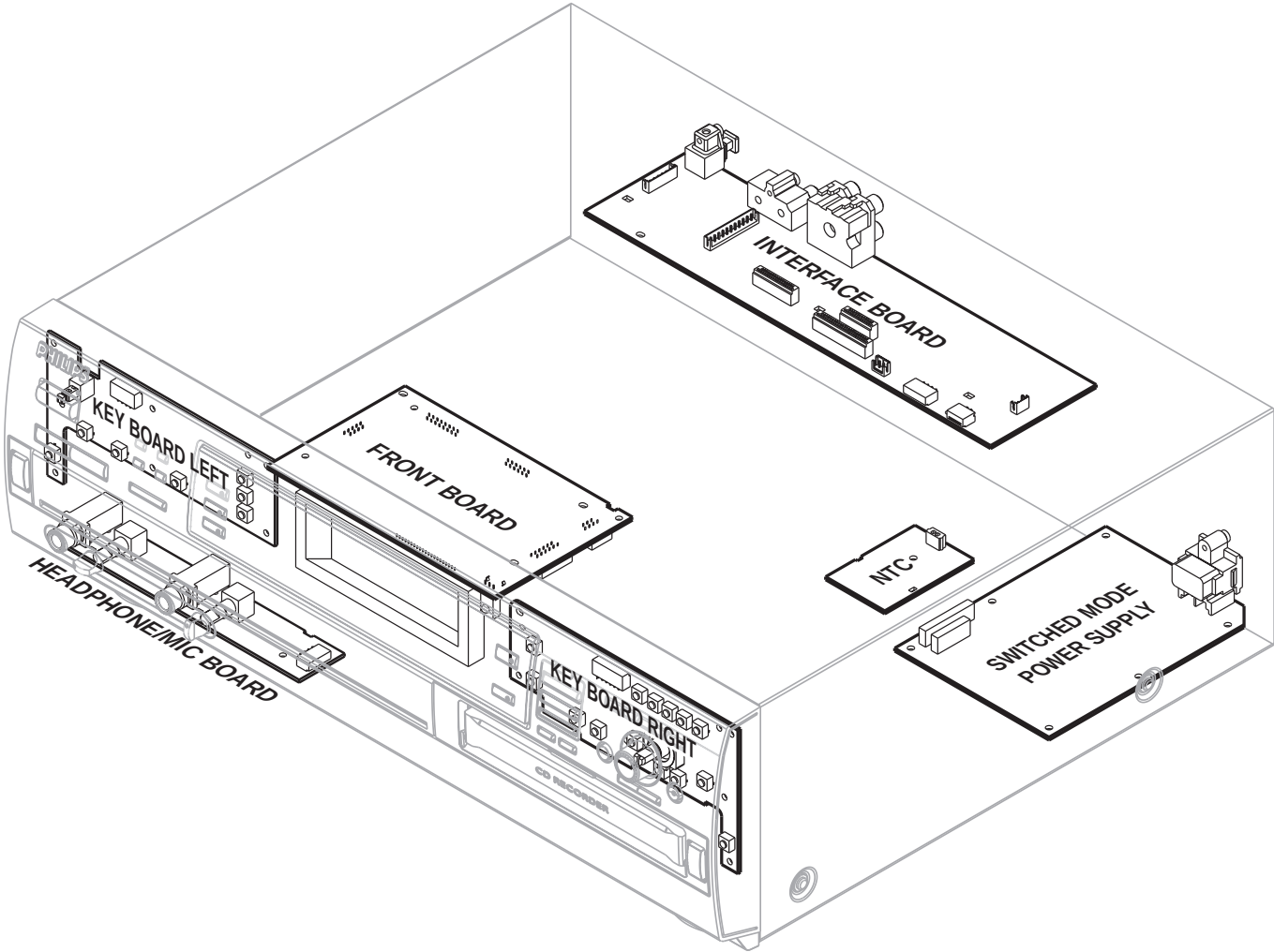
RC5 code RC283505, 130300

MEASUREMENT SETUP

CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)





location of pcb's, 240200

picture 1

(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 wristband 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 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 gegenüber elektrostatischen Entladungen (ESD). Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Sorgen Sie dafür, daß Sie im Reparaturfall über ein Puls-armband 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 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) AVAILABLE ESD PROTECTION EQUIPMENT :

anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25mm	4822 466 10958
anti-static wristband		4822 395 10223
connection box (3 press stud connections, 1MΩ)		4822 320 11307
extendible cable (2m, 2MΩ, to connect wristband to connection box)		4822 320 11305
connecting cable (3m, 2MΩ, to connect table mat to connection box)		4822 320 11306
earth cable (1MΩ, to connect any product to mat or to connection box)		4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)		4822 310 10671
wristband tester		4822 344 13999

(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

(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 strålning.

(FIN) Varoitus !

Avatussa laitteessa ja suojalukituksen 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".

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English

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GENERAL INFORMATION

English

Welcome !

Thank you for buying this Philips Compact Disc Recorder / CD Changer.

In the eighties Philips invented a new audio system - the CD. The CD (compact disc) revealed to you the new dimensions of digital sounds and added to the pleasures of audio. Compact disc technology permits a high contrast in loud as well as in quiet passages, with perfect channel separation. Philips has now further developed compact disc technology and the result is the CD recorder.

With your Philips CD Recorder/Changer, you can make your own high-quality audio CDs (subject only to legal restrictions on copying), either by recording at normal or high speed from the Changer to the Recorder, or by recording from an external source. And naturally, you can also play all pre-recorded audio CDs, using one or both decks individually.

About this manual

This manual gives instructions for operating this CD recorder where:

- the figures (1) throughout the text indicate a sequence of actions necessary to perform a certain operation;
- the arrows (→) indicate the reaction from the recorder;
- the dots (•) indicate remarks, advice or special options within a sequence of actions. The dot-marked instructions are not necessary for the required operation.

All instructions in this manual are based on control via the keys on the set. If there are corresponding keys available on the remote control they can be used as well.

Environmental information

All redundant packing material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet).

Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.

As an ENERGY STAR® partner, Philips has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.



Supplied accessories

- 2 Analog audio cables (with red and white plugs)
- 1 Digital coaxial cable (with black plugs)
- Mains cable
- 2 batteries for the remote control, size AA
- Remote control

Technical data

Subject to modification without notice.

General

Power consumption	16 W
Power consumption in Standby	< 1 W
Operating temperature	5-35° C
Weight	6.0 kg
Dimensions	435 x 360 x 140 mm

Audio

Frequency response	20Hz-22.050 Hz
Playback S/N (A-weighted) CD (CDR)	127 (100) dB
Playback S/N CD (CDR)	121 (98) dB
Playback Dynamic Range CD (CDR)	95 dB (94) dB
Playback Total Harmonic Distortion CD + CDR	90 dB/0.003 %
Channel separation CD (CDR)	120 (89) dB
Recording S/N (A-weighted)	96 dB
Recording S/N digital without SRC	equal to source
Recording Dynamic Range	92 dB
Recording Total Harmonic Distortion + noise	86 dB / 0.005%

This set complies with the radio interference requirements of the European Community.

GENERAL INFORMATION

English

Discs for recording

For recording, make sure to use special audio discs only. These discs are marked with "Digital Audio" and the logos shown below.

There are two different types of audio discs for the use on this CD recorder:

– CD-Audio Recordable (CDR) discs

These discs can be recorded on once and play in all standard CD players and CD recorders, when they are finalized.



– CD-Audio ReWritable (CDRW) discs

These discs can be recorded on, erased and re-recorded many times and play in CDRW compatible CD players and CD recorders, when they are finalized.



– All Philips CD players and CD recorders with the sticker shown here are CDRW compatible.



To ensure proper working of the set we recommend the use of Philips audio CDR and audio CDRW discs only.

Note: Do not use a computer CDR or CDRW as recording will not work properly!

In certain countries including the UK and certain Commonwealth countries, use of the product (or CD-Recorder) as shown or suggested in this user manual may require the permission of copyright holders.

Discs for playback

For playback on this CD changer and CD recorder you can use following audio discs:

– All pre-recorded audio CDs

– All audio CDR and audio CDRW discs

Notes:

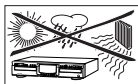
- Do not try to play a CD-ROM, CD-I or CDV!
- CDR(W) discs, which are recorded on a computer can only be used when they are correctly treated according to the audio standard (IEC958: Consumer part). Single session only!

Maintenance

Clean the set with a soft, slightly dampened lint-free cloth. Do not use any cleaning agents as they may have a corrosive effect.



Do not expose the set, batteries or CDs to humidity, rain, sand or excessive heat (caused by heating equipment or direct sunlight).



The lenses may cloud over when the set is suddenly moved from cold to warm surroundings. Playing a CD(RW) is not possible then. Leave the set in a warm environment until the moisture evaporates.

CDR(W) handling

For recording it is very important to use dust and scratch free discs.

To take a CD(RW) out of its box easily, press the centre spindle while lifting the CD(RW). Always pick up a CD(RW) by the edge and put it back after use. Never write on a CD or attach a sticker to it. Write only on the printed side of a CDR or CDRW, and only with a soft felt-tipped pen.

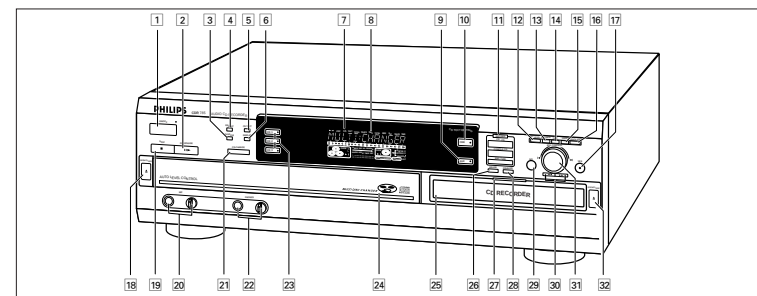


To clean a CD(RW), wipe it in a straight line from the centre toward the edge using a soft, lint-free cloth. A cleaning agent may damage the disc!



CONTROLS AND CONNECTIONS

English



Controls on the front

General

- 1 **ON/OFF**turns the CD recorder/changer ON and OFF

ON/OFF indicatorlights up when the set is switched on

- 2 **PLAY/PAUSE**starts play/interrupts play
 3 **SHUFFLE**plays discs in changer, program or CD(RW) in recorder in random order
 4 **REPEAT**repeat play (All, program or track)
 5 **CD TEXT**makes CD text scroll over display once
 6 **DISPLAY**selects display information/text
 7 **IR sensor**receives signals from the remote control

- 8 **Display**information screen
 9 **AUX**selects external input
 10 **CDR**selects CDR display/keys
 17 **YES**selects settings in Text Edit and Track Edit mode
 stores Text settings
 plays selected tracks
 programs track numbers

- 19 **STOP**stops playback or recording
 20 **MIC(rophone)**microphone socket
Levelmicrophone volume control
 22 **PHONES**socket for headphones
Levelheadphones volume control
 23 **CD 1, 2, 3**select CD 1, 2 or 3/CD changer display and keys

- 29 **NO** deletes tracks from a program
 deletes complete program
 deletes text in Text Edit mode
 30 **◀** searches backward
 reviews the tracks in a program
 controls the cursor in different menus (Text Edit and Track Edit)
▶ searches forward
 reviews the tracks in a program
 controls the cursor in different menus (Text Edit and Track Edit)

- 31 **◀ JOG CONTROL ▶** previous/next disc/track (play and program mode)
 recording level control (recording)
 balance control (recording)
 selects settings (menu on)

CD changer

- 15 **PROG(ram)**opens/closes program (review) memory
 16 **TRACK EDIT**opens Track Edit mode to create your own 'tracks'
 18 **OPEN/CLOSE**opens/closes disc tray
 21 **CD CHANGE**selects disc in CD changer
 24 Disc tray

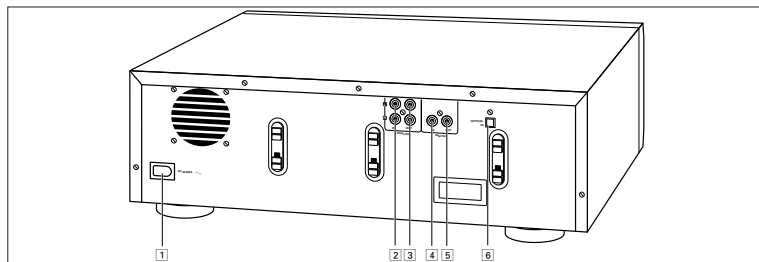
CD recorder

- 11 **Recording keys**
CD → CDselects high speed/auto finalise recording mode
COMPILE CDselects high speed recording mode/opens program memory
REC(ording) TYPEselects other recording modes
 12 **REC(ording) LEVEL**enables the EASY JOG key to set the recording level control
 13 **BALANCE**enables the EASY JOG key to set the balance
 14 **TEXT**opens Text Edit mode and stores entered text
 25 Disc tray
 26 **ERASE**erases recordings
 27 **Recording Led** Blue in Stop and Play mode
 Red during recording
 Red blinking during erasing
 28 **FINALIZE**finalises/unfinalises disc
 32 **OPEN/CLOSE**opens/closes disc tray

Note: Unless stated otherwise, all controls are on the front of the CD recorder/changer. When provided on the remote control, you can also use the corresponding buttons, after selecting the CD recorder or CD Changer by pressing CD-R or CD 1, CD 2, or CD 3.

CONTROLS AND CONNECTIONS

English



Connections at the back

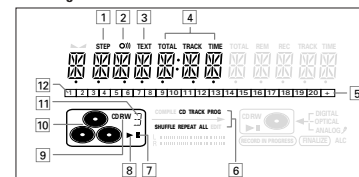
- 1 Connection to mains
- 2 **ANALOG IN**connects to the line output of a tape deck, amplifier or other analogue source
- 3 **ANALOG OUT CDR & CD**connects to the line input of an amplifier. (left and right)
- 4 **DIGITAL IN**connects to the digital coaxial output of an external CD player
- 5 **DIGITAL OUT CDR & CD**connects to the digital coaxial input of e.g. amplifier or recording device
- 6 **OPTICAL IN**connects to the digital optical output of an external CD player

DISPLAY

English

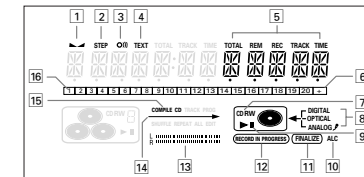
DISPLAY indications

CD changer section



- 1 **STEP**indicates the number of tracks in a program
- 2 **CDR**remote control active
- 3 **TEXT**CD TEXT active
- 4 **TRACK TIME**remaining track time (CDC)
TOTAL TIMEtotal time (CDC)
TRACKtrack number
- 5 **+**disc or program contains more than 20 tracks
- 6 **PROG**flashes during programming/ lights in program mode
SHUFFLEplays tracks in random order
REPEAT TRACKlights up when a track is repeated
ALLlights up when all tracks on the discs in the changer are repeated/when a program is repeated
CDlights up when a complete disc in the changer or recorder is repeated
- 7 **II**pause function active
- 8 **▶**lights during play
- 9 **CD**CD selected (a pre-recorded CD or finalised CD-R or CD-RW disc)
CD Runfinalised CD R disc selected
CD RWunfinalised CD RW disc selected
- 10 **CD**CD changer selected and CD(s) inserted in compartment 1, 2 and/or 3 (a prerecorded CD or finalised CD-R or CD-RW disc)
- 11 **3**disc in play or selected
- 12 **Track bar**indicates:
.....- number of tracks on a disc or in a program
.....- number of track in play

CD recorder section



- 1 **balance**balance
- 2 **STEP**indicates the number of tracks in a program
- 3 **CDR**remote control active
- 4 **TEXT**CD TEXT active
- 5 **TRACK TIME**remaining track time (CDR)
TOTAL TIMEtotal time (CDR)
REM REC TIMEremaining recording time
REM TRACK TIMEremaining track time
TRACKtrack number
TOTAL REM (TRACK) TIMEtotal remaining (track) time (in dubbing mode)
- 6 **+**disc or program contains more than 20 tracks
- 7 **CD**CD inserted (a pre-recorded CD or finalised CD-R or CD-RW disc)
CD Runfinalised CD R disc inserted
CD RWunfinalised CD RW disc inserted
- 9 **DIGITAL**digital input selected for external recording
OPTICALoptical input selected for external recording
ANALOGanalog input selected for external recording
microphonemicrophone input active
- 10 **ALC**Auto Level Control active
- 11 **FINALIZE**lights up during finalizing a recording
- 12 **RECORD IN PROGRESS**lights during recording
L/R II IIindicates the audio signal level
- 14 **internal recording**internal recording activated
- 15 **COMPILE CD**lights up when Compile CD mode is selected
- 16 **Track bar**indicates:
.....- number of tracks on a disc or in a program
.....- number of track in play

DISPLAY

English

DISPLAY

English

DISPLAY messages

Messages, as listed and explained here, may appear on the display for your guidance.

General

PHILIPS CD RECORDER

.....when set is switched on
READINGreading disc information
OPEN CDC / CDRduring tray opening of
changer/recorder
PROGRAM FULLprogram full
INSERT DISCinsert disc or insert disc in correct
way/when recording is activated while
no CD is inserted
WRONG DISCinserted disc is no audio CD
UNFINALIZED- lights up when unfinalized CDR(W)
disc or wrong disc is inserted in CD
changer
.....- flashes when CDR disc tray is
opened with unfinalised CDR(W) disc
inserted
MEMORY _- lights up when 87 % of memory is
used
.....- gives the amount of memory used,
when tray is opened

Recording

WAITwhen STOP ■ is pressed during
recording the first 4 seconds of a track
UPDATEupdating disc contents
DISC-FULLno more recording possible
AUX DIGITAL ?digital coaxial input 1 selected
AUX OPTICAL ?digital optical input selected
AUX ANALOG ?analog input selected
COPY PROTECTno digital recording can be made of
the external source
NOT FINALIZED when opening the tray with an
unfinalized disc inserted
CD FAST ?high speed recording of a complete
disc from the CD Changer
TRACK FAST ?high speed recording of a single track
from the CD Changer
CD LISTEN ?normal speed recording of a complete
CD from the CD Changer
TRACK LISTEN ?normal speed synchronized recording of
a single a track
RECORD CD X ?recording of the entire disc selected
COMPILE CD ?High Speed recording of compilation
(program) selected
AUX CD ?Synchronised Start of recording of a
complete disc from external source
AUX TRACK ?Synchronised Start of recording of a
single track from external source
AUX MANUAL ?Manual Start of recording from
external source selected
AUX MIX MIC ?Manual Start of mixed recording of
microphone and external source input
REC TR X ?select a track for recording

MIC ONLY ?Manual Start of microphone recording
CLEAR A-B ?when clearing a passage
A-B FAST ?highspeed recording of a particular
passage
A-B LISTEN ?normal speed recording of a particular
passage
REC LEV - XX DBrecord level is being adjusted
NOT FITTINGtime left on CDR(W) disc is not enough
for proposed recording
ANALOG RECcopy prohibited track found during
internal recording. Track will be copied
analog (Copy Protection Regulations).
ERASE ?recorder asks for confirmation when
erasing
ERASE X + ?recorder asks for confirmation when
erasing mote than one track
ERASE DISC ?recorder asks for confirmation when
erasing a disc
FINALIZE ?recorder asks for confirmation when
finalising a disc
FINALIZEDwhen trying to finalise an already
finalised disc
FINALIZED CDwhen trying to record on an already
finalized disc
UNFINAL XXtime countdown during unfinalizing
CHECK INPUTwhen RECORD is pressed while no
digital source is detected
ERASE XX XXtime countdown when erasing a track
or a disc
FINAL XX XXtime countdown when finalising a disc
PROF SOURCEwhen a professional source is
connected
A - 0:00when point A of a passage to be
repeated is stored

Play

PROGRAMprogram mode selected
PLAY PROGRAMplayback of program
CLEAR PROG ?when clearing a program
CD X ALLcomplete CD X selected for
programming

Others

AUTO FINALwhen activating/disactivating the auto
finalize function
NO AUDIO TRwhen the recorder enters a data track
during recording
FINALIZE CDlaser power calibration performed 96
times, please finalize disc
INITIALIZINGduring laser power calibration for
unfinalized discs
DISC RECOVERduring disc recovering after power
failure
OPC ERRORfailure during OPC procedure (OPC =
Optimum Power Calibration)
RECORD ERRORrecording error in menu mode
DISC ERRORwhen trying to record on or finalize a
recovered disc
MEMORY FULL/when no more text can be stored for a
FINALIZE CDcertain disc. Another disc has to be
finalized to obtain memory space
NO TRACKSwhen text input is given for an empty
disc
TEXT EDITwhen entering Text Edit mode
ALBUM ARTISTwhen editing or erasing an artist name
ALBUM TITLEwhen editing or erasing a title
TR N ARTISTwhen editing or erasing an artist name
per track
TR N TITLEwhen editing or erasing a title per
track
TEXT ERASEwhen erasing text
ALL TEXTwhen erasing all text selected
ERASEwhen confirmation for erasing has to
be given with YES key
ERASE ALLwhen confirmation for erasing has to
be given with YES key
ERASE MEMORYwhen waiting for confirmation when
erasing a disc
TEXT MEMORYwhen selecting text review per
unfinalised disc in memory
MEMORY EMPTYwhen TEXT MEMORY is selected
while no text is in memory
AUTO TRACKwhen selecting auto track increment
ON or OFF
ALBUM TITLEwill be followed by album title
TRACK TITLEwill be followed by track title
ALBUM ARTISTwill be followed by artist name
TRACK ARTISTwill be followed by track artist name
NO TEXTno text stored for disc/track

INSTALLATION

English

Connections general

For playback on the CD recorder from the CD changer deck the following outputs are present:

- Digital coaxial output (CD & CD-R)
- Analog output (CD & CD-R)

We advise you to connect these to the TAPE or CD-R input on your amplifier.

For external recording the following inputs are present:

- Digital optical input
- Digital coaxial input
- Analog input (stereo)

The connections you make will depend upon the possibilities your audio equipment offers. Please refer to the user manuals for your other audio equipment first.

Digital recordings (optical or coaxial) give the best performance in audio and usability (e.g. auto-track). (The digital optical connection is less sensitive to external disturbances).

If your equipment does not offer digital connections, the high quality Analog-Digital-Converter of your set will ensure very good audio performance when recordings are made from the analog input.

Playback via the digital coaxial output of the CD recorder gives the best audio performance.

If your equipment does not offer digital connections, the high quality Digital-Analog-Converter of the set ensures a very good sound quality via the analog output.

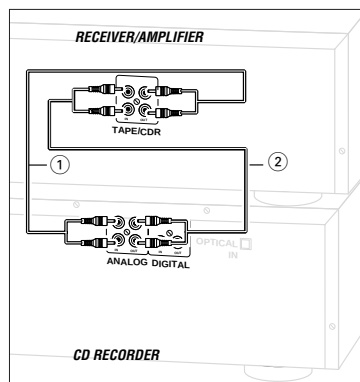
We advise you to always establish both digital and analog connections. In this way you can always make analog recordings when digital recording is not possible.

We have described the most common ways of connecting the CD recorder. If you still have difficulties with the connections you can always contact the Philips Consumer Service desk in your country.

Analog connections

This connection must be made for playback on the CD recorder deck as well as the CD changer deck (cable ②).

Cable ① is only required if you want to make recordings from an external analog source.



Use the audio cables supplied. Connect the red plugs to the R sockets, and the white plugs to the L sockets.

- 1 For external recording, connect cable ① between the ANALOG IN-sockets on the set and the CDR LINE- or TAPE OUT-sockets of an amplifier.

Note: For recording directly from a CD player or tape deck, the analog input of the set should be connected to the analog output of the CD player or tape deck.

- 2 For playback, connect cable ② between the ANALOG OUT-sockets on the set and the input sockets of an amplifier e.g. TAPE IN, CD-R or AUX.

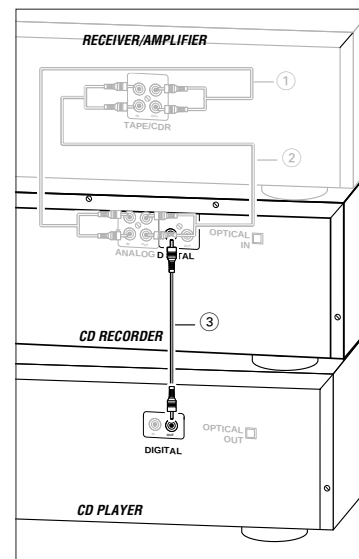
Note: Never use the PHONO input.

INSTALLATION

English

Digital coaxial connections

This connection is required if you want to make recordings from an external CD player with a digital coaxial output.

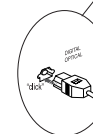
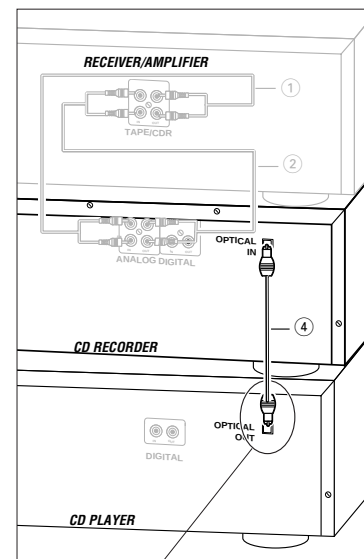


- 1 For external recording, connect the cable ③ between the DIGITAL IN-socket on the set and the DIGITAL OUT-socket of an external CD player.

Note: Your set is equipped with a digital coaxial output (common output for CD recorder & CD changer deck). This output can be used for digital playback. (e.g. Philips receiver FR960 or FR970.)

Digital optical connections

This connection is required if you want to make recordings from an external CD player with a digital optical output.



When connecting the Digital Optical cable, make sure it is fully inserted until there is a click.

- 1 Remove the dust caps from the digital optical connection. (We recommend you save the cap.)

- 2 For external recording, connect a fibre-optic cable ④ between the digital optical input of the set and the digital-optical output of an external CD player.

Note: For playback, the digital coaxial outputs or analog outputs of the CD Changer and CD recorder should be connected to an amplifier.

INSTALLATION

English

Power supply/Mains



The type plate is located on the rear of the set.

- 1 Check whether the mains voltage as shown on the type plate corresponds to your local mains voltage. If it does not, consult your dealer or service organisation.
 - 2 Make sure all connections have been made before switching on the mains supply.
 - 3 Connect the mains cable supplied to AC MAINS ~ and to the wall socket. This switches on the mains supply.
 - 4 Press ON/OFF to switch on the set.
→ PHILIPS CD RECORDER will be displayed.
- Press ON/OFF again to switch off the set.
 - Press on the remote control to switch the set to Standby mode.

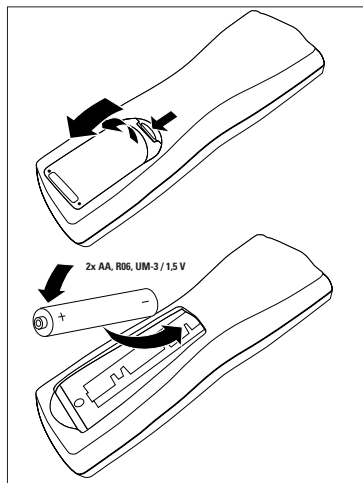
When the set is switched to standby, it is still consuming some power. To disconnect the set from the mains completely, remove the mains plug from the wall socket.

For users in the U.K.: please follow the instructions on page 3.

Setup recommendations

- Place the set on a solid, vibration free surface.
- Make sure there is sufficient space around the set to prevent overheating.
- Do not place the set near a source of heat or in direct sunlight.
- Do not use the set under extremely damp conditions.
- If the set is placed in a cabinet, make sure that a 2.5 cm space remains free on all sides of the CD recorder for proper ventilation.
- Place the set on a solid, vibration free surface.
- Active mobile phones near to the set may cause malfunctions.

Inserting batteries in the remote control



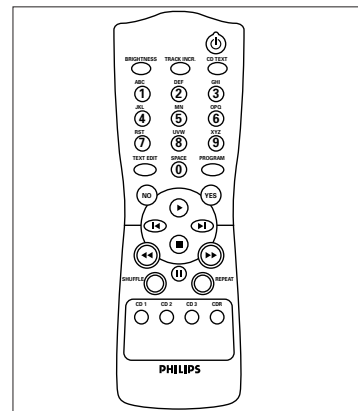
- 1 Open the battery compartment cover.
- 2 Insert 2 batteries (AA, R06 or UM-3; as supplied) as shown.
- 3 Replace the cover.

Note: We recommend you use 2 batteries of the same type and condition.

Batteries contain chemical substances, so they should be disposed of properly.

REMOTE CONTROL

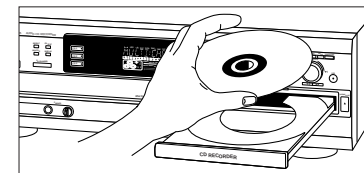
Remote control commands



- STANDBY**switches to Standby
- BRIGHTNESS**sets the brightness of the display
- TRACK INCR(ement)**selects automatic or manual increase of track numbers during recording
- CD TEXT**activates CD text mode
- Number/alphabet keys 0 - 9**selects a track by number
.....selects character for text input
- TEXT EDIT**opens Text Edit mode and stores entered text
- SPACE**inserts space during text input
- PROGRAM**opens/closes program memory
- NO**deletes tracks from a program
.....deletes complete program
.....deletes text in Text Edit mode
- YES**selects settings in Text Edit and Track Edit mode
.....stores Text settings
.....plays selected tracks
.....programs track numbers
- ▶**starts CD(RW) play
- ◀**previous track (Play and Program mode)
- ▶|**next track (Play and Program mode)
-stops CD(RW)
- ◀◀**searches backward
.....cursor control in Prog. review mode
- ▶▶**searches forward
.....cursor control in Prog. review mode
- ||**interrupts CD(RW) play
- SHUFFLE**plays CDs, CD(RW) or program in random order
- REPEAT**repeat play
- CD 1, 2, 3**selects discs in CD changer
- CDR**selects CD recorder

LOADING DISCS

CD recorder



Note:
Only Audio CDs will be accepted in the CD recorder deck if a non-audio disc is inserted, the display shows **WRONG DISC**.

- 1 Press OPEN/CLOSE to open the disc tray.
→ OPEN CDR lights up.
- 2 Insert a CD, CDR or CDRW in the appropriate recess in the tray, label side up.
- 3 Press OPEN/CLOSE to close the tray (see also "Playing").
→ **READING** lights up and the display will show the type of disc inserted.



- If a CDR(W) is finalised it will show **CD** on the display.
- If you insert a blank or partly-recorded CDR or unfinalised CDRW, the CD recorder will calibrate the disc for optimum recording. During this process the display will first show **READING**; **INITIALIZING** and then the number of audio tracks. Calibration can take up to 25 seconds.



- If CD-text is available the **TITLE/ARTIST** will scroll by.



IMPORTANT !

For recording it is important that the blank disc is completely free from dust particles or scratches (see CD(RW) handling).

LOADING DISCS

PLAYING

English

CD changer

Note:
Only Audio CDs will be accepted in the CD changer deck. If a non-audio disc is inserted, the display shows **WRONG DISC**.

- 1 Press OPEN/CLOSE to open the disc compartment.
→ OPEN CDC lights up.
- 2 Insert CDs in the two outer disc trays, label side up.
- Press CD CHANGE.
→ The CD carousel tray will rotate until the inner tray is at the right hand side.
- 3 Insert a CD in the tray, label side up.
- 4 Press OPEN/CLOSE to close the compartment (see also Playing a CD).
→ **READING** lights up and the display will show the type of disc inserted.



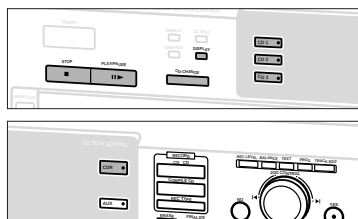
Changing discs during play

- 1 Press OPEN/CLOSE to open the disc compartment.
→ OPEN CDC lights up.
- 2 The CDs in the two outer disc trays can be changed while play continues.

IMPORTANT!

When an unfinalized disc is inserted reading may take up to 1 minute. **READING** will then be displayed, followed by **NOT FINALIZED**.

Playing

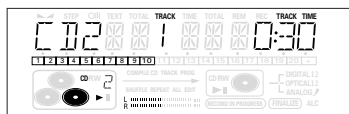


CD recorder

- 1 Press CDR.
→ The CDR label lights up.
- 2 Press PLAY/PAUSE ►► to start play.

CD changer

- 1 Press CD 1, 2 or 3.
- 2 Press PLAY/PAUSE ►► to start play.
→ Play starts with the first track of the disc in the CD recorder or the selected disc in the changer.
→ The track number and track time of the track in play appear on the display.

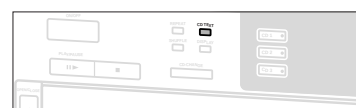


- Press DISPLAY once, twice or three times to see:
→ remaining track time, total remaining time, permanent CD text.
- To interrupt play temporarily, press PLAY/PAUSE ►► again.
→ ►► lights on the display.
- To continue play, press PLAY/PAUSE ►► again.
- 3 To stop play, press STOP ■.
→ The number of tracks and the total playing time appear on the display.
→ After the last track play will stop. If CDC was selected, play will continue with the next disc.

PLAYING

English

CD text



This feature allows the display of information such as album title or track title contained on a specially encoded CD.

- Make sure to insert a CD with CD text.
→ **TEXT** is shown and the album title is scrolled once.



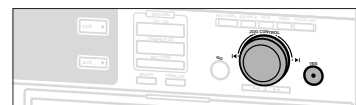
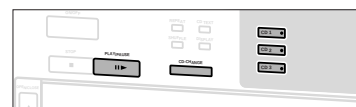
CD text when playback is stopped

- Press CD TEXT to see the following information, which will be scrolled once (if available):
– Artist name of album
– Album title

CD text during playback

- Press CD TEXT to see the following information, which will be scrolled once (if available):
– Artist name for track (on CD recorder only)
– Track title

Selecting a disc



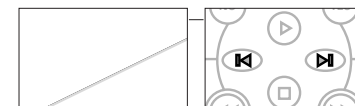
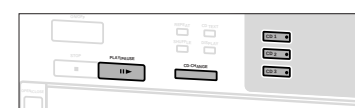
Selecting a disc during play

- 1 Press CD 1, 2 or 3 or CDR to select a particular disc.
→ Playback is stopped and the new disc is selected.
- 2 Press YES or PLAY/PAUSE ►► to start play.

Selecting a disc in STOP mode

- 1 Press CD 1, 2 or 3 or CDR to select the required disc number.
- 2 Press YES or PLAY/PAUSE ►► to start play.
→ Play starts with the first track of the selected disc.

Selecting a track



Selecting a track during play

- 1 Rotate ◀ JOG CONTROL ▶ until the required track number appears on the display.
→ Play skips to the beginning of the selected track.
- or
- Select CDR or CDC (CD 1, 2 or 3) on the remote control and key in the required track number using the numerical keys on the remote control. For 2-digit track numbers, press the keys in rapid succession.
→ Play skips to the beginning of the selected track.
- or
- Press ◀ or ▶ on the remote control one or more times.
→ Play skips to the beginning of the present, previous or subsequent tracks.

Note: For tracks on another disc, first select the required disc by pressing CD 1, CD 2, CD 3 or CDR.

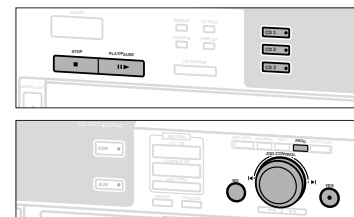
Selecting a track when CD play is stopped

- 1 Rotate ◀ JOG CONTROL ▶ until the required track number appears on the display.
 - 2 Press PLAY/PAUSE ►► or YES to start playing.
- or
- 1 Select CDR or CDC (CD 1, 2 or 3) on the remote control and key in the required track number using the numerical keys.
For 2-digit track numbers, press the keys in rapid succession.
 - 2 Press PLAY/PAUSE ►► to start playing.
- or
- 1 Briefly press ◀ or ▶ on the remote control one or more times.
 - 2 Start playback by pressing PLAY/PAUSE ►►.

PROGRAM

English

Programming track numbers



You can select tracks and store them either in the CD changer, or CD recorder memory. If you use the program for playback you can choose one of the two memories, else if you like to specify tracks for recording, use the CD changer memory only! You can store any track more than once.

- 1 Load the desired disc(s) in the disc tray(s).
- 2 Press either CD 1, CD 2, CD 3, or CDR to select the disc.
- 3 Press PROG(ram).
- **PROG** starts blinking and **PROGRAM** is displayed.
- 4 Rotate **JOG CONTROL** (press the numerical keys on the remote control; for 2-digit numbers, press the keys in rapid succession) to select the required track numbers and store each track by pressing YES.
- The number of programmed tracks (**STEP**), **PROG** and the total program time are displayed.

**CD changer only**

- If you wish to program a complete CD from the CD Changer rotate **JOG CONTROL** to select **CD1** (or **2**, **3**) **ALL** and press YES.
- All tracks of CD 1 (or 2, 3) will be programmed.



- 5 Press PROG(ram) to end programming.
- **PROG** stays shown and the program is currently available.

*Note: If the maximum number of programmable tracks is reached, the display shows **PROGRAM FULL**.*

Erasing a track from the program

- 1 If necessary press **STOP**.
- 2 Press either CD 1, CD 2, CD 3, or CDR to select the desired memory.
- 3 Press PROG(ram), followed by **◀** or **▶** to move through the program steps.
- The track number at the selected step and the total program time are displayed.
- 4 Press **NO** to remove the track from the program.
- **CLEARED** is displayed briefly.
- The next programmed track number will move up to this position and is displayed together with the step number and the remaining total program time.

Clearing the program

- 1 If necessary press **STOP**.
- 2 Press **NO**.
- **CLEAR PROG ?** is displayed.
- 3 Press **YES** to clear the program.
- **PROG CLEARED** will be displayed and **PROG** goes off.

Note: If you open the CD recorder or the CD changer tray the respective program will be cleared.

Making a program for recording

See 'High speed recording and automatic finalizing (optional) of the current program' under chapter 'Internal recording'.

PLAYING

English

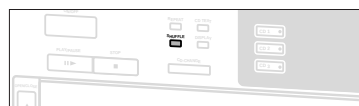
Search



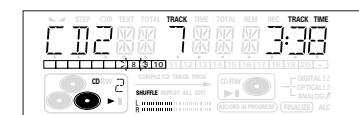
- 1 Hold down **◀** or **▶**.
- The set first searches backwards or forwards at 10 times normal speed with sound at low volume, then goes to 50 times normal speed with sound muted.
- 2 Release the button at the desired passage.
- Play starts at the desired passage.

Note: During Shuffle, Repeat Track or Programmed play, search is restricted to within the track being played at the time.

Shuffle (random order) play



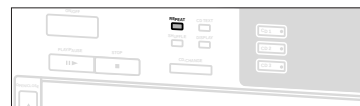
- 1 Press **SHUFFLE** before or during CD play to start shuffle play.
- The tracks on the CD(RW) in the recorder (**SHUFFLE**), the tracks on the CDs in the changer (**SHUFFLE**) or the tracks in the program (**SHUFFLE PROG**) play in random order.



- 2 Press **SHUFFLE** again to return to normal CD play.

Note: Shuffle is also cleared if you open the disc tray.

Repeat CD(s), track or program



- 1 Press **REPEAT** one or more times during CD play.
- When **REPEAT TRACK** lights up, the current track plays repeatedly. When **REPEAT ALL** lights up, the discs in the changer or the program play(s) repeatedly.
- When **REPEAT DISC** lights up, the selected disc in the changer or the recorder plays repeatedly.



- 2 To return to normal play, press **REPEAT** one or more times until:
- the **REPEAT** label disappears from the display.

Note:

- You can use shuffle in combination with **REPEAT ALL** or programmed play of the CD Changer.
- **REPEAT** is also cleared if you open the disc tray.

RECORDING GENERAL

Basic information

We will describe:

- **Digital recording from internal CDC** (fast or normal recording).
- **Recording from external CD player:**
 - Digital
 - Digital (synchronized start with external CD player)
 - Analog
- **Finalizing discs:**
Finalizing a CDR(W) disc is a simple procedure, necessary to:
 - play a recorded CDR on a standard CD player
 - play a recorded CDRW on a CDRW compatible CD player
- The recording procedure is the same for CDR and CDRW discs. **Make sure that the CDR(W) is absolutely free of scratches and dust particles.**
- It is advisable to use a CDRW disc for your first try.
- If the disc already contains recordings, the CD recorder will automatically search for the end of the last track, so that recording can start from there.
- For recordings, the minimum track length is 4 seconds. You can record up to a maximum of 99 tracks on a disc. The minimum of recording time left on the disc is 7 seconds. Else, **NOT FITTING** is displayed and you cannot enter into the record standby mode.
- When you try to record a copy protected material from an external source, **COPY PROTECT** will be displayed. No further digital recording is possible then.
- The **Serial Copy Management System (SCMS)** only allows digital recording under specific conditions:
 - This means that it is not possible to make a digital copy from a digital copy.
 - Analog recording is always possible !
 - The number of recordings from the original is unlimited.
- Recordings from DAT or DCC players will not always stop automatically.

Important:

If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See finalising discs.

Finalised CDRW discs play only on CDRW compatible CD players.

For recording from external CD changers do not use AUX MANUAL, but AUX TRACK or AUX CD.

Direct Line Recording (DLR)

The CD recorder is equipped with the high-performance **Direct Line Recording** technique. It ensures a perfect recording of the source material, meaning a true "bit for bit" recording. DLR will always become active, when you make normal recordings in listen mode.

Auto Level Control (ALC)

Auto Level Control ensures that the tracks on the recorded disc have a similar volume level. Always the already recorded tracks of the CDR(W) disc will be taken as reference for the volume level of the following recordings. ALC is active, when **ALC** is shown.

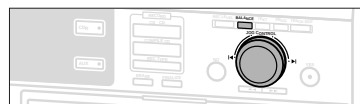
Auto level control becomes active, when:

- **COMPILE CD** is being used,
- a disc, a track or a track edit (A-B) is being high speed recorded and the CDR(W) has recordings on it,
- a program from the CD changer is being high speed recorded, or
- **CD→CD** is being used and the CDR(W) has recordings on it.

Auto level control will not become active, when:

- **CD→CD** is being used for an empty CDR(W),
- making recordings from an external source, or
- making normal recordings in listen mode.

BALANCE key



You can set the reference record balance for both digital and analog recordings.

- 1 Keep **BALANCE** on the set pressed to enable the **◀ JOG CONTROL ▶** to set the **BALANCE**.
- 2 Rotate the **◀ JOG CONTROL ▶** to set the desired balance.
→ The set balance will be displayed.

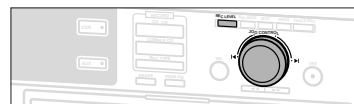


- The balance is reset after the set has been switched to standby.

RECORDING GENERAL

INTERNAL RECORDING

REC LEVEL key



You can adjust the reference record level for both digital and analog recordings. This is also possible when ALC is active. This feature can be used for fading your recordings in or out.

- 1 Select the required recording mode (see Recording modes).
- 2 Keep **REC LEVEL** on the set pressed to enable the **◀ JOG CONTROL ▶** to adjust the record level.
- 3 Rotate the **◀ JOG CONTROL ▶** to the left to adjust the desired record level.
→ The actual record level (in dB) will be displayed.



- The record level is reset after the set has been switched to standby.

Remarks on recording

- During high speed recording, the original recording quality will be maintained.
- When **Auto Track** is on (default setting), track numbers will automatically be increased during recording.
- If a finalised CDR disc is inserted in the CD recorder and **CD→CD** is pressed, **FINALIZED** CD will be displayed. Recording is not possible.
- If a finalised CDRW disc is inserted in the CD recorder and **REC TYPE** is pressed, **UNFINALIZE ?** will be displayed. If **YES** is pressed, the disc will be unfinalised.

*Note: If during recording **ANALOG REC** appears, the track is copy protected and will be recorded as analog, at normal speed. All other tracks will be copied normally (at double speed).*

Warning: No more recording possible after finalizing CDR discs!

Recording modes

For recording from the internal CD Changer-deck you can choose following recording modes:

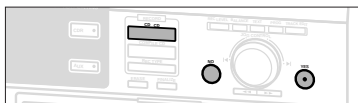
- **High speed recording and automatic finalizing:**
Fast and easy! Record and finalize your CDR(W) in one quick step while the sound is muted. You can record:
 - the current CD (**CD→CD**);
 - a program (**COMPILE CD**).
- **High speed recording (REC TYPE):**
Record your CDR(W) fast while the sound is muted. You can record:
 - an entire CD (**CD FAST**);
 - a track (**TRACK FAST**);
 - a program (**COMPILE CD/ PROG FAST**);
 - a track edit (**AB FAST**).
- **Normal recording and listening (REC TYPE):**
Listen to the recording while you are making it. You can record:
 - an entire CD (**CD LISTEN**);
 - a track (**TRACK LISTEN**);
 - a program (**PROG LISTEN**);
 - a track edit (**AB LISTEN**).
- **Microphone recording:**
Mix sound from the internal CD Changer with microphone input (**CD MIX MIC**).

INTERNAL RECORDING

English

High speed recording and automatic finalizing

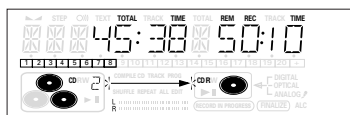
High speed recording and automatic finalizing of the current disc



Notes:

- During High Speed recording, the Pause function is not operative.
- Copy prohibited tracks will be copied analog. ANALOG REC is displayed.
- During High Speed recording, the sound is not audible.
- When the CDR(W) already contains a recording the ALC function will become active. ALC then lights up on the display.
- If required the recording level can be set first, using the REC LEVEL key. See "Rec Level key" under "Recording General".

- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Press CD → CD to enter into the record mode.
 - Both decks will be selected in the display, the arrow and the YES key start blinking. The remaining recording time of the CDR(W), the total playing time of the source CD and RECORD CD1 (or 2, 3) ? are displayed.



- 3 Press YES to start recording and finalizing.
 - The arrow lights, **RECORDING IN PROGRESS** and **FINALIZE** are shown, high speed recording and finalizing start and the actual recording time left starts to count down.
- To check the elapsed recording time, press DISPLAY. This can be done during recording.
- Recording will stop automatically.
- 4 To stop recording manually, press STOP ■.
 - If STOP ■ was pressed within 3 seconds after YES, no recording will take place.

Note: If a program was already available before pressing CD → CD, this will be ignored. PROG goes off and the current disc will be recorded. After finishing the recording, PROG is shown and the program is available again.

High speed recording and automatic finalizing (optional) of the current program

- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Select and store all desired tracks in the CD changer memory (see "Programming track numbers").

- 3 Press COMPILE CD to enter into the record mode.

→ Both decks will be selected in the display, the arrow starts blinking. The remaining recording time of the CDR(W), the total playing time of the program and RECORD PROG ? are displayed.



- If the total time of the program is of bigger size than the remaining recording time of the CDR(W):
 - NOT FITTING ! will be displayed briefly, followed by the remaining recording time and RECORD PROG ?
- If you still start recording, only the whole tracks of the program that fit onto the CDR(W) will be recorded.

- 4 Press either:
 - NO to change the program.
 - PROG starts blinking. Now you can change the program (see "Program") and return to the record mode by pressing COMPILE CD.

or
YES to confirm recording.
→ AUTO FIN ? is displayed.

- 5 Press either:
 - YES, if the CDR(W) shall be finalized after recording.

or
NO, if the CDR(W) shall not be finalized after recording.

- The recording process starts. The arrow lights, **RECORDING IN PROGRESS** is shown, high speed recording and **FINALIZE** (if selected) start and the actual recording time left starts to count down.

- To check the elapsed recording time, press DISPLAY. This can be done during recording.
- Recording will stop automatically.
- 6 To stop recording manually, press STOP ■.
 - If STOP ■ was pressed within 3 seconds after YES, no recording will take place.

Note: If no program is available and you press COMPILE CD, you enter immediately into the program menu. Start your programming and return to the record mode by pressing PROGRAM or COMPILE CD.

Important:

If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See 'Finalising discs'.

Finalised CDRW discs play only on CDRW compatible CD players.

INTERNAL RECORDING

English

High speed recording

High speed recording of an entire disc, a track, a program or a track edit



- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Press either CD 1, CD 2 or CD 3 to select the disc you wish to record from.
- 3 Press REC TYPE on the set to enter into the recording menu.
- 4 Rotate JOG CONTROL ► to select one of the following high speed record modes:

If a disc from the CD changer is selected:

- CD FAST ? : for high speed recording of an entire disc.
 - Continue with step 5
- TRACK FAST ? : for high speed recording of a track.
 - Press YES to confirm.
- Rotate JOG CONTROL ► to select the track.
- REC TR ? and the tracknumber are displayed.
 - Continue with step 6.

If CD changer program mode is available:

- PROG FAST ? : for high speed recording of the selected disc or of the program.

If CD changer track edit mode is available:

- A-B FAST ? : for high speed recording of the A-B track.

- 5 Press YES to confirm your selection.
 - Both decks will be selected in the display, the arrow starts blinking. The remaining recording time of the CDR(W), the total recording time of the CDR(W) and either RECORD CD1 (or 2, 3) ?, RECORD PROG ? or RECORD A-B ? is displayed.



- 6 Press YES to start high speed recording.
 - The arrow lights, **RECORDING IN PROGRESS** is shown, high speed recording starts and the actual recording time left starts to count down.
- To check the elapsed recording time, press DISPLAY. This can be done during recording.
- Recording will stop automatically.

- To stop recording manually, press STOP ■.
- If STOP was pressed within 3 seconds after YES, no recording will take place.

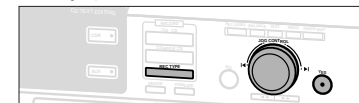
Important:

If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See 'Finalising discs'.

Finalised CDRW discs play only on CDRW compatible CD players.

Normal speed recording and listening

Normal recording and listening of an entire disc, a track, a program or a track edit



- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Follow step 2 and 3 of "High speed recording".
- 3 Rotate JOG CONTROL ► to select one of the following normal record options:

If CD changer is selected:

- CD LISTEN ? : for listening to the entire disc during normal recording
 - Follow step 5 and 6 of "High speed recording".
- TRACK LISTEN ? : for listening to the track during normal recording
 - Press YES to confirm.
- Rotate JOG CONTROL ► to select the desired track.
- REC TR ? and the tracknumber is displayed.
 - Continue with step 6 of "High speed recording".

If CD changer program mode is available:

- PROG LISTEN ? : for listening to the program during normal recording

If CD changer track edit mode is available:

- A-B LISTEN ? : for listening to the A-B track during normal recording

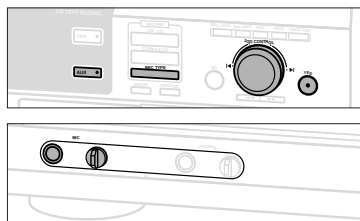
- 4 Follow step 5 and 6 of "High speed recording".

Note: If required the recording level can be set first, using the REC LEVEL key. See "Rec Level key" under "Recording General".

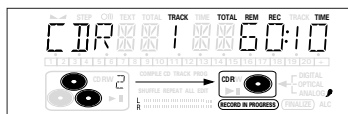
INTERNAL RECORDING

English

Microphone recording



- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Set MIC LEVEL to the minimum level to prevent acoustic feedback (e.g. a loud howling sound) before you connect the microphone.
- 3 Connect a microphone to MIC.
- 4 Press CD 1, CD 2 or CD 3 to select the disc you wish to mix the microphone with.
- 5 Press REC TYPE on the set to enter into the recording menu.
- 6 Rotate ◀ JOG CONTROL ▶ to select the manual record mode for the microphone:
→ CD MIX MIC is displayed.
- 7 Press YES to confirm.
→ WAIT is displayed.
→ RECORD ? is displayed.
- 8 Press YES to start recording.
- 9 Rotate ◀ JOG CONTROL ▶ to select the desired track.
→ The disc tray number, the current track number and playing time of the track are displayed.
- 10 Press PLAY/PAUSE ▶▶ to start playback.
→ The selected source is mixed to the microphone.

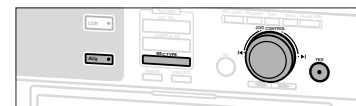


- 11 Press STOP ■ to stop recording.
- To perform microphone recording only see "Manual recording" of the chapter "External recording".

EXTERNAL RECORDING

English

Analog or digital recording



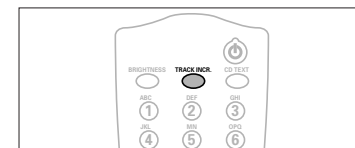
When making recordings from an external source, we recommend to do analog recording only if digital recording is not possible. Digital recording will usually result in better sound quality.

Recording modes

For external recording you can choose following recording modes:

- *AUX CD* - to make an automatic recording of an external source simply by starting the source.
- *AUX TRACK* - to make an automatic recording of a single track from an external source simply by starting the source.
- *AUX MANUAL* - to start a manual recording from an external source.
- *AUX MIX MIC* - to start a mixed recording of microphone and external source input.
- *MIC ONLY* - manual start of microphone recording.

Automatic track increment



In recording mode tracks will be incremented automatically such that the track numbers are positioned on the same position as the original.

- Press as often as necessary TRACK INCREMENT on the remote control during stop when CDR is selected to switch the automatic track increment function on.
→ **AUTO TR ON** is displayed and the function is switched on. Track increments are now automatically detected from digital source material. In analog source material a silence of 2.7 seconds or more is detected as a track increment.
- Press as often as necessary TRACK INCREMENT on the remote control during stop when CDR is selected to switch the automatic track increment function off.
→ **AUTO TR OFF** is displayed and the function is switched off. Track numbers can now be incremented manually by pressing TRACK INCREMENT on the remote control during recording. The minimum track length is 4 seconds.

Notes:

- Track numbers cannot be changed after recording.
- The automatic track increment only works with consumer sources with a digital output signal according to the IEC 958 (consumer part) audio standard. DAT, DVD and DCC do not deliver this signal.

EXTERNAL RECORDING

English

Recording with automatic synchronized start

Recording of an entire disc or a track with automatic start

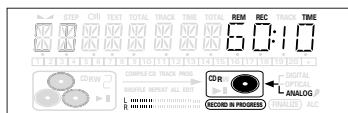
Important:

- Recording from CD-changers should always be started in the Auto-Start mode.
- For recording from external CD changers do not use AUX MANUAL, but AUX TRACK or AUX CD.

- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Press repeatedly AUX to select the input for the external source you want to record from.
 - AUX DIGITAL is displayed if the digital coaxial input is selected.
 - AUX OPTICAL is displayed if the digital optical input is selected.
 - AUX ANALOG is displayed if the analogue input is selected.
- 3 Press REC TYPE on the set to enter into the recording menu.
- 4 Rotate ◀ JOG CONTROL ▶ to select either:
 - AUX CD ? : for recording with synchronised start of an entire disc
 - AUX TRACK ? : for recording with synchronised start of a track
- 5 Press YES to confirm your selection.
 - START SOURCE, AUX and the remaining recording time of the CDR(W) are displayed.

Notes: If required the recording level can be set first, using the REC LEVEL key. See "Rec Level key" under "Recording General".

- 6 Start playback on the selected source.
 - The CD recorder starts to record simultaneously and recording in progress is shown. The remaining recording time left of the CDR(W) is displayed.



Note: If you start playback on the selected source within a track, recording starts at the beginning of the next track or after 2.7 seconds of silence in analogue recordings.

7 If a digital source is selected:

After the recording process, the CD recorder stops automatically.

Note: Recordings from DAT or DCC will automatically stop after 20 seconds silence.

If an analogue source is selected:

After the recording process, the CD recorder stops after a silence of 20 seconds on the source material.

- To stop recording manually, press STOP ■ on the set.
 - RECORDING IN PROGRESS goes off.

Important:

If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See finalising discs.

Finalised CDRW discs play only on CDRW compatible CD players.

Manual recording

Manual recording from an external source

- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Press repeatedly AUX to select the input for the external source you want to record from.
 - AUX DIGITAL is displayed if the digital coaxial input is selected.
 - AUX OPTICAL is displayed if the digital optical input is selected.
 - AUX ANALOG is displayed if the analogue input is selected.
- 3 Press REC TYPE on the set to enter into the recording menu.
- 4 Rotate ◀ JOG CONTROL ▶ to select the record type.
 - AUX MANUAL ? : for manual start of recording
- 5 Press YES to confirm your selection.
 - WAIT is displayed.
 - RECORD ? , AUX and the remaining recording time of the CDR(W) are displayed.
- 6 Start playback on the external source in order to set the optimal recording level on the CD recorder (see "REC LEVEL key").
- 7 Stop playback on the external source.
- 8 Go to the beginning of the desired track.
- 9 Press YES and simultaneously start playback on the external source.
 - The CD recorder starts to record and recording in progress is shown. The remaining recording time left of the CDR(W) is displayed.



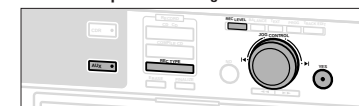
Note: If CHECK INPUT is flashing, check the digital connection.

- 10 Press STOP ■ on the set to stop recording.
 - UPDATE is displayed and RECORDING IN PROGRESS goes off.

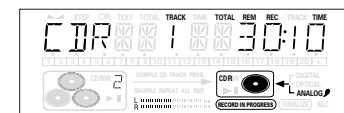
EXTERNAL RECORDING

English

Manual microphone recording



- 1 Make sure that the CDR(W) is absolutely free of scratches and dust particles.
- 2 Set MIC LEVEL to the minimum level to prevent acoustic feedback (e.g. a loud howling sound) before you connect the microphone.
- 3 Connect a microphone to MIC.
- 4 Press repeatedly AUX to select the input for the external source you wish to mix the microphone with.
 - AUX DIGITAL is displayed if the digital coaxial input is selected.
 - AUX OPTICAL is displayed if the digital optical input is selected.
 - AUX ANALOG is displayed if the analogue input is selected.
- 5 Press REC TYPE on the set to enter into the recording menu.
- 6 Rotate ◀ JOG CONTROL ▶ to select the record type:
 - AUX MIX MIC: the microphone is mixed to the external source.
 - MIC ONLY: only the microphone is recorded.
- 7 Press YES to confirm your selection.
 - WAIT is displayed.
 - RECORD ? , AUX and the remaining recording time of the CDR(W) are displayed.
- 8 Set the optimal recording level on the CD recorder (see "REC LEVEL key").
 - In addition you can also set the optimal recording level of the microphone by turning MIC LEVEL.
- 9 If AUX MIX MIC is selected:
 - Press YES and simultaneously start playback on the external source.
 - The CD recorder starts to record and recording in progress is shown. The remaining recording time left of the CDR(W) is displayed.



(UN)FINALIZING, ERASING

Erasing from a CDRW disc

It is possible to erase one or more tracks (starting from the end of the last track) or the entire CDRW.

Erasing an entire CDRW

- 1 Insert the CDRW you want to erase in the CD recorder tray.
- 2 Press CDR to select the CD recorder.
- 3 Press ERASE to enter into the erasing menu.
- 4 Rotate **◀ JOG CONTROL ▶** to select:
→ ERASE DISC ? : for erasing the entire disc.
- 5 Press YES to confirm your selection.
→ ERASE ? and the total number of tracks to be erased are displayed. All track numbers are blinking in the music calendar.
- 6 Press YES to start erasing.
→ ERASE is displayed and the operation time left starts to count down. The track number of the actual erased track will go off in the music calendar.



Erasing one or more tracks

- 1 Insert the CDRW you want to erase from in the CD recorder tray.
 - 2 Press CDR to select the CD recorder.
 - 3 Press ERASE to enter into the erasing menu.
 - 4 Rotate **◀ JOG CONTROL ▶** to select the track number(s) you wish to erase:
→ ERASE and the track number (e.g. 10 +) are displayed.
- To select more tracks to be erased repeat step 4.

Note: When erasing more tracks, the tracks to be erased must be selected in sequence, starting from the last recorded track. Example: The CDRW has 5 tracks recorded on it. Now, you can erase track 5 and 4. You can also erase track 5, 4 and 3, however you cannot erase track 5 and 3!

→ All track numbers selected for erasing are blinking in the music calendar. The remaining track numbers light up.

- 5 Press YES to confirm your selection.
→ ERASE ? is displayed.
- 6 Press YES to start erasing.
→ ERASE is displayed and the operation time left starts to count down. The track number of the currently erased track will go off in the music calendar.

Unfinalising CDRW discs

If you want to record (or erase) on (from) an finalized CDRW, you have to unfinalize it first.

Notes:

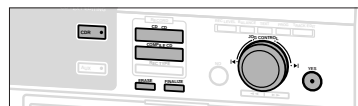
- Unfinalizing will take approximately 2 minutes.
- After unfinalizing of the CDRW, **CD** changes to **CDRW** on the display.
- When unfinalizing a CDRW with CD text on it available, this text will be transferred to the CD recorder memory. In case the memory is full, you have to erase text (see "Erasing text") or to finalize another disc first in order to obtain memory space.

- 1 Insert the CDRW you want to unfinalize in the CD recorder tray.
- 2 Press CDR to select the CD recorder.
- 3 Press FINALIZE on the set.
→ UNFINALIZE ? is displayed.
- 4 Press YES to start unfinalizing.
→ UNFINAL is displayed and the operation time left starts to count down.



(UN)FINALIZING, ERASING

Finalising CDR & CDRW discs



Finalizing a CDR(W) disc is a simple procedure, necessary to:

- play a recorded CDR on a standard CD player
- play a recorded CDRW on a CDRW compatible CD player and CD recorder
- avoid further unwanted recordings on a disc
- avoid erasure of tracks on a CDRW

Notes:

- Finalizing will take about 2–4 minutes.
- After finalization of the CDR(W), **CDR(W)** changes to **CD** on the display.
- During finalization no other operating commands can be executed.

Auto finalizing

When you use either CD→CD or COMPILE CD, your recordings will be finalized automatically (see "High speed recording and automatic finalizing").

Manual finalizing when recording is in progress

- 1 Press FINALIZE on the set during recording.
→ AUTO FINAL ? is displayed.
- 2 Press YES to confirm.
→ FINALIZE is shown. The finalization will start after recording and the actual finalizing time left will start to count down.

Manual finalizing when recording is stopped

- 1 Insert the CDR(W) you want to finalize in the CD recorder tray.
- 2 Press CDR to select the CD recorder.
- 3 Press FINALIZE on the set.
→ FINALIZE ? is displayed.
- 4 Press YES to start finalizing.
→ FINALIZE is shown, FINAL is displayed and the actual finalizing time left starts to count down.



EXTERNAL RECORDING

If MIC ONLY is selected:

Press YES on the set to start recording.

→ The CD recorder starts to record and **RECORDING IN PROGRESS** is shown. The remaining recording time left of the CDR(W) is displayed.

- 10 Press STOP on the set to stop recording.

→ UPDATE is displayed and **RECORDING IN PROGRESS** goes off.

Important:

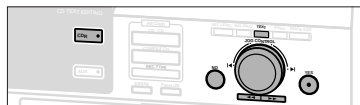
If you want to play the recorded CDR disc on any regular CD player, it must first be finalised. See finalising discs.

Finalised CDRW discs play only on CDRW compatible CD players.

SPECIAL FEATURES

English

Text edit (on CD recorder only)



After you have recorded your CDR(W), the TEXT EDIT feature allows you to give names to discs and tracks. Disc and track names will be displayed during playback. All names will be stored in the memory and can be called up and changed at any time.

A maximum of 60 characters per item can be stored.

The following items can be selected:

ALBUM ARTIST: for editing the CD artist.

ALBUM TITLE: for editing the CD title.

ARTIST TR{ack}: for editing the artist of track 1, 2, 3, etc.

TITLE TR{ack}: for editing the title of track 1, 2, 3, etc.

Storing text during STOP mode

1 If necessary press STOP ■.

2 Press CDR to select the CD recorder.

3 Press TEXT to enter into the text edit menu.

→ TEXT lights up and TEXT EDIT is displayed.



4 Press YES to confirm.

5 Rotate ◀ JOG CONTROL ▶ to select either:

→ ALBUM ARTIST.

→ ALBUM TITLE.

→ ARTIST TR 1 or (2, 3,...): for editing the artist of track 1 or (2, 3,...).

→ TITLE TR 1 or (2, 3,...): for editing the title of track 1 or (2, 3,...).

6 Press YES to confirm the selection.

7 Rotate ◀ JOG CONTROL ▶ (press the alphabet keys on the remote control) to select a character.

8 Press YES to confirm the selection.

→ The cursor moves to the next character space.

9 Repeat steps 7 and 8 for adding further characters.

10 Press TEXT to save the characters that have been selected and to exit to the last position in the text editing menu.
→ UPDATE is displayed.

Storing text during recording

You can store and edit text even while recording a single track or single CD, or when recording from an external source or tuner. Editing text during finalizing is not possible. Make sure, when using high speed recording and automatic finalizing, to enter the text before finalizing starts, otherwise automatic finalizing will be cancelled.

• Follow steps 3–10 of “Storing text during stop mode”.

Note: Editing text is not possible when a copy protected track is analogue recorded. Editing is stopped, “CD TEXT SAVED” is displayed and your text is saved for later editing.”

Auto copied text

When an artists name has been stored for a track, it will be copied automatically into the next track.

• Press either:

TEXT to confirm the copied text.

or

NO to delete the copied text and to enter a new one.

Inserting a space

1 Press ◀◀ or ▶▶ to move to the position where the space is to be inserted.

→ The position starts blinking.

2 Press YES to confirm the position of the insert character.

→ A space will be inserted, text will move to the right.

• You can also use the SPACE button on the remote control to insert a space.

Deleting and substituting a character

1 Press ◀◀ or ▶▶ to move to the characters position to be deleted or substituted.

→ The character starts blinking.

If you want to delete the character:

2 Press NO.

→ The character is deleted and the text is shifted one position to the left.

If you want to substitute the character:

2 Rotate ◀ JOG CONTROL ▶ (press the alphabet keys on the remote control) to select a new character.
Press YES to confirm the selection.

• To change another character press ◀◀ or ▶▶.

SPECIAL FEATURES

English

Erasing text

1 Press TEXT to enter into the text edit menu.

→ TEXT lights up and TEXT EDIT is displayed.

2 Rotate ◀ JOG CONTROL ▶ to select the text erase menu.

→ TEXT ERASE is displayed.



3 Press YES to confirm.

4 Rotate ◀ JOG CONTROL ▶ to select either:

→ ALL TEXT: All text of the selected disc is chosen to be erased in one step.

→ ALBUM ARTIST: CD artists name is chosen to be erased.

→ ALBUM TITLE: CD title is chosen to be erased.

→ ARTIST TR 1 or (2, 3,...): artists name of track 1 or (2, 3,...) is chosen to be erased.

→ TITLE TR 1 or (2, 3,...): title of track 1 or (2, 3,...) is chosen to be erased.

5 Press YES to confirm your selection.

→ ERASE ? or ERASE ALL ? is displayed.

6 Press YES to start erasing.

→ UPDATE is displayed and the chosen text is erased.

Erasing from the memory

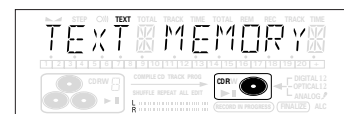
When the text memory of your CD recorder is full, the messages MEMORY FULL and FINALIZE DISC will be displayed. If you still want to add a new disc to the text memory, you have either to erase another disc from the memory or you have to finalize another disc.

1 Press TEXT to enter into the text edit menu.

→ TEXT lights up and TEXT EDIT is displayed.

2 Rotate ◀ JOG CONTROL ▶ to select the memory view menu.

→ TEXT MEMORY is displayed.



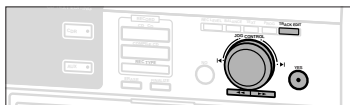
3 Press YES to confirm.

4 Rotate ◀ JOG CONTROL ▶ to select the disc you wish to erase from the text memory.

SPECIAL FEATURES

English

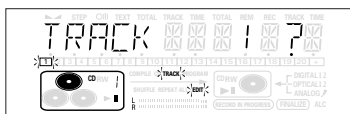
Track editing (on CD changer only)



You can create a "track" by marking a passage of music within one track on the current disc. This new "track" can be used for recording or playing. The minimum track length is 4 seconds.

1 Press TRACK EDIT on the set.

→ TRACK EDIT starts blinking, TRACK and the current track number ? are displayed. The current track number is also blinking in the track bar.



2 Rotate JOG CONTROL until the desired track number is displayed.

3 Press YES to confirm the selected track.

→ The marker position A and the track time will be displayed. The first 4 seconds of the track will be played continuously.



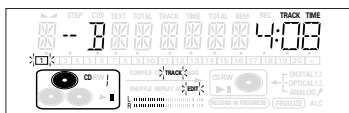
4 Press PLAY/PAUSE on the set to play to the desired start position of your new "track" (the initial position of marker A is always the start of the chosen track).

• To fast forward to the desired start position press ◀◀ or ▶▶ on the set.

• To fine tune the position press first PLAY/PAUSE on the set, then rotate JOG CONTROL.

5 Press YES to confirm the position of marker A.

→ The marker position B and the new "track" time will be displayed. The first 4 seconds before marker position B until marker position B will be played continuously.



6 Press PLAY/PAUSE on the set to play to the stop position of your new "track" (The initial position of marker B is always the position of marker A plus 4 seconds).

7 Press YES to confirm the marked passage.

→ TRACK EDIT is shown, A-B and the track edit time are displayed.



• Press TRACK EDIT again to leave Track Edit mode.

→ The new "track" will be stored.

Note: If you open the CD changer tray the edit is deleted.

Clearing the track edit

1 Press NO during stop.

→ CLEAR A-B ? is displayed.

2 Press YES to clear the markers.

→ The markers A-B are cleared.

TROUBLESHOOTING

English

WARNING

Under no circumstances should you try to repair the set yourself as this will invalidate the guarantee. Do not open the set as there is a risk of electric shock.

If a fault occurs, first check the points listed, before taking the set for repair.

If you are unable to solve a problem by following these hints, consult your dealer or service centre.

LASER SAFETY

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

SYMPTOM

• possible solution:

No power

- ensure that the ON/OFF button is on: the set is in standby mode, press any key to activate it
- ensure that the mains cable is plugged in correctly
- switch the set OFF and then immediately back ON

Auto track does not work

- check if auto track is selected
- check if there are 2.7 seconds silence in between the tracks (analog recording only)
- check if the source is a consumer source with the digital output according to the IEC audio standard
- source is DVD player (no track information)

No sound

- check the audio connections
- if using an amplifier, try using a different source

Amplifier sound is distorted

- check that the analog output of the set is not connected to the amplifier Phono input

Play will not start

- ensure that the label of the CD is facing up
- clean the disc
- check that the disc is not defective by trying another disc

Remote control does not work

- point the remote control directly at the set
- check the batteries and replace if necessary
- select the right source first

DISC RECOVER indication

- a power failure has occurred during recording, the CD recorder is attempting to repair the disc
- if DISC ERROR then appears on the display, the disc cannot be recorded further, and cannot be finalised. But it can still be played on the CD recorder or another CD recorder.
- on a CDRW disc, the track being recorded is lost, but further recording and finalisation can still be done

INSERT DISC indication

- replace or clean the disc
- insert a CD(RW), label upwards
- wait until the lens has cleared

USE AUDIO CD indication

- insert a digital audio disc marked with "Digital audio" and the special logo

CHECK INPUT indication

- select the correct input
- make sure the connection cable is properly connected

Will not record

- clean the disc
- check if CDR(W) is an unfinalised disc
- check that the disc is recordable and replace if necessary
- the disc is not an AUDIO disc (WRONG DISC)
- wrong input source chosen. Input label flashing (CHECK INPUT)
- text memory full (MEMORY FULL / FINALIZE CD). When a CDRW has to be unfinalised for recording. Erase text for other disc(s) or finalise other disc(s) to obtain memory space

Recording is distorted

- make sure the recording level is correct

20 second pause between recordings

- see "Recording with automatic synchronized start".

Set does not react

- switch the set OFF and then immediately back ON

Recorded disc does not play in other standard CD player

- finalize the CDR(W)
- insert the CDRW in a CDRW compatible player

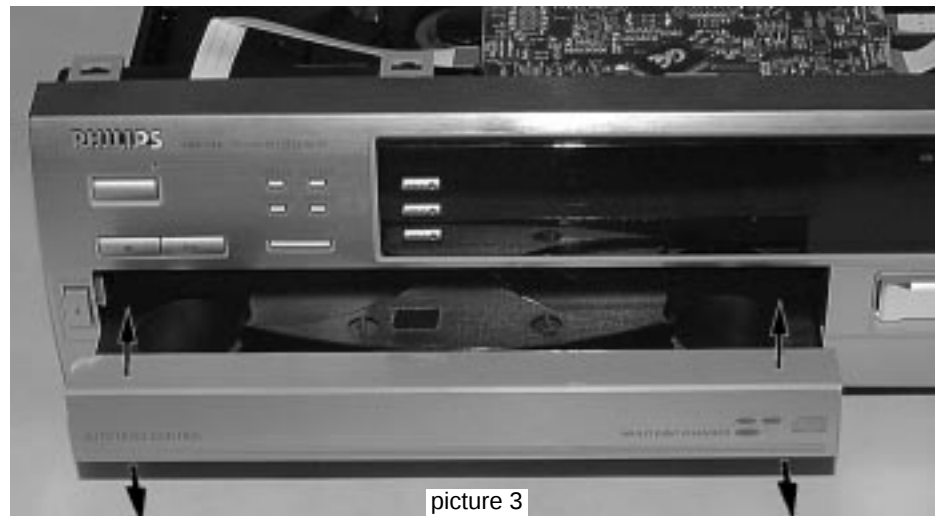
Dismantling the *Top Cover*

- Remove 9 screws as shown in picture 2.
- Raise top cover at the rear and pull it backwards.



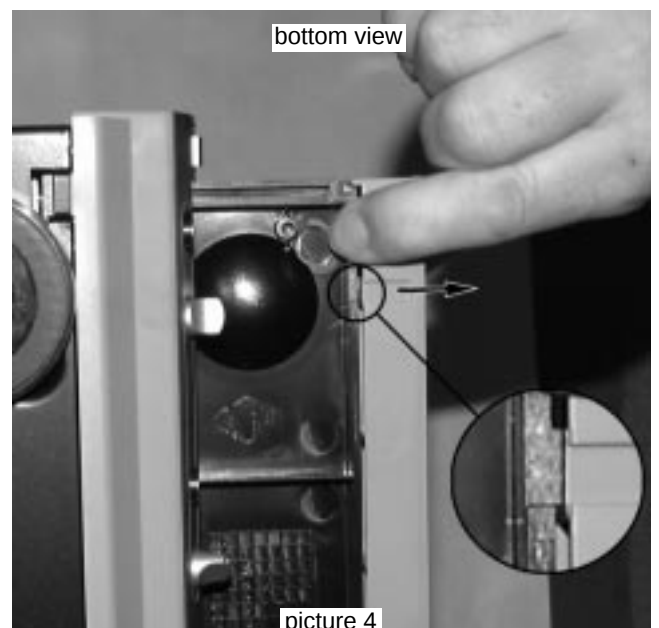
picture 2

Dismantling the *Tray Cover*



picture 3

- To release the cover from the catch on the tray pull it frontwards on bottom side as shown in picture 4.
- Pull the cover up.



picture 4

Dismantling the *Front Cabinet*

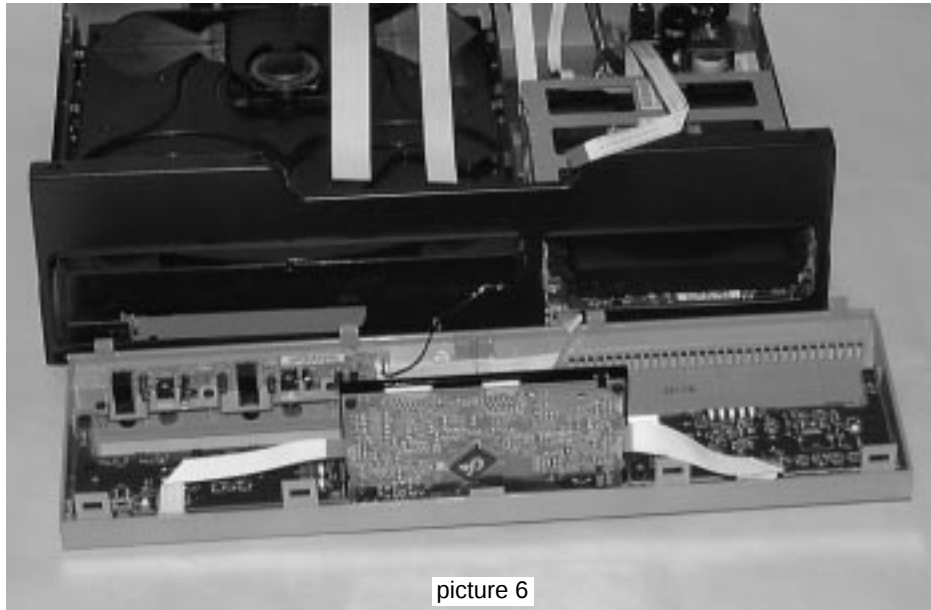


picture 5

- Remove tray cover first → see description before.
- Disconnect flexfoil cables to interface board and CDR module.
- Release catches on top as shown in picture 5 and turn front cabinet away.

Take care of the flexfoil cables connecting the key boards!

- Place front cabinet as shown in picture 6.



picture 6

Dismantling the *3CDC module*

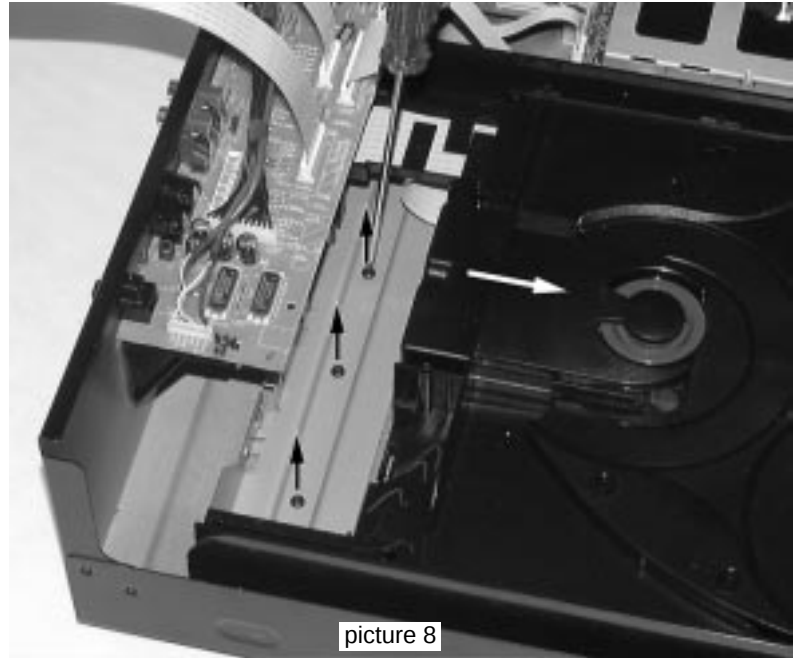
- Remove screw on front side first
→ see pictures 7.



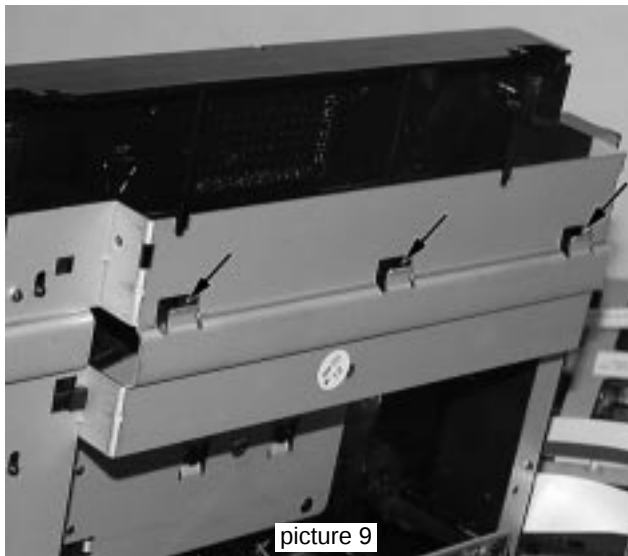
picture 7

Dismantling the *CDC module*
continued

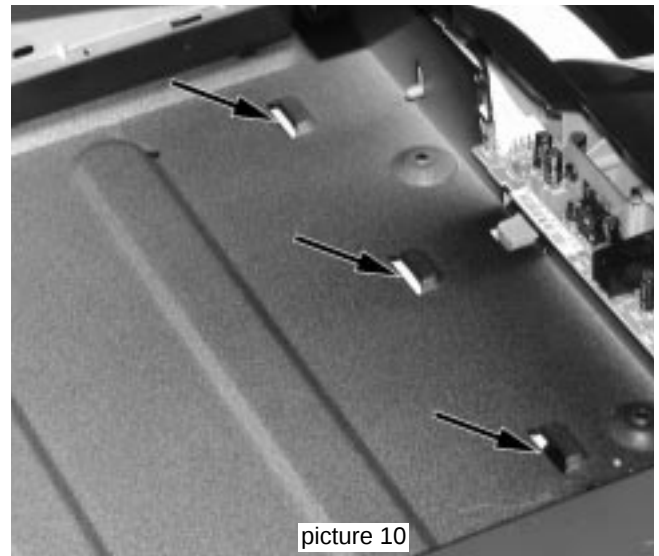
- Dismantle front cabinet as described before.
- Move the tray a few centimetres out to get access to the fastening screws at the rear.
- Remove the 3 screws as shown in picture 8.
- Put the tray back and move the complete module backwards to release catches on bottom cabinet.
→ for orientation see picture 9 and 10.



picture 8



picture 9

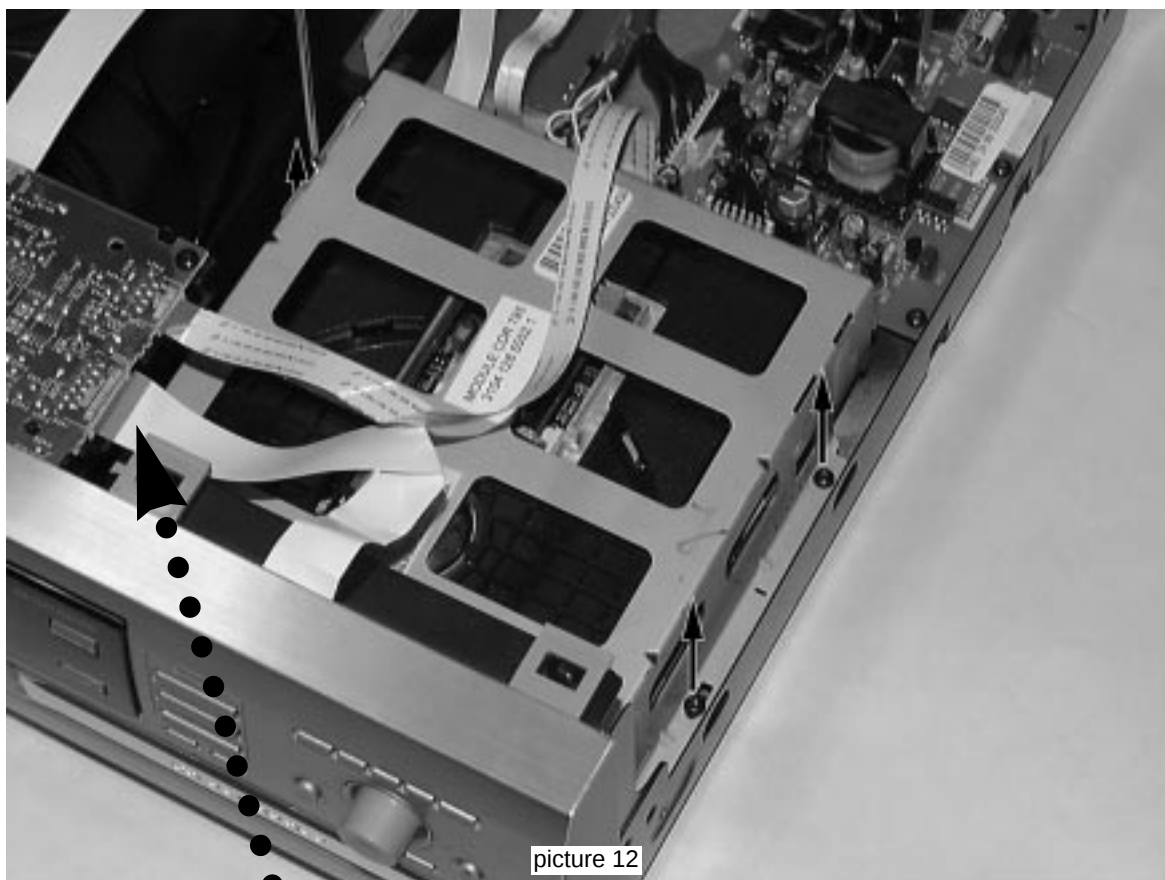


picture 10

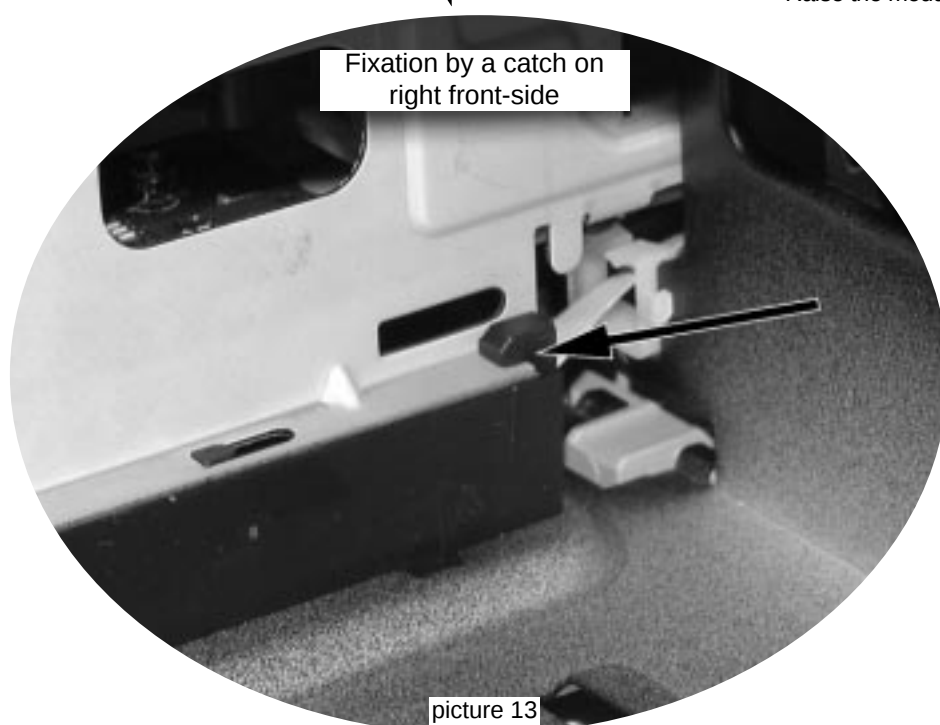
- Pull the module on front side up and turn it out as shown in picture 10.
- Put the module to a proper service position.
→ see also chapter SERVICE HINTS
- To get the set operating mount front cabinet and connect flexfoil cables to front board again.

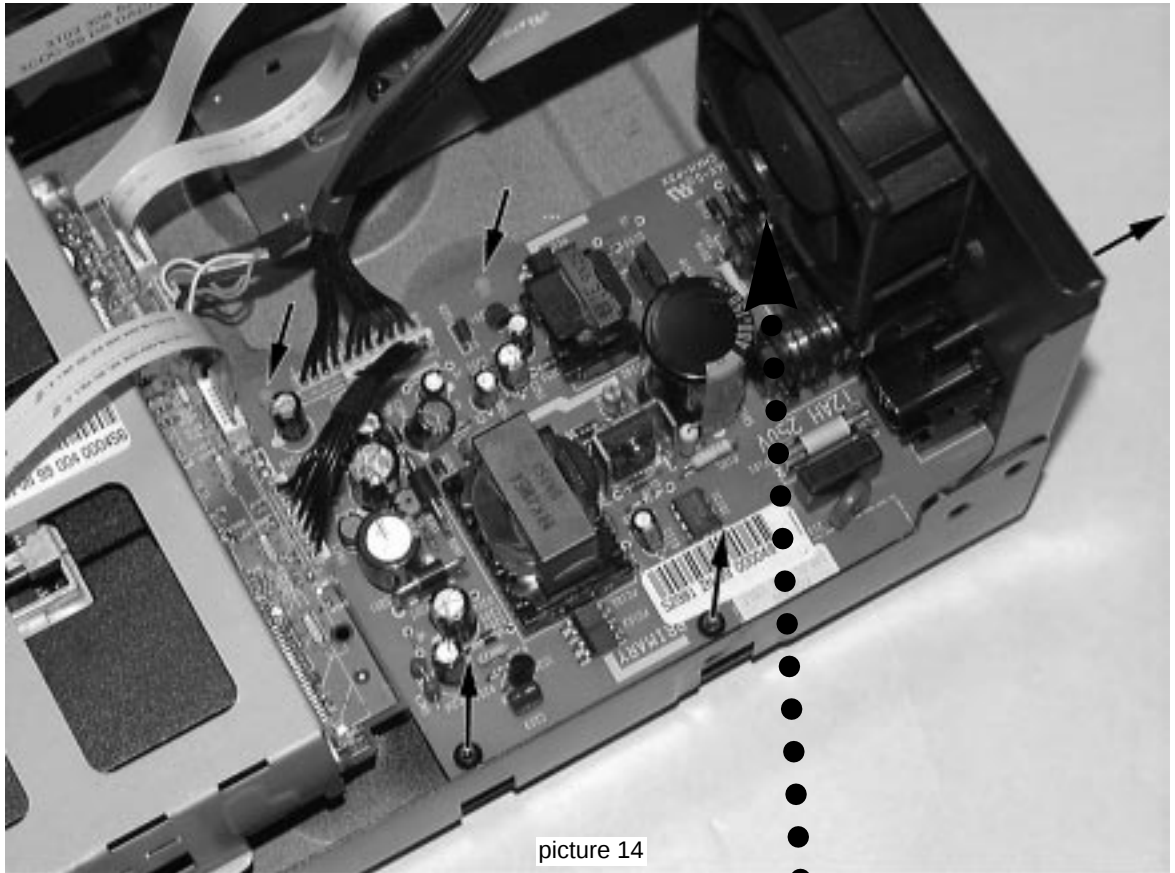


picture 11

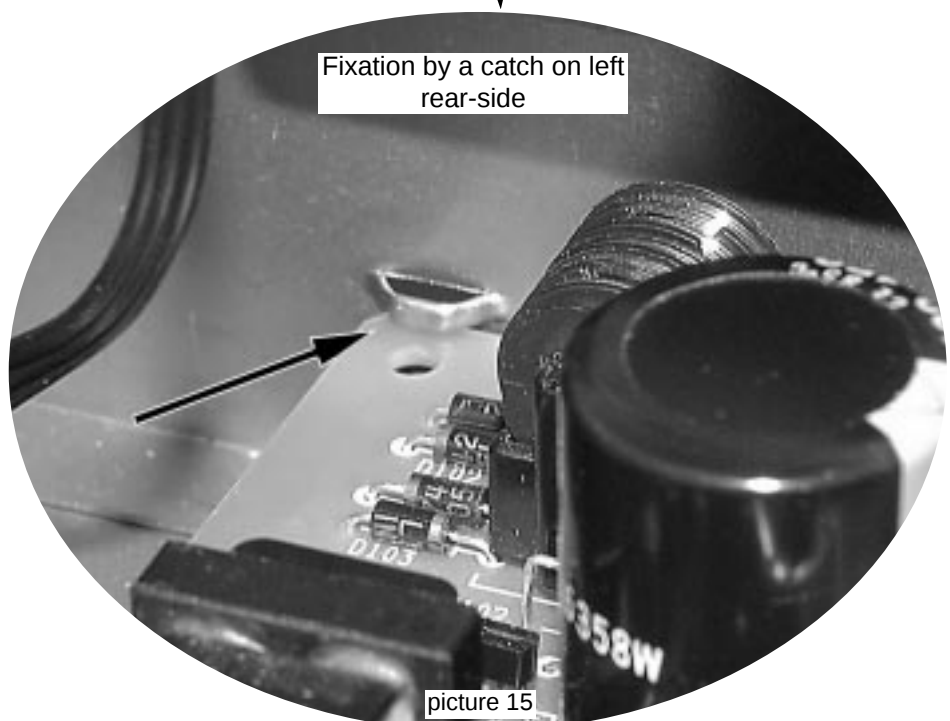
Dismantling the *CDR module*

- Remove 3 screws as as indicated in picture 12.
- Disconnect all cables.
- Move the module backwards to release the catch on pos. 205 (see exploded view)
- Raise the module on the rear and turn it out.



Dismantling the *Power board*

- Disconnect all cables.
- Remove 3 screws as indicated in picture 14.
- Release the catches on the plastic supports.
- Move the board backwards to release the catch on left front-side.
- Lift the module on the rear and turn it out.
remark: space to CDR module will be very tight



SERVICE TOOLS

TORX T10 screwdriver with shaftlength 150mm	4822 395 50423
TORX screwdriver set SBC 163	4822 295 50145
Audio signal disc SBC 429	4822 397 30184
Playability test disc SBC444	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30dB level without "pause")	4822 397 30155

HANDLING CHIP COMPONENTS

GENERAL

Diagram illustrating the general assembly of a chip component onto a P.C.B. using solder and glue. Labels include: SOLDER, CHIP COMPONENT, SOLDER, COPPER TRACK, P.C.B., and GLUE.

Diagram illustrating a service package containing chip components.

SERVICE PACKAGE

DISMOUNTING

Diagram illustrating the dismounting process. Labels include: SOLDERING IRON, VACUUM PISTON 4822 395 10082, SOLDER WICK 4822 321 40042, and A PAIR OF TWEEZERS.

Diagram illustrating the cleaning process. Labels include: SOLDERING IRON and SOLDER WICK.

PRECAUTIONS

Diagram illustrating correct and incorrect soldering techniques. Labels include: SOLDERING IRON, CORRECT, COPPER TRACK, and CHIP COMPONENT.

MOUNTING

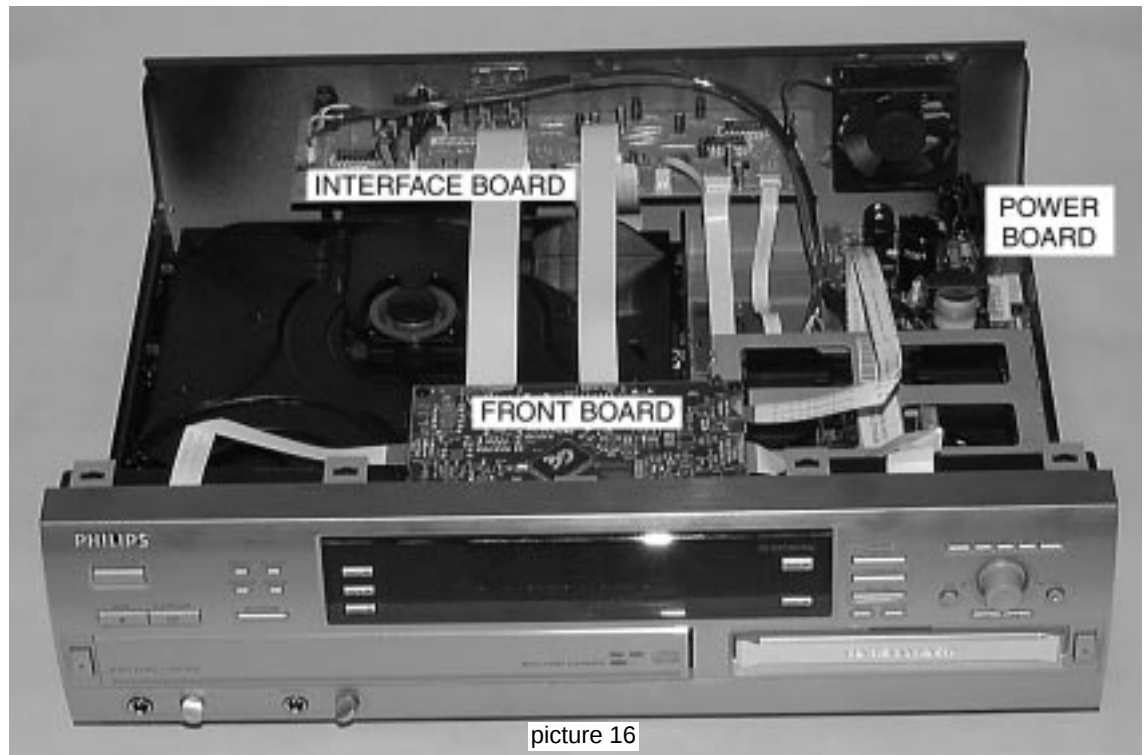
Diagram illustrating the mounting process. Labels include: SOLDERING IRON, SOLDER, PRESSURE, and SOLDERING TIME < 3 sec/side.

EXAMPLES

Diagram illustrating examples of correct and incorrect soldering techniques.

General Service position

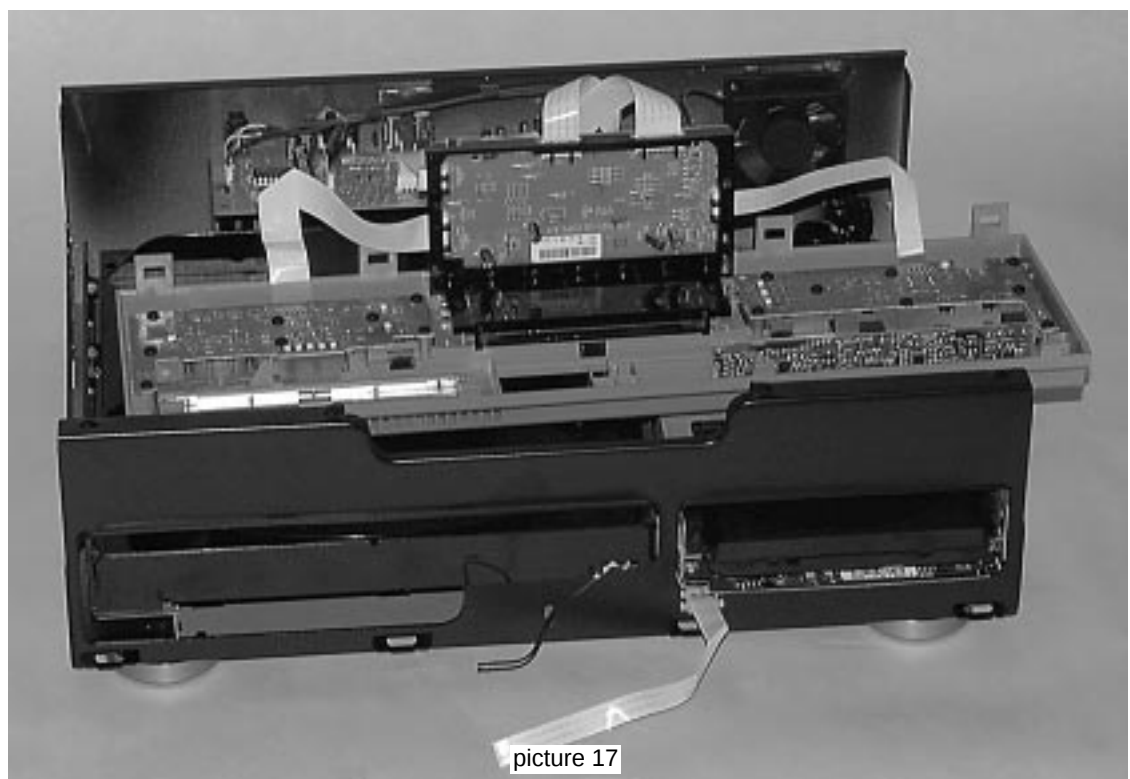
For repairs on: Front Board
Power Board
Interface Board



picture 16

Service position *Key Boards*

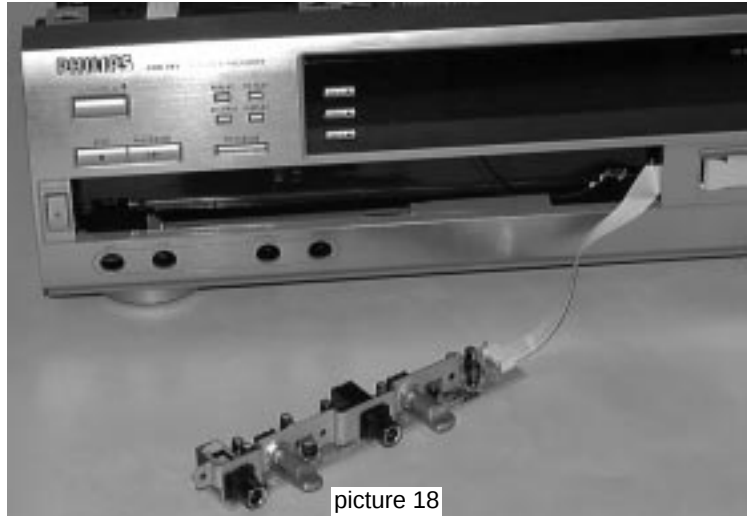
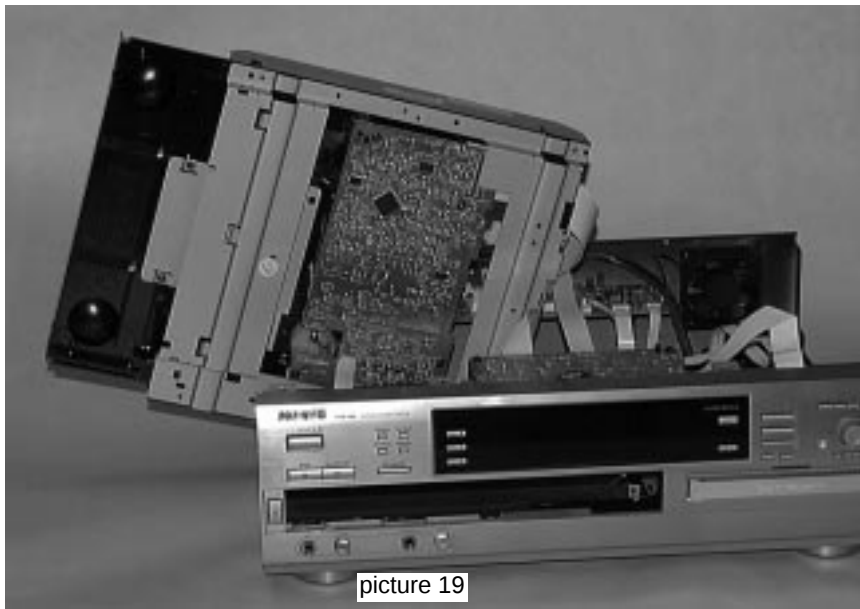
After dismantling the front cabinet as described in chapter 4-2 the front unit can be placed on 3CDC- and CDR module and be re-connected again.



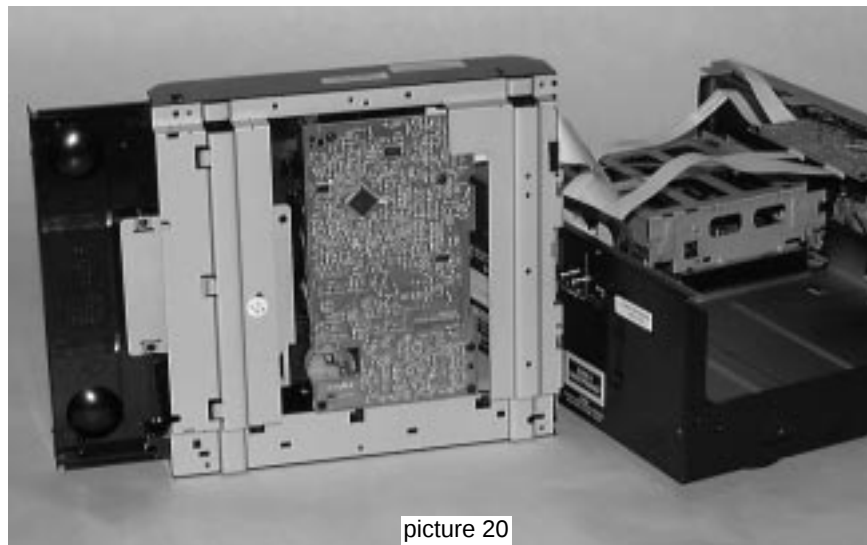
picture 17

Service position *Headphone/Microphone Board*

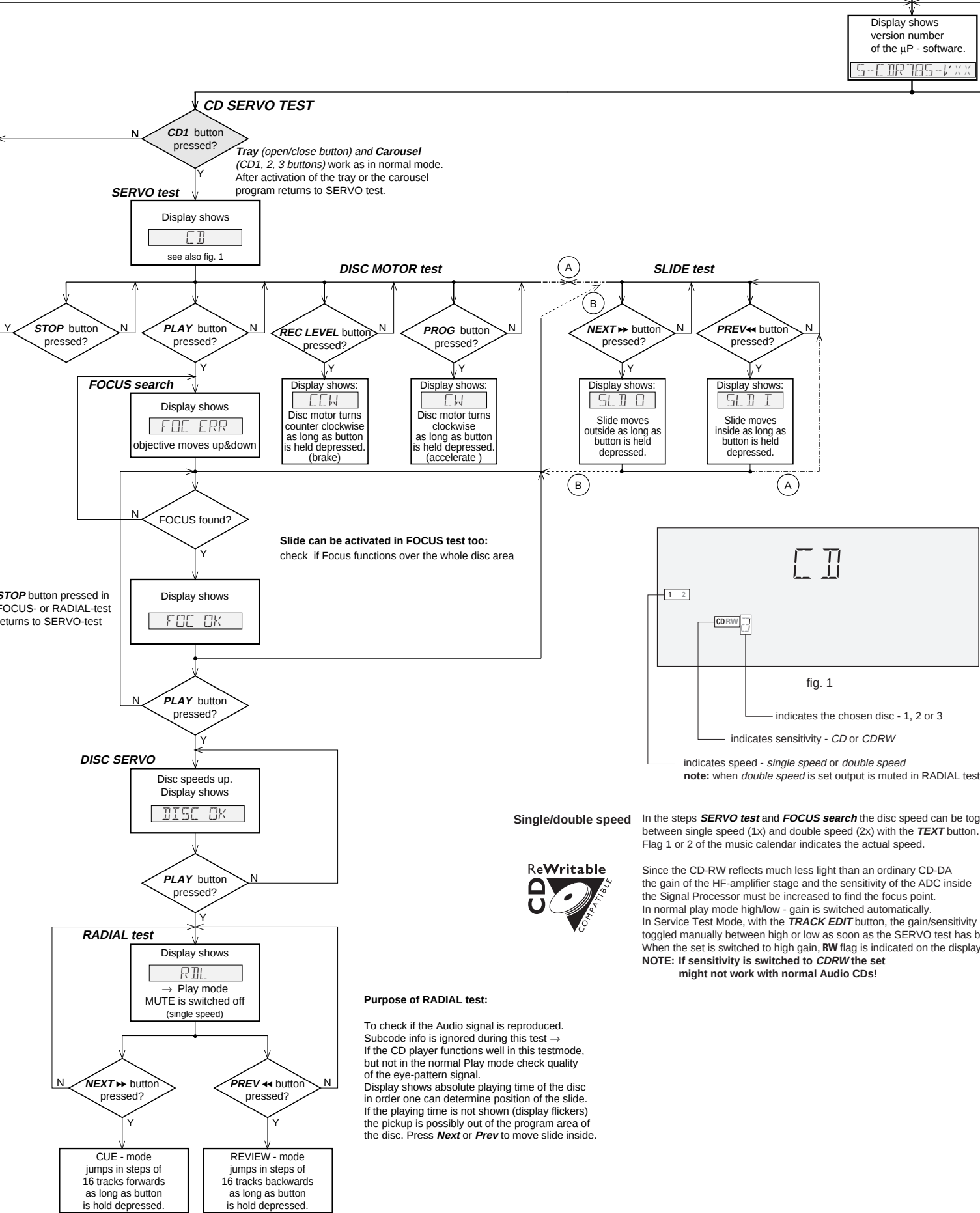
- Dismantle front cabinet as described in chapter 4-2.
- Dismantle Headphone/Microphone Board and put it through the opening for the 3CDC-tray in front cabinet.
- Mount front cabinet provisional and re-connect flexfoil cables to Front Board.

**Service position *3CDC Module***

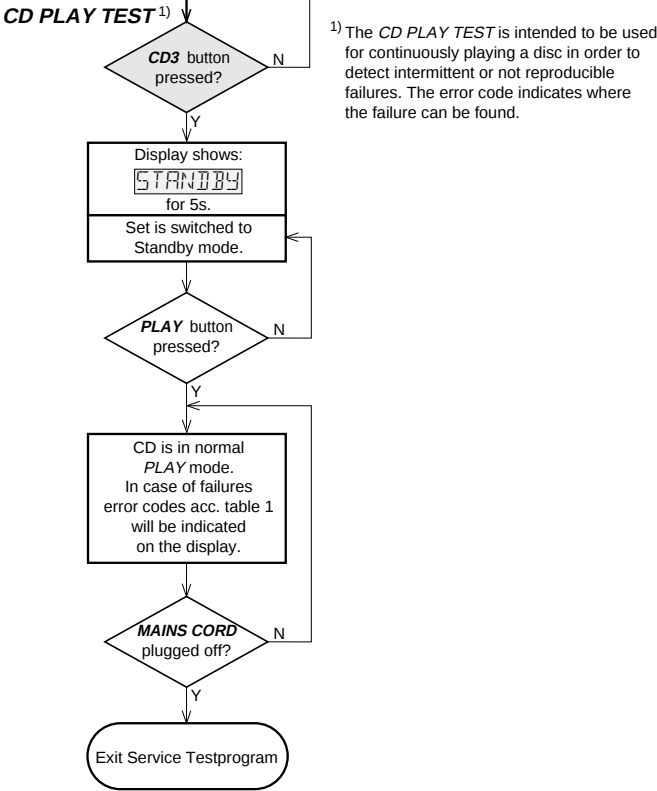
Dismantle the 3CDC module as described in chapter 4-2 to 4-3 and place it in the desired service position.



SERVICE TESTPROGRAM
CD-CHANGER MODULE



* To leave Service Testprogram plug mains cord off.



CD ERROR CODES

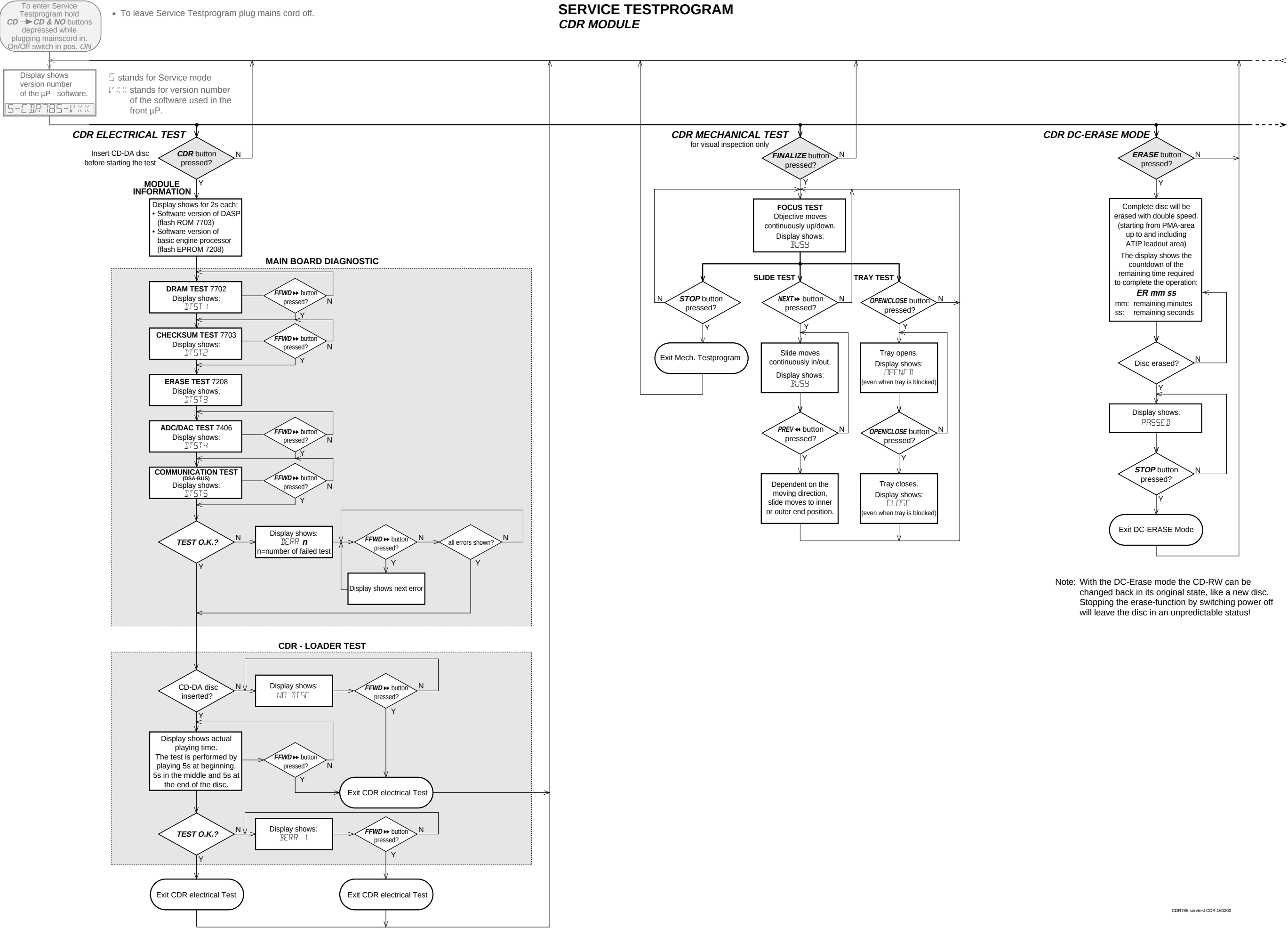
Error number	Error description	Error type
E1000	Focus Error Triggered when the focus is lost for more than 250ms while playing the CD.	W
E1001	Radial error Triggered when the radial servo is not on track for a certain time during playing the CD.	W
E1002	Slide-in error Generated when the inner-switch did not close within approx. 6s when the pick up is moved inside. Inner-switch or slide motor problems.	W
E1003	Slide-out error Generated when the inner-switch did not open within approx. 250ms when the pick up is moved from the inner position outside. Inner-switch or slide motor problems.	W
E1005	Jump error. Triggered when the servo processor counts too less tracks in a defined time during JUMPS. This can be caused by a disturbed HF-signal (the tracks cannot be recognized exactly), slide motor problems, track servo problems or scratched discs.	W
E1006	Subcode Error No valid subcode for 300ms during PLAY .	W
E1007	PLL lock error When no valid subcode was found within 300ms PLL is checked. If PLL is locked E1006 will be indicated else E1007 and the servo is stopped and restarted once again to recover (as if the user would have pressed STOP and then PLAY immediately).	W
E1008	Disc motor error Generated when the CD could not reach 75% of speed during startup within 1,2s.	W
E1020	Focus Search Error Triggered when the focus could not be found within 4s when starting up the CD.	F

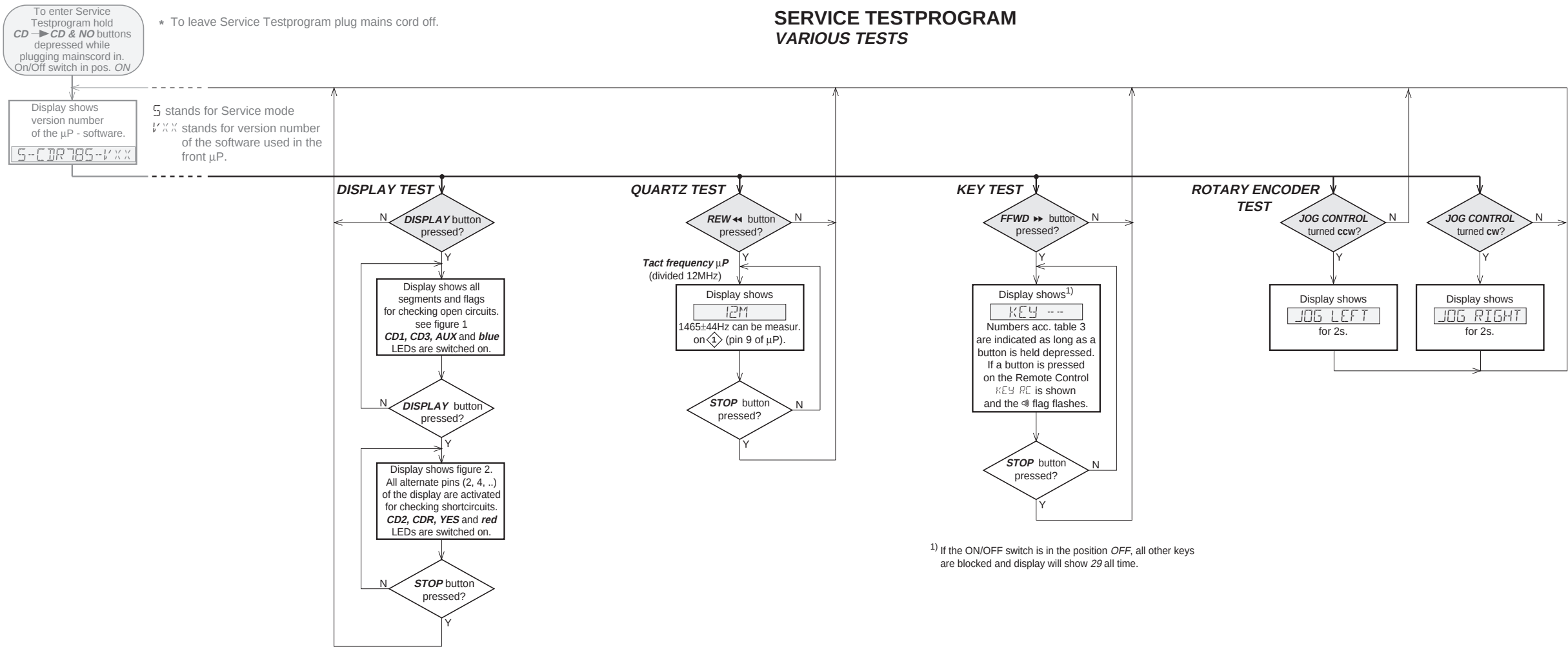
table 1

Error type: W = Warning → set continues operation, message remains on the display until next error occurs or any key is pressed.

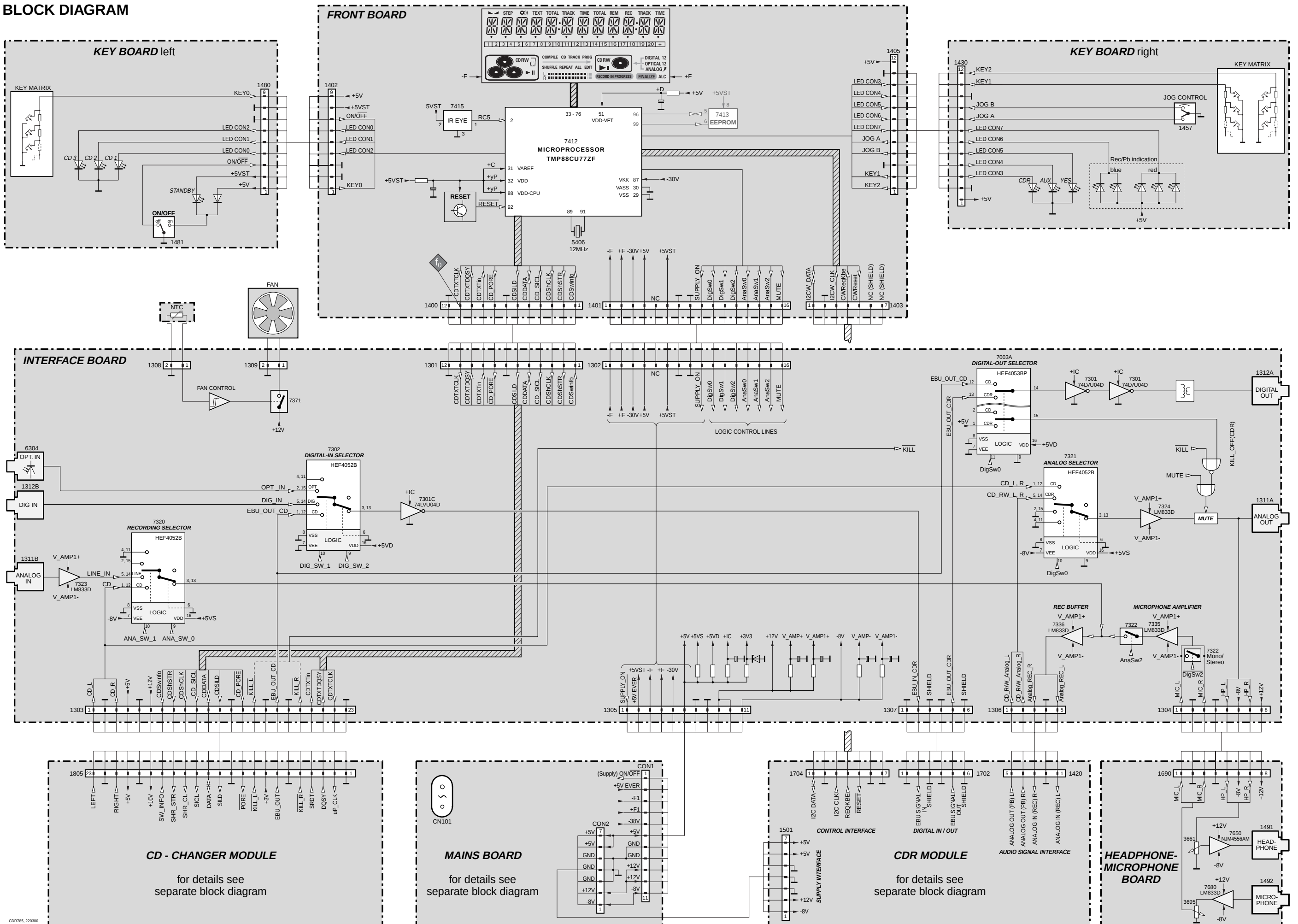
F = Fatal Error → set stops operation, message remains on the display.

SERVICE TESTPROGRAM
CDR MODULE

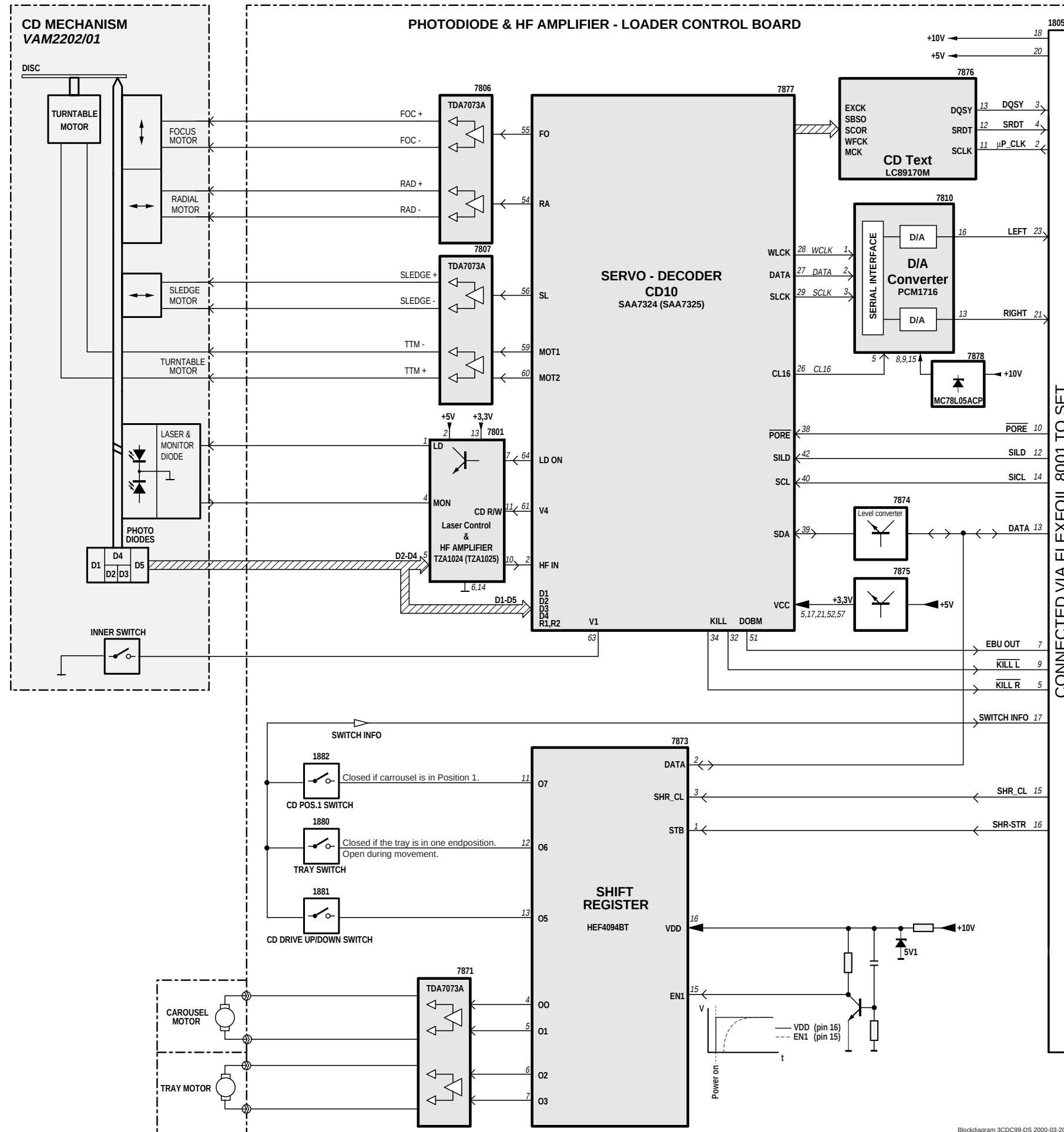




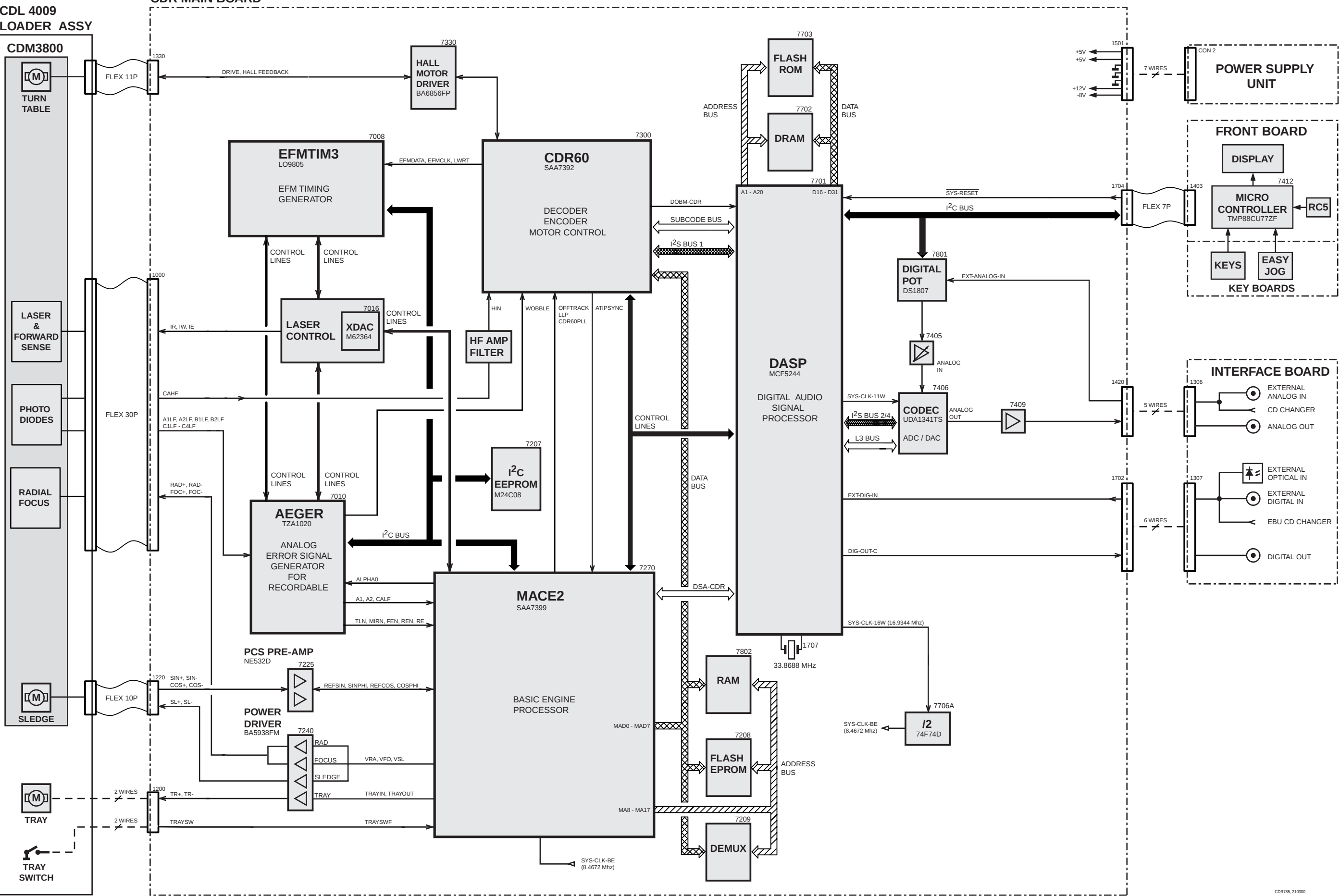
BLOCK DIAGRAM

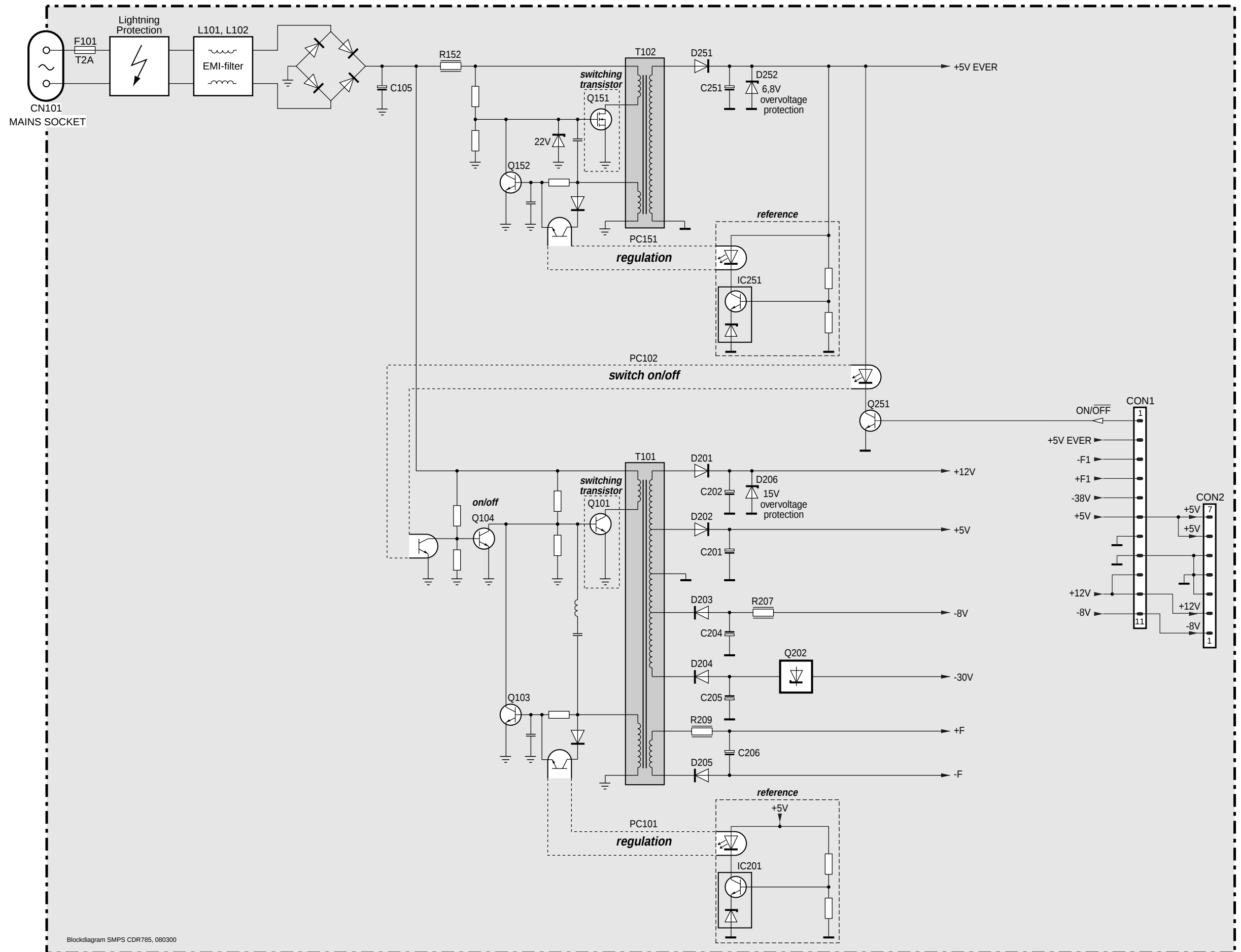


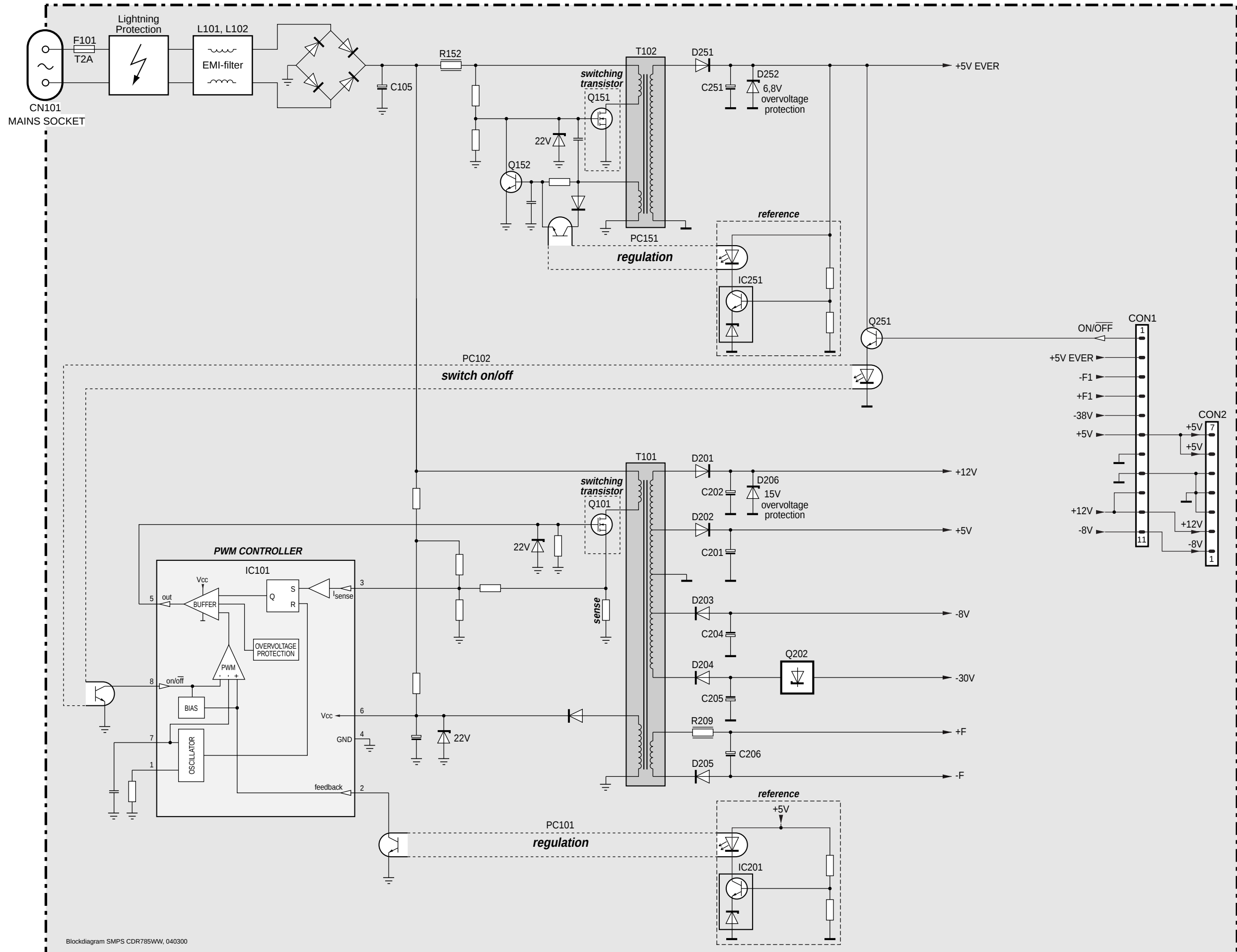
BLOCK DIAGRAM 3CDC MODULE



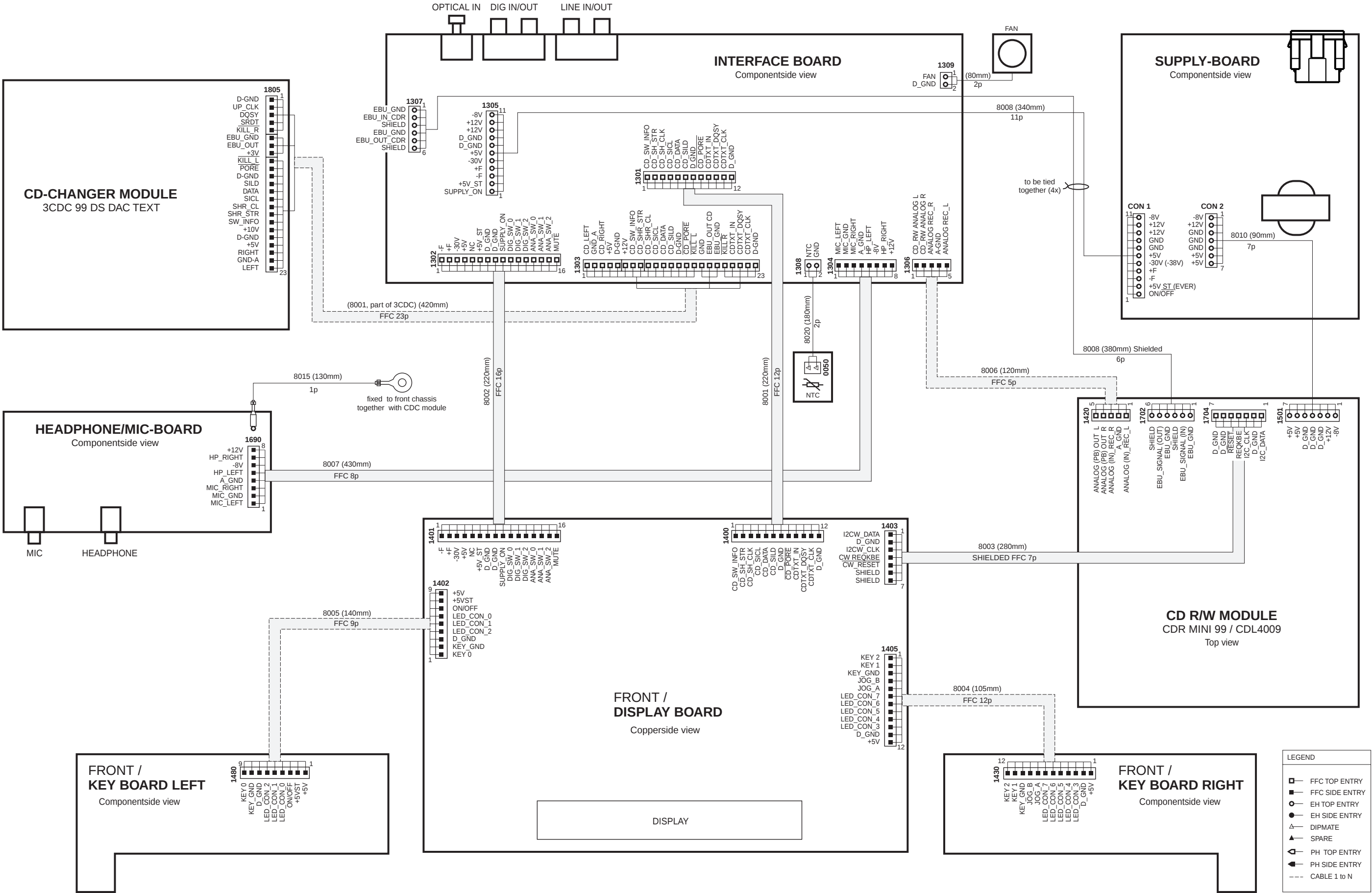
BLOCK DIAGRAM CDR-MODULE



BLOCK DIAGRAM**SWITCHED MODE POWER SUPPLY / European & USA version**

BLOCK DIAGRAM**SWITCHED MODE POWER SUPPLY / WorldWide version**

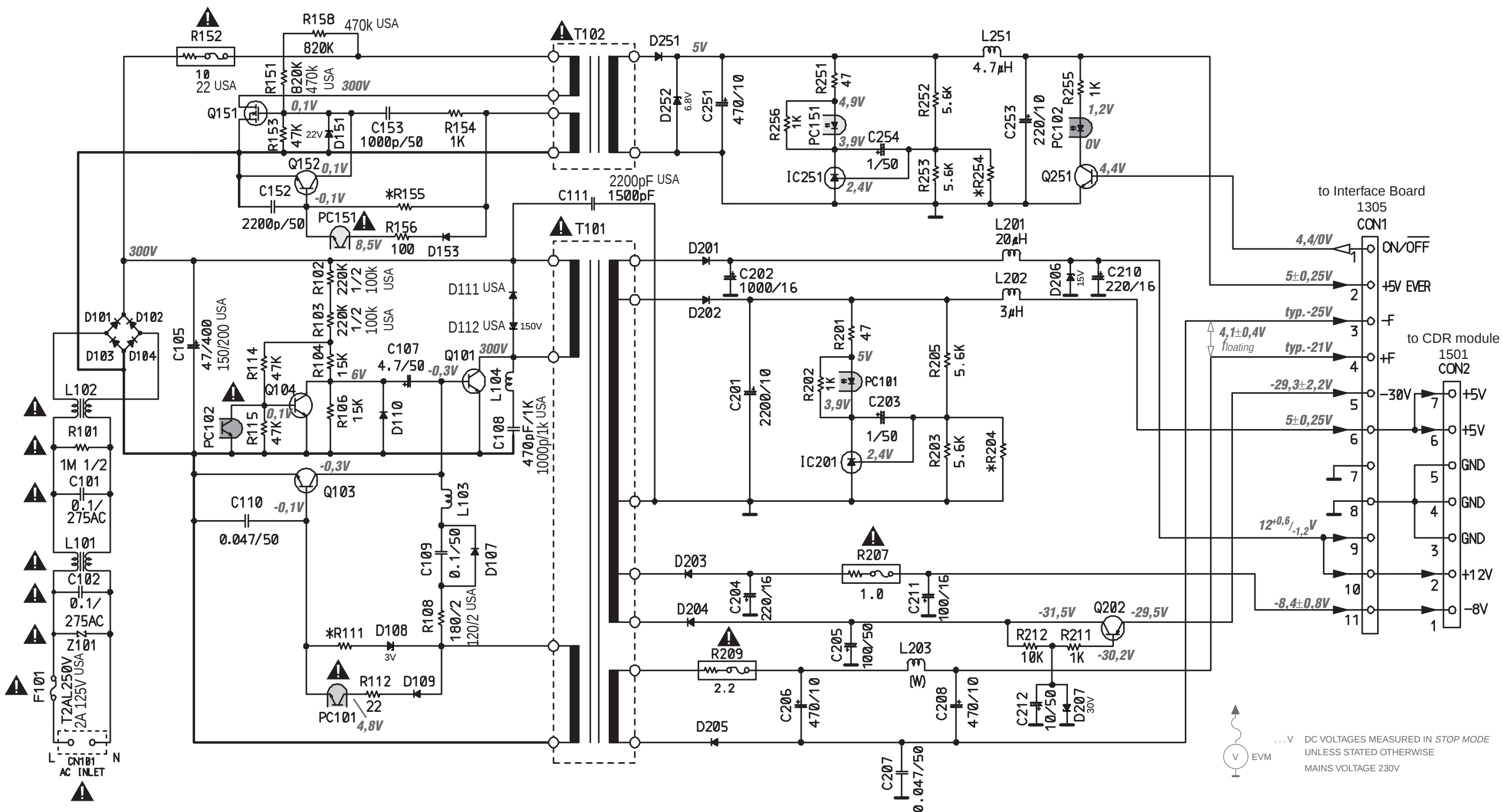
WIRING DIAGRAM



For service code numbers of flexfoil cables see mechanical partslist.

for orientation only

Switched Mode Power Supply / EU + USA version (/00/17)



D101, D102, D103, D104
D107
D108
D109, D110, D153
D111
D112
D151
Q101
Q103, Q104
Q151
Q152
PC101, PC102, PC151

1N4005 or 1N4007
11ES2 or ERA15-02
MA4030 or MTZJ3.0
1SS133 or MA165
AG01A USA
P6KE150 or Z2150U USA
MA4220 or MTZJ22
2SC4231 2SC5241 USA
2SC4040
2SK2128 2SK2177 USA
2SC1740
ON3171 or PC123 or PS2561
ON3131 or PC817 or PS2501 USA

D201
D202
D203, D204, D251
D205
D206
D207
D252
IC201, IC251
Q202
Q251

S3L20U or 31DF2
D3S4M or SB340
D1NL20U
AK04
RD15F or MA2150
MA4300 or MTZJ30
MA4068 or MTZJ6.8
AN1431T or MM1431AT
2SB1434 or 2SA1015 or 2SA933AS
UN4211 or DTC114ESA

LEGEND

..... USA for USA version only

Ω/W (1/4W)
$\mu F/V$ (50V)

* EU version

symbol	min	typ	max
*R111	680	820	1K
*R155	10K	15K	82K
*R204	47K	100K	OPEN
*R254	47K	100K	OPEN

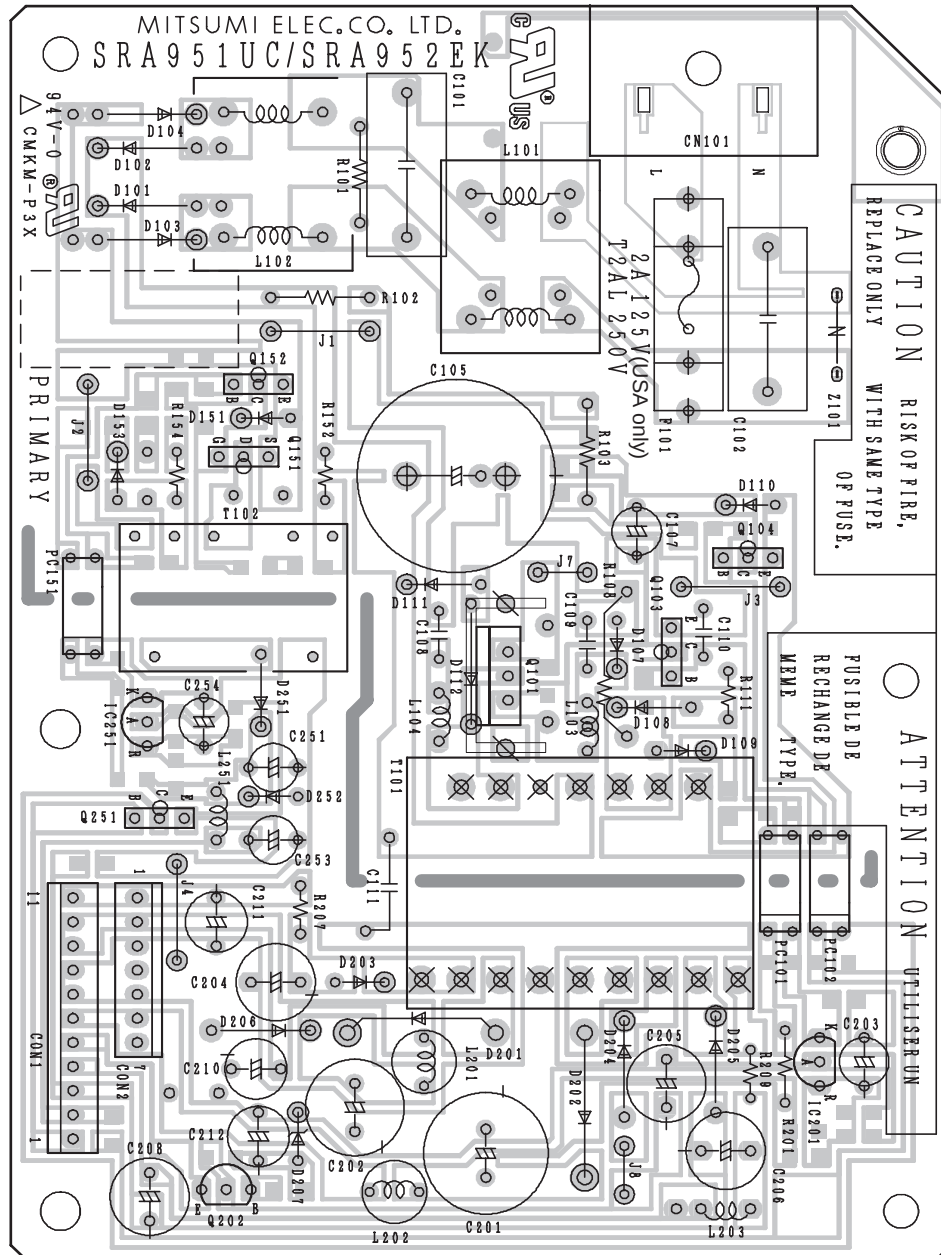
* USA version

symbol	min	typ	max
*R111	470	560	680
*R155	10k	22k	82k
*R204	47k	100k	OPEN
*R254	47k	100k	OPEN

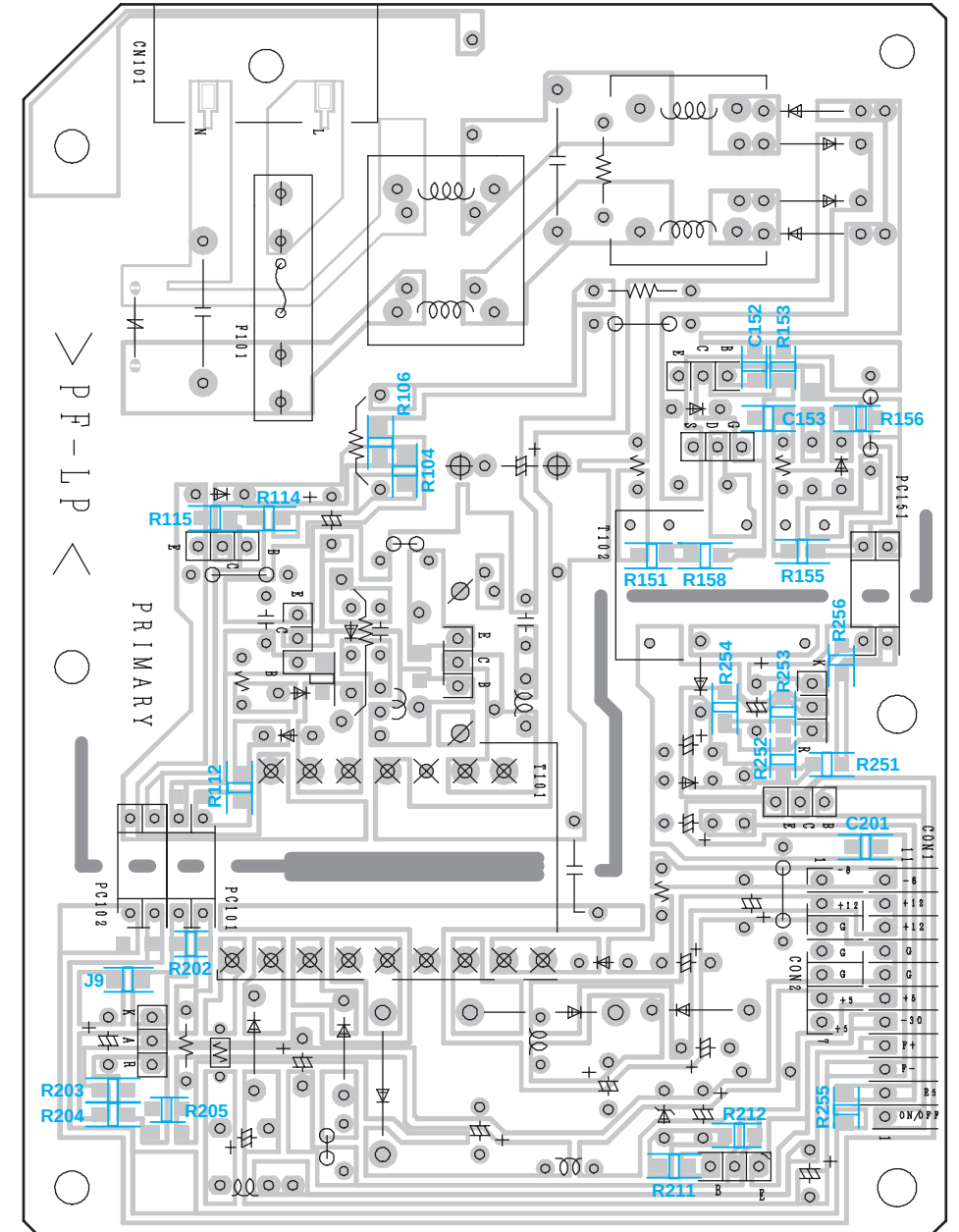
Switched Mode Power Supply, EU+USA versions, 000330
(SRA952EK+SRA951UC combined)

for orientation only

POWER BOARD / component side view
USA and European version

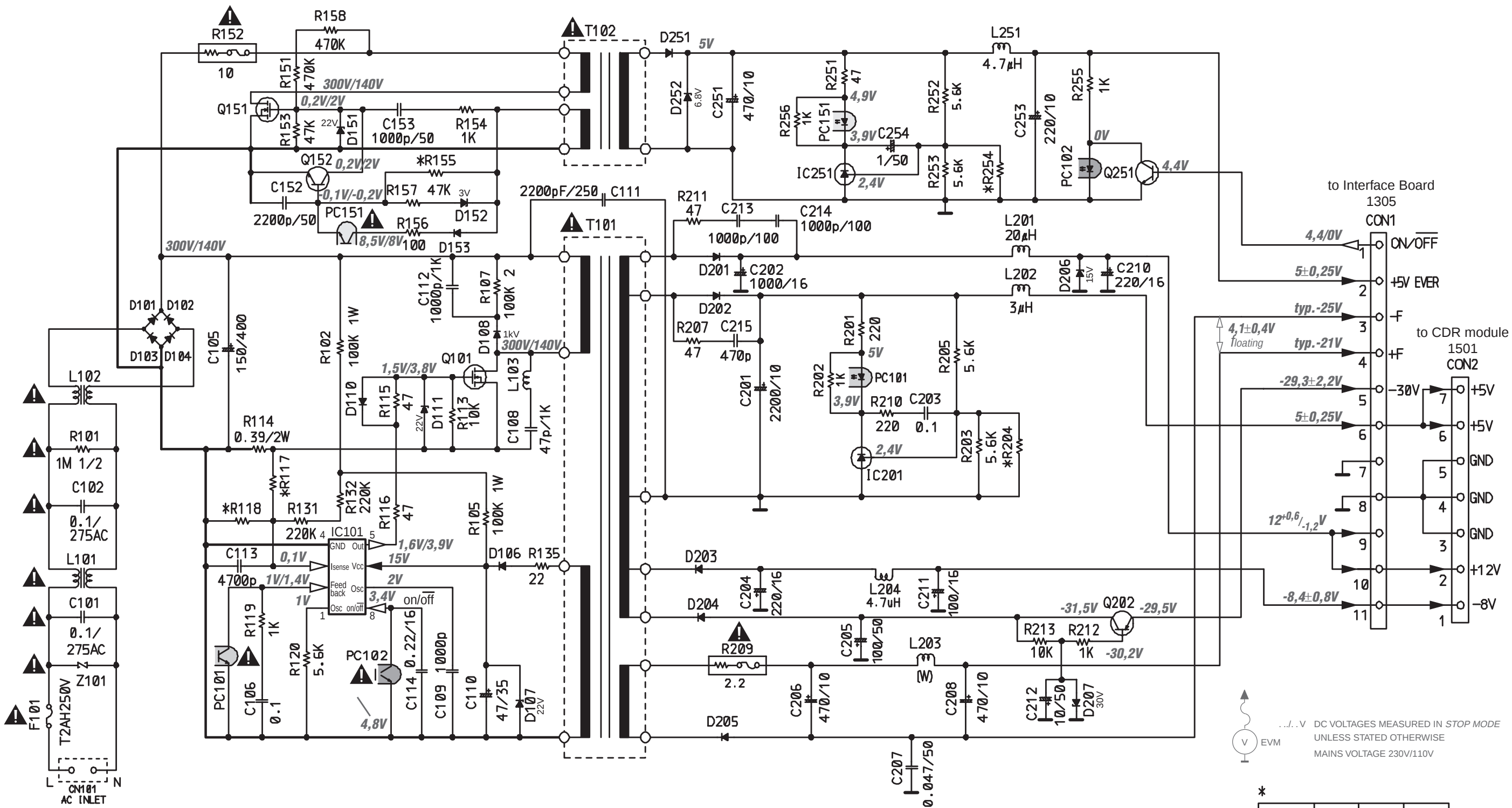


POWER BOARD / copper side view
USA and European version



for orientation only

Switched Mode Power Supply / WorldWide version (/01)



... V DC VOLTAGES MEASURED IN STOP MODE
UNLESS STATED OTHERWISE
MAINS VOLTAGE 230V/110V

*

symbol	min	typ	max
*R117	470	560	680
*R118	560	680	820
*R155	15K	33K	82K
*R204	47K	100K	OPEN
*R254	47K	100K	OPEN

Ω/W (1/4W)
$\mu F/V$ (50V)

D101, D102, D103, D104
D106
D107, D151
D108
D110, D153
D111
D152
Q101
Q151
Q152
PC101, PC102, PC151
IC101

1N4005 or 1N4007
AU022 or
MA4220 or MTZJ22
EG01C or
1SS133 or MA165
MA2220 or RD22F
MA4030 or MTZJ3.0
2SK2651
2SK2128
2SC1740
ON3171 or PC123 or PS2561
KA7552 or FA5317P

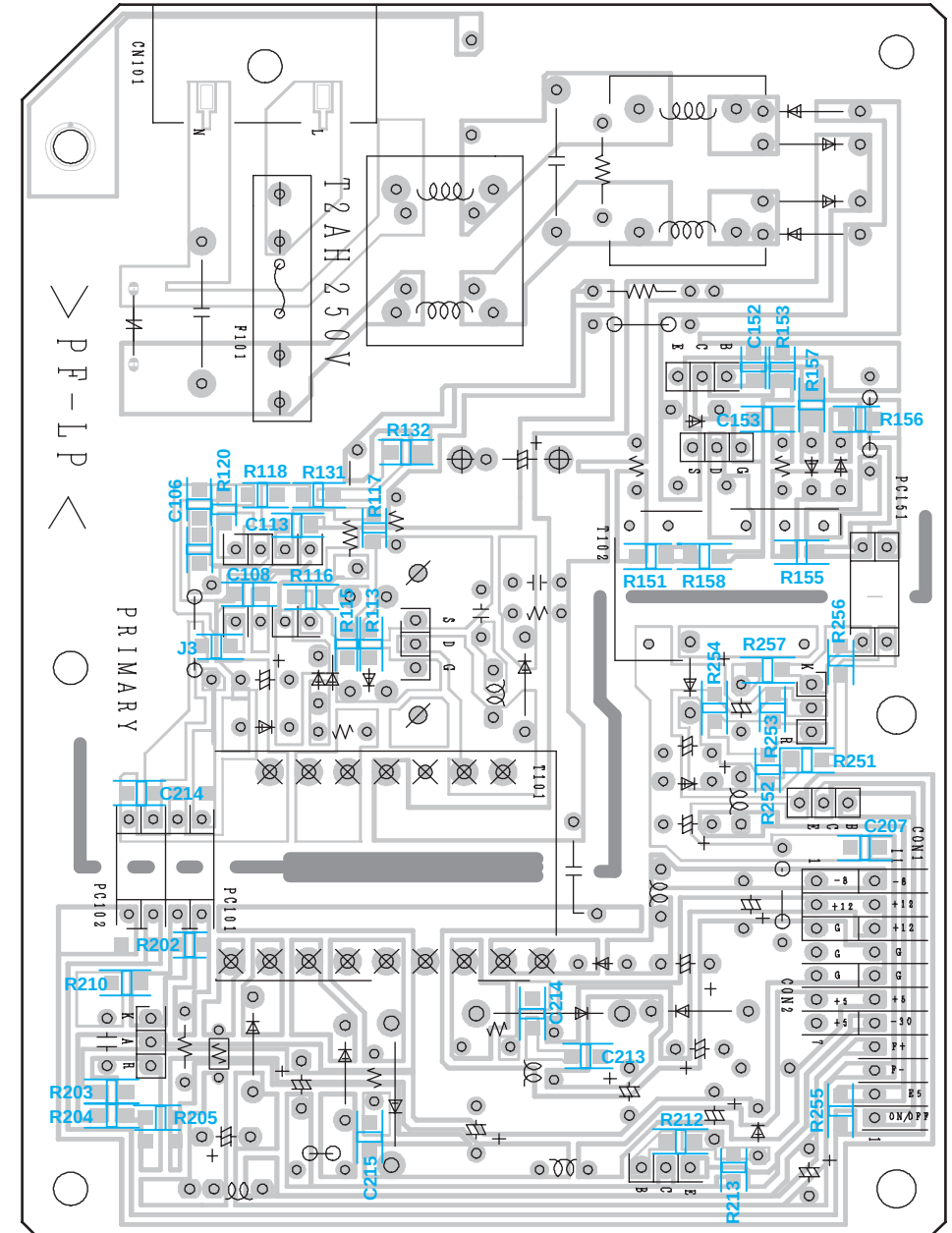
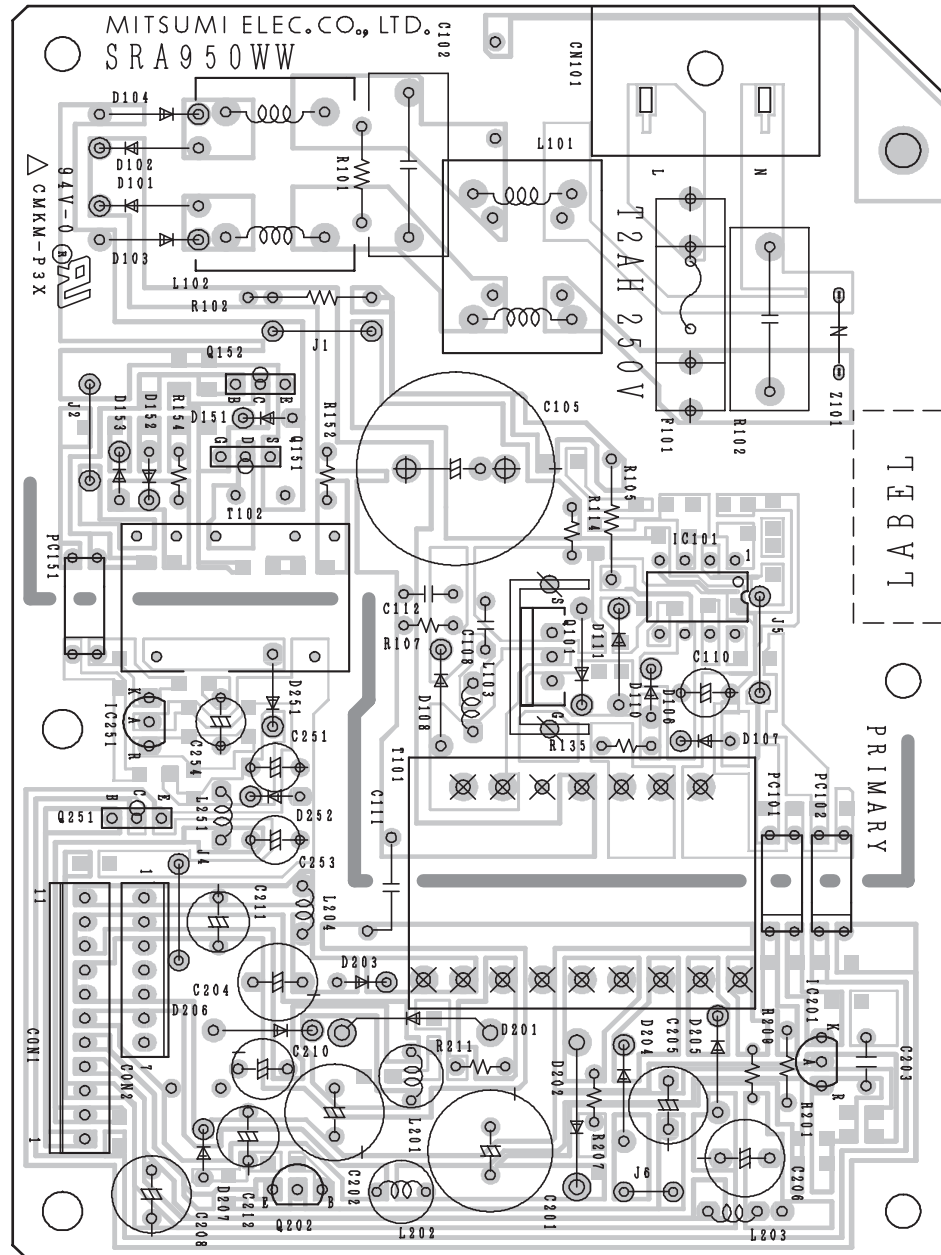
D201
D202
D203, D204, D251
D205
D206
D207
D252

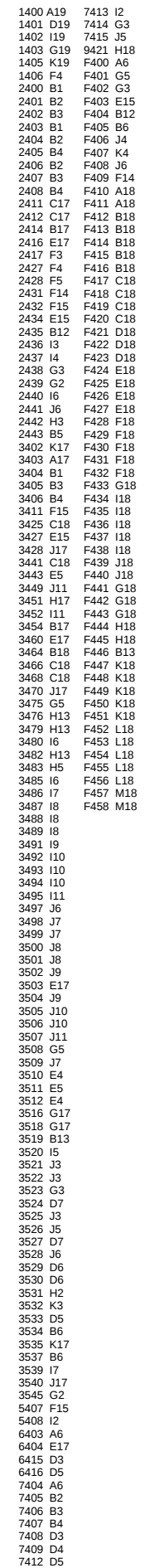
IC201, IC251
Q202
Q251

S3L20U or 31DF2
D3S4M or SB340
D1NL20U
AK04
RD15F or MA2150
MA4300 or MTZJ30
MA4068 or MTZJ6.8

AN1431T or MM1431AT
2SB1434 or 2SA1015 or 2SA933AS
UN4211 or DTC114ESA

POWER BOARD / copper side view
WorldWide version





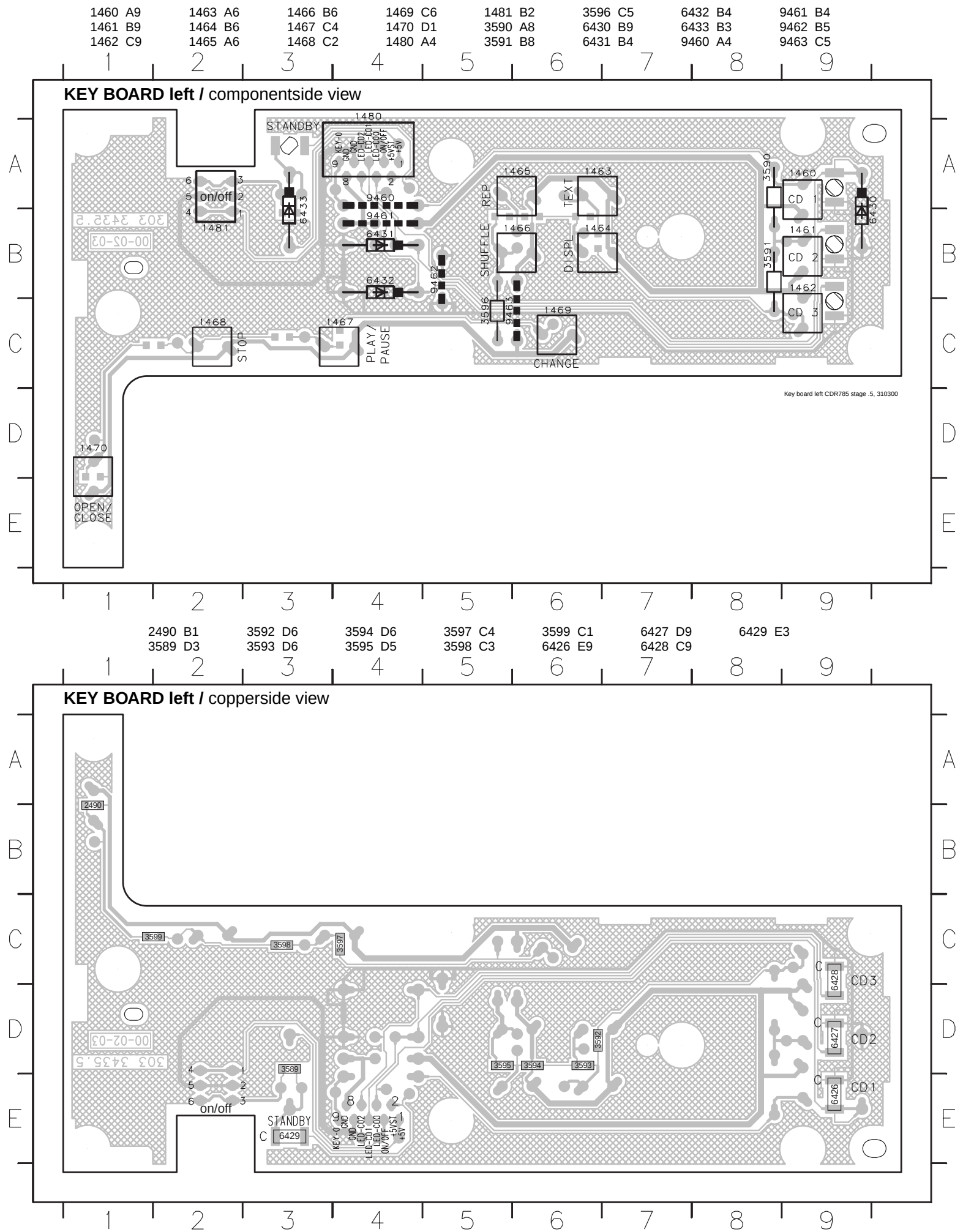
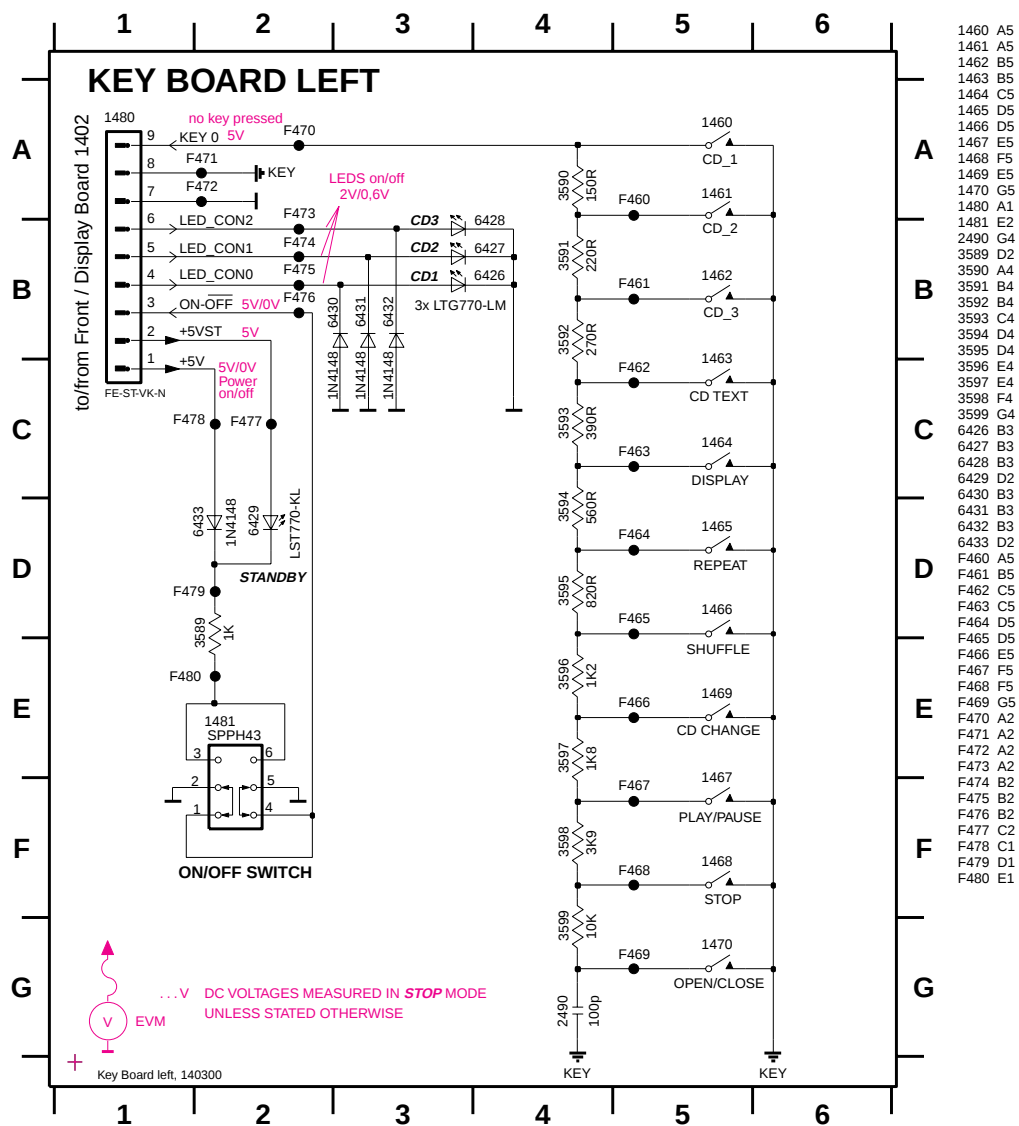
2400 B7	3499 D6	1400 F5	9423 B2
2401 B8	3500 D6	1401 F8	9425 A9
2402 B8	3501 D6	1402 D9	
2403 B7	3502 D6	1403 F1	
2404 B8	3503 D7	1405 D1	
2405 B8	3504 D6	1406 D4	
2406 B7	3505 D7	2432 C7	
2407 B8	3506 D7	2434 C8	
2408 B8	3507 D7	2435 A9	
2411 F5	3508 D4	2437 D1	
2412 F5	3509 D6	2439 C3	
2414 E4	3520 B1	2443 C2	
2416 D8	3521 D2	3411 C8	
2417 C4	3522 D2	3427 C9	
2427 D4	3523 D3	3428 E7	
2428 D4	3524 C3	3443 D3	
2431 C7	3525 D2	3491 D7	
2436 D1	3526 B1	3510 D3	
2438 D4	3527 C3	3511 D3	
2440 B1	3528 B1	3512 D3	
2441 B1	3529 C3	3516 E2	
2442 D3	3530 C3	3518 E2	
3402 E1	3531 D3	3519 E8	
3403 E4	3532 D2	3534 E8	
3404 B8	3533 C3	3537 C9	
3405 B8	3535 E1	3540 E7	
3406 B8	3539 E6	5407 B7	
3425 F5	3545 D3	5408 C1	
3441 F5	4401 B7	6403 F8	
3449 D7	4403 E4	6404 D6	
3451 D8	4404 E4	6415 C3	
3452 D7	4405 C2	6416 C2	
3454 E4	7405 B7	7404 B5	
3460 E7	7406 B8	7415 A1	
3464 E4	7407 B8	9401 E8	
3466 E5	7408 C2	9402 E8	
3468 E5	7409 C3	9403 D8	
3470 D8	7412 C5	9404 D8	
3475 D4	7413 D2	9405 D8	
3476 B7	7414 D3	9406 C8	
3479 B7		9407 C9	
3480 D5		9408 C7	
3482 C6		9409 B6	
3483 D5		9410 D7	
3485 D5		9411 E6	
3486 E5		9412 E6	
3487 E6		9413 E6	
3488 E6		9414 F6	
3489 E6		9415 D4	
3492 D6		9416 E3	
3493 D7		9417 F3	
3494 D7		9418 F3	
3495 D7		9419 B2	
3497 B1		9420 D1	
3498 D5		9421 E1	

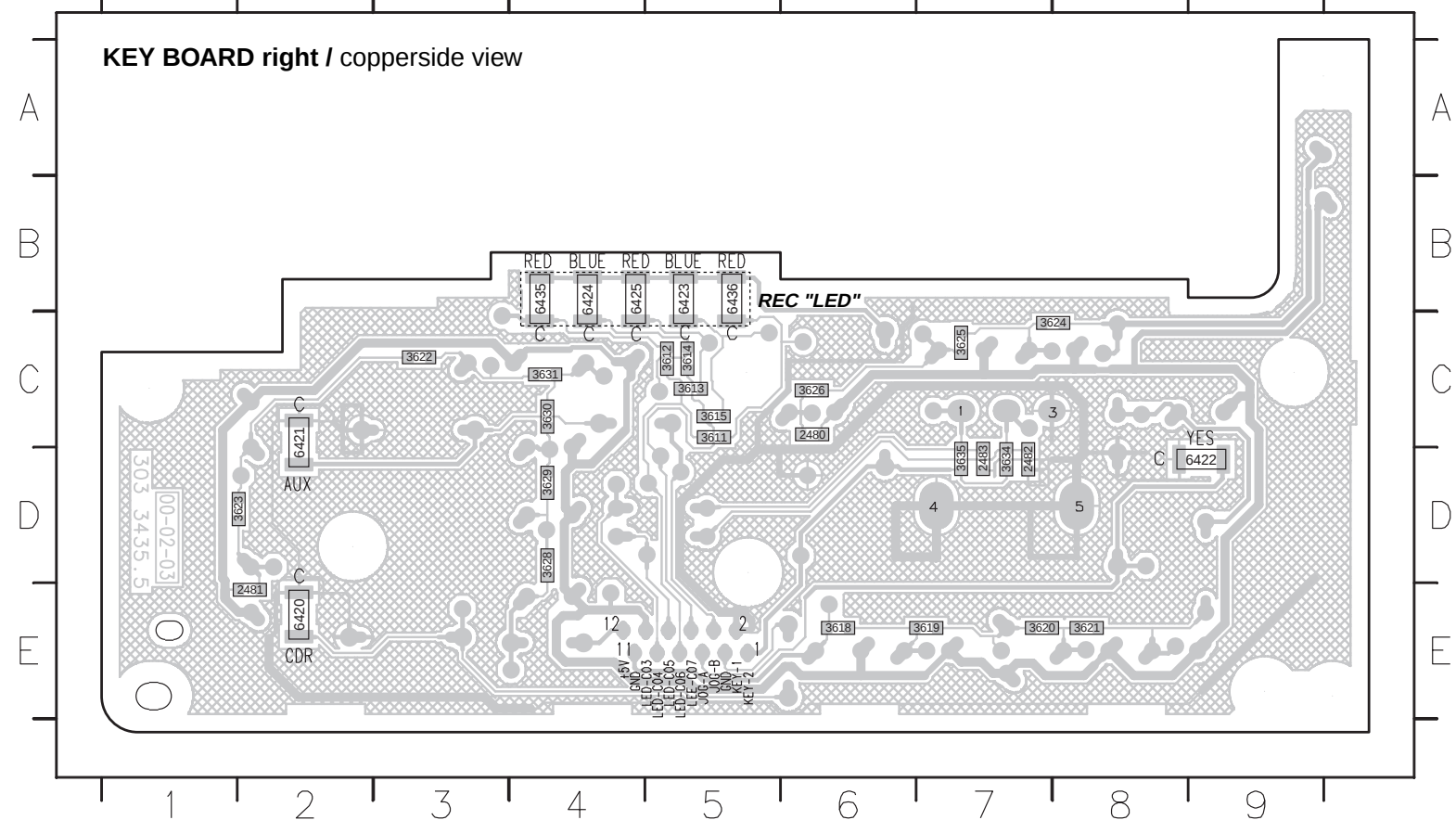
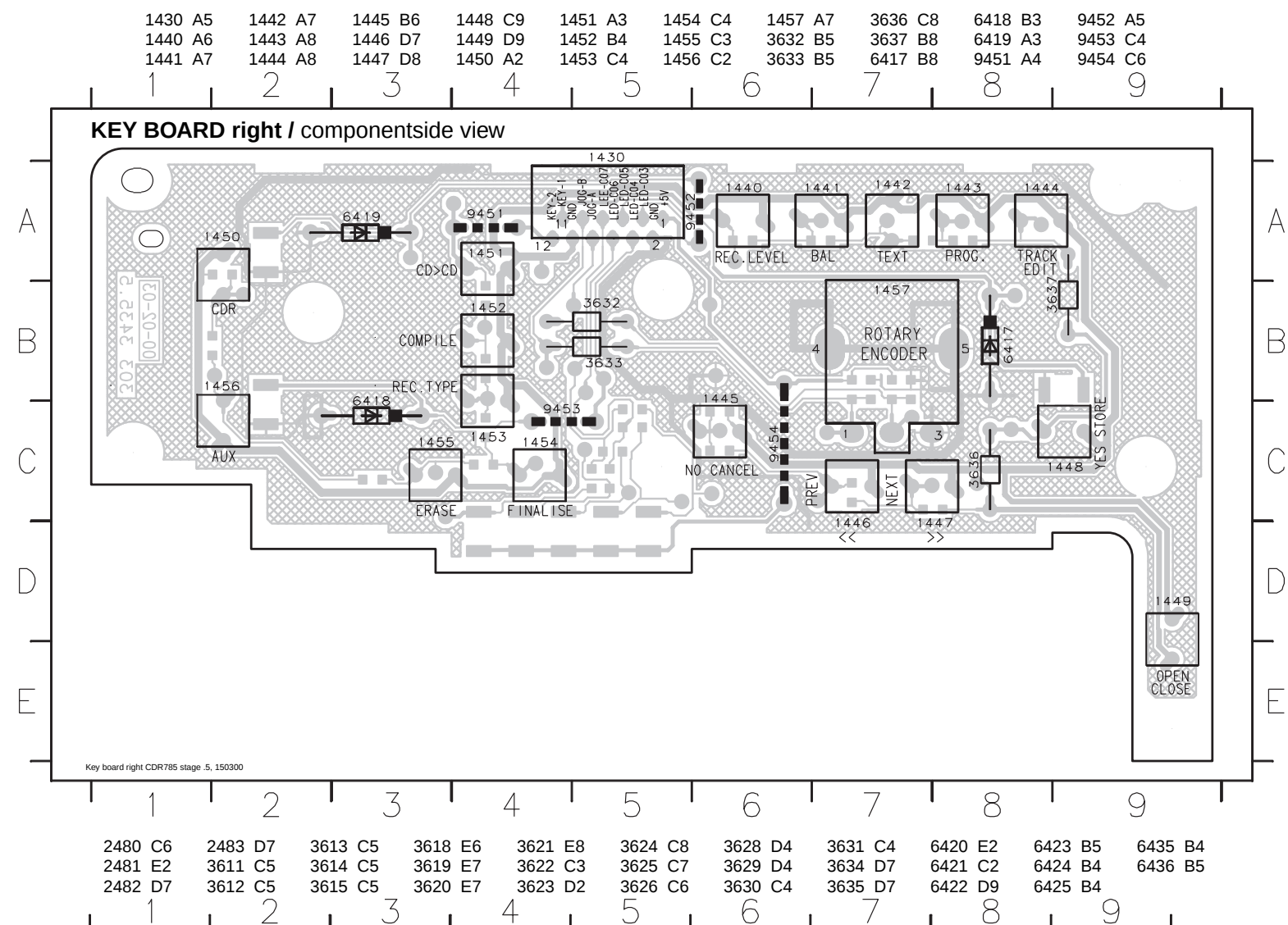
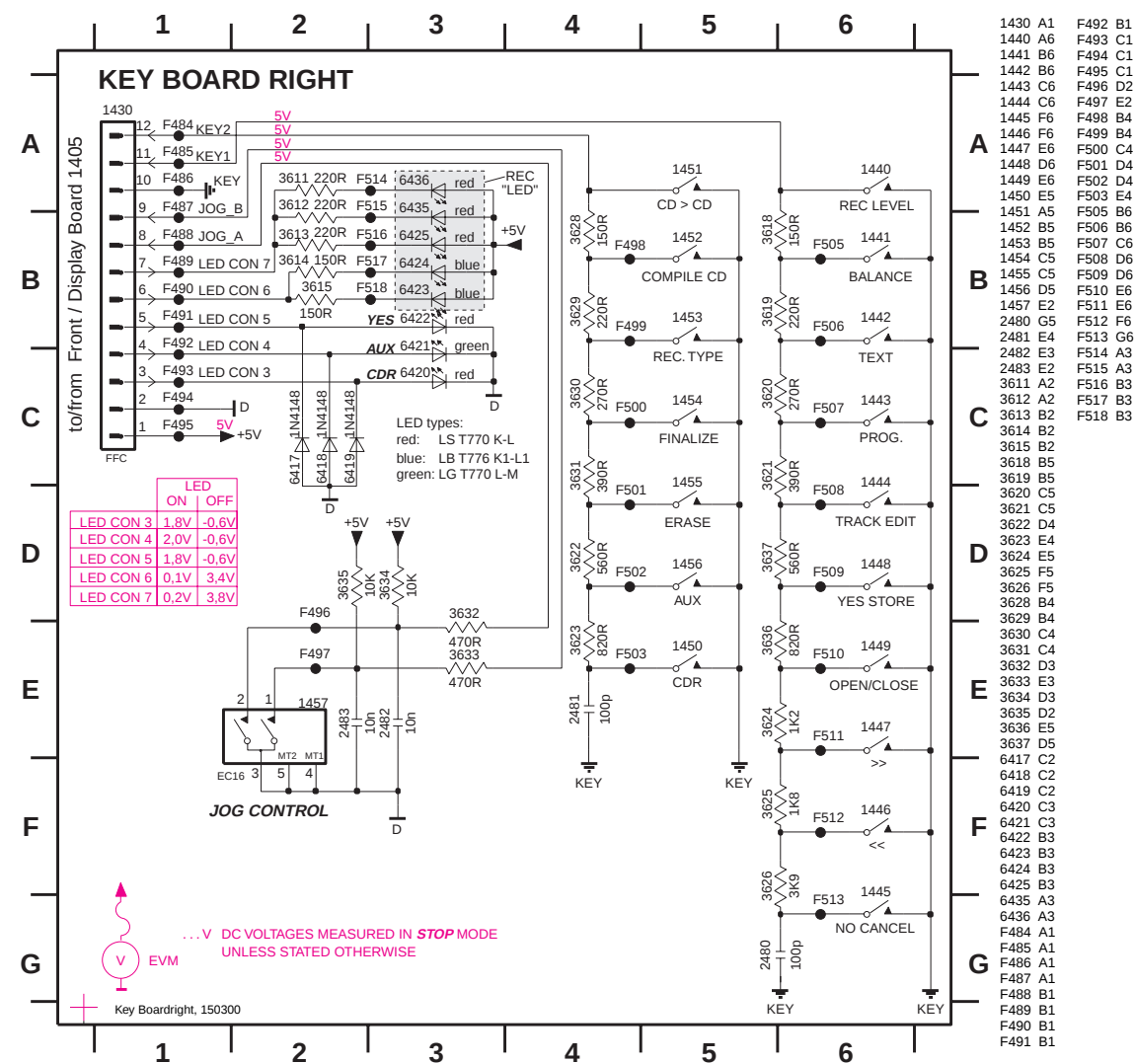
The diagram illustrates a CD player interface with various controls and a corresponding barcode. The interface is divided into several sections:

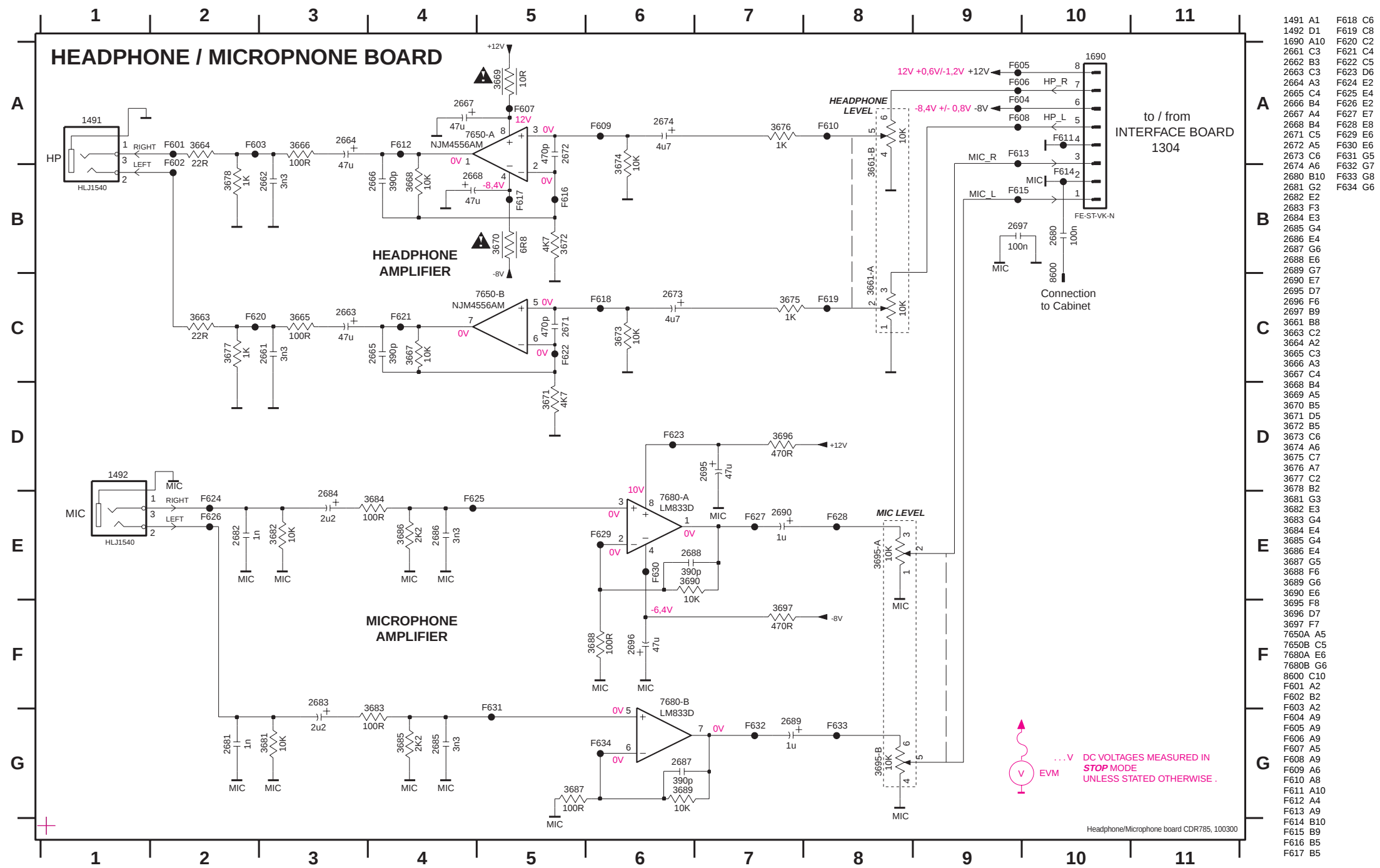
- Top Section:** A row of 20 buttons labeled G1 through G20. Each button has a specific icon: G12 (triangle), G11 (STEP), G10 (play/pause), G9 (TEXT), G8 (TOTAL), G7 (TRACK), G6 (TIME), G5 (TOTAL), G4 (REM), G3 (REC), G2 (TRACK), and G1 (TIME). Below these buttons is a row of 20 numbered buttons (1-20) and a '+' button.
- Bottom Section:** A row of 12 buttons labeled G13 through G24. Each button has a specific icon: G13 (CD RW), G14 (SHUFFLE), G15 (REPEAT), G16 (ALL), G17 (EDIT), G18 (L), G19 (R), G20 (CD RW), G21 (RECORD IN PROGRESS), G22 (FINALIZE), G23 (ALC), and G24 (DIGITAL 12).

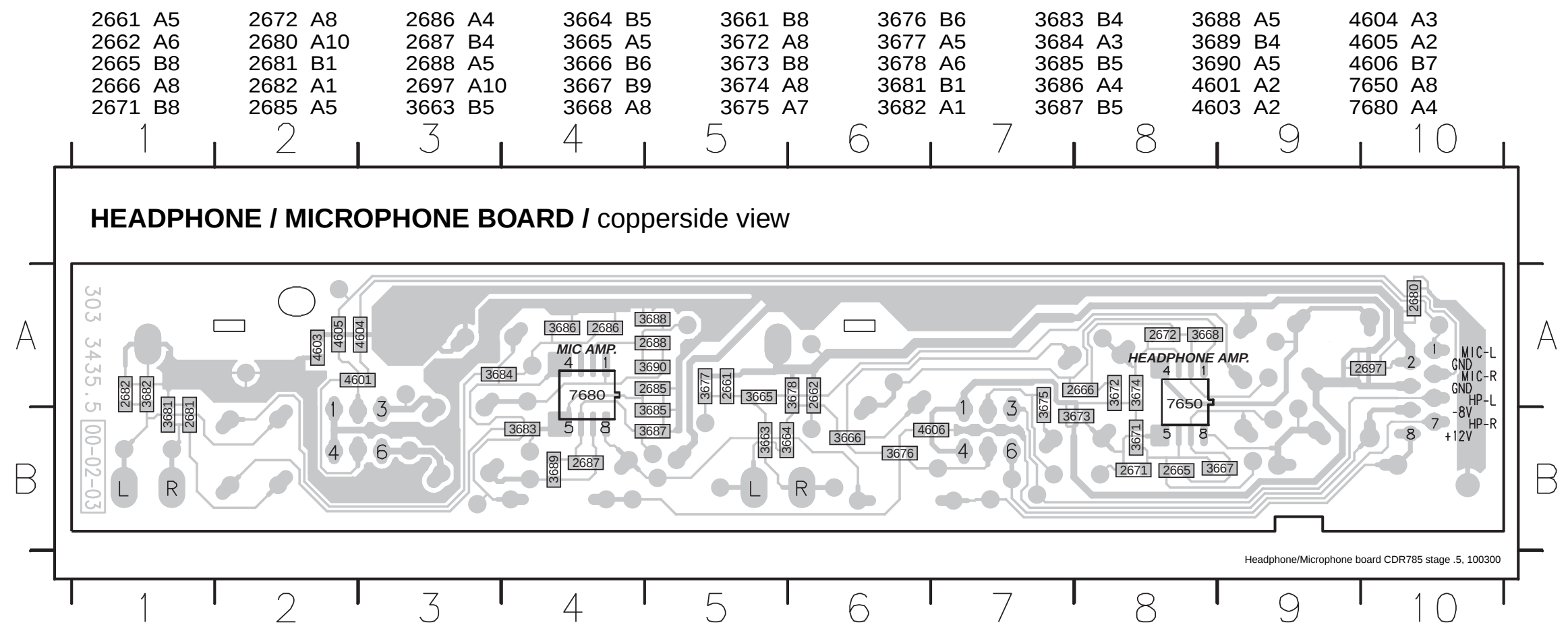
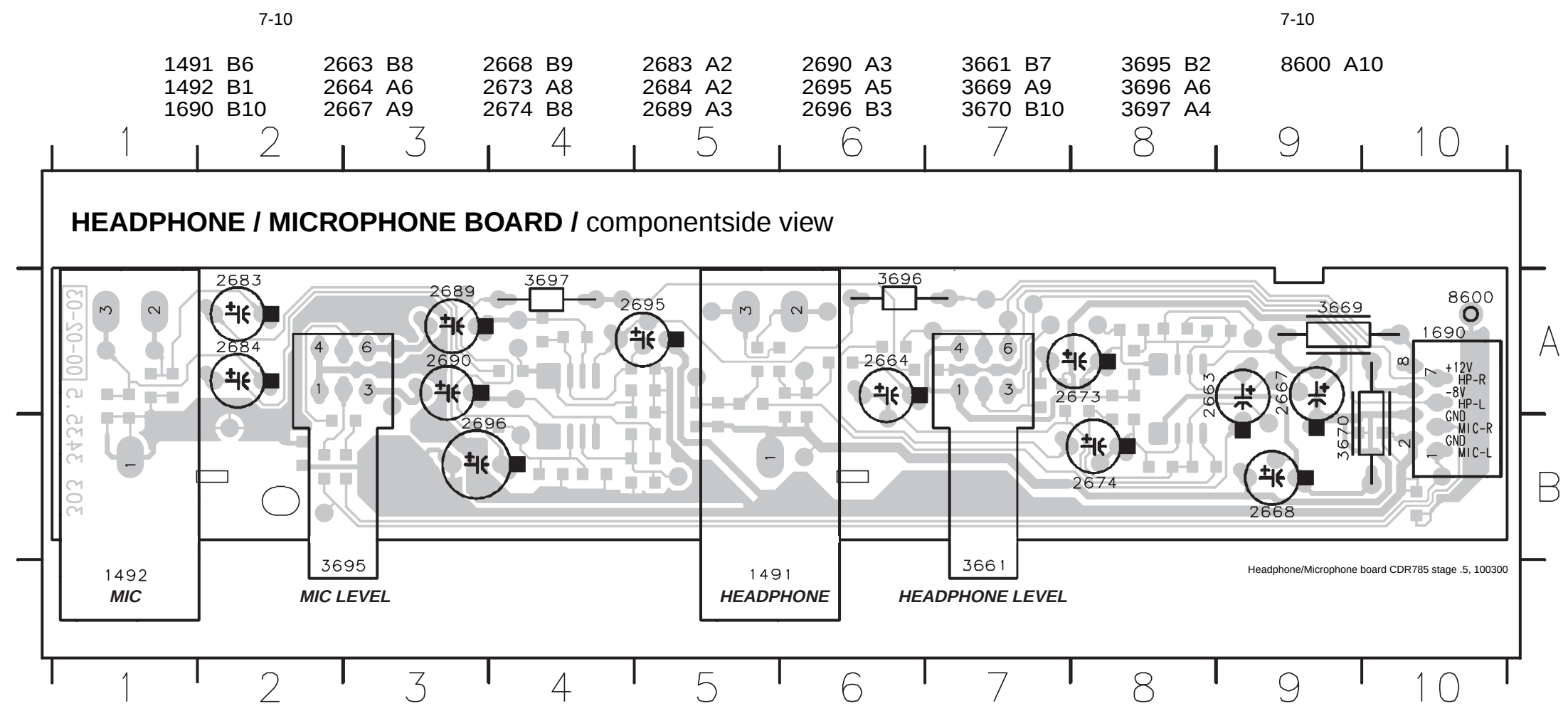
Below the interface is a barcode with 20 bars of varying heights, labeled B1 through B20. The bars are arranged in two rows of 10. The first row contains bars B1 through B10, and the second row contains bars B11 through B20. The bars are labeled with their corresponding G and B codes: G1 through G20 and B1 through B20.

[illegible]

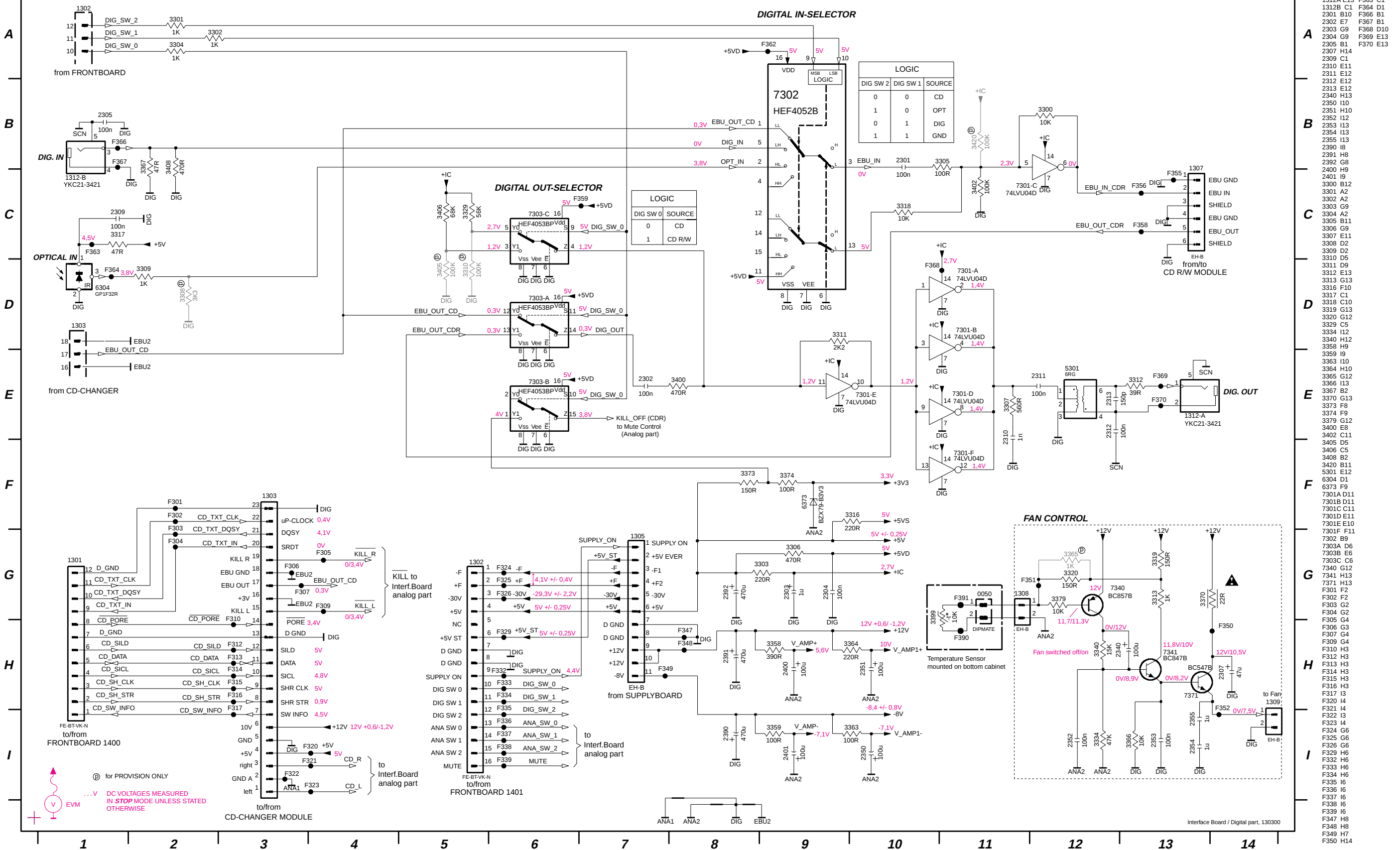


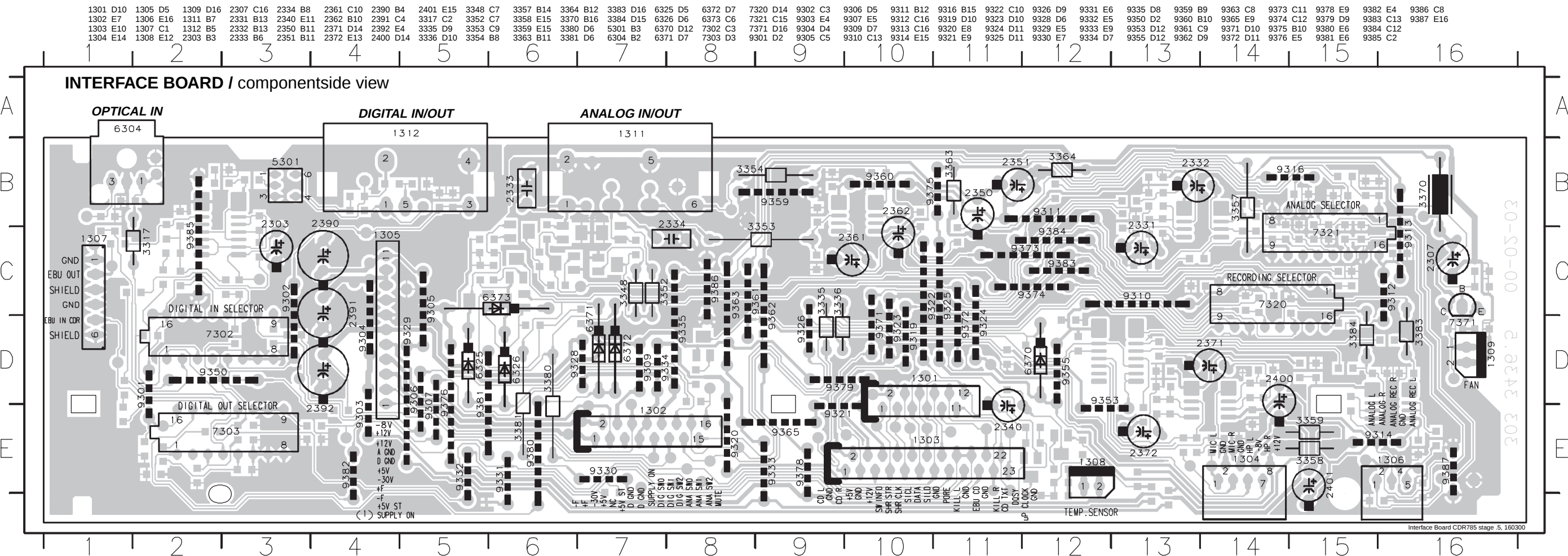




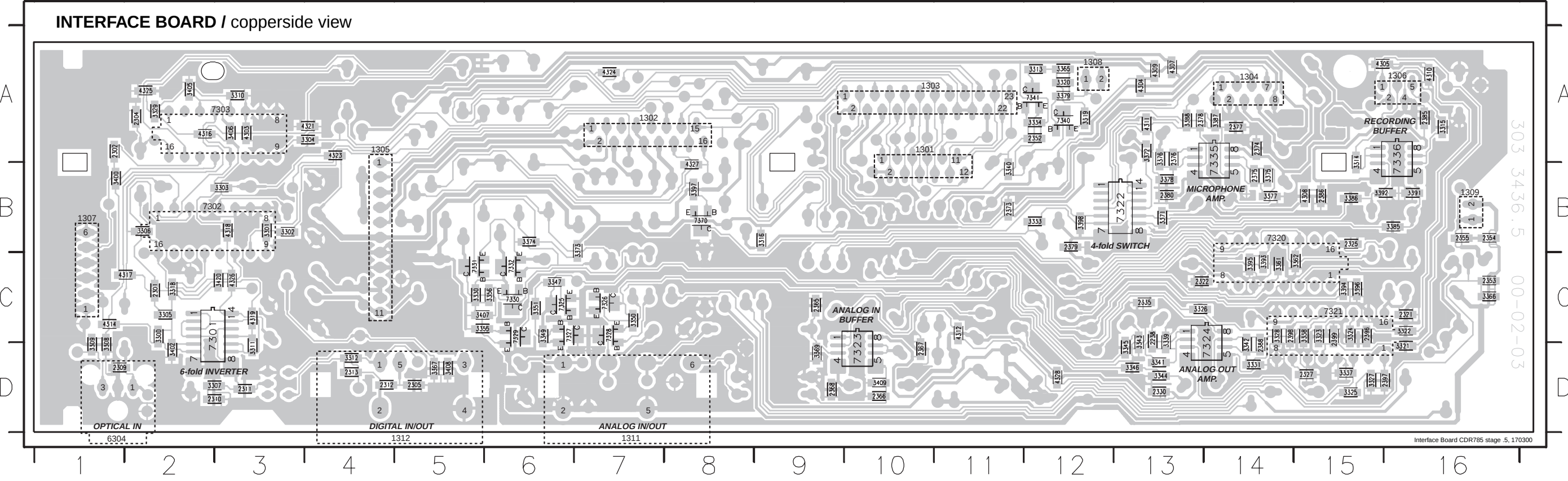


INTERFACE BOARD /digital part

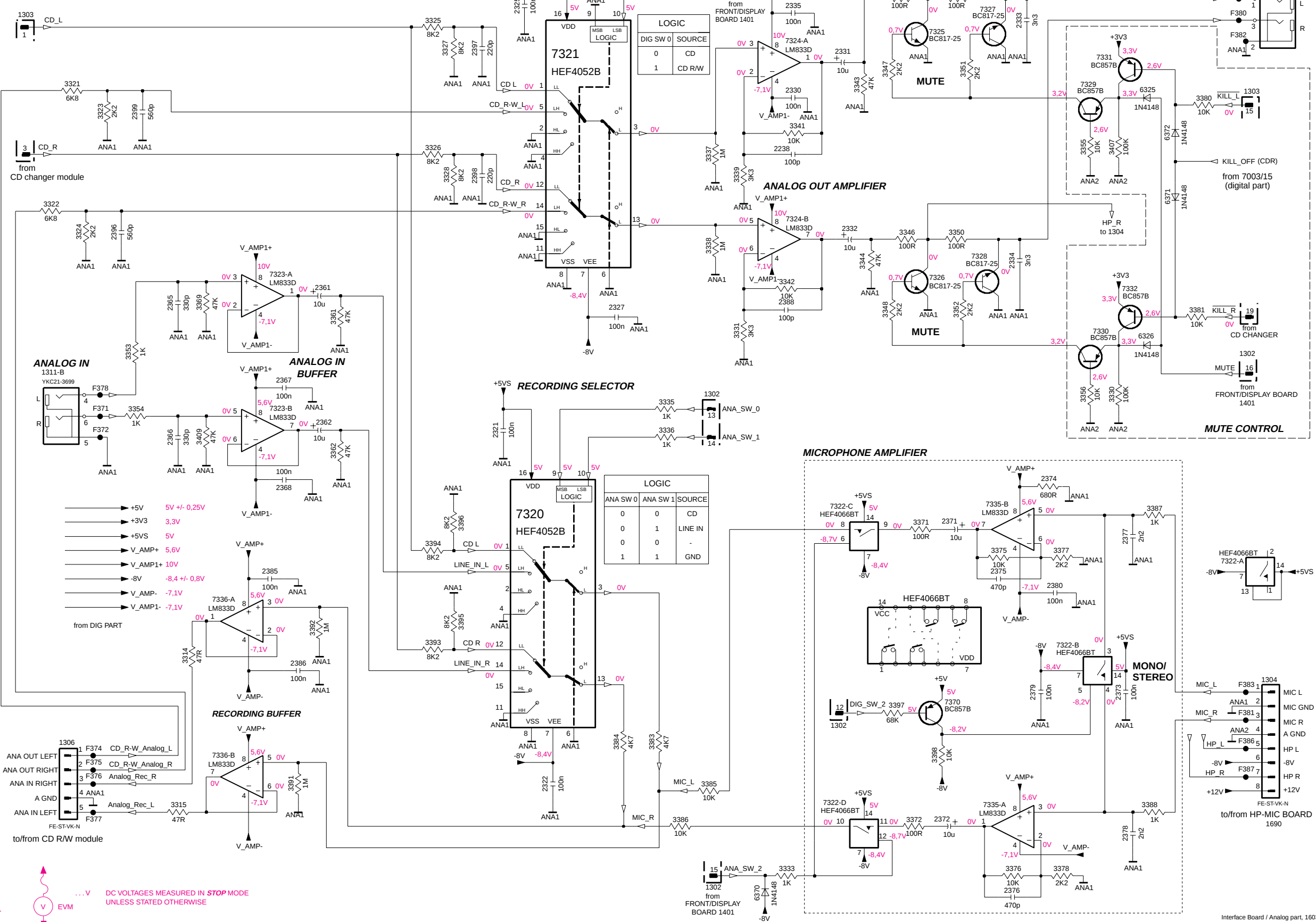




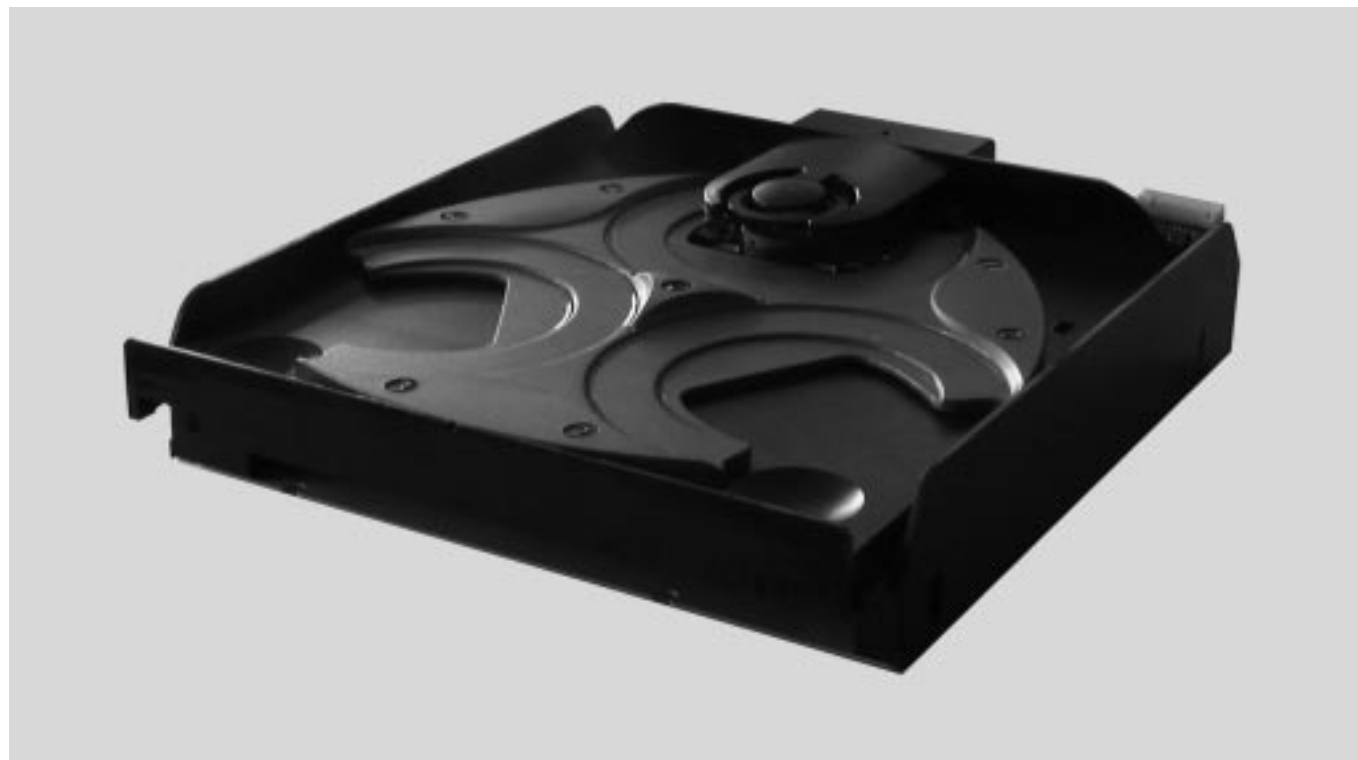
2238 C13	2309 D1	2321 C16	2335 C13	2365 C9	2374 A14	2379 B12	2396 C15	3301 B3	3306 B2	3311 D3	3316 B9	3322 C16	3327 D15	3333 B12	3340 B11	3345 D13	3351 C6	3365 A12	3372 A13	3377 B14	3387 A14	3394 C15	3400 B1	3408 D5	4305 A15	4311 A13	4318 B3	4325 A2	7322 B13	7327 C6	7332 C6	7370 B8
2301 C2	2310 D3	2322 C13	2352 A12	2366 D10	2375 B14	2380 B13	2397 D16	3302 B3	3307 D3	3312 D4	3318 C2	3323 C15	3328 C14	3334 A12	3341 D13	3346 D13	3355 C5	3366 C16	3373 B7	3378 B13	3388 A13	3395 C14	3402 D2	3409 D10	4307 A13	4312 C11	4319 C3	4326 C3	7323 D10	7328 C7	7335 A14	
2302 A1	2311 D3	2325 B15	2353 C16	2367 D10	2376 A14	2385 A16	2398 C14	3303 B3	3308 D1	3313 A12	3319 A12	3324 C15	3329 A2	3337 D15	3342 D14	3347 C6	3356 C6	3367 D5	3374 B6	3379 A12	3391 B16	3396 C15	3405 A2	3420 C3	4308 B15	4314 C1	4321 A4	4327 B8	7324 D14	7329 C6	7336 A16	
2304 A2	2312 D4	2327 D15	2354 B16	2368 D9	2377 A14	2386 B15	2399 C15	3304 A4	3309 D1	3314 A15	3320 A12	3325 D15	3330 C5	3338 C15	3343 C13	3349 C6	3361 C14	3369 D9	3375 B14	3385 B16	3392 B15	3397 B8	3406 A3	4303 A3	4309 A13	4316 A2	4323 A4	4328 D12	7325 C6	7330 C6	7340 A12	
2305 D5	2313 D4	2330 D13	2355 B16	2373 B11	2378 A13	2388 D14	3300 C2	3305 C2	3310 A3	3315 A16	3321 D16	3326 C13	3331 D14	3339 C13	3344 D13	3350 C7	3362 C15	3371 B13	3376 A13	3386 B15	3393 C14	3398 B12	3407 C5	4304 A13	4310 A16	4317 C2	4324 A7	7301 C2	7326 C7	7331 C5	7341 A12	



INTERFACE BOARD /analog part



1304 G13 7332 C12
 1306 H1 7335A I10
 1311A A13 7335B F10
 1311B D1 7336A G3
 2238 B8 7336B H3
 2321 E5 7370 H10
 2322 H6 F371 E1
 2325 A6 F372 E1
 2327 D7 F374 H1
 2330 A8 F375 H1
 2331 A9 F376 H1
 2332 C9 F377 I1
 2333 A11 F378 D2
 2334 C11 F379 A13
 2335 A8 F380 A13
 2361 C4 F381 H13
 2362 E4 F382 A13
 2365 D2 F383 G13
 2366 E2 F386 H13
 2367 D3 F387 H13
 2368 E3
 2371 F10
 2372 I10
 2373 H12
 2374 E11
 2375 F10
 2376 I11
 2377 F12
 2378 I12
 2379 H11
 2380 F11
 2385 F3
 2386 G3
 2388 D8
 2396 C1
 2397 A5
 2398 B5
 2399 B2
 3314 G2
 3315 I2
 3321 A1
 3322 C1
 3323 B1
 3324 C1
 3325 A5
 3326 B5
 3327 A5
 3328 B5
 3330 E12
 3331 D8
 3333 I8
 3335 E7
 3336 E7
 3337 B8
 3338 C8
 3339 B8
 3341 B8
 3342 C8
 3343 A9
 3344 C9
 3345 A9
 3346 C9
 3347 A9
 3348 D9
 3349 A10
 3350 C10
 3351 A10
 3352 D10
 3353 D2
 3354 E2
 3355 B11
 3356 E11
 3357 A7
 3361 D4
 3362 E4
 3369 D2
 3371 F10
 3372 I10
 3375 F10
 3376 I11
 3377 F11
 3378 I11
 3380 B12
 3381 D12
 3383 H7
 3384 H7
 3385 H7
 3386 I7
 3387 F12
 3388 I12
 3391 H3
 3392 G4
 3393 G5
 3394 F5
 3395 G5
 3396 F5
 3397 H9
 3398 H10
 3407 B12
 3409 E2
 6325 A12
 6326 D12
 6370 I8
 6371 C12
 6372 B12
 7320 F6
 7321 A6
 7322A F13
 7322B G11
 7322C F9
 7322D I9
 7323A C3
 7323B E3
 7324A A8
 7324B C8
 7325 A10
 7326 C10
 7327 A10
 7328 C10
 7329 A11
 7330 D12
 7331 A12



3CDC99-DS Module

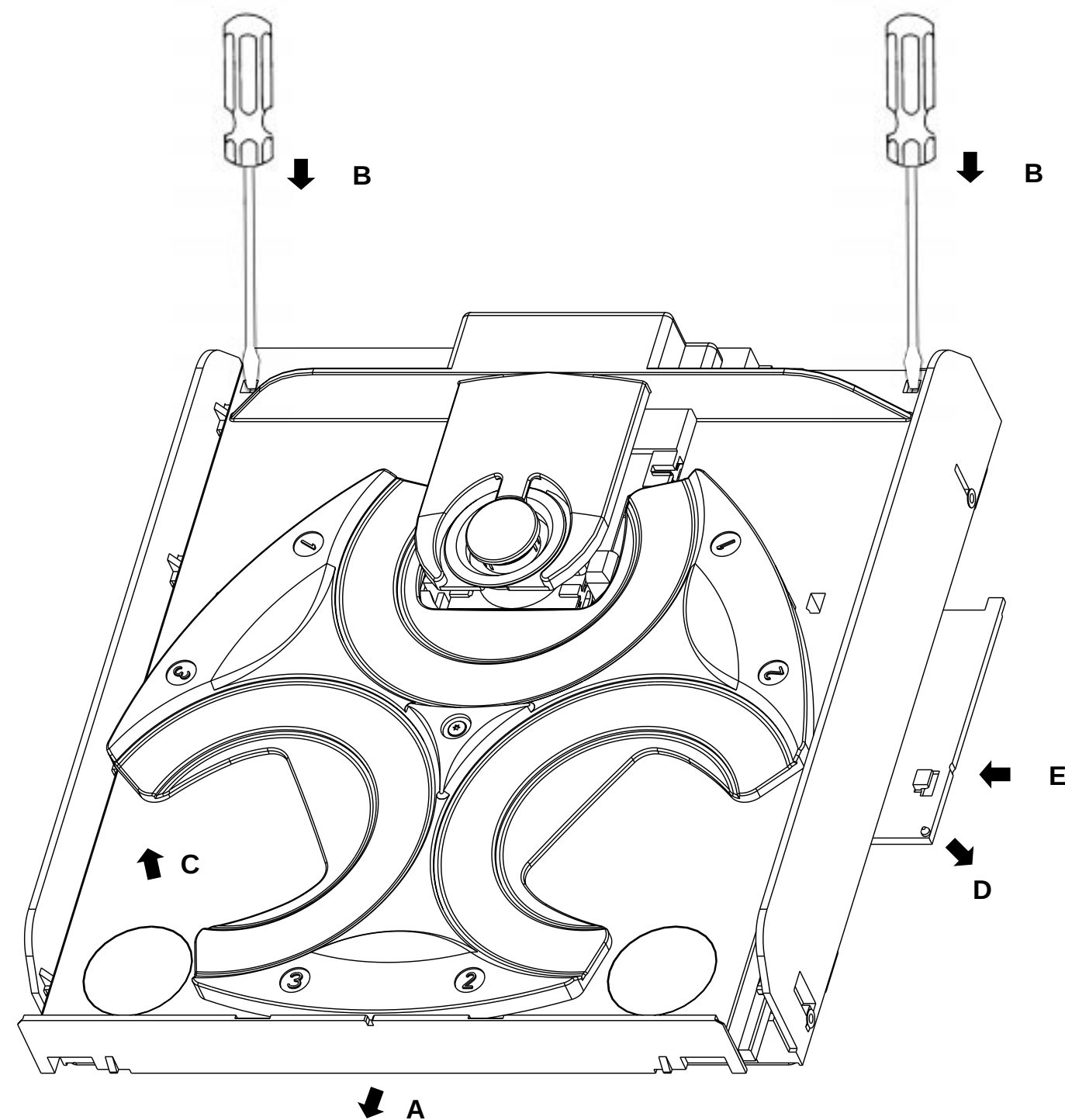
(3 Disc Carousel Changer)

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Dismantling Hints



Dismantling of Drawer

- A Pull drawer outwards
- B Unlock drawer with screwdriver
- C Lift drawer to demount from chassis

Dismantling of Flex Plate

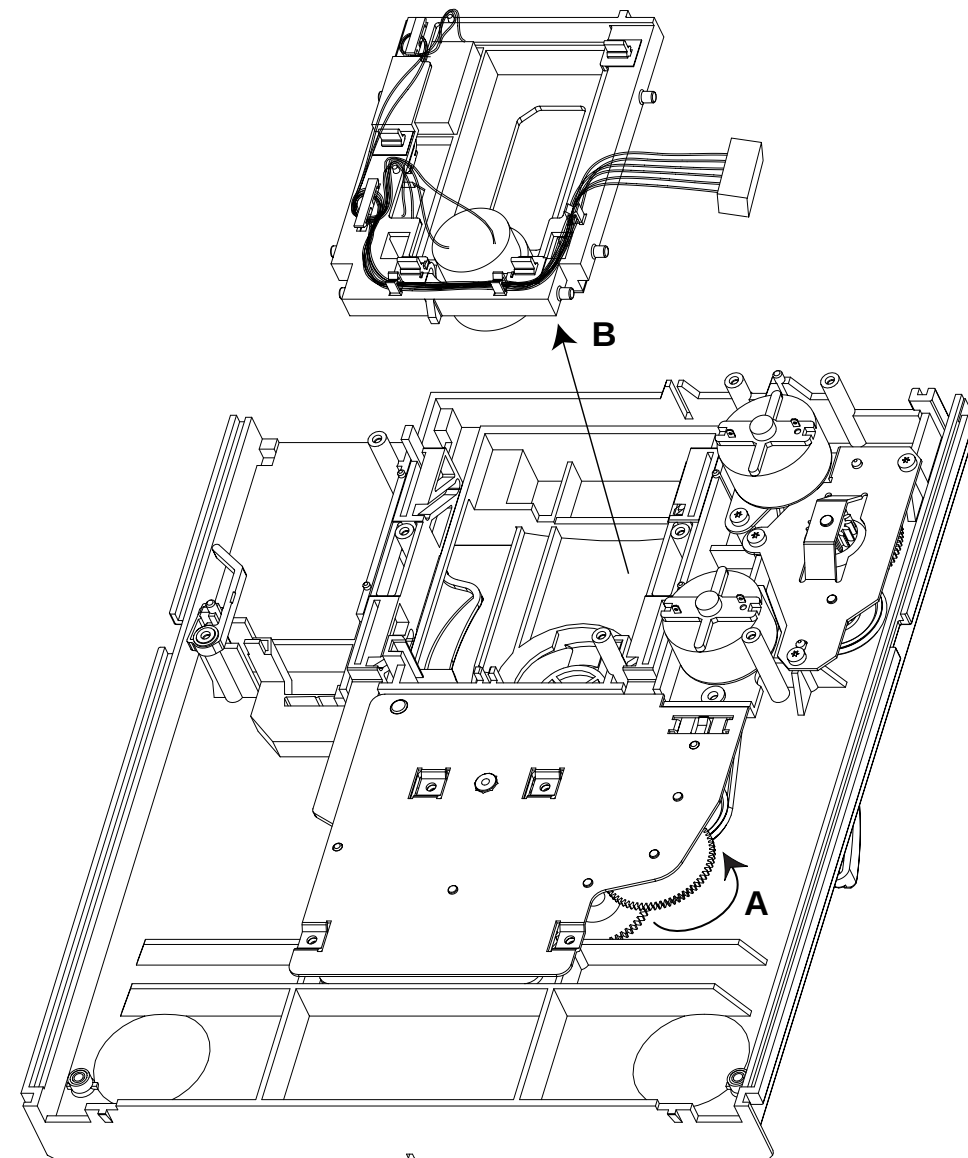
- D Lift plate to unlock pin from bottom plate
- E Move plate inwards to demount from bottom plate

Service Hints

Replacement of CD Drive

See also exploded view of changer mechanism.

1. Dismantle printed circuit board: remove 5 screws.
2. Disconnect flexfoil cable and JST connector.
3. Loosen 2 screws (pos 107,108) and remove CD drive-lockings (pos 105,106).
4. Turn gearwheel (pos 42) of disc change mechanism by finger to move CD drive support in upper position as shown in picture below **A**.
5. Dismantle CD drive support (pos 95) **B**.
6. Replace CD drive (pos 100). The wire tree of JST connector has to be desoldered and resoldered on the new CD drive again.

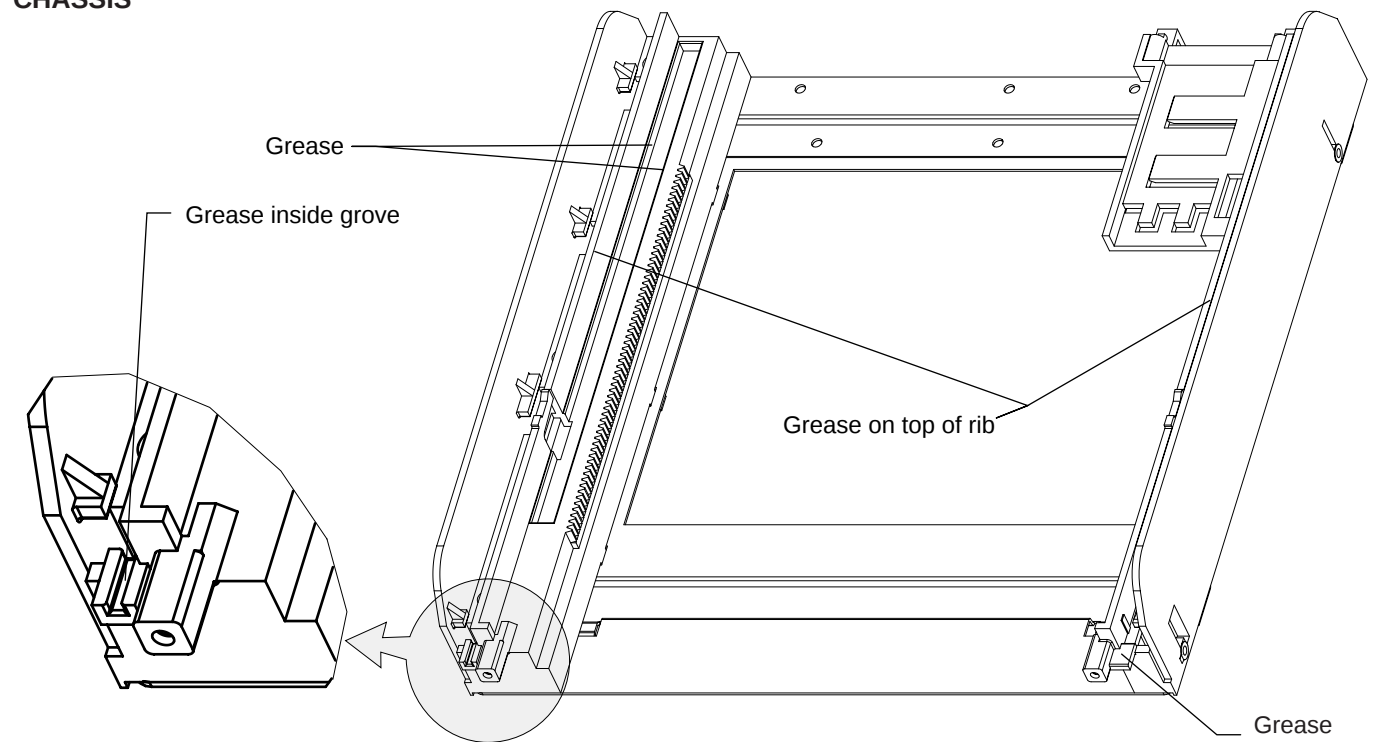


Mounting of Carousel

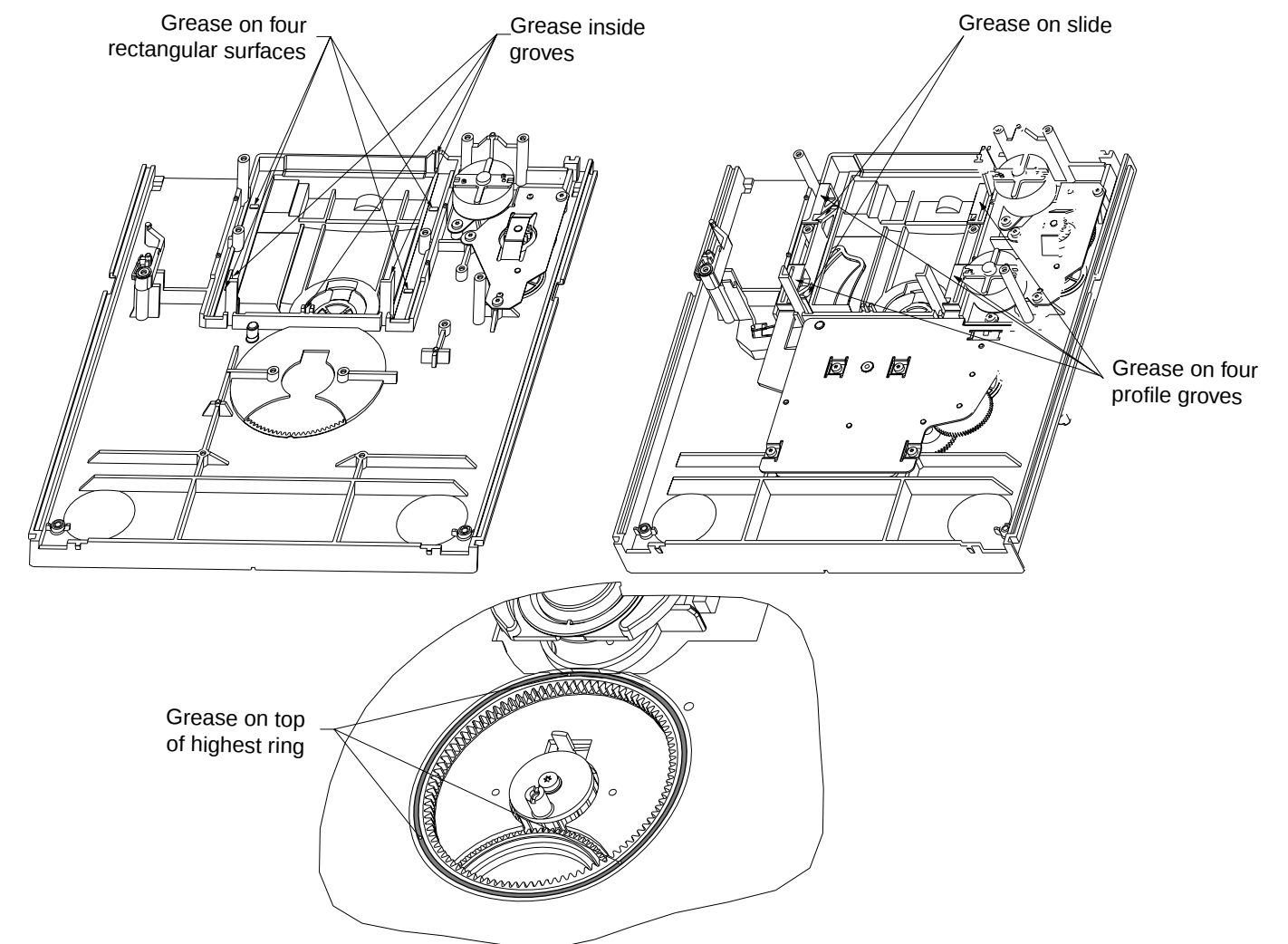
1. Turn gearwheel (pos 42) of disc change mechanism by finger until CD drive is in play position.
2. Mount carousel (pos 115) so that disc is positioned right on turntable. Carousel position number doesn't matter.

Lubrication Instructions

CHASSIS

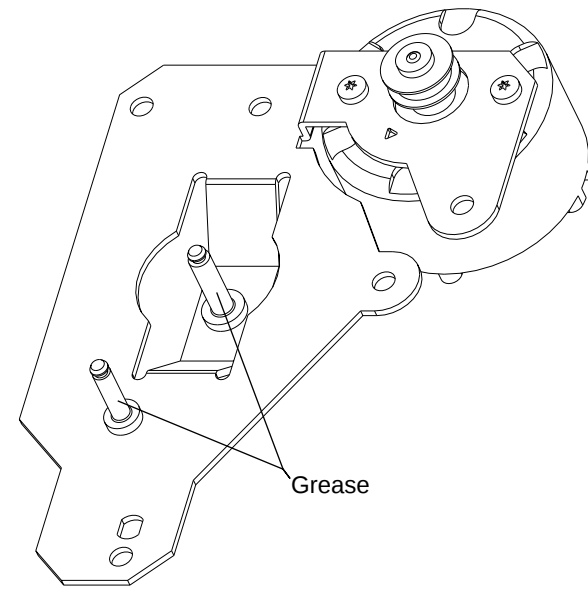


DRAWER

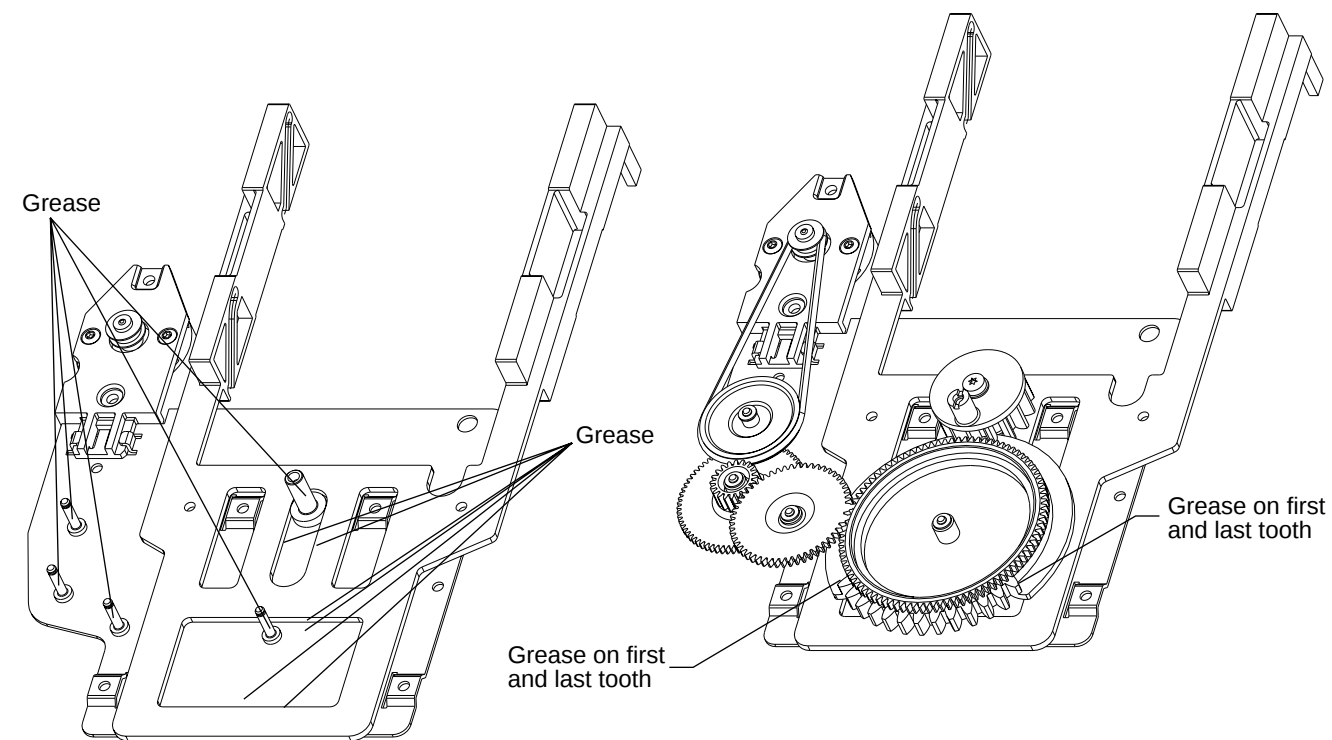


Lubrication Instructions

DRAWER MECHANISM



DISC CHANGE MECHANISM



Use only grease **Polylub GLY 801** service codenumber 4822 390 10136

WARNING

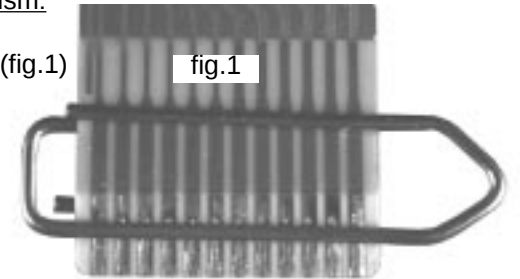
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- **SWITCH OFF POWER SUPPLY**
- **ESD PROTECTION**

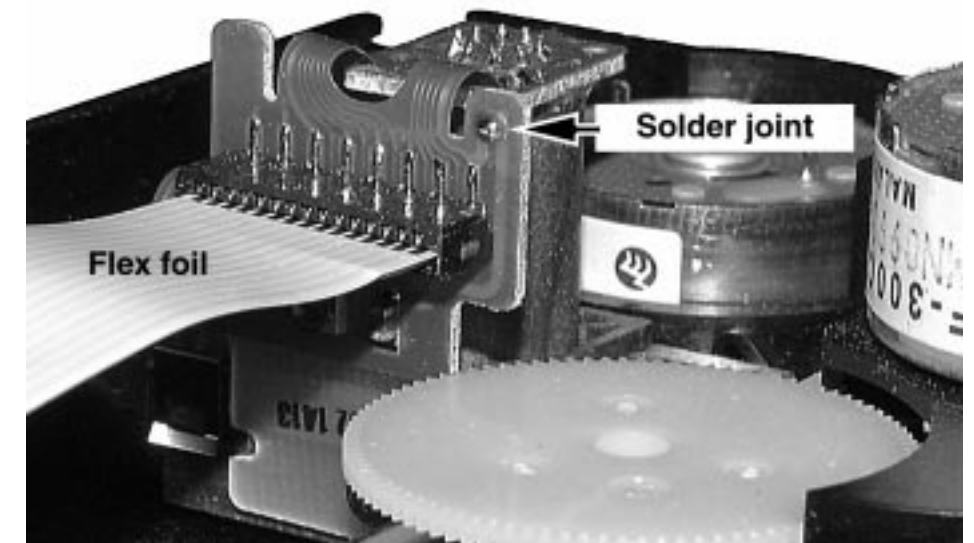
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the CD mechanism:

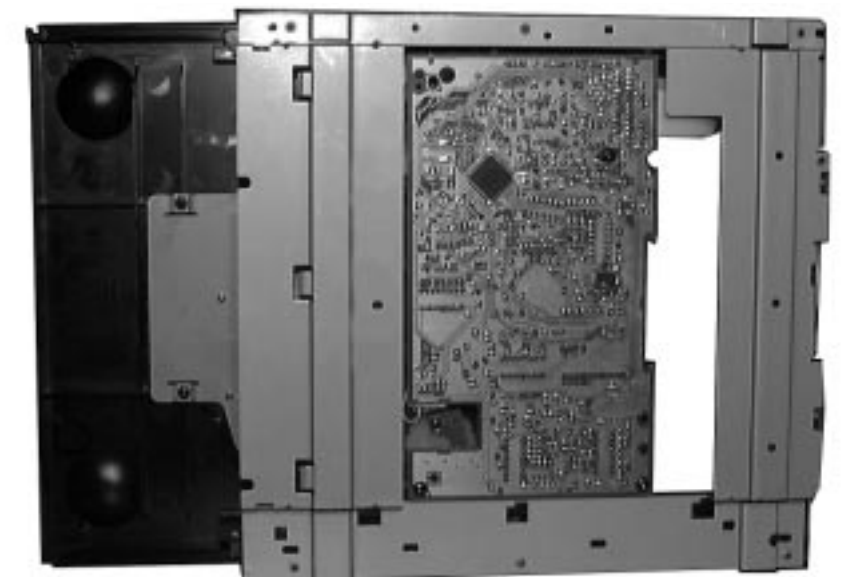
1. Disconnect flexfoil cable from old CD drive
2. Put a paper clip onto the flexfoil cable to short-circuit connections (fig.1)
3. Remove old CD drive
4. Remove paper clip from flexfoil cable
5. Connect flexfoil cable to new CD drive
6. Position new CD drive on its studs
7. Remove soldered short-circuit from Laserunit (see below)



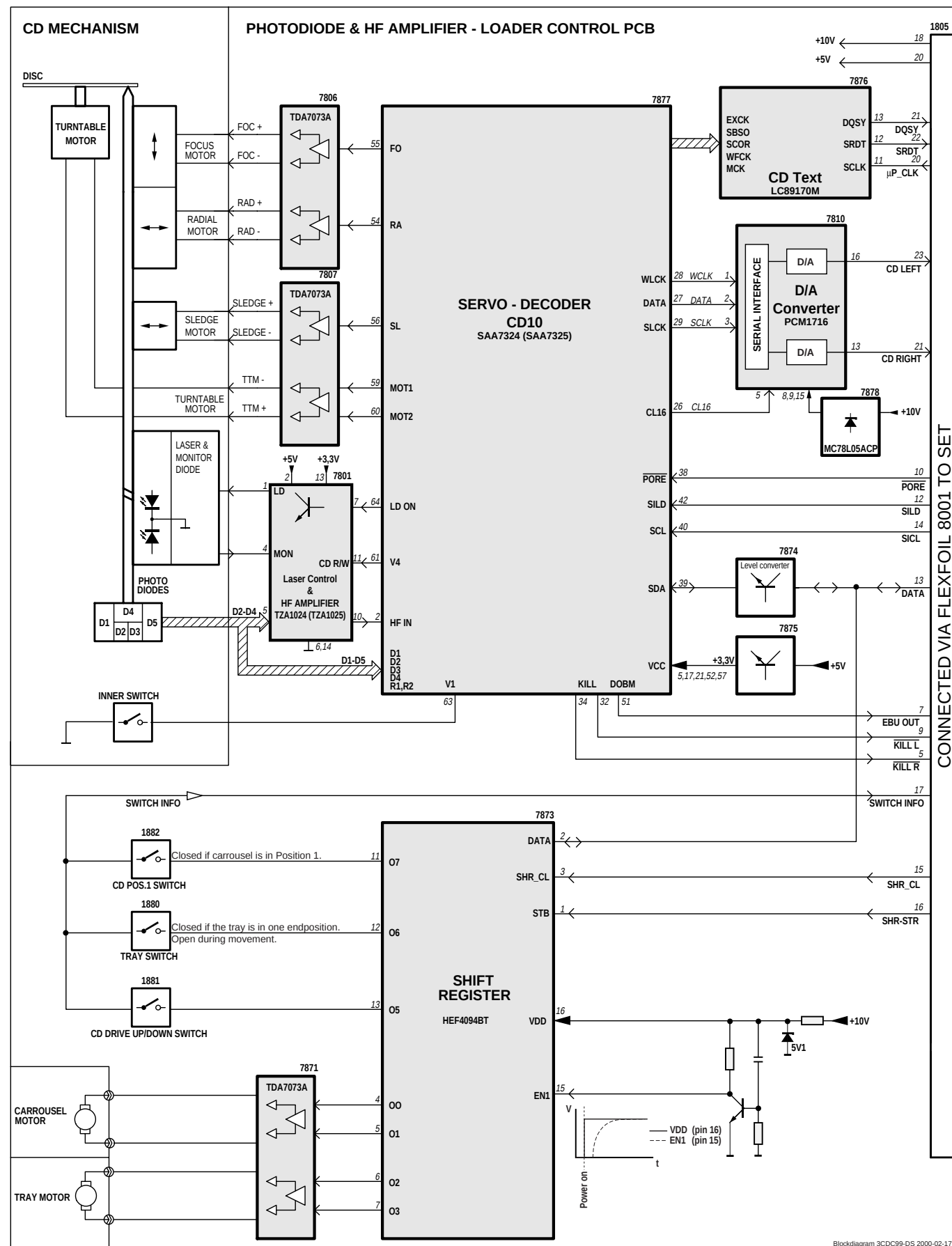
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laser diode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connecting the drive to the set.



Service Position

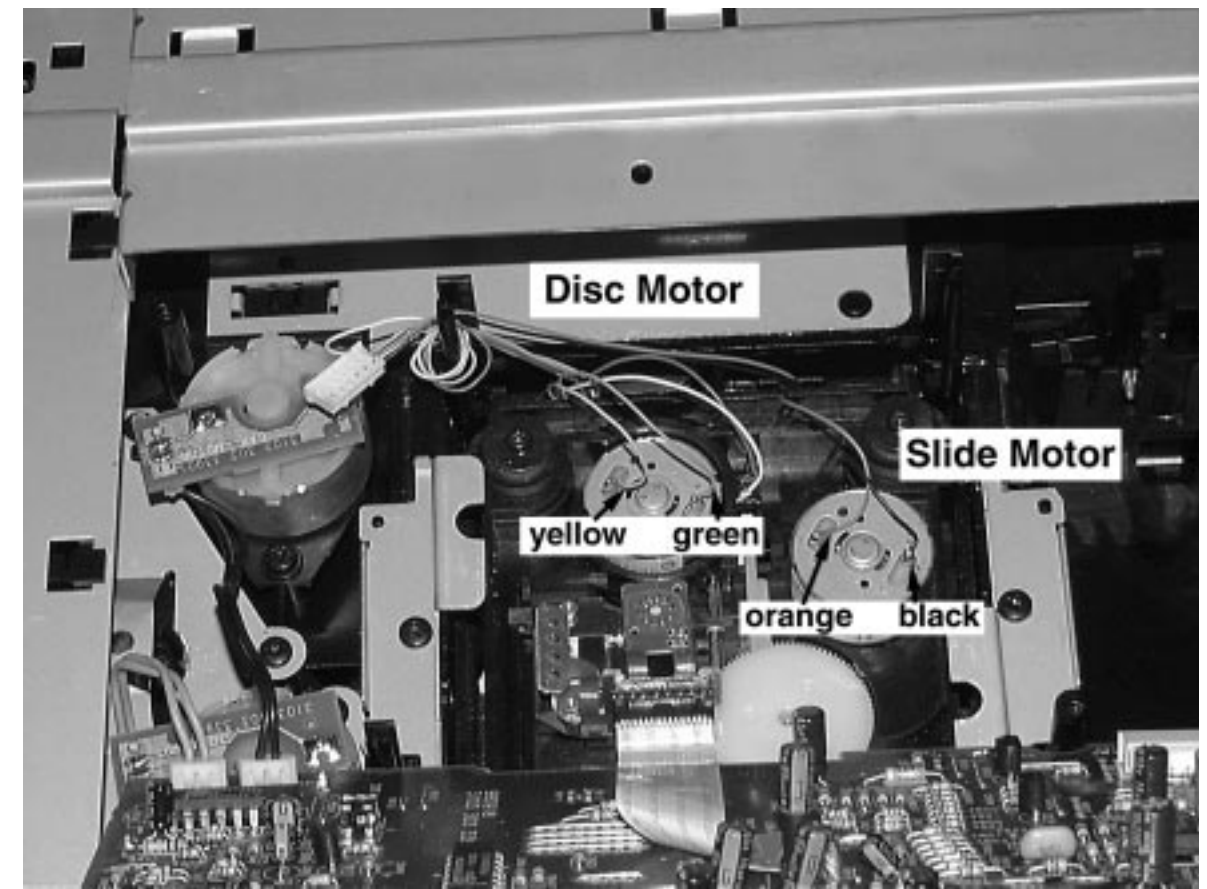


Blockdiagram

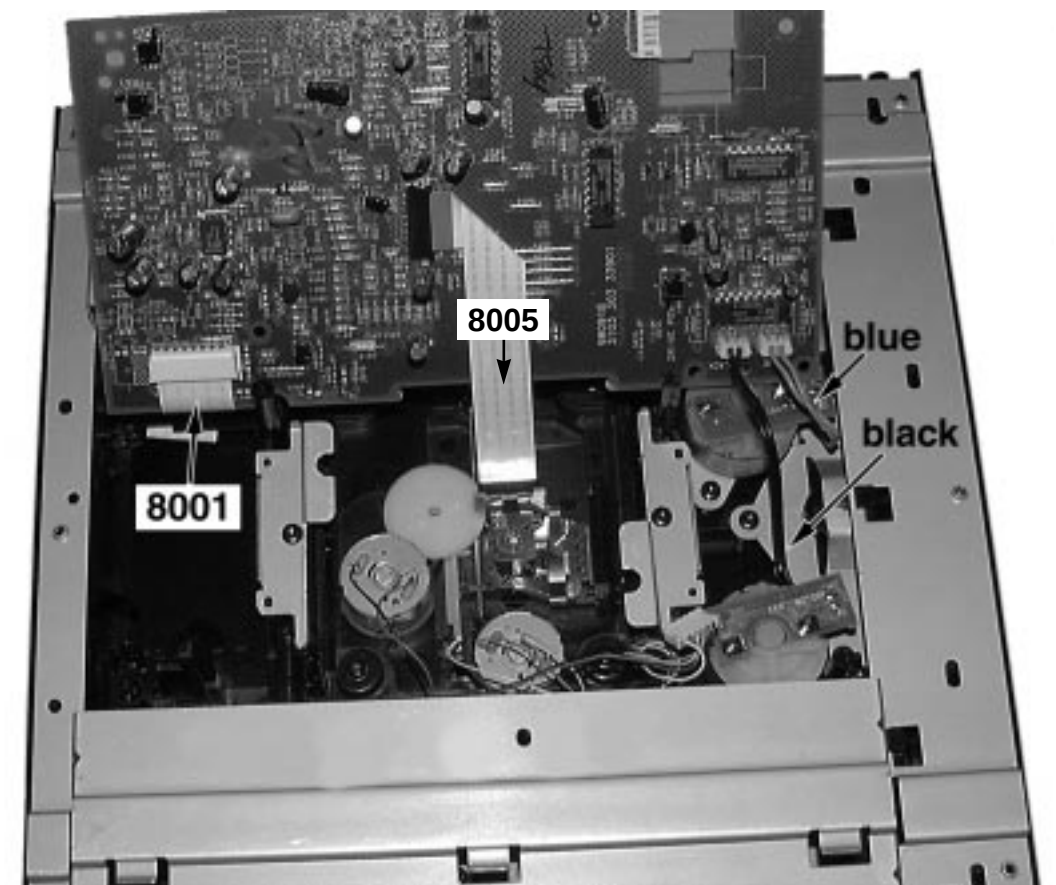


Blockdiagram 3CDC99-DS 2000-02-17

Wiring of CD Drive



Pict. 1



Pict. 2

A



Transistor pinning

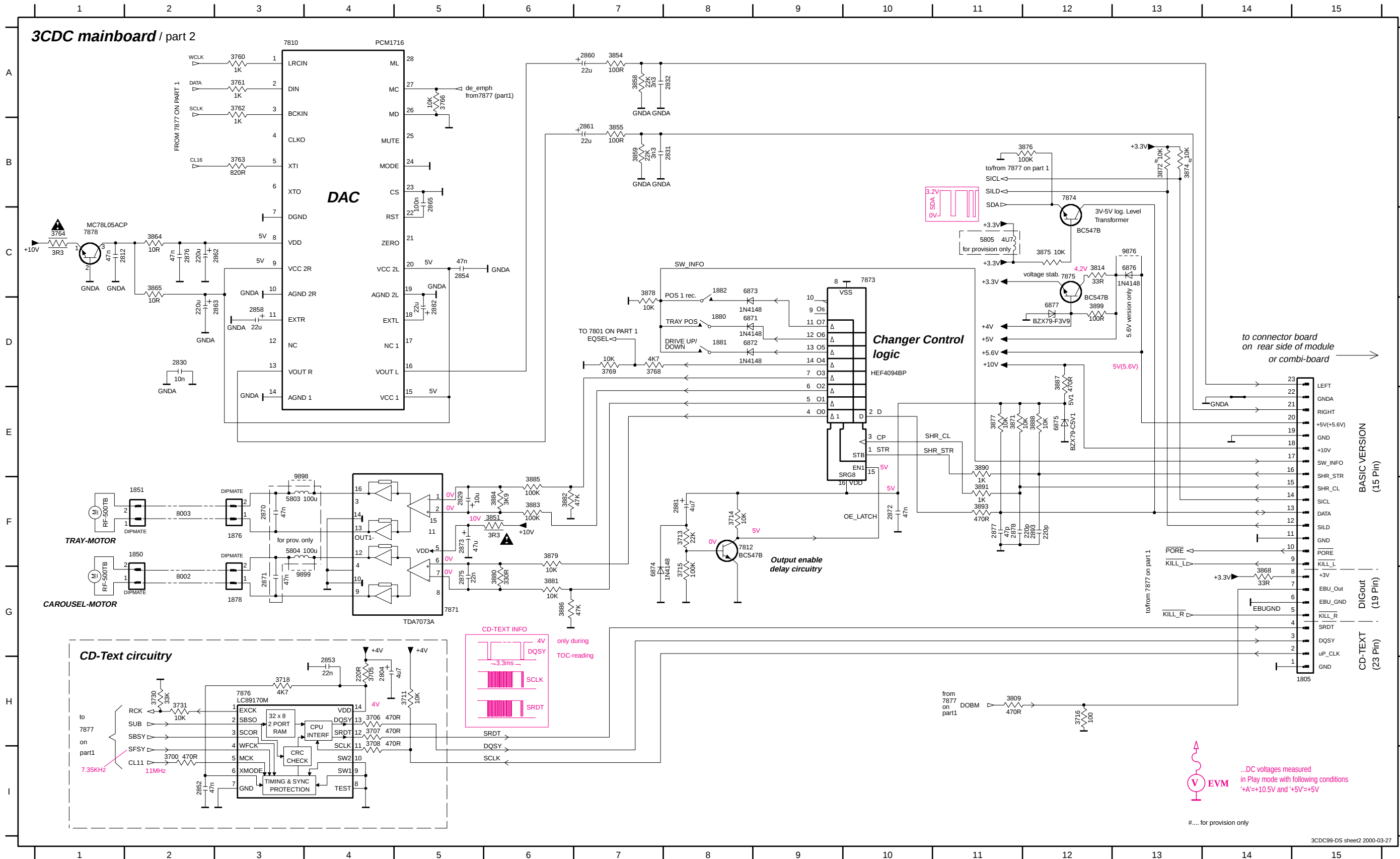
C
B
E

3CDC99

1800	E3	3714	H2	3886	J3
1801	H5	3715	H3	3887	J3
1805	A1	3716	A2	3888	I3
1810	D3	3718	C5	3889	B5
1876	J1	3728	B5	3890	I3
1878	I1	3730	B5	3891	I3
1880	A5	3731	C5	3892	C4
1881	I2	3760	B3	3893	I3
1882	B5	3761	B3	3894	D4
2800	D2	3762	B3	3895	D5
2801	D3	3763	C4	3896	H3
2802	E2	3764	C2	3897	F1
2803	D3	3766	B3	3899	C2
2804	D5	3768	J4	5803	J1
2805	D3	3769	J4	5804	I1
2806	D3	3800	D2	5805	A5
2807	D2	3801	D2	6871	H4
2808	D3	3802	D3	6872	I4
2809	E5	3803	D2	6873	I4
2810	D2	3805	D2	6874	H4
2811	D3	3806	D2	6875	I4
2812	C2	3807	D2	6876	C1
2814	E2	3808	D2	6877	A3
2815	E1	3809	D5	7801	F2
2816	C4	3811	D2	7806	H3
2818	C3	3812	G4	7807	F5
2822	F4	3814	D2	7810	B3
2823	D4	3815	D1	7812	H3
2824	D4	3816	E5	7871	I1
2825	D4	3817	E4	7873	J4
2826	D4	3819	B5	7874	C1
2828	D5	3820	E2	7875	C2
2829	J2	3821	E2	7876	C5
2830	C2	3822	E3	7877	C4
2831	B2	3823	F1	7878	C2
2832	B2	3824	F1	9805	C1
2833	D2	3825	G3	9806	E2
2834	C2	3826	E4	9807	G5
2835	E5	3827	E3	9808	F1
2837	F4	3828	F4	9809	F4
2838	F4	3831	C2	9810	B3
2839	H4	3832	A2	9813	D1
2840	E5	3833	F2	9815	A2
2841	E5	3834	F2	9817	A5
2842	G4	3835	H4	9818	B1
2844	E5	3837	E5	9819	B2
2849	E4	3838	D5	9820	B2
2850	B4	3839	E5	9821	A4
2851	C3	3840	E5	9823	C1
2852	C5	3841	E5	9825	H1
2853	C5	3842	E5	9826	A1
2854	B3	3843	G4	9828	A5
2855	E2	3844	G4	9830	D1
2856	C4	3845	E5	9831	C4
2857	G5	3846	G4	9832	E5
2858	C3	3847	G3	9833	H1
2859	G5	3848	E5	9834	D1
2860	B3	3849	E5	9835	A1
2861	A2	3850	E5	9836	D5
2862	B4	3851	J2	9837	J3
2863	C3	3852	G5	9838	A1
2864	D5	3853	F4	9839	A1
2865	A3	3854	B2	9841	E4
2869	F2	3855	B2	9842	E4
2870	J1	3857	G4	9844	F4
2871	I1	3858	B2	9845	D5
2872	I4	3859	A2	9849	A4
2873	I2	3862	C3	9851	D5
2875	I3	3863	D5	9852	E5
2876	B3	3864	B3	9853	E4
2877	J3	3865	C3	9855	E3
2878	J3	3866	F2	9856	E3
2879	E5	3867	C3	9857	G2
2880	F2	3868	B2	9858	G3
2881	I3	3869	G2	9859	G3
2882	A3	3870	G2	9861	G5
2884	E2	3871	I3	9862	G5
2885	E3	3872	A2	9863	G2
2887	C4	3873	B5	9864	F3
2888	E1	3874	A3	9876	C1
2891	G3	3875	C1	9884	G3
2892	E2	3876	A2	9885	G2
2893	J3	3877	I3	9886	C3
3700	C5	3878			

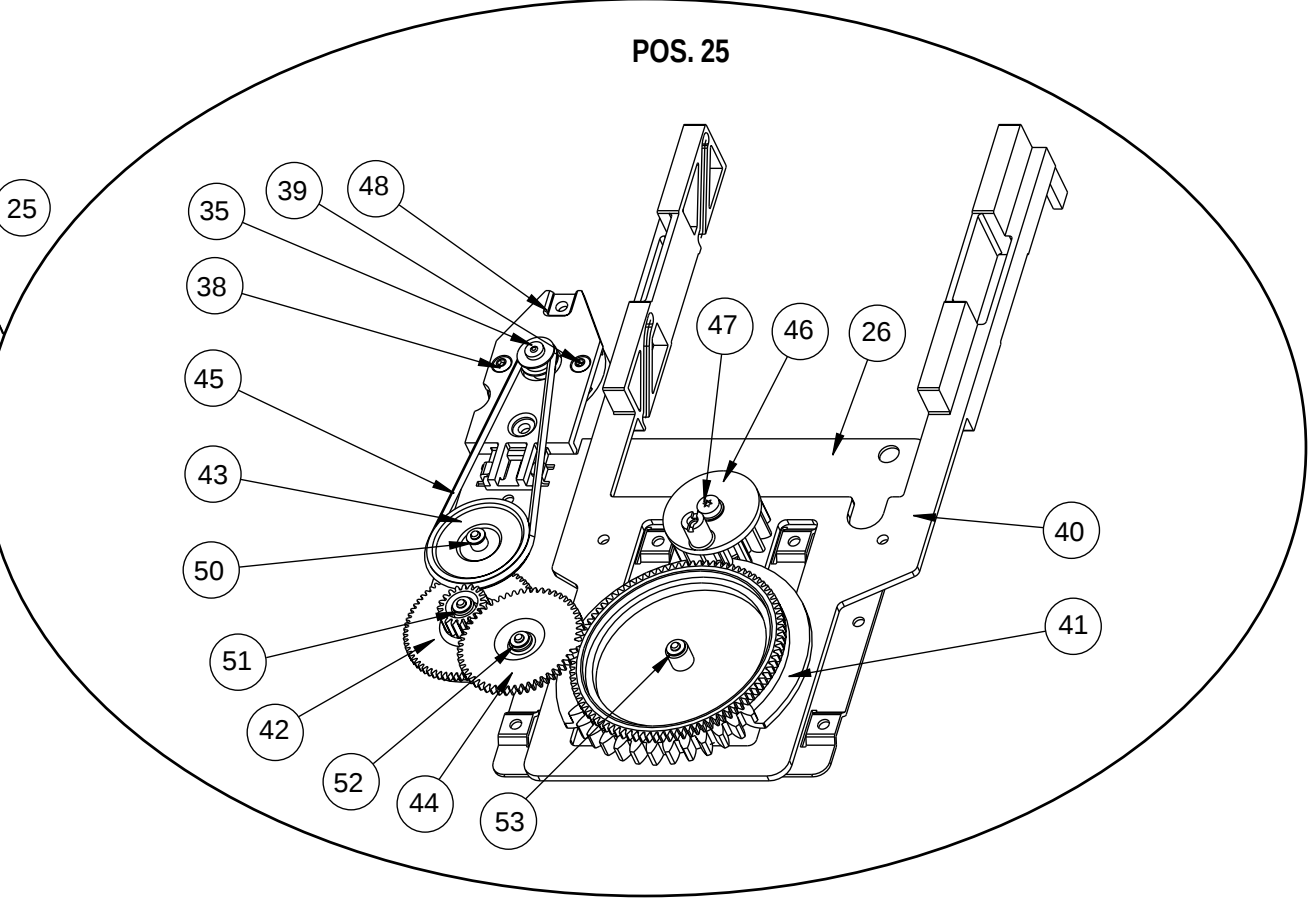
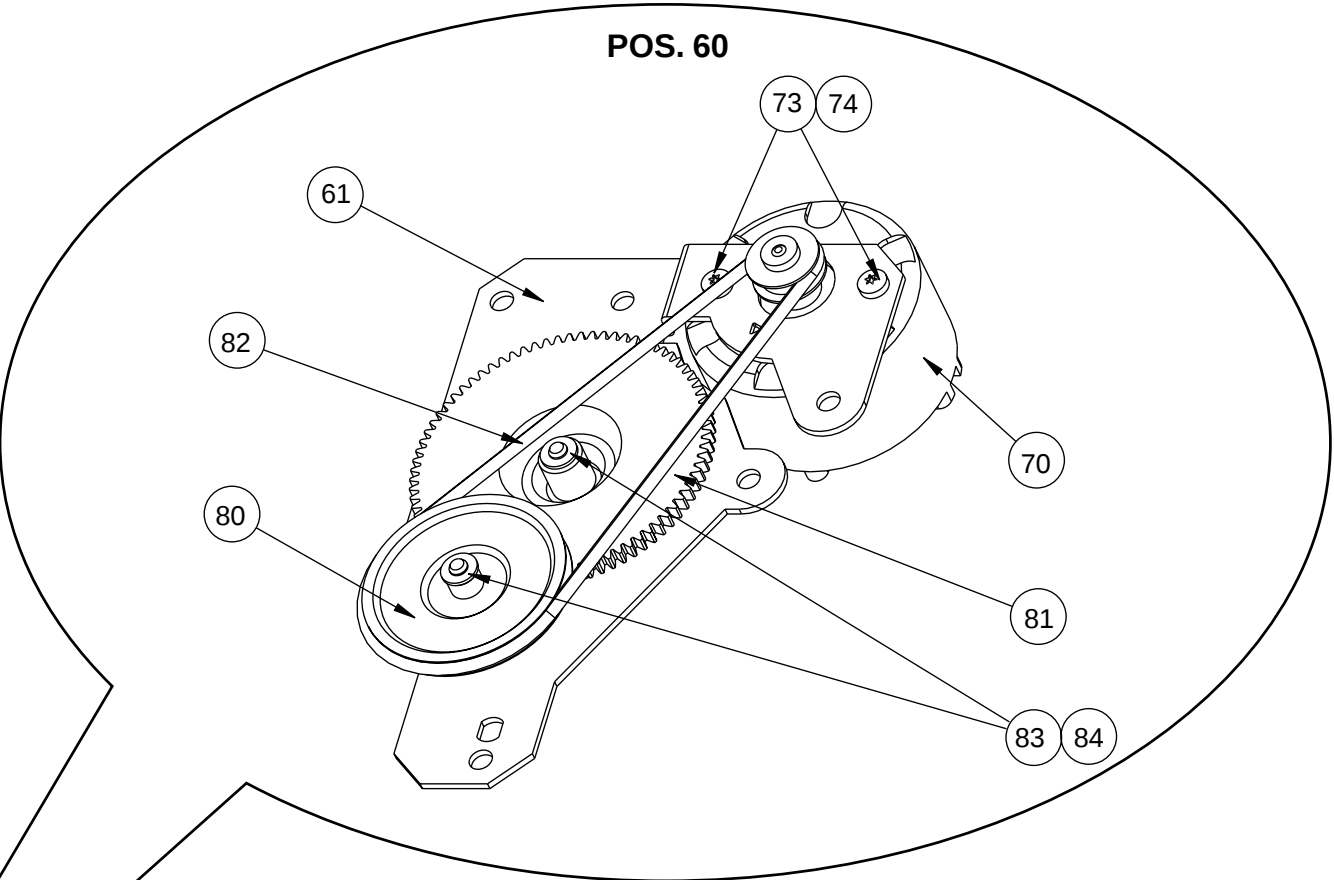
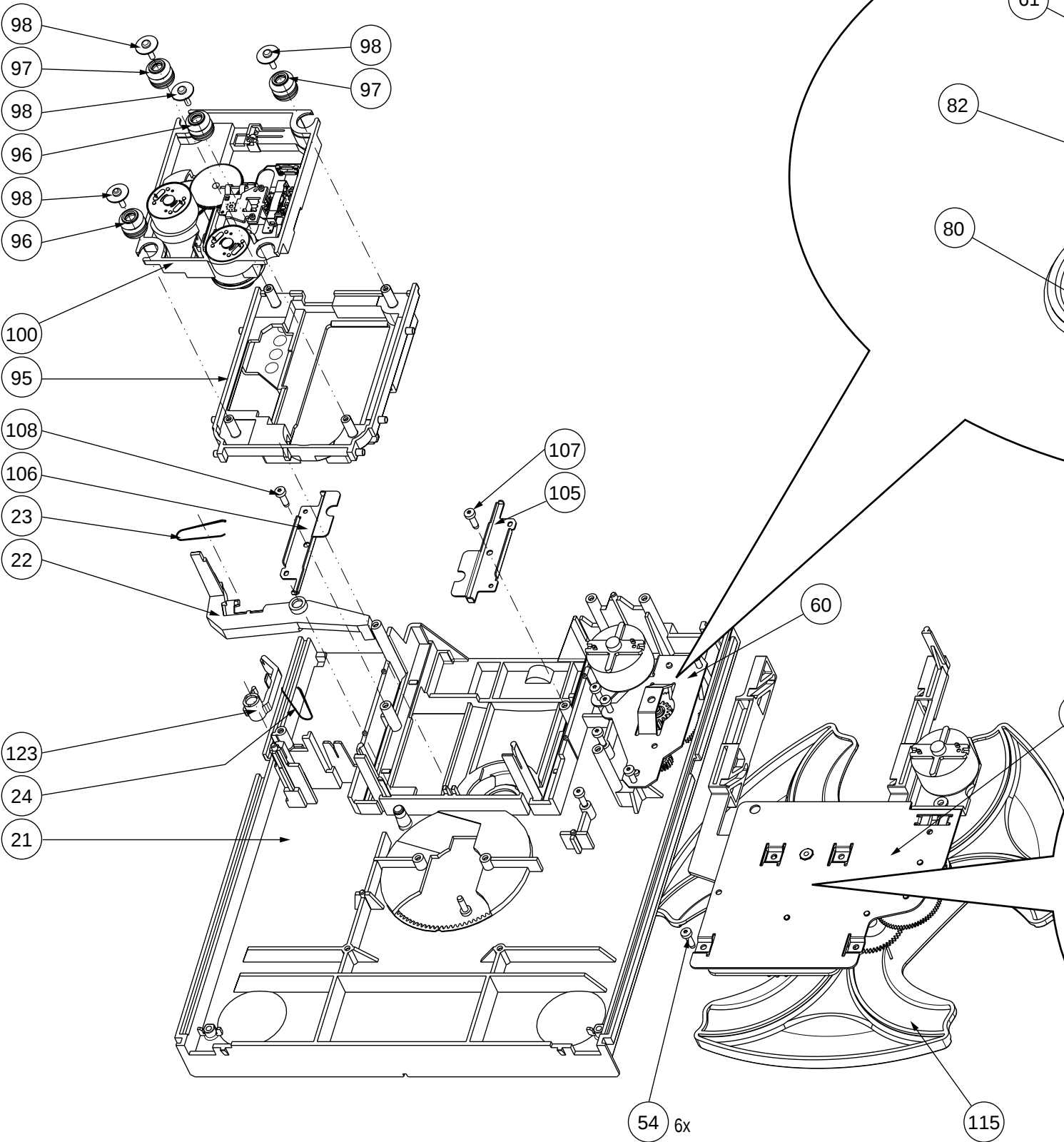
Diagram of a cell with three dots labeled C, B, and E.

1805 H15	2804 H4	2852 I2	2862 C2	2872 F10	2881 F8	3707 H4	3716 H12	3762 A3	3809 H11	3859 B7	3874 B13	3880 G6	3886 G6	3896 G10	6872 D8	7810 A3	7876 H3	9839 C14
1876 F3	2812 C1	2853 H4	2863 D2	2873 F5	2882 D5	3708 H4	3718 H3	3763 B3	3814 C12	3864 C2	3875 C12	3881 G6	3887 D12	3899 D12	6873 C8	7812 F8	7878 C1	9876 C13
1878 G3	2829 F5	2854 C5	2864 H12	2875 G5	2893 F12	3711 H5	3730 H2	3764 C1	3851 F6	3865 C2	3876 B12	3882 F6	3888 E12	5803 F3	6874 G7	7871 G5	9826 H14	9898 E3
1880 D8	2830 D2	2858 D3	2865 B5	2876 C2	3700 I2	3713 F8	3731 H2	3766 A5	3854 A7	3868 G14	3877 E11	3883 F6	3890 E11	5804 F3	6875 E12	7873 C10	9834 F10	9899 G3
1881 D8	2831 B8	2860 A7	2870 F3	2877 F11	3705 H4	3714 F8	3760 A3	3768 D7	3855 B7	3871 E11	3878 C7	3884 F6	3891 F11	5805 C11	6876 C13	7874 B12	9835 G11	
1882 C8	2832 A8	2861 B7	2871 G3	2878 F11	3706 H4	3715 G8	3761 A3	3769 D7	3858 A7	3872 B13	3879 F6	3885 E6	3893 F11	6871 D8	6877 D12	7875 C12	9838 C14	



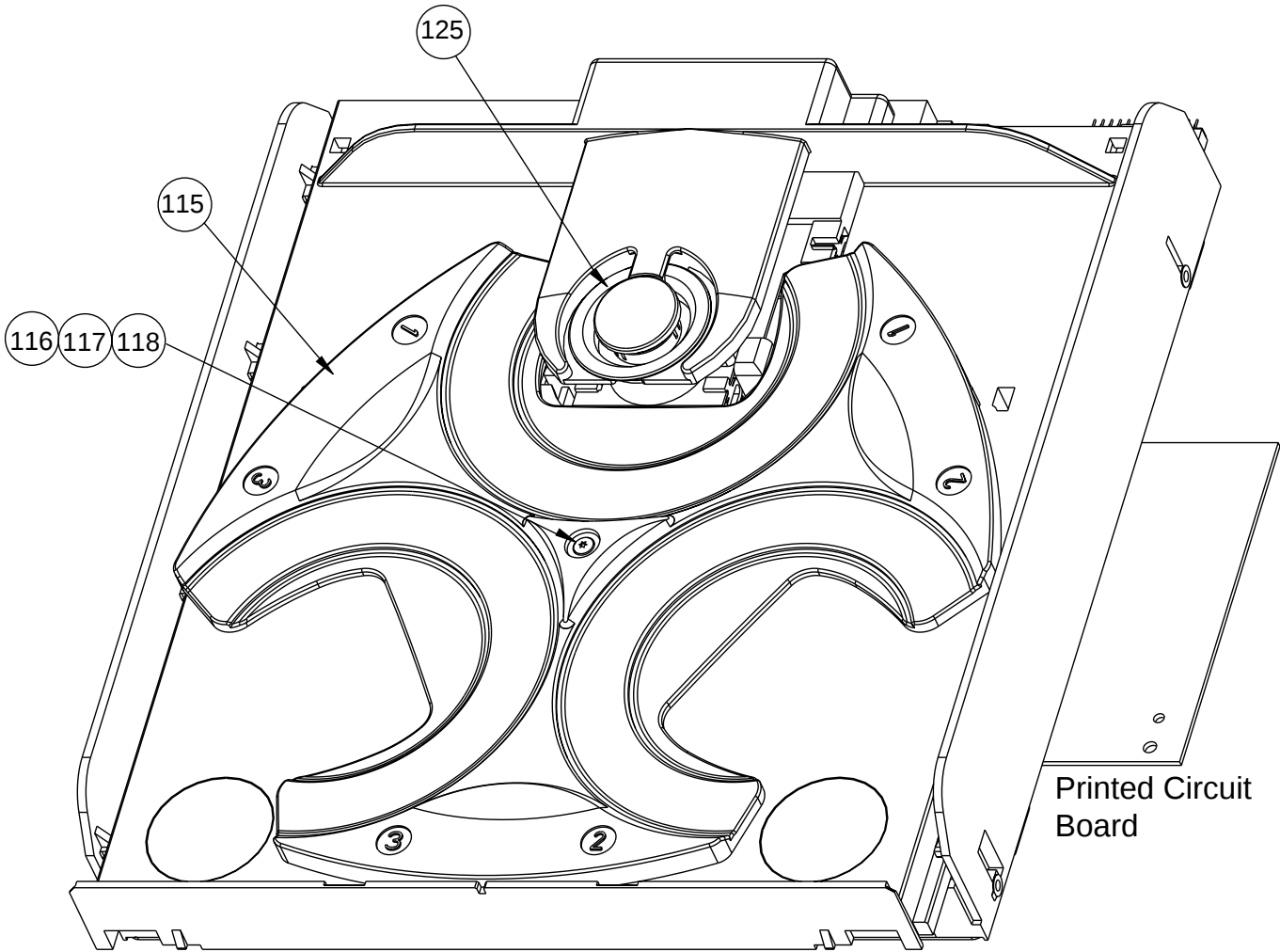
EXPLODED VIEW / 3CDC99-DS

Drawer bottom view

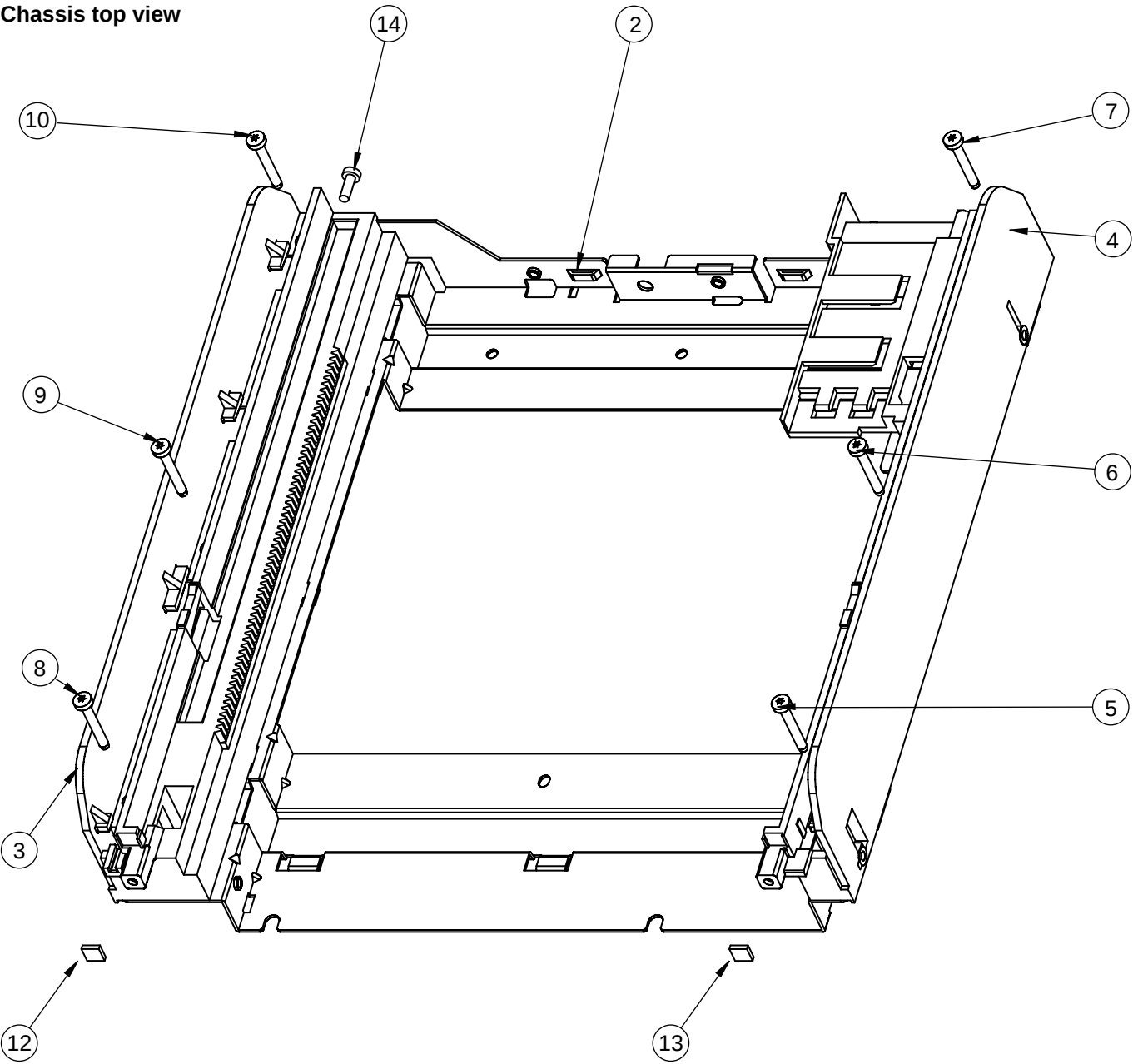


EXPLODED VIEW / 3CDC99-DS

Module top view



Chassis top view



MECHANICAL PARTSLIST 3CDC99-DS MODULE

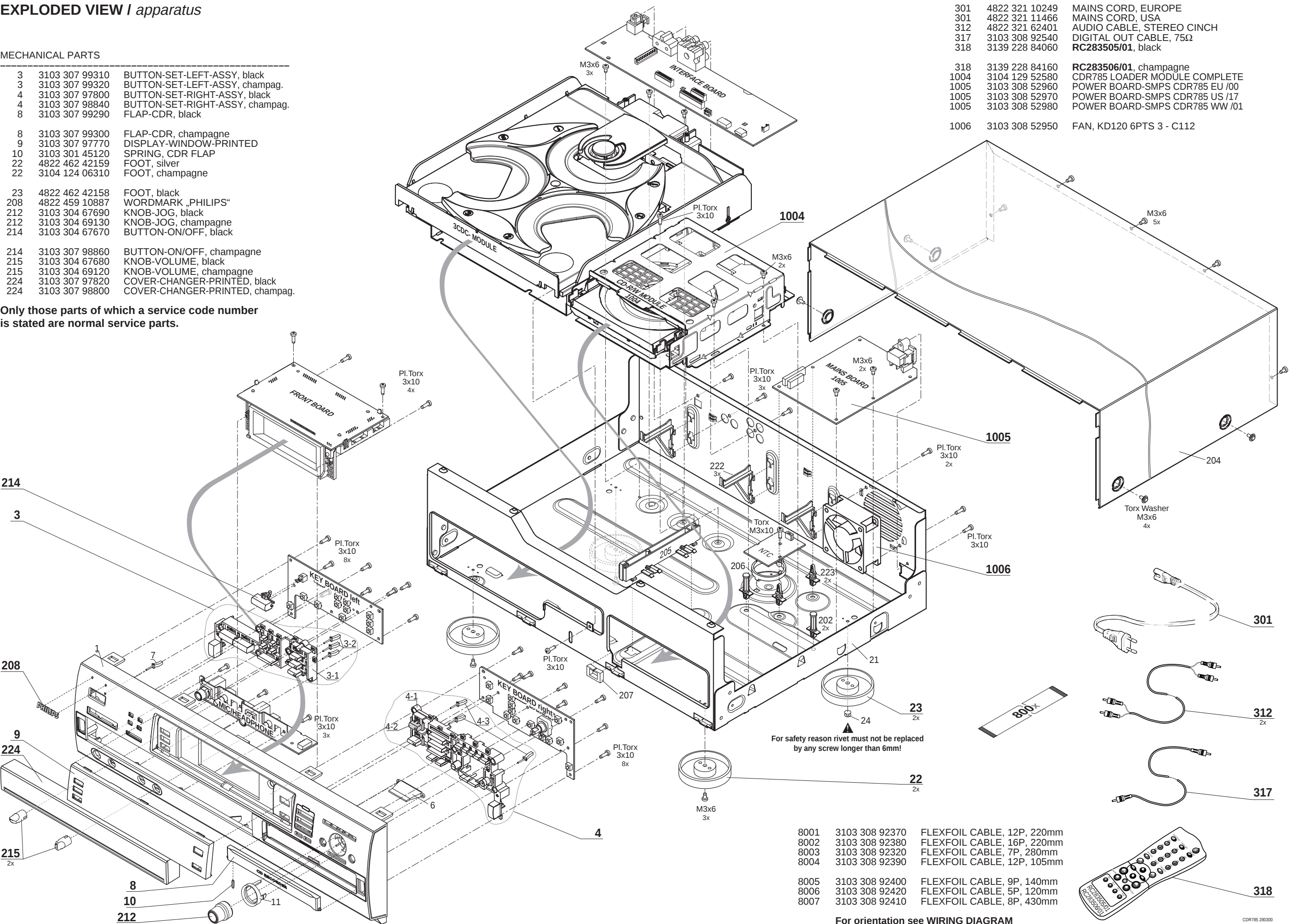
0003	4822 463 11235	GUIDING LEFT	0053	4822 532 12364	WASHER
0004	4822 463 11236	GUIDING RIGHT	0073	4822 502 12548	SCREW M2,6X3,5
0012	4822 466 12146	RUBBER	0074	4822 502 12548	SCREW M2,6X3,5
0013	4822 466 12146	RUBBER	0080	4822 528 10937	PULLEY
0021	4822 418 10403	DRAWER	0081	4822 522 10494	GEAR DRAWER
0022	4822 402 11236	BRACKET TUMBLER	0082	4822 358 10115	BELT
0023	4822 492 11721	SPRING	0083	4822 532 12364	WASHER
0024	4822 492 11721	SPRING	0084	4822 532 12364	WASHER
0038	4822 502 12548	SCREW M2,6x3,5	0095	4822 404 10985	SUPPORT-VAM
0039	4822 502 12548	SCREW M2,6X3,5	0096	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
0040	4822 463 11237	SLIDE	0097	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
0041	4822 522 10509	CONTROL DISC	0100	9305 022 30201	VAM2202/01
0042	4822 522 10492	GEAR WHEEL	0115	4822 466 10736	CAROUSEL
0043	4822 528 10937	PULLEY	0117	4822 532 12365	BUSH DRAWER
0044	4822 522 10493	IDLER WHEEL	0123	4822 402 11237	SWITCH-BRACKET
0045	4822 358 10115	BELT	0125	4822 401 11708	DISC CLAMP VAM DRIVE 3CDC
0046	4822 466 10735	ECCENTRIC GEAR WHEEL			
0050	4822 532 12364	WASHER			
0051	4822 532 12364	WASHER			
0052	4822 532 12364	WASHER			

EXPLODED VIEW / apparatus

MECHANICAL PARTS

3	3103 307 99310	BUTTON-SET-LEFT-ASSY, black
3	3103 307 99320	BUTTON-SET-LEFT-ASSY, champag.
4	3103 307 97800	BUTTON-SET-RIGHT-ASSY, black
4	3103 307 98840	BUTTON-SET-RIGHT-ASSY, champag.
8	3103 307 99290	FLAP-CDR, black
8	3103 307 99300	FLAP-CDR, champagne
9	3103 307 97770	DISPLAY-WINDOW-PRINTED
10	3103 301 45120	SPRING, CDR FLAP
22	4822 462 42159	FOOT, silver
22	3104 124 06310	FOOT, champagne
23	4822 462 42158	FOOT, black
208	4822 459 10887	WORDMARK „PHILIPS“
212	3103 304 67690	KNOB-JOG, black
212	3103 304 69130	KNOB-JOG, champagne
214	3103 304 67670	BUTTON-ON/OFF, black
214	3103 307 98860	BUTTON-ON/OFF, champagne
215	3103 304 67680	KNOB-VOLUME, black
215	3103 304 69120	KNOB-VOLUME, champagne
224	3103 307 97820	COVER-CHANGER-PRINTED, black
224	3103 307 98800	COVER-CHANGER-PRINTED, champag.

Only those parts of which a service code number is stated are normal service parts.



301	4822 321 10249	MAINS CORD, EUROPE
301	4822 321 11466	MAINS CORD, USA
312	4822 321 62401	AUDIO CABLE, STEREO CINCH
317	3103 308 92540	DIGITAL OUT CABLE, 75Ω
318	3139 228 84060	RC283505/01, black
318	3139 228 84160	RC283506/01, champagne
1004	3104 129 52580	CDR785 LOADER MODULE COMPLETE
1005	3103 308 52960	POWER BOARD-SMPS CDR785 EU /00
1005	3103 308 52970	POWER BOARD-SMPS CDR785 US /17
1005	3103 308 52980	POWER BOARD-SMPS CDR785 WW /01
1006	3103 308 52950	FAN, KD120 6PTS 3 - C112

8001	3103 308 92370	FLEXFOIL CABLE, 12P, 220mm
8002	3103 308 92380	FLEXFOIL CABLE, 16P, 220mm
8003	3103 308 92320	FLEXFOIL CABLE, 7P, 280mm
8004	3103 308 92390	FLEXFOIL CABLE, 12P, 105mm
8005	3103 308 92400	FLEXFOIL CABLE, 9P, 140mm
8006	3103 308 92420	FLEXFOIL CABLE, 5P, 120mm
8007	3103 308 92410	FLEXFOIL CABLE, 8P, 430mm

For orientation see WIRING DIAGRAM

ELECTRICAL PARTSLIST FRONT BOARD**MISCELLANEOUS**

1400	4822 267 51453	FFC-CONNECTOR, 12P, SIDE ENTRY
1401	2422 025 14546	FFC-CONNECTOR, 16P, SIDE ENTRY
1402	4822 265 11531	FFC-CONNECTOR, 9P, SIDE ENTRY
1403	4822 267 10956	FFC-CONNECTOR, 7P, SIDE ENTRY
1405	4822 267 51453	FFC-CONNECTOR, 12P, SIDE ENTRY

7404	3103 308 52920	VFD DISPLAY, 15-BT-66GN
7415	4822 218 11573	GP1U28QP, IR-EYE

CAPACITORS

2400 ©	5322 122 32531	100pF	5%	50V
2401 ©	5322 122 32531	100pF	5%	50V
2402 ©	5322 122 32531	100pF	5%	50V
2403 ©	5322 122 32531	100pF	5%	50V
2404 ©	5322 122 32531	100pF	5%	50V

2405 ©	5322 122 32531	100pF	5%	50V
2406 ©	5322 122 32531	100pF	5%	50V
2407 ©	5322 122 32531	100pF	5%	50V
2408 ©	5322 122 32531	100pF	5%	50V
2411 ©	5322 122 32448	10pF	5%	50V

2412 ©	5322 122 32448	10pF	5%	50V
2414 ©	5322 122 31863	330pF	5%	50V
2416 ©	5322 122 31863	330pF	5%	50V
2417 ©	4822 126 13838	100nF	10%	50V
2427 ©	4822 126 13486	15pF	2%	63V

2428 ©	4822 126 13486	15pF	2%	63V
2431 ©	4822 126 14585	100nF	10%	50V
2432	4822 124 40433	47µF	20%	25V
2434	4822 124 41584	100µF	20%	10V
2435	4822 124 41751	47µF	20%	16V

2438 ©	4822 122 33177	10nF	20%	50V
2439	4822 124 40769	4,7µF	20%	100V
2440 ©	4822 126 14585	100nF	10%	50V
2441 ©	4822 122 33127	2,2nF	10%	63V
2442 ©	4822 122 33177	10nF	20%	50V

2443	4822 124 41751	47µF	20%	16V
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RESISTORS

3402 ©	4822 051 20471	470Ω	5%	0,1W
3404 ©	4822 051 20223	22kΩ	5%	0,1W
3405 ©	4822 051 20223	22kΩ	5%	0,1W
3406 ©	4822 051 20223	22kΩ	5%	0,1W
3411	4822 052 10228	2,2Ω	5%	0,33W

3425 ©	4822 051 10102	1kΩ	2%	0,25W
3427	4822 052 10478	4,7Ω	5%	NFR
3428	4822 116 52263	2,7kΩ	5%	0,5W
3441 ©	4822 051 10102	1kΩ	2%	0,25W
3443	4822 050 11002	1kΩ	5%	0,2W

3449 ©	4822 051 10102	1kΩ	2%	0,25W
3451 ©	4822 117 12955	2,7kΩ	1%	0,1W
3452 ©	4822 051 10102	1kΩ	2%	0,25W
3454 ©	4822 051 20471	470Ω	5%	0,1W
3460 ©	4822 051 20471	470Ω	5%	0,1W

3464 ©	4822 051 20471	470Ω	5%	0,1W
3466 ©	4822 051 20471	470Ω	5%	0,1W
3468 ©	4822 051 20471	470Ω	5%	0,1W
3470 ©	4822 051 20332	3,3kΩ	5%	0,1W
3475 ©	4822 051 10102	1kΩ	2%	0,25W

3476 ©	4822 051 20101	100Ω	5%	0,1W
3479 ©	4822 051 20101	100Ω	5%	0,1W
3480 ©	4822 051 10102	1kΩ	2%	0,25W
3482 ©	4822 051 20101	100Ω	5%	0,1W
3483 ©	4822 051 10102	1kΩ	2%	0,25W

3485 ©	4822 051 10102	1kΩ	2%	0,25W
3486 ©	4822 051 20471	470Ω	5%	0,1W
3487 ©	4822 051 10102	1kΩ	2%	0,25W
3488 ©	4822 051 10102	1kΩ	2%	0,25W
3489 ©	4822 051 20471	470Ω	5%	0,1W

RESISTORS

3491	4822 050 11002	1kΩ	5%	0,2W
3492 ©	4822 051 10102	1kΩ	2%	0,25W
3493 ©	4822 051 10102	1kΩ	2%	0,25W
3494 ©	4822 051 10102	1kΩ	2%	0,25W
3495 ©	4822 051 10102	1kΩ	2%	0,25W

3497 ©	4822 051 10102	1kΩ	2%	0,25W
3498 ©	4822 051 10102	1kΩ	2%	0,25W
3499 ©	4822 051 10102	1kΩ	2%	0,25W
3500 ©	4822 051 10102	1kΩ	2%	0,25W
3501 ©	4822 051 10102	1kΩ	2%	0,25W

3502 ©	4822 051 20471	470Ω	5%	0,1W
3503 ©	4822 051 10102	1kΩ	2%	0,25W
3504 ©	4822 051 10102	1kΩ	2%	0,25W
3505 ©	4822 051 10102	1kΩ	2%	0,25W
3506 ©	4822 051 20471	470Ω	5%	0,1W

3507 ©	4822 051 10102	1kΩ	2%	0,25W
3508 ©	4822 051 10102	1kΩ	2%	0,25W
3509 ©	4822 051 20471	470Ω	5%	0,1W
3510	4822 116 83876	270Ω	5%	0,16W
3511	4822 116 83876	270Ω	5%	0,16W

3512	4822 116 83876	270Ω	5%	0,16W
3516	4822 116 83876	270Ω	5%	0,16W
3518	4822 116 83876	270Ω	5%	0,16W
3519	4822 052 10228	2,2Ω	5%	0,33W
3520 ©	4822 051 20101	100Ω	5%	0,1W

3523 ©	4822 051 10102	1kΩ	2%	0,25W
3524 ©	4822 117 11504	270Ω	1%	0,1W
3526 ©	4822 117 10833	10kΩ	1%	0,1W
3527 ©	4822 117 11504	270Ω	1%	0,1W
3528 ©	4822 051 10102	1kΩ	2%	0,25W

3529 ©	4822 117 11504	270Ω	1%	0,1W
3530 ©	4822 117 10833	10kΩ	1%	0,1W
3531 ©	4822 117 10837	100kΩ	1%	0,1W
3533 ©	4822 117 10833	10kΩ	1%	0,1W
3534	4822 052 10479	47Ω	5%	0,3W

3535 ©	4822 051 20471	470Ω	5%	0,1W
3537	4822 050 21003	10kΩ	2%	0,25W
3539 ©	4822 051 10102	1kΩ	2%	0,25W
3540	4822 116 52263	2,7kΩ	5%	0,5W
3545 ©	4822 117 13579	220kΩ	1%	0,1W

4401 ©	4822 051 20008	CHIP JUMPER 0805
4403 ©	4822 051 20008	CHIP JUMPER 0805
4404 ©	4822 051 20008	CHIP JUMPER 0805
4405 ©	4822 051 20008	CHIP JUMPER 0805

COILS

1406	5322 242 73686	CERAMIC RESONATOR, 12MHZ
5407	4822 157 62552	2,2µH

DIODES

6403	3198 010 53380	BZX79-B3V3
6404	4822 130 30621	1N4148
6415	4822 130 30621	1N4148
6416	4822 130 30621	1N4148

TRANSISTORS

7405 ©	4822 130 60511	BC847B
7406 ©	4822 130 60511	BC847B
7407 ©	4822 130 60511	BC847B
7408 ©	4822 130 60511	BC847B
7409 ©	4822 130 60511	BC847B

7414 ©	4822 130 60511	BC847B
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INTEGRATED CIRCUITS

7412 ©	3103 308 84170	TMP88CU77F-CDR785.1, µ-PROC.
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ELECTRICAL PARTSLIST KEY BOARD left**ELECTRICAL PARTSLIST KEY BOARD right****MISCELLANEOUS**

1460	4822 276 13775	TACT SWITCH
1461	4822 276 13775	TACT SWITCH
1462	4822 276 13775	TACT SWITCH
1463	4822 276 13775	TACT SWITCH
1464	4822 276 13775	TACT SWITCH
1465	4822 276 13775	TACT SWITCH
1466	4822 276 13775	TACT SWITCH
1467	4822 276 13775	TACT SWITCH
1468	4822 276 13775	TACT SWITCH
1469	4822 276 13775	TACT SWITCH
1470	4822 276 13775	TACT SWITCH
1480	4822 265 11531	FFC-CONNECTOR, 9P, SIDE ENTRY
1481	2422 128 02929	SWITCH, PUSH

CAPACITORS

2490 ©	5322 122 32531	100pF	5%	50V
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RESISTORS

3589 ©	4822 051 10102	1kΩ	2%	0,25W
3590	4822 116 83868	150Ω	5%	0,5W
3591	4822 116 83872	220Ω	5%	0,5W
3592 ©	4822 117 11504	270Ω	1%	0,1W
3593 ©	4822 051 20391	390Ω	5%	0,1W

3594 ©	4822 051 20561	560Ω	5%	0,1W
3595 ©	4822 117 11454	820Ω	1%	
3596	4822 116 52207	1,2kΩ	5%	0,5W
3597 ©	4822 051 20182	1,8kΩ	5%	0,1W
3598 ©	4822 051 20392	3,9kΩ	5%	0,1W

3599 ©	4822 117 10833	10kΩ	1%	0,1W
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DIODES

6426 ©	9322 147 84685	LGT770-LM, GREEN
6427 ©	9322 147 84685	LGT770-LM, GREEN
6428 ©	9322 147 84685	LGT770-LM, GREEN
6429 ©	9322 147 85685	LST770-KL, RED
6430	4822 130 30621	1N4148

6431	4822 130 30621	1N4148
6432	4822 130 30621	1N4148
6433	4822 130 30621	1N4148

MISCELLANEOUS

1430	4822 267 51453	FFC-CONNECTOR, 12P, SIDE ENTRY
1440	4822 276 13775	TACT SWITCH
1441	4822 276 13775	TACT SWITCH
1442	4822 276 13775	TACT SWITCH
1443	4822 276 13775	TACT SWITCH
1444	4822 276 13775	TACT SWITCH
1445	4822 276 13775	TACT SWITCH
1446	4822 276 13775	TACT SWITCH
1447	4822 276 13775	TACT SWITCH
1448	4822 276 13775	TACT SWITCH

1449	4822 276 13775	TACT SWITCH
1450	4822 276 13775	TACT SWITCH
1451	4822 276 13775	TACT SWITCH
1452	4822 276 13775	TACT SWITCH
1453	4822 276 13775	TACT SWITCH

1454	4822 276 13775	TACT SWITCH
1455	4822 276 13775	TACT SWITCH
1456	4822 276 13775	TACT SWITCH
1457	8203 303 84420	JOG ENCODER

CAPACITORS

2480 ©	5322 122 32531	100pF	5%	50V
2481 ©	5322 122 32531	100pF	5%	50V
2482 ©	4822 122 33177	10nF	20%	50V
2483 ©	4822 122 33177	10nF	20%	50V

RESISTORS

3611 ©	4822 117 11503	220Ω	5%	0,1W
3612 ©	4822 117 11503	220Ω	5%	0,1W
3613 ©	4822 117 11503	220Ω	5%	0,1W
3614 ©	4822 117 10353	150Ω	5%	0,1W
3615 ©	4822 117 10353	150Ω	5%	0,1W

3618 ©	4822 117 10353	150Ω	5%	0,1W
3619 ©	4822 117 11503	220Ω	5%	0,1W
3620 ©	4822 117 11504	270Ω	1%	0,1W
3621 ©	4822 051 20391	390Ω	5%	0,1W
3622 ©	4822 051 20561	560Ω	5%	0,1W

3623 ©	4822 117 11454	820Ω	1%	
3624 ©	4822 051 20122	1,2kΩ	5%	0,1W
3625 ©	4822 051 20182	1,8kΩ	5%	0,1W
3626 ©	4822 051 20392	3,9kΩ	5%	0,1W
3628 ©	4822 117 10353	150Ω	5%	0,1W

3629 ©	4822 117 11503	220Ω	5%	0,1W
3630 ©	4822 117 11504	270Ω	1%	0,1W
3631 ©	4822 051 20391	390Ω	5%	0,1W
3632	4822 116 83883	470Ω	5%	0,16W
3633	4822 116 83883	470Ω	5%	0,16W

3634 ©	4822 117 10833	10kΩ	1%	0,1W
3635 ©	4822 117 10833	10kΩ	1%	0,1W
3636	4822 116 52231	820Ω	5%	0,5W
3637	4822 116 52226	560Ω	5%	0,5W

DIODES

6417	4822 130 30621	1N4148
6418	4822 130 30621	1N4148
6419	4822 130 30621	1N4148
6420 ©	9322 147 85685	LST770-KL, RED
6421 ©	9322 147 84685	LGT770-LM, GREEN

6422 ©	9322 147 85685	LST770-KL, RED
6423 ©	9322 147 83685	LBT776-K1L1, BLUE
6424 ©	9322 147 83685	LBT776-K1L1, BLUE
6425 ©	9322 147 85685	LST770-KL, RED
6435 ©	9322 147 85685	LST770-KL, RED

6436 ©	9322 147 85685	LST770-KL, RED
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ELECTRICAL PARTSLIST HEADPHONE BOARD**MISCELLANEOUS**

1491	4822 267 31453	HEADPHONE SOCKET 6,3mm
1492	4822 267 31453	MICROPHONE SOCKET 6,3mm
1690	4822 265 11535	FFC-CONNECTOR, 8P, SIDE ENTRY

CAPACITORS

2661 ©	4822 122 33891	3,3nF	10%	63V
2662 ©	4822 122 33891	3,3nF	10%	63V
2663	4822 124 40433	47µF	20%	25V
2664	4822 124 40433	47µF	20%	25V
2665 ©	4822 122 33172	390pF	5%	50V
2666 ©	4822 122 33172	390pF	5%	50V
2667	4822 124 40433	47µF	20%	25V
2668	4822 124 40433	47µF	20%	25V
2671 ©	5322 122 34099	470pF	10%	63V
2672 ©	5322 122 34099	470pF	10%	63V
2673	4822 124 12032	4,7µF	20%	50V
2674	4822 124 12032	4,7µF	20%	50V
2680 ©	4822 126 14585	100nF	10%	50V
2681 ©	5322 122 31647	1nF	10%	63V
2682 ©	5322 122 31647	1nF	10%	63V
2683	4822 124 22652	2,2µF	20%	50V
2684	4822 124 22652	2,2µF	20%	50V
2685 ©	4822 122 33891	3,3nF	10%	63V
2686 ©	4822 122 33891	3,3nF	10%	63V
2687 ©	4822 122 33172	390pF	5%	50V
2688 ©	4822 122 33172	390pF	5%	50V
2689	4822 124 21913	1µF	20%	63V
2690	4822 124 21913	1µF	20%	63V
2695	4822 124 40433	47µF	20%	25V
2696	4822 124 81286	47µF	20%	16V
2697 ©	4822 126 14585	100nF	10%	50V

RESISTORS

3661	4822 101 21199	POTMETER 2x10KΩ
3663 ©	4822 051 20229	22Ω 5% 0,1W
3664 ©	4822 051 20229	22Ω 5% 0,1W
3665 ©	4822 051 20101	100Ω 5% 0,1W
3666 ©	4822 051 20101	100Ω 5% 0,1W
3667 ©	4822 117 10833	10kΩ 1% 0,1W
3668 ©	4822 117 10833	10kΩ 1% 0,1W
3669	4822 052 10109	10Ω 5% NFR
3670	4822 052 10688	6,8Ω 5% 0,33W
3671 ©	4822 051 20472	4,7kΩ 5% 0,1W
3672 ©	4822 051 20472	4,7kΩ 5% 0,1W
3673 ©	4822 117 10833	10kΩ 1% 0,1W
3674 ©	4822 117 10833	10kΩ 1% 0,1W
3675 ©	4822 051 10102	1kΩ 2% 0,25W
3676 ©	4822 051 10102	1kΩ 2% 0,25W
3677 ©	4822 051 10102	1kΩ 2% 0,25W
3678 ©	4822 051 10102	1kΩ 2% 0,25W
3681 ©	4822 117 10833	10kΩ 1% 0,1W
3682 ©	4822 117 10833	10kΩ 1% 0,1W
3683 ©	4822 051 20101	100Ω 5% 0,1W
3684 ©	4822 051 20101	100Ω 5% 0,1W
3685 ©	4822 117 11449	2,2kΩ 1% 0,1W
3686 ©	4822 117 11449	2,2kΩ 1% 0,1W
3687 ©	4822 051 20101	100Ω 5% 0,1W
3688 ©	4822 051 20101	100Ω 5% 0,1W
3689 ©	4822 117 10833	10kΩ 1% 0,1W
3690 ©	4822 117 10833	10kΩ 1% 0,1W
3695	4822 101 21199	POTMETER 2x10KΩ
3696	4822 116 83883	470Ω 5% 0,16W
3697	4822 116 83883	470Ω 5% 0,16W

RESISTORS

4601 ©	4822 051 20008	CHIP JUMPER 0805
4603 ©	4822 051 20008	CHIP JUMPER 0805
4604 ©	4822 051 20008	CHIP JUMPER 0805
4605 ©	4822 051 20008	CHIP JUMPER 0805
4606 ©	4822 051 20008	CHIP JUMPER 0805

INTEGRATED CIRCUITS

7650 ©	4822 209 31378	NJM4556M, 2-FOLD OP-AMP.
7680 ©	4822 209 30095	LM833D, 2-FOLD OP-AMP.

ELECTRICAL PARTSLIST *INTERFACE BOARD***MISCELLANEOUS**

1301	4822 267 10732	FFC-CONNECTOR, 12P, TOP ENTRY
1302	2422 025 14526	FFC-CONNECTOR, 16P, TOP ENTRY
1303	4822 267 10757	FFC-CONNECTOR, 23P, TOP ENTRY
1304	4822 265 11535	FFC-CONNECTOR, 8P, SIDE ENTRY
1306	4822 267 10958	FFC-CONNECTOR, 5P, SIDE ENTRY

1311	4822 265 11151	CINCH SOCKET, 4-FOLD
1312	4822 267 31448	CINCH SOCKET, 2-FOLD
6304	4822 218 11487	OPTICAL CONNECTOR, GP1F32R

CAPACITORS

2238 ©	5322 122 32531	100pF	5%	50V
2301 ©	4822 126 14585	100nF	10%	50V
2302 ©	4822 126 14585	100nF	10%	50V
2303	4822 124 21913	1µF	20%	63V
2304 ©	4822 126 14585	100nF	10%	50V

2305 ©	4822 126 14585	100nF	10%	50V
2307	4822 124 40433	47µF	20%	25V
2309 ©	4822 126 14585	100nF	10%	50V
2310 ©	5322 122 31647	1nF	10%	63V
2311 ©	4822 126 14585	100nF	10%	50V

2312 ©	4822 126 14585	100nF	10%	50V
2313 ©	5322 122 33538	150pF	5%	63V
2321 ©	4822 126 14585	100nF	10%	50V
2322 ©	4822 126 14585	100nF	10%	50V
2325 ©	4822 126 14585	100nF	10%	50V

2327 ©	4822 126 13838	100nF	10%	50V
2330 ©	4822 126 14585	100nF	10%	50V
2331	4822 124 40248	10µF	20%	63V
2332	4822 124 40248	10µF	20%	63V
2333	4822 121 42687	3,3nF	10%	63V

2334	4822 121 42687	3,3nF	10%	63V
2335 ©	4822 126 14585	100nF	10%	50V
2340	4822 124 41584	100µF	20%	10V
2350	4822 124 40207	100µF	20%	25V
2351	4822 124 40207	100µF	20%	25V

2352 ©	4822 126 14585	100nF	10%	50V
2353 ©	4822 126 14585	100nF	10%	50V
2354 ©	4822 126 14043	1µF	20%	16V
2355 ©	4822 126 14043	1µF	20%	16V
2361	4822 124 40248	10µF	20%	63V

2362	4822 124 40248	10µF	20%	63V
2365 ©	5322 122 31863	330pF	5%	50V
2366 ©	5322 122 31863	330pF	5%	50V
2367 ©	4822 126 14585	100nF	10%	50V
2368 ©	4822 126 14585	100nF	10%	50V

2371	4822 124 40248	10µF	20%	63V
2372	4822 124 40248	10µF	20%	63V
2373 ©	4822 126 14585	100nF	10%	50V
2375 ©	5322 122 34099	470pF	10%	63V
2376 ©	5322 122 34099	470pF	10%	63V

2377 ©	4822 122 33127	2,2nF	10%	63V
2378 ©	4822 122 33127	2,2nF	10%	63V
2379 ©	4822 126 14585	100nF	10%	50V
2380 ©	4822 126 14585	100nF	10%	50V
2385 ©	4822 126 14585	100nF	10%	50V

2386 ©	4822 126 14585	100nF	10%	50V
2388 ©	5322 122 32531	100pF	5%	50V
2390	4822 124 80791	470µF	20%	16V
2391	4822 124 80791	470µF	20%	16V
2392	4822 124 80791	470µF	20%	16V

2396 ©	5322 116 80853	560pF	5%	63V
2397 ©	4822 122 33575	220pF	5%	50V
2398 ©	4822 122 33575	220pF	5%	50V

CAPACITORS

2399 ©	5322 116 80853	560pF	5%	63V
2400	4822 124 40207	100µF	20%	25V
2401	4822 124 40207	100µF	20%	25V

RESISTORS

2374 ©	4822 117 10361	680Ω	1%	0,1W
3300 ©	4822 117 10833	10kΩ	1%	0,1W
3301 ©	4822 051 10102	1kΩ	2%	0,25W
3302 ©	4822 051 10102	1kΩ	2%	0,25W
3303 ©	4822 117 11503	220Ω	5%	0,1W

3304 ©	4822 051 10102	1kΩ	2%	0,25W
3305 ©	4822 051 20101	100Ω	5%	0,1W
3306 ©	4822 051 20471	470Ω	5%	0,1W
3307 ©	4822 051 20561	560Ω	5%	0,1W
3309 ©	4822 051 10102	1kΩ	2%	0,25W

3311 ©	4822 117 11449	2,2kΩ	1%	0,1W
3312 ©	4822 051 20399	39Ω	5%	0,1W
3313 ©	4822 051 10102	1kΩ	2%	0,25W
3314 ©	4822 051 20479	47Ω	5%	0,1W
3315 ©	4822 051 20479	47Ω	5%	0,1W

3316 ©	4822 117 11503	220Ω	5%	0,1W
3317	4822 116 52195	47Ω	5%	0,5W
3318 ©	4822 117 10833	10kΩ	1%	0,1W
3319 ©	4822 117 10353	150Ω	5%	0,1W
3320 ©	4822 117 10353	150Ω	5%	0,1W

3321 ©	4822 117 11507	6,8kΩ	1%	0,1W
3322 ©	4822 117 11507	6,8kΩ	1%	0,1W
3323 ©	4822 117 11449	2,2kΩ	1%	0,1W
3324 ©	4822 117 11449	2,2kΩ	1%	0,1W
3325 ©	4822 051 20822	8,2kΩ	5%	0,1W

3326 ©	4822 051 20822	8,2kΩ	5%	0,1W
3327 ©	4822 051 20822	8,2kΩ	5%	0,1W
3328 ©	4822 051 20822	8,2kΩ	5%	0,1W
3329 ©	4822 117 11148	56kΩ	1%	0,1W
3330 ©	4822 117 10837	100kΩ	1%	0,1W

3331 ©	4822 051 20332	3,3kΩ	5%	0,1W
3333 ©	4822 051 10102	1kΩ	2%	0,25W
3334 ©	4822 117 10834	47kΩ	1%	0,1W
3335	4822 050 11002	1kΩ	5%	0,2W
3336	4822 050 11002	1kΩ	5%	0,2W

3337 ©	4822 051 20105	1MΩ	5%	0,1W
3338 ©	4822 051 20105	1MΩ	5%	0,1W
3339 ©	4822 051 20332	3,3kΩ	5%	0,1W
3340 ©	4822 116 83933	15kΩ	1%	0,1W
3341 ©	4822 117 10833	10kΩ	1%	0,1W

3342 ©	4822 117 10833	10kΩ	1%	0,1W
3343 ©	4822 117 10834	47kΩ	1%	0,1W
3344 ©	4822 117 10834	47kΩ	1%	0,1W
3345 ©	4822 051 20101	100Ω	5%	0,1W
3346 ©	4822 051 20101	100Ω	5%	0,1W

3347 ©	4822 117 11449	2,2kΩ	1%	0,1W
3348	4822 116 52256	2,2kΩ	5%	0,16W
3349 ©	4822 051 20101	100Ω	5%	0,1W
3350 ©	4822 051 20101	100Ω	5%	0,1W
3351 ©	4822 117 11449	2,2kΩ	1%	0,1W

3352	4822 116 52256	2,2kΩ	5%	0,16W
3353	4822 050 11002	1kΩ	5%	0,2W
3354	4822 050 11002	1kΩ	5%	0,2W
3355 ©	4822 117 10833	10kΩ	1%	0,1W
3356 ©	4822 117 10833	10kΩ	1%	0,1W

3357	4822 050 11002	1kΩ	5%	0,2W
3358	4822 116 83881	390Ω	5%	0,5W
3359	4822 116 52175	100Ω	5%	0,5W
3361 ©	4822 117 10834	47kΩ	1%	0,1W

ELECTRICAL PARTSLIST INTERFACE BOARD**RESISTORS**

3362 ©	4822 117 10834	47kΩ	1%	0,1W
3363	4822 116 52175	100Ω	5%	0,5W
3364	4822 116 83872	220Ω	5%	0,5W
3366 ©	4822 117 10833	10kΩ	1%	0,1W
3367 ©	4822 051 20101	100Ω	5%	0,1W
3369 ©	4822 117 10834	47kΩ	1%	0,1W
3370	4822 052 10229	22Ω	5%	0,33W
3371 ©	4822 051 20101	100Ω	5%	0,1W
3372 ©	4822 051 20101	100Ω	5%	0,1W
3373 ©	4822 117 10353	150Ω	5%	0,1W
3374 ©	4822 051 20101	100Ω	5%	0,1W
3375 ©	4822 117 10833	10kΩ	1%	0,1W
3376 ©	4822 117 10833	10kΩ	1%	0,1W
3377 ©	4822 117 11449	2,2kΩ	1%	0,1W
3378 ©	4822 117 11449	2,2kΩ	1%	0,1W
3379 ©	4822 117 10833	10kΩ	1%	0,1W
3380	4822 050 21003	10kΩ	2%	0,25W
3381	4822 050 21003	10kΩ	2%	0,25W
3383	4822 116 52283	4,7kΩ	5%	0,5W
3384	4822 116 52283	4,7kΩ	5%	0,5W
3385 ©	4822 117 10833	10kΩ	1%	0,1W
3386 ©	4822 117 10833	10kΩ	1%	0,1W
3387 ©	4822 051 10102	1kΩ	2%	0,25W
3388 ©	4822 051 10102	1kΩ	2%	0,25W
3391 ©	4822 051 20105	1MΩ	5%	0,1W
3392 ©	4822 051 20105	1MΩ	5%	0,1W
3393 ©	4822 051 20822	8,2kΩ	5%	0,1W
3394 ©	4822 051 20822	8,2kΩ	5%	0,1W
3395 ©	4822 051 20822	8,2kΩ	5%	0,1W
3396 ©	4822 051 20822	8,2kΩ	5%	0,1W
3397 ©	4822 051 20683	68kΩ	5%	0,1W
3398 ©	4822 117 10833	10kΩ	1%	0,1W
3400 ©	4822 051 20471	470Ω	5%	0,1W
3402 ©	4822 117 10837	100kΩ	1%	0,1W
3406 ©	4822 051 20683	68kΩ	5%	0,1W
3407 ©	4822 117 10837	100kΩ	1%	0,1W
3408 ©	4822 051 20471	470Ω	5%	0,1W
3409 ©	4822 117 10834	47kΩ	1%	0,1W
4303 ©	4822 051 20008	CHIP JUMPER 0805		
4304 ©	4822 051 20008	CHIP JUMPER 0805		
4305 ©	4822 051 20008	CHIP JUMPER 0805		
4307 ©	4822 051 20008	CHIP JUMPER 0805		
4308 ©	4822 051 20008	CHIP JUMPER 0805		
4309 ©	4822 051 20008	CHIP JUMPER 0805		
4310 ©	4822 051 20008	CHIP JUMPER 0805		
4311 ©	4822 051 20008	CHIP JUMPER 0805		
4312 ©	4822 051 20008	CHIP JUMPER 0805		
4314 ©	4822 051 20008	CHIP JUMPER 0805		
4316 ©	4822 051 20008	CHIP JUMPER 0805		
4317 ©	4822 051 20008	CHIP JUMPER 0805		
4318 ©	4822 051 20008	CHIP JUMPER 0805		
4319 ©	4822 051 20008	CHIP JUMPER 0805		
4321 ©	4822 051 20008	CHIP JUMPER 0805		
4323 ©	4822 051 20008	CHIP JUMPER 0805		
4325 ©	4822 051 20008	CHIP JUMPER 0805		
4326 ©	4822 051 20008	CHIP JUMPER 0805		
4327 ©	4822 051 20008	CHIP JUMPER 0805		
4328 ©	4822 051 20008	CHIP JUMPER 0805		

COILS

5301	2422 536 00019	TRANSFORMER, DIGITAL OUT
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DIODES

6325	4822 130 30621	1N4148
6326	4822 130 30621	1N4148
6370	4822 130 30621	1N4148
6371	4822 130 30621	1N4148
6372	4822 130 30621	1N4148

6373	3198 010 53380	BZX79-B3V3
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TRANSISTORS

7325 ©	4822 130 42804	BC817-25
7326 ©	4822 130 42804	BC817-25
7327 ©	4822 130 42804	BC817-25
7328 ©	4822 130 42804	BC817-25
7329 ©	4822 130 60373	BC856B

7330 ©	4822 130 60373	BC856B
7331 ©	4822 130 60373	BC856B
7332 ©	4822 130 60373	BC856B
7340 ©	4822 130 60373	BC856B
7341 ©	4822 130 60511	BC847B

7370 ©	4822 130 60373	BC856B
7371	4822 130 40959	BC547B

INTEGRATED CIRCUITS

7301 ©	4822 209 17235	74LVU04D, 6-FOLD INVERTER
7302	4822 209 10263	HEF4052BP, SELECTOR IC
7303	5322 209 10576	HEF4053BP, SELECTOR IC
7320	4822 209 10263	HEF4052BP, SELECTOR IC
7321	4822 209 10263	HEF4052BP, SELECTOR IC

7322 ©	5322 209 14542	HEF4066BT, 4-FOLD SWITCH
7323 ©	4822 209 30095	LM833D, 2-FOLD OP-AMP.
7324 ©	4822 209 30095	LM833D, 2-FOLD OP-AMP.
7335 ©	4822 209 30095	LM833D, 2-FOLD OP-AMP.
7336 ©	4822 209 30095	LM833D, 2-FOLD OP-AMP.

ELECTRICAL PARTSLIST 3CDC99-DS MODULE**MISCELLANEOUS**

0035	4822 361 10753	CAROUSEL MOTOR
0070	4822 361 10753	TRAY MOTOR
1800	4822 265 10925	FFC-CONNECTOR, 15P
1805	4822 265 11533	FFC-CONNECTOR, 23P
1880	4822 276 13503	SWITCH
1881	4822 276 13503	SWITCH
1882	4822 276 13503	SWITCH
8001	3103 308 92020	FLEXFOIL CABLE, 23P, 420mm
8005	3103 308 91820	FLEXFOIL CABLE, 15P, 95mm

CAPACITORS

2800	4822 126 10053	180pF	10%	50V
2801	4822 122 10466	220pF	10%	50V
2802	4822 126 10053	180pF	10%	50V
2803	4822 122 10466	220pF	10%	50V
2804	4822 124 40769	4,7μF	20%	100V

2805	4822 122 10466	220pF	10%	50V
2806	4822 122 10466	220pF	10%	50V
2807	4822 126 12787	330pF	10%	50V
2808	4822 122 10466	220pF	10%	50V
2809	5322 124 41948	0,47μF	20%	50V

2810	4822 126 10053	180pF	10%	50V
2811	4822 122 10466	220pF	10%	50V
2812	4822 126 12785	47nF	20%	50V
2815	4822 126 13174	33nF	20%	16V
2816	4822 126 12878	1,5nF	10%	16V

2818	4822 126 12878	1,5nF	10%	16V
2822	4822 126 12878	1,5nF	10%	16V
2823	4822 122 33848	47pF	5%	50V
2824	4822 126 12785	47nF	20%	50V
2825	4822 121 51387	10nF	20%	16V

2826	4822 124 80231	47μF	20%	16V
2828	4822 124 40433	47μF	20%	25V
2829	4822 124 21732	10μF	20%	25V
2830	4822 121 51387	10nF	20%	16V
2831	4822 122 10577	3,3nF	10%	16V

2832	4822 122 10577	3,3nF	10%	16V
2833	4822 122 33069	33pF	5%	50V
2834	4822 122 33069	33pF	5%	50V
2835	4822 126 12785	47nF	20%	50V
2837	4822 124 40433	47μF	20%	25V

2838	4822 124 40248	10μF	20%	63V
2839	4822 124 40433	47μF	20%	25V
2840	4822 126 12882	100nF	20%	50V
2841	4822 126 12702	270pF	10%	50V
2842	4822 126 12339	2,2nF	10%	16V

2844	4822 126 12702	270pF	10%	50V
2849	4822 124 40769	4,7μF	20%	100V
2850	4822 122 33197	1nF	10%	50V
2851	4822 124 40433	47μF	20%	25V
2852	4822 126 12785	47nF	20%	50V

2853	4822 126 11585	22nF	20%	50V
2854	4822 126 12785	47nF	20%	50V
2855	4822 122 33519	470pF	10%	50V
2856	4822 122 33848	47pF	5%	50V
2857	4822 121 51387	10nF	20%	16V

2858	4822 124 81151	22μF	20%	50V
2859	4822 121 51387	10nF	20%	16V
2860	4822 124 41596	22μF	20%	50V
2861	4822 124 41596	22μF	20%	50V
2862	4822 124 11912	220μF	20%	6,3V

CAPACITORS

2863	4822 124 11912	220μF	20%	6,3V
2865	4822 126 12882	100nF	20%	50V
2869	4822 126 12785	47nF	20%	50V
2872	4822 126 12785	47nF	20%	50V
2873	4822 124 12233	47μF	20%	25V

2875	4822 126 11585	22nF	20%	50V
2876	4822 126 12785	47nF	20%	50V
2877	4822 122 33848	47pF	5%	50V
2878	4822 122 10466	220pF	10%	50V
2879	4822 126 12785	47nF	20%	50V

2880	4822 126 12882	100nF	20%	50V
2881	4822 124 40769	4,7μF	20%	100V
2882	4822 124 81151	22μF	20%	50V
2884	4822 124 40769	4,7μF	20%	100V
2885	4822 124 40769	4,7μF	20%	100V

2887	4822 126 12882	100nF	20%	50V
2888	4822 124 40769	4,7μF	20%	100V
2891	4822 122 10576	1,8nF	10%	16V
2892	4822 126 11714	4,7nF	20%	16V
2893	4822 122 10466	220pF	10%	50V

RESISTORS

3700	4822 116 83883	470Ω	5%	0,16W
3705	4822 116 83872	220Ω	5%	0,5W
3706	4822 116 83883	470Ω	5%	0,16W
3707	4822 116 83883	470Ω	5%	0,16W
3708	4822 116 83883	470Ω	5%	0,16W

3709	4822 116 52257	22kΩ	5%	0,5W
3711	4822 050 21003	10kΩ	2%	0,25W
3713	4822 116 52257	22kΩ	5%	0,5W
3714	4822 050 21003	10kΩ	2%	0,25W
3715	4822 116 52234	100kΩ	5%	0,5W

3716	4822 116 52175	100Ω	5%	0,5W
3718	4822 116 52283	4,7kΩ	5%	0,5W
3728	4822 116 52283	4,7kΩ	5%	0,5W
3730	4822 050 23303	33kΩ	1%	0,6W
3731	4822 050 21003	10kΩ	2%	0,25W

3760	4822 050 11002	1kΩ	5%	0,2W
3761	4822 050 11002	1kΩ	5%	0,2W
3762	4822 050 11002	1kΩ	5%	0,2W
3763	4822 116 52231	820Ω	5%	0,5W
3764	4822 052 10338	3,3Ω		NFR25

3766	4822 050 21003	10kΩ	2%	0,25W
3768	4822 116 52283	4,7kΩ	5%	0,5W
3769	4822 050 21003	10kΩ	2%	0,25W
3800	4822 116 52291	56kΩ	5%	0,5W
3801	4822 050 21003	10kΩ	2%	0,25W

3802	4822 116 52291	56kΩ	5%	0,5W
3803	4822 050 21003	10kΩ	2%	0,25W
3805	4822 050 21003	10kΩ	2%	0,25W
3806	4822 050 21003	10kΩ	2%	0,25W
3807	4822 050 21003	10kΩ	2%	0,25W

3808	4822 050 21003	10kΩ	2%	0,25W
3809	4822 116 83883	470Ω	5%	0,16W
3811	4822 116 52251	18kΩ	5%	0,5W
3812	4822 053 10228	2,2Ω	5%	1W
3814	4822 116 52191	33Ω	5%	0,5W

3815	4822 052 10478	4,7Ω	5%	NFR
3816	4822 116 83884	47kΩ	5%	0,16W
3817	4822 116 52298	680kΩ	5%	0,5W
3819	4822 116 83883	470Ω	5%	0,16W
3820	4822 116 52289	5,6kΩ	5%	0,16W

ELECTRICAL PARTSLIST 3CDC99-DS MODULE**RESISTORS**

3821	4822 116 52289	5,6kΩ	5%	0,16W
3822	4822 116 52263	2,7kΩ	5%	0,5W
3823	4822 050 11002	1kΩ	5%	0,2W
3824	4822 050 11002	1kΩ	5%	0,2W
3825	4822 050 11002	1kΩ	5%	0,2W
3826	4822 116 52257	22kΩ	5%	0,5W
3827	4822 050 23303	33kΩ	1%	0,6W
3828	4822 116 52257	22kΩ	5%	0,5W
3831	4822 116 52257	22kΩ	5%	0,5W
3832	4822 050 21003	10kΩ	2%	0,25W
3833	4822 116 52257	22kΩ	5%	0,5W
3834	4822 116 52257	22kΩ	5%	0,5W
3835	4822 052 10338	3,3Ω		NFR25
3837	4822 050 11002	1kΩ	5%	0,2W
3838	4822 050 11002	1kΩ	5%	0,2W
3839	4822 116 52234	100kΩ	5%	0,5W
3840	4822 116 52234	100kΩ	5%	0,5W
3841	4822 116 52283	4,7kΩ	5%	0,5W
3842	4822 116 83884	47kΩ	5%	0,16W
3843	4822 050 23303	33kΩ	1%	0,6W
3844	4822 116 52283	4,7kΩ	5%	0,5W
3845	4822 116 83884	47kΩ	5%	0,16W
3846	4822 050 23303	33kΩ	1%	0,6W
3847	4822 116 83961	6,8kΩ	5%	0,16W
3848	4822 116 52234	100kΩ	5%	0,5W
3849	4822 116 52234	100kΩ	5%	0,5W
3850	4822 116 52276	3,9kΩ	5%	0,5W
3851	4822 052 10338	3,3Ω		NFR25
3852	4822 052 10228	2,2Ω	5%	0,33W
3853	4822 116 83883	470Ω	5%	0,16W
3854	4822 116 52175	100Ω	5%	0,5W
3855	4822 116 52175	100Ω	5%	0,5W
3857	4822 116 52191	33Ω	5%	0,5W
3858	4822 116 52257	22kΩ	5%	0,5W
3859	4822 116 52257	22kΩ	5%	0,5W
3862	4822 116 52175	100Ω	5%	0,5W
3863	4822 116 52191	33Ω	5%	0,5W
3864	4822 116 52176	10Ω	5%	0,5W
3865	4822 116 52176	10Ω	5%	0,5W
3866	4822 050 21003	10kΩ	2%	0,25W
3867	4822 116 52206	120Ω	5%	0,5W
3869	4822 050 24708	4,7Ω	1%	0,6W
3870	4822 116 52175	100Ω	5%	0,5W
3871	4822 050 21003	10kΩ	2%	0,25W
3872	4822 050 21003	10kΩ	2%	0,25W
3873	4822 116 83883	470Ω	5%	0,16W
3874	4822 050 21003	10kΩ	2%	0,25W
3875	4822 050 21003	10kΩ	2%	0,25W
3876	4822 116 52234	100kΩ	5%	0,5W
3877	4822 050 21003	10kΩ	2%	0,25W
3878	4822 050 21003	10kΩ	2%	0,25W
3879	4822 050 21003	10kΩ	2%	0,25W
3880	4822 116 52219	330Ω	5%	0,5W
3881	4822 050 21003	10kΩ	2%	0,25W
3882	4822 116 83884	47kΩ	5%	0,16W
3883	4822 116 52234	100kΩ	5%	0,5W
3884	4822 116 52276	3,9kΩ	5%	0,5W
3885	4822 116 52234	100kΩ	5%	0,5W
3886	4822 116 83884	47kΩ	5%	0,16W
3887	4822 116 83883	470Ω	5%	0,16W

RESISTORS

3888	4822 050 21003	10kΩ	2%	0,25W
3889	4822 116 83883	470Ω	5%	0,16W
3890	4822 050 11002	1kΩ	5%	0,2W
3891	4822 050 11002	1kΩ	5%	0,2W
3892	4822 116 83883	470Ω	5%	0,16W
3893	4822 116 83883	470Ω	5%	0,16W
3894	4822 116 52191	33Ω	5%	0,5W
3895	4822 116 52176	10Ω	5%	0,5W
3897	4822 116 52175	100Ω	5%	0,5W
3899	4822 116 52175	100Ω	5%	0,5W

COILS

1810	4822 242 10849	CRYSTAL 8,46MHz
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DIODES

6871	4822 130 30621	1N4148
6872	4822 130 30621	1N4148
6873	4822 130 30621	1N4148
6874	4822 130 30621	1N4148
6875	3198 010 55180	DIO REG BZX79-B5V1
6877	3198 010 53980	DIO REG BZX79-B3V9

TRANSISTORS

7812	4822 130 40959	BC547B
7874	4822 130 40959	BC547B
7875	4822 130 40959	BC547B

INTEGRATED CIRCUITS

7801 ©	4822 209 17286	TZA1024T/N1, HF-AMPLIFIER
7806	9352 628 49112	IC TDA7073A/N4, SERVO DRIVER
7807	9352 628 49112	IC TDA7073A/N4, MOTOR DRIVER
7810 ©	8203 303 11278	PCM1716, D/A CONVERTER
7871	9352 628 49112	IC TDA7073A/N4, MOTOR DRIVER
7873	5322 209 10421	HEF4094BP, SHIFT REGISTER
7876 ©	4822 209 16143	LC89170M, CD TEXT IC
7877 ©	9352 641 80557	SAA7324H/M2B, CD10 SIGNAL PROC.
7878	4822 209 72042	MC78L05ACP, STABILIZER