Modular Matrix Switcher

FDX-08

<User Guide>

Ver.1.0.0

Thank you for choosing our product.

To ensure the best performance of this product, please read this user guide fully and carefully before using it and keep this manual together with the product for future reference as needed.

IDK Corporation
Trademarks

- Blu-ray Disc and Blu-ray are trademarks of Blu-ray Disc Association.
- ETHERNET is a registered trademark of Fuji Xerox Co., Ltd.
- The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.
- HDBaseT™ and the HDBaseT Alliance Logo are trademarks of the HDBaseT Alliance.
- Microsoft, Windows, Internet Explorer are either registered trademarks or trademarks of the Microsoft Corporation in the United States and other countries.
- The terms Anti-snow and Connection Reset are registered trademarks of IDK Corporation in Japan.
- All other company and product names mentioned in this manual are either registered trademarks or trademarks of their respective owners. In this manual, the “®” or “™” marks may not be specified.
Before reading this manual

- All rights reserved.
- Some information contained in this User guide such as exact product appearance, diagrams, menu operations, communication commands, and so on may differ depending on the product version.
- This User guide is subject to change without notice. You can download the latest version from IDK's website at: http://www.idkav.com

The reference manual consists of the following two volumes:
- User 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 RS-232C and LAN communications.

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

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 board (4 channels), HDBaseT output board (4 channels), or HDBaseT scan converter output board (2 channels) is mounted, use an STP cable for the twisted pair cable in order to meet the VCCI standard. It can reduce noise caused by cables.
Safety Instructions

Read and understand all safety and operating instructions before using this product. 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>! 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 product is handled incorrectly.</td>
</tr>
<tr>
<td>! 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 product is handled incorrectly.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caution</td>
<td>This symbol is intended to alert the user. (Warning and caution)</td>
<td>Electrical Hazard</td>
</tr>
<tr>
<td>Prohibited</td>
<td>This symbol is intended to prohibit the user from specified actions.</td>
<td>Do not disassemble</td>
</tr>
<tr>
<td>Instruction</td>
<td>This symbol is intended to instruct the user.</td>
<td>Unplug</td>
</tr>
</tbody>
</table>
### Warning

#### For lifting heavy products:

<table>
<thead>
<tr>
<th>Instruction</th>
</tr>
</thead>
</table>
| • Lifting must be done by two or more personnel.  
  To avoid injury: When lifting the product, bend your knees, keep your back straight and get close to it with two or more persons. |

#### For installing and connecting products:

<table>
<thead>
<tr>
<th>Prohibited</th>
</tr>
</thead>
</table>
| • Do not place the product upon a surface that may give way or that may become unstable.  
  Install the product in a secure and stable place to prevent it from falling and possibly causing injury.  
  • Secure the product if installing in locations prone to vibration or movement.  
  Otherwise, it may move unexpectedly or it may fall and lead to injury. |

<table>
<thead>
<tr>
<th>Instruction</th>
</tr>
</thead>
</table>
| • Installation work must be performed by professionals.  
  The product is intended to be installed by skilled technicians. For installation, please contact a system integrator or IDK. Improper installation may lead to the risk of fire, electric shock, injury, or property damage.  
  • Insert the power plug into an outlet that is unobstructed.  
  Unobstructed access to the plug enables unplugging the product in case of any extraordinary failure, abnormal situation or for easy disconnection during extended periods of non-use.  
  • Insert the power plug into an appropriate outlet completely.  
  If the plug is partially inserted, arching may cause the connection to overheat, increasing the risk of electrical shock or fire. Do not use a damaged plug or connect to a damaged outlet.  
  • Unplug the product from the AC power source during installation or service.  
  When connecting peripheral devices to this product, unplug all involved devices from outlets. Ground potential differences may cause fire or other difficulties. |

#### For operating products:

<table>
<thead>
<tr>
<th>Prohibited</th>
</tr>
</thead>
</table>
| • Keep out any foreign objects.  
  To avoid fire or electric shock, do not permit foreign objects, such as metal and paper, to enter the product from vent holes or other apertures.  
  • For power cable/plug:  
  • Do not scratch, heat, or modify, including splicing or lengthening them.  
  • Do not pull, place heavy objects on them, or pinch them.  
  • Do not bend, twist, tie or clamp them together forcefully.  
  Misuse of the power cable and plug may cause fire or electric shock. If power cables/plugs become damaged, contact your IDK representative. |

<table>
<thead>
<tr>
<th>Do not disassemble</th>
</tr>
</thead>
</table>
| • Do not repair, modify or disassemble.  
  Since the product includes circuitry that uses potentially lethal, high voltage levels, disassembly by unauthorized personnel may lead to the risk of fire or electric shock. For internal inspection or repair, contact your IDK representative. |

<table>
<thead>
<tr>
<th>Do not touch</th>
</tr>
</thead>
</table>
| • Do not touch the product and connected cables during electrical storms.  
  Contact may cause electric shock |

<table>
<thead>
<tr>
<th>Instruction</th>
</tr>
</thead>
</table>
| • Clean the power plug regularly.  
  If the plug is covered in dust, it may increase the risk of fire. |
### Warning

If the following problem occurs:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| ![Unplug](image) | **Unplug immediately if the product smokes, makes unusual noise, or produces a burning odor.**  
If you continue to use the product under these conditions, it may cause electric shock or fire. |
|   | **Unplug immediately if the product is damaged by falling or having been dropped.**  
If you continue to use the product under these conditions, it may increase the risk of electrical shock or fire. For maintenance and repair, contact your IDK representative. |
|   | **Unplug immediately if water or other objects are directed inside.**  
If you continue to use the product under these conditions, it may increase the risk of electrical shock or fire. For maintenance and repair, contact your IDK representative. |
For installing and connecting products:

- **Do not place the product in a location where it will be subjected to high temperatures.**
  If the product is subjected to direct sunlight or high temperatures while under operation, it may affect the product's performance and reliability and may increase the risk of fire.

- **Do not store or operate the product in dusty, oil smoke filled, or humid place.**
  If the product is placed near humidifiers or in a dusty area, it may increase the risk of fire or electric shock.

- **Do not block the vent holes.**
  If ventilation slots are blocked, it may cause the product to overheat, affecting performance and reliability and may increase the risk of fire.

- **Do not place or stack heavy items on the product.**
  Failure to observe this precaution may result in damage to the product and other property and may lead to the risk of personal injury.

- **Do not exceed ratings of outlet and wiring devices.**
  Exceeding the rating of an outlet may increase the risk of fire and electric shock.

- **Do not handle power plug with wet hands.**
  Failure to observe this precaution may increase the risk of electrical shock.

- **Use and store the product within the specified temperature/humidity range.**
  If the product is used outside the specified range for temperature and humidity continuously, it may increase the risk of fire or electric shock.

- **Do not place the product at elevations of 1.24 mi. (2,000 m) or higher above sea level.**
  Failure to do so may shorten the life of the internal parts and result in malfunctions.

- **When mounting the product into the rack, provide sufficient cooling space.**
  Mount the product in a rack meeting EIA standards, and maintain spaces above and below for air circulation. For your safety as required, attach an L-shaped bracket in addition to the panel mount bracket kit to improve mechanical stability.

- **Never insert screws without the rubber feet into the threaded holes on the bottom of the product.**
  Never insert screws without the rubber feet into the threaded holes on the bottom of the product. Doing so may lead to damage when the screws contact electrical circuitry or components inside the product. Reinstall the originally supplied rubber feet using only the originally supplied screws.

For operating products:

- **Use only the supplied power cable and AC adapter.**
  If non-compliant adapter or power cables are used, it may increase the risk of fire or electrical shock.

- **Do not use the supplied power cable and AC adapter with other products.**

- **If the product won’t be used for an extended period of time, unplug it.**
  Failure to observe this precaution may increase the risk of fire.

- **Unplug the product before cleaning.**
  To prevent electric shock.

For power:

- **Double Pole/Neutral Fusing**
  If a fuse blows out, it may cause electric shock.
Table of Contents

1 Included items ........................................................................................................................................ 11
2 Product outline ..................................................................................................................................... 12
3 Features ............................................................................................................................................... 15
4 Panels .................................................................................................................................................. 16
  4.1 Front panel ..................................................................................................................................... 16
  4.2 Rear panel ..................................................................................................................................... 17
  4.3 Channel of output board ................................................................................................................ 19
5 System Configuration Example .......................................................................................................... 20
6 Precautions .......................................................................................................................................... 21
  6.1 Installation .................................................................................................................................... 21
  6.2 Cabling ......................................................................................................................................... 22
    6.2.1 Twisted pair cable for extension ............................................................................................ 22
    6.2.2 SFP optical transceiver ........................................................................................................ 23
    6.2.3 Fiber optic cable ..................................................................................................................... 23
    6.2.4 Coaxial cable .......................................................................................................................... 24
    6.2.5 Alarm ....................................................................................................................................... 24
7 Basic Operation .................................................................................................................................... 25
  7.1 Setting switching mode .................................................................................................................. 25
  7.2 Selecting I/O channels ..................................................................................................................... 26
    7.2.1 Selecting I/O channel in INPUT→OUTPUT mode ................................................................. 26
    7.2.2 Selecting I/O channel in OUTPUT→INPUT mode ................................................................. 27
  7.3 Menu operation key ......................................................................................................................... 28
  7.4 Recalling preset memory ................................................................................................................ 30
  7.5 Initialization ................................................................................................................................... 31
  7.6 Locking/unlocking front key function lock .................................................................................... 32
8 Menu .................................................................................................................................................... 33
  8.1 Menu list ......................................................................................................................................... 33
  8.2 Input settings [INPUT SETTING] ................................................................................................. 36
    8.2.1 Input equalizer [INPUT EQUALIZER] ................................................................................... 36
    8.2.2 No-signal input monitoring [INPUT SIGNAL CHECK] ....................................................... 37
    8.2.3 HDCP input enabled/disabled [INPUT HDCP] ................................................................. 38
    8.2.4 SDI input audio group [INPUT SDI AUDIO GR] ............................................................... 39
    8.2.5 SDI Dual Stream input video [INPUT SDI 2HD SEL] ....................................................... 40
  8.3 Input timing settings [INPUT TIMING] .......................................................................................... 41
    8.3.1 Horizontal start position [INPUT H POSITION] ............................................................... 41
    8.3.2 Horizontal active area [INPUT H SIZE] .............................................................................. 41
    8.3.3 Vertical start position [INPUT V POSITION] ...................................................................... 42
    8.3.4 Vertical active area [INPUT V SIZE] .................................................................................... 43
    8.3.5 Input video aspect ratio [INPUT ASPECT] ......................................................................... 44
    8.3.6 Input contrast [INPUT CONTRAST] .................................................................................... 44
    8.3.7 Input brightness [INPUT BRIGHTNESS] ............................................................................ 45
    8.3.8 Input gamma [INPUT GAMMA] ............................................................................................ 45
    8.3.9 Input sharpness [INPUT FILTER] ......................................................................................... 46
    8.3.10 Input HUE [INPUT HUE] ................................................................................................. 46
    8.3.11 Input saturation [INPUT SATURATION] ............................................................................. 47
  8.4 Output settings [OUTPUT SETTING] ............................................................................................ 48
    8.4.1 Output equalizer [OUTPUT EQUALIZER] ........................................................................... 48
8.4.2 Output mode [OUTPUT MODE] ................................................................. 48
8.4.3 Sink device EDID check [OUTPUT HDMI MODE] .............................. 49
8.4.4 Hot plug ignoring duration [OUTPUT HPD MASK] ............................ 49
8.4.5 Output Deep Color [OUTPUT DEEP COLOR] ..................................... 50
8.5 Output timing settings [OUTPUT TIMING] ............................................. 51

8.5.1 Output resolution [OUTPUT RESOLUTION] ........................................ 51
8.5.2 Aspect ratio of sink device [OUTPUT ASPECT] ................................. 52
8.5.3 Output test pattern [OUTPUT PATTERN] ............................................. 53
8.5.4 Display size [OUTPUT SIZE] .............................................................. 54
8.5.5 Display position [OUTPUT POSITION] .............................................. 54
8.5.6 Blank color [OUTPUT BLANK COLOR] .............................................. 55
8.5.7 Background color [OUTPUT BACKGROUND] .................................... 55
8.5.8 Output contrast [OUTPUT CONTRAST] ............................................. 56
8.5.9 Output brightness [OUTPUT BRIGHTNESS] ....................................... 56
8.5.10 Dissolve effect [OUTPUT FADE OUT-IN] ........................................ 57
8.5.11 HDCP output [OUTPUT HDCP] ....................................................... 57
8.6 Audio [AUDIO] ..................................................................................... 58
8.6.1 Digital audio output [AUDIO DIGITAL OUT] ..................................... 58
8.7 EDID settings [EDID] ........................................................................... 59

8.7.1 EDID resolution [EDID DATA] .......................................................... 60
8.7.2 Copying EDID [EDID SAVE] ............................................................. 62
8.7.3 EDID loading output channel [EDID EXTERNAL CH] ..................... 62
8.7.4 Deep Color input [EDID DEEP COLOR] ............................................ 63
8.7.5 Audio channel [EDID SPEAKER CH] ............................................... 64
8.7.6 LPCM Audio [EDID LINEAR PCM] .................................................. 65
8.7.7 AC-3 Dolby Digital Audio [EDID AC-3/Dolby D] .............................. 66
8.7.8 AAC Audio [EDID AAC] ................................................................. 67
8.7.9 Dolby Digital Plus Audio [EDID Dolby D+] ..................................... 68
8.7.10 DTS Audio [EDID DTS] ................................................................. 69
8.7.11 DTS-HD Audio [EDID DTS-HD] ..................................................... 70
8.7.12 Dolby TrueHD Audio [EDID Dolby TrueHD] .................................. 71
8.7.13 WXGA [EDID WXGA SELECT] ...................................................... 71
8.7.14 RS-232C communication [COM PORT SETUP] .............................. 72
8.8 LAN communication [LAN] ................................................................. 73

8.8.1 IP address [IP ADDRESS] ............................................................... 73
8.8.2 Subnet mask [SUBNET MASK] ....................................................... 73
8.8.3 TCP port number [CONTROL PORT] .............................................. 74
8.8.4 MAC address [MAC ADDRESS] ..................................................... 75
8.9 Preset memory [PRESET MEMORY] ..................................................... 76

8.9.1 Recalling preset memory [PRESET LOAD] ....................................... 76
8.9.2 Saving preset memory [PRESET SAVE] .......................................... 77
8.9.3 Editing preset memory [PRESET EDIT] ............................................ 78
8.9.4 Start-up I/O channel [PRESET START UP] ..................................... 79
8.10 Others [OTHERS] ............................................................................... 80

8.10.1 Front key function lock [KEY LOCK] ............................................. 80
8.10.2 Beep [BUZZER] .............................................................................. 80
8.10.3 Power saving [POWER SAVE] ...................................................... 81
8.10.4 Alarm [ALARM] ............................................................................ 82
8.10.5 Top page [TOP DISPLAY] ............................................................. 83
8.10.6 Viewing input signal status [INPUT STATUS] ............................... 85
8.10.7 Viewing sink device status [MONITOR STATUS] ................................................................. 85
8.10.8 Viewing board status [BOARD STATUS] ........................................................................ 85
8.10.9 Viewing cooling fan status [FAN STATUS] ...................................................................... 86
8.10.10 Viewing power-supply voltage [POWER STATUS] ......................................................... 86
8.10.11 Viewing firmware and hardware versions [VERSION] ...................................................... 87

9 WEB browser ........................................................................................................................................... 88

10 Specification ............................................................................................................................................. 91
10.1 Pin assignments .................................................................................................................................. 91
10.1.1 DVI-I connector ........................................................................................................................... 91
10.1.2 RJ-45 connector ............................................................................................................................ 91
10.2 Product specification ........................................................................................................................... 92

11 Troubleshooting ....................................................................................................................................... 96
1 Included items

Ensure that all items illustrated below are included in the package. If any items are missing or damaged, please contact IDK.

One (1) FDX-08
Two (2) rack mounting brackets

One (1) 2-pin terminal block
One (1) power cord, 5.9 ft. (1.8 m)

[Fig. 1.1] Included items
The FDX-08 is a highly versatile matrix switcher for AV systems with up to 8 inputs and 8 outputs. The HDCP-compliant matrix switcher can input protected video, and it also can input HDMI signals using a conversion cable. The SDI input board enables SMPTE 3G/HD/SD-SDI signal input. Using with an HDBaseT I/O board or optic I/O board makes it easy to establish the system. If using the scan converter output boards, video signals having different synchronization or resolutions can be switched faster than using digital frame synchronizer.

The FDX can be controlled remotely over RS-232C and LAN ports.
FDX-08 User Guide

Digital video/audio
HDMI DVI

Digital video/audio
for extension
HDBaseT

Digital video/audio
for extension
fiber optic

SDI video/audio
3G-SDI
HD-SDI
SD-SDI

(*)  Multimode fiber
OM3: Up to 328 ft.   (100 m)
OM4: Up to 1312 ft.  (400 m)
Singlemode fiber
OS1: Up to 328 ft.    (100 m)
(*)  SD-SDI: Up to 1312 ft. (400 m)/
HD-SDI: Up to 787 ft.  (240 m)/
3G-SDI: Up to 459 ft.  (140 m)
over 1694A (BELDEN RG-6) cable

(*) Input board can expand in 4-input unit.
(*) Output board can expand in 4-output unit.
(*) Scan converter output board can expand in 2-output unit.

[Fig. 2.2] I/O diagram
Digital input board (4 inputs)
Four DVI-I connectors are mounted that can input both HDMI (a conversion cable is needed) and DVI signals.

HDBaseT input board (4 inputs)
Four RJ-45 connectors are mounted that can extend digital (video/audio) signals up to 328 ft. (100 m) when the HDC-T series and FDX series are used together.

Optic input board (4 inputs)
Up to four SFP (LC connector x 2) modules can be mounted. Digital signals can be transmitted up to 2.92 mi. (4.7 km) (singlemode fiber) when the OPF-TH1000 and FDX are used together.

SDI input board (4 inputs)
Four BNC connectors with loop-through output are mounted. 3G-SDI, HD-SDI, and SD-SDI signals can be input. SD-SDI signals can be transmitted up to 459 ft. (140 m) with 1694A (BELDEN RG-6).

Digital output board (4 outputs)
Four DVI-I connectors that are mounted can output video and audio signals of the selected input channel.

HDBaseT output 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 transmitted up to 328 ft. (100 m) when the HDC-R series and FDX series are used together.

Optic output 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 transmitted up to 2.92 mi. (4.7 km) (singlemode fiber) when the OPF-RH1000 and FDX are used together.

Digital scan converter output 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.

HDBaseT scan converter output 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 transmitted up to 328 ft. (100 m) when the HDC series receivers and FDX series are used together.

Optic scan converter output 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 transmitted up to 2.92 mi. (4.7 km) (singlemode fiber) when the OPF-RH1000 and FDX are used together.
3 Features

■ Video
  - Up to 1080p/QWXGA* (Reduced Blanking)
  - 3G/HD/SD-SDI input
  - Automatic input signal equalization
    - Input : Up to 98 ft. (30 m)
    - Output : Up to 131 ft. (40 m)
  - Up to 328 ft. (100 m) over Cat6 cable
  - Transmission distances
    - Multimode fiber (OM3) : Up to 984 ft. (300 m)
    - Multimode fiber (OM4) : Up to 0.62 mi. (1 km)
    - Singlemode fiber (OS1) : Up to 2.92 mi. (4.7 km), 6.21 mi. (10 km) (Optional)
  - Anti-snow
  - The number of I/Os can be customized
  - Scaling (Scan converter output board)
  - SDI loop-through output connector

![Fig. 3.1] Combination example of boards

■ Control input
  - RS-232C
  - LAN

■ Others
  - EDID emulation
  - Audio breakaway for independent audio and video switching (When MAU-1616 (Optional) is connected)
  - I/O board and CPU board can be replaced without removing from rack
  - Alarm output (Monitoring power source and fans)
  - Preset memory
  - Last memory
  - Connection Reset
  - Front key function lock
  - RS-232C transmission (HDBaseT/Optic output board)

* Maximum resolution of optic I/O board: WUXGA (RB)
4 Panels

4.1 Front panel

[Fig. 4.1] Front panel drawing

[Table 4.1] Front panel features

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>POWER switch</td>
<td>Powers ON/OFF the FDX</td>
</tr>
<tr>
<td>②</td>
<td>LCD screen</td>
<td>Displays menus and settings</td>
</tr>
<tr>
<td>③</td>
<td>MENU/SET key</td>
<td>Selects menus and edits/controls/saves settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applies the setting</td>
</tr>
<tr>
<td>④</td>
<td>ESC key</td>
<td>Ends the current menu setting</td>
</tr>
<tr>
<td>⑤</td>
<td>Arrow keys (▲, ▼, ◄, ►)</td>
<td>Switches menus, moves cursors and changes set values</td>
</tr>
<tr>
<td>⑥</td>
<td>SWITCHING MODE key</td>
<td>Selects a switching mode V&amp;A (FDX and MAU-1616), VIDEO (only FDX), AUDIO (only MAU-1616) for when I/O channel is switched.</td>
</tr>
<tr>
<td>⑦</td>
<td>Switching direction selection key</td>
<td>Selects a switching direction (INPUT→OUTPUT or OUTPUT→INPUT) when channels are being set.</td>
</tr>
<tr>
<td>⑧</td>
<td>Input channel selection keys</td>
<td>Selects an input channel when I/O channels are being set. Selects a preset memory number when ⑩ (PRESET LOAD key) is enabled.</td>
</tr>
<tr>
<td>⑨</td>
<td>Output channel selection keys</td>
<td>Selects output channels when I/O channels are being set.</td>
</tr>
<tr>
<td>⑩</td>
<td>PRESET LOAD key</td>
<td>Enables/disables the loading preset memory mode</td>
</tr>
<tr>
<td>⑪</td>
<td>I/O channel status display</td>
<td>Displays selected I/O channels</td>
</tr>
</tbody>
</table>
4.2 Rear panel

[Fig. 4.2] Rear panel drawing

[Table 4.2] Rear panel features

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>DVI input connector</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 connector</td>
<td>Digital signals (Audio/Video) can be transmitted up to 328 ft. (100 m) by using with HDC series transmitters.</td>
</tr>
<tr>
<td>③</td>
<td>Optical input connector</td>
<td>Digital (video/audio) signals can be transmitted up to 2.92 mi. (4.7 km) (singlemode fiber) using the OPF-TH1000 and FDX together.</td>
</tr>
<tr>
<td>④</td>
<td>SDI input connector</td>
<td>3G-SDI/HD-SDI/SD-SDI signals can be input. 3G-SDI signals can be transmitted up to 1312 ft. (400 m) over BELDEN RG-6 cable; Level A and Level B are supported.</td>
</tr>
<tr>
<td>⑤</td>
<td>SDI loop-through output connector</td>
<td>If the FDX is powered on, SDI signals can be output from the SDI loop-through output connector.</td>
</tr>
<tr>
<td>⑥</td>
<td>DVI output connector</td>
<td>For DVI-I cables and DVI-D cables (analog signals cannot be used.) HDMI signals can be output using an HDMI-DVI conversion cable.</td>
</tr>
<tr>
<td>⑦</td>
<td>HDBaseT output connector</td>
<td>Digital signals (Audio/Video) can be transmitted up to 328 ft. (100 m) by using with HDC series receivers.</td>
</tr>
<tr>
<td>⑧</td>
<td>Optical output connector</td>
<td>Digital (video/audio) signals can be transmitted up to 2.92 mi. (4.7 km) (singlemode fiber) using the OPF-RH1000 and FDX together.</td>
</tr>
<tr>
<td>⑨</td>
<td>RS-232 connector</td>
<td>For external control using communication commands</td>
</tr>
<tr>
<td>⑩</td>
<td>LAN connector</td>
<td>For external control by communication commands or web browsers</td>
</tr>
<tr>
<td>⑪</td>
<td>Maintenance connector</td>
<td>Factory use only</td>
</tr>
</tbody>
</table>
## [Table 4.3] Rear panel features (Cont’d)

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⑫</td>
<td>ALARM connector</td>
<td>By using a 2-pin terminal block, problems in cooling fans, supply voltage, and I/O boards can be detected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>【See: 1 Included items】</td>
</tr>
<tr>
<td></td>
<td></td>
<td>【See: 6.2.5 Alarm】</td>
</tr>
<tr>
<td></td>
<td></td>
<td>【See: 8.10.4 Alarm [ALARM]】</td>
</tr>
<tr>
<td>⑬</td>
<td>OPTION connector</td>
<td>If the MAU-1616 (optional) is used, use the special cable. Normally, please do not connect anything.</td>
</tr>
<tr>
<td>⑭</td>
<td>BREAKER</td>
<td>Turned OFF if a circuit is broken or a problem in circuit parts occurs 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>⑮</td>
<td>AC power connector</td>
<td>For using with provided power cable</td>
</tr>
<tr>
<td>⑯</td>
<td>Frame ground</td>
<td>Use for bonding chassis to local ground. An M4 screw is used.</td>
</tr>
</tbody>
</table>
4.3 Channel of output board

- An output board has four channels or two channels (scan converter output board).
- The channel numbers of scan converter output board are the first two channels only; the rest of two channels cannot be set.
- In the configuration shown below, valid channels and invalid channels are as follows. Digital scan converter output board: No.5 and 6 are valid; No.7 and 8 are not used.

[Fig. 4.3] Channel configuration of Output board
5 System Configuration Example

Sink devices connected to HDC-R series and OPF-RH1000 via RS-232C can be controlled using FDX’s HDBaseT output board or optic output board.

[Fig. 5.1] Configuration example

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 HDBseT products that supports DVI signals.
6 Precautions

Before connecting to external devices, follow the precautions below.

6.1 Installation

- Before connecting cables to the FDX or an external device, dissipate static electricity by touching grounded metal such as racks before handling signal cables. Failure to observe this precaution may result in ESD (electrostatic discharge) damage.
- Do not block vent holes. To provide adequate ventilation, maintain sufficient clearances around the FDX 1.2 in. (30 mm) or more.
- When the FDX needs to be mounted in an EIA rack, or an enclosed space, ensure that sufficient ventilation or cooling is provided and that the ambient temperature will not exceed 104°F (40°C). If inadequately vented, the product's service life, operation and reliability may be affected.

■ Attaching rack mounting brackets

1. Remove four M5 screws from one side of the unit. Retain these 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.

![Fig. 6.1] Attaching rack mounting brackets

Note:
The standard screw tightening torque is 2.94 N·m (about 30 kgf·cm).
6.2 Cabling

- Read manuals for the external devices.
- Power all units off before connecting cables.
- Be sure to fully seat all plugs and connections and dress cables to reduce stress on connectors.

6.2.1 Twisted pair cable for extension

To ensure the best performance of twisted pair cables, select a correct twisted pair cable and connect it correctly.

- Cat5e UTP/STP and Cat6 UTP/STP can be used, but we recommend CAT.5E HDC cable* for optimal performance.
- If using an STP cable, connect the FG connector to a 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.
- Connectors for long-haul extension are the same as that of eight-core modular connector used for Ethernet, but the transmission system is not the same so that it cannot be connected to Ethernet.
- The maximum extension distance of a twisted pair cables is the shorter distance of the maximum extension distances of transmitter/receiver/sink device connected to the FDX.
- Pin assignments: T568A or T568B straight
- Do not pull the cable hard. 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 larger.
- Do not tie the cable tightly; leave a space allowing the cable to move slightly.
- If you use multiple twisted pair 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 the cable in an electrically noisy environment, since high-speed signals are transmitted. Particularly when you use a high-output radio around the FDX, video or audio may be interrupted.
- If the total extension distance from the transmitter to receiver is 328 ft. (100 m) or less, up to two cable joints can be used. Products supporting Cat6A (10GBase-T) are recommended.
- The table below shows supported extension distance for each twisted pair cable category. Note that the distance may shorten depending on the actual environment.

<table>
<thead>
<tr>
<th>Noise influence</th>
<th>Category</th>
<th>Extension distance</th>
<th>TMDS clock</th>
<th>Recommended cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easily affected</td>
<td>UTP</td>
<td>Cat5e 164 ft. (50 m)</td>
<td>≤ 225 MHz</td>
<td>For 164 ft. (50 m) or longer: CAT.5E HDC*, Cat5e STP, and Cat6 UTP/STP cables</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cat6 328 ft. (100 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less affected</td>
<td>STP</td>
<td>Cat5e* 328 ft. (100 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cat6* 328 ft. (100 m)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The CAT.5E HDC cable is a double-shielded twisted pair cable that optimizes video signal transmission. It is certified to 500 MHz bandwidth at distance up to 328 ft. (100 m) and verified to meet requirement specified by HDBaseT Alliance. The double-shielded structure protects video signal from outside interference.
Note:
If there is a problem in the transmission path, video or audio may be interrupted. Check the precautions above.
If the problem still cannot be solved, shortening the twisted pair cable may remedy the problem.

6.2.2 SFP optical transceiver

The fiber type and transmission distance vary depending on the SFP optical transceiver.

Table 6.2 Specification of standard SFP optical transceivers

<table>
<thead>
<tr>
<th>Item</th>
<th>Multimode fiber</th>
<th>Singlemode fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave length</td>
<td>850 nm (Oxide VCSEL*)</td>
<td>1310 nm (Fabry-Perot laser*)</td>
</tr>
<tr>
<td>Max. transmission distance</td>
<td>OM3: 984 ft. (300 m)</td>
<td>OM4: 0.62 mi. (1 km)</td>
</tr>
<tr>
<td></td>
<td>OM3: 984 ft. (300 m)</td>
<td>OS1: 2.92 mi. (4.7 km)</td>
</tr>
<tr>
<td>Receiver sensitivity (OMA) @10.3Gbps</td>
<td>-13 dBm or higher</td>
<td>-18 dBm or higher</td>
</tr>
<tr>
<td>Average Launch Power</td>
<td>-9 dBm to -2.5 dBm</td>
<td>-8.4 dBm to -3 dBm</td>
</tr>
<tr>
<td>Max. input power</td>
<td>0 dBm</td>
<td>+0.5 dBm</td>
</tr>
<tr>
<td>Connector</td>
<td>LC (Duplex)</td>
<td></td>
</tr>
</tbody>
</table>

* The lasers in these models meet class1.

For SFP module for singlemode fiber (OS1), some modules transmits signals up to 6.21 mi. (10 km).

- When no fiber optic cable is connected, plug dust caps.
- Do not use the SFP module for other products. Also, do not connect fiber optic cables that is connected to other products to the SFP module or the module may be damaged.
- If you need to replace the SFP module, please contact us.

6.2.3 Fiber optic cable

FDX can reach their full potential by selecting appropriate fiber optic cables for long-haul extension and installing the cable 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 may not operate correctly.
- Before inserting or removing the fiber, make sure to first turn the FDX off and not to touch the ends of the fiber. Clean them up before inserting the cable again.
- For SFP optical transceiver for multimode: PC polishing is recommended.
  For SFP optical transceiver for singlemode: UPC polishing is recommended.

Note: APC polishing is not supported.
6.2.4 Coaxial cable

Select the appropriate coaxial cable by referring to the following table.

<table>
<thead>
<tr>
<th>SDI type</th>
<th>Cable</th>
<th>Max. transmission distances</th>
</tr>
</thead>
<tbody>
<tr>
<td>3G-SDI</td>
<td>1505A (BELDEN RG-59)</td>
<td>394 ft. (120 m)</td>
</tr>
<tr>
<td></td>
<td>1694A (BELDEN RG-6)</td>
<td>459 ft. (140 m)</td>
</tr>
<tr>
<td>HD-SDI</td>
<td>1505A (BELDEN RG-59)</td>
<td>656 ft. (200 m)</td>
</tr>
<tr>
<td></td>
<td>1694A (BELDEN RG-6)</td>
<td>787 ft. (240 m)</td>
</tr>
<tr>
<td>SD-SDI</td>
<td>1505A (BELDEN RG-59)</td>
<td>1083 ft. (330 m)</td>
</tr>
<tr>
<td></td>
<td>1694A (BELDEN RG-6)</td>
<td>1312 ft. (400 m)</td>
</tr>
</tbody>
</table>

*Note:* Maximum transmission distance depends on the characteristics of each source device and quality of each cable.

6.2.5 Alarm

Connect the provided 2-pin terminal block to the ALARM connector in order to detect problems in the cooling fan, power-supply voltage, and I/O boards.

AWG 28 to AWG16 conductor gauge is recommended for the cable. The recommended wire strip length is 0.28 in. (7 mm).

[Fig. 6.4] Connecting cable to 2-pin terminal block connector
7 Basic Operation

7.1 Setting switching mode

- **V&A**: Illuminates in orange. I/O channels of the FDX and MAU-1616 can be switched simultaneously.

- **VIDEO**: Illuminates in green. I/O channels of only the FDX can be switched.

- **AUDIO**: Illuminates in red. I/O channels of only the MAU-1616 can be switched.

Every time you press the key, the mode is switched. (V&A→VIDEO→AUDIO)

![Fig. 7.1] Selecting switching mode
7.2 Selecting I/O channels

You can select I/O channels using INPUT SELECT and OUTPUT SELECT keys. If you want to select an input channel first, select “INPUT→OUTPUT” mode; in the opposite case (you want to select output channels first), select “OUTPUT→INPUT” mode.

If you do not operate these keys for 60 seconds, the power saving function will be enabled.

【See: 8.10.3 Power saving [POWER SAVE]】

7.2.1 Selecting I/O channel in INPUT→OUTPUT mode

Selecting an input channel first and then selecting output channels:

Procedure

1. Select the desired mode by pressing the SWITCHING MODE key (LEDs of input and output channel keys that corresponding to the selected mode will be turned on.)
2. Select “INPUT→OUTPUT” mode by pressing the SELECT MODE key. (The LED of the SELECT MODE key will be turned off.)
3. Select an input channel by pressing an INPUT SELECT key (“1” to “8” or “OFF”) (LEDs of the currently selected output channels will be turned on.)*
4. Select output channels by pressing OUTPUT SELECT keys (“1” to “8” or “ALL”)

Notes:

・ Channels that do not have a board cannot be selected.
・ The selected output channels can be OFF (no signal) by pressing the “OFF” key.
・ The selected input channel can be output to all output channels by pressing the “ALL” key.
7.2.2 Selecting I/O channel in OUTPUT→INPUT mode

Selecting output channels first and then selecting an input channel:

Procedure

1. Select the desired mode by pressing the SWITCHING MODE key (LEDs of input and output channel keys that corresponding to the selected mode will be turned on.)
2. Select "OUTPUT→INPUT" mode by pressing the SELECT MODE key (The LED of the SELECT MODE key will be turned on.)
3. Select output channels by pressing OUTPUT SELECT keys ("1" to "8" or "ALL") (The LED of the currently selected input channel will be turned on.)
4. Select an input channel by pressing an INPUT SELECT key ("1" to "8" or "OFF")

Notes:
- Channels that do not have a board cannot be selected.
- The selected output channels can be OFF (no signal) by pressing the "OFF" key.
- The selected input channel can be output to all output channels by pressing the "ALL" key.
7.3 Menu operation key

The menu consists of the top page, main menu, sub menu, and setting page. Selecting I/O channel and recalling preset memory operations are always precedes other operations.

The screen backlight is turned off if no operation is performed for 60 seconds (power saving function). If you do not operate these keys for 60 seconds, the power saving function will be enabled.

Procedure

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

[See: 8.10.3 Power saving [POWER SAVE]]

[Fig. 7.2] Menu operation
*1 Available “▲”, “▼”, “◄”, and “►” keys are displayed at the lower right of the front display and the LED lights.
   A channel that does not have its board cannot be set.
*2 The set value will be saved after the operation.
7.4 Recalling preset memory

The FDX can recall registered preset memory and apply the I/O channel settings.

**PRESET LOAD front key**: Memories 1 to 8 (INPUT SELECT keys)
**PRESET LOAD menu**: up to preset memories 1 to 32

![Diagram of FDX interface showing preset memory recall](image)

### Procedure

1. Press the “PRESET LOAD” key.
2. Select the desired preset memory number using “1” to “8” keys.

### Notes:

- Once you press the “PRESET LOAD” key, the LED is turned on and the recalling preset memory mode is enabled.
- Press the “PRESET LOAD” key again or “ESC” key in order to cancel the mode. If you do not operate the key for 60 seconds after the recalling preset memory mode is enabled, the mode will be canceled because of power saving function.
7.5 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.

![Input Channel Select](image1)

![Output Channel Select](image2)

[Fig. 7.3] 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 “8.1 Menu list”. 
7.6 Locking/unlocking front key function lock

Press and hold the “ESC” key for five seconds to set/cancel keylock for keys below. You will hear a beep tone and then one of the following messages is displayed for 1 second.

You can group target keys.

【See: 8.10.1 Front key function lock [KEY LOCK]】

Press and hold for 5 sec.

[Fig. 7.4] Locking/unlocking front key function lock
8 Menu

Menus are divided into the following groups:

- INPUT SETTING
- INPUT TIMING
- OUTPUT SETTING
- OUTPUT TIMING
- AUDIO
- EDID
- COM PORT (RS-232C communication)
- LAN
- PRESET MEMORY
- OTHERS

* These menus are available if scan converter output board is mounted.

8.1 Menu list

### Input settings (INPUT SETTING)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT EQUALIZER</td>
<td>Input equalizer</td>
<td>AUTO/OFF</td>
<td>Each input</td>
<td>AUTO</td>
<td>36</td>
</tr>
<tr>
<td>INPUT SIGNAL CHECK</td>
<td>No-signal input monitoring</td>
<td>OFF/3 to 15 [sec.]</td>
<td>Each input</td>
<td>10 [sec.]</td>
<td>37</td>
</tr>
<tr>
<td>INPUT HDCP</td>
<td>HDCP input enabled/disabled</td>
<td>ENABLE/DISABLE</td>
<td>Each input</td>
<td>ENABLE</td>
<td>38</td>
</tr>
<tr>
<td>INPUT SDI AUDIO GR</td>
<td>SDI input audio group</td>
<td>PRI : 1 to 4</td>
<td>Each input</td>
<td>PRI : 1</td>
<td>39</td>
</tr>
<tr>
<td>INPUT SDI 2HD SEL</td>
<td>SDI Dual Stream input video</td>
<td>STREAM 1/STREAM 2</td>
<td>Each input</td>
<td>STREAM 1</td>
<td>40</td>
</tr>
</tbody>
</table>

### Input timing settings (INPUT TIMING)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT H POSITION</td>
<td>Horizontal start position</td>
<td>0/-100 to +100 [dot]</td>
<td>Each input signal</td>
<td>0 [dot]</td>
<td>41</td>
</tr>
<tr>
<td>INPUT H SIZE</td>
<td>Horizontal active area</td>
<td>0/-100 to +100 [dot]</td>
<td>Each input signal</td>
<td>0 [dot]</td>
<td>41</td>
</tr>
<tr>
<td>INPUT V POSITION</td>
<td>Vertical start position</td>
<td>0/-30 to +30 [line]</td>
<td>Each input signal</td>
<td>0 [line]</td>
<td>42</td>
</tr>
<tr>
<td>INPUT V SIZE</td>
<td>Vertical active area</td>
<td>0/-30 to +30 [line]</td>
<td>Each input signal</td>
<td>0 [line]</td>
<td>43</td>
</tr>
<tr>
<td>INPUT ASPECT</td>
<td>Input video aspect ratio</td>
<td>AUTO/FULL/4:3:5:3:5:4/16:9/16:10/16:9 LT</td>
<td>Each input signal</td>
<td>AUTO</td>
<td>41</td>
</tr>
<tr>
<td>INPUT CONTRAST</td>
<td>Input contrast</td>
<td>R/G/B: 0 to 200 [%]</td>
<td>Each input signal</td>
<td>100 [%]</td>
<td>44</td>
</tr>
<tr>
<td>INPUT BRIGHTNESS</td>
<td>Input brightness</td>
<td>80 to 120 [%]</td>
<td>Each input signal</td>
<td>100 [%]</td>
<td>45</td>
</tr>
<tr>
<td>INPUT GAMMA</td>
<td>Input gamma</td>
<td>0.1 LOW MIN to 1.0 NORMAL to 3.0 HIGH MAX</td>
<td>Each input signal</td>
<td>1.0 NORMAL</td>
<td>45</td>
</tr>
<tr>
<td>INPUT FILTER</td>
<td>Input sharpness</td>
<td>-5 SOFT MIN to 0 NORMAL to 15 SHARP MAX</td>
<td>Each input signal</td>
<td>0 NORMAL</td>
<td>46</td>
</tr>
<tr>
<td>INPUT HUE</td>
<td>Input HUE</td>
<td>0° to 359°</td>
<td>Each input signal</td>
<td>0°</td>
<td>46</td>
</tr>
<tr>
<td>INPUT SATURATION</td>
<td>Input saturation</td>
<td>0 to 200 [%]</td>
<td>Each input signal</td>
<td>100 [%]</td>
<td>47</td>
</tr>
</tbody>
</table>
### Output settings (OUTPUT SETTING)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTPUT EQUALIZER</td>
<td>Output equalizer</td>
<td>OFF/LOW/MEDIUM/HIGH</td>
<td>Each output</td>
<td>OFF</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>Sink device EDID check</td>
<td>OFF (In case of EDID load error, the sink device is treated as a DVI device.)</td>
<td>Each output</td>
<td>OFF</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>EDID settings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID WXGA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID Dolby TrueHD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID Dolby D+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID AAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID AC-3/Dolby D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID AES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID DTS-4000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID DTS-5000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EDID WUXGA SELECT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUTPUT HPD MASK</td>
<td>Hot plug ignoring duration</td>
<td>OFF/2 to 15 [sec.]</td>
<td>Each output</td>
<td>OFF</td>
<td>49</td>
</tr>
</tbody>
</table>

### Timing settings (OUTPUT TIMING)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTPUT RESOLUTION</td>
<td>Output resolution</td>
<td>AT: /</td>
<td>Each output</td>
<td>AT:</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01: 640x 480 / 02: 800x 600 / 03: 1024x 768 / 04: 1280x 768 / 05: 1280x 800 / 06: 1280x 960 / 07: 1280x1024 / 08: 1360x 768 / 09: 1366x 768 / 10: 1400x1050 / 11: 1440x 900 / 12: 1600x 900 / 13: 1600x1200 / 14: 1680x1050 / 15: 1920x1080 / 16: 1920x1200 / 17: 2048x1152 / 18: 720x 480 / 19: 720x 576 / 20: 720p @50 / 21: 720p @59 / 22: 1080i @50 / 23: 1080i @59 / 24: 1080p @60 / 25: 1080p @59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUTPUT PATTERN</td>
<td>Output test pattern</td>
<td>OFF/F-V/S-PERI/CROSS/HATCH/WHITE RASTER/RED RASTER/GREEN RASTER/BLUE RASTER/COLOR BAR/18STEP GRAY/256STEP/GRAY</td>
<td>Each output</td>
<td>OFF</td>
<td>53</td>
</tr>
<tr>
<td>OUTPUT SIZE</td>
<td>Display 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>Display 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>Output contrast</td>
<td>0 to 200 [%]</td>
<td>Each output</td>
<td>100 [%]</td>
<td>56</td>
</tr>
<tr>
<td>OUTPUT BRIGHTNESS</td>
<td>Output brightness</td>
<td>0 to 200 [%]</td>
<td>Each output</td>
<td>0</td>
<td>56</td>
</tr>
<tr>
<td>OUTPUT FADE OUT-IN</td>
<td>Dissolve effect</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>

### Audio (AUDIO)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</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>55</td>
</tr>
</tbody>
</table>

### EDID settings (EDID)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDID SAVE</td>
<td>Copying EDID</td>
<td>OUT1 to OUT8</td>
<td>Each input</td>
<td>OUT1</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>05:1080p (59.94 / 60)</td>
<td>Each input</td>
<td>OUT1</td>
<td>62</td>
</tr>
<tr>
<td>EDID EXTERNAL CH</td>
<td>EDID loading output channel</td>
<td>OUT1 to OUT8</td>
<td>Each input</td>
<td>OUT1</td>
<td>62</td>
</tr>
<tr>
<td>EDID SPEAKER CH</td>
<td>Audio channel</td>
<td>2/1:5/1:5/1:7:1 [channel]</td>
<td>Each input</td>
<td>2 [channel]</td>
<td>64</td>
</tr>
<tr>
<td>EDID LINEAR PCM</td>
<td>LPCM Audio</td>
<td>32/44.1/48/88.2/96/112 [kHz]</td>
<td>Each input</td>
<td>48 [kHz]</td>
<td>65</td>
</tr>
<tr>
<td>EDID AAC</td>
<td>AAC Audio</td>
<td>OFF/32/44.1/48/88.2/96 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
<td>67</td>
</tr>
<tr>
<td>EDID Dolby D+</td>
<td>Dolby Digital Plus Audio</td>
<td>OFF/32/44.1/48/88.2/96 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
<td>68</td>
</tr>
<tr>
<td>EDID DTS</td>
<td>DTS Audio</td>
<td>OFF/32/44.1/48/88.2/96 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
<td>69</td>
</tr>
<tr>
<td>EDID DTS-HD</td>
<td>DTS-HD Audio</td>
<td>OFF/32/44.1/48/88.2/96 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
<td>70</td>
</tr>
<tr>
<td>EDID Dolby TrueHD</td>
<td>Dolby TrueHD Audio</td>
<td>OFF/32/44.1/48/88.2/96 [kHz]</td>
<td>Each input</td>
<td>OFF</td>
<td>71</td>
</tr>
<tr>
<td>EDID WUXGA SELECT</td>
<td>WUXGA</td>
<td>1360 x 768/1360 x 768</td>
<td>Each input</td>
<td>1360 x 768</td>
<td>71</td>
</tr>
</tbody>
</table>

### RS-232C communication (COM PORT)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</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>Baud rate</td>
<td>9600 [bps]</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data bit length: 8 [bit]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parity check: NONE/ODD/EVEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stop bit: 1 [bit]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### ■ LAN communication (LAN)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</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</td>
<td>—</td>
<td>192.168.1.199</td>
<td>73</td>
</tr>
<tr>
<td>SUBNET MASK</td>
<td>Subnet mask</td>
<td>0.0.0.0 to 255.255.254</td>
<td>—</td>
<td>255.255.255.0</td>
<td>73</td>
</tr>
<tr>
<td>CONTROL PORT</td>
<td>TCP port number</td>
<td>Port number: 1/1000/6000 to 6999</td>
<td>—</td>
<td>Port number: 1/1000</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 connections: ON (Up to 8 connections can be used)</td>
<td></td>
<td>8 connections: OFF</td>
<td></td>
</tr>
<tr>
<td>MAC ADDRESS</td>
<td>MAC address</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>75</td>
</tr>
</tbody>
</table>

### ■ Preset memory (PRESET MEMORY)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESET LOAD</td>
<td>Recalling preset memory</td>
<td>Preset memory number: 01 to 32</td>
<td>—</td>
<td>Channels are not controlled</td>
<td>76</td>
</tr>
<tr>
<td>PRESET SAVE</td>
<td>Saving preset memory</td>
<td>Preset memory number: 01 to 32</td>
<td>—</td>
<td>Channels are not controlled</td>
<td>77</td>
</tr>
<tr>
<td>PRESET EDIT</td>
<td>Editing preset memory</td>
<td>Preset memory number: 01 to 32</td>
<td>—</td>
<td>Channels are not controlled</td>
<td>78</td>
</tr>
<tr>
<td>PRESET START UP</td>
<td>Start-up I/O channel</td>
<td>PRESET MEMORY 01 to 32</td>
<td>—</td>
<td>LAST MEMORY</td>
<td>79</td>
</tr>
</tbody>
</table>

### ■ Others (OTHERS)

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Setting value</th>
<th>For</th>
<th>Default</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEY LOCK</td>
<td>Front key function lock</td>
<td>MENU KEY: LOCK/UNLOCK</td>
<td>—</td>
<td>MENU KEY: LOCK</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CH KEY: LOCK/UNLOCK</td>
<td></td>
<td>CH KEY: LOCK</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PRESET KEY: LOCK/UNLOCK</td>
<td></td>
<td>PRESET KEY: LOCK</td>
<td></td>
</tr>
<tr>
<td>BUZZER</td>
<td>Beep</td>
<td>ON/OFF</td>
<td>—</td>
<td>ON</td>
<td>80</td>
</tr>
<tr>
<td>POWER SAVE</td>
<td>Power saving</td>
<td>ON/OFF</td>
<td>—</td>
<td>ON</td>
<td>81</td>
</tr>
<tr>
<td>ALARM</td>
<td>Alarm</td>
<td>ON/OFF</td>
<td>—</td>
<td>ON</td>
<td>82</td>
</tr>
<tr>
<td>TOP DISPLAY</td>
<td>Top page</td>
<td>ON/OFF</td>
<td>—</td>
<td>OFF</td>
<td>82</td>
</tr>
<tr>
<td>INPUT STATUS</td>
<td>Viewing input signal status</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>85</td>
</tr>
<tr>
<td>MONITOR STATUS</td>
<td>Viewing sink device status</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>85</td>
</tr>
<tr>
<td>BOARD STATUS</td>
<td>Viewing board status</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>85</td>
</tr>
<tr>
<td>FAN STATUS</td>
<td>Viewing cooling fan status</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>86</td>
</tr>
<tr>
<td>POWER STATUS</td>
<td>Viewing power-supply voltage</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>86</td>
</tr>
<tr>
<td>VERSION</td>
<td>Viewing firmware and hardware versions</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>87</td>
</tr>
</tbody>
</table>

Note:
If “ALL” is selected in “Selecting I/O 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 Input settings [INPUT SETTING]

8.2.1 Input equalizer [INPUT EQUALIZER]

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

Menu

INPUT SETTING → INPUT EQUALIZER

Setting for

Each input connector (IN1 to IN8)

Setting value

AUTO : Automatic correction  [Default]
OFF    : Without correction

Notes:

- Press the SET key to apply the setting.
- If you use a 16 ft. (5 m) 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.
- Only channels of digital input board can be selected in this menu.
8.2.2 No-signal input monitoring [INPUT SIGNAL CHECK]

If you change the EDID settings of the FDX or power the FDX off/on, the source device may not output a video signal. Use this menu to set the monitoring time which is from when a source device stops outputting signal to when the FDX requests the source device to output video signal.

![Diagram of signal monitoring process]

**Menu**

INPUT SETTING → INPUT SIGNAL CHECK

**Setting for**

Each input connector (IN1 to IN8, ALL)

**Setting value**

OFF

3Sec to 15Sec  [Default] 10 sec.

**Notes:**

- If you are using the monitor power-saving or dual monitor features on your PC, set this feature to “OFF”. This will avoid unpredictable operation.
- When using this feature, ensure that the “monitoring time” is set for a value greater than the amount of time needed for the source to provide an output signal.
- Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.

![Diagram of repeating output signal setting]
8.2.3 HDCP input enabled/disabled [INPUT HDCP]

Some source devices negotiate with the connected device to determine if it supports HDCP encryption. After this negotiation, the source device decides whether they encrypt HDCP signal or not. This process takes place with some source device, even if the content being presented is not copyright protected. The FDX is HDCP compliant, if it is connected to a display device that does not support HDCP, video may not be displayed. Under these circumstances and if the content is not protected, the problem can be solved by setting this menu to "DISABLE."

[Fig. 8.3] HDCP-compliant and HDCP-non compliant sink device

Menu
INPUT SETTING → INPUT HDCP

Setting for
Each input connector (IN1 to IN8, ALL)

Setting value
ENABLE : Supports HDCP [Default]
DISABLE: Not support HDCP

Notes:
• In order to display contents whose copyright is protected, set this menu to "ENABLE."
• Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.
8.2.4 SDI input audio group [INPUT SDI AUDIO GR]

Up to 16 audio channels are in SDI input audio, and these channels are divided into one to four groups by four channels. Selected two audio groups can be output as multi channel audio and can be specified as Primary or Secondary audio as follows.

PRI : Primary audio  (Output 1ch to 4ch)
SEC : Secondary audio  (Output 5ch to 8ch)
An audio group cannot be specified as both primary and secondary audio group.

Menu
 INPUT SETTING → INPUT SDI AUDIO GR

Setting for
 Each input connector (IN1 to IN8)

Setting value
 1: Audio group 1 (1ch to 4ch)  [Default for primary audio]
 2: Audio group 2 (5ch to 8ch)  [Default for secondary audio]
 3: Audio group 3 (9ch to 12ch)
 4: Audio group 4 (13ch to 16ch)

Note:
This menu is available only if an SDI input board is mounted.
8.2.5 SDI Dual Stream input video [INPUT SDI 2HD SEL]

Two video streams are included when 3G-SDI Dual Stream signals are input. You can select one stream to be output.

Menu
INPUT SETTING → INPUT SDI 2HD SEL

Setting for
Each input connector (IN1 to IN8)

Setting value
STREAM 1: Video stream 1  [Default]
STREAM 2: Video stream 2

Note:
This menu is available only if an SDI input board is mounted.
8.3 Input timing settings [INPUT TIMING]

8.3.1 Horizontal start position [INPUT H POSITION]

Menu
INPUT TIMING → INPUT H POSITION

Setting for
Each input signal

Setting value
0 : 0 dot [Default]
-100 to +100: -100 dots to +100 dots

Note:
This menu is available only if a scan converter output board is mounted.

8.3.2 Horizontal active area [INPUT H SIZE]

Horizontal active area can be adjusted between -100 dots and +100 dots.
(−): The vertical video will be shrunk according to the sink device.
(+) : The horizontal video will be enlarged according to the sink device.

“−”: To be shrunk

“+”: To be enlarged

[Fig. 8.4] Horizontal active area
Menu
  INPUT TIMING → INPUT H SIZE

Setting for
  Each input signal

Setting value
  0 : 0 dot [Default]
  -100 to +100: -100 dots to +100 dots

Note:
This menu is available only if a scan converter output board is mounted.

8.3.3 Vertical start position [INPUT V POSITION]

Menu
  INPUT TIMING → INPUT V POSITION

Setting for
  Each input signal

Setting value
  0 : 0 line [Default]
  -30 to +30: -30 lines to +30 lines

Note:
This menu is available only if a scan converter output board is mounted.
8.3.4 Vertical active area [INPUT V SIZE]

Vertical active area can be adjusted between -30 lines and +30 lines. 
(−): The vertical video will be shrunk according to the sink device. 
(+): The horizontal video will be enlarged according to the sink device.

“−”: To be shrunk

“+”: To be enlarged

[Fig. 8.5] Vertical active area

Menu
INPUT TIMING → INPUT V SIZE

Setting for
Each input signal

Setting value
0 : 0 line  [Default]
-30 to +30: -30 lines to +30 lines

Note:
This menu is available only if a scan converter output board is mounted.
8.3.5 Input video aspect ratio [INPUT ASPECT]

Menu
INPUT TIMING → INPUT ASPECT

Setting for
Each input signal

Setting value
AUTO : Selects the best aspect ratio automatically based on input signals  [Default]
FULL
4:3
5:3
5:4
16:9
16:10
16:9 LT

Note:
This menu is available only if a scan converter output board is mounted.

8.3.6 Input contrast [INPUT CONTRAST]

Select “A” in the front panel to change the settings of “R” (leftmost), “G” and “B” relatively from the current setting values.

By moving the cursor position to each red, green, and blue, the contrast can be changed individually.

Menu
INPUT TIMING → INPUT CONTRAST

Setting for
Each input signal

Setting value
100%  [Default]
0% to 200%

Note:
This menu is available only if a scan converter output board is mounted.
8.3.7 Input brightness [INPUT BRIGHTNESS]

**Menu**

INPUT TIMING → INPUT BRIGHTNESS

**Setting for**

Each input signal

**Setting value**

- 100% [Default]
- 80% to 120%

**Note:**

This menu is available only if a scan converter output board is mounted.

8.3.8 Input 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.

**Menu**

INPUT TIMING → INPUT GAMMA

**Setting for**

Each input signal

**Setting value**

- 0.1 LOW MIN to 0.9 LOW : emphasizing darkness
- 1.0 NORMAL : no adjustment [Default]
- 1.1 HIGH to 3.0 HIGH MAX: emphasizing brightness

**Note:**

This menu is available only if a scan converter output board is mounted.
8.3.9 Input sharpness [INPUT FILTER]

Menu
INPUT TIMING → INPUT FILTER

Setting for
Each input signal

Setting 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 is available only if a scan converter output board is mounted.

8.3.10 Input HUE [INPUT HUE]

Menu
INPUT TIMING → INPUT HUE

Setting for
Each input signal

Setting value
0° [Default]
0° to 359°

Note:
This menu is available only if a scan converter output board is mounted.
8.3.11 Input saturation [INPUT SATURATION]

**Menu**

INPUT TIMING → INPUT SATURATION

**Setting for**

Each input signal

**Setting value**

100%  [Default]
0% to 200%

*Note:*
This menu is available only if a scan converter output board is mounted.
8.4 Output settings [OUTPUT SETTING]

8.4.1 Output equalizer [OUTPUT EQUALIZER]

Menu
OUTPUT SETTING → OUTPUT EQUALIZER

Setting for
Each output connector (OUT1 to OUT8, ALL)

Setting value
- OFF: No correction [Default]
- LOW
- MEDIUM
- HIGH

Notes:
- If you use a 16 ft. (5 m) 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.
- Only channels of digital output board or digital scan converter output board can be selected in this menu.

8.4.2 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.

Menu
OUTPUT SETTING → OUTPUT MODE

Setting for
Each output connector (OUT1 to OUT8, ALL)

Setting 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:
Only channels of digital output board can be selected in this menu.
8.4.3 Sink device EDID check [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 output 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.

Menu

OUTPUT SETTING → OUTPUT HDMI MODE

Setting for

Each output connector (OUT1 to OUT8, ALL)

Setting value

OFF: In case of EDID load error, the sink device is treated as a DVI device. [Default]
ERROR: In case of EDID load error, the sink device is treated as a HDMI device.
ALWAYS: Always HDMI output

Notes:

• 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: 8.7.1 EDID resolution [EDID DATA]]
  [See: 8.4.2 Output mode [OUTPUT MODE]]
• Only channels of output board can be selected in this menu.

8.4.4 Hot plug ignoring duration [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.

Menu

OUTPUT SETTING → OUTPUT HPD MASK

Setting for

Each output connector (OUT1 to OUT8, ALL)

Setting value

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

Note:

Only channels of digital output board or digital scan converter output board can be selected in this menu.
8.4.5 Output Deep Color [OUTPUT DEEP COLOR]

**Menu**

OUTPUT SETTING → OUTPUT DEEP COLOR

**Setting for**

Each output connector (OUT1 to OUT8)

**Setting value**

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

**Notes:**

- 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 board and HDBaseT scan converter output board support Deep Color up to “30 bit/pixel (10 bit/component)”.
- Since an optic I/O board and optic scan converter output board do not support Deep Color, 24 bit/pixel (8 bit/component) is used.
- Only channels of output board can be selected in this menu.
8.5 Output timing settings [OUTPUT TIMING]

8.5.1 Output resolution [OUTPUT RESOLUTION]

Menu
OUTPUT TIMING → OUTPUT RESOLUTION

Setting for
Each output connector (OUT1 to OUT8)

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

Numbers following “@” are vertical sync frequency.
480p/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.

Notes:
- Press the SET key to apply the setting.
- Only channels of scan converter output board can be selected in this menu.
- Optic scan converter output board does not support QWXGA@60.
8.5.2 Aspect ratio of sink device [OUTPUT ASPECT]

If you select “THROUGH”, the aspect ratio of the resolution selected in “8.5.1 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”.

Menu

OUTPUT TIMING → OUTPUT ASPECT

Setting for

Each output connector (OUT1 to OUT8)

Setting value

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

Note:

Only channels of scan converter output board can be selected in this menu.
8.5.3 Output test pattern [OUTPUT PATTERN]

**Menu**

OUTPUT TIMING → OUTPUT PATTERN

**Setting for**

Each output connector (OUT1 to OUT8)

**Setting value**

- OFF [Default]
- V-STRIPES
- CROSS HATCH
- WHITE RASTER
- RED RASTER
- GREEN RASTER
- BLUE RASTER
- COLOR BAR
- 16STEP GRAY
- 256STEP GRAY

![Test pattern images](image_url)

**Note:**

Only channels of scan converter output board can be selected in this menu.
8.5.4 Display size [OUTPUT SIZE]

**Menu**
OUTPUT TIMING → OUTPUT SIZE

**Setting for**
Each output connector (OUT1 to OUT8)

**Setting value**
- 100% [Default]
- 20.0% to 400.0%

*Note:*
Only channels of scan converter output board can be selected in this menu.

8.5.5 Display position [OUTPUT POSITION]

**Menu**
OUTPUT TIMING → OUTPUT POSITION

**Setting for**
Each output connector (OUT1 to OUT8)

**Setting value**
- 0% [Default]
- -400.0% to +400.0%

*Note:*
Only channels of scan converter output board can be selected in this menu.
8.5.6 Blank color [OUTPUT BLANK COLOR]

Select “A” in the front panel to change the settings of “R” (leftmost), “G” and “B” relatively from the current setting values.

Menu

OUTPUT TIMING → OUTPUT BLANK COLOR

Setting for

Each output connector (OUT1 to OUT8)

Setting value

0 [Default]
0 to 255

Note:
Only channels of scan converter output board can be selected in this menu.

8.5.7 Background color [OUTPUT BACKGROUND]

Select “A” in the front panel to change the settings of “R” (leftmost), “G” and “B” relatively from the current setting values.

By moving the cursor position to each red, green, and blue, the contract can be changed individually.

Menu

OUTPUT TIMING → OUTPUT BACKGROUND

Setting for

Each output connector (OUT1 to OUT8)

Setting value

0 [Default]
0 to 255

Note:
Only channels of scan converter output board can be selected in this menu.
8.5.8 Output contrast [OUTPUT CONTRAST]

Menu
OUTPUT TIMING → OUTPUT CONTRAST

Setting for
Each output connector (OUT1 to OUT8)

Setting value
100% [Default]
0% to 200%

Note:
Only channels of scan converter output board can be selected in this menu.

8.5.9 Output brightness [OUTPUT BRIGHTNESS]

Menu
OUTPUT TIMING → OUTPUT BRIGHTNESS

Setting for
Each output connector (OUT1 to OUT8)

Setting value
100% [Default]
0% to 200%

Note:
Only channels of scan converter output board can be selected in this menu.
8.5.10 Dissolve effect [OUTPUT FADE OUT-IN]

**Menu**
OUTPUT TIMING → OUTPUT FADE OUT-IN

**Setting for**
Each output connector (OUT1 to OUT8)

**Setting value**
- ON : Enabled  [Default]
- OFF : Disabled

**Note:**
Only channels of scan converter output board can be selected in this menu.

8.5.11 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.

**Menu**
OUTPUT TIMING → OUTPUT HDCP

**Setting for**
Each output connector (OUT1 to OUT8)

**Setting value**
- AUTO : HDCP is not output until an input channel with HDCP is selected.  [Default]
- INPUT ONLY : HDCP is encrypted only if input signal is with HDCP.

**Note:**
Only channels of scan converter output board can be selected in this menu.
8.6 Audio [AUDIO]

8.6.1 Digital audio output [AUDIO DIGITAL OUT]

**Menu**

AUDIO → AUDIO DIGITAL OUT

**Setting for**

Each output connector (OUT1 to OUT8)

**Setting value**

- ON [Default]
- OFF

*Note:*

Only channels of output board can be selected in this menu.
8.7 EDID settings [EDID]

You can set or customize EDID to be sent to the source device. Change the setting as needed.

![Fig. 8.7 Setting EDID](image)

(1) Select the target sink device for external EDID/ copy EDIDs.
Skip this step if the built-in EDID is used.

- [See: 8.7.2 Copying EDID [EDID SAVE]]
- [See: 8.7.3 EDID loading output channel [EDID EXTERNAL CH]]

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

- [See: 8.7.1 EDID resolution [EDID DATA]]

(3) If you use built-in EDID, customize the data as usage.

- [See: 8.7.4 Deep Color input [EDID DEEP COLOR]]
- [See: 8.7.5 Audio channel [EDID SPEAKER CH]]
- [See: 8.7.6 LPCM Audio [EDID LINEAR PCM]]
- [See: 8.7.7 AC-3 Dolby Digital Audio [EDID AC-3/Dolby D]]
- [See: 8.7.8 AAC Audio [EDID AAC]]
- [See: 8.7.9 Dolby Digital Plus Audio [EDID Dolby D+]]
- [See: 8.7.10 DTS Audio [EDID DTS]]
- [See: 8.7.11 DTS-HD Audio [EDID DTS-HD]]
- [See: 8.7.12 Dolby TrueHD Audio [EDID Dolby TrueHD]]
- [See: 8.7.13 WXGA [EDID WXGA SELECT]]
8.7.1 EDID resolution [EDID DATA]

You can set the 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.

**Menu**

EDID → EDID DATA

**Setting for**

Each input connector (IN1 to IN8)

**Setting value**

[Table 8.1] Maximum resolution of EDID

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Maximum 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 can be set in '8.7.13 WXGA [EDID WXGA SELECT]'</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></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: 8.7.2 Copying EDID [EDID SAVE]】
【See: 8.7.3 EDID loading output channel [EDID EXTERNAL CH]】
【See: 8.7.13 WXGA [EDID WXGA SELECT]】
### Maximum resolution and supported pixels

<table>
<thead>
<tr>
<th>Pixels (EDID)</th>
<th>Max. resolution</th>
<th>640 x 480</th>
<th>800 x 600</th>
<th>1024 x 768</th>
<th>1280 x 720</th>
<th>1280 x 768</th>
<th>1280 x 800</th>
<th>1280 x 960</th>
<th>1280 x 1024</th>
<th>1360 x 768</th>
<th>1366 x 768</th>
<th>1400 x 1050</th>
<th>1440 x 900</th>
<th>1600 x 1080</th>
<th>1600 x 1200</th>
<th>1680 x 1050</th>
<th>1920 x 1200</th>
<th>2048 x 1152</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>1080p (59.94/60)</td>
<td>Y Y Y N N Y Y Y Y Y Y Y Y Y Y Y N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>720p</td>
<td>Y Y N Y N N N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>1080i</td>
<td>Y Y Y N N N N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>1080p (24/25/30/50)</td>
<td>Y Y Y N N Y Y Y Y Y Y Y Y Y Y Y N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>800×600</td>
<td>Y Y N N N N N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1024×768</td>
<td>Y Y Y N N N N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1280×720</td>
<td>Y Y Y Y Y Y N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1280×768</td>
<td>Y Y Y Y Y Y N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>1280×800</td>
<td>Y Y Y Y Y Y N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>1280×960</td>
<td>Y Y Y Y Y Y N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>1280×1024</td>
<td>Y Y Y Y Y Y N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>1360×768</td>
<td>Y Y Y Y Y Y N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>1400×1050</td>
<td>Y Y Y Y Y Y N N N N N N N N N N N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>1440×900</td>
<td>Y Y Y Y Y N Y Y Y Y Y Y Y Y Y Y N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>1600×900</td>
<td>Y Y Y Y Y N Y Y Y Y Y Y Y Y Y Y N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>1600×1200</td>
<td>Y Y Y Y Y N Y Y Y Y Y Y Y Y Y Y N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>1680×1050</td>
<td>Y Y Y Y Y N Y Y Y Y Y Y Y Y Y Y N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>1920×1080</td>
<td>Y Y Y Y Y N Y Y Y Y Y Y Y Y Y Y N N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>1920×1200</td>
<td>Y Y Y Y N N Y Y Y Y N N Y Y Y Y Y Y N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>2048×1152</td>
<td>Y Y Y N N N N Y Y Y Y Y Y Y Y Y Y N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Y: Supported, N: Not supported, -: Not used

* The number of EDID-supported pixels for 1360×768 and 1366×768 can be set in “8.7.13 WXGA [EDID WXGA SELECT]”. The default value is 1360×768.

【See: 8.7.13 WXGA [EDID WXGA SELECT]】

**Notes:**
- Press the SET key to apply the setting.
- Optic I/O boards and optic scan converter output board do not support QWXGA.
- Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.

---

[Table 8.2] Maximum resolution and supported pixels

61
8.7.2 Copying EDID [EDID SAVE]

You can store the sink device EDID in the FDX. The stored EDID can be treated as internal EDID by registering the EDID.

Menu
EDID → EDID SAVE

Setting for
Each copied EDID stored area (1[xxx] to 4[xxx])

Setting value
OUT1[xxx]*1 to OUT8[xxx]*1: OUT1 to OUT8 EDID  [Default] 05:1080p (59.94/60) *2

*1 "xxx": Vendor code of the saved EDID
*2 05  : 1080p (59.94/60) is stored in all stored area as factory default

Notes:
・Press the SET key to apply the setting.
・Only channels of output board can be selected in this menu.

8.7.3 EDID loading output channel [EDID EXTERNAL CH]

You can set the output connector to be loaded when the EDID type is set to “EXTERNAL”.

Menu
EDID → EDID EXTERNAL CH

Setting for
Each input connector (IN1 to IN8)

Setting value
OUT1 to OUT8: EDID loading output channel OUT1 to OUT8  [Default] OUT1

Notes:
・Press the SET key to apply the setting.
・This menu is valid if you select “00” for the resolution of EDID.
・Only channels of input board or output board can be selected in this menu.
・Channels in which an SDI input board cannot be selected.
8.7.4 Deep Color input [EDID DEEP COLOR]

You can set the Deep Color that is output from the source device. 

【See: 8.7.1 EDID resolution [EDID DATA]】

**Menu**

EDID → EDID DEEP COLOR

**Setting for**

Each input connector (IN1 to IN8)

**Setting value**

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

**Notes:**

- Press the SET key to apply the setting.
- If you set this function to “30 bit/pixel (10 bit/component)” or “36 bit/pixel (12 bit/component)”,
  the transmission clock frequency is increased. As a result, noise may appear when a bad-condition cable
  or long cable is connected. In such a case, set this menu to “24 bit/pixel (8 bit/component)”.
- The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
- Digital scan converter output board and HDBaseT scan converter output board support Deep Color up to
  “30 bit/pixel (10 bit/component)”. 
- Since optic I/O boards and optic scan converter output do not support Deep Color, 24 bit/pixel
  (8 bit/component) is used.
- Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.
8.7.5 Audio channel [EDID SPEAKER CH]

You can set the number of multiple channels to be output from the source device.

[See: 8.7.1 EDID resolution [EDID DATA]]

Menu

EDID → EDID SPEAKER CH

Setting for

Each input connector (IN1 to IN8)

Setting 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. 8.8] The number of channels and speaker configuration

Notes:

- Press the SET key to apply the setting.
- The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
- Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.
8.7.6 LPCM Audio [EDID LINEAR PCM]

You can set the maximum sampling frequency of PCM audio that is output from the source device.

[See: 8.7.1 EDID resolution [EDID DATA]]

**Menu**

EDID → EDID LINEAR PCM

**Setting for**

Each input connector (IN1 to IN8)

**Setting value**

- 32kHz
- 44.1kHz
- 48kHz [Default]
- 88.2kHz
- 96kHz
- 192kHz

**Notes:**

- Press the SET key to apply the setting.
- Some LC monitors do not support some audio formats.
  Select the audio format and sampling frequency that are supported by the device.
- The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
- Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.
8.7.7 AC-3 Dolby Digital Audio [EDID AC-3/Dolby D]

You can set the maximum sampling frequency of AC-3 Dolby Digital Audio that is output from the source device.

【See: 8.7.1 EDID resolution [EDID DATA]】

Menu
EDID → EDID AC-3/Dolby D

Setting for
Each input connector (IN1 to IN8)

Setting value
OFF [Default]
32kHz
44.1kHz
48kHz

Notes:
• Press the SET key to apply the setting.
• Some LC monitors do not support some audio formats.
  Select the audio format and sampling frequency that are supported by the device.
• The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
• Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.
8.7.8 AAC Audio [EDID AAC]

You can set the maximum sampling frequency of AAC Audio that is output from the source device.

[See: 8.7.1 EDID resolution [EDID DATA]]

Menu

EDID → EDID AAC

Setting for

Each input connector (IN1 to IN8)

Setting value

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

Notes:

・ Press the SET key to apply the setting.
・ Some LC monitors do not support some audio formats.
   Select the audio format and sampling frequency that are supported by the device.
・ The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
・ Only channels of input board can be selected in this menu.
   Channels in which an SDI input board cannot be selected.
8.7.9 Dolby Digital Plus Audio [EDID Dolby D+]

You can set the maximum sampling frequency of Dolby Digital Plus Audio that is output from the source device.  

【See: 8.7.1 EDID resolution [EDID DATA]】

**Menu**

EDID → EDID Dolby D+

**Setting for**

Each input connector (IN1 to IN8)

**Setting value**

OFF  [Default]

32kHz

44.1kHz

48kHz

**Notes:**

・ Press the SET key to apply the setting.
・ Some LC monitors do not support some audio formats.  
  Select the audio format and sampling frequency that are supported by the device.
・ The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
・ Only channels of input board can be selected in this menu.  
  Channels in which an SDI input board cannot be selected.
8.7.10 DTS Audio [EDID DTS]

You can set the maximum sampling frequency of DTS Audio that is output from the source device.

【See: 8.7.1 EDID resolution [EDID DATA]】

Menu

EDID → EDID DTS

Setting for

Each input connector (IN1 to IN8)

Setting value

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

Notes:

・ Press the SET key to apply the setting.
・ Some LC monitors do not support some audio formats.
  Select the audio format and sampling frequency that are supported by the device.
・ The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
・ Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.
8.7.11 DTS-HD Audio [EDID DTS-HD]

You can set the maximum sampling frequency of DTS-HD Audio that is output from the source device.

【See: 8.7.1 EDID resolution [EDID DATA]】

**Menu**

EDID → EDID DTS-HD

**Setting for**

Each input connector (IN1 to IN8)

**Setting value**

- OFF [Default]
- 44.1kHz
- 48kHz
- 88.2kHz
- 96kHz
- 176.4kHz
- 192kHz

**Notes:**

- Press the SET key to apply the setting.
- Some LC monitors do not support some audio formats.
  Select the audio format and sampling frequency that are supported by the device.
- The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
- Only channels of input board can be selected in this menu.
  Channels in which an SDI input board cannot be selected.
8.7.12 Dolby TrueHD Audio [EDID Dolby TrueHD]

You can set the maximum sampling frequency of Dolby TrueHD Audio that is output from the source device.

【See: 8.7.1 EDID resolution [EDID DATA]】

Menu

EDID → EDID Dolby TrueHD

Setting for

Each input connector (IN1 to IN8)

Setting value

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

Notes:

・Press the SET key to apply the setting.
・Some LC monitors do not support some audio formats.
   Select the audio format and sampling frequency that are supported by the device.
・The setting will be applied only if the EDID resolution is set to one of “05” to “24”.
・Only channels of input board can be selected in this menu.
   Channels in which an SDI input board cannot be selected.

8.7.13 WXGA [EDID WXGA SELECT]

You can set the number of WXGA pixels based on the resolution setting of EDID.

Menu

EDID → EDID WXGA SELECT

Setting for

Each input connector (IN1 to IN8)

Setting value

1360x 768 [Default]
1366x 768

Notes:

・Press the SET key to apply the setting.
・The setting will be applied only if the EDID resolution is set to one of “05”, “08” and “16” to “22”.
・Only channels of input board can be selected in this menu.
   Channels in which an SDI input board cannot be selected.
8.7.14 RS-232C communication [COM PORT SETUP]

Menu
COM PORT → COM PORT SETUP

Setting value

[Table 8.3] RS-232C communication setting

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baud rate [bps]</td>
<td>4800, 9600, 14400, 19200, 38400</td>
<td>9600</td>
</tr>
<tr>
<td>Data bit [bit]</td>
<td>7, 8</td>
<td>8</td>
</tr>
<tr>
<td>Parity check</td>
<td>NONE, ODD, EVEN</td>
<td>NONE</td>
</tr>
<tr>
<td>Stop bit [bit]</td>
<td>1, 2</td>
<td>1</td>
</tr>
</tbody>
</table>

Note:
Press the SET key to apply the setting.
8.8 LAN communication [LAN]

8.8.1 IP address [IP ADDRESS]

Menu
LAN → IP ADDRESS

Setting value
0.0.0.0 to 255.255.255.255: IP address  [Default] 192.168.1.199

Note:
Press the SET key to apply the setting.

8.8.2 Subnet mask [SUBNET MASK]

Menu
LAN → SUBNET MASK

Setting value
0.0.0.0 to 255.255.255.254: Subnet mask  [Default] 255.255.255.0

Note:
Press the SET key to apply the setting.
8.8.3 TCP port number [CONTROL PORT]

You can set the TCP port and 8-connection feature setting.

**Menu**

```lan → CONTROL PORT```

**Setting value for TCP port**

- **1**: 1100, 6000 to 6999: Port number  [Default] 1100

**Setting value for 8-connection**

- **2**: OFF  Connections will be divided into WEB browser control (up to 4 connections) and communication command control (up to 4 connections). The WEB browser HTTP port number is fixed at “80”. [Default]
- **2**: ON  Connections will be assigned to only communication command control (up to 8 connections).

For communication command control, set the port number to a value from “1100”, “6000” to “6999”.

---

**Notes:**

- Press the SET key to apply the setting.
- If setting 8-connection feature to “ON”, WEB browser cannot be used.
8.8.4 MAC address [MAC ADDRESS]

Menu
   LAN → MAC ADDRESS
8.9 Preset memory [PRESET MEMORY]

8.9.1 Recalling preset memory [PRESET LOAD]

Recalling registered preset memory and apply the I/O channel setting.

**Menu**

PRESET MEMORY → PRESET LOAD

**Setting value**

01 to 32: The number of preset memory 1 to 32

**Note:**

Press the SET key to apply the setting.
8.9.2 Saving preset memory [PRESET SAVE]

You can save the current I/O channel status (I/O channel selection, output resolution, test pattern, display setting, contrast, and brightness) into the preset memory.

Menu

PRESET MEMORY → PRESET SAVE

Setting value

| 01 to 32 | The number of preset memory 1 to 32 |
| [C]      | Settings will be kept |
| [D]      | Settings will be overwritten |
| [xxxxxxxxxx] | Preset memory name (Up to 10 characters in ASCII) |

If selecting a memory number that is set to "---" (not control) in "8.9.3 Editing preset memory [PRESET EDIT]", you can select a writing method: "C" or "D".

【See: 8.9.3 Editing preset memory [PRESET EDIT]】

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 7 = Input channel 7
Output channel 8 = Input channel 8

Current I/O channel status

Output channel 1 = Input channel 1
Output channel 2 = Not control
Output channel 3 = Input channel 1
Output channel 4 = Not control
Output channel 7 = Input channel 5
Output channel 8 = Not control

Current settings of preset memory 1

Settings of preset memory 1 when "[C]" is selected.

Output channel 1 = Input channel 1
Output channel 2 = Not control
Output channel 3 = Input channel 3
Output channel 4 = Not control
Output channel 7 = Input channel 7
Output channel 8 = Not control

Settings of preset memory 1 when "[D]" is selected.

[Fig. 8.10] Saving preset memory

Notes:

- Press the SET key to apply the setting.
- Do not power off the FDX while “Saving” is displayed, otherwise the setting information may be lost.
8.9.3 Editing preset memory [PRESET EDIT]

**Menu**

PRESET MEMORY → PRESET EDIT

**Setting value**

The first page

01 to 32 : The number of preset memory 1 to 32

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

The second page

OUT1 to OUT8 : Selecting output channel

V: ---, 1 to 8, OFF: Setting input channel setting of the FDX  [Default] 「---」

A: ---, 1 to 8, OFF: Setting Input channel setting of the MAU-1616 (optional)  [Default] 「---」

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

If it is set to not controlling channels, “---” is displayed. When preset memory is loaded an output that is set to “---” (not controlled) will not be switched.

All preset memories are set to “---” (not controlled) by default.

![Current I/O channel status]

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 5 = Input channel 5
Output channel 6 = Input channel 6
Output channel 7 = Input channel 7
Output channel 8 = Input channel 8

Current settings of preset memory 1

![Output channel 1 = Input channel 3
Output channel 2 = Not control (---)
Output channel 3 = Input channel 1
Output channel 4 = Not control (---)
Output channel 7 = Input channel 5
Output channel 8 = Not control (---)]

Load

Setting 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 7 = Input channel 5
Output channel 8 = Input channel 8]

I/O channel status after recalling preset memory

**Notes:**

- Press the SET key to apply the setting.
- Do not power off the FDX while “Saving” is displayed, otherwise the setting information may be lost.
8.9.4 Start-up I/O channel [PRESET START UP]

You can set the start-up I/O channel status. Settings other than the channel status will be automatically saved when settings are changed. The last settings will be applied for the next startup.

**Menu**
PRESET MEMORY → PRESET START UP

**Setting value**
- LAST MEMORY: I/O channel status of last powered off will be applied. [Default]
- DEFAULT MEMORY: All I/O channels are set to OFF.
- PRESET MEMORY 01 to 32: Statuses of I/O set for preset memory 1 to 32 will be applied.
8.10 Others [OTHERS]

8.10.1 Front key function lock [KEY LOCK]

**Menu**

OTHERS → KEY LOCK

**Setting value**

- **MENU KEY LOCK**: Key functions of ① are locked. [Default]
- **MENU KEY UNLOCK**: Key functions of ① are unlocked.
- **CH KEY LOCK**: Key functions of ② are locked. [Default]
- **CH KEY UNLOCK**: Key functions of ② are unlocked.
- **PRESET LOCK**: Key functions of ③ are locked. [Default]
- **PRESET UNLOCK**: Key functions of ③ are unlocked.

【See: 7.6 Locking/unlocking front key function lock】

*When all key functions of ①, ②, ③ are locked, the ESC key function also will be locked.*

[Fig. 8.12] Grouping keys

8.10.2 Beep [BUZZER]

**Menu**

OTHERS → BUZZER

**Setting value**

- **ON**: Beep sound ON [Default]
- **OFF**: Beep sound OFF
8.10.3 Power saving [POWER SAVE]

If this function is set to ON and no key operation is performed for 60 seconds, the LCD backlight and key LED will be turned off.

**Menu**

OTHERS → POWER SAVE

**Setting value**

ON : The LCD backlight and key LEDs are turned off. [Default]
OFF: The LCD backlight and key LEDs always illuminate.
8.10.4 Alarm [ALARM]

Menu
OTHERS → ALARM

Setting value
ON  [Default]
OFF

Rated voltage: 24 V
Rated current: 300 mA

![Fig. 8.13] Alarm output circuit

In case a problem occurs in a cooling fan, power voltage, or I/O boards, the relay will be closed and the contact between A and B will be set to ON.
When an alarm is output and the top page is displayed, the ALARM page is displayed and the backlight blinks.

![Fig. 8.14] 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 power-supply voltage.</td>
</tr>
<tr>
<td>②</td>
<td>Displayed if a problem occurs in the power-supply voltage of an input board.</td>
</tr>
<tr>
<td>③</td>
<td>Displayed if a problem occurs in the power-supply voltage of an output board.</td>
</tr>
<tr>
<td>④</td>
<td>Displayed if a problem occurs in cooling fans.</td>
</tr>
</tbody>
</table>

Note:
In case the alarm is displayed, the FDX may have problems. Please contact us.

【See: 8.10.8 Viewing board status [BOARD STATUS]】
【See: 8.10.9 Viewing cooling fan status [FAN STATUS]】
【See: 8.10.10 Viewing power-supply voltage [POWER STATUS]】
8.10.5 Top page [TOP DISPLAY]

Menu

OTHERS → TOP DISPLAY

Setting value

OFF: Normal  [Default]

ON: Viewing input signal status (four pages) or sink device status (two pages). These status display can be switched using “△” and “▼” keys. I/O channels can be selected using “◄” and “►” keys.

Values to be displayed

1  ① Input channel number
    ② Input resolution
    ③ Input vertical sync frequency
    When no signal is input, “No Signal” is displayed.
    When no input board is mounted: “-------------” is displayed.

2  ④ Input signals
    d: DVI signal, without HDCP
    D: DVI signal, with HDCP
    h: HDMI signal, without HDCP
    H: HDMI signal, with HDCP
    s: SDI signal

    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 Color space (DVI, HDMI signal)
    SDI signal type, sampling information (SDI signal)
    When no signal is input, “No Signal” is displayed.
    When no input board is mounted: “-------------” is displayed.

3  ⑦ Input audio signal
    L-PCM: LPCM
    COMPRESSED AUDIO: Compressed audio

    ⑧ Input sampling frequency
    When no signal is input, “No Signal” is displayed.
    When no input board is mounted: “-------------” is displayed.
Input signal status 4

Input board number
Input status for each input

H: HDMI signal
D: DVI signal
S: SDI signal
H: With HDCP
A: With audio input

Output channel number
Audio

HC: Compressed audio supported
HP: Compressed audio not supported (LPCM only)
D: DVI monitor

Color space
RGB: RGB supported
422: YCbCr 4:2:2 supported
444: YCbCr 4:4:4 supported

Color depth
8: 24 bit/pixel (8 bit/component)
10: 30 bit/pixel (10 bit/component)
12: 36 bit/pixel (12 bit/component)

When no sink device is connected, “UNCONNECTED” is displayed.
When no output board is mounted: “-------------” is displayed.

HDCP
ON: Supported
OFF: HDCP not supported
---: Not connected

HDCP authorization
000: None
001: Being authorized
002: Being authorized
003: Being authorized
004: Completed correctly
005: Error

When no sink device is connected, “UNCONNECTED” is displayed.
When no output board is mounted: “-------------” is displayed.

[Fig. 8.15] Status display
8.10.6 Viewing input signal status [INPUT STATUS]

Menu
OTHERS → INPUT STATUS

[See: 8.10.5 Top page [TOP DISPLAY]]

8.10.7 Viewing sink device status [MONITOR STATUS]

Menu
OTHERS → MONITOR STATUS

[See: 8.10.5 Top page [TOP DISPLAY]]

8.10.8 Viewing board status [BOARD STATUS]

Menu
OTHERS → BOARD STATUS

[Fig. 8.16] Board status page

[Table 8.5] Board status page

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
</tr>
</thead>
</table>
| ① | Board number  
IN 1 to 4, OUT 1 to 4  
Press “▲” and “▼” keys to display another board status.  
(D): Digital I/O board and digital scan converter output board,  
(T): HDBaseT I/O board and HDBaseT scan converter output board,  
(O): Optic I/O board and optic scan converter output board,  
(S): SDI input board |
| ② | Temperature of board  
“------”: No board is mounted |
| ③ | Power supply voltage of board  
OK: normal, NG: abnormal, “--”: board is not mounted |

Note:
In case “NG” (problems in board voltage ③) is displayed, the FDX may have problems. Please contact us.
8.10.9 Viewing cooling fan status [FAN STATUS]

**Menu**

OTHERS → FAN STATUS

![Cooling fan status page](image)

**Table 8.6 Cooling fan status page**

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Cooling fan number&lt;br&gt;01 to 05&lt;br&gt;Press &quot;▲&quot; and &quot;▼&quot; keys to display another cooling fan.</td>
</tr>
<tr>
<td>②</td>
<td>RPM (revolutions per minute) of the cooling fan</td>
</tr>
<tr>
<td>③</td>
<td>Cooling fan status&lt;br&gt;OK: normal, NG: abnormal</td>
</tr>
</tbody>
</table>

**Note:**
In case “NG” (problems in cooling fan ③) is displayed, the FDX may have problems. Please contact us.

8.10.10 Viewing power-supply voltage [POWER STATUS]

**Menu**

OTHERS → POWER STATUS

OK: normal, NG: abnormal

![Power-supply voltage status](image)

**Note:**
In case “NG” is displayed, the FDX may have problems. Please contact us.
8.10.11 Viewing firmware and hardware versions [VERSION]

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

[Fig. 8.19] Viewing versions
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.

* IDK has tested the operation on the Microsoft Internet Explorer 8.0 for Windows or greater.
### [Table 9.1] WEB browser control

<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>V&amp;A : Switching I/O channels of both the FDX and MAU-1616 (optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VIDEO : Switching I/O channels of only the FDX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AUDIO : Switching I/O channels of only the MAU-1616</td>
<td></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:</td>
</tr>
<tr>
<td></td>
<td>OFF SELECT</td>
<td>Sets I/O channels individually</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ALL SELECT:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sets a specified input channel to ALL (all outputs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF SELECT:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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>③</td>
<td>CROSS POINT</td>
<td>Displays I/O channel status</td>
</tr>
<tr>
<td></td>
<td>Orange : FDX and MAU-1616</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green : FDX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red : MAU-1616</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Black : Not set</td>
<td></td>
</tr>
<tr>
<td>④</td>
<td>NAME EDIT</td>
<td>Edits I/O channel name displayed in &quot;CROSS POINT&quot;.</td>
</tr>
<tr>
<td>⑤</td>
<td>PRESET MEMORY</td>
<td>Recalls the desired registered preset memory and sets the I/O channel status.</td>
</tr>
<tr>
<td></td>
<td>LOAD</td>
<td>The memory name that is being recalled is displayed in orange. If the preset 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>
**[Fig. 9.2] Editing I/O channel name**

**[Table 9.2] Editing I/O channel name page**

<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 “CROSS POINT”. “IN1” to “IN8” names are set as default. Up to 10 characters in ASCII code (Even if you enter 11 characters or more, 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 “CROSS POINT”. “OUT1” to “OUT8” names are set as default. Up to 10 characters in ASCII code (Even if you enter 11 characters or more, 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 all names</td>
</tr>
<tr>
<td>5</td>
<td>END</td>
<td>Exits</td>
</tr>
</tbody>
</table>
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></td>
<td>C1 N.C.</td>
</tr>
<tr>
<td>11</td>
<td>TMDS data1 shield</td>
<td></td>
<td>C2 N.C.</td>
</tr>
<tr>
<td>12</td>
<td>N.C.</td>
<td></td>
<td>C3 N.C.</td>
</tr>
<tr>
<td>13</td>
<td>N.C.</td>
<td></td>
<td>C4 N.C.</td>
</tr>
<tr>
<td>14</td>
<td>+5 V power supply</td>
<td></td>
<td>C5 GND</td>
</tr>
<tr>
<td>15</td>
<td>GND</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Fig. 10.1] DVI-I pin assignments

10.1.2 RJ-45 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>GREEN</td>
<td>1</td>
<td>WHITE/ORANGE, Stripe</td>
</tr>
<tr>
<td>2</td>
<td>ORANGE</td>
<td>2</td>
<td>ORANGE</td>
</tr>
<tr>
<td>3</td>
<td>WHITE/ORANGE, Stripe</td>
<td>3</td>
<td>WHITE/GREEN, Stripe</td>
</tr>
<tr>
<td>4</td>
<td>BLUE</td>
<td>4</td>
<td>BLUE</td>
</tr>
<tr>
<td>5</td>
<td>WHITE/BLUE, Stripe</td>
<td>5</td>
<td>WHITE/BLUE, Stripe</td>
</tr>
<tr>
<td>6</td>
<td>GREEN</td>
<td>6</td>
<td>GREEN</td>
</tr>
<tr>
<td>7</td>
<td>WHITE/BROWN, Stripe</td>
<td>7</td>
<td>WHITE/BROWN, Stripe</td>
</tr>
<tr>
<td>8</td>
<td>BROWN</td>
<td>8</td>
<td>BROWN</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input</strong></td>
<td>8 inputs</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>8 outputs</td>
</tr>
<tr>
<td><strong>Input board</strong></td>
<td>Digital: Up to 2 boards, 4 inputs per board (Up to 8 inputs)</td>
</tr>
<tr>
<td></td>
<td>HDBaseT: 4 outputs per board (output board)</td>
</tr>
<tr>
<td></td>
<td>Optical: 2 outputs per board (scan converter output board)</td>
</tr>
<tr>
<td><strong>Output board</strong></td>
<td>Digital: Up to 2 boards (Up to 8 outputs)</td>
</tr>
<tr>
<td></td>
<td>HDBaseT: 4 outputs per board (output board)</td>
</tr>
<tr>
<td></td>
<td>Optical: 2 outputs per board (output board)</td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td>Scan Converter: Motion adaptive interlaced/progressive conversion, Aspect ratio control, Picture adjustment (brightness, contrast, display position, display size, etc.), Seamless switching with one black frame (*1)</td>
</tr>
<tr>
<td></td>
<td>Others: Audio breakaway for independent audio and video switching (When MAU-1616 (Optional) is connected), I/O board and CPU board can be replaced without removing from rack, Preset memory (32 settings), Last memory, Front key function lock, Anti-snow(*2), Connection Reset(*3), The number of I/Os can be customized, RS-232C transmission (HDBaseT/Optic output board)</td>
</tr>
<tr>
<td><strong>Instant Alert output</strong></td>
<td>1 port/2-pin terminal block/Power unit monitoring, Fan unit monitoring</td>
</tr>
<tr>
<td><strong>External control</strong></td>
<td>RS-232C: 1 port/male D-sub (9 pin) connector</td>
</tr>
<tr>
<td></td>
<td>LAN: 1 port/RJ-45 10Base-T/100Base-TX (Auto Negotiation), Auto MDI/MDI-X</td>
</tr>
<tr>
<td></td>
<td>Optional (MAU-1616): 1 port/female D-sub (25 pin) connector</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>100 - 240 VAC ± 10%, 50 Hz/60 Hz ± 3 Hz</td>
</tr>
<tr>
<td><strong>Maximum power consumption</strong> (*4)</td>
<td>With HDMI/DVI I/O board: About 71 Watts</td>
</tr>
<tr>
<td></td>
<td>With HDBaseT I/O board: About 118 Watts</td>
</tr>
<tr>
<td></td>
<td>With optic I/O board: About 141 Watts</td>
</tr>
<tr>
<td></td>
<td>With HDMI/DVI input/scan converter output board: About 136 Watts</td>
</tr>
<tr>
<td></td>
<td>With HDBaseT input/scan converter output board: About 112 Watts</td>
</tr>
<tr>
<td></td>
<td>With optic input/scan converter output board: About 120 Watts</td>
</tr>
<tr>
<td></td>
<td>With SDI input/HDMI/DVI output board: About 69 Watts</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>Dimensions: 16.9 (W) x 5.2 (H) x 13.8 (D) (430 (W) x 132 (H) x 350 (D) mm) (EIA 3U high, full rack wide) (Excluding connectors and the like)</td>
</tr>
<tr>
<td><strong>Maximum weight</strong> (*4)</td>
<td>With HDMI/DVI I/O board: 19.2 lbs. (8.7 kg)</td>
</tr>
<tr>
<td></td>
<td>With HDBaseT I/O board: 20.3 lbs. (9.2 kg)</td>
</tr>
<tr>
<td></td>
<td>With optic I/O board: 21.8 lbs. (9.9 kg)</td>
</tr>
<tr>
<td></td>
<td>With HDMI/DVI input/scan converter output board: 19.6 lbs. (8.9 kg)</td>
</tr>
<tr>
<td></td>
<td>With HDBaseT input/scan converter output board: 20.5 lbs. (9.3 kg)</td>
</tr>
<tr>
<td></td>
<td>With optic input/scan converter output board: 22 lbs. (10.0 kg)</td>
</tr>
<tr>
<td></td>
<td>With SDI input/HDMI/DVI output board: 19.2 lbs. (8.7 kg)</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>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>Input board specification</strong></td>
<td></td>
</tr>
<tr>
<td><strong>HDMI/DVI input board</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td>4 inputs</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>HDMI/DVI</td>
</tr>
<tr>
<td></td>
<td>HDMI Deep Color (*5)/DVI 1.0</td>
</tr>
<tr>
<td></td>
<td>TMDS single link, HDCP 1.4</td>
</tr>
<tr>
<td></td>
<td>TMDS clock: 25 MHz to 225 MHz, TMDS data rate: 0.75 Gbps to 6.75 Gbps</td>
</tr>
<tr>
<td></td>
<td>Automatic input signal equalization, EDID emulation</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>VGA to QWXGA (Dot clock: 25 MHz to 165 MHz)</td>
</tr>
<tr>
<td></td>
<td>* WUXGA / QWXGA: only Reduced Blanking is supported.</td>
</tr>
<tr>
<td></td>
<td>480i / 480p / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>Digital</td>
</tr>
<tr>
<td></td>
<td>Multi-channel LPCM up to 8 channels</td>
</tr>
<tr>
<td></td>
<td>Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit</td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>T Female DVI-I (29-pin)</td>
</tr>
<tr>
<td></td>
<td>Analog signals cannot be used.</td>
</tr>
<tr>
<td><strong>Transmission distance</strong></td>
<td>Up to 98 ft. (30 m) (*6)</td>
</tr>
<tr>
<td><strong>HDBaseT input board</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td>4 inputs</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>HDBaseT</td>
</tr>
<tr>
<td></td>
<td>HDBaseT (*5)</td>
</tr>
<tr>
<td></td>
<td>HDCP 1.4 (*7)</td>
</tr>
<tr>
<td></td>
<td>EDID emulation</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>VGA to QWXGA (Dot clock: 25 MHz to 165 MHz)</td>
</tr>
<tr>
<td></td>
<td>* WUXGA / QWXGA: only Reduced Blanking is supported.</td>
</tr>
<tr>
<td></td>
<td>480i / 480p / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>HDBaseT</td>
</tr>
<tr>
<td></td>
<td>Multi-channel LPCM up to 8 channels</td>
</tr>
<tr>
<td></td>
<td>Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit</td>
</tr>
<tr>
<td><strong>Cable</strong></td>
<td>RJ-45 (*8)</td>
</tr>
<tr>
<td><strong>Transmission distance</strong></td>
<td>Up to 328 ft. (100 m) (*10)</td>
</tr>
<tr>
<td><strong>Optic input board</strong> (*11)</td>
<td></td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td>4 inputs</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>Digital optical signal for extension</td>
</tr>
<tr>
<td></td>
<td>Digital optical signal for extension (*12)</td>
</tr>
<tr>
<td></td>
<td>HDCP 1.4</td>
</tr>
<tr>
<td></td>
<td>EDID emulation</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1280x768) / WXGA (1366x768) / SXGA++ / WXGA++ / UXGA / WSXGA+ / WUXGA</td>
</tr>
<tr>
<td></td>
<td>* WUXGA: Only Reduced Blanking and DVI signal are supported.</td>
</tr>
<tr>
<td></td>
<td>480i / 480p / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>Digital optical signal for extension</td>
</tr>
<tr>
<td></td>
<td>Multi-channel LPCM up to 8 channels</td>
</tr>
<tr>
<td></td>
<td>Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit</td>
</tr>
<tr>
<td><strong>Cable</strong></td>
<td>Duplex fiber cable, SFP module (2 LC connectors) (*13)</td>
</tr>
<tr>
<td><strong>Polishing</strong> (*14)</td>
<td>SFP for Multimode : PC (recommended)</td>
</tr>
<tr>
<td></td>
<td>SFP for Singlemode: UPC (recommended), UPC supported *APC is not supported</td>
</tr>
<tr>
<td><strong>Transmission distances</strong> (*15)</td>
<td>Multimode fiber (OM3): Up to 984 ft. (330 m)</td>
</tr>
<tr>
<td></td>
<td>Multimode fiber (OM4): Up to 0.62 mi. (1 km)</td>
</tr>
<tr>
<td></td>
<td>Singlemode fiber (OS1): Up to 2.92 mi. (4.7 km)</td>
</tr>
</tbody>
</table>
| | Singlemode fiber (OS1): Up to 6.21 mi. (10 km) *
| | Optional |
| **SDI input board** | |
| **Input** | 4 inputs (With loop-through output) |
| | Note: When the FDX is powered on, SDI input signals are output from SDI loop-through output connectors. |
| **Video** | SDI |
| | 3G-SDIHD-SDI/SDI |
| | NRZI/NRZ, 0.6 V[p-p]/75 Ω |
| | SMPTE 424M (3G-SDI)/SMPTE 292M (HD-SDI)/SMPTE 259M-C (SD-SDI) |
| **Formats** | 480i / 576i / 720p / 1080i / 1080p |
| | *3G-SDI signals: Level A and Level B |
| | *720p: 23.98 Hz and 24 Hz are not supported. |
| **Audio** | Digital |
| | LPCM up to 8 channels (Selecting 2 groups of audio groups1 to 4) |
| | Sampling frequency: 48 kHz, Sample size: 16 bit to 24 bit |
| **Connector** | BNC |
| **Cable** | 75 Ω coaxial cable for high frequency signal |
| **Maximum transmission distances** | With 1505A (BELDEN RG-59), SD-SDI: 1083 ft. (330 m)/HD-SDI: 656 ft. (200 m)/3G-SDI: 384 ft. (120 m) |
| | With 1694A (BELDEN RG-6), SD-SDI: 1312 ft. (400 m)/HD-SDI: 787 ft. (240 m)/3G-SDI: 459 ft. (140 m) |
| | *The maximum distances may be shorter depending on the quality of cable. Please make sure that the cable is long enough. |
### Digital output board

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td>4 outputs</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>HDMI/DVI</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>HDMI Deep Color (*5)/DVI 1.0 TMDS signal link, HDCP 1.4 TMDS clock: 25 MHz to 225 MHz, TMDS data rate: 0.75 Gbps to 6.75 Gbps</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>Digital</td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>1 Female DVI-I (29-pin) * Analog signals cannot be used.</td>
</tr>
<tr>
<td><strong>Transmission distance</strong></td>
<td>Up to 131 ft. (40 m) (*5)</td>
</tr>
</tbody>
</table>

### HDBaseT output board

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td>4 outputs</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>HDBaseT</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>VGA to QWXGA (Dot clock: 25 MHz to 165 MHz) * WUXGA / QWXGA: Only Reduced Blanking is supported. 480 / 480p / 576p / 720p / 1080p / 1080p</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>HDBaseT</td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>RJ45 (*9)</td>
</tr>
<tr>
<td><strong>Cable</strong></td>
<td>CAT.5E UTP/STP, Cat5e UTP/STP (*9)</td>
</tr>
<tr>
<td><strong>Transmission distance</strong></td>
<td>Up to 328 ft. (100 m) (*10)</td>
</tr>
</tbody>
</table>

### Optic output board (*11)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td>4 outputs</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>Digital optical signal for extension</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>Digital optical signal for extension (*12)</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>Digital optical signal for extension</td>
</tr>
<tr>
<td><strong>Cable</strong></td>
<td>Duplex fiber cable, SFP module (2 LC connectors) (*13)</td>
</tr>
<tr>
<td><strong>Polishing</strong></td>
<td>Duplex fiber cable, SFP module (2 LC connectors) (*13)</td>
</tr>
<tr>
<td><strong>Transmission distances</strong> (*15)</td>
<td>Multimode fiber (OM3): Up to 984 ft., (300 m)</td>
</tr>
<tr>
<td></td>
<td>Multimode fiber (OM4): Up to 0.62 mi. (1 km)</td>
</tr>
<tr>
<td></td>
<td>Singlemode fiber (OS1): Up to 2.92 mi. (4.7 km)</td>
</tr>
<tr>
<td></td>
<td>Singlemode fiber (OS1): Up to 6.21 mi. (10 km) (Optional)</td>
</tr>
</tbody>
</table>

### Digital scan converter output board

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td>2 outputs (*17)</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>HDMI/DVI</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>HDMI Deep Color (*16)/DVI 1.0 TMDS signal link, HDCP 1.4 TMDS clock: 25 MHz to 202.5 MHz, TMDS data rate: 0.755 Gbps to 6.075 Gbps</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>Digital</td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>1 Female DVI-I (29-pin) * Analog signals cannot be used.</td>
</tr>
<tr>
<td><strong>Transmission distance</strong></td>
<td>Up to 131 ft. (40 m) (*5)</td>
</tr>
</tbody>
</table>

### HDBaseT scan converter output board

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td>2 outputs (*17)</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>HDBaseT</td>
</tr>
<tr>
<td><strong>Formats</strong></td>
<td>VGA / SXGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / WUXGA / VESAHD / WUXGA / QWXGA</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>HDBaseT</td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>RJ45 (*8)</td>
</tr>
<tr>
<td><strong>Cable</strong></td>
<td>CAT.5E UTP/STP, Cat5e UTP/STP (*9)</td>
</tr>
<tr>
<td><strong>Transmission distance</strong></td>
<td>Up to 328 ft. (100 m) (*10)</td>
</tr>
</tbody>
</table>
### Optic scan converter output board (*11*)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td>2 outputs (*17)</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td></td>
</tr>
<tr>
<td>Formats</td>
<td>Digital optical signal for extension (*12)</td>
</tr>
<tr>
<td></td>
<td>HDCP 1.4</td>
</tr>
<tr>
<td></td>
<td>VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1360x768) / SXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA</td>
</tr>
<tr>
<td>Audio</td>
<td>Multi-channel LPCM up to 8 channels</td>
</tr>
<tr>
<td></td>
<td>Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit</td>
</tr>
<tr>
<td><strong>Cable</strong></td>
<td>Duplex fiber cable, SFP module (2 LC connectors) (*13)</td>
</tr>
<tr>
<td><strong>Polishing</strong> (*14)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SPF for Multimode: PC (recommended)</td>
</tr>
<tr>
<td></td>
<td>SPF for Singlemode: UPC (recommended), SPC supported *APC is not supported</td>
</tr>
<tr>
<td><strong>Transmission distances</strong> (*15)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multimode fiber (OM3): Up to 984 ft. (300 m)</td>
</tr>
<tr>
<td></td>
<td>Multimode fiber (OM4): Up to 0.62 mi. (1 km)</td>
</tr>
<tr>
<td></td>
<td>Singlemode fiber (OS1): Up to 2.92 mi. (4.7 km)</td>
</tr>
<tr>
<td></td>
<td>Singlemode fiber (OS1): Up to 6.21 mi. (10 km) (Optional)</td>
</tr>
</tbody>
</table>

*1 Seamless switching with a black frame.  
*2 The anti-snow feature automatically fixes snow noise that is a specific symptom of HDCP-compliant signals and mainly occurs at start-up. This feature does not work when snow noise has already occurred during startup or when it occurs due to a bad condition of the transmission line.  
*3 For digital systems, some problems, such as an HDCP authentication error, can often be recovered by physically disconnecting and reconnecting the digital cables. However, the Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. It creates the same condition as if the cable were physically disconnected and reconnected. This feature only works for the FDX’s output. If other devices are connected between the FDX’s output and sink device, this feature may be invalid.  
*4 Please contact our Sales Division for power consumption information of each configuration.  
*5 36 bit/pixel (12 bit/component) Deep Color is supported while x.v.Color, 3D, ARC, HEC, and CEC are not supported.  
*6 The maximum cable distance varies depending on the connected devices and was measured under following conditions:  
* IDK’s AWG 24 cable was used and 1080p@60 24 bit/pixel (8 bit/component) signals were transmitted.  
* The maximum cable distance depends on the connected devices. The distance may not be extended with some device combinations, cabling method, or other manufacturer’s cable. Video may be distorted or may not be output even if signals are within the range mentioned above.  
*7 HDBaseT input: DVI signals protected by HDCP are not supported.  
To transmit those signals, use an IDK’s twisted pair cable extender supporting DVI signals.  
*8 RJ-45 (HDBaseT connector) is only for extending digital video and audio signals over a Cat5e/Cat6 twisted pair cable. Use it with IDK’s twisted pair cable transmitter or receiver. Do not use for LAN devices.  
*9 T568A or T568B straight. The CAT.5E HDC cable is developed by IDK and recommended by HDBaseT alliance.  
*10 The maximum extension distance was obtained when IDK’s CAT.5E HDC cable was used.  
The distance may not be extended with some device combinations, cabling method, or other manufacturer’s cable. Video may be distorted or may not be output even if signals are within the range mentioned above. Operations may not be stable with some LCD devices; please check the operation beforehand or contact us. The maximum extension distance is the shorter distance of connected HDBaseT product or sink device’s maximum extension distance.  
*11 The IDK OPP-H1000 must be connected for optical extension input and output cards.  
*12 Deep Color, x.v.Color, 3D, ARC, HEC, and CEC are not supported.  
*13 Please refer to SFP Specification.  
*14 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.  
The maximum extension distance is measured under the following conditions: Fiber that is polished by a recommended method is used, there is no interconnection, and the allowable bending radius is not exceeded.  
*16 HDBaseT output: DVI signals protected by HDCP are not supported. To transmit those signals, use an IDK’s twisted pair cable receiver supporting DVI signals.  
*17 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.  
*18 30 bit/pixel (10 bit/component) Deep Color is supported while x.v.Color, 3D, ARC, HEC, and CEC are not supported.  
*19 1080p and 1080i are 50 Hz/59.94 Hz.
## 11 Troubleshooting

This chapter recommends what to do if you have problems operating the FDX.

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

- Are the FDX and all devices plugged in and powered on normally?
- Are cables connected correctly?
- Are there no loose connections?
- Are correct cables supported by devices being used?
- Are specifications of connected devices matched to each other?
- Are settings of the sink device correct?
- Are there any nearby 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>If there are no problems with cable connections, first check [1] and [2] below.</td>
<td></td>
</tr>
<tr>
<td>Video is not output</td>
<td>If the EDID resolution setting of this device is 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 sync 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>38</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 (Cont’d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video is not output.</strong></td>
<td>[4] If a long cable is connected for input or output when digital I/O board or digital scan converter output board is mounted, replace it with a 16 ft. (5 m) or shorter cable. Even though a 16 ft. (5 m) or longer cable can be connected for digital I/O of the FDX, HDCP authorization or EDID acquisition may fail depending on the cable quality and the connected device.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>[5] Some devices do not support SD, HD, 3G-Level A, or 3G-Level B SDI signals depending on the sink device that is connected to the SDI loop-through output connector. Check if the same problem occurs when connecting directly the source and sink devices without connecting to the SDI loop-through output connector.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>[6] Are signals that are not supported being input?</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>[7] Change the setting of Hot plug ignoring duration.</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>[8] Is the set no-signal input monitoring time too short?</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>[9] Check the video output setting of the source device.</td>
<td>–</td>
</tr>
<tr>
<td><strong>Video is interrupted or noise appears on video.</strong></td>
<td>If a long cable is connected for input or output when digital I/O board or digital scan converter output board is mounted, set the input or output equalizer.</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>If a long cable is connected for input or output when a digital I/O board or digital scan converter output board is mounted, replace it with a 16 ft. (5 m) or shorter cable. Even though a 16 ft. (5 m) 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>
<td>48</td>
</tr>
<tr>
<td></td>
<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 front panel, and you can set the EDID in order to control the resolution and color depth of the input signals.</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>63</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 (Cont’d)</td>
<td>Video is interrupted or noise appears on video.</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Ensure that coaxial cable type and SDI output signal of the source device are matched. The maximum transmission distances of FDX SDI input signal are following; With 1505A (BELDEN RG-59), SDI: 1083 ft. (330 m)/HD-SDI: 656 ft. (200 m)/3G-SDI: 394 ft. (120 m) With 1694A (BELDEN RG-6), SDI: 1312 ft. (400 m)/HD-SDI: 787 ft. (240 m)/3G-SDI: 459 ft. (140 m) The maximum distances may be shorten depending on the quality of cable. Ensure that the cable is long enough.</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Is a cable appropriated for the transmission when HDBaseT I/O board or HDBaseT scan converter output board is mounted? If the transmission distance is 164 ft. (50 m) 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 164 ft. (50 m) or shorter, you can use a Cat5e cable.</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>When an HDBaseT I/O board or HDBaseT scan converter output 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>
<td>23</td>
</tr>
<tr>
<td></td>
<td>When an optic I/O board or optic scan converter output board is mounted, are fiber optic 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 fiber loss occurs depending on scratches and dirt of connector ends, bend radius, lateral pressure, and connection method of fiber optic cables. Check the power budget.</td>
<td>60</td>
</tr>
<tr>
<td>Snow noise appears.</td>
<td>Since an optic I/O board and optic scan converter output board do not support QWXGA, snow noise appears. Input another resolution or set another output resolution. You can check the resolution input signals in the front panel, and you can set the EDID in order to control the resolution.</td>
<td>63</td>
</tr>
<tr>
<td>Deep Color signal is not output.</td>
<td>Does the sink device support Deep Color? If not, video is output at 24 bit/pixel (8 bit/component) even if Deep Color signal is input. Since an optic I/O board and optic scan converter output board do not support Deep Color, signals are transmitted in 24 bit/pixel (8 bit/component).</td>
<td>63</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 (Cont’d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video blinks</td>
<td>If interlace signal is 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>
</tr>
<tr>
<td>Video edges (top/bottom/right/left) are cut out.</td>
<td>Some sink devices overscan input video, and the video may be cut out. Check the display setting of the sink device.</td>
<td>—</td>
</tr>
<tr>
<td>Video looks shrunked horizontally or vertically.</td>
<td>Some sink devices display input video with 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>
</tr>
<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>
</tr>
<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>
<td>37</td>
</tr>
<tr>
<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. Connected sink device may not detect the color space of the input video and then displays the video in purple or green. Some sink devices that are connected to the SDI loop-through output connector support only either 3G-LevelA or 3G-LevelB SDI signal mapping, and they also do not support 4:4:4 (RGB or YCbCr) formats. Check if the same problem occurs when connecting directly the source and sink devices without connecting to the SDI loop-through output connector.</td>
<td>48</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><strong>Audio output</strong></td>
<td>Audio is not output.</td>
<td>58</td>
</tr>
<tr>
<td>Ensure that audio output is turned on.</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>If there are multiple output connectors in the source device, check the audio output setting of the source device.</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Ensure that the input audio format is supported by the connected sink device. Especially, LCD monitors may not output 88.2 kHz or higher LPCM and compressed audio (such as Dolby Digital and DTS).</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>In order to play a Blu-ray disc having compressed audio, check the audio output setting of the source device.</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>You can also control audio signal that will be output from the source device by setting EDID.</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Ensure that DVI signal is not being output from the source device.</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Ensure that the output mode is not set to DVI output.</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>If the EDID of the connected sink device cannot be obtained for some reason, the FDX cannot determine the sink type. As a result, audio may not be output. In such case, set “8.4.3 Sink device EDID check [OUTPUT HDMI MODE]” to “ALWAYS”.</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Is the SDI input audio is grouped correctly? Ensure that the audio group settings for primary and secondary audio group are correct.</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Even though multi-channel audio is played, only 2-channel audio is output.</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>For multi-channel, change the EDID setting which is set to 2-channel audio by default.</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Compressed audio (such as Dolby Digital, DTS, and the like) is not output from the source device.</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Compressed audio input is limited by default. Change the EDID setting if using compressed audio.</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Check the audio output setting of the source device.</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td><strong>Key operation</strong></td>
<td>Keys cannot be operated.</td>
<td>32</td>
</tr>
<tr>
<td>Is key operation locked?</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>It takes about 7 seconds after turning on the FDX to complete the start process. All key operations are invalid during this start process.</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td><strong>Communication command control</strong></td>
<td>The FDX cannot be controlled by the PC using communication command control</td>
<td>72</td>
</tr>
<tr>
<td>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</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>It takes about 7 seconds from turning on the FDX to completing the start process. The communication command control is invalid during the start process.</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td><strong>Web browser control</strong></td>
<td>The FDX cannot be controlled by the PC over web browser</td>
<td>74</td>
</tr>
<tr>
<td>Is the connection setting of the TCP port valid for the web browser?</td>
<td>74</td>
<td></td>
</tr>
</tbody>
</table>
If additional assistance is required, please perform the following tests and then contact us.

1. Does the same problem occur at all connectors?
2. Connect the devices using genuine cables without connecting the ICP.
   The problem still cannot be solved? Please contact us for assistance.