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# HDMI Module cecTalker A module that makes your devices smart by connecting them with HDMI



## socionext for better quality of experience

Create an environment for smart living and smart work at home by yourself. This module makes it possible to have something that was not available or possible up until now.

The HDMI module cecTalker(pronounced "C-E-C-Talker") enables the user to easily design UI and UX for devices in order to make them convenient just by connecting with HDMI. cecTalker makes it easy to design a high-speed interface for video and audio, strongly supporting customers' development work.

#### **Overview**

These days, video and audio devices for 2K and even up to 8K Super Hi-Vision can be connected to one another using a single cable via HDMI terminals. However, developing an product with HDMI is difficult and has been a tough obstacle for many developers. In order to solve this problem, Socionext leveraged its sophisticated technological capabilities and its wealth of experience in HDMI to offer an HDMI module cecTalker that simplifies the development of products with HDMI.

In particular, cecTalker allows these devices to be connected, which was previously difficult to do, by focusing on the CEC functionality defined in the HDMI standard and by connecting the devices using only the HDMI plug-in. cecTalker expands the possibilities of medical, monitoring, and broadcasting equipment, as well as video and audio equipment, depending on how you want to use them. cecTalker also allows customers to create prototypes by connecting to a PC, Raspberry Pi\*1, Arduino\*<sup>2</sup>, or SPRESENSE<sup>™</sup>\*<sup>3</sup> and to perform other development work on platforms that they are familiar with.

\*1: Raspberry Pi is a registered trademark of the Raspberry Pi Foundation.

\*2: Arduino is a registered trademark of ARDUINO SA.

\*3: SPRESENSE is a trademark of Sony Corporation.

#### Features

cecTalker has two models: HDMI model [Black] and V-by-One model [White]. These models not only simplify the development, evaluation, and testing work performed by customers, but they also allow customers to incorporate them into their products and mass produce them. Devices connected with HDMI cables can also be integrated using CEC.

#### Image of product development using "cecTalker"

#### Step-1

Concept making

First, let's try using cecTalker in

various ways. For example, try

creating an app by connecting a

PC and an AV device, or creating

a convenient device by combining

with Raspberry Pi, and so on.

#### Step-2

#### Prototyping

When you have determined the concept, try creating a prototype by designing the exterior or customizing the cecTalker board to fit the exterior.

## HDMI model V-by-One model

[White]

[Black]

#### Step-3

#### Manufacturing

After checking the prototype, start mass production by putting the cecTalker in the assembly process at the factory. The cecTalker can also be certified, so it is safe to use as it is.

#### **Product line-up**

#### > Specification

Product name			cecTalker HDMI model [Black]	cecTalker V-by-One model [White]
Purpose			Prototype/Development/Mass production	Prototype/Development/Testing
Function			<ul> <li>CEC transmission function</li> <li>CEC reception function (Support for customization)</li> <li>3 to 1 HDMI input selection function</li> <li>2K/4K low-latency super-resolution function</li> </ul>	<ul> <li>HDMI to V-by-One conversion function</li> <li>V-by-One to HDMI conversion function</li> <li>4 to 1 HDMI input selection function</li> <li>2K/4K low-latency super-resolution function</li> </ul>
Interface	HDMI	Rx	3 ports (Connector: Type-A)	4 ports (Connector: Type-D)
		Tx	1 port (Connector: Type-A)	1 port (Connector: Type-A)
		CEC	Standard	Support for customization
		ARC	Support for customization	-
	V-by-One	Rx		1 port
		Tx	_	1 port
	l <sup>2</sup> S	Rx/Tx	Support for customization	2 ports (for Raspberry Pi and a sub-board)
	UART	Rx/Tx	2 ports (for Raspberry Pi and SPRESENSE™*1)	2 ports (for Raspberry Pi and a sub-board*2)
Power supply			5V/1A* <sup>3</sup> (Connector: USB micro-B)	5V/1.5A (Connector: USB Type-C)

\*1: SPRESENSE™ or Raspberry Pi Exclusive

\*2: Main or Sub Exclusive

\*3: 2.0A in case of SPRESENSE™ stacking

#### Block diagram



# HDMI Module cecTalker

## cecTalker HDMI model [Black]

The cecTalker HDMI model [Black] has HDMI input/output terminals. The user can reset the board from the button on the board and select an input port. The status is indicated by the LED display.

#### Product appearance



#### > Items included in the product:

The cecTalker HDMI model [Black] comprises only the main-board. An AC adapter and HDMI cables are required separately.

Product name	Description	Product appearance
Main-board	The cecTalker main-board. cecTalker can be operated using only this board. cecTalker can be used by stacking on Raspberry Pi or SPRESENSE <sup>™</sup> . When using Raspberry Pi, connect it to the GPIO connector. When using SPRESENSE <sup>™</sup> , connect it to the dedicated pin on the rear surface.	

#### > Items that need to be prepared separately:

①AC adapter (5V 1A\*): Connect it to the main-board using the USB micro-B connector. (\*: 2.0A in case of SPRESENSE<sup>™</sup> stacking) 2HDMI cable (Type-A): Use it to connect the main-board with the monitor.

③HDMI cable (Type-A): Use it to connect the main-board with the source device. (Up to three cables can be connected.)

#### ▷ Simple application example



## System application example









# HDMI Module **CecTalker**





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## cecTalker V-by-One model [White]

The cecTalker V-by-One model [White] has the input/output terminals for HDMI and V-by-One on the main-board. By connecting it to a sub-board for user interface (UI) extension, it is possible to switch modes and display the status.

## > Product appearance



#### > Items included in the product:

The cecTalker V-by-One model [White] includes the main-board, sub-board, and FF cable. Note that the AC adapter, HDMI cable, and V-by-One cable are required separately.

Product name	Description	Product appearance
Main-board	The cecTalker main-board. cecTalker can be operated with only this board. Use it by stacking on Raspberry Pi. (cecTalker supports Raspberry Pi's GPIO.)	
Sub-board	The UI extension board. (Use this board to control the main-board.)	
FF cable	The FF cable to connect the main-board to the sub-board.	

## > Items that need to be prepared separately:

①AC adapter (5V 1.5A) : Connect it with the main-board using the USB Type-C connector. ②HDMI cable (Type-A/Type-A): Use it to connect the main-board with the monitor. (It is not required for V-by-One output.) ③HDMI cable (Type-A/Type-D): Use it to connect the main-board with the source device. (Up to four cables can be connected.) ④V-by-One cable : Prepare the cable as needed.

## Simple application example



## System application example





# HDMI Module **CecTalker**