

**Interactive
Media
Systems**

CD-I



CDI 602



PROFESSIONAL CD-I SYSTEM

- CD-I multimedia system with real-time interactivity
- Plays all CD-I and CD-DA discs, extendable for CD-ROM
- Digital video and audio processing
- Motion video and high-quality still pictures
- Multistandard TV in RGB, Y/C or CVBS for PAL and NTSC
- Very easy control (through resident "user shell")
- Floppy disc drive for auxiliary software support
- Extension slots for adding memory and communication facilities

- Two standard CD-I I/O ports plus two RS232-C serial communication ports
- Caddy loading
- Complete with standard CD-I mouse

FROM PHILIPS: A SINGLE-UNIT CD-I SYSTEM FOR PROFESSIONAL AND INSTITUTIONAL APPLICATIONS

The CDI 602 is one of the first single-unit CD-I systems for professional and institutional applications, from Philips.

It is fully equipped to run the new CD-I applications,



PHILIPS

with their unique ability to present video, audio, text and graphics, interactively, in real time. Largely because of this real-time ability, CD-I is fast coming into use in education and training, in Point of Information and Point of Sale (POI and POS) techniques, and reference information systems.

The CDI 602 is fully self-contained and, as a CD-I system, designed primarily for stand-alone applications, extended as well as base case. Nevertheless, there is ample provision of I/O ports and extension slots to permit server applications too.

With its principal components of Compact Disc Drive and Multi Media Controller/Processor, the CDI 602 will run all CD-I discs produced in accordance with the world-wide CD-I standard. In addition to the standard CD-I motion video capabilities the system is prepared for optional

updating to full-screen, full-motion video by an extension kit. In line with the CD-I concept, the CDI 602 is also fully compatible for playing CD-DA discs, or CD-DA tracks on other discs, such as CD-I or 12cm LaserDisc. For CD-ROM discs, additional hardware and/or software can also be incorporated. The CDI 602 then acts in the same way as a CD-ROM drive, peripheral to a computer system.

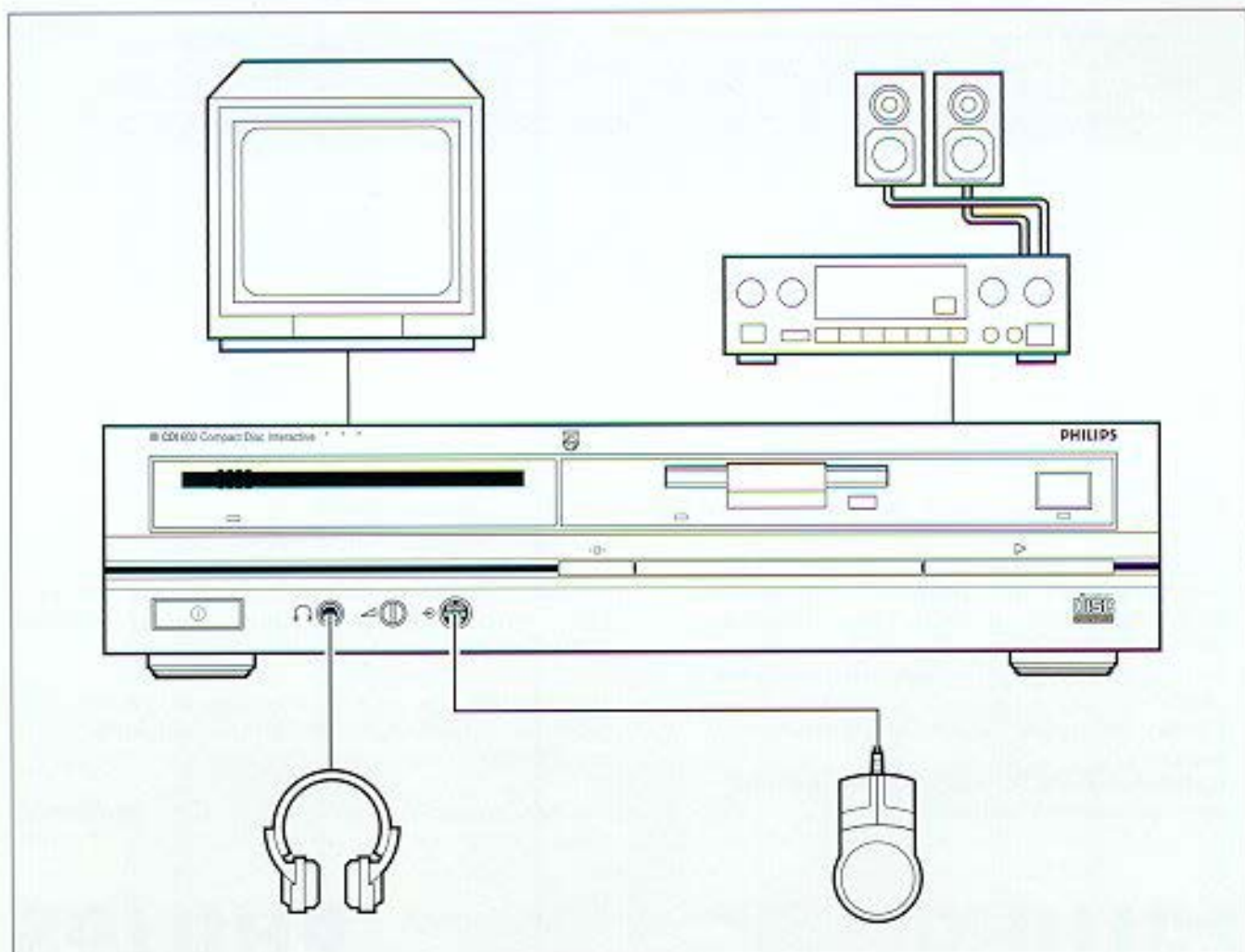
A resident- "User Shell", in conjunction with the mouse supplied, makes operation surprisingly easy. The combination of dynamic pointing device action and immediate (real time) visual feedback makes even sophisticated operations perfectly easy to follow. No technical skills are required to use the system.

CD-I: THE WORLD-WIDE STANDARD FOR REAL-TIME INTERACTIVE SYSTEMS

The CD-I system is defined in a comprehensive standard supported world-wide by the major suppliers of electronic products. It is thus a guarantee of compatibility. CD-I offers multi-media application programs which interact instantaneously (in real time) with the user, in a way which is not available through any other medium. CD-I programs are optically recorded on the universally accepted 12cm (5-inch) format used for CD-Digital Audio.

Audio Quality Options

CD-I offers a range of ADPCM sound qualities from HiFi stereo to quality speech (equivalent to AM broadcast quality). The sound quality can be matched to the type of sound recorded; HiFi stereo, for example, is not the best mode for spoken commentary, because its wide band-



width allows in additional noise. What is more, sound quality can be traded off against disc data storage space. The HiFi mode, for example, has a flat frequency response up to 17kHz and, for stereo reproduction, occupies 50% of the available storage space. Quality speech mode, with a frequency response up to 8.5kHz, offers adequate sound quality for many applications, yet for mono, it uses only 6% of the available storage space. This makes it possible, for example, to present a variety of language choices for the same application.

These and other audio features provide a wide range of flexibility for audio programming.

CD-DA discs can be played on the system and according to the CD-I standard CD-DA tracks may be included in a CD-I application.

Video Compression Techniques

The CD-I range of video compression techniques provides the opportunity to optimize the quality of various types of video material according to the application, while at the same time making the most economical use of disc and memory storage space.

CD-I compression techniques include DYUV for photographic images; RGB and CLUT for text and complex graphics easily manipulated by CD-I application programmers; and Run-length for simple cartoons or graphics with large colour blocks.

Overlay Facilities

Two main video planes, plus a cursor and a background plane, allow unique flexibility for application programmers in image creation and manipulation.

By overlaying of the two main planes, any part of a visual field can be separately updated, trading off picture resolution against video data throughput. Full use can be made of visual effects like cuts, dissolves, wipes and scrolling.

Real-time Operation

The CDI 602 takes video, audio, text and graphics information from the disc as required and stores it, then processes it to present an interactive program in real time. The user makes requests, and the system responds to them at once. Time delays, while accessing program material, are virtually eliminated in a most convenient way for users. No time is wasted during the information presentation.

SURPRISINGLY EASY TO USE

The combination of the mouse and the visual feedback of information from the TV screen makes the CDI 602 surprisingly easy to use. The only action required is to point and select; the system does the rest.

In addition to the mouse, the CDI 602 can also accept wired inputs from standard pointing devices such as joysticks, graphic tablets and touch screens, as well as CD-I keyboards. Through the infra-red sensor on the front panel, or a remote sensor connected to the rear panel, the CDI 602 can also accept inputs from the Philips "Thumb-stick" infra-red remote control which is available as an optional extra.

THE CD-I SYSTEM

The minimum hardware configuration needed to run CD-I discs is the CDI 602, with the mouse supplied, and a TV set (receiver or monitor). The TV set may be either 525-line or 625-line standard with RGB, Y/C or CVBS input.

For applications in which stereo sound is an important feature (such as big-screen presentations), it is advisable to connect the stereo audio output of the CDI 602 to a stereo amplifier and suitably positioned loudspeakers.

A headphone socket with volume control is provided for applications which require personal listening.

Personal (Customizing) Memory

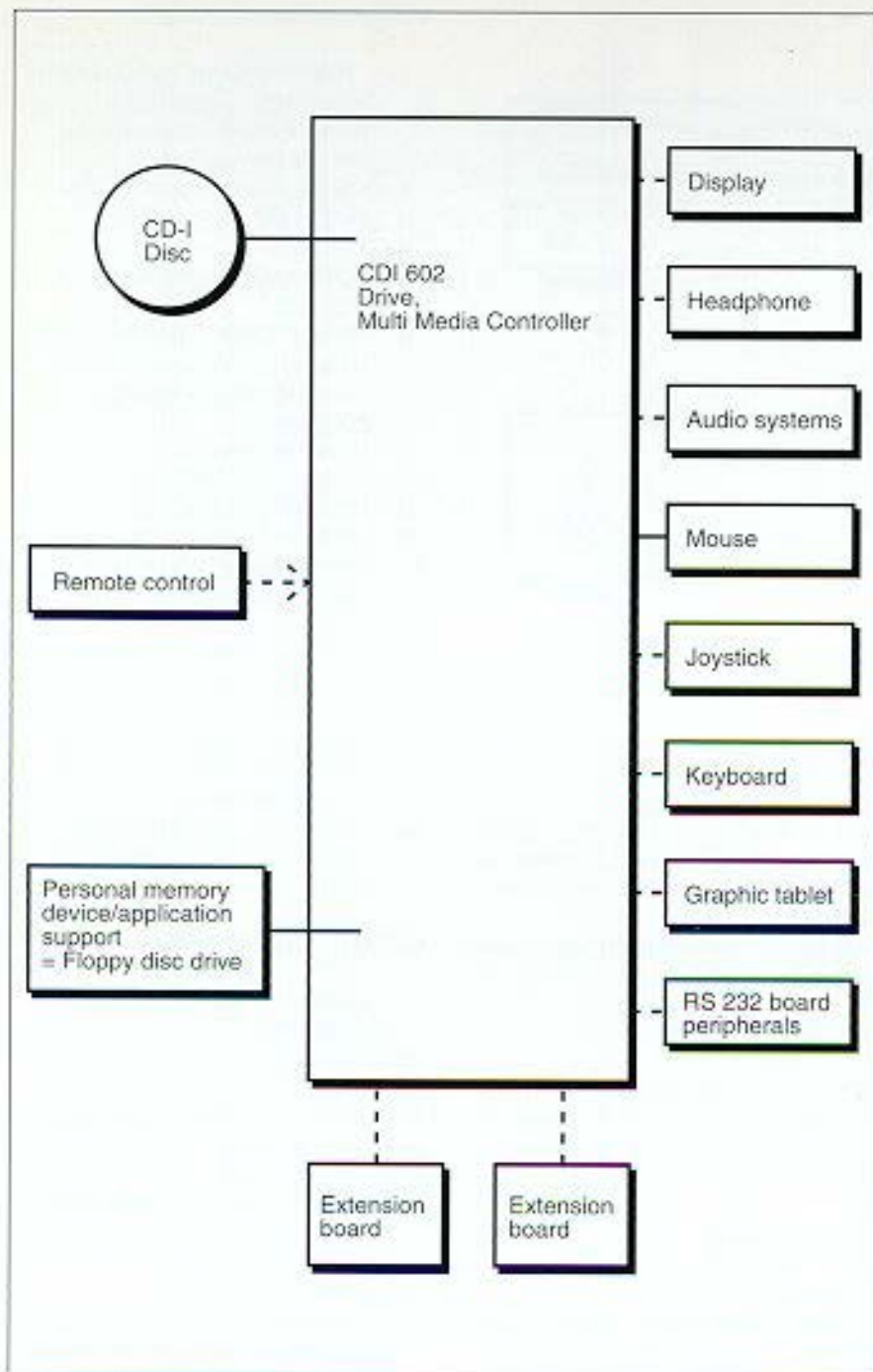
A floppy disc inserted in the 3.5 inch disc drive can be linked with the CD-I disc to provide facilities such as storage, retrieval, access control and application loading. These facilities offer considerable flexibility for application customisation or personalization.

For applications using the personal memory device the floppy disc can serve as such. Valuable data, such as tasks already accomplished in a training course, can be stored on the floppy. "Bookmarks" can be recorded to indicate that information has been noted or observed. "Scores" for progress tests can be recorded. Specific pictures or other data can be extracted from the CD-I disc.

Alternatively, external data stored on the floppy can be retrieved to update or modify the application on the CD-I disc. Typical cases include revised prices for a product catalogue, or up-to-date information concerning the availability of houses in real-estate markets, or of holidays from tour operators.

Certain applications will also require controlled access to sensitive data; for example by managerial staff only, or by employees rather than the general public. Such access control authorizations can be carried on "personalized" floppy discs. All the user has to do is insert the floppy disc; everything is then handled by the application.

System extensions and communication capabilities can be configured with complete ease by staff with no special training. Simply by inserting the appropriate floppy disc and calling up the "load" function in the "Setting Menu", specific printers, other peripherals or communication connections can be configured fully automatically. To application builders using CD-RTOS, full functionality is offered for preparing the floppy discs for the application users and for system configuration. Dependent on the application requirements various formats are supported.



Extension Facilities

Two extension slots provide for expansion of the memory or communication facilities of the CDI 602. Through these Philips proprietary slots, various standard extensions are available, including Ethernet, SCSI and parallel I/O port (Centronics).

A wide variety of customized plug-in interface cards can be made available for interfacing with other equipment and systems. This allows the CDI 602 to be used, for example, in run-time environments where

exchange of information with external sources is required. These extensions can also be used to satisfy authoring system requirements such as emulation or simulation of applications. Full information about extension card facilities is available on request.

THE "USER SHELL"

With the same "point and select" action, all the resident functions of the CDI 602 can be controlled so easily that the actions become instinctive. This

is the result of the special Philips "User Shell" that puts the user in direct interactive communication with the system.

To run a CD-I disc it is only necessary to select "Start" on the CD-I start-up screen which is presented automatically when a CD-I disc is loaded. The application then takes over, and the user can select from the options offered.

For CD-DA discs, the "User Shell" offers many of the functions of top-range Philips Compact Disc players.

An "Info" facility supplies "help screen" information about "User Shell" functions.

Preferred Settings are also offered. These include CD-I Auto-start, System entry (for computer system applications), Load Application, Time/Date display, and CD-DA functions Auto-start, Auto-repeat and Auto-shuffle. When Preferred Settings have been made, the system automatically adopts them when started up.

USER SHELL FUNCTIONS

General

Preferred Settings

- Auto-Start CD-I
- System entry
- Load Application
- Display Time/Date
- CA-DA functions: Auto-Start, Auto-Repeat, Auto-Shuffle.

Info (calls up functions information screen).

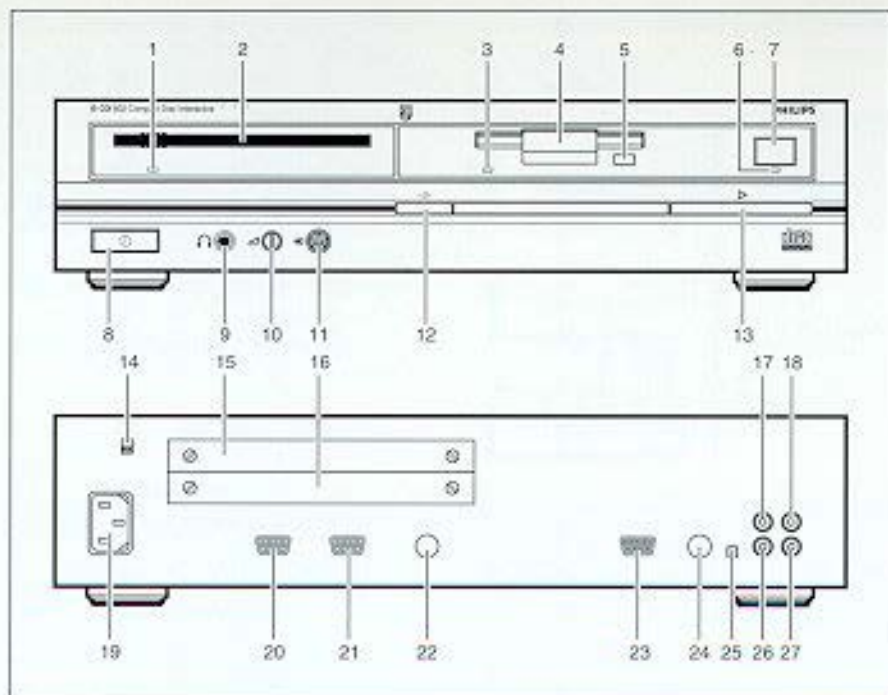
Dim Screen (adjusts screen brightness).

CD-I

Start CD-I (starts CD-I application).

CD-DA

While Playing: Play, Stop, Pause.
Play Modes: Repeat, Shuffle, Intro Scan, FTS (Favourite Track Selection), Search (with sound), Fast Forward and Fast Rewind (without sound), Next Track and Previous Track (directly selectable), Create FTS (programming of selected tracks, in any order).



CDI 602 FRONT PANEL

1. "Reading Disc" LED. Lights when the CD-I disc is loaded, flashes when the disc is being read
2. Caddy loading slot
3. FDD-LED indicator
4. FDD 3.5"
5. FDD push button to eject the disc
6. Sensor LED. Flashes regularly when infra-red commands are being received
7. Infra-red sensor
8. Power On/Off key
9. Headphone socket
10. Headphone volume control
11. Dedicated I/O port for CD-I control devices. Port 1
12. "Return to zero" key. Returns to the main menu in CD-I applications; stops play but remains "in menu" for CD-A discs (i.e. play is resumed at the beginning of the same track)
13. Start/Play key. Starts the application for CD-I discs; starts play for CD-DA discs

TECHNICAL DATA CONNECTIONS

Audio

L + R
(Cinch) 2Vrms typical 10k Ohm
Headphone
(6mm headphone socket)
8 Ohm-2k Ohm, 30 mW at 32 Ohm, manual volume control.

Video

NTSC and PAL video in:
-RGB (D-sub 9 plug) 1Vpp in 75 Ohm
-Y/C (Y/C connector) 1Vpp in 75 Ohm
-CVBS (Cinch) 1Vpp in 75 Ohm

Control ports

Port 1
(Mini DIN 8-pin A), pointing device

Port 2
(Mini DIN 8-pin A), pointing device or CD-I keyboard

Port 3
(D-sub 9 plug), RS232 based peripheral

Port 4
(D-sub 9 plug), RS232 based peripheral

Optional

Infra-red remote control
Wired remote control via infra red "eye"

Extension ports

Two general extension ports for communication, expansion and interfacing. Such as: SCSI (Harddisc), Ethernet, Centronics port, additional memory (1 or 2 Mbyte).
Full-screen full motion video prepared.

Memory

1 Mbyte RAM
8Kb non-volatile RAM
Floppy disc drive 3.5 in. (personal memory device, application support etc.).

Power supply

100-120V and 220-240V \pm 10% selectable
Power consumption approx. 40W (without extensions)

Approvals

FCC, UL.
Conforms with VDE, FTZ, CSA, Nordic, U.S. and German Laser safety regulations

MTBF 35000 hrs.

Dimensions (w x h x d)

-420 x 90 x 400 mm
-16.5 x 3.5 x 15.7 in.

Weight (approx.)

-7kg
-15.4lbs

CDI 602 REAR PANEL

14. Mains Voltage selector 110/220V
15. Extension slot 2
16. Extension slot 1
17. Audio L channel connector
18. CVBS connector
19. Mains Power connector
20. I/O port for RS 232-based general peripherals/extensions. Port 4
21. Default I/O port terminal. For RS 232-based extensions e.g. modem. Port 3
22. I/O port for CD-I pointing devices, CD-I keyboard or other RS 232-based extensions e.g. printer. Port 2
23. RGB connector
24. Y/C connector
25. 525/625 line selector
26. Audio R channel connector
27. IR Remote control bus connector (for connection to a remote IR receiver)