

AIT Drive

Operating Instructions



SDX-D420V Series

Safety Regulations

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below.

Refer to them whenever you call upon your dealer regarding this product.

Model No.

Serial No.

Information

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

MODEL No. for Regulatory Compliance

Your AIT-1 is assigned the MODEL No. ATDEA2A (respectively) for regulatory compliance certifications. The number is indicated on the model number label on your drive along with the rated voltage and current.

For customers in the USA

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

CAUTION

The mains plug on this equipment must be used to disconnect mains power. Please ensure that the socket outlet is installed near the equipment and shall be easily accessible.

ACHTUNG

Zur Trennung vom Netz ist der Netzstecker aus der Steckdose zu ziehen, welche sich in der Nähe des Gerätes befinden muß und leicht zugänglich sein soll.

Hinweis: Der höchste Schalldruckpegel beträgt 70 dB (A) oder weniger gemäß ISO 7779

NOTICE

Use the power cord set approved by the appropriate testing organization for the specific countries where this unit is to be used.

HINWEIS

Die 3-adrige Geräteanschlußleitung muß Typ H05VV-F oder H05VVH2-F sein und nach DIN VDE 0625 geprüft sein. Der Stecker und die Gerätesteckdose müssen nach DIN VDE 0620 bzw DIN VDE 0625 geprüft sein. Der Leitungsquerschnitt kann 0,5 mm² betragen wenn die Anschlußleitung eine Länge von 2 m nicht überschreitet. Anderenfalls muß der Leitungsquerschnitt mindestens 0,75 mm² betragen.

If you have any questions about this product, please refer to Sony contact in the instruction manual.

DECLARATION OF CONFORMITY

Trade Name:	SONY
Model:	ATDEA2A
Responsible Party:	Sony Electronics Inc.
Address:	16450 W. Bernardo Dr., San Diego, CA 92127 U.S.A.
Telephone number:	858-942-2230

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Für Kunden in Deutschland

Diese Ausrüstung erfüllt die Europäischen EMC-Bestimmungen für die Verwendung in folgender/folgenden Umgebung(en):

- Wohngegenden
- Gewerbegebiete
- Leichtindustriegebiete

(Diese Ausrüstung erfüllt die Bestimmungen der Norm EN 55022, Klasse B.)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に接近して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

이 기기는 가정용으로 전자파 적합등록을 한 기기로서
주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

기기의 명칭 (모델명) : ATDEA2A
인증받은자의 상호 : SONY KOREA Corp.
제조년월일 : 별도표시
제조사/제조국가 : SONY CORP./중국

IMPORTANT SAFEGUARDS

For your protection, please read these safety instructions completely before operating the appliance, and keep this manual for future reference.

Carefully observe all warnings, precautions and instructions on the appliance, or the one described in the operating instructions and adhere to them.

USE

Power Sources – This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of electrical power, consult your dealer or local power company.

For the unit with a three-wire grounding type ac plug:

If you are unable to insert the plug into the outlet, contact your electrician to have a suitable plug installed. Do not defeat the safety purpose of the grounding plug.

AC Power cord:

The AC power cord should have appropriate safety approvals or marking for the country in which the equipment will be used. Consult your dealer or local power company.

Cleaning – Unplug the unit from the wall outlet before cleaning or polishing it. Do not use liquid cleaners or aerosol cleaners.

Use a cloth lightly dampened with water for cleaning the exterior of the unit.

Object and Liquid Entry – Never push objects of any kind into the unit through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

INSTALLATION

Water and Moisture – Do not use power-line operated units near water - for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.

Power-Cord Protection – Route the power cord so that it is not likely to be walked on or pinched by items placed upon or against them, paying particular attention to the plugs, receptacles, and the point where the cord exits from the appliance.

Accessories – Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or an adult, and serious damage to the unit. Use only a cart stand tripod, bracket, or table recommended by the manufacturer.

Ventilation – The slots and openings in the cabinet are provided for necessary ventilation. To ensure reliable operation of the unit, and to protect it from overheating, these slots and openings must never be blocked or covered.

- Never cover the slots and openings with a cloth or other materials.
- Never block the slots and openings by placing the unit on a bed, sofa, rug or other similar surface.
- Never place the unit in a confined space, such as a bookcase, or built-in cabinet, unless proper ventilation is provided.

SERVICE

Damage Requiring Service – Unplug the unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power cord or plug is damaged or frayed.
- If liquid has been spilled or objects have fallen into the unit.
- If the unit has been exposed to rain or water.
- If the unit has been subject to excessive shock by being dropped, or the cabinet has been damaged.
- If the unit does not operate normally when following the operating instructions. Adjust only those controls that are specified in the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to normal operation.
- When the unit exhibits a distinct change in performance - this indicates a need for service.

Servicing – Do not attempt to service the unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer to all servicing to qualified service personnel.

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- Sony cannot accept liability for data written to cartridges lost as a result of using this product.
- Sony bears no responsibility for any financial damages, lost profits, or claims made by third parties arising from the use of this product.

How to Use this Guide

This guide describes how to use and care for the SDX-D420V. Please read it carefully before using the drive and save it for future reference. The guide consists of four chapters and an appendix. Refer to the chapters that relate to your use of the drive.

Chapter 1 Introduction

Describes the features of the drive, system requirements, and the names and functions of each part.

Chapter 2 Preparation

Describes the necessary connections between the drive and the host computer. Read this chapter when you install the drive.

Chapter 3 Operation

Describes how to use the drive, including how to turn it on, and how to insert and remove cartridges. Read this chapter when you are going to use the drive.

Chapter 4 Care and Maintenance

Describes how to take care of the drive and cartridges, and how to clean the drive head. Read this chapter before using the drive.

Appendix

Contains the specifications of the drive.

Trademarks

- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- All other system names, products, and services are either registered trademarks or trademarks of their respective owners. The TM or ® marks do not appear in this manual.

Chapter 1 Introduction

About the AIT Drive

The SDX-D420V is an external AIT drive using data cartridges that conform to the AIT-1 format.

Features

The SDX-D420V has the following features.

- Uses the Advanced Intelligent Tape (AIT) format AIT-1 data cartridges. AIT-1 data cartridges provide 35 GB of storage (no compression) on a 230-m tape. The Read After Write function and Third Level Error Correction Code ensure high data reliability.
- The drive comes with a data compression function, providing a maximum of 91 GB of storage on an AIT-1 data cartridge (230-m tape).^{*1}
- Stored data is automatically checked for compression. The drive can also read data recorded with other devices.
- The drive is equipped with a USB interface. You can therefore connect the drive to either connector to your computer.

Note

You cannot use the USB interface simultaneously.

- The drive supports Hot Plug, which means that you can connect and disconnect it while the drive and/or your computer is on.

^{*1} Assuming a 2.6:1 hardware compression ratio.

The actual degree of compression during recording depends on the system environment and the type of data.

System Requirements

The following are the minimum system requirements to use the drive.

- PC/AT-compatible computer (300 MHz or faster)
- Running Windows Server 2003, Windows XP, Windows 2000
- CD-ROM drive (to install the software necessary to the drive)
- USB interface

Useable Cartridges

The SDX-D420V can be used with data cartridges marked with the AIT-1 logo.



AIT-1 Logo

AIT-1 Data Cartridges

Name	Capacity (no compression)
SDX1-35C	35 GB
SDX1-25C	25 GB

AIT Cleaning Cartridges

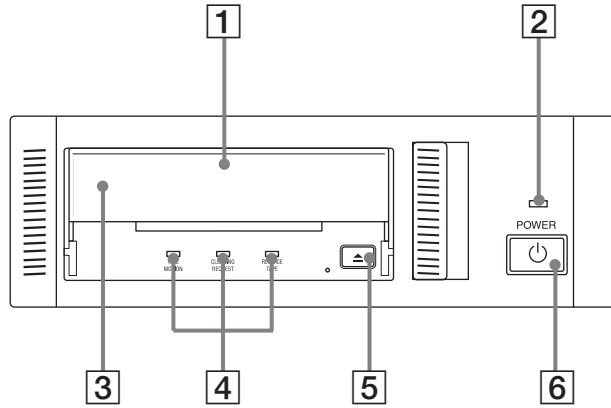
Name	Description
SDX1-CL	AIT drive cleaning cartridge

Note

- Be sure to use only data cartridges designed specifically for AIT.
- Do not use anything but AIT cartridges with this system, as doing so can damage the AIT drive. Although commercially available 8mm videotapes resemble AIT cartridges in appearance, they have entirely different specifications and cannot be used.

Part Names and Functions

Front Panel



1 AIT Data Cartridge Receptacle

See page 16 to 17 for information on inserting and removing a AIT data cartridge.

2 POWER Indicator

Lights while the drive is on.

3 Dust Cover

This cover protects the AIT data cartridge receptacle.

4 LED Indication for Drive Status

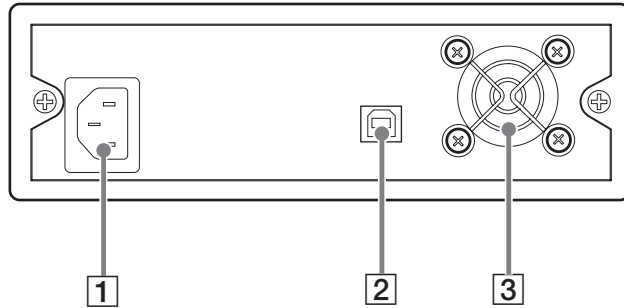
The LED indicators are defined as follows.


LED			Sense
TAPE MOTION	CLEANING REQUEST	REPLACE TAPE	
	Independent	Independent	Tape Loaded
	Independent	Independent	Tape Access in Progress (write/read)
	Independent	Independent	Tape Access in Progress (others)
Independent		Independent	Cleaning is requested
Independent		Independent	Cleaning is Not Completed
Independent	Independent		Media Error Occurred
			H/W Error Occurred

- on
- Slow
1 pulse (0.9 sec on/0.3 sec off)
- Fast
1 pulse (0.3 sec on/0.3 sec off)

- 5 EJECT Button**
Push to remove a data cartridge from the drive.
- 6 POWER Switch**
Press to turn the drive on or off.

Rear Panel



- 1 AC IN Connector**
Connect the supplied power cable here.
- 2 USB Connector ()**
Connects to the USB connector of the host computer or a USB hub.
- 3 Cooling Fan**

Chapter 2 Preparation

After you confirm that all the necessary items are accounted for, connect the drive to the host computer or to a USB hub.

Supplied Items

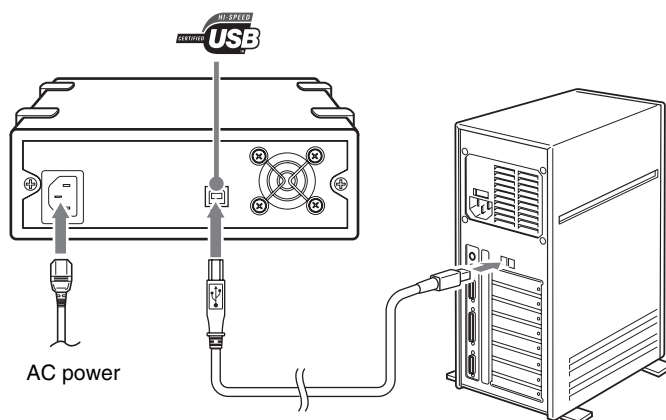
When you open the package, make sure that it contains the following. Contact your supplier if any of these items are missing and/or damaged.

- AIT Drive Unit
- Quick start guide
- AIT data cartridge
- Operating instructions CD-ROM
- USB 2.0 cable
- Power cable
- Safety regulations

Interconnections

Connecting to the USB Interface

Connect the USB connector of the host computer or USB hub to the USB connector of the drive with the USB cable.



Option Switches (DIP Switch)

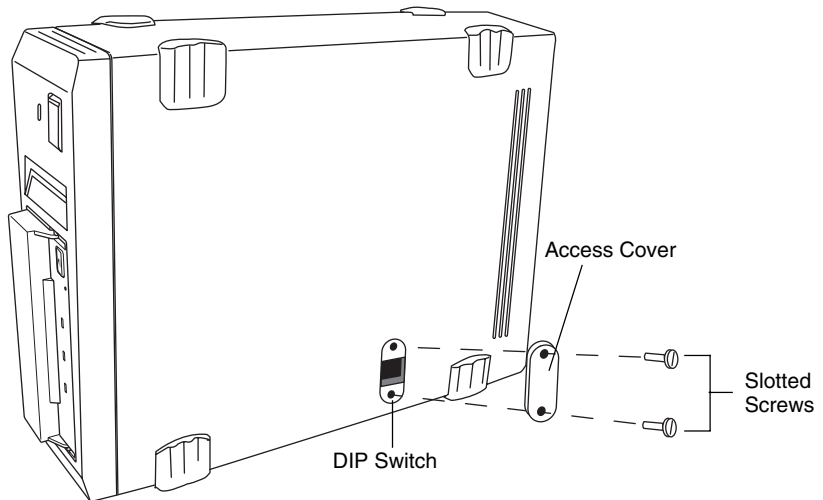
Remove the two slotted screws by using a slotted screwdriver. Remove the access cover to change the DIP switch settings. (Refer to the following figure for details changing the DIP switch settings.)

After changing the DIP switch settings, replace access cover and tighten the two slotted screws using a slotted screwdriver.

Caution

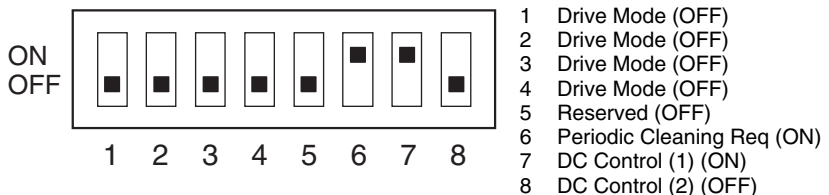
Before removing the access cover to change DIP switch settings on the drive, turn off the computer and disconnect the power cord from the unit. Once the DIP switch settings have been changed, replace the access cover using the two original slotted screws provided.

DIP Switch Access



DIP Switch Positions

Default



Cleaning Request Mode

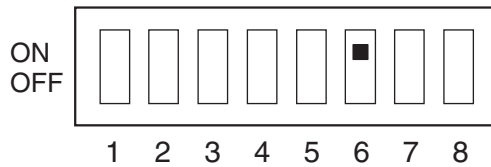
Automatic cleaning requests can be enabled by a DIP switch.

When switch 6 is ON, cleaning requests are enabled. When enabled, the “CLEANING REQUEST” LED on the front panel lights after every 100 hours of operation.

When this LED lights, clean the drive with a head cleaning cartridge.

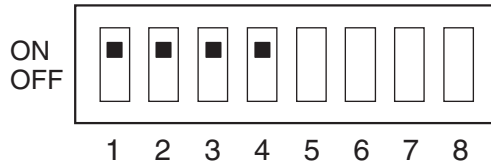
Note

To maintain the drive in optimum condition in environments affected by dust and other contaminants, we recommend keeping cleaning requests enabled.



Emulation Mode*

To enable Emulation Mode, set position 1 - 4 Drive Mode switches to ON.



* Emulation Mode returns the following in the Product Identification field of Inquiry of the SDX-D420V.
SDX-420C

Data Compression Control DIP switch

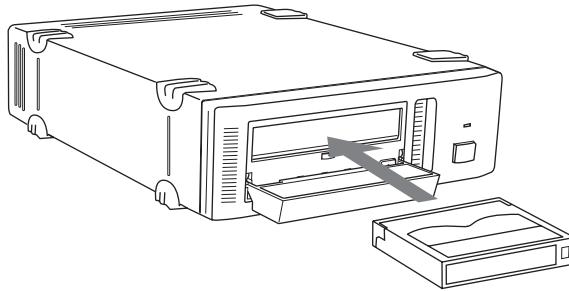
Data compression can be selected by DIP switches. Data compression is enabled while position 7 [DC Control (1)] is ON. Control by host can be disabled when position 8 [DC Control (2)] is ON.

Chapter 3 Operation

This chapter describes how to use the AIT drive, and how to handle data cartridges.

How to use the AIT Drive

- 1 Press the POWER switch on the front panel. The POWER indicator should light, and the TAPE MOTION, CLEANING REQUEST, and REPLACE TAPE indicators should blink as the self-test is performed.
- 2 When the three indicators stop blinking, open the dust cover and insert a data cartridge as shown below. The TAPE MOTION indicator lights.



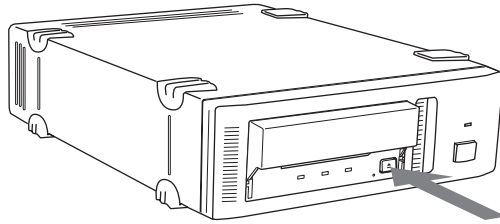
- 3 Computer software controls the reading and writing of tapes. While reading or writing, the TAPE MOTION indicator blinks.
- 4 Close the dust cover.

Caution

Do not touch the rear of the drive unit during operation, to prevent the possibility of malfunction.

Cartridge Removal

- 1 Press the EJECT button.
- 2 The cartridge is ejected automatically.



Caution

Do not push the EJECT button while the TAPE MOTION indicator is blinking. To do so may destroy data on the tape.

- 3 Remove the cartridge from the receptacle, and then close the dust cover.

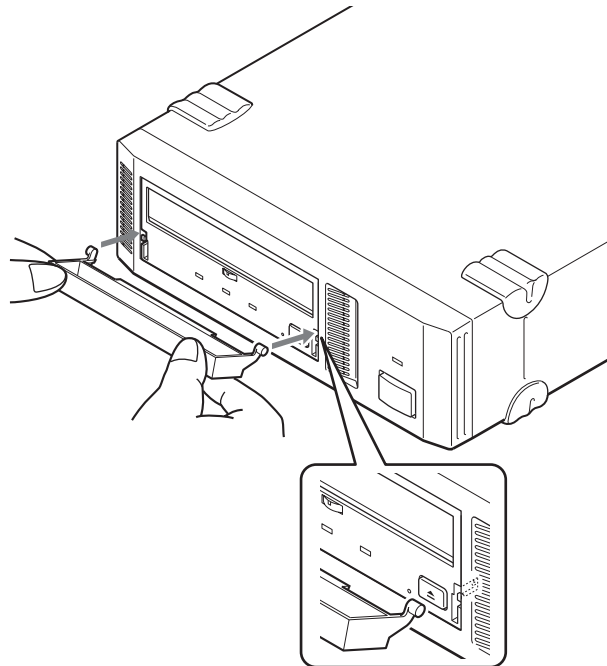
Attaching the Dust Cover

If the dust cover comes loose, attach it as described below.

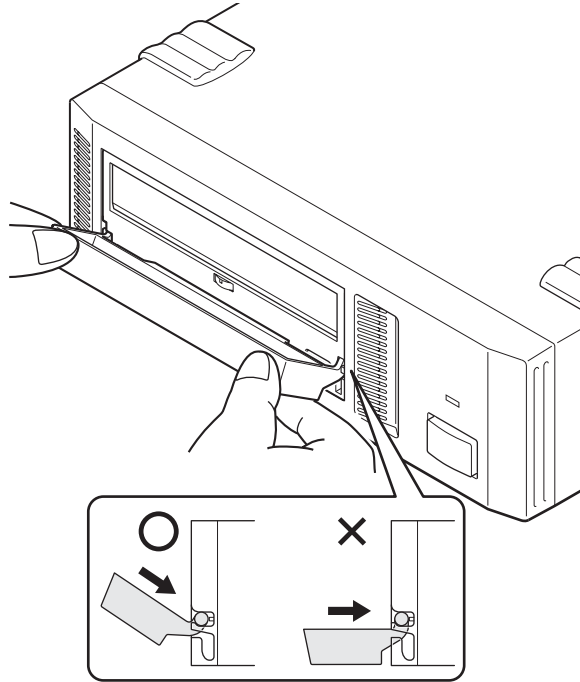
Note

We recommend that you use the drive with the dust cover.

- 1 Align the dust cover's hinge clips (one on each side) with the pins of the drive bezel.
 - The dust cover should be positioned so that the magnets* on the cover's back face the drive bezel.
 - * This magnet does not affect the tape of the cartridge.
 - Holding the dust cover at an angle as shown in the figure below, set the hinge clips on top of the bezel pins, positioning them so that they bracket the pins.



- 2 Press down at an angle on each side in turn until you hear the hinge clips click into place.



Caution

Do not press the dust cover in horizontally from the front. Doing so could cause the dust cover to break.

- 3 Close the dust cover.
This completes attachment of the dust cover.

Chapter 4 Care and Maintenance

Taking Care of the Drive

Safety Considerations

■ Power

- 100 to 240 V AC.
- Avoid plugging into the same outlet as high-current equipment like copiers or shredders.

■ Power Cable Precautions

- Do not crush the cable or place heavy items on it. If the cable insulation appears worn or broken, do not use the cable.
- Always unplug the cable by holding the plug: never pull the cable itself, as it will break.
- If the drive is not being used for a long time, unplug the cable from the outlet.

Avoiding Damage

■ Avoid shock and vibration

Intense shock, such as from dropping the drive, will damage it.

■ Environmental considerations

Do not store or use the drive in locations subject to:

- high humidity
- excessive dust
- high temperature
- intense vibration
- direct sunlight
- sudden changes in temperature

■ Proper ventilation

To avoid overheating, install the drive where it has free air circulation around the case and cooling fan. Also, do not cover the drive during operation. The drive can malfunction if its internal temperature rises too high.

■ Avoid sudden changes in temperature

If the drive is moved from a cool place to a warm place, or if the room temperature suddenly rises, moisture may condense inside the case. After a sudden change in temperature, wait at least one hour before turning the drive on.

■ Abnormal occurrences

If the drive behaves abnormally, or if it begins to smell or smoke, immediately unplug it from the wall outlet and contact your supplier for assistance.

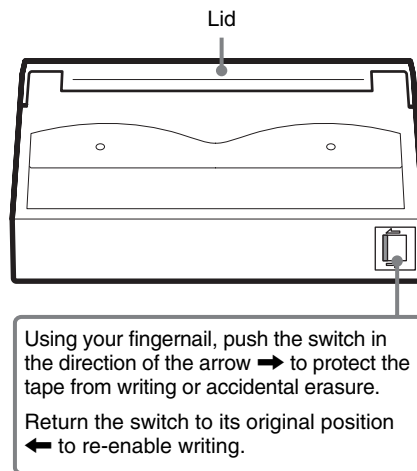
■ Cabinet cleaning

Wipe the cabinet with a soft dry cloth. For heavy dirt, wipe with a soft cloth moistened with a gentle liquid soap, then wipe again with a soft dry cloth. Do not use alcohol, paint thinner, bug sprays or other volatile solvents, as they can damage the finish.

Taking Care of Cartridges

Usage Precautions

- Avoid dropping the cartridges and high vibrations.
- The lid on the face of the cartridges opens automatically when they are inserted into the drive. Do not open the lid by hand, as touching the tape may damage it.
- The cartridges are precisely aligned. Do not try to open or dismantle them.
- The write-protect switch on the face of cartridges is used to prevent the tape from being written to or accidentally erased. If you do not need to write to the tape, move this switch to the write-protect position.



- In case of a sudden change in temperature, condensation may interfere with reading and writing to a tape.
- Avoid unnecessary insertion and removal of cartridge if you do not need to write or read a tape.
- When you are done using the drive, remove the cartridge.
- Avoid touching AIT cartridges' Memory in Cassette (MIC) terminals as they are sensitive precision components.

Storage Precautions

- Keep cartridges in their cases when not in the drive.
- Avoid storing cartridges in dusty locations, in direct sunlight, near heaters or air conditioners, or in humid locations.
- Do not place cartridges on dashboards or in car storage trays.

Head Cleaning

To keep the AIT drive in top condition, clean the head as needed using a head cleaning cartridge with the AIT logo. When the head needs cleaning, the CLEANING REQUEST indicator lights.

How to Clean

- 1** Load the head cleaning cartridge (SDX1-CL) into the AIT drive. Cleaning starts automatically.
- 2** After about 15 seconds, cleaning will stop and the cartridge will be ejected automatically.

Notice

Do not rewind the cleaning cartridge and reuse it. When you reach the end of the cartridge, dispose it and buy a new cleaning cartridge with the AIT logo .

Specifications

■ Performance

Storage Capacity	35 GB uncompressed (with 230 m AIT-1 data cartridge) 91 GB compressed (with 230 m AIT-1 data cartridge* ¹)
Data Transfer Rate (TAPE)	4 MB/s uncompressed
Burst Data Transfer Rate	480 Mbps maximum (USB)* ²
Load Time	average of 14 seconds* ³
Unload Time	average of 20 seconds* ³
Rewind Time	average of 105 seconds (with 230 m AIT-1 data cartridge)

■ Operating Environment

Operating	Temperature: 10 to 35 °C ($\Delta T < 10^\circ\text{C/h}$) Humidity: 30 to 80% (non-condensing) Maximum wet bulb temperature: 26 °C
Non-operating	Temperature: -40 to 70 °C ($\Delta T < 10^\circ\text{C/h}$) Humidity: 10 to 90% ($\Delta RH < 30\%/h$) Maximum wet bulb temperature: 45 °C

■ Power Supply & Miscellaneous

Rated Power Supply	100 to 240 V AC, 50/60 Hz, 1.2 A
Case Dimensions	198 × 64.5 × 246 mm (W × H × D) (excluding projections)
Mass	2.4 kg
Equipment	Quick start guide 1 AIT-1 data cartridge (SDX1-35C) 1 Operating instructions CD-ROM 1 USB 2.0 cable 1 Power cable 1 Safety regulations 1

Specifications may be subject to change, in the interest of technological improvement, without notice or obligation.

*¹ Assuming a 2.6:1 hardware compression ratio.

The actual degree of data compression during recording depends on the system environment and type of data.

*² Theoretical maximum using the USB 2.0 high-speed transfer standard.

Actual transfer rate depends on the type of device connected to and other factors.

This product may be connected to USB 1.1 interface devices, but transfer rate will fall to USB 1.1 speeds.

*³ No retries.

Sony Contacts

For further information, please contact:

Sony Electronics Inc., Tape Storage Solutions (USA)

URL: <http://www.storagebysony.com>

Sony Corporation

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FAX: (416) 499-8541

Sony Business Europe

URL: <http://www.sonyisstorage.com/>

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e-mail: CIC-customerissues@ap.sony.com

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URL: <http://www.sony.co.kr/cp/>

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URL: <http://www.sony.co.jp/STORAGE>

