

STORM Pro

HD-SDI I/O CARD WITH HDMI OUTPUT



Setup Guide

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**Manual
Explanation**

- 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, Microsoft® Windows® 7 operating system is called Windows 7 (collective term for Ultimate, Professional, Home Premium, and Home Basic), and Microsoft® Windows® 8 operating system is called Windows 8 (collective term for Enterprise, Pro, and Core Edition).

**Revision
Status**

Rev Date	Description
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Safety Summaries

General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

While using this product, you may need to access other parts of the system. Read the General Safety Summary in other system manuals for warnings and cautions related to operating the system.

Injury Precautions

Do Not Operate Without Covers

To avoid electric shock or fire hazard, do not operate this product with covers or panels removed.

Do Not Operate in Wet/Damp Conditions

To avoid electric shock, do not operate this product in wet or damp conditions.

Do Not Operate in an Explosive Atmosphere

To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.

Avoid Exposed Circuitry

To avoid injury, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present.

Product Damage Precautions

Use Proper Power Source

Do not operate this product from a power source that applies more than the voltage specified.

Provide Proper Ventilation

To prevent product overheating, provide proper ventilation.

Do Not Operate With Suspected Failures

If you suspect there is damage to this product, have it inspected by qualified service personnel.

Safety Terms and Symbols

Terms in This Manual

These terms may appear in this manual:



WARNING: *Warning statements identify conditions or practices that can result in personal injury or loss of life.*



CAUTION: *Caution statements identify conditions or practices that may result in damage to equipment or other property, or which may cause equipment crucial to your business environment to become temporarily non-operational.*

Terms on the Product

These terms may appear on the product:

DANGER indicates a personal injury hazard immediately accessible as one reads the marking.
WARNING indicates a personal injury hazard not immediately accessible as you read the marking.
CAUTION indicates a hazard to property including the product.

Symbols on the Product

The following symbols may appear on the product:



DANGER high voltage



Protective ground (earth) terminal



ATTENTION – refer to manual

Service Safety Summary



WARNING: *The service instructions in this manual are intended for use by qualified service personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries before performing service.*

Do Not Service Alone

Do not perform internal service or adjustment of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect Power

To avoid electric shock, disconnect the main power by means of the power cord or, if provided, the power switch.

Use Care When Servicing With Power On

Dangerous voltages or currents may exist in this product. Disconnect power and remove battery (if applicable) before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

Certifications and Compliances

FCC Emission Control

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Grass Valley can affect emission compliance and could void the user's authority to operate this equipment.

Canadian EMC Notice of Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. This product must not be used in residential areas.

EMC Directive Class A Warning

This product must not be used in residential areas.

FCC Emission Limits

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 undesirable operation.

Warranty

Grass Valley warrants to Customer that Hardware will be free from material defects in materials and workmanship under normal authorized use consistent with the Technical Hardware Specifications for a period of fifteen (15) months from the date of shipment from factory (the “Hardware Warranty Period”). If any such Hardware proves defective under the foregoing warranty during the Hardware Warranty Period, Grass Valley, at its option, will either (i) repair the defective Hardware without charge for parts and labor or (ii) provide a replacement in exchange for the defective Hardware. Replacement Products, parts and components may include materials that are reconditioned to “Like-New” performance and functionality (as defined below).

Résumé des mesures de sécurité

Résumé des mesures de sécurité générales

Consultez les mesures de sécurité suivantes afin d'éviter toute blessure corporelle et dommage au produit, et pour tous les produits qui y sont connectés. Lors de l'utilisation de ce produit, il est possible que vous ayez à accéder à d'autres parties du système. Consultez le Résumé des mesures de sécurité générales du manuel des autres systèmes pour prendre connaissance des mises en garde et des avertissements relatifs à leur utilisation.

Précautions relatives aux blessures

Ne pas faire fonctionner le produit sans couvercle

Afin d'éviter un choc électrique ou un risque d'incendie, ne faites pas fonctionner ce produit lorsque que les couvercles ou les panneaux sont retirés.

Ne pas faire fonctionner le produit dans des conditions humides

Afin d'éviter un choc électrique, ne faites pas fonctionner ce produit dans des conditions humides.

Ne pas faire fonctionner le produit dans une atmosphère explosive

Afin d'éviter une blessure corporelle ou un risque d'incendie, ne faites pas fonctionner ce produit dans une atmosphère explosive.

Éviter les circuits à nu

Afin d'éviter une blessure corporelle, retirez tous vos bijoux, tels que bagues, montres et autres objets métalliques. Ne touchez pas les connexions ni les composants à nu lorsque l'appareil est sous tension.

Précautions relatives aux dommages au produit

Utiliser une source d'alimentation appropriée

Ne faites pas fonctionner ce produit avec une source d'alimentation qui applique une tension supérieure à celle spécifiée.

Prévoir une ventilation adéquate

Afin d'empêcher une surchauffe du produit, prévoyez une ventilation adéquate.

Ne pas faire fonctionner le produit en cas de soupçons de panne

Si vous remarquez que ce produit est endommagé, faites-le examiner par un personnel d'entretien qualifié.

Termes et symboles de sécurité

Termes utilisés dans ce manuel

Les termes suivants peuvent apparaître dans ce manuel :



MISE EN GARDE: Les indications de mise en garde identifient des conditions ou des pratiques qui peuvent provoquer des blessures corporelles ou le décès.



AVERTISSEMENT: Les indications d'avertissement identifient des conditions ou des pratiques qui peuvent provoquer des dommages à l'équipement ou à d'autres biens, ou qui peuvent rendre temporairement non opérationnel un équipement indispensable à l'environnement de votre activité.

Termes relatifs au produit

Les termes suivants peuvent apparaître sur le produit :
DANGER indique un risque de blessure corporelle immédiatement accessible lors de la lecture de l'inscription.

MISE EN GARDE indique un risque de blessure corporelle non immédiatement accessible lors de la lecture de l'inscription.

AVERTISSEMENT indique un risque relatif aux biens, y compris le produit.

Symboles sur le produit

Les symboles suivants peuvent apparaître sur le produit :



DANGER haute tension



Prise de mise à la masse (terre)



ATTENTION – consultez le manuel

Résumé des mesures de sécurité d'entretien



MISE EN GARDE: Les instructions d'entretien de ce manuel sont destinées uniquement à du personnel d'entretien qualifié. Afin d'éviter toute blessure corporelle, ne procédez à aucun entretien à moins de posséder les qualifications requises. Consultez tous les résumés des mesures de sécurité avant de procéder à l'entretien.

Ne pas procéder seul à l'entretien

Ne procédez pas à un entretien ou à un ajustement interne de ce produit à moins qu'une autre personne en mesure de prodiguer les premiers soins ou une réanimation ne soit présente.

Débrancher l'alimentation

Afin d'éviter un choc électrique, coupez l'alimentation principale au moyen du cordon d'alimentation ou, le cas échéant, de l'interrupteur d'alimentation.

Faire preuve de prudence lors de l'entretien lorsque l'appareil est sous tension

Ce produit peut être le cadre de tensions et d'intensités dangereuses. Débranchez l'alimentation et retirez la pile (le cas échéant) avant de retirer les panneaux de protection, de procéder à une soudure ou de remplacer des composants.

Afin d'éviter un choc électrique, ne touchez pas les connexions à nu.

Certifications et conformités

Contrôle d'émission du FCC

Le présent équipement a été testé et approuvé comme répondant aux normes des dispositifs numériques de classe A, conformément à la Partie 15 des règlements du FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les brouillages préjudiciables dans un environnement commercial. Cet appareil produit, utilise et peut dégager de l'énergie radioélectrique et, s'il n'est pas installé et utilisé selon les instructions, il peut être la source d'interférences gênantes pour les communications radio. L'utilisation de cet appareil dans une zone résidentielle peut également causer des interférences gênantes, auquel cas l'utilisateur s'engage à mettre fin à ces interférences à ses frais. Les changements et modifications non expressément approuvés par Grass Valley peuvent influencer sur la conformité des émissions et pourraient annuler l'autorisation de l'utilisateur à utiliser cet appareil.

Avis de conformité de la CEM pour le Canada

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Ce produit ne doit pas être utilisé dans des zones résidentielles.

Directive CEM

Avertissement relatif à la classe A

Ce produit ne doit pas être utilisé dans des zones résidentielles.

Limites d'émission du FCC

Cet appareil est conforme à la partie 15 des règlements du FCC. Son utilisation est soumise aux deux conditions suivantes : (1) Cet appareil ne doit pas provoquer d'interférences nuisibles, et (2) cet appareil doit tolérer toute interférence reçue, y compris des interférences qui pourraient provoquer un fonctionnement indésirable.

Garantie

Grass Valley garantit au Client que le Matériel sera exempt de tout défaut matériel et de fabrication dans le cadre d'une utilisation normale autorisée en conformité avec les Spécifications techniques du Matériel, pendant une période de quinze (15) mois à compter de la date d'expédition depuis l'usine (la « Période de garantie du Matériel »). Dans le cas où un Matériel s'avérerait défectueux sous la garantie susdite au cours de la Période de garantie du Matériel, Grass Valley, à sa discrétion, pourra soit (i) réparer le Matériel défectueux à titre gratuit en ce qui concerne les pièces et la main d'œuvre, soit (ii) remplacer le Matériel défectueux. Les Produits, pièces et composants de rechange peuvent inclure des matériels reconditionnés à un niveau de performance et de fonctionnement « comme neuf » (tel que défini ci-dessous).

Before Using

Before Using

Operation environment

I/O card

The following PCI Express slot is required:
PCI Express x1 (PCI Express Spec. Revision 1.1) x1

Note

- Check the operation environment of your EDIUS software for other operation environments.

Limitations

Following are limitations to use this product. Please also see the Grass Valley website and provided License Agreement for the latest information.

Stand-by mode

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

Grass Valley Product Support

For technical assistance, to check on the status of a question, or to report a new issue, contact Grass Valley Product Support via e-mail, the Web, or by phone or fax.

Web Technical Support

To access support information on the Web, visit the product support Web page on the Grass Valley Web site. You can download software or find solutions to problems by searching our Frequently Asked Questions (FAQ) database.

World Wide Web:

<http://www.grassvalley.com/support/>

Contact Customer Support:

<http://www.grassvalley.com/support/contact>

* Please select "Support for Professional Products" tab.

Phone Support

Use the following information to contact product support by phone during business hours. After hours phone support is available for warranty and contract customers.

United States/Americas	+1 801 222 5204
Europe, United Kingdom, Africa and The Middle East	+44 (0)20 8867 6305
Asia (except Japan and Korea)	+86 21 5869 8668

Authorized Support Representative

To locate the support representative for your country, visit the Product Support Web page on the Grass Valley Web site: www.grassvalley.com/support.



END-OF-LIFE PRODUCT RECYCLING NOTICE

Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive, the United States Environmental Protection Agency, and U.S. state and local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight. However, you are responsible for the removal of the equipment from your facility and packing the equipment to make it ready for pickup.



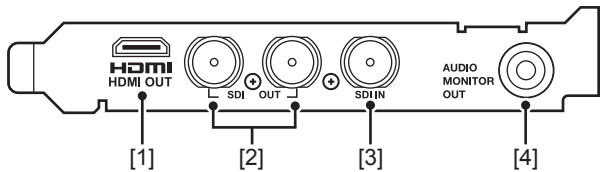
For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the U.S. and Americas please call 800-547-8949 or 530-478-4148, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: www.grassvalley.com/about/environmental-policy

Hardware Setting

This section describes the part names of STORM Pro, the procedures for mounting STORM Pro and then for installing EDIUS.

Part names

STORM Pro I/O Card Rear panel



[1] HDMI output terminal (HDMI Mini)

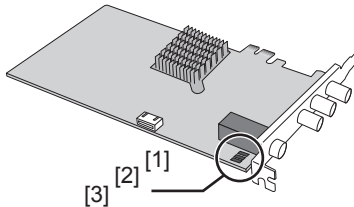
[2] SDI output terminal (HD/SD-SDI)

[3] SDI input terminal (HD/SD-SDI)

[4] AUDIO MONITOR output terminal (Stereo)

LED

If the card does not work properly, check the LED on the card.



[1] I/O card connection indicator

The indicator lights when the card is installed in the PCI Express slot and connection is possible. It blinks if there is any abnormality.

[2] SDI OUT connection indicator

The indicator lights when a stable signal is output from the SDI output terminal. It goes off or blinks if the output becomes unstable.

[3] SDI IN connection indicator

The indicator lights when the SDI output terminal receives a signal properly. It goes off or blinks if the input becomes unstable.

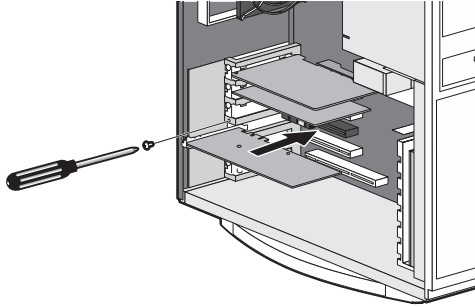
Setting the Hardware

Setting the I/O card

Before card setting, be sure that your work area is dust-free and dry. Prepare a Phillips 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.

- 1 Tightly set the I/O card in PCI Express slot.



POINT

- See the instruction manual for your PC (motherboard) for the PCI Express slot type. Set the I/O card (STORM Pro) in the PCI Express slot (PCI Express x1).
* When PCI Express x1 is not available, either PCI Express x4 or x8 can be used.

POINT

- The card should fit easily and should not require excessive force to insert into the PCI slot (PCI Express slot). If you feel any resistance, remove the card and check the alignment or if there is any obstacle. Insert it into another slot, if necessary. If the card does not fit in any of the PCI slots, the card or the computer may have a physical problem. Contact the computer/motherboard manufacturer.

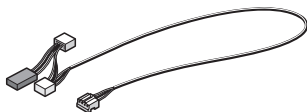
Audio output

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 I/O card.

POINT

- Attached audio cable (4pin-4pin) branches off connectors with different type and wiring specification. Connect the side without branch to I/O card, 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.

POINT

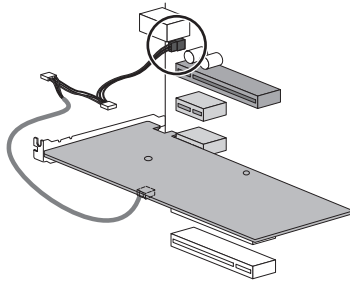
- For STORM Pro, in addition to the connection with the audio cable (4pin-4pin) mentioned above (internal connection), connection to a sound device to be the output destination with a stereo mini cable (external connection) is available. Internal and external connection cannot be active at the same time.

Output from sound device on board

Connect the audio cable to the terminal of motherboard.

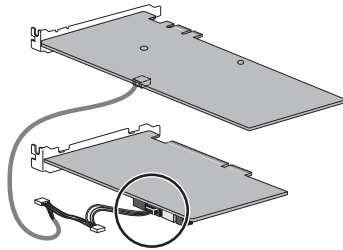
Note

- 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 card installed in slot depending on connector position of the device.



Output from sound board

Connect the audio cable to the terminal of sound board.



Installing EDIUS

Install EDIUS after mounting STORM Pro. For details on the installation procedure, see the Installation Guide of EDIUS.

Confirmation after installation

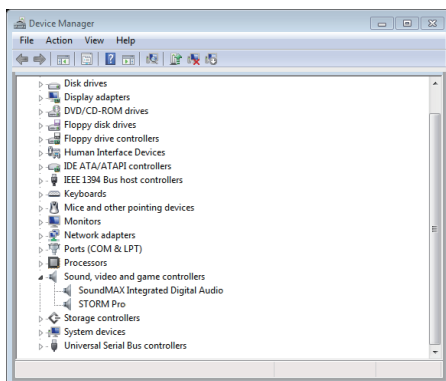
Confirming resource

Note

- The following procedure describes how to confirm in Windows 7.

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

- 1 Proceed to “Hardware and sound” from “Control Panel” of “Start” menu.
- 2 Click “Device Manager”.
- 3 Double-click “Sound, video and game controllers”.



- 4 Confirm the device names.

- [STORM Pro]

If you find ! or X mark at the top of device name, that means you failed installing STORM Pro driver.

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

5 Close “Device Manager”.

Checking the driver for the I/O card now finishes.

- POINT**
- When the unit does not work properly, please check the PCI Express Slot specification and BIOS setting of your PC (motherboard).

EDID Monitor

EDIUS is start up. Click “Tools” on the menu bar and click “EDID Monitor”.

EDID Monitor is software to check the video display ability, the number of receivable audio channels, and other information of the monitor device connected to STORM Pro with an HDMI cable.

- POINT**
- EDID Monitor displays all types of specifications (formats which are available to display) of a monitor. Note that formats which are not available on STORM Pro may be displayed.

Hardware Specifications

STORM Pro I/O Card

PCI Express standard	PCI Express x 1 (PCI Express Spec. Revision 1.1)	
Video input	SDI	SDI x 1 (SMPTE ST 292/ ST 259-C)
Video output	SDI	SDI x 2 (SMPTE ST 292/ ST 259-C)
	HDMI	HDMI Mini Connector x 1 (HDMI 1.3 compliant, HDCP not supported)
Audio input	SDI	Embedded audio 8ch (SMPTE ST 299/ST 272-C)
Audio output	SDI	Embedded audio 8ch (SMPTE ST 299/ST 272-C)
	HDMI	2ch/8ch, 24 bits, 48 kHz (only uncompressed PCM audio supported)
	Monitor output	Stereo monitor audio (1/4" TRS)
4-pin connector with 2ch for internal connection		
Power supply	DC 12 V, DC 3.3 V	
Max consumption current	DC 12 V 0.5 A, DC 3.3 V 0.5 A	

Dimensions (protrusions excluded)	161.00 (W) x 111.15 (H) mm (without PCI bracket)
Weight	132 g
Operating temperature	0 °C - 45 °C
Operating humidity	0 % - 80 % (No Condensation)

Supported formats

Capture Format

SDI	HD 60Hz	1920 x 1080/59.94i 1920 x 1080/29.97PsF 1440 x 1080/59.94i 1440 x 1080/29.97PsF 1280 x 1080/59.94i 1280 x 1080/29.97PsF 1280 x 720/59.94p 960 x 720/59.94p
	HD 50Hz	1920 x 1080/50i 1440 x 1080/50i 1280 x 720/50p
	HD 24Hz	1920 x 1080/23.98PsF 1440 x 1080/23.98PsF
	SD NTSC	720 x 486/59.94i 720 x 480/59.94i
	SD PAL	720 x 576/50i

Output Format

HDMI	HD 60Hz	1920 x 1080/59.94i 1920 x 1080/29.97PsF 1440 x 1080/59.94i 1440 x 1080/29.97PsF 1280 x 1080/59.94i 1280 x 1080/29.97PsF 1280 x 720/59.94p 960 x 720/59.94p
	HD 50Hz	1920 x 1080/50i 1920 x 1080/25PsF 1440 x 1080/50i 1440 x 1080/25PsF 1280 x 720/50p 960 x 720/50p
	SD NTSC	720 x 486/59.94i*1 720 x 480/59.94i
	SD PAL	720 x 576/50i

SDI	HD 60Hz	1920 x 1080/59.94i 1920 x 1080/29.97PsF 1440 x 1080/59.94i 1440 x 1080/29.97PsF 1280 x 1080/59.94i 1280 x 1080/29.97PsF 1280 x 720/59.94p 960 x 720/59.94p
	HD 50Hz	1920 x 1080/50i 1920 x 1080/25PsF 1440 x 1080/50i 1440 x 1080/25PsF 1280 x 720/50p 960 x 720/50p
	HD 24Hz	1920 x 1080/23.98PsF 1440 x 1080/23.98PsF
	SD NTSC	720 x 486/59.94i 720 x 480/59.94i
	SD PAL	720 x 576/50i

*1 Displays 480 lines only.

有毒有害物质含有表

This information is applicable for People's Republic of China only.

产品中有毒有害物质或元素的名称及含量

STORM Pro I/O Card

部件名称	有毒有害物质或元素					
	铅 Pb	汞 Hg	镉 Cd	六价铬 Cr (VI)	聚溴联苯 PBB	聚溴二苯醚 PBDE
电缆	○	○	○	○	○	○
外壳	○	○	○	○	○	○
焊锡	○	○	○	○	○	○
电路板	○	○	○	○	○	○
电子元件	×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。

×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。

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