

**Panasonic**<sup>®</sup>

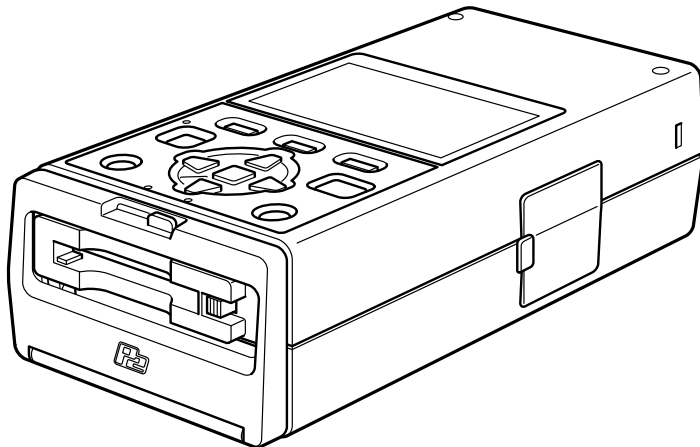
# Operating Instructions

Mobile Storage Unit




Model No. **AG-MSU10P**

Model No. **AG-MSU10E**



Before operating this product, please read the instructions carefully and save this manual for future use.

# Read this first! (AG-MSU10P and AG-MSU10E)

 indicates safety information.

## WARNING:

- To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.
- To reduce the risk of fire or electric shock hazard, keep this equipment away from all liquids. Use and store only in locations which are not exposed to the risk of dripping or splashing liquids, and do not place any liquid containers on top of the equipment.

## WARNING:

Always keep accessories (screws) out of the reach of babies and small children.

## CAUTION:

Do not remove panel covers by unscrewing them.  
To reduce the risk of electric shock, do not remove the covers. No user serviceable parts inside.  
Refer servicing to qualified service personnel.

## CAUTION:

To reduce the risk of fire or electric shock and annoying interference, use the recommended accessories only.

## WARNING:

This equipment must be grounded.  
To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power outlet which is effectively grounded through normal household wiring.  
Extension cords used with the equipment must have three cores and be correctly wired to provide connection to the ground. Wrongly wired extension cords are a major cause of fatalities.  
The fact that the equipment operates satisfactorily does not imply that the power outlet is grounded or that the installation is completely safe. For your safety, if you are in any doubt about the effective grounding of the power outlet, please consult a qualified electrician.

## CAUTION:

The mains plug of the power supply cord shall remain readily operable.  
The AC receptacle (mains socket outlet) shall be installed near the equipment and shall be easily accessible.  
To completely disconnect this equipment from the AC mains, disconnect the power cord plug from the AC receptacle.

## CAUTION:

- Danger of explosion or fire if battery is mistreated.
- Do not leave the battery in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
- Do not disassemble the battery or dispose of it in fire.
- Do not store in temperatures over 60°C (140°F).

### For Battery

- Use specified charger.
- Replace only with same or specified type.

## CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space.  
To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

## CAUTION:

This apparatus can be operated at a voltage in the range of 100 - 240 V AC.  
Voltages other than 120 V are not intended for U.S.A. and Canada.  
Operation at a voltage other than 120 V AC may require the use of a different AC plug. Please contact either a local or foreign Panasonic authorized service center for assistance in selecting an alternate AC plug.

## Note:

### Mobile Storage Unit

The rating plate is on the underside of the Mobile Storage Unit.

### AC Adapter

The rating plate is on the underside of the AC Adapter. Disconnect the AC mains plug from the AC mains socket when not in use.

## FCC NOTICE (USA)

### Declaration of Conformity

Model Number: AG-MSU10P

Trade Name: Panasonic

Responsible Party: Panasonic Corporation of North America One Panasonic Way, Secaucus, NJ 07094

Support contact: 1-800-524-1448

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To assure continued compliance, follow the attached installation instructions and do not make any unauthorized modifications.

### CAUTION:

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 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 user may find the booklet "Something About Interference" available from FCC local regional offices helpful.

### FCC Warning:

To assure continued FCC emission limit compliance, follow the attached installation instructions and the user must use only shielded interface cables when connecting to host computer or peripheral devices. Also any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

## NOTIFICATION (Canada)

This class B digital apparatus complies with Canadian ICES-003.



A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

EEE Yönetmeliğine Uygundur.

EEE Complies with Directive of Turkey.

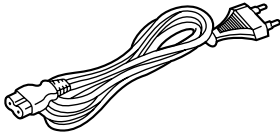
## Caution for AC Mains Lead For battery charger

### FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

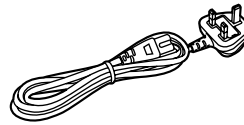
This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.

Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

#### FOR CONTINENTAL EUROPE, ETC. Not to be used in the U.K.





#### FOR U.K. ONLY



#### FOR U.K. ONLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 5 amp fuse is fitted in this plug. Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS1362.

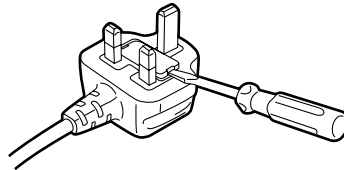
Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

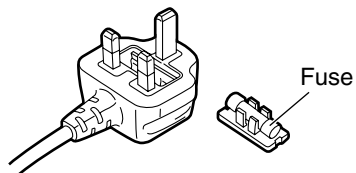
If you lose the fuse cover the plug must not be used until a replacement cover is obtained. A replacement fuse cover can be purchased from your local Panasonic Dealer.

#### How to replace the fuse

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse



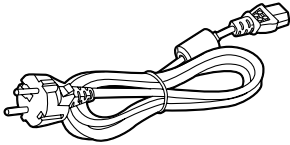
## Caution for AC Mains Lead For AC adaptor

### FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

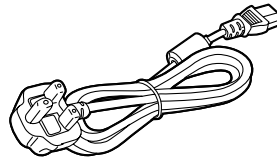
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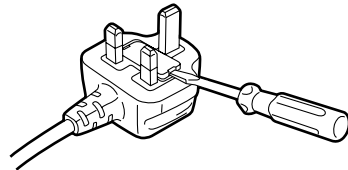
Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

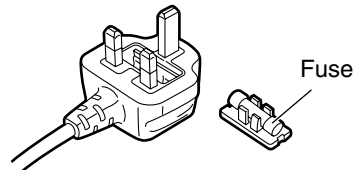
If you lose the fuse cover the plug must not be used until a replacement cover is obtained. A replacement fuse cover can be purchased from your local Panasonic Dealer.

#### How to replace the fuse

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse



## Recommendation for Use of Genuine Panasonic Battery (Rechargeable Battery)

Thank you for using a Panasonic product.

It has been found that counterfeit batteries which look very similar to the genuine product are made available to purchase in some markets. Some of these batteries are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these batteries may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery. To ensure that safe products are used we would recommend that a genuine Panasonic battery is used.

- Be aware that many batteries sold at extremely cheap prices or in situations where it is difficult to verify the actual products before purchase have proven to be counterfeit.

### ■ Batteries that may be used with this product (Correct as of August 2010)

Panasonic CGA-D54 batteries may be used with this product.

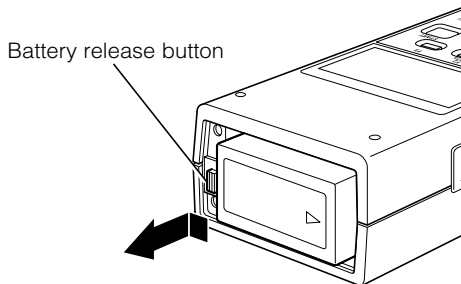
The CGA-D54 batteries contain a function to enable verification as to whether they may be safely used with this product.



## To remove the battery

### Main Power Battery

Press the battery release button.



### Back-up Battery

- For the removal of the battery for disposal at the end of its service life, please consult your dealer.

Pursuant to at the directive 2004/108/EC, article 9(2)

**Panasonic Testing Centre**

**Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH**

Winsbergring 15, 22525 Hamburg, F.R. Germany

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## For long and Trouble-free Operation

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### Illustrations in this manual

- Note that illustrations of the unit and menu screens may differ from the ones you actually see.

### Page references

- In this manual, references to pages are indicated as: (→ page 00).

### Terminology

- A memory card with the “P2” logo (for example the separately sold AJ-P2C064AG) is referred to as a “P2 card.”
- A hard disk drive is referred to as a “hard disk” or “HDD.”
- A solid state drive is referred to as an “SSD.” An SSD is a semiconductor storage device built with flash memory modules.
- Externally connected hard disks, SSDs or interface boxes are referred to as “Storage devices” or “storage.”
- A continuous video recording created using a P2 unit during a single recording is referred to as a “clip.”

### Panasonic Website

- Information on topics, such as operation-confirmed SSDs and the latest drivers, can be found on the Panasonic website. Access the following URL for the latest information not included in these Operating Instructions.  
<http://pro-av.panasonic.net/>



# Introduction

## Overview

The AG-MSU10 is a mobile storage unit designed for P2 cards (memory cards) and houses the AG-MBX10G removable interface box for installing commercial SSDs and is also provided with USB 2.0 (Type A) and eSATA connectors.

This unit copies data recorded using a P2 card camera-recorder or other device to a hard disk or other storage device connected to the removable interface box installed in this unit.

## Standard accessories

- AG-MBX10G removable interface box ..... 1
- Operating instructions (this manual)..... 1
- CD-ROM (P2 driver, P2 card manager, install manual, operating instructions (this manual) ..... 1
- Battery (5400 mAh) (CGA-D54 for the AG-MSU10P / CGA-D54s for the AG-MSU10E) ..... 1
- Battery charger ..... 1
- AC adapter..... 1
- AC power supply cable (for the battery charger)..... 1
- AC power supply cable (for the AC adapter) ..... 1
- USB cable ..... 2
- 3.0 mm screws for SSD installation..... 4
- Silicone jacket for the AG-MBX10G ..... 1

## Optional units

- AG-MBX10G removable interface box
- Battery (5400 mAh) (CGA-D54 for the AG-MSU10P / CGA-D54s for the AG-MSU10E)

# Precautions

## AG-MSU10

### ■ Secure deletion of data from memory cards and storage devices prior to disposal or transfer of the unit

The format and delete functions on this unit or a PC will only change the file management data and leave data on the memory card or storage device intact. It is recommended that cards or storage devices either be physically destroyed or that commercially sold software be used to completely delete any data they contain. Management of data on memory cards and storage devices is the sole responsibility of the user.

### ■ Place of Installation

Do not install this unit in a location exposed to direct sunlight as this may deform the cabinet or damage the LCD screen.

### ■ Liquid crystal displays

- While 99.99 % or more of the pixels on an LCD screen will function normally, 0.01 % may either be dead or constantly lit (seen as red, blue or green dots). This is not a malfunction.
- There may be some unevenness on the screen depending on the image displayed.
- Wiping or rubbing the LCD screen with a rough cloth may damage it.
- Leaving an unchanging image on the screen for a long period of time may create a temporary afterimage (burn-in).
- LCD response and brightness vary with operating temperature.
- In a high-temperature and high-humidity location, the LCD panel characteristics may change and result in uneven image quality.

### ■ Information on software for this product

1. Included with this product is software licensed under the GNU General Public License (GPL) and GNU Lesser General Public License (LGPL), and users are hereby informed that they have the right to obtain, change and redistribute the source codes of this software.

Details on GPL and LGPL can be found on the installation CD provided with the unit. Refer to the folder called "LDOC".

(Details are given in the original (English-language) text.)

To obtain the source codes, go to the following home page:

<https://eww.pavc.panasonic.co.jp/pro-av/>

The manufacturer asks users to refrain from directing inquiries concerning the source codes they have obtained and other details to its representatives.

2. Included with this product is software which is licensed under MIT-License.

This information is provided in the LDOC folder (in the original English language text) on the install CD-ROM supplied with the unit.

## AG-MBX10G interface box

Install a commercially available 2.5-type SSD with Serial ATA interface in the supplied AG-MBX10G removable interface box according to the instructions in “Interface Box Setup” (page 42).

- Information on SSDs that we have tested is posted on our website.
- Be sure to turn the unit off before inserting and removing the interface box in the unit.  
Failure to heed this warning may result in damage to the unit.
- Do not install a hard disk drive in the interface box.

## AC adapter

Use the supplied AC adapter. Read the Operating Instructions before use.

→ “Connecting the Power Cable” (page 16 ).

## Battery

Use the supplied battery. (CGA-D54 for the AG-MSU10P / CGA-D54s for the AG-MSU10E)

### **Battery characteristics**

This unit uses a rechargeable lithiumion battery that uses its internal chemical reaction to generate electrical energy. This reaction is easily influenced by the ambient temperature and humidity, and the battery's effective operating time is reduced as the temperature rises or falls. In very low temperatures, the battery may last only 5 minutes.

Protective circuitry functions if you use the battery where it is very hot and you will have to wait before you can use it again.

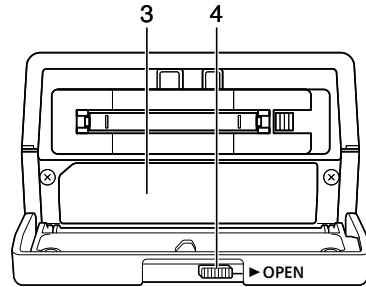
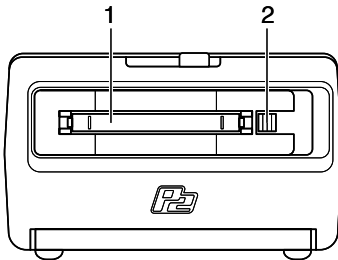
### **Remove the battery after use.**

Completely remove the battery. (The battery continues to be used even if you have turned the unit off.) The battery can over discharge if you leave it in the unit and it may become impossible to recharge it.

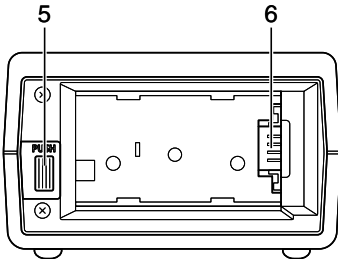
# Control Reference Guide

## Front and Rear View

### ■ Front view



### ■ Rear view



#### 1. P2 card slot

This slot is designed for P2 cards.  
Before inserting a P2 card, make sure that the EJECT button is in. Hold the card level as you insert it.  
→ For details, refer to “Inserting a P2 card” (page 20).

#### ◆ NOTE:

- Never insert anything in the slot except P2 cards.

#### 2. EJECT button

Press to eject P2 cards from the slot.  
→ For details, refer to “Removing a P2 card” (page 20).

#### 3. Interface box slot

This slot is designed for an interface box (AG-MBX10G). Hold the box level as you slide it into the slot.  
→ For details, refer to “Inserting and Removing Interface Boxes” (page 21).

#### ◆ NOTE:

- Never insert anything in the slot except an interface box.
- Turn off the unit before inserting and removing interface box.

#### 4. Front door lock lever

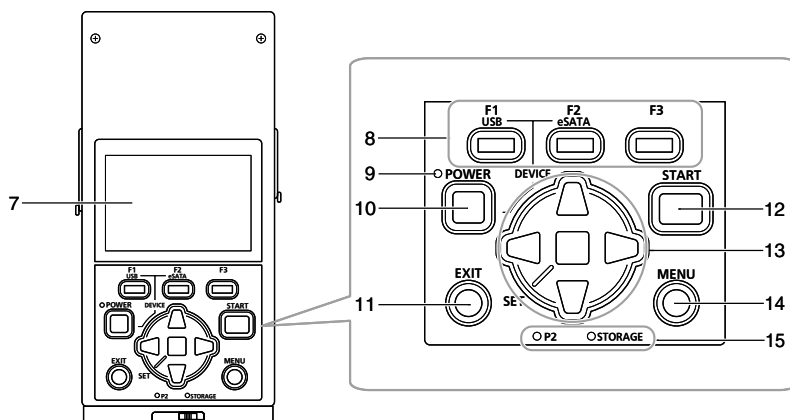
Slide the lever to open the front door and insert or remove an interface box.  
→ For details, refer to “Inserting and Removing Interface Boxes” (page 21).

#### 5. Battery lock release button

Use this button to remove a supplied battery or AC adapter.  
→ For details, refer to “Disconnecting the Battery” (page 16).

#### 6. Power inlet

Insert the supplied battery or AC adapter here.  
→ For details, refer to “Connecting and Disconnecting the Battery and the Power Cable” (page 16).



## 7. 82 mm (3.2 inch) LCD monitor

Displays thumbnails as well as P2 card and interface box operating status.

### ◆ NOTE:

- Use the steps below to adjust the brightness of the backlight. Select [SETTING] → [LCD BACKLIGHT] from the menu.  
→ For details, refer to “Menu list” (page 38).
- Use the steps below to have the LCD monitor automatically turn off after a specified time (5 min) of inactivity. Select [SETTING] → [LCD TIMEOUT] from the menu.  
→ For details, refer to “Menu list” (page 38).

## 8. Function buttons (F1/F2/F3)

Press to use the functions displayed at the bottom of the screen.

## 9. POWER LED

Lights when the unit is ON.  
The POWER LED flashes during shutdown.

## 10. POWER button

Use to turn the power ON and OFF.  
When the unit is OFF, hold down the POWER button for 1 second to turn it ON.  
When the unit is ON, hold down the POWER button for 2 seconds to turn it OFF.  
→ For details, refer to “Turning the unit on and off” (page 18).

## 11. EXIT button

Press this button in a clip thumbnail, Properties, or in the Explore screen on the storage device or other screen to return to the previous screen. You can also use [EXIT] in a menu and press the SET button to the same effect.

## 12. START button

Press to start copying a P2 card.

## 13. Cursor (up/down/left/right) buttons/SET button

The four outer buttons are cursor buttons. Use them to move the cursor in thumbnails, menus, Explorer, etc.  
The SET button at the center is used to select menu items and clips.  
→ For details, refer to “Cursor operations” (page 30).

## 14. MENU button

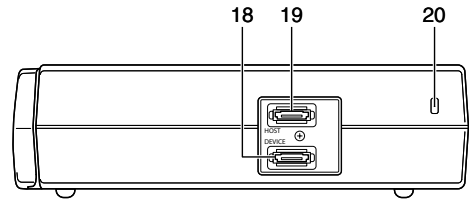
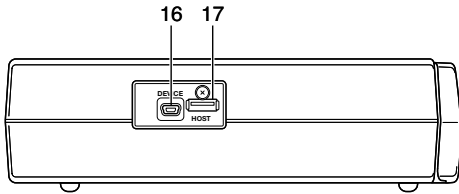
Press to open the menu. Press again to return to the previous screen.  
→ For details, refer to “Menu list” (page 38).

## 15. Access LEDs

**P2:**  
The LED is on when a P2 card is inserted and flashes when it is accessed.

**STORAGE:**  
The LED is on when the drive in the interface box or an external storage unit is connected for copying and flashes when any of the drives are accessed.  
→ For details, refer to “Connections” (page 37).

## Left and Right Sides



### 16. USB 2.0 DEVICE connector (Type Mini-B)

Connect personal computers and other devices for use in the USB device mode.

→ For details, refer to “Using the Unit as a USB Device” (page 37).

### 17. USB 2.0 HOST connector (Type A)

Enables connection of a variety of storage devices using the unit as a USB host.

For example, hard disks that support USB 2.0.

→ For details, refer to “Selecting Storage Device” (page 25).

### 18. eSATA DEVICE connector

The eSATA connector on the interface box allows you to connect a personal computer or other device.

→ For details, refer to “Using the unit as an eSATA device” (page 37).

### 19. eSATA HOST connector

Enables connection of a hard disk drive or solid state drive with an eSATA connector using the unit as host device.

→ For details, refer to “Selecting Storage Device” (page 25).

### 20. Security lock slot

Used for attaching security cables. For details on connection, refer to the instruction manual supplied with the cable. Security locks and security cables help prevent theft. However, in the event that theft does occur, Panasonic is not liable for any resulting damages.

### ◆ NOTE:

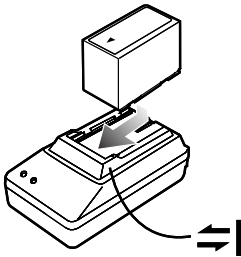
- It may not be possible to connect an eSATA storage device that does not support the LINUX operating system.
- Some eSATA storage devices may prolong the startup time of the unit.
- This unit supports USB bus power (5 V, 0.5 A) but some storage devices may have difficulties starting up using USB bus power. Should this happen, provide the storage device with a separate power supply.
- This unit does not support storage devices that are 2 TB (2,048 GB) or larger.
- Some storage devices and cables may not operate normally.
- Use a storage device with sufficient space for copying.
- Do not connect a storage device to hubs or other connections that involve multiple units even when it is not powered.
- During formatting and copying, do not disconnect cables, do not remove a P2 card and do not power off this unit and the storage device. Otherwise this unit and the storage device must be rebooted. The P2 card may have become damaged.
- A storage device is a high-precision instrument whose read and write functions may fail if used in an unsuitable environment. Please note that Panasonic accepts no liability whatsoever for data loss or other losses either direct or indirect arising from storage device damage or other defects.
- When data from this unit is copied to a storage device and is edited on another computer, the data may no longer work in this unit and storage device data may become corrupted.
- Repair bad clips on P2 cards before copying them to a storage device.
- SATA (serial ATA) or PATA (parallel ATA) interface storage devices connected using a USB converter cable may not be recognized.

# Preparation

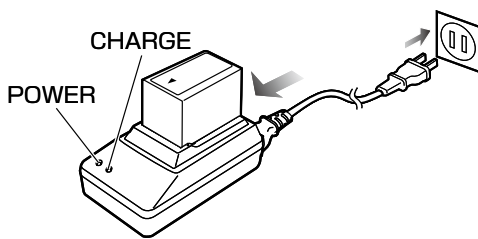
## Charging the battery

The battery is not charged when the product is purchased. Use the steps below to fully charge the battery using the supplied charger.

- 1** Place the battery level on the charger and slide it in the direction of the arrows on the charger.



- 2** Connect the AC power supply cable to the charger and connect the power plug to a wall outlet.
  - The POWER lamp and CHARGE lamp on the charger lights indicating that charging has started.
  - If the CHARGE lamp does not light when the battery is installed, reinstall the battery correctly.



- The CHARGE lamp on the charger goes out when charging ends.

- 3** Slide the battery off the charger.

### ■ Charging time and battery life estimates for the supplied battery

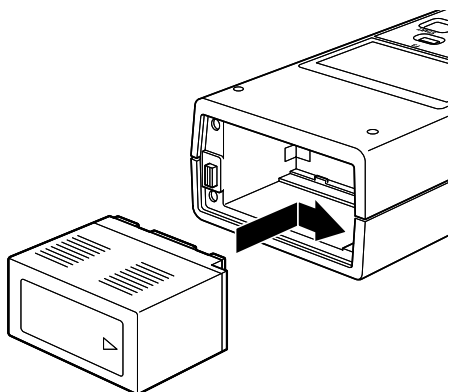
Capacity	5400 mAh
Charging time	Approx. 330 min.
Continuous copying time	Approx. 400 min.

- The table above shows expected battery performance with an E-series P2 card in the AG-MBX10G removable interface box.
- This level of performance is achieved at an ambient operating temperature of 20 °C (68 °F) and an ambient operating humidity of 60 %. Higher temperature and humidity levels will extend the charging time.
- The battery becomes hot during charging.
- When the battery temperature becomes excessively high or low, or it has become discharged after a long period of inactivity, the CHARGE lamp may flash a two or three times before automatic charging starts.
- If the CHARGE lamp continues flashing when the battery is at normal temperature, it may be defective and you should contact your supplier.
- Charging time becomes longer for a hot battery.
- Using the charger or AC adapter near a radio may interfere with radio reception. Place the charger or AC adapter at least 1 meter away from a radio.
- The charger may emit noise during charging. This is not a malfunction.
- No guarantees are given for the operation of the CGR-D16/CGR-D16s (1600 mAh) battery pack.

# Connecting and Disconnecting the Battery and the Power Cable

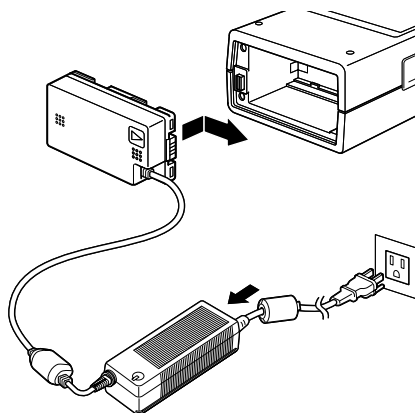
## Connecting the Battery

- 1 Slide in the battery until it clicks into place.



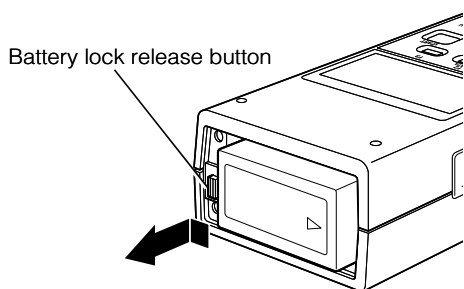
## Connecting the Power Cable

- 1 Connect the AC power supply cable to the AC adapter, and then connect the power plug to a wall outlet.
- 2 Slide in the DC power supply cable plate until it clicks into place.



## Disconnecting the Battery

- 1 Hold down the POWER button for 2 second or longer to turn the unit off and make sure that the POWER LED is off.
- 2 Depress the battery lock release button to slide out the battery.
  - Hold the battery to prevent it from falling out.



## Disconnecting the Power Cable

- 1 Hold down the POWER button for 2 second or longer to turn the unit off and make sure that the POWER LED is off.
- 2 Depress the battery lock release button and slide out the DC power supply cable plate.
- 3 Disconnect the AC power supply cable from the wall outlet.



---

◆ NOTE:

- Disconnect the AC power supply cable from the wall outlet when the unit is not used.
- The power lamp on the AC adapter will remain lit for a few moments after the AC power supply cable is disconnected. This is not a malfunction.

# Turning the Unit on and off

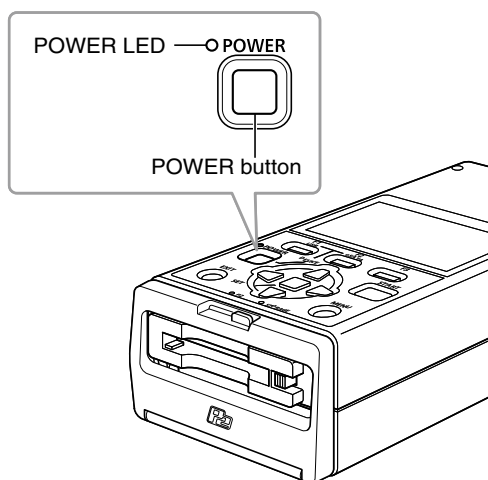
Use the supplied battery or AC adapter to power the unit.

- For details, refer to “Connecting the Battery” (page 16).
- For details, refer to “Connecting the Power Cable” (page 16).

Make sure that the battery or the AC adapter is properly connected to the unit. Turn the unit on before starting. And turn the unit off when you finish.

## Turning the unit on

Hold down the POWER button for 1 second or longer to turn the unit on when it is off. The POWER LED lights green when the unit has started up.



## Turning the unit off

Hold down the POWER button for 2 second or longer to turn the unit off when it is on. The POWER LED goes out. But the POWER LED flashes while the unit is being shut down.

### ◆ NOTE:

- When a low battery voltage occurs (and the battery icon is red), turn off the unit and replace the battery with a charged battery or switch to the AC adapter and turn on the unit.

## Auto Power Off During Operation

This unit will automatically power down after 10 minutes of inactivity when copying or formatting is not performed.

To use the unit, turn it on again.

### ◆ NOTE:

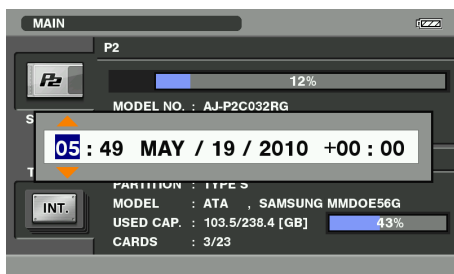
- Use the steps below to set the time until auto power off is activated. Select [SETTING] → [AUTO POWER OFF] from the menu.
  - For details, refer to “Menu list” (page 38).
- When the unit is used as a USB or eSATA device, it is not turned off automatically when inactive. Turn the unit off when it is not used.

# Calendar and Time Settings

Use the following steps to set the time before you start using the unit.

- 1** Turn the unit on.
- 2** Press the MENU button to open the menu.
- 3** Use the cursor buttons to select [SETTING] → [CLOCK SET] and press the SET button.

- The Time setting screen appears. (The default setting is current time)



- 4** Use the cursor buttons (left/right) buttons to move the cursor to the item you want to set.

- The items appear in hour, minute, month, day, year and time zone order.
- In time zone, set the difference in hours from Greenwich Mean Time.
  - For details, refer to "Time zone list" (This page).
- HOUR indicates time according to the 24-hour clock.

- 5** Use the cursor (up/down) buttons to set the calendar.

- 6** Set the calendar and press the SET button.
  - Pressing the SET button sets the clock to the set time.

- If you require an exact time setting, check and reset the time before use.
- You can change the order of Year, Month and Day. Select [SETTING] → [DATE FORMAT] from the menu.
  - For details, refer to "Menu list" (page 38).

## ■ Time zone list

Time difference	City/Region
00:00	Greenwich
+00:30	
+01:00	Central Europe
+01:30	
+02:00	Eastern Europe
+02:30	
+03:00	Moscow
+03:30	Teheran
+04:00	Abu Dhabi
+04:30	Kabul
+05:00	Islamabad
+05:30	Bombay
+06:00	Dacca
+06:30	Yangon
+07:00	Bangkok
+07:30	
+08:00	Beijing
+08:30	
+09:00	Tokyo
+09:30	Darwin Islands
+10:00	Guam
+10:30	Lord Howe Island
+11:00	Solomon Islands
+11:30	Norfolk Islands
+12:00	New Zealand
+12:45	Chatham Islands
+13:00	
-12:00	Kwajalein Atoll
-11:30	
-11:00	Midway Islands
-10:30	
-10:00	Hawaii
-09:30	Marquesas Islands
-09:00	Alaska
-08:30	
-08:00	Los Angeles
-07:30	
-07:00	Denver
-06:30	
-06:00	Chicago
-05:30	
-05:00	New York
-04:30	
-04:00	Halifax
-03:30	Newfoundland
-03:00	Buenos Aires
-02:30	
-02:00	Central Atlantic time
-01:30	
-01:00	Azores
-00:30	

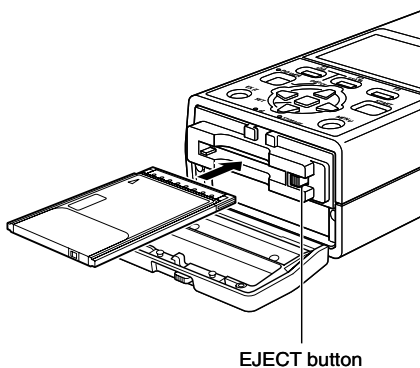
### ◆ NOTE:

- Since the clock is affected by deviation, it should be checked before use.

# Inserting and Removing a P2 Card

## Inserting a P2 Card

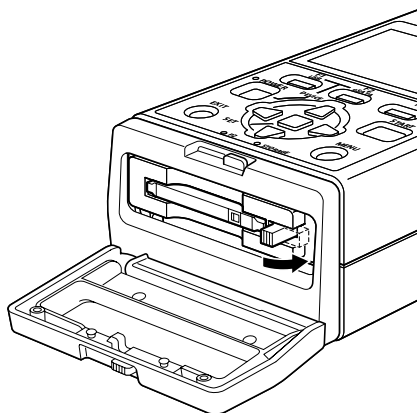
- 1 Insert a P2 card in the P2 card slot.
  - Press in the card until the EJECT button pops up.



### ◆ NOTE:

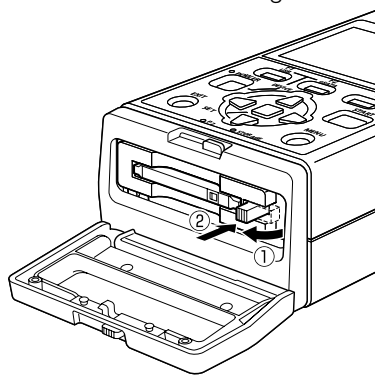
- Be sure to hold the P2 card level as you insert it and slide it in as far as it will go. Forcing cards into the slot at an angle may damage them.

- 2 Fold the EJECT button in the direction of the arrow.



## Removing a P2 Card

- 1 Flip up the EJECT button in the direction of the arrow.
- 2 Press the EJECT button.
  - Remove the P2 card when it pops out.
  - Do not remove a P2 card when the P2 card access LED (P2) is flashing. Otherwise the data may become corrupted and the P2 card could be damaged.

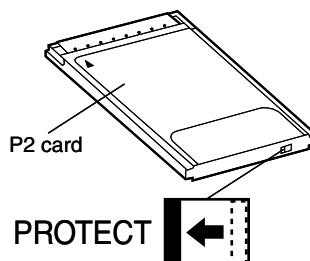


### ◆ NOTE:

- A P2 card that has just been used may be very hot and must be handled with care when removed.

## Preventing Accidental Deletion

Set the write-protect switch to [PROTECT] to prevent accidental deletion of data recorded on a P2 card.



### ◆ NOTE:

- A write-protect switch setting made during copying or access will not take effect until the current read or write operation ends.

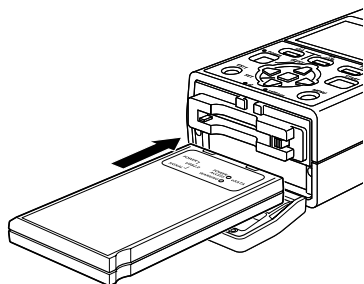
# Installing and Removing Interface Boxes

Install a commercially sold SSD (Solid State Drive) in the AG-MBX10G removable interface box before use.

→For details, refer to “Interface Box Setup” (page 42).

## Installing an Interface Box in the Unit

- 1 Turn the unit off.
- 2 Slide the front door lock lever to open the front door.
- 3 Insert the interface box in the interface box slot and slide it fully into the slot.



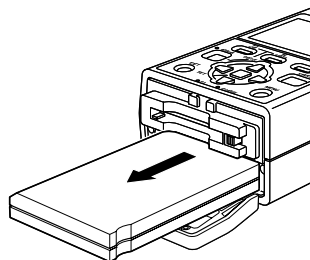
- 4 Close the front door.

### ◆ NOTE:

- Always turn the unit off before installing the interface box. Installing the interface box when the unit is on, may damage the unit, the interface box or the SSD.

## Removing the Interface Box From the Unit

- 1 Turn the unit off.
- 2 Slide the front door lock lever to open the front door.
- 3 Slide out the interface box.



- 4 Close the front door.

### ◆ NOTE:

- Always turn the unit off before removing the interface box. Removing the interface box when the unit is on, may damage the unit, the interface box or the SSD.

# Formatting the Interface Box

This section describes how to format an SSD installed in the interface box.

An SSD can be formatted as a TYPE S or FAT drive. Before you use an SSD for the first time it must be formatted using TYPE S or FAT.

ERASE ALL allows you to delete all data on the SSD.

## TYPE S:

A special disk format for high-speed writing data by P2 card. It enables saving up to 23 cards. Saved data for each copied P2 card will be recognized as a separate drive by computers and other devices.

## FAT:

The basic primary partition becomes FAT32. Computers will recognize the device as a single drive and as cards are copied to the drive, new folders are automatically created for copying.

## ERASE ALL:

Since formatting will only delete some of the data, use ERASE ALL to securely erase all the data on the drive.

---

### ◆ NOTE:

- Do not use battery power, but the AC adapter for ERASE ALL since it writes data to the drive to delete all data, which takes considerable time.
- To use an SSD after an ERASE ALL operation, format it selecting either TYPE S or FAT.

---

**1** Make sure that TARGET in the main screen is INTERNAL and press the F3 (INT. EXPLORE) button.

- The EXPLORE screen appears.

---

### ◆ NOTE:

- The appearance of the screen that appears depends on which type of formatting was selected for the SSD.

---

**2** Press the MENU button and use the cursor (up/down/left/right) buttons to select [OPERATION] → [FORMAT(INT.)] and press the SET button.

---

**3** Select the format type (TYPE S, FAT or ERASE ALL) and press the SET button.

---

**4** Use the cursor buttons (Up/Down) to select [YES] in the confirmation message that appears.

- Formatting starts

---

**5** Press SET when the completion message appears.

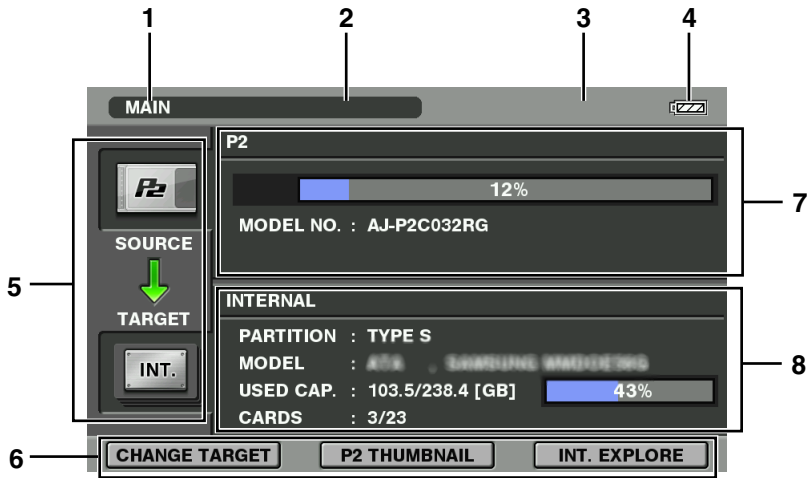
---

### ◆ NOTE:

- Check that no important data remains on a device before formatting since data erased by formatting cannot be recovered. Note that formatting formats the entire storage device.
- A storage device is not guaranteed to operate on this unit if the storage device was formatted with this unit and data was later written to the storage device using a personal computer. (Data written using this unit or the storage device itself may not be recognized.)

# Operations

## Copy Screen Control Reference Guide



### 1. Screen name

Indicates the name of the current screen.

MAIN	The first screen for copying that appears when the unit is turned on
P2 THUMBNAIL	Screen showing thumbnails on the P2 card
STORAGE EXPLORE	Selected Storage Explore screen (list of partitions/folders)
STORAGE THUMBNAIL	Thumbnail screen for selected storage partition/folder

### 2. Screen and status update indication

The UPDATING icon shown below appears when data is loaded from a P2 card or when screens are updated.



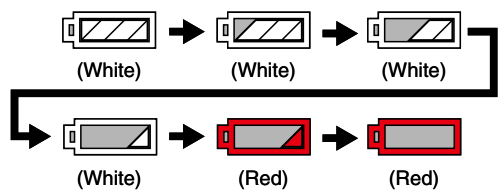
### 3. Warning indication

Displays warning messages when operating errors, or problems with the unit, P2 cards, storage devices and other hardware problems occur.

→ For details, refer to “Error and Warning Information” (page 48).

### 4. Battery status indicator

Indicates remaining battery capacity in 6 levels.



#### ◆ NOTE:

- Copying will not start when the battery icon turns red. Insert a freshly charged battery or use an AC adapter.

## 5. Card, interface status and copy direction indication

The icons indicate inserted card and availability of selected interface device while the arrow indicates direction of copy operation.



Indicates that a P2 card is inserted.



Indicates that a P2 card is not inserted.



Indicates that an available internal interface box has been selected as the copy target.



Indicates that the internal interface box that has been selected as the copy target is not available.



Indicates that an available external eSATA interface has been selected as the copy target.



Indicates that the external eSATA interface selected as the copy target is not available.



Indicates that an available external USB interface has been selected as the copy target.



Indicates that the external USB interface selected as the copy target is not available.

## 6. Function button indication

Shows the functions assigned to the function buttons. Press the F1, F2 or F3 button to use the corresponding function. The functions that are assigned depend on the selected screen.

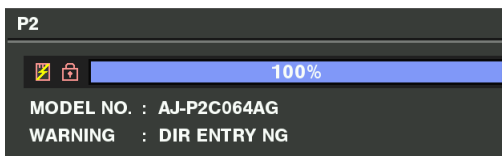
In the main screen, the following functions are assigned.

F1	CHANGE TARGET	Switches the storage device (INTERNAL/eSATA/USB) selected as the copy target.
----	---------------	---

F2	P2 THUMBNAIL	Switches to display thumbnails on the P2 card.
F3	STORAGE EXPLORE	Switches the Explore screen (list of partitions/folders) of the storage device selected as the copy target.

## 7. Card information

Shows the capacity, model number and other details of an inserted card.



### Card information



Indicates a protected card



Indicates a warning

### Warning messages

#### RUN DOWN CARD:

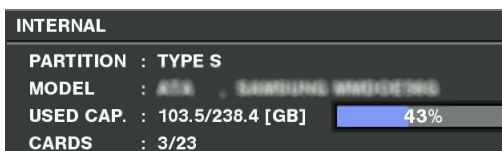
The maximum number of overwrites for the P2 card has been reached. The card may still function, but proper recording and playback are not guaranteed. We recommend replacing the P2 card.

#### DIR ENTRY NG CARD:

The directory structure of the P2 card is not supported. The card may still function, but we recommend backing up the card data immediately and formatting the card before using it again.

## 8. Interface information

Shows detailed information regarding the formatting and other information on the selected storage device





## ■ Partition type

Partition type	Features	Available functions				
		Thumbnail display	Copying cards (P2 card → Storage device)	Copying clips		Format
				P2 card → Storage device	Storage device → P2 card	
Type S	A special disk format for high-speed writing/loading data by P2 card.	○	○	○	○	○
FAT	A hard disk whose primary partition is formatted either using FAT16 or FAT32. The root partition or the "CONTENTS" folder under any folder*1 is used.	○	○	○	○	○
P2STORE	A P2 Store (AJ-PCS060G) hard disk. Cannot be used for writing data.	○	×	×	○	×
OTHER	A storage device formatted using a format other than those above. <ul style="list-style-type: none"> <li>• NTFS, HFS+, ext3 or other file system other than FAT16 or FAT32.</li> </ul>	×	×	×	×	○

\*1: This enables up to 100 folders in up to three levels. Folders appear in order from the top level. Long file names and two-byte character filenames are not supported.

Example:

/CONTENTS	Can be displayed
/SAMPLE/CONTENTS	Can be displayed
/SAMPLE/20100101/CONTENTS	Can be displayed
/SAMPLE/20100101/1200/CONTENTS	Cannot be displayed → This is the fourth level and will therefore not appear.

## Selecting Storage Device

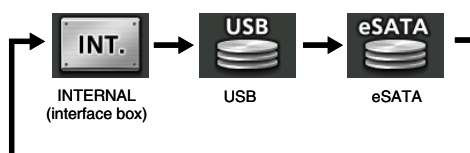
Before copying, select the storage device you want to copy clips to. The Explore screen and thumbnail screen that appear are those of the storage device selected above.

**1** Connect a storage device for copying.

**2** Turn the unit on.

**3** Press the CHANGE TARGET (F1) button to change destination.

- Each press of the button will change the destination drive in the following order.



◆ NOTE:

- It may take some time (a few seconds) for the unit to recognize the connected storage device and display the related information.

# Copying All Clips on a P2 Card

Pressing the START button during the main screen displayed allows you to copy all files on a card to a storage device.

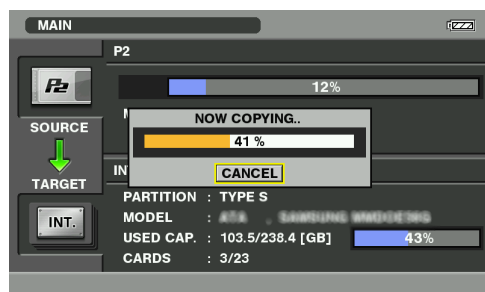
## Copying All Clips on a P2 Card

**1** Turn the unit ON and select the storage device to copy the clips to.

→ For details, refer to “Selecting Storage Device” (page 25).

**2** Press the START button.

- Copying of clips on the card starts and a progress bar appears.



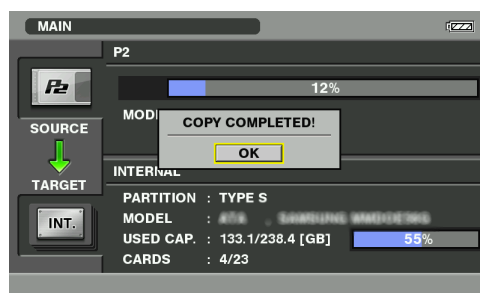
### ◆ NOTE:

- Copy results and the maximum number of P2 cards that can be copied depends on the partition type of the storage device.  
→ For details, refer to “Partition type and copy results” (page 27).
- To interrupt copying, press the SET button. Use the cursor (Up/Down) buttons to select “YES” and press the SET button in the CANCEL dialog box that appears. If you change your mind and want to continue copying, select “NO” and press the SET button.
- For a TYPE S storage device, the unit checks whether the card has already been copied before starting to copy. If the card has already been copied, the message “ALREADY COPIED. CONTINUE?” appears. To copy again, select “YES.”

**3** When copying ends, a message indicating that copying has ended appears.

Press the SET button.

- The message clears.
- Open the thumbnail to check the result as required.  
→ For details, refer to “Displaying Storage Device Thumbnails” (page 28).



### ◆ NOTE:

- If the unit was turned off automatically or because battery power was not sufficient when the end message is displayed, it will appear again the next time the unit is started up.

### ■ Partition type and copy results

Partition type	Copy result	Number of P2 cards that can be copied <sup>*2</sup>
TYPE S	A separate partition is created for each card and all data on the card is copied to this partition. The Explore screen on the unit allows you to check the model number and serial number of a P2 card.	23
FAT	A separate folder <sup>*1</sup> is created for each card and all data on the card is copied to this folder. The Explore screen on the unit allows you to check the name of the folder.	100

<sup>\*1</sup>: Each folder consists of a hierarchy involving a date folder and a lower folder called a time folder.

Example: A folder created at 12:34:56 on March 30, 2010 will have the following structure:  
/10-03-30/12-34-56

<sup>\*2</sup>: It is not possible to copy P2 cards that are larger than the storage device.

#### ◆ NOTE:

- Use the steps below to automatically compare the original P2 card data with data copied to the storage device when using a TYPE S format for copying. Select [SETTING] → [VERIFY] from the menu.  
→ For details, refer to “Menu list” (page 38).
- Use the steps below to set a buzzer that will notify you when copying ends, when the device is powered up and of any errors that might occur. Select [SETTING] → [BUZZER] from the menu.  
→ For details, refer to “Menu list” (page 38).

# Selecting Clips for Copying

This unit allows you to select specific clips on a P2 card or a storage device to copy to a storage device or a P2 card rather than copying all clips at one time.

Use thumbnail view to select the clips you want to copy.

## Thumbnail Screen Operations

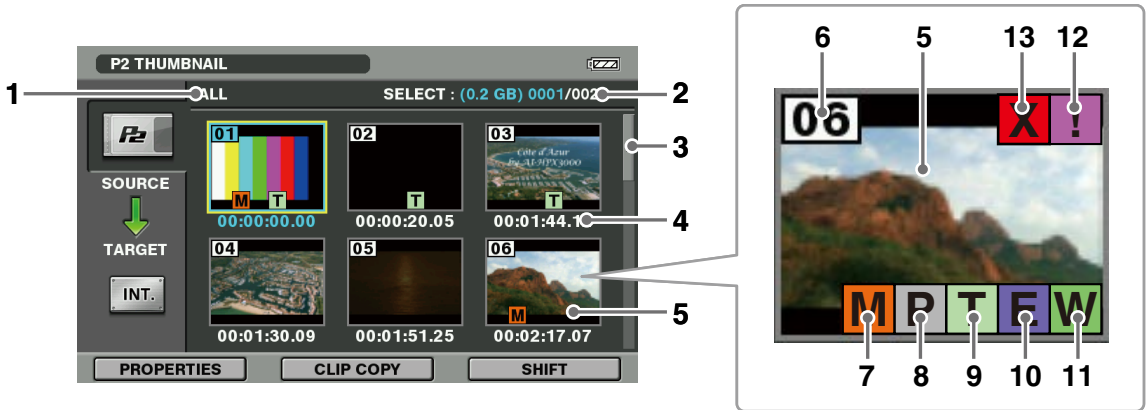
### Opening P2 Card Thumbnail Screen

- 1** Press the P2 THUMBNAIL (F2) button.
  - Thumbnails appear
  - To return to the main screen, press the EXIT button.

### Displaying Storage Device Thumbnails

- 1** Use the CHANGE TARGET (F1) button to select a storage device to display.
- 2** Press the STORAGE EXPLORE (F3) button.
  - The EXPLORE screen appears.
- 3** Use the cursor (up/down) buttons to move the cursor to the partition (or folder) you want to display.
- 4** Press the SET button.
  - Thumbnails appear.
  - To return to the main screen, press the EXIT button.

# Thumbnail Screen



## 1. Display status

Indicates the type of thumbnails that are displayed on the screen.

ALL	All clips
SELECT	Clips selected with the SET button
MARKER	Clips with shot markers
TEXT MEMO	Clips with text memo data

## 2. Selected clip indication

Indicates the size and number of the selected clip and the total number of clips.

## 3. Thumbnail scrollbar

Indicates the location of the currently displayed thumbnails among all of the thumbnails.

## 4. Time indication

Indicates the TC (time code) at the start of clip recording, UB (user bits at the start of clip recording), time of shooting, day of shooting, date and time of shooting, name of the clip or user clip name.

→ For details, refer to “Changing Time Indication” (page 31)

## 5. Thumbnails

Shows the thumbnails recorded for each clip.

## 6. Clip number

Indicates the numbers assigned to P2 card clips. Numbers are assigned starting in order from the earliest shooting date.

→ For details, refer to “Viewing Clip Information (PROPERTIES)” (page 32).

## 7. Shot mark indicator **M**

Indicates a clip to which a shot mark that has been attached.

### ◆ NOTE:

- This unit does not allow you to add or delete shot marks.

## 8. Proxy indicator **P**

Indicates a clip that contains a proxy attached using the AJ-HPX2700, AJ-HPX3700 or other camera.

### ◆ NOTE:

- This unit does not allow you to add or delete proxies.

## 9. Text memo indicator **T**

Indicates a clip that contains text memo data.

### ◆ NOTE:

- This unit does not allow you to add or delete text memos.

## 10. Edit copy indicator **E**

Indicates an edit-copied clip.

### 11. Wide indicator **W**

Indicates a clip recorded in the 16:9 aspect ratio. This is not indicated for an HD format clip.

### 12. Incomplete clip indicator **!**

Indicates a clip spanning multiple P2 cards where one of the cards that contains part of the clip has not been inserted.

### 13. Bad clip indicator **X**

#### Unknown clip indicator **?**

The **X** icon indicates a clip that became defective because the power was shut down during recording or was damaged for some other reason.

**?** is displayed for clips such as those which differ in format from the P2 standard.

## Cursor operations

Use the cursor (up/down/left/right) buttons to move the cursor.

### Cursor jumping

Hold down the SHIFT (F3) button and press cursor (up/down) buttons to move the cursor to the first or last clip.

### Changing displayed partition (folder)

In the thumbnail screen of a storage device, hold down the SHIFT (F3) button and press the cursor (left/right) buttons to view thumbnails in the next or previous partition (or folder).

## Selecting Clips

Select clips for processing in the thumbnail screen as described below.

**1** Use the cursor (up/down/left/right) buttons to place a yellow frame around a clip.

**2** Press the SET button.

- A light blue frame appears around the clip selected with the cursor to indicate that it is selected.

### ◆ NOTE:

- Repeat steps 1 and 2 to select multiple clips.
- To select a range of clips, first select one clip then move the cursor to a different clip and hold down the SHIFT (F3) button while pressing the SET button to select the first clip and all clips between the first clip and the cursor location.
- When a clip is selected, the number of the selected clip and its size is shown in the upper right corner of the screen.
- Pressing the SET button a second time will deselect an already selected clip.
- Pressing the EXIT button while holding down the SHIFT (F3) button will deselect all selected clips.

## Changing the type of thumbnails that open

You can restrict the type of thumbnails that open, so that only thumbnails of a selected type open.

**1** Press the MENU button to select THUMBNAIL.

**2** Use the cursor buttons to select the type of clips that open.

ALL CLIP	Shows all clips
SELECTED CLIPS	Shows only clips selected using the SET button At this time the thumbnails appear in selected order.
MARKED CLIPS	Shows only clips to which shot marks have been attached
TEXT MEMO CLIPS	Shows only clips that contain text memo data

**3** Press the SET button.

## Changing the indicators that appear

Use the steps below to switch thumbnail display indicators and data settings.

**1** Press the MENU button and use the cursor buttons to select [THUMBNAIL] → [SETUP] → [INDICATOR].

**2** Use the cursor buttons to select the type of indicators that open.

- Each press of the SET button turns check boxes on and off. Turn on the check boxes for the indicators you want to see.

ALL HIDE	Hides all indicators Selecting ALL HIDE disables selection of other items.
MARKER	Shows the shot mark indicator
TEXT MEMO	Shows the text memo indicator
WIDE	Shows the wide indicator
PROXY	Shows the proxy indicator

**3** Press the SET button.

## Changing Time Indication

Use the steps below to change the type of time indication.

**1** Press the MENU button and use the cursor buttons to select [THUMBNAIL] → [SETUP] → [DATA DISPLAY].

**2** Use the cursor buttons to select the type of data you want to see and press the SET button.

TC	Time code
UB	User bits
TIME	Time of recording
DATE	Date of recording
DATE TIME	Date and time of recording
CLIP NAME	Clip name
USER CLIP NAME	The first fifteen characters in the user clip name

**3** Press the SET button.

## Viewing Clip Information (PROPERTIES)

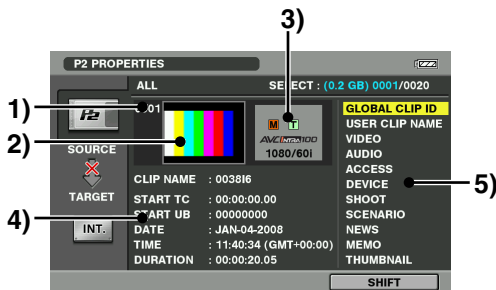
Use the steps below to check detailed clip information in the screen. You can also modify information on P2 card clips by making preference selections.

### 1 Press the PROPERTIES (F1) button.

- This displays information about the clip at the cursor location.

#### ◆ NOTE:

- Use the cursor buttons (left/right) to move to the previous or next clip. Or, hold down the SHIFT (F3) button and press cursor (up/down) buttons to move the cursor to the first or last clip.



### 1) Clip number

### 2) Thumbnails

Displays clip video as a slide show (the update interval varies with the recording format and video content)

### 3) Attached clip information

Displays the indicators that are part of a clip and the recording format of the clip. An icon appears when the P2 card where the clip resides is write protected.

#### Voice memo indicator

Indicates a clip to which a voice memo has been attached. This indicator appears only in clip PROPERTIES screen.

### 4) Clip information

The following information appears.

CLIP NAME	Clip name
START TC	Time code at start of recording
START UB	User bit value at start of recording
DATE	Date at start of recording
TIME	Time at start of recording
DURATION	Clip length

### 5) Clip metadata

This area shows more detailed information (clip metadata) on a clip.

## 2

### Browse the clip metadata as necessary.

- Use the cursor (up/down) buttons to select a metadata item and press the SET button to view the following information.

GLOBAL CLIP ID	Global CLIP ID
USER CLIP NAME	The name a user assigns to a clip This normally includes a GLOBAL CLIP ID.
VIDEO	Video signal system
AUDIO	Audio channel system and other information
ACCESS	The date of the last update and other information
DEVICE	Serial number of recording equipment and other information
SHOOT	Date when recording started and ended, etc.
SCENARIO	Program name, scene No., etc.
NEWS	Reporter, data collection, etc.
MEMO	TEXT MEMO number, location, name and text content
THUMBNAIL	Size and frame location of the thumbnail in relation to the original image.

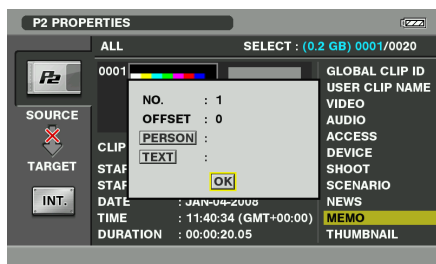
#### ◆ NOTE:

- Offset is indicated in frame numbers from the start.
- Up to 1000 characters of text can be added, but only the first 100 characters will be displayed.
- Use the cursor (left/right) buttons to select the text numbers.



## ◆ NOTE:

- Clip metadata displayed as detailed information for clips on a P2 card can also be revised. As shown in the figure below, data that can be revised is indicated as “TEXT”.



Use the cursor buttons to move to the item you want to change and press the SET button to open a screen for revising metadata (soft keyboard). Use the soft keyboard to revise data. Select [OK] after revising to save the revised metadata to the clip and return to the metadata display. Use EXIT to cancel the entry and return to the previous display.

## 3

Press the EXIT button.

- The thumbnail screen reappears.

## Copying Clips on a P2 Card

## 1

Press the CHANGE TARGET (F1) button in the main screen to select the storage device you want to copy the clips to.

→ For details, refer to “Selecting Storage Device” (page 25).

## 2

Press the P2 THUMBNAIL (F2) button to open the thumbnails on the P2 card and select clips for copying.

→ For details, refer to “Selecting Clips” (page 30).

## 3

Press the CLIP COPY (F2) button or menu button, use the cursor buttons to select [OPERATION] → [COPY(INT./USB/eSATA)] and press the SET button.

- The Explore screen on the storage device appears.

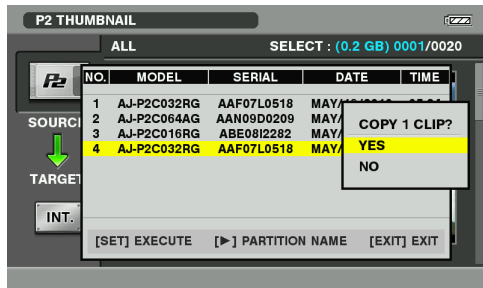
## 4

Use the cursor buttons to select the partition (or folder) you want to copy to and press the SET button.

- The dialog box that appears indicates the number of clips selected for copying and prompts you to either approve or cancel copying by selecting [YES] or [NO].

**5** Use the cursor buttons to select [YES] and press the SET button.

- Selecting [YES] starts clip copying and displays a progress bar.
- Selecting [NO] cancels copying.



- To interrupt ongoing copying, press the SET button. Use the cursor buttons to select "YES" and press the SET button in the CANCEL dialog box that appears. If you change your mind and want to continue copying, select "NO" and press the SET button.

**6** When copying ends, a message indicating that copying has ended appears. Press the SET button.

- The message clears.

◆ **NOTE:**

- The START button in the thumbnail screen of the P2 card copies all clips on the P2 card and not selected clips.  
→ For details, refer to "Copying All Clips on a P2 Card" (page 26).
- A clip indicated as a bad clip (by the bad clip indicator **X**) (caused by power loss or other mishap during copying) on a storage device must be deleted before you can copy the clip a second time.
- Use the steps below to set a buzzer that will notify you when copying ends, when the device is powered up and of any errors that might occur. Select [SETTING] → [BUZZER] from the menu.  
→ For details, refer to "Menu list" (page 38).
- A message notifying completion or cancellation of copying that is cleared because the unit shuts down automatically or due to insufficient battery power will reappear when the unit is powered up the next time.
- When a clip is copied to a storage device formatted using TYPE S, the card model number is displayed as "UNKNOWN".

## Copying Clips on a Storage Device

**1** Press the CHANGE TARGET (F1) button in the main screen to select the storage device you want to copy from.

- For details, refer to "Selecting Storage Device" (page 25).

**2** Press the STORAGE EXPLORE (F3) button to open the Explorer screen on the storage device.

**3** Open thumbnails on the storage device and select the clips you want to copy.

- For details, refer to "Displaying Storage Device Thumbnails" (page 28).

**4** Press the CLIP COPY (F2) button.

- You can also press the menu button, use the cursor buttons to select [OPERATION] → [COPY (P2)] and press the SET button
- The dialog box that appears indicates the number of clips selected for copying and prompts you to either approve or cancel copying by selecting [YES] or [NO].

**5** Use the cursor buttons to select [YES] and press the SET button.

- Selecting [YES] starts clip copying and displays a progress bar.
- Selecting [NO] cancels copying.
- To interrupt ongoing copying, press the SET button. Use the cursor buttons to select "YES" and press the SET button in the CANCEL dialog box that appears. If you change your mind and want to continue copying, select "NO" and press the SET button.

**6** When copying ends, a message indicating that copying has ended appears.

Press the SET button.

- The message clears.

---

**◆ NOTE:**

- Use the steps below to set a buzzer that will notify you when copying ends, when the device is powered up and of any errors that might occur. Select [SETTING] → [BUZZER] from the menu.  
→ For details, refer to “Menu list” (page 38).
- A message notifying completion or cancellation of copying that is cleared because the unit shuts down automatically or due to insufficient battery power will reappear when the unit is powered up the next time.

# Formatting P2 Cards

- **1** Open the menu in the main screen or in the P2 thumbnail screen.
- **2** Press the menu button and use the cursor buttons to select [OPERATION] → [FORMAT (P2)].
- **3** Use the cursor buttons to select [YES] and press the SET button in the confirmation screen that appears.
  - Selecting [YES] starts formatting. Messages may also be displayed during formatting.
  - Selecting [NO] cancels formatting.
- **4** When formatting ends, a message indicating that formatting has ended appears. Press the SET button.
  - The message clears.

---

◆ NOTE:

- Check that no important data remains on a device before formatting since data erased by formatting cannot be recovered.

# Connections

## Connecting to a PC

Connecting a PC to the USB or eSATA device connector on the unit enables access to the SSD in the interface box. A USB connection also allows access to a P2 card inserted in the P2 card slot.

### Using the Unit as a USB Device

Connecting a PC to the USB device connector makes it possible to use a P2 card inserted in the P2 card slot of the unit and the SSD inserted in the interface box as mass storage. Use of P2 viewer, which can be downloaded from Panasonic's website, allows you to manipulate clips stored on a P2 card with a Windows PC.

#### ◆ NOTE:

- Make a USB 2.0 connection
- For details regarding connections, refer to the instruction manuals supplied with the PC and the application software.
- Turn the unit Off before replacing the interface box.

### Switching to USB Device Mode

- 1 Hold down the [F1] button and the [POWER] button for 1 second or longer to turn the unit on.
  - This starts the unit up in USB device mode.

- 2 Use the supplied USB cable (USB 2.0) to connect a PC to the USB device connector.
  - The screen shows host connection status.

DISCONNECT	Not connected
CONNECT	Connected

- 3 To return to normal operating mode, turn the unit off and turn it on again.

#### ◆ NOTE:

- Use the supplied CD-ROM disc to install the required drivers on a Windows PC.
- Use the supplied CD-ROM disc to install the required drivers on a Macintosh.

- Make sure that cables are not disconnected and that the unit and the PC are not turned off during data transfers. Otherwise the data may become corrupted or the equipment could be damaged.
- Use double shielded cable except the supplied cable for making connections to USB 2.0 connectors.

### Using the Unit as an eSATA Device

Connecting a PC to the eSATA device connector will enable high-speed access to the SSD in the interface box slot.

#### ◆ NOTE:

- An eSATA device connection does not allow access to a P2 card.

### Switching to eSATA Device Mode

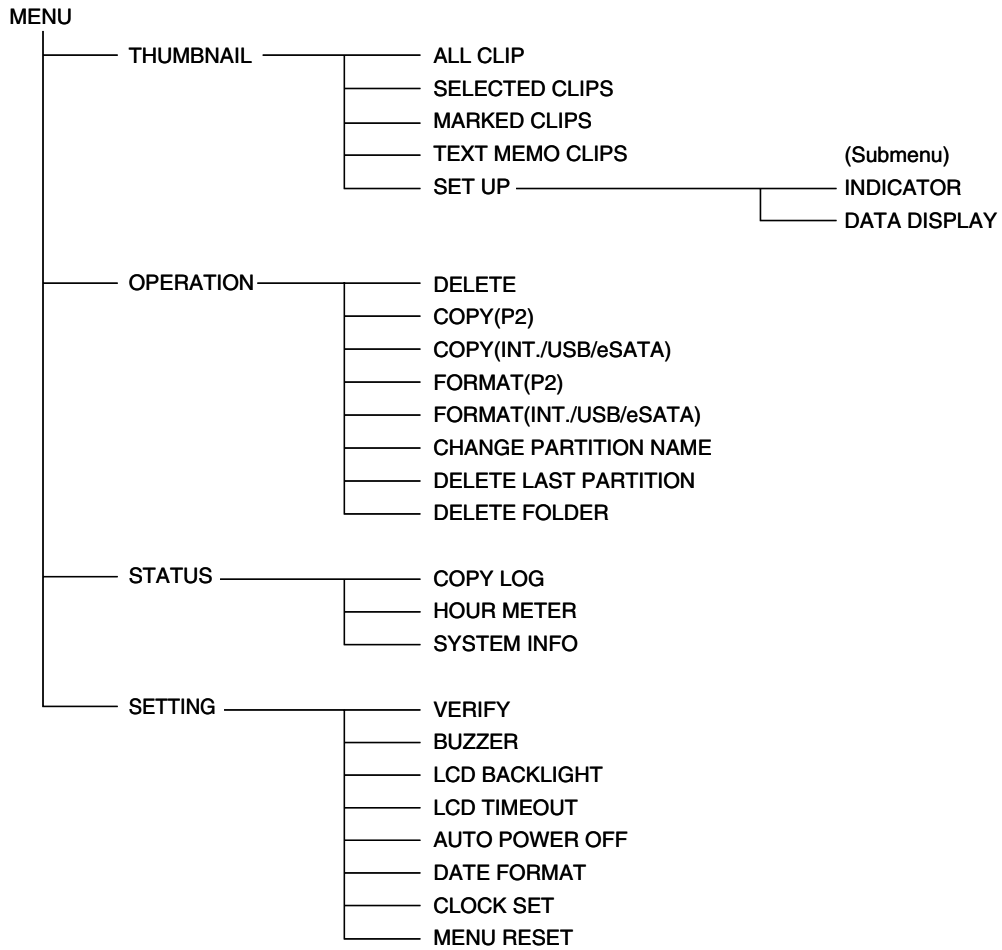
- 1 Use a commercially available eSATA cable to connect a PC to the eSATA device connector.
- 2 Hold down the [F2] button and the [POWER] button for 1 second or longer to turn the unit on.
  - The unit starts up in eSATA device mode. The screen does not display host connection status.
- 3 To return to normal operating mode, turn the unit off and turn it on again.

#### ◆ NOTE:

- Make sure that cables are not disconnected and that the unit and the PC are not turned off during data transfers. Otherwise the data may become corrupted or the equipment could be damaged.
- Use double shielded cable for making connections to eSATA connectors.

# Setup

## Menu list



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◆ NOTE:

- To initialize menus and log data, select [SETTING] → [MENU RESET] from the menu and press the SET button.

## THUMBNAIL

Menu	Setting
ALL CLIP	Shows all clips
SELECTED CLIPS	Shows only clips selected using the SET button
MARKED CLIPS	Shows only clips to which shot marks have been attached
TEXT MEMO CLIPS	Shows only clips with text memo data.
SETUP	Switches indicator and time indications. (For details, refer to the submenu description below.)
<b>Submenu</b>	
INDICATOR	Switches thumbnail display indicators and data settings. <b>ALL HIDE:</b> Hides all indicators. Selecting ALL HIDE disables selection of other items. <b>MARKER:</b> Shows the shot mark indicator. <b>TEXT MEMO:</b> Shows the text memo indicator. <b>WIDE:</b> Shows the wide indicator. <b>PROXY:</b> Shows the proxy indicator.
DATA DISPLAY	Switches the type of time indication. <b>TC:</b> Time code <b>UB:</b> User bits <b>TIME:</b> Time of recording <b>DATE:</b> Date of recording <b>DATE TIME:</b> Date and time of recording <b>CLIP NAME:</b> Clip name <b>USER CLIP NAME:</b> User clip name (up to the first 15 characters)

## OPERATION

Menu	Setting
DELETE	Deletes selected clips.
COPY(P2)	Copies clips on a storage device to a P2 card.
COPY(INT./USB/eSATA)	Copies clips on a P2 card to a storage device (INT./USB/eSATA).
FORMAT(P2)	Formats a P2 Card.
FORMAT(INT./USB/eSATA)	Format the storage device (INT./USB/eSATA) using TYPE S or FAT, or delete all the data on the storage device.
CHANGE PARTITION NAME	Changes names of partitions on a storage device formatted using the TYPE S format.
DELETE LAST PARTITION	Deletes the last partition on a storage device formatted using the TYPE S format.
DELETE FOLDER	Deletes folders on a storage device formatted using FAT.

## STATUS

Menu	Setting
COPY LOG	Shows the history (log data) of copying results.
HOUR METER	Indicates the following time data. <b>OPERATION:</b> Indicates the number of hours that the unit has been on. <b>LCD ON:</b> Indicates backlight on time for the LCD monitor in hours. <b>POWER ON:</b> Indicates the number of times the power has been turned on.
SYSTEM INFO	Shows the version of software installed in this unit.

## SETTING

Menu	Setting
VERIFY	Use the settings below to determine whether or not the system should automatically compare the original P2 card data with data copied to the storage device when using TYPE S formatting for copying. <b>ON:</b> Compares data after copying. The Verify process takes as long as copying. <b>OFF:</b> No comparison is made.
BUZZER	Use the settings below to determine how the buzzer will notify you when copying ends, when the device is powered up and of any errors that might occur. <b>ONCE:</b> Sounds the buzzer once <b>REPEAT:</b> Continues sounding until an action is performed <b>OFF:</b> Buzzer is disabled
LCD BACKLIGHT	Allows you to adjust LCD monitor backlight brightness. <b>LIGHT:</b> Normal <b>DARK:</b> Dark
LCD TIMEOUT	Make the settings below to have the LCD monitor automatically turn off after a specified time (approx. 5 min) of inactivity. <b>ON:</b> The LCD switches off automatically <b>OFF:</b> The LCD does switch off
AUTO POWER OFF	Make the settings below to set the time until auto power off is activated. <b>Off/5 min/10 min/15 min/20 min/25 min/30 min</b> The default setting is 10 min.
DATE FORMAT	You can change the order that Year, Month and Day are displayed. <b>Y-M-D:</b> Year, month and day order <b>M-D-Y:</b> Month, day, and year order <b>D-M-Y:</b> Day, month and year order
CLOCK SET	Sets the calendar and time.
MENU RESET	Initializes menu settings and clears copy result logs. <b>YES:</b> Returns menu settings to their defaults and clears copy result history. <b>NO:</b> Cancels initialization



# Displaying Unit Information

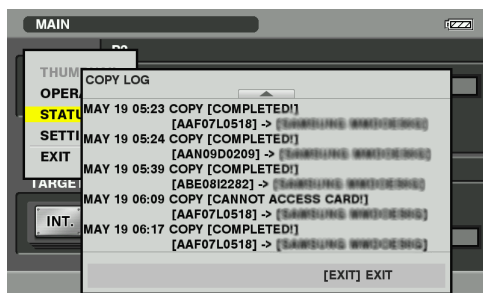
## Log data

The unit allows you to save the history (log data) of copying results. Use the steps below to check this log.

- 1 Turn the unit on.
- 2 Press the MENU button to open the menu.
- 3 Use the cursor buttons to select [STATUS] → [COPY LOG] and press the SET button.
  - The logs shown below appear.
    - Date and time of start of copying and result of copying
    - [Copy source] → [Copy target]  
P2 card serial number or model name of storage device

### ◆ NOTE:

- The unit saves Greenwich Mean Time. A change in the time zone changes the time indication accordingly.



- 4 Press the EXIT button.
  - The menu reappears.

### ◆ NOTE:

- To initialize menus and copying results, select [SETTING] → [MENU RESET] from the menu and press the SET button.
  - For details, refer to "Menu list" (page 38).
- The copy result history is automatically deleted starting from the oldest data to make place for new data.

## Operation time

Indicates the time the unit has been in operation.

- 1 Turn the unit on.
- 2 Press the MENU button to open the menu.
- 3 Use the cursor buttons to select [STATUS] → [HOUR METER] and press the SET button.
  - Indicates the following time data.

OPERATION	Indicates the number of hours that the unit has been on.
LCD ON	Indicates backlight on time for the LCD monitor in hours.
POWER ON	Indicates the number of times the power has been turned on.
- 4 Press the EXIT button.
  - The menu reappears.

## Software Version

Use this function to check the version of software used in this unit.

- 1 Turn the unit on.
- 2 Press the MENU button to open the menu.
- 3 Use the cursor buttons to select [STATUS] → [SYSTEM INFO] and press the SET button.
  - Use this function to view the version of the system.
  - Use the cursor (left/right) buttons to check detailed version data.
- 4 Press the EXIT button.
  - The menu reappears.

# Interface Box

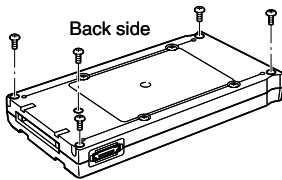
## Interface Box Setup

Installing an SSD in the AG-MBX10G Interface Box allows the user to copy data recorded on a P2 card camera-recorder to the SSD.

USB bus power operation makes use of the AC adapter unnecessary. In addition to a USB 2.0 connection, the unit also provides a high-speed eSATA connection.

### Installing an SSD (Solid State Drive)

- 1 Remove the five screws in the interface box and remove the top lid.

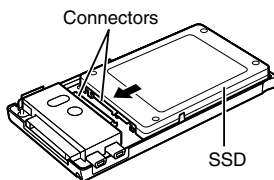


Use a No. 0 Phillips screwdriver to remove the screws.

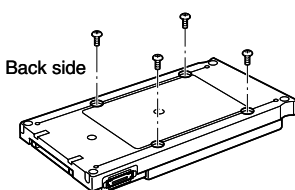
- 2 Slide the SSD into the box while taking care to align the connectors on the SSD with those in the box.

◆ NOTE:

- Do not insert the SSD at an angle as the connectors could be damaged.

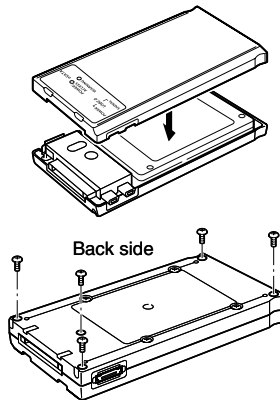


- 3 Secure the SSD using the four supplied 3.0 mm screws.



Use a No. 2 Phillips screwdriver to secure the screws.

- 4 Close the top lid and secure the lid using the five 2 mm screws removed in step 1.



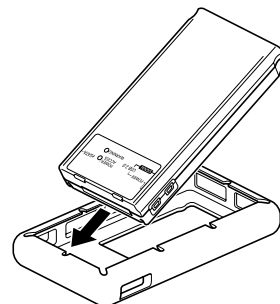
Use a No. 0 Phillips screwdriver to secure the screws.

◆ NOTE:

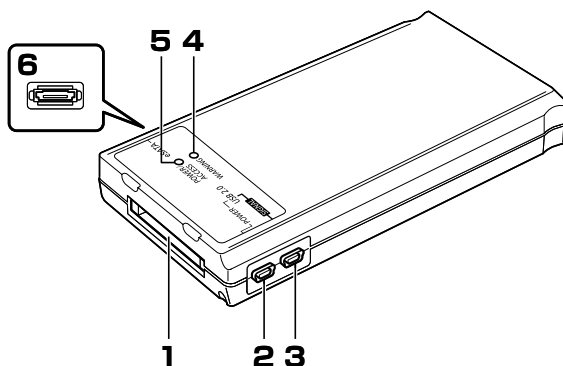
- Be sure to use a Phillips No. 0 screwdriver for the lid screws and a Phillips No. 2 screwdriver for the SSD securing screws.

### Attaching the Silicone Jacket

When using the interface box as a stand-alone external device, slip it into the supplied silicone jacket to protect its connectors.



# Control Reference Guide



**1. AG-MSU10 connector**

Connector for connecting the interface box to the AG-MSU10 Mobile Storage Unit.

**2. USB 2.0 connector (POWER connector)**

Use the USB cable to connect this connector to a USB 2.0 connector on a personal computer to power the drive from the computer.

**3. USB 2.0 connector (SIGNAL connector)**

Use the USB cable to connect this connector to a USB 2.0 connector on a personal computer to power the drive from the computer and to transfer data between devices.

**4. WARNING LED**

Lights indicate that not enough power is supplied.

→ For details, refer to “Checking Bus Power Operation” (page 44).

**5. POWER/ACCESS LED**

Green: Power is supplied and the device is ready to use.

Red: The host is accessing the device.

---

◆ **NOTE:**

- POWER/ACCESS LED operation depends on the installed SSD.

**6. eSATA connector**

Use the eSATA cable to connect this connector to an eSATA connector on a personal computer.

---

◆ **NOTE:**

- The eSATA connector does not supply power. Use the USB cable to supply power.
- Use double shielded cable for making connections to eSATA connectors.

# Connecting the Interface Box to a Personal Computer

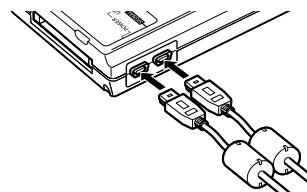
Although the AG-MBX10G (either supplied with the unit (AG-MSU10) or optional) can be operated on bus power via the USB connector, this may not be sufficient and result in erratic operation in specific operating environments (depending on SSD, USB cable, personal computer and other factors).

The following phenomena may occur when not enough power is supplied.

- The PC may not recognize the SSD.
- The SSD may suddenly stop during operation causing the PC to display an error message.

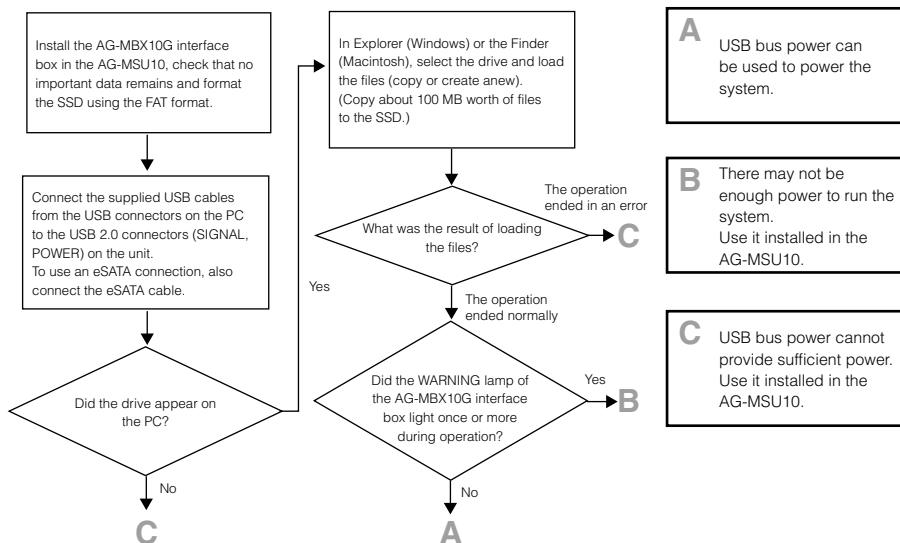
## ◆ NOTE:

- Use two USB cables to use bus power.  
→ For details, refer to "Checking Bus Power Operation" (This page).
- To use an SSD for writing, install it in the AG-MSU10 and power it by connecting the AC adapter.
- Use the supplied USB cables.



## ■ Checking Bus Power Operation

Check the following before performing any copy operations with the unit when using bus power. Note that the result of this check may not fully guarantee bus power operation on your PC.



## ◆ NOTE:

- To prevent power interruptions during extended use of USB bus power, power the PC using an AC power supply.
- Use only self-powered USB hubs (self-powered hubs supply their own power via an AC adapter).
- Use double shielded cable for making connections to eSATA connectors.

# For long and Trouble-free Operation

## Internal Battery

The internal battery preserves the date and time settings. An “E-50” indication at the top right of the screen indicates that the internal battery has been depleted. Follow the steps below to recharge the battery. When the battery has been charged, set the time and date settings.

### 1 Connect the unit to the AC adapter.

- Make sure the unit is turned off.

### 2 Leave the unit for about 4 hours.

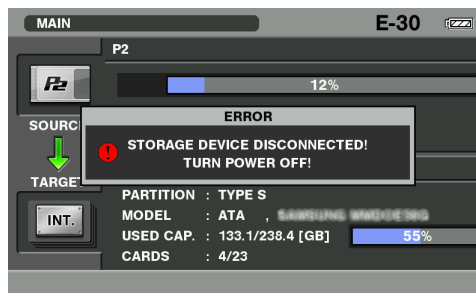
- This is the time it takes to fully charge the internal battery.

#### ◆ NOTE:

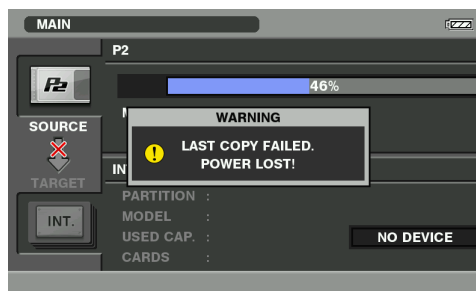
- Replace the internal battery if the [E-50] icon appears after charging. Consult your supplier.

## Error Messages

If a P2 card or storage device malfunctions during operation and copying fails, the error message shown below will appear. (When the unit has to be shut down, all POWER, P2 and STORAGE LEDs will start to flash.) Follow the instructions given in the error message to resume operation after an error has occurred.



If the battery runs out or the power supply is interrupted during copying or formatting of the storage device, the following error dialog box and error message will show the result of the previous copy or format operation the next time the unit is started up. After reading the message, press the SET button to clear the message and resume normal operation.



## ■ Error message list

Message	Description	Measure
CANNOT ACCESS CARD!	An error occurred during P2 card access.	Check P2 card.
CANNOT ACCESS TARGET!	An error occurred during storage device access.	Check storage device status and connections.
CANNOT ACCESS!	Last copy or format operation failed because an error occurred on the P2 card or storage device.	Check the P2 card or storage device and try again.
CANNOT COPY!	An error occurred on the P2 card or storage device during copying.	Check the P2 card or storage device.
CANNOT COPY! FORMAT STORAGE DEVICE TO FAT	Copying cannot be completed because the partition selected as the copy target does not exist.	Format the storage device using FAT or use a device with a formatted partition.
CANNOT FORMAT!	The P2 card or storage device cannot be formatted.	Check the P2 card or storage device.
CANNOT RECOGNIZE STORAGE DEVICE!	The storage device cannot be properly recognized.	Reboot the storage device or connect a different device.
CARD ACCESS ERROR!	An error occurred during P2 card access.	Check P2 card.
CARD IS EMPTY! CANNOT COPY!	The P2 card being used as the copy source is empty.	Copying cannot take place as there is no data on the copy source.
DEVICE DISCONNECTED!	Last copy or format operation failed because the P2 card or storage device was disconnected.	Connect the device properly and try again.
LACK OF CAPACITY!	There is not enough free space on a P2 card or storage device used as the copy target.	Use a P2 card or storage device with sufficient free space.
LAST COPY FAILED.	Last copy operation failed.	Copy the data again.
LAST COPY SUCCESSFUL.	Last copy operation was successful.	–
LAST FORMAT FAILED.	Last format operation failed.	Format the device again.
LAST FORMAT SUCCESSFUL.	Last format operation was successful.	–
LOW BATTERY!	The battery is running low.	Replace the battery or connect the AC adapter.
NOT SELECTED!	No clip is selected.	Select clips before copying.
POWER LOST!	Last copy or format operation failed because the power supply was interrupted.	Replace the battery or connect the AC adapter and try again.

<b>Message</b>	<b>Description</b>	<b>Measure</b>
STORAGE DEVICE DISCONNECTED!	The unit has been disconnected from the storage device.	Connect the storage device properly. If the device still does not operate normally, turn it off and turn it back on again.
SYSTEM ERROR!	Last copy or format operation failed due to a system control error.	Copy or format again.
TOO MANY CLIPS!	Too many clips are selected.	Reduce the number of selected clips.
TOO MANY FOLDERS!	There are too many folders on the storage device.	The maximum number of folders is 100. Use a new storage device or a formatted storage device.
TOO MANY PARTITIONS!	There are too many partitions on the storage device.	Storage devices can handle up to 23 partitions. Use a new or formatted storage device.
TOO MANY TARGETS!	There are too many devices connected to hubs.	Disconnect the device, turn off the unit and turn it back on again.
TURN POWER OFF!	Displayed when an error occurs in reading and writing P2 card or storage device data.	To continue operation, turn the power off and then back on again.
UNKNOWN CONTENTS FORMAT!	An attempt was made to process an unknown clip (clip version not supported by this unit) or a bad clip.	Use only clips that are supported by the unit. Restore bad clips on the device that recorded them or delete them.
UNKNOWN DEVICE CONNECTED!	An unsupported DVD drive or unsupported device is connected.	Disconnect the device, turn off the unit and turn it back on again.
VERIFICATION FAILED!	The contents of the copied data do not match.	Copy the data again.
WRITE PROTECTED!	The P2 card is write protected.	Insert write-enabled media.

## ■ Error and Warning Information

An E-\*\*\* indication may appear in the upper right corner of the screen to notify errors not related to copying or formatting.


Indication No	Description	Operation
30	Indicates that an error occurred during P2 card or storage device access. To continue operation, turn the power off and then back on again.	STOP
37	Displayed when a system controller command was not observed. To continue operation, turn the power off and then back on again.	STOP
38	Displayed when a communications error occurs. To continue operation, turn the power off and then back on again.	STOP
50	Displayed when a drop in the backup battery voltage for the internal clock is detected at power on. Charge the internal battery. → For details, refer to "Internal Battery" (page 45).	Operation continues
BA	The battery is depleted. Charge the battery.	The unit is shut down.
70	Indicates that the directory structure of the P2 card is not supported. Immediately make a backup of card data and reformat the card.	Operation continues
71	Indicates that the maximum number of overwrites for the P2 card has been reached. This P2 card should be replaced.	Operation continues



## Before Requesting a Repair

When the unit does not seem to operate normally, first check the following information. If the problem still persists, consult your supplier.

### Power supply issues

Symptom	Check	Page reference
The unit does not start up.	<ul style="list-style-type: none"> <li>The battery and AC adapter may not be correctly connected. Check the connections.</li> <li>Hold down the POWER button 1 second or longer to start up.</li> </ul>	Refer to page 16 Refer to page 18
The unit cuts out.	<ul style="list-style-type: none"> <li>To reduce battery consumption, the unit is automatically shut down after 10 minutes of inactivity. Select [SETTING] → [AUTO POWER OFF] in the setting menu to check.</li> </ul>	Refer to page 18
The unit cuts out soon after being started up.	<ul style="list-style-type: none"> <li>Check whether the battery is depleted. The battery is depleted when the battery charge indicator flashes or the [  ] indication appears. Charge the battery or replace it with a freshly charged battery.</li> </ul>	Refer to page 15

### Battery issues

Symptom	Check	Page reference
The battery is quickly depleted.	<ul style="list-style-type: none"> <li>Check whether the battery is fully charged. Continue charging until the CHARGE lamp on the charger goes out.</li> <li>Check whether the unit is being used in a low-temperature environment. Battery operation is affected by temperature and battery life will decrease when used at a low temperature.</li> <li>Check whether the battery has reached the end of its service life. The battery has a limited life span. The life span of the battery varies depending on how it is used. The battery has reached the end of its service life when it depletes quickly, even after being fully charged.</li> </ul>	Refer to page 15

## Maintenance

Do not use benzene or thinner for cleaning.

- Benzene and thinner could deform the unit and cause the paint to peel off.
- Disconnect the battery and the AC power supply cable from the wall outlet before cleaning.
- Wipe the unit using a soft clean cloth. Stubborn soiling should be removed using a cloth dampened with a solution of a neutral detergent and water. Then wipe with a dry cloth.

## Condensation

Condensation occurs due to the same principle involved when droplets of water form on a window pane of a heated room. It occurs when this unit or a card is moved between places where the temperature or humidity varies greatly or when, for instance:

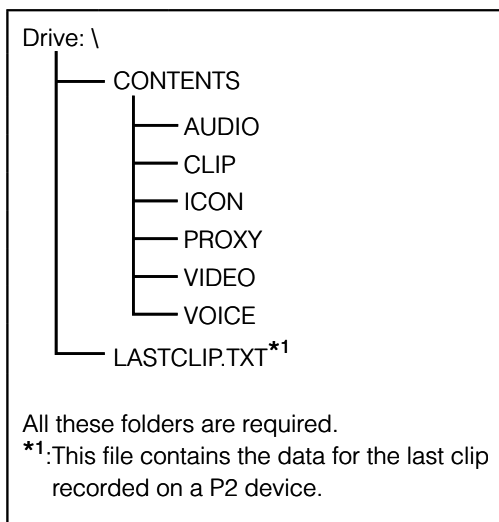
- It is moved to a very humid place full of steam or a room immediately after it has been heated up.
- It is suddenly moved from a cold location to a hot or humid location. When moving the unit to locations such as these, leave it standing for about 10 minutes rather than switching on the power immediately.

# Handling P2 Card Data

The P2 card is a semiconductor memory card designed for the P2 HD series, Panasonic's line of professional video and broadcast equipment.

- Since the P2 format records data as files, it is ideally suited for computer processing. Video and audio are recorded in the MXF file format while the metadata (XML) is stored in the folders with the configuration shown at right.

**If any of this data is changed or lost, it will not be recognized as P2 data or the P2 card may no longer be possible to use in a P2 device.**




- To prevent data loss when transferring the data stored on a P2 card to a PC, or transferring the data on a PC back to a P2 card, use P2 Viewer (software exclusively designed for managing P2 card data), which can be downloaded from the following website.  
<https://www.pavc.panasonic.co.jp/pro-av/support/desk/e/index.htm>
- Follow the steps below to use general IT tools such as Microsoft Windows Explorer or Apple Finder to transfer the data to a PC. Be sure to use P2 Viewer to write data back to a P2 card.
  - Process the CONTENTS folder and the LASTCLIP.TXT file together.  
Do not modify the data below the CONTENTS folder.  
In copying, be sure to copy both the CONTENTS folder and the LASTCLIP.TXT file together.
  - When transferring data from multiple P2 cards, create separate folders for each P2 card to prevent overwriting clips with identical names.
  - Do not delete data on a P2 card.
  - Be sure to use a P2 device or the P2 Viewer to format P2 cards.

# Specifications

## [General]

Power supply: 7.2/7.9 V DC  
Current consumption: 1.1 A

 indicates safety information.

### Dimensions (W × H × D):

99 mm × 58 mm × 212 mm  
(3-7/8 inches × 2-5/16 inches × 8-3/8 inches)  
(Excluding protrusions)

**Mass:** Approx. 770 g (1.69 lb)  
(Excluding SSD and battery)

### Supply voltage:

Battery 7.2 V DC  
AC adapter 7.9 V DC

### Ambient operating temperature:

0 °C to 40 °C (32 °F to 104 °F)

### Ambient operating humidity:

10 % to 80 %

### Ambient storage temperature:

-20 °C to 60 °C (-4 °F to 140 °F)


### Ambient storage humidity:

85 % or less

**Interface:** USB 2.0 HOST × 1  
(Type A, supporting bus power)  
USB 2.0 DEVICE × 1 Type Mini-B  
eSATA HOST × 1  
P2 card slot × 1  
AG-MBX10 interface box slot × 1

## [AC adapter]

Rated input: 100 – 240 V AC, 47 – 63 Hz  
0.55 A  
Rated output: 7.9 V DC, 2.53 A

 indicates safety information.


### Dimensions (W × H × D):

42 mm × 31 mm × 104 mm  
(1-5/8 inches × 1-1/4 inches × 4-1/8 inches)

**Mass:** 220 g (0.48 lb)

## [Charger]

Rated input: 100 – 240 V AC, 50 Hz/60 Hz  
0.4 A  
Rated output: 8.4 V DC, 1.2 A

 indicates safety information.


### Dimensions (W × H × D):

70.0 mm × 44.5 mm × 116.0 mm  
(2-3/4 inches × 1-3/4 inches × 4-9/16 inches)

**Mass:** 160 g (0.35 lb)

## [Interface box]

Power supply: 5 V DC (supplied by USB 2.0 bus power)

 indicates safety information.

### Dimensions (W × H × D):

76 mm × 18 mm × 145 mm  
(1-15/16 inches × 11/16 inches × 5-11/16 inches)

**Mass:** 135 g (0.3 lb) (Excluding SSD)

### Ambient operating temperature:

0 °C to 40 °C (32 °F to 104 °F)

### Ambient operating humidity:

10 % to 80 %

### Ambient storage temperature:

-20 °C to 60 °C (-4 °F to 140 °F)

### Ambient storage humidity:

85 % or less

**Interface:** USB 2.0 (Type Mini-B) × 2  
eSATA × 1  
Connector for connecting AG-MSU10 mobile storage unit × 1

Weight and dimensions are approximate.  
Specifications are subject to change without notice.

## Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste. For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.



For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



### For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

### Information on Disposal in other Countries outside the European Union

These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

### Note for the battery symbol (bottom two symbol examples):

This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

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Web Site: <http://panasonic.net>

#### Panasonic Solutions Company

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[www.panasonic.com/broadcast](http://www.panasonic.com/broadcast) e-mail: [MediaProServices.PSC@us.panasonic.com](mailto:MediaProServices.PSC@us.panasonic.com)

#### Panasonic Canada Inc.

5770 Ambler Drive, Mississauga, Ontario L4W 2T3 Tel: 905-624-5010

#### Panasonic de México S.A. De C.V.

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