Caution:

1. Do not insert any game/software cartridge into the memory expansion port of the disk drive. This expansion port is designed only to hook up additional RAM cartridge to the system. Remove the disk drive interface box when you want to connect a game cartridge to the computer.

2. Power off before connecting the disk drive to the computer or connecting any RAM cartridge to the system.

CHAPTER 1: Getting started

Connecting your Disk Drive

Before hooking up the disk drive with the A8 computer, check the bottom label of the disk drive to verify if the application voltage required is the same as that of the area you live. Then connect the interface box of the disk drive to the computer as shown in Fig. 1. Connect the power cord and RF cable of the computer to the mains socket and the TV as usual. Plug in the power cord of the disk drive to the mains socket. Check the drive selection switch located at the rear panel of the disk drive. It should be selected to drive (1) location.
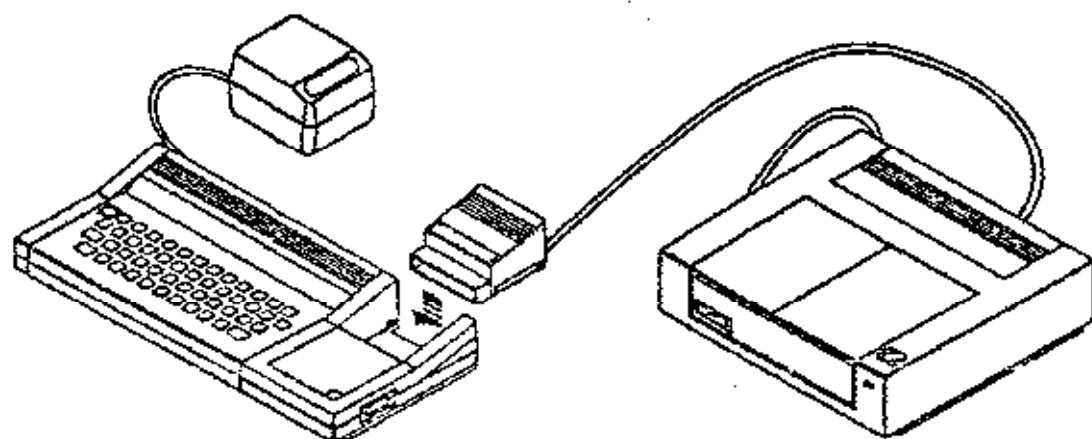

Fig1: Connect the disk drive to the computer.

Power up

Always turn ON the power to the disk drive BEFORE the computer is turned on. The green LED on the left hand side of the front panel will light to indicate that power is applied to the disk drive.

When you turned on the computer and strike the 'Return' key you will see the following message.

AQUARIUS DOS BASIC VER 1.0
COPYRIGHT C BY MIRCROSOFT INC.

The message means you had properly hooked up the disk drive with the computer. If you cannot find 'Aquarius DOS' in the message and the green LED is not lit, it means no power has been applied to the disk drive. In case the green LED is lit and you cannot find the 'Aquarius DOS' word on the screen, check if the interface box is properly connected to the computer.

For the computer to be used with the VHF TV channels, please try both ch3 and ch4 to select a channel which provides a better picture quality.

Additional memory required?

The AQ disk drive is specially designed to save your pocket money to purchase a mini expander when you want to expand your computer-disk drive system with additional memory. A memory expansion port is conveniently located at the rear panel of the disk drive (Fig. 2) and ready to accept any additional RAM cartridge. Never connect a game (ROM) cartridge into this port otherwise both the cartridge and the disk drive may be damaged. This is because the Disk Operating System (DOS) is 100% packed into a firmware which resides on the same location as the game cartridge in the memory map. This special feature means the valuable memory space of your computer will not be occupied by the DOS as compare to other disk drives in the market.

Fig 2: Expand the memory of the system.
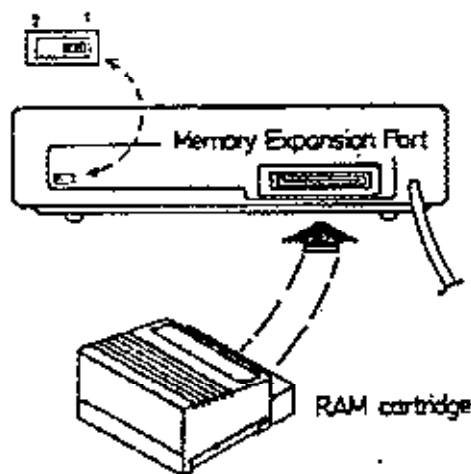
For you to check if the RAM cartridge is properly connected, key in

        ?fre(0) <Return>

The screen will display the free RAM space available. The number displayed will be the original free space available in the computer plus the addition RAM space added by the RAM cartridge.

Make sure the power to the disk drive is switched OFF before you connect or remove a RAM module.

Installing the second drive.

Follow the illustration in Fig. 1 to connect the first disk drive
to the computer. The drive selection switch should be selected
to the drive (1) location. Then plug in the interface box of the
second disk drive into the expansion port of disk drive (1) as
shown in Fig. 3. The drive selection switch of drive 2 should be
selected to the number (2) location. The power of the disk
drives and computer must not be turned on until the system is
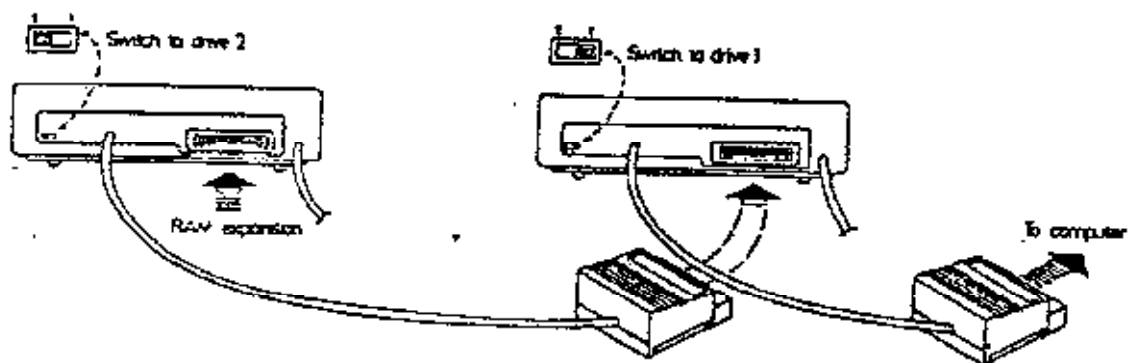properly connected.

Fig 3: Installation of the second disk drive.

To power up the system, switch on the disk drives first and then
the computer. Check that the words, "Aquarius DOS" appears on
the screen when you boot up the system and strike the "Return"
key. In case you cannot find the "Aquarius DOS" on the screen,
it means the system is not properly hooked up.

For your protection – Read Only Files.

After you have stored some valuable programs and data files on a floppy diskette and do not want the diskette to be accidentally erased, you can break away the "Write Protect" frame located on the top left corner of the diskette. There is a "Write Protect" frame for each of side A and side B respectively. (Fig. 4)
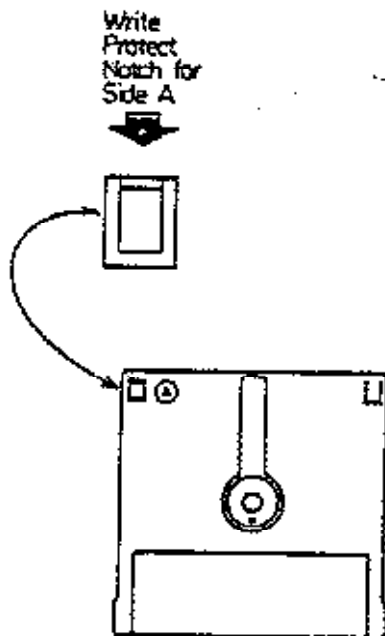
Write
Protect
Notch for
Side A

Fig 4: White Protect Notch of a diskette

2: The AQ-DOS

Start up with a new diskette.

A blank new diskette must be initialized and formatted before use. The command to initialize a diskette is

    INIT, <drive number>

Example: To initialize a blank diskette locates at drive 1.

    INIT, 1

For a single drive system, the drive location is always drive "1". Alternatively, you may only key in "INIT" and the AQ.DOS will prompt you for the drive number. An "OK" will be displayed on the screen to inform you that the diskette initialization is completed. To initialize the other side of your diskette, turn the diskette over and key in "INIT" again.

What's on the diskette?

    DIR, <drive number>

is the command to produce a list of all files on the diskette on that drive. It will also give the number of free bytes available for new files.

Example: To display the directory of a diskette locates at drive 1.

    DIR, 1

An example directory displayed on the screen is:-

```
DIRECTORY
NAME        ATR    SIZE      NAME     ATR    SIZE
FILE 1       1     0500      FILE 2    1     03AF
FILE 3       2     100C
48271 BYTES AVAILABLE ON DISK.
```

Where NAME denotes the name of file. ATR denotes the attribute of the file — ATR 1 implies the file is a machine code program or data. ATR 2 means the file is a BASIC program. Size denotes the number of bytes taken up by the file. The size is displayed in HEX number to facilitate the memory calculation for software management in the AQ RAM area. The number of free bytes in DECIMAL is displayed at the bottom of the directory. Totally there are 51200 free bytes available on each side of the diskette which means a total formatted storage of 100K bytes per diskette.

An alternate way to display the directory is to just key in DIR and the AQ.DOS will prompt you for the drive number.

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SAVE <"file name">, <drive number>

is the command to save a BASIC program. The file name cannot be more than six characters. In particular, you should feel the user friendlyness of AQ.DOS by just keying in the SAVE command and the DOS will prompt you for the drive number and file name.

To load a file from the disk drive, you may use the command,

LOAD <"file name">, <drive number>

Similarly, AQ.DOS will prompt you for the drive number and file name if you simply enter the command "LOAD".

Housekeeping

As you continue to create and save new files the disk will eventually be fill up. This can be anticipated by keeping an eye on the number of free bytes upon the DIR command. If you try to save a file which is too large, the file will not be created and an error message "OUT OF MEMORY" will be displayed.

It is a good practice to maintain a good housekeeping on your diskette. That is, to delete all unwanted files as soon as they become unwanted. This may be achieved with the KILL command.

KILL <"file name">, <drive number>

CHAPTER 3: More Advanced Features of the AQ-DOS

Saving and loading machine codes

To save a machine code program, you have to specify the starting address, the ending address, and the execution address.

        WRITE <"file name">,<drive number>,<top address>,
              <end address>,<exec address>.

The file name cannot be more than six characters.

As usual, if you key in only the WRITE command, the AQ.DOS will prompt you for the rest of the variables respectively.

A particular rule to be noticed is that the address numbers entered must be in HEX numbers.

To retrieve the machine program use the command

        LOAD <"file name">, <drive number>

and the machine code program will be dumped into the starting and ending address specified when this file is created. Of course these address area must be in the RAM area for you to LOAD the program. In loading a machine code program, the recorded execution address is also displayed to remind you where the program should start to run.

Duplicating a file

To duplicate a file from one disk drive to another disk drive (in a dual disk system) or to duplicate a file with different file name on the same disk drive use the command

        DISKCOPY

The AQ.DOS will then friendly prompt you for the source drive number, the destination drive number, the source file name and the desirable filename for the duplicated file.

Interactive programs.

The AQ.DOS commands are designed to be interactive with AQ
computer built-in BASIC. Listed below is a simple demonstration
BASIC program which assigns a NAME to your diskette. With this
program you can also RENAME your diskette anytime you want.

```
10      DATA:................................
20      P=PEEK(14415)+PEEK(14416)*256
30      READNA$
40      IFASC(NA$)=33THEN200
50      PRINT"The name of this diskette is";
60      FORN=1TO30
70      A$=MID$(NA$,N,1)
80      IFA$="|"THEN100
90      PRINTA$;
100     NEXT
110     PRINT
120     INPUT  "DO YOU WANT TO RENAME IT (Y/N)"; A$
130     INMID$(A$,1,1)="y"THEN190
140     STOP
150     KILL"NAME",1
160     INPUT"Enter the name of diskette ";NA$
170     IFLEN(NA$) 30THEN200
180     FORN=1TOLEN(NA$)
190     A$=MID$(NA$,N,1)
200     POKEP+4+N,ASC(A$)
210     NEXT
220     POKEP+4+N,ASC("|")
230     SAVE"NAME",1
```

Then you have finished the key-in of this BASIC program. SAVE it
with the filename "NAME". For you to read the name of the
diskette or to RENAME it, just LOAD the "NAME" file and RUN it.

If you go through the program carefully, you may discover that
line 150 and line 230 are not BASIC command but AQDOS commands to
enable you to access the disk drive through a BASIC program.

Appendix A

Summary of AQ-DOS commands

1. DIR, drive number

   Function: To display the directory of the diskette.
   Example: DIR, 1

2. INIT, drive number

   Function: To format and initialize a diskette.
   Example: INIT, 1

3. SAVE "file name", drive number

   Function: To store a BASIC program onto a diskette.
   Example: SAVE "TEST", 1

4. LOAD "file name", drive number

   Function: To load a file from the disk drive.
   Example: LOAD "TEST", 1

5. KILL "file name", drive number

   Function: To delete a file from the diskette.
   Example: KILL "TEST", 1

6. WRITE "file name", drive number, top address, end address,
        execution address.

   Function: To save a MACHINE CODE program on to a diskette.
   Example: WRITE "CODE", 1, 3900, 39A0, 3900

7. DISKCOPY.

   Function: To copy a file from a diskette.
   Example: DISKCOPY
           The computer will prompt you for the file name, drive
           number of the source and destination.

Appendix B

===ERROR MESSAGE===

1. 'NO DISKETTS'

   You have requested disk (read or write) operations on a
   nonexistent disk. This may be a drive without a disk
   inserted, or a disk drive door that has been left open.

2. 'WRITE PROTECTED'

   The disk is write protected and writing is not allowed.

3. 'TIME OUT ERROR'

   You may be reading from an unformatted disk.

4. 'DISK READ ERROR'

   A read error occurred while trying to read a block of data.
   You may be reading from a block of data which may have been
   physically damaged or partially erased.

5. 'OVER RUN'

   This indicates that more than four characters have been
   received without the attention from the CPU.

6. 'CRC ERROR'

   This indicates that a bad file is being read from the disk.

7. 'EOF ERROR'

   The file that you are reading either was not closed when it
   was created, or this file has been corrupted.

8. 'OUT OF MEMORY'

   Program too large for available memory.

9. 'BAD FILE NAME'

   File name exceeds 6 character..

10 'TOO MANY FILES'

   The disk has already got 40 different files (Maximum number of
   file is 40) entered into it.

11 'FILE ALREADY EXISTS'

   An attempt has been made to save a file, but another file
   with this file.name already exists.

12 'INSUFFICIENT DISK SPACE'

   While saving file, the entire disk was filled up.

13 'FILE NOT FOUND'

   An attempt was made to load a file, but the file does not
   exist.