

ST-506 type hard drive interface



Article Overview

The ST-506 interface is an early hard disk drive interface introduced in 1980, connecting drives to controllers via separate control and data cables using MFM encoding.

Overview

The ST-506 interface was introduced by Seagate (originally Shugart Technology) in 1980 with the first 5.25-inch hard disk drive, the ST-506, which stored up to 5 MB after formatting . It became a de facto standard for early personal computers, including the IBM PC/XT, and was widely adopted by other manufacturers . Its successor, the ST-412, increased capacity to 10 MB and improved seek performance while maintaining compatibility with the ST-506 interface .

Physical Connection

The ST-506 interface uses two signal cables and a power cable:

- Control cable: 34-pin ribbon cable, similar to the Shugart floppy disk interface, capable of supporting up to four drives . It carries signals for head selection, step pulses, and drive selection.
- Data cable: 20-pin ribbon cable, carrying separate unidirectional RS-422 compatible differential signal pairs for Read and Write operations .
- Power cable: Standard 4-pin connector providing 5V and 12V to the drive. Each drive requires its own dedicated data cable to the controller, while multiple drives can share a control cable

Article Content

Jan 06, 2026

Hard disk drive interface

Early interfaces A data cable (top) and control cable (below) connecting a controller card and an ST-506 type HDD. Power cable not

Nov 03, 2025

SEAGATE ST506 MICROWINCHESTER

The ST506 electrical interface is similar to the Shugart Associates SA1000 family of 8 inch fixed disc drives. The ST506 size and

Oct 09, 2025

ESDI drive migration notes | Micropolis

In terms of cabling, ESDI seems similar to ST-412/506 as the same cables are used, but the interface is completely different.

Apr 06, 2026

1980: Seagate 5.25-inch HDD becomes PC standard

Oral Histories "International Business Machines Corporation (IBM) 5.25 and 3.5 inch floppy drives oral history panel" Computer

Oct 24, 2025

Seagate ST-506: The Daddy of Modern Hard Drives

But the use of 5.25" hard drives continued all the way into 1998, and it's likely that one of your early machines had a

Sep 07, 2025

X-Stream Technologies: Hard Drive Interfaces

The interface used the same type of 20-pin data cable and the 34-pin control cable as the ST-506. ESDI

Jul 27, 2026

ST-506 5MB hard disk drive

This first 5¼ inch hard disk was the size of a 5¼ inch floppy disk drive and had a similar interface, so it was easy to add to PCs.

Apr 21, 2026

ST-506/ST-412

The ST-506 and ST-412 (sometimes written ST506 and ST412) were early hard disk drive products introduced by Seagate in 1980

Aug 23, 2025

ST-506/ST-412 explained

In the ST-506 interface, the drive connects to a controller card with two ribbon cables carrying signals, while a third cable provides

Dec 18, 2025

ST506/412 (MFM & RLL)

ST506/412 interface pinout: 34-pin control cable and 20-pin data cable used by early 5.25-inch MFM and RLL hard

Apr 17, 2026

What Is ST-506 Interface?

The ST-506, ST-412 and ST-412RLL interfaces were de facto HDD standards through the 1990s. Unlike modern hard

Dec 14, 2025

S100 Computers

The ST-506 was the first 5.25 inch hard disk drive. Introduced in 1980 by Seagate Technology (then Shugart Technology), it stored

Nov 15, 2025

Seagate ST 506/412 OEM Manual

The ST-506/412 electrical interface is similar to Shugart Associates' SA 1000 family of 8 inch fixed disc drives. ST -506/412 size and

Nov 05, 2025

ST-506 | Article about ST-506 by The Free Dictionary

The ST-506 stored up to 5 megabytes after formatting using MFM encoding. It transferred data at 625 kilobytes per second. The ST

Sep 04, 2025

Hard Disk Drives/ Seagate // retrocmp / retro computing

Shugart was responsible for the genesis of the two hard drive interfaces that were to dominate the PC world for

Sep 13, 2025

DS_Seagate ST506

Details of the drive are shown in a 1981 product brochure. The success of the ST-506 provided a stimulus for numerous other disk

Sep 02, 2025

ST-506 Service Manual Overview | PDF | Detector (Radio)

This document provides service information for the Seagate ST-506 microWinchester hard disk drive, including: - A general

Jul 19, 2026

Hard disk drive interfaces

Three standard Hard Disk Drive interfaces have been used with DOS Computers over the years. The SCSI Interface, a universal

Apr 12, 2026

ST-506/ST-412

In the ST-506 interface, the drive connects to a controller card with two ribbon cables carrying signals, while a third cable provides

Apr 28, 2026

ST506/412

The ST506/ST412 hard disk interface uses a shared 34-pin control cable and individual 20-pin MFM data cables,

Mar 05, 2026

ST-506 from FOLDOC

ST-506 <storage> The first full-height 5.25 inch hard disk drive for personal computers, introduced in 1980 by Shugart

Nov 24, 2025

Nerdly Pleasures: Working with ST-506 Interface MFM Hard Drives

The ST-506 was a 5MB drive and used a two-cable interface. The IBM original controller only officially supported one type of hard

May 02, 2026

ST-506/ST-412 explained

The ST-506 and ST-412 (sometimes written ST506 and ST412) were early hard disk drive s introduced by Seagate in 1980 and

Jun 20, 2026

ST506 disk interface

The ST506 disk interface (other common names: ST412, ST506/ST412, or often the misleading MFM disk) was introduced in 1980

Dec 17, 2025

seagate :: ST506 ServiceMan May82

The ST-506 uses modified frequency modulation (MFM) as the encoding method implemented to record data on the drive. This

Aug 13, 2025

Hard disk drive interfaces

The ST506 and ESDI interfaces had a lot of the signal processing electronics on the Interface card but with the ever increasing scale

Apr 23, 2026

Hard disk drive interface

ST412, an ST-506 variant was available in either MFM or RLL (Run-Length Limited) encoding variants. Enhanced Small Disk

May 07, 2026

Changes to the ST-506/ST-412 Interface

Hardware Change #1 to Interface At the time of introduction of the ST-506 and the later ST-412, the signal on pin 4 of the control

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

