The Complete Amiga CD32 Manual

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Introduction

Welcome to the Commodore Amiga CD32, the last model of the most popular Amiga range. It was affordable and easy to use. It had a wide range of software, in particular, games which Jay Minor, the creator of the Amiga, had designed it for.

The Amiga CD32 is based on the Motorola 68020 14.7 MHz Processor with 2Mb RAM, a Compact Disc drive and a Custom Chipset that provides the Sound and Graphics. It also supports expansion with a FMV module for playing Video CD or CD-I discs.

The Amiga runs the Operating System called AmigaOS which consists of the Kickstart ROM which contains some essential libraries and devices needed to load software.

Setting Up

There are a number of ports you can use to connect the a television or monitor and joypads to the CD32.

At the back of the CD32, you have the following ports:

1 x Square Power socket
1 x 4 pin S-Video port
1 x RF port
1 x RCA Composite Port
2 x Left/Right Audio ports

Behind the blanking plate is the expansion slot of add-ons such as the FMV.

Connect the television or monitor to the appropriate video port and connect the power cable to the power socket.

At the side you have two joypad ports and a 6 pin DIN auxiliary serial port.
If using some CDTV software, you can plug in a keyboard into the Aux port, an
Amiga mouse can be fitted into the Joypad ports.

Plug your joypad onto the first joypad port.

On top you have the CD drive on the left with the following controls on the right:

1 x CD Open/Eject button
2 x Light indicators
1 x Volume slider
1 x Headphone socket

<u>Using the CD 32</u>

When you have powered up the CD32 you should get the following animated boot screen:

At this point, you can press the Open/Eject button and insert your CD32 game or application CD and the software should automatically start.

After the animation, you can press a button on the joypad (or mouse) and you can select the locale you wish to use as follows:

Use the joypad to scroll up and down the list of languages (the appropriate flag will be animated when a language is selected) and press a button to select it.

Another screen you can access is the Non-Volatile Memory screen where you can manage saved games and other information as follows.

Using the CD32 Joypad

The CD32's joy pad is designed primarily for playing games and some simple selection on screens. As well as the normal directional pad there are four fire buttons, which can be assigned different functions depending on the game or software application. Finally there is an auto fire button in case you need extra assistance when in some shoot em up type games.

There are other joy pads such as the CD32 Competition Pro and the Boomerang which is better designed than the original CD32. See picture below:

<u>CD32 Software</u>

The CD32 is basically an Amiga 1200 with a built in CD drive but no floppy drive. Most software designed for the CD32 will boot up and start the game so there is no sign of Workbench which you get on other Amiga software, this makes playing games more intuitive and less likely to go wrong due to missing or old Workbench files and so on and you do not have to search for in a hard disk.

Here is a list of some CD32 you could play on the CD32:

Alien Breed Series
Banshee
Battle Chess
Beneath a steel sky
Brian the Lion
Cannon Fodder
Chaos Engine
Chuck Rock series
Dangerous Streets
Defender of the Crown 2
Exile
Feats
FIFA Intl Soccer
Fire and Ice
Football Glory
Gloom
Guardian
Gunship 2000
Humans series
James Pond 2 and 3
Jet Strike
Jungle Strike
Kick Off 3
Lemmings
Myth
Nick Faldo's Golf
PGA Euro Tour Golf
Pinball Fantasies
Pinball Illusions
Pirates Gold
Project X
Sabre Team
Seek and Destroy
Sensible Soccer
Silly Putty
Simon the Sorcerer
Speedball 2
Sub War 2050
Super Frog

Theme Park
Trivial Pursuit
Trolls
UFO: Enemy Unknown
Zool series

NB: This is not a comprehensive list, you can find bigger lists from various CD32 web sites.

The CD32 can also read some of the older CDTV and the A500 A570 CDROM software which was released earlier (more info about the CDTV can be found here: http://www.cdtv.org.uk/).

Motherboard

There were 5 revisions of the motherboard. Revisions 1 and 2 were debug versions given to developers, revision 3 was a release version and revision 4 and 4.1 are later releases.

Below is the revision 3 motherboard:
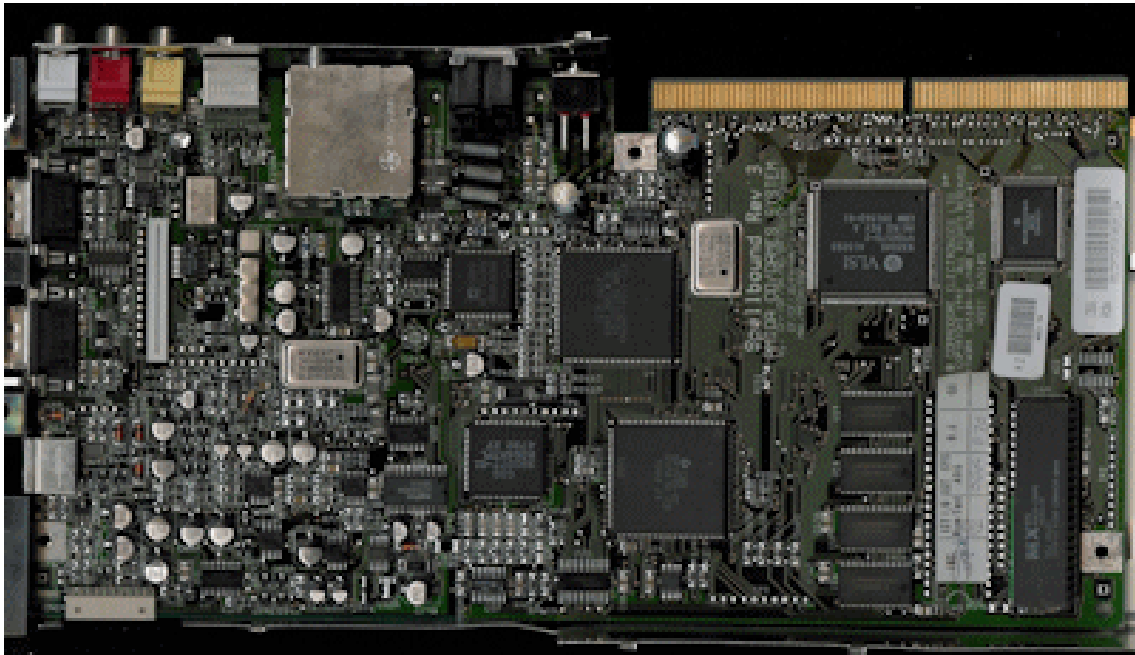
As you can see, the two joy pad ports on the left, the main audio and visual connections at the top left and the main expansion port at the top right.

Below we have the chips:

Bottom right - Kickstart chip
Top right - MC68020 Processor chip
Middle top right - Akiko (Chunky to Planar) chip
Middle bottom right - 4 RAM chips (2 MB)
Middle top left - Lisa chip (AGA chipset)
Middle bottom left - Alice chip (Memory access)
Top left - Unknown
Bottom left - Paula chip (Audio)

Expansion

An number of expansions were created for the CD32 to add additional functionality such as memory expansions, processor expansion, video and hard disk and floppy disk add-ons. See below for some of them:

FMV

In the early 1990s Compact Disc Video was starting to appear which allowed users to view videos recorded to CDs using the early MPEG 1 format. The Full Motion Video (FMV) add on allowed users to view Video CDs and CD-I (CD Interactive) CDs on the CD32.

The MPEG Decoder was the C-Cube Microsystems CL450 video decoder chip.

SX-1

The Microbiotics, Hi-Tech or Paravision SX-1 is a comprehension expansion box for the CD32 which gave the following facilities:

1 x 25pin Parallel Port
1 x 9pin Serial Port
1 x 23pin RGB Video Port
1 x External Floppy Drive Port (for up to 3 drives)
1 x 2.5" IDE Connector
1 x 37pin External IDE Connector
1 x Keyboard connector, compatible with both Amiga and PC keyboards
1 x 72pin SIMM slot.
1 x Karaoke / Audio Input.
1 x Pass Thru for FMV module.

SX-32

The DCE SX-32 is another CD32 expansion which is smaller than the SX-1. There are four versions: SX-32, SX-32 Mk-II, SX-32 Mk-II Pro and the SX-32 Pro.

1 x Battery backed clock
1 x 25pin Parallel Port
1 x 25pin Serial Port
1 x 23pin RGB Video Port
1 x 15pin VGA Monitor Port
1 x External Floppy Drive Port
1 x 2.5" Buffered IDE Connector, with enough space to mount a 2.5" HD
1 x Keyboard Connector, both Amiga and PC keyboards can be used.

Creating a CD32 Game Disk

1. The CD32 uses a very old CD File System so I would stick to **ISO 9660** and/or **RockRidge** modes using short file names. Do not use Joliet or very long file names (>32 characters).
2. You will need the following files and folders on the CD as follows:

        devs/
                system-configuration
        game-folder/
                game files
        s/
                startup-sequence
        SetPatch   (Enables AGA and patches os)
        cdmpeg   (Plays some Mpeg files from any track)

The game folder can be anything and contains the files needed to play games. As it's a CD game and is read only, saved games can be saved to either non-volatile RAM (a r/w area on memory that is saved even if powered off) or if the CD32 is expanded to Floppy disk or Hard disk.

The **RockRidge** filesystem (RRIP, IEEE P1282) is a extension of the ISO standard that allows POSIX file system semantics and supports Amiga flags such as the P (Pure) and S (Script) flags.

Authoring programs you can use include: MasterISO, MasterCD and Frying Pan.

<u>Creating a Video CD</u>

Since the CD32 was designed 7-8 years before DVDs were invented, you can only play MPEG-1 Videos on CDs on the CD32. Most CD Burning software will allow you to create Video CDs easily.

Video

    * Codec: MPEG-1
    * Resolution:
        o NTSC: 352x240
        o PAL/SECAM: 352x288
    * Aspect Ratio:
        o NTSC: 4:3
        o PAL/SECAM: 4:3
    * Frame rate:
        o NTSC: 29.97 or 23.976 frames per second
        o PAL/SECAM: 25 frames per second
    * Bit rate: 1,150 kilobits per second
        o Rate Control: constant bit rate

Audio

    * Codec: MPEG-1 Audio Layer II
    * Frequency: 44,100 hertz (44.1 kHz)
    * Output: Dual channel or stereo
    * Bit rate: 224 kilobits per second
        o Rate Control: Constant Bit rate

Use the **Mode 2/XA** format to create a Video CD using up to 800 MB or 80 minutes of CD space.

References

Amiga History Guide - http://www.amigahistory.co.uk/customchips.html

Big Book of Amiga Hardware - http://amigahardware.mariomisic.de/index_e.html

CD32 F.A.Q. - http://www.faqs.org/faqs/amiga/CD32-FAQ/part1/

Wikipedia - http://www.wikipedia.org/