

Creating .DSK & .DMK image utilities--reading TRS-80 diskette formats

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Stumbled across Vernon Hester's analysis of the major TRS-80 DOSes. This excerpt comes from the MultiDOS manual, Cosmopolitan Electronics Corporation, 1984, and shows a good summary of different formats TRS-80 disks employed.

Hopefully this might be used as a starting point for use in creating utilities made to analyze disk images. Perhaps someday we might have full fledged utilities for exporting and importing into these disk formats. (Open source code might be ported to various emulators and survive into a next gen platform.)

Phil Ereaud has an interesting start with his "Emulator File and Sector Display" v9.0 utility. I hope he continues to improve it.

If each of these four factors described below are looked at on a .DSK disk then for each duplicate in the "TYPE" category, additional hueristics might be added, e.g.

* if the disk can be determined to be a type "DTX0" - that is

"D" = Double Density

"T" = True Logical Tracks (how is this tested?)

"X" = track 0 and track 1 are different densities

"0" = lowest sector is numbered zero.

then the disk is a Model 1 Double Density disk, either DOSPLUS or MULTIDOS "D".

An additional check might be made to look at differences between DOSPLUS and MULTIDOS"D" disks. Perhaps there is a sector on the MULTIDOS disk whose last 8 bytes are always "MULTIDOS". Are there clear differences between these two types of disks?

Would tagging these disks properly be a good start for creating a good export/import program?

To view correctly copy and paste into notepad or other text editor using COURIER FONT.

From Vernon Hester, page 1 of the MULTIDOS manual:

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MULTIDOS is a TRS-80 disk operating system developed to provide a means of communicating with other disk operating systems currently on the market. In addition, MULTIDOS contains major enhancements which make the program easy to use.

The word "TYPE" in the chart below classifies all known operating systems and is determined by four factors.

- 1) The type of address marks used to identify the directory. "U" indicates USER DEFINED. "D" Indicates DELETED.
- 2) The use of pseudo-logical tracks. "P" indicates pseudo-logical tracks. "T" indicates true logical tracks.
- 3) Track zero formatted in a different density than the balance of the diskette. "Z" indicates the same density. "X" indicates a different density.
- 4) The lowest sector number assigned to each track. "0"=Numbered zero. "1"=Numbered one.

MULTIDOS MODEL III/4
MODEL I MAX/80
MOD. SYSTEM DEN "TYPE" READ WRITE READ WRITE

I TRSDOS S UTZ0 OK NOTE 1 NOTE 2 NOTE 2
I NEWDOS S UTZ0 OK NOTE 1 NOTE 2 NOTE 2
I VTOS S UTZ0 OK NOTE 1 NOTE 2 NOTE 2
I ULTRADOS S UTZ0 OK NOTE 1 NOTE 2 NOTE 2
I NEWDOS80-1 S UTZ0 OK NOTE 1 NOTE 2 NOTE 2
I DOSPLUS S UTZ0 OK OK NOTE 2 NOTE 2
I NEWDOS80-2 S UTZ0 OK OK NOTE 2 NOTE 2
I LDOS S DTZ0 OK OK OK OK
I MULTIDOS"S" S DTZ0 OK OK OK OK
I DBLDOS D DPX0 OK OK OK OK
I VTOS D DPX0 OK OK OK OK
I NEWDOS80-1 D DPX0 OK OK OK OK
I NEWDOS80-2 D DPX0 OK OK OK OK
I MULTIDOS"P" D DPX0 OK OK OK OK
I DOSPLUS D DTX0 OK OK OK OK
I MULTIDOS"D" D DTX0 OK OK OK OK
I LDOS D DTZ0 OK OK OK OK

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I TRSDOS D DTX1 NO NO NO NO
III TRSDOS D DTZ1 VFU NO VFU NO
III DOSPLUS D DTZ0 OK OK OK OK
III LDOS D DTZ0 OK OK OK OK
III NEWDOS80-2 D DPZ0 OK OK OK OK
4 TRSDOS D DTZ0 OK OK OK OK
4 DOSPLUS D DTZ0 OK OK OK OK
4 MULTIDOS D DTZ0 OK OK OK OK
MAX-80 LDOS D DTZ0 OK OK OK OK
MAX-80 MULTIDOS D DTZ0 OK OK OK OK

VFU = VFU/CMD can copy a file FROM these types.

NOTE 1: These types will have their address marks changed.

NOTE 2 = Requires CONVERT/CMD to alter the directory address marks.

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