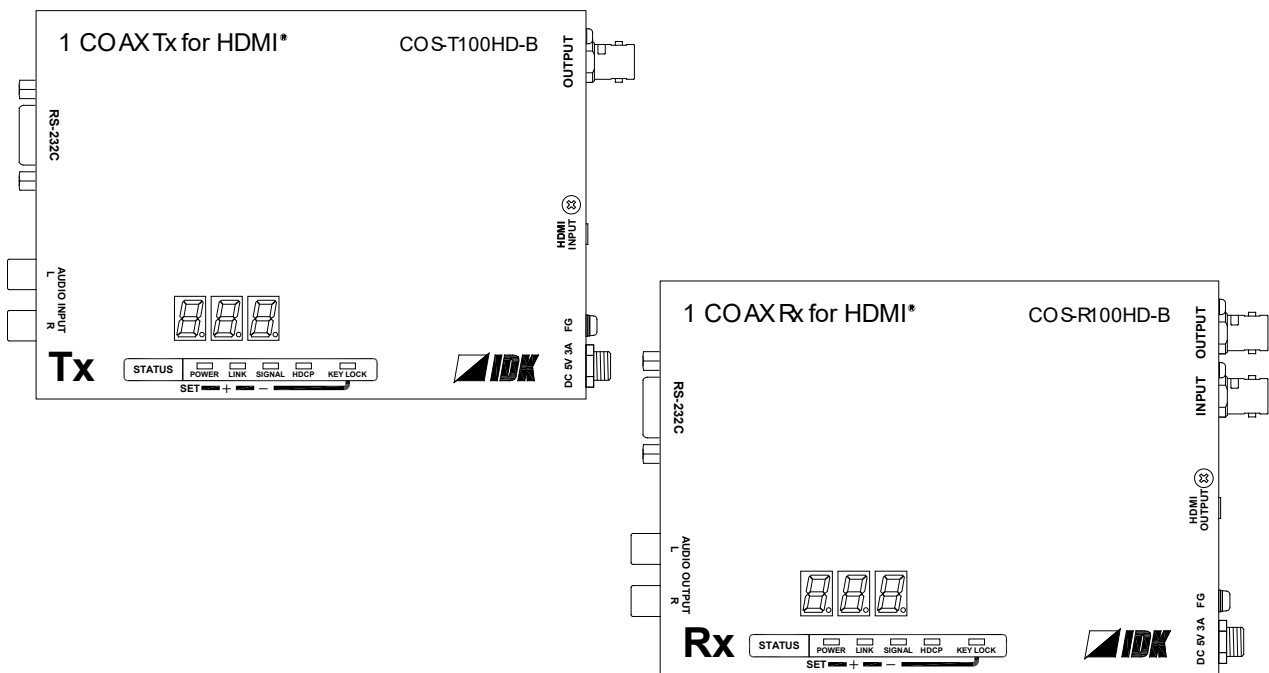


HDMI Coaxial Cable Extender

COS-100HD-B

User Guide

Ver.1.6.0



- 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

- Blu-ray Disc and Blu-ray are trademarks of Blu-ray Disc Association.
- 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.
- Connection Reset is a registered trademark of IDK Corporation in Japan.
- All other company and product names mentioned in this manual are either registered trademarks or trademarks of their respective owners. In this manual, the “®” or “™” marks may not be specified.

Before reading this manual

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

The reference manual consists of the following two volumes:

- User guide (this document):
Provides explanations and procedures for operations, installation, connections among devices, I/O adjustment and settings.
- Command guide: Please download the command guide from the website above.
Provides explanations and procedures for external control using RS-232C and LAN communications.

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

CE MARKING

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

WEEE MARKING











Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC
(This directive is only valid in the EU.)

This equipment complies with the WEEE Directive (2002/96/EC) marking requirement.
The left marking indicates that you must not discard this electrical/electronic equipment in domestic household waste.

Safety Instructions


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

Enforcement Symbol	Description
 Warning	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.
 Caution	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)	 Electrical Hazard
 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"> ● Lifting must be done by two or more personnel. <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"> ● Do not place the product upon a surface that may give way or that may become unstable. <p>Install the product in a secure and stable place to prevent it from falling and possibly causing injury.</p> <ul style="list-style-type: none"> ● Secure the product if installing in locations prone to vibration or movement. <p>Otherwise, it may move unexpectedly or it may fall and lead to injury.</p>
 Instruction	<ul style="list-style-type: none"> ● Installation work must be performed by professionals. <p>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.</p> <ul style="list-style-type: none"> ● Insert the power plug into an outlet that is unobstructed. <p>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.</p> <ul style="list-style-type: none"> ● Insert the power plug into an appropriate outlet completely. <p>If the plug is partially inserted, arcing may cause the connection to overheat, increasing the risk of electrical shock or fire. Do not use a damaged plug or connect to a damaged outlet.</p> <ul style="list-style-type: none"> ● Unplug the product from the AC power source during installation or service. <p>When connecting peripheral devices to this product, unplug all involved devices from outlets. Ground potential differences may cause fire or other difficulties.</p>

■ For operating products:

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

Warning




■ **If the following problem occurs:**



- **Unplug immediately if the product smokes, makes unusual noise, or produces a burning odor.**
If you continue to use the product under these conditions, it may cause electric shock or fire.
- **Unplug immediately if the product is damaged by falling or having been dropped.**
If you continue to use the product under these conditions, it may increase the risk of electrical shock or fire. For maintenance and repair, contact your IDK representative.
- **Unplug immediately if water or other objects are directed inside.**
If you continue to use the product under these conditions, it may increase the risk of electrical shock or fire. For maintenance and repair, contact your IDK representative.

Caution

■ For installing and connecting products:

 Prohibited	<ul style="list-style-type: none"> ● Do not place the product in a location where it will be subjected to high temperatures. If the product is subjected to direct sunlight or high temperatures while under operation, it may affect the product's performance and reliability and may increase the risk of fire. ● Do not store or operate the product in dusty, oil smoke filled, or humid place. If the product is placed near humidifiers or in a dusty area, it may increase the risk of fire or electric shock. ● Do not block the vent holes. If ventilation slots are blocked, it may cause the product to overheat, affecting performance and reliability and may increase the risk of fire. ● Do not place or stack heavy items on the product. Failure to observe this precaution may result in damage to the product and other property and may lead to the risk of personal injury. ● Do not exceed ratings of outlet and wiring devices. Exceeding the rating of an outlet may increase the risk of fire and electric shock.
 No wet hands	<ul style="list-style-type: none"> ● Do not handle power plug with wet hands. Failure to observe this precaution may increase the risk of electrical shock.
 Instruction	<ul style="list-style-type: none"> ● Use and store the product within the specified temperature/humidity range. If the product is used outside the specified range for temperature and humidity continuously, it may increase the risk of fire or electric shock. ● Do not place the product at elevations of 1.24 mi. (2,000 m) or higher above sea level. Failure to do so may shorten the life of the internal parts and result in malfunctions. ● When mounting the product into the rack, provide sufficient cooling space. Mount the product in a rack meeting EIA standards, and maintain spaces above and below for air circulation. For your safety as required, attach an L-shaped bracket in addition to the panel mount bracket kit to improve mechanical stability. ● Never insert screws without the rubber feet into the threaded holes on the bottom of the product. Never insert screws without the rubber feet into the threaded holes on the bottom of the product. Doing so may lead to damage when the screws contact electrical circuitry or components inside the product. Reinstall the originally supplied rubber feet using only the originally supplied screws.

■ For operating products:




 Prohibited	<ul style="list-style-type: none"> ● Use only the supplied power cable and AC adapter. ● Do not use the supplied power cable and AC adapter with other products. If non-compliant adapter or power cables are used, it may increase the risk of fire or electrical shock.
 Unplug	<ul style="list-style-type: none"> ● If the product won't be used for an extended period of time, unplug it. Failure to observe this precaution may increase the risk of fire. ● Unplug the product before cleaning. To prevent electric shock.
 Instruction	<ul style="list-style-type: none"> ● If cooling fan stops, power off the product and contact us. Failure to do so may rise internal temperature and increase the risk of malfunction, fire, or electric shock. ● Clean the vent holes regularly. If the vent holes of the cooling fan is covered in dust, internal temperature rises and it may increase the risk of malfunction, fire, or electric shock.

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1 Included Items

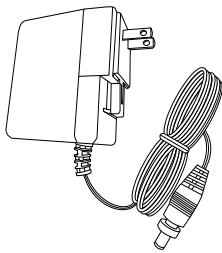
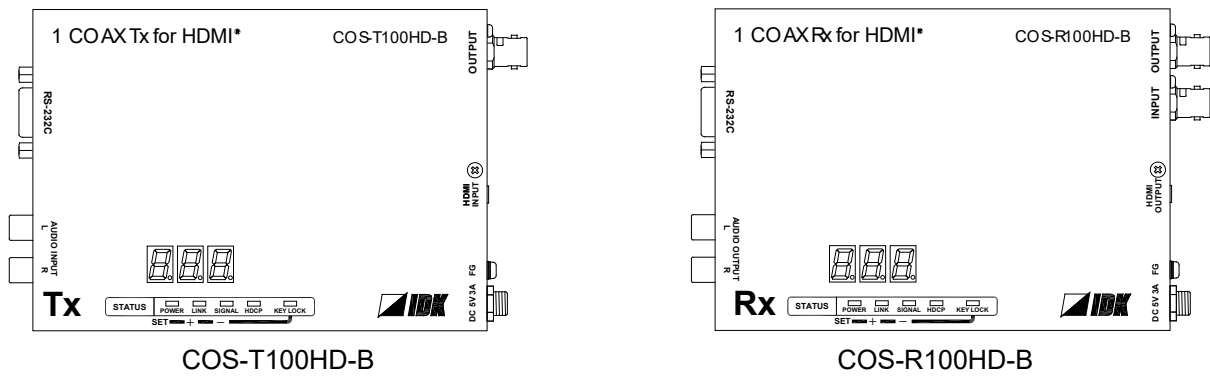
Ensure that all items illustrated below are included in the package.
If any items are missing or damaged, please contact IDK.

■ Transmitter

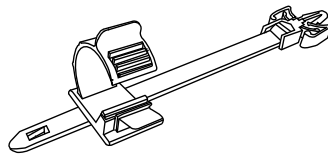
- COS-T100HD-B (main unit) x1
- AC adapter with screw locking mechanism (5.9 ft. (1.8 m)) x1
- Cable clamp x1
- Rubber feet x4

■ Receiver

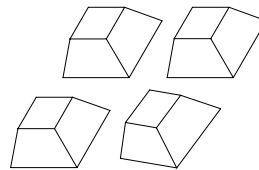
- COS-R100HD-B (main unit) x1
- AC adapter with screw locking mechanism (5.9 ft. (1.8 m)) x1
- Cable clamp x1
- Rubber feet x4



AC adapter with screw locking mechanism (5.9 ft. (1.8 m))



Cable clamp



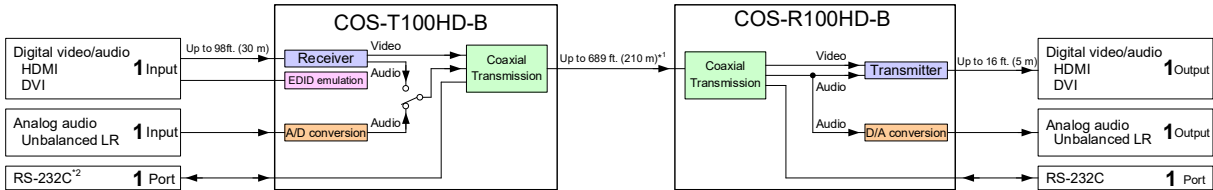
Rubber feet

[Fig. 1.1] Included items

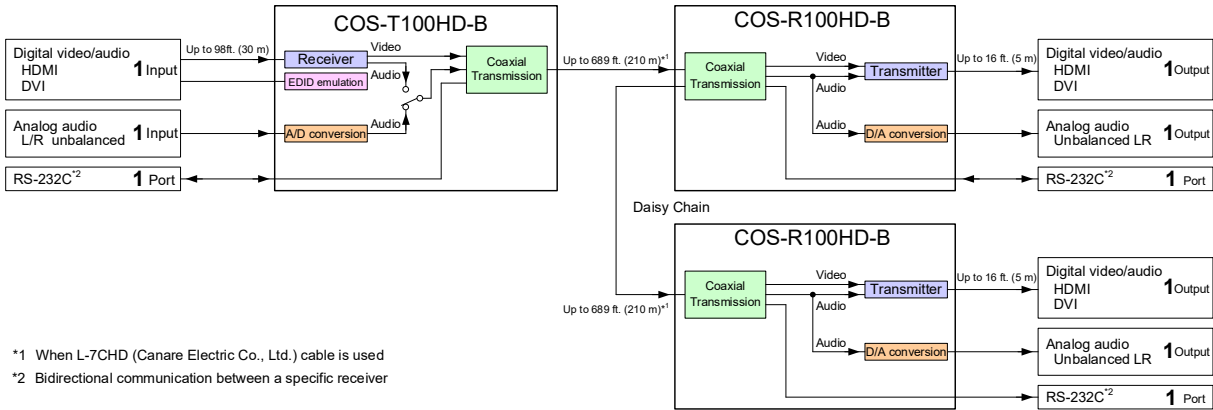
2 Product Outline

The COS-100HD-B is a transmitter and receiver set that enables HDMI signals to be transmitted over a coaxial cable. It also supports Daisy Chain and RS-232C bidirectional communication.

■ One receiver is used



■ Daisy chain connection



*1 When L-7CHD (Canare Electric Co., Ltd.) cable is used
*2 Bidirectional communication between a specific receiver

[Fig. 2.1] COS-100HD-B Diagram

Note:

The COS-T100HD (Transmitter) and COS-R100HD (Receiver) have to be used together. IDK's own format is employed for digital signal for extension between the transmitter and receiver. Any device cannot be connected between the COS-T100HD and COS-R100HD.

3 Features

■ Video

- Up to 1080p/QWXGA (Reduced Blanking)
- HDCP 1.4
- Up to 558 ft. (170 m) over 7731A (BELDEN RG-11) cable
- Up to 361 ft. (110 m) over 1694A (BELDEN RG-6) cable
- Up to 328 ft. (100 m) over 1505A (BELDEN RG-59) cable
- Transmitter HDMI input: Up to 98 ft. (30 m)
- Daisy chain connection
- Anti-snow

■ Audio

- Embedding/De-embedding

■ Communication

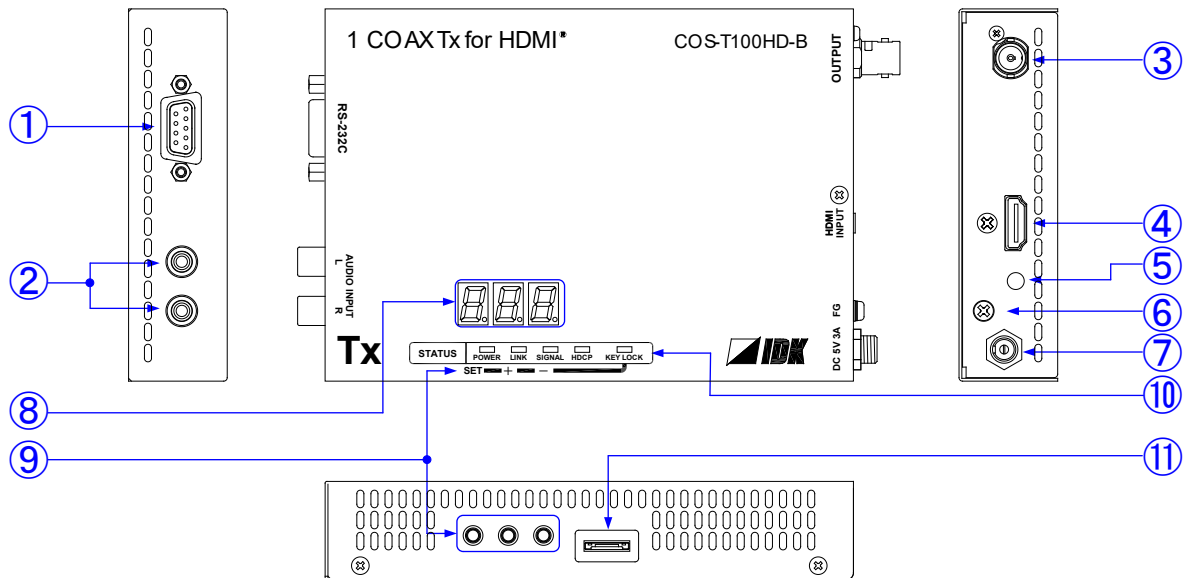
- Bidirectional RS-232C
- Sending to all receivers in Daisy chain connection
- Bidirectional communication with a specified receiver

■ Others

- EDID emulation
- Connection Reset
- Built-in test pattern/tone output
- Displaying I/O signal status (7-segment/OSD)
- HDMI and serial signals can be extended over 1 coaxial cable
- AC adapter with locking mechanism

4 Panels

4.1 Transmitter



[Fig. 4.1] Panel drawings

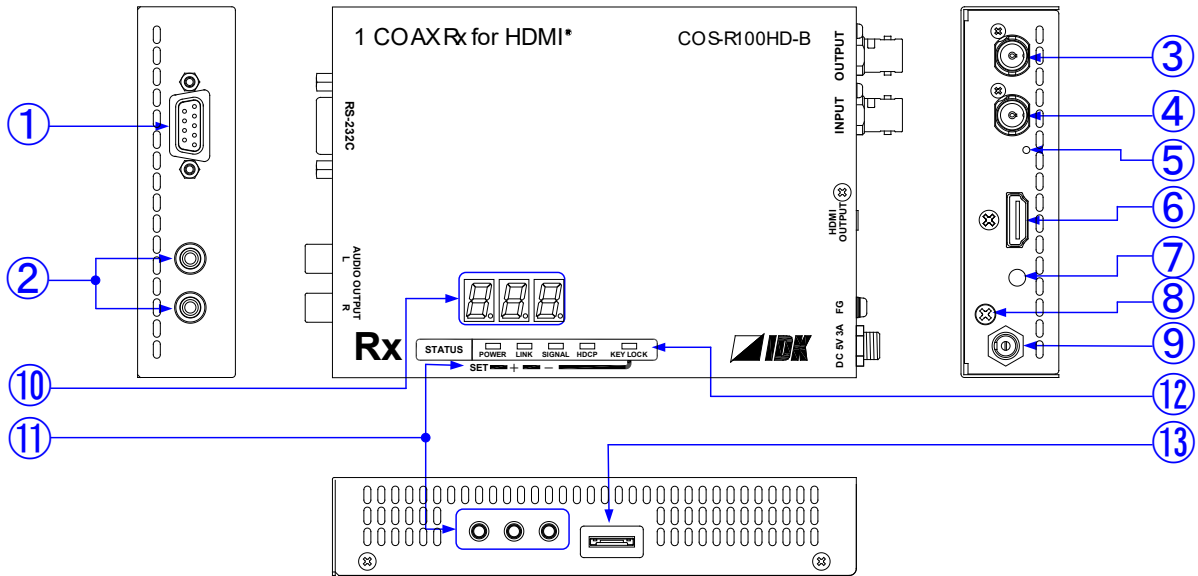
[Table 4.1] Panel features

#	Feature	Description
①	RS-232C connector	Connector for RS-232C signal. Connected to a control device (e.g. PC).
②	Audio input connectors	Input connector for analog audio input.
③	Output connector for extension	Output connector for digital signals for extension. Connected to the receiver using a coaxial cable.
④	HDMI input connector	Input connector for HDMI signals. Connected to a source device (e.g. Blu-ray player).
⑤	HDMI cable fixing hole	Retains HDMI cables by inserting cable clamps.
⑥	Frame ground	Use for bonding chassis to local ground. An M3 screw is used.
⑦	Power connector	Connector for the included AC adapter.
⑧	7-segment display	Displays menu items and setting status.
⑨	Menu operation buttons	Sets I/O settings of the transmitter and locks menu operation buttons <ul style="list-style-type: none"> Use "SET", "+", and "-" buttons to set I/O settings of the transmitter. Press and hold the "SET" button in order to lock those buttons.

[Table 4.2] Panel features (cont'd)

#	Feature	Description
⑩	Status LEDs	<ul style="list-style-type: none"> • POWER <ul style="list-style-type: none"> Illuminates green : Power is supplied. Does not illuminate : Power is not supplied. • LINK <ul style="list-style-type: none"> Illuminates green : Connected to the COS-R100HD and signal is recognized. Does not illuminate : Not connected to the COS-R100HD or connected to a device other than the COS-R100HD. • SIGNAL <ul style="list-style-type: none"> Illuminates green : Vertical synchronous signal is input from the HDMI input connector. Does not illuminate : Vertical synchronous signal is not input from the HDMI input connector. • HDCP <ul style="list-style-type: none"> Illuminates green : The input signal is with HDCP. Does not illuminate : The input signal is not with HDCP. • KEY LOCK <ul style="list-style-type: none"> Illuminates green : Buttons are locked. Flashes green : Buttons are being locked (being set). Does not illuminate : Buttons are not locked.
⑪	Connector for maintenance	Do not use this connector.

4.2 Receiver



[Fig. 4.2] Panel drawings

[Table 4.3] Panel features

#	Feature	Description
①	RS-232C connector	Connector for RS-232C signal. Connected to a control device (e.g. PC).
②	Audio output connectors	De-embeds HDMI input audio to analog audio. Connected to amplifiers, speakers or mixers.
③	Output connector for extension	Output connector for digital signal for extension. Connected to the next receiver over a coaxial cable in Daisy Chain connection.
④	Input connector for extension	Input connector for digital signal for extension. Connected to the transmitter over a coaxial cable. Connected to the previous receiver in Daisy Chain connection.
⑤	LED for detecting abnormality in transmission	Lights in green when valid code is transmitted (Tx) or received (Rx). Illuminates green : Connected to a receiver over a coaxial cable and recognizes signal. Flashes green : Problems occurs in signal. Flashes green : Signal cannot be recognized. For extension distance, see “[Table 5.1] Maximum extension distance”.
⑥	HDMI output connector	Output connector for HDMI signals. Connected to a sink device (e.g. LC monitors).
⑦	HDMI cable fixing hole	Retains HDMI cables by inserting cable clamps.
⑧	Frame ground	Use for bonding chassis to local ground. An M3 screw is used.
⑨	Power connector	Connector for the included AC adapter.
⑩	7-segment display	Displays menu items and setting status.

[Table 4.4] Panel features (cont'd)

#	Feature	Description
⑪	Menu operation buttons	<p>Sets I/O settings of the transmitter and locks menu operation buttons</p> <ul style="list-style-type: none"> • Use “SET”, “+”, and “-” buttons to set I/O settings of the transmitter. • Press and hold the “SET” button in order to lock those buttons.
⑫	Status LEDs	<ul style="list-style-type: none"> • POWER <ul style="list-style-type: none"> Illuminates green : Power is supplied. Does not illuminate : Power is not supplied. • LINK <ul style="list-style-type: none"> Illuminates green : Connected to the COS-T100HD and signal is recognized. Does not illuminate : Not connected to the COS-T100HD or connected to a device other than the COS-T100HD. • SIGNAL <ul style="list-style-type: none"> Illuminates green : Vertical synchronous signal is input from the transmitter. Does not illuminate : Vertical synchronous signal is not input from the transmitter. • HDCP <ul style="list-style-type: none"> Illuminates green : HDCP authentication completed. Does not illuminate : The input signal is not with HDCP./ The sink device does not support HDCP./ HDCP authentication failed. • KEY LOCK <ul style="list-style-type: none"> Illuminates green : Buttons are locked. Flashes green : Setting is being changed. Does not illuminate : Buttons are not locked.
⑬	Connector for maintenance	Do not use this connector.

5 Precautions

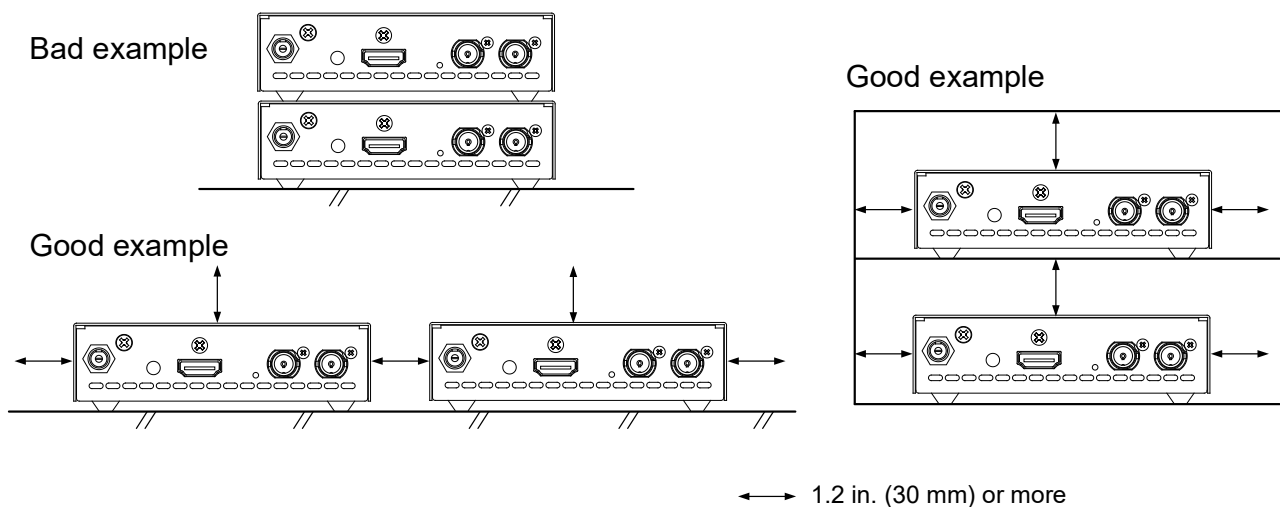
5.1 Attaching Rubber feet

First, clean the bottom surface of the COS-100HD-B as needed, and then peel the release papers from the rubber feet and place them in each of the four corners.

5.2 Installation

When installing the COS-100HD, please observe the following precautions.

- Do not stack or place the COS-100HD directly on top of another COS-100HD
- Do not block vent holes. To provide adequate ventilation, maintain sufficient clearances around the COS-100HD (1.2 in. (30 mm) or more)
- When the COS-100HD needs to be mounted in an enclosed space or an EIA rack without using IDK's rack mounting hardware (RM-SF, RM-SH), 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.



[Fig. 5.1] Minimum required clearances (when an EIA rack-mount unit is not used)

5.2.1 Installing on wall or ceiling

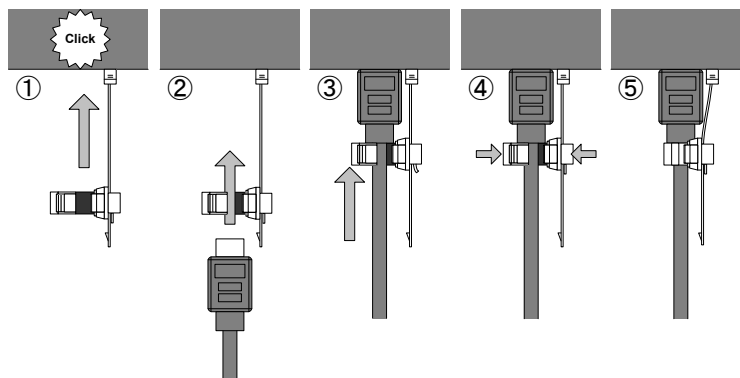
You can install the COS-100HD on a wall or ceiling using the optional mounting plate (FP-100).

5.3 Cabling

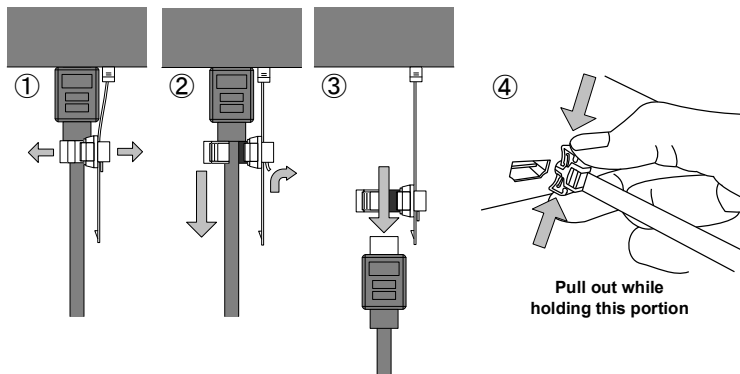
When connecting the COS-100HD to external devices, please observe the following precautions.

- Read manuals for the external devices.
- Before connecting cables to the COS-100HD 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. Secure HDMI cables using cable clamps to prevent connectors from being accidentally pulled out of ports.

Fixing HDMI cable using cable clamp



Removing HDMI cable and cable clamp



[Fig. 5.2] Attaching and removing cable clamp

5.3.1 Cables

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

5.3.2 Coaxial cable

Use appropriate coaxial cables.

[Table 5.1] Maximum extension distance

Cable type	Maximum extension distance
L-3C2V	131 ft. (40 m)
L-3CFB	262 ft. (80 m)
L-5C2V	197 ft. (60 m)
L-5CFB	361 ft. (110 m)
L-7CFB	492 ft. (150 m)
L-7CHD	689 ft. (210 m)

Notes:

Those distances were obtained under tests using Canare's cable. If you use other manufactures' cable or a cable joint (JJ), the distances above are not guaranteed.

If Canare's L-5CFB and BCJ-J (cable joint) are used together, up to 5 JJs can be used. The total extension distance may be shortened if a JJ has a problem or impedance mismatch.

The extension distance may be shortened or the number of JJs may be reduced depending on characteristics of source devices and source devices. The cable length needs to be long enough to avoid those problems.

5.3.3 RS-232C cable

- RS-232C signal (up to 38400 bps) can be transmitted bi-directionally.
- Select cross cables or straight cable depending on devices to be connected.

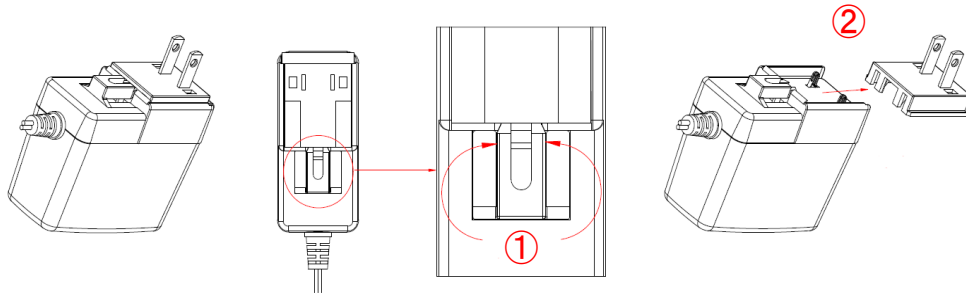
【See:8.1.2 RS-232C connector】

5.3.4 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:

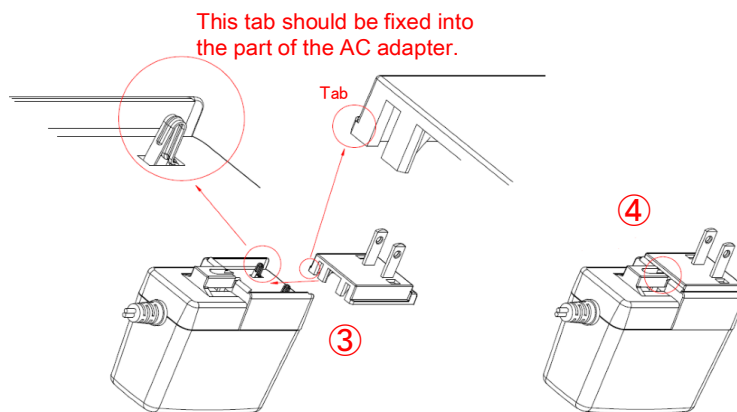
Slide the AC plug (②) from the AC adapter while holding down the portion mentioned below (①)



[Fig. 5.3] Removing AC plug (Example: Plug type A)

Attaching AC plug:

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

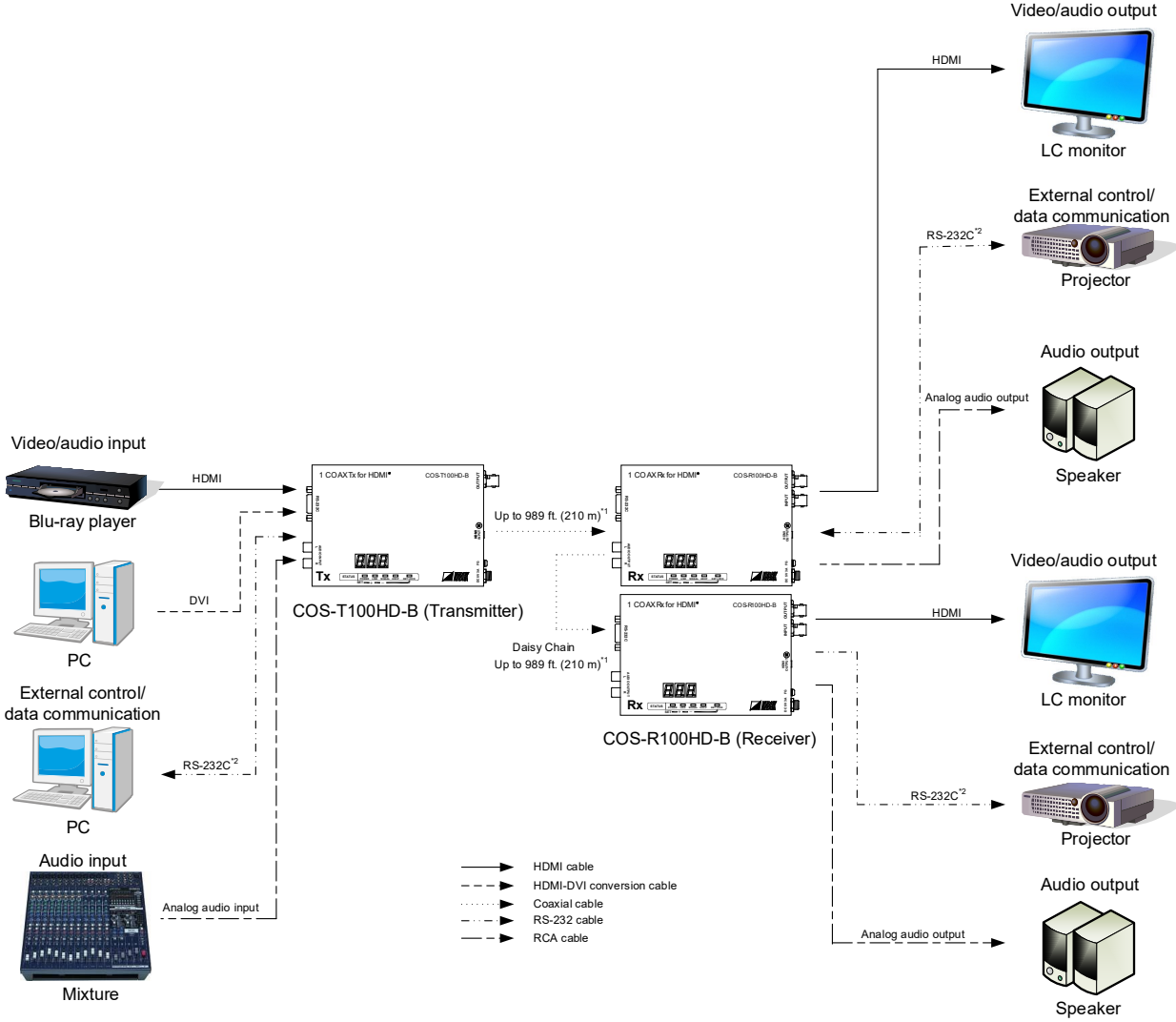


[Fig. 5.4] Attaching AC plug (Example: Plug type A)

5.4 Application example

Digital video and audio are transmitted from the Blu-ray disc player to the transmitter. The transmitter sends those signals to the receiver over a coaxial cable, and it also converts digital audio signals to analog and outputs them to the amplifier. The receiver outputs the received video and audio signals to the projector from the HDMI output connector.

A control device (e.g. PC) can control peripheral devices (e.g. projector) and data communication between transmitter and receiver by RS-232C.

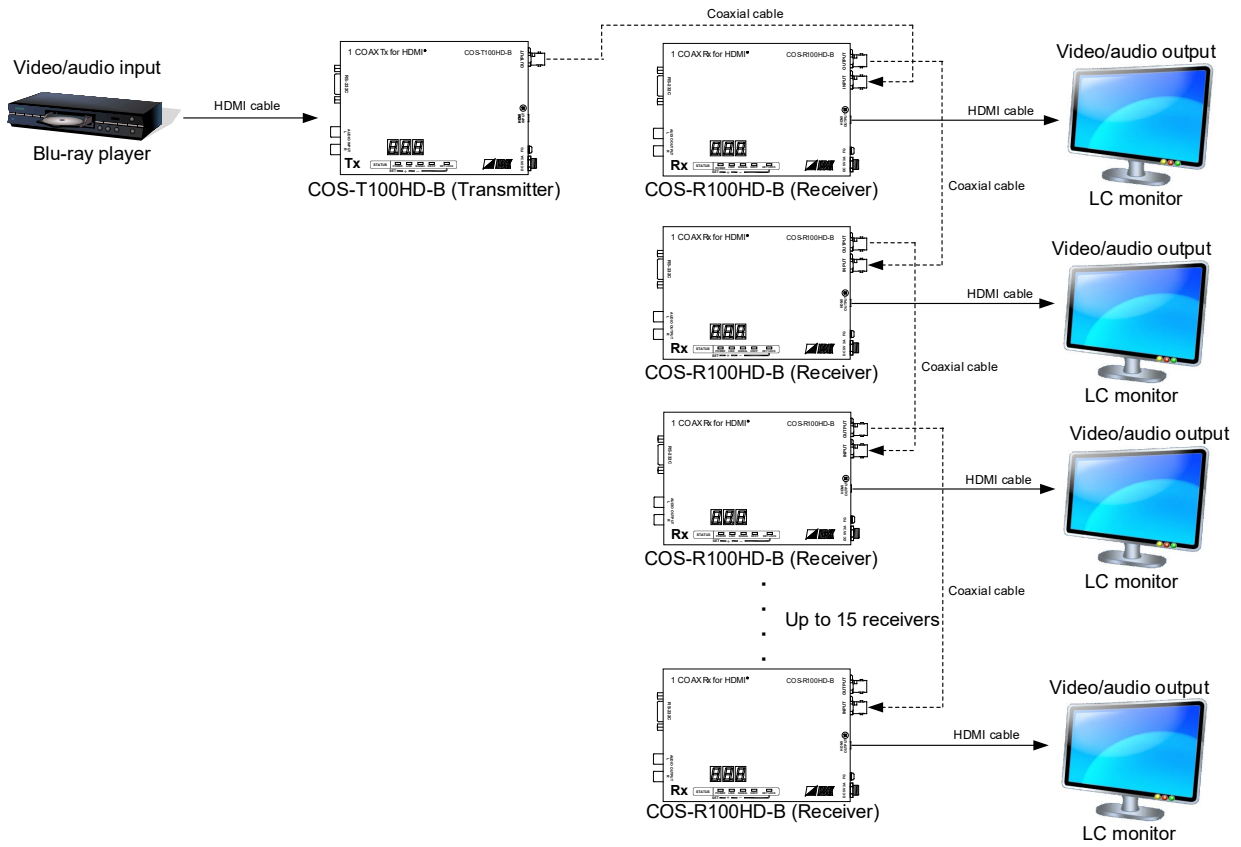


^{*1} If Canare's L-7CHD is used.
^{*2} Bidirectional communication with a specific receiver

[Fig. 5.5] Application example

5.5 Daisy Chain connection

Up to 15 receivers can be connected to 1 transmitter.
 Connect coaxial cables correctly as shown below.



[Fig. 5.6] Daisy Chain connection

If connecting a receiver over RS-232C, set an ID to the receiver. For details of RS-232C communication, refer to the Command Guide.

【See:7.6.12 [C18] RS-232C communication: Receiver ID】

Note:

Canare's L-5CFB, 361 ft. (110 m) was used in the test. The cable length needs to be long enough to avoid problems.

6 Basic Operation

6.1 Menu operation buttons

Setting input and output using the menu operation buttons.

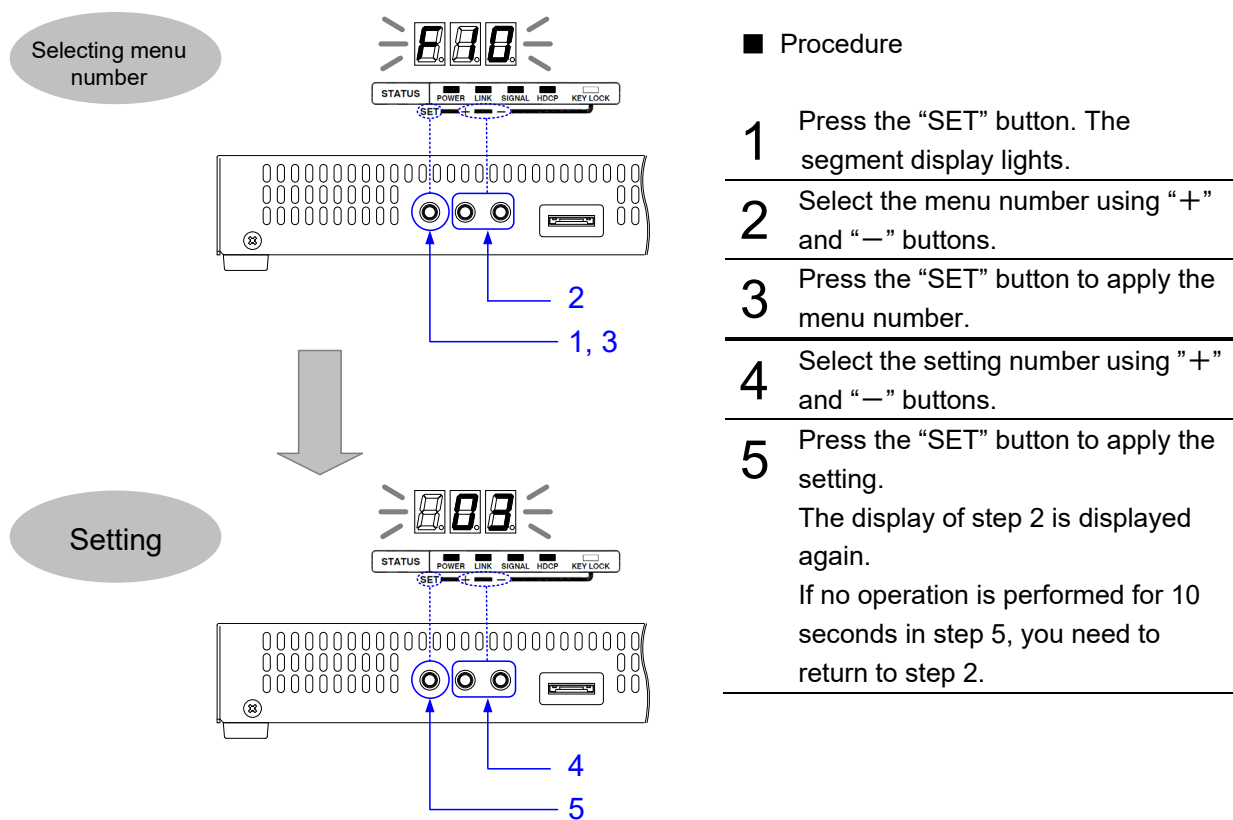
To use menu operation buttons:

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

Use a thin stick to press buttons.

Note:

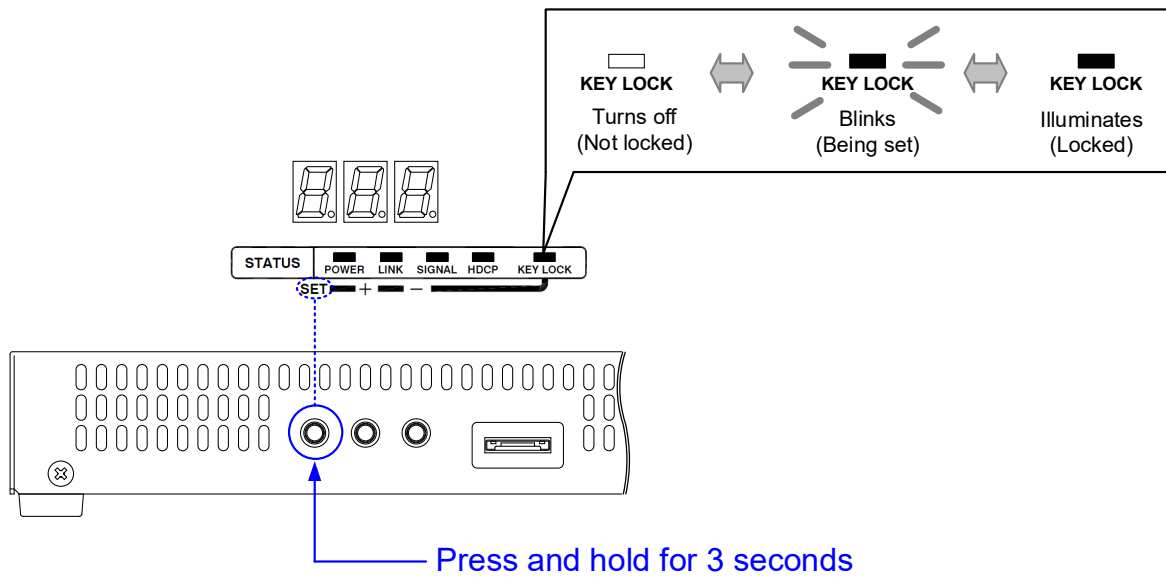
If no operation is performed for 60 seconds in each step, the segment display is turned off.



[Fig. 6.1] Using menu operation buttons

6.2 Locking menu operation buttons

Press and hold the “SET” button for three seconds in order to lock the menu operation buttons. Perform the same operation in order to release the lock.

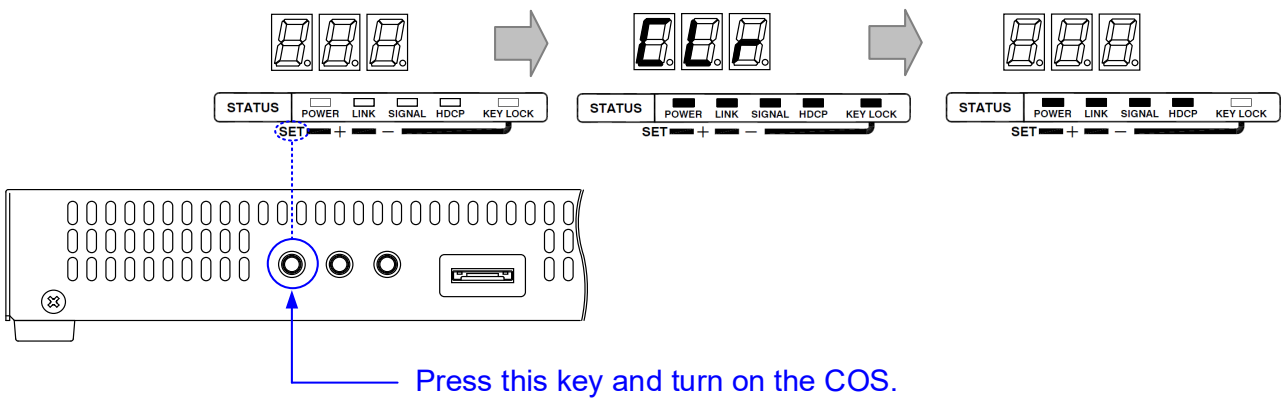


[Fig. 6.2] Locking / Unlocking menu operation buttons

6.3 Initialization

Turn on the COS while pressing the “SET” button in order to reset settings to factory default values.

Note: Once initializing the settings, you cannot restore these settings.



[Fig. 6.3] Initialization

7 Menu

The following three menu types can be set in the transmitter and receiver:

■ Transmitter

- Setting input in normal use: Setup menu
- Verifying operations: Maintenance menu
- Displaying input status: Input status display menu

■ Receiver

- Setting output: Setup menu
- Verifying operations: Maintenance menu
- Displaying output status: Output status display menu

Tip:

Since the maintenance menu and status display menu are not used normally, they are not displayed. Display them using Setup menu as needed.

7.1 Menu List

7.1.1 Transmitter

■ Setup menu

[Table 7.1] Setup menu

Menu #	Function	Settings		Page
		Setting	Default	
F01	Copying EDID	Copy / Not copy	Not copy	29
F02	EDID resolution	SVGA to QWXGA	1080p	30
F03	No-signal input monitoring time	OFF / 2 to 15 [sec.]	10 [sec.]	32
F04	PCM Audio	32 / 44.1 / 48 / 88.2 / 96 / 192 [kHz]	48 [kHz]	33
F05	AC-3 Dolby Digital Audio	OFF / ON (48 [kHz])	OFF	33
F06	AAC Audio	OFF / ON (48 [kHz])	OFF	33
F07	Dolby Digital Plus Audio	OFF / ON (48 [kHz])	OFF	34
F08	DTS Audio	OFF / ON (48 [kHz])	OFF	34
F09	Audio channel	2 channels / 3 (2.1) channels / 6 (5.1) channels / 8 (7.1) channels	2 channels	34
F10	EDID WXGA	1360 × 768 / 1366 × 768	1360 × 768	36
F11	Analog / Digital audio	Analog audio / Digital audio	Digital audio	36
F90	Displaying firmware version	—	—	36
F91	Displaying hardware version	—	—	36
F99	Maintenance / Status display menu	Display / Not display / Always display	Not display	36

■ Maintenance menu

[Table 7.2] Maintenance menu

Menu #	Function	Settings		Page
		Setting	Default	
C01	HDCP input setting	HDCP enabled / HDCP disabled	HDCP enabled	37
C10	Test pattern resolution	VGA to QWXGA / 480i to 1080p	1080p (60Hz)	38
C11	Test pattern output	OFF / COLOR BAR / CROSS HATCH / V-GRAY SCALE	OFF	39
C12	Input status On-screen-display	Display / Not display	Not display	40
C13	RS-232C communication mode	Transmission mode / Setting mode.	Transmission mode	41
C14	RS-232C communication: Baud rate	4800 / 9600 / 19200 / 38400 [bps]	9600 [bps]	41
C15	RS-232C communication: Data bit length	7 / 8 [bit]	8 [bit]	41
C16	RS-232C communication: Parity check	None / Odd / Even	None	41
C17	RS-232C communication: Stop bit	1 / 2 [bit]	1 [bit]	42

■ Input status display menu

[Table 7.3] Input status display menu

Menu #	Function	Settings		Menu #
		Setting value		
L01 to L13	Displaying input information	—	—	43

7.1.2 Receiver

■ Setup menu

[Table 7.4] Setup menu

Menu #	Function	Settings		Page
		Setting value	Default	
F01	Digital audio output	ON / OFF	ON	46
F02	Analog audio output	ON / OFF	ON	46
F90	Displaying firmware version	—	—	46
F91	Displaying hardware version	—	—	46
F99	Maintenance / Status display menu	Display / Not display / Always display.	Not display	46

■ Maintenance menu

[Table 7.5] Maintenance menu

Menu #	Function	Settings		Page
		Setting	Default	
C01	Hot plug masking	OFF / 2 to 15 [sec.]	OFF	47
C02	Checking sink device EDID	Treated as DVI / Treated as HDMI / Always treated as HDMI	Treated as DVI	47
C03	Output mode	Automatic / RGB / YCbCr 4:2:2 / YCbCr 4:4:4 / DVI	Automatic	48
C10	Test pattern resolution	VGA to QWXGA / 480i to 1080p	1080p (60 Hz)	49
C11	Test pattern output	OFF / COLOR BAR / CROSS HATCH / V-GRAY SCALE	OFF	50
C12	Output status On-screen-display	Display / Not display	Not display	51
C13	RS-232C	Transmission mode / Setting mode.	Transmission mode	52
C14	RS-232C communication: Baud rate	4800 / 9600 / 19200 / 38400 [bps]	9600 [bps]	52
C15	RS-232C communication: Data bit length	7 / 8 [bit]	8 [bit]	52
C16	RS-232C communication: Parity check	None / Odd / Even	None	52
C17	RS-232C communication: Stop bit	1 / 2 [bit]	1 [bit]	53
C18	RS-232C communication: Receiver ID	0 to 15	0	53

■ **Output status display menu**

[Table 7.6] Output status display menu

Menu #	Function	Settings		Page
		Setting value	Default	
[L01 to L07]	Displaying output information	—	—	54

Tip:

[] to the left of the each section title shows its menu name.

7.2 Transmitter (Setup menu)

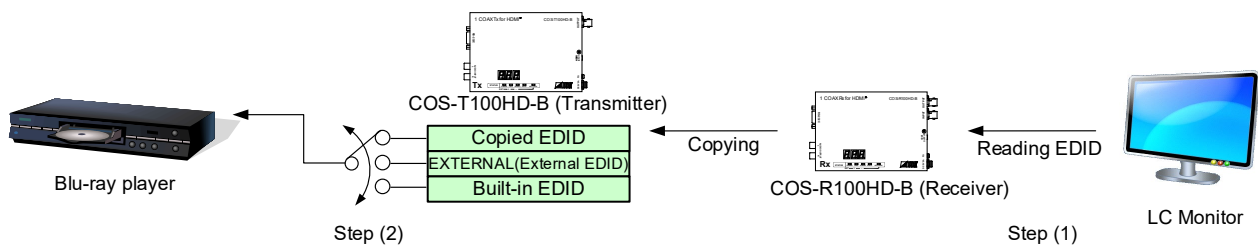
You can set transmitter's input in normal use.

Tip: “[]” shows each menu number in this section.

7.2.1 [F01] Copying EDID

EDID of sink devices can be read and stored in the transmitter. The copied EDID can be registered in the transmitter to treat the EDID as same as the built-in EDID.

- (1) Set [F01] to “on” in order to read EDID of the sink device from the receiver's HDMI output connector. The read EDID will be copied to the transmitter.
- (2) Set [F02] to “02”. The copied EDID will be used.



[Fig. 7.1] Copying EDID

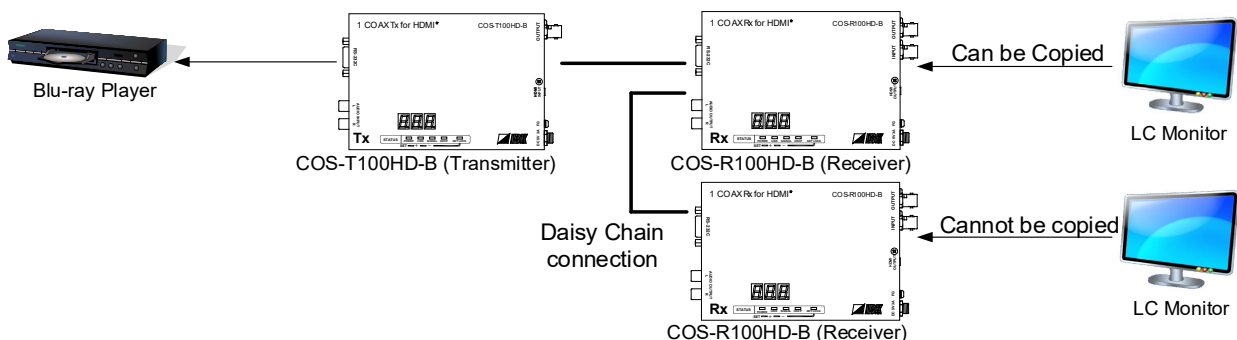
【See:7.2.2 [F02] EDID resolution】

Setting values

- on : Copying EDID
- off : Not copying EDID [Default]

Note:

For Daisy Chain connection, the transmitter copies the EDID from the sink device that is directly connected to the receiver.



[Fig. 7.2] EDID copy in Daisy Chain connection

7.2.2 [F02] EDID resolution

You can set the EDID that is sent to the source device.

03 to 22: Transmitter's built-in EDID

If using built-in EDID, set the maximum resolution supported by the sink device.

Setting value

[Table 7.7] Maximum EDID resolution

Setting value	Maximum resolution	Pixel	Standard	Remarks
01	EXTERNAL (External EDID)	—	—	When no EDID data, setting value "03" will be applied.
02	Copied EDID	—	—	When no EDID data, setting value "03" will be applied.
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 devices
10	WXGA	1280×768	VESA	
11	WXGA	1280×800		MAC supported
12	Quad-VGA	1280×960		
13	SXGA	1280×1024		
14	WXGA	1360×768, 1366×768		Pixels can be set in "7.2.10 [F10] EDID WXGA".
15	SXGA+	1400×1050		
16	WXGA+	1440×900		
17	WXGA++	1600×900		Reduced Blanking
18	UXGA	1600×1200		
19	WSXGA	1680×1050		
20	VESA1080	1920×1080	CVT	Reduced Blanking, For DVI devices
21	WUXGA	1920×1200	VESA	Reduced Blanking
22	QWXGA	2048×1152		Reduced Blanking

【See:7.2.10 [F10] EDID WXGA】

[Table 7.8] Maximum resolution and EDID supported pixel

EDID supported 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
01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
03	1080p (59.94/60)	Y	Y	Y	N	N	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
05	1080i	Y	Y	Y	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	N	N
07	800x600	Y	Y	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
09	1280x720	Y	Y	Y	Y	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
11	1280x800	Y	Y	Y	Y	Y	Y	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
13	1280x1024	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	N	N	N	N	N	N	N	N
15	1400x1050	Y	Y	Y	Y	N	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	N	N	N	N	N	N
17	1600x900	Y	Y	Y	Y	N	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	N	N	N	N
19	1680x1050	Y	Y	Y	Y	N	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	N	N
21	1920x1200	Y	Y	Y	N	N	Y	Y	Y	N	N	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

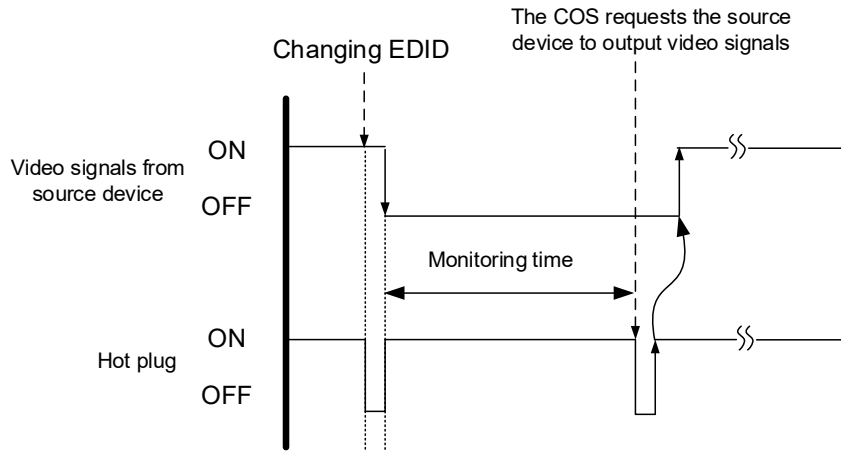
Y: Supported, N: Not supported

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

【See:7.2.10 [F10] EDID WXGA】

7.2.3 [F03] No-signal input monitoring time

You can set the monitoring time for when the source device does not output video signals due to the changes of transmitter EDID or turning on/off the transmitter or source device.



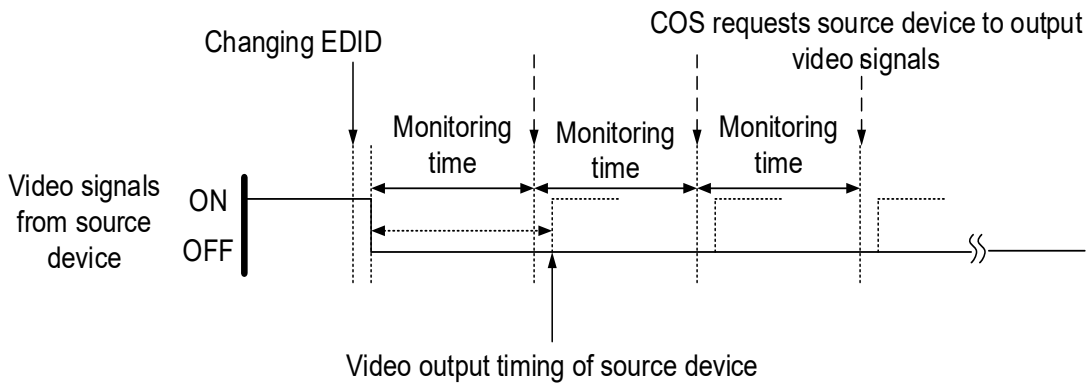
[Fig. 7.3] Monitoring time

Setting values

- oFF : OFF
- 02 to 15 : 2 to 15 second [Default]10 sec.

Notes:

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



7.2.4 [F04] PCM Audio

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

Setting values

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

Note:

For audio sampling frequency that is output from a receiver is 48 kHz.

7.2.5 [F05] AC-3 Dolby Digital Audio

You can enable and disable AC-3 Dolby Digital Audio input.

Setting values

- on : 48 kHz
- oFF : OFF [Default]

Note:

For compressed audio input, only 48 kHz is available.

7.2.6 [F06] AAC Audio

You can enable and disable AAC Audio input.

Setting values

- on : 48 kHz
- oFF : OFF [Default]

Note:

For compressed audio input, only 48 kHz is available.

7.2.7 [F07] Dolby Digital Plus Audio

You can enable and disable Dolby Digital Plus Audio input.

Setting values

- on : 48 kHz
- oFF : OFF [Default]

Note:

For compressed audio input, only 48 kHz is available.

7.2.8 [F08] DTS Audio

You can enable and disable DTS Audio

Setting values

- on : 48 kHz
- oFF : OFF [Default]

Note:

For compressed audio input, only 48 kHz is available.

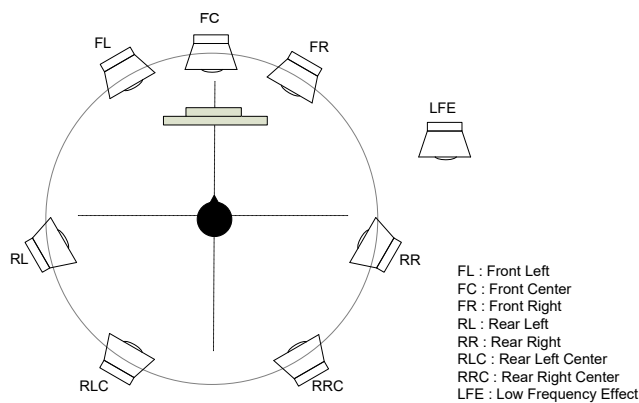
7.2.9 [F09] Audio channel

You can set the number of channels to the audio of multi-channel output that is output from the source device.

Setting values

- 02 : 2 channels [Default]
- 03 : 3 channels (2.1 channels)
- 06 : 6 channels (5.1 channels)
- 08 : 8 channels (7.1 channels)

■ The number of channels and speaker configuration



The number of channels	FL/FR	LFE	FC	RL/RR	RLC/RRC
02 (2 channels)	ON	OFF	OFF	OFF	OFF
03 (2.1 channels)	ON	ON	OFF	OFF	OFF
06 (5.1 channels)	ON	ON	ON	ON	OFF
08 (7.1 channels)	ON	ON	ON	ON	ON

[Fig. 7.4] The number of channels and speaker configuration

7.2.10 [F10] EDID WXGA

You can set the number of pixels of WXGA (1360×768 / 1366×768) depending on the EDID resolution.

【See:7.2.2 [F02] EDID resolution】

Setting values

on : 1366×768

oFF : 1360×768 [Default]

7.2.11 [F11] Analog / Digital audio

You can select input audio.

Setting values

oFF : OFF

d : Digital audio [Default]

A : Analog audio

Note:

If DVI signal is input and analog audio is selected, embedded HDMI signal is output.

7.2.12 [F90] Displaying firmware version

You can display the firmware version.

7.2.13 [F91] Displaying hardware version

You can display the hardware version.

7.2.14 [F99] Maintenance / Status display menu

You can set how the maintenance menu and status display menu are displayed.

Setting value

oFF : Not displayed [Default]

on : Displayed (not displayed when the COS is turned on next time)

ALL : Always displayed (displayed when the COS is turned on next time as well)

7.3 Transmitter (Maintenance menu)

You can set the required items for operation verification.

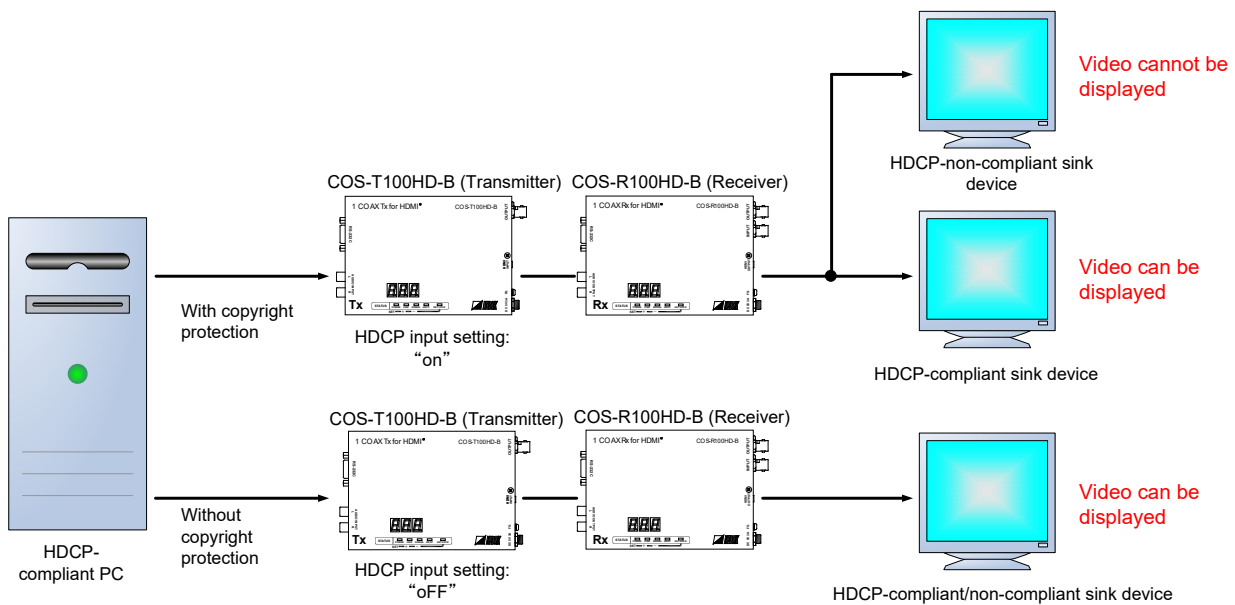
Set [F99] to “ALL” or “on” in order to enable the maintenance menu.

【See: 7.2.14 [F99] Maintenance / Status display menu】

7.3.1 [C01] HDCP input setting

You can set whether the transmitter encrypts HDCP to the source device.

Some source devices check whether the connected device supports HDCP and then determine whether they encrypt HDCP signals or not. Since the transmitter is HDCP compliant, if it is connected to a sink device that is not HDCP compliant, the sink device may not display video. In this case, set this menu to “oFF” in order to display the video.



[Fig. 7.5] HDCP and sink devices

Setting value

- on : HDCP enabled [Default]1
- oFF : HDCP disabled

Note:

Set this menu to “on” in order to display copyright protected contents.

7.3.2 [C10] Test pattern resolution

You can set the output resolution of the built-in test pattern of the transmitter.

If setting [C11] to a value other than “oFF”, the test pattern will be output at the resolution that is set in this menu.

Setting values

[Table 7.9] Test pattern resolution

Setting values	Resolution	Pixels	Frequency	Remarks
01	VGA	640×480	60 Hz	
02	SVGA	800×600	60 Hz	
03	XGA	1024×768	60 Hz	
04	WXGA	1280×768	60 Hz	
05	WXGA	1280×800	60 Hz	
06	Quad-VGA	1280×960	60 Hz	
07	SXGA	1280×1024	60 Hz	
08	SXGA+	1400×1050	60 Hz	
09	WXGA+	1440×900	60 Hz	
10	WXGA++	1600×900	60 Hz	
11	UXGA	1600×1200	60 Hz	
12	WSXGA+	1680×1050	60 Hz	
13	VESA HD	1920×1080	60 Hz	
14	WUXGA	1920×1200	60 Hz	Reduced Blanking
15	QWXGA	2048×1152	60 Hz	Reduced Blanking
16	480i	720×480	59.94 Hz	
17	480p	720×480	59.94 Hz	
18	576i	720×576	50 Hz	
19	576p	720×576	50 Hz	
20	720p	1280×720	50 Hz	
21	720p	1280×720	59.94 Hz	
22	720p	1280×720	60 Hz	
23	1080i	1920×1080	50 Hz	
24	1080i	1920×1080	59.94 Hz	
25	1080i	1920×1080	60 Hz	
26	1080p	1920×1080	50 Hz	
27	1080p	1920×1080	59.94 Hz	
28	1080p	1920×1080	60 Hz	Default

【See: 7.3.3 [C11] Test pattern output】

7.3.3 [C11] Test pattern output

You can switch built-in test patterns, and the selected test pattern will be output at the resolution that is set in [C10]. Video signal input is not necessary when a test pattern is output.

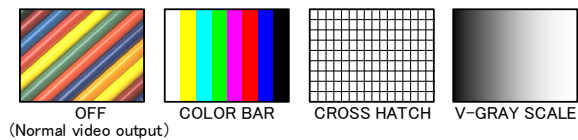
For 01, 03, and 05, the built-in test tone is also output. Audio signal input is not necessary when the test tone is output.

The number of test tone channels: 8
 Output frequency: 1 kHz (LFE: 80 Hz)
 Sampling frequency: 48 kHz

【See: 7.3.2 [C10] Test pattern resolution】

Setting values

- oFF : OFF [Default]
- 01 : COLOR BAR (With test tone)
- 02 : COLOR BAR (Without test tone)
- 03 : CROSS HATCH (With test tone)
- 04 : CROSS HATCH (Without test tone)
- 05 : V-GRAY SCALE (With test tone)
- 06 : V-GRAY SCALE (Without test tone)



Notes:

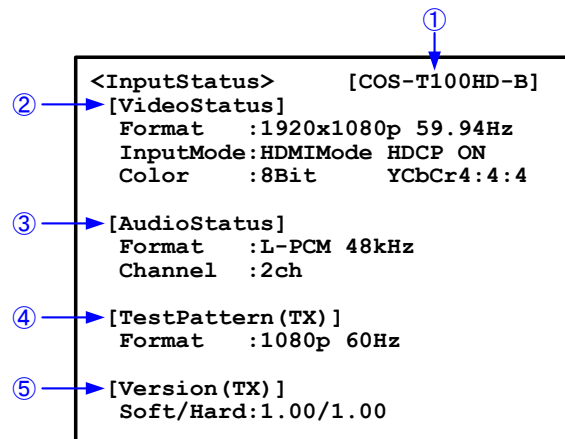
If you set test pattern output for both transmitter and receiver, receiver's test pattern will be output.

7.3.4 [C12] Input status On-screen-display

You can display the signal status that is input to the transmitter on the screen.

Setting values

- on : OSD enabled
- OFF : OSD disabled [Default]



[Fig. 7.6] Input status OSD

[Table 7.10] Description of input status

#	Description
①	Model name
②	Input video signal Format : Input resolution, input vertical synchronous frequency InputMode : Input mode (HDMI / DVI), with or without HDCP Color : Color depth, color space
③	Digital audio input signal Format : Input audio format, input sampling frequency Channel : The number of input audio channels
④	Data of output test pattern information Format : Resolution of output test pattern, Vertical synchronous frequency (When no test pattern is output: "OFF")
⑤	Version Soft / Hard: Software version / Hardware version

Notes:

- If the on-screen display function is set for both transmitter and receiver, the input status of the transmitter is not displayed.
- If the on-screen display function of transmitter and the test pattern output function of receiver are set to enabled, the former is not displayed.

7.3.5 [C13] RS-232C communication mode

You can set the RS-232C communication mode to control the transmitter and communicate with the receiver.

Setting values

- 00 : Transmission mode [Default]
- 01 : Setting mode

7.3.6 [C14] RS-232C communication: Baud rate

You can set the baud rate for RS-232C communication between the transmitter and control device.

This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.3.5 [C13] RS-232C communication mode】

Setting values

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

7.3.7 [C15] RS-232C communication: Data bit length

You can set the data bit length for RS-232C communication between the transmitter and control device.

This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.3.5 [C13] RS-232C communication mode】

Setting values

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

7.3.8 [C16] RS-232C communication: Parity check

You can set the parity check for RS-232C communication between the transmitter and control device.

This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.3.5 [C13] RS-232C communication mode】

Setting values

- Non : None [Default]
- odd : Odd
- En : Even

7.3.9 [C17] RS-232C communication: Stop bit

You can set the stop bit for RS-232C communication between the transmitter and control device.

This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.3.5 [C13] RS-232C communication mode】

Setting values

01 : 1 [bit] [Default]

02 : 2 [bit]

7.4 Transmitter (Displaying input status)

You can set status display menus in this section if [F99] is set to “on” or “ALL”.

Press the “SET” button to apply the setting.

【See: 7.2.14 [F99] Maintenance / Status display menu】

7.4.1 [L01 to L13] Displaying input information

[Table 7.11] Input information of transmitter

Menu #	Value	Description
● HDMI / DVI mode and color depth		
Note: Even if 30 bit / pixel or larger signal is input, the output is 24 bit / pixel.		
L01	H08	HDMI mode 24 bit / pixel (8bit / component)
	H10	HDMI mode 30 bit / pixel (10bit / component)
	H12	HDMI mode 36 bit / pixel (12bit / component)
	d08	DVI mode 24 bit / pixel (8bit / component)
	---	No input
● With / Without HDCP		
L02	on	With HDCP
	oFF	Without HDCP
	---	No input
● Color space		
L03	rgb	RGB
	422	YCbCr 4:2:2
	444	YCbCr 4:4:4
	---	Unknown or no input
● Video frequency		
L04	59.9	Input vertical synchronous frequency (for 59.9 Hz)
	---	No input
● DDC power		
L05	on	DDC power is input
	oFF	No DDC power is input
● Resolution		
L06	192	Input resolution (scrolling display)
	---	No input

[Table 7.12] Input information of transmitter (cont'd)

Menu #	Value	Description
<p>● Audio input format (2 digits from left) and the number of channels (1 digit from right) X= the number of channels: 2 = 2 channels, 3 = 2.1 channels, 6 = 5.1channels, 8 = 7.1 channels</p>		
L10	---	Unknown or no input
	00X	Unknown
	01X	PCM Audio
	02X	AC-3 Audio
	03X	MPEG-1 Audio
	04X	MP3 Audio
	05X	MPEG-2 Audio
	06X	AACLC Audio
	07X	DTS Audio
	08X	ATRAC Audio
	09X	DSD Audio
	10X	Dolby Digital Plus Audio
	11X	DTS-HD Audio
	12X	Dolby TrueHD Audio
	13X	DST Audio
14X	WMA Audio	
15X	HE-AAC / HE-AACv2 / MPEG Surround Audio	
<p>● Sampling frequency of digital audio input Note: For compressed audio input, only 48 kHz is available.</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 input	

[Table 7.13] Input information of transmitter (cont'd)

Menu #	Value	Description
<ul style="list-style-type: none"> ● The number of digital audio input bit, HBR mode (High Bit-Rate Audio) Note: HBR is not supported. 		
L12	H16	16 bit, HBR mode
	P16	16 bit, PCM mode
	:	:
	H24	24 bit, HBR mode
	P24	24 bit, PCM mode
	- - -	No input
<ul style="list-style-type: none"> ● Digital audio input status 		
L13	00	No audio input
	01	Input is being detected.
	02	
	03	
	04	
	05	
	06	
	07	Normal input.
	- - -	No input

7.5 Receiver (Setting menu)

You can set receiver's input in normal use.

Tip:

“[]” shows each menu number in this section.

7.5.1 [F01] Digital audio output

You can enable and disable digital audio output.

Setting values

on : ON [Default]
oFF : OFF

7.5.2 [F02] Analog audio output

You can enable and disable analog audio output.

Setting values

on : ON [Default]
oFF : OFF

Note:

If compressed audio (Dolby Digital, DTS and the like) is input, analog audio is not output.

7.5.3 [F90] Displaying firmware version

You can display the firmware version.

7.5.4 [F91] Displaying hardware version

You can display the hardware version.

7.5.5 [F99] Maintenance / Status display menu

You can set how the maintenance menu and status display menu are displayed.

Setting value

oFF : Not displayed [Default]
on : Displayed (not displayed when the COS is turned on next time)
ALL : Always displayed (displayed when the COS is turned on next time as well)

7.6 Receiver (Maintenance menu)

You can set the required items for operation verification.

Set [F99] to “ALL” or “on” in order to enable the maintenance menu.

【See: 7.5.5 [F99] Maintenance / Status display menu】

7.6.1 [C01] Hot plug masking

You can set the time for ignoring video output request signal that is sent from the sink device.

If the sink device repeatedly sends video output request in a short cycle, the receiver sets video output every time. In such a case, video may not be output.

This problem can be solved by setting the time for ignoring video output request signal.

【See: 7.2.3 [F03] No-signal input monitoring time】

Setting values

oFF : Without masking processing [Default]

02 to 15 : 2 to 15 [sec.]

7.6.2 [C02] Checking sink device EDID

You can set the sink device's EDID checking method.

The receiver acquires EDID from the sink device and determines whether the sink device is HDMI or DVI device. However, if the receiver cannot acquire the EDID for any reason, audio may not be output. In such a case, the COS determines the sink device is an HDMI device.

Setting values

oFF : DVI device in case of EDID reading error [Default]

Err : HDMI device in case of EDID reading error

ALL : HDMI device at all times

Note:

If selecting “Err” or “ALL”, set the transmitter's EDID resolution to a resolution other than “EXTERNAL” and set the appropriate EDID.

If the source device cannot acquire the EDID, video and audio may not be output correctly.

This setting is valid only if the output mode is set to a value other than “d”.

【See: 7.2.2 [F02] EDID resolution】

【See: 7.6.3 [C03] Output mode】

7.6.3 [C03] Output mode

You can set the color space that will be sent to the sink device.

The sink device automatically selects the optimal color space. However, if the sink device does not select the color space for any reason, use this menu.

Setting values

- oFF : Automatic [Default]
- rgb : RGB
- 422 : YCbCr 4:2:2
- 444 : YCbCr 4:4:4
- d : DVI

Note:

This setting is valid only if HDMI signal is input.

7.6.4 [C10] Test pattern resolution

You can set the output resolution of the built-in test pattern of the receiver.

If setting [C11] to a value other than “oFF”, the test pattern will be output at the resolution that is set in this menu.

Setting values

[Table 7.14] Test pattern resolution

Setting values	Resolution	Pixels	Frequency	Remarks
01	VGA	640×480	60 Hz	
02	SVGA	800×600	60 Hz	
03	XGA	1024×768	60 Hz	
04	WXGA	1280×768	60 Hz	
05	WXGA	1280×800	60 Hz	
06	Quad-VGA	1280×960	60 Hz	
07	SXGA	1280×1024	60 Hz	
08	SXGA+	1400×1050	60 Hz	
09	WXGA+	1440×900	60 Hz	
10	WXGA++	1600×900	60 Hz	
11	UXGA	1600×1200	60 Hz	
12	WSXGA+	1680×1050	60 Hz	
13	VESA HD	1920×1080	60 Hz	
14	WUXGA	1920×1200	60 Hz	Reduced Blanking
15	QWXGA	2048×1152	60 Hz	Reduced Blanking
16	480i	720×480	59.94 Hz	
17	480p	720×480	59.94 Hz	
18	576i	720×576	50 Hz	
19	576p	720×576	50 Hz	
20	720p	1280×720	50 Hz	
21	720p	1280×720	59.94 Hz	
22	720p	1280×720	60 Hz	
23	1080i	1920×1080	50 Hz	
24	1080i	1920×1080	59.94 Hz	
25	1080i	1920×1080	60 Hz	
26	1080p	1920×1080	50 Hz	
27	1080p	1920×1080	59.94 Hz	
28	1080p	1920×1080	60 Hz	Default

【See: 7.6.5 [C11] Test pattern output】

7.6.5 [C11] Test pattern output

You can switch built-in test patterns, and the selected test pattern will be output at the resolution that is set in [C10]. Video signal input is not necessary when a test pattern is output.

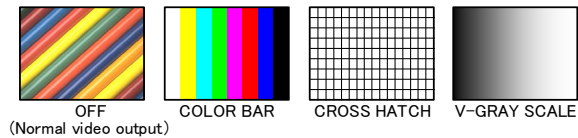
For 01, 03, and 05, the built-in test tone is also output. Audio signal input is not necessary when the test tone is output.

The number of test tone channels: 8
 Output frequency: 1 kHz (LFE: 80 Hz)
 Sampling frequency: 48 kHz

【See: 7.6.4 [C10] Test pattern resolution】

Setting values

- oFF : OFF [Default]
- 01 : COLOR BAR (With test tone)
- 02 : COLOR BAR (Without test tone)
- 03 : CROSS HATCH (With test tone)
- 04 : CROSS HATCH (Without test tone)
- 05 : V-GRAY SCALE (With test tone)
- 06 : V-GRAY SCALE (Without test tone)



Notes:

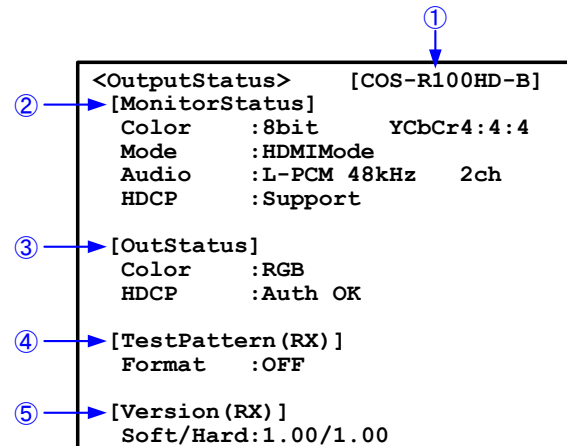
If you set test pattern output for both transmitter and receiver, receiver's test pattern will be output.

7.6.6 [C12] Output status On-screen-display

You can display the signal status that is output to the receiver on the screen.

Setting values

- on : OSD enabled
- oFF : OSD disabled [Default]



[Fig. 7.7] Output status OSD

[Table 7.15] Description of input status

#	Description
①	Model name
②	Sink device status Color : Color depth, color space Mode : mode (HDMI / DVI) Audio : Audio format, sampling frequency, the number of audio channels HDCP : Supported / Not supported
③	Output signal status Color : Color space HDCP : HDCP Authentication Status
④	Data of output test pattern information Format : Resolution of output test pattern, Vertical synchronous frequency (When no test pattern is output: "OFF")
⑤	Version Soft / Hard: Software version / Hardware version

Note:

If the on-screen display function is set for both transmitter and receiver, the input status of the transmitter is not displayed.

7.6.7 [C13] RS-232C communication mode

You can set the RS-232C communication mode to control the receiver and communicate with the transmitter.

Setting values

- 00 : Transmission mode [Default]
- 01 : Setting mode

7.6.8 [C14] RS-232C communication: Baud rate

You can set the data bit length for RS-232C communication between the receiver and control device.

This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.6.7 [C13] RS-232C communication mode】

Setting values

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

7.6.9 [C15] RS-232C communication: Data bit length

You can set the data bit length for RS-232C communication between the receiver and control device.

This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.6.7 [C13] RS-232C communication mode】

Setting values

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

7.6.10 [C16] RS-232C communication: Parity check

You can set the parity check for RS-232C communication between the receiver and control device.

This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.6.7 [C13] RS-232C communication mode】

Setting values

- non : None [Default]
- odd : Odd
- En : Even

7.6.11 [C17] RS-232C communication: Stop bit

You can set the stop bit for RS-232C communication between the transmitter and control device.
This setting will be applied for both modes ("00" and "01") set in [C13].

【See: 7.6.7 [C13] RS-232C communication mode】

Setting values

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

7.6.12 [C18] RS-232C communication: Receiver ID

You can set the ID for serial transmission with a specified receiver in Daisy Chain connection.
Set the receiver ID to "00" to transmit the data to a specified receiver.
This setting is valid only if [C13] is set to "00" (Transmission mode).

【See: 7.6.7 [C13] RS-232C communication mode】

Setting values

- 00 : ID for unspecified receiver [Default]
- 01 to 15 : ID for specified receiver

7.7 Receiver (Displaying output status)

You can set status display menus in this section if [F99] is set to “on” or “ALL”.

Press the “SET” button to apply the setting.

【See: 7.5.5 [F99] Maintenance / Status display menu】

7.7.1 [L01 to L07] Displaying output information

[Table 7.16] Output information of receiver

Menu #	Value	Description
● Color depth		
<i>Note:</i> 24 bit / pixel fixed from receiver		
L01	08	24 bit / pixel (8bit / component)
	10	30 bit / pixel (10bit / component)
	12	36 bit / pixel (12bit / component)
	- - -	Not connected
● Color space supported (sink device)		
L02	rgb	RGB supported
	422	YCbCr 4:2:2 supported
	444	YCbCr 4:4:4 supported
	- - -	Not connected
● Color space: Output status		
L03	rgb	RGB output
	422	YCbCr 4:2:2 output
	444	YCbCr 4:4:4 output
	- - -	Not connected
● Hot plug detection		
L04	on	Hot plug detected
	oFF	No hot plug detected
● HDMI / DVI		
L05	HC	HDMI mode (Compressed audio)
	HP	HDMI mode (PCM audio)
	d	DVI mode (Audio is not supported)
	- - -	Not connected
● HDCP authentication		
L06	00	None
	01	Being authenticated
	02	
	03	
	04	Ended normally
	05	Ended abnormally

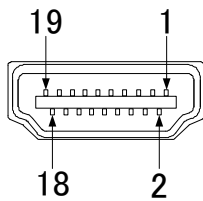
[Table 7.17] Output information of receiver (cont'd)

Menu #	Value	Description
● HDCP		
L07	on	HDCP supported
	oFF	HDCP not supported
	- - -	Not connected

8 Product specification

8.1 Pin assignment

8.1.1 HDMI TypeA connector



Pin #	Signal name	Pin #	Signal name
1	TMDS data 2+	10	TMDS clock+
2	TMDS data 2 shield	11	TMDS clock shield
3	TMDS data 2-	12	TMDS clock
4	TMDS data 1+	13	CEC
5	TMDS data 1 shield	14	spare (N.C.*)
6	TMDS data 1-	15	SCL
7	TMDS data 0+	16	SDA
8	TMDS data 0 shield	17	DDC / CEC ground
9	TMDS data 0-	18	+5 power supply
		19	Detecting hot plug

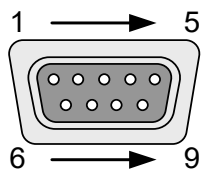
*N.C.: No Connection

[Fig. 8.1] HDMI TypeA pin assignment

8.1.2 RS-232C connector

Pin assignment of the RS-232C connector is as follows.

RS-232C connector

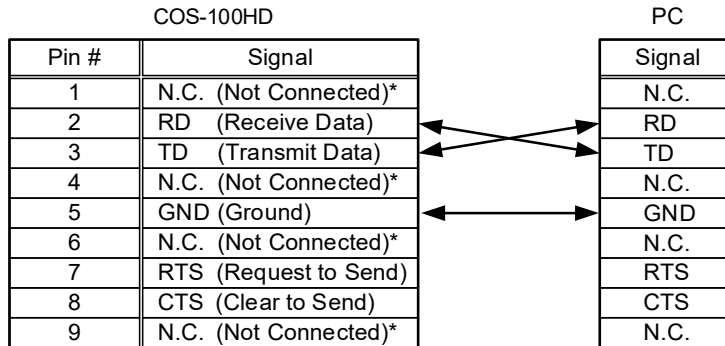


Male D-sub (9 pin)

[Fig. 8.2] RS-232C connector pin assignment

■ Connecting COS-100HD to PC

Use a cross cable to connect the COS-100HD to a PC.

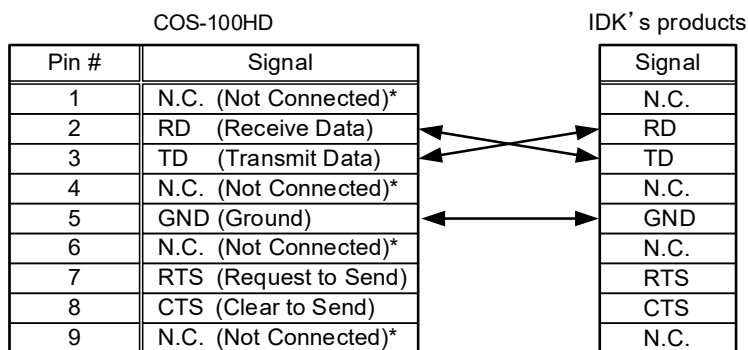


*Not used

[Fig. 8.3] RS-232C pin assignment (connecting to PC)

■ Connecting COS-100HD to IDK's products

Use a cross cable to connect the COS-100HD to an IDK's product.

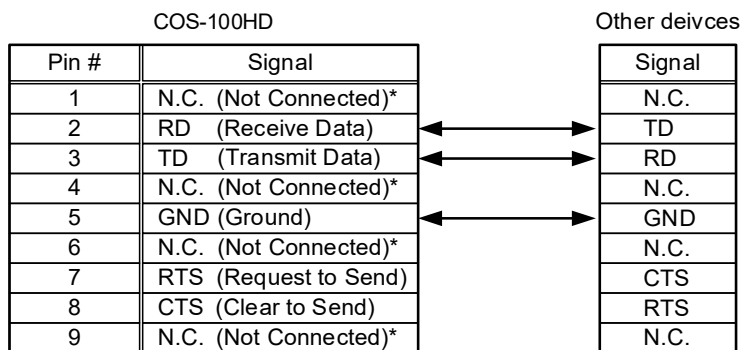


*Not used

[Fig. 8.4] RS-232C pin assignment (connecting to IDK's product)

■ Connecting COS-100HD to another device requiring straight connection

Use a straight cable to connect the COS-100HD to other devices requesting straight connection.



*Not used

[Fig. 8.5] RS-232C pin assignment (Connecting to device requiring straight connection)

8.2 Product specification

Item			COS-T100HD-B (Transmitter)	COS-R100HD-B (Receiver)	
Input	Video	HDMI / DVI	Number / Signal	1 input / HDMI (*1) / DVI 1.0 TMDS Single Link, HDCP1.4 TMDS clock: 25 MHz to 165 MHz Dot clock: 25 MHz to 165 MHz EDID emulation	1 input / Digital signals for extension
			Connector	1 female HDMI Type A (*2)	1 BNC 75 Ω
		Others	Color depth: 24 bit (*5)		
	Formats	480i / 480p / 576i / 576p / 720p / 1080i / 1080p VGA to QWXGA * WUXGA / QWXGA only support Reduced Blanking			
	Audio	Digital	Number / Signal	1 input Multi-channel LPCM up to 8 channels - Sampling frequency: 32kHz to 192kHz - Sample Size: 16bit to 24bit - Reference level: -20 dBFS, - Max. input level: 0 dBFS	1 input / Digital signals for extension
			Connector	1 female HDMI Type A (*2)	1 BNC 75 Ω
		Analog	Number / Signal	1 input / stereo LR unbalanced signals - Input impedance: 24 kΩ - Reference level: -10 dBu - Max input level: +10 dBu	-
			Connector	1 RCA pin jack	-
Output	Video	HDMI / DVI	Number / Signal	1 output / Digital signals for extension	1 output / HDMI (*1) / DVI 1.0 TMDS Single Link, HDCP1.4 TMDS clock: 25 MHz to 165 MHz Dot clock: 25 MHz to 165 MHz
			Connector	1 BNC 75 Ω	1 female HDMI Type A (*3)
		Daisy Chain	Number / Signal	-	1 input / Digital signals for extension
		Connector	-	1 BNC 75 Ω	
		Others	Color depth: 24 bit (*5)		
	Formats	480i / 480p / 576i / 576p / 720p / 1080i / 1080p VGA to QWXGA * WUXGA / QWXGA only support Reduced Blanking			
	Audio	Digital	Number / Signal	1 output / Digital signals for extension	1 output Multi-channel LPCM up to 8 channels - Sampling frequency: 48kHz - Sample Size: 24bit - Reference level: -20 dBFS - Max. input level: 0 dBFS
			Connector	1 BNC 75 Ω	1 female HDMI Type A
		Analog	Number / Signal	-	1 output / stereo LR unbalanced signals (*6) - Input impedance: 75 kΩ - Reference level: -10 dBu - Max input level: +10 dBu
			Connector	-	1 RCA pin jack
Plug & Play			DDC2B (Built-in EDID: It can select maximum resolution)		
Coaxial cables			75 Ω coaxial cable for high frequency signal		
Signal transmission distance			L-7CHD: Up to 689 ft. (210 m) L-7CFB: Up to 492 ft. (150 m) L-5CFB: Up to 361 ft. (110 m) L-5C2V: Up to 197 ft. (60 m) L-3CFB: Up to 262 ft. (80 m) L-3C2V: Up to 131 ft. (40 m) *Please be careful to use it with an adequate cable length *This distance may shorten due to jitter performance of the input video signals *Number of daisy chaining may be limited or cable extension distance may shorten if jitter performance at daisy chaining had degraded		
Functions			Anti-Snow (*7), Connection Reset (*8), Built-in test pattern / tone output, I/O signal status check		
Control	Serial control port	Number / Signal	1 port / Full duplex Max. 115.2kbps		
		Connector	1 male 9-pin D-Sub		
Others	AC adapter	Input: 100 - 240 VAC ± 10%, 50 Hz / 60 Hz ± 3 Hz Output: DC 5V 3A (AC adapter is supplied)			
	Power consumption	About 6 Watts	About 6 Watts		
	Dimensions	4.2 × 1.1 × 5.9" (106 (W) × 28 (H) × 150 (D) mm) (EIA quarter rack wide) (Excluding connectors and the like)			
	Weight	1.1 lbs. (0.5 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 CEC, x.v.Color, 3D, ARC and HEC are not supported

*2 Up to 98 ft. (30m) cables can be used. The transmission distance depends on the connected device.

*3 Use an HDMI cable shorter than 5 m.

*4 Video that does not meet VESA and CEA-861 may not be transmitted.

For coaxial transmission, data is not compressed and the size is not changed. However, signals with some resolutions are converted; the video data may not be restored completely.

*5 Deep Color is not supported.

*6 Analog audio output only supports 2 channels liner PCM

*7 Anti-snow function can fix snowy noise automatically that is a specific symptom of the signal having HDCP, mainly snow noise that arises during starting. Therefore, this function cannot work when snow noise has already occurred before starting or when snowy noise occurs because of bad status of transmission line.

*8 Connection reset function can fix problems that can be repaired by taking off and putting in connectors. This function can work only in this product's output port, which sometimes will not take effect if another device is between output of this product and display device.

9 Troubleshooting

In case the COS-100HD-B does not work correctly, please check the following items first. Also refer to manuals for connected devices as well, since they may possibly be the cause of the problem.

- Is the COS-100HD-B powered on correctly?
- Are cables connected correctly?
- Are there no short circuits, disconnections, or loose connections?
- Are appropriate cables for the COS-100HD-B being used?
- Connected devices are set correctly?
- Are there any nearby objects that may cause noise?

If additional assistance is required, please check the following items and refer to manuals of connected devices as well.

Problem	Cause/Check item/Solution	Page #
● Video output		
Video is not output.	If there are no problems with cable connections, first check [1] and [2] below.	—
	[1] Is the EDID resolution setting of this device set to the input resolution supported by the display device? • If the EDID resolution is set to 1080i, some TVs do not support that resolution. • For output resolution for TVs (480i to 1080p), check the vertical synchronous frequency . • For output resolution for PCs (VGA to QWXGA), video may not be output to LC monitors.	30
	[2] Are signals output from the input device? If the SIGNAL LED of the transmitter illuminates, check [3] to [7]; if it does not illuminate, check [8] and [9].	13
	[3] If signals protected by HDCP are input, does the sink device support the HDCP? If the sink device that is not HDCP compliant is connected: - only video without content protection (such as analog input and test pattern) can be output - black is output when signal with content protection is input. Some source devices check whether the sink device is HDCP compliant or not and they output video depending on the result. In such a case, disable HDCP input in “ 7.3.1 [C01] HDCP input setting ”.	37
	[4] If a test pattern of the transmitter is displayed, the input side has problems. Replace the HDMI cable with a shorter one (16 ft. (5 m) or shorter). If a test pattern of the receiver is not displayed, the output side has problems.	—

Problem	Cause/Check item/Solution	Page #
● Video output (Cont'd)		
Video is not output from input.	[5] If the transmitter's test pattern is not displayed while receiver's test pattern is displayed, the coaxial cable has problems. Replace the cable with a shorter cable.	17
	[6] The COS-100HD-B supports only 25 MHz to 165 MHz dot clock.	—
	[7] Change the setting of Hot plug masking.	47
	[8] Is the "No-signal input" monitoring time too short?	32
	[9] Check the video output setting of the source device.	—
Interference or noise appears on video.	If a test pattern of the transmitter is displayed, the input side has problems. Replace the HDMI cable with a shorter one (16 ft. (5 m) or shorter). If a test pattern of the receiver is not displayed, the output side has problems.	—
	If the problem occurs in the transmitter side while it does not in the receiver side, the coaxial cable has problems. If a long cable is connected for input or output, replace it with a shorter cable. The problem may occur due to the cable's quality or the connected device. If the problem is solved by the replacement, the signals may be deteriorated because of the long-distance transmission.	17
	If a coaxial cable length exceeds its maximum transmission distance, the video may be interrupted or noise appears. Even within the maximum transmission distance, if the cable is connected using a cable joint (JJ), the signals may not be transmitted to the distance mentioned in the specification. The similar problems may occur if the number of Daisy chain devices exceeds the maximum number (15 devices). The maximum transmission distance and the maximum number of Daisy chain devices of this device depends on each input resolution.	17
	When high-speed signals (e.g.: high-resolution signals such as UXGA, WUXGA, and 1080p) are input or output, video may not be displayed or noise may appear depending on the cable quality and connected devices. Set the EDID in order to control the resolution and color depth of input signals.	30
Video blinks.	If interlace signals are input to a display device that does not support interlaced signals, the video blinks. Check the supported resolution of the monitor.	—

Problem	Cause/Check item/Solution	Page #
● Video output (Cont'd)		
The left, right, top and bottom sides are cut off.	If the problem occurs only when "CROSS HATCH" (a test pattern) is output, the sink device enlarges and displays the video. Adjust the sink device. If the sink device does not have the adjusting function, set the video size and position of the output.	39 50
Video is reduced vertically or horizontally.	Does the selected aspect ratio of the output resolution match that of the connected sink device? If not, set the aspect ratio of the sink device. Check the set aspect ratio of the input signal. Check the monitor setting of the source device	—
Black is displayed at top, bottom, right and left on PC video or only part of the PC video is displayed, and the rest is displayed by scrolling with the mouse.	Does the PC resolution (you can check it in "Properties" of the PC) match the resolution that is output from the PC (you can check it in "7.3.4 [C12] Input status On-screen-display")? If not, set the EDID and PC resolutions. If the copy of the built-in LCD screen is output in the laptop, the output to an output monitor is limited to the resolution of the LCD screen. As a result, black may be displayed at edges. The problem can be solved by enlarging the display or displaying only to the external monitor.	30
Dual monitor cannot be set in PC or the setting is released automatically.	If the "No-signal input" monitoring feature works, the Dual monitor may not work correctly. In this case, disable the ignoring monitoring feature.	32
Video is displayed in purple or green.	Some sink devices cannot determine color space. Set the desired color space in the output mode setting.	48
● Audio output		
Video is displayed, but audio is not output.	Is analog / digital audio set to "oFF"? Are analog audio and digital audio input set correctly?	36
	Is audio output (Digital / Audio) set to "oFF"?	46
	If a test tone of the transmitter is displayed, the input side has problems; if a test tone of the receiver is not displayed, the output side has problems. Check the audio setting of the source or sink device.	39
		50
	If there are multiple output connectors in the input device, check the audio output setting of the input device.	—
	Is compressed audio (such as Dolby Digital and DTS) input? Compressed audio cannot be output. When you want to play a disk with compressed audio (such as Blu-ray disk), check the audio output setting of the input device.	33
		to 34
	Are DVI signals output from the source device?	—
Is the output mode set to DVI output?	48	

Problem	Cause/Check item/Solution	Page #
● Audio output (Cont'd)		
Video is displayed, but audio is not output.	EDID of the connected sink device cannot be acquired, audio may not be output. Set the sink device EDID check to "Err" or "ALL".	47
Multi-channel audio is played, but only 2 channels audio is output.	It is limited by default. Change the EDID settings.	34
Audio is output from HDMI output, but it is not output from analog audio output.	Is analog audio output set to "oFF"?	46
	Is compressed audio (such as Dolby Digital and DTS) input? Analog audio is not output. Only 2-channel linear PCM is supported.	—
Audio is output from analog audio output, but it is not output from HDMI output.	Is digital audio output set to "oFF"?	46
	Is appropriate resolution set? If an output resolution for PCs (VGA to WUXGA) selected, the sink device may not output audio.	—
Analog audio is not output.	Analog / Digital audio setting is set to "A"?	36
Digital audio is not output.	Analog / Digital audio setting is set to "d"?	36
Compressed audio (such as Dolby Digital and DTS) is not output from the input device.	Compressed audio input is limited. Change the EDID setting to use compressed audio. High Bit-rate Audio (Dolby TrueHD, DTS-HD) is not supported.	33 to 34
	Check the audio output setting of input device.	—
● RS-232C communication		
Communication between transmitter and receiver is not available.	Are the communication mode of the transmitter and receiver set to the Setting mode? Set the mode of each to communication mode for communication between the transmitter and receiver.	41 52
	Are the communication settings between external control devices correct? If the communication settings (Baud rate, data length, parity, stop bit) are not matched, communication cannot proceed.	41 52
	Is the RS-232C cable type correct? Select straight or cross cable according to the devices (such as control devices) to be connected.	56
	Communication to a specific receiver is not available during Daisy Chain connection.	Is the ID set correctly? Set each receiver's ID to a value other than "00" and set the IDs of transmitter's and receiver's destinations. See the Command Guide for details.

Problem	Cause/Check item/Solution	Page #
● RS-232C communication (Cont'd)		
Bidirectional communication is not available during Daisy chain connection.	Is bidirectional communication setting set for multiple receivers? Bidirectional communication is only valid for one receiver. If multiple receivers are set to the bidirectional setting, bidirectional communication is available only for the receiver closest to the transmitter.	53
Transmitter and receiver cannot be set by communication commands.	Are the communication mode of the transmitter and receiver set to the Transmission mode? Set the mode of both transmitter and receiver each to communication mode for communication between the transmitter and receiver.	41 52
	Are the communication settings between the COS-100HD-B and control device correct? If the communication settings (Baud rate, data length, parity, stop bit) are not matched, communication cannot proceed.	41 52
	Is the RS-232C cable type correct? Select straight or cross cable according to the devices (such as control devices) to be connected.	56
● Key operation		
Keys do not operate.	Ensure that keys are not locked.	24

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 COS-100HD-B. The problem still cannot be solved? Please contact us for assistance.	Yes or No

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