

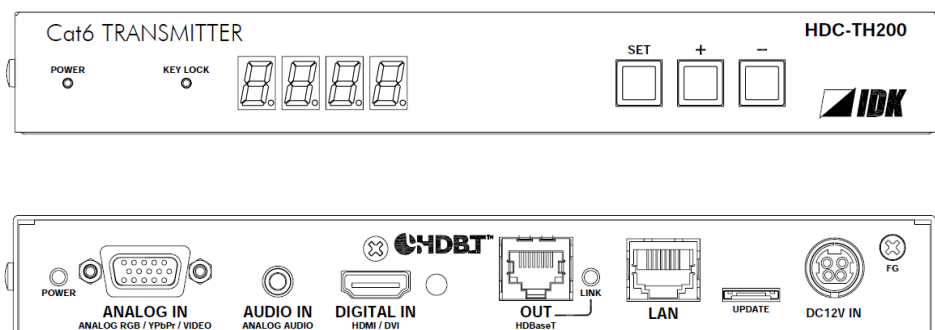
## HDMI/Analog HDBaseT Transmitter

# HDC-TH200

<User Guide>

<Command Reference Guide>

Ver.1.7.0



- 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.

## **Trademarks**

- HDBaseT™ and the HDBaseT Alliance Logo are trademarks of the HDBaseT Alliance.
- 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.
- SDVoE™ and SDVoE logo are trademarks of SDVoE Alliance.
- All other company and product names mentioned in this document are either registered trademarks or trademarks of their respective owners. In this document, the “®” or “™” marks may not be specified.
- ©2017 IDK Corporation, all rights reserved.

# Before reading this manual

- All rights reserved.
- Some information contained in this User guide such as exact product appearance, diagrams, menu operations, 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: [www.idkav.com](http://www.idkav.com)

**FCC STATEMENT**

**Note:** 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.

(Class A)

**Supplier's Declaration of Conformity  
47 CFR § 2.1077 Compliance Information**

**Unique Identifier**

Type of Equipment: HDBaseT Extender

Model Name: HDC-TH200

**Responsible Party – U.S. Contact Information**

Company Name: IDK America Inc.

Address: 72 Grays Bridge Road Suite 1-C, Brookfield, CT 06804

Telephone number: +1-203-204-2445

URL: www.idkav.com

**FCC Compliance Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(FCC SDoC)

**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.

# Safety Instructions

Read all safety and operating instructions before using this product. Follow instructions and heed warnings/cautions.


Instructions and warnings/cautions for all products are provided. Some of them may not be applicable to your product.

	<h2>Warning</h2>	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.
	<h2>Caution</h2>	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.


Symbol	Description	Example
 Caution	This symbol is intended to alert the user. (Warning and caution)	 Hot surfaces Caution
 Prohibited	This symbol is intended to prohibit the user from specified actions.	 Do not disassemble
 Instruction	This symbol is intended to instruct the user.	 Unplug

## Warning


### For lifting heavy products:

 Instruction	<ul style="list-style-type: none"> <li>● <b>Lifting must be done by two or more personnel.</b></li> </ul> <p>To avoid injury: When lifting the product, bend your knees, keep your back straight and get close to it with two or more persons.</p>
--	--





### For installing and connecting products:

 Prohibited	<ul style="list-style-type: none"> <li>● <b>Do not place the product in unstable place.</b></li> </ul> <p>Install the product in a horizontal and stable place, as this may fall or tip over and cause injury.</p> <ul style="list-style-type: none"> <li>● <b>Secure the product if installing in the locations with vibration.</b></li> </ul> <p>Vibration may move or tip over the product unexpectedly, resulting in injury.</p>
---	--


# Warning

 <b>Instruction</b>	<ul style="list-style-type: none"> <li>● <b>Installation work must be performed by professionals.</b> 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.</li> <li>● <b>Insert the power plug into an outlet that is unobstructed.</b> 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.</li> <li>● <b>Insert the power plug into an appropriate outlet completely.</b> If the plug is partially inserted, arcing may cause the connection to overheat, increasing the risk of electric shock or fire. Do not use a damaged plug or connect to a loose outlet.</li> <li>● <b>Unplug the product from an AC power source during installation or service.</b> When connecting peripheral devices to this product, unplug all involved devices from outlets. Ground potential differences may cause fire or other difficulties.</li> <li>● <b>The product must be electrically earthed/grounded.</b> To reduce the risk of electric shock, ensure the product is connected to a mains socket outlet with a protective earthing connection.</li> <li>● <b>For PoE/PoH, use category cables meeting IEEE802.3af/at.</b> Otherwise, it may cause problems or a fire.</li> </ul>
---	--

**For operating products:**

 <b>Prohibited</b>	<ul style="list-style-type: none"> <li>● <b>Keep out any foreign objects.</b> 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.</li> <li>● <b>For power cable/plug and Category cable,</b> <ul style="list-style-type: none"> <li>• Do not scratch, heat, or modify, including splicing or lengthening them.</li> <li>• Do not pull, place heavy objects on them, or pinch them.</li> <li>• Do not bend, twist, tie or clamp them together forcefully.</li> </ul> </li> </ul> <p>Misuse of the power cable and plug may cause fire or electric shock. If power cables/plugs become damaged, contact your IDK representative.</p>
 <b>Do not disassemble</b>	<ul style="list-style-type: none"> <li>● <b>Do not repair, modify or disassemble.</b> 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.</li> </ul>
 <b>Do not touch</b>	<ul style="list-style-type: none"> <li>● <b>Do not touch the product and connected cables during electric storms.</b> Contact may cause electric shock.</li> </ul>
 <b>Instruction</b>	<ul style="list-style-type: none"> <li>● <b>Clean the power plug regularly.</b> If the plug is covered in dust, it may increase the risk of fire.</li> </ul>




**If the following problem occurs:**

 <b>Unplug</b>	<ul style="list-style-type: none"> <li>● <b>Unplug immediately if the product smokes, makes unusual noise, or produces a burning odor.</b></li> <li>● <b>Unplug immediately if the product is damaged by falling or having been dropped.</b></li> <li>● <b>Unplug immediately if water or other objects are directed inside.</b></li> </ul> <p>If you continue to use the product under these conditions, it may increase the risk of electric shock or fire. For maintenance and repair, contact your IDK representative.</p>
--	--







# Caution

## For installing and connecting products:

 <p><b>Prohibited</b></p>	<ul style="list-style-type: none"> <li>● <b>Do not place the product in a location where it will be subjected to high temperatures.</b> 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.</li> <li>● <b>Do not store or operate the product in dusty, oil smoke filled, or humid place.</b> Placing the product in such environment may increase the risk of fire or electric shock.</li> <li>● <b>Do not block the vent holes.</b> If ventilation slots are blocked, it may cause the product to overheat, affecting performance and reliability and may increase the risk of fire.</li> <li>● <b>Do not place or stack heavy items on the product.</b> Failure to observe this precaution may result in damage to the product itself as well as other property and may lead to the risk of personal injury.</li> <li>● <b>Do not exceed ratings of outlet and wiring devices.</b> Exceeding the rating of an outlet may increase the risk of fire and electric shock.</li> </ul>
 <p><b>No wet hands</b></p>	<ul style="list-style-type: none"> <li>● <b>Do not handle power plug with wet hands.</b> Failure to observe this precaution may increase the risk of electric shock.</li> </ul>
 <p><b>Instruction</b></p>	<ul style="list-style-type: none"> <li>● <b>Use and store the product within the specified temperature/humidity range.</b> If the product is used outside the specified range of temperature and humidity continuously, it may increase the risk of fire or electric shock.</li> <li>● <b>Do not place the product at elevations of 1.24 mi. (2,000 m) or higher above sea level.</b> Failure to do so may shorten the life of the internal parts and result in malfunctions.</li> <li>● <b>When mounting the product into the rack, provide sufficient cooling space.</b> 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.</li> <li>● <b>Never insert screws without the rubber feet into the threaded holes on the bottom of the product.</b> Never insert screws alone into the threaded holes on the bottom of the product. Doing so may lead to damage when the screws contact electric circuitry or components inside the product. Reinstall the originally supplied rubber feet using the originally supplied screws only.</li> </ul>

**For operating products:**

 <p><b>Hot surfaces Caution</b></p>	<p><b>For products with the hot surfaces caution label only:</b></p> <ul style="list-style-type: none"> <li>● <b>Do not touch the product's hot surface.</b></li> </ul> <p>If the product is installed without enough space, it may cause malfunction of other products. If you touch product's hot surface, it may cause burns.</p>
 <p><b>Prohibited</b></p>	<ul style="list-style-type: none"> <li>● <b>Use only the supplied power cable and AC adapter.</b></li> <li>● <b>Do not use the supplied power cable and AC adapter with other products.</b></li> </ul> <p>If non-compliant adapter or power cables are used, it may increase the risk of fire or electric shock.</p>
 <p><b>Unplug</b></p>	<ul style="list-style-type: none"> <li>● <b>If the product won't be used for an extended period of time, unplug it.</b></li> </ul> <p>Failure to observe this precaution may increase the risk of fire.</p> <ul style="list-style-type: none"> <li>● <b>Unplug the product before cleaning.</b></li> </ul> <p>To prevent electric shock.</p>
 <p><b>Instruction</b></p>	<ul style="list-style-type: none"> <li>● <b>Do not prevent heat release.</b></li> </ul> <p>If cooling fan stops, power off the product and contact IDK. Failure to do so may raise internal temperature and increase the risk of malfunction, fire, or electric shock.</p> <ul style="list-style-type: none"> <li>● <b>Keep vents clear of dust.</b></li> </ul> <p>If the vent holes near the cooling fan or near the fan are covered with dust, internal temperatures increase and may increase the risk of malfunction. Clean the vent holes and near the fan as needed. If dust accumulates inside of the product, it may increase the risk of fire or electric shock. Periodic internal cleaning, especially before humid rainy season, is recommended. For internal cleaning, contact your IDK representative.</p>



## Table of Contents

1	Included items .....	11
2	About HDC-TH200 .....	12
3	Features .....	13
4	Panels .....	14
4.1	Front panel .....	14
4.2	Rear panel .....	15
5	System Configuration Example .....	16
6	Precautions .....	17
6.1	Installation .....	17
6.2	Cabling .....	18
6.2.1	Cables .....	18
6.2.2	Category cable .....	19
6.2.3	DIN plug AC adapter with locking mechanism .....	20
6.2.4	Analog video input connector .....	22
6.2.5	Connection between HDC-TH200 and MSD-402 .....	23
6.2.6	RS-232C communication of HDBaseT output connector .....	23
7	Basic operation .....	24
7.1	Menu operations .....	24
7.2	Locking menu operation keys .....	25
7.3	Initialization .....	25
7.4	Input channel remote switching .....	26
8	Menus .....	27
8.1	Menu list .....	28
8.2	Input switching setting .....	31
8.2.1	[ F05 ] Priority of input channel automatic switching .....	31
8.2.2	[ F06 ] Audio .....	32
8.2.3	[ F00 ] Manual input channel switching .....	33
8.3	Input .....	34
8.3.1	[ F16 ] No-signal input monitoring .....	34
8.3.2	[ F17 ] Digital input equalizer .....	35
8.3.3	[ F07 ] Analog input signal type .....	35
8.3.4	[ F64 ] Color bit for analog video input .....	35
8.4	EDID .....	36
8.4.1	[ F01 ] Copying EDID .....	36
8.4.2	[ F10 to F11 ] EDID resolution .....	37
8.4.3	[ F76 to F77 ] Selecting EDID WXGA .....	38
8.4.4	[ F20 ] Deep Color .....	39
8.4.5	[ F22 ] PCM Audio .....	39
8.4.6	[ F24 ] AC-3 Dolby Digital Audio .....	40
8.4.7	[ F26 ] AAC Audio .....	40
8.4.8	[ F28 ] Dolby Digital Plus Audio .....	41
8.4.9	[ F30 ] DTS Audio .....	41
8.4.10	[ F32 ] DTS-HD Audio .....	42
8.4.11	[ F34 ] Dolby TrueHD Audio .....	42
8.4.12	[ F36 ] Audio channel .....	43
8.4.13	[ F38 ] Copying EDID's CEC physical address .....	44
8.5	Analog video timing .....	45

8.5.1	[ F08 ] Automatic measurement .....	45
8.5.2	[ F40 ] Automatic measurement of start position .....	47
8.5.3	[ F42 ] The total number of horizontal dots .....	49
8.5.4	[ F43 ] Starting position of horizontal dots.....	49
8.5.5	[ F44 ] Horizontal Active area.....	50
8.5.6	[ F45 ] Horizontal start position .....	50
8.5.7	[ F46 ] Display period of horizontal dots.....	51
8.5.8	[ F47 ] Horizontal sync signal width .....	51
8.5.9	[ F48 ] Starting position of vertical lines .....	52
8.5.10	[ F49 ] Vertical active area .....	52
8.5.11	[ F50 ] Vertical start position.....	53
8.5.12	[ F51 ] Display period of vertical lines .....	53
8.5.13	[ F52 ] Vertical sync signal width.....	54
8.5.14	[ F53 ] Tracking .....	54
8.6	Output .....	55
8.6.1	[ F65 ] Audio output.....	55
8.6.2	[ F70 ] Deep Color output.....	55
8.7	Advanced setting .....	56
8.7.1	[ F90 ] Version.....	56
8.7.2	[ F99 ] Maintenance/status display menu .....	56
8.8	Checking operation (Maintenance menu).....	57
8.8.1	[ C01 ] Sink device EDID check .....	57
8.8.2	[ C06 ] HDCP input.....	58
8.8.3	[ C10 ] Hot plug ignoring duration .....	59
8.8.4	[ C14 ] RS-232C communication speed.....	60
8.8.5	[ C15 ] RS-232C communication data bit length.....	60
8.8.6	[ C16 ] RS-232C communication parity check .....	60
8.8.7	[ C17 ] RS-232C communication stop bit.....	60
8.8.8	[ C18 ] HDBaseT output long reach mode.....	61
8.8.9	[ C30 ] Ignoring duration after automatic switching.....	61
8.8.10	[ C55 ] Forced output color mode.....	61
8.9	Displaying input/output statuses (Status display menu) .....	62
8.9.1	[ L00 ] Display selected input channel .....	62
8.9.2	[ L01 to L13 ] Displaying digital input information .....	63
8.9.3	[ L20 to L22 ] Displaying analog input information .....	65
8.9.4	[ L30 to L60 ] Output information .....	66
9	Command.....	67
9.1	Summary.....	67
9.2	Command list .....	68
9.3	Details of commands .....	69
9.3.1	Error status.....	69
9.3.2	Input channel selection .....	69
9.3.3	RS-232C communication .....	70
9.3.4	Advanced setting.....	71
10	Specification.....	78
10.1	Product specification.....	78
11	Troubleshooting .....	79

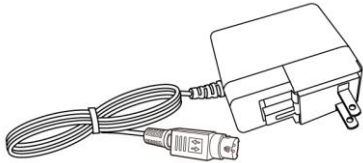
# 1 Included items

Ensure that all items illustrated below are included in the package.

If any items are missing or damaged, please contact IDK.



One (1) main unit (HDC-TH200)



One (1) AC adapter (4 ft. (1.2 m))

**[Fig. 1.1] Included items**

## 2 About HDC-TH200

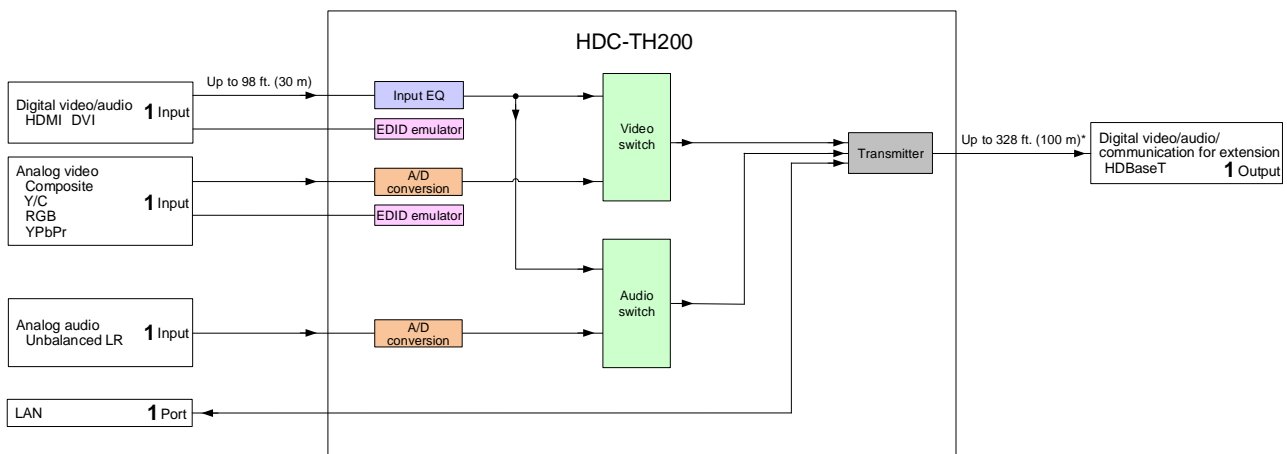
The HDC-TH200 is a transmitter for long-distance transmission of HDMI/DVI and Analog (video and audio) input signals over a category cable.

Since HDMI/DVI signals are transmitted without compression or processing, the image quality can be kept. Analog video signals can be converted to digital signal with high image quality by 12 bit quantization.

1 channel HDMI signal or DVI signal and one channel analog input video signals (composite, Y/C (S-Video), RGB, and YPbPr) are supported. Selected input signal is converted to HDBaseT signal and output.

1 channel digital and analog audio is supported. Audio signal is embedded to video signal and transmit as HDBaseT signal.

The HDC has LAN port as communication port and HDBaseT signal support bidirectional LAN communication.



\*For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum if using with IDK's HDBaseT products supporting 328 ft. (100 m) transmission.

[Fig. 2.1] Diagram

## 3 Features

---

### ■ Video

- Up to 1080p/QWXGA (Reduced Blanking)
- HDCP 1.4
- 3D Y/C separation for NTSC and PAL signals
- Automatic input signal equalization  
Input: Up to 98 ft. (30 m)
- Up to 328 ft. (100 m) over Cat6 cable
- Anti-snow
- Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)<sup>\*1</sup>

### ■ Audio

- Embedding

### ■ Communication

- LAN

### ■ Control input

- RS-232C (HDBaseT)

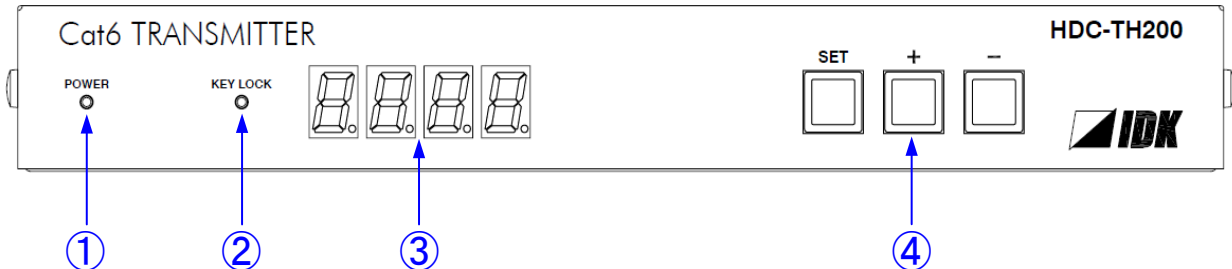
### ■ Others

- EDID emulation
- Input channel automatic switching
- CEC (Pass-through)
- Last memory
- Connection Reset
- Button security lockout
- AC adapter with locking mechanism

<sup>\*1</sup>If exceeding 328 ft. (100 m) in Long reach mode, CAT.5E HDC, Cat5e STP, and Cat6 STP cables are recommended.

## 4 Panels

### 4.1 Front panel

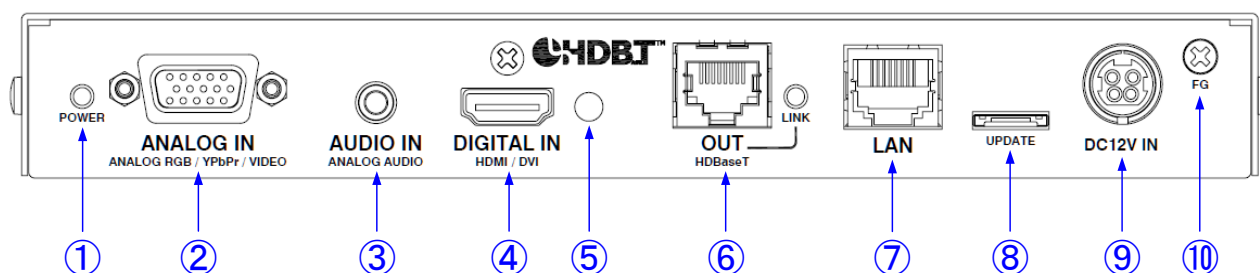


[Fig. 4.1] Front panel drawing

[Table 4.1] Front panel features

#	Feature	Description
①	POWER LED	Shows power status of the HDC. ON : Power is supplied to the HDC. OFF : Power is not supplied to the HDC.
②	KEY LOCK LED	Shows key lock status of the HDC. ON : Keys are locked Blink : During key lock setting OFF : Keys are unlocked
③	Seven-segment LED	Displays menu number, setting number, and setting status.
④	Menu operation keys	Selects and sets each menu. If you press "SET" keys for a while you can lock/unlock keys.  【See: 7.1 Menu operations】 【See: 7.2 Locking menu operation keys】

## 4.2 Rear panel

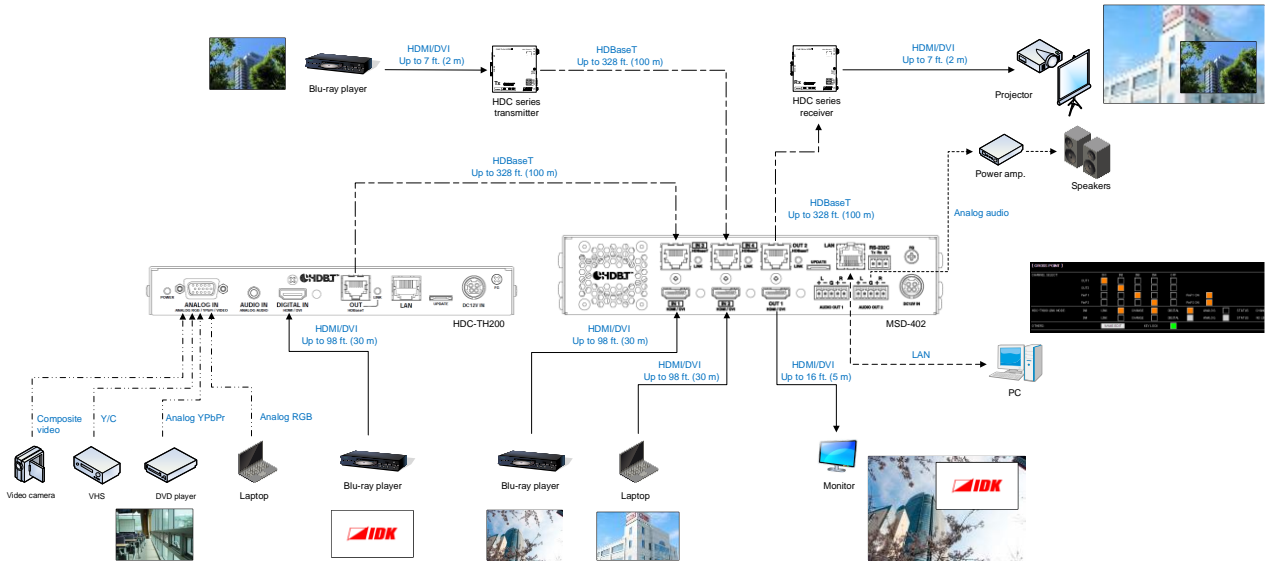


[Fig. 4.2] Rear panel drawing

[Table 4.2] Rear panel features

#	Feature	Description
①	POWER LED	Shows power status of the HDC ON : Power is supplied to the HDC. OFF: Power is not supplied to the HDC.
②	Analog video input connector	Input connector for analog video signal Following analog signals can be input. <ul style="list-style-type: none"> <li>▪ Analog RGB (such as PC)</li> <li>▪ Analog YPbPr (SDTV/HDTV)</li> <li>▪ Composite video (NTSC/PAL)</li> <li>▪ S-Video (NTSC/PAL)</li> </ul> <p style="text-align: right;">【See: 6.2.4 Analog video input connector】</p>
③	Audio input connector	Input connector for analog audio input
④	HDMI input connector	Input connector for HDMI signals Connector for a source device such as a DVD/Blu-ray player
⑤	HDMI cable fixing holes (Not used)	Not used.
⑥	HDBaseT output connector	Output connector for HDBaseT signal Connecting HDBaseT receivers using twisted pair cable <p style="text-align: right;">【See: 6.2.2 Category cable】</p> <p style="text-align: right;">【See: 8.8.8 [ C18 ] HDBaseT output long reach mode】</p>
⑦	LAN port	LAN port connector Connecting network devices
⑧	Connector for maintenance	Not used. Please do not connect anything; this connector is for maintenance only.
⑨	DIN connector	Connecting attached AC adapter <p style="text-align: right;">【See: 6.2.3 DIN plug AC adapter with locking mechanism】</p>
⑩	Frame ground	Using M3 screw Connecting ground terminal

# 5 System Configuration Example



[Fig. 5.1] System configuration example



## 6 Precautions

Before connecting to external devices, follow the precautions below.

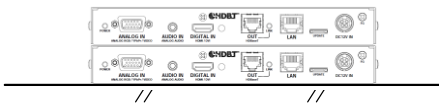
### 6.1 Installation

When installing the HDC, please observe the following precautions.

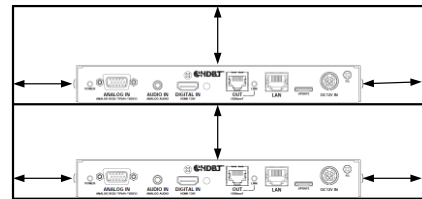
- Do not stack or place the HDC directly on top of another HDC
- Do not block vent holes. To provide adequate ventilation, maintain sufficient clearances around the HDC (1.2 in. (30 mm) or more)
- When the HDC needs to be mounted in an enclosed space, ensure that a sufficient ventilation/cooling system is provided to keep the ambient temperature at 104°F (40°C) or lower. If inadequately vented, the product's service life, operation, and reliability may be affected.

Maintain adequate clearances (1.2 in. (30 mm) or more) as shown below

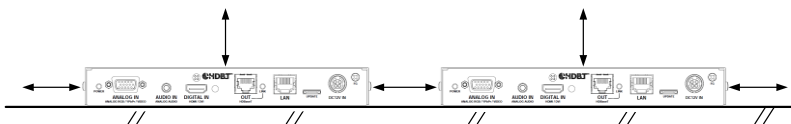
#### Bad example



#### Good example



#### Good example

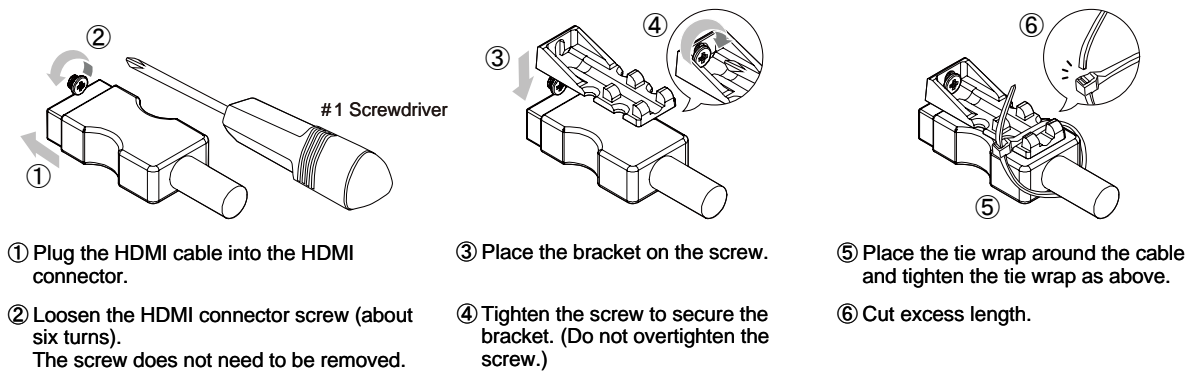


[Fig. 6.1] Necessary clearances

## 6.2 Cabling

When connecting the HDC to external devices, please observe the following precautions.

- Read manuals for the external devices.
- Before connecting cables to the HDC or an external device, dissipate static electricity by touching grounded metal such as equipment racks before handling signal cables. Failure to observe this precaution may result in ESD (electrostatic discharge) damage.
- Power all units off before connecting cables.
- Be sure to fully seat all plugs and connections and dress cables to reduce stress on connectors.
- Use the cable lacing bracket to secure a standard HDMI cable as shown.



[Fig. 6.2] Cable Lacing Bracket (FB-01 For IDK products only)

### 6.2.1 Cables

Use the correct HDMI cable or HDMI-DVI conversion cable depending on the system configuration.

## 6.2.2 Category cable

To ensure the best performance with category cables, select a high quality category cable type, ensuring that proper pinning and pairing requirements are observed.

- Cat5e UTP/STP and Cat6 UTP/STP can be used, but we recommend CAT.5E HDC cable\* for optimal performance.
- If using STP cables, connect the FG connector to a local electrical ground bonding point. Without bonding FG to ground, the shielding feature may not effectively eliminate interference. If using UTP cables, it is still recommend that the FG connector be used.
- The STP cables are less affected by interference or external noise than UTP cables.
- Connectors for long-haul transmission 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 transmission distance of a category cables is the shorter distance of the maximum transmission distances of transmitter/receiver/sink device connected to the HDC.
- Pin assignments: T568A or T568B straight
- Do not pull the cable using excessive force. The allowable tension of the category cable is 110 N.
- Do not bend the cable at a sharp angle. Keep the bend radius four times of the cable diameter or larger.
- Do not clamp or tie the cable tightly; leave some space allowing the cable to move slightly.
- If you use multiple category cables, we recommend keeping a distance between the cables or not to place the cables closely in parallel.
- Keep the category cable running as straight as possible. Looping or coiling the cable, causes it to be more easily affected by noise; especially when using longer cable run lengths.
- Do not place the cable in an electrically noisy environment, since high-speed impulsive noise may couple into the category cable. Use of a high-output radio transmission device near the HDC or remote receivers may interfere with or interrupt video and or audio signals.
- If the total transmission distance from the transmitter to receiver is 328 ft. (100 m) or less, up to two cable interconnection points can be used. Products supporting Cat6A (10GBase-T) are recommended.
- The table below shows supported transmission distance for each category.  
Note that specified distances may shorten depending on the conditions within the actual environment.

**[Table 6.1] Transmission distance**

Noise influence	Category		Transmission distance	TMDS clock	Recommended cable
Easily affected	UTP	Cat5e	164 ft. (50 m)	$\leq 225$ MHz	For 164 ft. (50 m) or longer: CAT.5E HDC*, Cat5e STP, and Cat6 UTP/STP cables
		Cat6	328 ft. (100 m)		
Less affected	STP	Cat5e* Cat6	328 ft. (100 m)	Long reach mode $\leq 148$ MHz (1080p (24 bit) or less)	
			492 ft. (150 m)		

\* The CAT.5E HDC cable is a double-shielded category cable optimized for video signal transmission. The double-shielded structure protects the video signal from external interference. It is certified to 500 MHz bandwidth at distances up to 328 ft. (100 m) and verified to meet requirements specified by HDBaseT Alliance.

**Note:**

If there is a problem in the transmission path, video or audio may be interrupted. Check the “[Table 6.1]” above.

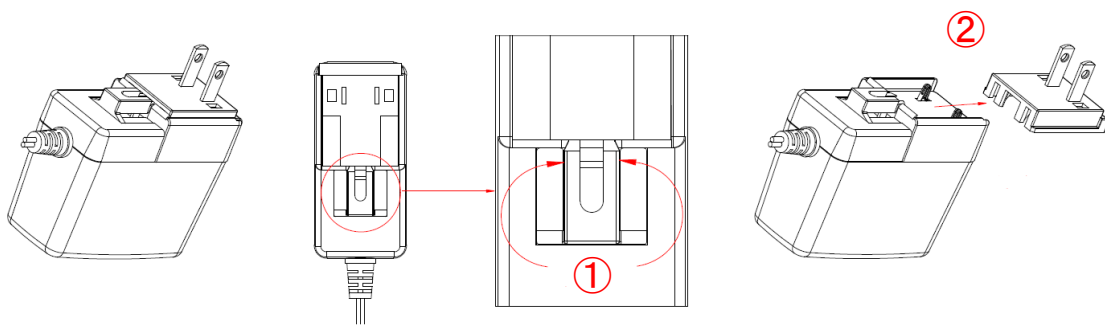
If the problem persists, it may be necessary to shorten the category cable.

### 6.2.3 DIN plug AC adapter with locking mechanism

The shapes of AC plugs with screw locking mechanism vary from country to country. The AC plug can be removed from the AC adapter.

**Removing AC plug:**

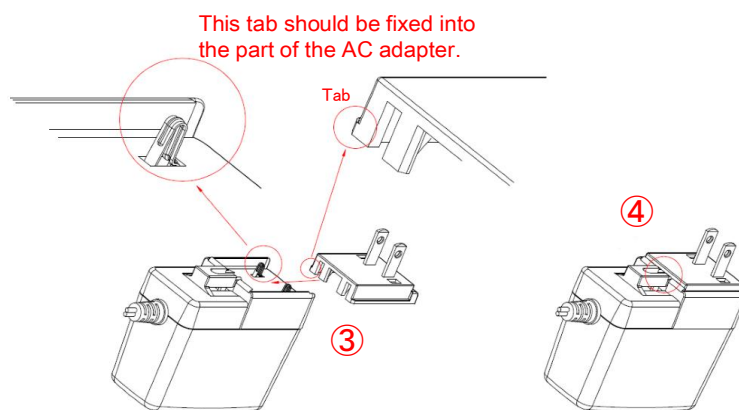
Slide the AC plug (②) from the AC adapter while holding down the portion mentioned below (①)



[Fig. 6.3] Removing AC plug (Example: Plug type A)

**Attaching AC plug:**

Gently slide the AC plug into the AC adapter (③) until it clicks (④)

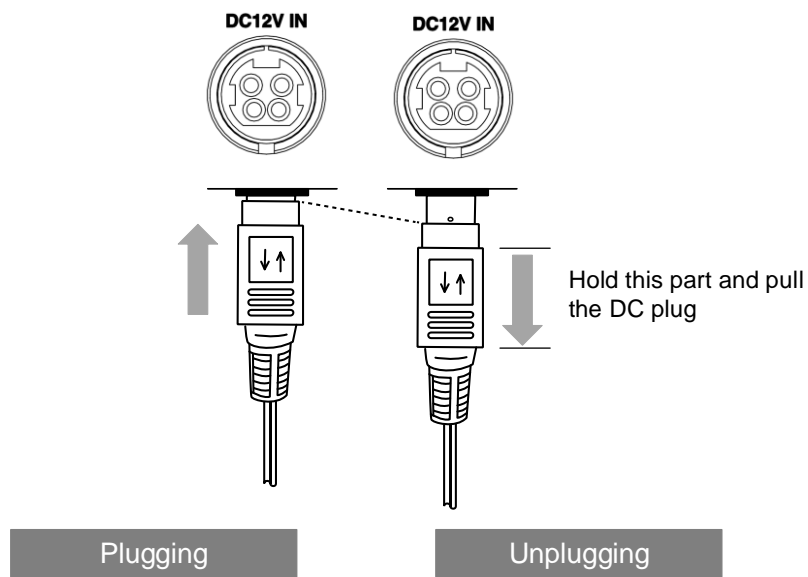


[Fig. 6.4] Attaching AC plug (Example: Plug type A)

**■ Plugging and unplugging DC plug**

Plug the DC plug to the power supply connector of the unit until it clicks

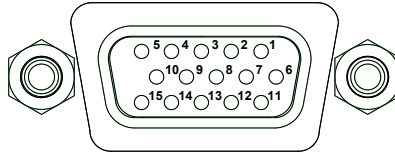
Hold the portion mentioned below when unplugging the DC plug



**[Fig. 6.5] Plugging and unplugging DC plug**

## 6.2.4 Analog video input connector

For analog video input, the D-Sub (15-pin) connector enables not only analog RGB signals (such as PC) to be input, but also supports analog YPbPr (SDTV/HDTV), composite video (NTSC/PAL), and S-video (NTSC/PAL) signal inputs using a conversion cable.



[Fig. 6.6] D-sub (15-pin) connector

[Table 6.2] Pin assignments

Pin #	Input signal			
	Analog RGB	Analog YPbPr	Composite video	S-Video (Y/C)
1	Red	Pr/Cr	N.C.	N.C.
2	Green	Y	VIDEO	Y
3	Blue	Pb/Cb	N.C.	C
4	N.C.	N.C.	N.C.	N.C.
5	GND	N.C.	N.C.	N.C.
6	GND	GND	N.C.	N.C.
7	GND	GND	GND	GND
8	GND	GND	N.C.	GND
9	N.C.	N.C.	N.C.	N.C.
10	GND	N.C.	N.C.	N.C.
11	N.C.	N.C.	N.C.	N.C.
12	DDC Data	N.C.	N.C.	N.C.
13	HD/CS	N.C.	N.C.	N.C.
14	VD	N.C.	N.C.	N.C.
15	DDC Clock	N.C.	N.C.	N.C.

N.C.: No Connection

## 6.2.5 Connection between HDC-TH200 and MSD-402

---

When HDC-TH200 is connected to the MSD-402 using HDBaseT signal, its input channels can be switched from the MSD-402. For the details please see User Guide of MSD-402.

【See: 5 System Configuration Example】

### Notes:

Setting the RS-232C communication of HDC as follows:

- Baud rate : 38400 [bps] 【See: 8.8.4 [ C14 ] RS-232C communication speed】
- Data bit length : 8 [bit] 【See: 8.8.5 [ C15 ] RS-232C communication data bit length】
- Parity check : NONE 【See: 8.8.6 [ C16 ] RS-232C communication parity check】
- Stop bit : 1 [bit] 【See: 8.8.7 [ C17 ] RS-232C communication stop bit】

## 6.2.6 RS-232C communication of HDBaseT output connector

---

When designing a control program, note the following points:

- With RS-232C communication, unnecessary data of a few bytes may be input to RS-232C signals when the HDC is powered off or the link is established. Some data may possibly be damaged or destroyed.
- Control by communication is not available until the link is established. Wait or retry may be needed.

## 7 Basic operation

### 7.1 Menu operations

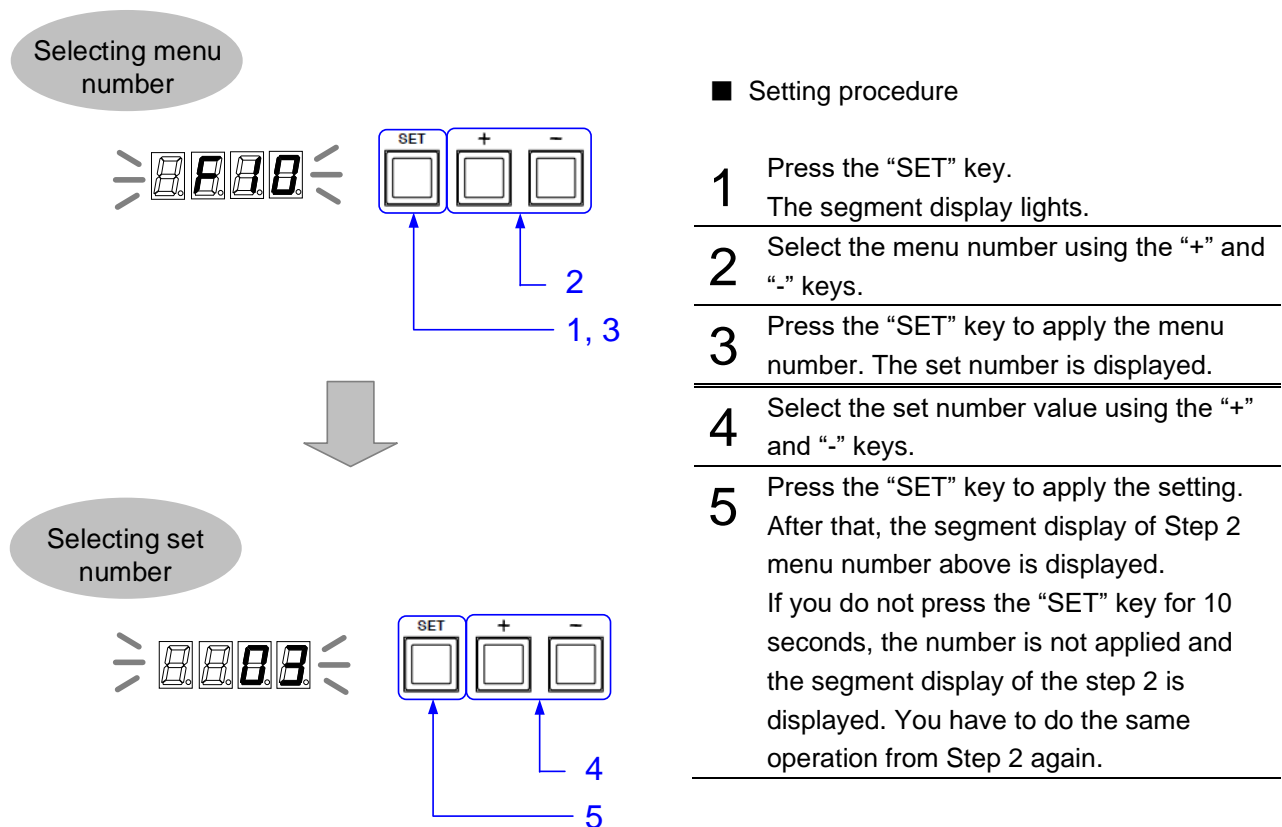
You can set all input/output settings of video and audio signals from menu operation keys.

Menu operation keys

Select the menu number first and then select the setting number.

If you do not operate for 10 seconds in step 5, you will go back to step 2.

If you do not operate for 60 seconds in each step, the light of the segment display will be turned off.



[Fig. 7.1] Menu key operation

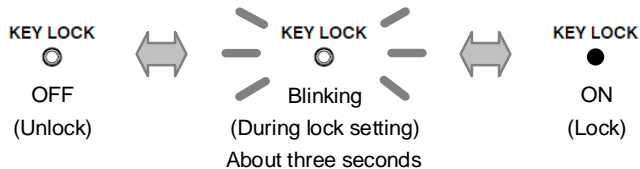


## 7.2 Locking menu operation keys

Press and hold the “SET” key for 3 seconds or longer to set/cancel key lock.



Menu operation keys will be locked by pressing the “SET” key for three seconds.



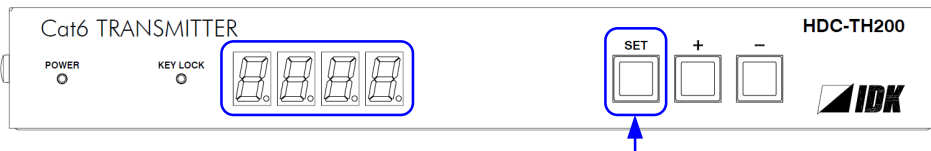
[Fig. 7.2] Locking menu operation keys

## 7.3 Initialization

All input and output settings will be initialized by powering on while pressing the “SET” key.

**Note:**

Once settings are initialized, they cannot be restored to the previous settings.



Turn ON the unit by pressing “SET” key.



Initialization is done

[Fig. 7.3] Initialization

## 7.4 Input channel remote switching

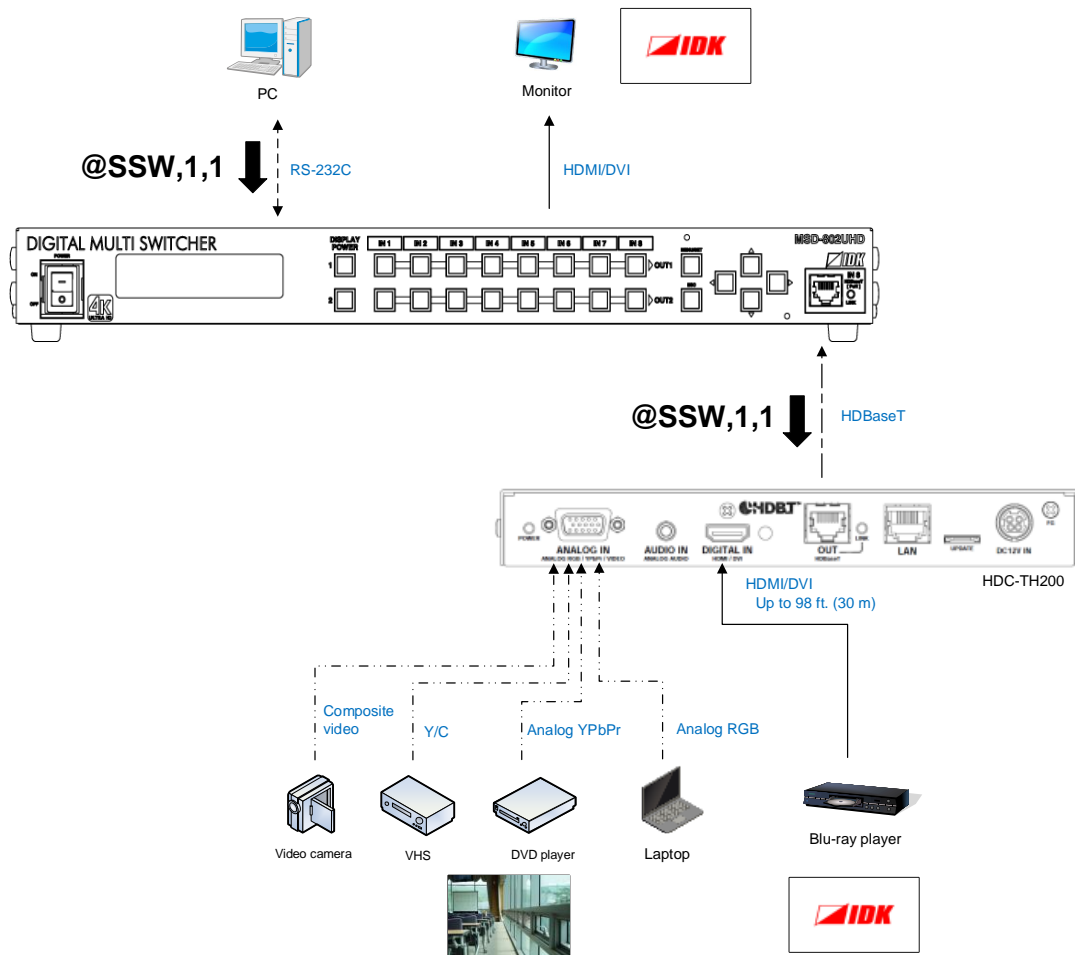
Input channels can be switched via an IDK's HDBaseT product (Digital multi switchers, Modular matrix switchers, and extender) using the communication command, “@GSW / @SSW Switching input channel”.

【See: 8.2.1 [ F05 ] Priority of input channel automatic switching】

【See: @GSW / @SSW Switching input channel】

Example: Switching HDC input channel from analog to digital video via the MSD-802UHD.

- “@SSW,1,1” command is sent from the PC that is connected to the RS-232C connector of the MSD-802UHD.
- The “@SSW,1,1” command is sent to the HDC that is connected to the HDBaseT input connector of the MSD-802UHD.
- The input channel of the HDC is switched from analog video input to HDMI input.



[Fig. 7.4] Switching input channel remotely

**Note:**

The HDC's LAN port does not receive commands.

RS-232C Settings of the HDC and the other HDBaseT product should be matched.

【See: 8.8.4 [ C14 ] RS-232C communication speed】

【See: 8.8.5 [ C15 ] RS-232C communication data bit length】

【See: 8.8.6 [ C16 ] RS-232C communication parity check】

【See: 8.8.7 [ C17 ] RS-232C communication stop bit】

## 8 Menus

- Setup menus : setting video and audio signals in normal use
- Maintenance menus : checking operation
- Status display menus : displaying statuses of input signals and connection with sink devices

**Note:**

Normally, the maintenance menu and status display menu are not displayed as a default.

[Table 8.1] Setup menus

Input switching setting	
[ F00 ] Manual input channel switching	[ F06 ] Audio
[ F05 ] Priority of input channel automatic switching	
Input	
[ F16 ] No-signal input monitoring	[ F07 ] Analog input signal type
[ F17 ] Digital input equalizer	[ F64 ] Color bit for analog video input
EDID	
[ F01 ] Copying EDID	[ F28 ] Dolby Digital Plus Audio
[ F10 to F11 ] EDID resolution	[ F30 ] DTS Audio
[ F76 to F77 ] Selecting EDID WXGA	[ F32 ] DTS-HD Audio
[ F20 ] Deep Color	[ F34 ] Dolby TrueHD Audio
[ F22 ] PCM Audio	[ F36 ] Audio channel
[ F24 ] AC-3 Dolby Digital Audio	[ F38 ] Copying EDID's CEC physical address
[ F26 ] AAC Audio	
Analog video timing	
[ F08 ] Automatic measurement	[ F47 ] Horizontal sync signal width
[ F40 ] Automatic measurement of start position	[ F48 ] Starting position of vertical lines
[ F42 ] The total number of horizontal dots	[ F49 ] Vertical active area
[ F43 ] Starting position of horizontal dots	[ F50 ] Vertical start position
[ F44 ] Horizontal Active area	[ F51 ] Display period of vertical lines
[ F45 ] Horizontal start position	[ F52 ] Vertical sync signal width
[ F46 ] Display period of horizontal dots	[ F53 ] Tracking
Output	
[ F65 ] Audio output	[ F70 ] Deep Color output
Advanced setting	
[ F90 ] Version	[ F99 ] Maintenance/status display menu

**Tip:**

Normally, the maintenance menu and status display menu are not displayed as a default.

To display them, use the setting menu number "8.7.2 [ F99 ] Maintenance/status display menu".

## 8.1 Menu list

### ■ Setup menu

[Table 8.2] Setup menus (1/2)

Menu number and functions	Setting		Page
	Setting value	Default	
[ F00 ] Manual input channel switching	Digital input/Analog input	—	33
[ F01 ] Copying EDID	Copy/No copy	No Copy	36
[ F05 ] Priority of input channel automatic switching	Auto/Digital has priority/ Analog has priority/ Digital input fixed/ Analog input fixed/ Disabling	Auto	31
[ F06 ] Audio	Auto/Digital audio/ Analog audio	Auto	32
[ F07 ] Analog input signal type	Auto/Analog RGB/ Analog YPbPr/Auto video/ Composite video/S-Video	Auto	35
[ F08 ] Automatic measurement	CLr/OFF/ON/4:3/16:9/ 5:3/5:4/16:10	OFF	45
[ F10 to F11 ] EDID resolution	720p, 1080i, 1080p, SVGA to QWXGA	1080p	37
[ F16 ] No-signal input monitoring	OFF/2 to 15 [sec]	10 [sec]	34
[ F17 ] Digital input equalizer	ON/OFF	ON	35
[ F20 ] Deep Color	8/10/12 [bit]	8 [bit]	39
[ F22 ] PCM Audio	32/44.1/48/88.2/96/192 [kHz]	48 [kHz]	39
[ F24 ] AC-3 Dolby Digital Audio	OFF/32/44.1/48 [kHz]	OFF	39
[ F26 ] AAC Audio	OFF/32/44.1/48/88.2/96 [kHz]	OFF	40
[ F28 ] Dolby Digital Plus Audio	OFF/32/44.1/48 [kHz]	OFF	41
[ F30 ] DTS Audio	OFF/32/44.1/48/96 [kHz]	OFF	41
[ F32 ] DTS-HD Audio	OFF/44.1/48/88.2/96/176.4/ 192 [kHz]	OFF	42
[ F34 ] Dolby TrueHD Audio	OFF/44.1/48/88.2/96/176.4/ 192 [kHz]	OFF	42
[ F36 ] Audio channel	2 channels/(2.1 channels)/ 6 (5.1 channels)/ 8 (7.1 channels)	2 channels	43
[ F38 ] Copying EDID's CEC physical address	Copy/No copy	No Copy	44

**[Table 8.3] Setup menus (2/2)**

Menu number and functions	Setting		Page
	Setting value	Default	
[ F40 ] Automatic measurement of start position	No auto adjustment/ Auto adjustment mode 1/ Auto adjustment mode 2	Auto adjustment mode 1	47
[ F42 ] The total number of horizontal dots	400 to 4125 [dot]	—	49
[ F43 ] Starting position of horizontal dots	20 to 2900 [dot]	—	49
[ F44 ] Horizontal Active area	20 to 2900 [dot]	—	50
[ F45 ] Horizontal start position	20 to 2900 [dot]	—	50
[ F46 ] Display period of horizontal dots	20 to 2900 [dot]	—	51
[ F47 ] Horizontal sync signal width	9 to 360 [dot]	—	51
[ F48 ] Starting position of vertical lines	10 to 2048 [line]	—	52
[ F49 ] Vertical active area	10 to 2048 [line]	—	52
[ F50 ] Vertical start position	10 to 2048 [line]	—	53
[ F51 ] Display period of vertical lines	10 to 2048 [line]	—	53
[ F52 ] Vertical sync signal width	1 to 20 [line]	—	54
[ F53 ] Tracking	0 to 63	0	54
[ F64 ] Color bit for analog video input	8/10/12 [bit]	8 [bit]	35
[ F65 ] Audio output	ON/OFF	ON	55
[ F70 ] Deep Color output	8/10/12 [bit]	12 [bit]	55
[ F76 to F77 ] Selecting EDID WXGA	1360x768/1366x768	1360x768	38
[ F90 ] Version	—	—	56
[ F99 ] Maintenance/status display menu	Not displayed/Displayed/ Always displayed	Not displayed	56

## ■ Maintenance menus

[Table 8.4] Maintenance menus

Menu number and functions	Setting		Page
	Setting value	Default	
[ C01 ] Sink device EDID check	Always recognize as HDMI device/When EDID read error, recognize as HDMI device/When EDID read error, recognize as DVI device	When EDID read error, recognize as DVI device	57
[ C06 ] HDCP input	HDCP enable/HDCP disable	HDCP Enable	58
[ C10 ] Hot plug ignoring duration	OFF/2 to 15 [sec.]	OFF	59
[ C14 ] RS-232C communication speed	4800/9600/19200/38400 [bps]	9600 [bps]	60
[ C15 ] RS-232C communication data bit length	7/8 [bit]	8 [bit]	60
[ C16 ] RS-232C communication parity check	NONE/ODD/EVEN	NONE	60
[ C17 ] RS-232C communication stop bit	1/2 [bit]	1 [bit]	60
[ C18 ] HDBaseT output long reach mode	OFF/ON	OFF	61
[ C30 ] Ignoring duration after automatic switching	OFF/0.5 to 10 [sec.]	1 [sec.]	61
[ C55 ] Forced output color mode	Auto/DVI output/RGB output/YCbCr422 output/YCbCr444 output	Auto	61

## ■ Status menus

[Table 8.5] Status menus

Menu number and functions	Setting		Page
	Setting value	Default	
[ L00 ] Display selected input channel	—	—	62
[ L01 to L13 ] Displaying digital input information	—	—	63 to 65
[ L20 to L22 ] Displaying analog input information	—	—	65
[ L30 to L60 ] Output information	—	—	66

## 8.2 Input switching setting

---

### 8.2.1 [ F05 ] Priority of input channel automatic switching

---

#### Setting value

- 00 : Auto [Default]
- 01 : Digital input has priority
- 02 : Analog input has priority
- 03 : Fixed digital input
- 04 : Fixed analog input
- 05 : Disabling

#### ■ Auto

HDC-TH200 will switch input channel under following conditions:

- When new video signal is detected, HDC-TH200 switch the input channel to the detected channel
- When current selected channel loose signal and if another channel has video signal, HDC-TH200 switch the input channel to the channel which has video image.

Selected channel is memorized (last memory). When turn off the HDC having active input signals on Digital input and analog input, HDC will select the channel which is selected before turn off.

#### ■ Digital input has priority

If HDC-TH200 detects both digital and analog video signal, it output digital output.

Only when there is no digital input but analog input, the HDC output analog video signal.

#### ■ Analog input has priority

If HDC-TH200 detects both digital and analog video signal, it output analog output.

Only when there is no analog input but digital input, the HDC output digital video signal.

#### ■ Fixed digital input

Always output digital video signal

#### ■ Fixed analog input

Always output analog video signal

#### ■ Disabling

Disables the automatic switching feature.

This value is for switching input channel remotely using communication command.

You can set masking time for automatic switching from “**8.8.9 [ C30 ] Ignoring duration after automatic switching**”.

【See: 8.8.9 [ C30 ] Ignoring duration after automatic switching】

**Notes for when selecting a value other than “05” (Disabling):**

- This menu will be disabled if “8.2.3 [ F00 ] Manual input channel switching” menu is displayed or “CHANGE mode”\* is executed.
- The setting will be applied if “8.2.3 [ F00 ] Manual input channel switching” operation is completed and “CHANGE mode”\* is set to OFF.

\* : For “CHANGE mode”, refer to the User guide of MSD-402.

## 8.2.2 [ F06 ] Audio

---

Select audio which is embedded to video signal.

**Setting value**

- 00 : Auto (Following video input) [Default]
- 01 : Digital audio (HDMI input connector)
- 02 : Analog audio (Analog audio input connector)

**Note:**

When you select digital audio setting and if the digital video signal has HDCP, the audio output has HDCP.

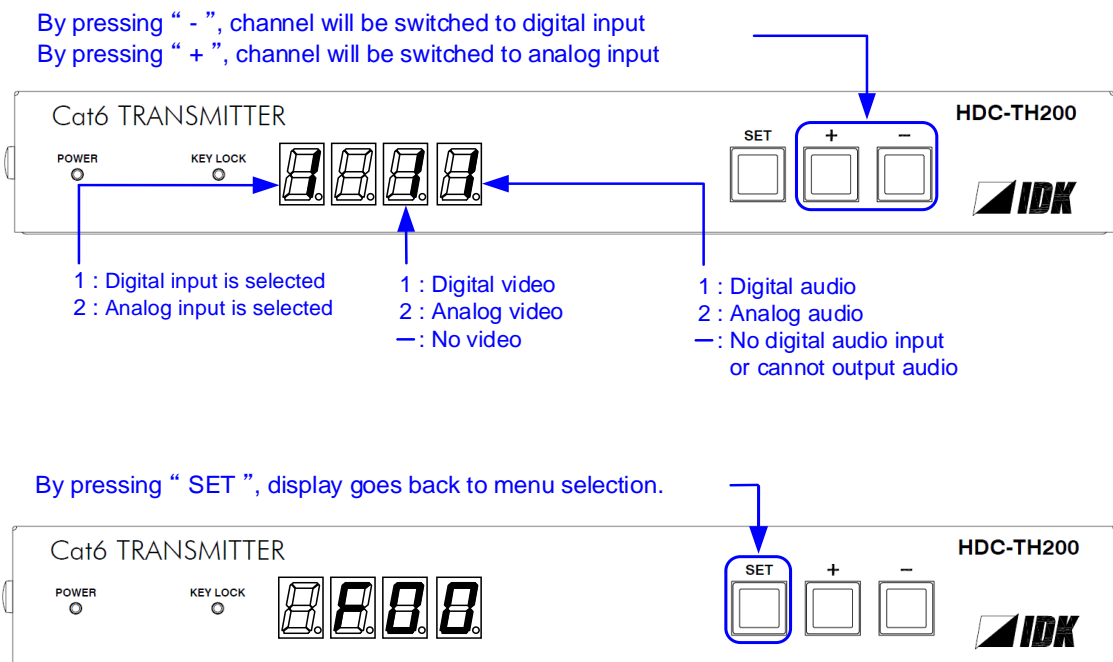


### 8.2.3 [ F00 ] Manual input channel switching

You can switch input channel from front panel menu. “ - ” is assigned to digital input channel and “ + ” is assigned to analog input channel. During this menu is displayed automatic switching set by “8.2.1 [ F05 ] Priority of input channel automatic switching” is disabled temporary.

Audio settings depend on setting of “8.2.2 [ F06 ] Audio” as follows:

- 00 : Auto (Following video input) [Default]
- 01 : Digital audio (HDMI input connector)
- 02 : Analog audio (Analog audio input connector)



[Fig. 8.1] Manual input channel switching

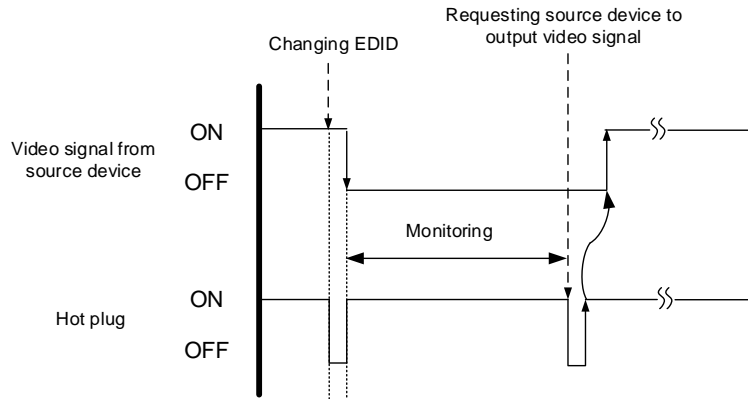
**Notes:**

- When you are executing “CHANGE mode” from MSD-402 and switch input channel from MSD-402, the display will correspond to the action.
- While “CHANGE mode” is executing, setting of “8.2.1 [ F05 ] Priority of input channel automatic switching” will be disabled temporary.
- Please see MSD-402 user’s guide for “CHANGE mode”.

## 8.3 Input

### 8.3.1 [ F16 ] No-signal input monitoring

If you change the EDID settings of the HDC or power the HDC off/on, the source device may not output a video signal. Use this menu to set the monitoring time. This is the interval beginning when a source device is not outputting a signal; and ending at the point when the HDC requests an output from that source device.



[Fig. 8.2] Monitoring absence of input

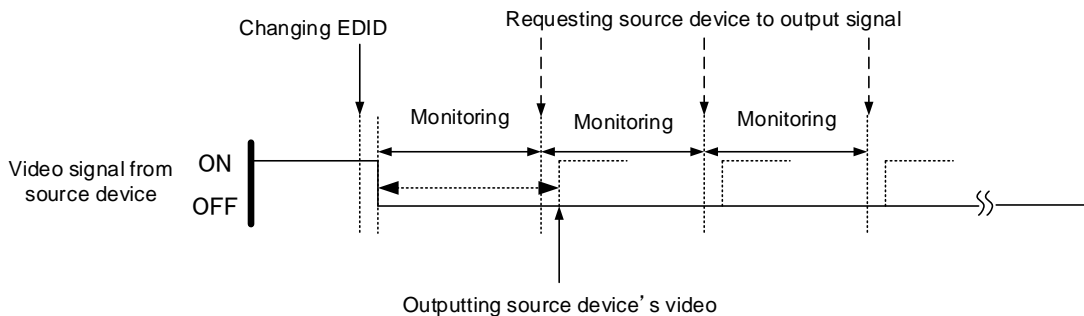
#### Setting value

oFF : OFF  
 02 to 15 : 2 sec. to 15 sec. [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 potentially 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.



[Fig. 8.3] Repeating output reset

### 8.3.2 [ F17 ] Digital input equalizer

---

You can set digital input equalizer function that correct video attenuation automatically.

#### Setting value

- on : ON (Auto) [Default]
- oFF : OFF

#### Note:

If using a 16 ft. (5 m) or longer cable, we recommend testing the application before installation. To avoid video interruption at the time of switching, set this function to ON.

### 8.3.3 [ F07 ] Analog input signal type

---

You can set video type which is input to analog input connector. If there is no video input on analog input connector, “- -” will be displayed.

#### Setting value

- 00 : Auto [Default]
- 01 : Analog RGB
- 02 : Analog YPbPr
- 03 : Auto video (Auto recognition between composite and S-Video)
- 04 : Composite video
- 05 : S-video

#### Notes:

- Usually if the HDC is set to “00” (Auto), HDC recognize input video signal automatically. However, it cannot be recognized input video image depending on signal condition sometimes, and then please select video type manually.
- When you set to “00” (Auto), sometimes auto recognition for S-video is failed. If input signals are composite video and S-Video, please set to “03” (Auto video), and if input signal is only S-video, please set to “05” (S-video)
- For the mono video image or bad condition VHS, please set to “03” (Video auto), “04” (Composite video), or “05” (S-video).

### 8.3.4 [ F64 ] Color bit for analog video input

---

#### Setting value

- 08 : 8 bit [Default]
- 10 : 10 bit
- 12 : 12 bit

#### Note:

To output Deep Color video image please set output color depth to 10 bit or 12 bit from “8.6.2 [ F70 ] Deep Color output”, and use sink device which support Deep Color.

## 8.4 EDID

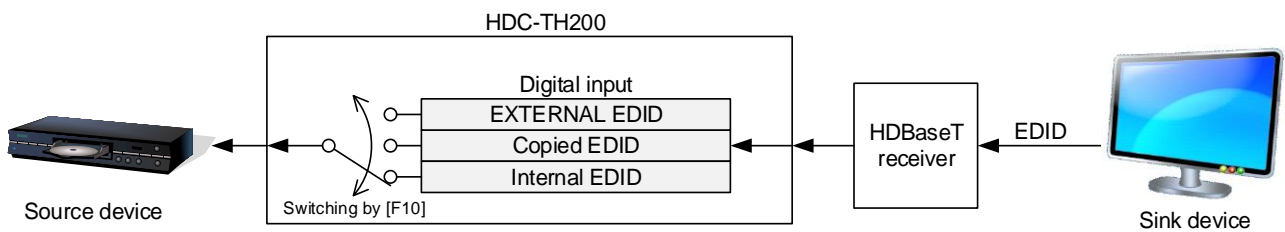
### 8.4.1 [ F01 ] Copying EDID

EDID of sink devices can be read and stored, and the copied EDID can apply in the same way of internal EDID.

#### Setting value

on : Copying EDID

off : Not copying EDID [Default]



[Fig. 8.4] Copying EDID

Please see “8.4.2 [ F10 to F11 ] EDID resolution” to change EDID setting.

## 8.4.2 [ F10 to F11 ] EDID resolution

You can set the EDID to be sent to the source device:  
EDID for digital input and analog input can be set individually.

“01 to 02” [ F10 ] : Can be selected only for digital input  
“03 to 22” are internal EDID which HDC-TH200 has.

### Menu number

F10 : Digital input

F11 : Analog input

### Setting value

[Table 8.6] The maximum resolution of EDID, [Table 8.7] Maximum resolution and supported pixels

[Table 8.6] The maximum resolution of EDID

Setting values	Maximum resolution	Pixel	Standard	Remarks
01	EXTERNAL (External EDID)	—	—	If no sink device is connected, the previous setting will be applied. If no collected data, its default is 03.
02	Copied EDID	—	—	Copied EDID which is set in “8.4.1 [ F01 ] Copying EDID”. If no collected data, its default is 03.
03	1080p (59.94/60)	1920×1080	HDTV	[Default]
04	720p	1280×720		
05	1080i	1920×1080		
06	1080p (24/25/30/50)	1920×1080		
07	SVGA	800×600	VESA	
08	XGA	1024×768		
09	VESA720	1280×720	CVT	For DVI device input
10	WXGA	1280×768	VESA	
11	WXGA	1280×800		For MAC
12	Quad-VGA	1280×960		
13	SXGA	1280×1024		
14	WXGA	1360×768, 1366×768		The number of pixels can be set in “8.4.3 [ F76 to F77 ] Selecting EDID WXGA”.
15	SXGA+	1400×1050		
16	WXGA+	1440×900		
17	WXGA++	1600×900		(RB)
18	UXGA	1600×1200		
19	WSXGA+	1680×1050		
20	VESA1080	1920×1080	CVT	(RB), For DVI device input
21	WUXGA	1920×1200	VESA	(RB)
22	QWXGA	2048×1152		(RB)

(RB): Reduced Blanking

[See: 8.4.3 [ F76 to F77 ] Selecting EDID WXGA]

**[Table 8.7] Maximum resolution and supported pixels**

Pixels Max. resolution		640	800	1024	1280	1280	1280	1280	1280	1360	1366	1400	1440	1600	1600	1680	1920	1920	2048
		x 480	x 600	x 768	x 720	x 768	x 800	x 960	x 1024	x 768*	x 768*	x 1050	x 900	x 900	x 1200	x 1050	x 1080	x 1200	x 1152
03	1080p(59.94/60)	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
04	720p	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
05	1080i	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
06	1080p (24/25/30p/50p)	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
07	800x600	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
08	1024x768	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
09	1280x720	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
10	1280x768	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
11	1280x800	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
12	1280x960	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N
13	1280x1024	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N
14	1360x768*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
15	1400x1050	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
16	1440x900	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
17	1600x900	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N
18	1600x1200	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
19	1680x1050	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N
20	1920x1080	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
21	1920x1200	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N
22	2048x1152	Y	Y	Y	N	N	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y

Y: Supported, N: Not supported

\* 1360x768 and 1366x768 can be selected in "8.4.3 [ F76 to F77 ] Selecting EDID WXGA".

### 8.4.3 [ F76 to F77 ] Selecting EDID WXGA

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

**[See: 8.4.2 [ F10 to F11 ] EDID resolution]**

**Menu number**

F76 : Digital input

F77 : Analog input

**Setting value**

on : 1366x768

oFF : 1360x768 [Default]

## 8.4.4 [ F20 ] Deep Color

---

You can set the Deep Color (color depth) that is output from the source device.

### Setting value

- 08 : 8 bit [Default]
- 10 : 10 bit
- 12 : 12 bit

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “**8.4.2 [ F10 to F11 ] EDID resolution**”.
- To output Deep Color, please set 10 bit or 12 bit in “**8.6.2 [ F70 ] Deep Color output**” and connect sink devices which support Deep Color.

## 8.4.5 [ F22 ] PCM Audio

---

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

### Setting value

- 32 : 32 kHz
- 44 : 44.1 kHz
- 48 : 48 kHz [Default]
- 88 : 88.2 kHz
- 96 : 96 kHz
- 192 : 192 kHz

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “**8.4.2 [ F10 to F11 ] EDID resolution**”.
- Depending on sink devices, there are audio format which are not supported on sink device. Please select supported audio format and frequency.

## 8.4.6 [ F24 ] AC-3 Dolby Digital Audio

---

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

### Setting value

- 32 : 32 kHz
- 44 : 44.1 kHz
- 48 : 48 kHz
- oFF : OFF [Default]

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “8.4.2 [ F10 to F11 ] EDID resolution”.
- Depending on sink devices, there are audio format which are not supported on sink device. Please select supported audio format and frequency.

## 8.4.7 [ F26 ] AAC Audio

---

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

### Setting value

- 32 : 32 kHz
- 44 : 44.1 kHz
- 48 : 48 kHz
- 88 : 88.2 kHz
- 96 : 96 kHz
- oFF : OFF [Default]

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “8.4.2 [ F10 to F11 ] EDID resolution”.
- Depending on sink devices, there are audio format which are not supported on sink device. Please select supported audio format and frequency.



## 8.4.8 [ F28 ] Dolby Digital Plus Audio

---

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

### Setting value

- 32 : 32 kHz
- 44 : 44.1 kHz
- 48 : 48 kHz
- oFF : OFF [Default]

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “8.4.2 [ F10 to F11 ] EDID resolution”.
- Depending on sink devices, there are audio format which are not supported on sink device. Please select supported audio format and frequency.

## 8.4.9 [ F30 ] DTS Audio

---

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

### Setting value

- 32 : 32 kHz
- 44 : 44.1 kHz
- 48 : 48 kHz
- 96 : 96 kHz
- oFF : OFF [Default]

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “8.4.2 [ F10 to F11 ] EDID resolution”.
- Depending on sink devices, there are audio format which are not supported on sink device. Please select supported audio format and frequency.

## 8.4.10 [ F32 ] DTS-HD Audio

---

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

### Setting value

44 : 44.1 kHz  
48 : 48 kHz  
88 : 88.2 kHz  
96 : 96 kHz  
176 : 176.4 kHz  
192 : 192 kHz  
oFF : OFF [Default]

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “**8.4.2 [ F10 to F11 ] EDID resolution**”.
- Depending on sink devices, there are audio format which are not supported on sink device. Please select supported audio format and frequency.

## 8.4.11 [ F34 ] Dolby TrueHD Audio

---

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

### Setting value

44 : 44.1 kHz  
48 : 48 kHz  
88 : 88.2 kHz  
96 : 96 kHz  
176 : 176.4 kHz  
192 : 192 kHz  
oFF : OFF [Default]

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for “**8.4.2 [ F10 to F11 ] EDID resolution**”.
- Depending on sink devices, there are audio format which are not supported on sink device. Please select supported audio format and frequency.

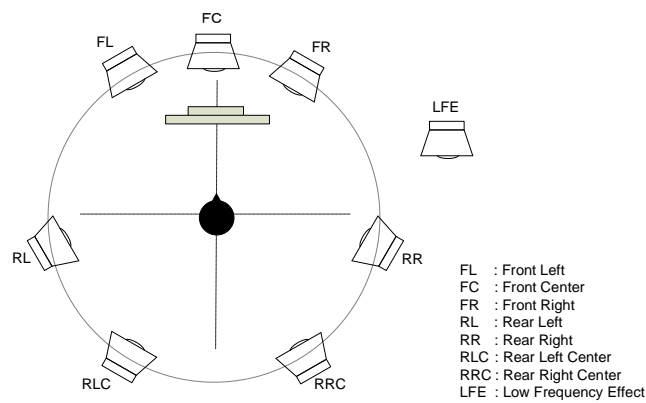
## 8.4.12 [ F36 ] Audio channel

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

### Setting value

- 02 : LR [Default]
- 03 : 2.1 channel surround sound
- 06 : 5.1 channel surround sound
- 08 : 7.1 channel surround sound

### ■ The number of channels and speaker configuration



Sound type (Number of speakers)	FL/FR	LFE	FC	RL/RR	RLC/RRC
LR (2)	ON	OFF	OFF	OFF	OFF
2.1 channel surround sound (3)	ON	ON	OFF	OFF	OFF
5.1 channel surround sound (6)	ON	ON	ON	ON	OFF
7.1 channel surround sound (8)	ON	ON	ON	ON	ON

[Fig. 8.5] The number of channels and speaker configuration

### Notes:

- This setting is only for digital input EDID.
- The setting will be applied only if one of 03 to 22 is selected for "8.4.2 [ F10 to F11 ] EDID resolution".

### 8.4.13 [ F38 ] Copying EDID's CEC physical address

---

CEC: Pass through between HDMI input connector and HDBaseT output connector.

The CEC physical address of the sink device that is connected to HDBaseT output connector can be copied into the EDID of the HDC-TH200 HDMI input connector.

If the CEC physical address of the connected sink device and the HDC's address are not the same, the CEC functions, such as input switching in the sink device at start-up, may not work correctly. The problem can be solved by using the CEC physical address that is copied into the HDC.

#### Setting value

- on : Copying physical address
- off : Not copy physical address [Default]

#### Notes:

- The setting will be applied only if one of 03 to 22 is selected for "8.4.2 [ F10 to F11 ] EDID resolution" and CEC supported source and sink devices are connected.
- CEC system link functions supported by other manufacturers' are not guaranteed to work correctly by this setting. Check the actual configuration.

## 8.5 Analog video timing

### 8.5.1 [ F08 ] Automatic measurement

Analog RGB/analog YPbPr input video is measured to set automatically.

The HDC-TH200 has standard video timing formats settings. Normally the HDC recognize video input signals and use pre-registered standard timing formats.

This menu is used for if the HDC cannot recognize video format or video is not recognized correctly with standard timing formats.

If composite/S-video signal is input, only "CLr" and "oFF" are available.

If there is no analog input, this menu shows "- - -".

#### Setting value

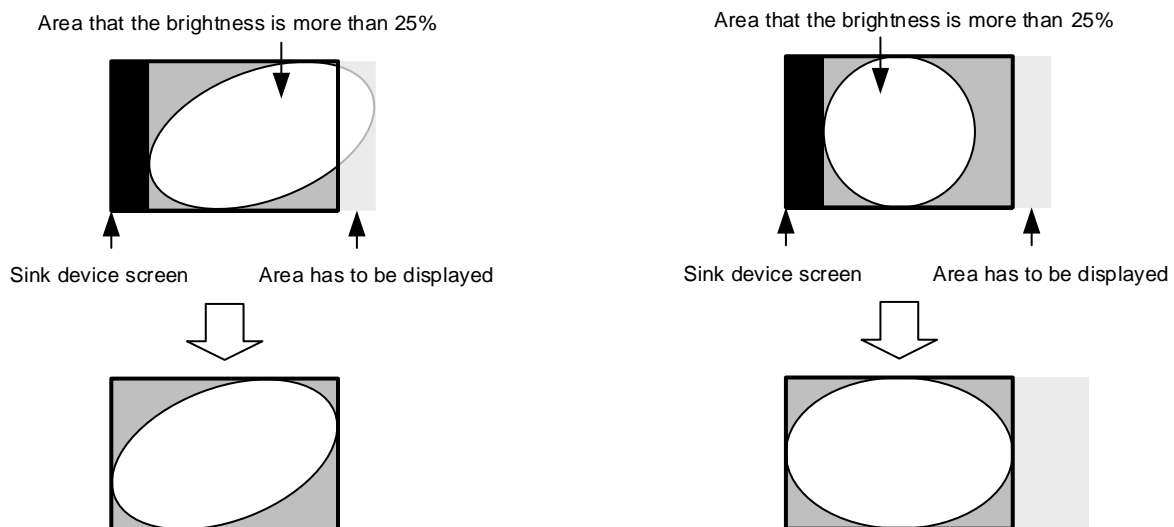
- CLr : Initializing timing format setting for current input signal
- oFF : Do not change current timing format setting [Default]
- on : Auto recognized aspect ratio (4:3, 16:9, 5:3, 5:4, or 16:10)
- 4.3 : Executing automatic measurement with 4:3 aspect ratio
- 16.9 : Executing automatic measurement with 16:9 aspect ratio
- 5.3 : Executing automatic measurement with 5:3 aspect ratio
- 5.4 : Executing automatic measurement with 5:4 aspect ratio
- 16.10 : Executing automatic measurement with 16:10 aspect ratio

#### ● Can be measured:

- Input video contacts the circumscribed rectangle.
- Brightness of input video is 25% or more.

#### ● Cannot be measured:

- Right and left sides of input video do not touch the circumscribed rectangle.
- Brightness of input video is 24% or less.



[Fig. 8.6] Condition for automatic measurement

Normal automatic measurement is executed with “on” setting.

If unknown video format is input to the unit, the aspect ratio might not match with normal automatic measurement. In this case, please select the menu which has correct aspect ratio automatic measurement setting.

The resolution horizontal direction, output dot clock will be adjusted from 25 MHz to 165 MHz. Because of this the actual resolution is going to be different from specified aspect ratio.

**[Table 8.8] Video timing which is set by automatic measurement**

Video timing which is set by automatic measurement	
8.5.3 [ F42 ] The total number of horizontal dots	8.5.9 [ F48 ] Starting position of vertical lines
8.5.4 [ F43 ] Starting position of horizontal dots	8.5.10 [ F49 ] Vertical active area
8.5.5 [ F44 ] Horizontal Active area	8.5.11 [ F50 ] Vertical start position
8.5.6 [ F45 ] Horizontal start position	8.5.12 [ F51 ] Display period of vertical lines
8.5.7 [ F46 ] Display period of horizontal dots	8.5.13 [ F52 ] Vertical sync signal width
8.5.8 [ F47 ] Horizontal sync signal width	8.5.14 [ F53 ] Tracking

The timing settings which are executed automatic measurement are registered to the HDC. If the same timing is input to the HDC next time, the HDC automatically load the registered timing setting and use it.

The timing settings are saved up to 127 settings.

#	Format	Timing settings
1	1080p 60Hz	
2	720p 50Hz	
3	480i 59.9Hz	
4	XGA 60Hz	
5	SXGA 60Hz	
⋮	⋮	
126	1080p 50Hz	
127	VGA 60Hz	

Timing settings are saved up to 127.  
If settings are loaded, the priority number will be changed.

Older timing format will be deleted when the registered timing settings are exceed 127.

**[Fig. 8.7] Timing settings**

Timing settings are saved when the setting of [ F42 ] to [ F53 ] are changed also.

## 8.5.2 [ F40 ] Automatic measurement of start position

You can set automatic adjustment for analog video input. Automatic adjustment function will adjust input signal to center automatically by monitoring analog input video signal.

### Setting value

- oFF : No automatic adjustment to current input video
- on1 : Executing automatic "adjustment mode 1" [Default]
- on2 : Executing automatic "adjustment mode 2"

Automatic adjustment is available only when analog RGB/analog YPbPr video signals are input.

If the input signal is Composite video/S-Video, only "oFF" is displayed.

If there is no analog video input, the HDC show "- - -".

This menu adjust video image by monitoring the area which the brightness is more than 25%.

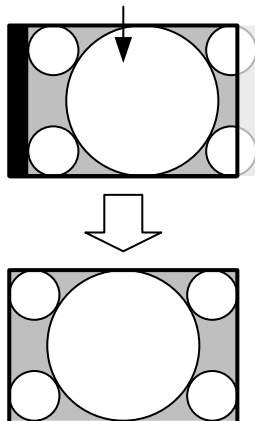
#### ● Automatic adjustment mode 1

Adjusting without changing display period.

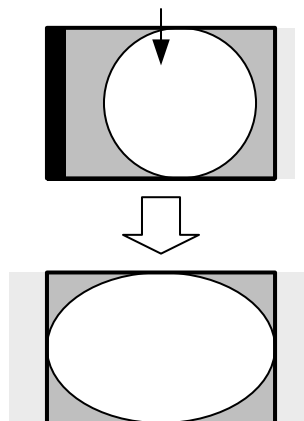
#### ● Automatic adjustment mode 2

Adjusting depending on area that the brightness is more than 25%.

Area that the brightness is more than 25%



Area that the brightness is more than 25%



[Fig. 8.8] Automatic adjustment mode

For video timing to be adjusted, see “[Table 8.9] Video timings which are adjusted by automatic adjustment mode”.

Even if video timing is adjusted automatically, the timing setting saved in the HDC is not changed.

[Table 8.9] Video timings which are adjusted by automatic adjustment mode

Settings adjusted by automatic measurement mode 1	Settings adjusted by automatic measurement mode 2
8.5.4 [ F43 ] Starting position of horizontal dots	8.5.4 [ F43 ] Starting position of horizontal dots
8.5.5 [ F44 ] Horizontal Active area	8.5.5 [ F44 ] Horizontal Active area
8.5.9 [ F48 ] Starting position of vertical lines	8.5.7 [ F46 ] Display period of horizontal dots
8.5.10 [ F49 ] Vertical active area	8.5.9 [ F48 ] Starting position of vertical lines
	8.5.10 [ F49 ] Vertical active area
	8.5.12 [ F51 ] Display period of vertical lines
8.5.14 [ F53 ] Tracking	8.5.14 [ F53 ] Tracking

**Notes:**

- Depending on contents such as movie, sometimes display position will be moved because of automatic measurement. In this case, please set automatic adjustment to “oFF”.
- This function is enabled for 25% or more brightness video and if the video content is input in almost fully in the display area.
- If you change setting from [F42] to [F53] manually, the manual settings will have priority and automatic adjustment is going to be “oFF”.



### 8.5.3 [ F42 ] The total number of horizontal dots

---

You can set the total number of horizontal dots of analog RGB/analog YPbPr input video.

#### Setting value

400 to 4125 : 400 dots to 4125 dots

Set value will be limited by sampling clock range from 13 MHz to 165 MHz.

The bottom values are different between starting position of horizontal dots and display period of horizontal dots. The bottom value is going to be “starting position of horizontal dots + display period of horizontal dots +1”.

【See: 8.5.6 [ F45 ] Horizontal start position】

【See: 8.5.7 [ F46 ] Display period of horizontal dots】

#### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- This menu is only available when analog RGB/analog YPbPr video input is input.  
If Composite and S-video are input, it shows the total number of horizontal dots and cannot change settings. If there is no analog signal, it shows “ - - ” and cannot change settings.

### 8.5.4 [ F43 ] Starting position of horizontal dots

---

You can set starting position of horizontal dots for analog video input.

#### Setting value

20 to 2900 : 20 dots to 2900 dots

Setting range is limited by starting position of horizontal dots, display period of horizontal dots, and frequency of horizontal dots.

Maximum setting value is “starting position of horizontal dots + display period of horizontal dots”

Minimum setting value is “frequency of horizontal dots + 1”.

【See: 8.5.6 [ F45 ] Horizontal start position】

【See: 8.5.7 [ F46 ] Display period of horizontal dots】

【See: 8.5.8 [ F47 ] Horizontal sync signal width】

#### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows “ - - ” and cannot change settings.

## 8.5.5 [ F44 ] Horizontal Active area

---

You can set horizontal active area.

### Setting value

20 to 2900 : 20 dots to 2900 dots

Setting range is limited by setting of display period of horizontal dots.

Maximum value is “display period of horizontal dots”.

【See: 8.5.7 [ F46 ] Display period of horizontal dots】

### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows “- - ” and cannot change settings.

## 8.5.6 [ F45 ] Horizontal start position

---

You can set horizontal display start position for analog input.

### Setting value

20 to 2900 : 20 dots to 2900 dots

Setting range is limited by total number of horizontal dots, display period of horizontal dots, and frequency of horizontal dots.

Maximum setting value is “total number of horizontal dots - display period of horizontal dots - 1”

Minimum setting value is “frequency of horizontal dots + 1”.

【See: 8.5.3 [ F42 ] The total number of horizontal dots】

【See: 8.5.7 [ F46 ] Display period of horizontal dots】

【See: 8.5.8 [ F47 ] Horizontal sync signal width】

### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows “- - ” and cannot change settings.

## 8.5.7 [ F46 ] Display period of horizontal dots

---

You can set display period of horizontal dots.

### Setting value

20 to 2900: 20 dots to 2900 dots

Setting range is limited by total number of horizontal dots and horizontal display start position.

Maximum setting value is "total number of horizontal dots - horizontal display start position - 1"

【See: 8.5.3 [ F42 ] The total number of horizontal dots】

【See: 8.5.6 [ F45 ] Horizontal start position】

### Notes:

- When you change this setting by using "+" and "-" buttons the LED blinks. During the LED is blinking, press "SET" button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows "- -" and cannot change settings.

## 8.5.8 [ F47 ] Horizontal sync signal width

---

You can set horizontal sync signal width for analog video input.

### Setting value

9 to 360 : 9 dots to 360 dots

Setting range is limited by horizontal display start position.

Maximum setting value is "horizontal display start position - 1"

【See: 8.5.6 [ F45 ] Horizontal start position】

### Notes:

- When you change this setting by using "+" and "-" buttons the LED blinks. During the LED is blinking, press "SET" button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows "- -" and cannot change settings.

## 8.5.9 [ F48 ] Starting position of vertical lines

---

You can set starting position of vertical lines for analog video input.

### Setting value

10 to 2048 : 10 lines to 2048 lines

Setting range is limited by vertical display start position, display period of vertical lines, and vertical sync signal width.

Maximum setting value is "vertical display start position + display period of vertical lines"

Minimum setting value is "vertical sync signal width +1".

【See: 8.5.11 [ F50 ] Vertical start position】

【See: 8.5.12 [ F51 ] Display period of vertical lines】

【See: 8.5.13 [ F52 ] Vertical sync signal width】

### Notes:

- When you change this setting by using "+" and "-" buttons the LED blinks. During the LED is blinking, press "SET" button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows "- -" and cannot change settings.

## 8.5.10 [ F49 ] Vertical active area

---

You can set vertical active area for analog signal.

### Setting value

10 to 2048 : 10 lines to 2048 lines

Setting range is limited by display period of vertical lines.

Maximum setting value is "display period of vertical lines"

【See: 8.5.12 [ F51 ] Display period of vertical lines】

### Notes:

- When you change this setting by using "+" and "-" buttons the LED blinks. During the LED is blinking, press "SET" button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows "- -" and cannot change settings.

## 8.5.11 [ F50 ] Vertical start position

---

You can set vertical display start position for analog video input.

### Setting value

10 to 2048 : 10 lines to 2048 lines

Setting range is limited by total number of vertical lines, display period of vertical lines, and vertical sync signal width.

Maximum setting value is “total number of vertical lines - display period of vertical lines -1”.

Minimum setting value is “vertical sync signal width +1”.

【See: 8.5.12 [ F51 ] Display period of vertical lines】

【See: 8.5.13 [ F52 ] Vertical sync signal width】

### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows “- - -” and cannot change settings.

## 8.5.12 [ F51 ] Display period of vertical lines

---

You can set display period of vertical dots for analog video input.

### Setting value

10 to 2048 : 10 lines to 2048 lines

Setting range is limited by total number of vertical lines and vertical display start position.

Maximum setting value is “total number of vertical lines – vertical display start position -1”.

【See: 8.5.11 [ F50 ] Vertical start position】

### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows “- - -” and cannot change settings.

### 8.5.13 [ F52 ] Vertical sync signal width

---

You can set vertical sync signal width for analog video input.

#### Setting value

1 to 20 : 1 line to 20 lines

Setting range is limited by vertical display start position.

Maximum setting value is “vertical display start position -1”.

【See: 8.5.11 [ F50 ] Vertical start position】

#### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- If there is no analog signal, it shows “- -” and cannot change settings.

### 8.5.14 [ F53 ] Tracking

---

You can set tracking for analog RGB/analog YPbPr video input.

Please set appropriate numbers.

#### Setting value

0 to 63 : [Default] 0

#### Notes:

- When you change this setting by using “ + ” and “ - ” buttons the LED blinks. During the LED is blinking, press “SET” button and changes are executed.  
If you do not operate more than 10 seconds during the LDE blinking, changes are not executed.
- This menu is only available when analog RGB/analog YPbPr video input is input.  
If Composite and S-video are input, it shows “0” and cannot change settings.  
If there is no analog signal, it shows “- -” and cannot change settings.

## 8.6 Output

---

### 8.6.1 [ F65 ] Audio output

---

You can set audio output ON/OFF.

#### Setting value

on : ON [Default]

oFF : OFF

### 8.6.2 [ F70 ] Deep Color output

---

You can set output color depth.

#### Setting value

08 : 8 bit

10 : 10 bit

12 : 12 bit [Default]

To output Deep Color video image, please set this menu to 10 bit or 12 bit, and connect source and sink devices which support Deep Color.

For input signals, following conditions are applied:

Digital input video:

Source device has to output Deep Color video image and setting in “**8.4.4 [ F20 ] Deep Color**” has to set to 10 bit or 12 bit.

Analog input video:

Setting in “**8.3.4 [ F64 ] Color bit for analog video input**” has to set to 10 bit or 12 bit.

【See: 8.4.4 [ F20 ] Deep Color】

【See: 8.3.4 [ F64 ] Color bit for analog video input】

## 8.7 Advanced setting

---

### 8.7.1 [ F90 ] Version

---

You can display the firmware version.

### 8.7.2 [ F99 ] Maintenance/status display menu

---

You can set the display setting of the maintenance menu and status display menu.

#### Setting value

oFF : [Default]

on : At the next start-up, settings of "oFF" will be applied.

ALL : Always displays

**[Table 8.10] Display menu**

Setting	Menu		
	Setting value	Maintenance	Status display
oFF	Displayed	Not displayed	Not displayed
on	*	*	*
ALL	Displayed	Displayed	Displayed

\* At the time of the next start-up, settings of "oFF" will be applied.



## 8.8 Checking operation (Maintenance menu)

---

You can set necessary items for operation verification.

This menu is enabled and displayed by setting [F99] to “on” or “ALL”.

To finish the operation, set the “SET” key.

【See: 8.7.2 [ F99 ] Maintenance/status display menu】

### 8.8.1 [ C01 ] Sink device EDID check

---

You can set which signal mode will be selected if EDID of the sink device cannot be acquired.

The HDC 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 HDC cannot acquire EDID for some reasons, problems such as no audio output and the like may occur.

#### Setting value

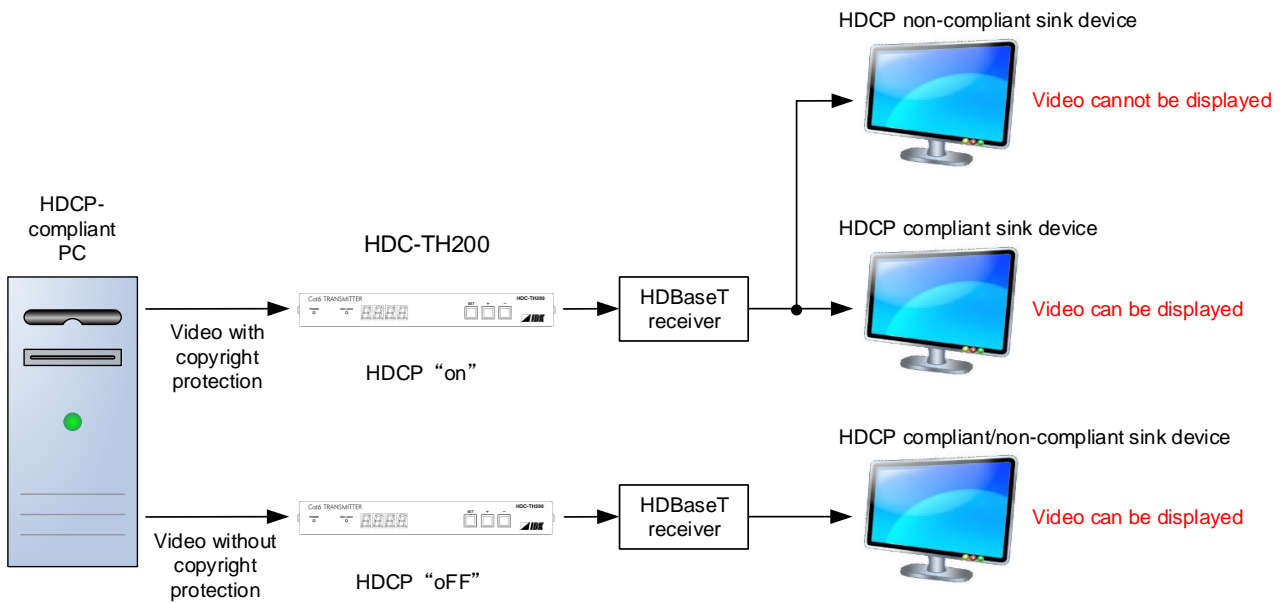
oFF : In case of EDID load error, the sink device is treated as a DVI device [Default]

Err : In case of EDID load error, the sink device is treated as a HDMI device

ALL : Always treats sink device as a HDMI device

## 8.8.2 [ C06 ] HDCP input

Some source devices negotiate with the connected device to determine if HDCP encryption is supported. After this negotiation, the source device determines whether HDCP signal encryption is enforced or not. This process takes place with some source device, even if the content being presented is not copyright protected. The HDC is HDCP compliant, if it is connected to a display device that does not support HDCP, even unprotected AV content may not be successfully displayed. Under these circumstances and if the content is indeed not protected, the problem can be solved by setting this menu to “DISABLE.”



[Fig. 8.9] HDCP-compliant and HDCP non-compliant sink device

### Setting value

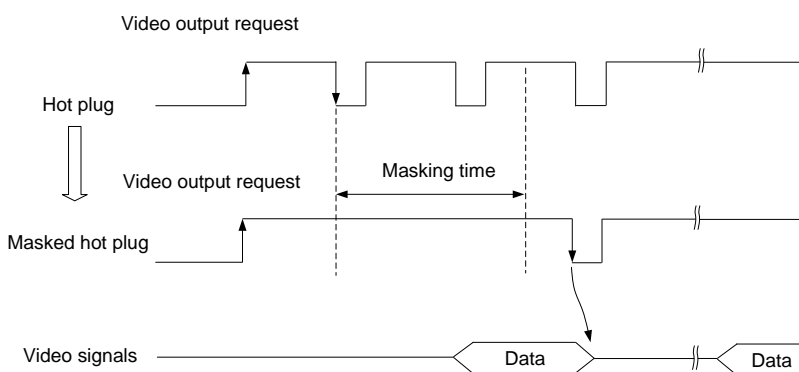
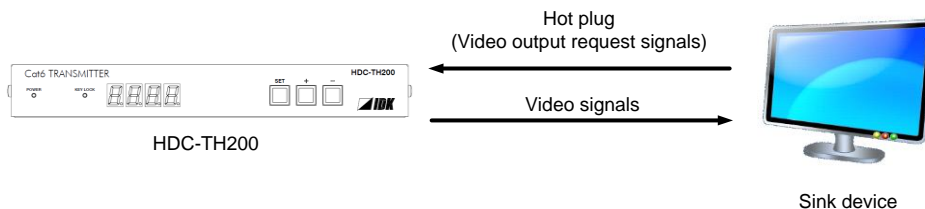
- off : Disabling HDCP
- on : Enabling HDCP [Default]

### Note:

Set this setting to “on” in order to display video with copyright protection.

### 8.8.3 [ C10 ] Hot plug ignoring duration

Time for ignoring the video output request signals sent from the sink device.  
 If the request signals are repeated in a short cycle, the HDC 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.



[Fig. 8.10] Hot plug mask

**Setting value**

- oFF : Not ignoring request signals [Default]
- 02 to 15 : 2 to 15 sec.

## 8.8.4 [ C14 ] RS-232C communication speed

---

You can set the baud rate of RS-232C communication from the HDBaseT output connector.

### Setting value

48 : 4800 [bps]  
96 : 9600 [bps]  
192 : 19200 [bps]  
384 : 38400 [bps] [Default]

【See: 7.4 Input channel remote switching】

## 8.8.5 [ C15 ] RS-232C communication data bit length

---

You can set the data bit length of RS-232C communication from the HDBaseT output connector.

### Setting value

07 : 7 [bit]  
08 : 8 [bit] [Default]

【See: 7.4 Input channel remote switching】

## 8.8.6 [ C16 ] RS-232C communication parity check

---

You can set the parity check for RS-232C communication from HDBaseT output connector.

### Setting value

non : NONE [Default]  
odd : ODD  
En : EVEN

【See: 7.4 Input channel remote switching】

## 8.8.7 [ C17 ] RS-232C communication stop bit

---

You can set the stop bit for RS-232C communication from HDBaseT output connector.

### Setting value

01 : 1 [bit] [Default]  
02 : 2 [bit]

【See: 7.4 Input channel remote switching】

## 8.8.8 [ C18 ] HDBaseT output long reach mode

---

You can enable/disable long reach mode for HDBaseT output.

With long reach mode, up to 1080p (24 bit)/dot clock 148 MHz is supported when using with IDK's HDBaseT product.

Select a supported output format.

### Setting value

- oFF : Long reach mode OFF Up to 328 ft. (100 m) [Default]
- on : Long reach mode ON Up to 492 ft. (150 m)

【See: 8.6.2 [ F70 ] Deep Color output】

## 8.8.9 [ C30 ] Ignoring duration after automatic switching

---

You can set masking time after automatic switching is executed.

This menu is available when set value in "8.2.1 [ F05 ] Priority of input channel automatic switching" is set to "00 to 02".

### Setting value

- oFF : No masking
- 0.5 to 10 : 0.5 to 10 sec. (by 0.5 sec.) [Default] 1 sec.

## 8.8.10 [ C55 ] Forced output color mode

---

You can set output color space which is output to the sink device.

The sink device automatically selects the appropriate color space according to the color space of the input video. If the sink device cannot do it for any reason, you can select the color space manually.

### Setting value

- oFF : Auto [Default]
- rgb : RGB output
- 422 : YCbCr422 output
- 444 : YCbCr444 output
- d : DVI output

## 8.9 Displaying input/output statuses (Status display menu)

Input and output statuses of the HDC can be displayed.

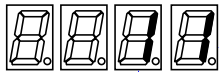
The status display menus can be operated by setting [F99] to “on” (Display) or “ALL” (Always display).

Press the “SET” key to exit the operation.

【See: 8.7.2 [ F99 ] Maintenance/status display menu】

### 8.9.1 [ L00 ] Display selected input channel

[Table 8.11] Selected input channel information

Menu number	Value to be displayed	Description
● Selected input channel information		
L00	 <p data-bbox="603 972 783 1061">                     1 : Digital video                      2 : Analog video                      — : No input                 </p>	<p data-bbox="916 972 1203 1093">                     1 : Digital audio                      2 : Analog audio                      — : No digital audio or audio cannot be output                 </p>

## 8.9.2 [ L01 to L13 ] Displaying digital input information

[Table 8.12] Digital input information

Menu number	Value to be displayed	Description
● HDMI/DVI mode and color depth of input video		
L01	H08	HDMI mode 24 bit/pixel (8 bit/component)
	H10	HDMI mode 30 bit/pixel (10 bit/component)
	H12	HDMI mode 36 bit/pixel (12 bit/component)
	d08	DVI mode 24 bit/pixel (8 bit/component)
	---	No signal is input.
● Presence of input HDCP		
L02	on	With HDCP
	oFF	Without HDCP
	---	No signal is input.
● Color space of input video		
L04	rgb	RGB
	422	YCbCr 422
	444	YCbCr 444
	---	Unknown or No signal is input.
● Input video frequency		
L05	59.9	Input vertical synchronous frequency (Example: 59.94 Hz)
	---	No signal is input.
● DDC power input state		
L06	on	DDC power is input.
	oFF	No DDC power is input.
● Input resolution		
L07	1920_1080P 60	Displaying (scroll) input resolution. (Example: 1920x1080p 60 Hz)
	---	No signal is input.

**[Table 8.13] Digital input information (Cont'd)**

Menu number	Value to be displayed	Description
<p>● Audio input type and the number of channels                      n*: 1 = 2 channels, 2 = 2.1 channels, 5 = 5.1 channels, 7 = 7.1 channels</p>		
L10	---	Unknown or No signal is input.
	00n	Unknown
	01n	PCM Audio
	02n	AC-3 Audio
	03n	MPEG-1 Audio
	04n	MP3 Audio
	05n	MPEG-2 Audio
	06n	AACLC Audio
	07n	DTS Audio
	08n	ATRAC Audio
	09n	DSD Audio
	10n	Dolby Digital Plus Audio
	11n	DTS-HD Audio
	12n	Dolby TrueHD Audio
	13n	DST Audio
	14n	WMA Audio
15n	HE-AAC/HE-AACv2/MPEG Surround Audio	
<p>● Audio input sampling frequency</p>		
L11	22	22.05 kHz
	24	24 kHz
	32	32 kHz
	44	44.1 kHz
	48	48 kHz
	88	88.2 kHz
	96	96 kHz
	176	176.4 kHz
	192	192 kHz
	768	768 kHz
	_01	Unknown
	_05	
	_07	
	_11	
	_13	
_15		
---	No signal is input.	
<p>● The number of audio input bits, HBR mode (High Bit-Rate Audio)</p>		
L12	H16	16 bit, HBR mode
	P16	16 bit, PCM mode
	:	:
	H24	24 bit, HBR mode
	P24	24 bit, PCM mode
	---	No signal is input.



**[Table 8.14] Digital input information (Cont'd)**

Menu number	Value to be displayed	Description
● Audio input		
L13	000	No audio is input.
	001	Input is being detected.
	002	
	003	
	004	
	005	
	006	
	007	Audio is input normally.
- - -	No signal is input.	

### 8.9.3 [ L20 to L22 ] Displaying analog input information

---

**[Table 8.15] Analog input information**

Menu number	Value to be displayed	Description
● Analog input signal type		
L20	00	Analog RGB
	01	Analog YPbPr
	02	Composite video
	03	S-video
	- - -	No signal is input.
● Analog input video frequency		
L21	59.9	Input vertical synchronous frequency (Example: 59.94 Hz)
	- - -	No signal is input.
● Analog input resolution		
L22	1920_1080P 60	Displaying (scroll) input resolution. (Example: 1920×1080p 60 Hz)
	- - -	No signal is input.

## 8.9.4 [ L30 to L60 ] Output information

[Table 8.16] Output information

Menu number	Value to be displayed	Description
● Deep Color		
L30	8	24 bit/pixel (8 bit/component) supported
	10	30 bit/pixel (10 bit/component) supported
	12	36 bit/pixel (12 bit/component) supported
	---	Not connected
● HDMI/DVI		
L35	HC	HDMI mode (Compressed audio supported)
	HP	HDMI mode (PCM audio supported)
	d	DVI mode (Audio is not supported)
	---	Not connected
● RGB/YCbCr		
L40	rgb	RGB supported
	422	RGB, YCbCr 422 supported
	444	RGB, YCbCr 444/422 supported
	---	Not connected
● HDCP authorization		
L45	000	None
	001	Being encrypted
	002	
	003	
	004	Encryption ends normally.
	005	Encryption ends abnormally.
● Color space (output)		
L50	rgb	RGB output
	422	YCbCr 422 output
	444	YCbCr 444 output
	---	Not connected
● HDCP		
L55	on	HDCP supported
	oFF	HDCP is not supported
	Err	Reading sink device information fails.
	---	Not connected
● Hot plug detection		
L60	on	Hot plug is detected.
	oFF	No hot plug is detected.

## 9 Command

---

### 9.1 Summary

---

A command consists of "@" ("40" in hexadecimal), 3 one-byte alphabetical characters (upper and lower cases), and parameters (one-byte numbers). For some commands, multiple parameter values can be specified or parameters are not necessary. Processing is executed by sending a delimiter at the end of the command.

Example: @SSW,1,1 ↵

"," (a comma, "2C" in hex) is indicated between a command and parameter and between two parameters. "↵" is indicated as a delimiter CR LF (return+line feed, "0D" and "0A" in hex).

#### ■ If there is an error:

An error command is returned if an undefined command or wrong parameter is included.

Example: @SSW,2 ↵  
 @ERR,1 ↵

#### ■ Using as HELP

If only delimiter is sent, command list as the help command is returned.

Example: ↵

```

----- HELP (1/4) ----- ↵
(CHANNEL SELECT Command) ↵
@GSW / @SSW : Getting/Setting Switching input channel ↵

----- HELP (2/4) ----- ↵
(Com Port Setting Command) ↵
@GCT / @SCT : Getting/Setting RS-232C communication ↵

```

## 9.2 Command list

---

### ■ Error status

Command	Function	Page
@ERR	Error status	69

### ■ Input channel selection

Command	Function	Page
@GSW / @SSW	Switching input channel	69

### ■ RS-232C communication

Command	Function	Page
@GCT / @SCT	RS-232C communication	70

### ■ Advanced setting

Command	Function	Page
@GIS	Digital input signal status	71
@GAS	Analog input signal status	75
@GOS	Sink device status	76
@GIV	Device information	77

## 9.3 Details of commands

### 9.3.1 Error status

@ERR		Error status
Description		Response in case the command is not executed
Response		@ERR, error ↵
Parameter		error: Error status 1 = Erroneous parameter format or value 2 = Undefined command or wrong format 5 = Menu is being set from the front panel.
Getting example	Command	@AAA ↵
	Response	@ERR,2 ↵
	Description	@AAA is sent. Command format error
Remarks		—

### 9.3.2 Input channel selection

@GSW / @SSW		Switching input channel
Getting	Command	@GSW ↵
	Response	@GSW, video, audio ↵
Setting	Command	@SSW, input, output ↵
	Response	@SSW, input, output ↵
Parameter		video: Video input channel audio: Audio input channel 1 = Digital input, 2 = Analog input input: Video and audio input channel 1 = Digital input, 2 = Analog input output: Output channel 1 = HDBaseT output, fixed
Getting example	Command	@GSW ↵
	Response	@GSW,2,2 ↵
	Description	Getting the video and audio input channels that are assigned to OUT Analog input
Setting example	Command	@SSW,1,1 ↵
	Response	@SSW,1,1 ↵
	Description	Setting the digital video and audio inputs to OUT
Remarks		If input channel is switched remotely, set " <b>8.2.1 [ F05 ] Priority of input channel automatic switching</b> " to "05" (Disabling).

### 9.3.3 RS-232C communication

@GCT / @SCT		RS-232C communication
Getting	Command	@GCT ↵
	Response	@GCT, ch, bps, length, parity, stop ↵
Setting	Command	@SCT, ch, bps, length, parity, stop ↵
	Response	@SCT, ch, bps, length, parity, stop ↵
Parameter		ch: RS-232C channel 1 = HDBaseT output connector, fixed
		bps: Baud rate 0 = 4800 bps, 1 = 9600 bps, 2 = 19200 bps, 3 = 38400 bps [Default]
		length: Data bit length 0 = 7 bit, 1 = 8bit [Default]
		parity: Parity check 0 = NONE [Default], 1 = ODD, 2 = EVEN
		stop: Stop bit 0 = 1 bit [Default], 1 = 2 bit
Getting example	Command	@GCT ↵
	Response	@GCT,1,3,1,0,0 ↵
	Description	Getting the RS-232C communication settings - RS-232C channel : HDBaseT output connector - Baud rate : 38400 [bps] - Data bit length : 8 [bit] - Parity check : NONE - Stop bit : 1 [bit]
Setting example	Command	@SCT,1,1,1,0,0 ↵
	Response	@SCT,1,1,1,0,0 ↵
	Description	Setting the RS-232C communication as follows: - RS-232C channel : HDBaseT output connector - Baud rate : 9600 [bps] - Data bit length : 8 [bit] - Parity check : NONE - Stop bit : 1 [bit] Completed
Remarks		RS-232C communication setting is changed, the communication may be disabled. Change the environmental settings based on the HDC settings.

### 9.3.4 Advanced setting

@GIS		Digital input signal status																								
Getting	Command	@GIS, mode ↵																								
	Response	@GIS, mode, status_1 (, status_2, status_3, status_4, status_5, status_6, status_7, status_8, status_9, status_10) ↵																								
Parameter	mode: Target status 0 = All of 1 to 10 below 1 = HDMI/DVI mode and color depth of input video 2 = Presence of HDCP 3 = Color space of input video 4 = Input video frequency 5 = DDC power input state 6 = Input resolution 7 = Audio input type and the number of channels 8 = Sampling frequency of audio input signal 9 = The number of audio input bits and HBR (High Bit-Rate Audio) mode 10 = Audio input status																									
	status_1: HDMI/DVI mode and color depth of input video  <table border="1"> <thead> <tr> <th colspan="2">HDMI/DVI mode</th> <th colspan="2">Input color depth</th> </tr> <tr> <th>Value</th> <th>Description</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDMI</td> <td>HDMI signal</td> <td>8bit</td> <td>24bit/pixel ( 8bit/component)</td> </tr> <tr> <td>DVI</td> <td>DVI signal</td> <td>10bit</td> <td>30bit/pixel (10bit/component)</td> </tr> <tr> <td>—</td> <td>No signal is input</td> <td>12bit</td> <td>36bit/pixel (12bit/component)</td> </tr> <tr> <td></td> <td></td> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>		HDMI/DVI mode		Input color depth		Value	Description	Value	Description	HDMI	HDMI signal	8bit	24bit/pixel ( 8bit/component)	DVI	DVI signal	10bit	30bit/pixel (10bit/component)	—	No signal is input	12bit	36bit/pixel (12bit/component)			—	No signal is input
	HDMI/DVI mode		Input color depth																							
	Value	Description	Value	Description																						
	HDMI	HDMI signal	8bit	24bit/pixel ( 8bit/component)																						
DVI	DVI signal	10bit	30bit/pixel (10bit/component)																							
—	No signal is input	12bit	36bit/pixel (12bit/component)																							
		—	No signal is input																							
status_2: Presence of HDCP  <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP on</td> <td>With HDCP</td> </tr> <tr> <td>HDCP off</td> <td>Without HDCP</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>		Value	Description	HDCP on	With HDCP	HDCP off	Without HDCP	—	No signal is input																	
Value	Description																									
HDCP on	With HDCP																									
HDCP off	Without HDCP																									
—	No signal is input																									
status_3: Color space of input video  <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RGB</td> <td>RGB</td> </tr> <tr> <td>YCbCr422</td> <td>YCbCr422</td> </tr> <tr> <td>YCbCr444</td> <td>YCbCr444</td> </tr> <tr> <td>—</td> <td>Unknown or No signal is input</td> </tr> </tbody> </table>		Value	Description	RGB	RGB	YCbCr422	YCbCr422	YCbCr444	YCbCr444	—	Unknown or No signal is input															
Value	Description																									
RGB	RGB																									
YCbCr422	YCbCr422																									
YCbCr444	YCbCr444																									
—	Unknown or No signal is input																									
status_4: Input video frequency  <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>59.94Hz</td> <td>Input vertical sync frequency (Example: 59.94 Hz)</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>		Value	Description	59.94Hz	Input vertical sync frequency (Example: 59.94 Hz)	—	No signal is input																			
Value	Description																									
59.94Hz	Input vertical sync frequency (Example: 59.94 Hz)																									
—	No signal is input																									

@GIS	Digital input signal status (Cont'd)																																			
Parameter	status_5: DDC power input state																																			
	<table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DDC Power on</td> <td>DDC power is input</td> </tr> <tr> <td>DDC Power off</td> <td>No DDC power is input</td> </tr> </tbody> </table>	Value	Description	DDC Power on	DDC power is input	DDC Power off	No DDC power is input																													
	Value	Description																																		
	DDC Power on	DDC power is input																																		
	DDC Power off	No DDC power is input																																		
	status_6: Input resolution																																			
	<table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1920x1080p 59.94Hz</td> <td>1080p@59.94</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>	Value	Description	1920x1080p 59.94Hz	1080p@59.94	—	No signal is input																													
	Value	Description																																		
	1920x1080p 59.94Hz	1080p@59.94																																		
	—	No signal is input																																		
status_7: Audio input type and the number of channels																																				
<p>Audio input type</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>Audio Format #00</td><td>Unknown</td></tr> <tr><td>Audio Format #01</td><td>PCM Audio</td></tr> <tr><td>Audio Format #02</td><td>AC-3 Audio</td></tr> <tr><td>Audio Format #03</td><td>MPEG-1 Audio</td></tr> <tr><td>Audio Format #04</td><td>MP3 Audio</td></tr> <tr><td>Audio Format #05</td><td>MPEG-2 Audio</td></tr> <tr><td>Audio Format #06</td><td>AACLIC Audio</td></tr> <tr><td>Audio Format #07</td><td>DTS Audio</td></tr> <tr><td>Audio Format #08</td><td>ATRAC Audio</td></tr> <tr><td>Audio Format #09</td><td>DSD Audio</td></tr> <tr><td>Audio Format #10</td><td>Dolby Digital Plus Audio</td></tr> <tr><td>Audio Format #11</td><td>DTS-HD Audio</td></tr> <tr><td>Audio Format #12</td><td>Dolby TrueHD Audio</td></tr> <tr><td>Audio Format #13</td><td>DST Audio</td></tr> <tr><td>Audio Format #14</td><td>WMA Audio</td></tr> <tr><td>Audio Format #15</td><td>HE-AAC/HE-AACv2/MPEG Surround Audio</td></tr> <tr><td>—</td><td>Unknown or No signal is input</td></tr> </tbody> </table>	Value	Description	Audio Format #00	Unknown	Audio Format #01	PCM Audio	Audio Format #02	AC-3 Audio	Audio Format #03	MPEG-1 Audio	Audio Format #04	MP3 Audio	Audio Format #05	MPEG-2 Audio	Audio Format #06	AACLIC Audio	Audio Format #07	DTS Audio	Audio Format #08	ATRAC Audio	Audio Format #09	DSD Audio	Audio Format #10	Dolby Digital Plus Audio	Audio Format #11	DTS-HD Audio	Audio Format #12	Dolby TrueHD Audio	Audio Format #13	DST Audio	Audio Format #14	WMA Audio	Audio Format #15	HE-AAC/HE-AACv2/MPEG Surround Audio	—	Unknown or No signal is input
Value	Description																																			
Audio Format #00	Unknown																																			
Audio Format #01	PCM Audio																																			
Audio Format #02	AC-3 Audio																																			
Audio Format #03	MPEG-1 Audio																																			
Audio Format #04	MP3 Audio																																			
Audio Format #05	MPEG-2 Audio																																			
Audio Format #06	AACLIC Audio																																			
Audio Format #07	DTS Audio																																			
Audio Format #08	ATRAC Audio																																			
Audio Format #09	DSD Audio																																			
Audio Format #10	Dolby Digital Plus Audio																																			
Audio Format #11	DTS-HD Audio																																			
Audio Format #12	Dolby TrueHD Audio																																			
Audio Format #13	DST Audio																																			
Audio Format #14	WMA Audio																																			
Audio Format #15	HE-AAC/HE-AACv2/MPEG Surround Audio																																			
—	Unknown or No signal is input																																			
<p>The number of channels</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>2ch</td><td>LR</td></tr> <tr><td>2.1ch</td><td>2.1 channel surround sound</td></tr> <tr><td>5.1ch</td><td>5.1 channel surround sound</td></tr> <tr><td>7.1ch</td><td>7.1 channel surround sound</td></tr> <tr><td>—</td><td>No signal is input</td></tr> </tbody> </table>	Value	Description	2ch	LR	2.1ch	2.1 channel surround sound	5.1ch	5.1 channel surround sound	7.1ch	7.1 channel surround sound	—	No signal is input																								
Value	Description																																			
2ch	LR																																			
2.1ch	2.1 channel surround sound																																			
5.1ch	5.1 channel surround sound																																			
7.1ch	7.1 channel surround sound																																			
—	No signal is input																																			









@GIS	Digital input signal status (Cont'd)																								
Parameter	status_8: Sampling frequency of audio input signal <table border="1" data-bbox="509 309 1398 795"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>22.05kHz</td> <td>22.05kHz</td> </tr> <tr> <td>24kHz</td> <td>24kHz</td> </tr> <tr> <td>32kHz</td> <td>32kHz</td> </tr> <tr> <td>44.1kHz</td> <td>44.1kHz</td> </tr> <tr> <td>48kHz</td> <td>48kHz</td> </tr> <tr> <td>88.2kHz</td> <td>88.2kHz</td> </tr> <tr> <td>96kHz</td> <td>96kHz</td> </tr> <tr> <td>176.4kHz</td> <td>176.4kHz</td> </tr> <tr> <td>192kHz</td> <td>192kHz</td> </tr> <tr> <td>768kHz</td> <td>768kHz</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>	Value	Description	22.05kHz	22.05kHz	24kHz	24kHz	32kHz	32kHz	44.1kHz	44.1kHz	48kHz	48kHz	88.2kHz	88.2kHz	96kHz	96kHz	176.4kHz	176.4kHz	192kHz	192kHz	768kHz	768kHz	—	No signal is input
	Value	Description																							
22.05kHz	22.05kHz																								
24kHz	24kHz																								
32kHz	32kHz																								
44.1kHz	44.1kHz																								
48kHz	48kHz																								
88.2kHz	88.2kHz																								
96kHz	96kHz																								
176.4kHz	176.4kHz																								
192kHz	192kHz																								
768kHz	768kHz																								
—	No signal is input																								
status_9: The number of audio input bits and HBR (High Bit-Rate Audio) mode <table border="1" data-bbox="509 907 1398 1191"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PCM 16bit</td> <td>16bit, PCM mode</td> </tr> <tr> <td>HBR 16bit</td> <td>16bit, HBR mode</td> </tr> <tr> <td>:</td> <td>:</td> </tr> <tr> <td>PCM 24bit</td> <td>24bit, PCM mode</td> </tr> <tr> <td>HBR 24bit</td> <td>24bit, HBR mode</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>	Value	Description	PCM 16bit	16bit, PCM mode	HBR 16bit	16bit, HBR mode	:	:	PCM 24bit	24bit, PCM mode	HBR 24bit	24bit, HBR mode	—	No signal is input											
Value	Description																								
PCM 16bit	16bit, PCM mode																								
HBR 16bit	16bit, HBR mode																								
:	:																								
PCM 24bit	24bit, PCM mode																								
HBR 24bit	24bit, HBR mode																								
—	No signal is input																								

@GIS		Digital input signal status (Cont'd)												
Parameter		status_10: Audio input status  <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Audio Status #0</td> <td>No audio is input</td> </tr> <tr> <td>Audio Status #1</td> <td rowspan="3">Input is being detected</td> </tr> <tr> <td>:</td> </tr> <tr> <td>Audio Status #6</td> </tr> <tr> <td>Audio Status #7</td> <td>Audio is input normally</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>	Value	Description	Audio Status #0	No audio is input	Audio Status #1	Input is being detected	:	Audio Status #6	Audio Status #7	Audio is input normally	—	No signal is input
Value	Description													
Audio Status #0	No audio is input													
Audio Status #1	Input is being detected													
:														
Audio Status #6														
Audio Status #7	Audio is input normally													
—	No signal is input													
Getting example	Command Response	@GIS,0 ↵ @GIS,0,HDMI 8bit,HDCP on,YCbCr444,59.94Hz,DDC Power on,1920x1080p 59.94Hz, Audio Format #01 2ch,44.1kHz,PCM 20bit,Audio Status #7 ↵												
	Description	Getting all statuses of digital input signal - HDMI/DVI mode and color depth of input video : HDMI signal, 24 bit/pixel (8 bit/component) - Presence of HDCP : with HDCP - Color space of input video : YCbCr444 signal - Input video frequency : 59.94Hz - DDC power input state : DDC power is input - Input resolution : 1080p@59.94 - Audio input type and the number of channels : PCM Audio, LR - Sampling frequency of audio input signal : 44.1kHz - The number of audio input bits and HBR mode : 20bit, PCM mode - Audio input status : Audio is input normally												
Remarks		—												

@GAS		Analog input signal status												
Getting	Command	@GAS, mode [↵]												
	Response	@GAS, mode, status_1 (, status_2, status_3) [↵]												
Parameter	mode: Target status 0 = All of 1 to 3 below 1 = Analog input signal type 2 = Analog input video frequency 3 = Analog input resolution													
	status_1: Analog input signal type <table border="1" data-bbox="509 600 1398 846"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RGB</td> <td>Analog RGB</td> </tr> <tr> <td>YPbPr</td> <td>Analog YPbPr</td> </tr> <tr> <td>CVBS</td> <td>Composite video</td> </tr> <tr> <td>YC</td> <td>S-video</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>		Value	Description	RGB	Analog RGB	YPbPr	Analog YPbPr	CVBS	Composite video	YC	S-video	—	No signal is input
	Value	Description												
	RGB	Analog RGB												
YPbPr	Analog YPbPr													
CVBS	Composite video													
YC	S-video													
—	No signal is input													
status_2: Analog input video frequency <table border="1" data-bbox="509 943 1398 1106"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>59.94Hz</td> <td>Input vertical sync frequency (Example: 59.94 Hz)</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>		Value	Description	59.94Hz	Input vertical sync frequency (Example: 59.94 Hz)	—	No signal is input							
Value	Description													
59.94Hz	Input vertical sync frequency (Example: 59.94 Hz)													
—	No signal is input													
status_3: Analog input resolution <table border="1" data-bbox="509 1209 1398 1335"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1920x1080p 59.94Hz</td> <td>1080p@59.94</td> </tr> <tr> <td>—</td> <td>No signal is input</td> </tr> </tbody> </table>		Value	Description	1920x1080p 59.94Hz	1080p@59.94	—	No signal is input							
Value	Description													
1920x1080p 59.94Hz	1080p@59.94													
—	No signal is input													
Getting example	Command	@GAS,0 [↵]												
	Response	@GAS,0,YPbPr,59.94Hz,1920x1080i 59.94Hz [↵]												
	Description	Getting all statuses of analog input signal - Analog input signal type : Analog YPbPr - Analog input video frequency : 59.94 Hz - Analog input resolution : 1080i@59.93												
Remarks	—													

@GOS		Sink device status												
Getting	Command	@GOS, mode ↵												
	Response	@GOS, mode, status_1 (, status_2, status_3, status_4, status_5, status_6, status_7) ↵												
Parameter		<p>mode: Target status</p> <p>0 = All of 1 to 7 below      1 = Deep Color</p> <p>2 = HDMI/DVI                      3 = RGB/YCbCr</p> <p>4 = HDCP status                  5 = Color space</p> <p>6 = HDCP                              7 = Hot plug detection</p>												
		<p>status_1: Deep Color</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>8bit</td> <td>24bit/pixel (8bit/component) supported</td> </tr> <tr> <td>10bit</td> <td>30bit/pixel (10bit/component) supported</td> </tr> <tr> <td>12bit</td> <td>36bit/pixel (12bit/component) supported</td> </tr> <tr> <td>—</td> <td>Not connected</td> </tr> </tbody> </table>	Value	Description	8bit	24bit/pixel (8bit/component) supported	10bit	30bit/pixel (10bit/component) supported	12bit	36bit/pixel (12bit/component) supported	—	Not connected		
Value	Description													
8bit	24bit/pixel (8bit/component) supported													
10bit	30bit/pixel (10bit/component) supported													
12bit	36bit/pixel (12bit/component) supported													
—	Not connected													
		<p>status_2: HDMI/DVI</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDMI Audio Compression supported</td> <td>HDMI mode (Compressed audio supported)</td> </tr> <tr> <td>HDMI PCM</td> <td>HDMI mode (PCM audio supported)</td> </tr> <tr> <td>DVI</td> <td>DVI mode (Audio is not supported)</td> </tr> <tr> <td>—</td> <td>Not connected</td> </tr> </tbody> </table>	Value	Description	HDMI Audio Compression supported	HDMI mode (Compressed audio supported)	HDMI PCM	HDMI mode (PCM audio supported)	DVI	DVI mode (Audio is not supported)	—	Not connected		
Value	Description													
HDMI Audio Compression supported	HDMI mode (Compressed audio supported)													
HDMI PCM	HDMI mode (PCM audio supported)													
DVI	DVI mode (Audio is not supported)													
—	Not connected													
		<p>status_3: RGB/YCbCr</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RGB</td> <td>RGB supported</td> </tr> <tr> <td>YCbCr422</td> <td>RGB, YCbCr422 supported</td> </tr> <tr> <td>YCbCr444</td> <td>RGB, YCbCr444/422 supported</td> </tr> <tr> <td>—</td> <td>Not connected</td> </tr> </tbody> </table>	Value	Description	RGB	RGB supported	YCbCr422	RGB, YCbCr422 supported	YCbCr444	RGB, YCbCr444/422 supported	—	Not connected		
Value	Description													
RGB	RGB supported													
YCbCr422	RGB, YCbCr422 supported													
YCbCr444	RGB, YCbCr444/422 supported													
—	Not connected													
		<p>status_4: HDCP status</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP Status #0</td> <td>None</td> </tr> <tr> <td>HDCP Status #1</td> <td rowspan="3">Being encrypted</td> </tr> <tr> <td>HDCP Status #2</td> </tr> <tr> <td>HDCP Status #3</td> </tr> <tr> <td>HDCP Status #4</td> <td>Encryption ends normally.</td> </tr> <tr> <td>HDCP Status #5</td> <td>Encryption ends abnormally.</td> </tr> </tbody> </table>	Value	Description	HDCP Status #0	None	HDCP Status #1	Being encrypted	HDCP Status #2	HDCP Status #3	HDCP Status #4	Encryption ends normally.	HDCP Status #5	Encryption ends abnormally.
Value	Description													
HDCP Status #0	None													
HDCP Status #1	Being encrypted													
HDCP Status #2														
HDCP Status #3														
HDCP Status #4	Encryption ends normally.													
HDCP Status #5	Encryption ends abnormally.													

<b>@GOS</b>		<b>Sink device status (Cont'd)</b>										
Parameter	status_5: Color space											
	<table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RGB</td> <td>RGB output</td> </tr> <tr> <td>YCbCr422</td> <td>YCbCr422 output</td> </tr> <tr> <td>YCbCr444</td> <td>YCbCr444 output</td> </tr> <tr> <td>—</td> <td>Not connected</td> </tr> </tbody> </table>		Value	Description	RGB	RGB output	YCbCr422	YCbCr422 output	YCbCr444	YCbCr444 output	—	Not connected
	Value	Description										
RGB	RGB output											
YCbCr422	YCbCr422 output											
YCbCr444	YCbCr444 output											
—	Not connected											
status_6: HDCP												
<table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP supported</td> <td>HDCP supported</td> </tr> <tr> <td>HDCP not supported</td> <td>HDCP is not supported</td> </tr> <tr> <td>Err</td> <td>Reading sink device information fails.</td> </tr> <tr> <td>—</td> <td>Not connected</td> </tr> </tbody> </table>		Value	Description	HDCP supported	HDCP supported	HDCP not supported	HDCP is not supported	Err	Reading sink device information fails.	—	Not connected	
Value	Description											
HDCP supported	HDCP supported											
HDCP not supported	HDCP is not supported											
Err	Reading sink device information fails.											
—	Not connected											
status_7: Hot plug detection												
<table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HPD on</td> <td>Hot plug is detected.</td> </tr> <tr> <td>HPD off</td> <td>No hot plug is detected.</td> </tr> </tbody> </table>		Value	Description	HPD on	Hot plug is detected.	HPD off	No hot plug is detected.					
Value	Description											
HPD on	Hot plug is detected.											
HPD off	No hot plug is detected.											
Getting example	Command	@GOS,0 										
	Response	@GOS,0,12bit,HDMI Audio Compression supported,YCbCr444,HDCP Status #4,RGB,HDCP supported,HPD on 										
	Description	Getting all statuses of sink device - Deep Color : 36bit/pixel (12bit/component) supported - HDMI/DVI : HDMI mode (Compressed audio supported) - RGB/YCbCr : RGB, YCbCr444/422 supported - HDCP status : Encryption ends normally. - Color space : RGB output - HDCP : HDCP supported - Hot plug detection : Hot plug is detected.										
Remarks		—										

<b>@GIV</b>		<b>Device information</b>
Getting	Command	@GIV 
	Response	@GIV, id, ver 
Parameter		id : Model number ver : Firmware version
Getting example	Command	@GIV 
	Response	@GIV,HDC-TH200,1.00 
	Description	Getting the product information Model number: HDC-TH200; Firmware version: 1.00
Remarks		—

# 10 Specification

## 10.1 Product specification

Item		Description
Input	Video	HDMI/DVI 1 input HDMI Deep Color (*1)/DVI 1.0 TMDS single link, HDCP 1.4 (*2) TMDS clock: 25 MHz to 225 MHz Built-in cable EQ, EDID emulation, CEC (Pass-through) Connector: Female HDMI Type A (19-pin)
		Analog 1 input Composite video/Y/C/Analog RGB/Analog YPbPr (Auto-recognition) Composite video : 1.0 V[p-p]/75 Ω Y/C : 1.0 V[p-p] (Y)/0.286 V[p-p] (C)/75 Ω Analog RGB : 0.7 V[p-p]/75 Ω, HS/VS TTL level Analog YPbPr : 1.0 V[p-p] (Y)/0.7 V[p-p] (Pb/Pr)/75 Ω EDID emulation Connector: Female high-density D-sub (15-pin)
		Format Analog : NTSC/PAL Analog/HDMI : VGA to QWXGA (Dot clock: 25 MHz to 165 MHz) For WUXGA/QWXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p
	Audio	Digital 1 input Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit Reference level: -20 dBFS, Max. input level: 0 dBFS Connector: Female HDMI Type A (19-pin)
		Analog 1 input Unbalanced Stereo LR Input impedance: 24 kΩ, Reference level: -10 dBu, Max. input level: +10 dBu Connector: Stereo mini jack (3.5 mm)
Output	Video HDBaseT 1 output HDBaseT RS-232C, LAN, CEC (Pass-through) Connector: RJ-45 (*3) Cable: CAT.5E HDC, Cat5e UTP/STP, Cat6 UTP/STP (*4)	
	Audio Digital 1 output Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit Reference level: -20 dBFS, Max. output level: 0 dBFS Connector: RJ-45	
Maximum transmission distances	Digital input	98 ft. (30 m) (*5)
	Digital output	328 ft. (100 m), 492 ft. (150 m) (Long reach mode is used) (*6)
Function	Analog video processing	3D Y/C separation
	Others	Input channel automatic switching, Last memory, Anti-snow (*7), Connection Reset (*8), Button security lockout
Control	LAN	1 port/RJ-45 10Base-T/100Base-TX (Auto Negotiation), Auto MDI/MDI-X
General	AC adapter	Input : 100 - 240 VAC ±10%, 50 Hz/60 Hz ±3 Hz Output : DC 12 V 3 A 36.0 W (A dedicated AC adapter is provided)
	Power consumption	About 11 W
	Dimensions	8.3 (W) × 1.1 (H) × 5.9 (D)" (210 (W) × 27.5 (H) × 150 (D) mm) (Half rack wide, thin type) (Excluding connectors and the like)
	Weight	2 lbs. (0.9 kg)
	Temperature	Operating : 32°F to 104°F (0°C to +40°C) Storage : -4°F to +176°F (-20°C to +80°C)
	Humidity	Operating/Storage: 20% to 90% (Non Condensing)

\*1 30 bit/pixel (10 bit/component) and 36 bit/pixel (12 bit/component) Deep Color are supported while x.v.Color, 3D, ARC and HEC are not supported.

\*2 HDCP-compliant DVI signals are not supported. To transmit these signals, use our extender which supports DVI signals or MSD-402.

\*3 RJ-45 (HDBaseT output connector) is only for extending digital video and audio signals over a Cat5e/Cat6 cable. Do not use for LAN devices.

\*4 T568A or T568B straight. The CAT.5E HDC cable is developed by IDK and recommended by HDBaseT alliance.

\*5 The maximum cable distance varies depending on the connected devices and was measured under following conditions:

· 1080p@60: When IDK's 24 AWG cable was used and signals of 1080p@60 24 bit/pixel (8 bit/component) was input or output.

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 disturbed or may not be output even if signals are within the range mentioned above.

\*6 The maximum transmission 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 disturbed 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 transmission distance is the shorter distance of connected HDBaseT product or sink device's maximum transmission distance.

Up to 492 ft. (150 m): 1080p (24 bit) in Long reach mode. For Long reach mode, use IDK's HDBaseT Products that supports 328 ft. (100 m) or longer.

\*7 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.

\*8 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 HDC's output. If other devices are connected between the HDC's output and sink device, this feature may be invalid.

## 11 Troubleshooting

This chapter provides recommendations in case difficulties are encountered during HDC setup and operation.

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

- Are the HDC and all devices connected to power and indicating “powered on”?
- Are signal cables connected correctly?
- Are there any loose or partially mated connections?
- Are the interconnecting cables specified correctly to support adequate bandwidth?
- Are specifications of connected devices matched to each other?
- Are configuration settings for the connected devices correct?
- Is there any nearby equipment that may cause electrical noise/RF interference?

If the problem persists, review the following section for guidelines and recommendations. Refer to the manuals of connected devices as well, since they may possibly be the cause of the problem.

Problem	Cause/Check item/Solution	Page
• Video output		
Digital input video is not being output.	[1] When digital input video is not output, check the source device status. See “ <b>8.9.2 [ L01 to L13 ] Displaying digital input information</b> ” <ul style="list-style-type: none"> <li>• <b>[L06] DDC power status</b> is “oFF” (no DDC power input) Please check if the source device is turned on.</li> <li>• <b>[L07] Input resolution</b> is “- -” (no input) Please check the output status of the source device</li> <li>• If you can see resolution and frequency of the input signal, please confirm that those resolution and frequency are supported by connected sink device.</li> </ul>	63
	[2] Please check if the input signal has HDCP or not. <ul style="list-style-type: none"> <li>• <b>[L02] HDCP status</b> is “on” (HDCP), please check the connected sink device supports HDCP or not. Please check <b>[L55] HDCP status: sink device</b> Some source devices output HDCP signal always depending on connected device. The HDC supports HDCP. If you connect the sink device which does not support HDCP, you cannot get video image. In this case, please see “<b>8.8.2 [ C06 ] HDCP input</b>” and disable HDCP input.</li> </ul>	63 66
	[3] Please try to change “ <b>8.3.1 [ F16 ] No-signal input monitoring</b> ” If the setting is less than output timing from source device, you may not be able to get video image. In this case, please set the value to longer time.	34
	[4] Please try to change “ <b>8.3.2 [ F17 ] Digital input equalizer</b> ”.	35

Problem	Cause/Check item/Solution	Page
Analog input video is not being output.	<p>[5] When analog input video is not output, please check input signal status. See <b>“8.9.3 [ L20 to L22 ] Displaying analog input information”</b></p> <ul style="list-style-type: none"> <li>▪ <b>[L20] Analog input signal type</b> is “- - -” (no input) Please check connection between the unit and source.</li> <li>▪ <b>[L22] Analog input resolution</b> is “- - -” (no input) Please check output status of source device.</li> <li>▪ If you can see resolution and frequency of the input signal, please confirm that those resolution and frequency are supported by connected sink device.</li> </ul>	65
	<p>[6] Please try to change <b>“8.3.3 [ F07 ] Analog input signal type”</b> Normally, if you set to “Auto”, the input signal is automatically recognized. However, depending on the signal condition, the HDC may not be able to recognize input signal. In this case please set signal type manually.</p>	35
Video is not being output.	<p>[7] Please check a sink device status. See <b>“8.9.4 [ L30 to L60 ] Output information”</b>.</p> <ul style="list-style-type: none"> <li>▪ <b>[L60] Hot plug detection</b> is “oFF” (no hot plug) Please check sink device if the unit is turned on.</li> </ul>	66
	<p>[8] Is resolution set to the supported resolution in <b>“8.4.2 [ F10 to F11 ] EDID resolution”</b>.</p> <ul style="list-style-type: none"> <li>▪ Factory default setting is 1080p.</li> <li>▪ If you set EDID resolution to 1080i, there is possibility that the sink device does not support interlace signal.</li> <li>▪ Monitor for PC may not support resolutions for TV. On the other hand, TV may not support resolutions for PC (VGA to QWXGA).</li> </ul>	37
	<p>[9] Please try to change <b>“8.8.3 [ C10 ] Hot plug ignoring duration”</b>.</p>	59



Problem	Cause/Check item/Solution	Page
Video is disappeared, interrupted, or has noise.	If using a long cable for input or output, replace it with a 16 ft. (5 m) or shorter cable. Since the HDC has the equalizing function, long cables can be connected, but the HDC may not provide its full performance depending on the cable quality and the connected device. If the problem is solved by replacing the cable, signal might have been degraded due to the long haul transmission. We have high-quality cables, cable boosters and extenders. Please contact us as needed. In case of HDBaseT input, category cable might be having external noise. Please check category cable.	—
	When high-speed signal (high resolution: such as UXGA, WUXGA, 1080p; DEEP COLOR signal) are input or output, video may not be displayed or noise may appear depending on the cable quality and the connected device. For digital video input, you can limit color depth in <b>"8.4.4 [ F20 ] Deep Color"</b> . For analog video input, you can limit color depth in <b>"8.3.4 [ F64 ] Color bit for analog video input"</b> . For Video output, you can limit color depth in <b>"8.6.2 [ F70 ] Deep Color output"</b> .	39 35 55
	Video image may be interrupted by external noise from peripheral equipment. In this case, please put away the unit which may output noise from the HDC, or turn off/on the HDC without video image. If the problem still cannot be solved, shorten the length of the twisted pair cable.	19
Video is interrupted, or has noise.	If the symptom happens only on digital video input, please check setting of equalizer.	35
Video is interrupted.	If interlace signal is input to a sink device that does not support interlace signal, the video may blink. Check the output resolution of the sink device.	—
Video from analog input is displayed in black-and-white or green.	Please try to change <b>"8.3.3 [ F07 ] Analog input signal type"</b> .	35
VHS reproduction or fast-forward is choppy when analog composite video or analog S-Video is input.	Please set to "Auto video", "Composite" or "S-Video" <b>"8.3.3 [ F07 ] Analog input signal type"</b> .	35

Problem	Cause/Check item/Solution	Page
Part of video is cut off or black is displayed at edge(s).	For analog input, set the automatic measurement of input timing in <b>"8.5.1 [ F08 ] Automatic measurement"</b> . If there is problem still, please set by manually, using menu <b>[F42]</b> to <b>[F52]</b> .	45 49 to 54
Analog input video signal aspect is not correct.	There may be unknown input signal is input. The HDC cannot recognize the input signal correctly. In this case please execute automatic measurement by specifying aspect ratio.	45
Black is displayed at top, bottom, right and left on PC video or only part of the PC video is displayed, and the rest can be revealed by scrolling with the mouse.	Does the resolution setting for the PC (You can check it in <b>"Properties"</b> of the PC) and the resolution output from the PC match? If not, set the EDID and PC resolution. You can confirm output signal from PC in <b>[L07] Input resolution</b> . If the signal is analog; you can confirm the resolution in <b>[L22] Analog input resolution</b> . If the copy of the built-in LCD monitor in the laptop is output, the resolution of the LCD monitor is applied for outputting the video to the external monitor, and black bars may appear at edges. The problem can be solved by enlarging the display or displaying only to the external monitor.	63 65 37
PC's dual monitor cannot be set or the setting is canceled.	If the monitoring function for no-signal input works, the dual monitor function may not operate correctly. In this case, turn the monitoring function "OFF" in <b>"8.3.1 [ F16 ] No-signal input monitoring"</b> .	34
Video from a PC of analog input is displayed with bright-and- dark vertical stripes.	Set <b>"8.5.3 [ F42 ] The total number of horizontal dots"</b> . If you change the total number of horizontal dots, you may sometimes have to set <b>[F43]</b> to <b>[F52]</b> menus also.	49
Light shadows appear on fine lines of video from an analog input PC.	Please try to change <b>"8.5.14 [ F53 ] Tracking"</b> .	54
Fluctuation appears on the analog input video.	Please try to change <b>"8.5.14 [ F53 ] Tracking"</b> .	54
Automatic measurement of input timing fails.	In order to enable this menu, the input video must have 25% or more brightness and its edges (all sides) need to be in contact with the circumscribed rectangle in the effective display area.	45
Display position of analog input video changes on its own.	If the function that automatically adjusts the display position (upper left of the screen) works by automatic measurement, the video may move on its own. In this case, disable the adjusting position function.	47
● Audio output		
Audio is not being output.	Please confirm the setting in <b>"8.6.1 [ F65 ] Audio output"</b> .	55

Problem	Cause/Check item/Solution	Page
Digital input audio is not being output.	Is the video image output normally? If there is no video please confirm [1],[2],[3],[4],[7],[8], and [9]	—
	Is DVI signal output from the source device? You can check the input signal type in <b>[L01] HDMI / DVI mode and color depth of input video</b> . Also there is the case DVI signals is output by EDID setting.	63 37
	Is audio format being used supported by the connected sink device or AV amplifier input? LCD monitors, especially, may not output 88.2 kHz or more sampling frequency of linear PCM and compressed audio (such as Dolby Digital, DTS, and so on). Audio signal output from the source device can be controlled by setting EDID.	64 37
	Make sure that the resolution that can be output from the sink device or AV amplifier is selected. If a PC output resolution (VGA to QWXGA) is selected, some sink devices and AV amplifiers cannot output audio.	63
	Make sure that the sampling frequency is supported by the sink device or AV amplifier. Some LCD monitors may not output audio whose sampling frequency is high (88.2 kHz or higher).	64
Compressed audio (such as Dolby Digital, DTS) is not output from the source device.	Compressed audio input is set to OFF (EDID settings) by factory default. If using compressed audio, change the EDID setting.	40 to 42
	In order to output multi-channel compressed audio, configure the HDC's EDID profile to define the correct number of speakers.	43
	Check the audio output settings of the source device.	—
Multi-channel audio is not output.	In order to output multi-channel audio, configure the HDC's EDID profile to define the correct number of speakers.	43
● Key operation		
Keys do not operate	Make sure that keys are not locked.	25
● Communication command		
Control commands cannot be issued from PC to the HDC.	Are baud rate and data bit length set correctly?	26
		60
● Others		
Devices cannot be controlled through CEC.	Are HDMI cables that support CEC being used?	—
	To use CEC, enable the HDMI link control of the connected devices (such as LCD TVs, Blu-ray recorder, and other formats).	—

If additional assistance is required, please perform the following tests and then contact us.

No.	Checking items	Result
1	The problem occurs at all connectors?	Yes or No
2	Connect the devices using genuine cables without connecting the HDC. The problem still cannot be solved? Please contact us for assistance.	Yes or No

## User Guide/Command Guide of HDC-TH200

Ver.1.7.0

Issued on: 8 August 2023

---



### Headquarters

IDK Corporation  
7-9-1 Chuo, Yamato-shi, Kanagawa-pref.  
242-0021 JAPAN  
TEL: +81-46-200-0764 FAX: +81-46-200-0765

Email: [idk\\_eng@idk.co.jp](mailto:idk_eng@idk.co.jp)

URL: [www.idkav.com](http://www.idkav.com)

### USA

IDK America Inc.  
72 Grays Bridge Road Suite 1-C, Brookfield, CT 06804  
TEL: +1-203-204-2445

Email: [sales@idkav.com](mailto:sales@idkav.com)

URL: [www.idkav.com](http://www.idkav.com)

### Europe

IDK Europe GmbH  
Lise-Meitner-Str. 6, D-40878 Ratingen  
TEL: +49-2102-578-301-0

Email: [info@idkav.eu](mailto:info@idkav.eu)

URL: [www.idkav.com](http://www.idkav.com)



### Product information Support

Arvanics Corporation  
7-9-1 Chuo, Yamato-shi, Kanagawa-pref.  
242-0021 JAPAN  
TEL: +81-46-259-6920 FAX: +81-46-259-6930

Email: [info@arvanics.com](mailto:info@arvanics.com)

URL: [www.arvanics.com](http://www.arvanics.com)

Information in this document is subject to change without notice.

©2017 IDK Corporation, all rights reserved. All trademarks mentioned are the property of their respective owners.