

EDIUS 5

Hardware Setup Manual

EDIUS SP / EDIUS SP-SDI / EDIUS SD / EDIUS HD





Cautions

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Manual Explanation

- Information not described in this manual may be displayed in some cases. Make sure to read the text file attached to the disc.
- If there are any variations between the explanation in this manual and the actual application method, priority is given to the actual application method.
- The screens used as examples in this manual are those of the development stage, so they may vary from those in the final product.
- This manual is written for people who have a basic knowledge of how to use a computer. If there are no special instructions, perform the same operation as a normal computer operation.
- In this manual, EDIUS 5 and EDIUS series are called 'EDIUS'.
- In this manual, Microsoft® Windows® XP Professional operating system is called Windows XP Professional or Windows XP. Microsoft® Windows® XP Home Edition operating system is called Windows XP Home Edition or Windows XP.
- In this manual, Windows Vista™ Home Basic, Windows Vista™ Home Premium, Windows Vista™ Business, Windows Vista™ Ultimate is called Windows Vista Home Basic, Windows Vista Home Premium, Windows Vista Business, Windows Vista Ultimate or Windows Vista.
- In this manual, Adobe Photoshop is called Photoshop, and Adobe After Effects is called After Effects.
- Information in this manual is subject to change without notice, due to the change in product specifications etc.

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Before Using

Notices & Warranties

Notices & Warranties

Copyright Regulations

It is illegal for anyone to violate any of the rights provided by the copyright laws to the owner of copyright, except for fair use (mainly private noncommercial use). Also, in certain cases copying is prohibited with no exceptions. In no event shall Thomson Grass Valley be liable for any direct or indirect damages whatsoever arising from the use of captured materials.

Warranty

This product is covered by a limited warranty when you register your Thomson Grass Valley product. This warranty is for a period of one year from the date of purchase from Thomson Grass Valley or an authorized Thomson Grass Valley agent. This warranty applies only to the original purchaser of the Thomson Grass Valley product and is not transferable, Thomson Grass Valley warrants that for this period the product will be in good working order. Should our product fail to be in good working order, Thomson Grass Valley will, at its option, repair or replace it at no additional charge, provided that the product has not been subjected to misuse, abuse or non-Thomson Grass Valley authorized alternations, modifications and/or repair. Proof of purchase is required to validate your warranty.

Thomson Grass Valley is not responsible for any lost profits, lost savings or other incidental or consequential damages arising out of the use of, or inability to use, this product. This includes damage to property and, to the extent permitted by law, damages for personal injury. This warranty is in lieu of all other warranties of merchantability and fitness for a particular purpose.

DANGER

The following conditions indicate the potential for serious bodily injury or loss of life.

Health precautions

In rare cases, flashing lights or stimulation from the bright light of a computer display or TV monitor may trigger temporary epileptic seizures or loss of consciousness. It is believed that even individuals whom have never experienced such symptoms may be susceptible. If you or close relatives have experienced any of these symptoms, consult a doctor before using this product.

Do not use in environments requiring a high degree of reliability and safety

This product is not to be used in medical devices or life support systems. The characteristics of this product are not suited for use with such systems.

Protect against static electricity

An electrostatic discharge may damage components of this product. Do not directly touch any of the connectors or component surfaces.

Static electricity can be generated on clothing and on people. Before handling the product, discharge static electricity from your body by touching a grounded metal surface.

Do not disassemble

Do not remove the cover or modify the Product. Fire, electric shock or malfunction may result. For internal inspection or repair, please contact your system integrator or Thomson Grass Valley directly.

CAUTION

The following conditions indicate the potential for bodily harm, damage to hardware or loss of data.

Do not setup in areas subject to heat

Do not setup in an area exposed to direct sunlight or near a heating apparatus. The heat can accumulate, causing burns, fire or damage. Also, the unit may become deformed or change color.

Only setup using the prescribed method

Do not setup in a manner other than prescribed. Do not use while wrapped in cloth or plastic. Heat can accumulate, causing burns, fire or damage.

FCC Notice

This equipment has been tested and found to comply with the limits for the class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against 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 and correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

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.

Declaration of Conformity

According to FCC Part 15

Responsible party Name:	Grass Valley, Inc
Address:	400 Providence Mine Road, Nevada City, CA 95959
Telephone:	530-478-3890

Operation environment

Notes • EDIUS operation is not necessarily guaranteed even in the environments satisfying all conditions below.

EDIUS SP

▶ PC

CPU: Intel Pentium 4 2.8GHz or higher

(Xeon 2.8GHz Dual Processor (hyper-threading) recommended.)

- * EDIUS complies with multi-processor and hyper threading technology.
- * CPU supporting SSE2 instructions is necessary in operating EDIUS.

▶ PCI bus

The below PCI slots are required:

64bit / 66MHz PCI (PCI Spec. Revision 2.2) x1

32bit / 33MHz PCI (PCI Spec. Revision 2.2) x1

- * You can also use two 32bit / 33MHz PCI (PCI Spec. Revision 2.2) slots, if you are editing in SD resolutions only.

▶ Memory

Memory space with 1GB or larger required, larger than 2GB recommended.

▶ Hard disk drive

800MB or larger space required for software installation.

Drive with ATA100 / 5400rpm or faster is necessary for video storage.

- * Ultra SCSI160 or faster is necessary to playback two or more streams in SD uncompressed.
- * RAID 0 is recommended for HD resolution editing.

▶ Graphics

Direct3D 9.0c or later, PixelShader 3.0 or later

SD 128 MB or larger required, 256 MB or larger recommended

HD 256 MB or larger required, 512 MB or larger recommended

▶ Sound system

Support for WDM driver is required.

▶ DVD-ROM drive

Required for software installation.

DVD-R / RW or DVD+R / RW drive is required when creating DVD-Video with Canopus DVD Creator.

► OS

Windows XP SP2 or later (32bit)
Windows Vista SP1 or later (32bit)*
Windows Vista SP1 or later (64bit)*

* Windows Vista SP1 includes the following operation systems.

Windows Vista Home Basic
Windows Vista Home Premium
Windows Vista Ultimate
Windows Vista Business

EDIUS SP-SDI

► PC

CPU: Intel Pentium 4 2.4GHz or higher

* EDIUS complies with multi-processor and hyper threading technology.

* CPU supporting SSE2 instructions is necessary in operating EDIUS.

► PCI bus

The below PCI slots are required:

Main board : PCI Express x 1 (PCI Express Spec. Revision 1.0a)

Expansion board : 32bit / 33MHz PCI (PCI Spec. Revision 2.2)

► Memory

Memory space with 1GB or larger required, larger than 2GB recommended.

► Hard disk drive

800MB or larger space required for software installation.

Drive with ATA100 / 5400rpm or faster is necessary for video storage.

* Ultra 160 SCSI or faster is necessary to playback two or more streams in SD uncompressed.

* RAID0 is recommended for HD resolution editing.

► Graphics

Direct3D 9.0c or later, PixelShader 3.0 or later

SD 128 MB or larger required, 256 MB or larger recommended

HD 256 MB or larger required, 512 MB or larger recommended

► Sound system

Support for WDM driver is required.

► DVD-ROM drive

Required for software installation.

DVD-R / RW or DVD+R / RW drive is required when creating DVD-Video with Canopus DVD Creator.

► OS

Windows XP SP2 or later (32bit)
Windows Vista SP1 or later (32bit)*
Windows Vista SP1 or later (64bit)*

* Windows Vista SP1 includes the following operation systems.

Windows Vista Home Basic
Windows Vista Home Premium
Windows Vista Ultimate
Windows Vista Business

EDIUS SD / EDIUS HD

► PC

CPU: Intel Xeon 3.06GHz (3.2GHz recommended) Dual Processor

► Chipset

Intel E7505 Chipset based M/B
(with PCI 64bit / 66MHz or PCI-X one slot)
(Recommend M/B Intel SE7505VB2)

► Memory

2GB Main Memory

► Hard disk drive

System HDD and Data HDD should be separate drives.

* System HDD

System HDD: Windows XP Professional / EDIUS 5 software installed
One Ultra-ATA drive or Ultra 160 SCSI drive

* Data HDD

Data HDD: Digitized video data, EDIUS 5 project data.
HDD speed : Read 70MB/s Write 60MB/s required for 2 streams video and audio +
1title realtime playback(Test tool: Storm test)

(Ex)

Serial ATA RAID set

Two or four S-ATA drive and RAID0 set
Card Silicon image SII13112(4) chip based RAID Card

SCSI drive RAID set

More then 2 drive Ultra160 or 320 RAID0 set
Card: Adaptec AHA29160 SCSI controller

► Graphics

Nvidia GeForce 5700 or higher class video card
Direct3D 9.0c or later, PixelShader 3.0 or later
SD 128 MB or larger required, 256 MB or larger recommended
HD 256 MB or larger required, 512 MB or larger recommended
Nvidia Quadra series Not supported

► Sound system

Support for WDM driver is required.

► DVD-ROM drive

Required for software installation.

DVD-R / RW or DVD+R / RW drive is required when creating DVD-Video with Canopus DVD Creator.

► IEEE1394 card

TI or NEC chip based PCI IEEE1394 card

(For DV data capture)

► Recommend PCI slot

RX-E1 Card should not share with other PCI devices in the same PCI bridge, i.e. RX-E1 should go to one of the two PCI slots that do not share the PCI bridge with the Gigabit LAN, and the other PCI slot next to it should be left open.

The Intel SE7505VB2 motherboard has two PCI-X slots and one PCI64bit/66MHz slot. The PCI 64bit / 66MHz slot is not recommended because it shares the Gigabit controller.

- We recommend using Intel 7505 Chipset when you install RX-E1 board.
- When you have 2 or 3 route bridges, we recommend RX-E1 board should be installed in PCI64bit / 66MHz slot that does not have any other branch, or in PCI-X slot.

► BIOS setting

Enable Hyper Thread technology

► OS

Windows XP SP2 or later (32bit)

Windows Vista SP1 or later (32bit)*

Windows Vista SP1 or later (64bit)*

* Windows Vista SP1 includes the following operation systems.

Windows Vista Home Basic

Windows Vista Home Premium

Windows Vista Ultimate

Windows Vista Business

Limitations

Following are limitations to use EDIUS SP / SD / HD. Please also see the Readme text included in the installation DVD-ROM for the latest information.

Stand-by mode

Set stand-by mode for screen saver and monitor power supply to "OFF" when using this product.

Support

Customer Support

For questions regarding hardware setup and usage, please contact your local Thomson Grass Valley office, distributor or the store where you have purchased this product.

Web-site

Including EDIUS, the latest company information is announced at our web-site:
<http://desktop.grassvalley.com/>

The latest drivers utilities, product manuals, FAQs, etc. are also available at our web-site.

Online User Registration

You can register your EDIUS here.
<http://desktop.grassvalley.com/support/>

2

Hardware Setting

Setting the Main Board

Before board setting, be sure that your work area is dust-free and dry. Prepare a Philips screwdriver and an empty box for removed screws in advance.

Also, be sure that your PC is turned off and that the cables (including power) are removed from the PC.

* The product components vary depending on the product of your purchase.

POINT

See the instruction manual for your PC (motherboard) for the PCI (PCI Express) slot type.

The slot to set your EDIUS SP / SD / HD varies depending on the product of your purchase.

See the instruction manual for your PC (motherboard) for the PCI slot type.

<EDIUS SP>

- Set the main board (SHX-E1) in the normal PCI slot (64bit / 66MHz PCI).
- 32bit / 33MHz PCI can be used when you edit only SD format videos.

<EDIUS SP-SDI>

- Set the main board (SHX-E2) in the PCI Express slot (PCI EXpress x1).
- When PCI Express x1 is not available, either PCI Express x4 or x8 can be used.

<EDIUS HD/SD>

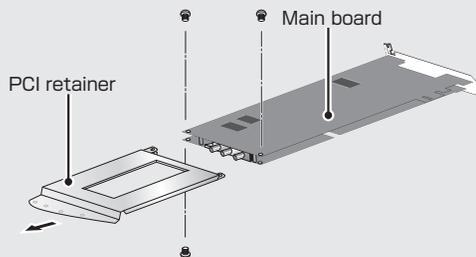
- Set the main board (RX-E1) in the normal PCI slot (64bit / 66MHz PCI).

POINT

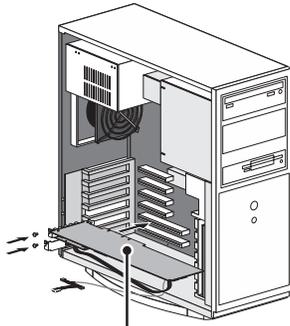
EDIUS SP-SDI main board (SHX-E2) has a PCI retainer equipped. If your PC has a slot which supports the full-sized PCI board, set the PCI retainer to it so that it can retain the EDIUS SP-SDI board. If the board does not seem to fit to a PCI Express slot of your PC because of the PCI retainer, or if your PC does not have a hook to set the PCI retainer, remove the PCI retainer from the main board without fail.

How to remove the PCI retainer

Remove three screws fixing PCI retainer with driver.



1 Tightly set the main board in PCI (PCI Express) slot.

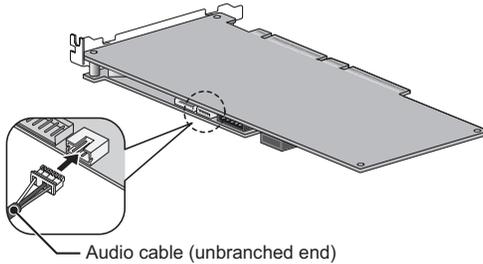


Main board

POINT • The main board should fit in the PCI (PCI Express) slot without using any force. If the board cannot be inserted fully, please do not force in or bend any parts of the board.

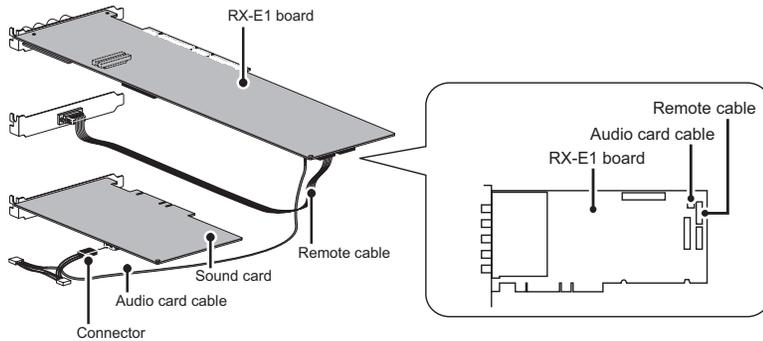
2 Set the audio cable (4pin-4pin) to the main board.

<EDIUS SP>



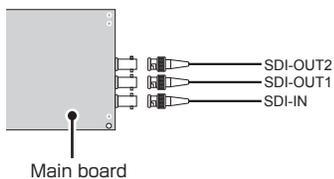
Audio cable (unbranched end)

<EDIUS HD / SD>



Setting the SDI bracket

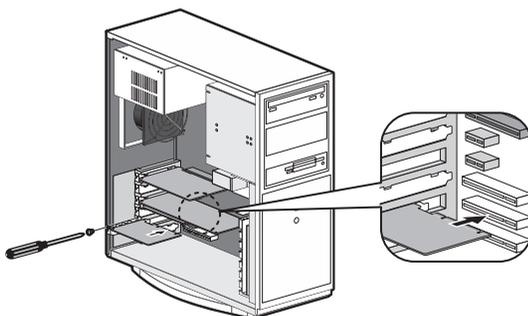
- 1 Connect main board and SDI bracket.



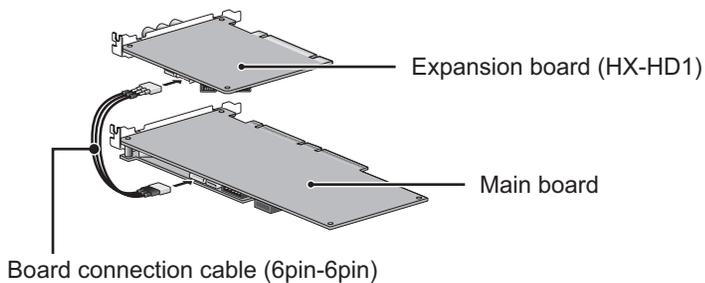
Setting the Sub Board

Expansion board (HX-HD1)

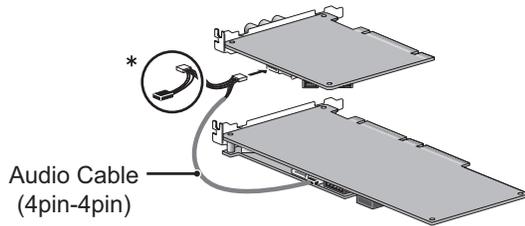
- 1 Tightly slide expansion board (HX-HD1) in PCI slot and fix the bracket temporarily.



- 2 Connect main and expansion boards with the board connection cable (6pin-6pin).



3 Connect main and expansion boards with the audio cable (4pin-4pin).

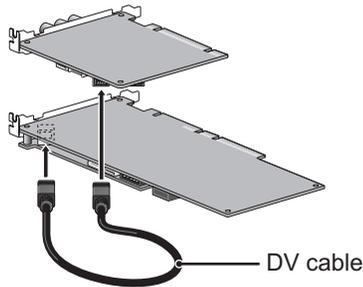


* Do not use these two connectors when connecting the expansion board.

POINT • For more details on audio output, see "Audio output" on page 15.

4 Connect main and expansion boards with the DV cable.

* You can use either of the two DV connectors on the expansion board.



Audio output

Specification of audio cable (4pin-4pin) is:

Red : Right channel (R)

White : Left channel (L)

Black : Ground (G)



Audio cable (4pin-4pin)

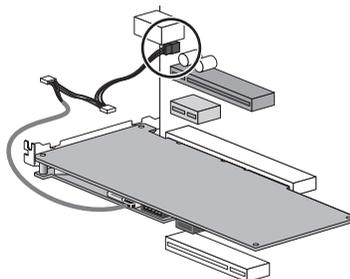
For audio output, use the attached audio cable (4pin-4pin) to connect sound device in output destination and the main board.

* Attached audio cable (4pin-4pin) branches off connectors with different type and wiring specification. Connect the side without branch to main board, and the side with branch to sound device in output destination. Use a connector that complies with the connector type and wiring specification for connecting destination. If you cannot use the attached audio cable (4pin-4pin), prepare another cable separately.

Output from sound device on board

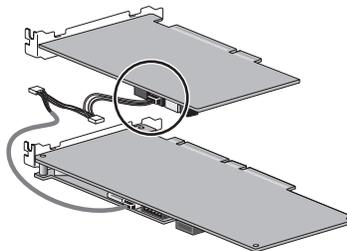
Connect the audio cable to the terminal of motherboard.

* Note that onboard sound device (sound device installed in motherboard: for details, see the instruction manual for your PC or motherboard) might interfere with the board installed in slot depending on connector position of the device.



Output from sound board

Connect the audio cable to the terminal of sound board.



Connecting to HDBX

► For EDIUS SD / HD only.

POINT

- See the following sections for the combination of EDIUS HD + HDBX-1000H and EDIUS SD + HDBX-1000S.
"Setting HDBX connecting terminal" P16
"Connecting HDBX" P21
- See the following sections for the combination of EDIUS SD + HDBX-1000S + HDBX-UG.
"Setting HDBX connecting terminal" P16
"Upgrading HDBX" P20
"Connecting HDBX" P21

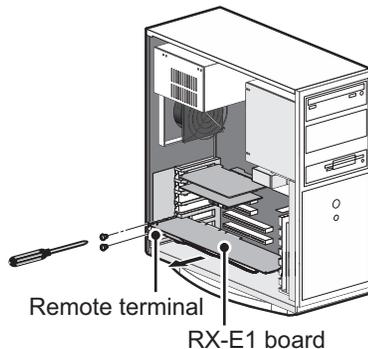
Setting HDBX connecting terminal

To connect HDBX to the RX-E1 board, you need to replace the SDI terminal of the RX-E1 board with the HDBX connecting terminal. This section explains how to remove the RX-E1 board already set in PC and how to replace the terminal. When the RX-E1 board is not set in PC, see from step 4.

Notes

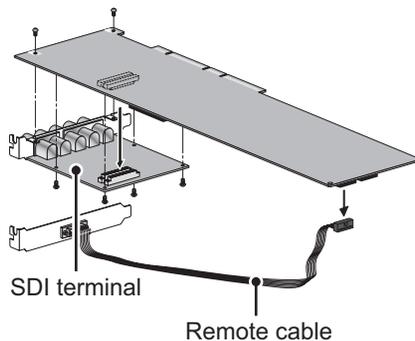
- Static electricity can damage electronic components. Take care not to touch connectors or cards directly. When installing or working on your PC, first touch a grounded metal surface. This will discharge any static electricity on your body.

- 1 Shut down Windows and unplug the power cable of your PC before installation.**
- 2 Remove the cover of your PC.**
- 3 Remove the RX-E1 board and the remote terminal.**



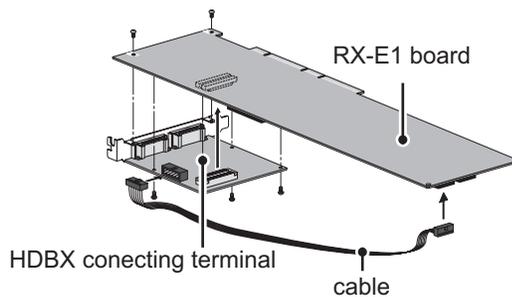
4 Remove the SDI terminal and the remote cable from the RX-E1 board.

The removed SDI terminal and remote terminal will not be used.
The SDI terminal and remote cable may not be attached to some products.

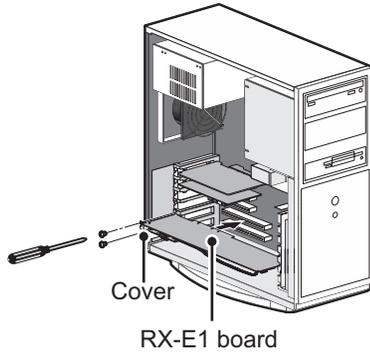


5 Set the HDBX connecting terminal and cable in the RX-E1 board.

Please pay attention to the cable direction when setting.



6 Set the RX-E1 board in PC. Set covers in empty slots.



Notes

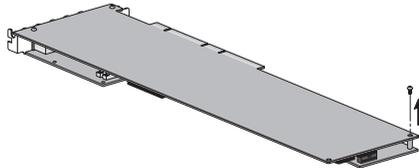
- Insert the RX-E1 board to the PCI 64bit / 66MHz slot. The optimal performance of the device will not be expected if you insert it to the different slot. The PCI 64bit / 66MHz slot is longer than the normal PCI slot.

7 Mount the PC cover.

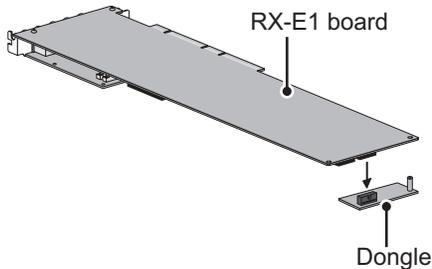
EDIUS HD + HDBX-1000H or HDUP-1000

Removing the Dongle (to the RX-E1 board)

1 Remove the screw.



2 Remove the Dongle (included in the HDUP-1000) from the RX-E1 board.

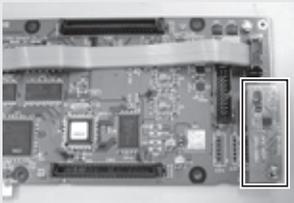


Attaching the Dongle (to the HD board)

- Notes**
- Attaching the HDBX-1000H to EDIUS-HD V26 Dongle



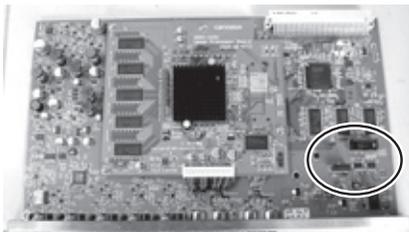
HDRX-E1 board with V26 Dongle



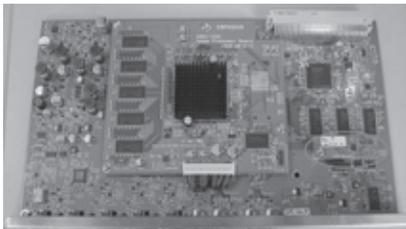
- 1 Attach the dongle (V26 Dongle) to the HD board and fasten it with the screw.**

* Please pay attention to the connector direction and insert it in the center.

Attaching location



After



Upgrading HDBX

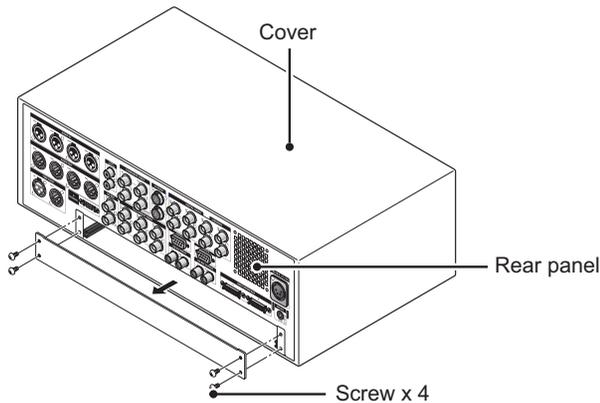
This section explains how to set HDBX-UG in HDBX-1000S to upgrade to HDBX-1000H.

Notes

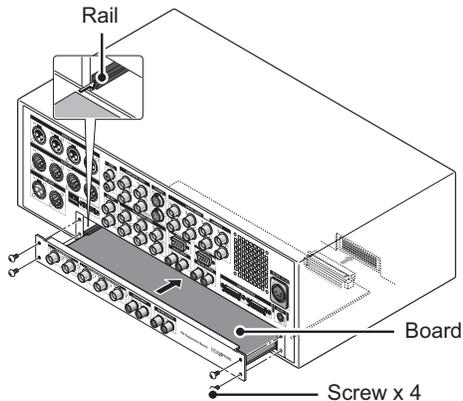
- Static electricity can damage electronic components. Take care not to touch connectors or cards directly. When installing or working on your PC, first touch a grounded metal surface. This will discharge any static electricity on your body.

1 Shut down PC.

2 Unscrew to remove the lower cover in the rear panel.



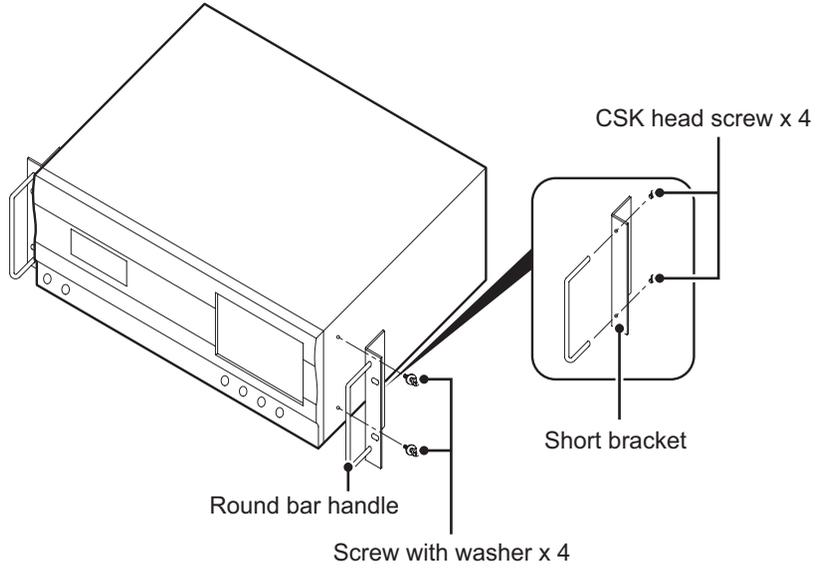
3 Insert the board along the rail and fasten the screws.



Connecting HDBX

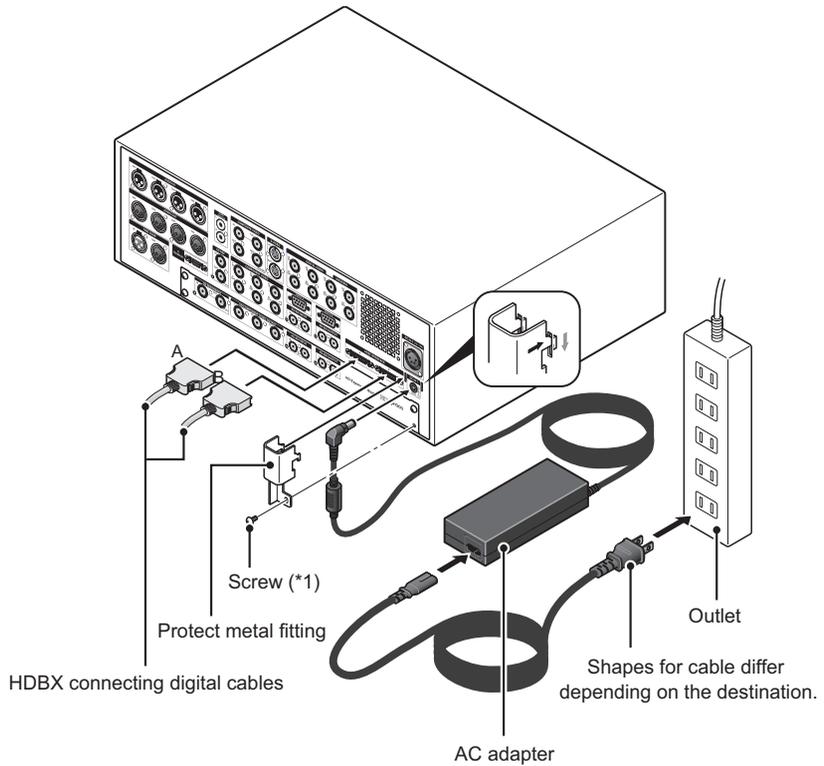
Notes • Do not turn on the power of workstation until the product connections are complete.

- 1 Set a round bar handle in each short bracket to attach them to both sides of the HDBX front panel.



2 Connect HDBX.

* HDBX-1000H (HDBX-1000S + HDBX-UG) is shown below.



3 Remove the screw (*1) shown in the figure.

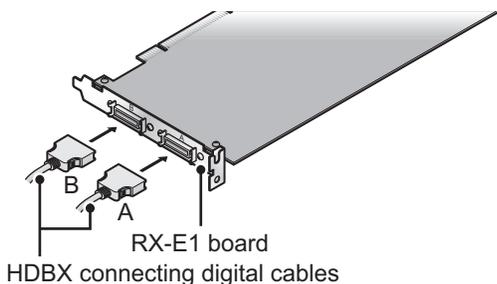
4 Connect AC adapter to HDBX.

5 Set the protect metal fitting and fasten it with the screw (*1).

6 Connect the HDBX connecting digital cables (A and B cables).

HDBX has A and B connectors. Check the types described in the cables (A or B) and connect them correctly.

- 7 Connect the HDBX connecting digital cables to the board on the workstation side.**



The board has A and B connectors. Check the types described in the cables (A or B) and connect them correctly.

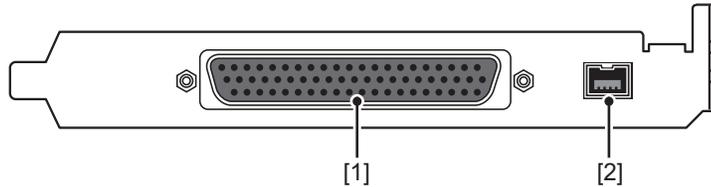
- 8 Connect other connectors to HDBX as necessary.**

- 9 Connect HDBX AC adapter to the outlet.**

At this point, the HDBX power is not turned on. When starting up EDIUS, the HDBX power is automatically turned on. It is turned off when shutting down (or rebooting) the workstation.

Part names

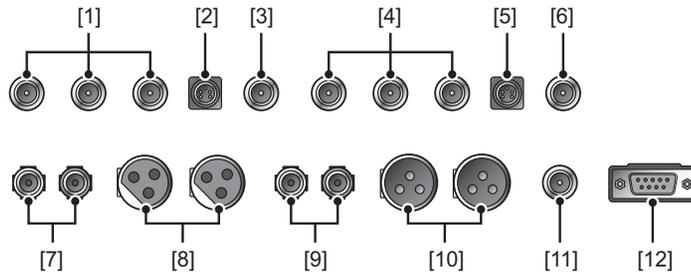
EDIUS SP Main board (SHX-E1 / E2) rear panel



[1] Special multi I/O cable terminal (D-Sub62pin)

[2] DV terminal (DV4pin)

Special multi I/O cable connection terminals



[1] Component input terminal (BNC)

[2] S video input terminal (S-Video)

[3] Composite input terminal (BNC)

[4] Component output terminal (BNC)

[5] S video output terminal (S-Video)

[6] Composite output terminal (BNC)

[7] Unbalanced audio 2ch Input terminal (RCA)

[8] Balanced audio 2ch Input terminal (XLR)

[9] Unbalanced audio 2ch Output terminal (RCA)

[10] Balanced audio 2ch Output terminal (XLR)

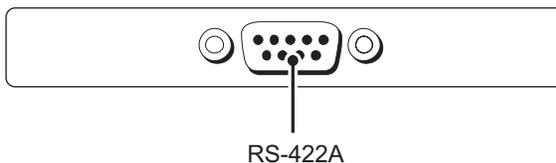
[11] Reference input terminal (BNC)

[12] Remote terminal (D-Sub9pin)

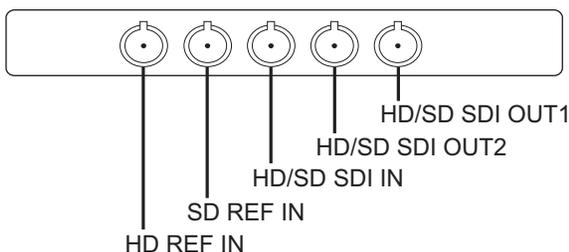
Notes

- When you connect the unbalance audio I/O terminal (RCA) for special multi I/O cable, be sure to firmly insert the terminal to the back (until click sound is heard).

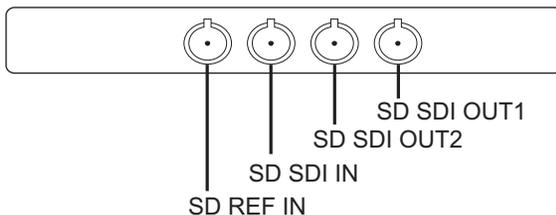
EDIUS HD / SD (RX-E1) Rear panel



► EDIUS HD



► EDIUS SD



Specifications for REF input terminal

Output device Input terminal	RX-E1 SD NTSC / PAL	RX-E1 HD 60Hz / 50Hz	RX-E1 HD 24Hz *SD
SD REF IN input (Black burst input)	○	○	Not supported
HD REF IN input (Tri-level sync input)		○	○

* Only the tri-level sync (24PsF / 23.98PsF) supports the REF for 24PsF / 23.98PsF, and the lock is not performed by the black burst.

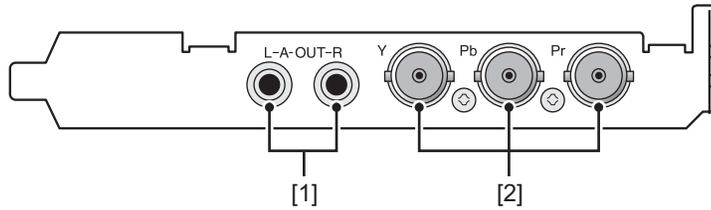
HD REF IN is only available on EDIUS HD.

Tri-level sync generation for HD (24PsF / 23.98PsF) is available by using HDSC1 (Firm Ver.1.01.000).

RX-E1HD 60Hz / 50Hz = 1080 59.94i / 50i / 29.97PsF / 25PsF

RX-E1HD 24Hz = 1080 24PsF / 23.98PsF

Expansion board (HX-HD1) rear panel

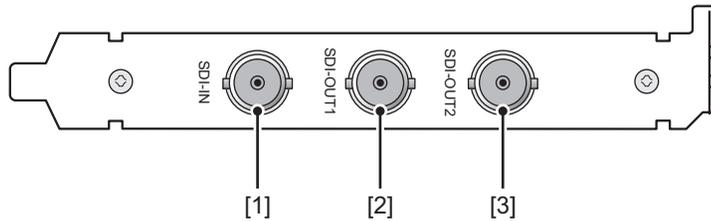


[1] Unbalanced audio 2ch output terminal (RCA)

* Can simultaneously be used with unbalanced audio output of main board.

[2] HD / SD component output terminal (BNC)

SDI bracket rear panel



[1] SDI-IN

SDI input terminal

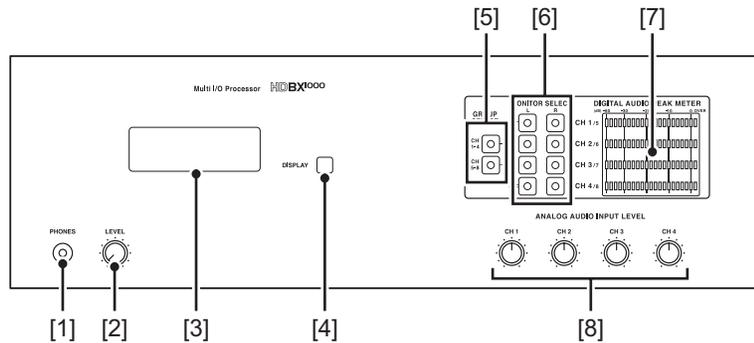
[2] SDI-OUT1

SDI output terminal

[3] SDI-OUT2

SDI output terminal

HDBX front panel



[1] Headphone terminal

[2] Adjusting volume for headphone level

[3] LCD indicator

[4] LCD switching button

[5] Audio monitor output selecting button (LED integrated)

This button switches CH1 to CH4 and CH5 to CH8.

* Press it twice to become mute, and LED blinks.

[6] Audio monitor output mapping button (LED integrated)

Use this button to select the channel you can monitor in the [1] headphone terminal and the rear panel [5] audio monitor.

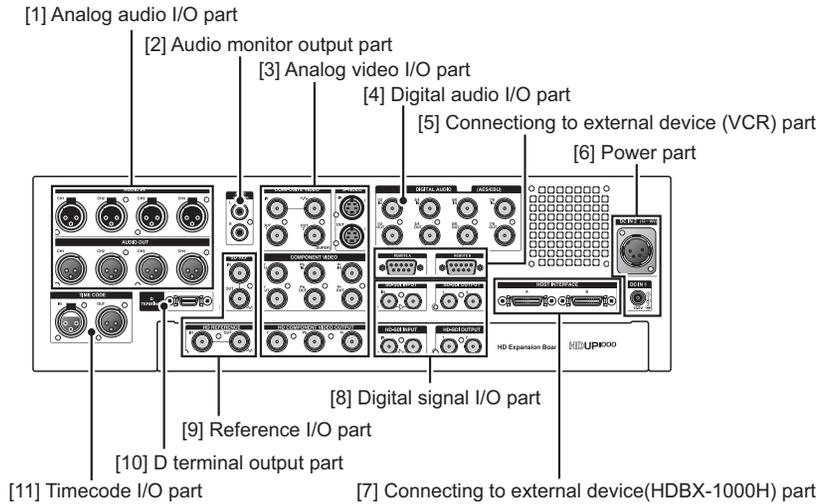
* To select all channels, press other buttons while pressing and holding any of the buttons. For example, if you press CH2, 3, 4 while pressing and holding CH1, LED for CH1 to CH4 will blink.

[7] Audio level meter

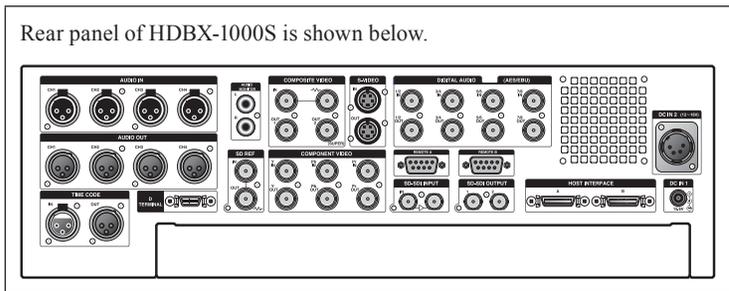
[8] Adjusting volumes for input level (CH1 to CH4)

Adjust the input level for the analog balance audio.

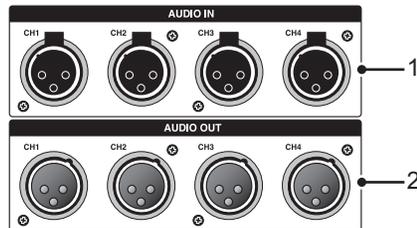
HDBX rear panel



Rear panel of HDBX-1000S is shown below.

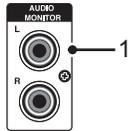


[1] Analog audio I/O part



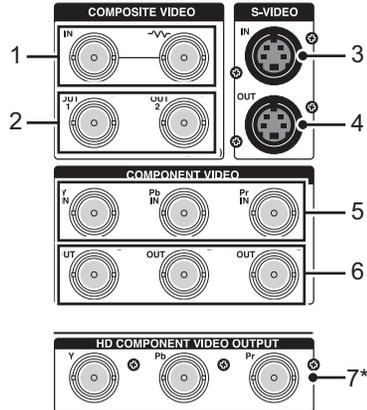
- 1 AUDIO IN (XLR x 4)
Balanced audio input (CH1 / CH2 / CH3 / CH4).
- 2 AUDIO OUT (XLR x 4)
Balanced audio output (CH1 / CH2 / CH3 / CH4).

[2] Audio monitor output part



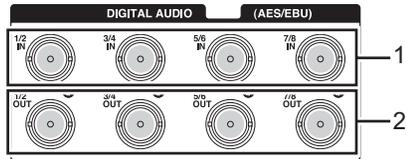
- 1 AUDIO MONITOR (L/R) (RCA x 2)
Unbalanced audio monitor output (stereo 1 system).

[3] Analog video I/O part



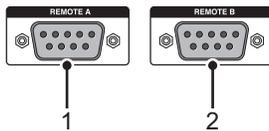
- 1 COMPOSITE VIDEO IN (BNC x 2)
Composite input (left) and loop through (right).
- 2 COMPOSITE VIDEO OUT (BNC x 2)
Composite output (1 / 2).
- 3 S-VIDEO IN (S terminal)
S-Video input terminals.
- 4 S-VIDEO OUT (S terminal)
S-Video output terminals.
- 5 COMPONENT VIDEO IN (Y / Pb / Pr) (BNC x 3)
Component video input.
- 6 COMPONENT VIDEO OUT (Y / Pb / Pr) (BNC x 3)
Component video output.
- 7* HD COMPONENT VIDEO OUTPUT (Y / Pb / Pr) (BNC x 3)
HD component video output.

[4] Digital audio I/O part



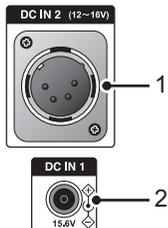
- 1 DIGITAL AUDIO (AES/EBU) (1/2 IN / 3/4 IN / 5/6 IN / 7/8 IN) (BNC x 4)
AES/EBU audio input.
- 2 DIGITAL AUDIO(AES/EBU)(1/2 OUT / 3/4 OUT / 5/6 OUT / 7/8 OUT) (BNC x 4)
AES/EBU audio output.

[5] Connecting to external device (VCR) part



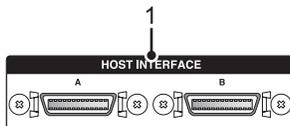
- 1 REMOTE A (D-SUB9Pin)
Used for remote connection A.
- 2 REMOTE B (D-SUB9Pin)
Used for remote connection B.

[6] Power part

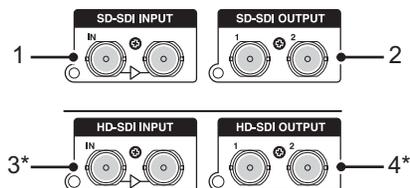


- 1 DC IN 2 (12V to 16V)
Used for power unit of business-use VTR and camcorder. Not normally used.
- 2 DC IN 1 (15.6V)
Used for connecting AC adapter (attached). This is normally used.

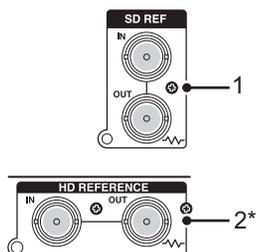
[7] Connecting to external device (HDBX-1000H) part



- 1 HOST INTERFACE (HDBX connecting digital terminal A / B)
Used for connecting to workstation with the attached HDBX connecting digital cables.

[8] Digital signal I/O part

- 1 SD-SDI INPUT IN(BNC x 2)
SD-SDI input (left) and active through (right).
- 2 SD-SDI OUTPUT(1/2)(BNC x 2)
SD-SDI output (1/2).
- 3* HD-SDI INPUT IN(BNC x 2)
HD-SDI input (left) and active through (right).
- 4* HD-SDI OUTPUT(1/2) (BNC x 2)
HD-SDI output (1/2).

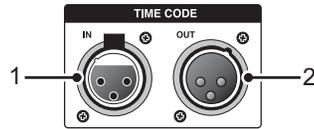
[9] Reference I/O part

- 1 SD REF(IN/OUT)
REF input (upper) and loop through/SG output (lower).
- 2* HD REFERENCE(IN/OUT)
REF input (left) and loop through/SG output (right).

[10] D terminal output part

- 1 D TERMINAL (D terminal)
Used for connecting to general-use video monitors with D terminal.

[11] Timecode I/O part



1 TIME CODE IN (XLR)

LTC input.

2 TIME CODE OUT (XLR)

LTC output.

* In case of HDBX-1000H or HDBX-1000S + HDBX-UG

Specifications for REF input terminal

Output device Input terminal	RX-E1 SD NTSC / PAL	RX-E1 HD 60Hz / 50Hz	RX-E1 HD 24Hz *SD
SD REF IN input (Black burst input)	○	○	Not supported
HD REF IN input (Tri-level sync input)		○	○

Specifications for REF input terminal (with the internal SG sync set)

Output device Input terminal	RX-E1 SD NTSC / PAL	RX-E1 HD 60Hz / 50Hz	RX-E1 HD 24Hz *SD
SD REF Out (Black burst output)	○	○	Not supported
HD REF Out (Tri-level sync output)		○	Not supported

* Only the tri-level sync (24PsF / 23.98PsF) supports the REF for 24PsF / 23.98PsF, and the lock is not performed by the black burst.

HD REF IN is only available on EDIUS HD.

Tri-level sync generation for HD (24PsF / 23.98PsF) is available by using HDSC1 (Firm Ver.1.01.000).

RX-E1HD 60Hz / 50Hz = 1080 59.94i / 50i / 29.97PsF / 25PsF

RX-E1HD 24Hz = 1080 24PsF / 23.98PsF

EDIUS SP Breakout Box

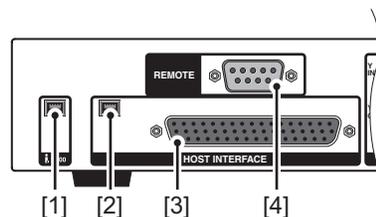
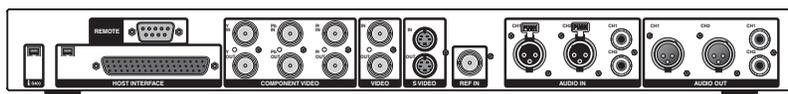
Front panel



[1] DV rear / front toggle switch

[2] DV connection terminal (front)

Rear panel



[1] DV connection terminal (rear)

[2] DV connection terminal (for connection to EDIUS SP for HDV main board)

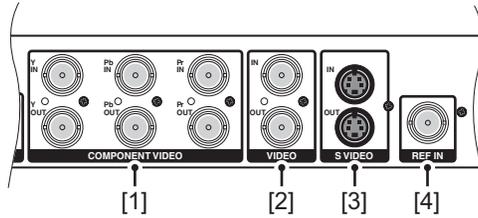
[3] HOST INTERFACE

Connect to EDIUS SP for HDV main board using the included connection cable.

Notes Make sure to switch off the power of your PC before connecting the Breakout Box.

[4] REMOTE (D-Sub9pin)

Remote terminal.



[1] COMPONENT VIDEO (BNC)

Component video terminals.

Upper three terminals (Y / Pb / Pr) are used for input; lower three terminals (Y / Pb / Pr) for output.

[2] VIDEO (BNC)

Composite video terminals.

Upper terminal is used input; lower for output.

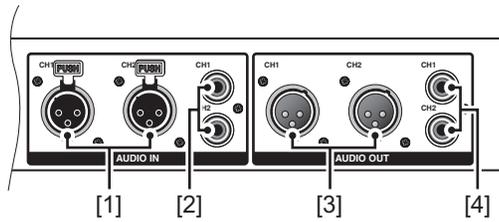
[3] S VIDEO (MiniDin4pin)

S-Video connection terminals.

Upper terminal is used for input; lower for output.

[4] REF IN (BNC)

Reference input terminal.



[1] AUDIO IN (XLR)

Balanced audio 2ch input terminal.

Left terminal in the rear panel is for CH1; right is for CH2.

[2] AUDIO IN (RCA)

Unbalanced audio 2ch input terminal.

Upper terminal is used for CH1; lower for CH2

[3] AUDIO OUT (XLR)

Balanced audio 2ch output terminal.

Left terminal in the rear panel is for CH1; right is for CH2.

[4] AUDIO OUT (RCA)

Unbalanced audio 2ch output terminal.

Upper terminal is used for CH1; lower for CH2.

3

Software Installation / Uninstallation

Installing EDIUS

This section explains how to install EDIUS both on Windows Vista and Windows XP.

Notes

- When you start up PC after setting up the board, "Found New Hardware"("Found New Hardware Wizard" in Windows XP) appears. Select [Cancel] here.
- Before starting installation, close all the other applications that may be running in the task tray.
- Installation requires the account authorized for the administrator (such as PC administrator).
- In order to install, you must log in as a user with administrator privileges.
- When you use the Canopus Video Out Plug-in, install the product which you want to use the plug-in for in advance.
- Application to be installed may differ depending on model.

1 Set the product DVD into the DVD-ROM drive.

If the application does not start automatically, open the product DVD, and double-click "SetupManagerForEDIUS.exe".

2 Click [Install].

"InstallShield Wizard" dialog box appears.

POINT

- When the other version of EDIUS has been installed, uninstall it along to the screen instruction and restart PC.

3 Click [Next].

Windows Vista

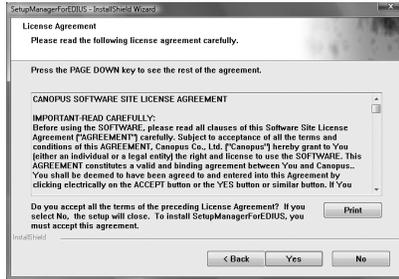


Windows XP



4 Click [Yes] to agree the license agreement.

Windows Vista



Windows XP



POINT • If you do not accept the terms, click [No]. If you do not agree to the license agreement, you cannot use this product.

Notes • Be sure of reading through terms and conditions by scrolling whole description.

5 Specify the user name, company name, and serial number, and click [Next].

Windows Vista

Windows XP

POINT • Enter the serial number of 6 to 16 digits, which is pasted on the product package of the EDIUS 5 product DVD.
• Please note that the serial number cannot be reissued. Keep the number securely.

6 Specify the folder to install EDIUS, and click [Next].

Click [Browse], and select the folder, to install in another folder.

Windows Vista



Windows XP



7 Check on the component to install, and click [Next].

[HX-E1 / E2] must be checked for EDIUS SP / SP-SDI.

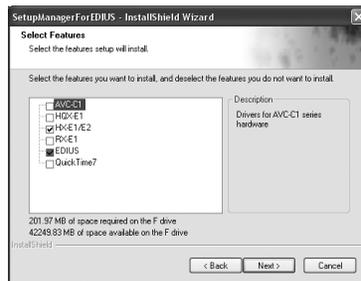
[RX-E1] must be checked for EDIUS HD / SD.

When AVC-Intra (optional) is mounted, check "AVC-C1".

Windows Vista

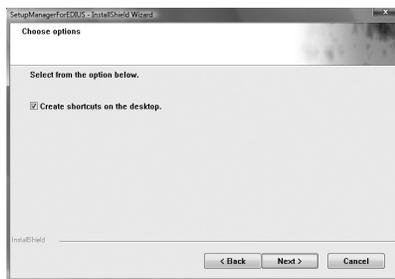


Windows XP

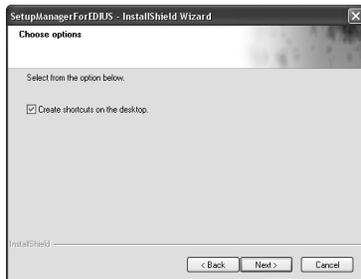


8 Check "Create shortcuts on the desktop." and click [Next].

Windows Vista



Windows XP



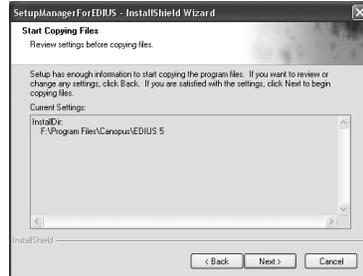
9 Check the settings and click [Next].

Installation of EDIUS starts up.

Windows Vista



Windows XP



POINT

- To use GPUfx transition, the following conditions are required.
 - Direct3D 9.0c or later, PixelShader 3.0 or later
 - SD 128 MB or larger required, 256 MB or larger recommended
 - HD 256 MB or larger required, 512 MB or larger recommended

10 Click [Install]. (Click [Continue Anyway] in Windows XP.)

Windows Vista



Windows XP



This screenshot is of EDIUS SP.

Instead of [HX-E1], [HX-E2] is displayed for EDIUS SP-SDI.

Instead of [HX-E1], [RX-E1] is displayed for EDIUS HD / SD.

[AVC-C1] is displayed for AVC-Intra.

11 Select "Yes, I want to restart my computer now." and click [Finish].

Windows Vista



Windows XP



PC restarts. Installation of EDIUS is completed.

POINT

- USB key in the package stores the license for using EDIUS.
- Attach the USB key to the USB port of PC for using EDIUS. If the detection is completed properly, the message appears to notify that new hardware is found.

Installing Attached Application Software

Install attached application software if necessary.

This section explains how to install EDIUS both on Windows Vista and Windows XP.

- Notes**
- TitleMotion Pro may not be included in the package depending on the product of your purchase.

Installing TitleMotion Pro

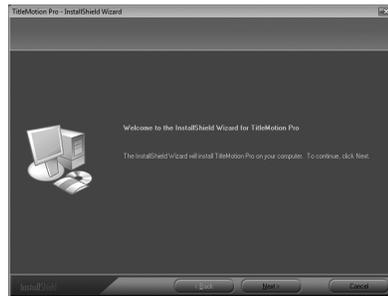
TitleMotion Pro is the application software specific for the title creation. A variety of expression is available such as 3D text or animation. It implements 3 functions to create a title by switching each function according to the operation purpose.

1 Set TitleMotion Pro Installation CD into the CD-ROM drive.

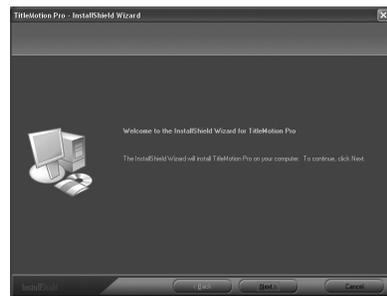
"InstallShield Wizard" dialog box appears.

2 Click [Next].

Windows Vista



Windows XP



Installation of TitleMotion Pro starts up.

3 Select "Yes, I want to restart my computer now." and click [Finish].

Windows Vista



Windows XP



PC restarts. Installation of TitleMotion Pro is completed.

Tools Folder contents

The following contents are provided in Tools Folder in the product DVD.

AdobeReader	Adobe Reader is included. Use it to view the PDF manuals provided. If Adobe Reader has not been installed on your PC, execute the setup file and install it by following the on-screen instruction.
AVCHD converter	This tool converts AVCHD video files (such as m2ts) into AVI files for Canopus HQ Codec. By using AVCHD converter, you can convert data into AVI files for Canopus HQ Codec, and the response in edit operation improves. To install the tool, double-click "setup.exe" and follow the on-screen instructions. For details on the installation and operation, see the PDF manual in Tools Folder.
DVCapture	DV capture tool that supports simultaneous capturing with 3 cameras, with maximum 2 cameras connecting to IEEE1394 ports (OHCI), and one connecting to EDIUS SP series, EDIUS NX Series. The function is also available to detect the border of the DV timecode and divide the file automatically. Double-click "CDVCap.exe" and follow the screen instruction to install.

EdiusLM	License Transfer Tool is included. Without attaching the USB key, you can use the license of EDIUS or other optional products. <i>License Transfer ►P52</i>
Keyboard Shortcut	Included files are the default shortcut key file, "Avid shortcut for EDIUS.dat", "EDIUS Pro3 shortcut.dat", "FinalCutPro shortcut for EDIUS.dat", and "FinalCutPro shortcut for EDIUS (104 Keys - English) .dat". Refer to Reference Manual for details to read the file.
VideoOut Plug-ins	Canopus VideoOut Plug-ins is included. It is plug-in software for 'NewTek LightWave 3D', 'Autodesk Maya', 'Autodesk 3ds Max', 'Autodesk Combustion', 'TVPaint Mirage', 'Adobe Photoshop' and 'Adobe After Effects'. This outputs videos or images displayed in each applications from video output on appropriate product to TV monitor. For details on the installation and operation, see the PDF manual in "Manual" → "ENG" folder in EDIUS 5 Installation DVD.

Installing DV Capture

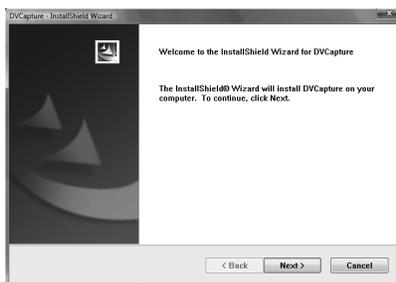
This section explains how to install EDIUS both on Windows Vista and Windows XP.

- 1** Set the product DVD into the DVD-ROM drive.
- 2** Open "Tools" folder, "DVCapture" folder, and double-click "CDVCap.exe".

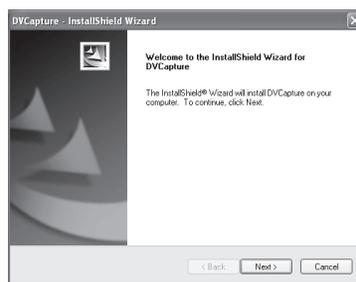
"InstallShield Wizard" dialog box appears.

- 3** Click [Next].

Windows Vista



Windows XP

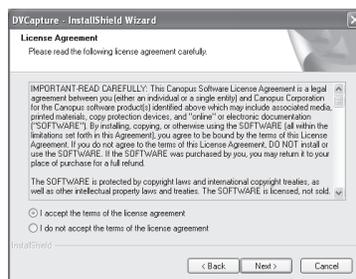


- 4** If you agree the license agreement, select "I accept the terms of the license agreement" and click [Next].

Windows Vista



Windows XP



Notes • Be sure to read through terms and conditions by scrolling whole description.

5 Specify file user name and company name and click [Next].

Windows Vista



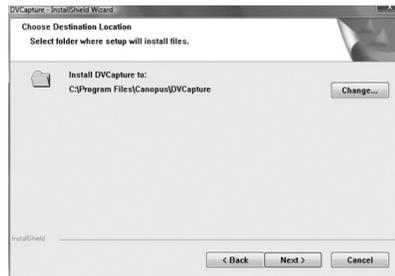
Windows XP



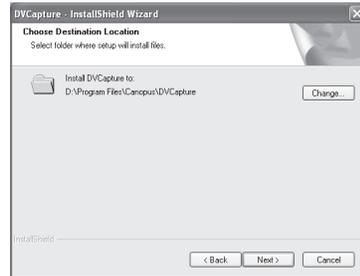
6 Specify the folder to install DV Capture, and click [Next].

Click [Change...] and select the folder, to install in another folder.

Windows Vista

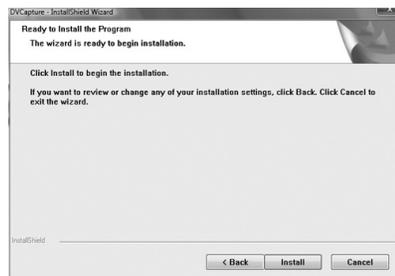


Windows XP

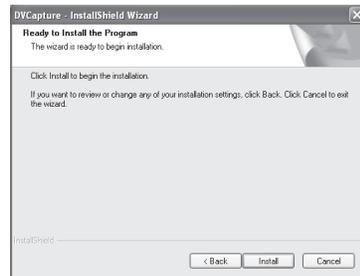


7 Click [Install].

Windows Vista



Windows XP

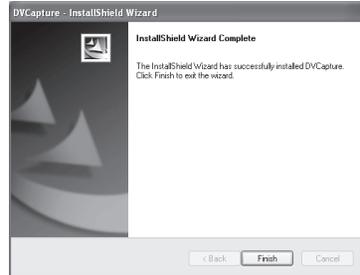


8 Click [Finish].

Windows Vista



Windows XP



Confirmation after installation

Confirming resource (in Windows Vista)

Confirm whether driver has been normally installed after restarting when driver and application software installation is finished.

- 1** Proceed to [System and Maintenance] from [Control Panel] of [Start] menu.
Or right click [Computer] of [Start] menu and select [Properties].
- 2** Click [Device Manager].
- 3** Double click [Sound, video and game controllers].



* This screenshot is of EDIUS SP-SDI.

4 Confirm the device names.

- [HX-E1] (EDIUS SP)
- [HX-E2] (EDIUS SP-SDI)
- [RX-E1] (EDIUS HD / SD)
- [AVC-C1] (AVC-Intra)

If you find ! or X mark at the top of device name, that means you failed installing HX-E1 / E2, RX-E1, AVC-C1 driver.

Try installation again, check rival resource, or change board insertion position.

5 Close [Device Manager].

Checking the driver for the main board now finishes.

6 Start up EDIUS or ADVC Mode Controller and exit once.

POINT • For more information on how to start up EDIUS, see "Starting EDIUS" "EDIUS User Guide / Reference Manual".

POINT **If HX-E1 (Expansion board) is mounted, follow the following steps and check whether the driver is installed properly.**

- 1 Referring to steps 1 and 2, open [Device Manager].
- 2 Double click the following items to check that the driver is installed.
 - [IEEE 1394 Bus host controllers]
Device-[NEC OHCI Compliant IEEE 1394 Host Controller]
- 3 Close [Device Manager].

When resources compete

EDIUS will not operate normally if your and other devices compete or share PC resources. Try following solution.

- Remove other device that share interrupting or change IRQ of other device.
- Change resource setting with BIOS of PC or motherboard. See instruction manual of PC or motherboard since BIOS setting method varies by manufacturer.

POINT • IRQ set method varies depending on PC or motherboard manufacturer. Some types assign arbitrary IRQ to each PCI Express slot with BIOS, other types program special IRQ in advance.

Confirming resource (in Windows XP)

Confirm whether driver has been normally installed after restarting when driver and application software installation is finished.

- 1 Proceed to [Performance and maintenance] from [Control panel] of [start] menu and select [See basic information about your computer].
Or right click [My Computer] of [start] menu and select [Properties].**

2 Select [Hardware] tab and click [Device Manager].



3 Double click [Sound, video and game controllers].



* This screenshot is of EDIUS SP-SDI.

4 Confirm the device names.

- [HX-E1] (EDIUS SP)
- [HX-E2] (EDIUS SP-SDI)
- [RX-E1] (EDIUS HD / SD)
- [AVC-C1] (AVC-Intra)

If you find ! or X mark at the top of device name, that means you failed installing HX-E1 / E2, RX-E1, AVC-C1 driver.

Try installation again, check rival resource, or change board insertion position.

5 Close [Device Manager].

Checking the driver for the main board now finishes.

6 Start up EDIUS or ADVC Mode Controller and exit once.

POINT • For more information on how to start up EDIUS, see "Starting EDIUS" "EDIUS User Guide / Reference Manual".

POINT **If HX-E1 (Expansion board) is mounted, follow the following steps and check whether the driver is installed properly.**

- 1 Referring to steps 1 and 2, open [Device Manager].
- 2 Double click the following items to check that the driver is installed.
 - [IEEE 1394 Bus host controllers]
 - Device-[NEC OHCI Compliant IEEE 1394 Host Controller]
 - [Network adapters]
 - Driver-[1394 Net Adapter]
- * #2 of or [1394 Net Adapter #2] may appear when connecting and disconnecting boards several time. Display description varies depending on your environment.
- 3 Close [Device Manager].

When resources compete

EDIUS will not operate normally if your and other devices compete or share PC resources. Try following solution.

- Remove other device that share interrupting or change IRQ of other device.
- Change resource setting with BIOS of PC or motherboard. See instruction manual of PC or motherboard since BIOS setting method varies by manufacturer.

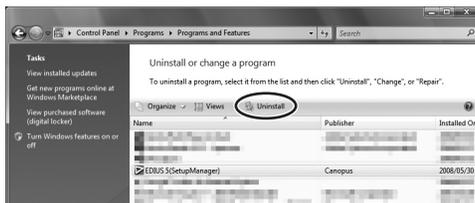
POINT • IRQ set method varies depending on PC or motherboard manufacturer. Some types assign arbitrary IRQ to each PCI Express slot with BIOS, other types program special IRQ in advance.

Uninstallation

Uninstalling driver and application software from Windows Vista

- Notes**
- Before starting uninstallation, close all the other applications that may be running in the task tray.
 - In order to uninstall, you must log in as a user with administrator privileges.

- 1 Click "Start" menu and click "Control Panel".
- 2 Click "Uninstall a program".
- 3 Select "EDIUS 5 (SetupManager)" and click [Uninstall].



- 4 Click [Continue] to continue uninstallation.
- 5 Check on the component to uninstall and click [Next].



Uninstallation starts.

- 6 Click [Finish].
- PC will be rebooted. Uninstallation is now completed.

Alternative

- Click "Start" menu and click "All Programs". Click and open "Canopus" folder, and click "Uninstall" in "EDIUS 5" folder. Then follow the procedure in Step4 to 6.

Uninstalling driver and application software from Windows XP

- Notes**
- Before starting uninstallation, close all the other applications that may be running in the task tray.
 - In order to uninstall, you must log in as a user with administrator privileges.

- 1 Click "Start" menu, and click "Control Panel".
- 2 Double-click "Add or Remove Programs".
- 3 Select "EDIUS 5 (SetupManager)", and click [Remove].
- 4 Check on the component to uninstall, and click [Next].



Uninstallation starts.

5 Click [Finish].

The computer will reboot. Uninstallation is completed.

Alternative

- Click "Start" menu, then click "All programs" → "Canopus" → "EDIUS 5" → "Uninstall". Check the items to uninstall and click [Next].

4 License Transfer

Transferring license

When you are using EDIUS on a desktop PC where the numbers of USB ports are limited, or when you do not want to carry USB key, consider transferring EDIUS licenses. Make sure to read and understand the following notes before transferring licenses.

The procedure in Windows Vista is described here. The operation is same in Windows XP.

Notes

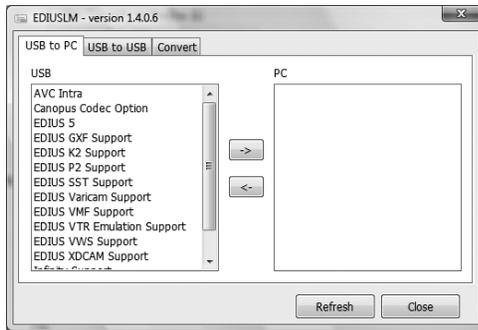
- The license transfer tool must be executed on a PC where EDIUS has been installed.
- When you close the license transfer tool, make sure that the transferring procedures of license have been completed. If you close the tool while processing, your EDIUS license may be lost.
- Please note that the USB key cannot be reissued no matter what the circumstances (even when the license information exists on a PC). Keep the USB key securely.
- License can only be transferred between PC and USB key, or between USB and USB. It cannot be transferred from a PC to another PC.
- If you have several licenses of the same product, they cannot be integrated in one USB key.
- If you have transferred the license to a PC, there is a possibility that the license may be lost because of the malfunction of a hard disk drive or any other reasons. We recommend that you should not transfer the license to a PC unless there is a compelling reason.
- Note that when you have transferred the license to a PC, the registered license data may become invalid if you change the hardware (CPU, Memory, Motherboard, HDD, NIC, etc) configurations.

Using License Transfer tool

- 1 Set the USB key that contains the licenses you want to transfer to a USB port of a PC.**
- 2 Set the product DVD into the DVD-ROM drive.**

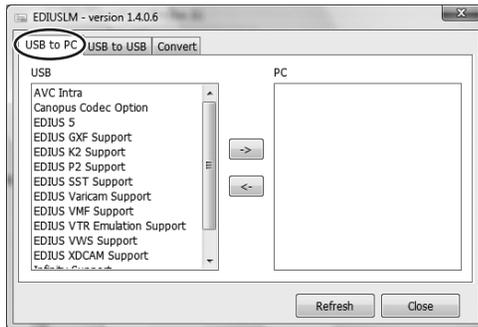
3 Open "Tools", "EdiusLM" and double-click "EdiusLM.exe".

[EDIUSLM] dialog appears.



Transfer between a USB key and a local disk of a PC

1 Click the "USB to PC" tab on the "EDIUSLM" dialog.



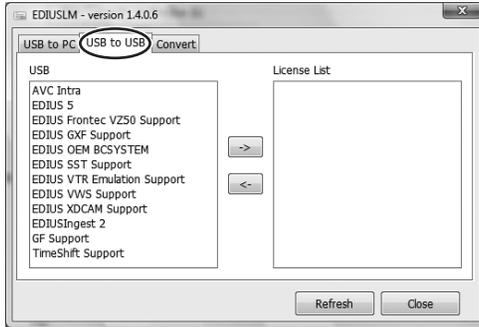
2 Select the license to transfer and click [->].

To transfer from a PC to a USB key, click [-<].

3 Wait until the license is transferred, and click [Close].

Transfer between a USB key and another USB key

1 Click the "USB to USB" tab on the "EDIUSLM" dialog.



2 Select the license to transfer and click [->].

3 Remove the USB key, set the USB key to transfer the license to, and then click [Refresh].

Notes

- Make sure to remove the USB key where the license had been stored, before setting the destination USB key.
- When you change the USB keys, do not fail to click [Refresh] in order to update the License list.

4 Select the license and click [->] to transfer it to the new USB key.

5 Wait until the license is transferred, and click [Close].

Notes

- Do not remove the USB key when the licenses are being transferred.
- To transfer licenses, make sure to replace USB keys step by step.

5

Hardware Specifications

Main Board

EDIUS SP (SHX-E1)

PCI standard	PCI Spec. Revision 2.1 For HD / SD edit: 64bit / 66MHz PCI For SD edit: 32bit / 33MHz PCI	
Digital video	DV terminal (DV 4pin) x 1 * OHCI board or Expansion board is required for HDV I/O	
Analog video	Input *1	Composite (BNC) x 1 S-Video (Mini DIN 4pin) x 1 Component (BNC) x 3
	Output *1	Composite (BNC) x 1 S-Video (Mini DIN 4pin) x 1 Component (BNC) x 3
Analog audio	Input *1	Unbalanced audio 2ch (RCA) pin x 2 Balanced audio 2ch (XLR) x2
	Output *1	Unbalanced audio 2ch (RCA) pin x 2 Balanced audio 2ch (XLR) x2
Board size	212mm (Width 107mm)	
Max consumption current	32bit PCI (for SD edit) +5V: 2.2A, +12V: 440mA, -12V: 160mA 64bit PCI (for HD edit) +5V: 2.4A, +12V: 440mA, -12V: 160mA	
Weight	About 250g	

*1 Connected from main board connector (D-Sub62 x 1) with special multi I/O cable.

EDIUS SP-SDI (SHX-E2)

PCI standard	PCI Express x 1 (PCI Express Spec. Revision 1.0a)	
Digital video	DV terminal (DV 4pin) x 1	
Analog video	Input *1	Composite (BNC) x 1 S-Video (Mini DIN 4pin) x 1 Component (BNC) x 3
	Output *1	Composite (BNC) x 1 S-Video (Mini DIN 4pin) x 1 Component (BNC) x 3
SD-SDI *2	Input	SMPTE259M-C (BNC x 1)
	Output	SMPTE259M-C (BNC x 2)
Analog audio	Input *1	Unbalanced audio 2ch (RCA) pin x 2 Balanced audio 2ch (XLR) x2
	Output *1	Unbalanced audio 2ch (RCA) pin x 2 Balanced audio 2ch (XLR) x2
Embedded audio *2	Input / Output	SMPTE272M-A (4ch Input/Output is supported)
Audio monitor *3	Output	Unbalanced audio 2ch (4pin connector x 1 for Sound Card Input)
DVITC *2	Input	Not supported
	Output	Superposed on SD-SDI output
Reference Input*1	BNC x 1	
REMOTE *1	RS422 (D-Sub 9pin x 1)	
Board size	212mm (Width 111mm)	
Max consumption current	+3.3V : 2.3A +12V : 1.4A	
Weight	About 310g (main board) About 380g (main board + PCI retainer) About 500g (main board + PCI retainer + SDI bracket)	

*1 Connected from main board connector (D-Sub62 x 1) with special multi I/O cable.

*2 Connected to the main board via the SDI bracket.

*3 MonitorOut whose channel can be configured. Output is in 1.0 [Vrms] and is exclusive for Sound Card input.

Use the expansion board to monitor Ch1/2, while using Audio Monitor to monitor Ch3/4.

EDIUS SD (RX-E1)

Video Format	Input / Output Signal Format	SD-Mode	SDI 10bit (SMPTE 259M-C Compatible)
	Supported Formats	SD-Mode	720 x 486 (NTSC) or 720 x 576 (PAL)
	Internal Signal Processing Format		4:2:2 input / Output 10bit (Internal processing 8bit)
Video	Input Terminal	SD-SDI	BNC x 1
		SD Ref	BNC x 1 (Black Burst Signal, 75 ohm)
	Output Terminal	SD-SDI	BNC x 2
Audio	Input Terminal	Embedded Audio	BNC x 1 (SMPTE 299M / 272M-A Compatible)
	Output Terminal	Embedded Audio	BNC x 1 (SMPTE 299M / 272M-A Compatible)
		Analog Monitor	LINE OUT x 1 (Output from a Sound Card)
Audio Format	Embedded Audio		SMPTE 299M / 272M-A Compatible
Control Terminal	Remote Control		RS-422A D-sub 9pin x 1

EDIUS HD (RX-E1)

Video Format	Input / Output Signal Format	HD-Mode	HD-SDI 10bit (SMPTE 259M-C Compatible)
		SD-Mode	SDI 10bit (SMPTE 259M-C Compatible)
	Supported Formats	HD-Mode	1920 x 1080 / 59.94i 1920 x 1080 / 50i 1920 x 1080 / 24PsF 1920 x 1080 / 23.98PsF 1920 x 1080 / 29.97PsF 1920 x 1080 / 25PsF
		SD-Mode	720 x 486 (NTSC) or 720 x 576 (PAL) Uncompressed PAL / NTSC (ITU-R601)
Internal Signal Processing Format		4:2:2 input / Output 10bit (Internal processing 8bit)	
Video	Input Terminal	HD / SD-SDI (Shared by HD / SD)	BNC x 1
		HD Ref	BNC x 1 (Tri-level Sync, 75 ohm)
		SD Ref	BNC x 1 (Black Burst Signal, 75 ohm)
	Output Terminal	HD / SD-SDI (Shared by HD / SD)	BNC x 2
Audio	Input Terminal	Embedded Audio	BNC x 1 (SMPTE 299M / 272M-A Compatible)
	Output Terminal	Embedded Audio	BNC x 1 (SMPTE 299M / 272M-A Compatible)
		Analog Monitor	LINE OUT x 1 (Output from a Sound Card)
Audio Format	Embedded Audio		SMPTE 299M / 272M-A Compatible
Control Terminal	Remote Control		RS-422A D-sub 9pin x 1

EDIUS HD / SD + HDBX-1000H / S

Video input	HD-SDI*	1 route	BNC x 2	SMPTE 292M	HD-SDI IN + ACTIVE THROUGH
	SD-SDI	1 route	BNC x 2	SMPTE 259M-C	SD-SDI IN + ACTIVE THROUGH
	Component	1 route	BNC x 3	Betacam, SMPTE / EBU-N10	-
	S-VIDEO	1 route	S terminal x 1	-	-
	Composite	2 routes	BNC x 2	NTSC: SMPTE170M, PAL: ITU-RBT.470	-
Video output	HD-SDI*	2 routes	BNC x 2	SMPTE 292M	-
	SD-SDI	2 routes	BNC x 2	SMPTE 259M-C	-
	HD component*	1 route	BNC x 3	SMPTE 274M	-
	Component	1 route	BNC x 3	Betacam, SMPTE / EBU-N10	-
	S-VIDEO	1 route	S terminal x 1	-	-
	Composite	2 routes	BNC x 2	NTSC: SMPTE170M, PAL: ITU-R BT.470	-
	D terminal	1 route	D terminal x 1	-	-
Audio input	HD-SDI*	-	-	SMPTE 299M	Embedded audio
	SD-SDI	-	-	SMPTE 272M-A	Embedded audio
	AES/EBU	4 routes	BNC x 4	AES3(AES-3id)	ch 1/2, ch 3/4, ch5/6, ch7/8
	Analog balanced audio	4 routes	XLR3 pin x 4	-	600 ohm terminal, +4dBm *Available to switch input level / headroom

Audio output	HD-SDI*	-	-	SMPTE 299M	Embedded audio
	SD-SDI	-	-	SMPTE 272M-A	Embedded audio
	AES/EBU	4 routes	BNC x 4	AES3(AES-3id)	ch 1/2, ch 3/4, ch5/6, ch7/8
	Analog balanced audio	4 routes	XLR3 pin x 4	-	+4dBm (600 ohm loaded) *Available to switch output level/ headroom
	Analog unbalanced audio	1 route	RCA x 2	-	-
Timecode	LTC input	1 route	XLR3 pin x 1	SMPTE 12M	-
	LTC output	1 route	XLR3 pin x 1	SMPTE 12M	-
	DVITC input	-	-	ARIB STD-B4 / SMPTE 266M	Separated from HDSDI / SD-SDI input
	DVITC output	-	-	ARIB STD-B4 / SMPTE 266M	Superimposed on HDSDI / SD-SDI output
Reference I/O	HD REF I/O*	1 route	BNC x 2	Tri-level sync signal	HD-REF IN + ACTIVE THROUGH or HD Ref Out
	SD REF I/O	1 route	BNC x 2	Black burst signal	SD-REF IN + ACTIVE THROUGH or SD Ref Out
REMOTE	REMOTE output	2 routes	DSUB 9 pin	RS-422A	-

*In case of HDBX-1000H or HDBX-1000S + HDUP-1000

HDBX-1000H / S

Power consumption	45W (HDBX-1000S) / 65W (HDBX-1000H)
Operating temperature range	10 to 35°C
Dimensions	430 (W) x 132 (H) x 310 (D) mm 19 inch 3U rack mounting size
Weight	8kg (HDBX-1000S) / 8.5kg (HDBX-1000H)

Expansion board (HX-HD1)

PCI standard	PCI Spec. Revision 2.1 (32bit / 33MHz)	
Analog video	Output	HD / SD component output (BNC) x 3
Analog audio	Output	Unbalanced audio (RCA pin-jack) x 2 * Can simultaneously be used with audio output of main board.
Board size	120mm (Width 93mm)	
Max consumption current	+5V: 200mA, +12V: 100mA, -12V: 100mA	
Weight	About 110g	

Unbalanced output

Output Headroom[dB]	Output Level [dBu]	Unbalance output level [Vrms]
+4	20	2.0
	18	1.6
	16	1.26
0	20	1.26
	18	1.0
	16	0.8

* When Unbalance input is selected, Unbalance input level is fixed to 2.0 [Vrms].

* Unbalance output level varies depending on the output headroom or output level setting of balance audio.