

1440k Floppy Drives for non-FDHD Macs

With the decrease in price of High Density 3.5" floppy disks (79¢ each for generic bulk purchase), and with Apple's standardization on their FDHD 1440k drives, the use of high density floppies is becoming more popular. Users of Mac Plus's, Mac II's, and older Mac SE's (before July '89) without FDHD drives may find themselves left behind in the near future. Apple also refers to this 1440k drive as the "FDHD SuperDrive".

Disclaimer: This information is derived from manufacturer's flyers, catalog descriptions, and limited discussions with technical support staff, but not from personal testing. While I believe that the data accurately reflects the inputs I started from, the possibility for error exists and parts of this article are definitely personal opinion. Also, the information is known to be incomplete in places (hopefully either marked by a "?" or mentioned in the text). Therefore, I urge readers to check out the data for themselves. I can not and will not be held responsible for the accuracy of the information in this article.

This article addresses the problem of using a 1440k floppy drive with a Mac 512E, Mac Plus, old Mac SE (from before July '89), or Mac II. The modern Macs (SE after July '89, SE/30, IIfx, IIfx, IIfx, IIfx, Classic, LC, and IIfx) all come equipped with the 1440k Apple FDHD drives. (The earlier Mac 128 and Mac 512 probably have problems more significant than the lack of a 1440k floppy drive. I have assumed that a Mac 512E includes an 800k floppy drive and a SCSI port.)

Getting an FDHD drive to work on one of these older Macs is not as simple as just attaching an external FDHD floppy drive. The upgrade requires replacing SWIM chips and/or ROM chips to provide the capability to control the FDHD drive. Apple does provide upgrades to FDHD drives for the Mac II's and the older SE's, but it is a somewhat expensive upgrade. The upgrade includes the necessary chips, an internal FDHD drive, and system software. The upgrade kit has a list price of \$599 (with return of the old chips). Installation must be performed by an authorized Apple Service center (labor costs are

extra). An internal Apple FDHD drive alone lists for \$499. There is not an Apple FDHD upgrade option for the Mac Plus or 512E.

The standard Apple FDHD drive gives the capability to read, write, format, and boot from all Apple 3.5" formats (400k, 800k, 1440k) and to read, write, and format the IBM 3.5" standards (720k, 1440k).

There are two categories of 1440k Mac compatible floppy drives on the market. The first category is the one which includes the Apple FDHD drive and its clones. Applied Engineering's "AEHD" 1440k drive appears to fall in this category. This category is useful only for Macs which came FDHD equipped or had the FDHD upgrade. The second category provides alternatives to the Apple FDHD upgrade, i.e. drives that can be used with a Mac 512E, Mac Plus, an older Mac SE, or a Mac II. PLI's TurboFloppy 1.4, Kennect Technologies' Kennect Drive 2.4 with Rapport, and DaynaFile 1.44MB fall in this second category. All three of these drives are plug'n'play types that do not require any internal modifications to your Mac. The Apple FHDH upgrade does require internal modifications, but is the only option which allows an internal FDHD floppy drive.

I have compiled some information on the PLI TurboFloppy 1.4, the Kennect Drive 2.4 with Rapport, and the DaynaFile 1.44MB. This information is shown in Tables 1, 2, and 3 below. Table 4 shows the stats on the Apple FDHD upgrade for comparison purposes. Where the list price was not given, I quickly checked a couple of mail order listings (identified by "Mail Order"). The "Data SW Compatibility" item refers to data exchange utilities for IBM floppies; this information is incomplete and differences may not be meaningful (only Kennect listed this information). All drives should be transparent to any regular Macintosh application software (This was not verified).

The TurboFloppy 1.4 appears to offer only 1440k capability in Mac formats, but it claims a speed that is over half as fast as some older hard disks (by using the SCSI). (The specs never say anything about 800k compatibility.) Booting from a 1440k drive is desirable because it is hard to get a decent Macintosh system on an 800k floppy. The TurboFloppy specs state that you can boot from a 1440k floppy in the TurboFloppy drive. The speed and low price of

the TurboFloppy 1.4 make it worth considering. It doesn't appear to support 400k & 800k Macintosh formats, but you already have a drive that does that. My first contact with the PLI technical support staff reached someone unfamiliar with the TurboFloppy 1.4 and provided a limited amount of information; a second request is pending.

The Kennect Drive 2.4 requires Rapport in order to work. Rapport is a piece of hardware that attaches to your floppy port. If you get Kennect Drive 2.4 with Rapport, you can also add 5.25" drives for additional IBM (and Apple II) compatibility on a daisy chain. The Kennect Drive 2.4 with Rapport "gives Macintosh compatibility with all current Apple and IBM 3.5" diskette formats and then does those giants one better with higher storage formats on both standard and high density media." (Is the Apple 400k format included as "current"? Does it really matter?) The Kennect specs never explicitly state that you can boot from a floppy in one of their drives. Further, they do state that you must put a piece of driver software in your system folder. Bootability is a question that will be important for some people. The "all Mac and IBM 3.5 inch formats" is a plus, and the higher storage capacity in the special formats is a plus for doing hard disk backups (but only people with Kennect Drive 2.4 would be able to read these special 1200k or 2400k floppy formats). The Rapport by itself will give 720k IBM compatibility on your internal 800k Mac floppy drive. (The limited documentation that I have leaves open the unlikely possibility that the "Kennect Drive 2.4 with Rapport" gets its Mac 800k, and IBM 720k compatibility by using Rapport and the internal Mac 800k drive rather than the Drive 2.4. I do not know how to contact Kennect Technology.)

The DaynaFile drives were primarily aimed at the Mac-IBM compatibility market, but the 1.44MB drive can also give FDHD compatibility to Mac users. It appears that DOS Mounter software (or something very similar) comes with the DaynaFile. The Dayna technical support person said that the DaynaFile 1.44MB drive can read and write 1440k Mac diskettes but not format them. She did not think that you could boot from a Mac disk in the DaynaFile 1.44MB drive. At the price, it is hard to justify buying one for FDHD compatibility alone, especially since it can not format diskettes in the Apple 1440k format. If you want a 1440k 3.5" drive combined in a unit with a 5.25" drive, you might take another look at these DaynaFile drives.

To pick a drive, first think about what you want.

If you just need 1440k compatibility and don't care about 400k/800k compatibility in the same drive, the TurboFloppy 1.4 looks good for the price and should have a real speed advantage.

If you need to be able to boot from the 1440k floppy drive, the TurboFloppy 1.4 and the Apple FDHD drives will do it. (The Kennect Drive may or may not let you boot from it).

If a special format 2400k floppy disk would be useful, check out the Kennect Drive 2.4 with Rapport.

If you need IBM 5.25" capability along with FDHD capability, compare the Kennect Drive 2.4 with Rapport and a 5.25" Kennect Drive against a DaynaFile dual drive. On paper, the Kennect Drives have an advantage but performance should be tested if you can get access to both types of drives.

If your machine is a Mac II or old SE (and not a 512E or Plus), the Apple FDHD upgrade offers READ / WRITE / FORMAT / BOOT compatibility on all Mac formats and READ / WRITE / FORMAT compatibility on the IBM formats at a price that is only slightly higher than the Kennect Drive 2.4 with Rapport. The fact that the FDHD drive is internal, along with the bootability question for the Kennect Drive 2.4 might give the advantage to the FDHD upgrade.

Most of us will have to weigh the price against all of the features.

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Kennect Technology

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Table 1

Product: TurboFloppy 1.4 Producer: PLI Connection Port: SCSI Approx. Price: \$275 - \$359 (Mail Order)					
Disk Formats:		Read	Write	Format	Bootable
Macintosh 3.5"	400k	No?	No?	No?	No?
	800k	No?	No?	No?	No?
	1440k	Yes	Yes	Yes	Yes
IBM 3.5"	720k	Yes	Yes	Yes?	
	1440k	Yes	Yes	Yes?	
HW Compatibility: All Macs with SCSI port Data SW Compatibility: Apple File Exchange, possibly others					
Comments & Special Features: TurboBack backup software, TurboCache disk accelerator software Daisy chainable (with standard SCSI) SCSI ID selection by dip switches Fast for a Floppy Drive: Ave. Access Time of 94 milliseconds Definitely bootable.*					
* Stated in documentation for this					

product; likely to be true
for other products.

Table 2

Product:	Kennect Drive 2.4 with Rapport				
Producer:	Kennect Technology				
Connection Port:	Floppy Port (with Rapport)				
Approx. Price:	\$510 - \$528 (Mail Order) (\$319 - \$329 without Rapport)				
Disk Formats:		Read	Write	Format	Bootable
Macintosh 3.5"	400k	?	?	?	?
	800k	Yes	Yes	Yes	?
	1440k	Yes	Yes	Yes	?
	1.2M (1)	Yes	Yes	Yes	?
	2.4M (2)	Yes	Yes	Yes	?
IBM 3.5"	720k	Yes	Yes	Yes	
	1440k	Yes	Yes	Yes	
<p>HW Compatibility: Mac 512E, Plus, SE/30, IICx, IICi Mac II and IIX with special cable (~\$49)</p> <p>Data SW Compatibility: MacLink Plus, SoftPC, DOS Mounter</p> <p>(1): Special format on double density (800k) floppy disk (2): Special format on high density (1440k) floppy disk</p> <p>Comments and Special Features: FastBack II backup software 5.25" Kennect Drives also available (for IBM and Apple II disk formats) Daisy chainable Driver software required in system folder</p>					

For some functions? For all functions? How does this affect bootability?
Rapport is required

Table 3

Product:	DaynaFile 1.44Mb				
Producer:	Dayna Communication s				
Connection Port:	SCSI				
Approx. Price:	\$610 (Mail Order) (List price > \$650)				
Disk Formats:		Read	Write	Format	Bootable
Macintosh 3.5"	400k	No	No	No	No
	800k	No	No	No	No
	1440k	Yes	Yes	No	No?
IBM 3.5"	720k	Yes	Yes	Yes	
	1440k	Yes	Yes	Yes	
HW Compatibility:	Any SCSI compatible Macintosh				
Data SW Compatibility:	DOS Mounter, Dayna Translation Software				
Comments and Special Features: DaynaFile emphasizes IBM data compatibility Dual or single drives: 360k 5.25", 1200k 5.25", 720k 3.5", 1440k 3.5" Daisy chainable via standard SCSI Some system software comes with the drive. For some functions? For all functions? How does this affect bootability? Compatible with DOS Mounter, Dayna Translation Software SCSI ID of 3 or 4 (preset at 3)					

Table 4

Product: Apple FDHD Upgrade (FDHD Drive included)

Producer: Apple

Connection Port: Internal Floppy Bay

Approx. Price: \$599 list price (with return of old chips) + labor

Disk Formats:		Read	Write	Format	Bootable
Macintosh 3.5"	400k	Yes	Yes	Yes	Yes
	800k	Yes	Yes	Yes	Yes
	1440k	Yes	Yes	Yes	Yes
IBM 3.5"	720k	Yes	Yes	Yes	
	1440k	Yes	Yes	Yes	

HW Compatibility: Mac II, old Mac SE

Data SW Compatibility: DOS Mounter, Dayna Translation Software, Apple File Ex.

Comments and Special Features:

Upgrade not available for Mac Plus or earlier

Upgrade not necessary for new SE's, Mac SE/30, Mac IIfx or later

A new copy of the Mac System Software comes with the upgrade

The drive fits in the internal bay

The upgrade allows addition of external FDHD drives (or of a second internal FDHD drive if space permits)