• Thank you for choosing our product.
• To ensure the best performance of this product, please read this User’s Guide fully and carefully before using it and keep this manual beside this product.

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Before reading this manual

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- Some of the contents in this User’s Guide such as appearance diagrams, menu operations, communication commands, and so on may differ depending on the version.
- This User’s Guide is subject to change without notice. You can download the latest version from IDK’s website at: http://www.idk.co.jp/en/index.html

The reference manual for FDX-32 consists of the following two volumes:

- User’s guide (this document):
  Provides explanations and procedures for operations, installation, connections among devices, I/O adjustment and settings.

- Command guide:
  Please download the command guide from the website above.
  Provides explanations and procedures for external control using serial and LAN communications.

The lasers in this product meet Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 laser safety standards which specify design safety.

FCC STATEMENT
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.

Note: This equipment was tested with shielded cables on the peripheral devices. Shielded cables must be used with the equipment to ensure compliance with FCC emissions limits.

CE MARKING
This equipment complies with the essential requirements of the relevant European health, safety and environmental protection legislation.

WEEE MARKING
Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC
(This directive is only valid in the EU).
This equipment complies with the WEEE Directive (2002/96/EC) marking requirement. The left marking indicates that you must not discard this electrical/electronic equipment in domestic household waste.

If an HDBaseT input slot board (4 channels), HDBaseT output slot board (4 channels), or HDBaseT scan convertor output slot board (2 channels) is equipped, use an STP cable for the twisted pair cable in order to meet the VCCI standard. It can reduce the noise caused by the cable.
Safety instructions

Read and understand all safety and operating instructions before using this device. Follow all instructions and cautions as detailed in this document.

<table>
<thead>
<tr>
<th>Enforcement Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Warning" /></td>
<td>Indicates the presence of a hazard that may result in death or serious personal injury if the warning is ignored or the equipment is handled incorrectly.</td>
</tr>
<tr>
<td><img src="image" alt="Caution" /></td>
<td>Indicates the presence of a hazard that may cause minor personal injury or property damage if the caution is ignored or the equipment is handled incorrectly.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Caution" /></td>
<td>This symbol is indicated to alert the user. (Warning and caution)</td>
<td><img src="image" alt="Electrical Hazard" /></td>
</tr>
<tr>
<td><img src="image" alt="Prohibition" /></td>
<td>This symbol is intended to prohibit the user from actions.</td>
<td><img src="image" alt="Do not disassemble" /></td>
</tr>
<tr>
<td><img src="image" alt="Instruction" /></td>
<td>This symbol is intended to instruct the user.</td>
<td><img src="image" alt="Unplug" /></td>
</tr>
</tbody>
</table>
## Warning

| Do not place the product in any unstable place.  
Install the product to a horizontal and stable place. Otherwise, it may fall/turn over and lead to injury. |
| Do not place the product in any environment with vibration.  
Otherwise, it may move/fall and lead to injury. |
| Keep out any foreign objects.  
In order to avoid fire or electric shock, do not allow foreign objects, such as metal and paper, to enter the product from the vent holes. |
| **For power cable/plug:**  
- Do not scratch, heat, or modify, including extending them.  
- Do not pull, put heavy stuff on them, or pinch them.  
- Do not bend, twist, or tie them together forcefully.  
If they are used in those states continuously, it may cause fire or electric shock. If power cables/plugs become damaged, contact IDK. |
| Do not repair, modify or disassemble.  
Since the product includes high-voltage parts, those actions may cause fire or electric shock. For internal inspections or repairs, contact IDK. |
| In the event of lighting or thunder, do not touch the main unit or cables such as power cable and LAN cable.  
Contact may cause electric shock |
| For installation:  
The product is intended to be installed by skilled technicians. For installation, please contact a system integrator or IDK. Otherwise, it may cause fire, electric shock, injury, or property damage. |
| **Set the power plug in a convenient place to unplug easily.**  
You can easily unplug in case of any extraordinary failure or abnormal situation, and it also helps for unplugging when you do not use it for a long period. |
| **Plug the power plug into appropriate outlet completely.**  
If the plug is plugged incompletely, it may overheat which causes electrical shock or fire. Do not use damaged plug or loosened outlet. |
| **Clean the power plug regularly.**  
If the plug is covered in dust, it may cause fire due to reduced insulating power. |
| Unplug immediately if the product smokes, makes unusual noise, or smells.  
If you continue to use the product under those situations, it may cause electric shock or fire. After confirming that the product stops smoking, contact IDK. |
| **Unplug immediately if you drop the product or if the cabinet is damaged.**  
If you continue to use the product under those situations, it may cause electrical shock or fire. For maintenance and repair, contact IDK. |
| **Unplug immediately if water or other objects are directed inside.**  
If you continue to use it under those situations, it may cause electrical shock or fire. For maintenance and repair, contact IDK. |
| **For connection**  
Differences in ground potential among the product and peripheral devices may cause electric shock or damage of the devices. When using cables to connect devices, including connection of long-distance transmission, unplug the power cables of all related devices.  
After connecting signal/control cables of each device, plug in the power cables of each device. |
### Caution

<table>
<thead>
<tr>
<th>Electrical Hazard</th>
<th>Double Pole/Neutral Fusing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prohibition</td>
<td>Do not place the product in any place where it will be subjected to high temperatures. If the product is subjected to direct sunlight or high temperatures, it may cause fire.</td>
</tr>
<tr>
<td></td>
<td>Do not place the product in humid, oil smoke, or dusty place. If the product is placed near humidifiers or dusty area, it may cause fire or electric shock.</td>
</tr>
<tr>
<td></td>
<td>Do not block the vent holes. If ventilation slots are blocked, it may cause fire or failure due to internal heat.</td>
</tr>
<tr>
<td></td>
<td>Do not put heavy items on the product. It may fall/turn over and lead to injury.</td>
</tr>
<tr>
<td></td>
<td>Do not exceed ratings of outlet and wiring devices. If several plugs are put in an outlet, it may cause fire and electric shock.</td>
</tr>
<tr>
<td></td>
<td>Use only the provided AC adapter and power cable.</td>
</tr>
<tr>
<td></td>
<td>Do not use the provided AC adapter and power cable with other products. If non-compliant adapter or power cables is used, it may cause fire or electrical shock. Use the provided AC power connection cable. If you want to use your product in other countries that use different AC power cables, contact IDK.</td>
</tr>
<tr>
<td>No wet hands</td>
<td>Do not plug or unplug with wet hands. It may cause electrical shock.</td>
</tr>
<tr>
<td>Instruction</td>
<td>Use and store the product within the specified temperature/humidity range. If the product is used outside the range continuously, it may cause fire or electric shock.</td>
</tr>
<tr>
<td></td>
<td>Turn off devices when they are connected to another device. It may cause fire or electric shock.</td>
</tr>
<tr>
<td>Unplug</td>
<td>Unplug the power plug if you do not use the product for a long period. In case of defect, it may cause fire.</td>
</tr>
<tr>
<td></td>
<td>Unplug the power plug before cleaning. It may cause electric shock.</td>
</tr>
</tbody>
</table>

#### For installation

**For rack mount devices:**

| Instruction | Mount the product to the rack meeting EIA standards, and maintain spaces above and below for air cooling. For your safety, attach an L-shape bracket in addition to the mount bracket kit for the front panel in order to balance the weight. |

**For devices with rubber feet:**

| Instruction | Never insert only the screws into the holes after removing the rubber feet. It may lead to damage when the screws contact electrical circuit or parts inside of the product. To put the rubber feet back on, use only provided rubber feet and screws. |
Altitude:

| Instruction | Do not place the product at elevations of 2,000 meters (6562 feet) or higher above sea level. Failure to do so may shorten the life of the internal parts and result in malfunctions. |

Caution:
If you lift the FDX with your knees straight fully, your back may be damaged.
When lifting the FDX, please bend your knees and get close to the machine with the following number of persons. If you do not follow this instruction, you may be injured or the FDX may be damaged.

- Over 20kg (44 lbs)
- Over 30kg (66 lbs)
- Over 50kg (110 lbs)
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</table>
1 Included items

Make sure all items below are included in the package. If any items are missing or damaged, please contact IDK.

FDX-32 main unit x 1
Terminal block (2 pin) x 1
Power cable (1.8m/5.9 feet) x 1
Rack mounting bracket x 2

[Fig. 1.1] Included items
2 Product outline

FDX-32 has 32 inputs and 32 outputs. Since this HDMI/DVI Digital Matrix Switcher supports HDCP, video whose copyright is protected, such as Blu-ray, can be input. HDMI signals can also be input via a conversion cable.

Combining HDBaseT or optical I/O slot board that supports a long-distance extension enables simple configurations around the matrix switcher.

Combining built-in scan converter output slot board, the FDX can seamless switching with one black frame between different resolution or synchronization video signals, and output to sink devices. The switching seed is faster than if system has digital frame synchronizer after matrix switcher.

The FDX has RS-232C and LAN as its communication ports for external control so that you can control each setting remotely.

[Fig. 2.1] Video switching timing with scan converter output slot board
[Fig. 2.2] I/O diagram

- **Digital input slot board (4 inputs)**
  
  Four DVI-I connectors are mounted that can input both HDMI (a conversion cable is needed) and DVI signals.

- **Twisted pair input slot board (4 inputs)**
  
  Four RJ-45 connectors are mounted that can extend digital (video/audio) signals up to 100 m/328.08 ft. when the HDC-T series and FDX series are used together.

- **Optical input slot board (4 inputs)**
  
  Up to four SFP (LC connector x 2) modules can be mounted. Digital signals can be extended up to 4.7 km/15419.95 ft. (singlemode fiber) when the OPF-TH1000 and FDX are used together.

- **Digital output slot board (4 outputs)**
  
  Four DVI-I connectors that are mounted can output video and audio signals of the selected input channel.
● Twisted pair output slot board (4 outputs)
  Four RJ-45 connectors are mounted that can output video and audio signals of the selected input channel. Those digital (video/audio) signals can be extended up to 100 m/328.08 ft. when the HDC-R series and FDX series are used together.

● Optical output slot board (4 outputs)
  Up to four SFP (LC connector x 2) modules are mounted that can output video and audio signals of the selected input channel. Those digital signals can be extended up to 4.7 km/15419.95 ft. (singlemode fiber) when the OPF-RH1000 and FDX are used together.

● Digital scan converter output slot board (2 outputs)
  Two DVI-I connectors that are mounted can output video and audio signals of the selected input channel. Selected input channel signals output as selected resolution by users because it has scan converter function.

● Twisted pair scan converter output slot board (2 outputs)
  Two RJ-45 connectors are mounted that can output video and audio signals of the selected input channel. Selected input channel signals output as selected resolution by users because it has scan converter function. Those digital (video/audio) signals can be extended up to 100 m/328.08 ft. when the HDC-R series and FDX series are used together.

● Optical scan converter output slot board (2 outputs)
  Up to two SFP (LC connector x 2) modules are mounted that can output video and audio signals of the selected input channel. Selected input channel signals output as selected resolution by users because it has scan converter function. Those digital signals can be extended up to 4.7 km/15419.95 ft. (singlemode fiber) when the OPF-RH1000 and FDX are used together.
3 Features

■ Video
- The maximum resolution: QWXGA \(^1\) (RB) \(^2\), 1080p
- Digital cable equalizer function (digital I/O slot board)
  Input: Up to 10 m to 30 m/32.8 to 98.43 ft.
  Output: Up to 10 m to 40 m/32.8 to 131.23 ft.
- Extension: Up to 100 m/328.08 ft. via a Cat6 cable (HDBaseT I/O slot board)
- Long-distance transmission via an optical fiber cable (Optical I/O slot board)
  Multimode fiber (OM 3): Up to 300 m/984.25 ft.
  Multimode fiber (OM 4): Up to 1 km/3280.83 ft.
  Singlemode fiber (OS 1): Up to 4.7 km/15419.95 ft.
- Anti-snow
- The number of inputs can be customized using 4 channels and outputs can be customized using 2 or 4 channels.
- Output resolution can be changed (scan converter output slot board)

![Diagram of slot board combination]

[Fig. 3.1] Example of slot board combination

■ Control input: RS-232C, LAN
Others
- EDID emulation (with copy function)
- Switching video and audio separately (when optional MAU-3232 is connected)
- I/O slot board, CPU slot board, and fan unit can be replaced without removing from the rack.
- Alarm output (Monitoring power and fans)
- Start-up memory
- Preset memory
- Last memory
- Connection reset
- Key lock
- Redundant power supply (optional extra)
- RS-232C transmission (HDBaseT / Optical slot board)

*1 The maximum resolution of optical I/O slot board: WUXGA (RB)
*2 (RB): Reduced Blanking
# 4 Panels

## 4.1 Front panel

![Front panel drawing](image)

### [Fig. 4.1] Front panel drawing

<table>
<thead>
<tr>
<th>#</th>
<th>Part name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>MENU/SET key</td>
<td>Displays menus and edits/controls settings.</td>
</tr>
<tr>
<td>②</td>
<td>ESC key</td>
<td>Goes back to the previous page.</td>
</tr>
<tr>
<td>③</td>
<td>Arrow keys (▲, ▼, ◄, ►)</td>
<td>Switches menus, moves cursors and changes set values.</td>
</tr>
<tr>
<td>④</td>
<td>I/O channel selection keys</td>
<td>0 to 9: Selects numbers. SET: Applies the I/O channel setting. INPUT: Moves the cursor to the INPUT side. OFF: Selects “OFF” (no signal) of input channel. OUTPUT: Moves the cursor to the OUTPUT side. ALL: Selects all output channels.</td>
</tr>
<tr>
<td>⑤</td>
<td>Loading preset memory key</td>
<td>Displays the preset memory screen.</td>
</tr>
<tr>
<td>⑥</td>
<td>SWITCHING MODE key</td>
<td>V&amp;A: Switching the FDX and MAU-3232 (optional) together. VIDEO: Switching only the FDX. AUDIO: Switching only the MAU-3232.</td>
</tr>
<tr>
<td>⑦</td>
<td>Power supply switch (POWER)</td>
<td>Turns on/off the FDX. If the main power supply switch of the rear panel is turned off, this switch is invalid.</td>
</tr>
<tr>
<td>⑧</td>
<td>LCD screen</td>
<td>Displays menus and settings.</td>
</tr>
</tbody>
</table>
4.2 Rear panel

[Fig. 4.2] Rear panel drawing
<table>
<thead>
<tr>
<th>#</th>
<th>Part name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DVI input connectors (DVI-D HDMI)</td>
<td>For DVI-I cables and DVI-D cables (analog signals cannot be used). HDMI signals can be input using an HDMI-DVI conversion cable.</td>
</tr>
<tr>
<td>2</td>
<td>HDBaseT input ports (HDC)</td>
<td>Digital (video/audio) signals can be extended up to 100 m/328.08 ft. using the HDC transmitter and FDX together.</td>
</tr>
<tr>
<td>3</td>
<td>Optical input ports (OPTICAL)</td>
<td>Digital (video/audio) signals can be extended up to 4.7 km/2.9 miles (singlemode fiber) using the OPF-TH1000 and FDX together.</td>
</tr>
<tr>
<td>4</td>
<td>DVI output connectors (DVI-D HDMI)</td>
<td>For DVI-I cables and DVI-D cables (analog signals cannot be used). HDMI signals can be input using an HDMI-DVI conversion cable.</td>
</tr>
<tr>
<td>5</td>
<td>Twisted pair output ports (HDC)</td>
<td>Digital (video/audio) signals can be extended up to 100 m/328.08 ft. using the HDC receiver and FDX together.</td>
</tr>
<tr>
<td>6</td>
<td>Optical output ports (OPTICAL)</td>
<td>Digital (video/audio) signals can be extended up to 4.7 km/2.9 miles (singlemode fiber) using the OPF-RH1000 and FDX together.</td>
</tr>
<tr>
<td>7</td>
<td>RS-232C port (RS-232C)</td>
<td>For external control using communication commands.</td>
</tr>
<tr>
<td>8</td>
<td>LAN port (LAN)</td>
<td>For external control by communication commands or web browsers.</td>
</tr>
<tr>
<td>9</td>
<td>Maintenance port (UPDATE)</td>
<td>Not used. Keep this connector free.</td>
</tr>
<tr>
<td>10</td>
<td>ALARM port (ALARM)</td>
<td>When the FDX detects an serious problem (alarm), the relay contact will be closed.</td>
</tr>
<tr>
<td>11</td>
<td>Option port (OPTION)</td>
<td>If the MAU-3232 (optional) is used, use the special cable. Normally, please do not connect anything.</td>
</tr>
<tr>
<td>12</td>
<td>Main power switch (POWER)</td>
<td>Turns on/off the FDX.</td>
</tr>
<tr>
<td>13</td>
<td>BREAKER</td>
<td>Turned OFF if a circuit is broken or a problem in circuit parts appears for some reason in order to prevent overcurrent into the FDX. If the breaker is turned off, press the breaker. However, if the breaker is turned off again, problems may have occurred in the device. Please contact us.</td>
</tr>
<tr>
<td>14</td>
<td>AC power connector</td>
<td>For the provided power cable.</td>
</tr>
<tr>
<td>15</td>
<td>Frame ground (FG)</td>
<td>For indoor ground terminal. An M4 screw is used.</td>
</tr>
<tr>
<td>16</td>
<td>Power unit 1</td>
<td>The first power supply for redundant power supply (optional)</td>
</tr>
<tr>
<td>17</td>
<td>Power unit 2</td>
<td>The second power supply for redundant power supply (optional)</td>
</tr>
</tbody>
</table>
4.3 Output slot board’s channel configuration

- The number of outputs can be customized using 2 (scan converter output slot board) or 4 channels.
- The first two channel numbers of scan converter output slot board are valid. Other two channels are invalid.
- The following picture shows that channel number 9 and 10 are valid, and channel number 11 and 12 are invalid on digital scan converter output slot board. The channel number 21 and 22 are valid, and the channel number 23 and 24 are invalid on HDBaseT scan converter output slot board. The channel number 29 and 30 are valid, and the channel number 31 and 32 are invalid on optical scan converter output slot board.

![Output slot board’s channel configuration](image-url)
5 Sample system diagram

The FDX is able to connect devices having various interfaces.

[Fig. 5.1] Example application

IDK is providing various cables such as DVI cable, HDMI-DVI conversion cable, fiber optic cable, and twisted pair cable. For details, please contact IDK sales or distributors.

For DVI cable, please use DVI-I or DVI-D single link cable (male connector) which supports DVI Rev1.0.

For twisted pair cable, please use UTP / STP cable which support Cat5e / Cat6 standard. IDK recommends our CAT.5E HDC cable. For fiber optic cable, please use one duplex fiber or two simplex fibers which have LC connectors and meet standards depending on extension distance. Please see “6.2 Cabling”.

【NOTE】If you connect an HDC device to send DVI signals that are protected by HDCP, use IDK’s twisted pair cable extender that supports DVI signals.
6 Precautions

Before connecting to external devices, follow the precautions below.

6.1 Installation

When installing the FDX, please observe the following precautions.

- Do not place the FDX on top of another FDX.
- Do not block vent holes. Please secure the space above ambient 30 mm/1.18 inches.
- Do not install the FDX to an enclosed space. When the FDX needs to be installed to EIA rack mount or an enclosed space, please prepare ventilating equipment to keep the ambient temperature at 40 degrees C/104 degrees F or less. If inadequately vented, the life of parts may be shortened and operations may be affected.

■ Attaching rack mounting brackets

1. Remove two M5 screws from one side of the unit. Retain the screws for step 2.
2. Attach one bracket to the side of the unit using the screws removed in step 1.
3. Repeat steps 1 and 2 on the other side of the unit.

【NOTE】The standard screw tightening torque is 2.94 N·m (about 30 kgf·cm).
6.2 Cabling

- Read manuals of the external devices.
- Turn off devices and then connect them.
- Be sure to plug cables in completely and install them without any stress on connectors.

6.2.1 Twisted pair cable

When connecting twisted pair cables to the MSD, please observe the following precautions.

- Cat5e/Cat6 UTP/STP can be used, however, we recommend a CAT.5E HDC cable* for the twisted pair cable which is developed by IDK to maximize quality of video transmission.
- If using an STP cable, connect the FG connector to an earth ground source. Otherwise, the shielding feature does not work correctly. When using a UTP cable, we still recommend using the ground connector.
- The shielded STP cables are less affected by interference or external noise than UTP cables.
- The connector for twisted pair cable is as same as the connectors which are used for Ethernet (8 core modular type connector), however, it cannot be connected and use for Ethernet because the way of data transmission is different.
- The maximum extension distance of Cat5e/Cat6 UTP/STP cable is the shorter maximum extension distance of the connected HDC receiver and sink device.
- For pin assignments, apply T568A or T568B standards for straight through wiring.
- Do not give connection cables a strong pull. The allowable tension of the twisted pair cable is 110 N.
- Do not bend the connection cable at a sharp angle. Keep the bend radius four times of the cable diameter or longer.
- Do not tie the cable tightly; leave a space allowing the cable to move slightly.
- If you use the same cables, we recommended keeping a distance between the cables or not to place the cables closely in parallel.
- Keep the twisted pair cable as straight as you can. If you coil the cable, it is easily affected by noise.
- Do not place this product in an electrically noisy environment, since high-speed signal is transmitted. Particularly when you use a high-output radio around this device, video or audio may be interrupted.
- If the distance between the transmitter and receiver is 100 m/328.08 feet or less, cables can be joined using an RJ-45 plug coupler or wall outlet. Up to two cable couplers are allowed. Couplers supporting Cat6A (10GBase-T) are recommended.
- [Figure 6.1] shows extension distance by each twisted pair cable. The extension distance depending on installation environment.

<table>
<thead>
<tr>
<th>External noise</th>
<th>Category</th>
<th>Distance</th>
<th>Dot clock</th>
<th>Memo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected</td>
<td>UTP</td>
<td>Cat5e 50 m/164.04 ft.</td>
<td>≤ 225 MHz</td>
<td>IDK recommends Cat5e STP, Cat6 UTP/STP, or CAT.5E HDC cable* if the extension distance exceeds 50 m/164.04 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cat6 100 m/328.08 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less affected</td>
<td>STP</td>
<td>Cat5e 100 m/328.08 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cat6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* CAT.5E HDC cable developed by IDK Corporation is double shielded twisted pair cable for high quality video transmission. It protects video signal from external noise or other interferences by having double shielded structure. Its transmission characteristic meets 500 MHz up to 100 m/328.08 ft., and it is certified and recommended by HDBaseT alliance.

【NOTE】 If there is a problem in the transmission path, video or audio may be interrupted. Please check the items above. If the problem still cannot be solved, shorten the length of the twisted pair cable.
6.2.2 SFP module

The fiber type and extension distance to be used vary depending on the SFP module.

[Table 6.2] Specifications of standard SFP modules

<table>
<thead>
<tr>
<th></th>
<th>Multimode fiber</th>
<th>Singlemode fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave length</td>
<td>850 nm (Oxide VCSEL laser*)</td>
<td>1310 nm (Fabry-Perot laser*)</td>
</tr>
</tbody>
</table>
| Maximum extension distance | OM3: 300 m/984.25 feet  
OM4: 1 km/3280.84 feet | OS1: 4.7 km/15419.94 feet                        |
| Input level       | -13 dBm or higher                                    | -18 dBm or higher                                |
| Output level      | -9 dBm to -2.5 dBm                                   | -8.4 dBm to -3 dBm                               |
| Max. optical receiving level | 0 dBm                                             | +0.5 dBm                                         |
| Connector         | LC (Duplex)                                          |                                                  |

* The lasers in this product meet Class 1 Laser Safety per FDA/CDRH and EN (IEC) 60825 laser safety standards which specify design safety.
* Some SFP modules for singlemode can extend the transmission distance up to 30 km with OS1. Please contact us if needed.

- Plug the dust cap to the fiber optical cable if you do not use it.
- Do not use the SFP module for other devices. Do not connect the optic fiber cable that is connected to other devices to the SFP module; otherwise, the SFP module may be broken.
- If you need to replace the SFP module, please contact us.
6.2.3 Fiber optic cable

To ensure the best performance of the FDX, select the appropriate optical fiber cable for a long-distance transmission and connect it correctly.

- Make sure that the fiber optical cable to be connected between the FDX and transmitter/receiver meets the standard of the desired extension distance.
- Make sure not to exceed the allowable tension and bend radius of fiber optic cable or the performance of the product and the life of the fiber optic cable may be affected.
- Extension distance varies depending on attenuation of the fiber, connector and other contact portions.
- Plug the dust caps to both faces of the fiber optic cable when connecting the fiber optic cable and when not in use.
- Before inserting a fiber optic cable, make sure there is no damage or dirt on the end-face of the optical connector. Clean up it or FDX-32 may not operate correctly.
- To polish connectors:
  - For SFP module for multimode: PC polishing is recommended.
  - For SFP module for singlemode: UPC polishing is recommended.
  *APC polishing is not supported.

![Fiber optic cable protection caps](Left: With protection caps, Right: Without protection caps)

![Fiber cleaning](Before cleaning, After cleaning)

6.2.4 Alarm output

To output alarm for cooling fan, power, and input/output from the FDX, please connect attached terminal block (2-pin) to ALARM connector. IDK recommends using AWG 28 to AWG 16 cables. The maximum pealing length is 7 mm / 0.28" approx.

![Terminal block 2-pin](Max. 7 mm / 0.28" approx)
7 Basic operation

7.1 Selecting Input/output channel

Procedure

1. Select the desired switching mode using the “SWITCHING MODE” key.*

2. Press the “INPUT” key to move to the input channel selection LCD screen.*

3. Select the desired input channel using “0” to “9” or “OFF” key.*

4. Press the “OUTPUT” key to move to the output channel selection LCD screen.*

5. Select the desired output channel using 0 to 9 or “ALL” key.*
   (When it is settable, a line break symbol appears at the lower right of the LCD screen.)

6. Press the “SET” key to apply the setting of I/O channel.
   (When the setting is fixed, a “*” appears at the lower right of the LCD screen.)

Example: Setting Video/Audio signals of input channel 1 to output channel 1.

You can check the input/output channel status in the “8.2.1 Displaying current I/O channel status [CHANNEL DISPLAY]”.
You can select whether channels of the FDX and optional MAU-3232 are switched in tandem with each other from the following three modes using the SWITCHING MODE key.

- **V&A mode**: Turns orange; switching I/O channels of both the FDX and MAU-3232 together.
- **VIDEO mode**: Turns green; switching I/O channels of only the FDX.
- **AUDIO mode**: Turns red; switching I/O channels of only the MAU-3232.

Every time you press the SWITCHING MODE key, the mode is switched as follows:

Every time you press the SWITCHING MODE key, the mode is switched as follows.

[Fig. 7.2] Selecting switching mode

You can select the output channel first instead of the input channel by pressing the “OUTPUT” key.

Input channel numbers 0 to 9: If a channel that cannot input signals (a slot board is not mounted) is selected, the selected value will be cleared.

The selected output channels can be OFF (no signal) by pressing the “OFF” key (you can skip the “INPUT” key).

The selected input channel can be output to all output channels by pressing the “ALL” key (you can skip the “INPUT” key).
7.2 Menu operation key

The menu consists of the top page, main menu, sub menu, and setting page. The screen backlight is turned off if no operation is performed for 10 seconds (power saving function).

[See 8.12.3 Power saving (POWER SAVE)]

Procedure

1. Press the "MENU/SET" key to open the main menu.*

2. Select the desired main menu using “▲” and “▼” keys.

3. Select the "MENU/SET" key to move to the sub menu. The top page can be opened again by pressing the “ESC” key.

4. Select the desired sub menu using “▲” and “▼” keys.

5. Select the "MENU/SET" key to move to the setting page. The main menu can be opened again by pressing the “ESC” key.

6. Select the channel using “◄” and “►” keys. The sub menu can be opened again by pressing the “ESC” key.

7. Change the setting using “▲” and “▼” keys.*2 The sub menu can be opened again by pressing the “ESC” key.

8. If the “MENU/SET” key blinks, press the key to apply the setting.

Ex: Input EQ setting

[Fig. 7.3] Menu operation
**1** Available “▲”, “▼”, “◄”, and “►” keys are displayed at the lower right of the LCD screen and the key LED lights.
   A channel that does not have its slot board cannot be set.

**2** The set value will be saved after the operation.
7.3 Loading preset memory

FDX can read registered preset memory and set input/output channels. If you operate “Selecting input/output channel” or “Menu operation” during loading preset memory, the operation will move to the operated operations.

【See : 7.1 Selecting Input/output channel】
【See : 7.2 Menu operation key】
【See : 8.11.2 Saving preset memory [PRESET SAVE]】
【See : 8.11.3 Editing preset memory [PRESET EDIT]】

Procedure

1. Press the “PRESET LOAD” key.

2. Select the desired preset memory number using “0” to “9” keys. (When it is ready to be set, a line break symbol appears at the lower right of the LCD screen.)

3. Press the “SET” key to apply the setting (when the setting is fixed, a "*" appears at the lower right of the LCD screen).

Example: Loading preset memory 1

[Fig. 7.4] Loading preset memory
7.4 Initialization

All settings can be reset to factory default values by turning on the FDX while pressing the “ESC” key. Press and hold the “ESC” key until you hear short beep sounds. Once you have initialized the settings, they cannot be reversed.

![Diagram showing the process of initialization]

**[Fig. 7.5] Initialization**

**[Table 7.1] Factory default list**

<table>
<thead>
<tr>
<th>Function</th>
<th>Factory default</th>
<th>Setting for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input channel</td>
<td>INPUT OFF</td>
<td>Each output</td>
</tr>
<tr>
<td>Switching mode</td>
<td>V&amp;A</td>
<td>–</td>
</tr>
</tbody>
</table>

For other factory defaults, see menu list.

*See: 8.1 Menu list*
7.5 Setting/Releasing key lock

The key lock of front keys can be set/released by pressing the “ESC” key for five seconds (approx.). Press and hold the “ESC” key until you hear a long beep sound. Front keys are divided into some groups, and you can select the target group.

【See 8.12.1 Grouping keys for key lock [KEY LOCK]】

[Fig. 7.6] Setting/Releasing key lock
8 Menus

Menus that can be set in the FDX are divided into the following groups:

- Displaying I/O channel status: CHANNEL DISPLAY
- Setting input: INPUT SETTING
- Setting input timing: INPUT TIMING *
- Setting output: OUTPUT SETTING
- Setting output timing: OUTPUT TIMING *
- Setting audio: AUDIO
- Setting EDID: EDID
- Setting RS-232C communication: COM PORT
- Setting LAN communication: LAN
- Setting preset memory: PRESET MEMORY
- Setting other functions: OTHERS

*Menu is available if scan converter output slot board is installed.

8.1 Menu list

### Displaying I/O channel status (CROSS POINT)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>Set value</th>
<th>For</th>
<th>Default value</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANNEL DISPLAY</td>
<td>Displaying current I/O channel status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>37</td>
</tr>
</tbody>
</table>

### Setting input (INPUT SETTING)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>Set value</th>
<th>For</th>
<th>Default value</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT EQUALIZER</td>
<td>Input equalizer</td>
<td></td>
<td>AUTO (Automatic correction)</td>
<td>Each input</td>
<td>AUTO (Automatic correction)</td>
<td>38</td>
</tr>
<tr>
<td>INPUT SIGNAL CHECK</td>
<td>No-signal input monitoring time</td>
<td></td>
<td>OFF/3 to 15 [second]</td>
<td>Each input</td>
<td>10 [second]</td>
<td>39</td>
</tr>
<tr>
<td>INPUT HDCP</td>
<td>HDCP input enabled/disabled</td>
<td></td>
<td>ENABLE/DISABLE</td>
<td>Each input</td>
<td>ENABLE</td>
<td>40</td>
</tr>
</tbody>
</table>

### Setting input timing (INPUT TIMING)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>Set Value</th>
<th>For</th>
<th>Default value</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT H POSITION</td>
<td>Horizontal starting position</td>
<td></td>
<td>0 / -100 to +100 [dot]</td>
<td>Each input</td>
<td>0 [dot]</td>
<td>41</td>
</tr>
<tr>
<td>INPUT H SIZE</td>
<td>Horizontal size</td>
<td></td>
<td>0 / -100 to +100 [dot]</td>
<td>Each input</td>
<td>0 [dot]</td>
<td>41</td>
</tr>
<tr>
<td>INPUT V POSITION</td>
<td>Vertical starting position</td>
<td></td>
<td>0 / -30 to +30 [line]</td>
<td>Each input</td>
<td>0 [line]</td>
<td>42</td>
</tr>
<tr>
<td>INPUT V SIZE</td>
<td>Vertical size</td>
<td></td>
<td>0 / -30 to +30 [line]</td>
<td>Each input</td>
<td>0 [line]</td>
<td>43</td>
</tr>
<tr>
<td>INPUT ASPECT</td>
<td>Aspect ratio</td>
<td></td>
<td>AUTO / FULL / 4:3 / 5:3 / 5:4 / 16:9 / 16:10 / 16:9 LT</td>
<td>Each input</td>
<td>AUTO (auto recognition)</td>
<td>44</td>
</tr>
<tr>
<td>INPUT CONTRAST</td>
<td>Contrast</td>
<td></td>
<td>R / G / B : 0 to 200 [%]</td>
<td>Each input</td>
<td>100 [%]</td>
<td>44</td>
</tr>
<tr>
<td>INPUT BRIGHTNESS</td>
<td>Brightness</td>
<td></td>
<td>80 to 120 [%]</td>
<td>Each input</td>
<td>100 [%]</td>
<td>45</td>
</tr>
<tr>
<td>INPUT GAMMA</td>
<td>Gamma</td>
<td></td>
<td>0.1 LOW MIN to 1.0 NORMAL to 3.0 HIGH MAX</td>
<td>Each input</td>
<td>1.0 NORMAL</td>
<td>45</td>
</tr>
<tr>
<td>INPUT FILTER</td>
<td>Sharpness</td>
<td></td>
<td>5 SOFT MIN to 0 NORMAL to 15 SHARP MAX</td>
<td>Each input</td>
<td>0 NORMAL</td>
<td>46</td>
</tr>
<tr>
<td>INPUT HUE</td>
<td>Hue</td>
<td></td>
<td>0° to 359°</td>
<td>Each input</td>
<td>0°</td>
<td>46</td>
</tr>
<tr>
<td>INPUT SATURATION</td>
<td>Saturation</td>
<td></td>
<td>0 to 200 [%]</td>
<td>Each input</td>
<td>100 [%]</td>
<td>47</td>
</tr>
</tbody>
</table>
### Setting output (OUTPUT SETTING)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Set value</th>
<th>Setting</th>
<th>Default value</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTPUT EQUALIZER</td>
<td>Output equalizer</td>
<td>OFF (Without automatic correction)/LOW/MEDIUM/HIGH</td>
<td>Each output</td>
<td>OFF (Without correction)</td>
<td>48</td>
</tr>
<tr>
<td>OUTPUT MODE</td>
<td>Output mode</td>
<td>AUTO/HDMI RGB/HDMI 422/HDMI 444/DVI</td>
<td>Each output</td>
<td>AUTO</td>
<td>48</td>
</tr>
<tr>
<td>OUTPUT HDMI MODE</td>
<td>Forced HDMI signal output</td>
<td>OFF (normal operation)/ERROR (HDMI output only when EDID loading fails)/ALWAYS (HDMI output at all times)</td>
<td>Each output</td>
<td>OFF (Normal operation)</td>
<td>49</td>
</tr>
<tr>
<td>OUTPUT HPD MASK</td>
<td>Time for ignoring video output request signals</td>
<td>OFF/2 to 15 (second)</td>
<td>Each output</td>
<td>OFF</td>
<td>49</td>
</tr>
</tbody>
</table>

### Setting output timing (OUTPUT TIMING)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Set value</th>
<th>Setting</th>
<th>Default value</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTPUT RESOLUTION</td>
<td>Output resolution</td>
<td>AT:/ 01: 640x480 / 02: 800x600 / 03:1024x768 / 04:1280x768 / 05:1280x800 / 06:1280x960 / 07:1280x1024 / 08:1360x768 / 09:1366x768 / 10:1400x1050 / 11:1440x900 / 12:1600x900 / 13:1680x1200 / 14:1680x1050 / 15:1920x1080 / 16:1920x1200 / 17:2044x1152 / 18: 720x480 / 19: 720x576 / 20:720p @60 / 21:720p @60 / 22:1080p @50 / 23:1080p @60 / 24:1080p @50 / 25:1088p @59</td>
<td>Each output</td>
<td>AT: (auto recognition)</td>
<td>51</td>
</tr>
<tr>
<td>OUTPUT ASPECT</td>
<td>Aspect ratio</td>
<td>THROUGH / 4:3 / 5:3 / 5:4 / 16:9 / 16:10</td>
<td>Each output</td>
<td>THROUGH</td>
<td>52</td>
</tr>
<tr>
<td>OUTPUT PATTERN</td>
<td>Test pattern output</td>
<td>OFF / V-STRIPES / CROSS HATCH / WHITE RASTER / RED RASTER / GREEN RASTER / BLUE RASTER / COLOR BAR / 16STEP GRAY / 256STEP GRAY</td>
<td>Each output</td>
<td>OFF</td>
<td>53</td>
</tr>
<tr>
<td>OUTPUT SIZE</td>
<td>Output size</td>
<td>20.0 to 400.0 [%]</td>
<td>Each output</td>
<td>100 [%]</td>
<td>54</td>
</tr>
<tr>
<td>OUTPUT POSITION</td>
<td>Output position</td>
<td>-400.0 to 400.0 [%]</td>
<td>Each output</td>
<td>0 [%]</td>
<td>54</td>
</tr>
<tr>
<td>OUTPUT BLANK COLOR</td>
<td>Blank color</td>
<td>R / G / B : 0 to 255</td>
<td>Each output</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td>OUTPUT BACKGROUND</td>
<td>Background color</td>
<td>R / G / B : 0 to 255</td>
<td>Each output</td>
<td>0</td>
<td>55</td>
</tr>
<tr>
<td>OUTPUT CONTRAST</td>
<td>Contrast</td>
<td>0 to 200 [%]</td>
<td>Each output</td>
<td>100 [%]</td>
<td>56</td>
</tr>
<tr>
<td>OUTPUT BRIGHTNESS</td>
<td>Brightness</td>
<td>0 to 200 [%]</td>
<td>Each output</td>
<td>100 [%]</td>
<td>56</td>
</tr>
<tr>
<td>OUTPUT FADE OUT-IN</td>
<td>Switching effect ON/OFF</td>
<td>ON / OFF</td>
<td>Each output</td>
<td>ON</td>
<td>57</td>
</tr>
<tr>
<td>OUTPUT HDCP</td>
<td>HDCP output</td>
<td>AUTO / INPUT ONLY</td>
<td>Each output</td>
<td>AUTO</td>
<td>57</td>
</tr>
</tbody>
</table>
### Setting audio (AUDIO)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>For</th>
<th>Default value</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIO DIGITAL OUT</td>
<td>Digital audio output</td>
<td>ON/OFF</td>
<td>Each output</td>
<td>ON</td>
<td>58</td>
</tr>
</tbody>
</table>

### Setting EDID (EDID)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>For</th>
<th>Default value</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDID SAVE</td>
<td>Copying EDID</td>
<td>Each save area</td>
<td>OUT1 to OUT32</td>
<td>05:1080p (59.94 / 60)</td>
<td>62</td>
</tr>
<tr>
<td>EDID EXTERNAL CH</td>
<td>Loading EDID channel</td>
<td>Each input</td>
<td>OUT1 to OUT32</td>
<td>OUT1</td>
<td>62</td>
</tr>
<tr>
<td>EDID SPEAKER CH</td>
<td>Audio channel</td>
<td>Each input</td>
<td>2 / 2.1 / 5.1 / 7.1 [channel]</td>
<td>Each input</td>
<td>2 [Channel]</td>
</tr>
<tr>
<td>EDID LINEAR PCM</td>
<td>Linear PCM Audio</td>
<td>Each input</td>
<td>32 / 44.1 / 48 / 88.2 / 96 / 192 [kHz]</td>
<td>Each input</td>
<td>48 [kHz]</td>
</tr>
<tr>
<td>EDID AC-3/Dolby D</td>
<td>AC-3/Dolby Digital Audio</td>
<td>Each input</td>
<td>OFF / 32 / 44.1 / 48 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
</tr>
<tr>
<td>EDID AAC</td>
<td>AAC Audio</td>
<td>Each input</td>
<td>OFF / 32 / 44.1 / 48 / 88.2 / 96 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
</tr>
<tr>
<td>EDID Dolby D+</td>
<td>Dolby Digital Plus Audio</td>
<td>Each input</td>
<td>OFF / 32 / 44.1 / 48 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
</tr>
<tr>
<td>EDID DTS</td>
<td>DTS Audio</td>
<td>Each input</td>
<td>OFF / 32 / 44.1 / 48 / 96 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
</tr>
<tr>
<td>EDID DTS-HD</td>
<td>DTS-HD Audio</td>
<td>Each input</td>
<td>OFF / 44.1 / 48 / 88.2 / 96 / 176.4 /192 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
</tr>
<tr>
<td>EDID Dolby TrueHD</td>
<td>Dolby TrueHD Audio</td>
<td>Each input</td>
<td>OFF / 44.1 / 48 / 88.2 / 96 / 176.4 /192 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
</tr>
<tr>
<td>EDID WXGA SELECT</td>
<td>WXGA</td>
<td>Each input</td>
<td>1360x768 / 1366x768</td>
<td>Each input</td>
<td>1360x768</td>
</tr>
</tbody>
</table>
### Setting RS-232C communication (COM PORT)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM PORT SETUP</td>
<td>RS-232C communication</td>
<td>Baud rate: 4800/9600/14400/19200/38400 (bps)</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data bit length: 7/8 [bit]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parity check: NONE/ODD/EVEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stop bit: 1/2 [bit]</td>
<td></td>
</tr>
</tbody>
</table>

### Setting LAN communication (LAN)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP ADDRESS</td>
<td>IP address</td>
<td>0.0.0.0 to 255.255.255.255</td>
<td>70</td>
</tr>
<tr>
<td>SUBNET MASK</td>
<td>Subnet-mask</td>
<td>0.0.0.0 to 255.255.255.254</td>
<td>70</td>
</tr>
<tr>
<td>CONTROL PORT</td>
<td>TCP port number</td>
<td>Port number: 1100/6000 to 6999</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 connections: ON (Up to 8 connections can be used)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF (Up to 4 connections can be used)</td>
<td></td>
</tr>
<tr>
<td>MAC ADDRESS</td>
<td>Displaying MAC address</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Setting preset memory (PRESET MEMORY)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESET LOAD</td>
<td>Loading preset memory</td>
<td>Preset memory number: 01 to 32</td>
<td>72</td>
</tr>
<tr>
<td>PRESET SAVE</td>
<td>Saving preset memory</td>
<td>Preset memory number: 01 to 32</td>
<td>73</td>
</tr>
<tr>
<td>PRESET EDIT</td>
<td>Editing preset memory</td>
<td>Preset memory number: 01 to 32</td>
<td>74</td>
</tr>
<tr>
<td>PRESET START UP</td>
<td>I/O channel at start-up</td>
<td>PRESET MEMORY 01 to 32</td>
<td>75</td>
</tr>
</tbody>
</table>

### Setting other functions (OTHERS)

<table>
<thead>
<tr>
<th>Menu name</th>
<th>Function</th>
<th>Setting</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEY LOCK</td>
<td>Grouping keys for key lock</td>
<td>MENU KEY : LOCK/UNLOCK</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CH KEY : LOCK/UNLOCK</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PRESET : LOCK/UNLOCK</td>
<td></td>
</tr>
<tr>
<td>BUZZER</td>
<td>Beep sound</td>
<td>ON/OFF</td>
<td>76</td>
</tr>
<tr>
<td>POWER SAVE</td>
<td>Power saving</td>
<td>ON/OFF</td>
<td>77</td>
</tr>
<tr>
<td>COMMAND FORMAT</td>
<td>Compatible-mode communication command</td>
<td>STANDARD/OPTION</td>
<td></td>
</tr>
<tr>
<td>ALARM</td>
<td>Alarm</td>
<td>ON/OFF</td>
<td>78</td>
</tr>
<tr>
<td>INPUT STATUS</td>
<td>Displaying input signal status</td>
<td>ON/OFF</td>
<td>79</td>
</tr>
<tr>
<td>MONITOR STATUS</td>
<td>Displaying sink device status</td>
<td></td>
<td>81</td>
</tr>
<tr>
<td>BOARD STATUS</td>
<td>Displaying slot board status</td>
<td></td>
<td>81</td>
</tr>
<tr>
<td>FAN STATUS</td>
<td>Displaying cooling fan status</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>POWER STATUS</td>
<td>Displaying supply voltage status</td>
<td></td>
<td>83</td>
</tr>
<tr>
<td>VERSION</td>
<td>Displaying firmware and hardware versions</td>
<td></td>
<td>84</td>
</tr>
</tbody>
</table>

**Note:** If "ALL" is selected in "7.1 Selecting Input/output channel" setup menu and each channel setting is not the same, the set value of the first channel is displayed and a "*" appears on the left.
8.2 Displaying I/O channel status [CROSS POINT]

8.2.1 Displaying current I/O channel status [CHANNEL DISPLAY]

**Setting by menu**

CROSS POINT → CHANNEL DISPLAY

![LCD screen to display I/O channel status](image)

[Fig. 8.1] LCD screen to display I/O channel status

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
</table>
| ①     | Output channel  
Press “▲” and “▼” keys to display a status of another output channel. |
| ②     | Displays the input channel status of the FDX. |
| ③     | Displays the input channel status of the MAU-3232 (optional). |

【NOTE】If there is no output slot board inserted to FDX, the output channel information is not shown.
8.3 Setting input [INPUT SETTING]

8.3.1 [INPUT EQUALIZER]

If you select “AUTO”, signals are corrected automatically depending on the amount of signal attenuation.

**Using menu**

INPUT SETTING → INPUT EQUALIZER

**For**

Each input connector (IN1 to IN32)

**Set value**

AUTO: Automatic correction [Default]

OFF: Without correction

【NOTE】

- If you do not press the “SET” key, the setting is not changed.
- If you use a 5 m/16.4 ft. or longer cable, we recommend testing the configuration beforehand since it is greatly affected by the quality of the output signals and the like.
- Set this menu before operating the FDX, since the image may be disturbed when the setting is switched.
- Channels that do not have a digital input slot board cannot be selected in this menu.
8.3.2 No-signal input monitoring time [INPUT SIGNAL CHECK]

Monitoring time for when the source device does not output video signals due to the changes of EDID or turning on/off the FDX. Use this menu to set the monitoring time which is from when a source device stops outputting signals to when the FDX requests the source device to output video signals.

Using menu

INPUT SETTING → INPUT SIGNAL CHECK

For

Each input connector (IN1 to IN32, ALL)

Set value

OFF, 3Sec to 15Sec  [Default]: 10Sec

【NOTE】

- If you use the power-saving function or dual monitor of the PC (source device), set this menu to “OFF”. PCs may release or cancel those functions if they receive the request to output video signals.
- If the set time is shorter than the timing that the source device outputs video, the source device may not output video signals because it sets the output signals repeatedly. In these cases, set the monitoring time longer.

[Fig. 8.3] Repeating output signal setting

- Channels that do not have an input slot board cannot be selected in this menu.
8.3.3 HDCP input enabled/disabled [INPUT HDCP]

Some source devices check whether the connected device supports HDCP and then determine whether they encrypt HDCP signals or not. Since the FDX is HDCP compliant, if it is connected to a sink device that is not HDCP compliant, the sink device may not display video.

In this menu, you can set whether the FDX encrypts HDCP to the source device. “ENABLE” is set by default, but if you want to connect the FDX to a sink device that is not HDCP compliant, select “DISABLE” to disable the encryption of HDCP output from the source device.

![Diagram showing enabling and disabling HDCP input]

Using menu
INPUT SETTING → INPUT HDCP

For
Each input connector (IN1 to IN32, ALL)

Set value
ENABLE: To enable HDCP encryption [Default]
DISABLE: To disable HDCP encryption

【NOTE】
- In order to display contents whose copyright is protected, set this menu to “ENABLE”.
- Channels that do not have an input slot board cannot be selected in this menu.
8.4 [INPUT TIMING]

8.4.1 Horizontal starting position [INPUT H POSITION]

**Using menu**

INPUT TIMING → INPUT H POSITION

**For**

Each input

**Set value**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 dot [default]</td>
</tr>
<tr>
<td>-100 to +100</td>
<td>-100 dots to +100 dots</td>
</tr>
</tbody>
</table>

**[NOTE]** This menu can be selected if FDX has scan converter output slot boards.

8.4.2 Horizontal size [INPUT H SIZE]

Horizontal size can be adjusted between -100 dots and +100 dots. If the set value is minus (-), the video image will be shown as reduced image to horizontal direction. If set value is plus (+), the video image will be shown as enlarged image to horizontal direction.

Set value to “-”

the video is shown as reduced image.

Set value to “+”

the video is shown as enlarged image.

[Fig. 8.5] Setting horizontal size
Using menu

INPUT TIMING → INPUT H SIZE

For

Each input

Set value

0 : 0 dot [default]
-100 to +100 : -100 dots to +100 dots

【NOTE】This menu can be selected if FDX has scan converter output slot boards.

8.4.3 Vertical starting position [INPUT V POSITION]

Using menu

INPUT TIMING → INPUT V POSITION

For

Each input

Set value

0 : 0 line [default]
-30 to +30 : -30 lines to +30 lines

【NOTE】This menu can be selected if FDX has scan converter output slot boards.
8.4.4 Vertical size [INPUT V SIZE]

Vertical size can be adjusted between -30 lines and +30 lines. If the set value is minus ( - ), the video image will be shown as reduced image to vertical direction. If set value is plus ( + ), the video image will be shown as enlarged image to vertical direction.

Set value to “−”
the video is shown as reduced image

Set value to “+”
the video is shown as enlarged image

[Fig. 8.6] Setting vertical size

Using menu
INPUT TIMING → INPUT V SIZE

For
Each input

Set value
0 : 0 line [default]
-30 to +30 : -30 lines to +30 lines

【NOTE】 This menu can be selected if FDX has scan converter output slot boards.
8.4.5 Input aspect ratio [INPUT ASPECT]

**Using menu**

INPUT TIMING → INPUT ASPECT

**For**

Each input

**Set value**

- AUTO: automatic adjustment [default]
- FULL: full screen
- 4:3: 4:3 aspect ratio
- 5:3: 5:3 aspect ratio
- 5:4: 5:4 aspect ratio
- 16:9: 16:9 aspect ratio
- 16:10: 16:10 aspect ratio
- 16:9 LT: 16:9 aspect ratio letter box

【NOTE】This menu can be selected if FDX has scan converter output slot boards.

8.4.6 Contrast [INPUT CONTRAST]

The cursor set to displayed “A” position and change a setting, the contrast changes relatively from current red, green, and blue settings. By moving the cursor position to each red, green, and blue, the contrast can be changed individually.

**Using menu**

INPUT TIMING → INPUT CONTRAST

**For**

Each input

**Set value**

- 100 %: 100 % [default]
- 0 % to 200 %: 0 % to 200 %

【NOTE】This menu can be selected if FDX has scan converter output slot boards.
8.4.7 Brightness [INPUT BRIGHTNESS]

Using menu

INPUT TIMING → INPUT BRIGHTNESS

For

Each input

Set value

<table>
<thead>
<tr>
<th>Value</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>100%</td>
</tr>
<tr>
<td>80 % to 120%</td>
<td>80 % to 120%</td>
</tr>
</tbody>
</table>

【NOTE】This menu can be selected if FDX has scan converter output slot boards.

8.4.8 Gamma [INPUT GAMMA]

By setting value to lower value, the gradation of black is increased and feeling darker. By setting value to higher value, the gradation of white is increased and feeling brighter. Gamma adjustment does not adjust black and white levels but halftone is changed while brightness adjusts black and white levels.

Using menu

INPUT TIMING → INPUT GAMMA

For

Each input

Set value

<table>
<thead>
<tr>
<th>Value</th>
<th>Value Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 LOW MIN to 0.9 LOW</td>
<td>emphasizing darkness</td>
</tr>
<tr>
<td>1.0 NORMAL</td>
<td>no adjustment [default]</td>
</tr>
<tr>
<td>1.1 HIGH to 3.0 HIGH MAX</td>
<td>emphasizing brightness</td>
</tr>
</tbody>
</table>

【NOTE】This menu can be selected if FDX has scan converter output slot boards.
8.4.9 Sharpness [INPUT FILTER]

Using menu
INPUT TIMING → INPUT FILTER

For
Each input

Set value
-5 SOFT MIN to -1 SOFT : softer filter (soft video image)
0 NORMAL               : No filter          [default]
1 SHARP to 15 SHARP MAX : sharper filter (sharp video image)

【NOTE】This menu can be selected if FDX has scan converter output slot boards.

8.4.10 Hue [INPUT HUE]

Using menu
INPUT TIMING → INPUT HUE

For
Each input

Set value
0°                 : 0°      [default]
0° to 359°          : 0° to 359°

【NOTE】This menu can be selected if FDX has scan converter output slot boards.
8.4.11 Saturation [INPUT SATURATION]

**Using menu**

INPUT TIMING → INPUT SATURATION

**For**

Each input

**Set value**

<table>
<thead>
<tr>
<th>100 %</th>
<th>100 %</th>
<th>[default]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 % to 200 %</td>
<td>0 % to 200 %</td>
<td></td>
</tr>
</tbody>
</table>

**[NOTE]** This menu can be selected if FDX has scan converter output slot boards.
8.5 [OUTPUT SETTING]

8.5.1 Output equalizer [OUTPUT EQUALIZER]

Using menu
OUTPUT SETTING → OUTPUT EQUALIZER

For
Each output connector (OUT1 to OUT32, ALL)

Set value
OFF: No correction [Default]
LOW
MEDIUM
HIGH

【NOTE】
- If you use a 5 m/16.4 ft. or longer cable, we recommend that you test the configuration beforehand since it is greatly affected by the quality of the output signals and the like.
- Set this menu before operating the FDX, since the image may be disturbed when the setting is switched.
- Channels that do not have a digital output slot board or digital scan converter slot board cannot be selected in this menu.

8.5.2 Output mode [OUTPUT MODE]

The sink device automatically selects the appropriate color space according to the color space of the input video. If the sink device cannot select the color space for some reason, the color space can be manually selected using this menu.

Using menu
OUTPUT SETTING → OUTPUT MODE

For
Each output connector (OUT1 to OUT32, ALL)

Set value
AUTO: Automatic [Default]
HDMI RGB: RGB output
HDMI 422: YCbCr 4:2:2 output
HDMI 444: YCbCr 4:4:4 output
DVI: DVI output

【NOTE】Channels that do not have an output slot board cannot be selected in this menu.
8.5.3 Forced HDMI signal output [OUTPUT HDMI MODE]

The FDX acquires EDID from the sink device and determines if the sink device is an HDMI device or DVI device in order to output HDMI signals. However, if the FDX cannot acquire EDID for some reason, problems such as no audio input and the like may occur. In these cases, FDX recognized the connected sink device is HDMI or DVI device and output signal as HDMI or DVI mode depending on its setting.

Using menu
OUTPUT SETTING → OUTPUT HDMI MODE

For
Each output connector (OUT1 to OUT32, ALL)

Set value
OFF : DVI output when EDID loading error occurs [Default]
ERROR : HDMI output when EDID loading error occurs
ALWAYS : Always HDMI output

【NOTE】
● If you use this setting for forced HDMI signal output, set the resolution of the EDID to a resolution other than “EXTERNAL (External EDID)” and set the EDID according to the resolution of the targeted sink device.
● Problems may occur, if for example, correct video or audio cannot be output when the source device cannot correct the EDID may occur. This menu is valid when HDMI signal is input to the FDX and output mode setting is other than “DVI”.

【See : 8.8.1 EDID resolution [EDID DATA]]
【See : 8.5.2 Output mode [OUTPUT MODE]]

Channels that do not have an output slot board cannot be selected in this menu.

8.5.4 Time for ignoring video output request signals [OUTPUT HPD MASK]

Time for ignoring the video output request signals sent from the sink device.
If the request signals are repeated in a short cycle, the FDX processes video output from the first cycle. As a result, video may not be output. This problem can be solved by setting the ignoring time.

Using menu
OUTPUT SETTING → OUTPUT HPD MASK

For
Each output connector (OUT1 to OUT32, ALL)

Set value
OFF: Not ignoring the request signals [Default]
2Sec to 15Sec

【NOTE】 Channels that do not have a digital output slot board or digital scan converter slot board cannot be selected in this menu.
8.5.5 Deep color [OUTPUT DEEP COLOR]

Using menu

OUTPUT SETTING → OUTPUT DEEP COLOR

For

Each output connector (OUT1 to OUT32)

Set value

24Bit : 24 bit / pixel (8 bit / component) [Default]
30Bit : 30 bit / pixel (10 bit / component)
36Bit : 36 bit / pixel (12 bit / component)

【NOTE】

● If you set “30 bit / pixel (10 bit / component)” or “36 bit/pixel (12 bit / component)”, the transmission clock frequency is increased. As a result, noise appears on image when a bad-condition cable or long cable is connected. In such a case, set this menu to “24 bit / pixel (8 bit/component)”. 
● Digital scan converter output slot board and HDBaseT scan converter output slot board support Deep Color up to “30 bit / pixel (10 bit / component)”.
● Since optical I/O slot boards do not support Deep Color, 24 bit/pixel (8 bit/component) is used.
● Channels that do not have an output slot board cannot be selected in this menu.
8.6 [OUTPUT TIMING]

8.6.1 Output resolution [OUTPUT RESOLUTION]

Using menu

OUTPUT TIMING → OUTPUT RESOLUTION

For

Each output connector (OUT1 to OUT32)

Set value

<table>
<thead>
<tr>
<th>AT:</th>
<th>Set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT:</td>
<td>Automatic output (current output resolution will be displayed) [Default]</td>
</tr>
<tr>
<td>01: 640x 480</td>
<td>VGA@60(640x480)</td>
</tr>
<tr>
<td>02: 800x 600</td>
<td>SVGA@60(800x600)</td>
</tr>
<tr>
<td>03:1024x 768</td>
<td>XGA@60(1024x768)</td>
</tr>
<tr>
<td>04:1280x 768</td>
<td>WXGA@60(1280x768)</td>
</tr>
<tr>
<td>05:1280x 800</td>
<td>WXGA@60(1280x800)</td>
</tr>
<tr>
<td>06:1280x 960</td>
<td>Quad-VGA@60(1280x960)</td>
</tr>
<tr>
<td>07:1280x1024</td>
<td>SXGA@60(1280x1024)</td>
</tr>
<tr>
<td>08:1360x 768</td>
<td>WXGA@60(1360x768)</td>
</tr>
<tr>
<td>09:1366x 768</td>
<td>WXGA@60(1366x768)</td>
</tr>
<tr>
<td>10:1400x1050</td>
<td>SXGA++@60(1400x1050)</td>
</tr>
<tr>
<td>11:1440x 900</td>
<td>WXGA++@60(1440x900)</td>
</tr>
<tr>
<td>12:1600x 900</td>
<td>WXGA++@60(1600x900)</td>
</tr>
<tr>
<td>13:1600x1200</td>
<td>UXGA@60(1600x1200)</td>
</tr>
<tr>
<td>14:1680x1050</td>
<td>WSXGA++@60(1680x1050)</td>
</tr>
<tr>
<td>15:1920x1080</td>
<td>VESAHD@60(1920x1080)</td>
</tr>
<tr>
<td>16:1920x1200</td>
<td>WUXGA@60(1920x1200)</td>
</tr>
<tr>
<td>17:2048x1152</td>
<td>QWUXGA@60(2048x1152)</td>
</tr>
<tr>
<td>18: 720x 480</td>
<td>480p@59.94(720x480)</td>
</tr>
<tr>
<td>19: 720x 576</td>
<td>576p@59.94(720x576)</td>
</tr>
<tr>
<td>20:720p @50</td>
<td>720p@59.94(720x720)</td>
</tr>
<tr>
<td>21:720p @59</td>
<td>720p@59.94(720x720)</td>
</tr>
<tr>
<td>22:1080i @50</td>
<td>1080i@59.94(1920x1080)</td>
</tr>
<tr>
<td>23:1080i @59</td>
<td>1080i@59.94(1920x1080)</td>
</tr>
<tr>
<td>24:1080p @50</td>
<td>1080p@59.94(1920x1080)</td>
</tr>
<tr>
<td>25:1080p @59</td>
<td>1080p@59.94(1920x1080)</td>
</tr>
</tbody>
</table>

Numbers following “@” are vertical synchronous frequency.

480i/480p/576i/576p/720p/1080i/1080p are the timings of CEA-861 standard.

Others are timings meeting VESA DMT standard or VESA CVT standard. VESAHD@60, WUXGA@60, and QWXGA@60 are output as Reduced Blanking.

【NOTE】

- If you do not press the “SET” key, the setting is not changed.
- Channels that do not have a scan converter output slot board cannot be selected in this menu.
- Optical I/O slot board does not support QWXGA@60.
8.6.2 Aspect ratio [OUTPUT ASPECT]

If you select “THROUGH”, the aspect ratio of the resolution selected in “8.6.1 Output resolution [OUTPUT RESOLUTION]” will be applied. If aspect ratio of the target sink device and the ratio set in “Output resolution” are different from each other, you can select an aspect ratio of the sink device from “4:3”, “5:4”, “5:3”, “16:9”, and “16:10”.

**Using menu**

OUTPUT TIMING → OUTPUT ASPECT

**For**

Each output connector (OUT1 to OUT32)

**Set value**

- **THROUGH**: aspect ratio of output resolution  [Default]
- 4:3 : 4:3 aspect ratio
- 5:3 : 5:3 aspect ratio
- 5:4 : 5:4 aspect ratio
- 16:9 : 16:9 aspect ratio
- 16:10 : 16:10 aspect ratio

**[NOTE]** Channels that do not have a scan converter output slot board cannot be selected in this menu.
8.6.3 Test pattern output [OUTPUT PATTERN]

Using menu

OUTPUT TIMING → OUTPUT PATTERN

For

Each output connector (OUT1 to OUT32)

Set value

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>no test pattern output [Default]</td>
</tr>
<tr>
<td>V-STRIPES</td>
<td>white and black stripes</td>
</tr>
<tr>
<td>CROSS HATCH</td>
<td>hatch</td>
</tr>
<tr>
<td>WHITE RASTER</td>
<td>white</td>
</tr>
<tr>
<td>RED RASTER</td>
<td>red</td>
</tr>
<tr>
<td>GREEN RASTER</td>
<td>green</td>
</tr>
<tr>
<td>BLUE RASTER</td>
<td>blue</td>
</tr>
<tr>
<td>COLOR BAR</td>
<td>color bar</td>
</tr>
<tr>
<td>16STEP GRAY</td>
<td>16 steps gray scale</td>
</tr>
<tr>
<td>256STEP GRAY</td>
<td>256 steps gray scale</td>
</tr>
</tbody>
</table>

[Fig. 8.7] Test pattern

【NOTE】Channels that do not have a scan converter output slot board cannot be selected in this menu.
8.6.4 Output size [OUTPUT SIZE]

**Using menu**

OUTPUT TIMING → OUTPUT SIZE

**For**

Each output connector (OUT1 to OUT32)

**Set value**

<table>
<thead>
<tr>
<th>Value</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>20.0 % to 400.0 %</td>
<td>20.0 % to 400 %</td>
</tr>
</tbody>
</table>

【NOTE】Channels that do not have a scan converter output slot board cannot be selected in this menu.

8.6.5 Output position [OUTPUT POSITION]

**Using menu**

OUTPUT TIMING → OUTPUT POSITION

**For**

Each output connector (OUT1 to OUT32)

**Set value**

<table>
<thead>
<tr>
<th>Value</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 %</td>
<td>0 %</td>
</tr>
<tr>
<td>-400.0 % to +400.0 %</td>
<td>-400 % to +400 %</td>
</tr>
</tbody>
</table>

【NOTE】Channels that do not have a scan converter output slot board cannot be selected in this menu.
8.6.6 Blank color [OUTPUT BLANK COLOR]

The cursor set to displayed “A” position and change a setting, the blank color changes relatively from current red, green, and blue settings. By moving the cursor position to each red, green, and blue, the blank color can be changed individually.

Using menu

OUTPUT TIMING → OUTPUT BLANK COLOR

For

Each output connector (OUT1 to OUT32)

Set value

<table>
<thead>
<tr>
<th>Value</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 [Default]</td>
</tr>
<tr>
<td>0 to 255</td>
<td>0 to 255</td>
</tr>
</tbody>
</table>

【NOTE】 Channels that do not have a scan converter output slot board cannot be selected in this menu.

8.6.7 Background color [OUTPUT BACKGROUND]

The cursor set to displayed “A” position and change a setting, the contrast changes relatively from current red, green, and blue settings. By moving the cursor position to each red, green, and blue, the contrast can be changed individually.

Using menu

OUTPUT TIMING → OUTPUT BACKGROUND

For

Each output connector (OUT1 to OUT32)

Set value

<table>
<thead>
<tr>
<th>Value</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 [Default]</td>
</tr>
<tr>
<td>0 to 255</td>
<td>0 to 255</td>
</tr>
</tbody>
</table>

【NOTE】 Channels that do not have a scan converter output slot board cannot be selected in this menu.
8.6.8 Contrast [OUTPUT CONTRAST]

Using menu
OUTPUT TIMING → OUTPUT CONTRAST

For
Each output connector (OUT1 to OUT32)

Set value
100 % : 100 % [Default]
0 % to 200 % : 0 % to 200 %

【NOTE】Channels that do not have a scan converter output slot board cannot be selected in this menu.

8.6.9 Brightness [OUTPUT BRIGHTNESS]

Using menu
OUTPUT TIMING → OUTPUT BRIGHTNESS

For
Each output connector (OUT1 to OUT32)

Set value
100 % : 100 % [Default]
0 % to 200 % : 0 % to 200 %

【NOTE】Channels that do not have a scan converter output slot board cannot be selected in this menu.
8.6.10 Switching effect [OUTPUT FADE OUT-IN]

**Using menu**

OUTPUT TIMING → OUTPUT FADE OUT-IN

**For**

Each output connector (OUT1 to OUT32)

**Set value**

ON : ON (switching effect) [Default]
OFF : OFF (no switching effect)

【NOTE】Channels that do not have a scan converter output slot board cannot be selected in this menu.

8.6.11 HDCP output [OUTPUT HDCP]

Please set “AUTO” normally. If “AUTO” is set, FDX does not output HDCP until input channel which has HDCP is selected. Once input channel which has HDCP is selected, FDX outputs HDCP always after the selection.

If “INPUT ONLY” is selected, FDX outputs HDCP only if input signal has HDCP. However, some sink devices may fail HDCP authentication sometimes when signal changes from HDCP OFF to ON and not output video and audio temporary.

If sink devices which do not support HDCP are connected, FDX outputs signal which does not have HDCP regardless this menu.

**Using menu**

OUTPUT TIMING → OUTPUT HDCP

**For**

Each output connector (OUT1 to OUT32)

**Set value**

AUTO : Do not output HDCP until input channel which has HDCP is selected [Default]
INPUT ONLY : HDCP is output only if input signal has HDCP.

【NOTE】Channels that do not have a scan converter output slot board cannot be selected in this menu.
8.7 [AUDIO]

8.7.1 Digital audio output [AUDIO DIGITAL OUT]

**Using menu**

AUDI0 → AUDIO DIGITAL OUT

**For**

Each output connector (OUT1 to OUT32)

**Set value**

ON [Default]
OFF

【NOTE】Channels that do not have an output slot board cannot be selected in this menu.
8.8 [EDID]

You can customize the EDID to be sent to the source device as needed.

(1) Select and register the sink device to which the EDID is copied from the output connector. Skip this step if the built-in EDID is used.

【See 8.8.2 Copying EDID [EDID SAVE]】
【See 8.8.3 Loading EDID channel [EDID EXTERNAL CH]】

(2) Set the EDID to be sent to the source device.

【See 8.8.1 EDID resolution [EDID DATA]】

(3) If the built-in EDID is used, customize it depending on the intended use.

【See 8.8.4 Deep Color [EDID DEEP COLOR]】
【See 8.8.5 Audio channel [EDID SPEAKER CH]】
【See 8.8.6 Linear PCM Audio [EDID LINEAR PCM]】
【See 8.8.7 AC-3 Dolby Digital Audio [EDID AC-3/Dolby D]】
【See 8.8.8 AAC Audio [EDID AAC]】
【See 8.8.9 Dolby Digital Plus Audio [EDID Dolby D+]】
【See 8.8.10 DTS Audio [EDID DTS]】
【See 8.8.11 DTS-HD Audio [EDID DTS-HD]】
【See 8.8.12 Dolby TrueHD Audio [EDID Dolby TrueHD]】
【See 8.8.13 WXGA [EDID WXGA SELECT]】
### 8.8.1 EDID resolution [EDID DATA]

EDID to be sent to the source device
In order to use values “05” to “24” which are built-in EDID, set the maximum resolution supported by the sink device.

**Using menu**

EDID → EDID DATA

**For**

Each input connector (IN1 to IN32)

**Set value**

**[Table 8.1] Max. resolution of EDID**

<table>
<thead>
<tr>
<th>Set value</th>
<th>Max. resolution</th>
<th>Pixels</th>
<th>Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>EXTERNAL (External EDID)</td>
<td>—</td>
<td>—</td>
<td>If no acquired data, the default is 05.</td>
</tr>
<tr>
<td>01</td>
<td>Copied EDID1</td>
<td>—</td>
<td>—</td>
<td>If no acquired data, the default is 05.</td>
</tr>
<tr>
<td>02</td>
<td>Copied EDID2</td>
<td>—</td>
<td>—</td>
<td>If no acquired data, the default is 05.</td>
</tr>
<tr>
<td>03</td>
<td>Copied EDID3</td>
<td>—</td>
<td>—</td>
<td>If no acquired data, the default is 05.</td>
</tr>
<tr>
<td>04</td>
<td>Copied EDID4</td>
<td>—</td>
<td>—</td>
<td>If no acquired data, the default is 05.</td>
</tr>
<tr>
<td>05</td>
<td>1080p (59.94/60)</td>
<td>1920×1080</td>
<td>HDTV</td>
<td>Default</td>
</tr>
<tr>
<td>06</td>
<td>720p</td>
<td>1280×720</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>1080i</td>
<td>1920×1080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>1080p (24/25/30/50)</td>
<td>1920×1080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>SVGA</td>
<td>800×600</td>
<td>VESA</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>XGA</td>
<td>1024×768</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>VESA720</td>
<td>1280×720</td>
<td>CVT</td>
<td>For DVI device input</td>
</tr>
<tr>
<td>12</td>
<td>WXGA</td>
<td>1280×768</td>
<td>VESA</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>WXGA</td>
<td>1280×800</td>
<td></td>
<td>MAC supported</td>
</tr>
<tr>
<td>14</td>
<td>Quad-VGA</td>
<td>1280×960</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>SXGA</td>
<td>1280×1024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>WXGA</td>
<td>1360×768, 1366×768</td>
<td></td>
<td>The number of pixels is set in &quot;Selecting WXGA&quot;.</td>
</tr>
<tr>
<td>17</td>
<td>SXGA+</td>
<td>1400×1050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>WXGA+</td>
<td>1440×900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>WXGA++</td>
<td>1600×900</td>
<td>(RB)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>UXGA</td>
<td>1600×1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>WSXGA</td>
<td>1680×1050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>VESA1080</td>
<td>1920×1080</td>
<td>CVT</td>
<td>(RB), for DVI device input</td>
</tr>
<tr>
<td>23</td>
<td>WUXGA</td>
<td>1920×1200</td>
<td>VESA</td>
<td>(RB)</td>
</tr>
<tr>
<td>24</td>
<td>QWXGA</td>
<td>2048×1152</td>
<td></td>
<td>(RB)</td>
</tr>
</tbody>
</table>

(RB): Reduced Blanking

**[See 8.8.2 Copying EDID [EDID SAVE]]**
**[See 8.8.3 Loading EDID channel [EDID EXTERNAL CH]]**
**[See 8.8.13 WXGA [EDID WXGA SELECT]]**
**[Table 8.2] Max. resolution and number of EDID-supported pixels**

| Max. resolution | EDID supported pixels | 640 | N | 800 | N | 600 | 1024 | N | 768 | 1280 | N | 768 | 1280 | N | 800 | 1280 | N | 960 | 1280 | N | 1024 | 1360 | N | 768 | * | 1366 | N | 768 | * | 1400 | N | 1050 | 1440 | N | 900 | 1600 | N | 1200 | 1680 | N | 1050 | 1920 | N | 1080 | 1920 | N | 1200 | 2048 | N | 1152 |
|------------------|-----------------------|-----|---|-----|---|-----|------|---|-----|------|---|-----|------|---|-----|------|---|-----|------|---|-----|------|---|-----|------|---|-----|------|---|-----|------|---|-----|------|
| 00               | -                     | -   | - | -   | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    |
| 01               | -                     | -   | - | -   | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    |
| 02               | -                     | -   | - | -   | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    |
| 03               | -                     | -   | - | -   | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    |
| 04               | -                     | -   | - | -   | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    | - | -   | -    |
| 05 1080p (59.94/60) | S | S | S | N | N | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | N | N |
| 06 720p          | S | S | N | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 07 1080i         | S | S | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 08 1080p (24/25/30/50) | S | S | S | N | N | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 09 800N600       | S | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 10 1024N768      | S | S | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 11 1280N720      | S | S | S | S | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 12 1280N768      | S | S | S | S | S | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 13 1280N800      | S | S | S | S | S | S | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 14 1280N960      | S | S | S | S | S | S | S | S | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 15 1280N1024     | S | S | S | S | S | S | S | S | S | S | S | S | S | N | N | N | N | N | N | N | N | N |
| 16 1360N768      | S | S | S | S | S | S | S | S | S | S | S | S | S | S | N | N | N | N | N | N | N | N |
| 17 1400N1050     | S | S | S | S | S | N | S | S | S | S | S | S | S | S | S | N | N | N | N | N | N | N |
| 18 1440N900      | S | S | S | S | S | N | S | S | S | S | S | S | S | S | S | N | N | N | N | N | N | N |
| 19 1600N900      | S | S | S | S | S | N | S | S | S | S | S | S | S | S | S | S | N | N | N | N | N | N |
| 20 1600N1200     | S | S | S | S | S | N | S | S | S | S | S | S | S | S | S | S | S | N | N | N | N | N |
| 21 1680N1050     | S | S | S | S | S | N | S | S | S | S | S | S | S | S | S | S | S | S | S | S | N | N |
| 22 1920N1080     | S | S | S | N | N | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 23 1920N1200     | S | S | S | N | N | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 24 2048N1152     | S | S | S | N | N | N | S | S | S | N | N | S | S | S | S | S | S | S | S | S | S | S |

S: Supported, N: Not supported, —: Not used

* The number of EDID-supported pixels for 1360\times768 and 1366\times768 can be set in 8.8.13 WXGA [EDID WXGA SELECT]. The default value is 1360\times768.

**[NOTE]**
- If you do not press the “SET” key, the setting is not changed.
- Optical I/O slot board does not support QWXGA.
- Channels that do not have an input slot board cannot be selected in this menu.
8.8.2 Copying EDID [EDID SAVE]

EDID of the sink device can be read and saved, and the copied EDID can be registered in the FDX that is the same as built-in EDID.

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu

EDID → EDID SAVE

For

Each copied EDID save area (1[xxx] to 4[xxx])

Set value

OUT1[xxx]* to OUT32[xxx]*: EDID data of OUT1 to OUT32

[Default]: 05:1080p (59.94/60), built-in EDID, for all save areas

* “xxx”: Vendor code of the saved EDID

[NOTE]

● If you do not press the “SET” key, the setting is not changed.
● Channels that do not have an output slot board cannot be selected in this menu.

8.8.3 Loading EDID channel [EDID EXTERNAL CH]

If the EDID type is set to “EXTERNAL (External EDID)” for EDID resolution setting, set the output connector value that loads the EDID.

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu

EDID → EDID EXTERNAL CH

For

Each input connector (IN1 to IN32)

Set value

OUT1 to OUT32  [Default]: OUT1

[NOTE]

● If you do not press the “SET” key, the setting is not changed.
● This menu is valid if you select “00” for the resolution of EDID.
● Channels that do not have an input or output slot board cannot be selected in this menu.
8.8.4 Deep Color [EDID DEEP COLOR]

Deep Color (color depth) output from the source device

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu

EDID → EDID DEEP COLOR

For

Each input connector (IN1 to IN32)

Set value

- 24Bit: 24 bit/pixel (8 bit/component) [Default]
- 30Bit: 30 bit/pixel (10 bit/component)
- 36Bit: 36 bit/pixel (12 bit/component)

【NOTE】

- If you do not press the “SET” key, the setting is not changed.
- If you set “30 bit / pixel (10 bit / component)” or “36 bit/pixel (12 bit / component)”, the transmission clock frequency is increased. As a result, noise appears on image when a bad-condition cable or long cable is connected. In such a case, set this menu to “24 bit / pixel (8 bit/component)”. If EDID resolution is set to “05” to “24”, this menu will be valid.
- Digital scan converter output slot board and HDBaseT scan converter output slot board support Deep Color up to “30 bit / pixel (10 bit / component)”.
- Since optical I/O slot boards do not support Deep Color, 24 bit/pixel (8 bit/component) is used.
- Channels that do not have an input slot board cannot be selected in this menu.
8.8.5 Audio channel [EDID SPEAKER CH]

The number of channels to the audio of multi-channel output that is from the source device

**Using menu**

EDID → EDID SPEAKER CH

**For**

Each input connector (IN1 to IN32)

**Set value**

- 2CH  [Default]
- 2.1CH
- 5.1CH
- 7.1CH

The number of channels and speaker configuration

<table>
<thead>
<tr>
<th>The number of channels</th>
<th>FL/FR</th>
<th>LFE</th>
<th>FC</th>
<th>RL/RR</th>
<th>RLC/RRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 channels</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>2.1 channels</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>5.1 channels</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>7.1 channels</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
</tbody>
</table>

**[Fig. 8.9] The number of channels and speaker configuration**

**[NOTE]**

- If you do not press the “SET” key, the setting is not changed.
- If EDID resolution is set to “05” to “24”, this menu will be valid.
- Channels that do not have an input slot board cannot be selected in this menu.
8.8.6 Linear PCM Audio [EDID LINEAR PCM]

The maximum sampling frequency of PCM audio that is output from the source device

**Using menu**

EDID → EDID LINEAR PCM

**For**

Each input connector (IN1 to IN32)

**Set value**

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>32kHz</td>
<td>32 kHz</td>
</tr>
<tr>
<td>44.1kHz</td>
<td>44.1 kHz</td>
</tr>
<tr>
<td>48kHz</td>
<td>48 kHz</td>
</tr>
<tr>
<td>88.2kHz</td>
<td>88.2 kHz</td>
</tr>
<tr>
<td>96kHz</td>
<td>96 kHz</td>
</tr>
</tbody>
</table>

**[NOTE]**

- If you do not press the “SET” key, the setting is not changed.
- For LCD monitors and the like, some audio formats are not supported. Select the audio format and sampling frequency that are supported by the connected devices.
- If EDID resolution is set to “05” to “24”, this menu will be valid.
- Channels that do not have an input slot board cannot be selected in this menu.

8.8.7 AC-3 Dolby Digital Audio [EDID AC-3/Dolby D]

The maximum sampling frequency of AC-3 Dolby Digital Audio that is output from the source device

**Using menu**

EDID → EDID AC-3/Dolby D

**For**

Each input connector (IN1 to IN32)

**Set value**

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>[Default]</td>
</tr>
<tr>
<td>32kHz</td>
<td></td>
</tr>
<tr>
<td>44.1kHz</td>
<td></td>
</tr>
<tr>
<td>48kHz</td>
<td></td>
</tr>
</tbody>
</table>

**[NOTE]**

- If you do not press the “SET” key, the setting is not changed.
- For LCD monitors and the like, some audio formats are not supported. Select the audio format and sampling frequency that are supported by the connected devices.
- If EDID resolution is set to “05” to “24”, this menu will be valid.
- Channels that do not have an input slot board cannot be selected in this menu.
8.8.8 AAC Audio [EDID AAC]

The maximum sampling frequency of AAC Audio that is output from the source device

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu

EDID → EDID AAC

For

Each input connector (IN1 to IN32)

Set value

OFF [Default]
32kHz
44.1kHz
48kHz
88.2kHz
96kHz

[NOTE]

• If you do not press the “SET” key, the setting is not changed.
• For LCD monitors and the like, some audio formats are not supported. Select the audio format and sampling frequency that are supported by the connected devices.
• If EDID resolution is set to “05” to “24”, this menu will be valid.
• Channels that do not have an input slot board cannot be selected in this menu.

8.8.9 Dolby Digital Plus Audio [EDID Dolby D+]

The maximum sampling frequency of Dolby Digital Plus Audio that is output from the source device

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu

EDID → EDID Dolby D+

For

Each input connector (IN1 to IN32)

Set value

OFF [Default]
32kHz
44.1kHz
48kHz

[NOTE]

• If you do not press the “SET” key, the setting is not changed.
• For LCD monitors and the like, some audio formats are not supported. Select the audio format and sampling frequency that are supported by the connected devices.
• If EDID resolution is set to “05” to “24”, this menu will be valid.
• Channels that do not have an input slot board cannot be selected in this menu.
8.8.10 DTS Audio [EDID DTS]

The maximum sampling frequency of DTS Audio that is output from the source device

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu
EDID → EDID DTS

For
Each input connector (IN1 to IN32)

Set value
OFF  [Default]
32kHz
44.1kHz
48kHz
96kHz

[NOTE]
• If you do not press the “SET” key, the setting is not changed.
• For LCD monitors and the like, some audio formats are not supported. Select the audio format and sampling frequency that are supported by the connected devices.
• If EDID resolution is set to “05” to “24”, this menu will be valid.
• Channels that do not have an input slot board cannot be selected in this menu.

8.8.11 DTS-HD Audio [EDID DTS-HD]

The maximum sampling frequency of DTS-HD Audio that is output from the source device

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu
EDID → EDID DTS-HD

For
Each input connector (IN1 to IN32)

Set value
OFF  [Default]
44.1kHz
48kHz
88.2kHz
96kHz
176.4kHz
192kHz

[NOTE]
• If you do not press the “SET” key, the setting is not changed.
• For LCD monitors and the like, some audio formats are not supported. Select the audio format and sampling frequency that are supported by the connected devices.
• If EDID resolution is set to “05” to “24”, this menu will be valid.
• Channels that do not have an input slot board cannot be selected in this menu.
8.8.12 Dolby TrueHD Audio [EDID Dolby TrueHD]

The maximum sampling frequency of Dolby TrueHD Audio that is output from the source device

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu
EDID → EDID Dolby TrueHD

For
Each input connector (IN1 to IN32)

Set value
OFF [Default]
44.1kHz
48kHz
88.2kHz
96kHz
176.4kHz
192kHz

【NOTE】
• If you do not press the “SET” key, the setting is not changed.
• For LCD monitors and the like, some audio formats are not supported. Select the audio format and sampling frequency that are supported by the connected devices.
• If EDID resolution is set to “05” to “24”, this menu will be valid.
• Channels that do not have an input slot board cannot be selected in this menu.

8.8.13 WXGA [EDID WXGA SELECT]

Set the number of pixels of WXGA according to the resolution setting of EDID

[See: 8.8.1 EDID resolution [EDID DATA]]

Using menu
EDID → EDID WXGA SELECT

For
Each input connector (IN1 to IN32)

Set value
1360x 768 [Default]
1366x 768

【NOTE】
• If you do not press the “SET” key, the setting is not changed.
• If EDID resolution is set to “05”, “08”, “16” to “22”, this menu will be valid.
• Channels that do not have an input slot board cannot be selected in this menu.
8.9 Setting RS-232C communication [COM PORT]

8.9.1 RS-232C communication [COM PORT SETUP]

**Using menu**

COM PORT → COM PORT SETUP

**Set value (baud rate)**

- 4800bps
- 9600bps [Default]
- 14400bps
- 19200bps
- 38400bps

7: data bit length is 7 bits
8: data bit length is 8 bits [Default]

NONE: No parity check [Default]

ODD : Parity check (odd number)

EVEN : Parity check (even number)

1: 1 stop bit [Default]
2: 2 stop bits

【NOTE】If you do not press the "SET" key, the setting is not changed.
8.10 LAN communication [LAN]

8.10.1 IP address [IP ADDRESS]

**Using menu**
LAN → IP ADDRESS

**Set value**
0.0.0.0 to 255.255.255.255  [Default] 192.168.1.199

【NOTE】If you do not press the “SET” key, the setting is not changed.

8.10.2 Subnet mask [SUBNET MASK]

**Using menu**
LAN → SUBNET MASK

**Set value**
0.0.0.0 to 255.255.255.254  [Default] 255.255.255.0

【NOTE】If you do not press the “SET” key, the setting is not changed.
8.10.3 TCP port number [CONTROL PORT]

If you set the 8-connection configuration to OFF, 8 connections will be divided into 4 connections for web browser control and 4 connections for communication command control, and the HTTP port number will be “80” (fixed).

If you set the 8-connection configuration to ON, up to 8 connections can be connected simultaneously. Select one of “1100”, “6000” to “6999” for connections for communication command control.

Using menu
LAN → CONTROL PORT

Set value
1: 1100, 6000 to 6999  [Default] 1100
2: OFF: up to 4 connections can be used  [Default]
ON: up to 8 connections can be used
Select “1” or “2” first. If you select “2”, then select “OFF” or “ON”

【NOTE】
- If you do not press the “SET” key, the setting is not changed.
- If you select “3” (8 connections ON), the web browser cannot be used.

8.10.4 Displaying MAC address [MAC ADDRESS]

Using menu
LAN → MAC ADDRESS
8.11 Setting preset memory [PRESET MEMORY]

8.11.1 Loading preset memory [PRESET LOAD]

Loading registered preset memory and apply the I/O channel setting

**Using menu**

PRESET MEMORY → PRESET LOAD

**Set value**

01 to 32: Preset memory number 1 to 32 for loading  [Default]  All memory channels are not controlled.*

* <All memory channels are not controlled>: one of setting options in the “8.11.3 Editing preset memory [PRESET EDIT]” menu. “V” and “A” are set to “---” (not controlled) by default. See “8.11.3 Editing preset memory [PRESET EDIT]” for details.

【NOTE】If you do not press the “SET” key, the setting is not changed.
8.11.2 Saving preset memory [PRESET SAVE]

You can save the current I/O channel status into the preset memory.

**Using menu**

PRESET MEMORY → PRESET SAVE

**Set value**

01 to 32: Preset memory number 1 to 32  [Default] All memory channels are not controlled.*

[C]: CONTINUE  [D]: DELETE

[xxxxxxxxxx]: Preset memory name (up to 10 characters in ASCII code)

*<All memory channels are not controlled>: one of setting options in the “8.11.3 Editing preset memory [PRESET EDIT]” menu. “V” and “A” are set to “---” (not controlled) by default. See “8.11.3 Editing preset memory [PRESET EDIT]” for details.

If you select the memory whose setting is “---” (not controlled), you can select a writing method. For these settings (not controlled), if you select “C” (CONTINUE), the settings will be kept; if “D” (DELETE) is selected, the settings will be overwritten.

![Diagram](image.png)

**[Fig. 8.11] Saving preset memory**

**[NOTE]**

- If you do not press the “SET” key, the setting is not changed.
- Do not turn off the FDX while “Saving” is displayed, otherwise, the setting information may be lost.
8.11.3 Editing preset memory [PRESET EDIT]

**Using menu**

PRESET MEMORY → PRESET EDIT

**Set value**

The first page

01 to 32: Preset memory number 1 to 32

[xxxxxxxxxx]: Preset memory name (up to 10 characters in ASCII code)

The second page

OUT1 to OUT32: Selecting output channel

V: ---, 1 to 32, OFF: Setting input channel of the FDX  [Default] “---” (not controlled)

A: ---, 1 to 32, OFF: Setting input channel of the MAU-3232 (optional)  [Default] “---” (not controlled)

* If output slot boards are not mounted, output channel information will not be displayed. Also if input slot boards are not mounted, you cannot set those channels.

When preset memory is loaded, output whose setting is “---” (not controlled) is not switched. All preset memories are set to “---” (not controlled) by factory default.

When a preset memory is loaded, output channel status is as follows:

- Output channel 1 = Input channel 1
- Output channel 2 = Input channel 2
- Output channel 3 = Input channel 3
- Output channel 4 = Input channel 4
- …
- Output channel 31 = Input channel 29
- Output channel 32 = Input channel 32

Settings is not changed

Output channel 1 = Input channel 3
Output channel 2 = Input channel 2
Output channel 3 = Input channel 1
Output channel 4 = Input channel 4
…
Output channel 31 = Input channel 29
Output channel 32 = Input channel 32

I/O channel status after loading preset memory

**[Fig. 8.12] Loading edited preset memory**

**[NOTE]**

- If you do not press the “SET” key, the setting is not changed.
- Do not turn off the FDX while “Saving” is displayed, otherwise, the setting information may be lost.
8.11.4 I/O channel at start-up [PRESET START UP]

Settings other than the channels are automatically saved at the time of menu operation or setting change from the communication command, and the saved settings will be applied for the next start-up. You can select the setting for channels as follows.

**Using menu**

PRESET MEMORY → PRESET START UP

**Set value**

LAST MEMORY: I/O channels status at the last time the FDX is turned off will be applied  [Default]

DEFAULT MEMORY: All I/O channels are set to OFF.

PRESET MEMORY 01 to 32: I/O status set for preset memory 1 to 32 will be applied.
8.12 Setting other functions [OTHERS]

8.12.1 Grouping keys for key lock [KEY LOCK]

**Using menu**
OTHERS → KEY LOCK

**Set value**
- **MENU KEY LOCK**: Keys of ① are locked. [Default]
- **MENU KEY UNLOCK**: Keys of ① are not locked.
- **CH KEY LOCK**: Keys of ② are locked. [Default]
- **CH KEY UNLOCK**: Keys of ② are not locked.
- **PRESET LOCK**: Keys of ③ are locked. [Default]
- **PRESET UNLOCK**: ③ are not locked.

【See: 7.5 Setting/Releasing key lock】

When all keys of ①, ②, and ③ are locked, the “ESC” key also will be locked until it is released.

[Fig. 8.13] Grouping for key lock

8.12.2 Beep sound [BUZZER]

**Using menu**
OTHERS → BUZZER

**Set value**
- **ON**: Beep sound ON [Default]
- **OFF**: Beep sound OFF
8.12.3 Power saving [POWER SAVE]

Using menu
OTHERS → POWER SAVE

Set value
ON : The backlight and key LEDs are turned off. [Default]
   If no key operation is performed for 10 seconds, the backlight will be turned off.
OFF : The backlight and key LEDs are turned on at all times.

8.12.4 Compatible-mode communication command [COMMAND FORMAT]

Set this item when the FDX is controlled by compatible-mode communication commands. See the Command guide for details.

Using menu
OTHERS → COMMAND FORMAT

Set value
STANDARD : Normal command [Default]
OPTION : Compatible-mode communication command
8.12.5 [ALARM]

The alarm is output in case a problem occurs in a cooling fan, power supply voltage, and I/O slot board.

**Using menu**

OTHERS → ALARM

**Set value**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>[Default]</td>
</tr>
<tr>
<td>OFF</td>
<td></td>
</tr>
</tbody>
</table>

Rated voltage: 24 V  
Rated current: 300 mA

![Fig. 8.14] Circuit for alarm output

In case a problem occurs in a cooling fan, power supply voltage, or I/O slot board, the relay will be closed and the contact between A and B will be set to ON.

When an alarm occurs, the following ALARM page will be displayed and the backlight will blink, but only if the Top page has been set to ON (default is OFF).

![Fig. 8.15] Alarm page

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Displayed if a problem occurs in the supply voltage.</td>
</tr>
<tr>
<td>②</td>
<td>Displayed if a problem occurs in the supply voltage of an input slot board.</td>
</tr>
<tr>
<td>③</td>
<td>Displayed if a problem occurs in the supply voltage of an output slot board.</td>
</tr>
<tr>
<td>④</td>
<td>Displayed if a problem occurs in the number of rotations of cooling fans.</td>
</tr>
</tbody>
</table>

*[Table. 8.3] Description of alarm page*

【NOTE】 In case the alarm page is displayed, the FDX may have problems. Please contact us.

【See: 8.12.9 Displaying slot board status [BOARD STATUS]]  
【See: 8.12.10 Displaying cooling fan status [FAN STATUS]]  
【See: 8.12.11 Displaying supply voltage status [POWER STATUS]]
### 8.12.6 Top page [TOP DISPLAY]

**Using menu**

OTHERS → TOP DISPLAY

**Set value**

OFF: Normal [Default]

ON: Statuses of input signals and sink device are displayed.

If you select “ON” and press “▲” and “▼” keys while the top page is being displayed, pages displaying statuses of input signals (four pages) and sink device (two pages) can be displayed.

The desired I/O channel can be selected by “◄” and “►” keys in each screen.

**Displayed contents**

1. **Input channel number**
2. **Input resolution**
3. **Input vertical synchronous frequency**
   - When there are no input signals: “No Signal” is displayed.
   - When input slot board is not mounted: “---------” is displayed.

4. **Input signals**
   - d: DVI signals, without HDCP
   - D: DVI signals, with HDCP
   - h: HDMI signals, without HDCP
   - H: HDMI signals, with HDCP
5. **Color depth**
   - 08: 24 bit/pixel (8 bit/component)
   - 10: 30 bit/pixel (10 bit/component)
   - 12: 36 bit/pixel (12 bit/component)
6. **YUV**
   - When there are no input signals: “No Signal” is displayed.
   - When input slot board is not mounted: “---------” is displayed.

7. **Input audio signals**
   - L-PCM: Linear PCM
   - COMPRESSED AUDIO: Compressed audio
8. **Input sampling frequency**
   - When there are no input signals: “No Signal” is displayed.
   - When input slot board is not mounted: “---------” is displayed.
4 ⑨Input slot board number
⑩For each slot board
  H: HDMI signals
  D: DVI signals
  H: With HDCP
  x: With audio input

5 ⑪Output channel number
⑫Audio status
  HC: Compressed audio is supported
  HP: Compressed audio is not supported (only Linear PCM)
  D: DVI monitor
⑬Color space status
  RGB: RGB is supported
  422: YCbCr 4:2:2 is supported
  444: YCbCr 4:4:4 is supported
⑭Color depth status
  8:24 bit/pixel (8 bit/component)
  10:30 bit/pixel (10 bit/component)
  12:36 bit/pixel (12 bit/component)
  When sink devices are not connected: “UNCONNECTED” is displayed.
  When output slot board is not mounted: “------------” is displayed.

6 ⑮HDCP status
  ON: Supported
  OFF: Not supported
  ---: Not checked
⑯HDCP authentication status
  000: No HDCP
  001: Being authorized (just started)
  002: Being authorized (middle of the processing)
  003: Being authorized (almost completed)
  004: Authentication completed successfully.
  005: Authentication fails.
  When sink devices are not connected: “UNCONNECTED” is displayed.
  When output slot board is not mounted: “------------” is displayed.

[Fig. 8.16] Displaying status
8.12.7 Displaying input signal status [INPUT STATUS]

Using menu
OTHERS → INPUT STATUS

[See: 8.12.6 Top page [TOP DISPLAY]]

8.12.8 Displaying sink device status [MONITOR STATUS]

Using menu
OTHERS → MONITOR STATUS

[See: 8.12.6 Top page [TOP DISPLAY]]

8.12.9 Displaying slot board status [BOARD STATUS]

Temperature and supply voltage statuses of each slot board can be displayed.

Using menu
OTHERS → BOARD STATUS

[Fig. 8.17] Page for displaying slot board status

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
</table>
| ① | Slot board position  
IN 1 to 8, OUT 1 to 8  
Press “▲” and “▼” keys to display another slot board status.  
(D): digital I/O slot board, (T): HDBaseT I/O slot board, (O): optical I/O slot board |
| ② | Temperature of slot board  
When the slot board is not mounted, “------” is displayed. |
| ③ | Supply voltage of slot board  
OK: normal, NG: abnormal, “--”: slot board is not mounted |

【NOTE】In case “NG” (problems in slot board) is displayed, the FDX may have problems. Please contact us.
8.12.10 Displaying cooling fan status [FAN STATUS]

Using menu

OTHERS → FAN STATUS

[FAN STATUS]
01: 3720 rpm OK

① ② ③

[Fig. 8.18] Page for displaying cooling fan status

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>The cooling fan position</td>
</tr>
<tr>
<td></td>
<td>01 to 07</td>
</tr>
<tr>
<td></td>
<td>01 to 10 for redundant power supply (optional)</td>
</tr>
<tr>
<td></td>
<td>Press “▲” and “▼” keys to display another fan status.</td>
</tr>
<tr>
<td>②</td>
<td>The number of rotations of cooling fans</td>
</tr>
<tr>
<td>③</td>
<td>Cooling fan status</td>
</tr>
<tr>
<td></td>
<td>OK: normal, NG: abnormal</td>
</tr>
</tbody>
</table>

【NOTE】In case “NG” (problems in slot board) is displayed, the FDX may have problems. Please contact us.
8.12.11 Displaying supply voltage status [POWER STATUS]

**Using menu**

OTHERS → POWER STATUS

OK: normal, NG: abnormal

If the FDX has the second (optional) power supply unit, statuses of the first and second supply unit.

![POWER STATUS]

Signal power supply unit

Dual power supply units

[Fig. 8.19] Pages for displaying power supply voltage

【NOTE】In case “NG” (problems in slot board) is displayed, the FDX may have problems. Please contact us.
8.12.12 Displaying firmware and hardware versions [VERSION]

Using menu
OTHERS → VERSION

Version information is displayed on four pages, and you can switch each page by pressing “▲” and “▼” keys. Hardware versions of input and output slot boards is available, and you can switch the page of each slot by pressing “◄” and “►” keys.

[Fig. 8.20] Pages for displaying version information
9 WEB browser

The FDX can be controlled by a web browser. Open a web browser on the PC using the same LAN and type the IP address of the FDX in the address bar to open the operation window.

【NOTE】IDK has tested the operation on the Microsoft Internet Explorer 8.0 for Windows or greater.

[Fig. 9.1] Page for controlling on a web browser
<table>
<thead>
<tr>
<th>#</th>
<th>Button name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>SWITCHING MODE</td>
<td>Sets and displays a switching mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• V&amp;A: Switching I/O channels of both the FDX and (optional) MAU-3232</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VIDEO: Switching I/O channels of only the FDX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• AUDIO: Switching I/O channels of only the MAU-3232</td>
</tr>
<tr>
<td>②</td>
<td>CHANNEL SELECT</td>
<td>Sets an input channel to an output channel</td>
</tr>
<tr>
<td></td>
<td>ALL SELECT</td>
<td>CHANNEL SELECT: Sets I/O channels individually</td>
</tr>
<tr>
<td></td>
<td>OFF SELECT</td>
<td>ALL SELECT: Sets a specified input channel to ALL (all outputs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF SELECT: Sets a specified output channel to OFF (no signal)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enter the I/O channel numbers in the text box and click the “SEND” button.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Input Output SEND Button" /></td>
</tr>
<tr>
<td>③</td>
<td>CROSS POINT</td>
<td>Displays I/O channel status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Orange: FDX and MAU-3232</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Green: FDX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Red: MAU-3232</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Black: Not set</td>
</tr>
<tr>
<td>④</td>
<td>NAME EDIT</td>
<td>Edits I/O channel name displayed in “CROSS POINT”.</td>
</tr>
<tr>
<td>⑤</td>
<td>PRESET MEMORY LOAD</td>
<td>Loads the desired registered preset memory and sets the I/O channel status.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The memory name that is being loaded is displayed in orange. If the preset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>memory is named, the name is displayed on the button.</td>
</tr>
<tr>
<td>⑥</td>
<td>RELOAD TIME SET</td>
<td>Sets the automatic reload time of the web browser</td>
</tr>
<tr>
<td>⑦</td>
<td>RELOAD</td>
<td>Displays the latest information of the FDX</td>
</tr>
</tbody>
</table>
### Table 1: Editing I/O Channel Names

<table>
<thead>
<tr>
<th>#</th>
<th>Button Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>CROSS POINT NAME EDIT (for inputs)</td>
<td>Edits input channel name displayed in &quot;CROSS POINT&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;IN1&quot; to &quot;IN32&quot; names are set as default.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up to 10 characters in ASCII code (Even if you enter 11 characters or more,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>only the first 10 characters are valid)</td>
</tr>
<tr>
<td>②</td>
<td>CROSS POINT NAME EDIT (for outputs)</td>
<td>Edits output channel name displayed in &quot;CROSS POINT&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;OUT1&quot; to &quot;OUT32&quot; names are set as default.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up to 10 characters in ASCII code (Even if you enter 11 characters or more,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>only the first 10 characters are valid)</td>
</tr>
<tr>
<td>③</td>
<td>SEND</td>
<td>Sets the I/O channel name and saves it in the FDX.</td>
</tr>
<tr>
<td>④</td>
<td>RELOAD</td>
<td>Reloads the display and displays the current settings</td>
</tr>
<tr>
<td>⑤</td>
<td>END</td>
<td>Terminates the name editing</td>
</tr>
</tbody>
</table>

[Fig. 9.2] Screen for editing I/O channel name
10 Specification

10.1 Pin assignments

10.1.1 DVI-I connector

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Signal name</th>
<th>Pin #</th>
<th>Signal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TMDS data2-</td>
<td>16</td>
<td>Hot plug detect</td>
</tr>
<tr>
<td>2</td>
<td>TMDS data2+</td>
<td>17</td>
<td>TMDS data0-</td>
</tr>
<tr>
<td>3</td>
<td>TMDS data2 shield</td>
<td>18</td>
<td>TMDS data0+</td>
</tr>
<tr>
<td>4</td>
<td>N.C.</td>
<td>19</td>
<td>TMDS data0 shield</td>
</tr>
<tr>
<td>5</td>
<td>N.C.</td>
<td>20</td>
<td>N.C.</td>
</tr>
<tr>
<td>6</td>
<td>DDC CLOCK-</td>
<td>21</td>
<td>N.C.</td>
</tr>
<tr>
<td>7</td>
<td>DDC DATA</td>
<td>22</td>
<td>TMDS clock shield</td>
</tr>
<tr>
<td>8</td>
<td>N.C.</td>
<td>23</td>
<td>TMDS clock+</td>
</tr>
<tr>
<td>9</td>
<td>TMDS data1-</td>
<td>24</td>
<td>TMDS clock</td>
</tr>
<tr>
<td>10</td>
<td>TMDS data1+</td>
<td>C1</td>
<td>N.C.</td>
</tr>
<tr>
<td>11</td>
<td>TMDS data1 shield</td>
<td>C2</td>
<td>N.C.</td>
</tr>
<tr>
<td>12</td>
<td>N.C.</td>
<td>C3</td>
<td>N.C.</td>
</tr>
<tr>
<td>13</td>
<td>N.C.</td>
<td>C4</td>
<td>N.C.</td>
</tr>
<tr>
<td>14</td>
<td>+5 V power supply</td>
<td>C5</td>
<td>GND</td>
</tr>
<tr>
<td>15</td>
<td>GND</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N.C.: No Connection

[Fig 10.1] DVI-I pin assignments

10.1.2 RJ-45 connector

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Signal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WHITE/GREEN, Stripe</td>
</tr>
<tr>
<td>2</td>
<td>GREEN</td>
</tr>
<tr>
<td>3</td>
<td>WHITE/ORANGE, Stripe</td>
</tr>
<tr>
<td>4</td>
<td>BLUE</td>
</tr>
<tr>
<td>5</td>
<td>WHITE/BLUE, Stripe</td>
</tr>
<tr>
<td>6</td>
<td>ORANGE</td>
</tr>
<tr>
<td>7</td>
<td>WHITE/BROWN, Stripe</td>
</tr>
<tr>
<td>8</td>
<td>BROWN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Signal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WHITE/ORANGE, Stripe</td>
</tr>
<tr>
<td>2</td>
<td>ORANGE</td>
</tr>
<tr>
<td>3</td>
<td>WHITE/GREEN, Stripe</td>
</tr>
<tr>
<td>4</td>
<td>BLUE</td>
</tr>
<tr>
<td>5</td>
<td>WHITE/BLUE, Stripe</td>
</tr>
<tr>
<td>6</td>
<td>GREEN</td>
</tr>
<tr>
<td>7</td>
<td>WHITE/BROWN, Stripe</td>
</tr>
<tr>
<td>8</td>
<td>BROWN</td>
</tr>
</tbody>
</table>

[Fig. 10.2] RJ-45 pin assignments
# 10.2 Product specification

Specifications and appearance are subject to change without notice.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>HDMI / DVI, HDBaseT, Optical extension</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>HDMI / DVI, HDBaseT, Optical extension</td>
</tr>
<tr>
<td><strong>Scan converter</strong></td>
<td>Aspect Ratio Control, Seamless Switching (*16), Picture adjustment (brightness, contrast, display position, display size), Motion adaptive I/P conversion</td>
</tr>
<tr>
<td><strong>Function</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>Audio breakaway enables independent audio and video switching</td>
</tr>
<tr>
<td></td>
<td>- Audio unit MAU-1616 is required (optional)</td>
</tr>
<tr>
<td></td>
<td>- Startup memory</td>
</tr>
<tr>
<td></td>
<td>- Preset memory (32 settings and startup settings)</td>
</tr>
<tr>
<td></td>
<td>- Last memory</td>
</tr>
<tr>
<td></td>
<td>- Anti-Snow (*17)</td>
</tr>
<tr>
<td></td>
<td>- Connection Reset (*18)</td>
</tr>
<tr>
<td></td>
<td>- Front panel security lockout</td>
</tr>
<tr>
<td></td>
<td>- RS232C transmission (HDBaseT / Optical output slot boards)</td>
</tr>
<tr>
<td></td>
<td>- Customizable input / output numbers by 4 ports or 2 ports input / output slot boards</td>
</tr>
<tr>
<td></td>
<td>- Input, output, and CPU boards can be exchanged without taking off the unit from rack mount</td>
</tr>
<tr>
<td></td>
<td>- Redundant power supply unit (optional)</td>
</tr>
<tr>
<td><strong>Instant Alert output</strong></td>
<td>Number / Signal 1 port / Power unit monitoring, Fan unit monitoring</td>
</tr>
<tr>
<td></td>
<td>Connector 1 terminal block 2-pin</td>
</tr>
<tr>
<td><strong>External control</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Serial control port</strong></td>
<td>Number / Signal 1 port / RS-232C</td>
</tr>
<tr>
<td></td>
<td>Connector 1 male 9-pin D-Sub</td>
</tr>
<tr>
<td><strong>LAN control port</strong></td>
<td>Number / Signal 1 port / 10Base-T (Auto Negotiation), 100Base-TX (Auto Negotiation), Auto MDI/MDI-X</td>
</tr>
<tr>
<td></td>
<td>Connector 1 RJ-45</td>
</tr>
<tr>
<td><strong>MAU-1616 (option)</strong></td>
<td>Number / Signal 1 port</td>
</tr>
<tr>
<td></td>
<td>Connector 1 female 25-pin D-Sub</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td></td>
</tr>
<tr>
<td><strong>HDMI / DVI input</strong></td>
<td>Output Max. configuration: About 236 Watts</td>
</tr>
<tr>
<td></td>
<td>HDBaseT input / output Max. configuration: About 410 Watts</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Power consumption</strong> (*19)</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>16.93 (W) x 8.88 (H) x 13.88 (D) (*19)</td>
</tr>
<tr>
<td><strong>Weight</strong> (*19)</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>Operating: 32 °F to 104 °F / 0 °C to +40 °C</td>
</tr>
<tr>
<td></td>
<td>Storage: -4 °F to +176 °F / -20 °C to +80 °C</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>Operating / Storage: 20 % to 90 % (Non Condensing)</td>
</tr>
</tbody>
</table>

## Input Board Specification

### HDMI / DVI input board

<table>
<thead>
<tr>
<th><strong>Video</strong></th>
<th>Number / Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI / DVI</td>
<td>4 inputs / HDMI Deep Color (*1) / DVI 1.0 / HDCP 1.4</td>
</tr>
<tr>
<td></td>
<td>- TMDS single link</td>
</tr>
<tr>
<td></td>
<td>- TMDS clock: 25 MHz to 225 MHz</td>
</tr>
<tr>
<td></td>
<td>- Dot clock: 25 MHz to 165 MHz</td>
</tr>
<tr>
<td>Connector</td>
<td>4 female 29-pin DVI-I</td>
</tr>
<tr>
<td>Formats</td>
<td>480 / 480p / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td></td>
<td>VGA to QWXGA *WUXGA / QWXGA only support Reduced Blanking</td>
</tr>
<tr>
<td>Others</td>
<td>EDID emulation, Digital cable EQ</td>
</tr>
</tbody>
</table>

### Audio

<table>
<thead>
<tr>
<th>Number / Signal</th>
<th>4 inputs / Multi-channel linear PCM up to 8 channels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Sampling frequency: 32 kHz to 192 kHz</td>
</tr>
<tr>
<td></td>
<td>- Sample size: 16 bit to 24 bit</td>
</tr>
<tr>
<td>Connector</td>
<td>4 female 29-pin DVI-I</td>
</tr>
</tbody>
</table>

### HDBaseT input board

<table>
<thead>
<tr>
<th><strong>Video</strong></th>
<th>Number / Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDBaseT</td>
<td>4 inputs / HDBaseT / HDMI Deep Color (*1) / DVI 1.0 / HDCP 1.4 (*3)</td>
</tr>
<tr>
<td></td>
<td>- TMDS single link</td>
</tr>
<tr>
<td></td>
<td>- TMDS clock: 25 MHz to 225 MHz</td>
</tr>
<tr>
<td></td>
<td>- Dot clock: 25 MHz to 165 MHz</td>
</tr>
<tr>
<td>Connector</td>
<td>4 RJ-45 (*4)</td>
</tr>
<tr>
<td>Formats</td>
<td>480 / 480p / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td></td>
<td>VGA to QWXGA *WUXGA / QWXGA only support Reduced Blanking</td>
</tr>
<tr>
<td>Others</td>
<td>EDID emulation</td>
</tr>
</tbody>
</table>

### Audio

<table>
<thead>
<tr>
<th>Number / Signal</th>
<th>4 inputs / HDBaseT / Multi-channel linear PCM up to 8 channels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Sampling frequency: 32 kHz to 192 kHz</td>
</tr>
<tr>
<td></td>
<td>- Sample size: 16 bit to 24 bit</td>
</tr>
<tr>
<td>Connector</td>
<td>4 RJ-45 (*4)</td>
</tr>
</tbody>
</table>

### Twisted pair cables

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat3 UTP / STP straight cable, Cat5e UTP / STP straight cable</td>
<td>50 m</td>
</tr>
</tbody>
</table>
**Fiber optic extension input board (7)**

| Connector | 4 SFP modules (2 LC connectors per SFP module) |
| Others | VQA / SVGA / XGA / WXGA (1280x768) / WXGA (1920x1080) / Quad-VGA / SXGA / WUXGA (1360x768) / WXGA (1920x1080) / WXGA (1360x768) / SXGA / WXGA / WXGA+ / UXGA / WUXGA / WUXGA++ / WUXGA only supports DVI signal and Reduced Blanking |

**Audio**

| Number / Signal | 4 inputs / Optical signals for extension / Multi-channel linear PCM up to 8 channels |
| Formats | - Sampling frequency: 32 kHz to 192 kHz |
| Others | - Sample size: 16 bit to 24 bit |

| Connector | 4 SFP modules (2 LC connectors per SFP module) |

**Fiber optic cable**

| Suitable cable | Duplex fiber cable, SFP module (2 LC connectors) (*9) |

**Maximum distance (11)**

- Multimode fiber (OM3): Up to 985 ft. (approx.) / 300 m
- Multimode fiber (OM4): Up to 3,280 ft. (approx.) / 1 km
- Singlemode fiber (OS1): Up to 15,420 ft. (approx.) / 4.7 km

---

**Output Board Specification**

**HDMI / DVI output board**

| Number / Signal | 4 outputs / HDMI Deep Color ("1") / DVI 1.0 / HDCP 1.4 |
| Formats | - TMDS single link |
| Others | - TMDS clock: 25 MHz to 225 MHz |
| Connector | 4 female 29-pin DVI-I |

**Audio**

| Number / Signal | 4 outputs / Multi-channel linear PCM up to 8 channels |
| Formats | - Sampling frequency: 32 kHz to 192 kHz |
| Others | - Sample size: 16 bit to 24 bit |

| Connector | 4 female 29-pin DVI-I |

**Maximum distance**

- From 33 ft. (approx.) to 10 m up to 131 ft. (approx.) / 40 m (*2)

---

**HDBaseT output board**

| Number / Signal | 4 outputs / HDBaseT / HDMI Deep Color ("1") / DVI 1.0 / HDCP 1.4 (*12) |
| Formats | - TMDS single link |
| Others | - TMDS clock: 25 MHz to 225 MHz |
| Connector | 4 RJ-45 (*4) |

**Audio**

| Number / Signal | 4 outputs / HDBaseT / Multi-channel linear PCM up to 8 channels |
| Formats | - Sampling frequency: 32 kHz to 192 kHz |
| Others | - Sample size: 16 bit to 24 bit |

| Connector | 4 RJ-45 (*4) |

**Twisted pair cables**

- Cat6 UTP/STP straight cable, Cat5e UTP/STP straight cable (*5)
- Cat5e (approx.) / 150 m (*6)

---

**Fiber optic extension output board (7)**

| Number / Signal | 4 SFP modules (2 LC connectors per SFP module) |
| Others | VQA / SVGA / XGA / WXGA (1280x768) / WXGA (1920x1080) / Quad-VGA / SXGA / WUXGA (1360x768) / WXGA (1920x1080) / WXGA (1360x768) / SXGA / WXGA / WXGA+ / UXGA / WUXGA / * WUXGA only supports DVI signal and Reduced Blanking |

**Audio**

| Number / Signal | 4 outputs / Optical signals for extension / Multi-channel linear PCM up to 8 channels |
| Formats | - Sampling frequency: 32 kHz to 192 kHz |
| Others | - Sample size: 16 bit to 24 bit |

| Connector | 4 SFP modules (2 LC connectors per SFP module) |

**Fiber optic cable**

| Suitable cable | Duplex fiber cable, SFP module (2 LC connectors) (*9) |

**Maximum distance (11)**

- Multimode fiber (OM3): Up to 985 ft. (approx.) / 300 m
- Multimode fiber (OM4): Up to 3,280 ft. (approx.) / 1 km
- Singlemode fiber (OS1): Up to 15,420 ft. (approx.) / 4.7 km

---

**HDMI / DVI scan converter output board**

| Number / Signal | 2 outputs / HDMI Deep Color ("14") / DVI 1.0 / HDCP 1.4 |
| Formats | - TMDS single link |
| Others | - TMDS clock: 25 MHz to 225 MHz |
| Connector | 2 female 29-pin DVI-I |

**Audio**

| Number / Signal | 2 outputs / Multi-channel linear PCM up to 8 channels |
| Formats | - Sampling frequency: 32 kHz to 192 kHz |
| Others | - Sample size: 16 bit to 24 bit |

| Connector | 2 female 29-pin DVI-I |

**Maximum distance (11)**

- From 33 ft. (approx.) to 10 m up to 131 ft. (approx.) / 40 m (*2)
### HDBaseT Scan Converter Output Board

<table>
<thead>
<tr>
<th>Item</th>
<th>Multimode Fiber</th>
<th>Singlemode Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector</td>
<td>2 LC Connectors (Duplex)</td>
<td>2 SFP Modules (2 LC Connectors per SFP Module)</td>
</tr>
<tr>
<td>Wave length</td>
<td>850 nm (Oxide VCSEL Laser (*1))</td>
<td>1310 nm (Fabry-Perot Laser (*2))</td>
</tr>
<tr>
<td>Maximum distance</td>
<td>OM3: 985 ft. (approx.) / 300 m</td>
<td>OM3: 985 ft. (approx.) / 300 m</td>
</tr>
<tr>
<td></td>
<td>OM4: 3,280 ft. (approx.) / 1 km</td>
<td>OM4: 3,280 ft. (approx.) / 1 km</td>
</tr>
<tr>
<td>Max input power</td>
<td>0 dBm</td>
<td>0 dBm</td>
</tr>
<tr>
<td>Optical power level</td>
<td>Over -13 dBm</td>
<td>Over -18 dBm</td>
</tr>
<tr>
<td></td>
<td>Over -9 dBm to -2.5 dBm</td>
<td>Over -8.4 dBm to -3 dBm</td>
</tr>
</tbody>
</table>

*1 This product supports 36 bits/pixel Deep color (12 bit/component). It does not support x.v.Color, 3D, ARC, HEC, and CEC

*2 Transmission distance depends on connected equipment. The information above is maximum transmission distance when a cable made by IDK (AWG24) is used and signals (1080p 60 Hz 24 bit/component) are transmitted (both inputs and outputs of this product). When connected equipment is not matched to this product or other makers’ cables are used, video signal can be unstable or video signals cannot be output, even though transmission distance is within the information above.

*3 It does not support DVI signals with HDCP. If you need to extend DVI signals with HDCP, please use The IDK HDC-TD100 as a transmitter.

*4 RJ-45 connector is only for extending video, audio, power for a receiver, control signals using a Cat5e/Cat6 twisted pair cable. IDK receivers are required. Please do not connect LAN devices to this connector.

*5 Wiring is straight T568A or T568B. If exceeding 50 m, it is recommended to use a Cat6 cable.

*6 If connected to a device whose status is significantly bad, video signal can be unstable or cannot be output. Check the operation beforehand or contact us.

*7 The IDK DPF-H1000-A must be connected for optical extension input and output cards.

*8 It does not support Deep Color, xVDC, Lip Sync, 3D, ARC, HEC, and CEC

*9 Please refer to SFP Specification.

*10 It is possible to connect without using the recommended polishing method, but that may cause a change of extension distance ability due to an increase in return loss.

*11 Extension distance is measured under following condition; using fiber of recommended polishing method, without connection at the transmission path and not exceeding the value of allowable bending radius.

*12 This product supports 36 bits/pixel Deep Color (10 bit/component). It does not support x.v.Color, 3D, ARC, HEC, and CEC

*13 Scan converter output board uses 2 of 4 channels. Channel numbers are assigned to each connector consecutively. Channel number for unused channel is reserved but not be able to set.

*14 The Anti-Snow function can automatically recover from snow noise that is a specific symptom of digital signals having HDCP. Mainly, this snow noise occurs during system startup. Therefore, this function does not work if snow noise has already occurred before input the signal to IDK switchers or bad quality signal transmission.

*15 The Connection Reset function can fix these problems without physical cable manipulations. This function can work only in this product's output port, which sometimes will not take effect if another device is between output device and display product.

Please contact our Sales Division for power consumption information of each configuration.
11 Troubleshooting

In case this device does not work correctly, please check the following items first.

- Are this device and the connected devices turned on normally?
- Are cables connected correctly?
- Are there no loose connections?
- Are cables that are appropriate to this device being used?
- Are signal specifications of connected devices matched to each other?
- Are settings of the sink device correct?
- Are there any close objects that may cause noise?

If the problem still cannot be solved, perform the following actions. Refer to manuals of connected devices as well, since they may possibly be the cause of the problem.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause/Check item/Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video output</td>
<td>Video is not output. If there are no problems with cable connections, first check [1] and [2] below.</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>[1] Is the EDID resolution setting of this device set to the input resolution supported by the sink device? If the EDID resolution is set to 480i, 576i or 1080i, the video may not be output to the sink device that does not support the interlaced signals. Vertical synchronous frequency: For TV output resolutions (480i to 1080p), video of 59.94 Hz or 60Hz may not be output. PC output resolutions (VGA to WUXGA/QWXGA) may not be output to LCD TVs and plasma TVs.</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>[3] If signals protected by HDCP are input, does the sink device support the HDCP? If the sink device does not support HDCP, those signals cannot be output. Some source devices check the HDCP of the sink device to output appropriate signals, but the FDX may not output video if connected to a sink device that does not support HDCP since the FDX supports HDCP. In such a case, disable the HDCP input from the source device.</td>
<td>40 81</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause/Check item/Solution</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Video output</td>
<td>Video is not output.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[4] If a long cable is connected for input or output when digital I/O slot board is mounted, replace it with a 5 m/16.4 ft. or shorter Cable. Even though a 5 m/16.4 ft. or longer cable can be connected for digital I/O of the FDX, HDCP authentication or EDID acquisition may fail depending on the cable quality and the connected device.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[5] Are signals that are not supported being input?</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>[6] Change the time for ignoring video output request signals.</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>[7] Is the set monitoring time for no signal input too short?</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>[8] Check the video output setting of the source device.</td>
<td></td>
</tr>
<tr>
<td>Interference or noise appears on video.</td>
<td>If a long cable is connected for input or output when a digital I/O slot board is mounted, set the input or output equalizer.</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>If a long cable is connected for input or output when digital I/O slot board is mounted, replace it with a 5 m/16.4 ft. or shorter Cable. Even though a 5 m/16.4 ft. or longer cable can be connected for digital I/O of the FDX, the FDX may not provide its full performance depending on the cable quality and the connected device. If the problem is solved by replacing the cable, signals might have been degraded due to long haul transmission. We have high-quality cables, cable boosters and extenders. Please contact us as needed.</td>
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<td>When high-speed signals (e.g.: high-resolution signals such as UXGA, WUXGA, and 1080p, and Deep Color signals) are input or output, video may not be displayed or noise may appear depending on the cable quality and connected devices. If this problem occurs in all output connectors, check the input side. If it occurs in a specific output connector(s), check the output side as follows: Change the resolution lower and/or turn off DEEP COLOR. You can check the resolution and color depth of input signals in the LCD screen, and you can set the EDID in order to control the resolution and color depth of the input signals.</td>
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<td>Is a cable that is appropriated for the transmission distance when a twisted pair I/O slot board is mounted? If the transmission distance is 50 m/164 ft. or longer, we recommend using a Cat6 cable whose noise characteristic and frequency characteristic and using STP cable instead of UTP cable to reduce the influence of interference and external noise. If the transmission distance is 50 m/164 ft. or shorter, you can use a Cat5e cable.</td>
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<td>When an HDBaseT I/O slot board is mounted, connect cables correctly (place them straight) to reduce the influence of noise. Keep the distance among cables and not to place cables closely in parallel.</td>
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<td>Interference or noise appears on video.</td>
<td>When an optical I/O slot board is mounted, are optical fiber cable type, standard, polishing method, and laying method correct? Make sure that the both ends have LC connector, the cable meets the SFP module standard, and the polishing method is correct. The optical loss occurs depending on scratches and dirt of connector ends, bend radius, lateral pressure, and connection method of optical fiber cables. Check the power budget.</td>
<td>23</td>
</tr>
<tr>
<td>Snow noise appears.</td>
<td>Since optical I/O slot board does not support QWXGA, snow noise appears. Input another resolution. You can check the resolution input signals in the LCD screen, and you can set the EDID in order to control the resolution.</td>
<td>60</td>
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<td>Deep Color signals are not output.</td>
<td>Does the sink device support Deep Color? If not, 24 bit/pixel (8 bit/component) is used even if signals are input in Deep Color. Since the optical output slot board does not support Deep Color, signals are transmitted in 24 bit/pixel (8 bit/component).</td>
<td>63</td>
</tr>
<tr>
<td>Video blinks.</td>
<td>If interlace signals are input to a sink device that does not support interlace signals, the video may blink. Check the output resolution of the sink device.</td>
<td>—</td>
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<tr>
<td>Video edges (up/down/right/left) are cut out.</td>
<td>Some sink devices display input video in overscan, and the video may be cut out. Check the display setting of the sink device.</td>
<td>—</td>
</tr>
<tr>
<td>Video is distorted horizontally or vertically.</td>
<td>Some sink devices display input video on full screen mode, and the aspect ratio cannot be kept. Check the display setting of the sink device. With some resolutions, full-screen display cannot be avoided. In that case, change the output resolution of the source device.</td>
<td>—</td>
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<tr>
<td>Black bars appear on PC images. Only part of the PC image is displayed, and the rest of the images is displayed by moving the mouse.</td>
<td>If the PC has the Panel Fit function, select “Scale Full Screen”. If the resolution that is set for the PC and the resolution that is actually output from the PC are not matched, those problems may occur. Check the resolution of the PC and the EDID resolution setting.</td>
<td>60</td>
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<tr>
<td>The dual monitor function cannot be set or it is canceled automatically.</td>
<td>When the No-signal input monitoring function works, the dual monitor function may not be enabled correctly. In this case, turn off this monitoring function.</td>
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<td>Video is displayed in purple or green.</td>
<td>Some sink devices do not find the color space of the input video correctly, and the video may be displayed in purple or green. Set the correct color space in the output mode to solve this problem.</td>
<td>48</td>
</tr>
</tbody>
</table>
| Audio output                     | **Audio is not output.**  
Verify that audio output is turned on.  
If there are multiple output connectors in the source device, check the audio output setting of the source device.  
Verify that audio whose format is supported by the connected sink device is input. Especially, LCD monitors may not output 88.2 kHz or higher linear PCM and compressed audio (such as Dolby Digital and DTS).  
In order to play a Blu-ray disc having compressed audio, check the audio output setting of the source device.  
You can also control audio signals that will be output from the source device by setting EDID.  
Verify that DVI signals are not being output from the source device.  
Is the output mode setting DVI output?  
If the EDID of the connected sink device cannot be acquired for some reason, the FDX cannot find the sink type. As a result, audio may not be output. In that case, set OUTPUT HDMI MODE to “Always”.  
Check the audio output setting of the source device.                                                                                                                                                                                                                                                                                                                                                                                                                           | 58   |
| Even though multi-channel audio is played, only audio signals of 2 channels are output. | For multiple channel play, change the EDID setting which is set to 2 channels by default.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 64   |
| Compressed audio (such as Dolby Digital, DTS, and the like) is not output from the source device. | Inputting compressed audio is controlled in the EDID setting by default. Change the EDID setting in order to use the compressed audio.  
Check the audio output setting of the source device.                                                                                                                                                                                                                                                                                                                                                                                                                       | 65   |
| Key operation                    | Is key operation locked?  
It takes about 8 seconds after turning on the FDX to complete the start process. All key operations are invalid during this start process.                                                                                                                                                                                                                                                                                                                                                                         | 32   |
| Communication command control    | The following items are set correctly?  
for RS-232C communication, baud rate, data bit length, and the like  
for LAN communication, IP address, subnet mask, and the like  
It takes about 8 seconds from turning on the FDX to completing the start process. The communication command control is invalid during the start process.                                                                                                                                                                                                                                                                                   | 69   |
| Web browser control             | Is the connection setting of the TCP port valid for the web browser?                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 71   |
If additional assistance is required, please perform the following tests and then contact us.

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<td>1.</td>
<td>The problem occurs in all connectors?</td>
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<tr>
<td>2.</td>
<td>Connect the devices using genuine cables without connecting the FDX-32. The problem still cannot be solved? Please contact us for assistance.</td>
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User’s guide of FDX-32

Ver.2.2.0

Issued on: 18 May 2017

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