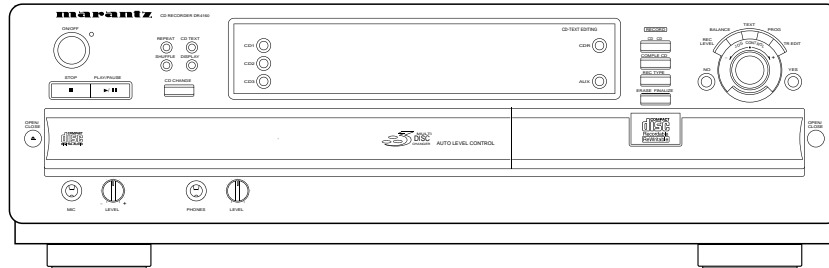


Service Manual

DR4160/F1N, /U1B

CD Recorder

DR4160



SERVICING

For servicing DR4160, 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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Please use this service manual with referring to the user guide (D.F.U) without fail.
 修理の際は、必ず取り扱い説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

DR4160

TECHNICAL SPECIFICATION

General:

Mains voltage	:	120V / 60Hz for DR4160/U1B 100V / 50-60Hz for DR4160/F1N
Power consumption	:	≤ 16W ≤ 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 **RC283521**

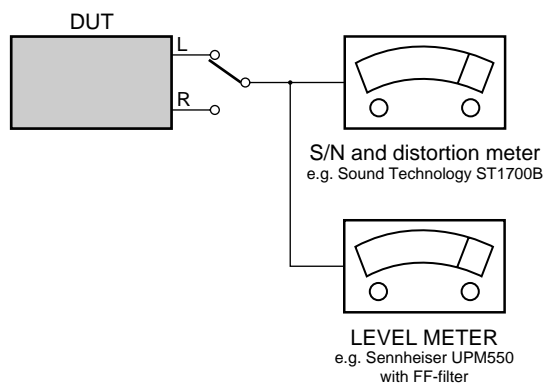
RC KEY	SYSTEM CODE		COMMAND CODE
	CD	CDR	
⏻ Standby	20	26	12
BRIGHTNESS	20	26	71
TRACK INCR.	-	26	114
CD TEXT	20	26	88
1	20	26	01
2	20	26	02
3	20	26	03
4	20	26	04
5	20	26	05
6	20	26	06
7	20	26	07
8	20	26	08
9	20	26	09
TEXT EDIT	20	26	82
0	20	26	00
PROGRAM	20	26	36
NO	20	26	49
YES	20	26	87
▶ PLAY	20	26	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

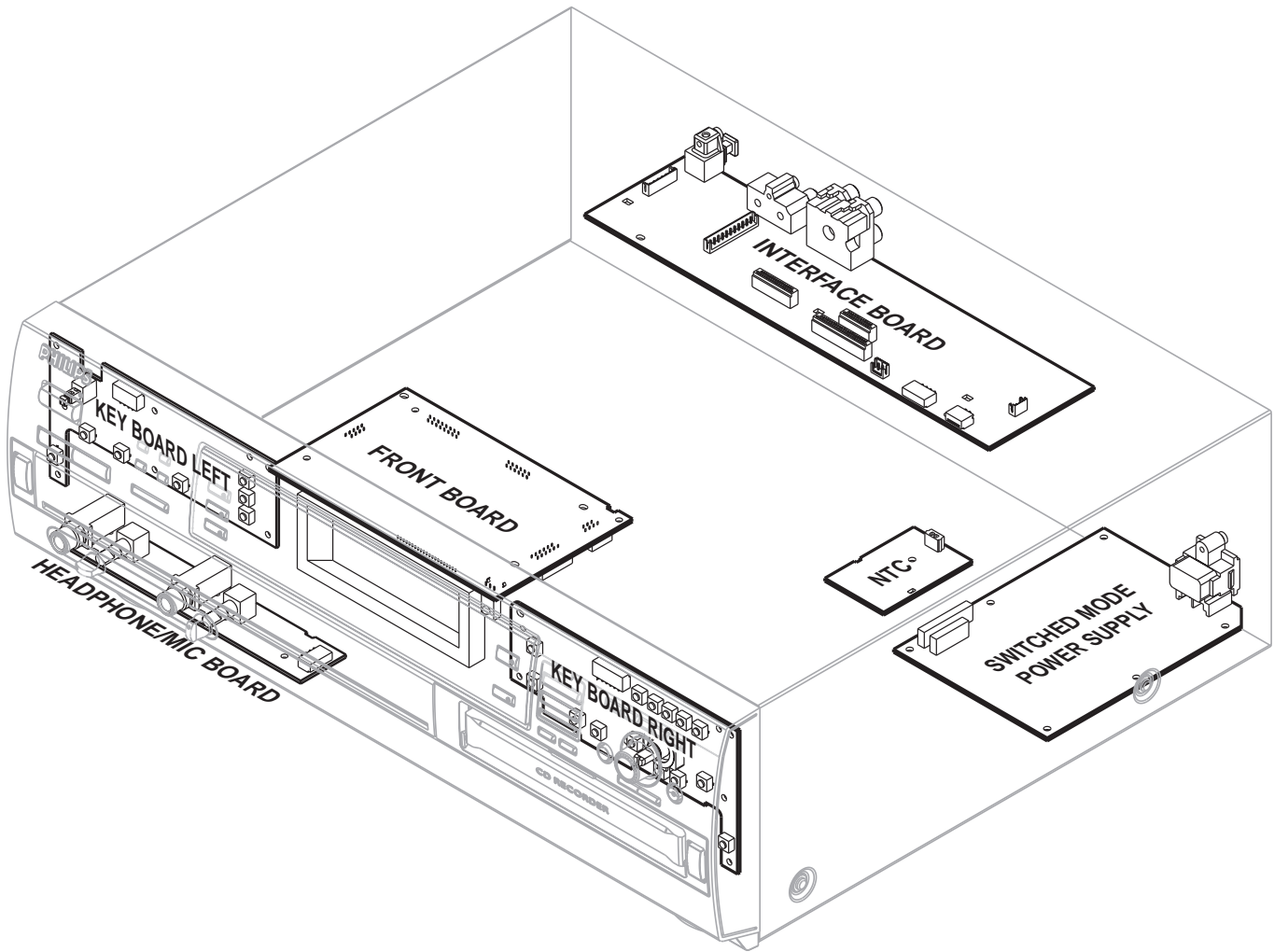
RC5 code RC283505, 130300

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 braceleterti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.



(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
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.

(NL) WAARSCHUWING

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

(I) AVVERTIMENTO

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

(GB) 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 markiert.

(NL)

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

(I)

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

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



(S) Varning !

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

(DK) Advarsel !

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

(FIN) Varoitus !

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

(GB)

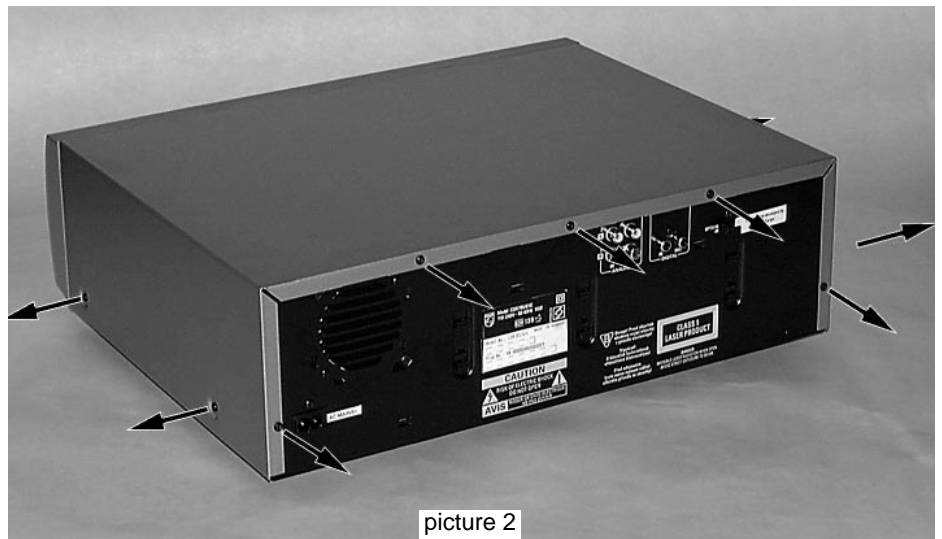
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)

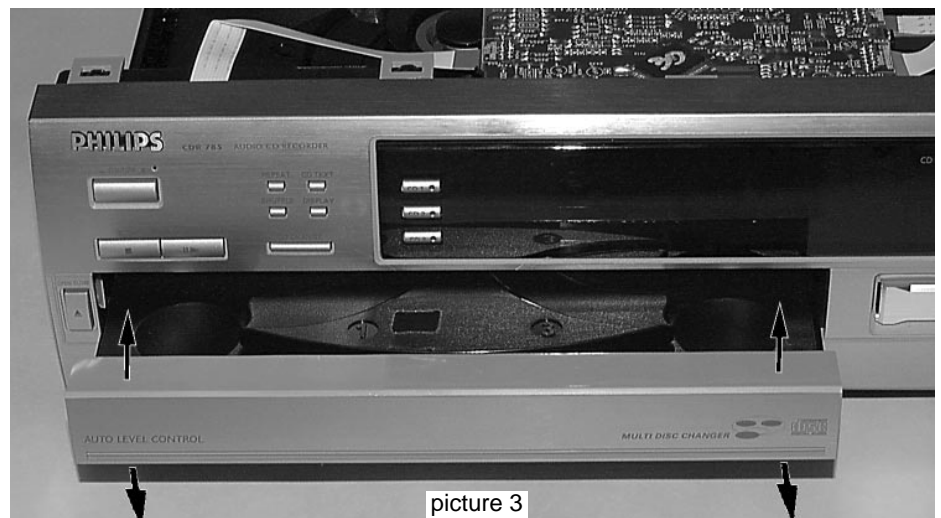
"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

Dismantling the *Top Cover*

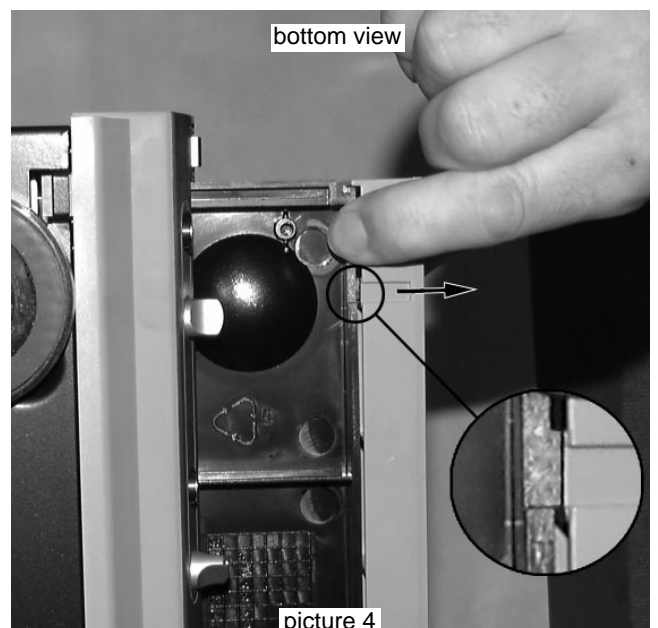
- Remove 9 screws as shown in picture 2.
- Raise top cover at the rear and pull it backwards.



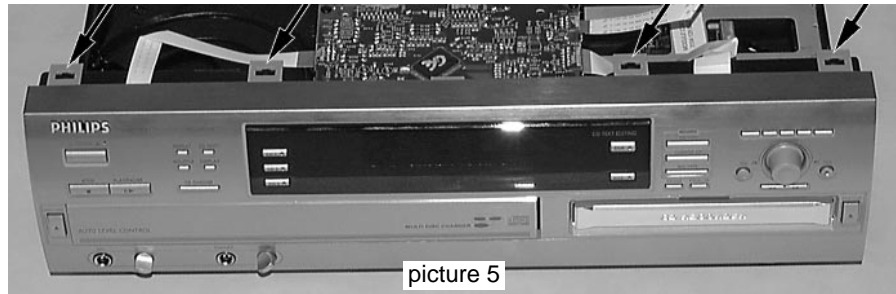
Dismantling the *Tray Cover*



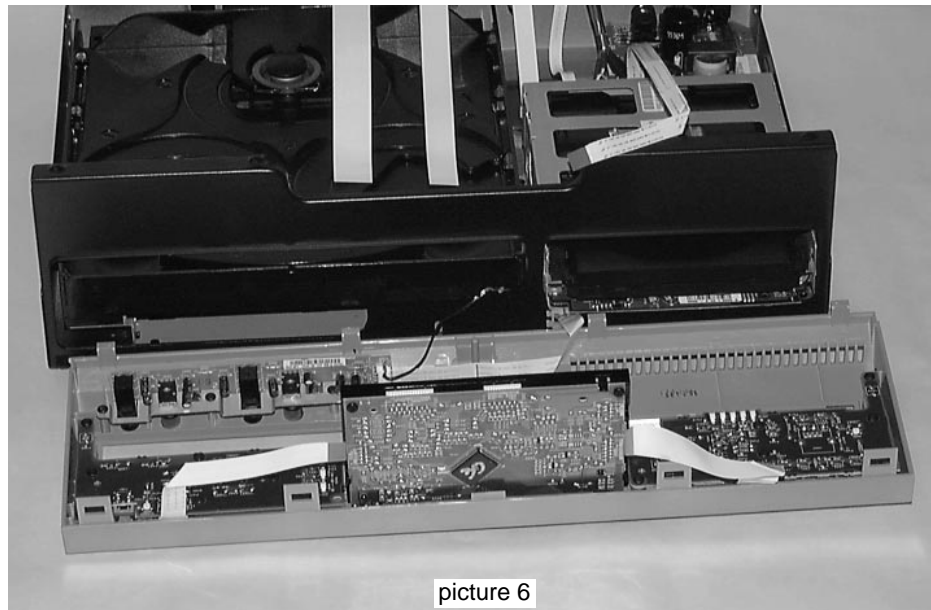
- To release the cover from the catch on the tray pull it frontwards on bottom side as shown in picture 4.
- Pull the cover up.



Dismantling the *Front Cabinet*



- 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.



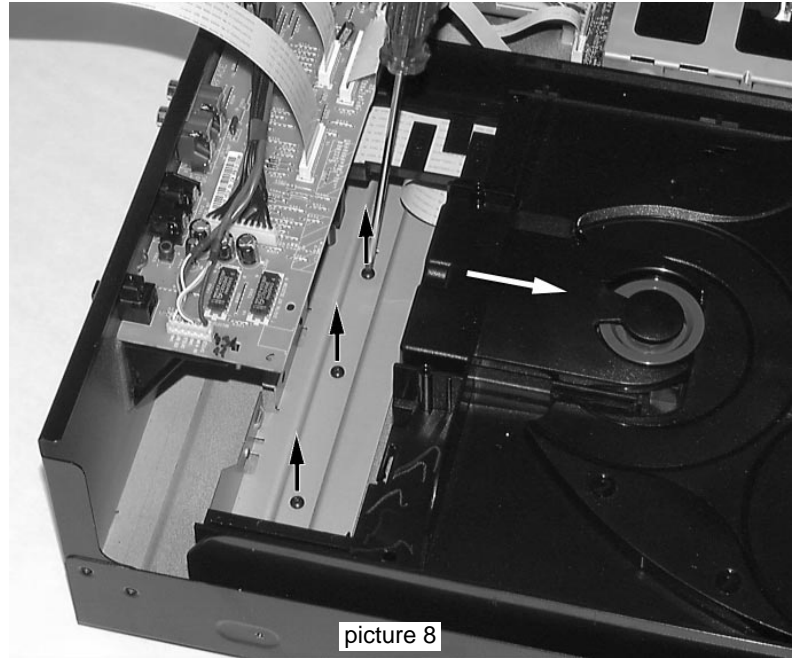
Dismantling the *3CDC module*

- Remove 2 screws on front side first → see pictures 7.

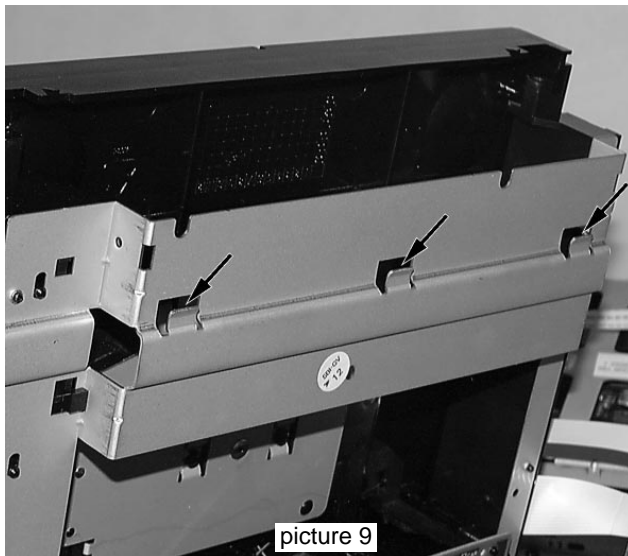


Dismantling the *CDC* module continued

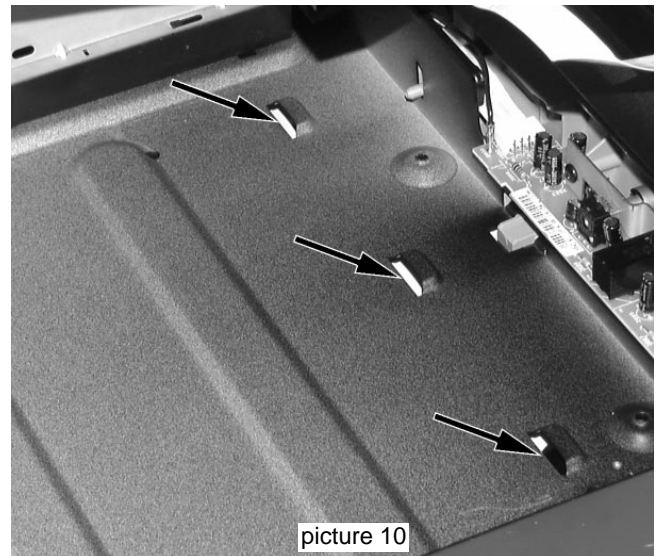
- Dismantle front cabinet as described before.
- Move the tray a few centimetres out to get access to the fastening screws at the rear.
- Remove the 3 screws as shown in picture 8.
- Put the tray back and move the complete module backwards to release catches on bottom cabinet.
→ for orientation see picture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



picture 8

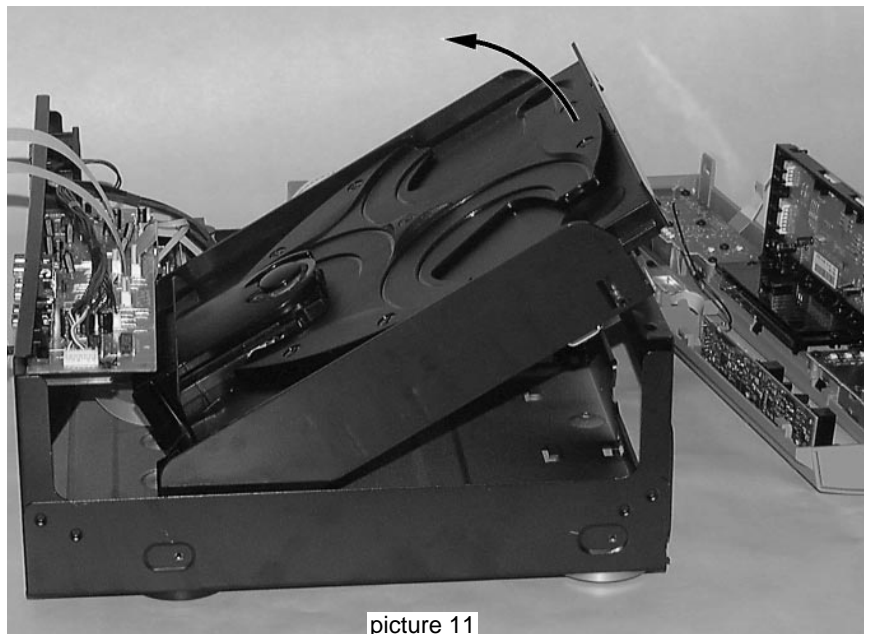


picture 9



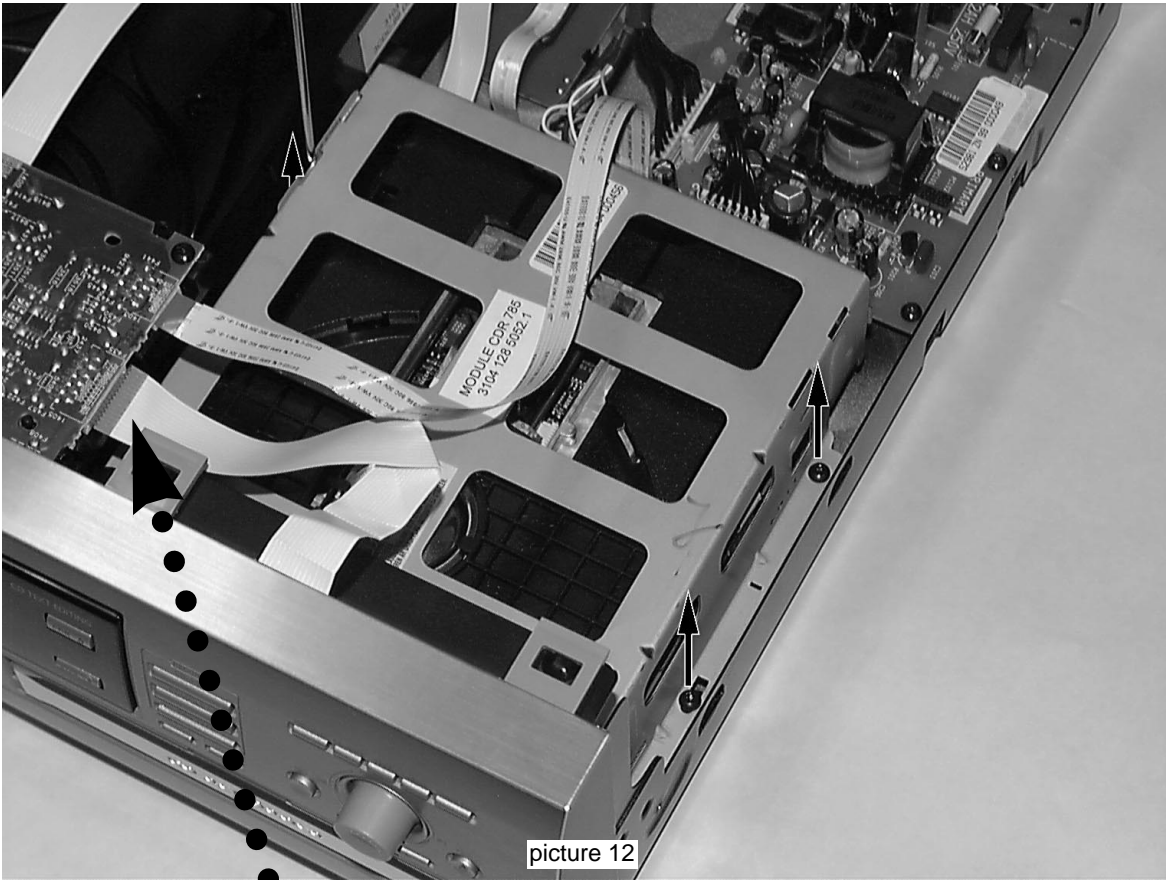
picture 10

- Pull the module on front side up and turn it out as shown in picture 11.
- 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.

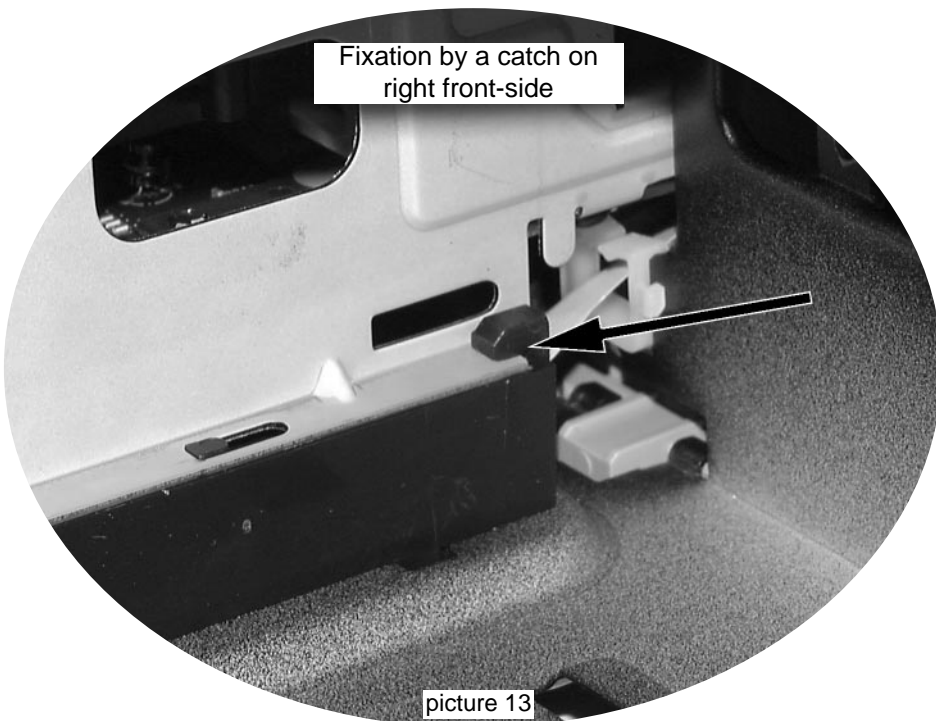


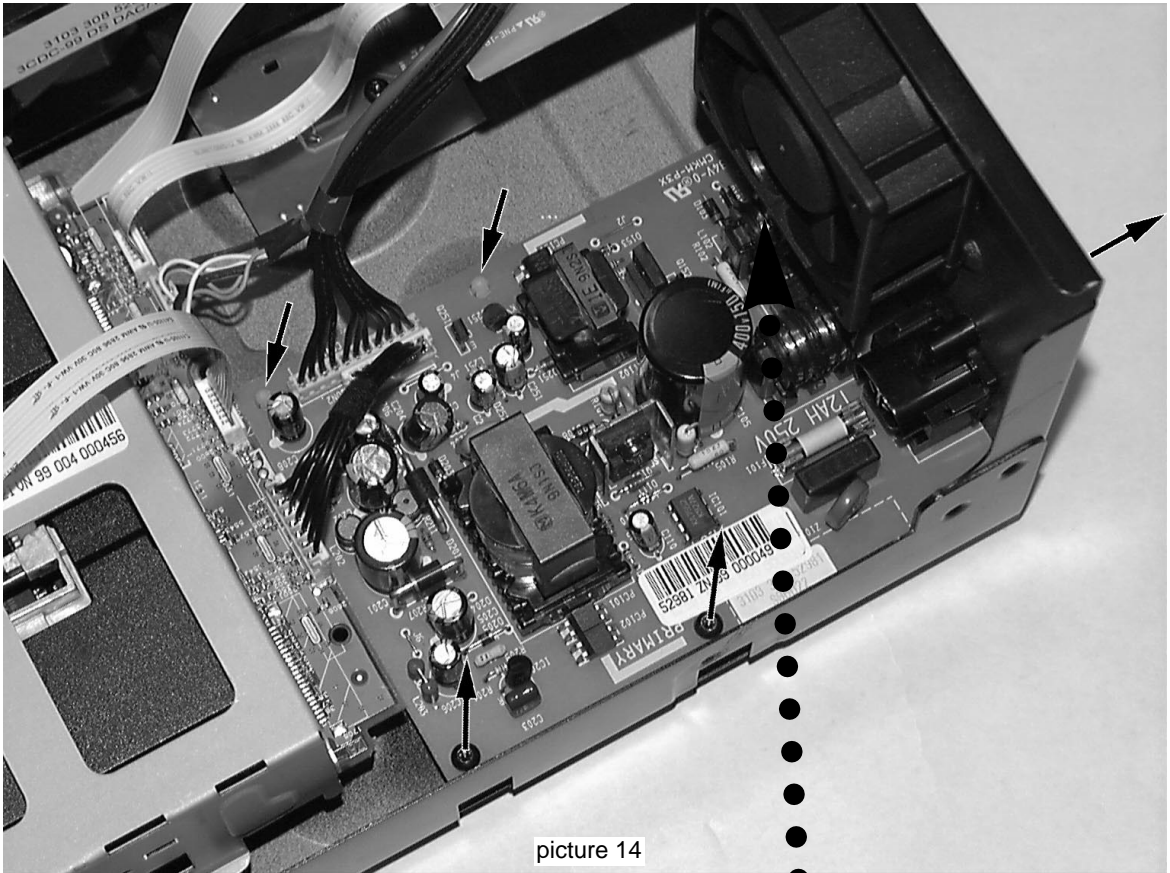
picture 11

Dismantling the *CDR module*



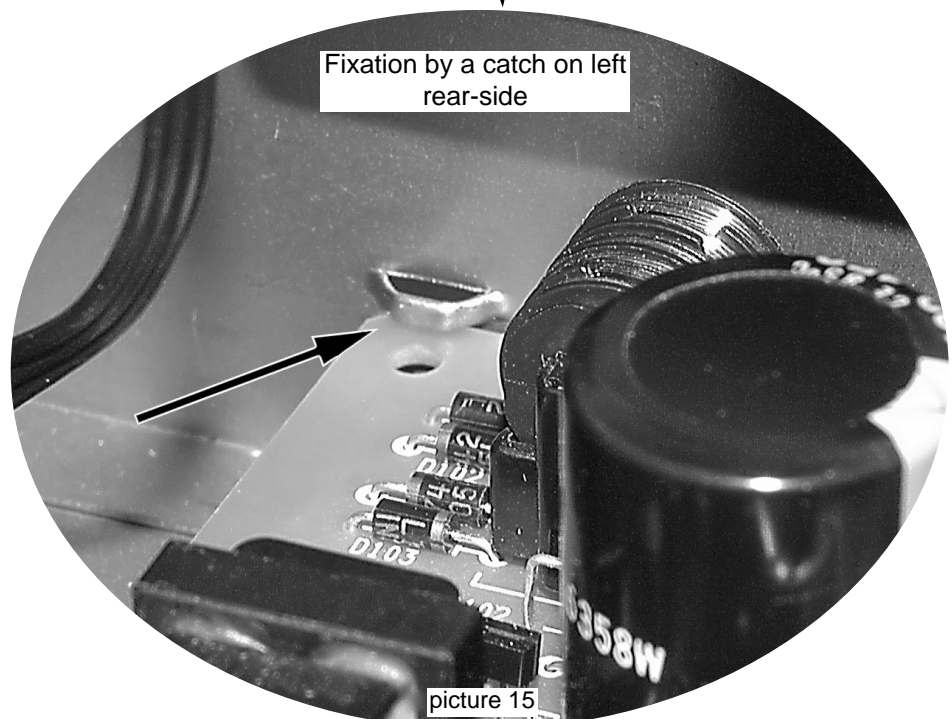
- Remove 3 screws as as indicated in picture 12.
- Disconnect all cables.
- Move the module backwards to release the catch on pos. 205 (see exploded view)
- Raise the module on the rear and turn it out.



Dismantling the *Power board*

picture 14

- 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



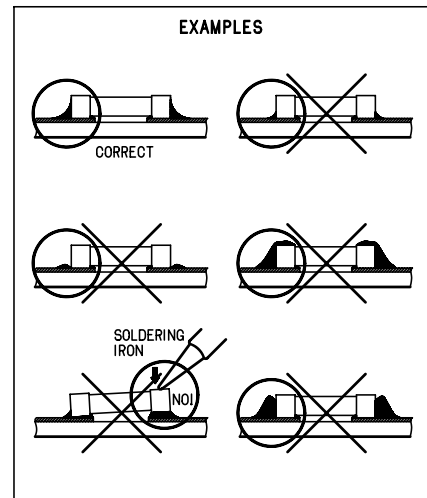
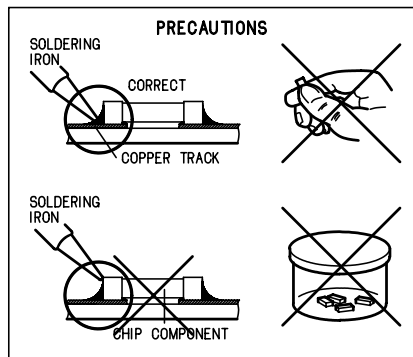
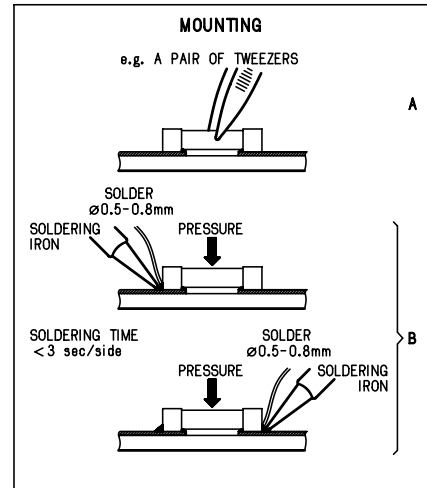
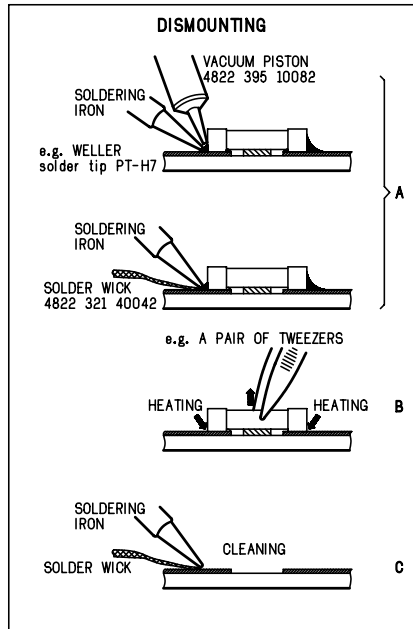
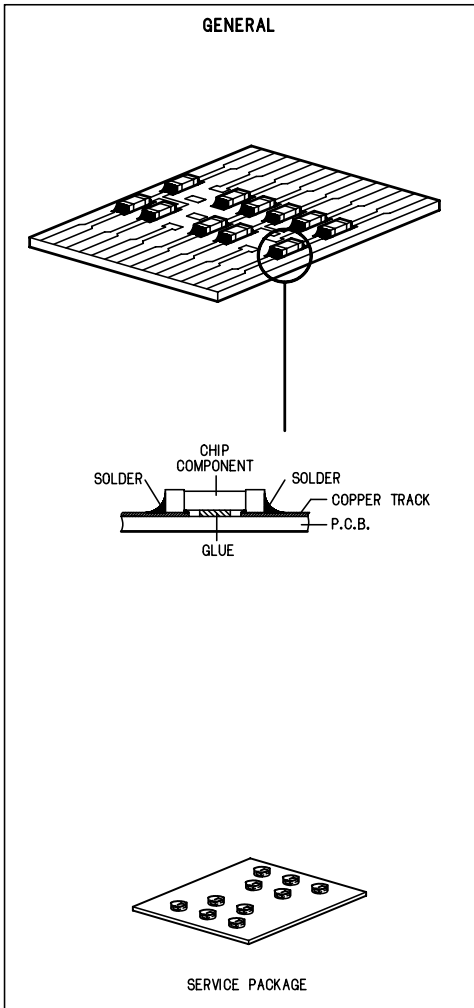
Fixation by a catch on left rear-side

picture 15

SERVICE TOOLS

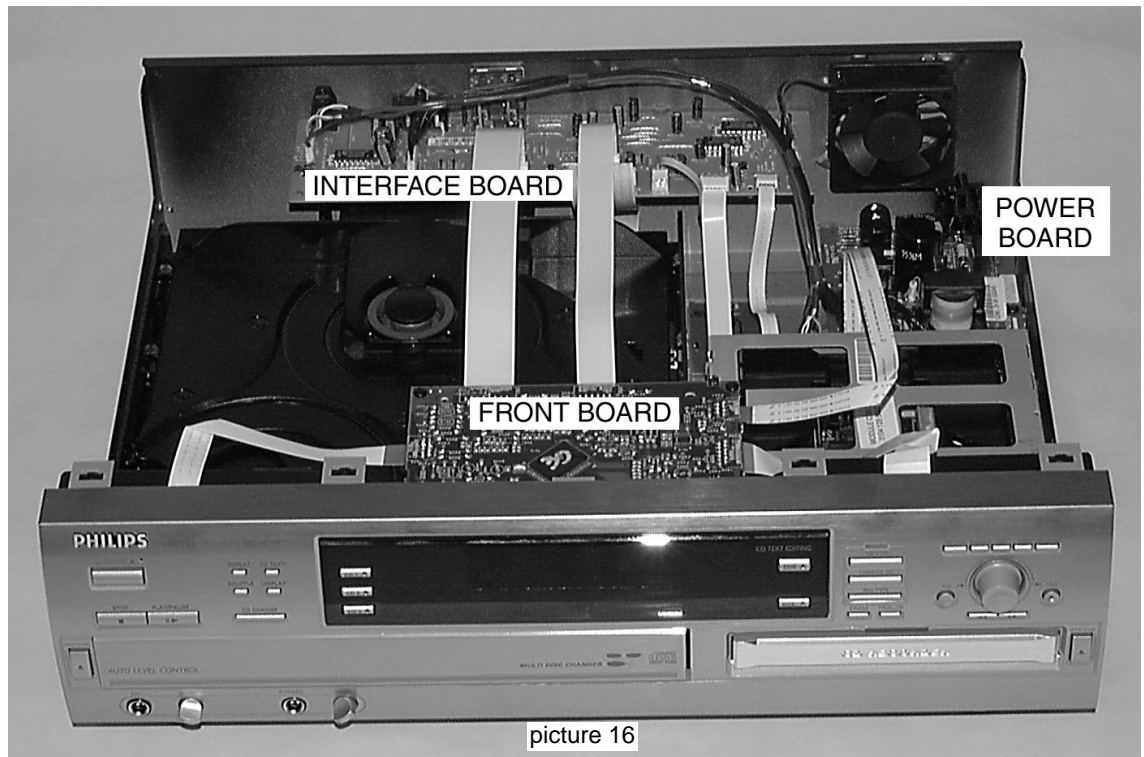
TORX T10 screwdriver with shaftlength 150mm	4822 395 50423
TORX screwdriver set SBC 163	4822 295 50145
Audio signal disc SBC 429	4822 397 30184
Playability test disc SBC444	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A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

HANDLING CHIP COMPONENTS



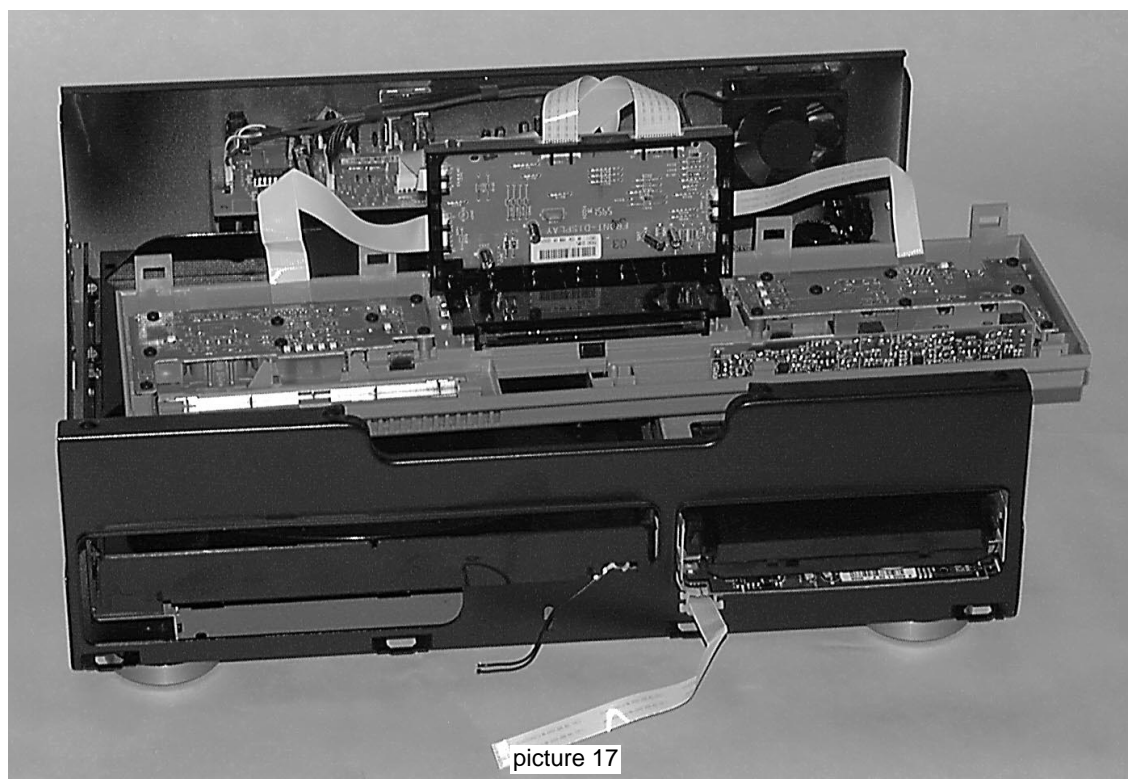
General Service position

For repairs on: Front Board
Power Board
Interface Board



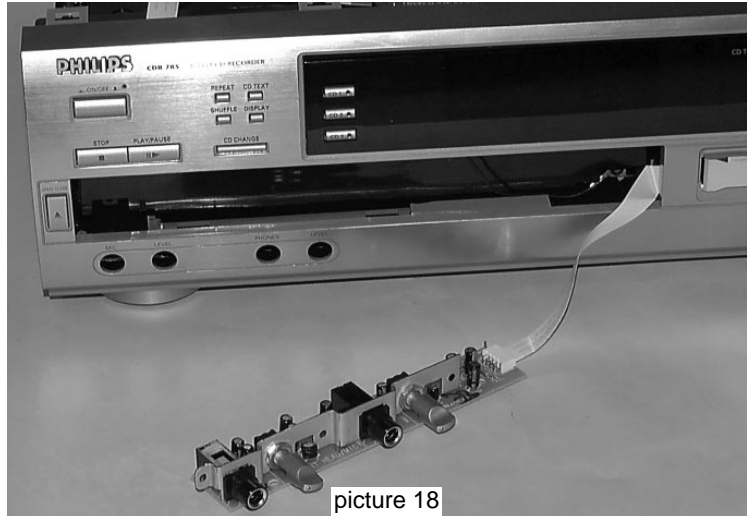
Service position Key Boards

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.



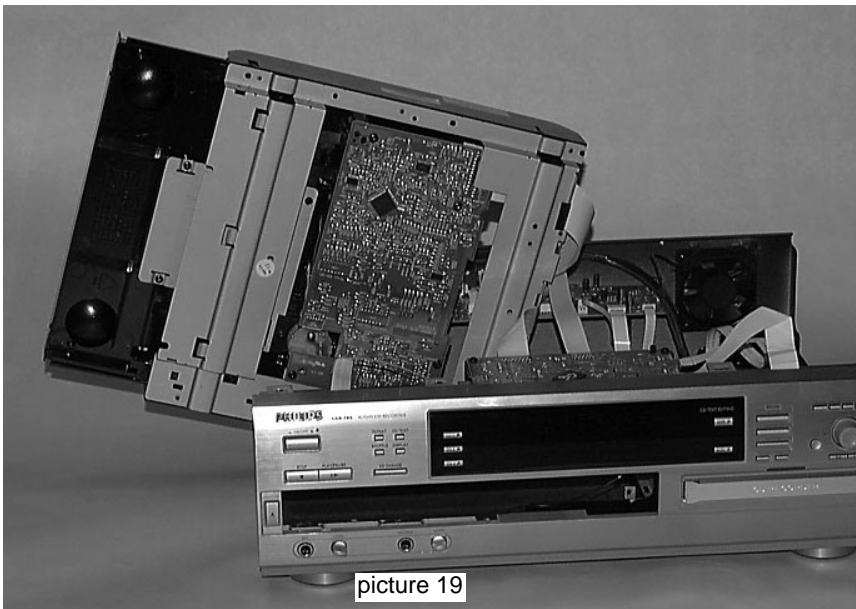
Service position *Headphone/Microphone Board*

- 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.



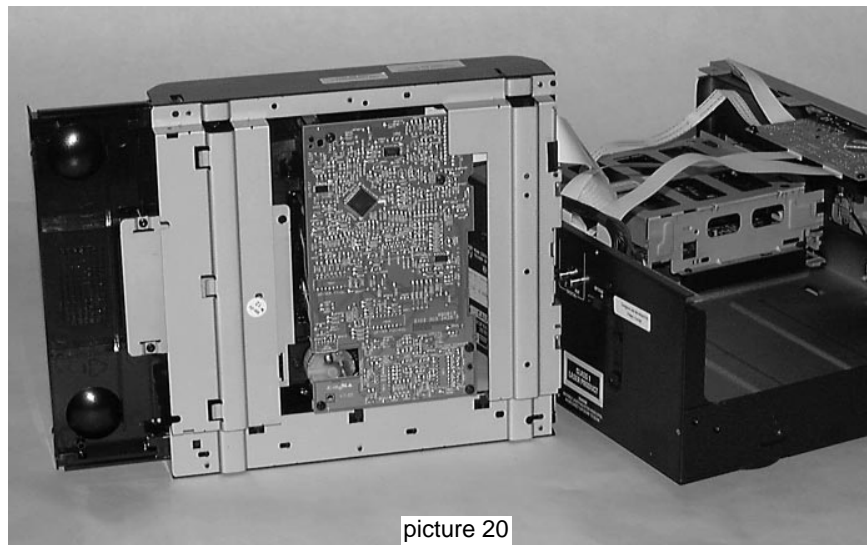
picture 18

Service position *3CDC Module*



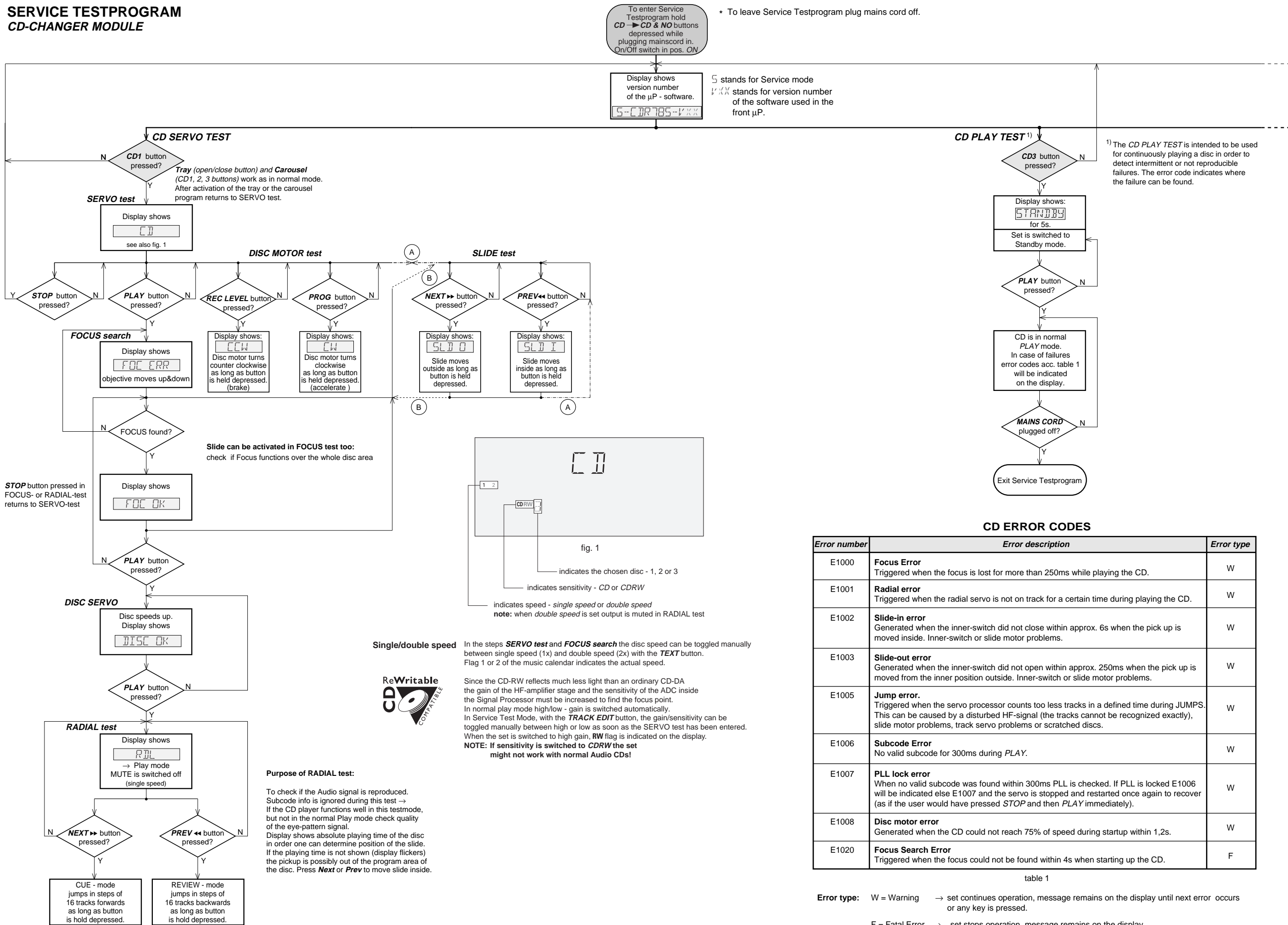
picture 19

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



picture 20

**SERVICE TESTPROGRAM
CD-CHANGER MODULE**



* To leave Service Testprogram plug mains cord off.

S stands for Service mode
VXXX stands for version number of the software used in the front µP.

1) The CD PLAY TEST is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.

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

To enter Service Testprogram hold **CD** → **CD & NO** buttons depressed while plugging mainscord in. On/Off switch in pos. **ON**

* To leave Service Testprogram plug mains cord off.

Display shows version number of the µP - software.
S-CDR785-VXX

S stands for Service mode
VXX stands for version number of the software used in the front µP.

CDR ELECTRICAL TEST

Insert CD-DA disc before starting the test

MODULE INFORMATION

Display shows for 2s each:
• Software version of DASP (flash ROM 7703)
• Software version of basic engine processor (flash EPROM 7208)

MAIN BOARD DIAGNOSTIC

DRAM TEST 7702
Display shows: BTST1

CHECKSUM TEST 7703
Display shows: BTST2

ERASE TEST 7208
Display shows: BTST3

ADC/DAC TEST 7406
Display shows: BTST4

COMMUNICATION TEST (ISA-BUS)
Display shows: BTST5

TEST O.K.? N → Display shows: BERR n
n=number of failed test

FFWD button pressed? N → all errors shown? N → Exit CDR electrical Test

FFWD button pressed? Y → Display shows next error

CDR - LOADER TEST

CD-DA disc inserted? N → Display shows: NO DISC

FFWD button pressed? N → Exit CDR electrical Test

FFWD button pressed? Y → Exit CDR electrical Test

Display shows actual playing time. The test is performed by playing 5s at beginning, 5s in the middle and 5s at the end of the disc.

FFWD button pressed? N → Exit CDR electrical Test

FFWD button pressed? Y → Exit CDR electrical Test

TEST O.K.? N → Display shows: BERR 1

FFWD button pressed? N → Exit CDR electrical Test

FFWD button pressed? Y → Exit CDR electrical Test

CDR MECHANICAL TEST

for visual inspection only

FINALIZE button pressed?

FOCUS TEST
Objective moves continuously up/down.
Display shows: BUSY

SLIDE TEST

STOP button pressed?

Slide moves continuously in/out.
Display shows: BUSY

PREV button pressed?

Dependent on the moving direction, slide moves to inner or outer end position.

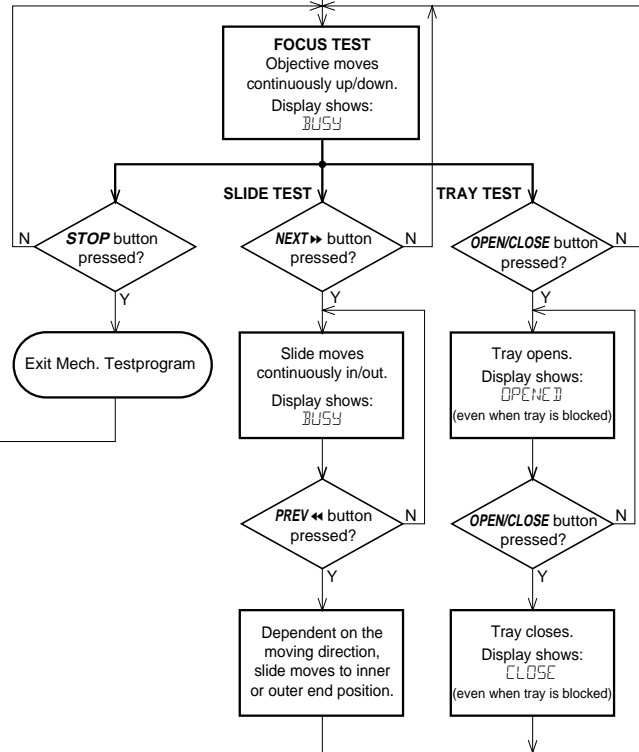
TRAY TEST

OPEN/CLOSE button pressed?

Tray opens.
Display shows: OPENED
(even when tray is blocked)

OPEN/CLOSE button pressed?

Tray closes.
Display shows: CLOSED
(even when tray is blocked)



CDR DC-ERASE MODE

ERASE button pressed?

Complete disc will be erased with double speed. (starting from PMA-area up to and including ATIP leadout area)
The display shows the countdown of the remaining time required to complete the operation:
ER mm ss
mm: remaining minutes
ss: remaining seconds

Disc erased?

Display shows: PASSED

STOP button pressed?

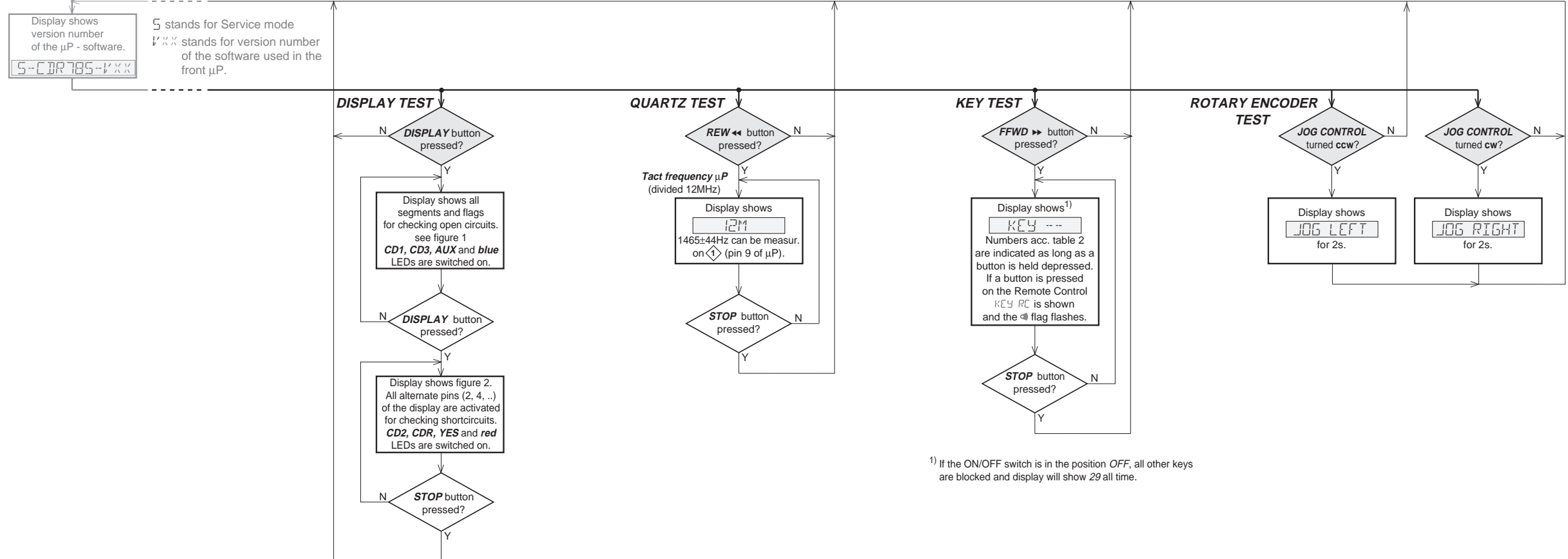
Exit DC-ERASE Mode

Note: With the DC-Erase mode the CD-RW can be changed back in its original state, like a new disc. Stopping the erase-function by switching power off will leave the disc in an unpredictable status!

SERVICE TESTPROGRAM VARIOUS TESTS

To enter Service Testprogram hold **CD → CD & NO** buttons depressed while plugging mainscord in. On/Off switch in pos. **ON**

* To leave Service Testprogram plug mains cord off.



¹⁾ If the ON/OFF switch is in the position OFF, all other keys are blocked and display will show 29 all time.

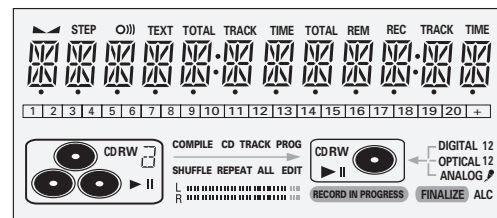


fig. 1

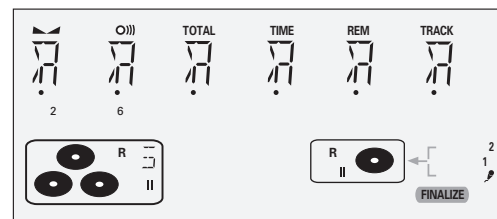


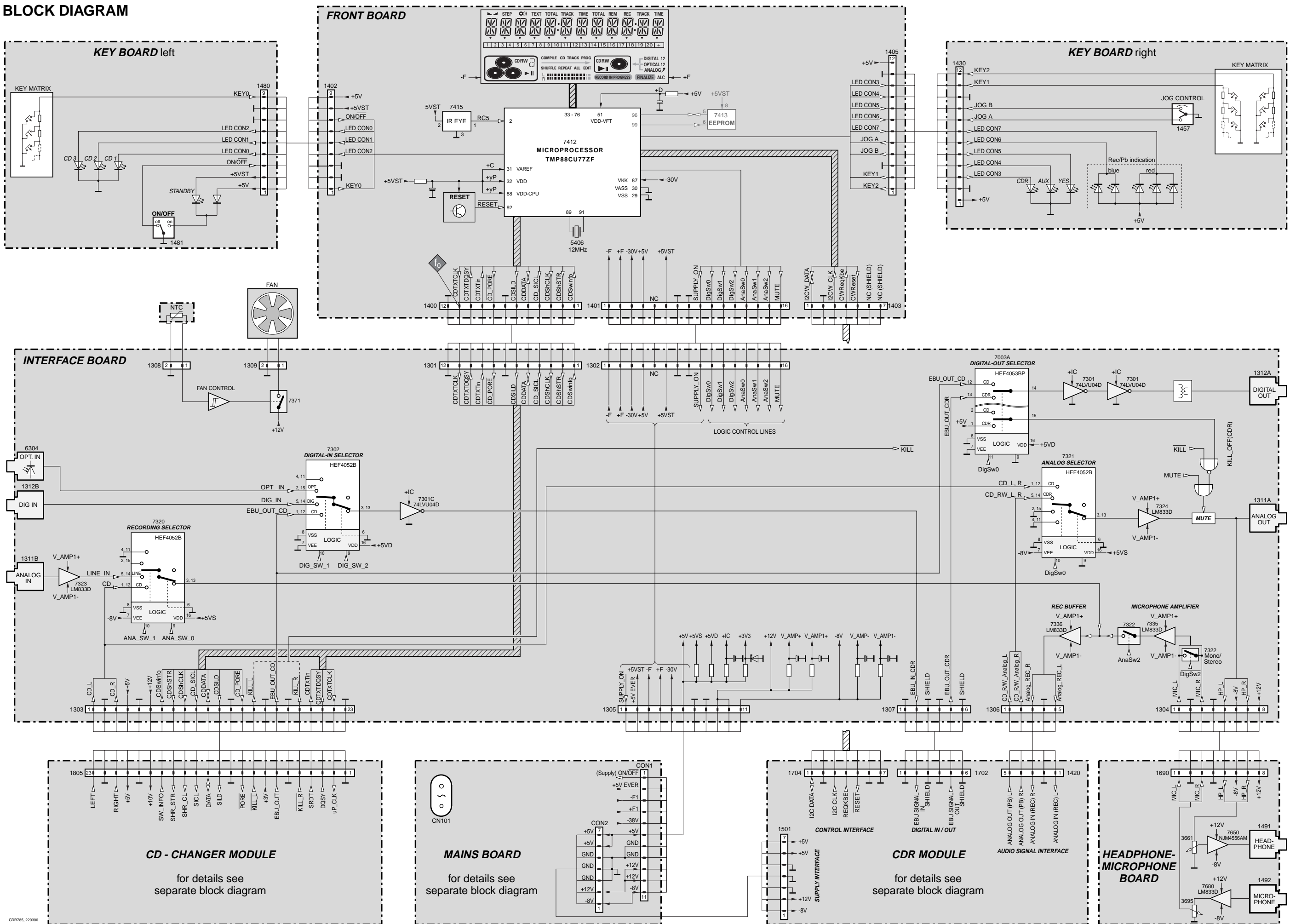
fig. 2

KEY CODES

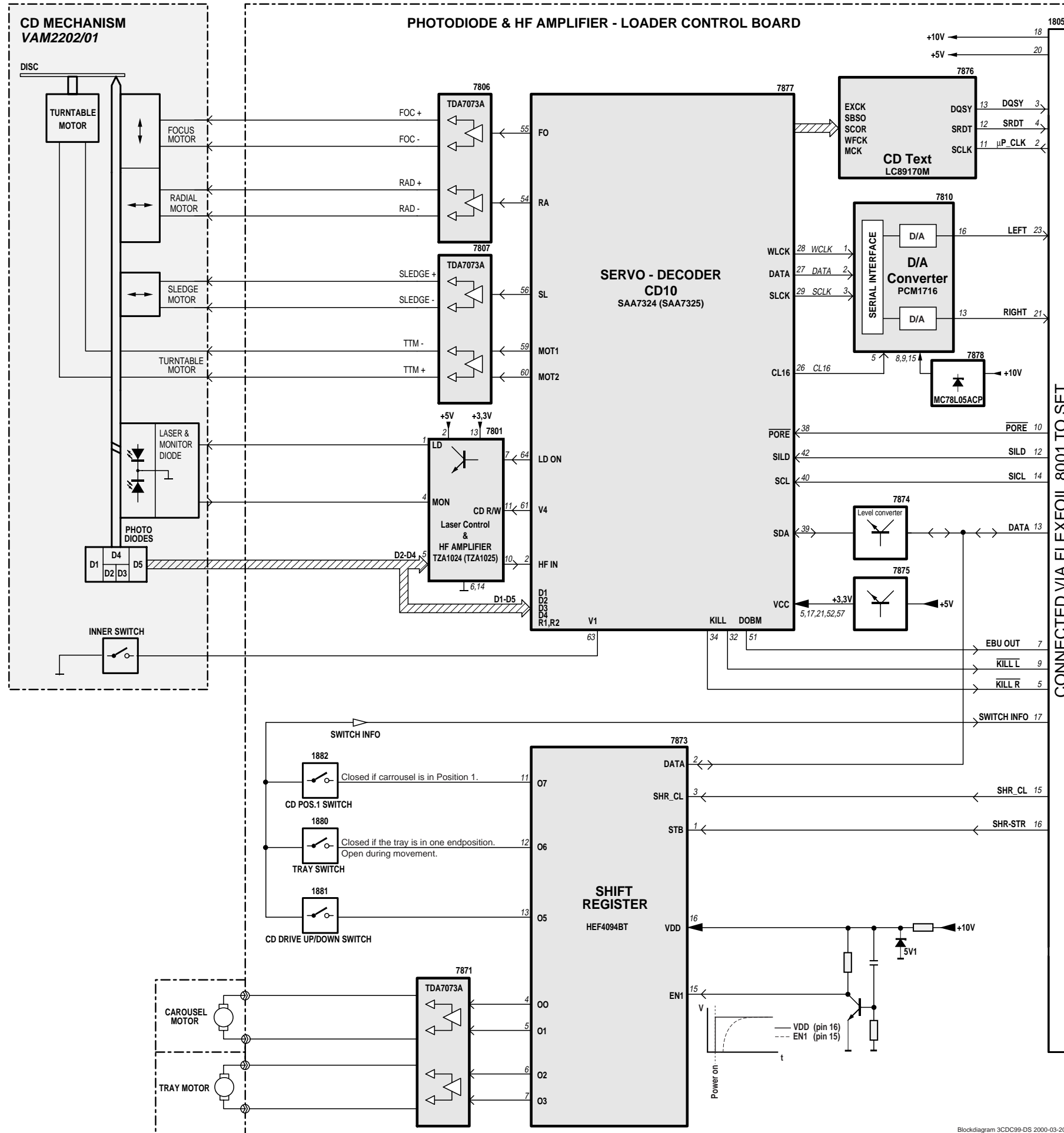
KEY	KEY CODE	KEY	KEY CODE
STOP	exit test	CD → CD	15
TRACK EDIT	1	CDR	16
PROGRAM	2	AUX	17
TEXT	3	CD3	18
BALANCE	4	CD2	19
REC LEVEL	5	CD1	20
YES	6	CD TEXT	21
NO	7	REPEAT	22
FFWD →→	8	DISPLAY	23
REW ←←	9	SHUFFLE	24
OPEN/CLOSE (CDR)	10	CD CHANGE	25
FINALIZE	11	PLAY/PAUSE	26
ERASE	12	OPEN/CLOSE (CDC)	27
REC TYPE	13	ON/OFF	29
COMPILE CD	14		

table 2

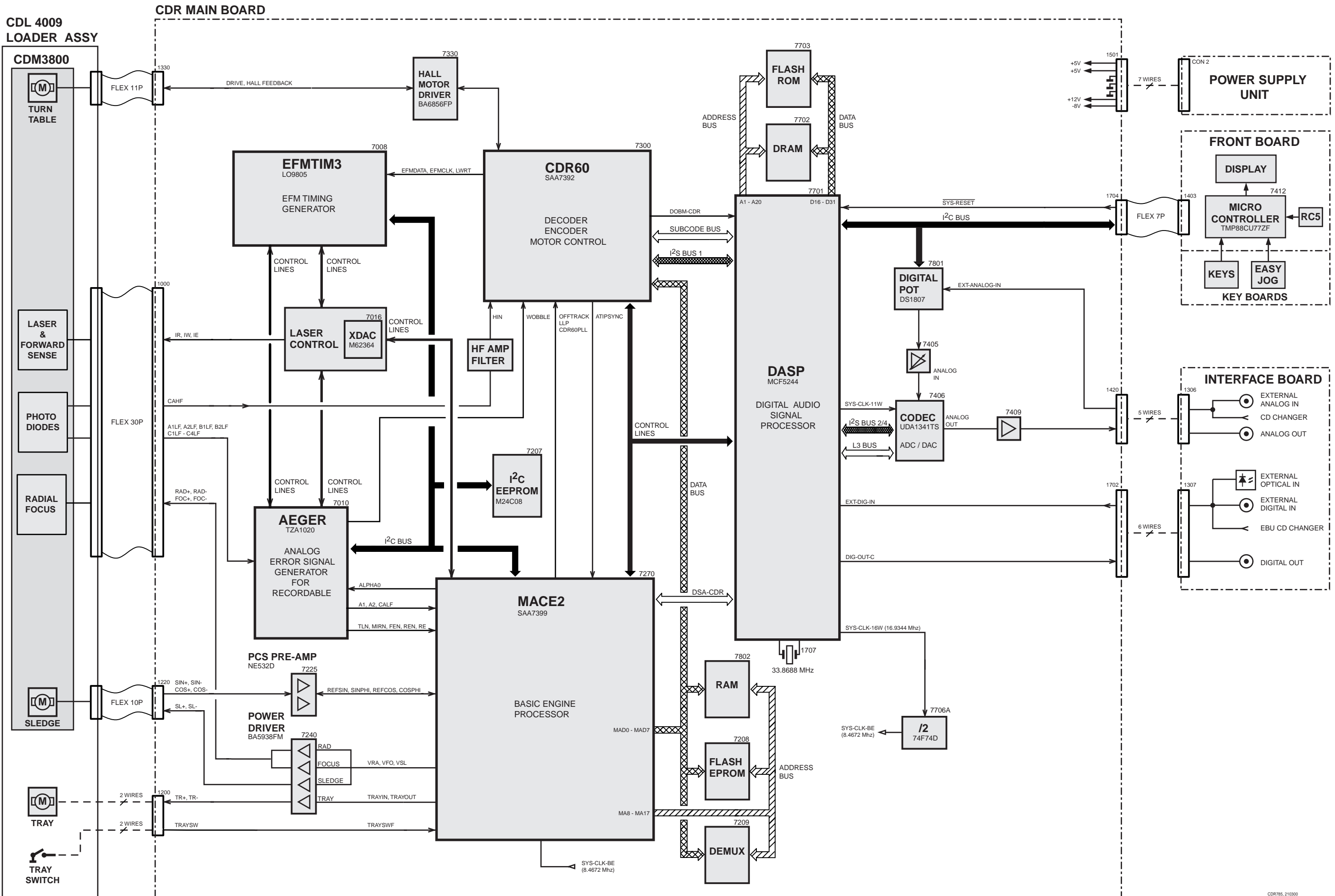
BLOCK DIAGRAM



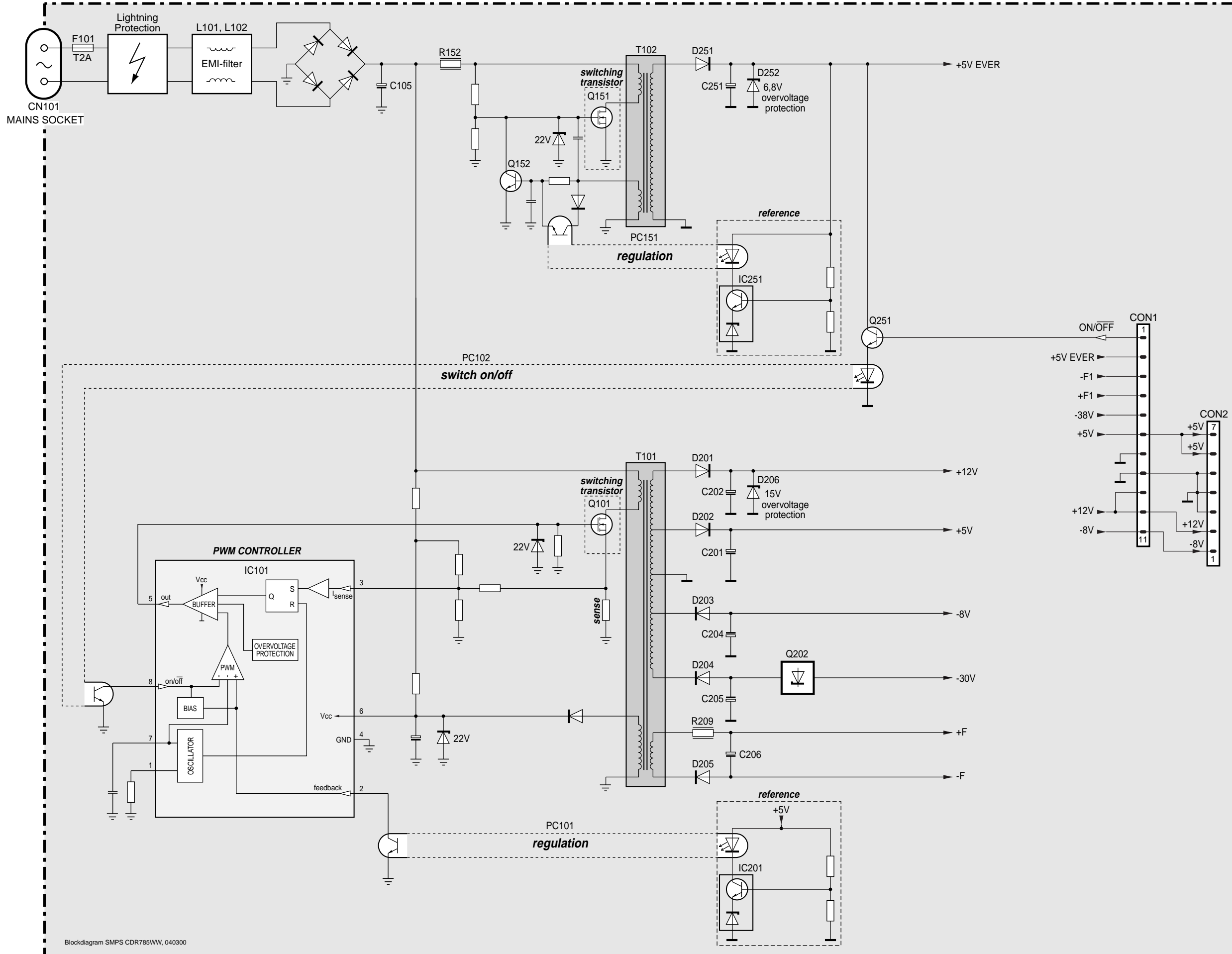
BLOCK DIAGRAM 3CDC MODULE



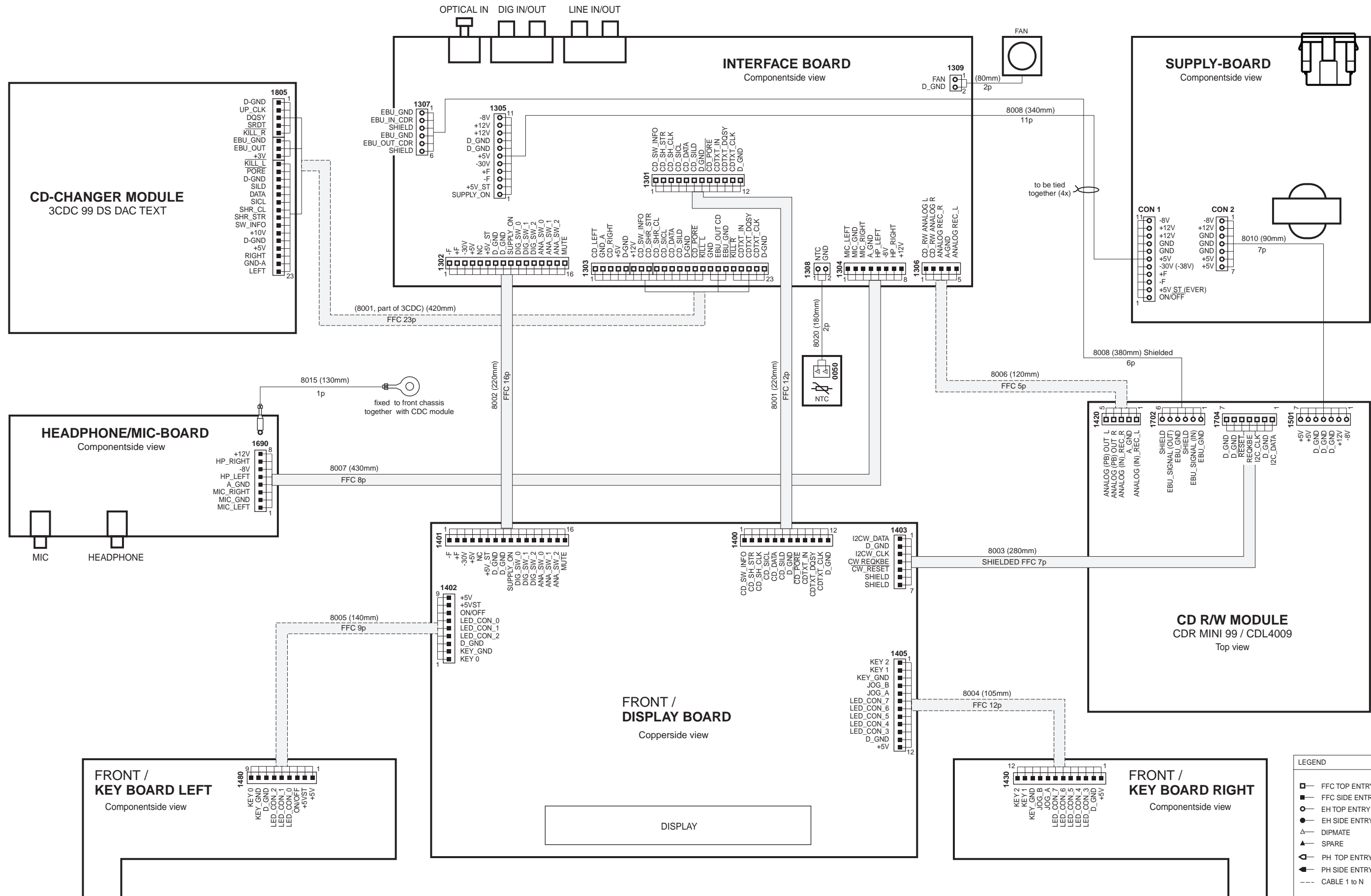
BLOCK DIAGRAM CDR-MODULE



BLOCK DIAGRAM SWITCHED MODE POWER SUPPLY / WorldWide version



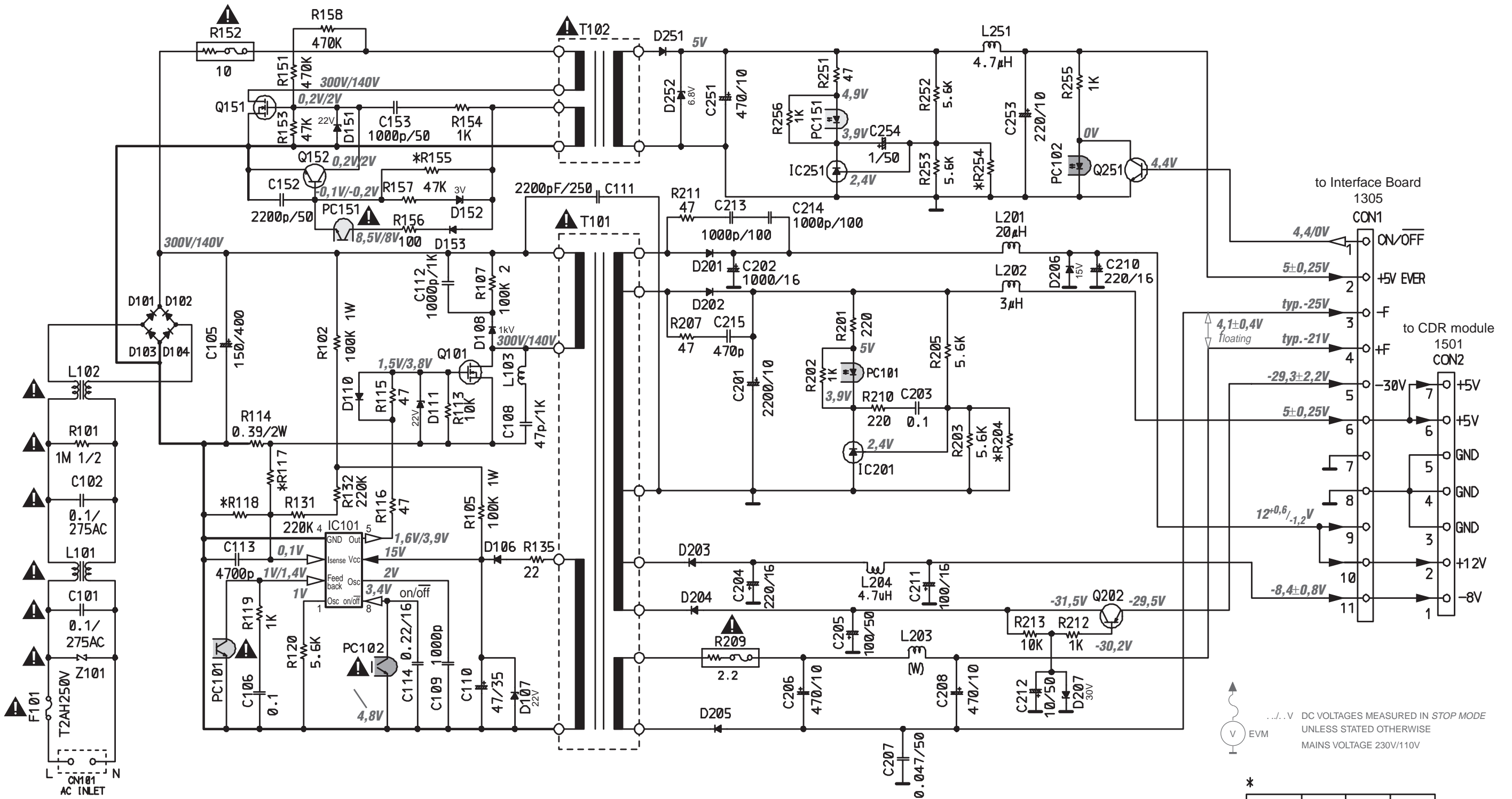
WIRING DIAGRAM



For service code numbers of flexfoil cables see mechanical partlist.

for orientation only

Switched Mode Power Supply / WorldWide version (/01)



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

- | | | | |
|------------------------|---------------------------|------------------|--------------------------------|
| D101, D102, D103, D104 | 1N4005 or 1N4007 | D201 | S3L20U or 31DF2 |
| D106 | AU02Z or | D202 | D3S4M or SB340 |
| D107, D151 | MA4220 or MTZJ22 | D203, D204, D251 | D1NL20U |
| D108 | EG01C or | D205 | AK04 |
| D110, D153 | 1SS133 or MA165 | D206 | RD15F or MA2150 |
| D111 | MA2220 or RD22F | D207 | MA4300 or MTZJ30 |
| D152 | MA4030 or MTZJ3.0 | D252 | MA4068 or MTZJ6.8 |
| Q101 | 2SK2651 | IC201, IC251 | AN1431T or MM1431AT |
| Q151 | 2SK2128 | Q202 | 2SB1434 or 2SA1015 or 2SA933AS |
| Q152 | 2SC1740 | Q251 | UN4211 or DTC114ESA |
| PC101, PC102, PC151 | ON3171 or PC123 or PS2561 | | |
| IC101 | KA7552 or FA5317P | | |

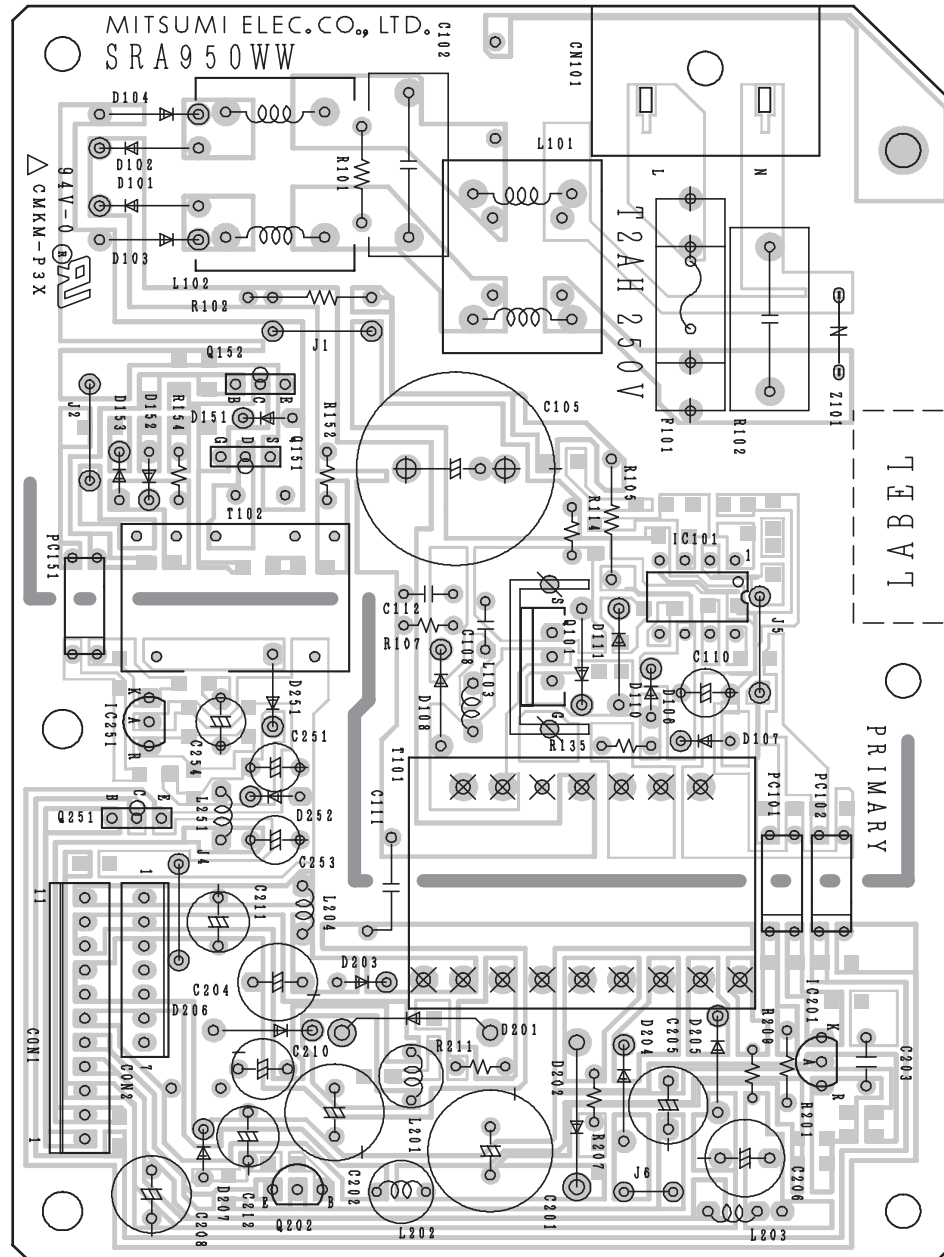
Ω/W (1/4W)
μF/V (50V)

*

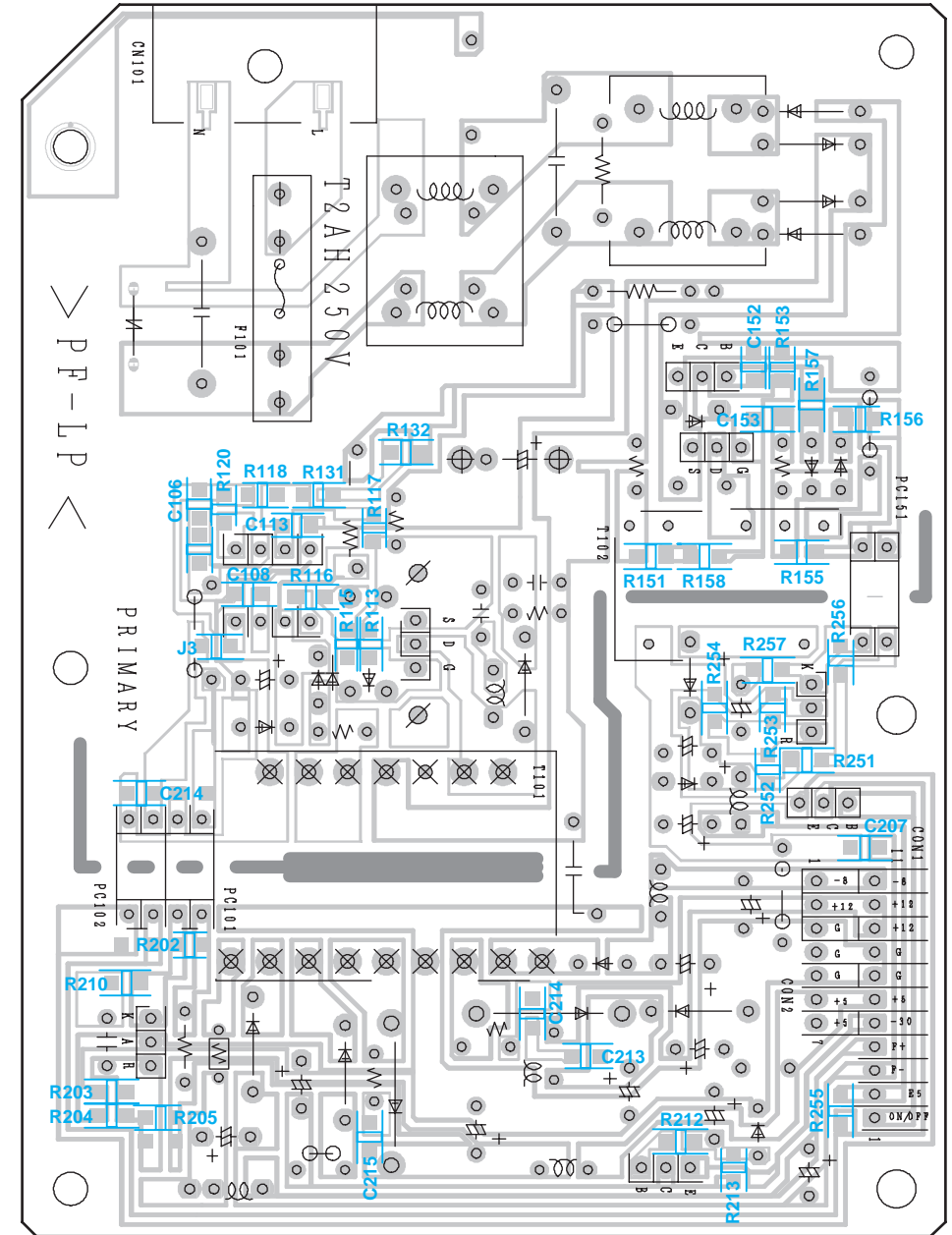
symbol	min	typ	max
*R117	470	560	680
*R118	560	680	820
*R155	15K	33K	82K
*R204	47K	100K	OPEN
*R254	47K	100K	OPEN

for orientation only

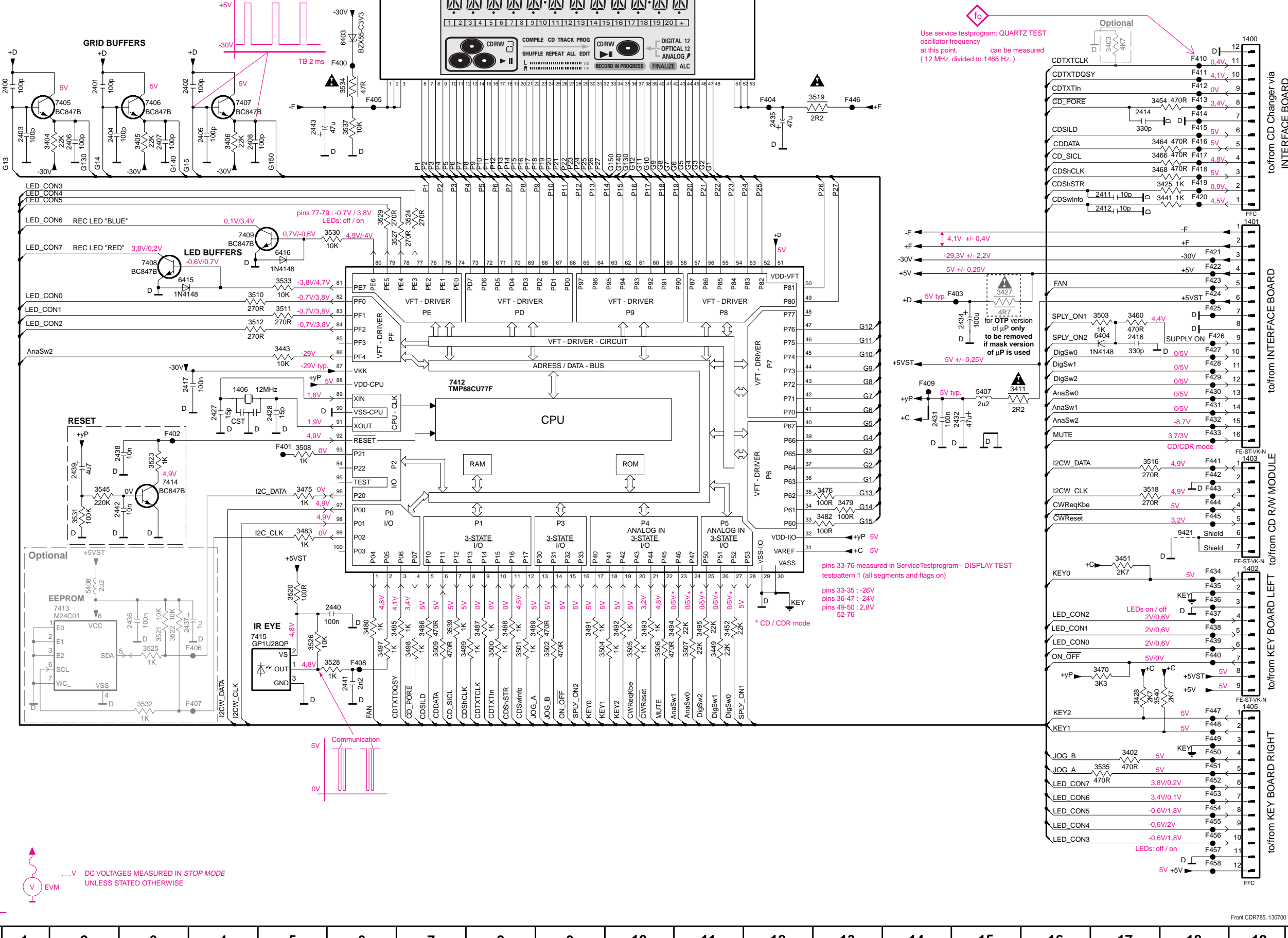
POWER BOARD / component side view
WorldWide version



POWER BOARD / copper side view
WorldWide version



FRONT BOARD

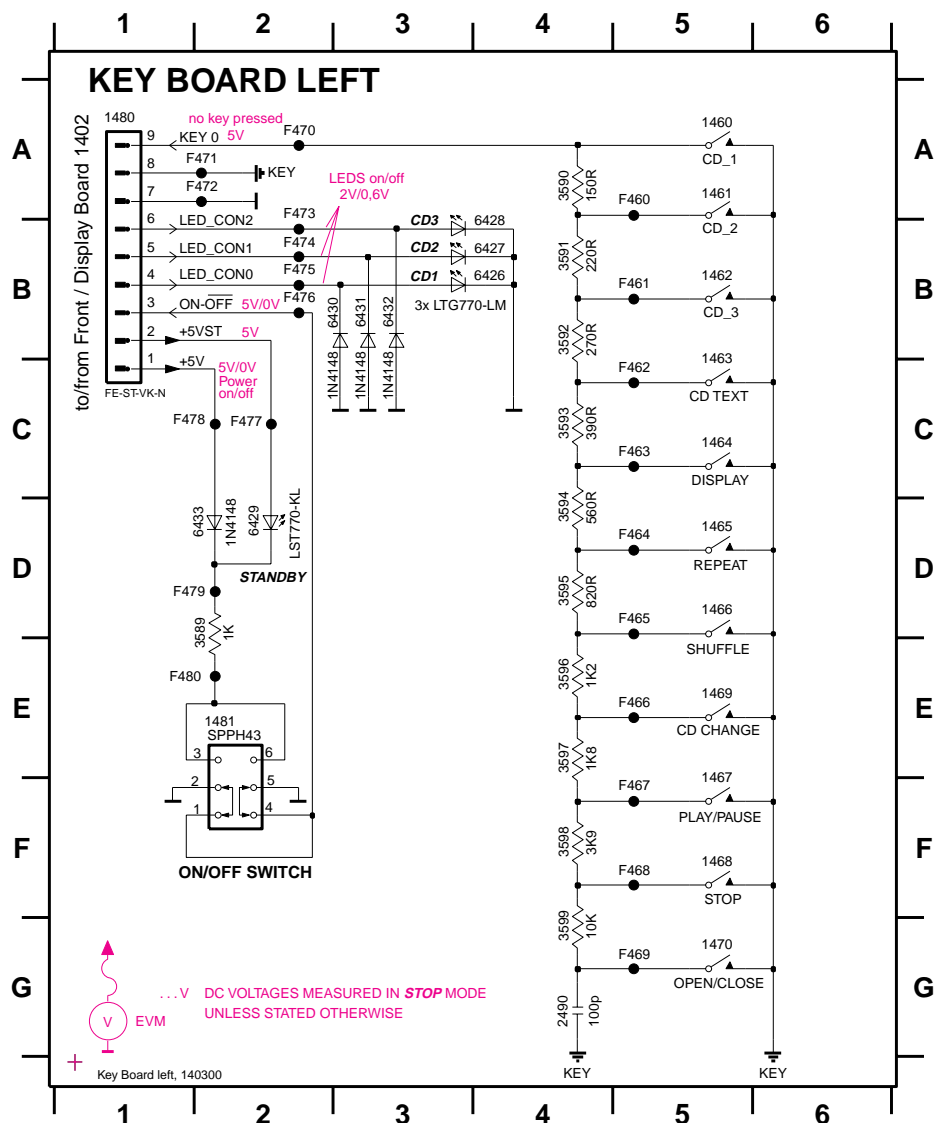


Use service testprogram: QUARTZ TEST oscillator frequency at this point. can be measured (12 MHz. divided to 1465 Hz.)

pins 33-76 measured in Service Testprogram - DISPLAY TEST testpattern 1 (all segments and flags on)
 pins 33-35 : -26V
 pins 36-47 : -24V
 pins 49-50 : 2,8V 52-76
 * CD / CDR mode

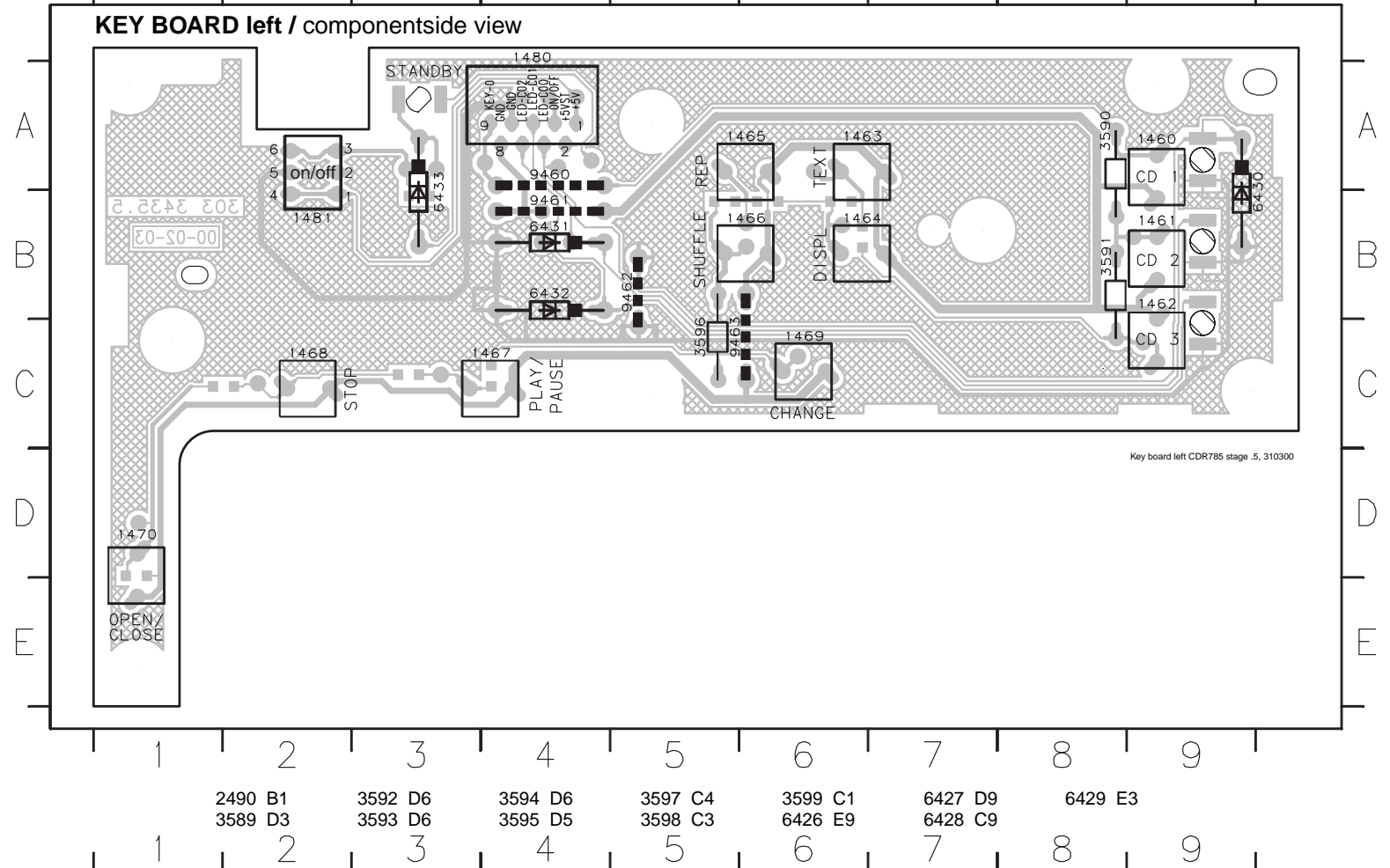
... V DC VOLTAGES MEASURED IN STOP MODE UNLESS STATED OTHERWISE

- 1400 A19
- 1401 D19
- 1402 I19
- 1403 G19
- 1405 K19
- 1406 F4
- 2400 B1
- 2401 B2
- 2402 B3
- 2403 B1
- 2404 B2
- 2405 B4
- 2406 B2
- 2407 B3
- 2408 B4
- 2411 C17
- 2412 C17
- 2414 B17
- 2416 E17
- 2417 F3
- 2427 F4
- 2428 F5
- 2431 F1
- 2432 F15
- 2434 E15
- 2435 B12
- 2436 B3
- 2437 I4
- 2438 G3
- 2439 G2
- 2440 I6
- 2441 J6
- 2442 H3
- 2443 B5
- 3402 K17
- 3403 A17
- 3404 E17
- 3405 B3
- 3406 B4
- 3411 F15
- 3425 C18
- 3427 E15
- 3428 J17
- 3441 C18
- 3443 E5
- 3449 J11
- 3451 H17
- 3452 I11
- 3454 B17
- 3460 E17
- 3464 B18
- 3466 C18
- 3468 C18
- 3470 J17
- 3475 G5
- 3476 H13
- 3479 H13
- 3480 I6
- 3482 H13
- 3485 I6
- 3486 I7
- 3487 I8
- 3488 I8
- 3489 I8
- 3491 I9
- 3492 I10
- 3493 I10
- 3494 I10
- 3495 I11
- 3497 J6
- 3498 J7
- 3499 J7
- 3500 J8
- 3501 J8
- 3502 J9
- 3503 J9
- 3504 J9
- 3505 J10
- 3506 J10
- 3507 J11
- 3508 G5
- 3509 J7
- 3510 E4
- 3511 E5
- 3512 E4
- 3516 G17
- 3518 G17
- 3519 B13
- 3520 I5
- 3521 J3
- 3522 J3
- 3523 G3
- 3524 D7
- 3525 J3
- 3526 J5
- 3527 D7
- 3528 J6
- 3529 D6
- 3530 D6
- 3531 H2
- 3532 K3
- 3533 D5
- 3534 B6
- 3535 K17
- 3537 B6
- 3539 I7
- 3540 J17
- 3545 G2
- 5407 F15
- 5408 I2
- 6403 A6
- 6404 E17
- 6415 D3
- 6416 D5
- 7404 A6
- 7405 B2
- 7406 B3
- 7407 B4
- 7408 D3
- 7409 D4
- 7412 D5
- 7413 I2
- 7414 G3
- 7415 J5
- 9421 H18
- F400 A6
- F401 G5
- F402 G3
- F403 E15
- F404 B12
- F405 B6
- F406 J4
- F407 K4
- F408 J6
- F409 F14
- F410 A18
- F411 A18
- F412 B18
- F413 B18
- F414 B18
- F415 B18
- F416 B18
- F417 C18
- F418 C18
- F419 C18
- F420 C18
- F421 D18
- F422 D18
- F423 D18
- F424 E18
- F425 E18
- F426 E18
- F427 E18
- F428 F18
- F429 F18
- F430 F18
- F431 F18
- F432 F18
- F433 G18
- F434 I18
- F435 I18
- F436 I18
- F437 I18
- F438 I18
- F439 J18
- F440 J18
- F441 G18
- F442 G18
- F443 G18
- F444 H18
- F445 H18
- F446 B13
- F447 K18
- F448 K18
- F449 K18
- F450 K18
- F451 K18
- F452 L18
- F453 L18
- F454 L18
- F455 L18
- F456 L18
- F457 M18
- F458 M18

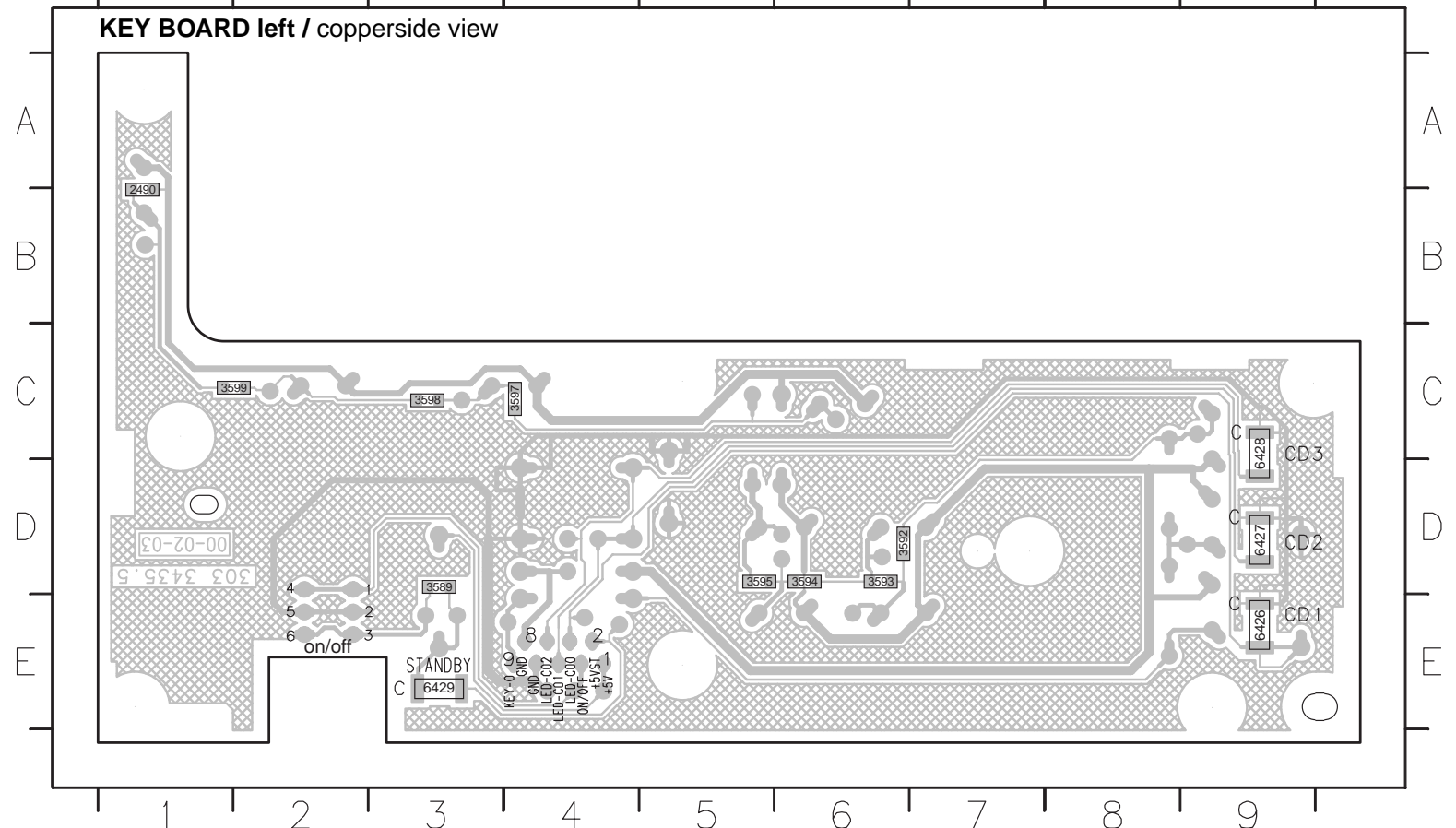


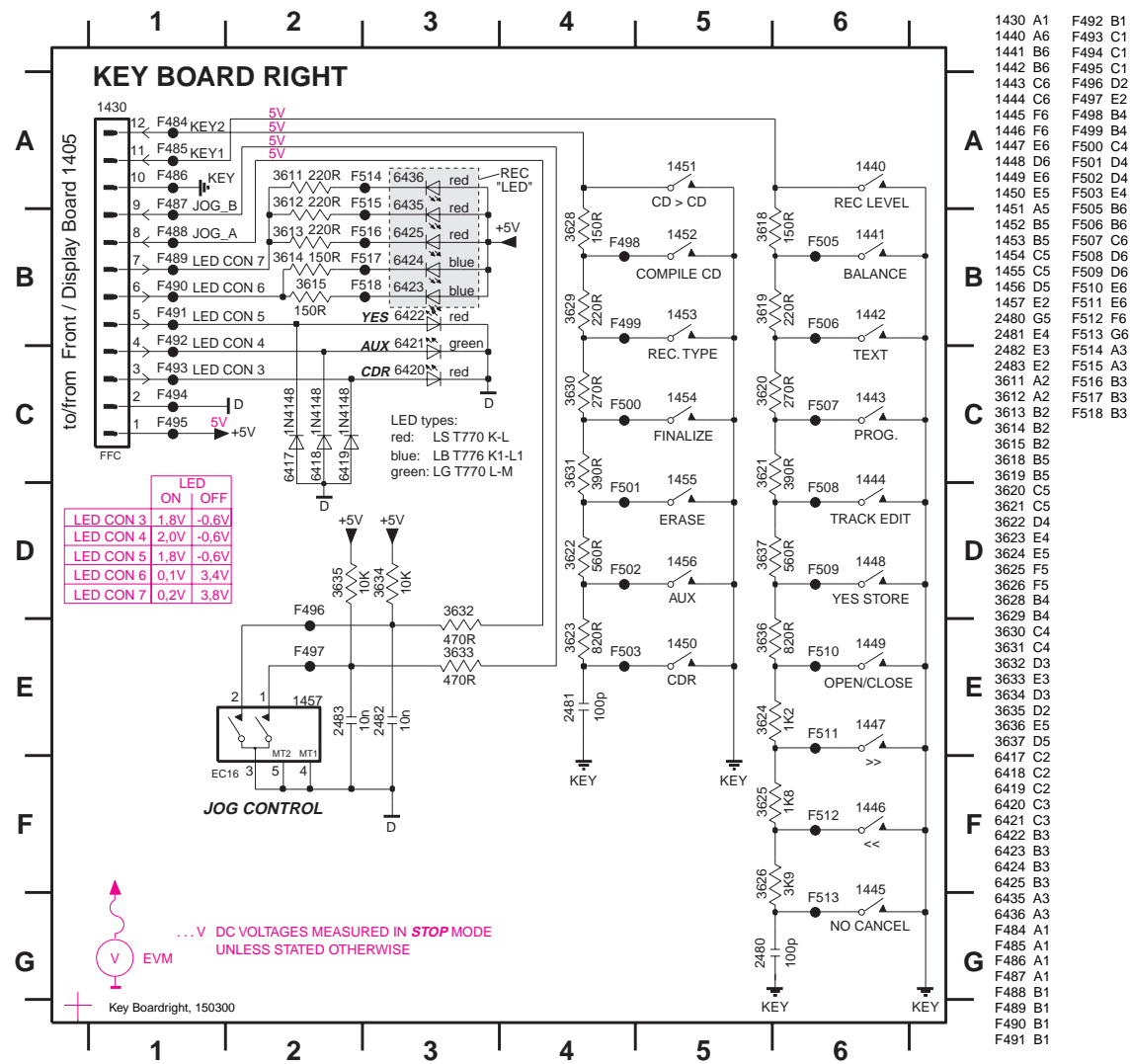
- 1460 A5
- 1461 A5
- 1462 B5
- 1463 B5
- 1464 C5
- 1465 D5
- 1466 D5
- 1467 E5
- 1468 F5
- 1469 E5
- 1470 G5
- 1480 A1
- 1481 E2
- 2490 G4
- 3589 D2
- 3590 A4
- 3591 B4
- 3592 B4
- 3593 C4
- 3594 D4
- 3595 D4
- 3596 E4
- 3597 E4
- 3598 F4
- 3599 G4
- 6426 B3
- 6427 B3
- 6428 B3
- 6429 D2
- 6430 B3
- 6431 B3
- 6432 B3
- 6433 D2
- F460 A5
- F461 B5
- F462 C5
- F463 C5
- F464 D5
- F465 D5
- F466 E5
- F467 F5
- F468 F5
- F469 G5
- F470 A2
- F471 A2
- F472 A2
- F473 A2
- F474 B2
- F475 B2
- F476 B2
- F477 C2
- F478 C1
- F479 D1
- F480 E1

- 1460 A9
- 1461 B9
- 1462 C9
- 1463 A6
- 1464 B6
- 1465 A6
- 1466 B6
- 1467 C4
- 1468 C2
- 1469 C6
- 1470 D1
- 1480 A4
- 1481 B2
- 3590 A8
- 3591 B8
- 3596 C5
- 6430 B9
- 6431 B4
- 6432 B4
- 6433 B3
- 9460 A4
- 9461 B4
- 9462 B5
- 9463 C5

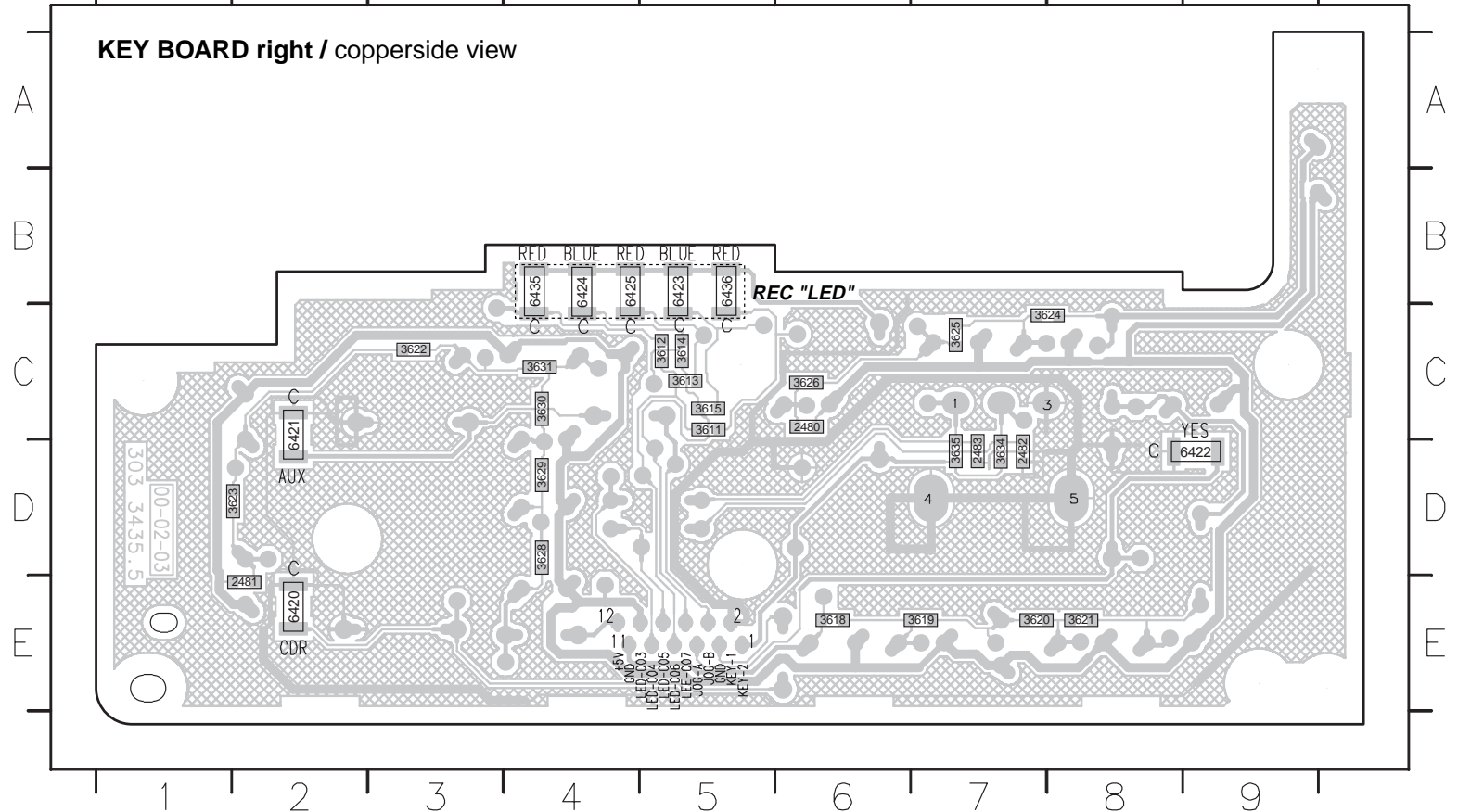
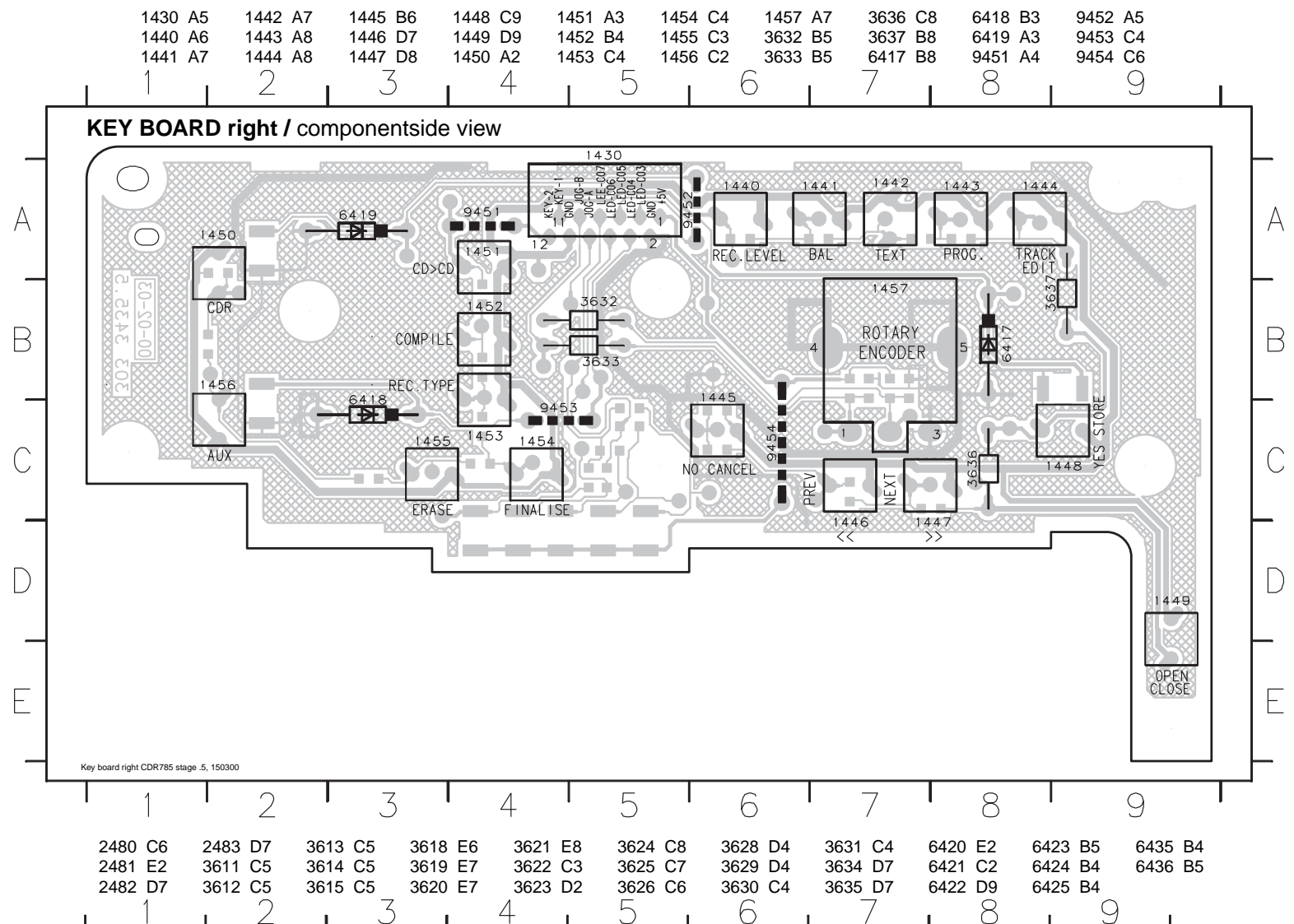


- 2490 B1
- 3589 D3
- 3592 D6
- 3593 D6
- 3594 D6
- 3595 D5
- 3597 C4
- 3598 C3
- 3599 C1
- 6426 E9
- 6427 D9
- 6428 C9
- 6429 E3



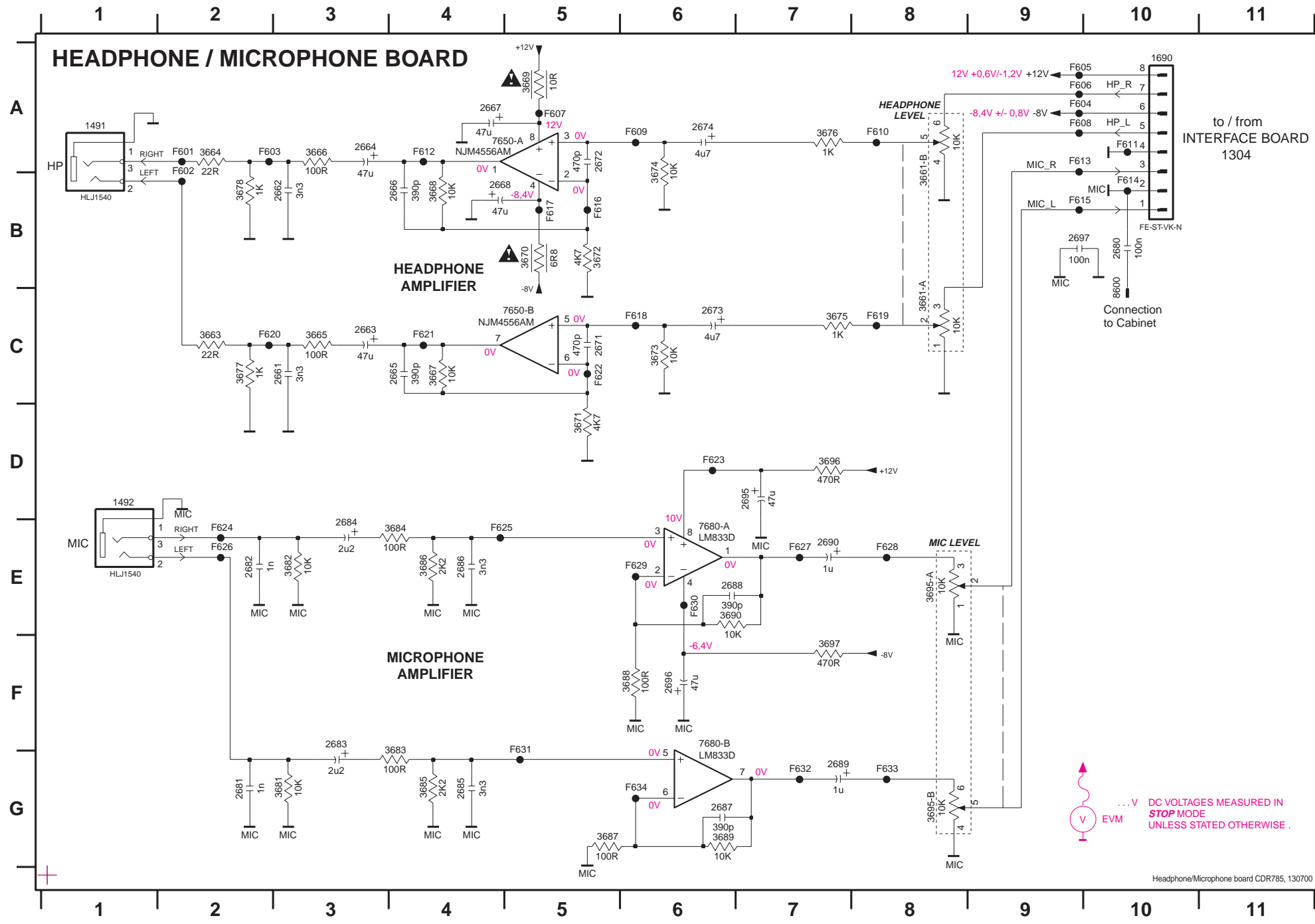


- 1430 A1
- 1440 A6
- 1441 B6
- 1442 B6
- 1443 C6
- 1444 C6
- 1445 F6
- 1446 F6
- 1447 E6
- 1448 D6
- 1449 E6
- 1450 E5
- 1451 A5
- 1452 B5
- 1453 B5
- 1454 C5
- 1455 C5
- 1456 D5
- 1457 E2
- 2480 G5
- 2481 E4
- 2482 E3
- 2483 E2
- 3611 A2
- 3612 A2
- 3613 B2
- 3614 B2
- 3615 B2
- 3616 B5
- 3619 B5
- 3620 C5
- 3621 C5
- 3622 D4
- 3623 E4
- 3624 E5
- 3625 F5
- 3626 F5
- 3628 B4
- 3629 B4
- 3630 C4
- 3631 C4
- 3632 D3
- 3633 E3
- 3634 D3
- 3635 D2
- 3636 E5
- 3637 D5
- 6417 C2
- 6418 C2
- 6419 C2
- 6420 C3
- 6421 C3
- 6422 B3
- 6423 B3
- 6424 B3
- 6425 B3
- 6435 A3
- 6436 A3
- F484 A1
- F485 A1
- F486 A1
- F487 A1
- F488 B1
- F489 B1
- F490 B1
- F491 B1
- F492 B1
- F493 C1
- F494 C1
- F495 C1
- F496 D2
- F497 E2
- F498 B4
- F499 B4
- F500 C4
- F501 D4
- F502 D4
- F503 E4
- F504 E4
- F505 B6
- F506 B6
- F507 C6
- F508 D6
- F509 D6
- F510 E6
- F511 E6
- F512 F6
- F513 G6
- F514 A3
- F515 A3
- F516 B3
- F517 B3
- F518 B3



- 1430 A5
- 1440 A6
- 1441 A7
- 1442 A8
- 1443 A8
- 1444 A8
- 1445 B6
- 1446 D7
- 1447 D8
- 1448 C9
- 1449 D9
- 1450 A2
- 1451 A3
- 1452 B4
- 1453 C4
- 1454 C4
- 1455 C3
- 1456 C2
- 1457 A7
- 3632 B5
- 3633 B5
- 3636 C8
- 3637 B8
- 6417 B8
- 6418 B3
- 6419 A3
- 9451 A4
- 9452 A5
- 9453 C4
- 9454 C6

- 2480 C6
- 2481 E2
- 2482 D7
- 3613 C5
- 3614 C5
- 3615 C5
- 3616 E6
- 3619 E7
- 3620 E7
- 3621 E8
- 3622 C3
- 3623 D2
- 3624 C8
- 3625 C7
- 3626 C6
- 3628 D4
- 3629 D4
- 3630 C4
- 3631 C4
- 3634 D7
- 3635 D7
- 6420 E2
- 6421 C2
- 6422 D9
- 6423 B5
- 6424 B4
- 6425 B4
- 6435 B4
- 6436 B5

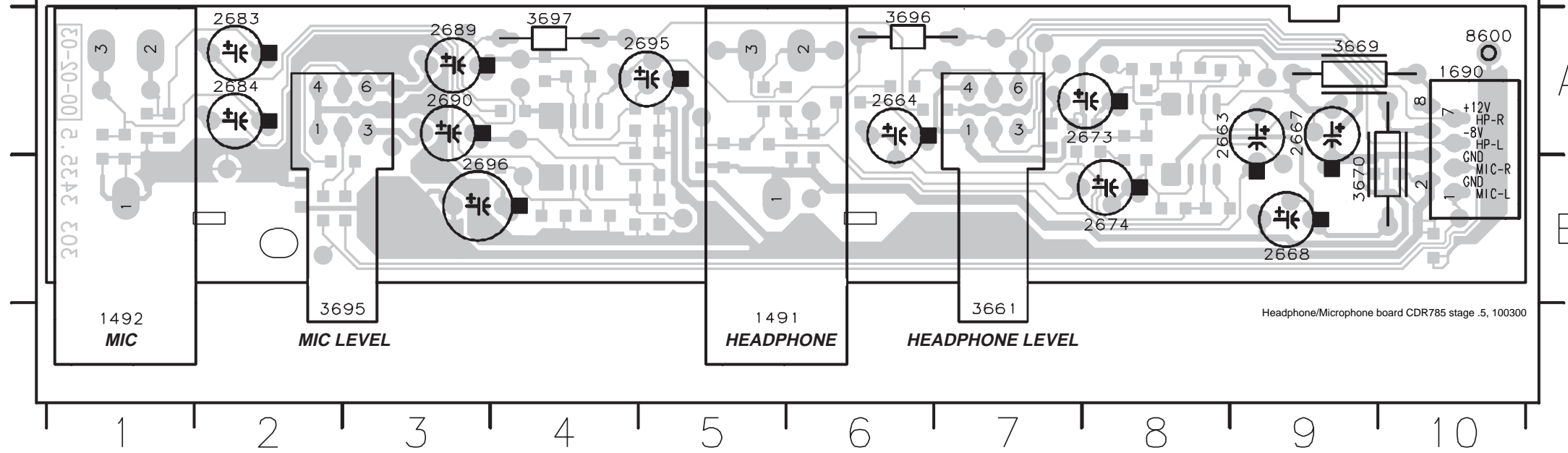


- 1491 A1 F618 C6
- 1492 D1 F619 C8
- 1690 A10 F620 C2
- 2661 C3 F621 C4
- 2662 B3 F622 C5
- 2663 C3 F623 D6
- 2664 A3 F624 E2
- 2665 C4 F625 E4
- 2666 B4 F626 E2
- 2667 A4 F627 E7
- 2668 B4 F628 E8
- 2671 C5 F629 E6
- 2672 A5 F630 E6
- 2673 C6 F631 G5
- 2674 A6 F632 G7
- 2680 B10 F633 G8
- 2681 G2 F634 G6
- 2682 E2
- 2683 F3
- 2684 E3
- 2685 G4
- 2686 E4
- 2687 G6
- 2688 E6
- 2689 G7
- 2690 E7
- 2695 D7
- 2696 F6
- 2697 B9
- 3661 B8
- 3663 C2
- 3664 A2
- 3665 C3
- 3666 A3
- 3667 C4
- 3668 B4
- 3669 A5
- 3670 B5
- 3671 D5
- 3672 B5
- 3673 C6
- 3674 A6
- 3675 C7
- 3676 A7
- 3677 C2
- 3678 B2
- 3681 G3
- 3682 E3
- 3683 G4
- 3684 E4
- 3685 G4
- 3686 E4
- 3687 G5
- 3688 F6
- 3689 G6
- 3690 E6
- 3695 F8
- 3696 D7
- 3697 F7
- 7650A A5
- 7650B C5
- 7680A E6
- 7680B G6
- 8600 C10
- F601 A2
- F602 B2
- F603 A2
- F604 A9
- F605 A9
- F606 A9
- F607 A5
- F608 A9
- F609 A6
- F610 A8
- F611 A10
- F612 A4
- F613 A9
- F614 B10
- F615 B9
- F616 B5
- F617 B5

Headphone/Microphone board CDR785, 130700

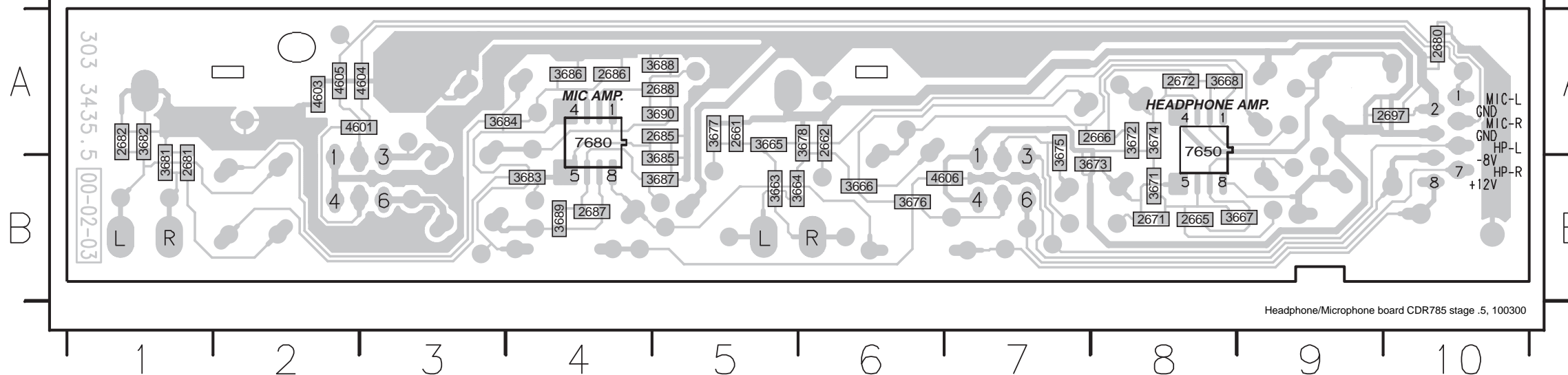
- | | | | | | | | |
|----------|---------|---------|---------|---------|----------|---------|----------|
| 1491 B6 | 2663 B8 | 2668 B9 | 2683 A2 | 2690 A3 | 3661 B7 | 3695 B2 | 8600 A10 |
| 1492 B1 | 2664 A6 | 2673 A8 | 2684 A2 | 2695 A5 | 3669 A9 | 3696 A6 | |
| 1690 B10 | 2667 A9 | 2674 B8 | 2689 A3 | 2696 B3 | 3670 B10 | 3697 A4 | |

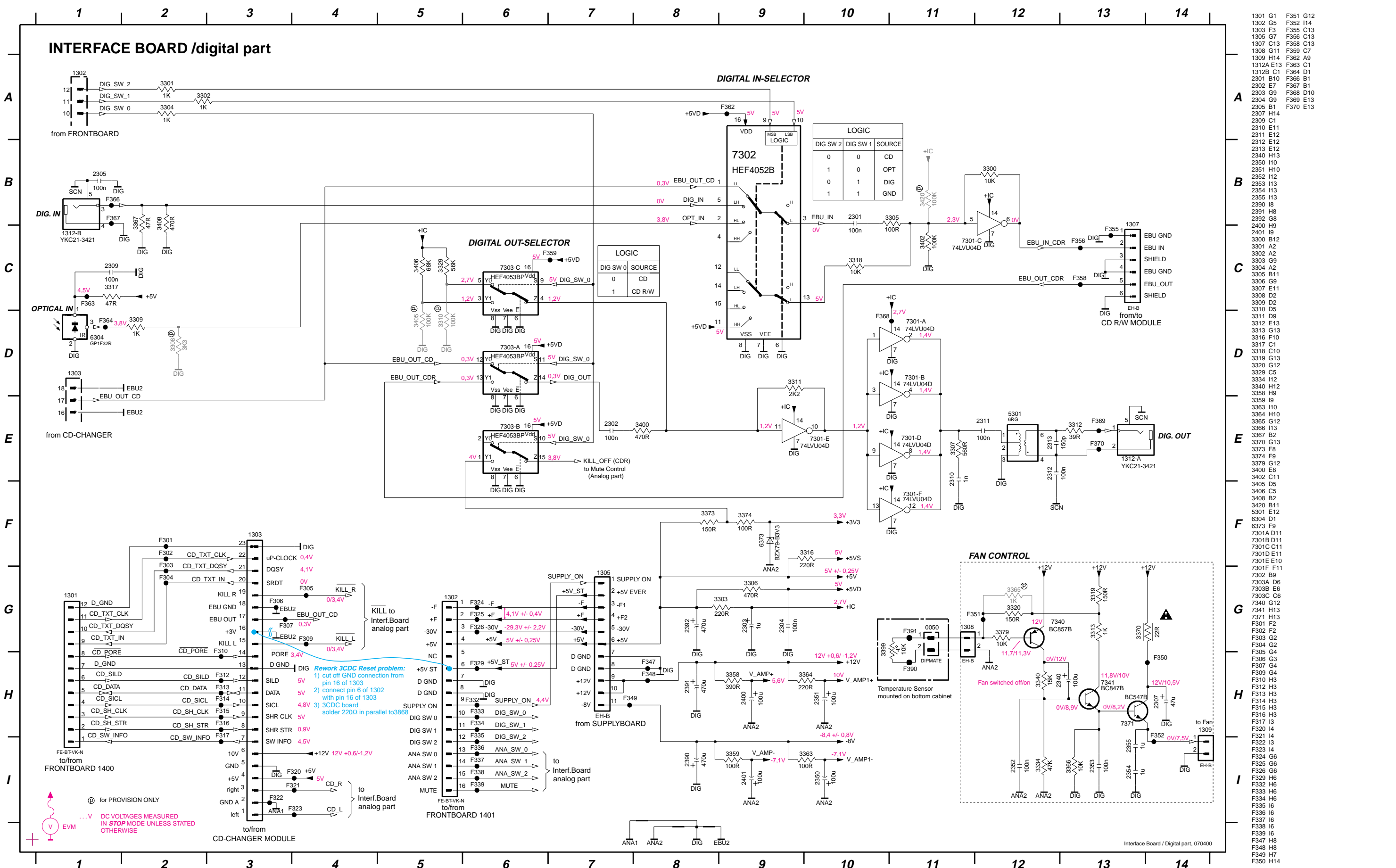
HEADPHONE / MICROPHONE BOARD / componentside view



- | | | | | | | | | |
|---------|----------|----------|---------|---------|---------|---------|---------|---------|
| 2661 A5 | 2672 A8 | 2686 A4 | 3664 B5 | 3661 B8 | 3676 B6 | 3683 B4 | 3688 A5 | 4604 A3 |
| 2662 A6 | 2680 A10 | 2687 B4 | 3665 A5 | 3672 A8 | 3677 A5 | 3684 A3 | 3689 B4 | 4605 A2 |
| 2665 B8 | 2681 B1 | 2688 A5 | 3666 B6 | 3673 B8 | 3678 A6 | 3685 B5 | 3690 A5 | 4606 B7 |
| 2666 A8 | 2682 A1 | 2697 A10 | 3667 B9 | 3674 A8 | 3681 B1 | 3686 A4 | 4601 A2 | 7650 A8 |
| 2671 B8 | 2685 A5 | 3663 B5 | 3668 A8 | 3675 A7 | 3682 A1 | 3687 B5 | 4603 A2 | 7680 A4 |

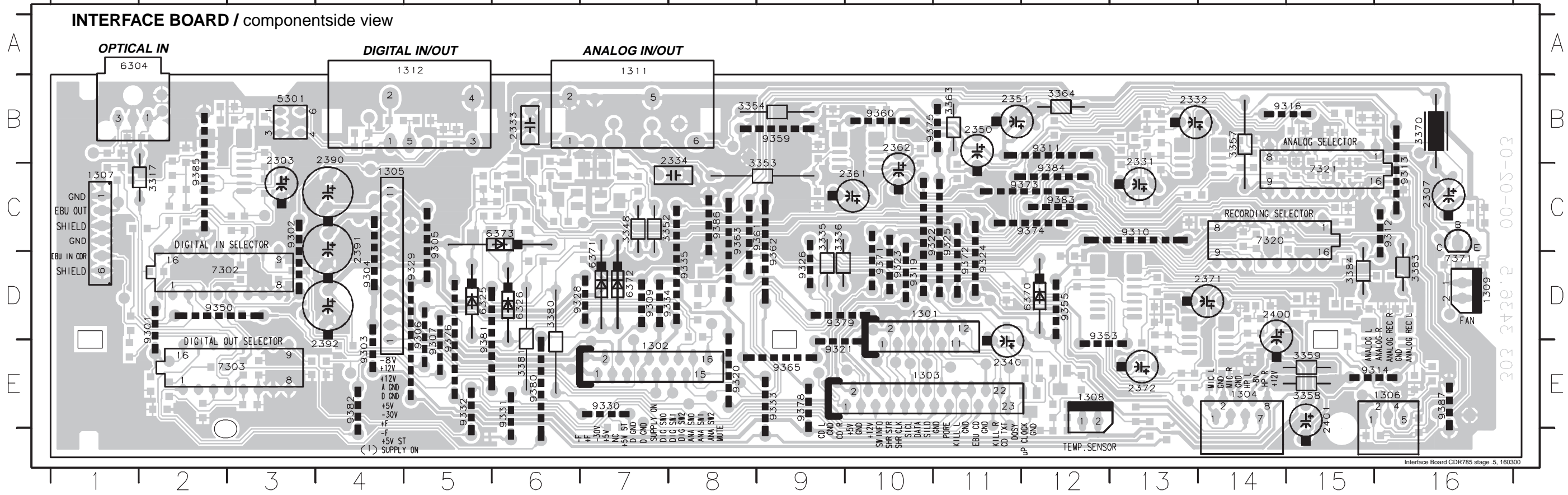
HEADPHONE / MICROPHONE BOARD / copperside view



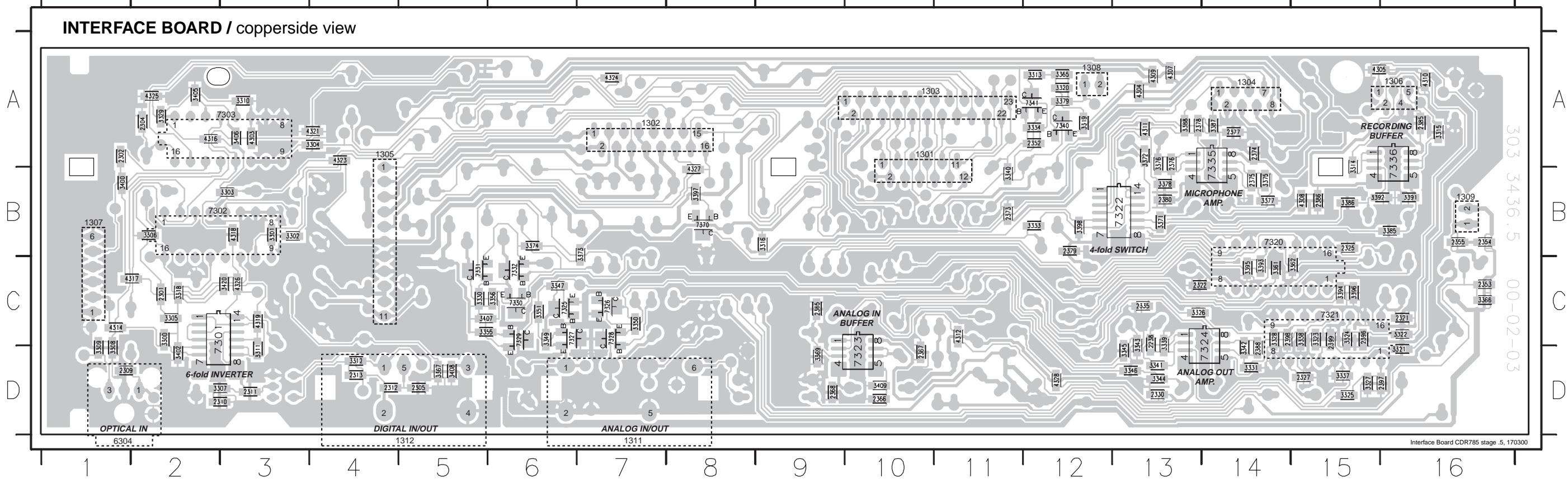


- 1301 G1
- 1302 G5
- 1303 F3
- 1305 G7
- 1307 C13
- 1308 G11
- 1309 H14
- 1312A E13
- 1312B C1
- 2301 B10
- 2302 E7
- 2303 G9
- 2304 G9
- 2305 B1
- 2307 H14
- 2309 C1
- 2310 E11
- 2311 E12
- 2312 E12
- 2313 E12
- 2340 H13
- 2350 I10
- 2351 H10
- 2352 I12
- 2353 I13
- 2354 I13
- 2355 I13
- 2390 I8
- 2391 H8
- 2392 G8
- 2400 H9
- 2401 I9
- 3300 B12
- 3301 A2
- 3302 A2
- 3303 G9
- 3304 A2
- 3305 B11
- 3306 G9
- 3307 E11
- 3308 D2
- 3309 D2
- 3310 D5
- 3311 D9
- 3312 E13
- 3313 G13
- 3316 F10
- 3317 C1
- 3318 C10
- 3319 G13
- 3320 G12
- 3329 C5
- 3334 I12
- 3340 H12
- 3358 H9
- 3359 I9
- 3363 I10
- 3364 H10
- 3365 G12
- 3366 I13
- 3367 B2
- 3370 G13
- 3373 F8
- 3374 F9
- 3379 G12
- 3400 E8
- 3402 C11
- 3405 D5
- 3406 C5
- 3408 B2
- 3420 B11
- 5301 E12
- 6304 D1
- 6373 F9
- 7301A D11
- 7301B D11
- 7301C C11
- 7301D E11
- 7301E E10
- 7301F F11
- 7302 B9
- 7303A D6
- 7303B E8
- 7303C C6
- 7340 G12
- 7341 H13
- 7371 H13
- F301 F2
- F302 F2
- F303 G2
- F304 G2
- F305 G4
- F306 G3
- F307 G4
- F309 G4
- F310 H3
- F312 H3
- F313 H3
- F314 H3
- F315 H3
- F316 H3
- F317 I3
- F320 I4
- F321 I4
- F322 I3
- F323 I4
- F324 G6
- F325 G6
- F326 G6
- F329 H6
- F332 H6
- F333 H6
- F334 H6
- F335 I6
- F336 I6
- F337 I6
- F338 I6
- F339 I6
- F347 H8
- F348 H8
- F349 H7
- F350 H14
- F351 G12
- F352 I14
- F355 C13
- F356 C13
- F358 C13
- F359 C7
- F362 A9
- F363 C1
- F364 D1
- F366 B1
- F367 B1
- F368 D10
- F369 E13
- F370 E13

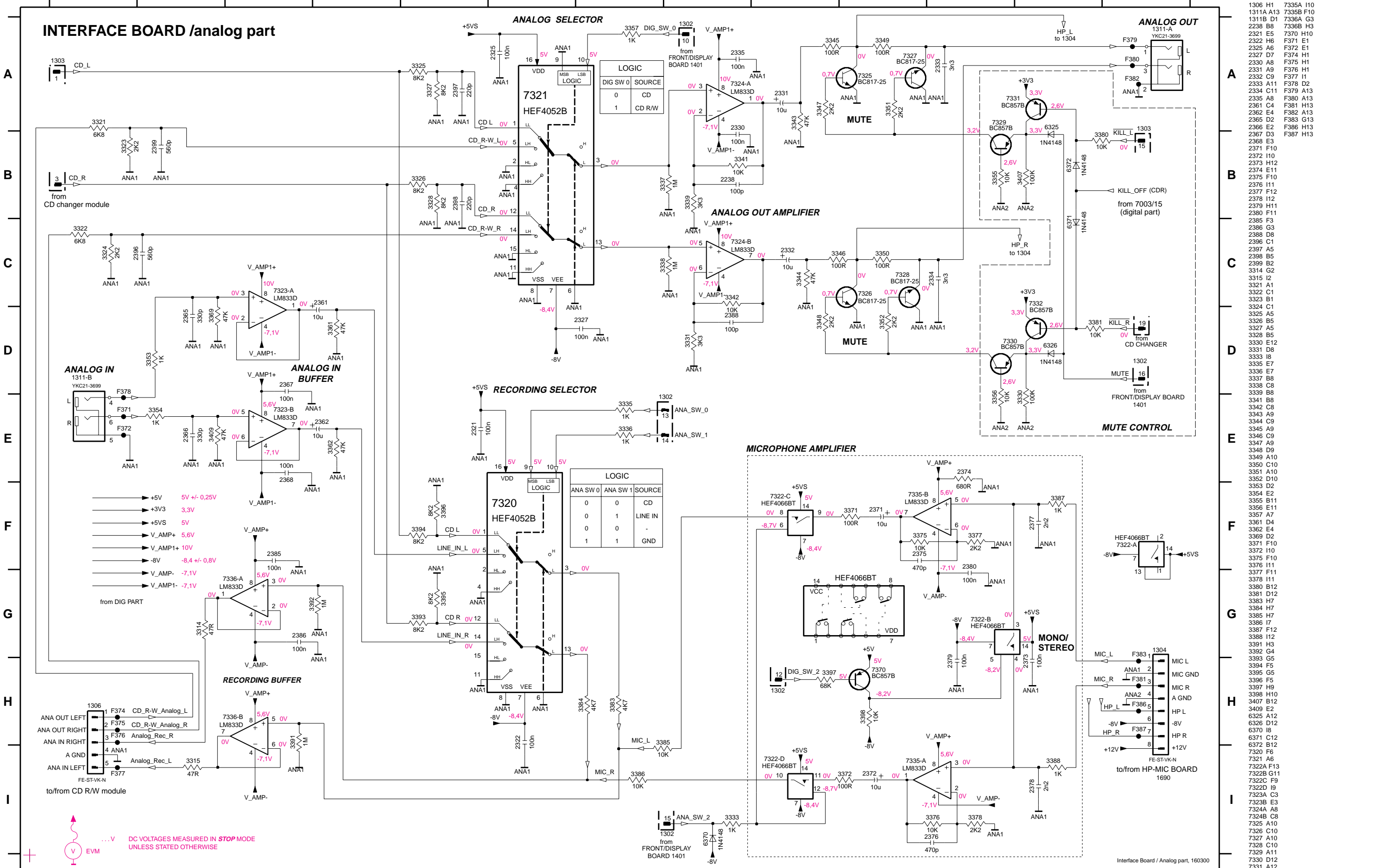
1301 D10 1305 D5 1309 D16 2307 C16 2334 B8 2361 C10 2390 B4 2401 E15 3348 C7 3357 B14 3364 B12 3383 D16 6325 D5 6372 D7 7320 D14 9302 C3 9306 D5 9311 B12 9316 B15 9322 C10 9326 D9 9331 E6 9335 D8 9359 B9 9363 C8 9373 C11 9378 E9 9382 E4 9386 C8
 1302 E7 1306 E16 1311 B7 2331 B13 2340 E11 2362 B10 2391 C4 3317 C2 3352 C7 3358 E15 3370 B16 3384 D15 6326 D6 6373 C6 7321 C15 9303 E4 9307 E5 9312 C16 9319 D10 9323 D10 9328 D6 9332 E5 9350 D2 9360 B10 9365 E9 9374 C12 9379 D9 9383 C13 9387 E16
 1303 E10 1307 C1 1312 B5 2332 B13 2350 B11 2371 D14 2392 E4 3335 D9 3353 C9 3359 E15 3380 D6 5301 B3 6370 D12 7302 C3 7371 D16 9304 D4 9309 D7 9313 C16 9320 E8 9324 D11 9329 E5 9333 E9 9353 D12 9361 C9 9371 D10 9375 B10 9380 E6 9384 C12
 1304 E14 1308 E12 2303 B3 2333 B6 2351 B11 2372 E13 2400 D14 3336 D10 3354 B8 3363 B11 3381 D6 6304 B2 6371 D7 7303 D3 9301 D2 9305 C5 9310 C13 9314 E15 9321 E9 9325 D11 9330 E7 9334 D7 9355 D12 9362 D9 9372 D11 9376 E5 9381 E6 9385 C2



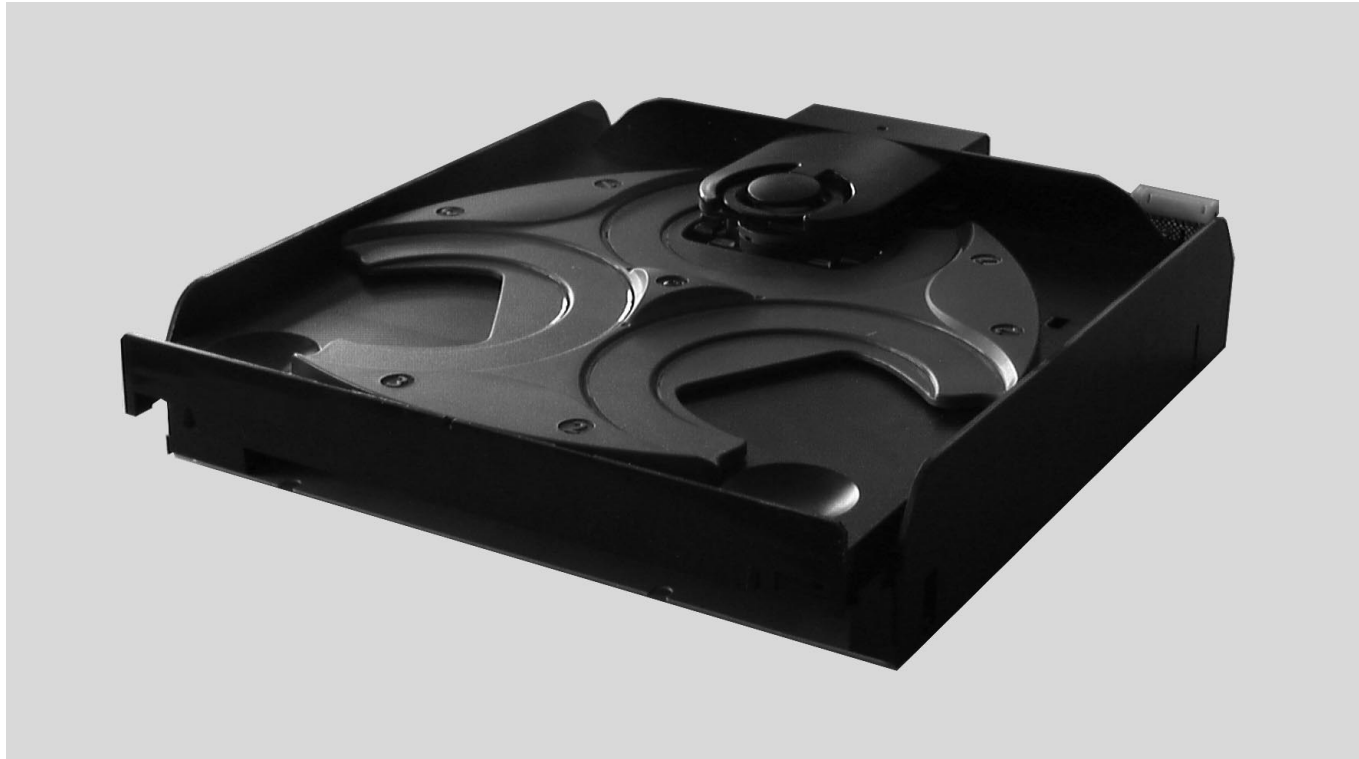
2238 C13 2309 D1 2321 C16 2335 C13 2365 C9 2374 A14 2379 B12 2396 C15 3301 B3 3306 B2 3311 D3 3316 B9 3322 C16 3327 D15 3333 B12 3340 B11 3345 D13 3351 C6 3365 A12 3372 A13 3377 B14 3387 A14 3394 C15 3400 B1 3408 D5 4305 A15 4311 A13 4318 B3 4325 A2 7322 B13 7327 C6 7332 C6 7370 B8
 2301 C2 2310 D3 2322 C13 2352 A12 2366 D10 2375 B14 2380 B13 2397 D16 3302 B3 3307 D3 3312 D4 3318 C2 3323 C15 3328 A14 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 A13 2385 A16 2398 C14 3303 B3 3308 D1 3313 A12 3319 A12 3324 C15 3329 A14 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 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 H10
- 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 H1
- 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 H10
- 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 A10
- 3326 B5
- 3327 A5
- 3328 B5
- 3329 A5
- 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 H10
- 3375 F10
- 3376 I11
- 3377 F11
- 3378 I11
- 3380 B12
- 3381 D12
- 3383 H7
- 3384 H7
- 3385 H7
- 3386 I7
- 3387 F12
- 3388 H2
- 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

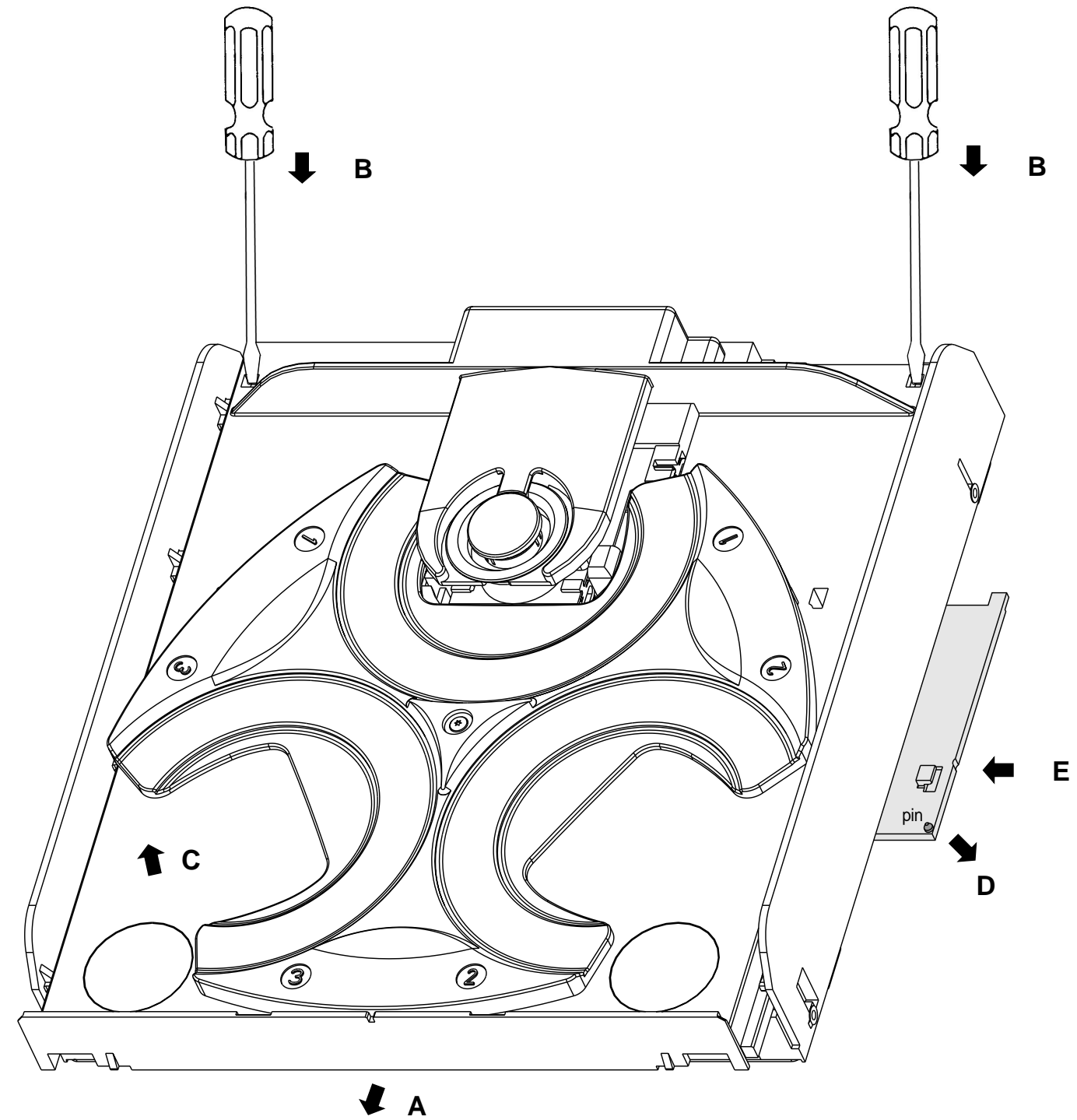
(3 Disc Carousel Changer)

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Dismantling Hints



Dismantling of Drawer

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

Dismantling of Cover Plate

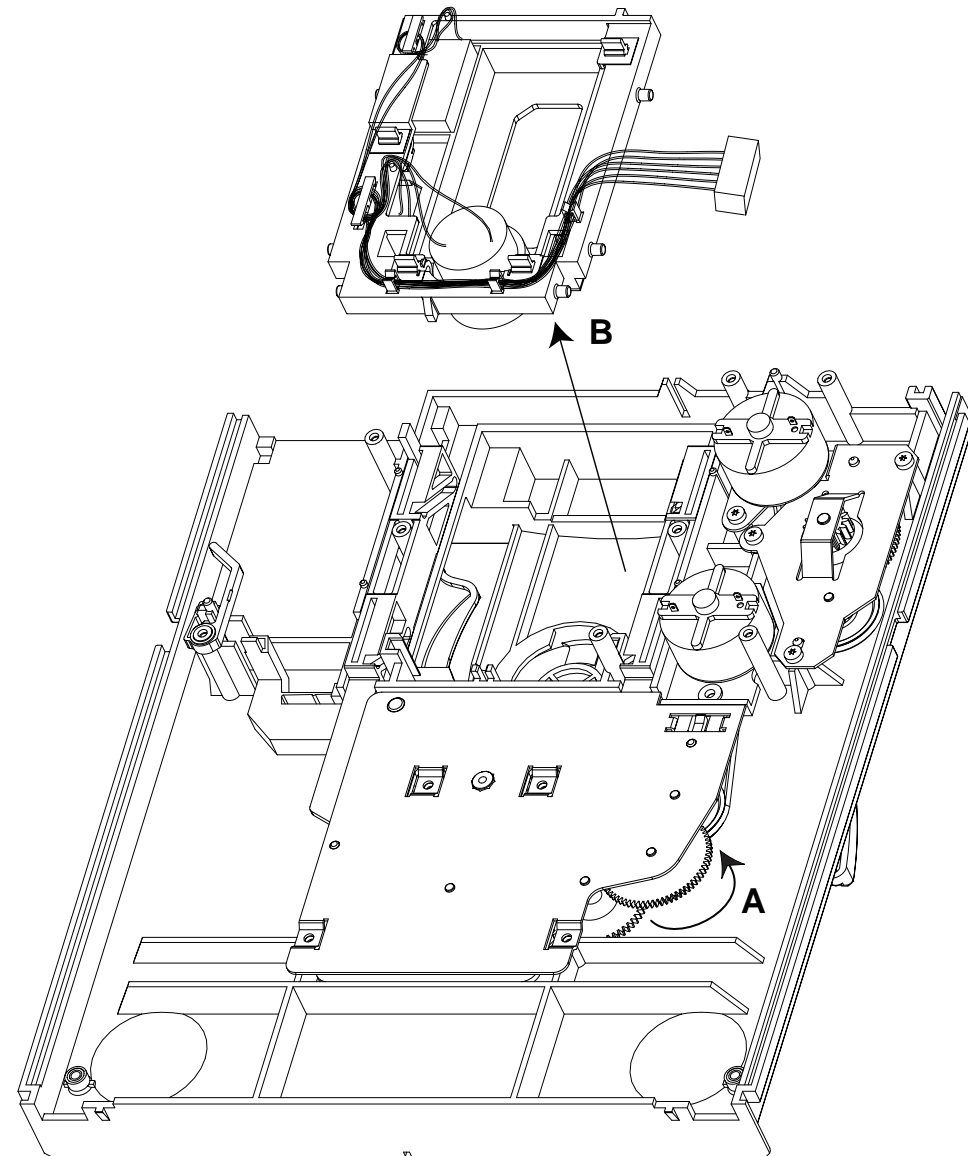
- (protection for flex wire)
- D Lift plate to unlock pin from bottom plate
- E Move plate inwards to remove from bottom plate

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.
Pay attention to ESD! See WARNING on next page.
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.

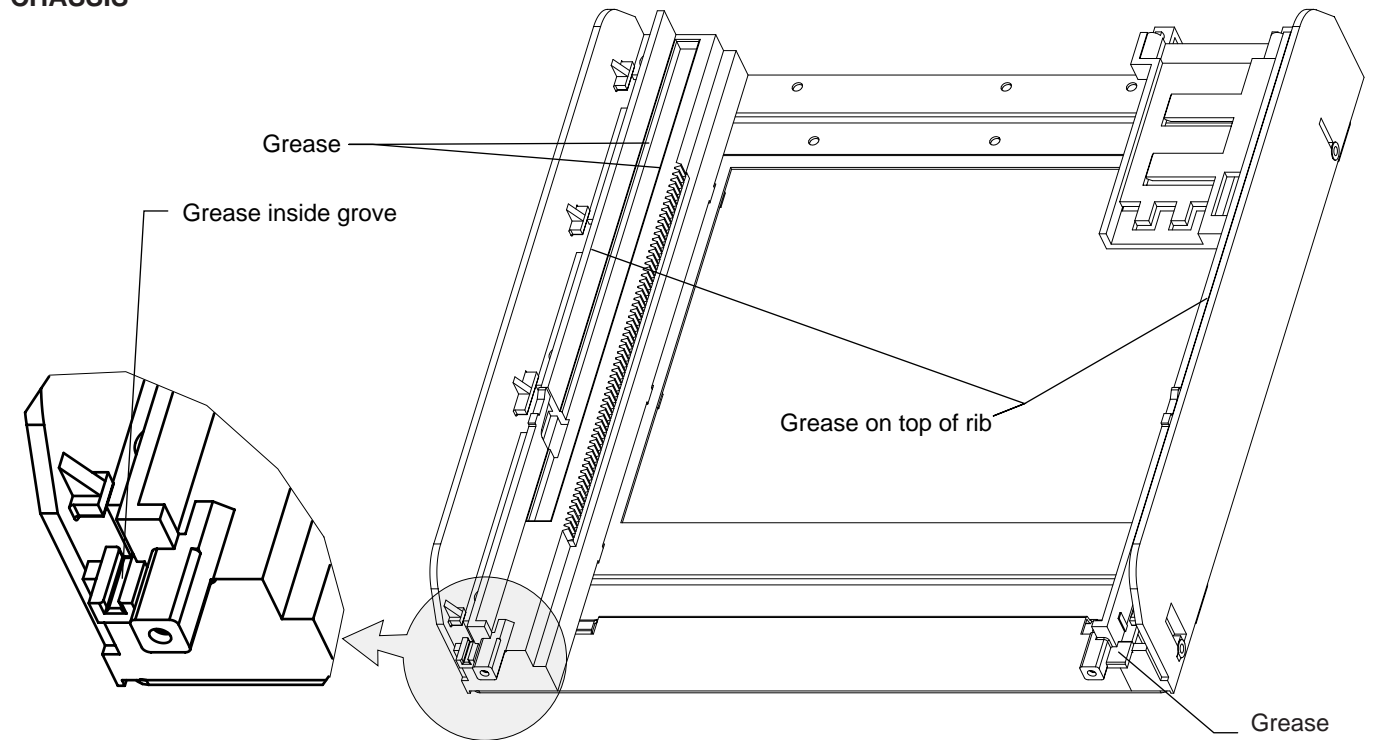


Mounting of Carousel

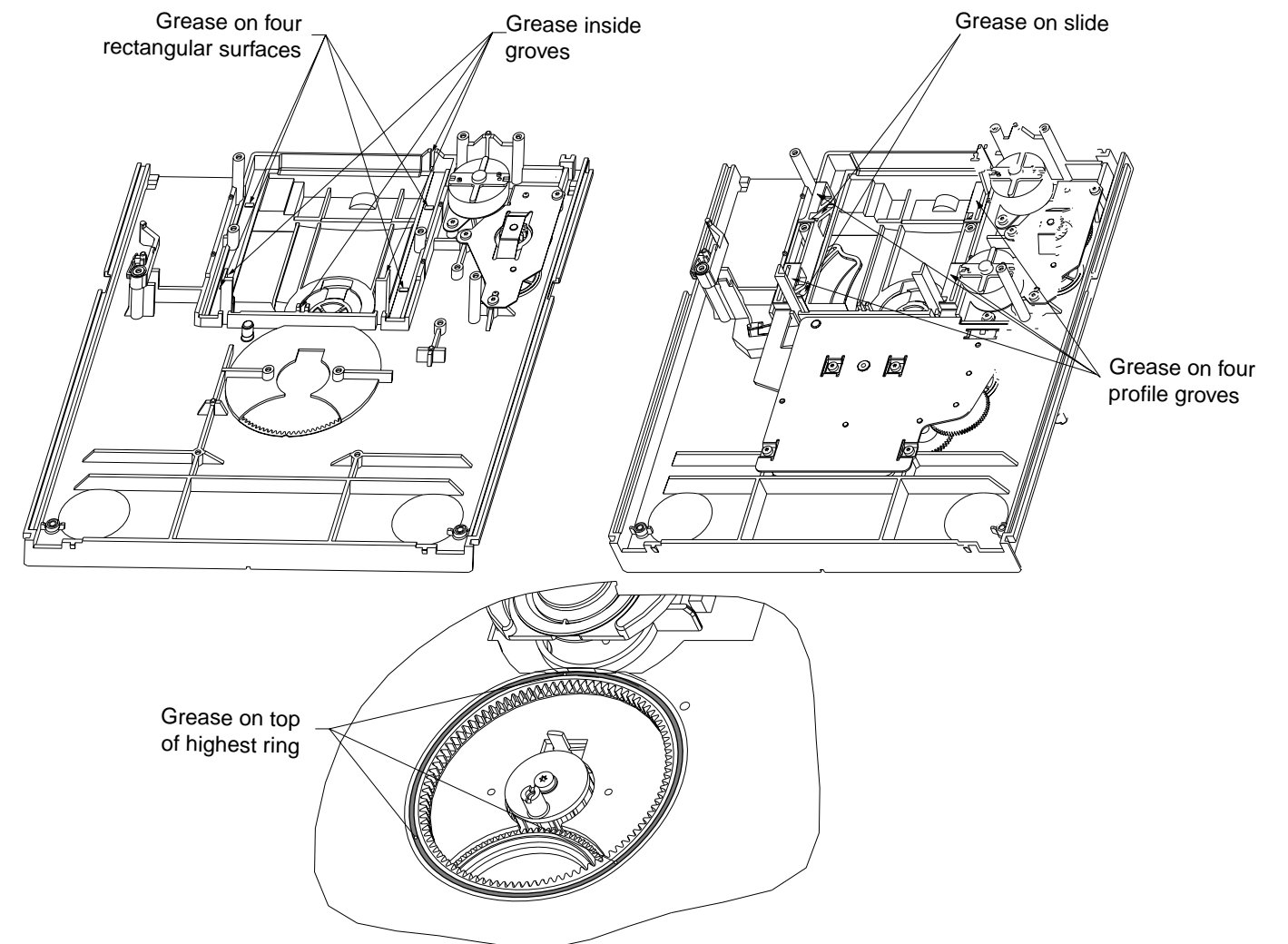
1. Turn gearwheel (pos 42) of disc change mechanism by finger until CD drive is in play position.
2. Mount carousel (pos 115) so that disc is positioned right on turntable. Carousel position number doesn't matter.

Lubrication Instructions

CHASSIS

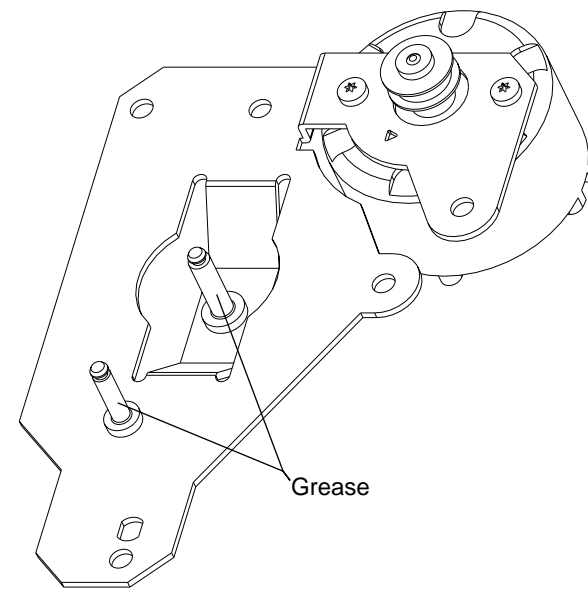


DRAWER

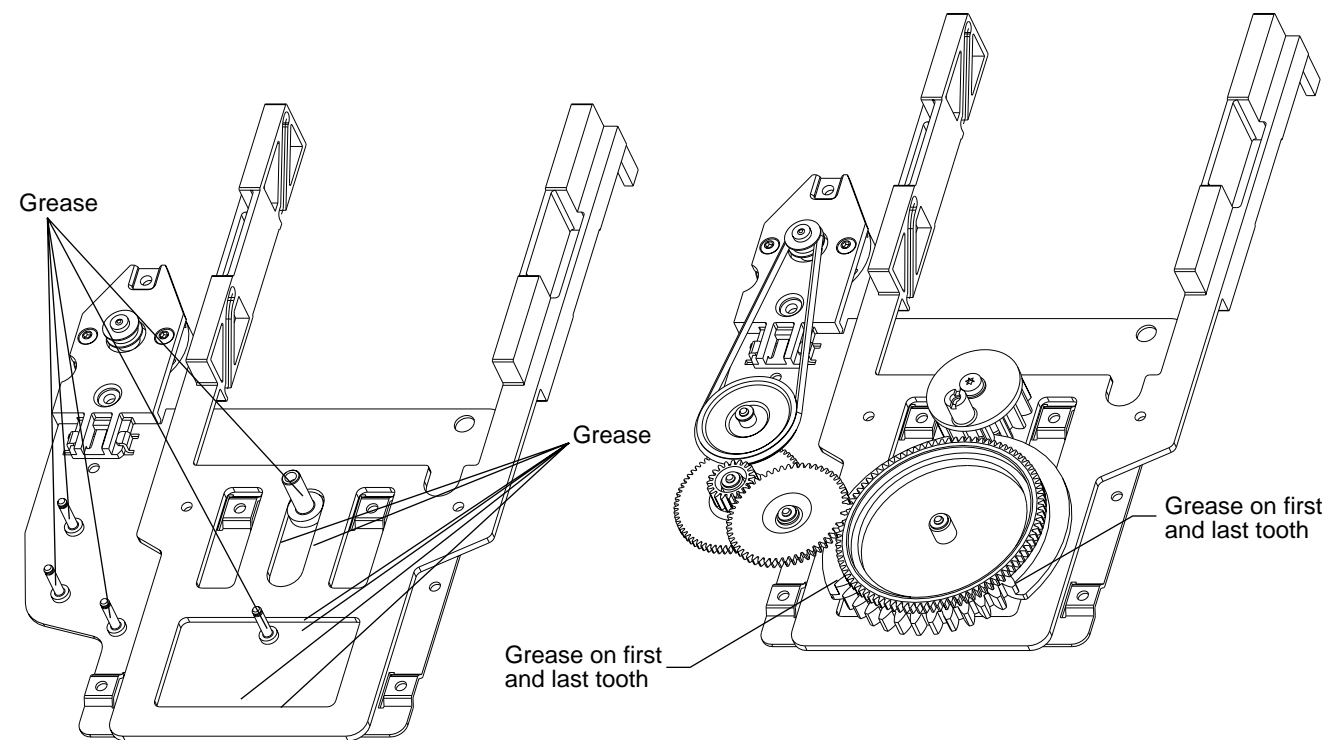


Lubrication Instructions

DRAWER MECHANISM



DISC CHANGE MECHANISM



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

WARNING

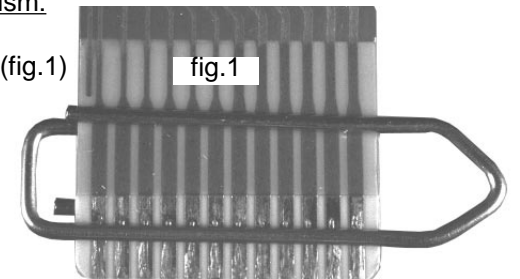
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

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

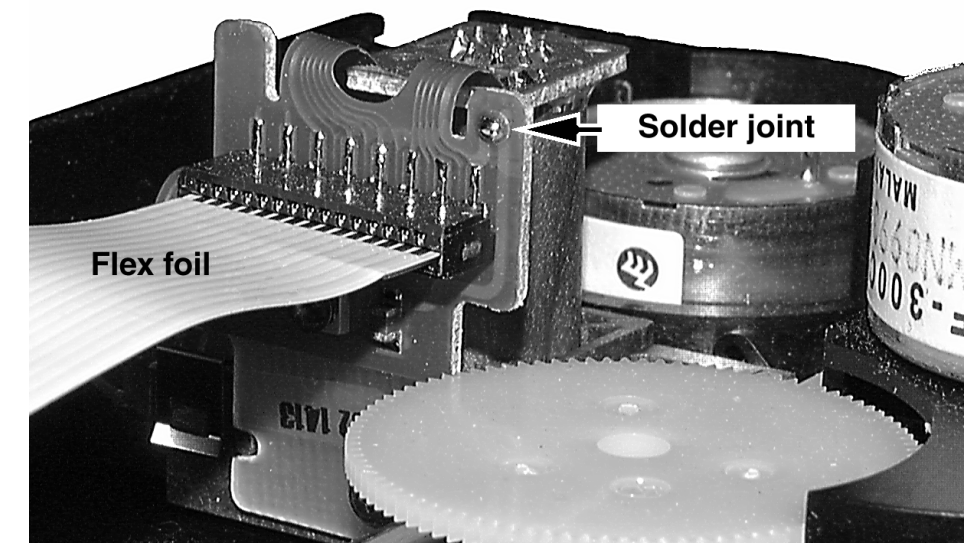
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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

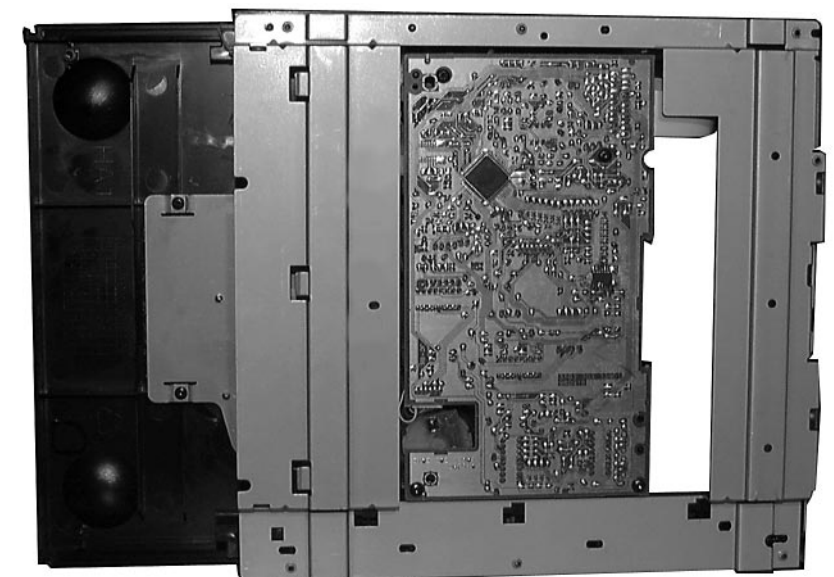
1. Disconnect flexfoil cable from old CD drive
2. Put a paper clip onto the flexfoil cable to short-circuit connections (fig.1)
3. Remove old CD drive
4. Remove paper clip from flexfoil cable
5. Connect flexfoil cable to new CD drive
6. Position new CD drive on its studs
7. Remove soldered short-circuit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



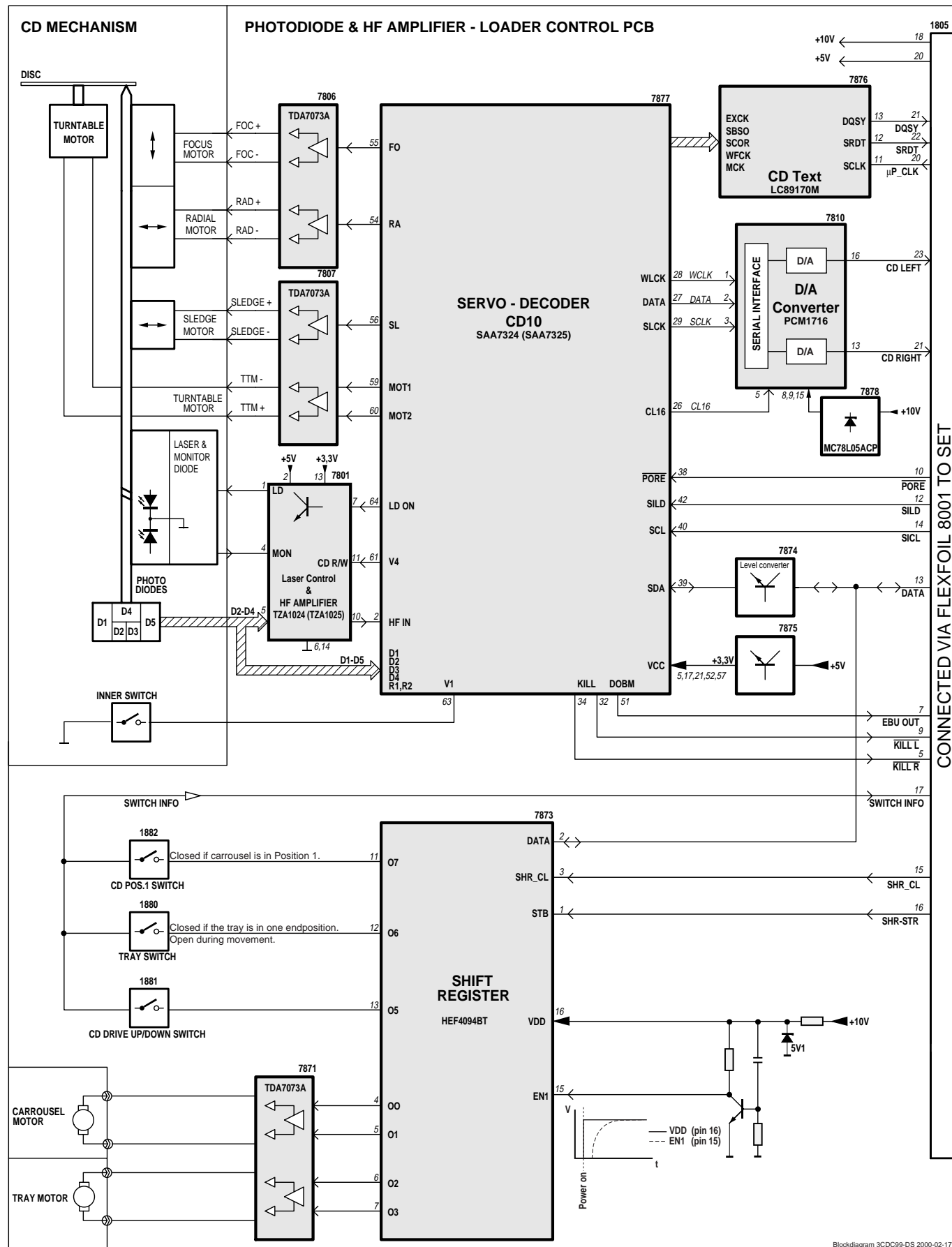
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laser diode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connecting the drive to the set.



Service Position

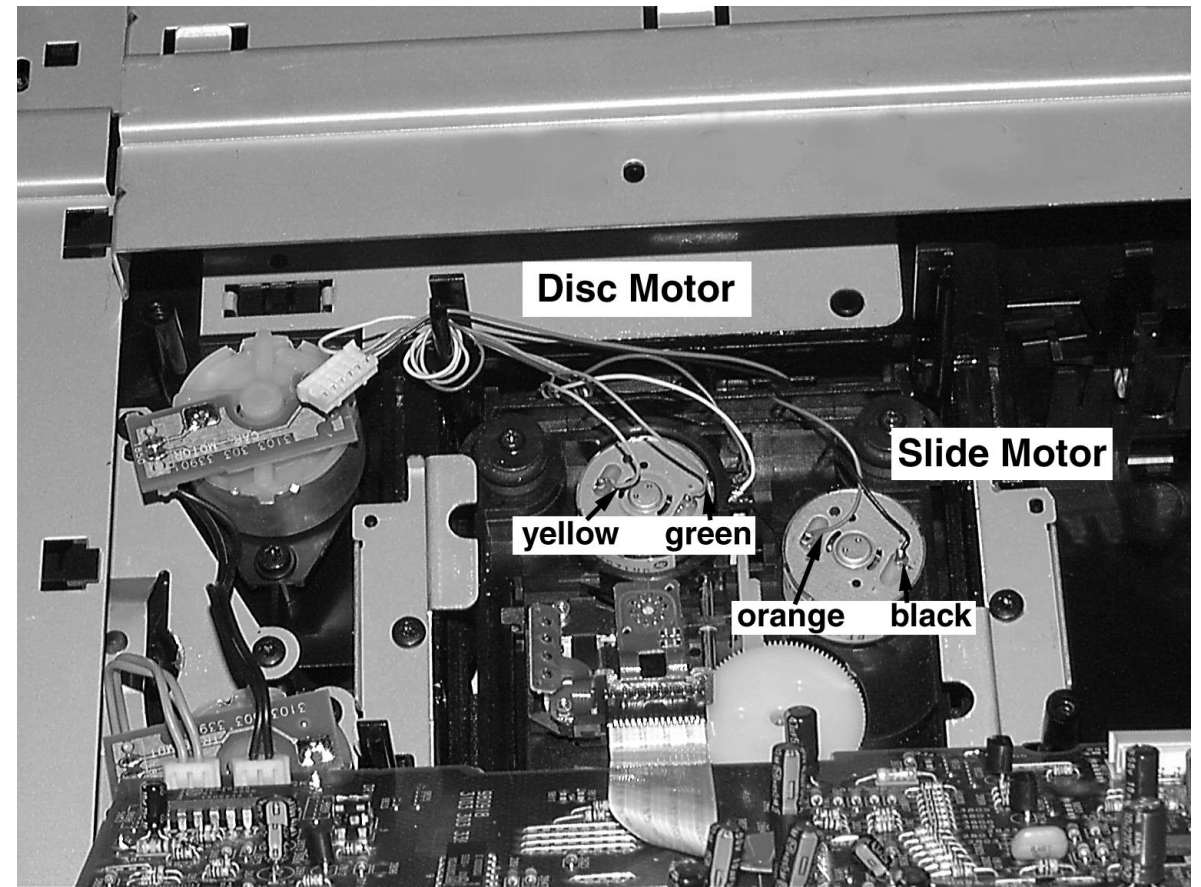


Blockdiagram

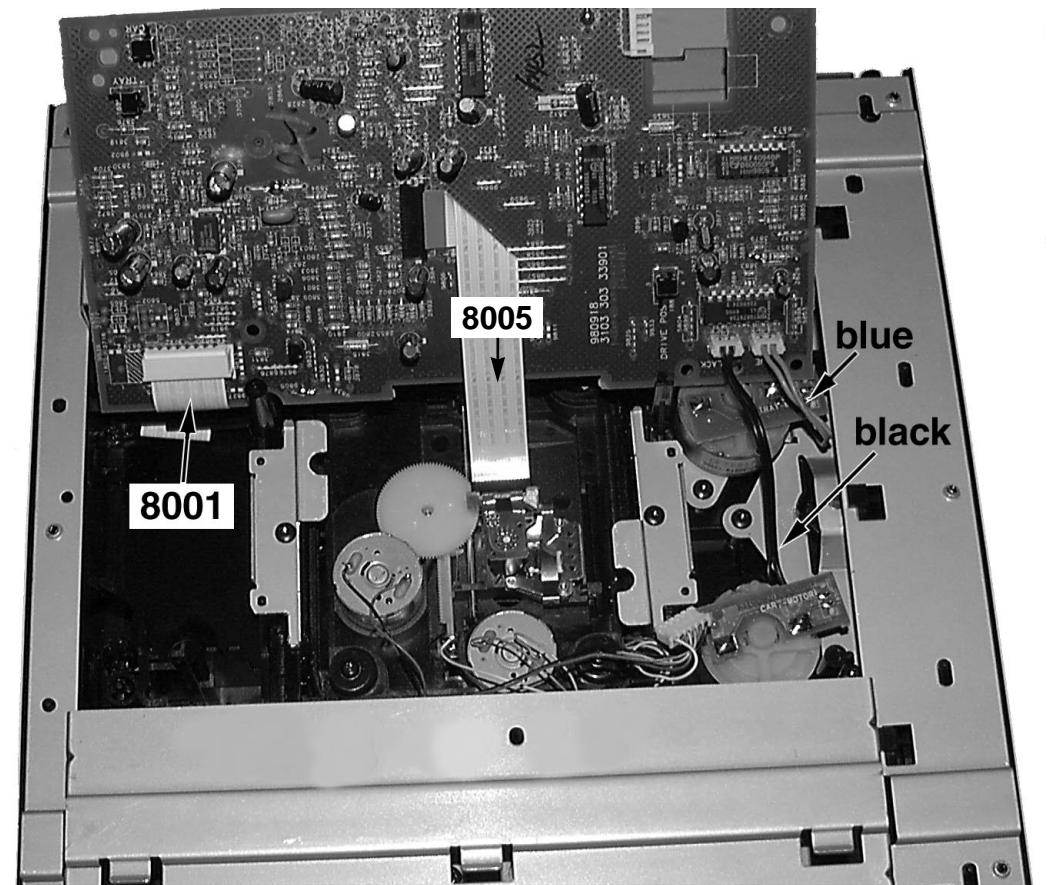


CONNECTED VIA FLEXFOIL 8001 TO SET

Wiring of CD Drive

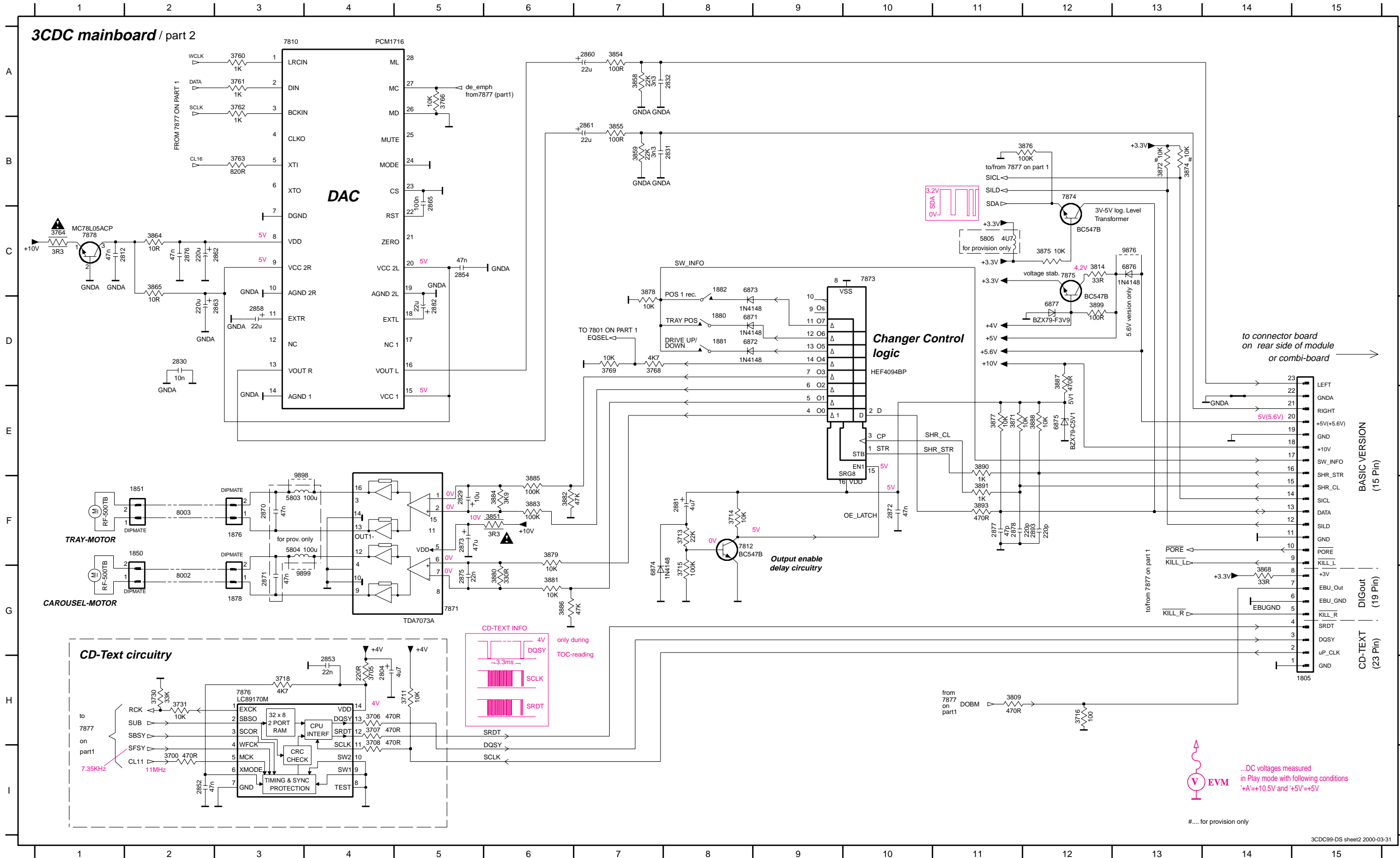


Pict. 1



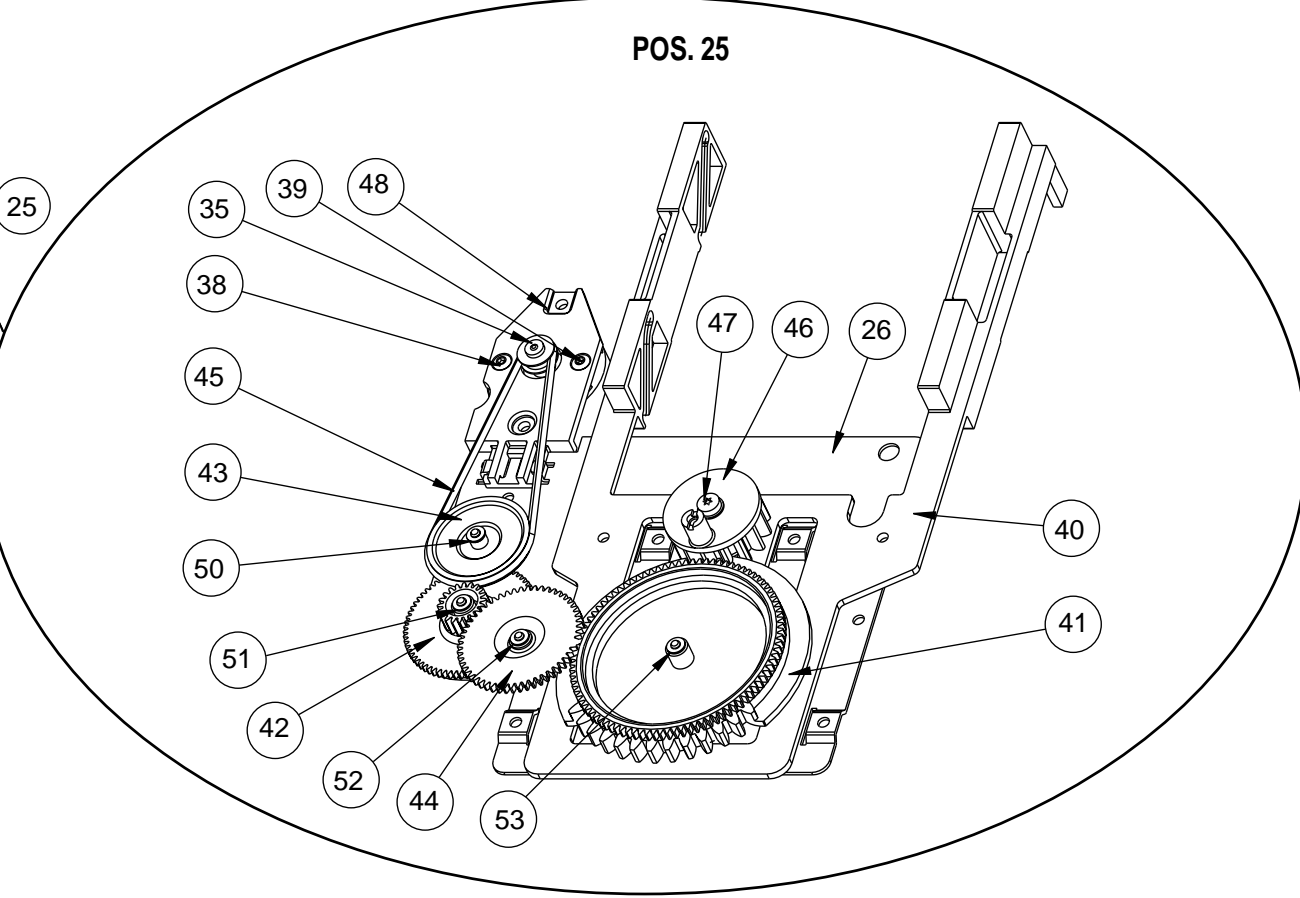
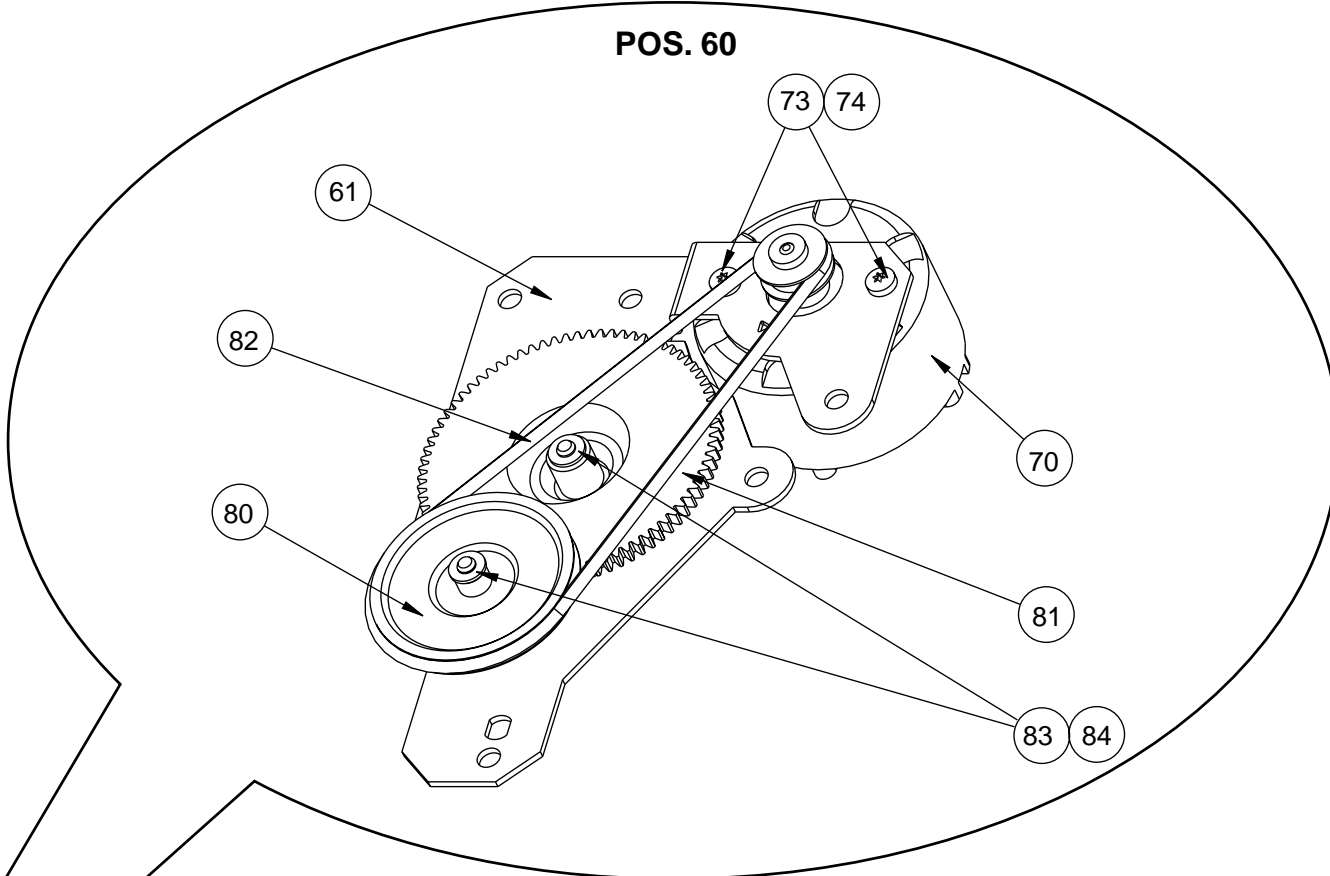
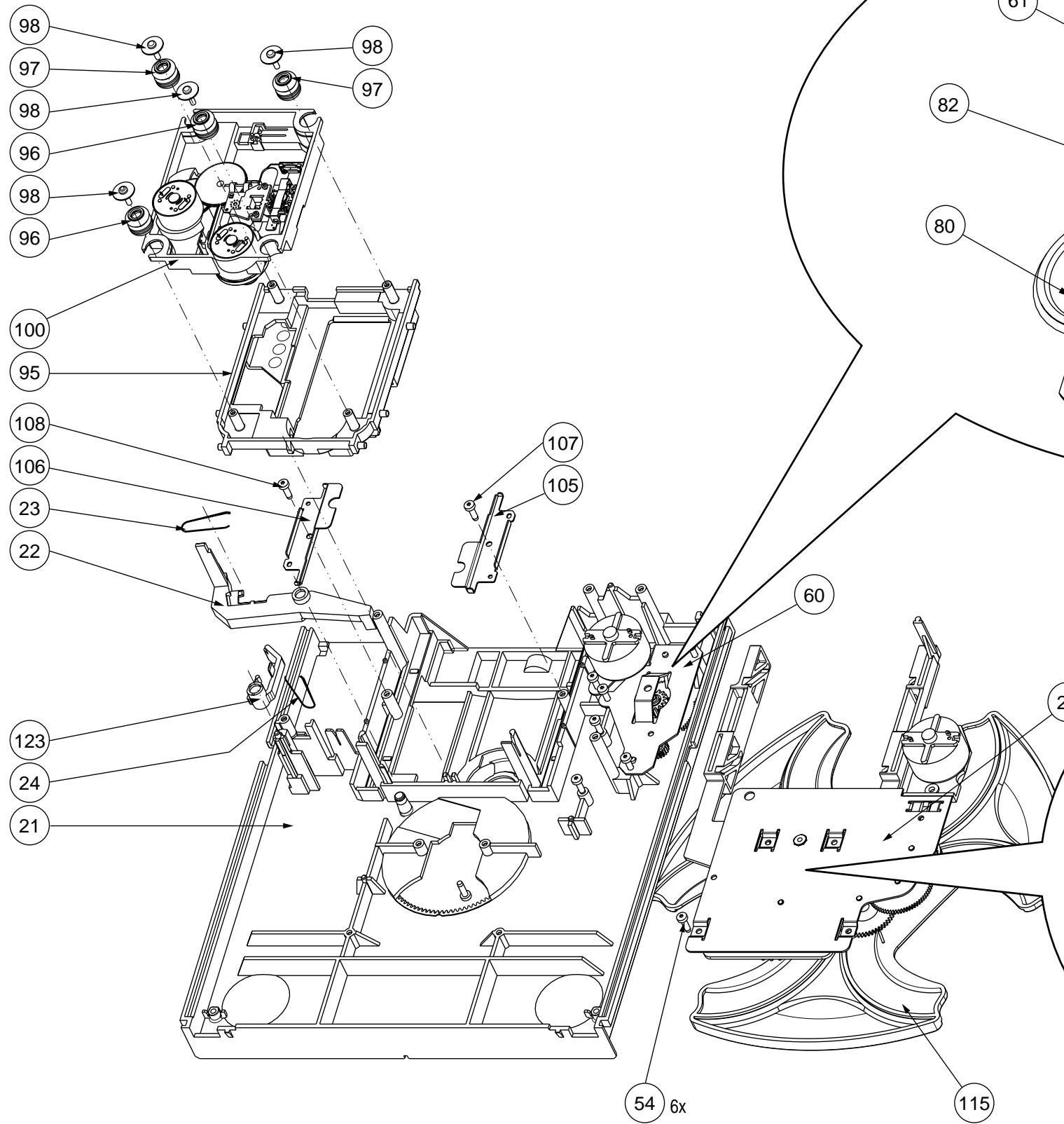
Pict. 2

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	3811 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	3768 D7	3760 A3	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	



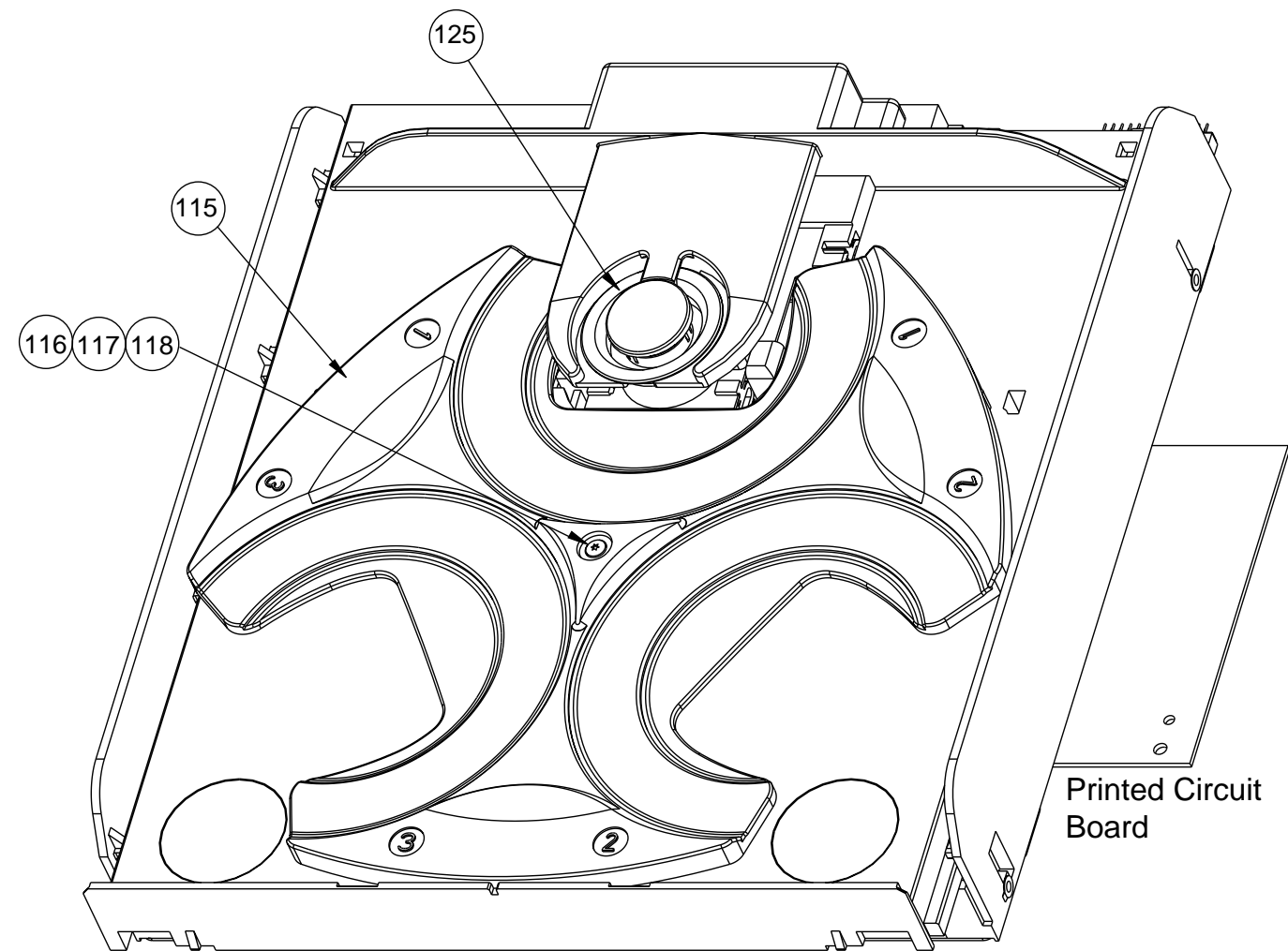
EXPLODED VIEW / 3CDC99-DS

Drawer bottom view

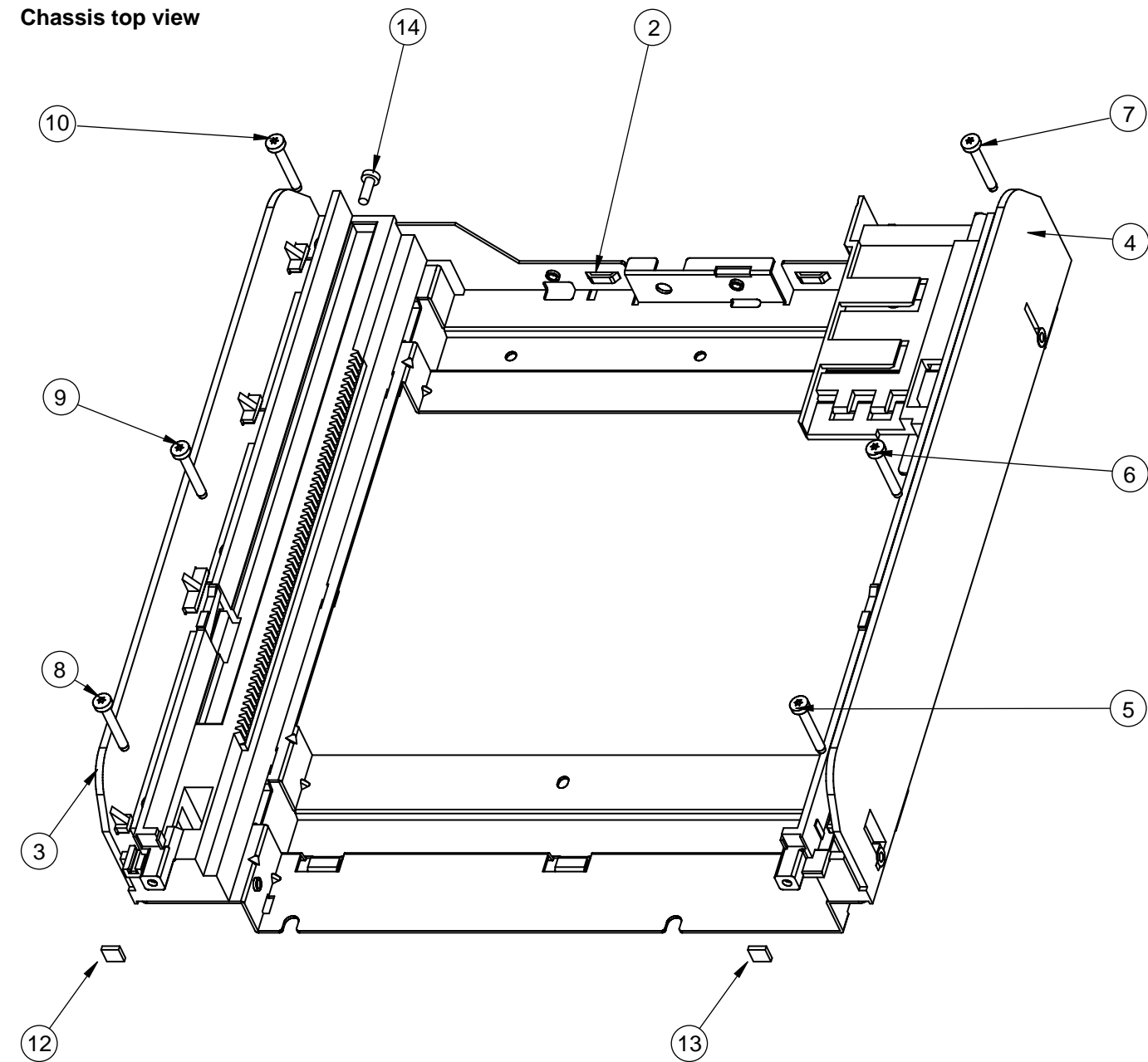


EXPLODED VIEW / 3CDC99-DS

Module top view



Chassis top view

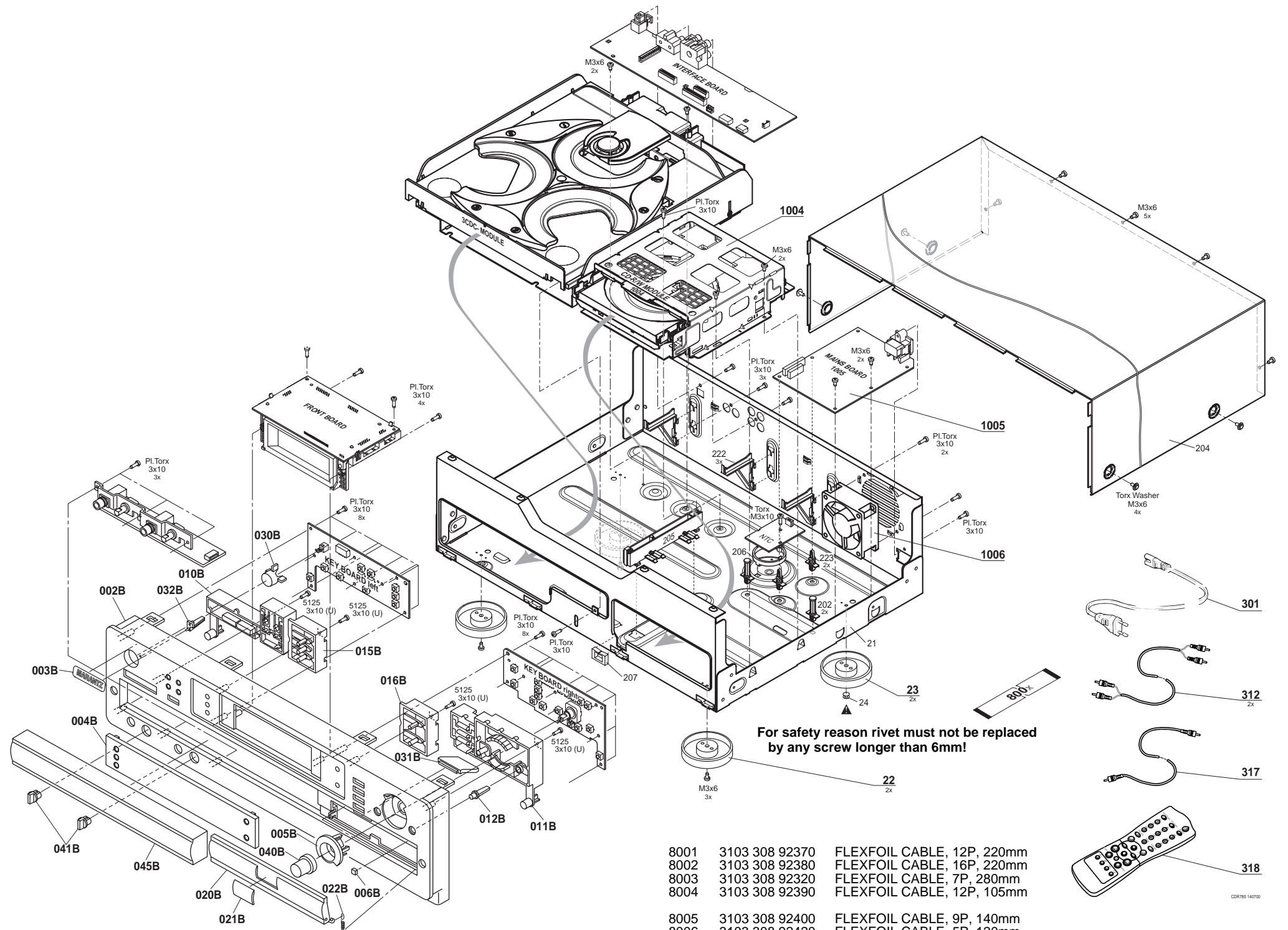
**MECHANICAL PARTSLIST 3CDC99-DS MODULE**

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

POS. NO	VERS. COLOR	DESCRIPTION	PART NO. (MJI)
002B	/F1N	FRONT PANEL GOLD	437W248110
002B	/U1B	FRONT PANEL BLACK	437W248010
003B		BADGE MARANTZ	185J251010
004B		WINDOW	437W158010
005B	/F1N	RING EASY JOG GOLD	437W353110
005B	/U1B	RING EASY JOG BLACK	437W353010
010B	/F1N	BUTTON CHANGER PLAY/STOP GL	437W270110
010B	/U1B	BUTTON CHANGER PLAY/STOP BL	437W270010
011B	/F1N	BUTTON CD-R REC MODE GOLD	437W270120
011B	/U1B	BUTTON CD-R REC MODE BLACK	437W270020
012B		BUTTON CD-R MENU YES	437W270040
015B		BUTTON CHANGER DISC SELECT	437W270030
016B		BUTTON CD-R SOURCE SELECT	437W270130
019B		SCREW 51250310U0	nsp
020B	/F1N	FLIP DOOR CD-R GOLD	437W257110
020B	/U1B	FLIP DOOR CD-R BLACK	437W257010
021B		BADGE CD-RW LOGO	437W251010
022B		CLOSE SPRING FLIP DOOR	437W115010
030B	/F1N	BUTTON POWER ON/STANDBY GL	437W270150
030B	/U1B	BUTTON POWER ON/STANDBY BL	437W270050
031B		REC INDICATOR	437W355500
032B		STANDBY INDICATOR	437W355020
040B	/F1N	JOG KNOB GOLD	437W154110
040B	/U1B	JOG KNOB BLACK	437W154010
041B	/F1N	LEVEL MICROPHONE/HEADPHONE GL	437W154120
041B	/U1B	LEVEL MICROPHONE/HEADPHONE BL	437W154020
045B	/F1N	TRAY LID CD CHANGER GOLD	437W063110
045B	/U1B	TRAY LID CD CHANGER BLACK	437W063010
22		FOOT GOLD	183J057010
23		FOOT GOLD	183J057110
▲ 301	/F1N	MAINS CORD JAPAN (3104 128 92620)	QW12892620
▲ 301	/U1B	MAINS CORD NAFTA (4822 321 11466)	QP32111466
▲ 1005	/F1N	POWER BOARD-SMPS CDR785 WW /01 (3103 308 52980)	QY30852980
▲ 1005	/U1B	POWER BOARD-SMPS CDR785 US /17 (3103 308 52970)	QY30852970
1006		FAN KD120 6PTS 3 - C112 (3103 308 52950)	QY30852950
001T	/F1N	USER GUIDE (JPN) (3103 306 17690)	437W851110
001T	/U1B	USER GUIDE (NAFTA) (3103 306 17680)	437W851250
318		REMOTE CONTROLLER RC4160DR (3139 228 86250)	ZK436W0010

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



- 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 21003	10kΩ	5%	0,2W

3449©	4822 051 20223	22kΩ	2%	0,25W
3451©	4822 117 12955	2,7kΩ	1%	0,1W
3452©	4822 051 20223	22kΩ	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 20223	22kΩ	2%	0,25W
3495©	4822 051 20223	22kΩ	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 20223	22kΩ	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 84270	TMP88CU77F-DR450.1, 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