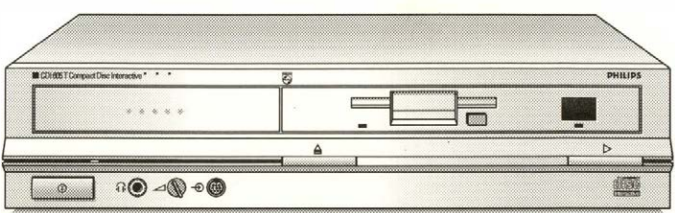


Service
Service
Service

Interactive
Media
Systems

CDI



CDI 605T

Service Manual



The CDI 605 T, tray loader version, is derived from the CDI 605 caddy loader version.
This manual contains only servicing data related to modifications on the tray loader, CD panel PCB, Expansion panel PCB and Extension board.
Service code of service manual CDI605/00/05/17;
4822 725 24083

CONTENTS

1	Manual Information
2	Product Information
3	Service Information
4	Mechanical Drawings and partslist
6	Electrical Drawings and partslists
7	Measurements
8	Extension part

CDM
These sets are equipped with Compactdisc Tray Loader Mechanism 915, including CDM 9.
Service information is include in this manual.

- SF** Varoitus!
Laitte sisältää laserdiodin, joka lähettää näkymätöntä silmille vaarallista lasersäteilyä.
- S** Varning!
Osynlig laserstrålning när denna del är öppnad och spärren ar urkopplad.
Betakta ej strålen.
- DK** Advarsel!
Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion.
Undgå udsættelse for stråling.
- 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



CHAPTER	CONTENTS
1	DETAILED TABLE OF CONTENTS
2	PRODUCT INFORMATION
* 2.1	Technical specification
2.2	Connections and controls
2.3	Accessoires
2.3.1	Video/audio cables
2.3.2	Various
* 2.3.3	Extension parts
* 2.3.4	Loading a disc in the caddy
2.3.5	Connections of RS232 I/O ports
2.3.6	Direction for use.
3	SERVICE INFORMATION
3.1	Safety instructions
* 3.2	Servicing of SMDs (Surface Mounted Devices)
* 3.2.1	General cautions on handling and storage
* 3.2.2	Removal of SMDs
* 3.2.2.1	Caution on removal
* 3.2.3	Attachment of SMDs
* 3.2.3.1	Caution on attachment
* 3.3	Handling ESD sensitive components
* 3.3.1	Personal safety
* 3.3.2	Storage and transport
* 3.3.3	Testing or handling
* 3.3.4	Mounting ESD sensitive components
* 3.3.5	Soldering
* 3.3.6	Electrostatic charges
* 3.3.7	Transients (switch-on phenomena)
* 3.3.8	Working environment
* 3.3.9	Replacement of the Flat Pack ICs
* 3.4	Codenumbers for standardized resistors
* 3.5	Service tools
* 3.5.1	Service PCB
* 3.5.1.1	Circuit diagram
* 3.5.1.2	Layout
* 3.5.1.3	Parts list
3.5.2	Test discs
3.5.3	Extension connectors
3.5.4	Measurement equipment
3.5.5	Pointing devices
3.5.6	(de)Mounting tool
3.6	Central repair procedures
4	MECHANICAL DRAWINGS AND PARTS LIST
4.1	Exploded view and demounting instructions of cabinet
4.1.1	Mechanical parts list of cabinet
4.2	Exploded view of TRAY LOADER
4.2.1	Parts list of TRAY LOADER
4.2.2	Demounting of CDM

CHAPTER	CONTENTS
* 5	DESCRIPTIONS
* 5.0	Introduction
* 5.1	CD part
* 5.1.1	CADDY LOADER
* 5.1.1.1	Output signals
* 5.1.1.2	Input signals
* 5.1.1.3	The disc indication LED
* 5.1.2	The drive processor
* 5.1.2.1	Micro processor MC68HSC05C8 (item 7201)
* 5.1.2.2	Inputs and outputs for the drive processor
* 5.1.2.3	Start and play
* 5.1.2.4	Jump to a given time
* 5.1.2.5	Pause
* 5.1.2.6	Service
* 5.1.2.7	Read subcode
* 5.1.2.8	Stop
* 5.1.2.9	Communication function
* 5.1.3	The communication function
* 5.1.3.1	The X-bus routine
* 5.1.3.2	The X-bus commands
* 5.1.3.3	Messages from and to the slave processor
* 5.1.3.4	Data format
* 5.1.3.5	Data from 68070 to the CD drive processor
* 5.1.3.6	Data from CD drive processor to slave processor
* 5.1.4	The servo software control
* 5.1.4.1	The main servo functions
* 5.1.4.2	The start up procedure
* 5.1.4.3	The search and jump procedure
* 5.1.4.4	The stop procedure
* 5.1.5	Photo diode signal processor TDA 8808
* 5.1.6	Radial error signal processor TDA 8809
* 5.1.7	Decoder SAA 7310
* 5.1.8	Audio digital output circuit PCF 3623
* 5.2	Audio part (analog)
* 5.2.1	APU panel (Audio Processing Unit)
* 5.2.1.1	Single-bit DAC (bit stream) SAA 7321
* 5.2.1.2	Dual 8-bit DAC AD 7528
* 5.2.2	Audio circuit on CD panel
* 5.3	Video part (analog)
* 5.3.1	Video encoder panel
* 5.3.1.1	PLL circuit
* 5.3.1.2	Encoder
* 5.4	Power supply part (SOPS)
* 5.4.1	Principle of operation
* 5.4.2	The pulse-width modulator
* 5.4.3	Control circuit
* 5.4.4	Overvoltage protection
* 5.4.5	Servicing hints
* 5.5	MMC part
* 5.5.1	Functional description
* 5.5.2	Microprocessor communication
* 5.5.3	Troubleshooting and service
* 5.6	Service Software
* 5.6.1	The low level MMC test
* 5.6.1.1	Tools
* 5.6.1.2	Test sequence
* 5.6.1.3	Low level test implementation
* 5.6.1.4	How to start up the low level test
* 5.6.1.5	PCB low level test
* 5.6.1.6	Terminal low level test
* 5.6.1.7	Error codes
* 5.6.1.8	Release number, position and checksum storage
* 5.6.1.9	Memory map mini MMC.

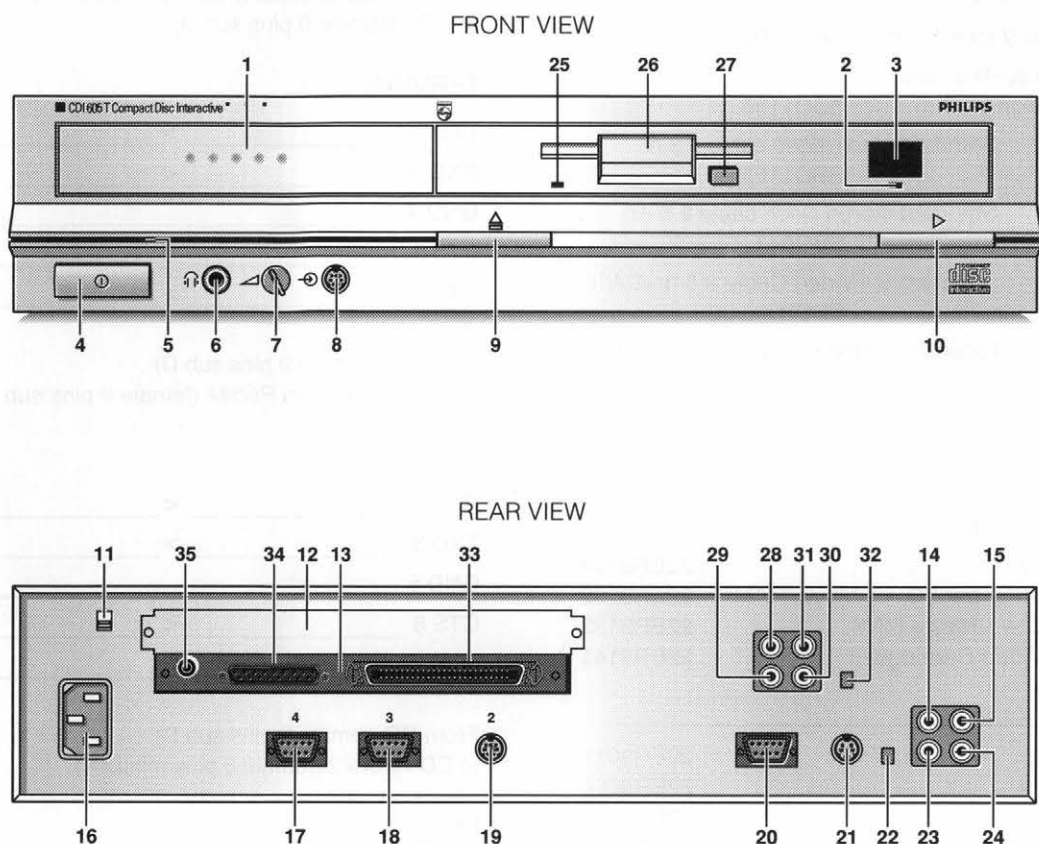
Note: Chapters marked with an * refer to service manual for CDI 605 /00/05/17

CHAPTER	CONTENTS
* 5.6.2	The service shell
* 5.6.2.1	Starting the service shell
* 5.6.2.2	Layout info
* 5.6.2.3	Subject dependent information
6	ELECTRICAL DRAWINGS
6.1	Block diagram
6.2	Alphabetical list of abbreviations
6.2.1	Wiring diagram
* 6.3	Power supply panel 1006
* 6.3.1	PCB Lay-outs
* 6.3.2	Circuit diagram
* 6.3.3	List of electrical parts
6.4	CD Panel 1004
6.4.1	Circuit diagram CD part 1
6.4.2	List of electrical parts
6.4.3	PCB Lay-outs
6.4.4	Circuit diagram CD part 2
* 6.4.5	Circuit diagram turntablemotor part
6.5	Miscellaneous panels 1005
6.5.1	Control and stop panel, Circuit diagram and PCB lay-out.
6.5.2	Headphone panel and power indicator panel, Circuit diagram, PCB lay-out.
6.5.3	List of electrical parts.
* 6.5.4	Caddy panel, Circuit diagram and PCB lay-out
6.6	Expansion panel FMV 1007
6.6.1	Circuit diagram
6.6.2	PCB lay-out and list of electrical parts.
* 6.7	Audio processing unit 1002
* 6.7.1	Circuit diagram
* 6.7.2	PCB lay-outs
* 6.7.3	List of electrical parts
* 6.8	Video encoder unit 1003
* 6.8.1	PCB lay-outs
* 6.8.2	List of electrical parts
* 6.8.3	Circuit diagram
* 6.9	Emulator unit 1011
* 6.9.1	List of electrical parts
* 6.9.2	Circuit diagram emulator panel
* 6.9.3	Circuit diagram PLL panel
* 6.9.4	PCB lay-outs Emulator and PLL panel
* 6.10	Floppy drive unit 1008
* 6.10.1	Circuit diagram FDC
* 6.10.2	PCB lay-out
* 6.11	MMC panel 1001
* 6.11.1	PCB lay-out
* 7	DIAGNOSTICS
* 7.1	Troubleshooting and Repair
* 7.1.1	Troubleshooting the Power Supply
* 7.1.2	Troubleshooting and Service the MMC panel
* 7.1.3	CD-part and Audio Section Troubleshooting
* 7.1.4	Video Section Troubleshooting
* 7.2	Measurements and adjustments
* 7.2.1	Power supply panel 1006
* 7.2.1.1	Checkpoints
* 7.2.1.2	Adjustment

CHAPTER	CONTENTS
7.2.2	CD panel 1004
7.2.2.1	Laser current
7.2.2.2	Focus signal
7.2.2.3	Starting signal
7.2.2.4	Motor control signals
* 7.2.2.5	Radial error circuit signals
* 7.2.2.6	Clock signal P IC7201
* 7.2.2.7	Decoder signals
* 7.2.2.8	Video signals
* 7.2.3	Audio processing unit 1002
* 7.2.3.1	Slave processor data
* 7.2.3.2	I ² S signals
* 7.2.3.3	Xin clock signal
* 7.2.3.4	DEEMP signal
* 7.2.3.5	FILTERN signal
* 7.2.3.6	Kill signal
* 7.2.3.7	Performance check
* 7.2.4	Video encoder unit 1003
* 7.2.4.1	Check and adjustment NTSC sub carrier
* 7.2.4.2	Check and adjustment PAL sub carrier
* 7.2.4.3	Phase Locked Loop
* 7.2.4.4	XT4 clocksignal
* 7.2.4.5	SW control signal
* 7.2.4.6	KILLM enable signal
* 7.2.4.7	HSYNC
* 7.2.4.8	Video signals
* 7.2.5	Multi media controller(MMC Panel) 1001
* 7.2.5.1	Supply voltages
* 7.2.5.2	Clock signals
* 7.2.5.3	I ² S interface
* 7.2.5.4	Reset circuitry
* 7.2.5.5	Main P 68070
* 7.2.5.6	Low Level test
* 7.2.5.7	Timing signals
* 7.2.6	Emulator unit 1011
* 7.2.6.1	Functional checks
8	Extension Part 22ER9132
* 8.1	Jumper setting
8.2	Specifications
* 9	MODIFICATION INFORMATION
* 9.1	Modification levels
* 9.1.1.	Modification level of the set.
* 9.1.1.1	Change Code on the type number plate.
* 9.1.1.2	Modification on ML sticker
* 9.1.1.3	Production number
* 9.2	Modification level of the panels or assembly
* 9.2.1	Modifications during production on PCB level can be indicated as follows.
* 9.2.2	Modifications during production on assemblies
* 9.3	Modification level of the software.

Note: Chapters marked with an * refer to service manual for CDI 605 /00/05/17

2.2 CONNECTIONS AND CONTROLS



CDI 605T FRONT PANEL

- | | | |
|-----|--------------------------------|-------|
| 1. | Disc loading tray | |
| 2. | Remote Control indicator | 6102 |
| 3. | Infra-red sensor | 6101 |
| 4. | Power On/Off button | SK-1 |
| 5. | Power On indicator | 6301 |
| 6. | Headphone socket | BU-12 |
| 7. | Headphone volume control | 3301 |
| 8. | I/O Port 1, mini DIN 8 pin | BU-11 |
| 9. | Open/close button | S-002 |
| 10. | Start/Play button | S-003 |
| 25. | Floppy Disc Drive indicator | |
| 26. | Floppy Disc Drive 3.5" | |
| 27. | Floppy Disc Drive eject button | |

CDI 605T REAR PANEL

- | | | |
|-----|----------------------------------|---------------|
| 11. | Voltage selector 110/220V | SK-4 |
| 12. | DVC Extension slot | |
| 13. | Extension | 22 ER 9132/40 |
| 14. | Audio L channel connector | BU-7 |
| 15. | CVBS (Video) connector | BU-9 |
| 16. | Mains Inlet | BU-1 |
| 17. | I/O Port 4, RS 232-C, D-sub 9 | BU-4 |
| 18. | I/O Port 3, RS 232-C, D sub 9 | BU-3 |
| 19. | I/O Port 2, mini DIN 8 pin | BU-2 |
| 20. | RGB connector | BU-5 |
| 21. | Y/C (S-Video) connector | BU-6 |
| 22. | 525/625 line selector | SK-5 |
| 23. | Audio R channel connector | BU-8 |
| 24. | Remote control bus connector | BU-10 |
| 28. | R.S Out | BU-23 |
| 29. | Digital Out, Input | BU-20 |
| 30. | Remote Switch, Input | BU-21 |
| 31. | Not connected | |
| 32. | CD Drive selector Int/Ext | SK-6 |
| 33. | SCSI Interface | BU-26 |
| 34. | Parallel I/O port 25 D connector | BU-25 |
| 35. | Ethernet BNC/thin wire connector | BU-24 |

2.3 ACCESSOIRES

2.3.1 Video/audio cables

- D-sub 9 to D-sub 9 cable 1 m : SBC1126
- D-sub 9 + audio (L+R cinch) to SCART (TV/Mon.) 1.5 m : SBC1135
- CVBS cable : Standard cinch video cable 1.8 m SBC1103
- Audio cable : Standard stereo cinch cable 2.5 m SBC043
- Y/C cable : Standard S - Video Cable 2.5 m (S-Video) SBC5500/00
- Ext. cable : Extension cable pointing devices 2.5m SBC 1139

2.3.2 Various

- EXTENSIONS BOARDS.
- 0.5 Mbyte RAM : 22ER9134
 - Ethernet + SCSI + par I/O + 1 Mbyte RAM : 22ER9132
 - SCSI + par I/O + 1 Mbyte RAM : 22ER9133
 - DVC (Digital Video Cartridge) : 22ER9141

- POINTING DEVICES
- Mouse (black) : 22ER9011
 - Remote control : 22ER9050
 - Roller Controller : 22ER9012
 - Trackerball : 22ER9013

2.3.5 Connections of RS232 I/O ports

From VT100 terminal (male 25 pins sub D) to CD-I (female 9 pins sub D)

TERMINAL		CD-I
TXD 2	>	2 RXD
RXD 3	<	3 TXD
GND 7		5 GND
CTS 5	<	7 RTS
RTS 4	>	8 CTS

From PC (female 9 pins sub D) to CD-I Port#3 and Port#4 (female 9 pins sub D)

PC		CD-I
RXD 2	<	3 TXD
TXD 3	>	2 RXD
GND 5		5 GND
CTS 8	<	7 RTS
RTS 7	>	8 CTS

From PC (female 9 pins sub D) to CD-I Port#2 (female 8 pins miniDIN)

PC		CD-I
RXD 2	<	3 TXD
TXD 3	>	2 RXD
GND 5		5 GND
CTS 8	<	7 RTS
RTS 7	>	6 CTS

Adaptor cable 8 pins miniDIN to 9 pins sub D

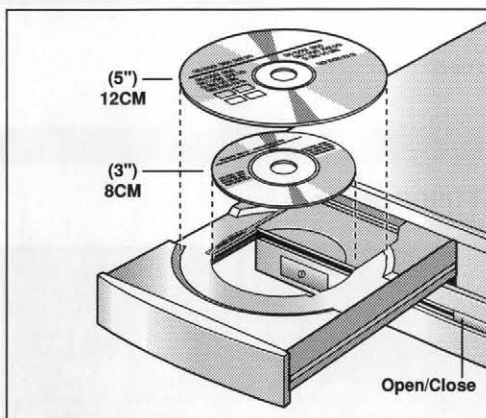
sub D		miniDIN
TXD 3	<	3 TXD
RXD 2	>	2 RXD
GND 5		5 GND
RTS 7	<	7 RTS
CTS 8	>	6 CTS

2.3.6 DIRECTIONS FOR USE

In normal interactive operation, the mouse is used to select functions displayed on the display unit. Simply roll the mouse on a flat, smooth surface to point the cursor arrow on the screen to the required function, and then press one of the two action buttons.

Loading a disc

Point and click on open (you may also press the open/close button on the player) to open the disc loading tray



First, take the transport pad away. Next, take the disc from its holder and place it on the tray with the label up.

Point and click on close (you may also press the open/close button on the player, or gently push the front of the tray) to close the tray.

The TV screen changes according to the type of disc.

Caution: never put more than one disc at a time into the CD-I player.

Unloading a disc

Point and click on open (you may also press the open/close button on the player) to open the disc loading tray. The player start-up screen reappears on the TV.

Take the disc from the tray and replace it in its holder.

Point and click on close (you may also press the open/close button on the player, or gently press the front of the tray) to close the tray with or without a new disc.

Note: You may unload the disc at any time by pressing the open/close button. Unloading a CD-I disc while the CD-I program is running, will terminate the CD-I program abruptly. "Bookmarks" or intermediate results, if used by the CD-I program, might not be updated to the latest situation.

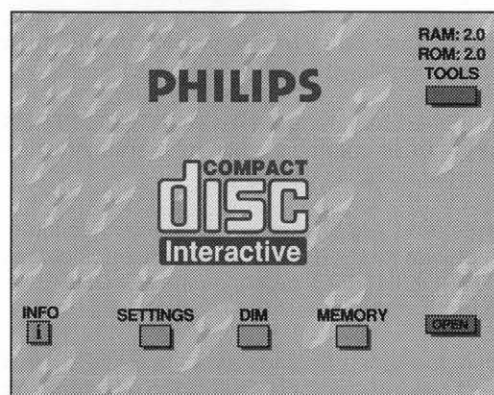
Warning: When a title consist of more than one consecutive disc, a so-called "Multi-disc" title, follow the instructions for opening and closing of the tray as shown on the screen. When you use the "OPEN" button on the player the title is considered to be played wholly and any intermediate scores, settings or "Bookmarks" will not be updated. Any additional disc of the multi-disc title will not be recognised as part of it. The tray may also be closed by gently pressing the front of it.

Preparation

- Press the Power On/Off button on the front panel, and check that the Power On indicator lights or flashes briefly.
- Switch on the TV (and HiFi system, if used).
- Select the CD-I input on the TV (and HiFi system, if used).

Note: Connecting a headphone does not mute the loudspeaker sound. This must be done manually, on the display unit or HiFi system, if required.

- On the TV, the Player Start-Up screen appears. This screen has four system functions to guide and assist you Select:



Start-up Screen

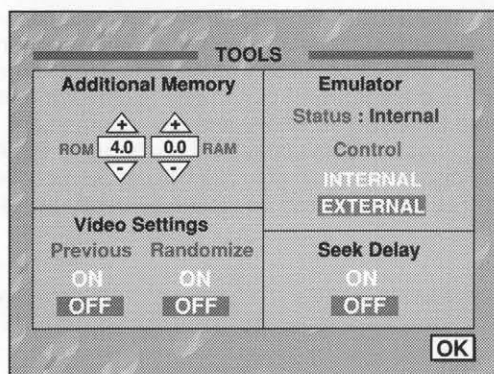
- **TOOLS:** to give extra functionality for authoring.
- **INFO:** to give some general information.
- **SETTINGS:** to preselect your preferred start-up conditions.
- **DIM:** to reduce the screen brightness while the system is at rest.
- **MEMORY:** to refer to the titles and FTS programs you give to CD-Audio discs.
- **OPEN/CLOSE:** to open or close the disc tray.

The 605T Tools menu

The Start-up screen in the CD-I 605T has an extra icon. This icon, located in the upper right corner, displays the amount of extended memory (ROM and RAM in Mbyte) the system has. Select this icon to call up the CD-I 605T Tools menu.

Note: It may take a while after power on before the Startup screen appears. This is depending on the amount of additional memory that is set in the CD-I 605T Tools menu.

DIRECTIONS FOR USE



- This menu gives some extra functionality to be used in the authoring environment. Herewith one is able to simulate some worst case and/or base case conditions for evaluation of CD-I applications (by means of an external cd-drive (Emulator) or the internal cd-drive).
- Select in the Additional Memory area the "+" or "-" icon to increase resp. decrease the amount of extended memory. The amount of memory is displayed in MegaBytes in steps of 0.5 Megabyte.
- Select the Seek Delay icon to switch ON/OFF the cd seek delay (conform F.F.G.B.).
- Select in the Emulator area the CONTROL INT/EXT icon to change drive communication to internal or external. The current status is displayed.

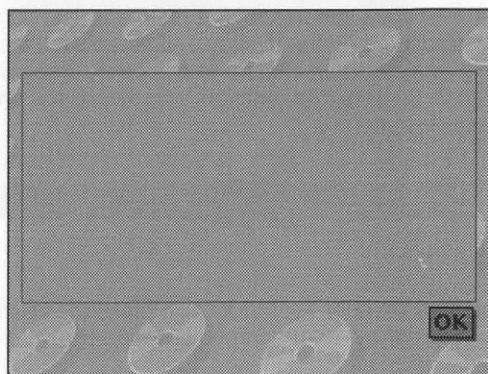
If the status does not change when changing to internal or external, please check if the remote switch (cinch) is in use. The CONTROL INT/EXT overrules the CD-DRIVE selector (on the rear).

- Select in the Video Settings area the RAND ON/OFF icon to select randomized or default video registers settings. Select the PREVIOUS icon to recall the previous randomized video register settings.
- Select the OK icon to return to the Start-up menu.

Note: If changes are made in the amount of additional memory, selecting OK will cause a system reset to install the new memory configuration.

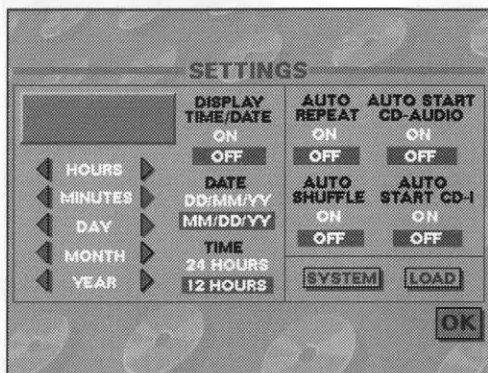
The INFO Screen

The INFO screen offers help related to the operating mode. When finished, point-and-click on OK.



Info Screen

The SETTINGS Screen



Settings Screen

AUTO START CD-I, AUTO START CD-AUDIO*, AUTO SHUFFLE* and AUTO REPEAT*

For all these functions, select "ON" to activate the function automatically when a disc is loaded.

* These are CD-AUDIO functions.

SYSTEM

System only appears for special configurations or for service purposes when a terminal is connected. Selecting SYSTEM gives access to the operating system. For further information please refer to the CDI Technical Manual.

LOAD

Select LOAD if the system or application requires the use of a personal memory device such as the floppy disc drive for system configuration. For this purpose, specially formatted devices are defined by the application or available from your supplier.

DISPLAY TIME/DATE

Select ON to display the time and date in the Start-up and CD-Audio screens.

DATE

Select DD/MM/YY to present date in day-month-year sequence
Select MM/DD/YY to present date in month-day-year sequence

TIME

Select 24 HOURS or 12 HOURS clock

DIRECTIONS FOR USE

TIME/DATE SET

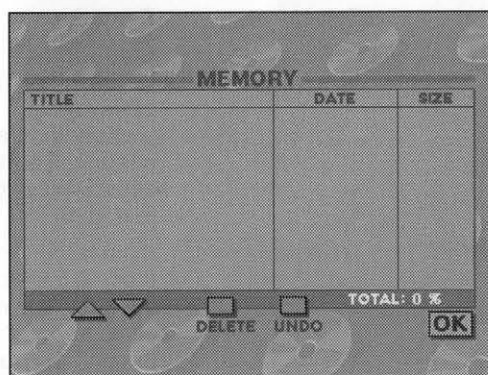
Select the ► and ◀ arrows to set Hours, Minutes, Day, Month and Year in turn, as required. When finished, point-and-click on OK.

The DIM function

Selecting DIM reduces the brightness of the displayed picture. Selecting it a second time, or moving the cursor away from the icon, restores the normal brightness. Use DIM to avoid screen burn-in if long-duration still pictures such as the Start-up screen are to be displayed while the system is waiting to be used.

The MEMORY Screen

The MEMORY Screen shows the information held in non-volatile memory: titles, dates and percentage of memory used. Use the scroll arrows to move up and down the list. To delete an item, click on its title and then click on DELETE. If you change your mind after deleting, click on UNDO. When finished, point-and-click on OK.



Memory Screen

Running a CD-I disc on the internal drive

- Switch the emulator interface to internal. This can be achieved by changing the control in the 605T Tools menu or by means of an external signal on the remote switch input on the rear.

Running a CD-I disc on an external drive

- Switch the emulator interface to external. This can be achieved by changing the control in the 605T Tools menu or by means of an external signal on the remote switch input on the rear.

Note. For further information please refer to the CD-I 605T technical manual.

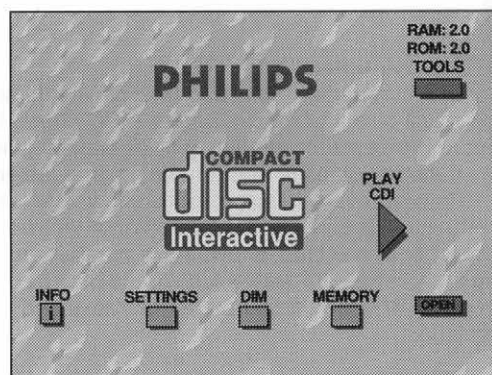
Running CD-I discs

Note. This procedure can also be used for CD-I Ready, CD Bridge discs and Photo CD. After loading the disc, the CD-I Start-up screen appears on the TV.

- Program Start**
To start the CD-I program, select the Play icon on the screen, or press the Play button ► on the system front panel.

Note. If AUTO START CD-I ON has been selected on the SETTINGS screen, the CD-I program will start automatically. AUTO START CD-I is not applicable for external drive or emulator.

From this point, all interaction is between the user and the disc program. Whenever the disc is being read, the Reading Disc indicator flashes on the system front panel. To stop at any time, select the stop or exit function provided by the program, or press the Open/Close button on the system front panel.



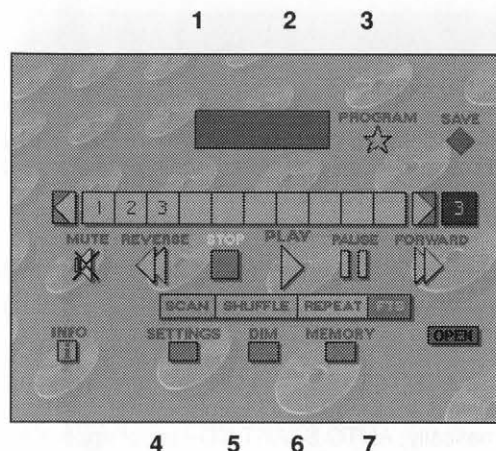
CD-I Start-up Screen

DIRECTIONS FOR USE

Playing CD-Audio discs

Note. This procedure can also be used for audio sections on 5 inch (12 cm) Laser Discs.

- **Loading**
Load the disc using the disc loading tray: on the system front panel, the Reading Disc indicator flashes briefly and then lights continuously, and on the display, the CD-Audio screen appears.



CD-Audio Screen

1. Track Time window
2. Play Track bar
3. PROGRAM star
4. SCAN
5. SHUFFLE
6. REPEAT
7. FTS

1. Track/Time window:

Shows total number of tracks and total playing time after loading. In all play and pause modes T/TW shows track number and elapsed or remaining track playing time. To change between elapsed and remaining time, select the time in the window. In all stop modes shows the last track number played and its playing time. If another track in the play track bar is selected, shows track number and playing time. If the total tracks icon in the play track bar is selected, T/TW shows total number of tracks and total playing time.

2. Play Track Bar:

Shows up to 10 track numbers and the total number or tracks. You can point-and-click to select any track. For discs with more than 10 tracks, the forward > and reverse < scroll arrows at the right and left of the track bar are used to move through the track list. The total number of tracks is shown in the box to the right of the bar, you can point-and-click it to display time in the Track Time window.

3. PROGRAM star

Allows you to program a list of special tracks called a Favorite Track Selection. When you select this star, the FTS track bar appears above the Play track bar and the SAVE diamond beside the PROGRAM star.

4. SCAN

Allows you to listen to the beginning of every track listed in the Play track bar.

5. SHUFFLE

Allows you to play the tracks in the Play track bar in a random order.

6. REPEAT

Allows you to repeat the entire disc.

7. FTS

Allows you to play Favorite Track Selections. This icon only appears if a Favorite Track Selection has been created for the disc that is loaded in the player.

- **Disc play**
All the disc play control functions are shown on the screen, and can be selected as desired. The operation of the functions is briefly explained in the following table.

Note. If AUTO START CD-AUDIO ON, AUTO SHUFFLE ON or AUTO REPEAT ON have been selected on the SETTINGS screen, these functions are activated automatically.

Note. Disc play can be started and stopped using the Start/Play ► and Open/Close button on the system front panel respectively.

Note. When play starts, adjust the sound level as required.

Operation	Select	Remarks
Start play	PLAY	Starts at the beginning of Track 1, or any other preselected track number. If a track is already playing it is restarted.
Select a track	Track number	If the disc has more than 10 tracks, use the left < and right > scroll arrows to move through the track numbers as required.
Pause	PAUSE	Use to interrupt play.
Exit Pause	PAUSE or PLAY	Play restarts at exactly the same point as pause was selected.
Forward search	FORWARD	Searches forward through disc, first slowly, then fast.
Reverse search	REVERSE	Searches backwards through disc, first slowly, then fast.
Stop Play	STOP	If Play is re-started, it begins at the first track in the track bar.
Mute the Sound	MUTE	
Restore the Sound	MUTE	
Scan the disc	SCAN	Plays the beginning of each track on the disc.
Exit scan	SCAN	Normal play starts from this point.
Shuffle play	SHUFFLE	Shuffle sequence appears in track bar start playing.

DIRECTIONS FOR USE

Exit Shuffle	SHUFFLE	Normal play starts from this point.
Repeat	REPEAT	Repeats entire disc (or FTS program), as selected on the Settings screen.
Exit Repeat	REPEAT	
Play FTS	FTS	Only available when an FTS program has already been created for the disc in the player.
Exit FTS	FTS	Normal play starts from this point.
Program FTS	PROGRAM star	Point to tracks as required on the Play Track bar, and in each case click on any action button twice to record the track in the FTS track bar. To insert a track in the FTS track bar, click once where you want it to go, then click two times on the desired number in the play track bar. To cancel an unwanted track, point to it in the FTS track bar and click on any action button two times. To cancel the entire FTS program, point to the first track in the FTS track bar and click on any action button repeatedly untill all the tracks disappear.
Store FTS	SAVE diamond	The Keyboard screen replaces the CD-Audio screen. See "Creating FTS Titles".

- Unloading
Select Open/Close button on screen or player front: on the display the Start-up screen reappears.

Creating FTS Titles

After creating a Favorite Track Selection for a disc, you can compose a title of up to 30 characters for the selection using the Keyboard screen. The title then appears on the CD-Audio screen whenever the disc is loaded.

At the CD-Audio screen, point-and-click on the PROGRAM star, then point-and-click on the SAVE diamond. The CD-Audio screen will change to the Keyboard screen.



Keyboard Screen

Select each character of the title in turn, using SHIFT to change between upper and lower case characters and SPACE to separate words.

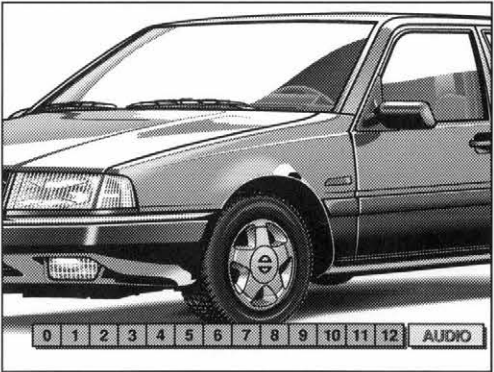
DELETE erases the last selected character. CLEAR erases the complete (or partially complete) title. CANCEL returns to the CD-Audio screen with no title. OK saves the title and returns to the CD-Audio screen.

Push-button control

For basic play control, or for playing discs through a stereo system without using the TV, you can use the buttons on the front panel or a remote control. The PLAY, PAUSE and STOP buttons operate in the same way as the corresponding on-screen functions. The NEXT and PREVIOUS buttons skip one track forward or backward respectively.

CD-Graphics

The CDI 605T is prepared for CD-Graphics, after loading the appropriate software (For update of information fill in and mail registration card.) CD-Graphics discs can be played. When a CD-Audio disc with graphics is loaded, the CD-Graphics screen appears automatically.

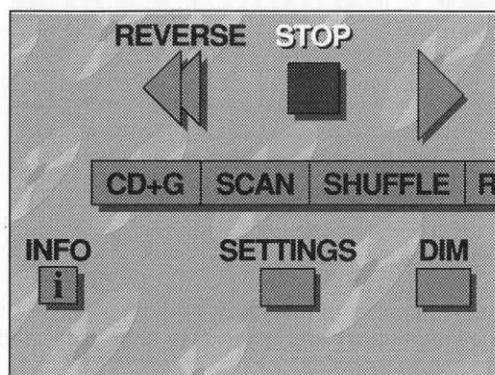


CD-Graphics

DIRECTIONS FOR USE

To enable or disable picture channels, click on the various numbers. Refer to the instructions that come with the disc for their functions.

To play Audio only, click on the Audio icon. The CD-Audio screen then appears with an additional icon for CD-Graphics.



Audio screen

Point-and-click on this icon to obtain the CD-Graphics screen again.

Note 1. Click action button to remove or recall selection bar.

Note 2. Implementation of CD-Graphics might differ depending on player version.

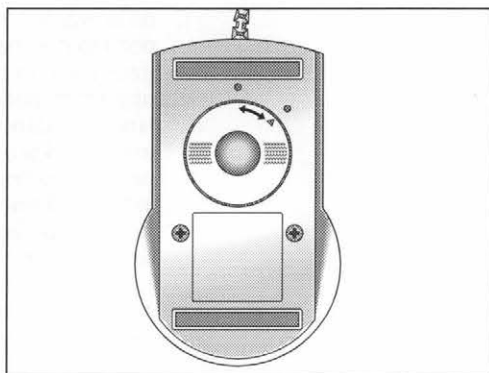
Switching off

- Press the Power On/Off button on the front panel, and check that the Power On indicator goes out.
- Switch off the display unit (and audio amplifier, if used).

Cleaning and disc care

Cleaning

- **System:** A chamois leather moistened with water is sufficient for cleaning the cabinet. Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.
- **Mouse:** Clean the mouse periodically as follows:
 1. Hold the mouse upside down in one hand with the cable pointing away from you.
 2. Using one finger on either side of the ball retainer on the bottom of the mouse, rotate the triangle mark anticlockwise from one circle mark to the other.
 3. Hold the free hand under the mouse to catch the retainer and ball, and then turn the mouse over.
 4. Use only a clean, soft, dry cloth to clean the ball. Never use cleaning fluid or tissue.
 5. Gently wipe inside the mouse housing to remove dust or dirt.
 6. Replace the ball in its housing, then re-insert the retainer and lock it by rotating the triangle mark clockwise from one circle mark to the other.



- **Care of discs**
To ensure top performance and long life, protect your discs from:
 - Dirt, fingerprints and scratches.
 - Do not use any form of cleaning agent.
 - Don't ever write on your discs, or put stickers on them.
 - Keep the playing surface clean. Use a soft lint-free cloth and always wipe the disc in a straight line from centre to edge.

CAUTION: Do not use cleaning agents for conventional records, detergents or abrasive cleaning agents for cleaning discs.

3.5.2 Test discs

Codenummer	Name/description	Application
4822 397 30245	Testdisc 5 (music) SBC444 Testdisc 5A SBC444B	Reference disc for playability and adjustments of CDM (music + dropouts and fingerprints)
4822 397 30155	Test disc with 1 KHz continous signal, 70 minutes. SBC442	Life test in case of intermittent faults
4822 397 30184	Audio signals SBC429	Measure specs.
4822 701 11922	Skew disc 0,6	Reference disc for playability
4822 701 11923	Excentricity disc 150 µ	Reference disc for playability
SW1000	Launch disc	CD-I demo disc

3.5.3 Extension connectors

Codenummer	Name/description	Application
4822 321 22267	10 poles ext.	For measuring Encoder panel
4822 321 22268	6 poles ext.	For measuring APU panel

3.5.4 Measurement equipment

Electronic Digital Multimeter
Display terminal type Digital VT220 or VT100
Digital oscilloscope
Analog oscilloscope
Timer/counter

3.5.5 Pointing devices

4822 218 10438	Remote Control
4822 691 30244	Mouse (white)

3.5.6 (de)Mounting tool

4822 395 50145	Torx screw drivers
----------------	--------------------

3.6 Repair procedure via Philips Consumer Service (PCS)

GENERAL:

Below a brief description is given, a more detailed procedure is available at P.C.S Logistics Management, systems and Procedure Office.

- NSO or Customer: send telex or on-line MSH system info to PCS customer relations officer with indicated number(s) and service 12NC for a repair reference number.
 - PCS: send telex or MSH info with repair reference number and return invoice price.
Also the same number(s) of new/repaired items are sent with invoice.
- NSO or customer: send defective item(s) to PCS at SDM1 by standard address label with repair reference number and return invoice to PCS -price center.
- Remark: the difference between the invoice price and return invoice price gives the 'repair price' for the NSO
 - PCS: send defective item to factory and stock.
 - Experience has learned that the status of the particular products and packaging needs your local attention. Products will be returned in case of unacceptable conditions.

REPAIR PROCEDURE CONDITIONS :

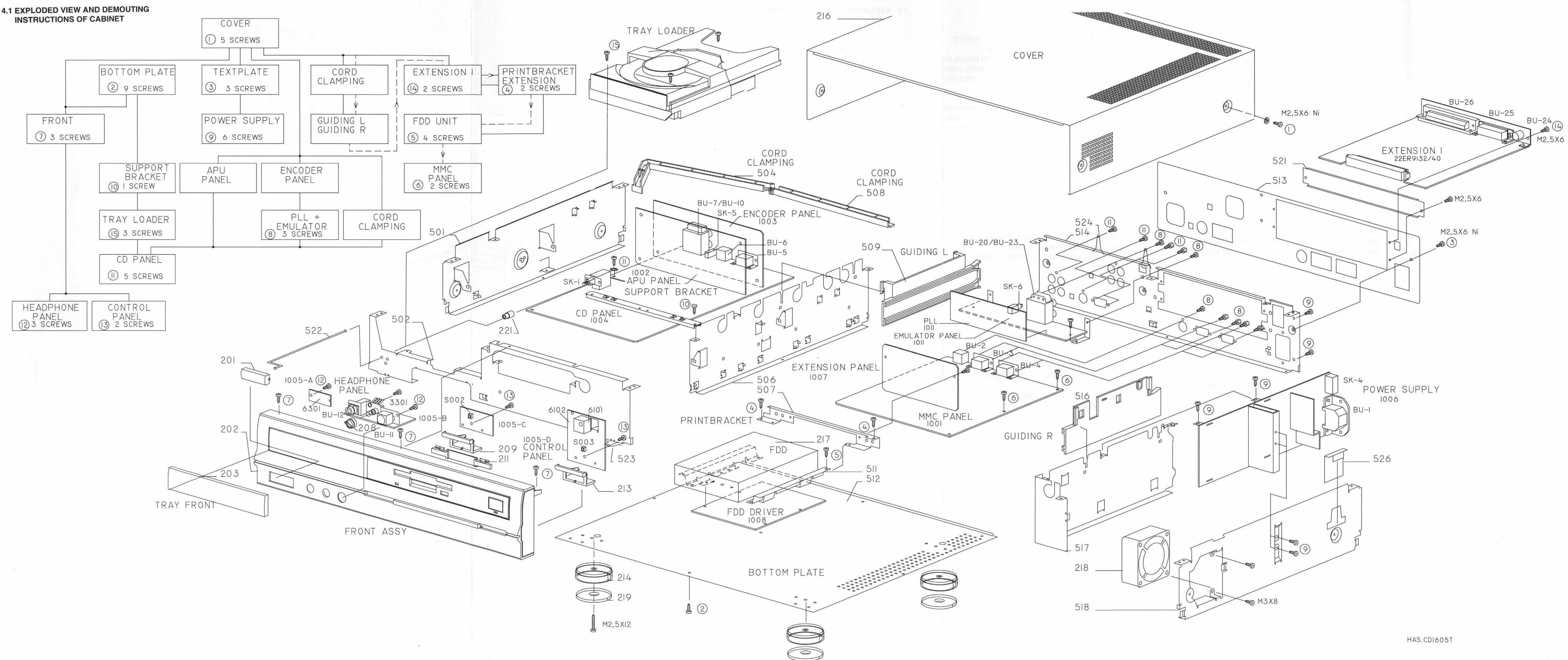
- * HANDLE WITH CARE IN AN ESD PROTETECTED ENVIRONMENT.
- * Defective items must be sent back to PHILPS CONSUMER SERVICE for repair forwarded by Address sticker.
- * Put the address sticker properly on a free area of the box.
- * Boards must not be reworked or damaged.
- * Re-use original package order new package in case of damages.
- * Remove additional stickers and labeling if re-using the original box. Service codenummer on sticker must be equal to codenummer on repairable item.

!!! If the above conditions are not fulfilled, then boards are not accepted and the return price will not be credited !!!

CENTRAL REPAIR PROCEDURE FOR THE FOLLOWING REPAIRABLE ITEMS:

Name:	Service Code number:
Multi Media Controller	4822 214 51928
Extension 1. 22ER9132/40	4822 214 52117
FDD Controller	4822 214 51852

EXPLODED VIEW AND DEMOUNTING INSTRUCTIONS OF CABINET



4.1.1 PARTS LIST OF CABINET

201	4822 410 61048	POWER KNOB ASSY
202	4822 444 40686	FRONT ASSY CDI605T
203	4822 444 40685	TRAY FRONT
208	4822 410 61047	HEAD PHONE KNOB
211	4822 444 60728	FDD-DOOR
214	4822 462 41693	FOOT
216	4822 444 60727	COVER
217	4822 691 30239	FLOPPY DISC DRIVE
218	4822 361 10591	FAN
221	4822 535 93284	MAINS SW CONNECTING ROD
504	4822 401 11388	CORD CLAMPING L
508	4822 401 11387	CORD CLAMPING R
BU-1	4822 265 20643	MAINS INLET
BU-2	4822 267 51216	SOCKET TC57587 MINI DIN
BU-5	4822 267 51233	SUB 9 D CONNECTOR
BU-6	4822 267 40857	TCS7927-24-401 Y/C SOCKET
BU-7/		
BU-10	4822 267 20414	CINCH SOCKET 4P
BU-11	4822 267 51216	SOCKET TCS7587 MINI DIN
BU-12	4822 267 31288	HEADPHONE SOCKET
SK-1	4822 276 11309	MAINS-POWER SWITCH
SK-4	4822 277 21475	SWITCH 110/220 V
SK-5	4822 276 13387	SWITCH 525/625
1080	4822 410 23697	KNOB FOR SK-5
S002	4822 276 13112	TACT SW OPEN/CLOSE
S003	4822 276 13112	TACT SW START

REPLACEMENT BOARDS

1002	4822 214 51849	APU PANEL
1003	4822 214 51992	ENCODER PANEL
1006	4822 214 51993	POWER SUPPLY ASSY
1007	4822 214 52116	EXPANSION PANEL FMV
1011	4822 214 51927	EMULATOR PANELS

HEADPHONE / CONTROL PANEL

BU-12	4822 267 31288	HEADPHONE SOCKET
3301	4822 102 10398	DUAL 10K LOG headphone
6101	4822 214 51795	IR RECVR. GP1U500
6102	4822 130 80848	TLHG4499 green LED
6301	4822 130 80113	TLSG5101 green LED

EMULATOR PANEL

BU20/		
BU23	4822 214 51806	EMULATOR SOCKETS
SK-6	4822 276 13387	SWITCH CD DRIVE INT/EXT
1011	4822 410 23697	KNOB FOR SK-6

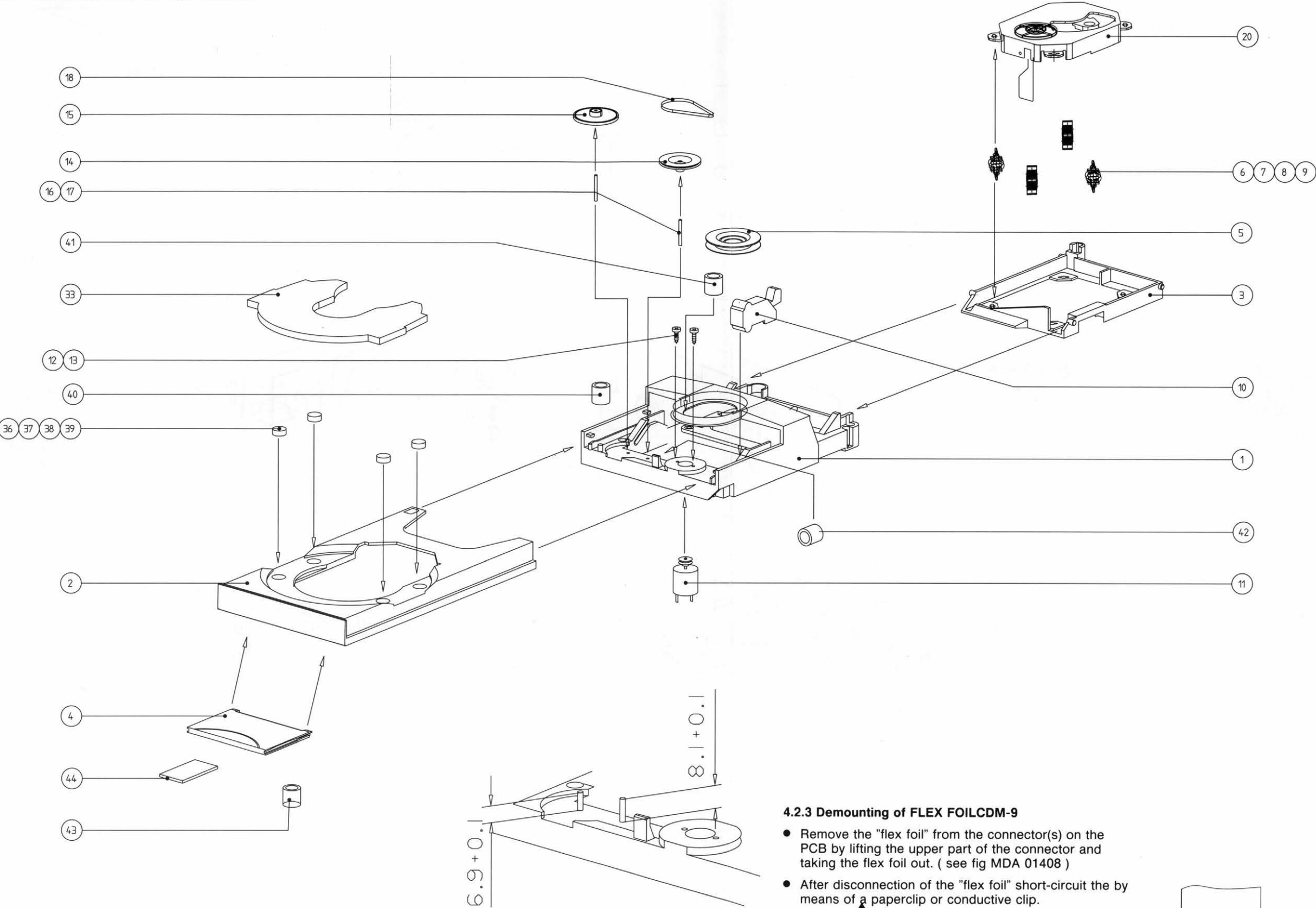
ACCESSOIRES & TOOLS

MOUSE	4822 691 30244	22ER9011 (WHITE)
RC TRANSM.	4822 218 10438	22ER9050
	4822 321 10741	CABLE FOR MAINS EUR.
	4822 395 50145	SET TORX SCREWDRIVER
	4822 264 50262	TESTPLUG FOR SERVICE SHELL
	4822 321 22267	10 poles EXTENSION PLUG FOR ENCODER PANEL
	4822 321 22268	6 poles EXTENSION PLUG FOR APU PANEL.

4.2.1. PARTS LIST OF THE TRAY LOADER 915

ASSY	4822 691 30294	COMPLETE LOADER WITHOUT CDM
2	4822 444 30457	TRAY
3	4822 464 50908	SUB CHASSIS
4	4822 444 60861	COVER
5	4822 402 61412	CLAMPER ASSY
6	4822 466 93065	SUSPENSION
7	4822 466 93065	SUSPENSION
8	4822 466 93065	SUSPENSION
9	4822 466 93065	SUSPENSION
10	4822 276 13222	MICROSWITCH
11	4822 361 21492	MOTOR ASSY
12		M2X4 STZN
13		M2X4 STZN
14	4822 528 81465	PULLEY
15	4822 528 81464	DRIVE PINION
18	4822 358 31168	BELT
20	4822 691 30275	CDM9 UNIT
3+6,9+20	4822 691 30277	CDM9 UNIT + SUB CHASSIS + SUSPENSIONS
33	4822 466 62109	TRANSPORT PROTECTION
40	4822 325 60379	DAMPING TULE
41	4822 325 60379	DAMPING TULE
42	4822 325 60379	DAMPING TULE
43	4822 325 60379	DAMPING TULE

4.2 EXPLODED VIEW OF TRAY LOADER

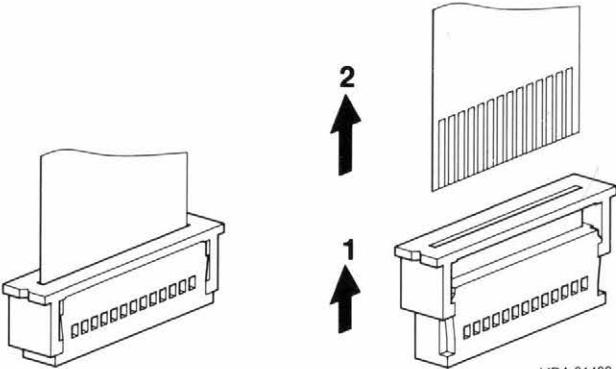


4.2.3 Demounting of FLEX FOILCDM-9

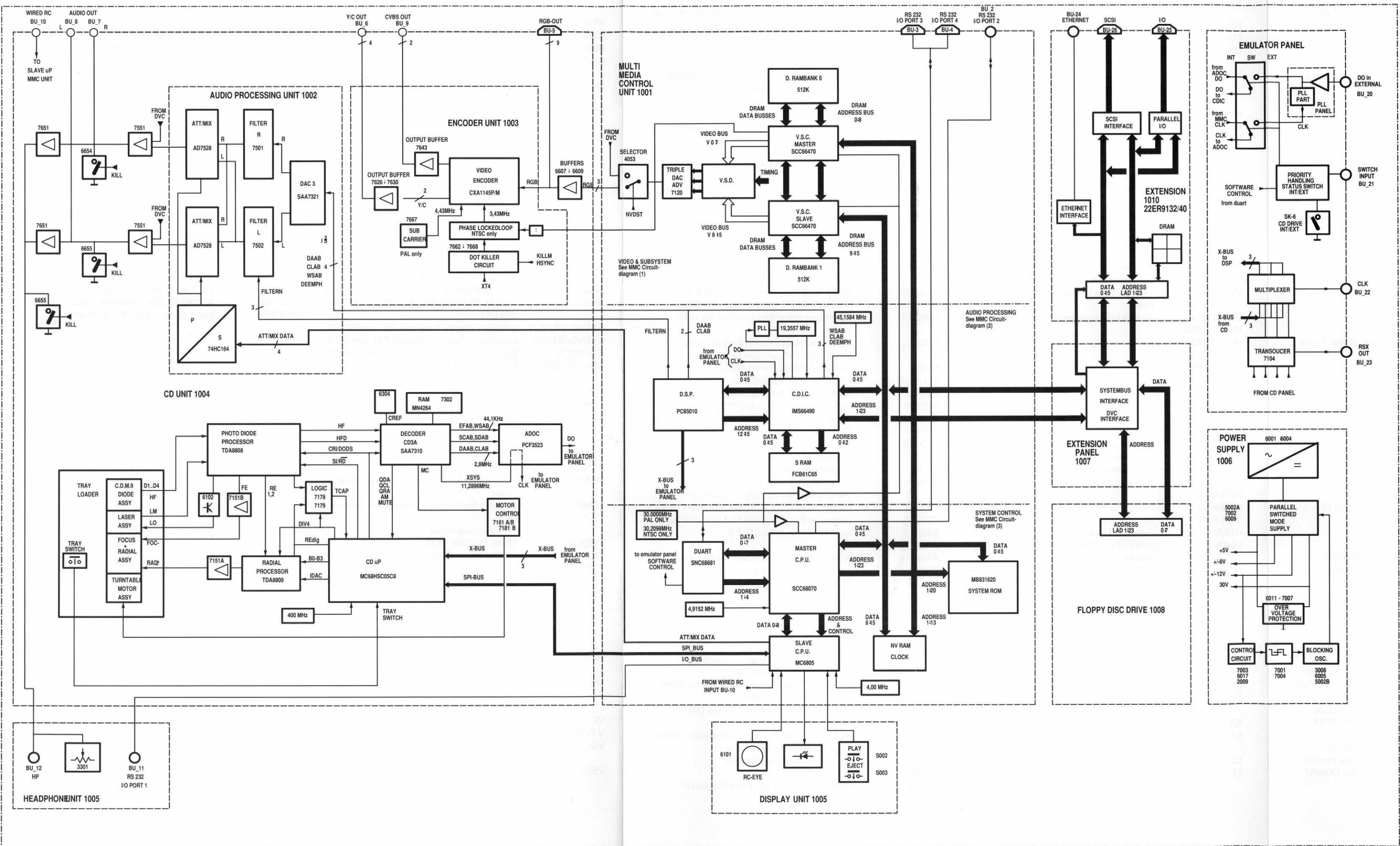
- Remove the "flex foil" from the connector(s) on the PCB by lifting the upper part of the connector and taking the flex foil out. (see fig MDA 01408)
- After disconnection of the "flex foil" short-circuit the by means of a paperclip or conductive clip.
- NOTE



Since laser, monitor diode and photodiodes are very sensitive to electrostatic discharges, careless handling during servicing may reduce life expectancy drastically. For this reason care should be taken that during servicing the potentials of the aids and yourself are equal to that of the screening of the set.



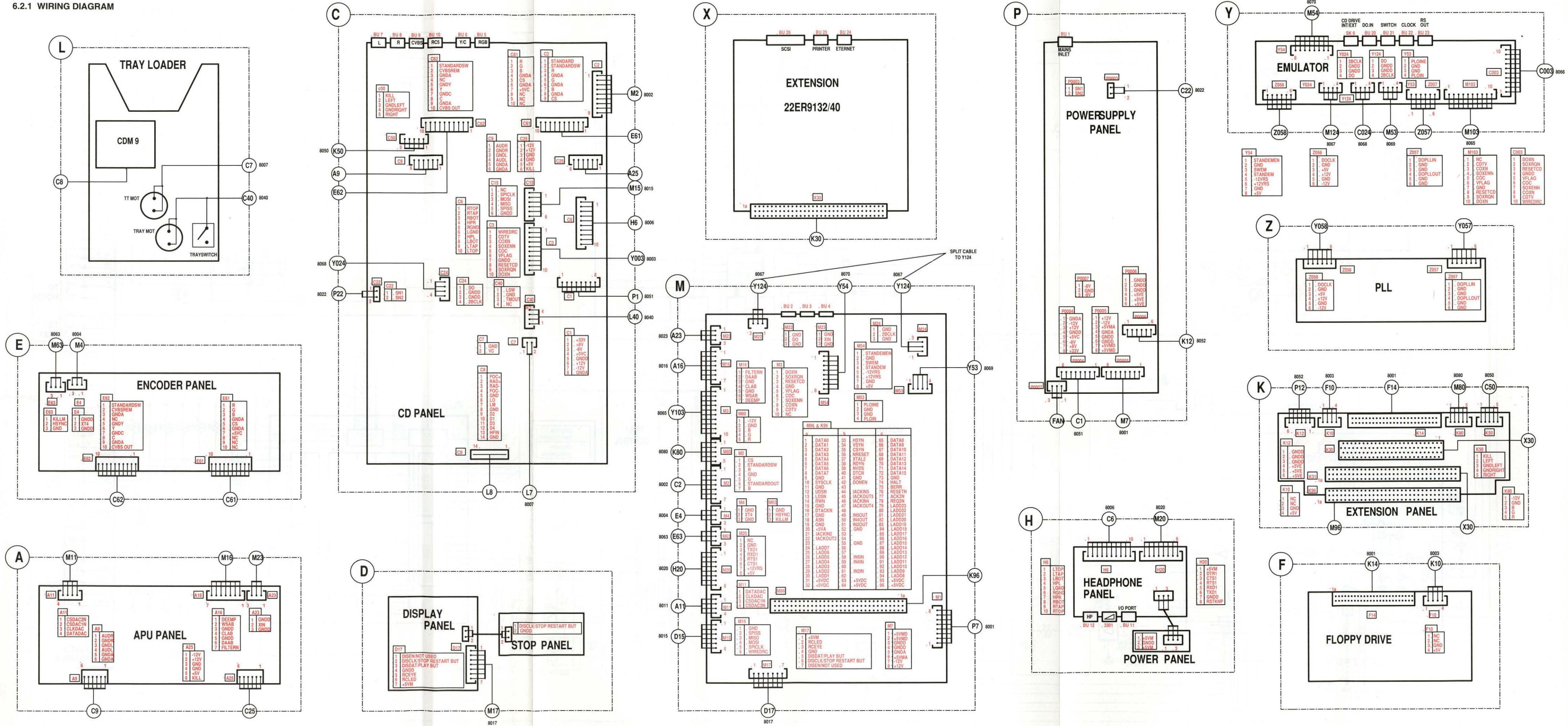
6.1 OVERALL BLOCKDIAGRAM



6.2 ALPHABETICAL SIGNAL LISTING

A,B,C +	: >> control signals for brushless DC-motor	CS	: CHIP SELECT	FILTERN	: filter select when high:level C,when low:level A	LADD1..23	: ADDRESS-BUS (active high,tristate) for direct addressing of 16 Mbyte of memory	RTS1..4 RTS#1..2 RWN RWN2 RWRAM RXD1..4 XD#1..2 SI	processor to the UART of the 68070 processor : >> REQUEST TO SEND (active low) WRPN1M..S WSAB WSAB2 XIN	VSYN	: (active when low) VERTICAL SYNCHRONISATION INPUT from the VSC : Control input for channel 1 or 2 (active low) of the VSD : >> WORD SELECT From A to B CHIP : >> 11,2896/9,6768/4,8384 symmetrical clock
		CSCDICN	: CHIP SELECT CDIC (active low) bus information is intended for or coming from CDIC	FOC- FOC+ GN	: >> focus out to CDM 9 : >> : When low:the outputs and inputs of the trancievers (646) are enabled	LBOT LDSN LM LO LRDN	: for HPL volume control : LOWER DATA STROBE of the bus : LASER MONITOR diode input : LASER amplifier current OUTPUT : when low select,the ROM'S or NVRAM read the lower data byte				
A,B,C -	: >>	CSKILL-MEMM	: Chip select for kill and DMA circuit.	HALTN	: active low,open drain,bidirectional. If low together whith the resetn it coues the 68070 to enter the reset state.	LTAP LTOP	: >> for HPL volume control : >>	RXD1..4 XD#1..2 SI	: READ - WRITE (low is write) signal : READ - WRITE (low is write) signal from CDIC to the DSP : READ - WRITE signal from the CDIC to the S RAM'S : >> RECIEVE DATA RXD is data input : >>	WSAB WSAB2 XIN	: >> 11,2896/9,6768/4,8384 symmetrical clock : >>
ACK2N	: DMA REQUEST ACKNOWLEDGE (active low) (of channel 2)	CSKILL-MEMMS	: >> Synchronized (=CSDAC2N) (if selected,low) it means that data will be adjusted on that channel			LVID0IN-7IN	: >> 8 bit pixel-bus for channel 2 (VSC - SLAVE)				
ACM	: output AC-motor	CSDAC1N	: (=CSDAC2N) (if selected,low) it means that data will be adjusted on that channel	HFin	: HF current input	LVID0OUT-D7OUT	: >>	SLMA0..8 SLMD0..15	: READ - WRITE signal from the CDIC to the S RAM'S : >> RECIEVE DATA RXD is data input : >>	XIN2 X-TAL2	: >>
ACK2NKON	: DMA request ACKNOWLEDGE of channel 2 via DMA2 on/off circuit.	CSNVRAMN	: CHIP SELECT NVRAM (active low) bus information is intended for or coming from the NVRAM	HPL	: HEADPHONE LEFT	LWRSN	: R/W Lower Memory Data to DRAM from VSC Slave				
ADEN	: (=ADENA) ADDRESS ENABLE NOT. When low, the address ADENA coming from the bus (68070) will be put through to CDIC	CSROMN	: >>	HPR	: HEADPHONE RIGHT	LWRMN	: R/W Lower Memory Data to DRAM from VSC Master	SOXENN SOXRQN	: VSC-slave memory address bus to the DRAM'S : VSC-slave memory data bus to the DRAM'S	XT2 XT4 XT4IN	: the system clock devided by two : >> the system clock devided by four : >>
AM	: ADDITIONAL MUTE	CSROM0N	: CHIP SELECT ROM (active low) bus information is coming from the ROM'S	HSYN	: (active low) horizontal synchronisation input from the VSC	MC	: MOTOR CONTROL signal				
ASN	: ADDRESS STROBE (active low,tristate) indicates when an address is valid on the bus for the system	CSSLAVEN	: CHIP SELECT SLAVES (active low)	HSYNOUT	: (active low) horizontal synchronisation output for monitor or tv	MISO	: MASTER IN SLAVE OUT	SOYENN2	: SERIAL OUTPUT ENABLE FOR THE X-BUS (enabled when low) : SERIAL OUTPUT REQUEST FOR THE X-BUS (when low)	0AD..12AD	: >> ADDRESS BUS,between CDIC-SRAM'S and SYSTEM ADDRESS BUS BUFFERS
AUDL	: >> AUDIO LEFT	CSON	: CHIP SELECT (active low) for the 8Kx8 SRAM'S	HVID 0 - 7 S	: 8 bit pixel bus for channel 1 VSD from VSC	MOSI	: MASTER OUT SLAVE IN				
AUDIOL	: >>	CSVSCMSN	: CHIP SELECT VSC MASTER AND SLAVE. When low the coming information is intended for the VSC'S	IACKIN2N	: >>	MSM	: Master Slave Selection input	SPICLK SPISS	: SERIAL OUTPUT ENABLE FOR THE Y-BUS (when low) : SERIAL OUTPUT REQUEST FOR THE X-BUS (when low)	10ADA..12ADA 0D..15D	: >>
AUDR	: >> AUDIO RIGHT	CSYN	: COMPOSITE SYNCHRONIZATION input from the VSC's (active low)	IACKIN4N	: >> Decoded interupt acknowledge (active low).	MSMA0..8	: ADDRESS BUS between the DRAM'S of the VSC' MASTER and the VSC MASTER				
AUDIOR	: >>	CTS1..4	: CLEAR TO SEND (active low) it indicates that the remote recieving device is ready	IACKIN5N	: >> Asserted during an interrupt acknowledge	MSMD0..15	: DATA BUS between the DRAM'S of the VSC' MASTER and the VSC MASTER	STANDARDOUT STANDARDSW STANDEM STANDEMEN	: SERIAL OUTPUT ENABLE FOR THE Y-BUS (when low) : SERIAL PERIPHERAL INTERFACE CLOCK : SERIAL PERIPHERAL INTERFACE SLAVE SELECT	0DA..15DA	: >> ADDRESS BUS,between CDIC-SRAM'S and SYSTEM ADDRESS BUS BUFFERS
AVN	: AUTOVECTORED INTERRUPTS (active low),can be used by an extension	CTS#2	: >>	IACKOUT2N	: >> sequence to indicate to a peripheral that	NRESET	: when low the video synthesizer is in reset				
B0..3	: input control bits for off-,catch-,play status and DAC output current for radial motor	CVBS	: CVBS output	IACKOUT4N	: >> this interupt request is being serviced	NVDS	: digital output to control an external switch for TV overlays (active low)	SSM SWAB SWEM	: software choise between PAL and NTSC : hardware choise between PAL and NTSC : Status from emulator , input for DUART	2BCLK 12A..15A	: >>
B,G,R,	: Output colours of the VSD	D1..4	: fotodiode currents	IACKOUT5N	: >>	NVDSI	: >> Synchronized with NXT2				
BERRN	: >> BUS ERROR (active low,open drain)	DAAB	: (DAAB2) serial data output of the X-bus I'S standard	IACKOUT2	: >>	PCLK1IM	: PIXEL CLOCK for channel 1	SYSCLK SYSCLKA	: SERIAL OUTPUT REQUEST FOR THE X-BUS (when low) : SERIAL OUTPUT REQUEST FOR THE X-BUS (when low)	WIREDRC	: ADDRESS BUS between CDIC and DSP : DATA BUS between CDIC-SRAM'S and SYSTEM DATA BUS TRANCIEVERS
BLANI	: (=BLAN1M) BLANKING OUTPUT (active low,tristate)of the VSC	DATADAC	: DATA LINES	IACKOUT4	: >>	PCLK2IN	: PIXEL CLOCK for channel 2				
CADDYIN	: high when reading data	DDTACK	: Data which will be send to the DAC('S) for volume adjustment	IACKOUT22	: >>	PLOIN1	: input clock for CDIC (22,5792 Mhz)	SYSCLK1 SYSCLK2	: DATA BUS between CDIC-SRAM'S and SYSTEM DATA BUS TRANCIEVERS : CLOCK for the 2 B-chip	12A..15A	: >>
CADDYSWITCH	: control signal for position tray	DEEMP	: DATA TRANSFER ACKNOWLEDGE to the 68070 bus	IACKOUT23	: >>	PLOIN2	: input clock for CDIC (19,3536 Mhz)				
CASN	: COLUMN ADDRESS STROBE (active low)	DIG OUT	: DEEMPHASIS	IACKOUT42	: >>	PLOIN	: Clock signals for emulator panel	TCAP	: START/STOP MOTOR : SUBCODING WORD CLOCK INPUT	12A..15A	: >>
CBA,	: 68070 bus transiever latch (rising edge)	DIRN	: DIGITAL OUTPUT	IACKOUT52	: >>	QCL	: Q-channel CLOCK				
CDICDACKN	: (=ACK1N) DMA REQUEST ACKNOWLEDGE (active low)	DISCLK	: DIRECTION CONTROL. Indecates the direction of data transfer through the transcievers	IDAC	: 1/2 bit DAC	QDA	: Q-channel DATA	TDMOUT	: input capture feature for the on-chip timer : output for the output compare feature of the on chip timer	12A..15A	: >>
CDICREQN	: (=REQ1N) DMA REQUEST (active low)	DISDAT	: DISPLAY CLOCK >>	IFDN2	: main channel word-flag to the DSP	QRA	: Q-channel REQUEST INPUT/ACKNOWLEDGE OUTPUT				
CDTV	: to change by remote control between TV or CDI (only used by CDI 2XX)	DISEN	: DISPLAY DATA >> only for CDI 2XX	INTENN	: >> when low,no extensions use the interrupts,when high interrupt devices are daisy chained	Q22	: output to PLL (22,5792 Mc) devided by 14	TXD1..4 TXD#1..2	: TRAY MOTOR OUT : >> TRANSMIT DATA TXD is data output	12A..15A	: >>
CLAB=CLAB2	: Bitclock for the SAA 7220 chip	DIV4	: DISPLAY ENABLE >>	INTENN2	: >>	Q21	: output to PLL (19,3536 Mc) devided by 12				
CLK=2BLCK	: CLOCK (11,2896 Mhz)	DO	: DIVIDE BY 4 signal	INTENN3	: >>	RAD+	: >> RADIAL OUT to CDM 9	UDSN	: UPPER DATA STROBE (active when low) : READ UPPER DATA BYTE (active when low)	12A..15A	: >>
CLKDAC	: CLOCK DAC,the clock used to send serial data to the volume adjustment	DODS	: DIGITAL OUT	IN2IN	: (=IN2OUT) >>	RAD-	: >>				
CLK1	: the clock on which the DSP operates (7,5264 Mhz)	DONEN	: DROP-OUT DETECTOR SUPPRESSION	IN4IN	: (=IN4UT) >> Decoder interrupt priority inputs	ASN	: ROW ADDRESS STROBE (active low)	WRMN	: READ - WRITE (write when low) UPPER MEMORY DATA FROM DRAM'S FROM VSC-MASTER	12A..15A	: >>
CRI	: COUNTER RESET INHIBIT (low during a real trackloss or during exction of a jump command	DOXN	: DONE (active low,open drain),operates in the DMA-mode	IN5IN	: (=IN5OUT) >> (active low) IN2IN has the lower	RBOT	: for HPR volume control				
COC	: COMMAND COMPLETED signal	DPSRWN	: serial data output of the X-bus	IN2OUT	: >> and IN5IN has the higher priority	RCEYE	: REMOTE CONTROL EYE	UWRSN	: READ - WRITE (write when low) UPPER MEMORY DATA FROM DRAM'S FROM VSC-SLAVE	12A..15A	: >>
COXN	: serial output clock for the X-bus	DTACKN	: Read (high) or write (low) from or to the Digital Signal Processor	IN4OUT	: >> IN2IN = SLAVEPROCESSOR (6805),IN4IN =	RCLED	: REMOTE CONTROL LED				
COXNDSP	: Clock DSP, the clock used to send serial data on the X bus	DSN2N	: DATA STROBE (active low) of the DSP	IN5OUT	: >> CDIC (IMS66490),IN5IN = DUART (68681)	RDN	: READY signal,starting up procedure finished	VC	: READY (active low) of the DMA channel : RADIAL ERROR DIGITAL	12A..15A	: >>
CPUASN	: the address strobe of the 68070 microprocessor	DTACKN	: DATA TRANSFER ACKNOWLEDGE asserted by a peripheral	IN4OUT2	: >>	RDYN	: READY (active low) of the DMA channel				
CPUUDSN	: the lower data strobe of the 68070 microprocessor	DTACKN	: DATA TRANSFER ACKNOWLEDGE	IN5OUT2	: >>	REDIG	: RADIAL ERROR DIGITAL	V-FLAG	: WRITE UPPER DATA BYTE (active when low) : READ - WRITE (write when low) UPPER MEMORY DATA FROM DRAM'S FROM VSC-MASTER	12A..15A	: >>
CPUUDSN	: the upper data strobe of the 68070 microprocessor	DTACKN	: DATA TRANSFER ACKNOWLEDGE of the ROM	IN2OUT3	: >>	RESETCD	: when low resetsequence starts				
		DTACKSLAVEN	: DATA TRANSFER AKnowledge of the ROM	KILL	: to mute audio outputs by power on and off	RESETINN	: when low VSC is in reset	VSCM-INTN	: this is the reset for all other ic's on MMC : DMA-request of channel 2 : DMA Request of channel 2 via DMA 2 on/off circuit	12A..15A	: >>
		DTCN	: DATA TRANSFER ACKNOWLEDGE of the SLAVE processor (68HC05)	KILL-ME	: Signal to enable NTSC encoder	REQ2N	: DMA-request of channel 2				
		DTCN	: DATA TRANSFER COMPLETE (active low,open drain) operates in the DMA-mode	LA1	: >> control signals for brushless DC-motor	REQ2KON	: DMA Request of channel 2 via DMA 2 on/off circuit	VSCS-INTN	: RESET OUT of the slave processor when high resetsequence starts : >> for HPR volume control : >>	12A..15A	: >>
		DUARTCSN	: Data transfer complete correction	LC1	: >>	RSTOUT	: RESET OUT of the slave processor when high resetsequence starts				
		EFAB	: DUART CHIP SELECT,when low businfo is coming from or going to the DUART			RTAP	: >> for HPR volume control	VSYS	: REQUEST TO SEND from the slave	12A..15A	: >>
			: ERROR FLAG			RTOP	: >>				

6.2.1 WIRING DIAGRAM



The schematic diagram illustrates the internal circuitry of a CD player, organized into several main functional blocks:

- CD-PART-I:** This section contains the laser pickup assembly, including the laser diode, lens, and photodiode. It also includes the signal processing circuitry, such as the pre-amplifier, equalizer, and various filters. Key components include the 7101 TDA8080, 7102 TDA8081, 7103 TDA8082, 7104 TDA8083, 7105 TDA8084, 7106 TDA8085, 7107 TDA8086, 7108 TDA8087, 7109 TDA8088, 7110 TDA8089, 7111 TDA8090, 7112 TDA8091, 7113 TDA8092, 7114 TDA8093, 7115 TDA8094, 7116 TDA8095, 7117 TDA8096, 7118 TDA8097, 7119 TDA8098, 7120 TDA8099, 7121 TDA8100, 7122 TDA8101, 7123 TDA8102, 7124 TDA8103, 7125 TDA8104, 7126 TDA8105, 7127 TDA8106, 7128 TDA8107, 7129 TDA8108, 7130 TDA8109, 7131 TDA8110, 7132 TDA8111, 7133 TDA8112, 7134 TDA8113, 7135 TDA8114, 7136 TDA8115, 7137 TDA8116, 7138 TDA8117, 7139 TDA8118, 7140 TDA8119, 7141 TDA8120, 7142 TDA8121, 7143 TDA8122, 7144 TDA8123, 7145 TDA8124, 7146 TDA8125, 7147 TDA8126, 7148 TDA8127, 7149 TDA8128, 7150 TDA8129, 7151 TDA8130, 7152 TDA8131, 7153 TDA8132, 7154 TDA8133, 7155 TDA8134, 7156 TDA8135, 7157 TDA8136, 7158 TDA8137, 7159 TDA8138, 7160 TDA8139, 7161 TDA8140, 7162 TDA8141, 7163 TDA8142, 7164 TDA8143, 7165 TDA8144, 7166 TDA8145, 7167 TDA8146, 7168 TDA8147, 7169 TDA8148, 7170 TDA8149, 7171 TDA8150, 7172 TDA8151, 7173 TDA8152, 7174 TDA8153, 7175 TDA8154, 7176 TDA8155, 7177 TDA8156, 7178 TDA8157, 7179 TDA8158, 7180 TDA8159, 7181 TDA8160, 7182 TDA8161, 7183 TDA8162, 7184 TDA8163, 7185 TDA8164, 7186 TDA8165, 7187 TDA8166, 7188 TDA8167, 7189 TDA8168, 7190 TDA8169, 7191 TDA8170, 7192 TDA8171, 7193 TDA8172, 7194 TDA8173, 7195 TDA8174, 7196 TDA8175, 7197 TDA8176, 7198 TDA8177, 7199 TDA8178, 7200 TDA8179, 7201 TDA8180, 7202 TDA8181, 7203 TDA8182, 7204 TDA8183, 7205 TDA8184, 7206 TDA8185, 7207 TDA8186, 7208 TDA8187, 7209 TDA8188, 7210 TDA8189, 7211 TDA8190, 7212 TDA8191, 7213 TDA8192, 7214 TDA8193, 7215 TDA8194, 7216 TDA8195, 7217 TDA8196, 7218 TDA8197, 7219 TDA8198, 7220 TDA8199, 7221 TDA8200, 7222 TDA8201, 7223 TDA8202, 7224 TDA8203, 7225 TDA8204, 7226 TDA8205, 7227 TDA8206, 7228 TDA8207, 7229 TDA8208, 7230 TDA8209, 7231 TDA8210, 7232 TDA8211, 7233 TDA8212, 7234 TDA8213, 7235 TDA8214, 7236 TDA8215, 7237 TDA8216, 7238 TDA8217, 7239 TDA8218, 7240 TDA8219, 7241 TDA8220, 7242 TDA8221, 7243 TDA8222, 7244 TDA8223, 7245 TDA8224, 7246 TDA8225, 7247 TDA8226, 7248 TDA8227, 7249 TDA8228, 7250 TDA8229, 7251 TDA8230, 7252 TDA8231, 7253 TDA8232, 7254 TDA8233, 7255 TDA8234, 7256 TDA8235, 7257 TDA8236, 7258 TDA8237, 7259 TDA8238, 7260 TDA8239, 7261 TDA8240, 7262 TDA8241, 7263 TDA8242, 7264 TDA8243, 7265 TDA8244, 7266 TDA8245, 7267 TDA8246, 7268 TDA8247, 7269 TDA8248, 7270 TDA8249, 7271 TDA8250, 7272 TDA8251, 7273 TDA8252, 7274 TDA8253, 7275 TDA8254, 7276 TDA8255, 7277 TDA8256, 7278 TDA8257, 7279 TDA8258, 7280 TDA8259, 7281 TDA8260, 7282 TDA8261, 7283 TDA8262, 7284 TDA8263, 7285 TDA8264, 7286 TDA8265, 7287 TDA8266, 7288 TDA8267, 7289 TDA8268, 7290 TDA8269, 7291 TDA8270, 7292 TDA8271, 7293 TDA8272, 7294 TDA8273, 7295 TDA8274, 7296 TDA8275, 7297 TDA8276, 7298 TDA8277, 7299 TDA8278, 7300 TDA8279, 7301 TDA8280, 7302 TDA8281, 7303 TDA8282, 7304 TDA8283, 7305 TDA8284, 7306 TDA8285, 7307 TDA8286, 7308 TDA8287, 7309 TDA8288, 7310 TDA8289, 7311 TDA8290, 7312 TDA8291, 7313 TDA8292, 7314 TDA8293, 7315 TDA8294, 7316 TDA8295, 7317 TDA8296, 7318 TDA8297, 7319 TDA8298, 7320 TDA8299, 7321 TDA8300, 7322 TDA8301, 7323 TDA8302, 7324 TDA8303, 7325 TDA8304, 7326 TDA8305, 7327 TDA8306, 7328 TDA8307, 7329 TDA8308, 7330 TDA8309, 7331 TDA8310, 7332 TDA8311, 7333 TDA8312, 7334 TDA8313, 7335 TDA8314, 7336 TDA8315, 7337 TDA8316, 7338 TDA8317, 7339 TDA8318, 7340 TDA8319, 7341 TDA8320, 7342 TDA8321, 7343 TDA8322, 7344 TDA8323, 7345 TDA8324, 7346 TDA8325, 7347 TDA8326, 7348 TDA8327, 7349 TDA8328, 7350 TDA8329, 7351 TDA8330, 7352 TDA8331, 7353 TDA8332, 7354 TDA8333, 7355 TDA8334, 7356 TDA8335, 7357 TDA8336, 7358 TDA8337, 7359 TDA8338, 7360 TDA8339, 7361 TDA8340, 7362 TDA8341, 7363 TDA8342, 7364 TDA8343, 7365 TDA8344, 7366 TDA8345, 7367 TDA8346, 7368 TDA8347, 7369 TDA8348, 7370 TDA8349, 7371 TDA8350, 7372 TDA8351, 7373 TDA8352, 7374 TDA8353, 7375 TDA8354, 7376 TDA8355, 7377 TDA8356, 7378 TDA8357, 7379 TDA8358, 7380 TDA8359, 7381 TDA8360, 7382 TDA8361, 7383 TDA8362, 7384 TDA8363, 7385 TDA8364, 7386 TDA8365, 7387 TDA8366, 7388 TDA8367, 7389 TDA8368, 7390 TDA8369, 7391 TDA8370, 7392 TDA8371, 7393 TDA8372, 7394 TDA8373, 7395 TDA8374, 7396 TDA8375, 7397 TDA8376, 7398 TDA8377, 7399 TDA8378, 7400 TDA8379, 7401 TDA8380, 7402 TDA8381, 7403 TDA8382, 7404 TDA8383, 7405 TDA8384, 7406 TDA8385, 7407 TDA8386, 7408 TDA8387, 7409 TDA8388, 7410 TDA8389, 7411 TDA8390, 7412 TDA8391, 7413 TDA8392, 7414 TDA8393, 7415 TDA8394, 7416 TDA8395, 7417 TDA8396, 7418 TDA8397, 7419 TDA8398, 7420 TDA8399, 7421

Parts location CD PART 1

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6.4.2 PARTS LIST CD PANEL

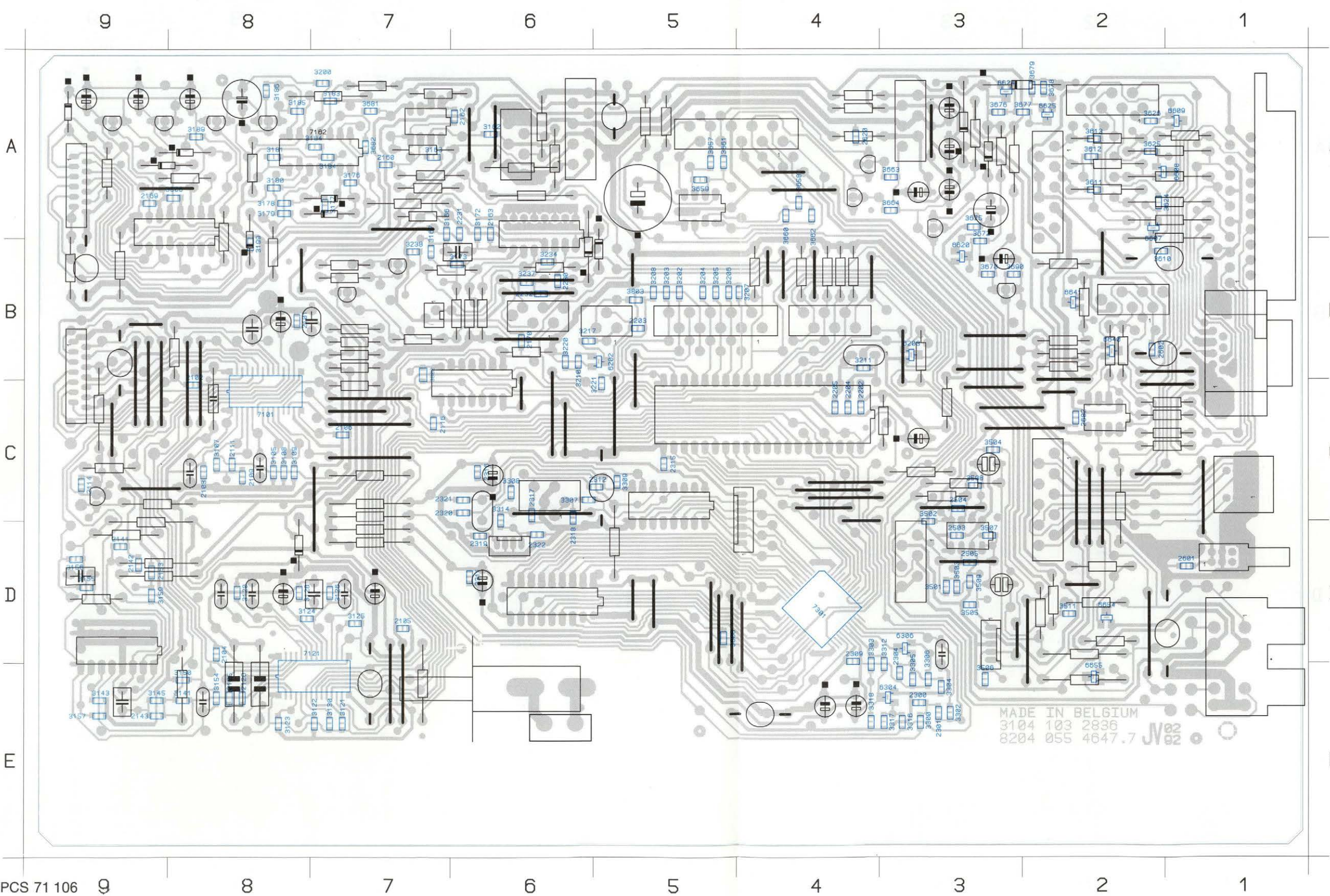
1201	4822 242 72527	4,000MHZ	6623	4822 130 40941
			6624	5322 130 41982
2501	4822 124 41738	BIP ELCAP 22U 10V	6625	5322 130 41982
2502	4822 124 41738	BIP ELCAP 22U 10V	6626	4822 130 30621
			6627	4822 130 30621
3103	4822 052 10478	NFR25 4R7		
3111	4822 052 10478	NFR25 4R7	6652	4822 130 40958
3113	4822 052 10189	NFR25 18R	6653	4822 130 40958
3114	4822 052 10129	NFR25 12R	6654	4822 130 42675
3142	4822 052 10108	NFR25 1R0	6655	4822 130 42675
3144	4822 052 10108	NFR25 1R0	7101	4822 209 73234
3174	4822 052 10108	NFR25 1R0	7121	4822 209 73235
3175	4822 052 10108	NFR25 1R0	7151	4822 209 72587
3209	4822 052 10478	NFR25 4R7	7161	4822 209 83274
3235	4822 052 10108	NFR25 1R0	7179	5322 209 11105
3236	4822 052 10108	NFR25 1R0	7181	4822 209 72587
3301	4822 052 10338	NFR25 3R3	7201	4822 209 32099
3310	4822 052 10478	NFR25 4R7	7301	4822 209 61759
3313	4822 052 10108	NFR25 1R0	7302	4822 209 70422
3620	4822 052 10158	NFR25 1R5	7310	4822 209 62588
3621	4822 052 10228	NFR25 2R2	7551	5322 209 86234
3622	4822 052 10228	NFR25 2R2	7651	4822 209 82362
3655	4822 052 10229	NFR25 22R		
3656	4822 052 10229	NFR25 22R		
3900	4822 052 10339	NFR25 33R		
3990	4822 052 10688	NFR25 6R8		
3991	5322 116 51882	SFR25 0R01		
3992	5322 116 51882	SFR25 0R01		
6102	4822 130 44121	BC338		
6103	4822 130 34174	BZX55-C4V7		
6160	5322 130 30684	1N4002		
6161	5322 130 30684	1N4002		
6162	4822 130 40941	BC558		
6163	4822 130 40941	BC558		
6202	5322 130 41983	BC858B		
6203	5322 130 41982	BC848B		
6306	4822 130 42131	BF550		
6607	5322 130 41982	BC848B		
6608	5322 130 41982	BC848B		
6609	5322 130 41982	BC848B		
6620	5322 130 41982	BC848B		
6621	4822 130 40941	BC558		
6622	5322 130 30684	1N4002		

6.4.3 CD PANEL PCB, COMPONENT SIDE VIEW

1	A	6	51	D	4	2115	B	8	2162	A	6	2308	E	4	2620	A	3	3114	B	9	3153	D	8	3174	A	7	3198	A	7	3221	C	5	3311	C	7	3682	A	2	3631	C	2	3659	A	5	3690	B	3	6172	A	8	6654	D	2	9087	D	5	9029	D	5	9050	B	9	9072	D	2						
2	A	2	52	D	0	2110	C	7	2163	B	5	2309	E	4	2621	A	3	3115	C	9	3154	E	8	3175	A	6	3199	B	8	3230	B	6	3312	E	3	3683	A	2	3632	C	1	3660	A	5	3697	C	3	6173	A	8	6655	E	2	9088	B	8	9031	E	7	9073	E	2									
3	B	4	61	A	2	2120	E	8	2164	A	8	2318	D	6	2622	A	3	3120	D	8	3155	D	9	3176	A	7	3200	A	7	3231	B	6	3313	C	7	3684	A	2	3633	C	1	3661	A	5	3682	C	7	6282	B	5	7101	C	8	9089	A	6	9031	D	7	9052	D	2	9074	C	3						
4	B	5	62	C	2	2121	E	8	2165	A	9	2311	D	6	2623	A	3	3121	E	7	3156	D	9	3177	A	7	3202	B	5	3232	B	7	3314	C	6	3685	A	2	3634	B	2	3662	A	5	3683	B	5	7102	C	8	9091	D	5	9032	D	7	9053	B	2	9075	C	2									
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8	D	3	1281	B	8	2125	E	8	2170	B	6	2316	C	6	2681	A	5	3125	D	7	3160	B	4	3181	A	8	3206	B	5	3236	A	6	3319	E	6	3610	A	2	3638	B	2	3668	D	2	6182	C	9	6088	A	2	7104	B	8	9015	C	2	9036	C	2	9057	B	4	9079	A	3						
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18	A	0	2111	C	8	2152	D	9	2301	E	3	2504	C	3	3109	C	8	3144	D	9	3170	B	7	3191	B	9	3216	C	3	3307	E	5	3510	C	3	3624	A	2	3655	A	5	3678	A	2	6192	A	8	6098	B	2	7188	C	2	9025	E	5	9046	B	9	9068	C	1									
19	B	6	2112	C	8	2153	D	9	2302	E	3	2505	D	3	3110	C	7	3145	E	9	3171	B	6	3192	A	9	3217	B	6	3308	C	6	3511	D	2	3625	A	2	3656	A	5	3679	A	2	6193	A	8	6099	B	2	7189	C	2	9026	D	4	9047	A	5	9069	D	2									
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41	D	3	2114	C	9	2161	B	7	2307	E	4	2602	B	2	3113	C	8	3152	D	9	3173	B	7	3194	A	7	3220	B	6	3319	D	7	3601	A	2	3638	D	2	3658	A	4	3682	A	7	6171	A	8	6653	A	2	9086	A	2	9028	C	3	9049	B	9	9071	D	2									

6.4.3 CD PANEL PCB, COPPERTRACK SIDE VIEW

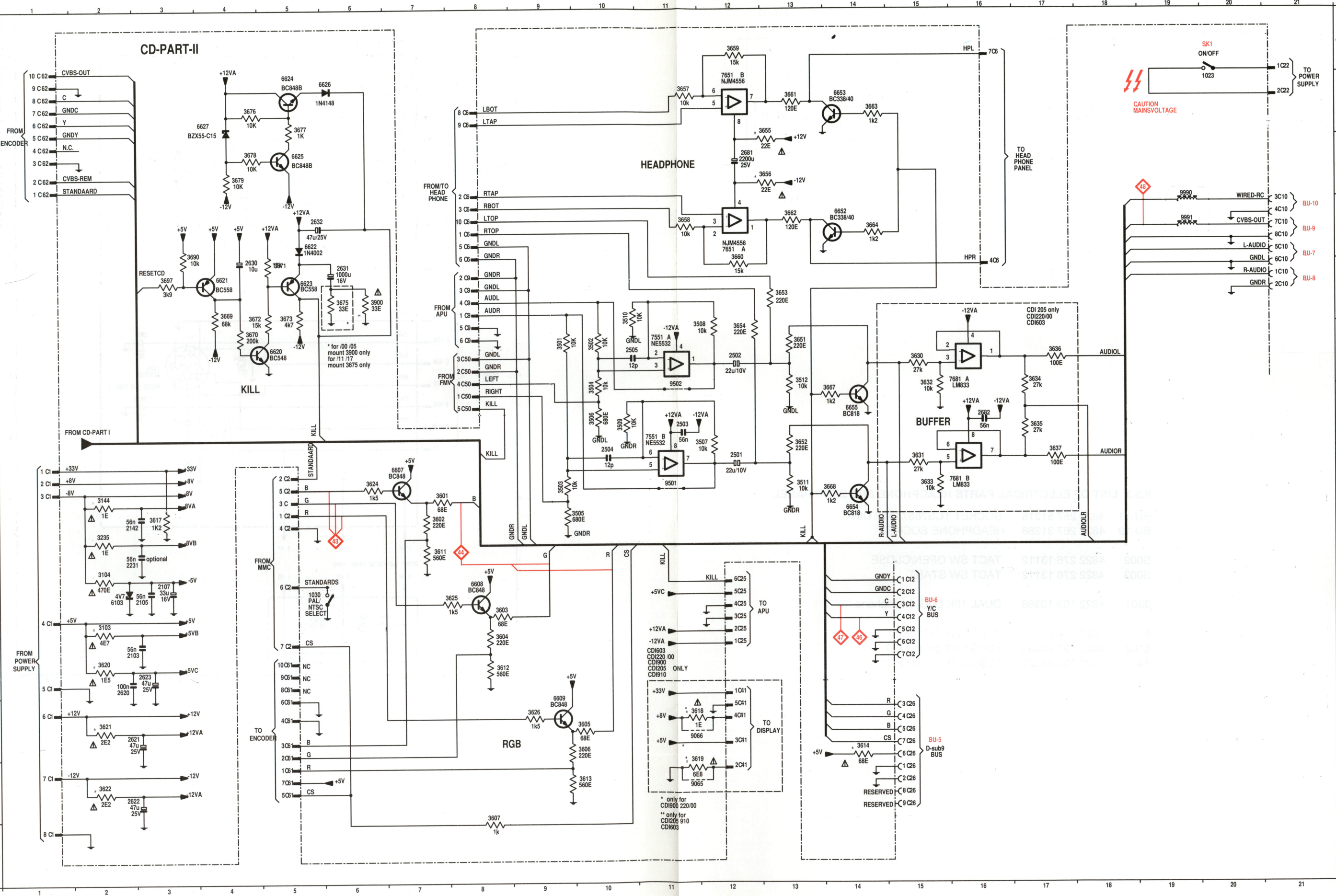
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9873 E 2	9851 E 7	9838 C 3	9808 B 8	8655 E 2	8173 A 8	3697 C 3	3660 A 4	3632 C 1	3603 A 2	3312 E 3	3230 B 6	3199 B 8	3175 A 6	3154 E 8	3115 C 9	2621 A 3	2309 E 4	2163 B 6	2116 C 7	52 D 6	2 A 2
9874 C 3	9852 D 2	9831 D 7	9809 A 6	7181 C 8	8282 B 5	3882 C 7	3661 A 5	3633 C 1	3604 A 2	3313 C 7	3231 B 6	3208 A 7	3176 A 7	3155 D 9	3120 D 8	2622 A 3	2310 D 6	2164 A 8	2120 E 7	61 A 2	3 B 4
9875 C 2	9853 B 2	9832 D 7	9811 D 5	7121 E 8	8283 B 3	3883 B 5	3662 A 4	3634 B 2	3605 A 2	3314 C 6	3232 B 7	3202 B 5	3177 A 7	3156 D 9	3121 E 7	2623 A 3	2311 D 6	2165 A 9	2121 E 8	62 C 2	5 B 5
9876 C 2	9854 B 1	9833 B 9	9812 B 5	7151 E 9	8384 E 3	3886 A 8	3663 A 3	3635 C 2	3606 A 2	3316 E 3	3233 B 8	3203 B 5	3178 A 8	3157 E 9	3122 E 7	2638 B 3	2312 C 6	2167 A 9	2122 D 8	1023 E 6	6 A 4
9877 D 3	9855 C 1	9834 B 9	9813 A 8	7161 A 7	8386 D 3	3888 D 5	3664 A 3	3636 C 1	3607 A 1	3317 E 3	3234 B 8	3204 B 5	3179 A 8	3158 D 9	3123 E 8	2631 A 3	2314 C 6	2168 A 8	2123 D 7	1030 D 1	7 B 7
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9886 B 6	9844 C 7	9823 C 8	9823 C 8	7651 A 5	8626 A 3	8186 A 8	3676 A 3	3653 D 2	3621 A 4	3588 C 3	3244 B 4	3214 B 4	3189 A 8	3168 B 7	3142 D 9	3187 C 8	2502 C 3	2232 B 6	2150 E 8	2109 C 8	25 C 3
9887 B 1	9845 C 7	9824 D 5	9824 D 5	7681 C 2	8627 A 2	8187 A 9	3677 A 2	3654 D 2	3622 A 4	3589 D 3	3245 C 3	3215 B 4	3190 B 8	3169 B 7	3143 E 9	3188 C 8	2503 D 3	2280 E 3	2151 B 8	2110 B 8	26 C 1
9888 C 1	9846 B 9	9825 E 5	9825 E 5	8082 B 9	8640 B 2	8188 A 8	3678 A 2	3655 A 5	3624 A 2	3510 C 3	3246 C 3	3216 C 3	3191 B 9	3170 B 7	3144 D 9	3189 C 8	2504 C 3	2381 E 3	2152 D 9	2111 C 8	27 A 9
9889 D 2	9847 A 5	9826 D 4	9826 D 4	8083 A 4	8641 B 2	8189 A 8	3679 A 2	3656 A 5	3625 A 2	3511 D 2	3247 C 6	3217 B 6	3192 A 9	3171 B 6	3145 E 8	3110 C 7	2505 D 3	2382 E 3	2153 D 9	2112 C 8	40 B 6
9890 D 2	9848 D 5	9827 C 4	9827 C 4	8085 A 4	8642 A 2	8190 A 9	3681 A 7	3657 A 5	3626 A 2	3512 C 3	3248 C 5	3218 C 3	3193 A 9	3172 B 6	3150 E 8	3111 B 6	2601 D 1	2384 E 3	2160 A 7	2113 B 8	41 A 6
9891 D 2	9849 B 9	9828 C 3	9828 C 3	8086 A 2	8653 A 4	8171 A 8	3682 A 7	3658 A 4	3630 D 2	3681 A 2	3310 D 7	3220 B 6	3194 A 7	3173 B 7	3152 D 9	3113 C 8	2602 B 2	2387 E 4	2161 B 7	2114 C 9	50 D 3



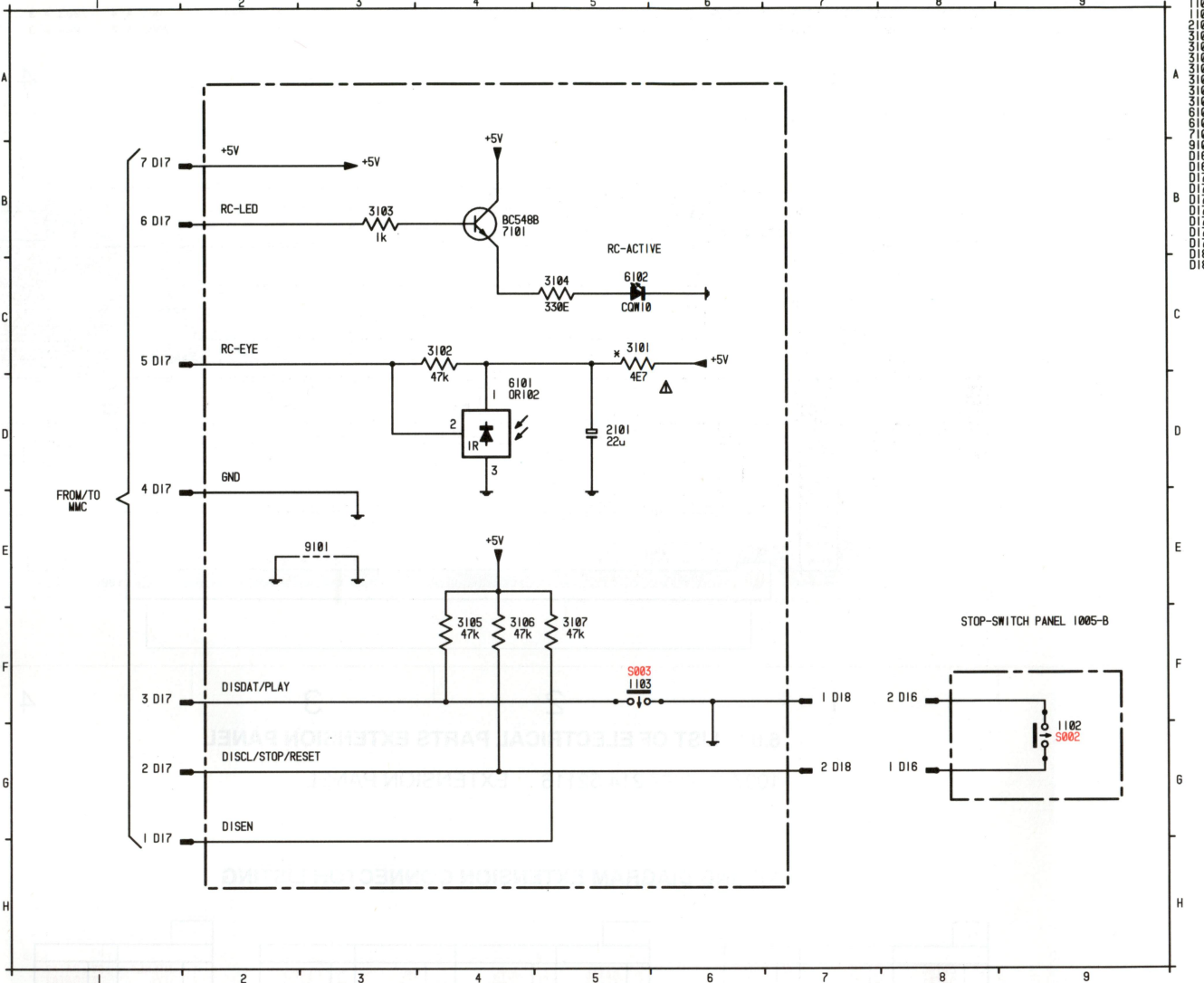
6.4.2 PARTS LIST CD PANEL

1201	4822 242 72527	4,000MHZ	6623	4822 130 40941	BC558
2501	4822 124 41738	BIP ELCAP 22U 10V	6624	5322 130 41982	BC848B
2502	4822 124 41738	BIP ELCAP 22U 10V	6625	5322 130 41982	BC848B
			6626	4822 130 30621	1N4148
			6627	4822 130 30621	1N4148
3103	4822 052 10478	NFR25 4R7	6652	4822 130 40958	BC338-25
3111	4822 052 10478	NFR25 4R7	6653	4822 130 40958	BC338-25
3113	4822 052 10189	NFR25 18R	6654	4822 130 42675	BC818
3114	4822 052 10129	NFR25 12R	6655	4822 130 42675	BC818
3142	4822 052 10108	NFR25 1R0			
3144	4822 052 10108	NFR25 1R0	7101	4822 209 73234	TDA8808T/C3
3174	4822 052 10108	NFR25 1R0	7121	4822 209 73235	TDA8809T/C2
3175	4822 052 10108	NFR25 1R0	7151	4822 209 72587	TCA0372DP2
3209	4822 052 10478	NFR25 4R7	7161	4822 209 83274	NJM4560D
3235	4822 052 10108	NFR25 1R0	7179	5322 209 11105	PC74HCT00P
3236	4822 052 10108	NFR25 1R0	7181	4822 209 72587	TCA0372DP2
3301	4822 052 10338	NFR25 3R3	7201	4822 209 32099	OTP ASSY SERVO
3310	4822 052 10478	NFR25 4R7	7301	4822 209 61759	SAA7310GP/H5
3313	4822 052 10108	NFR25 1R0	7302	4822 209 70422	MN4264-15
3620	4822 052 10158	NFR25 1R5	7310	4822 209 62588	PCF2705P
3621	4822 052 10228	NFR25 2R2	7551	5322 209 86234	NE553N
3622	4822 052 10228	NFR25 2R2	7651	4822 209 82362	NJM4556D
3655	4822 052 10229	NFR25 22R			
3656	4822 052 10229	NFR25 22R			
3900	4822 052 10339	NFR25 33R			
3990	4822 052 10688	NFR25 6R8			
3991	5322 116 51882	SFR25 0R01			
3992	5322 116 51882	SFR25 0R01			
6102	4822 130 44121	BC338			
6103	4822 130 34174	BZX55-C4V7			
6160	5322 130 30684	1N4002			
6161	5322 130 30684	1N4002			
6162	4822 130 40941	BC558			
6163	4822 130 40941	BC558			
6202	5322 130 41983	BC858B			
6203	5322 130 41982	BC848B			
6306	4822 130 42131	BF550			
6607	5322 130 41982	BC848B			
6608	5322 130 41982	BC848B			
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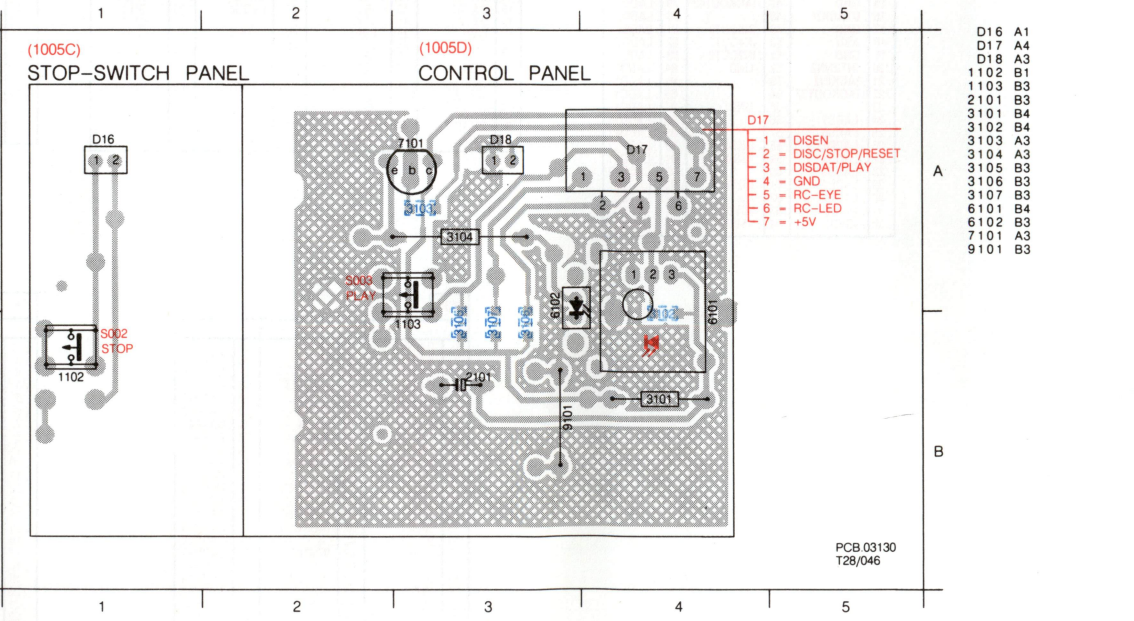
6.4.4 CD PART 2, CIRCUIT DIAGRAM



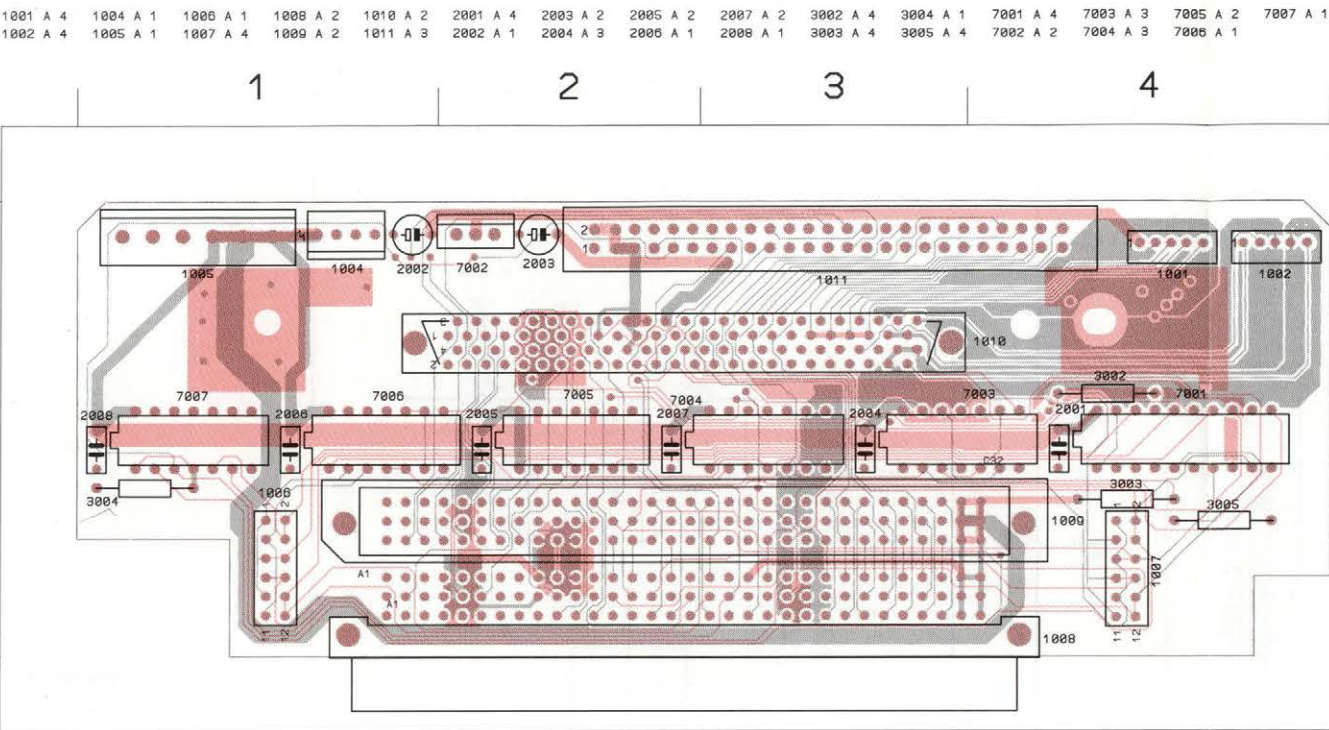
6.5.1 CONTROL AND STOP PANEL, CIRCUIT DIAGRAM



6.5.1 CONTROL AND STOP PANEL PCB, COMPONENT SIDE VIEW



6.6.1 EXTENSION PANEL FMV PCB, COMPONENT SIDE VIEW



6.6.1 LIST OF ELECTRICAL PARTS EXTENSION PANEL

1007 4822 214 52116 EXTENSION PANEL

WIRING DIAGRAM EXTENSION CONNECTOR LISTING

.K31		
a	b	c
1 DATA0	33 HSYN	65 DATA8
2 DATA1	34 VSYN	66 DATA9
3 DATA2	35 CSYN	67 DATA10
4 DATA3	36 NRESET	68 DATA11
5 DATA4	37 XTAL2	69 DATA12
6 DATA5	38 RDYN	70 DATA13
7 DATA6	39 NVDS	71 DATA14
8 DATA7	40 DTCN	72 DATA15
9 GND	41 GND	73 GND
10 SYSCLK	42 DONE	74 HALT
11 GND	43 BERR	75 BERR
12 USDN	44 JACKIN5	76 RESETN
13 LQSN	45 JACKOUT52	77 ACK2N
14 RWN	46 JACKIN4	78 REQ2N
15 GND	47 JACKOUT42	79 LADD22
16 DTACKN	48	80 LADD22
17 GND	49 INOUT2	81 LADD21
18 ASN	50 INOUT2	82 LADD20
19 GND	51 INOUT2	83 LADD19
20 INTEN2	52 GND	84 LADD18
21 JACKIN2	53	85 LADD17
22 JACKOUT22	54	86 LADD16
23	55 GND	87 LADD15
24 LADD7	56	88 LADD14
25 LADD6	57	89 LADD13
26 LADD5	58	90 LADD12
27 LADD4	59	91 LADD11
28 LADD3	60	92 LADD10
29 LADD2	61	93 LADD9
30 LADD1	62	94 LADD8
31 +SVDC	63	95 +SVDC
32 +SVDC	64	96 +SVDC

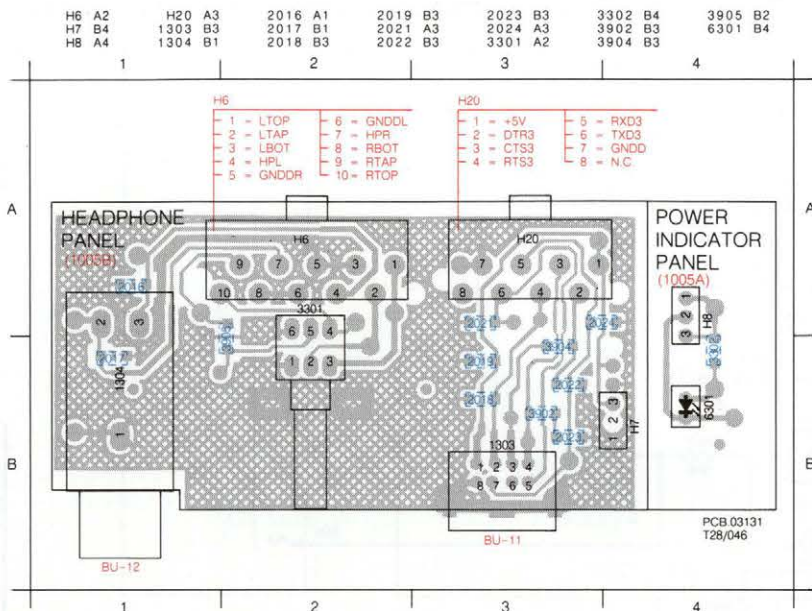
.X2		
a	b	c
1 DATA0	26 RDYN	51 +SV
2 DATA1	27 RESETN	52 GND
3 DATA2	28 DTCN	53 GND
4 DATA3	29 GND	54 INTENN
5 DATA4	30 GND	55 INTREQN
6 DATA5	31 ACK2CON	56 LADD23
7 DATA6	32 USDN	57 LADD22
8 DATA7	33 +SV	58 LADD22
9 DATA8	34 LQSN	59 LADD7
10 DATA9	35 GND	60 LADD21
11 DATA10	36 GND	61 LADD20
12 DATA11	37 JACKN	62 LADD19
13 DATA12	38 REQ2N	63 LADD18
14 DATA13	39 +SV	64 LADD19
15 DATA14	40 +SV	65 LADD4
16 DATA15	41 +SV	66 LADD18
17 GND	42 RWN	67 LADD3
18 GND	43 +SV	68 LADD17
19 GND	44 RESERVED	69 LADD2
20 GND	45 WSAB	70 LADD16
21 HSYNOUT	46 DTACKN	71 LADD1
22 DONE	47 +SV	72 LADD15
23 VSYN	48 RESERVED	73 GND
24 BERRN	49 GND	74 LADD14
25 XT2	50 ASN	75 GND

.K14		
a	b	c
1 INTEN4	26 DATA3	51 LADD13
2 +SVA	27 DATA2	52 GNDV
3 +SVA	28 DATA1	53 LADD12
4 +SVA	29 DATA0	54 GND
5 +SVA	30 GND	55 LADD11
6 GND	31 ASN	56 LADD23
7 DTACKN	32 GND	57 LADD22
8 JACKOUT2	33 LADD23	58 LADD22
9 GND	34 LADD22	59 LADD7
10 GND	35 LADD21	60 LADD20
11 JACKOUT2	36 LADD20	61 LADD19
12 GND	37 LADD19	62 LADD18
13 INOUT3	38 LADD18	63 LADD17
14 GND	39 LADD17	64 LADD16
15 INOUT	40 LADD16	65 LADD15
16 GND	41 LADD15	66 LADD14
17 LQSN	42 LADD14	67 LADD13
18 GND	43 LADD13	68 LADD12
19 RWN	44 LADD12	69 LADD11
20 GND	45 LADD11	70 LADD10
21 RESETN	46 LADD10	71 LADD9
22 DATA7	47 LADD9	72 LADD8
23 DATA6	48 LADD8	73 LADD7
24 DATA5	49 LADD7	74 LADD6
25 DATA4	50 LADD6	75 LADD5

.X30		
a	b	c
1 DATA0	33 HSYN	65 DATA8
2 DATA1	34 VSYN	66 DATA9
3 DATA2	35 CSYN	67 DATA10
4 DATA3	36 NRESET	68 DATA11
5 DATA4	37 XTAL2	69 DATA12
6 DATA5	38 RDYN	70 DATA13
7 DATA6	39 NVDS	71 DATA14
8 DATA7	40 DTCN	72 DATA15
9 GND	41 GND	73 GND
10 SYSCLK	42 DONE	74 HALT
11 GND	43 BERR	75 BERR
12 USDN	44 JACKOUT52	76 RESETN
13 LQSN	45 JACKOUT5	77 ACK2N
14 RWN	46 JACKOUT42	78 REQ2N
15 GND	47 JACKOUT4	79 LADD23
16 DTACKN	48	80 LADD22
17 GND	49 INOUT	81 LADD21
18 ASN	50 INOUT	82 LADD20
19 GND	51 INOUT	83 LADD19
20 INTEN3	52 GND	84 LADD18
21 JACKOUT22	53	85 LADD17
22 JACKOUT23	54	86 LADD16
23	55 GND	87 LADD15
24 LADD7	56	88 LADD14
25 LADD6	57	89 LADD13
26 LADD5	58	90 LADD12
27 LADD4	59	91 LADD11
28 LADD3	60	92 LADD10
29 LADD2	61	93 LADD9
30 LADD1	62	94 LADD8
31 +SVDC	63	95 +SVDC
32 +SVDC	64	96 +SVDC

.F14		
a	b	c
1 INTEN4	26 DATA3	51 LADD13
2 +SVA	27 DATA2	52 GNDV
3 +SVA	28 DATA1	53 LADD12
4 +SVA	29 DATA0	54 GND
5 +SVA	30 GND	55 LADD11
6 GND	31 ASN	56 LADD23
7 DTACKN	32 GND	57 LADD22
8 GND	33 LADD23	58 LADD22
9 JACKOUT2	34 LADD22	59 LADD7
10 GND	35 LADD21	60 LADD20
11 JACKOUT2	36 LADD20	61 LADD19
12 GND	37 LADD19	62 LADD18
13 INOUT3	38 LADD18	63 LADD17
14 GND	39 LADD17	64 LADD16
15 INOUT	40 LADD16	65 LADD15
16 GND	41 LADD15	66 LADD14
17 LQSN	42 LADD14	67 LADD13
18 GND	43 LADD13	68 LADD12
19 RWN	44 LADD12	69 LADD11
20 GND	45 LADD11	70 LADD10
21 RESETN	46 LADD10	71 LADD9
22 DATA7	47 LADD9	72 LADD8
23 DATA6	48 LADD8	73 LADD7
24 DATA5	49 LADD7	74 LADD6
25 DATA4	50 LADD6	75 LADD5

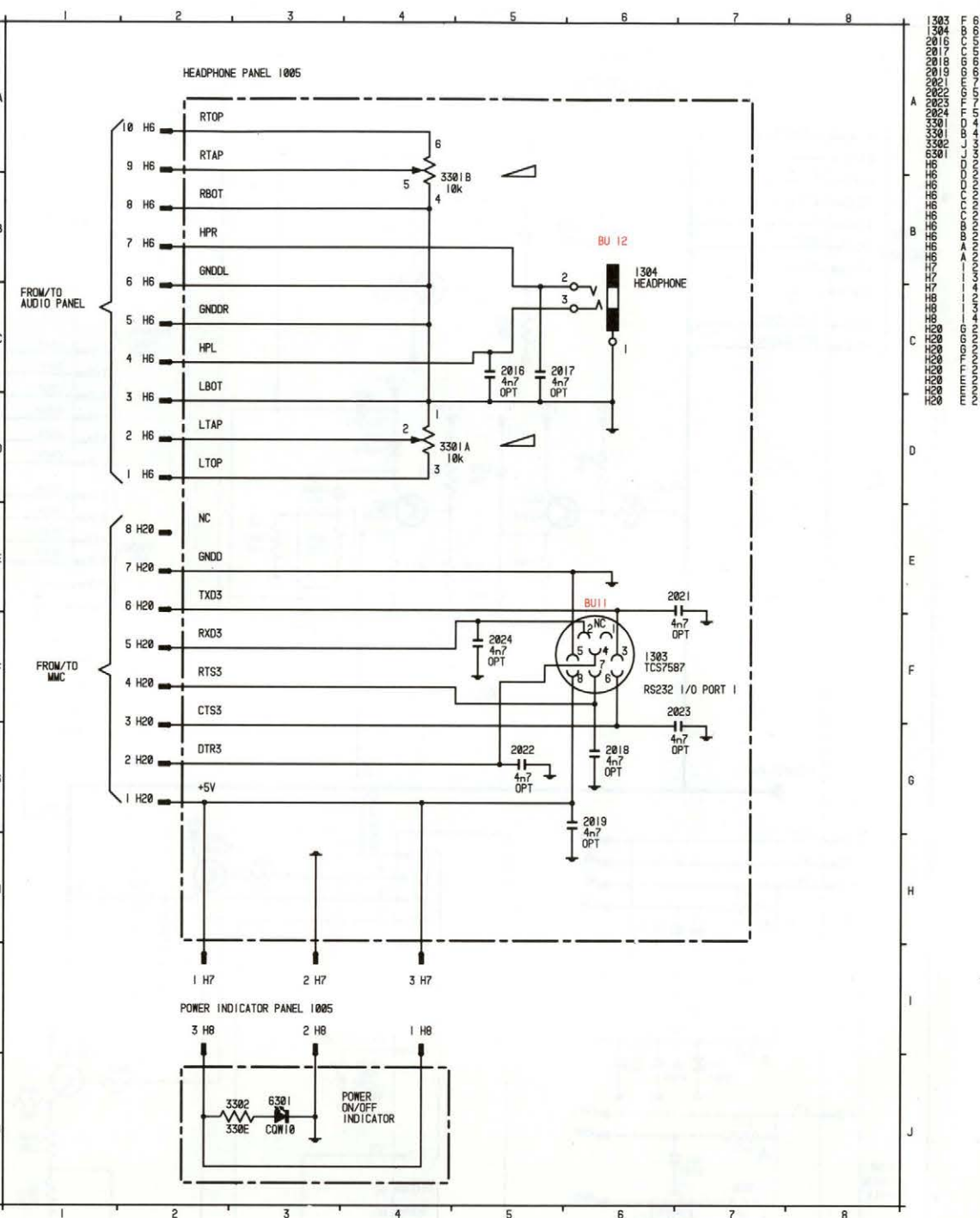
6.5.2 HEADPHONE PANEL AND POWER INDICATOR PANEL PCB, COMPONENT SIDE VIEW



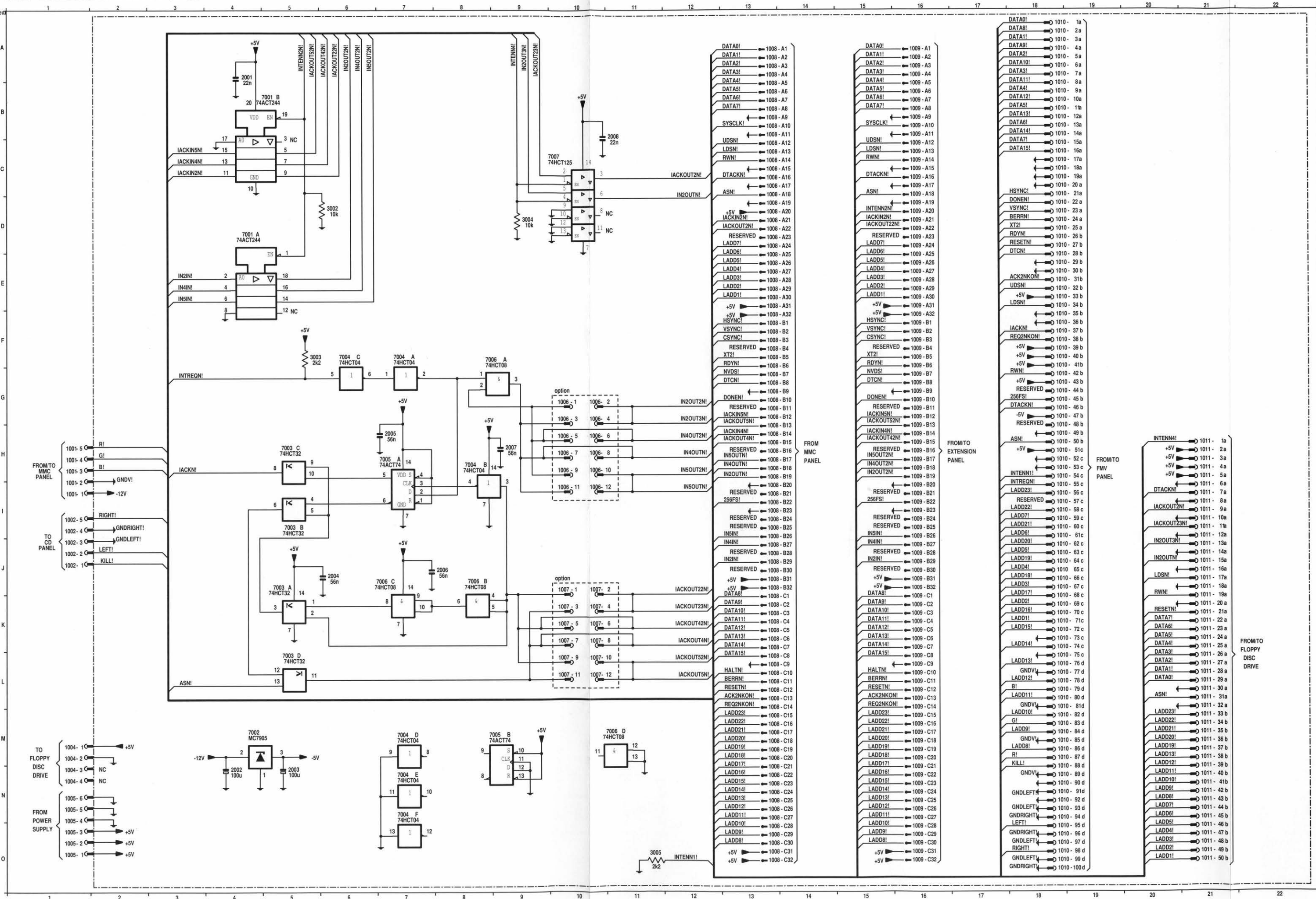
6.5.3 LIST OF ELECTRICAL PARTS HEADPHONE AND STOP PANEL

BU-11	4822 267 51216	SOCKET TCS7587 MINI DIN
BU-12	4822 267 31288	HEADPHONE SOCKET
S002	4822 276 13112	TACT SW OPEN/CLOSE
S003	4822 276 13112	TACT SW START
3301	4822 102 10398	DUAL 10K LOG headphone
6101	4822 214 51795	IR RECVR. GP1U500
6102	4822 130 80848	TLHG4499 green LED
6301	4822 130 80113	TLSG5101 green LED

6.5.2 HEADPHONE PANEL AND POWER INDICATOR PANEL CIRCUIT DIAGRAM



6.6.2 EXTENSION PANEL FMV CIRCUIT DIAGRAM



1001 H 1	1002 J 1	1003 L 5	1004 F 6	1005 N 1	1006 H 10	1007 K 10	1008 G 13	1009 H 16	1010 H 18	1011 M 21	1012 A 4	1013 N 4	1014 N 5	1015 J 6	1016 H 7	1017 J 8	1018 H 9	1019 B 11	1020 D 6	1021 F 5	1022 D 9	1023 O 11	1024 D 4	1025 B 5	1026 M 4	1027 L 5	1028 J 5	1029 H 5	1030 L 5	1031 F 6	1032 F 7	1033 N 7	1034 H 8	1035 H 7	1036 M 8	1037 J 7	1038 J 8	1039 F 8	1040 M 11	1041 C 9
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7.2.2 MEASUREMENTS & ADJUSTMENTS CD
PANEL 1004

Introduction

In the circuit diagrams and on the drawings of the panels measuring points are marked with :
Some times signals to be measured are pointed as for example : IC7181pin1.
All DC signals are measured with an universal electronic voltmeter.
All AC signals are measured with an oscilloscope

7.2.2.1 Lasercurrent

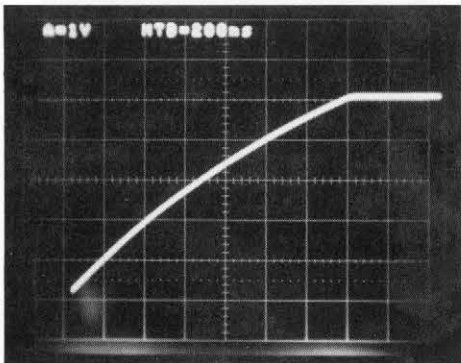
The lasercurrent is adjusted in the CDM9 and is a factory adjustment. After replacing a defective CDM the laser current does not need to be adjusted.
Play track 1 of testdisc 5, the voltage accross measuring point 1 and point 2 should be : 0,7 V / DC $\pm$ 10 %.

7.2.2.2 Focus signal

Play track 1 of testdisc 5, the voltage accross measuring point 3 and GND should be : + 400 mV / DC $\pm$ 10%.

7.2.2.3 Starting signal

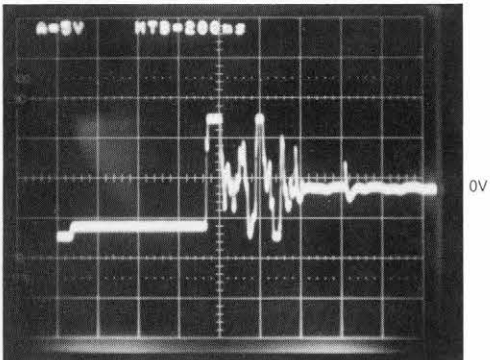
Insert a disc and measure accross measuring point 4 and GND.
After pushing the play button the next picture appears on the oscilloscope :



The signal is triggered by the Si/RD signal on IC7101pin6.

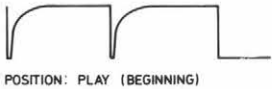
7.2.2.4 Motorcontrol signals

Insert testdisc 5.
Measure accross IC7181pin1 and GND, after pushing the play button the next picture should appear on the oscilloscope.



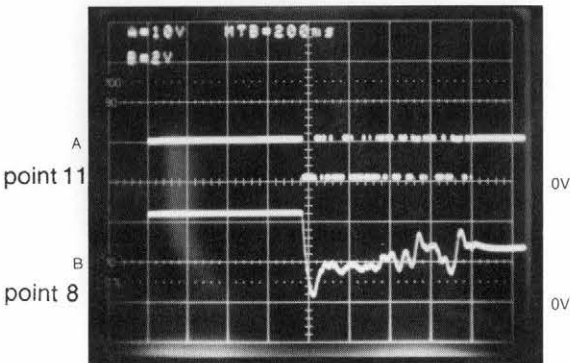
After a while, when playing track 1, the voltage should be:
- 1.7 V DC $\pm$ 10%

Play track 1 of testdisc 5, the voltage across 6 and ground should be: 3.2 Volt DC $\pm$ 10%
Signal accross measuring point 7 and GND should be :



38 849 A12

Insert test disc 5. Accross measuring point 8 and GDN the next picture should appear on the oscilloscope after pushing the play button (Green , S003):



8.2 SPECIFICATIONSEXTENSION 22ER9132/40

The on board extension 22ER9132/40 provides the following functions:

- MEMORY: Total of 5 Mbyte RAM. 1 Mbyte for the Base Case system, 4 Mbyte extended Ram. Expandable to 12 Mbyte via extension slot.
- PRINTER PORT: Connector: 25 pins Sub-D connector
Standard: centronics compatible
Function: serves as a printerinterface. Fully compatible with the IBM-PC printer port.
- SCSI PORT: Connector: 50 pins microribbon connector.
Standard: SCSI-1 (8 bit)
Function: serves as an interface for all SCSI based devices, such as hard disks, CDROMs, magnetic tapes, ...
Depending on the (resident) software installed, the system (player + ext) can act as a master (for HARDDISK) as well as a slave (CDROM emulation).
- ETHERNET: Connector : BNC connector (thin wire)
Standard: IEEE 802.3 (thin ethernet)
Function: serves as an interface to all thin wire based LAN's.

– SCSI-part (BU-26)

- * Function: Serves as an interface for all SCSI based peripheral devices
- * Connector: – 50 pins micro ribbon connector female
– single ended
- * Standard: – SCSI-1 (ANSI X3I92)
- * Data transfer: – Asynchronous
- * Pin-assignments:

PIN	SIGNAL
2	DB(0)
4	DB(1)
6	DB(2)
8	DB(3)
10	DB(4)
12	DB(5)
14	DB(6)
16	DB(7)
18	DB(P)
20	GROUND
22	GROUND
24	GROUND
26	TERMPWR
28	GROUND
30	ATN
34	GROUND
36	BSY
38	ACK
40	RST
42	MSG
44	SEL
46	C/D
48	REQ
50	I/O

NOTE :All odd pins except pin 25 are connected to ground.
Pin 25 has been left open.
All signals use open collector or three-state drivers.

– ETHERNET (BU-24)

- * Function: Serves as an interface to all thin wire based LAN
- * Standard: IEEE 802
- * Connector: BNC

– PARALLEL I/O PORT (BU-25)

- * Function: Serves as on printer interface or general purpose I/O port
- * Standard: Centronics compatible
- * Connector: 25 pins D-connector
- * Pin-assignment :

NO	NAME	I/O
1	STB-	O
2	PD0	O
3	PD1	O
4	PD2	O
5	PD3	O
6	PD4	O
7	PD5	O
8	PD6	O
9	PD7	O
10	ACK-	I
11	BUSY	I
12	PE	I
13	SELECT	I
14	-	-
15	ERROR-	I
16	-	-
17	-	-
18	GND	-
19	GND	-
20	GND	-
21	GND	-
22	GND	-
23	GND	-
24	GND	-
25	GND	-

CAUTION: For correct operation, connections to all I/O ports must be made with power off.