DIGITTRADE

High Security HDD

HS128 / HS256

Benutzerhandbuch

User Manual

Zertifiziert vom Nationalinstitut für Standardisierung und Technologie der Vereinigten Staaten von Amerika.
Certified by The National Institute of Standards and Technology of the United States of America (NIST)

Contents

PLEASE READ AND FOLLOW THE INSTRUCTIONS PROVIDED IN THIS USER MANUAL CAREFULLY.

FAILURE TO DO SO MAY RESULT IN DAMAGE TO THE DIGITTTRADE HIGH SECURITY HDD AND CONNECTED DEVICES.

About the DIGITTRADE HIGH SECURITY HDD

The DIGITTRADE HIGH SECURITY HDD (HS128 / 256) is currently the best solution to save data at a high standard of security and mobility.

Thanks to the full disk hardware encryption according to the AES standard and the two-factor authentication, the DIGITTRADE HIGH SECURITY HDD combines the benefits of mobile data media with highest security standard for data privacy.

The hardware-based encryption module, integrated in the security enclosure performs a full disk encryption. It encrypts every byte and every sector that is written on the HDD according to AES standard (128/ 256 bit).

The DIGITTRADE HIGH SECURITY HDD encrypts additionally to all stored data even temporary files as well as areas that would normally not be noticed by encryption software.

The AES key is on the Smart Card. In case of loss or theft it is not possible to read out the AES key neither from the enclosure nor from the HDD.

The DIGITTRADE HIGH SECURITY HDD provides best possible protection besides the hardware based encryption by a two-factor authentication.

The two-factor authentication works according to the "Having and Knowing Method":

Factor 1 (Having): verifies, if the user has a Smart Card with the correct AES key.

Factor 2 (Knowing): verifies, if the user knows the correct 8-digit PIN and consequently is authorized to use this Smart Card.

The Smart Card will be locked forever and disabled automatically if the 8-digit PIN was entered wrongly 8 times. Data stored on the Smart Card will be destroyed irrevocably.

The embedded 2.5" SATA hard drive makes the mobile data safe small and handy. Thanks to data transfer and power supply using USB or FireWire and the hard ware encryption it is possible to use this storage medium independent of an operating system or platform.

The benefits of DIGITTRADE HIGH SECURITY HDD

- maximum protection and mobility for all stored data

- two-factor authentication using Smart Card and PIN (8-digit)

- AES hardware cipher engine (128/256 bits)

- full disk encryption: every byte and sector is encrypted

- maximum protection against unauthorized access

- portable 2,5" enclosure

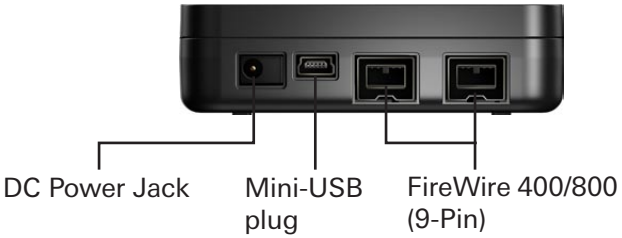
- operating system independent

- bus interface USB 1.1 / 2.0 and FireWire

- no performance degradations of reading and writing speed

How to connect DIGITTRADE HIGH SECURITY HDD

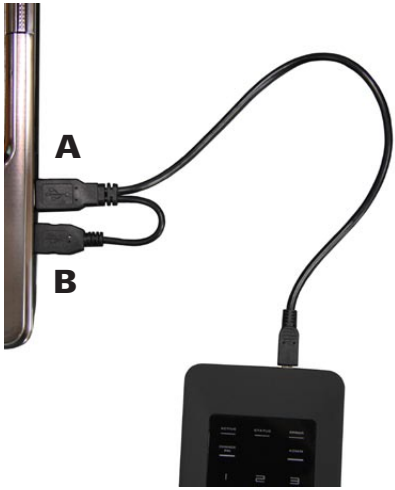
It is possible to connect the DIGITTRADE HIGH SECURITY HS128/256 either using USB or FireWire to the computer.



Connection to USB 1.1 Port

Connect the DIGITTRADE HIGH SECURITY HDD to your PC or laptop using the USB cable included in delivery.

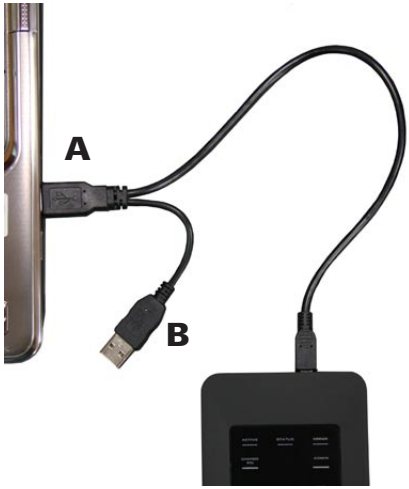
Please note that the A- and B- plugs have to be connected first with the PC or Laptop as shown on the picture before connecting the USB cable to the HDD.



Connection to USB 2.0 Port

Connect the DIGITTRADE HIGH SECURITY HDD to your PC or laptop using the USB cable included in delivery. Please use therefore the A-plug as shown on the picture.
Not only the data will be transmitted through the USB cable but also the HDD will be energized.

Please make sure that the HDD is connected at all times directly to the USB plug of the PC or laptop.



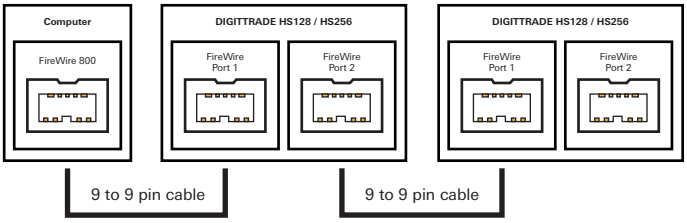
Note: *Do not use the DIGITTRADE HIGH SECURITY HDD via a bus-powered USB hub or USB extension cable.*

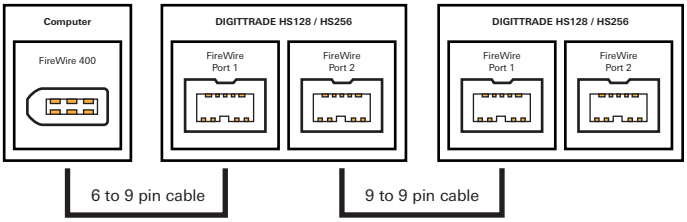
Connection to FireWire

Connect the DIGITTRADE HIGH SECURITY HDD to your PC or laptop using a FireWire cable. For using FireWire 400/800, please ensure that you have a 9 pin FireWire cable and connect it to the computer´s FireWire port.

A suitable FireWire cable is available on www.digittrade.de.

Two FireWire ports are available on DIGITTRADE HIGH SECURITY HDD to allow daisy chaining of two or more hard drives. To daisy chain, simply refer to the following configuration.





Note: *FireWire ports at a computer could be 9, 6 or 4 pin. Please use the correct FireWire cable for your computer. If you are connecting to computer via a 4 to 9 pin cable, you will need to ensure that you have an additional powersupply for the DIGITTRADE HIGH SECURITY FESTPLATTE.* *(See P. 37)*

Switching-On

The DIGITTRADE HIGH SECURITY HDD is powered by the USB or FireWire bus. It is not neccessary to use an additional power supply. In case your used connecter cannot provide enough power it is possible to use an additional power supply.

If the HS128/256 is connected correctly to the computer the LED "ACTIVE", "STATUS" and "ERROR" flash once.

The hard disk is now ready for use, but still needs to get unlocked. For this you need one of the provided Smart Cards and the PIN.

This hard drive is protected by the two-factor authentication to avoid unauthorized access.

Note: *Please use only original accessories in combination with DIGITTRADE HIGH SECURITY HDD.*

Two-Factor Authentication

The DIGITTRADE HIGH SECURITY HDD functions with a two-factor authentication process to avoid unauthorized access to the HDD and data stored on it.

With this process the authorization of the user will be verified to exclude misuse. The verfication works with two factors according to the "Having and Knowing Method":

Factor 1 (Having): verifies if the user has a Smart Card with the correct AES key. This verfication takes place by inserting the Smart Card into the HDD enclosure. Two Smart Cards are included in delivery.

Factor 2 (Knowing): verifies if the user knows the correct 8-digit PIN and consequently is authorized to use this Smart Card. This verfication takes place by the PIN entry. After activating the DIGITTRADE HIGH SECURITY HDD successfully it needs to be unblocked for use.

Inserting the Smart Card

Therefore insert the Smart Card into the Smart Card Slot in direction of arrow.

If a valid Smart Card is inserted, the "STATUS" flashes once. Afterwards the keypad is lighted and ready for PIN entry.

If an invalid Smart Card is inserted the "ERROR" LED flashes.

PIN Entry

After you have activated the DIGITTRADE HIGH SECURITY HDD successfully and inserted a valid Smart Card the keypad will be lighted and the HDD is ready for PIN entry.

Now you can enter the 8-digit PIN.

The preset factory PIN is "1-2-3-4-5-6-7-8", after you entered the PIN, press the "Enter" button.

Note: *To guarantee a maximum security it is obligatory to change the standard PIN (see page 39). Additionally it is advisable to use different PINs for the two different Smart Cards.*

After successful PIN entry the DIGITTRADE HIGH SECURITY HDD will be identified by the system as a removable medium and the lighting of the keypad disappears.

The access is enabled and the Smart Card can be removed.

If a wrong PIN was entered, the "ERROR" LED flashes. Press the "ESC" button to restart the PIN entry.

Note: *After PIN was entered eight times incorrectly, the Smart Card will be irrevocably locked and cannot be used anymore.*

Changing the PIN

Follow these steps to change the PIN of your Smart Card :

1) Insert the Smart Card into DIGITTRADE HIGH SECURITY HDD (see page 37).

2) Press the “CHANGE PIN” button and afterwards the “1” button.

3) Confirm the entry with “ENTER”. The “STATUS” LED will flash four times.

4) Enter the current 8-digit PIN and press “ENTER” to confirm the entry.

5) Enter the new 8-digit PIN and press again “ENTER” for confirmation .

6) Enter the new confirmed 8-digit PIN again and press “ENTER”.

After a successful PIN change, the Status -LED will flash four times and you will hear two beeps. The DIGITTRADE HIGH SECURITY HDD will be identified by the system as a removable medium and the lighting of the keypad disappears.

The access is enabled and the Smart Card can be removed.

If the PIN change was not sucessful, the “ERROR” LED will flash. Press the “ESC” button and start again with the first step of the PIN change.

Note: *The DIGITTRADE HIGH SECURITY HDD only accepts 8-digit PINs.*

Administrator PIN

The administrator PIN is required only to initialize new Smart Cards for the DIGITTRADE HIGH SECURITY HDD. This feature is neccessary if both Smart Cards got lost or are defective.
If new Smart Cards are initialized, all data stored on it will be destroyed because the hard disk needs to be formatted with process.

The preset factory PIN is "1-2-3-4-5-6-7-8".
For security reasons it is obligatory to change this PIN to avoid data loss or unauthorized interactions.
For further information regarding the initialization of new Smart Cards please feel free to contact us by telephone +49 345 / 2317353 or e-mail beratung@digittrade.de.

Changing Administrator PIN

Follow these steps to change your administrator PIN:

1) Insert Smart Card into DIGITTRADE HIGH SECURITY HDD.

2) Press the "CHANGE PIN" button and afterwards "0".

3) Confirm your entry with "ENTER".

4) Type in the current 8-digit administrator PIN and press "Enter" to confirm the entry. The "STATUS" LED will flash twice.

5) Enter the new 8-digit administrator PIN and press "ENTER".

6) For confirmation enter your new 8-digit administrator PIN again and press "ENTER".

7) If the change of administrator PIN was successfull the "STATUS" LED will flash three times and you will hear two beeps.

8) The Smart Card can be removed now.

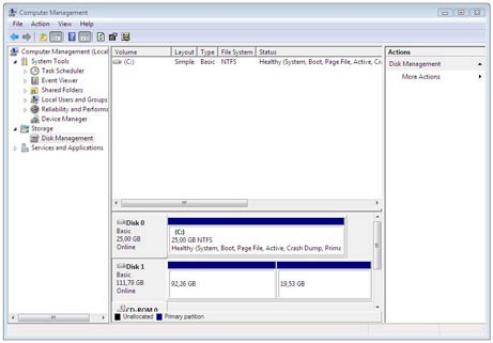
If the PIN change was not sucessful, the "ERROR" LED will flash. Press the "ESC" button and start again with the first step of the PIN change.

Partitioning / Formatting using Windows

Please follow the instructions to customise the file system, partition size and number of partitions.

- Go to “control panel” and double click on “Administrative Tools”.

- Open the “Computer Management” and choose “Disk Management”.



- Choose with your mouse the external HDD and open the context menu using the right mouse button.

- choose the menu item “Formatting” to format the hard disk

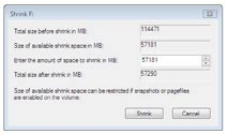
Note: *All data will be deleted irrevocably and cannot be restored after formatting.*

To partition the HDD choose the item “Shrink Volume”.

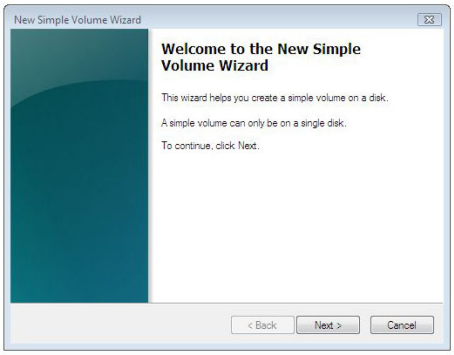
- Type in the desired memory capacity (in MB).

- An unassigned field will be shown in the administration display.

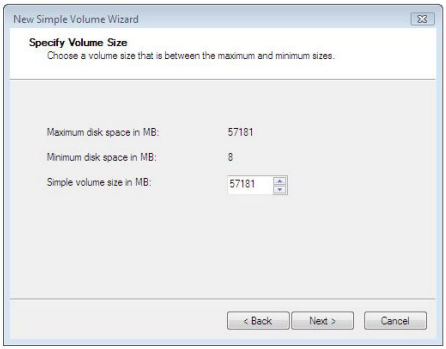
- Mark this unassigned field with the mouse and open the context menu with the right mouse button and choose the item “New Simple Volume”.



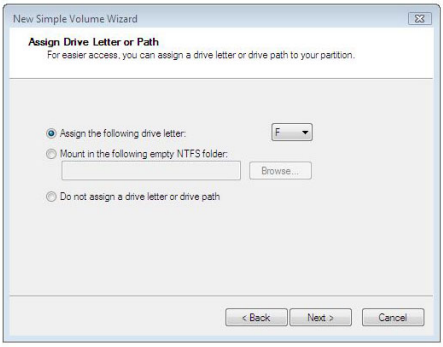
The partitioning assist will appear.



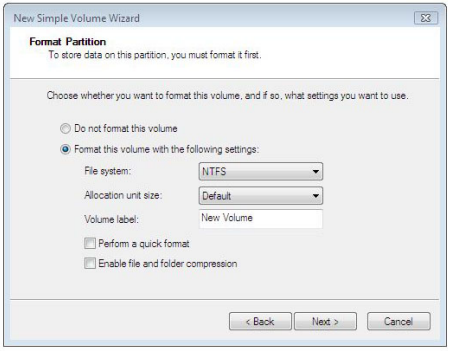
- Click on “Next”.



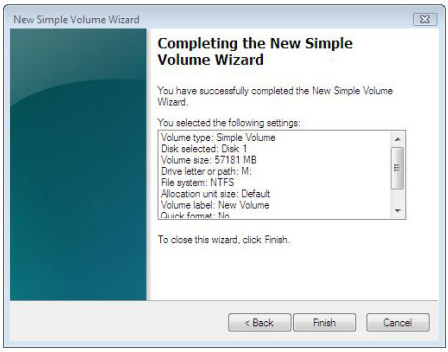
- Type in the desired size of the partition in MB and click on “Next”.



- Choose a drive letter for the partition.
- Click on “Next”.



- Choose the desired file system, the type of formatting and click on "Next".



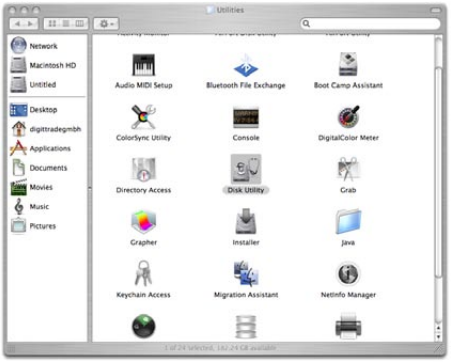
- The partitioning will be finished now, confirm this action by clicking on "Finish".

Note: *The newly partitioned field will be formatted now. After the formatting is completed the new partition will be automatically identified by the system.*

Partitioning / Formatting using MAC OS X

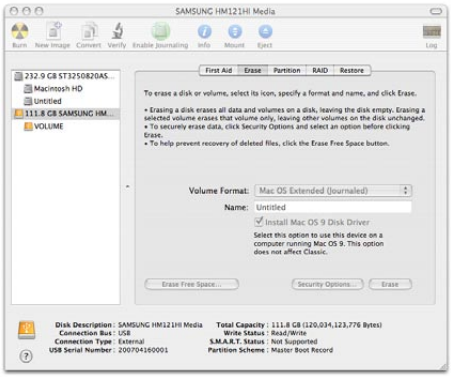
Please follow the instructions to customise the file system, partition size and number of partitions.

- Select “Utilities” from “Applications”.

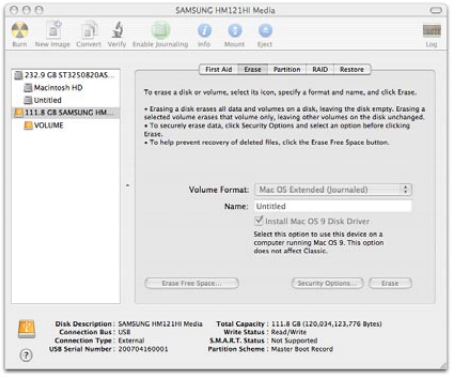


- Choose “Disk Utility”.

- Choose from the left drive overview the external HDD.



- Choose from the main index the option “Partition”.

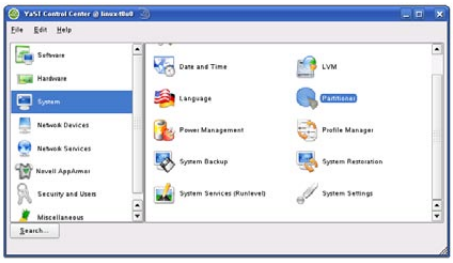


- In this menu you can change partition sizes, delete partitions or create new partitions.

Partitioning / Formatting using Linux

It is possible to divide the hard drive in several partitions. The instruction below is described on the base of YaST and Suse Linux. This procedure is similar under other Linux distributions.

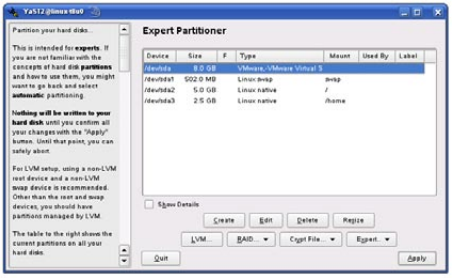
- First open YaST. If necessary, you will need to authenticate yourself.



- Choose from the left side “System” and from the right field “Partitioner”.

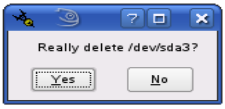
- For security reasons a window will open and you will be asked whether you are familiar with the partitioning. Confirm this with “Yes”.

- The volume table of your system will appear.



- Now you can choose the desired volume, partition it or edit or delete already existing partitions.

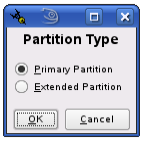
- To delete the standard NTFS partition please click on it and afterwards on “Delete”.



- You will be asked whether you really want to delete the partition. Make sure you have chosen the correct partition and confirm with a click on "Yes".

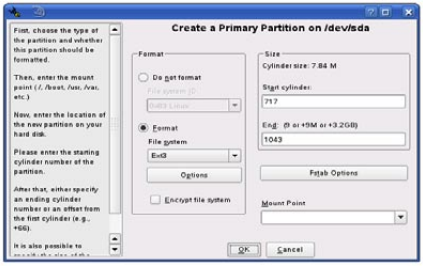
Note: *If you delete the partition, you will delete irrevocably all files stored on it.*

- To create a new partition in the free space of your volume click on "Create".



- Choose a volume to create the new partition.

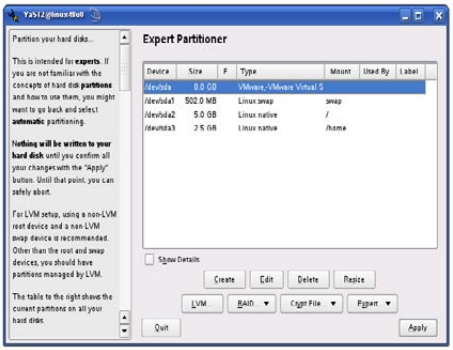
- You will be asked which type of partition you want to create. It is recommended to use "Primary Partition".



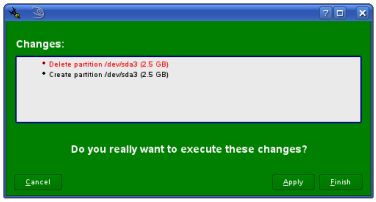
- In this window you configure all features of the partition. You can choose between different file systems and sizes and if necessary you can configure a mountingpoint for Linux. Confirm your configuration with "OK".

- Formatting works similarly. Choose the desired partition and click on “Edit”.

- Tick on “Formatting” and choose the adequate file system. Confirm your configurations with “OK”.



- Click on “Apply” to operate your modifications.



- All modifications will be shown in a new window. Make sure all the modifications are correct and confirm the configurations by clicking on “Apply”.

Note: *If you are not sure which file system or partition size to choose, we recommend taking the automatically entered values.*

The Correct File System

- In the table below you can see the compatibility between operating systems and file systems.

	NTFS	FAT32	HFS+	EXT3
Win 98	X	R, W	X	X
Win NT, 2000, ME, XP, Vista	R, W	R, W	X	X
Mac OS X	R	R, W	R, W	X
Linux	R	R, W	X	R, W

R - reading W - writing X - no compatibility

With additional programs it could be possible to write on file systems, on which it usually is not possible.

The DIGITTRADE Security Hard Dive is at the time of delivery already preformatted in the NTFS file system. In the table above you can see the compatibility of NTFS to your operating system. Should NTFS not be suitable to your operating system, you will have to format the HDD again (see chapter: “Partitioning / formatting”, p. 41).

For windows users we recommend using NTFS. For Mac OS X is HFS+ the most powerful file system and for Linux you should use EXT3. Naturally, it is also possible to format the DIGITTRADE HIGH SECURITY HDD with every other file system. This does not affect the security features.
If you want to use the hard drive using different operating systems, we recommend to use the FAT32 file system, since it can be read and written by almost every operating system. However, it will cause reductions in the maximum file size and partition size. Furthermore there will be performance differences.

Technical Specifications

Interface:	S-ATA 150
Capacity:	120 GB - 1000 GB
Spindle Speed:	5400 - 7200 RPM
Data Transfer Rate:	USB 1.1 max 12 Mbps
	USB 2.0 max 480 Mbps
	FireWire 400 max 400 Mbps
	FireWire 800 max 800 Mbps
Access Time:	12 ms
Buffer Memory:	8192 KB
Smart Card:	certified to ISO-7816
Supported Encryption:	128 / 256 bit

NIST certified AES hardware cipher engine

Computers and HDD manufacturers convertdifferently from Byte to KByte, MByte and GByte. HDD manufacturers calculate in the metric system (1 KByte = 10^3 Byte = 1000 Byte) and computers use due to their construction the dual system (1 KByte = 2^{10} Byte = 1024 Byte). The outcomes of this are the following differences in the representation of the memory capacity.

HDD Manufacturer	True Capacity
120 GB	111.76 GB
160 GB	149.01 GB
250 GB	232.83 GB
320 GB	298.02 GB
500 GB	465.66 GB
1000 GB	931.32 GB

Only HDDs of leading manufacturers of proprietary goods are assembled.

FAQ - Frequently Asked Questions

If any problems occure with your DIGITTRADE HIGH SECURITY HDD please read the following checklist to find a solution.
If further technical support is required, please feel free to contact our support team.

Problem	Symptom	Solution
The keypad is inactive	keypad light is turned off	Ensure that the USB connector is firmly connected to your computer's USB port. If you are using Firewire, ensure that the Firewire connector is firmly connected to the computer's Firewire port.
	"ERROR" LED lights up	Ensure that a valid card is inserted, and that the card orientation is correct by inserting the card with the contacts facing down.
Authentication fails	"ERROR" LED lights up	An incorrect PIN was entered. Press the "ESC" button to restart PIN entry (max. 8 trials).
The drive cannot be identified	no icon for the device is shown on the computer	Ensure that the HS128/256 is not connected to a bus-powered USB hub or a USB extension cable. Please use the delivered USB-Y-cable.
	missing partition or file system cannot be detected	Please refer Chapter "Partitioning / Formatting", p. 41 et seqq.

Problem	Symptom	Solution
The drive cannot be identified	the wrong USB-cable is used	Please use the delivered USB-Y-cable and connect the A- and B-plug to your computer.
The drive is performaing very slowly	connection using USB	Please ensure your HS 128 / 256 is connected to a USB 2.0 bus interface.
	the wrong USB-cable is used	Please use the delivered USB-Y-cable and connect the A- and B-plug to your computer.
	wrong connection to the computer	Ensure the USB and FireWire cable is connected to your computer.
	the HS128/256 is plugged in an USB hub	Connect the HS 128/256 directly to your computer.
	other USB devices are connected to the same port	Disconnect any other USB devices and see if performance improves.

Data Security and Dsiclaimer

We recommend to store continuously the data saved on the DIGITTRADE HIGH SECURITY HDD on other storage media. This will protect you against a total data loss. The DIGITTRADE GmbH is not liable for data loss and thereby emerging costs and damages.

Storage of Smart Card

The DIGITTRADE HIGH SECURITY HDD is delivered with 2 Smart Cards. The access to the enclosure is granted only with these Smart Cards.

If a defect or a loss occurs, please contact us immediately. A new Smart Card can be provided with costs after sending back the HS128/256 including the other valid Smart Card.

If you lose both of the Smart Cards or both are defective there is no way to get access to the HDD and all data stored on it. To use the DIGITTRADE HIGH SECURITY HDD please send it back to our support team and tell us your administrator PIN. We can provide you a new pair of Smart Cards with costs. These contain a new AES key. With the initialization of the Smart Cards the HDD will be formatted and all data stored on it will be irrevocably deleted.

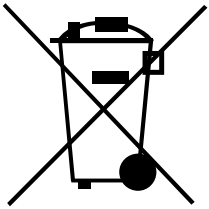
Note: *Please keep your administrator PIN in safe custody. Without this PIN it is not possible to initialize new Smart Cards and hence to use the HDD.*

Scope of Delivery

- DIGITTRADE HIGH SECURITY HDD
- 2 Smart Cards
- USB-Y-Cable
- User Manual
- CD
- Hardcover Case
- Certificate of Ownership

WEEE Statement

According to the EC directive, waste electrical and electronic equipment (WEEE) must not be disposed as municipal wastes.
To avoid the spread of the contained fabric components in your environment and to save natural resources we would like to ask you to hand this product after its economic life time only to a collecting point for WEEE in your area.
Thanks to these measures, materials of your product can be reused environmentally friendly.



Ihre Notizen / Your Notes

Ihre Notizen / Your Notes

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