

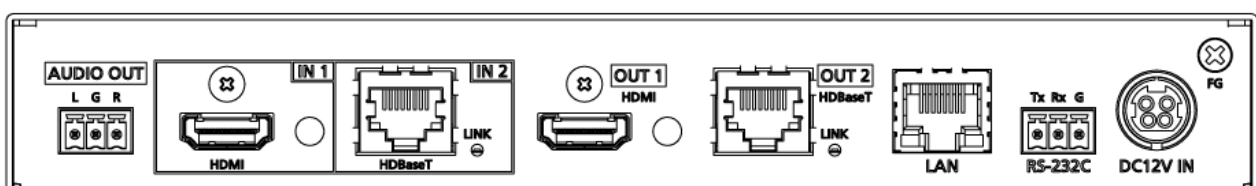
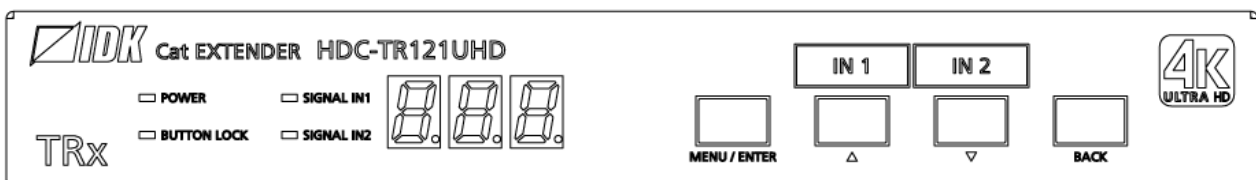
## 4K@60/HDCP 2.2 HDBaseT Extender with Distribution Amplifier

# HDC-UHD Series

HDC-TR121UHD  
HDC-TH221UHD/HDC-TH421UHD  
HDC-RH221UHD/HDC-RH421UHD

<Command Reference Guide>

Ver.2.0.1



- 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.

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# Before reading this manual

- All rights reserved.
- Some information contained in this Command guide such as exact product appearance, diagrams, communication commands, and so on may differ depending on the product version.
- This Command 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:

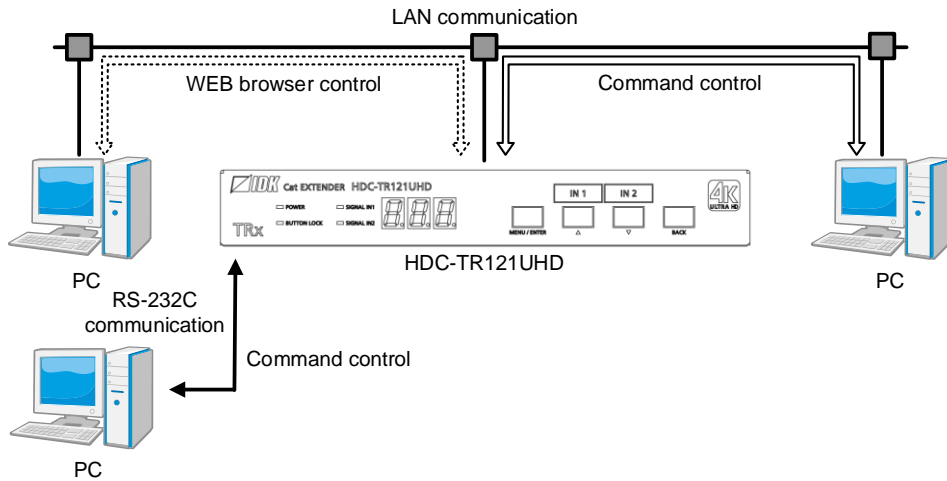
- User guide: Please download the User guide from the website above.  
Provides explanations and procedures for operations, installation, connections among devices, I/O adjustment and settings.
- Command guide (this document):  
Provides explanations and procedures for external control using RS-232C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

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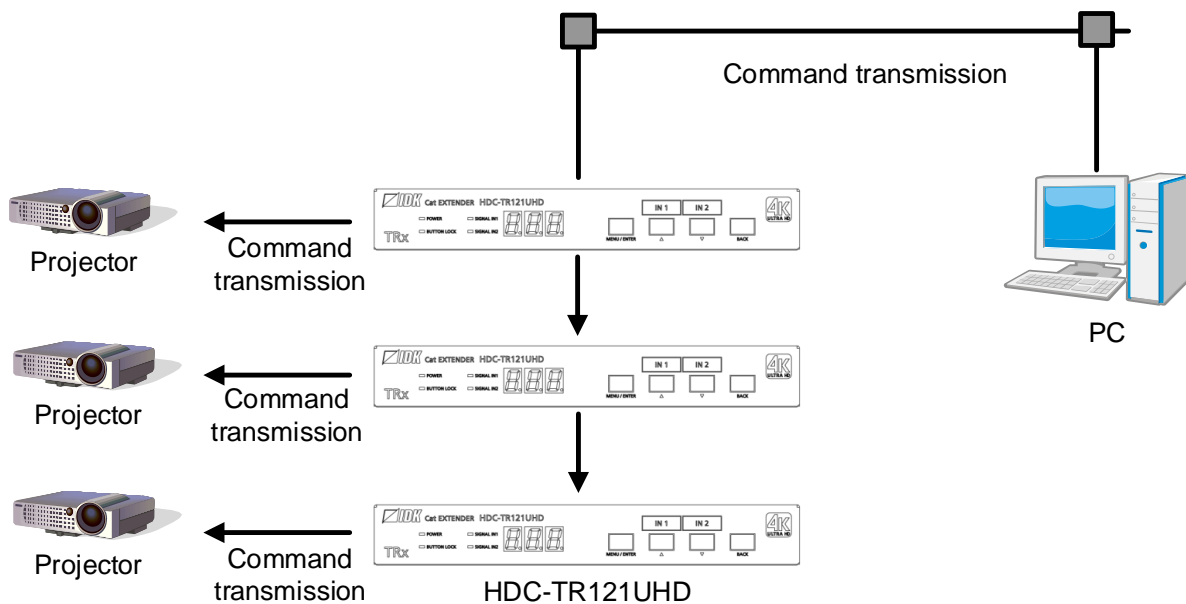
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# 1 About this Guide

This guide contains the procedure for controlling the HDC-UHD series (hereafter referred to as “HDC”) using commands via RS-232C communication or LAN communication.



[Fig. 1.1] Controlling HDC



[Fig. 1.2] RS232C transmission

■ **Communication commands enables the following main operations:**

- Switching channel
- Setting I/O, audio, and EDID
- Setting RS-232C transmission mode and command mode

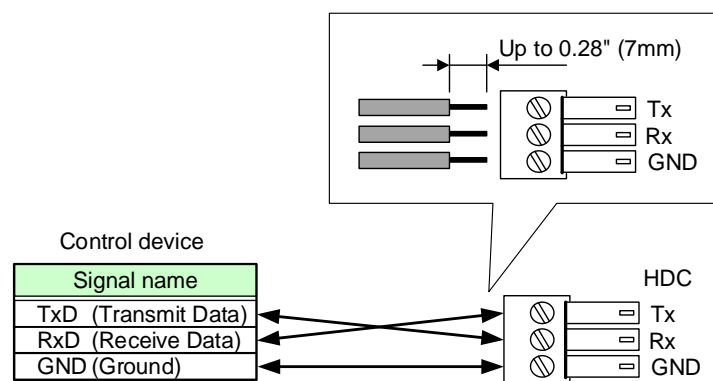
## 2 Communication configuration and Specifications

### 2.1 RS-232C communication

#### 2.1.1 RS-232C connector specification

Insert and secure the wires from the RS-232C cable into the supplied 3-pin captive screw connector, and then insert the captive screw connector into the mating connector on the HDC.

28 AWG to 16 AWG conductor gauge is recommended. The recommended wire strip length is 0.28 in. (7 mm). Short RTS/CTS and DTR/DSR as needed.



[Fig. 2.1] Connecting RS-232C cable to 3-pin captive screw connector

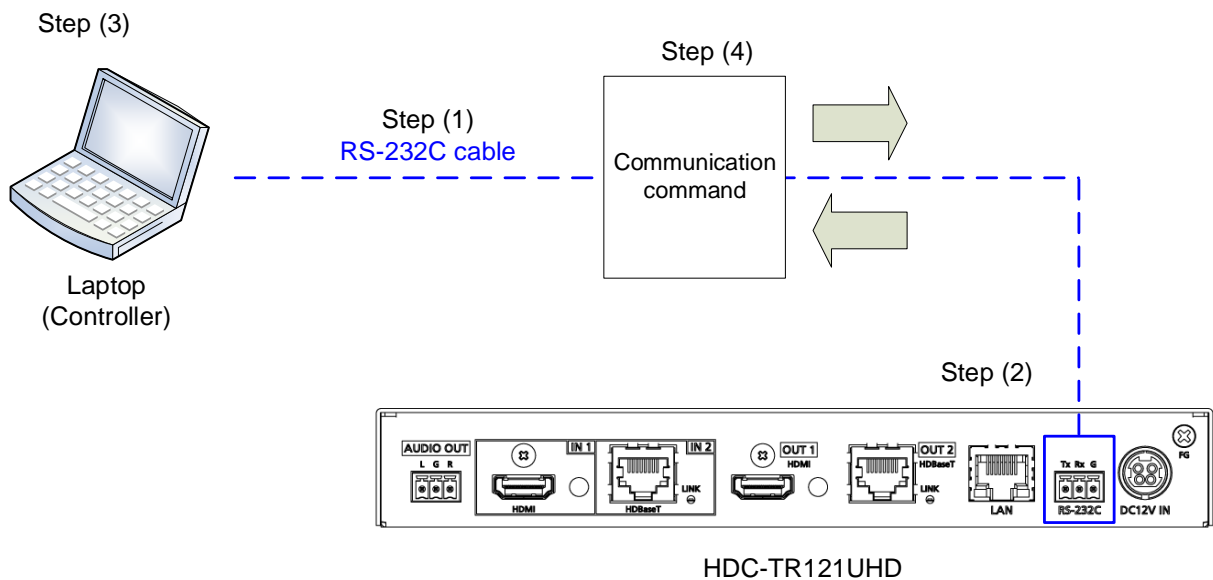
#### 2.1.2 RS-232C communication specification

[Table 2.1] RS-232C specification

|                      |   |
|----------------------|---|
| Compliant standard   | RS-232C   |
| Baud rate            | 4800/9600/14400/19200/38400 [bps]                       |
| Data bit length      | 7/8 [bit]   |
| Parity check         | NONE, EVEN, ODD   |
| Stop bit             | 1/2 [bit]   |
| X parameter          | Invalid   |
| Flow control         | None  |
| Delimiter            | CR LF (Carriage return and line feed, 0D and 0A in hex) |
| Communication method | Full duplex   |

## 2.1.3 Setting up RS-232C communication

- (1) Connect the HDC and the control device via an RS-232C cable.
  - (2) Set the RS-232C communication as follows:
    - RS-232C communication: Baud rate, data bit length, parity check, and stop bit
    - Operation mode of RS-232C communication: Setting mode
- 【Reference: User Guide】  
【See: 2.1.4 RS-232C transmission mode】
- (3) For the control device, set the same values in the same way as RS-232C communication (baud rate, data bit length, parity check, and stop bit) in step (2) above.
  - (4) Send a communication command from the control device to the HDC in order to check the control status of the HDC.

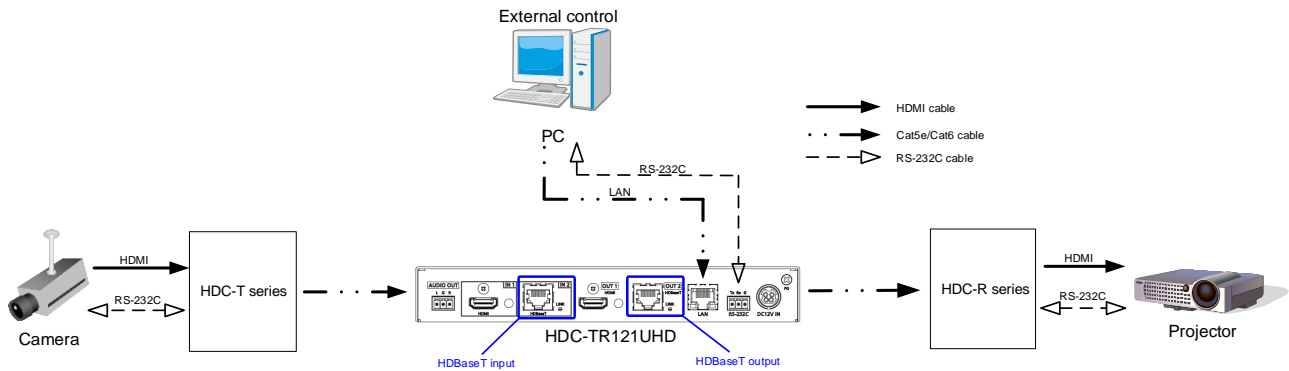


[Fig. 2.2] Setting RS-232C communication

## 2.1.4 RS-232C transmission mode

Devices that are connected to HDBaseT input/output connectors and RS-232C connector of the HDC can be controlled via RS-232C communication.

【See: RS-232C transmission mode】



[Fig. 2.3] RS-232C transmission mode application example

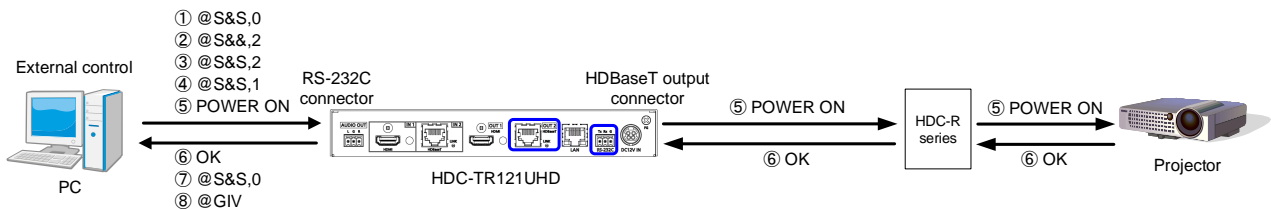
You can specify multiple sending channels.

If setting multiple channels to be received, ensure that data is not duplicated in order to specify that each data is received from which connector.

Example: Sending data to OUT2 and receiving the response from OUT2

Setting RS-232C communication as follows: baud rate: 9600bps; data bit length: 8 bit; parity check: None; stop bit: 1 bit)

| No. | Command                         | Description   | Mode              |
|-----|---------------------------------|---|-------------------|
| ①   | @S&S,0 <input type="checkbox"/> | Setting to "Command mode".<br>After this, command can be sent to the HDC.                 | Command mode      |
| ②   | @S&&,2 <input type="checkbox"/> | Setting RS-232C transmission sending channel, specifying OUT2                             | Command mode      |
| ③   | @S&R,2 <input type="checkbox"/> | Setting RS-232C transmission receiving channel, specifying OUT2                           | Command mode      |
| ④   | @S&S,1 <input type="checkbox"/> | Setting to "Transmission mode".<br>After this, received data is sent to OUT2 set by @S++. | Transmission mode |
| ⑤   | POWER ON                        | Sending projector powered ON command  | Transmission mode |
| ⑥   | OK                              | Receiving projector powered ON command  | Transmission mode |
| ⑦   | @S&S,0 <input type="checkbox"/> | Setting to "Command mode".<br>After this, command can be sent to the HDC.                 | Command mode      |
| ⑧   | @GIV <input type="checkbox"/>   | Getting versions  | Command mode      |



[Fig. 2.4] RS-232C transmission mode communication example



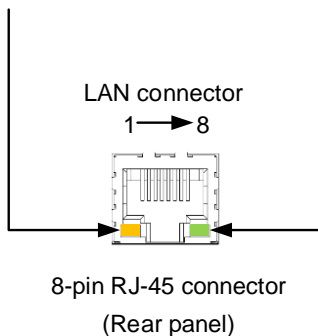
## 2.2 LAN communication

### 2.2.1 LAN connector specification

Pin assignment of the LAN connector is as follows.

Light in orange if the send/receive rate is 100 Mbps.  
Goes off if it is 10 Mbps.

Light in green while link is established.  
Blinks in green while data is being sent/received.



| Pin# | Signal Name              |                          |
|------|--------------------------|--------------------------|
|      | MDI                      | MDI-X                    |
| 1    | TX+ (Transmitted Data +) | RX+ (Received Data +)    |
| 2    | TX- (Transmitted Data -) | RX- (Received Data -)    |
| 3    | RX+ (Received Data +)    | TX+ (Transmitted Data +) |
| 4    | N.C. (Not Connected)*    | N.C. (Not Connected)*    |
| 5    | N.C. (Not Connected)*    | N.C. (Not Connected)*    |
| 6    | RX- (Received Data -)    | TX- (Transmitted Data -) |
| 7    | N.C. (Not Connected)*    | N.C. (Not Connected)*    |
| 8    | N.C. (Not Connected)*    | N.C. (Not Connected)*    |

\*Not used

[Fig. 2.5] LAN connector

Since Auto MDI/MDI-X that distinguishes and switches straight/cross cables automatically is supported, extra care is not necessary to connect the HDC to PC, HUB or the like.

### 2.2.2 LAN communication specification

[Table 2.2] Specification of LAN communication

|                   |  |
|-------------------|--|
| Physical layer    | 10Base-T (IEEE802.3i)/100Base-TX (IEEE802.3u)  |
| Network layer     | ARP, IP, ICMP  |
| Transport layer   | TCP<br>Port used for command control : 1100, 6000 to 6999<br>Port used for WEB browser control (HTTP) : 80 |
| Application layer | HTTP, TELNET   |

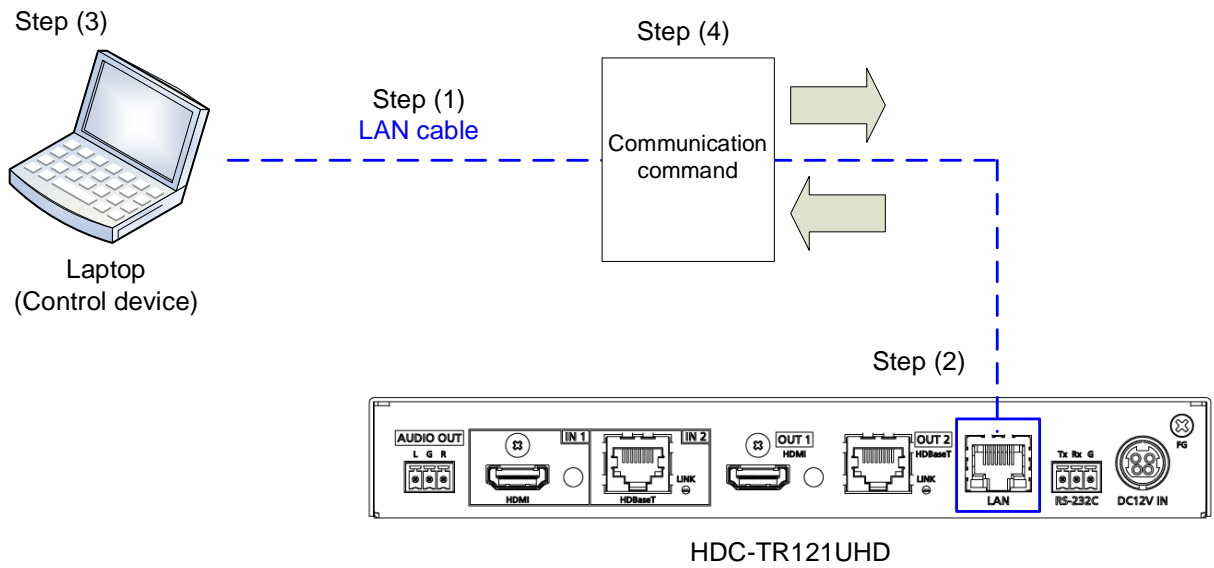
**Note:**

Up to 8 connections can be used simultaneously. (4 connections for WEB browser)

【See: 2.2.4 The number of TCP-IP connections】

## 2.2.3 Setting up LAN communication

- (1) Connect the HDC and the control device via a LAN cable.
  - (2) Set up LAN communication as follows:
    - Set IP address and subnet mask
    - TCP port number: 23, 1100, 6000 to 6999
- 【Reference: User guide】
- (3) Establish the connection from the control device to the IP address and TCP port that are set to the HDC in step (2) above.
  - (4) Send a communication command from the control device to the HDC in order to check the control status of the HDC.



**[Fig. 2.6] Setting LAN communication**

## 2.2.4 The number of TCP-IP connections

---

The HDC supports up to eight simultaneous TCP-IP connections (eight logical ports).

To maintain optimal system accessibility, it is advisable to issue “port-open” and “port-close” commands before and after command or query strings are issued. This approach enables eight or more control devices to be effectively interfaced simultaneously and without concern for communication errors.

**[Table 2.3] Increasing connections**

| Your PC software       |   | HDC                     |
|------------------------|---|-------------------------|
| Connecting TCP-IP      | → | (Occupying 1 port)      |
| Sending command (@xxx) | → |                         |
|                        | ← | Replying command (@xxx) |
| Closing TCP-IP         | → | (Releasing 1port)       |

**Note:**

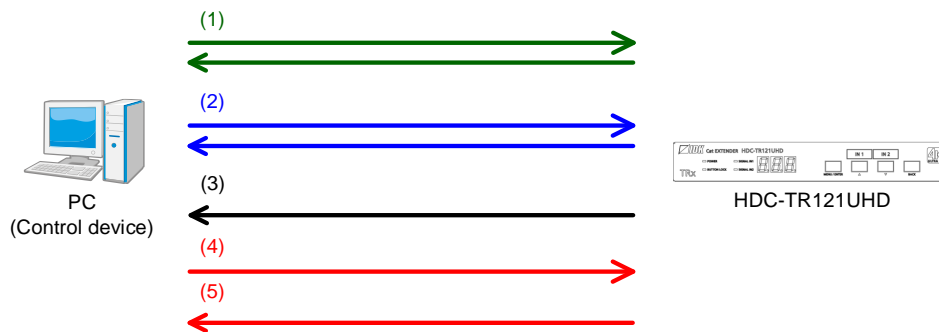
As a safeguard, the HDC incorporates a 30-second timeout window for each port. If any port is inactive for more than 30 seconds, it will be closed automatically.

## 2.3 Unsolicited status notification

The HDC can notify status changes and problems in a system through RS-232C or LAN communication.

### Unsolicited status notification:

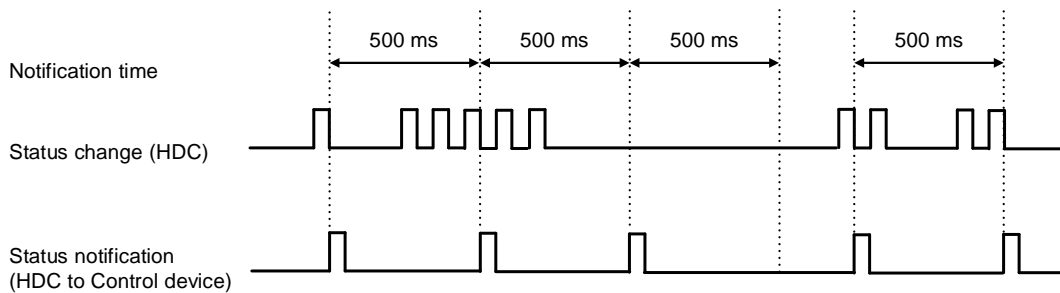
- (1) The unsolicited status notification feature is enabled using @SPH command.
- (2) The control device periodically sends @GIV command (30 seconds or shorter) to keep the connection.  
This step can be skipped for RS0232C communication.
- (3) The HDC notifies control device of changes in HDC.
- (4) The control device sends @AIN command that is for getting input status.
- (5) The HDC sends the control device current status.



[Fig. 2.7] Notifying status

Interval between a notification and the next notification

If no change is detected during the interval, status is sent immediately after detecting a change.



[Fig. 2.8] Notification interval

### Notes:

- You need to set the time again after powering off the HDC.
- If “@G&S / @S&S RS-232C transmission mode” is set to “1” (transmission mode), this feature cannot be used.

## 3 Command

---

### 3.1 Summary

---

A command consists of "@" ("40" in hexadecimal), 3 one-byte alphabetical characters, followed by 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: @SPM,2↵

"," (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).

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

Example: @SSW,1  
 @ERR,1

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

Example: ↵

```

----- HELP (1/10) -----
(CHANNEL SELECT Command)
@GSW / @SSW Getting/Setting Switching channels
@GOF / @SOF Getting/Setting Automatic input channel switching
  
```

## 3.2 Command list

### ■ Error status

| Command | Function     | Page |
|---------|--------------|------|
| @ERR    | Error status | 16   |

### ■ Switching channel

| Command     | Function                                    | Page |
|-------------|---|------|
| @GSW / @SSW | Switching channels                          | 17   |
| @GOE / @SOE | Applying @SOO setting                       | 17   |
| @GOF / @SOF | Automatic input channel switching           | 18   |
| @GMT / @SMT | Ignoring duration after automatic switching | 18   |

### ■ Setting input

| Command     | Function                      | Page |
|-------------|-------------------------------|------|
| @GDT / @SDT | No-signal input monitoring    | 19   |
| @GHE / @SHE | HDCP input enabled/disabled   | 19   |
| @GIA / @SIA | HDBaseT input long reach mode | 20   |

### ■ Setting output

| Command     | Function  | Page |
|-------------|---|------|
| @GDM / @SDM | Output format   | 21   |
| @GHM / @SHM | Sink device EDID check                                | 22   |
| @GMK / @SMK | Hot plug ignoring duration                            | 22   |
| @GOA / @SOA | HDBaseT output long reach mode                        | 23   |
| @GDN / @SDN | Downconversion output                                 | 23   |
| @GOO / @SOO | Presence of output signal for when signal is input    | 24   |
| @GDP / @SDP | Presence of output signal for when no signal is input | 24   |

### ■ Setting audio

| Command     | Function               | Page |
|-------------|------------------------|------|
| @GAW / @SAW | Audio waiting duration | 25   |
| @GUC / @SUC | Outputting audio       | 25   |

### ■ Setting EDID

| Command     | Function              | Page |
|-------------|-----------------------|------|
| @GED / @SED | Resolution            | 26   |
| @RME        | Copying EDID          | 27   |
| @GEC / @SEC | External EDID         | 27   |
| @GDI / @SDI | Deep Color            | 28   |
| @GSP / @SSP | Speaker configuration | 29   |
| @GAF / @SAF | Audio format          | 30   |
| @GHZ / @SHZ | Input video frequency | 31   |

### ■ Setting RS-232C

| Command     | Function                  | Page |
|-------------|---------------------------|------|
| @GCT / @SCT | RS-232C communication     | 32   |
| @G&S / @S&S | RS-232C transmission mode | 33   |
| @G&& / @S&& | RS-232C sending channel   | 33   |
| @G&R / @S&R | RS-232C receiving channel | 34   |

### ■ Setting LAN

| Command     | Function        | Page |
|-------------|-----------------|------|
| @GIP / @SIP | IP address      | 35   |
| @GSB / @SSB | Subnet mask     | 35   |
| @GLP / @SLP | TCP port number | 36   |
| @GMC        | MAC address     | 36   |

### ■ Configuring HDC

| Command     | Function                         | Page |
|-------------|----------------------------------|------|
| @GLM / @SLM | Grouping button security lockout | 37   |
| @GLS / @SLS | Button security lockout          | 37   |
| @GPW / @SPW | Power saving                     | 38   |

### ■ Status indication

| Command | Function                                | Page |
|---------|---|------|
| @GIS    | Input signal status (For each channel)  | 39   |
| @GOS    | Output signal status (For each channel) | 41   |
| @GES    | Sink device EDID (For each channel)     | 43   |
| @GHC    | System status                           | 45   |
| @GPS    | Power voltage                           | 46   |
| @GST    | Internal temperature                    | 46   |
| @GIV    | Version                                 | 46   |
| @GHB    | HDBaseT information (For each channel)  | 47   |

### ■ Status notification

| Command     | Function                                | Page |
|-------------|---|------|
| @GPH / @SPH | Notification interval                   | 50   |
| @PSH        | Unsolicited status notification         | 51   |
| @AIN        | Input signal status (For each channel)  | 52   |
| @AOT        | Output signal status (For each channel) | 56   |
| @GAA        | Alarm status                            | 62   |

### 3.3 Details of commands

This section describes commands for the HDC-TH421UHD. Note that the numbers of outputs and output ports for other models are different from those of the HDC-TH421UHD.

#### 3.3.1 Error status

| @ERR            |             | Error status  |
|-----------------|-------------|---|
| Description     |             | Response in case the command is not executed  |
| Response        |             | @ERR, error ↴   |
| Parameter       |             | error: Error status<br>1 = Erroneous parameter format or value<br>2 = Undefined command or wrong format<br>3 = Currently cannot be used<br>4 = Loading EDID from the sink device failed |
| Getting example | Command     | @IOS ↴  |
|                 | Response    | @ERR,2 ↴  |
|                 | Description | @IOS is sent.<br>Command format error   |
| Remarks         |             | —   |



### 3.3.2 Switching channel

| @GSW / @SSW     |             | Switching channels  |
|-----------------|-------------|---|
| Getting         | Command     | @GSW ↵  |
|                 | Response    | @GSW, in _1, ... , in _5 ↵  |
| Setting         | Command     | @SSW, in, out ↵   |
|                 | Response    | @SSW, in, out ↵   |
| Parameter       |             | in, in_1-5: Input channel<br>1 = IN1, 2 = IN2                           |
|                 |             | out: Output channel<br>0 [Fixed]  |
| Getting example | Command     | @GSW ↵  |
|                 | Response    | @GSW,1,1,1,1,1 ↵  |
|                 | Description | Getting the input channel that is assigned to the output channel<br>IN1 |
| Setting example | Command     | @SSW,1, 0 ↵   |
|                 | Response    | @SSW,1, 0 ↵   |
|                 | Description | Setting IN1 to be output<br>Completed                                   |
| Remarks         |             | —   |

| @GOE / @SOE     |             | Applying @SOO setting   |
|-----------------|-------------|---|
| Getting         | Command     | @GOE ↵  |
|                 | Response    | @GOE, mode ↵  |
| Setting         | Command     | @SOE, mode ↵  |
|                 | Response    | @SOE, mode ↵  |
| Parameter       |             | mode: Switching output signal mode setting<br>0 = Disabled, 1 = Enabled [Default]                     |
| Getting example | Command     | @GOE ↵  |
|                 | Response    | @GOE,1 ↵  |
|                 | Description | Getting output signal settings<br>Enabled   |
| Setting example | Command     | @SOE,1 ↵  |
|                 | Response    | @SOE,1 ↵  |
|                 | Description | Enabling switching output signal settings<br>Completed  |
| Remarks         |             | This command is valid only if “@GOO/ @SOO Presence of output signal for when signal is input” is set. |

| <b>@GOF / @SOF</b> |             | <b>Automatic input channel switching</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GOF   |
|                    | Response    | @GOF, priority   |
| Setting            | Command     | @SOF, priority   |
|                    | Response    | @SOF, priority   |
| Parameter          |             | priority: Automatic input channel switching<br>0 = OFF [Default], 1 = AUTO,<br>2 = IN1 priority, 3 = IN2 priority,<br>4 = IN1 fixed, 5 = IN2 fixed |
| Getting example    | Command     | @GOF   |
|                    | Response    | @GOF,1   |
|                    | Description | Getting the automatic input channel switching<br>AUTO  |
| Setting example    | Command     | @SOF,1   |
|                    | Response    | @SOF,1   |
|                    | Description | Setting the automatic input channel switching to AUTO<br>Completed   |
| Remarks            |             | —  |

| <b>@GMT / @SMT</b> |             | <b>Ignoring duration after automatic switching</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GMT   |
|                    | Response    | @GMT, time   |
| Setting            | Command     | @SMT, time   |
|                    | Response    | @SMT, time   |
| Parameter          |             | time: Masking time<br>0 = OFF, 500 to 10000 = 0.5 sec. to 10 sec. by 0.5 sec. [Default] 1 sec. |
| Getting example    | Command     | @GMT   |
|                    | Response    | @GMT,10000   |
|                    | Description | Getting the masking time after automatic switching of input channel<br>10 seconds              |
| Setting example    | Command     | @SMT,10000   |
|                    | Response    | @SMT,10000   |
|                    | Description | Setting the masking time to 10 seconds<br>Completed  |
| Remarks            |             | —  |









### 3.3.3 Setting input

| <b>@GDT / @SDT</b> |             | <b>No-signal input monitoring</b>   |
|--------------------|-------------|---|
| Getting            | Command     | @GDT <a href="#">↵</a>  |
|                    | Response    | @GDT, time_1, time_2 <a href="#">↵</a>  |
| Setting            | Command     | @SDT, in_1, time_1 (, in_2, time_2) <a href="#">↵</a>   |
|                    | Response    | @SDT, in_1, time_1 (, in_2, time_2) <a href="#">↵</a>   |
| Parameter          |             | time_1-2: No-signal input monitoring time<br>0 = OFF, 2 to 15 = 2 sec. to 15 sec. [Default] 10 sec. |
|                    |             | in_1-2: Input channel<br>0 = All inputs, 1 = IN1, 2 = IN2   |
| Getting example    | Command     | @GDT <a href="#">↵</a>  |
|                    | Response    | @GDT,0,10 <a href="#">↵</a>   |
|                    | Description | Getting the no-signal input monitoring time<br>All input channels: 10 seconds                       |
| Setting example    | Command     | @SDT,0,4 <a href="#">↵</a>  |
|                    | Response    | @SDT,0,4 <a href="#">↵</a>  |
|                    | Description | Setting the monitoring time of all input channels to 4 seconds<br>Completed                         |
| Remarks            |             | —   |

| <b>@GHE / @SHE</b> |             | <b>HDCP input enabled/disabled</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GHE <a href="#">↵</a>   |
|                    | Response    | @GHE, hdcp_1, hdcp_2 <a href="#">↵</a>   |
| Setting            | Command     | @SHE, in_1, hdcp_1 (, in_2, hdcp_2) <a href="#">↵</a>  |
|                    | Response    | @SHE, in_1, hdcp_1 (, in_2, hdcp_2) <a href="#">↵</a>  |
| Parameter          |             | hdcp_1-2: HDCP input enabled/disabled<br>0 = DISABLE (Disabled), 1 = HDCP 1.4 (Enabled),<br>2 = HDCP 2.2 (Enabled) [Default] |
|                    |             | in_1-2: Input channel<br>0 = All inputs, 1 = IN1, 2 = IN2  |
| Getting example    | Command     | @GHE <a href="#">↵</a>   |
|                    | Response    | @GHE,0,1 <a href="#">↵</a>   |
|                    | Description | Getting the HDCP input enabled/disabled<br>All input channels: HDCP 1.4 enabled  |
| Setting example    | Command     | @SHE,0,0 <a href="#">↵</a>   |
|                    | Response    | @SHE,0,0 <a href="#">↵</a>   |
|                    | Description | Setting the HDCP input of all input channels to be disabled<br>Completed   |
| Remarks            |             | —  |

| @GIA / @SIA     |             | HDBaseT input long reach mode  |
|-----------------|-------------|--|
| Getting         | Command     | @GIA ↵   |
|                 | Response    | @GIA,mode_2 ↵  |
| Setting         | Command     | @SIA, in_2, mode_2 ↵   |
|                 | Response    | @SIA, in_2, mode_2 ↵   |
| Parameter       |             | mode_2: Long reach mode<br>0 =OFF [Default], 1 = ON  |
|                 |             | in_2: HDBaseT input channel<br>2 = IN2 [Fixed]   |
| Getting example | Command     | @GIA ↵   |
|                 | Response    | @GIA,0 ↵   |
|                 | Description | Getting the HDBaseT input long reach mode<br>IN2: OFF  |
| Setting example | Command     | @SIA,2,0 ↵   |
|                 | Response    | @SIA,2,0 ↵   |
|                 | Description | Setting the long reach mode of IN2 to OFF<br>Completed   |
| Remarks         |             | If this menu is set to "ON", resolutions up to 1080p (24 bit) or dot clock 148 MHz are supported. If it exceeds 1080p (24 bit) or 148 MHz, signals cannot be received. |

### 3.3.4 Setting output

| @GDM / @SDM     |             | Output format  |
|-----------------|-------------|--|
| Getting         | Command     | @GDM    |
|                 | Response    | @GDM, mode_1, ... , mode_5    |
| Setting         | Command     | @SDM, out_1, mode_1 (, out_2, mode_2...)    |
|                 | Response    | @SDM, out_1, mode_1 (, out_2, mode_2...)    |
| Parameter       |             | mode_1-5: Output format<br>0 = FOLLOW SINK DEVICE [Default]<br>1 = HDMI RGB MODE<br>2 = HDMI YCbCr 4:2:2 MODE<br>3 = HDMI YCbCr 4:4:4 MODE<br>4 = DVI MODE<br>5 = HDMI YCbCr 4:2:0 MODE Available only for 4K@50/59.94/60 output.<br>Even if you select this mode for other resolution, "0" ("FOLLOW SINK DEVICE") will be selected automatically. |
|                 |             | out_1-5: Output channel<br>0 = All outputs, 1 to 5 = OUT1 to OUT5  |
| Getting example | Command     | @GDM    |
|                 | Response    | @GDM,0,0,0,0,0    |
|                 | Description | Getting the output format<br>All output channels: FOLLOW SINK DEVICE   |
| Setting example | Command     | @SDM,0,0    |
|                 | Response    | @SDM,0,0    |
|                 | Description | Setting the output format of all output channels to FOLLOW SINK DEVICE<br>Completed  |
| Remarks         |             | This setting is applied when HDMI signal is input. When 4K YCbCr 4:4:4 signal is input, the HDC outputs the signal at YCbCr 4:2:0 to the sink device supporting YCbCr 4:2:0 (not supporting YCbCr 4:4:4).  |

| <b>@GHM / @SHM</b> |             | <b>Sink device EDID check</b>   |
|--------------------|-------------|---|
| Getting            | Command     | @GHM [↵]  |
|                    | Response    | @GHM, mode_1, ··· , mode_5 [↵]  |
| Setting            | Command     | @SHM, out_1, mode_1 (, out_2, mode_2···) [↵]  |
|                    | Response    | @SHM, out_1, mode_1 (, out_2, mode_2···) [↵]  |
| Parameter          |             | mode_1-5: Sink device EDID check method<br>0 = In case of EDID load error, the sink device is treated as a DVI device [Default],<br>1 = In case of EDID load error, the sink device is treated as a HDMI device without SCDC,<br>2 = Always treats sink device as a HDMI device without SCDC,<br>3 = In case of EDID load error, the sink device is treated as a HDMI device with SCDC,<br>4 = Always treats sink device as a HDMI device with SCDC |
|                    |             | out_1-5: Output channel<br>0 = All outputs, 1 to 5 = OUT1 to OUT5   |
| Getting example    | Command     | @GHM [↵]  |
|                    | Response    | @GHM,0,0,0,0,0 [↵]  |
|                    | Description | Getting the sink device EDID check<br>“0” (In case of EDID load error, the sink device is treated as a DVI device.)   |
| Setting example    | Command     | @SHM,0,0 [↵]  |
|                    | Response    | @SHM,0,0 [↵]  |
|                    | Description | Setting the sink device EDID check method of all output channels to “0” (In case of EDID load error, the sink device is treated as a DVI device.)<br>Completed  |
| Remarks            |             | —   |

| <b>@GMK / @SMK</b> |             | <b>Hot plug ignoring duration</b>  |
|--------------------|-------------|--|
| Getting            | Command     | @GMK [↵]   |
|                    | Response    | @GMK, mask_1, ··· , mask_5 [↵]   |
| Setting            | Command     | @SMK, out_1, mask_1 (, out_2, mask_2···) [↵]   |
|                    | Response    | @SMK, out_1, mask_1 (, out_2, mask_2···) [↵]   |
| Parameter          |             | mask_1-5: Hot plug ignoring duration<br>1 = OFF [Default], 2 to 15 = 2 sec. to 15 sec. |
|                    |             | out_1-5: Output channel<br>0 = All outputs, 1 to 5 = OUT1 to OUT5                      |
| Getting example    | Command     | @GMK [↵]   |
|                    | Response    | @GMK,1,1,1,1,1 [↵]   |
|                    | Description | Getting the hot plug ignoring duration<br>All output channels: OFF                     |
| Setting example    | Command     | @SMK,0,1 [↵]   |
|                    | Response    | @SMK,0,1 [↵]   |
|                    | Description | Setting the hot plug ignoring duration of all output channels to OFF<br>Completed      |
| Remarks            |             | —  |

| <b>@GOA / @SOA</b> |             | <b>HDBaseT output long reach mode</b>   |
|--------------------|-------------|---|
| Getting            | Command     | @GOA  |
|                    | Response    | @GOA, mode_2 , ... , mode_5   |
| Setting            | Command     | @SOA, out_2, mode_2 (, out_3, mode_3...)  |
|                    | Response    | @SOA, out_2, mode_2 (, out_3, mode_3...)  |
| Parameter          |             | mode_2-5: Long reach mode<br>0 = OFF [Default], 1 = ON  |
|                    |             | out_2-5: HDBaseT output channel<br>0 = All HDBaseT outputs (OUT2 to OUT5), 2 to 5 = OUT2 to OUT5  |
| Getting example    | Command     | @GOA  |
|                    | Response    | @GOA,0,0,0,0  |
|                    | Description | Getting the HDBaseT output long reach mode<br>OUT2 to OUT5: OFF   |
| Setting example    | Command     | @SOA,0,0  |
|                    | Response    | @SOA,0,0  |
|                    | Description | Disabling OUT2 to OUT5's long reach mode<br>Completed   |
| Remarks            |             | If this menu is set to "ON", resolutions only up to 1080p (24 bit) or dot clock 148 MHz are supported. If it exceeds those limits, signal cannot be sent. |

| <b>@GDN / @SDN</b> |             | <b>Downconversion output</b>  |
|--------------------|-------------|---|
| Getting            | Command     | @GDN  |
|                    | Response    | @GDN, down_1  |
| Setting            | Command     | @SDN, out_1, down_1   |
|                    | Response    | @SDN, out_1, down_1   |
| Parameter          |             | down_1: Downconversion output<br>0 = FOLLOW SINK EDID [Default], 1 = OFF, 2 = 1080p |
|                    |             | out_1: Output channel<br>1 = OUT1 [Fixed]   |
| Getting example    | Command     | @GDN  |
|                    | Response    | @GDN,0  |
|                    | Description | Getting the downconversion output<br>OUT1: FOLLOW SINK EDID                         |
| Setting example    | Command     | @SDN,1,0  |
|                    | Response    | @SDN,1,0  |
|                    | Description | Setting the downconversion output of OUT1 to FOLLOW SINK EDID<br>Completed          |
| Remarks            |             | —   |

| <b>@GOO/ @SOO</b> |             | <b>Presence of output signal for when signal is input</b>   |
|-------------------|-------------|---|
| Getting           | Command     | @GOO [↵]  |
|                   | Response    | @GOO, mode_1, ··· , mode_5 [↵]  |
| Setting           | Command     | @SOO, out_1, mode_1 (, out_2, mode_2···) [↵]  |
|                   | Response    | @SOO, out_1, mode_1 (, out_2, mode_2···) [↵]  |
| Parameter         |             | mode_1-5: Output format<br>0 = Video output ON, Audio output ON [Default],<br>1 = Video output OFF, Audio output OFF,<br>2 = Black output ON, Audio output OFF,<br>3 = Black output ON, Audio output ON,<br>4 = Video output ON, Audio output OFF |
|                   |             | out_1-5: Output channel<br>0 = All outputs, 1 to 5 = OUT1 to OUT5   |
| Getting example   | Command     | @GOO [↵]  |
|                   | Response    | @GOO,0,0,0,0,0 [↵]  |
|                   | Description | Getting output signal setting<br>All outputs: Video output ON, Audio output ON  |
| Setting example   | Command     | @SOO,0,0 [↵]  |
|                   | Response    | @SOO,0,0 [↵]  |
|                   | Description | Setting all output channels to "0" (Video output ON, Audio output ON)<br>Completed  |
| Remarks           |             | This setting can be enabled or disabled by setting "@GOE / @SOE Applying @SOO setting".   |

| <b>@GDP / @SDP</b> |             | <b>Presence of output signal for when no signal is input</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GDP [↵]   |
|                    | Response    | @GDP, power_1, ··· , power_5 [↵]   |
| Setting            | Command     | @SDP, out_1, power_1 (, out_2, power_2···) [↵]   |
|                    | Response    | @SDP, out_1, power_1 (, out_2, power_2···) [↵]   |
| Parameter          |             | power_1-5: Output format<br>0 = Not sending the presence of input signal (+5V signal ON) [Default],<br>1 = Sending the presence of input signal (+5V signal OFF) |
|                    |             | out_1-5: Output channel<br>0 = All outputs, 1 to 5 = OUT1 to OUT5  |
| Getting example    | Command     | @GDP [↵]   |
|                    | Response    | @GDP,0,0,0,0,0 [↵]   |
|                    | Description | Getting output setting for when no input video<br>All outputs: "Not sending the presence of input signal"  |
| Setting example    | Command     | @SDP,0,0 [↵]   |
|                    | Response    | @SDP,0,0 [↵]   |
|                    | Description | Setting all output channels to be "Not sending the presence of input signal" for when no input video.<br>Completed   |
| Remarks            |             | —  |



### 3.3.5 Setting audio

| <b>@GAW / @SAW</b> |             | <b>Audio waiting duration</b>   |
|--------------------|-------------|---|
| Getting            | Command     | @GAW <a href="#">↵</a>  |
|                    | Response    | @GAW, mode_1, mode_2 <a href="#">↵</a>  |
| Setting            | Command     | @SAW, in_1, mode_1 (, in_2, mode_2) <a href="#">↵</a>   |
|                    | Response    | @SAW, in_1, mode_1 (, in_2, mode_2) <a href="#">↵</a>   |
| Parameter          |             | mode_1-2: Audio output waiting time length<br>0 = No wait, 1 = Short,<br>2 = Middle [Default], 3 = Long |
|                    |             | in_1-2: Input channel<br>0 = All inputs, 1 = IN1, 2 = IN2   |
| Getting example    | Command     | @GAW <a href="#">↵</a>  |
|                    | Response    | @GAW,1,1 <a href="#">↵</a>  |
|                    | Description | Getting the audio output waiting time<br>All inputs: Short  |
| Setting example    | Command     | @SAW,0,0 <a href="#">↵</a>  |
|                    | Response    | @SAW,0,0 <a href="#">↵</a>  |
|                    | Description | Disabling audio output waiting feature of all inputs<br>Completed                                       |
| Remarks            |             | —   |

| <b>@GUC / @SUC</b> |             | <b>Outputting audio</b>  |
|--------------------|-------------|--|
| Getting            | Command     | @GUC <a href="#">↵</a>   |
|                    | Response    | @GUC, mode_1, ... , mode_5 <a href="#">↵</a>   |
| Setting            | Command     | @SUC, out_1, mode_1 (, out_2, mode_2...) <a href="#">↵</a>                                     |
|                    | Response    | @SUC, out_1, mode_1 (, out_2, mode_2...) <a href="#">↵</a>                                     |
| Parameter          |             | mode_1-5: Outputting digital audio<br>0 = Not outputting audio, 1 = Outputting audio [Default] |
|                    |             | out_1-5: Output channel<br>0 = All outputs, 1 to 5 = OUT1 to OUT5                              |
| Getting example    | Command     | @GUC <a href="#">↵</a>   |
|                    | Response    | @GUC,1,1,1,1,1 <a href="#">↵</a>   |
|                    | Description | Getting the digital audio setting<br>All output channels: Outputting audio                     |
| Setting example    | Command     | @SUC,0,0 <a href="#">↵</a>   |
|                    | Response    | @SUC,0,0 <a href="#">↵</a>   |
|                    | Description | Setting all outputs' digital audio to not output audio<br>Completed                            |
| Remarks            |             | —  |

### 3.3.6 Setting EDID

| @GED / @SED     |             | Resolution   |
|-----------------|-------------|--|
| Getting         | Command     | @GED <input type="checkbox"/>  |
|                 | Response    | @GED, format_1, format_2 <input type="checkbox"/>  |
| Setting         | Command     | @SED, in_1, format_1 (, in_2, format_2) <input type="checkbox"/>   |
|                 | Response    | @SED, in_1, format_1 (, in_2, format_2) <input type="checkbox"/>   |
| Parameter       |             | format_1-2: EDID resolution<br>1 = External EDID, 2 = Copied EDID,<br>3 = 1080p (59.94/60), 4 = 720p,<br>5 = 1080i, 6 = SVGA (800x600),<br>7 = XGA (1024x768), 8 = VESA720 (1280x720),<br>9 = WXGA (1280x768), 10 = WXGA (1280x800),<br>11 = Quad-VGA (1280x960), 12 = SXGA (1280x1024),<br>13 = WXGA (1360x768), 14 = WXGA (1366x768),<br>15 = SXGA+ (1400x1050), 16 = WXGA+ (1440x900),<br>17 = WXGA++ (1600x900) , 18 = UXGA (1600x1200),<br>19 = WSXGA+ (1680x1050), 20 = VESA1080 (1920x1080),<br>21 = WUXGA (1920x1200), 22 = QWXGA (2048x1152),<br>23 = WQHD (2560x1440), 24 = WQXGA (2560x1600),<br>41 = 2160p (24/25/30),<br>42 = 2160p (50/59.94/60, 4:2:0) [Default] (HDBaseT input connector),<br>43 = 2160p (50/59.94/60, 4:4:4) [Default] (HDMI input connector),<br>44 = 4096x2160 (24/25/30),<br>45 = 4096x2160 (50/59.94/60, 4:2:0),<br>46 = 4096x2160 (50/59.94/60, 4:4:4) |
|                 |             | in_1-2: Input channel<br>0 = All inputs, 1 = IN1, 2 = IN2  |
| Getting example | Command     | @GED <input type="checkbox"/>  |
|                 | Response    | @GED,3,3 <input type="checkbox"/>  |
|                 | Description | Getting the EDID resolution<br>All input channels: 1080p (59.94/60)  |
| Setting example | Command     | @SED,0,1 <input type="checkbox"/>  |
|                 | Response    | @SED,0,1 <input type="checkbox"/>  |
|                 | Description | Setting the EDID resolution of all input channels to External EDID<br>Completed  |
| Remarks         |             | If selecting "1" (External EDID) or "2" (Copied EDID), execute " <b>@SEC External EDID</b> " or " <b>@RME Copying EDID</b> " beforehand, respectively.   |

| <b>@RME</b>     |             | <b>Copying EDID</b>  |
|-----------------|-------------|--|
| Setting         | Command     | @RME, out, number ↵  |
|                 | Response    | @RME, out, number ↵  |
| Parameter       |             | Out: Channel to be read<br>1 to 5 = OUT1 to OUT5   |
|                 |             | number: Destination to save copied EDID<br>1 to 3 = Destination 1 to Destination 3       |
| Setting example | Command     | @RME,1,1 ↵   |
|                 | Response    | @RME,1,1 ↵   |
|                 | Description | Setting destination for saving sink device's EDID that is connected to OUT1<br>Completed |
| Remarks         |             | —  |

| <b>@GEC / @SEC</b> |             | <b>External EDID</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GEC ↵   |
|                    | Response    | @GEC, out_1, out_2 ↵   |
| Setting            | Command     | @SEC, in_1, out_1 (, in_2, out_2) ↵                                      |
|                    | Response    | @SEC, in_1, out_1 (, in_2, out_2) ↵                                      |
| Parameter          |             | out_1-5: External EDID channel<br>1 to 5 = OUT1 to OUT5                  |
|                    |             | in_1-2: Input channel<br>0 = All inputs, 1 = IN1, 2 = IN2                |
| Getting example    | Command     | @GEC ↵   |
|                    | Response    | @GEC,1,1 ↵   |
|                    | Description | Getting the external EDID channels<br>All input channels: EDID from OUT1 |
| Setting example    | Command     | @SEC,0,1 ↵   |
|                    | Response    | @SEC,0,1 ↵   |
|                    | Description | Setting all input channels' EDID to external EDID from OUT1<br>Completed |
| Remarks            |             | —  |

| @GDI / @SDI     |             | Deep Color   |
|-----------------|-------------|--|
| Getting         | Command     | @GDI ↵   |
|                 | Response    | @GDI, color_1, color_2 ↵   |
| Setting         | Command     | @SDI, in_1, color_1 (, in_2, color_2) ↵  |
|                 | Response    | @SDI, in_1, color_1 (, in_2, color_2) ↵  |
| Parameter       |             | color_1-2: Color depth<br>0 = 24 bit/pixel (8 bit/component) [Default],<br>1 = 30 bit/pixel (10 bit/component),<br>2 = 36 bit/pixel (12 bit/component) |
|                 |             | in_1-2: Input channel<br>0 = All inputs, 1 = IN1, 2 = IN2  |
| Getting example | Command     | @GDI ↵   |
|                 | Response    | @GDI,0,0 ↵   |
|                 | Description | Getting the color depth<br>All input channels: 24 bit/pixel (8 bit/component)  |
| Setting example | Command     | @SDI,0,0 ↵   |
|                 | Response    | @SDI,0,0 ↵   |
|                 | Description | Setting the color depth of all input channels to 24 bit/pixel (8 bit/component)<br>Completed   |
| Remarks         |             | This command is valid only if “@GED / @SED Resolution” is set to “3” to “46” (Built-in EDID).  |

| @GSP / @SSP                |  | Speaker configuration  |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|----------------------------|--|--|------------|-------|---------|----|-------|---------|----|----|-----|-----|-----|-----|----------------------------|----|----|-----|-----|-----|----------------------------|----|----|----|----|-----|----------------------------|----|----|----|----|----|
| Getting                    | Command  | @GSP [↵]   |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|                            | Response   | @GSP, ch_1, ch_2 [↵]   |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| Setting                    | Command  | @SSP, in_1, ch_1 (, in_2, ch_2) [↵]  |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|                            | Response   | @SSP, in_1, ch_1 (, in_2, ch_2) [↵]  |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| Parameter                  | <p>ch_1-2: Speaker configuration<br/>                     0 = LR [Default], 1 = 2.1 channel surround sound,<br/>                     2 = 5.1 channel surround sound, 3 = 7.1 channel surround sound</p> <p>FL : Front Left<br/>                     FC : Front Center<br/>                     FR : Front Right<br/>                     RL : Rear Left<br/>                     RR : Rear Right<br/>                     RLC : Rear Left Center<br/>                     RRC : Rear Right Center<br/>                     LFE : Low Frequency Effect</p> <table border="1"> <thead> <tr> <th>Sound type</th> <th>FL/FR</th> <th>LFE</th> <th>FC</th> <th>RL/RR</th> <th>RLC/RRC</th> </tr> </thead> <tbody> <tr> <td>LR</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>2.1 channel surround sound</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>5.1 channel surround sound</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>7.1 channel surround sound</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table> |  | Sound type | FL/FR | LFE     | FC | RL/RR | RLC/RRC | LR | ON | OFF | OFF | OFF | OFF | 2.1 channel surround sound | ON | ON | OFF | OFF | OFF | 5.1 channel surround sound | ON | ON | ON | ON | OFF | 7.1 channel surround sound | ON | ON | ON | ON | ON |
| Sound type                 | FL/FR  | LFE  | FC         | RL/RR | RLC/RRC |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| LR                         | ON   | OFF  | OFF        | OFF   | OFF     |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| 2.1 channel surround sound | ON   | ON   | OFF        | OFF   | OFF     |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| 5.1 channel surround sound | ON   | ON   | ON         | ON    | OFF     |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| 7.1 channel surround sound | ON   | ON   | ON         | ON    | ON      |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|                            | <p>in_1-2: Input channel<br/>                     0 = All inputs, 1 = IN1, 2 = IN2</p>   |  |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| Getting example            | Command  | @GSP [↵]   |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|                            | Response   | @GSP,0,0 [↵]   |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|                            | Description  | Getting the speaker configuration<br>All input channels: LR                |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| Setting example            | Command  | @SSP,0,0 [↵]   |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|                            | Response   | @SSP,0,0 [↵]   |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
|                            | Description  | Setting the speaker configuration of all input channels to LR<br>Completed |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |
| Remarks                    | This command is valid only if "@GED / @SED Resolution" is set to "3" to "46" (Built-in EDID).  |  |            |       |         |    |       |         |    |    |     |     |     |     |                            |    |    |     |     |     |                            |    |    |    |    |     |                            |    |    |    |    |    |

| <b>@GAF / @SAF</b> |                                  | <b>Audio format</b>   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
|--------------------|----------------------------------|---|--------------|----------------------------------|---------|------|------------------------------|----|---------------|----------------|-----|-----|------------------------|-----|-----------------|----------------|-----|-----|-------------------|-----|--------|-------------------------------|-----|--------------|-------------------------------|-----|
| Getting            | Command                          | @GAF, in [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
|                    | Response                         | @GAF, in, format_1, frequency_1, ··· , format_7, frequency_7 [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Setting            | Command                          | @SAF, in, format_1, frequency_1 (, format_2, frequency_2···) [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
|                    | Response                         | @SAF, in, format_1, frequency_1 (, format_2, frequency_2···) [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Parameter          |                                  | <p>in: Input channel<br/>1 = IN1, 2 = IN2</p> <p>format_1-7: Audio format<br/>0 = LPCM,            1 = Dolby Digital, 2 = AAC,<br/>3 = Dolby Digital+, 4 = DTS,            5 = DTS-HD,<br/>6 = Dolby TrueHD</p> <p>frequency_1-7: Maximum sampling frequency<br/>0 = OFF (Not output),            1 = 32 kHz, 2 = 44.1 kHz,<br/>3 = 48 kHz,            4 = 88.2 kHz,            5 = 96 kHz,<br/>6 = 176.4 kHz,            7 = 192 kHz</p> <table border="1"> <thead> <tr> <th>Audio format</th> <th>Maximum sampling frequency (kHz)</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>LPCM</td> <td>32/44.1/48/88.2/96/176.4/192</td> <td>48</td> </tr> <tr> <td>Dolby Digital</td> <td>OFF/32/44.1/48</td> <td>OFF</td> </tr> <tr> <td>AAC</td> <td>OFF/32/44.1/48/88.2/96</td> <td>OFF</td> </tr> <tr> <td>Dolby Digital +</td> <td>OFF/32/44.1/48</td> <td>OFF</td> </tr> <tr> <td>DTS</td> <td>OFF/32/44.1/48/96</td> <td>OFF</td> </tr> <tr> <td>DTS-HD</td> <td>OFF/44.1/48/88.2/96/176.4/192</td> <td>OFF</td> </tr> <tr> <td>Dolby TrueHD</td> <td>OFF/44.1/48/88.2/96/176.4/192</td> <td>OFF</td> </tr> </tbody> </table> | Audio format | Maximum sampling frequency (kHz) | Default | LPCM | 32/44.1/48/88.2/96/176.4/192 | 48 | Dolby Digital | OFF/32/44.1/48 | OFF | AAC | OFF/32/44.1/48/88.2/96 | OFF | Dolby Digital + | OFF/32/44.1/48 | OFF | DTS | OFF/32/44.1/48/96 | OFF | DTS-HD | OFF/44.1/48/88.2/96/176.4/192 | OFF | Dolby TrueHD | OFF/44.1/48/88.2/96/176.4/192 | OFF |
| Audio format       | Maximum sampling frequency (kHz) | Default   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| LPCM               | 32/44.1/48/88.2/96/176.4/192     | 48  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Dolby Digital      | OFF/32/44.1/48                   | OFF   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| AAC                | OFF/32/44.1/48/88.2/96           | OFF   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Dolby Digital +    | OFF/32/44.1/48                   | OFF   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| DTS                | OFF/32/44.1/48/96                | OFF   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| DTS-HD             | OFF/44.1/48/88.2/96/176.4/192    | OFF   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Dolby TrueHD       | OFF/44.1/48/88.2/96/176.4/192    | OFF   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Getting example    | Command                          | @GAF,1 [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
|                    | Response                         | @GAF,1,0,3,1,0,2,0,3,0,4,0,5,0,6,0 [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
|                    | Description                      | Getting the audio format and maximum sampling frequency of IN1 channel<br>Maximum sampling frequency of LPCM: 48 kHz; other audio format: OFF   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Setting example    | Command                          | @SAF,1,0,7 [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
|                    | Response                         | @SAF,1,0,7 [ ]  |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
|                    | Description                      | Setting the audio format and maximum sampling frequency of IN1 to LPCM and 192 kHz<br>Completed   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |
| Remarks            |                                  | <ul style="list-style-type: none"> <li>Maximum settable sampling frequency depends on the audio format.</li> <li>LPCM cannot be turned OFF.</li> <li>This command is valid only if “@GED / @SED Resolution” is set to “3” to “46” (Built-in EDID).</li> </ul>   |              |                                  |         |      |                              |    |               |                |     |     |                        |     |                 |                |     |     |                   |     |        |                               |     |              |                               |     |

| <b>@GHZ / @SHZ</b> |             | <b>Input video frequency</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GHZ [↵]   |
|                    | Response    | @GHZ, mode_1, mode_2 [↵]   |
| Setting            | Command     | @SHZ, in_1, mode_1 (, in_2, mode_2 ) [↵]   |
|                    | Response    | @SHZ, in_1, mode_1 (, in_2, mode_2 ) [↵]   |
| Parameter          |             | mode_1-2: Frame rate<br>0 = 60 Hz/30 Hz [Default],<br>1 = 50 Hz/25 Hz                                    |
|                    |             | in_1-2: Input channel<br>0 = All inputs, 1 = IN1, 2 = IN2  |
| Getting example    | Command     | @GHZ [↵]   |
|                    | Response    | @GHZ,0,0 [↵]   |
|                    | Description | Getting the frame rate<br>All input channels: 60 Hz/30 Hz  |
| Setting example    | Command     | @SHZ,0,0 [↵]   |
|                    | Response    | @SHZ,0,0 [↵]   |
|                    | Description | Setting the frame rate of all input channels to 60 Hz/30 Hz<br>Completed                                 |
| Remarks            |             | This command is valid only if “@GED / @SED Resolution” is set to “2160p” or “4096x2160” (Built-in EDID). |

### 3.3.7 Setting RS-232C

| @GCT / @SCT     |             | RS-232C communication  |
|-----------------|-------------|--|
| Getting         | Command     | @GCT   |
|                 | Response    | @GCT, baudrate, length, parity, stop   |
| Setting         | Command     | @SCT, baudrate, length, parity, stop   |
|                 | Response    | @SCT, baudrate, length, parity, stop   |
| Parameter       |             | Baudrate: Baud rate<br>0 = 4800 bps, 1 = 9600 bps [Default], 2 = 14400 bps,<br>3 = 19200 bps, 4 = 38400 bps  |
|                 |             | Length: Data bit length<br>0 = 7 bit, 1 = 8 bit [Default]  |
|                 |             | Parity: Parity check<br>0 = NONE [Default], 1 = ODD, 2 = EVEN  |
|                 |             | Stop: Stop bit<br>0 = 1 bit [Default], 1 = 2 bit   |
| Getting example | Command     | @GCT   |
|                 | Response    | @GCT,1,1,0,0   |
|                 | Description | Getting the RS-232C communication setting<br>- Baud rate : 9600 bps<br>- Data bit length : 8 bit<br>- Parity check : NONE<br>- Stop bit : 1 bit                          |
| Setting example | Command     | @SCT,1,1,0,0   |
|                 | Response    | @SCT,1,1,0,0   |
|                 | Description | Setting the RS-232C communication setting as follows:<br>- Baud rate : 9600 bps<br>- Data bit length : 8 bit<br>- Parity check : NONE<br>- Stop bit : 1 bit<br>Completed |
| Remarks         |             | RS-232C communication setting is changed, the communication may be disabled. Change the environmental settings based on the HDC settings.                                |



| <b>@G&amp;S / @S&amp;S</b> |             | <b>RS-232C transmission mode</b>  |
|----------------------------|-------------|---|
| Getting                    | Command     | @G&S <input type="checkbox"/>   |
|                            | Response    | @G&S, mode <input type="checkbox"/>   |
| Setting                    | Command     | @S&S, mode <input type="checkbox"/>   |
|                            | Response    | @S&S, mode <input type="checkbox"/>   |
| Parameter                  |             | mode: RS-232C transmission mode<br>0 = Command mode [Default],<br>1 = Transmission mode |
| Getting example            | Command     | @G&S <input type="checkbox"/>   |
|                            | Response    | @G&S,0 <input type="checkbox"/>   |
|                            | Description | Getting the RS-232C transmission mode<br>Command mode                                   |
| Setting example            | Command     | @S&S,0 <input type="checkbox"/>   |
|                            | Response    | @S&S,0 <input type="checkbox"/>   |
|                            | Description | Setting the RS-232C transmission mode to Command mode<br>Completed                      |
| Remarks                    |             | -   |

| <b>@G&amp;&amp; / @S&amp;&amp;</b> |             | <b>RS-232C sending channel</b>   |
|------------------------------------|-------------|--|
| Getting                            | Command     | @G&& <input type="checkbox"/>  |
|                                    | Response    | @G&&, ch_1 (, ··· , ch_4) <input type="checkbox"/>   |
| Setting                            | Command     | @S&&, ch_1 (, ch_2, ···) <input type="checkbox"/>  |
|                                    | Response    | @S&&, ch_1 (, ch_2, ···) <input type="checkbox"/>  |
| Parameter                          |             | ch_1 to ch_3: RS-232C sending channel<br>0 = ALL,<br>2 = OUT2,<br>3 = All outputs,<br>102 = IN2,<br>200 = RS-232C connector<br>[Default]: All channels are disabled. |
| Getting example                    | Command     | @G&& <input type="checkbox"/>  |
|                                    | Response    | @G&&,2,102 <input type="checkbox"/>  |
|                                    | Description | Getting the RS-232C transmission channel<br>OUT2 and IN2   |
| Setting example                    | Command     | @S&&,2,102 <input type="checkbox"/>  |
|                                    | Response    | @S&&,2,102 <input type="checkbox"/>  |
|                                    | Description | Setting the OUT2 and IN2 to RS-232C transmission channel<br>Completed  |
| Remarks                            |             | If both "2" (OUT2) and "3" (All outputs) are set, "3" (All outputs) is applied.  |

| <b>@G&amp;R / @S&amp;R</b> |             | <b>RS-232C receiving channel</b>   |
|----------------------------|-------------|--|
| Getting                    | Command     | @G&R ☐   |
|                            | Response    | @G&R, ch_1 (, ··· , ch_3 ) ☐   |
| Setting                    | Command     | @S&R, ch_1 (, ch_2, ···) ☐   |
|                            | Response    | @S&R, ch_1 (, ch_2, ···) ☐   |
| Parameter                  |             | ch_1 to ch_3: RS-232C receiving channel<br>0 = ALL,<br>2 = OUT2,<br>102 = IN2,<br>200 = RS-232C connector<br>[Default]: All channels are disabled. |
| Getting example            | Command     | @G&R ☐   |
|                            | Response    | @G&R,2,102 ☐   |
|                            | Description | Getting the RS-232C receiving channel OUT2 and IN2   |
| Setting example            | Command     | @S&R,2,102 ☐   |
|                            | Response    | @S&R,2,102 ☐   |
|                            | Description | Setting the OUT2 and IN2 to RS-232C receiving channel Completed  |
| Remarks                    |             | If multiple receiving channels are specified and their receiving signal timing coincides with each other, commands are not sent correctly.         |

### 3.3.8 Setting LAN

| <b>@GIP / @SIP</b> |             | <b>IP address</b>  |
|--------------------|-------------|--|
| Getting            | Command     | @GIP <input type="checkbox"/>  |
|                    | Response    | @GIP, unit_1, unit_2, unit_3, unit_4 <input type="checkbox"/>  |
| Setting            | Command     | @SIP, unit_1, unit_2, unit_3, unit_4 <input type="checkbox"/>  |
|                    | Response    | @SIP, unit_1, unit_2, unit_3, unit_4 <input type="checkbox"/>  |
| Parameter          |             | unit_1 to unit_4: Upper bit of the IP address to Lower bit of the IP address<br>0 to 255 = 8 bit (Decimal notation) [Default]192.168.1.199 |
| Getting example    | Command     | @GIP <input type="checkbox"/>  |
|                    | Response    | @GIP,192,168,1,200 <input type="checkbox"/>  |
|                    | Description | Getting the IP address of the HDC<br>192.168.1.200   |
| Setting example    | Command     | @SIP,192,168,1,200 <input type="checkbox"/>  |
|                    | Response    | @SIP,192,168,1,200 <input type="checkbox"/>  |
|                    | Description | Setting the IP address to 192.168.1.200<br>Completed   |
| Remarks            |             | LAN communication setting is changed, the communication may be disabled.<br>Change the environmental settings based on the HDC settings.   |

| <b>@GSB / @SSB</b> |             | <b>Subnet mask</b>  |
|--------------------|-------------|---|
| Getting            | Command     | @GSB <input type="checkbox"/>   |
|                    | Response    | @GSB, unit_1, unit_2, unit_3, unit_4 <input type="checkbox"/>   |
| Setting            | Command     | @SSB, unit_1, unit_2, unit_3, unit_4 <input type="checkbox"/>   |
|                    | Response    | @SSB, unit_1, unit_2, unit_3, unit_4 <input type="checkbox"/>   |
| Parameter          |             | unit_1 to unit_4: Upper bit of the subnet mask to Lower bit of the subnet mask<br>0 to 255 = 8 bit (Decimal notation) [Default] 255.255.255.0 |
| Getting example    | Command     | @GSB <input type="checkbox"/>   |
|                    | Response    | @GSB,255,255,255,0 <input type="checkbox"/>   |
|                    | Description | Getting the subnet mask of the HDC<br>255.255.255.0   |
| Setting example    | Command     | @SSB,255,255,255,254 <input type="checkbox"/>   |
|                    | Response    | @SSB,255,255,255,254 <input type="checkbox"/>   |
|                    | Description | Setting the subnet mask of the HDC to 255.255.255.254<br>Completed  |
| Remarks            |             | LAN communication setting is changed, the communication may be disabled.<br>Change the environmental settings based on the HDC settings.      |

| <b>@GLP / @SLP</b> |             | <b>TCP port number</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GLP   |
|                    | Response    | @GLP, port, add  |
| Setting            | Command     | @SLP, port, add  |
|                    | Response    | @SLP, port, add  |
| Parameter          |             | port: Port number<br>1100 [Default], 6000 to 6999<br>add: 8-connection setting<br>0 = 8-connection setting OFF [Default]<br>(WEB browser 4 connections/communication command control<br>4 connections),<br>1 = 8-connection setting ON<br>(Communication command control 8-connection) |
| Getting example    | Command     | @GLP   |
|                    | Response    | @GLP,1100,0  |
|                    | Description | Getting the TCP port number<br>1100; 8 connection setting disabled   |
| Setting example    | Command     | @SLP,1100,0  |
|                    | Response    | @SLP,1100,0  |
|                    | Description | Setting the port number and 8-connection setting to 1100 and OFF,<br>respectively<br>Completed   |
| Remarks            |             | LAN communication setting is changed, the communication may be disabled.<br>Change the environmental settings based on the HDC settings.   |

| <b>@GMC</b>     |             | <b>MAC address</b>  |
|-----------------|-------------|---|
| Getting         | Command     | @GMC  |
|                 | Response    | @GMC, unit_1, unit_2, unit_3, unit_4, unit_5, unit_6  |
| Parameter       |             | unit_1 to unit_6: Upper bit of the MAC address to Lower bit of the MAC address<br>00 to FF = 8 bit (in hexadecimal) |
| Getting example | Command     | @GMC  |
|                 | Response    | @GMC,00,08,E5,59,00,01  |
|                 | Description | Getting the MAC address<br>00-08-E5-59-00-01  |
| Remarks         |             | —   |

### 3.3.9 Configuring HDC

| <b>@GLM / @SLM</b> |             | <b>Grouping button security lockout</b>   |
|--------------------|-------------|---|
| Getting            | Command     | @GLM ↵  |
|                    | Response    | @GLM, channel , menu ↵  |
| Setting            | Command     | @SLM, channel , menu ↵  |
|                    | Response    | @SLM, channel , menu ↵  |
| Parameter          |             | channel : Input channel selection button<br>menu : Menu operation button<br>0 = Not locked,<br>1 = Locked [Default]     |
| Getting example    | Command     | @GLM ↵  |
|                    | Response    | @GLM,1,1 ↵  |
|                    | Description | Getting the button security lockout target<br>Input channel selection buttons and menu operation buttons                |
| Setting example    | Command     | @SLM,1,1 ↵  |
|                    | Response    | @SLM,1,1 ↵  |
|                    | Description | Setting input channel selection buttons and menu operation buttons to be<br>button security lockout target<br>Completed |
| Remarks            |             | This command cannot be set when buttons are locked.   |

| <b>@GLS / @SLS</b> |             | <b>Button security lockout</b>   |
|--------------------|-------------|--|
| Getting            | Command     | @GLS ↵   |
|                    | Response    | @GLS, lock ↵   |
| Setting            | Command     | @SLS, lock ↵   |
|                    | Response    | @SLS, lock ↵   |
| Parameter          |             | lock: Front panel security lockout<br>0 = Unlocking [Default], 1 = Locking |
| Getting example    | Command     | @GLS ↵   |
|                    | Response    | @GLS,1 ↵   |
|                    | Description | Getting the lock status<br>Locked  |
| Setting example    | Command     | @SLS,1 ↵   |
|                    | Response    | @SLS,1 ↵   |
|                    | Description | Enabling the front panel security lockout<br>Completed                     |
| Remarks            |             | —  |

| <b>@GPW / @SPW</b> |             | <b>Power saving</b>                                       |
|--------------------|-------------|---|
| Getting            | Command     | @GPW ↵  |
|                    | Response    | @GPW, mode ↵  |
| Setting            | Command     | @SPW, mode ↵  |
|                    | Response    | @SPW, mode ↵  |
| Parameter          |             | mode: Power saving<br>0 = Disabled [Default], 1 = Enabled |
| Getting example    | Command     | @GPW ↵  |
|                    | Response    | @GPW,1 ↵  |
|                    | Description | Getting power saving mode<br>Enabled                      |
| Setting example    | Command     | @SPW,1 ↵  |
|                    | Response    | @SPW,1 ↵  |
|                    | Description | Enabling power saving<br>Completed                        |
| Remarks            |             | —   |



### 3.3.10 Status indication

| @GIS   |  | Input signal status (For each channel)   |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
|--|--|--|-------------------------------|--------------------|-------------------|-----------------|-------------------|--------------------------|---------------------|------------------------------|-------------------|-----------------------|----|-------------------------------|---|---------------------------|----|-------------------------------|---|------------------------|--|--|---|---------------------|--|
| Getting  | Command  | @GIS, in, mode <input type="checkbox"/>  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
|  | Response   | @GIS, in, mode, status_1 (, status_2, status_3, status_4, status_5, status_6) <input type="checkbox"/> |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| Parameter  | in: Input channel<br>1 to 2 = IN1 to IN2   |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
|  | mode: Target status (selected channels only)<br>0 = All statuses of input signals,<br>1 = HDMI/DVI mode and color depth of input video,<br>2 = Input resolution/Input video frequency,<br>3 = Color space of input video,<br>4 = Audio input type/Audio input sampling frequency,<br>5 = Presence of HDCP,<br>6 = Scrambling of input signal   |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
|  | status_1: HDMI/DVI mode and color depth of input video   |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
|  | <table border="1"> <thead> <tr> <th>Input mode</th> <th>Description</th> <th>Input color depth</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>d</td> <td>DVI signal, without HDCP</td> <td>24</td> <td>24bit/pixel (8bit/component)</td> </tr> <tr> <td>D</td> <td>DVI signal, with HDCP</td> <td>30</td> <td>30bit/pixel (10bit/component)</td> </tr> <tr> <td>h</td> <td>HDMI signal, without HDCP</td> <td>36</td> <td>36bit/pixel (12bit/component)</td> </tr> <tr> <td>H</td> <td>HDMI signal, with HDCP</td> <td></td> <td></td> </tr> <tr> <td>N</td> <td>No signal is input.</td> <td></td> <td></td> </tr> </tbody> </table> |  | Input mode                    | Description        | Input color depth | Description     | d                 | DVI signal, without HDCP | 24                  | 24bit/pixel (8bit/component) | D                 | DVI signal, with HDCP | 30 | 30bit/pixel (10bit/component) | h | HDMI signal, without HDCP | 36 | 36bit/pixel (12bit/component) | H | HDMI signal, with HDCP |  |  | N | No signal is input. |  |
| Input mode   | Description  | Input color depth  | Description                   |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| d  | DVI signal, without HDCP   | 24   | 24bit/pixel (8bit/component)  |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| D  | DVI signal, with HDCP  | 30   | 30bit/pixel (10bit/component) |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| h  | HDMI signal, without HDCP  | 36   | 36bit/pixel (12bit/component) |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| H  | HDMI signal, with HDCP   |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| N  | No signal is input.  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| status_2: Input resolution/Input video frequency   |  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| <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>1600x1200p 60Hz</td> <td>UXGA@60</td> </tr> <tr> <td>NO SIGNAL</td> <td>No signal is input.</td> </tr> </tbody> </table>   |  | Value  | Description                   | 1920x1080p 59.94Hz | 1080p@59.94       | 1600x1200p 60Hz | UXGA@60           | NO SIGNAL                | No signal is input. |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| Value  | Description  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| 1920x1080p 59.94Hz   | 1080p@59.94  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| 1600x1200p 60Hz  | UXGA@60  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| NO SIGNAL  | 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 input</td> </tr> <tr> <td>YCbCr 4:2:2</td> <td>YCbCr 4:2:2 input</td> </tr> <tr> <td>YCbCr 4:4:4</td> <td>YCbCr 4:4:4 input</td> </tr> <tr> <td>YCbCr 4:2:0</td> <td>YCbCr 4:2:0 input</td> </tr> </tbody> </table> |  | Value  | Description                   | RGB                | RGB input         | YCbCr 4:2:2     | YCbCr 4:2:2 input | YCbCr 4:4:4              | YCbCr 4:4:4 input   | YCbCr 4:2:0                  | YCbCr 4:2:0 input |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| Value  | Description  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| RGB  | RGB input  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| YCbCr 4:2:2  | YCbCr 4:2:2 input  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| YCbCr 4:4:4  | YCbCr 4:4:4 input  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |
| YCbCr 4:2:0  | YCbCr 4:2:0 input  |  |                               |                    |                   |                 |                   |                          |                     |                              |                   |                       |    |                               |   |                           |    |                               |   |                        |  |  |   |                     |  |

| @GIS   |   | Input signal status (For each channel) (Cont'd)   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
|--|---|---|-----------------------|-----------------|-------------|--|----------------|------------------------------|------------------|------------------------------|----------|-------------------|-----------|---------------------|
| Parameter  |   | status_4: Audio input type/Audio input sampling frequency   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
|  |   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>L-PCM 48kHz</td> <td>2-channel LPCM 48 kHz</td> </tr> <tr> <td>L-PCM 48kHz M</td> <td>Multi-channel LPCM 48 kHz</td> </tr> <tr> <td>COMPRESSED AUDIO</td> <td>Compressed audio</td> </tr> <tr> <td>NO AUDIO</td> <td>No audio is input</td> </tr> </tbody> </table> | Value                 | Description     | L-PCM 48kHz | 2-channel LPCM 48 kHz                                | L-PCM 48kHz M  | Multi-channel LPCM 48 kHz    | COMPRESSED AUDIO | Compressed audio             | NO AUDIO | No audio is input |           |                     |
|  |   | Value   | Description           |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
|  |   | L-PCM 48kHz   | 2-channel LPCM 48 kHz |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| L-PCM 48kHz M  | Multi-channel LPCM 48 kHz   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| COMPRESSED AUDIO   | Compressed audio  |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| NO AUDIO   | No audio is input   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| status_5: Presence of HDCP   |   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP 1.4</td> <td>HDCP 1.4 signal</td> </tr> <tr> <td>HDCP 2.2</td> <td>HDCP 2.2 no stream type or undefined signal is input</td> </tr> <tr> <td>HDCP 2.2 Type0</td> <td>HDCP 2.2 stream Type0 signal</td> </tr> <tr> <td>HDCP 2.2 Type1</td> <td>HDCP 2.2 stream Type1 signal</td> </tr> <tr> <td>HDCP OFF</td> <td>No HDCP</td> </tr> <tr> <td>NO SIGNAL</td> <td>No signal is input.</td> </tr> </tbody> </table> | Value   | Description   | HDCP 1.4              | HDCP 1.4 signal | HDCP 2.2    | HDCP 2.2 no stream type or undefined signal is input | HDCP 2.2 Type0 | HDCP 2.2 stream Type0 signal | HDCP 2.2 Type1   | HDCP 2.2 stream Type1 signal | HDCP OFF | No HDCP           | NO SIGNAL | No signal is input. |
| Value  | Description   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| HDCP 1.4   | HDCP 1.4 signal   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| HDCP 2.2   | HDCP 2.2 no stream type or undefined signal is input  |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| HDCP 2.2 Type0   | HDCP 2.2 stream Type0 signal  |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| HDCP 2.2 Type1   | HDCP 2.2 stream Type1 signal  |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| HDCP OFF   | No HDCP   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| NO SIGNAL  | No signal is input.   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| Getting example  |   | status_6: Scrambling of input signal  |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
|  |   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SCRAMBLE ON</td> <td>Scrambled</td> </tr> <tr> <td>SCRAMBLE OFF</td> <td>Not scrambled</td> </tr> </tbody> </table>   | Value                 | Description     | SCRAMBLE ON | Scrambled  | SCRAMBLE OFF   | Not scrambled                |                  |                              |          |                   |           |                     |
|  |   | Value   | Description           |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| SCRAMBLE ON  | Scrambled   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| SCRAMBLE OFF   | Not scrambled   |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| Command Response   | @GIS,1,0 <input type="checkbox"/><br>@GIS,1,0,H24,1920x1080p 59.94Hz,YCbCr 4:4:4,L-PCM 48kHz,HDCP1.4,SCRAMBLE OFF <input type="checkbox"/>  |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| Description  | Getting all input signal statuses of IN1<br>- HDMI/DVI mode of input video : HDMI mode<br>- Color depth of input video : 24bit/pixel (8bit/component)<br>- Input resolution/Input video frequency : 1080p59.94Hz<br>- Color space of input video : YCbCr 4:4:4<br>- Audio input type/Audio input sampling frequency : 2-channel LPCM 48kHz<br>- Presence of HDCP : HDCP 1.4<br>- Scrambling of input signal : Not scrambled |   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |
| Remarks  |   | —   |                       |                 |             |  |                |                              |                  |                              |          |                   |           |                     |



| @GOS             |  | Output signal status (For each channel)   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|------------------|--|---|-------------|-------------|-------------------------------|------------------------------------|--------------------------|------------------------------------|-----------------------|-----------------------------------|-----------------------|-------------------------------------|-------------|-------------------------------|
| Getting          | Command  | @GOS, out, mode <input type="checkbox"/>  |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  | Response   | @GOS, out, mode, status_1 (, status_2, status_3, status_4, status_5, status_6, status_7, status_8 ) <input type="checkbox"/>  |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| Parameter        |  | out: Output channel<br>1 to 5 = OUT1 to OUT5  |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  |  | mode: Target status<br>0 = All statuses of sink device,                      1 = HDCP of sink device,<br>2 = HDCP authentication between the HDC and sink device,<br>3 = HDCP output,    4 = HDMI/DVI output,<br>5 = Color space output,                                      6 = Color range output,<br>7 = Color depth output,                                      8 = Scrambling output   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  |  | status_1: HDCP of sink device   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  |  | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP 2.2 SUPPORT</td> <td>Device with HDCP 2.2 is connected.</td> </tr> <tr> <td>HDCP 1.4 SUPPORT</td> <td>Device with HDCP 1.4 is connected.</td> </tr> <tr> <td>HDCP NOT SUPPORT</td> <td>Device without HDCP is connected.</td> </tr> <tr> <td>HDCP NOT CHECK</td> <td>HDCP of sink device is not checked.</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table> | Value       | Description | HDCP 2.2 SUPPORT              | Device with HDCP 2.2 is connected. | HDCP 1.4 SUPPORT         | Device with HDCP 1.4 is connected. | HDCP NOT SUPPORT      | Device without HDCP is connected. | HDCP NOT CHECK        | HDCP of sink device is not checked. | UNCONNECTED | Sink device is not connected. |
|                  | Value  | Description   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP 2.2 SUPPORT | Device with HDCP 2.2 is connected.   |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP 1.4 SUPPORT | Device with HDCP 1.4 is connected.   |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP NOT SUPPORT | Device without HDCP is connected.  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP NOT CHECK   | HDCP of sink device is not checked.  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| UNCONNECTED      | Sink device is not connected.  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  | status_2: HDCP authentication between the HDC and sink device  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP OFF</td> <td>Signal with HDCP is not input</td> </tr> <tr> <td>HDCP OK</td> <td>Authentication succeeded</td> </tr> <tr> <td>HDCP ERROR</td> <td>Authentication failed</td> </tr> <tr> <td>HDCP CHECK NOW</td> <td>Being encrypted</td> </tr> </tbody> </table> | Value   | Description | HDCP OFF    | Signal with HDCP is not input | HDCP OK                            | Authentication succeeded | HDCP ERROR                         | Authentication failed | HDCP CHECK NOW                    | Being encrypted       |                                     |             |                               |
| Value            | Description  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP OFF         | Signal with HDCP is not input  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP OK          | Authentication succeeded   |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP ERROR       | Authentication failed  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP CHECK NOW   | Being encrypted  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  | status_3: HDCP output  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP NON</td> <td>No HDCP</td> </tr> <tr> <td>HDCP1.4</td> <td>HDCP 1.4 output</td> </tr> <tr> <td>HDCP2.2 Type0</td> <td>HDCP 2.2 Type0 output</td> </tr> <tr> <td>HDCP2.2 Type1</td> <td>HDCP 2.2 Type1 output</td> </tr> </tbody> </table>                        | Value   | Description | HDCP NON    | No HDCP                       | HDCP1.4                            | HDCP 1.4 output          | HDCP2.2 Type0                      | HDCP 2.2 Type0 output | HDCP2.2 Type1                     | HDCP 2.2 Type1 output |                                     |             |                               |
| Value            | Description  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP NON         | No HDCP  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP1.4          | HDCP 1.4 output  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP2.2 Type0    | HDCP 2.2 Type0 output  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDCP2.2 Type1    | HDCP 2.2 Type1 output  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  | status_4: HDMI/DVI output  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
|                  | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDMI</td> <td>HDMI output</td> </tr> <tr> <td>DVI</td> <td>DVI output</td> </tr> </tbody> </table>   | Value   | Description | HDMI        | HDMI output                   | DVI                                | DVI output               |                                    |                       |                                   |                       |                                     |             |                               |
| Value            | Description  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| HDMI             | HDMI output  |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |
| DVI              | DVI output   |   |             |             |                               |                                    |                          |                                    |                       |                                   |                       |                                     |             |                               |

| <b>@GOS</b>     |                                      | <b>Output signal status (For each channel)</b>   |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
|-----------------|--------------------------------------|--|-------|-------------|-----|------------|-------------|--------------------|-------------|--------------------|-------------|--------------------|-------|-------------|------------|-------------------|---------------|----------------------|-------|-------------|--------------|-------------------------------------|--------------|--------------------------------------|--------------|--------------------------------------|-------|-------------|-------------|-----------|--------------|---------------|
| Parameter       |                                      | status_5: Color space output <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RGB</td> <td>RGB output</td> </tr> <tr> <td>YCbCr 4:2:2</td> <td>YCbCr 4:2:2 output</td> </tr> <tr> <td>YCbCr 4:4:4</td> <td>YCbCr 4:4:4 output</td> </tr> <tr> <td>YCbCr 4:2:0</td> <td>YCbCr 4:2:0 output</td> </tr> </tbody> </table><br>status_6: Color range output <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>FULL RANGE</td> <td>Full range output</td> </tr> <tr> <td>LIMITED RANGE</td> <td>Limited range output</td> </tr> </tbody> </table><br>status_7: Color depth output <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>24 BIT COLOR</td> <td>24bit/pixel (8bit/component) output</td> </tr> <tr> <td>30 BIT COLOR</td> <td>30bit/pixel (10bit/component) output</td> </tr> <tr> <td>36 BIT COLOR</td> <td>36bit/pixel (12bit/component) output</td> </tr> </tbody> </table><br>status_8: Scrambling output <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SCRAMBLE ON</td> <td>Scrambled</td> </tr> <tr> <td>SCRAMBLE OFF</td> <td>Not scrambled</td> </tr> </tbody> </table> | Value | Description | RGB | RGB output | YCbCr 4:2:2 | YCbCr 4:2:2 output | YCbCr 4:4:4 | YCbCr 4:4:4 output | YCbCr 4:2:0 | YCbCr 4:2:0 output | Value | Description | FULL RANGE | Full range output | LIMITED RANGE | Limited range output | Value | Description | 24 BIT COLOR | 24bit/pixel (8bit/component) output | 30 BIT COLOR | 30bit/pixel (10bit/component) output | 36 BIT COLOR | 36bit/pixel (12bit/component) output | Value | Description | SCRAMBLE ON | Scrambled | SCRAMBLE OFF | Not scrambled |
| Value           | Description                          |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| RGB             | RGB output                           |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| YCbCr 4:2:2     | YCbCr 4:2:2 output                   |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| YCbCr 4:4:4     | YCbCr 4:4:4 output                   |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| YCbCr 4:2:0     | YCbCr 4:2:0 output                   |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| Value           | Description                          |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| FULL RANGE      | Full range output                    |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| LIMITED RANGE   | Limited range output                 |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| Value           | Description                          |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| 24 BIT COLOR    | 24bit/pixel (8bit/component) output  |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| 30 BIT COLOR    | 30bit/pixel (10bit/component) output |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| 36 BIT COLOR    | 36bit/pixel (12bit/component) output |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| Value           | Description                          |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| SCRAMBLE ON     | Scrambled                            |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| SCRAMBLE OFF    | Not scrambled                        |  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| Getting example | Command Response                     | @GOS,1,0 <br>@GOS,1,0,HDCP 1.4 SUPPORT,HDCP OK,HDCP1.4,HDMI, YCbCr 4:4:4, FULL RANGE,24 BIT COLOR,SCRAMBLE OFF   |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
|                 | Description                          | Getting all statuses of OUT1 sink device<br>- HDCP : Device with HDCP 1.4 is connected.<br>- HDCP authentication : Completed<br>- HDCP output : HDCP 1.4 output<br>- HDMI/DVI output : HDMI output<br>- Color space output : YCbCr 4:4:4<br>- Color range output : Full range output<br>- Color depth output : 24bit/pixel (8bit/component) output<br>- Scrambling output : OFF  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |
| Remarks         |                                      | —  |       |             |     |            |             |                    |             |                    |             |                    |       |             |            |                   |               |                      |       |             |              |                                     |              |                                      |              |                                      |       |             |             |           |              |               |

| @GES  |   | Sink device EDID (For each channel)   |             |                      |  |  |  |                               |                               |                               |                               |
|---|---|---|-------------|----------------------|--|--|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Getting   | Command   | @GES, out, mode <input type="checkbox"/>  |             |                      |  |  |  |                               |                               |                               |                               |
|   | Response  | @GES, out, mode, status_1 (, status_2, status_3, status_4, status_5, status_6, status_7) <input type="checkbox"/> |             |                      |  |  |  |                               |                               |                               |                               |
| Parameter   | out : Output channel<br>1 to 5 = OUT1 to OUT5   |   |             |                      |  |  |  |                               |                               |                               |                               |
|   | mode: Target status<br>0 = All of 1 to 7,<br>1 = Sink device name,<br>2 = Resolution/Dot clock,<br>3 = HDMI mode/Color space/Color depth,<br>4 = Audio format/Sampling frequency/Bit length/<br>The number of channels/Compressed audio,<br>5 = SCDC,<br>6 = HDR,<br>7= 3D  |   |             |                      |  |  |  |                               |                               |                               |                               |
|   | status_1: Sink device name  |   |             |                      |  |  |  |                               |                               |                               |                               |
|   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDC-TR121UHD</td> <td>A sink device named "HDC-TR121UHD" is connected.</td> </tr> <tr> <td>EDID READ ERROR</td> <td>Sink device EDID recall error</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table> |   | Value       | Description          | HDC-TR121UHD   | A sink device named "HDC-TR121UHD" is connected.     | EDID READ ERROR  | Sink device EDID recall error | UNCONNECTED                   | Sink device is not connected. |                               |
| Value   | Description   |   |             |                      |  |  |  |                               |                               |                               |                               |
| HDC-TR121UHD  | A sink device named "HDC-TR121UHD" is connected.  |   |             |                      |  |  |  |                               |                               |                               |                               |
| EDID READ ERROR   | Sink device EDID recall error   |   |             |                      |  |  |  |                               |                               |                               |                               |
| UNCONNECTED   | Sink device is not connected.   |   |             |                      |  |  |  |                               |                               |                               |                               |
| status_2: Resolution/Dot clock  |   |   |             |                      |  |  |  |                               |                               |                               |                               |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1920x1080p 148.50MHz</td> <td>A sink device supporting 1920x1080 (resolution) and 148.50 MHz (dot clock) is connected.</td> </tr> <tr> <td>EDID READ ERROR</td> <td>Sink device EDID recall error</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table>   |   | Value   | Description | 1920x1080p 148.50MHz | A sink device supporting 1920x1080 (resolution) and 148.50 MHz (dot clock) is connected. | EDID READ ERROR                                      | Sink device EDID recall error  | UNCONNECTED                   | Sink device is not connected. |                               |                               |
| Value   | Description   |   |             |                      |  |  |  |                               |                               |                               |                               |
| 1920x1080p 148.50MHz  | A sink device supporting 1920x1080 (resolution) and 148.50 MHz (dot clock) is connected.  |   |             |                      |  |  |  |                               |                               |                               |                               |
| EDID READ ERROR   | Sink device EDID recall error   |   |             |                      |  |  |  |                               |                               |                               |                               |
| UNCONNECTED   | Sink device is not connected.   |   |             |                      |  |  |  |                               |                               |                               |                               |
| status_3: HDMI mode/Color space/Color depth   |   |   |             |                      |  |  |  |                               |                               |                               |                               |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DVI</td> <td>A sink device that does not support HDMI signal is connected.</td> </tr> <tr> <td>HDMI-<br/>RGB/YCbCr422/<br/>YCbCr444-24/30BIT<br/>COLOR</td> <td>A sink device supporting HDMI signal is connected. Supported sampling structure (RGB, YCbCr 4:2:2, YCbCr 4:4:4) and color depth (24, 30, 36) are returned.</td> </tr> <tr> <td>EDID READ ERROR</td> <td>Sink device EDID recall error</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table> |   | Value   | Description | DVI                  | A sink device that does not support HDMI signal is connected.                            | HDMI-<br>RGB/YCbCr422/<br>YCbCr444-24/30BIT<br>COLOR | A sink device supporting HDMI signal is connected. Supported sampling structure (RGB, YCbCr 4:2:2, YCbCr 4:4:4) and color depth (24, 30, 36) are returned. | EDID READ ERROR               | Sink device EDID recall error | UNCONNECTED                   | Sink device is not connected. |
| Value   | Description   |   |             |                      |  |  |  |                               |                               |                               |                               |
| DVI   | A sink device that does not support HDMI signal is connected.   |   |             |                      |  |  |  |                               |                               |                               |                               |
| HDMI-<br>RGB/YCbCr422/<br>YCbCr444-24/30BIT<br>COLOR  | A sink device supporting HDMI signal is connected. Supported sampling structure (RGB, YCbCr 4:2:2, YCbCr 4:4:4) and color depth (24, 30, 36) are returned.  |   |             |                      |  |  |  |                               |                               |                               |                               |
| EDID READ ERROR   | Sink device EDID recall error   |   |             |                      |  |  |  |                               |                               |                               |                               |
| UNCONNECTED   | Sink device is not connected.   |   |             |                      |  |  |  |                               |                               |                               |                               |

| @GES  | Sink device EDID (For each channel) (Cont'd)  |       |             |                   |  |   |  |                 |                               |             |                               |
|---|---|-------|-------------|-------------------|--|---|--|-----------------|-------------------------------|-------------|-------------------------------|
| Parameter   | <p>status_4: Audio format/Sampling frequency/Bit length/<br/>The number of channels/Compressed audio</p> <table border="1" data-bbox="416 349 1310 786"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AUDIO NOT SUPPORT</td> <td>A sink device that does not support audio signal is connected.</td> </tr> <tr> <td>LINEAR PCM<br/>-32/44.1/48kHz<br/>-16/20/24BIT<br/>-8CHANNEL</td> <td>A sink devices supporting audio signal is connected. Supporting sampling frequency (32, 44.1, 48, 88.2, 96, 176.4, 192), the number of bits (16, 20, 24), the number of channels (1 to 8), and compressed audio support status are returned.</td> </tr> <tr> <td>EDID READ ERROR</td> <td>Sink device EDID recall error</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table> | Value | Description | AUDIO NOT SUPPORT | A sink device that does not support audio signal is connected. | LINEAR PCM<br>-32/44.1/48kHz<br>-16/20/24BIT<br>-8CHANNEL | A sink devices supporting audio signal is connected. Supporting sampling frequency (32, 44.1, 48, 88.2, 96, 176.4, 192), the number of bits (16, 20, 24), the number of channels (1 to 8), and compressed audio support status are returned. | EDID READ ERROR | Sink device EDID recall error | UNCONNECTED | Sink device is not connected. |
| Value   | Description   |       |             |                   |  |   |  |                 |                               |             |                               |
| AUDIO NOT SUPPORT   | A sink device that does not support audio signal is connected.  |       |             |                   |  |   |  |                 |                               |             |                               |
| LINEAR PCM<br>-32/44.1/48kHz<br>-16/20/24BIT<br>-8CHANNEL | A sink devices supporting audio signal is connected. Supporting sampling frequency (32, 44.1, 48, 88.2, 96, 176.4, 192), the number of bits (16, 20, 24), the number of channels (1 to 8), and compressed audio support status are returned.  |       |             |                   |  |   |  |                 |                               |             |                               |
| EDID READ ERROR   | Sink device EDID recall error   |       |             |                   |  |   |  |                 |                               |             |                               |
| UNCONNECTED   | Sink device is not connected.   |       |             |                   |  |   |  |                 |                               |             |                               |
|   | <p>status_5: SCDC</p> <table border="1" data-bbox="416 904 1310 1106"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SCDC SUPPORT</td> <td>SCDC supported.</td> </tr> <tr> <td>SCDC NOT SUPPORT</td> <td>SCDC is not supported.</td> </tr> <tr> <td>EDID READ ERROR</td> <td>Sink device EDID recall error</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table>   | Value | Description | SCDC SUPPORT      | SCDC supported.  | SCDC NOT SUPPORT  | SCDC is not supported.   | EDID READ ERROR | Sink device EDID recall error | UNCONNECTED | Sink device is not connected. |
| Value   | Description   |       |             |                   |  |   |  |                 |                               |             |                               |
| SCDC SUPPORT  | SCDC supported.   |       |             |                   |  |   |  |                 |                               |             |                               |
| SCDC NOT SUPPORT  | SCDC is not supported.  |       |             |                   |  |   |  |                 |                               |             |                               |
| EDID READ ERROR   | Sink device EDID recall error   |       |             |                   |  |   |  |                 |                               |             |                               |
| UNCONNECTED   | Sink device is not connected.   |       |             |                   |  |   |  |                 |                               |             |                               |
|   | <p>status_6: HDR</p> <table border="1" data-bbox="416 1227 1310 1429"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDR SUPPORT</td> <td>HDR supported.</td> </tr> <tr> <td>HDR NOT SUPPORT</td> <td>HDR is not supported.</td> </tr> <tr> <td>EDID READ ERROR</td> <td>Sink device EDID recall error</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table>   | Value | Description | HDR SUPPORT       | HDR supported.   | HDR NOT SUPPORT   | HDR is not supported.  | EDID READ ERROR | Sink device EDID recall error | UNCONNECTED | Sink device is not connected. |
| Value   | Description   |       |             |                   |  |   |  |                 |                               |             |                               |
| HDR SUPPORT   | HDR supported.  |       |             |                   |  |   |  |                 |                               |             |                               |
| HDR NOT SUPPORT   | HDR is not supported.   |       |             |                   |  |   |  |                 |                               |             |                               |
| EDID READ ERROR   | Sink device EDID recall error   |       |             |                   |  |   |  |                 |                               |             |                               |
| UNCONNECTED   | Sink device is not connected.   |       |             |                   |  |   |  |                 |                               |             |                               |
|   | <p>status_7: 3D</p> <table border="1" data-bbox="416 1550 1310 1751"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>3D SUPPORT</td> <td>3D supported.</td> </tr> <tr> <td>3D NOT SUPPORT</td> <td>3D is not supported.</td> </tr> <tr> <td>EDID READ ERROR</td> <td>Sink device EDID recall error</td> </tr> <tr> <td>UNCONNECTED</td> <td>Sink device is not connected.</td> </tr> </tbody> </table>  | Value | Description | 3D SUPPORT        | 3D supported.  | 3D NOT SUPPORT  | 3D is not supported.   | EDID READ ERROR | Sink device EDID recall error | UNCONNECTED | Sink device is not connected. |
| Value   | Description   |       |             |                   |  |   |  |                 |                               |             |                               |
| 3D SUPPORT  | 3D supported.   |       |             |                   |  |   |  |                 |                               |             |                               |
| 3D NOT SUPPORT  | 3D is not supported.  |       |             |                   |  |   |  |                 |                               |             |                               |
| EDID READ ERROR   | Sink device EDID recall error   |       |             |                   |  |   |  |                 |                               |             |                               |
| UNCONNECTED   | Sink device is not connected.   |       |             |                   |  |   |  |                 |                               |             |                               |



| <b>@GES</b>     |             | <b>Sink device EDID (For each channel) (Cont'd)</b>  |
|-----------------|-------------|--|
| Getting example | Command     | @GES,1,0 [↵]   |
|                 | Response    | @GES,1,0, HDC-TR121UHD,1920x1080<br>148.50MHz,HDMI-RGB/YCbCr444/-24BIT COLOR,LINEAR<br>PCM-32/44.1/48kHz-16/20/24BIT-2CHANNEL,SCDC SUPPORT,HDR<br>SUPPORT,3D SUPPORT [↵]   |
|                 | Description | Getting the EDID of the sink device connected to OUT1<br>- Sink device name : HDC-TR121UHD<br>- Resolution : 1920x1080<br>- Dot clock : 148.50 MHz<br>- HDMI mode : Supported<br>- Color space/Color depth : RGB/YCbCr444/-24BIT COLOR<br>- Audio format : LINEAR PCM<br>- Sampling frequency : -32/44.1/48kHz<br>- Bit length : -16/20/24BIT<br>- The number of channels : -2CHANNEL<br>- SCDC : Supported<br>- HDR : Supported<br>- 3D : Supported |
| Remarks         |             | —  |

| <b>@GHC</b>     |             | <b>System status</b>  |
|-----------------|-------------|---|
| Getting example | Command     | @GHC [↵]  |
|                 | Response    | @GHC, temp, voltage [↵]                                       |
| Parameter       |             | temp: Internal temperature status<br>0 = Normal, 1 = Abnormal |
|                 |             | voltage: Power voltage<br>0 = Normal, 1 = Abnormal            |
| Getting example | Command     | @GHC [↵]  |
|                 | Response    | @GHC,0,0 [↵]  |
|                 | Description | No problem in internal temperature or power voltage status    |
| Remarks         |             | —   |

| <b>@GPS</b>     |             | <b>Power voltage</b>   |
|-----------------|-------------|--|
| Getting         | Command     | @GPS   |
|                 | Response    | @GPS, voltage, status  |
| Parameter       |             | voltage: Power voltage = Power voltage level x 1000<br>e.g.) 12.210 V: 12210 |
|                 |             | status: Power voltage status<br>0 = Normal, 1 = Abnormal                     |
| Getting example | Command     | @GPS   |
|                 | Response    | @GPS,12210,0   |
|                 | Description | Getting the power voltage<br>Voltage: 12.210 V; status: Normal               |
| Remarks         |             | —  |



| <b>@GST</b>     |             | <b>Internal temperature</b>   |
|-----------------|-------------|---|
| Getting         | Command     | @GST  |
|                 | Response    | @GST, temp, status  |
| Parameter       |             | temp: Internal temperature value<br>The value of temperature x 100<br>e.g.) 38.75°C: 3875 |
|                 |             | status: Internal temperature status<br>0 = Normal, 1 = Abnormal                           |
| Getting example | Command     | @GST  |
|                 | Response    | @GST,3425,0   |
|                 | Description | Getting the internal temperature<br>Temperature: 34.25°C; status: Normal                  |
| Remarks         |             | —   |

| <b>@GIV</b>     |             | <b>Version</b>  |
|-----------------|-------------|---|
| Getting         | Command     | @GIV  |
|                 | Response    | @GIV, id, version   |
| Parameter       |             | id : Model number   |
|                 |             | version : Firmware version  |
| Getting example | Command     | @GIV  |
|                 | Response    | @GIV,HDC-TR121UHD,1.00R0  |
|                 | Description | Getting the product information<br>Model number: HDC-TR121UHD; Firmware version: 1.00R0 |
| Remarks         |             | —   |

| @GHB  |   | HDBaseT information (For each channel)   |             |             |   |                       |               |             |              |             |           |                     |
|---|---|--|-------------|-------------|---|-----------------------|---------------|-------------|--------------|-------------|-----------|---------------------|
| Getting   | Command   | @GHB, port, mode    |             |             |   |                       |               |             |              |             |           |                     |
|   | Response  | @GHB, port, mode, status_1 (, status_2, status_3, status_4, status_5, status_6)<br> |             |             |   |                       |               |             |              |             |           |                     |
| Parameter   | port: I/O channels<br>2 = IN2<br>102 to 105 = OUT2 to OUT5  |  |             |             |   |                       |               |             |              |             |           |                     |
|   | mode: Target status (selected channels only)<br>0 = All statuses, 1 = Video signal information,<br>2 = Link status,<br>3 = Connection between source and sink devices<br>4 = Device type, 5 = Version ID,<br>6 = Connected device type, 7 = Connected version ID,<br>8 = Operation mode, 9 = Category cable length,<br>10 = Bit error rate, 11 = Video signal quality,<br>12 = Maximum video signal quality (FMSEERR MAX VALUE),<br>13 = Video signal residual gap (FMAXERR CURRENT VALUE),<br>14 = Maximum video signal residual gap (FMAXERR MAX VALUE) |  |             |             |   |                       |               |             |              |             |           |                     |
|   | status_1: Video signal information  |  |             |             |   |                       |               |             |              |             |           |                     |
|   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1920x1080p 59.94Hz</td> <td>Resolution, frequency</td> </tr> <tr> <td>YCbCr 4:4:4</td> <td>Color space</td> </tr> <tr> <td>24 BIT COLOR</td> <td>Color depth</td> </tr> <tr> <td>NO SIGNAL</td> <td>No signal is input.</td> </tr> </tbody> </table>  |  | Value       | Description | 1920x1080p 59.94Hz                      | Resolution, frequency | YCbCr 4:4:4   | Color space | 24 BIT COLOR | Color depth | NO SIGNAL | No signal is input. |
|   | Value   | Description  |             |             |   |                       |               |             |              |             |           |                     |
| 1920x1080p 59.94Hz  | Resolution, frequency   |  |             |             |   |                       |               |             |              |             |           |                     |
| YCbCr 4:4:4   | Color space   |  |             |             |   |                       |               |             |              |             |           |                     |
| 24 BIT COLOR  | Color depth   |  |             |             |   |                       |               |             |              |             |           |                     |
| NO SIGNAL   | No signal is input.   |  |             |             |   |                       |               |             |              |             |           |                     |
| status_2: Link status   |   |  |             |             |   |                       |               |             |              |             |           |                     |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>LINK ON</td> <td>Transmitter and receiver are connected.</td> </tr> <tr> <td>LINK OFF</td> <td>Not connected</td> </tr> </tbody> </table> |   | Value  | Description | LINK ON     | Transmitter and receiver are connected. | LINK OFF              | Not connected |             |              |             |           |                     |
| Value   | Description   |  |             |             |   |                       |               |             |              |             |           |                     |
| LINK ON   | Transmitter and receiver are connected.   |  |             |             |   |                       |               |             |              |             |           |                     |
| LINK OFF  | Not connected   |  |             |             |   |                       |               |             |              |             |           |                     |
| status_3: Connection between source and sink devices  |   |  |             |             |   |                       |               |             |              |             |           |                     |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Connected</td> </tr> <tr> <td>OFF</td> <td>Not connected</td> </tr> </tbody> </table>   |   | Value  | Description | ON          | Connected                               | OFF                   | Not connected |             |              |             |           |                     |
| Value   | Description   |  |             |             |   |                       |               |             |              |             |           |                     |
| ON  | Connected   |  |             |             |   |                       |               |             |              |             |           |                     |
| OFF   | Not connected   |  |             |             |   |                       |               |             |              |             |           |                     |
| status_4: Device type   |   |  |             |             |   |                       |               |             |              |             |           |                     |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>VS100RX</td> <td>VS100RX</td> </tr> <tr> <td>VS100TX</td> <td>VS100TX</td> </tr> </tbody> </table>  |   | Value  | Description | VS100RX     | VS100RX                                 | VS100TX               | VS100TX       |             |              |             |           |                     |
| Value   | Description   |  |             |             |   |                       |               |             |              |             |           |                     |
| VS100RX   | VS100RX   |  |             |             |   |                       |               |             |              |             |           |                     |
| VS100TX   | VS100TX   |  |             |             |   |                       |               |             |              |             |           |                     |

| @GHB   | HDBaseT status (For each channel) (Cont'd)   |             |                         |                       |              |                          |                 |                           |                  |               |                  |
|--|--|-------------|-------------------------|-----------------------|--------------|--------------------------|-----------------|---------------------------|------------------|---------------|------------------|
| Parameter  | status_5: Version ID<br><table border="1" data-bbox="470 309 1345 394"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>13.07.21.10</td> <td>13.07.21.10</td> </tr> </tbody> </table>   | Value       | Description             | 13.07.21.10           | 13.07.21.10  |                          |                 |                           |                  |               |                  |
|  | Value  | Description |                         |                       |              |                          |                 |                           |                  |               |                  |
|  | 13.07.21.10  | 13.07.21.10 |                         |                       |              |                          |                 |                           |                  |               |                  |
|  | status_6: Connected device type<br><table border="1" data-bbox="470 510 1345 595"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>VS100TX</td> <td>VS100TX</td> </tr> </tbody> </table>  | Value       | Description             | VS100TX               | VS100TX      |                          |                 |                           |                  |               |                  |
|  | Value  | Description |                         |                       |              |                          |                 |                           |                  |               |                  |
|  | VS100TX  | VS100TX     |                         |                       |              |                          |                 |                           |                  |               |                  |
|  | status_7: Connected version ID<br><table border="1" data-bbox="470 714 1345 799"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>13.07.21.10</td> <td>13.07.21.10</td> </tr> </tbody> </table>   | Value       | Description             | 13.07.21.10           | 13.07.21.10  |                          |                 |                           |                  |               |                  |
|  | Value  | Description |                         |                       |              |                          |                 |                           |                  |               |                  |
|  | 13.07.21.10  | 13.07.21.10 |                         |                       |              |                          |                 |                           |                  |               |                  |
|  | status_8: Operation mode<br><table border="1" data-bbox="470 916 1345 1120"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDBASET MODE</td> <td>HDBaseT mode</td> </tr> <tr> <td>LONG REACH MODE</td> <td>Long reach mode</td> </tr> <tr> <td>LPPF1 MODE</td> <td>LOW POWER mode 1</td> </tr> <tr> <td>LPPF2 MODE</td> <td>LOW POWER mode 2</td> </tr> </tbody> </table> | Value       | Description             | HDBASET MODE          | HDBaseT mode | LONG REACH MODE          | Long reach mode | LPPF1 MODE                | LOW POWER mode 1 | LPPF2 MODE    | LOW POWER mode 2 |
|  | Value  | Description |                         |                       |              |                          |                 |                           |                  |               |                  |
| HDBASET MODE   | HDBaseT mode   |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| LONG REACH MODE  | Long reach mode  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| LPPF1 MODE   | LOW POWER mode 1   |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| LPPF2 MODE   | LOW POWER mode 2   |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| status_9: Category cable length<br><table border="1" data-bbox="470 1236 1345 1440"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>85m</td> <td>Category cable length</td> </tr> <tr> <td>&lt;20m</td> <td>66 ft. (20 m) or shorter</td> </tr> <tr> <td>100m&lt;</td> <td>328 ft. (100 m) or longer</td> </tr> <tr> <td>UNCONNECTED</td> <td>Not connected</td> </tr> </tbody> </table> | Value  | Description | 85m                     | Category cable length | <20m         | 66 ft. (20 m) or shorter | 100m<           | 328 ft. (100 m) or longer | UNCONNECTED      | Not connected |                  |
| Value  | Description  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| 85m  | Category cable length  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| <20m   | 66 ft. (20 m) or shorter   |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| 100m<  | 328 ft. (100 m) or longer  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| UNCONNECTED  | Not connected  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| status_10: Bit error rate<br><table border="1" data-bbox="470 1554 1345 1682"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>10e-11</td> <td>Signal bit error rate</td> </tr> <tr> <td>UNCONNECTED</td> <td>Not connected</td> </tr> </tbody> </table>  | Value  | Description | 10e-11                  | Signal bit error rate | UNCONNECTED  | Not connected            |                 |                           |                  |               |                  |
| Value  | Description  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| 10e-11   | Signal bit error rate  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| UNCONNECTED  | Not connected  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| status_11: Video signal quality<br><table border="1" data-bbox="470 1800 1345 1924"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A:-22 B:-20 C:-21 D:-22</td> <td>Signal quality</td> </tr> <tr> <td>UNCONNECTED</td> <td>Not connected</td> </tr> </tbody> </table>  | Value  | Description | A:-22 B:-20 C:-21 D:-22 | Signal quality        | UNCONNECTED  | Not connected            |                 |                           |                  |               |                  |
| Value  | Description  |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| A:-22 B:-20 C:-21 D:-22  | Signal quality   |             |                         |                       |              |                          |                 |                           |                  |               |                  |
| UNCONNECTED  | Not connected  |             |                         |                       |              |                          |                 |                           |                  |               |                  |





| @GHB   |                        | HDBaseT status (For each channel) (Cont'd)  |                             |             |                             |                             |             |               |
|--|------------------------|---|-----------------------------|-------------|-----------------------------|-----------------------------|-------------|---------------|
| Parameter  |                        | status_12: Maximum video signal quality (FMSEERR MAX VALUE)   |                             |             |                             |                             |             |               |
|  |                        | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A:-22 B:-20 C:-21 D:-22</td> <td>Maximum signal quality</td> </tr> <tr> <td>UNCONNECTED</td> <td>Not connected</td> </tr> </tbody> </table>   | Value                       | Description | A:-22 B:-20 C:-21 D:-22     | Maximum signal quality      | UNCONNECTED | Not connected |
|  |                        | Value   | Description                 |             |                             |                             |             |               |
| A:-22 B:-20 C:-21 D:-22  | Maximum signal quality |   |                             |             |                             |                             |             |               |
| UNCONNECTED  | Not connected          |   |                             |             |                             |                             |             |               |
| status_13: Video signal residual gap (FMAXERR CURRENT VALUE)     |                        |   |                             |             |                             |                             |             |               |
|  |                        | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A:0.34 B:0.35 C:0.32 D:0.33</td> <td>Signal residual gap</td> </tr> <tr> <td>UNCONNECTED</td> <td>Not connected</td> </tr> </tbody> </table>  | Value                       | Description | A:0.34 B:0.35 C:0.32 D:0.33 | Signal residual gap         | UNCONNECTED | Not connected |
|  |                        | Value   | Description                 |             |                             |                             |             |               |
|  |                        | A:0.34 B:0.35 C:0.32 D:0.33   | Signal residual gap         |             |                             |                             |             |               |
| UNCONNECTED  | Not connected          |   |                             |             |                             |                             |             |               |
| status_14: Maximum video signal residual gap (FMAXERR MAX VALUE) |                        |   |                             |             |                             |                             |             |               |
|  |                        | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A:0.34 B:0.35 C:0.32 D:0.33</td> <td>Maximum signal residual gap</td> </tr> <tr> <td>UNCONNECTED</td> <td>Not connected</td> </tr> </tbody> </table>  | Value                       | Description | A:0.34 B:0.35 C:0.32 D:0.33 | Maximum signal residual gap | UNCONNECTED | Not connected |
|  |                        | Value   | Description                 |             |                             |                             |             |               |
|  |                        | A:0.34 B:0.35 C:0.32 D:0.33   | Maximum signal residual gap |             |                             |                             |             |               |
| UNCONNECTED  | Not connected          |   |                             |             |                             |                             |             |               |
| Getting example  | Command Response       | @GHB,2,0 <br>@GHB,2,0,1920x1080p 59.99Hz YCbCr 4:4:4 24 BIT COLOR,LINK ON,ON,VS100RX,13 07 21 00,VS100TX,13 07 21 10,HDBASET MODE,85m,10e-11,A:-22 B:-20 C:-21 D:-22,A:-22 B:-20 C:-21 D:-22,A:0.34 B:0.35 C:0.32 D:0.33,A:0.34 B:0.35 C:0.32 D:0.33    |                             |             |                             |                             |             |               |
|  | Description            | Getting all input statuses of IN2<br>- Video signal information : 1920x1080p 59.99Hz YCbCr 4:4:4 24 BIT COLOR<br>- Link status : Connected<br>- Connection between source and sink devices : Connected<br>- Device type : VS100RX<br>- Version ID : 13 07 21 00,<br>- Connected device type : VS100TX<br>- Connected version ID : 13 07 21 00<br>- Operation mode : HDBASET MODE<br>- Category cable length : 279 ft. (85 m)<br>- Bit error rate : 10e-11<br>- Video signal quality : A:-22 B:-20 C:-21 D:-22<br>- Maximum video signal quality (FMSEERR MAX VALUE) : A:-22 B:-20 C:-21 D:-22<br>- Video signal residual gap (FMAXERR CURRENT VALUE) : A:0.34 B:0.35 C:0.32 D:0.33<br>- Maximum video signal residual gap (FMAXERR MAX VALUE) : A:0.34 B:0.35 C:0.32 D:0.33 |                             |             |                             |                             |             |               |
| Remarks  |                        | —   |                             |             |                             |                             |             |               |

### 3.3.11 Status notification



| @GPH / @SPH     |             | Notification interval   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|-----------------|-------------|---|------|--------|------|---|-----|---|---|----|---------|---|----|---------|---|----|---------|---|----|---------|---|----|---------|---|----|---------|---|----|---------|---|----|---------|---|----|---------|----|----|----------|------|--------|------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|
| Getting         | Command     | @GPH <input type="checkbox"/>   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|                 | Response    | @GPH, time <input type="checkbox"/>   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| Setting         | Command     | @SPH, time <input type="checkbox"/>   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|                 | Response    | @SPH, time <input type="checkbox"/>   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| Parameter       |             | time: Notification time<br>0 = OFF [Default], 1 to 50 = 100 ms. to 5000 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|                 |             | <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr> <th>time</th> <th>ON/OFF</th> <th>Time</th> </tr> </thead> <tbody> <tr><td>0</td><td>OFF</td><td>—</td></tr> <tr><td>1</td><td>ON</td><td>100 ms.</td></tr> <tr><td>2</td><td>ON</td><td>200 ms.</td></tr> <tr><td>3</td><td>ON</td><td>300 ms.</td></tr> <tr><td>4</td><td>ON</td><td>400 ms.</td></tr> <tr><td>5</td><td>ON</td><td>500 ms.</td></tr> <tr><td>6</td><td>ON</td><td>600 ms.</td></tr> <tr><td>7</td><td>ON</td><td>700 ms.</td></tr> <tr><td>8</td><td>ON</td><td>800 ms.</td></tr> <tr><td>9</td><td>ON</td><td>900 ms.</td></tr> <tr><td>10</td><td>ON</td><td>1000 ms.</td></tr> </tbody> </table> to <table border="1" style="display: inline-table;"> <thead> <tr> <th>time</th> <th>ON/OFF</th> <th>Time</th> </tr> </thead> <tbody> <tr><td>40</td><td>ON</td><td>4000 ms.</td></tr> <tr><td>41</td><td>ON</td><td>4100 ms.</td></tr> <tr><td>42</td><td>ON</td><td>4200 ms.</td></tr> <tr><td>43</td><td>ON</td><td>4300 ms.</td></tr> <tr><td>44</td><td>ON</td><td>4400 ms.</td></tr> <tr><td>45</td><td>ON</td><td>4500 ms.</td></tr> <tr><td>46</td><td>ON</td><td>4600 ms.</td></tr> <tr><td>47</td><td>ON</td><td>4700 ms.</td></tr> <tr><td>48</td><td>ON</td><td>4800 ms.</td></tr> <tr><td>49</td><td>ON</td><td>4900 ms.</td></tr> <tr><td>50</td><td>ON</td><td>5000 ms.</td></tr> </tbody> </table> | time | ON/OFF | Time | 0 | OFF | — | 1 | ON | 100 ms. | 2 | ON | 200 ms. | 3 | ON | 300 ms. | 4 | ON | 400 ms. | 5 | ON | 500 ms. | 6 | ON | 600 ms. | 7 | ON | 700 ms. | 8 | ON | 800 ms. | 9 | ON | 900 ms. | 10 | ON | 1000 ms. | time | ON/OFF | Time | 40 | ON | 4000 ms. | 41 | ON | 4100 ms. | 42 | ON | 4200 ms. | 43 | ON | 4300 ms. | 44 | ON | 4400 ms. | 45 | ON | 4500 ms. | 46 | ON | 4600 ms. | 47 | ON | 4700 ms. | 48 | ON | 4800 ms. | 49 | ON | 4900 ms. | 50 | ON | 5000 ms. |
| time            | ON/OFF      | Time  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 0               | OFF         | —   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 1               | ON          | 100 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 2               | ON          | 200 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 3               | ON          | 300 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 4               | ON          | 400 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 5               | ON          | 500 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 6               | ON          | 600 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 7               | ON          | 700 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 8               | ON          | 800 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 9               | ON          | 900 ms.   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 10              | ON          | 1000 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| time            | ON/OFF      | Time  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 40              | ON          | 4000 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 41              | ON          | 4100 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 42              | ON          | 4200 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 43              | ON          | 4300 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 44              | ON          | 4400 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 45              | ON          | 4500 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 46              | ON          | 4600 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 47              | ON          | 4700 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 48              | ON          | 4800 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 49              | ON          | 4900 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| 50              | ON          | 5000 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| Getting example | Command     | @GPH <input type="checkbox"/>   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|                 | Response    | @GPH,5 <input type="checkbox"/>   |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|                 | Description | Getting set notification time<br>500 ms.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| Setting example | Command     | @SPH,50 <input type="checkbox"/>  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|                 | Response    | @SPH,50 <input type="checkbox"/>  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
|                 | Description | Setting notification time to 5000 ms. (5 seconds)<br>Completed  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |
| Remarks         |             | You need to set the time again after powering off the HDC.  |      |        |      |   |     |   |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |   |    |         |    |    |          |      |        |      |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |

| @PSH   |             | Unsolicited status notification  |     |      |      |      |      |      |     |     |   |     |   |   |   |      |      |      |      |      |
|--|-------------|--|-----|------|------|------|------|------|-----|-----|---|-----|---|---|---|------|------|------|------|------|
| Getting  | Response    | @PSH, in, out, system ☐  |     |      |      |      |      |      |     |     |   |     |   |   |   |      |      |      |      |      |
| Parameter  |             | in: Checking if input status changes<br>0 = Not change, 1 to 2 = Changes<br><table border="1"> <thead> <tr> <th>bit</th> <th>7</th> <th>6</th> <th>5</th> <th>4</th> <th>3</th> <th>2</th> <th>1</th> <th>0</th> </tr> </thead> <tbody> <tr> <td>in</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>IN2</td> <td>IN1</td> </tr> </tbody> </table> "1" appears for detected channel, the value is displayed in hex.                | bit | 7    | 6    | 5    | 4    | 3    | 2   | 1   | 0 | in  | - | - | - | -    | -    | -    | IN2  | IN1  |
|  |             | bit  | 7   | 6    | 5    | 4    | 3    | 2    | 1   | 0   |   |     |   |   |   |      |      |      |      |      |
|  |             | in   | -   | -    | -    | -    | -    | -    | IN2 | IN1 |   |     |   |   |   |      |      |      |      |      |
|  |             | out: Checking if output status changes<br>0 = Not change, 1 to 1F = Changes<br><table border="1"> <thead> <tr> <th>bit</th> <th>7</th> <th>6</th> <th>5</th> <th>4</th> <th>3</th> <th>2</th> <th>1</th> <th>0</th> </tr> </thead> <tbody> <tr> <td>out</td> <td>-</td> <td>-</td> <td>-</td> <td>OUT5</td> <td>OUT4</td> <td>OUT3</td> <td>OUT2</td> <td>OUT1</td> </tr> </tbody> </table> "1" appears for detected channel, the value is displayed in hex. | bit | 7    | 6    | 5    | 4    | 3    | 2   | 1   | 0 | out | - | - | - | OUT5 | OUT4 | OUT3 | OUT2 | OUT1 |
| bit  | 7           | 6  | 5   | 4    | 3    | 2    | 1    | 0    |     |     |   |     |   |   |   |      |      |      |      |      |
| out  | -           | -  | -   | OUT5 | OUT4 | OUT3 | OUT2 | OUT1 |     |     |   |     |   |   |   |      |      |      |      |      |
| system: Checking if system status changes<br>0 = Not change, 1 = Changes |             |  |     |      |      |      |      |      |     |     |   |     |   |   |   |      |      |      |      |      |
| Getting example  | Response    | @PSH,1,0,0 ☐   |     |      |      |      |      |      |     |     |   |     |   |   |   |      |      |      |      |      |
|  | Description | Getting status change information<br>- Input status : Changes in IN1<br>- Output status : No changes<br>- System status: No changes  |     |      |      |      |      |      |     |     |   |     |   |   |   |      |      |      |      |      |
| Remarks  |             | Only if "@GPH / @SPH Notification interval" is set, the HDC sends unsolicited command.<br>For input status changes, only selected channel is detected.   |     |      |      |      |      |      |     |     |   |     |   |   |   |      |      |      |      |      |

| @AIN  |   | Input signal status (For each channel)   |             |             |                     |                  |             |
|---|---|--|-------------|-------------|---------------------|------------------|-------------|
| Getting   | Command   | @AIN, in    |             |             |                     |                  |             |
|   | Response  | @AIN, status_1, status_2, status_3, status_4, status_5, status_6, status_7, status_8, status_9, status_10, status_11, status_12, status_13, status_14, status_15, status_16, status_17, status_18, status_19  |             |             |                     |                  |             |
| Parameter   | in: Input channel<br>1 to 2 = IN1 to IN2  |  |             |             |                     |                  |             |
|   | status_1: Input channel   |  |             |             |                     |                  |             |
|   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1: IN1<br/>2: IN2</td> </tr> </tbody> </table>       |  | Value       | Description | 1                   | 1: IN1<br>2: IN2 |             |
|   | Value   | Description  |             |             |                     |                  |             |
|   | 1   | 1: IN1<br>2: IN2   |             |             |                     |                  |             |
|   | status_2: Model number  |  |             |             |                     |                  |             |
|   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDC-TR121UHD</td> <td>Model number</td> </tr> </tbody> </table> |  | Value       | Description | HDC-TR121UHD        | Model number     |             |
|   | Value   | Description  |             |             |                     |                  |             |
| HDC-TR121UHD  | Model number  |  |             |             |                     |                  |             |
| status_3: Version   |   |  |             |             |                     |                  |             |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>V1.00R0</td> <td>Version</td> </tr> </tbody> </table>   |   | Value  | Description | V1.00R0     | Version             |                  |             |
| Value   | Description   |  |             |             |                     |                  |             |
| V1.00R0   | Version   |  |             |             |                     |                  |             |
| status_4: The number of valid data  |   |  |             |             |                     |                  |             |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>15</td> <td>"15" (fixed)</td> </tr> </tbody> </table>   |   | Value  | Description | 15          | "15" (fixed)        |                  |             |
| Value   | Description   |  |             |             |                     |                  |             |
| 15  | "15" (fixed)  |  |             |             |                     |                  |             |
| status_5: Reservation   |   |  |             |             |                     |                  |             |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>"1" (fixed)</td> </tr> </tbody> </table>   |   | Value  | Description | 1           | "1" (fixed)         |                  |             |
| Value   | Description   |  |             |             |                     |                  |             |
| 1   | "1" (fixed)   |  |             |             |                     |                  |             |
| status_6: Horizontal pixels of input video  |   |  |             |             |                     |                  |             |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No signal is input.</td> </tr> <tr> <td>1920</td> <td>1920 pixels</td> </tr> </tbody> </table> |   | Value  | Description | 0           | No signal is input. | 1920             | 1920 pixels |
| Value   | Description   |  |             |             |                     |                  |             |
| 0   | No signal is input.   |  |             |             |                     |                  |             |
| 1920  | 1920 pixels   |  |             |             |                     |                  |             |
| status_7: Vertical pixels of input video  |   |  |             |             |                     |                  |             |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No signal is input.</td> </tr> <tr> <td>1080</td> <td>1080 lines</td> </tr> </tbody> </table>  |   | Value  | Description | 0           | No signal is input. | 1080             | 1080 lines  |
| Value   | Description   |  |             |             |                     |                  |             |
| 0   | No signal is input.   |  |             |             |                     |                  |             |
| 1080  | 1080 lines  |  |             |             |                     |                  |             |

| @AIN  | Input signal status (For each channel) (Cont'd)   |  |             |   |  |       |          |
|---|---|--|-------------|---|--|-------|----------|
| Parameter   | status_8: Input video frequency<br><table border="1" data-bbox="470 309 1345 434"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No signal is input.</td> </tr> <tr> <td>59.94</td> <td>59.94 Hz</td> </tr> </tbody> </table>   | Value  | Description | 0   | No signal is input.  | 59.94 | 59.94 Hz |
|   | Value   | Description  |             |   |  |       |          |
|   | 0   | No signal is input.  |             |   |  |       |          |
|   | 59.94   | 59.94 Hz   |             |   |  |       |          |
|   | status_9: Progressive or interlace scan<br><table border="1" data-bbox="470 553 1345 712"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is input.<br/>1: Progressive<br/>2: Interlace</td> </tr> </tbody> </table>  | Value  | Description | 1   | 0: No signal is input.<br>1: Progressive<br>2: Interlace   |       |          |
|   | Value   | Description  |             |   |  |       |          |
|   | 1   | 0: No signal is input.<br>1: Progressive<br>2: Interlace   |             |   |  |       |          |
|   | status_10: HDMI/DVI mode of input video<br><table border="1" data-bbox="470 831 1345 990"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0: No signal is input.<br/>1: DVI signal input<br/>2: HDMI signal input</td> </tr> </tbody> </table>   | Value  | Description | 2   | 0: No signal is input.<br>1: DVI signal input<br>2: HDMI signal input  |       |          |
|   | Value   | Description  |             |   |  |       |          |
|   | 2   | 0: No signal is input.<br>1: DVI signal input<br>2: HDMI signal input  |             |   |  |       |          |
|   | status_11: Color space of input video<br><table border="1" data-bbox="470 1108 1345 1384"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is input.<br/>1: RGB input<br/>2: YCbCr 4:2:2 input<br/>3: YCbCr 4:4:4 input<br/>4: YCbCr 4:2:0 input<br/>255: Unknown</td> </tr> </tbody> </table> | Value  | Description | 1   | 0: No signal is input.<br>1: RGB input<br>2: YCbCr 4:2:2 input<br>3: YCbCr 4:4:4 input<br>4: YCbCr 4:2:0 input<br>255: Unknown |       |          |
|   | Value   | Description  |             |   |  |       |          |
|   | 1   | 0: No signal is input.<br>1: RGB input<br>2: YCbCr 4:2:2 input<br>3: YCbCr 4:4:4 input<br>4: YCbCr 4:2:0 input<br>255: Unknown |             |   |  |       |          |
| status_12: Color range of input video<br><table border="1" data-bbox="470 1503 1345 1662"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0: No signal is input.<br/>1: Limited range output<br/>2: Full range output</td> </tr> </tbody> </table>   | Value   | Description  | 2           | 0: No signal is input.<br>1: Limited range output<br>2: Full range output   |  |       |          |
| Value   | Description   |  |             |   |  |       |          |
| 2   | 0: No signal is input.<br>1: Limited range output<br>2: Full range output   |  |             |   |  |       |          |
| status_13: Color depth of input video<br><table border="1" data-bbox="470 1783 1345 2018"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is input.<br/>1: 24 bit/pixel (8 bit/component)<br/>2: 30 bit/pixel (10 bit/component)<br/>3: 36 bit/pixel (12 bit/component)<br/>4: 48 bit/pixel (16 bit/component)</td> </tr> </tbody> </table> | Value   | Description  | 1           | 0: No signal is input.<br>1: 24 bit/pixel (8 bit/component)<br>2: 30 bit/pixel (10 bit/component)<br>3: 36 bit/pixel (12 bit/component)<br>4: 48 bit/pixel (16 bit/component) |  |       |          |
| Value   | Description   |  |             |   |  |       |          |
| 1   | 0: No signal is input.<br>1: 24 bit/pixel (8 bit/component)<br>2: 30 bit/pixel (10 bit/component)<br>3: 36 bit/pixel (12 bit/component)<br>4: 48 bit/pixel (16 bit/component)   |  |             |   |  |       |          |

| @AIN   | Input signal status (For each channel) (Cont'd)   |  |             |  |  |
|--|---|--|-------------|--|--|
| Parameter  | status_14 : +5V input status <table border="1" data-bbox="470 309 1345 434"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No +5V signal is input.<br/>1: +5V signal is input.</td> </tr> </tbody> </table>  | Value  | Description | 1  | 0: No +5V signal is input.<br>1: +5V signal is input.  |
|  | Value   | Description  |             |  |  |
|  | 1   | 0: No +5V signal is input.<br>1: +5V signal is input.  |             |  |  |
|  | status_15 : Presence of input video HDCP encryption (Encryption from source device) <table border="1" data-bbox="470 591 1345 828"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0: No signal is input.<br/>1: Without HDCP<br/>2: HDCP 1.4<br/>3: HDCP 2.2 Type0<br/>4: HDCP 2.2 Type1</td> </tr> </tbody> </table> | Value  | Description | 2  | 0: No signal is input.<br>1: Without HDCP<br>2: HDCP 1.4<br>3: HDCP 2.2 Type0<br>4: HDCP 2.2 Type1 |
|  | Value   | Description  |             |  |  |
|  | 2   | 0: No signal is input.<br>1: Without HDCP<br>2: HDCP 1.4<br>3: HDCP 2.2 Type0<br>4: HDCP 2.2 Type1 |             |  |  |
| status_16 : Audio input type <table border="1" data-bbox="470 947 1345 1106"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is input.<br/>1: LPCM<br/>2: Compressed audio</td> </tr> </tbody> </table>  | Value   | Description  | 1           | 0: No signal is input.<br>1: LPCM<br>2: Compressed audio   |  |
| Value  | Description   |  |             |  |  |
| 1  | 0: No signal is input.<br>1: LPCM<br>2: Compressed audio  |  |             |  |  |
| status_17 : Audio input sampling frequency <table border="1" data-bbox="470 1225 1345 1541"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>0: No signal is input.<br/>1: 22.05 kHz      2: 24.0 kHz<br/>3: 32 kHz        4: 44.1 kHz<br/>5: 48 kHz        6: 88.2 kHz<br/>7: 96 kHz        8: 176 kHz<br/>9: 192 kHz       10: 768.0 kHz<br/>255: Unknown</td> </tr> </tbody> </table> | Value   | Description  | 5           | 0: No signal is input.<br>1: 22.05 kHz      2: 24.0 kHz<br>3: 32 kHz        4: 44.1 kHz<br>5: 48 kHz        6: 88.2 kHz<br>7: 96 kHz        8: 176 kHz<br>9: 192 kHz       10: 768.0 kHz<br>255: Unknown |  |
| Value  | Description   |  |             |  |  |
| 5  | 0: No signal is input.<br>1: 22.05 kHz      2: 24.0 kHz<br>3: 32 kHz        4: 44.1 kHz<br>5: 48 kHz        6: 88.2 kHz<br>7: 96 kHz        8: 176 kHz<br>9: 192 kHz       10: 768.0 kHz<br>255: Unknown  |  |             |  |  |
| status_18 : The number of audio input bits <table border="1" data-bbox="470 1659 1345 1935"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>9</td> <td>0: No signal is input.<br/>3: 18 bit          4: 19 bit<br/>5: 20 bit          6: 21 bit<br/>7: 22 bit          8: 23 bit<br/>9: 24 bit<br/>255: Unknown</td> </tr> </tbody> </table>   | Value   | Description  | 9           | 0: No signal is input.<br>3: 18 bit          4: 19 bit<br>5: 20 bit          6: 21 bit<br>7: 22 bit          8: 23 bit<br>9: 24 bit<br>255: Unknown  |  |
| Value  | Description   |  |             |  |  |
| 9  | 0: No signal is input.<br>3: 18 bit          4: 19 bit<br>5: 20 bit          6: 21 bit<br>7: 22 bit          8: 23 bit<br>9: 24 bit<br>255: Unknown   |  |             |  |  |

| @AIN            |  | Input signal status (For each channel) (Cont'd)   |       |             |   |  |
|-----------------|--|---|-------|-------------|---|--|
| Parameter       |  | status_19: Audio input HBR mode<br><br><table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>           0: No signal is input.<br/>           1: Mode other than HBR (PCM mode, other compressed audio)<br/>           2: HBR mode         </td> </tr> </tbody> </table>   | Value | Description | 1 | 0: No signal is input.<br>1: Mode other than HBR (PCM mode, other compressed audio)<br>2: HBR mode |
| Value           | Description  |   |       |             |   |  |
| 1               | 0: No signal is input.<br>1: Mode other than HBR (PCM mode, other compressed audio)<br>2: HBR mode |   |       |             |   |  |
| Getting example | Command  | @AIN,1   |       |             |   |  |
|                 | Response   | @AIN,1,HDC-TR121UHD,1.00R0,15,1,1920,1080,59.94,1,2,1,2,1,1,2,1,5,9,1    |       |             |   |  |
|                 | Description  | Getting all statuses of IN1 input signal<br>- Input channel : IN1<br>- Model number : HDC-TR121UHD<br>- Version : 1.00R0<br>- The number of valid data : 15<br>- Reservation : 1<br>- Horizontal pixels of input video : 1920 pixels<br>- Vertical pixels of input video : 1080 lines<br>- Input video frequency : 59.94 Hz<br>- Progressive or interlace scan : Progressive<br>- HDMI/DVI mode of input video : HDMI signal input<br>- Color space of input video : RGB input<br>- Color range of input video : Full range output<br>- Color depth of input video : 24 bit/pixel (8bit/component)<br>- +5V input status : +5V signal is input.<br>- Presence of input video HDCP encryption : Without HDCP<br>- Audio input type : LPCM<br>- Audio input sampling frequency : 48 kHz<br>- The number of audio input bits : 24bit<br>- Audio input HBR mode : Mode other than HBR |       |             |   |  |
| Remarks         |  | —   |       |             |   |  |

| @AOT  |  | Output signal status (For each channel)  |   |  |              |   |
|---|--|--|---|--|--------------|---|
| Getting   | Command  | @AOT,out ☐   |   |  |              |   |
|   | Response   | @AOT, status_1, status_2, status_3, status_4, status_5, status_6, status_7, status_8, status_9, status_10, status_11, status_12, status_13, status_14, status_15, status_16, status_17, status_18, status_19, status_20, status_21, status_22, status_23, status_24, status_25 ☐ |   |  |              |   |
| Parameter   |  | out: Output channel<br>1 to 5 = OUT1 to OUT5   |   |  |              |   |
|   |  | status_1: Output channel   |   |  |              |   |
|   |  | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1: OUT1<br/>2: OUT2<br/>3: OUT3<br/>4: OUT4<br/>5: OUT5</td> </tr> </tbody> </table>  | Value   | Description  | 1            | 1: OUT1<br>2: OUT2<br>3: OUT3<br>4: OUT4<br>5: OUT5 |
|   |  | Value  | Description   |  |              |   |
|   |  | 1  | 1: OUT1<br>2: OUT2<br>3: OUT3<br>4: OUT4<br>5: OUT5 |  |              |   |
|   |  | status_2: Model number   |   |  |              |   |
|   |  | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDC-TR121UHD</td> <td>Model number</td> </tr> </tbody> </table>  | Value   | Description  | HDC-TR121UHD | Model number  |
|   |  | Value  | Description   |  |              |   |
| HDC-TR121UHD  | Model number   |  |   |  |              |   |
| status_3: Version   |  |  |   |  |              |   |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>V1.00R0</td> <td>Version</td> </tr> </tbody> </table>   | Value  | Description  | V1.00R0   | Version  |              |   |
| Value   | Description  |  |   |  |              |   |
| V1.00R0   | Version  |  |   |  |              |   |
| status_4: The number of valid data  |  |  |   |  |              |   |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>21</td> <td>"21" (fixed)</td> </tr> </tbody> </table>   | Value  | Description  | 21  | "21" (fixed)   |              |   |
| Value   | Description  |  |   |  |              |   |
| 21  | "21" (fixed)   |  |   |  |              |   |
| status_5: Reservation   |  |  |   |  |              |   |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>"1" (fixed)</td> </tr> </tbody> </table>   | Value  | Description  | 1   | "1" (fixed)  |              |   |
| Value   | Description  |  |   |  |              |   |
| 1   | "1" (fixed)  |  |   |  |              |   |
| status_6: Selected input  |  |  |   |  |              |   |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: Source off ("@SOO" is set to "1")<br/>or No input signal<br/>1: IN1<br/>2: IN2</td> </tr> </tbody> </table> | Value  | Description  | 1   | 0: Source off ("@SOO" is set to "1")<br>or No input signal<br>1: IN1<br>2: IN2 |              |   |
| Value   | Description  |  |   |  |              |   |
| 1   | 0: Source off ("@SOO" is set to "1")<br>or No input signal<br>1: IN1<br>2: IN2 |  |   |  |              |   |



| @AOT   | Output signal status (For each channel) (Cont'd)   |                      |             |   |                      |          |             |
|--|--|----------------------|-------------|---|----------------------|----------|-------------|
| Parameter  | status_7: Horizontal pixels of output video<br><table border="1" data-bbox="472 309 1347 434"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No signal is output.</td> </tr> <tr> <td>1920</td> <td>1920 pixels</td> </tr> </tbody> </table> | Value                | Description | 0   | No signal is output. | 1920     | 1920 pixels |
|  | Value  | Description          |             |   |                      |          |             |
|  | 0  | No signal is output. |             |   |                      |          |             |
|  | 1920   | 1920 pixels          |             |   |                      |          |             |
|  | status_8: Vertical pixels of output video<br><table border="1" data-bbox="472 551 1347 676"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No signal is output.</td> </tr> <tr> <td>1080</td> <td>1080 lines</td> </tr> </tbody> </table>    | Value                | Description | 0   | No signal is output. | 1080     | 1080 lines  |
|  | Value  | Description          |             |   |                      |          |             |
|  | 0  | No signal is output. |             |   |                      |          |             |
| 1080   | 1080 lines   |                      |             |   |                      |          |             |
| status_9: Output video frequency<br><table border="1" data-bbox="472 792 1347 918"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No signal is output.</td> </tr> <tr> <td>59.94</td> <td>59.94 Hz</td> </tr> </tbody> </table>  | Value  | Description          | 0           | No signal is output.  | 59.94                | 59.94 Hz |             |
| Value  | Description  |                      |             |   |                      |          |             |
| 0  | No signal is output.   |                      |             |   |                      |          |             |
| 59.94  | 59.94 Hz   |                      |             |   |                      |          |             |
| status_10: Progressive or interlace scan<br><table border="1" data-bbox="472 1034 1347 1196"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is output.<br/>1: Progressive<br/>2: Interlace</td> </tr> </tbody> </table>   | Value  | Description          | 1           | 0: No signal is output.<br>1: Progressive<br>2: Interlace   |                      |          |             |
| Value  | Description  |                      |             |   |                      |          |             |
| 1  | 0: No signal is output.<br>1: Progressive<br>2: Interlace  |                      |             |   |                      |          |             |
| status_11: HDMI/DVI mode of output video<br><table border="1" data-bbox="472 1312 1347 1473"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0: No signal is output.<br/>1: DVI signal output<br/>2: HDMI signal output</td> </tr> </tbody> </table>  | Value  | Description          | 2           | 0: No signal is output.<br>1: DVI signal output<br>2: HDMI signal output  |                      |          |             |
| Value  | Description  |                      |             |   |                      |          |             |
| 2  | 0: No signal is output.<br>1: DVI signal output<br>2: HDMI signal output   |                      |             |   |                      |          |             |
| status_12: Color space of output video<br><table border="1" data-bbox="472 1590 1347 1827"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is output.<br/>1: RGB output<br/>2: YCbCr 4:2:2 output<br/>3: YCbCr 4:4:4 output<br/>4: YCbCr 4:2:0 output</td> </tr> </tbody> </table> | Value  | Description          | 1           | 0: No signal is output.<br>1: RGB output<br>2: YCbCr 4:2:2 output<br>3: YCbCr 4:4:4 output<br>4: YCbCr 4:2:0 output |                      |          |             |
| Value  | Description  |                      |             |   |                      |          |             |
| 1  | 0: No signal is output.<br>1: RGB output<br>2: YCbCr 4:2:2 output<br>3: YCbCr 4:4:4 output<br>4: YCbCr 4:2:0 output  |                      |             |   |                      |          |             |

| @AOT   | Output signal status (For each channel) (Cont'd)  |  |             |  |  |
|--|---|--|-------------|--|--|
| Parameter  | status_13: Color range of output video<br><table border="1" data-bbox="470 309 1345 472"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0: No signal is output.<br/>1: Limited range output<br/>2: Full range output</td> </tr> </tbody> </table>   | Value  | Description | 2  | 0: No signal is output.<br>1: Limited range output<br>2: Full range output   |
|  | Value   | Description  |             |  |  |
|  | 2   | 0: No signal is output.<br>1: Limited range output<br>2: Full range output   |             |  |  |
|  | status_14: Color depth of output video<br><table border="1" data-bbox="470 589 1345 831"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is output.<br/>1: 24 bit/pixel (8 bit/component)<br/>2: 30 bit/pixel (10 bit/component)<br/>3: 36 bit/pixel (12 bit/component)<br/>4: 48 bit/pixel (16 bit/component)</td> </tr> </tbody> </table> | Value  | Description | 1  | 0: No signal is output.<br>1: 24 bit/pixel (8 bit/component)<br>2: 30 bit/pixel (10 bit/component)<br>3: 36 bit/pixel (12 bit/component)<br>4: 48 bit/pixel (16 bit/component) |
|  | Value   | Description  |             |  |  |
|  | 1   | 0: No signal is output.<br>1: 24 bit/pixel (8 bit/component)<br>2: 30 bit/pixel (10 bit/component)<br>3: 36 bit/pixel (12 bit/component)<br>4: 48 bit/pixel (16 bit/component) |             |  |  |
| status_15: Hot plug detection<br><table border="1" data-bbox="470 947 1345 1070"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: Hot plug is detected.<br/>1: No hot plug is detected.</td> </tr> </tbody> </table>  | Value   | Description  | 1           | 0: Hot plug is detected.<br>1: No hot plug is detected.  |  |
| Value  | Description   |  |             |  |  |
| 1  | 0: Hot plug is detected.<br>1: No hot plug is detected.   |  |             |  |  |
| status_16: HDCP encryption<br><table border="1" data-bbox="470 1189 1345 1464"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>0: No HDCP encryption<br/>1: HDCP is being encrypted.<br/>2: HDCP is being encrypted.<br/>3: HDCP is being encrypted.<br/>4: HDCP encryption ends normally.<br/>5: HDCP encryption ends abnormally.</td> </tr> </tbody> </table> | Value   | Description  | 4           | 0: No HDCP encryption<br>1: HDCP is being encrypted.<br>2: HDCP is being encrypted.<br>3: HDCP is being encrypted.<br>4: HDCP encryption ends normally.<br>5: HDCP encryption ends abnormally. |  |
| Value  | Description   |  |             |  |  |
| 4  | 0: No HDCP encryption<br>1: HDCP is being encrypted.<br>2: HDCP is being encrypted.<br>3: HDCP is being encrypted.<br>4: HDCP encryption ends normally.<br>5: HDCP encryption ends abnormally.  |  |             |  |  |
| status_17: HDCP output<br><table border="1" data-bbox="470 1581 1345 1783"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No HDCP output<br/>1: HDCP 1.4 output<br/>2: HDCP 2.2 Type0 output<br/>3: HDCP 2.2 Type1 output</td> </tr> </tbody> </table>  | Value   | Description  | 1           | 0: No HDCP output<br>1: HDCP 1.4 output<br>2: HDCP 2.2 Type0 output<br>3: HDCP 2.2 Type1 output  |  |
| Value  | Description   |  |             |  |  |
| 1  | 0: No HDCP output<br>1: HDCP 1.4 output<br>2: HDCP 2.2 Type0 output<br>3: HDCP 2.2 Type1 output   |  |             |  |  |

| @AOT   | Output signal status (For each channel) (Cont'd)   |   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
|--|--|---|-------------|---|---|----------------|----------------|-----|---|-------|---|---|---|---|----------------|----------------|----------------|-----|
| Parameter  | status_18: Audio output type <table border="1" data-bbox="470 309 1345 472"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: No signal is output.<br/>1: LPCM<br/>2: Compressed audio</td> </tr> </tbody> </table>  | Value   | Description | 1   | 0: No signal is output.<br>1: LPCM<br>2: Compressed audio   |                |                |     |   |       |   |   |   |   |                |                |                |     |
|  | Value  | Description   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
|  | 1  | 0: No signal is output.<br>1: LPCM<br>2: Compressed audio |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
|  | status_19: Reading EDID <table border="1" data-bbox="470 589 1345 752"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0: Not connected<br/>1: Failed<br/>2: Completed</td> </tr> </tbody> </table>   | Value   | Description | 2   | 0: Not connected<br>1: Failed<br>2: Completed   |                |                |     |   |       |   |   |   |   |                |                |                |     |
| Value  | Description  |   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
| 2  | 0: Not connected<br>1: Failed<br>2: Completed  |   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
| status_20: HDMI/DVI mode (sink) <table border="1" data-bbox="470 869 1345 1106"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0: Not connected<br/>1: DVI mode<br/>2: HDMI mode (LPCM supported)<br/>3: HDMI mode (Compressed audio supported)</td> </tr> </tbody> </table>   | Value  | Description   | 2           | 0: Not connected<br>1: DVI mode<br>2: HDMI mode (LPCM supported)<br>3: HDMI mode (Compressed audio supported) |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
| Value  | Description  |   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
| 2  | 0: Not connected<br>1: DVI mode<br>2: HDMI mode (LPCM supported)<br>3: HDMI mode (Compressed audio supported)  |   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
| status_21: Color space (sink) <table border="1" data-bbox="470 1223 1442 1346"> <thead> <tr> <th>bit</th> <th>7</th> <th>6</th> <th>5</th> <th>4</th> <th>3</th> <th>2</th> <th>1</th> <th>0</th> </tr> </thead> <tbody> <tr> <td>Color</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>YCbCr<br/>4:2:0</td> <td>YCbCr<br/>4:4:4</td> <td>YCbCr<br/>4:2:2</td> <td>RGB</td> </tr> </tbody> </table> <p data-bbox="483 1350 1291 1420">"1" appears for supported color space, the value is displayed in hex.<br/>"0": Not connected.</p> | bit  | 7   | 6           | 5   | 4   | 3              | 2              | 1   | 0 | Color | - | - | - | - | YCbCr<br>4:2:0 | YCbCr<br>4:4:4 | YCbCr<br>4:2:2 | RGB |
| bit  | 7  | 6   | 5           | 4   | 3   | 2              | 1              | 0   |   |       |   |   |   |   |                |                |                |     |
| Color  | -  | -   | -           | -   | YCbCr<br>4:2:0  | YCbCr<br>4:4:4 | YCbCr<br>4:2:2 | RGB |   |       |   |   |   |   |                |                |                |     |
|  | status_22: Color depth (sink) <table border="1" data-bbox="470 1541 1345 1778"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0: Not connected<br/>1: 24 bit/pixel (8 bit/component)<br/>2: 30 bit/pixel (10 bit/component)<br/>3: 36 bit/pixel (12 bit/component)<br/>4: 48 bit/pixel (16 bit/component)</td> </tr> </tbody> </table> | Value   | Description | 1   | 0: Not connected<br>1: 24 bit/pixel (8 bit/component)<br>2: 30 bit/pixel (10 bit/component)<br>3: 36 bit/pixel (12 bit/component)<br>4: 48 bit/pixel (16 bit/component) |                |                |     |   |       |   |   |   |   |                |                |                |     |
| Value  | Description  |   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |
| 1  | 0: Not connected<br>1: 24 bit/pixel (8 bit/component)<br>2: 30 bit/pixel (10 bit/component)<br>3: 36 bit/pixel (12 bit/component)<br>4: 48 bit/pixel (16 bit/component)  |   |             |   |   |                |                |     |   |       |   |   |   |   |                |                |                |     |

| @AOT      | Output signal status (For each channel) (Cont'd)  |   |             |   |   |
|-----------|---|---|-------------|---|---|
| Parameter | status_23: HDCP (sink) <table border="1" data-bbox="472 309 1345 510"> <thead> <tr> <th data-bbox="472 309 871 353">Value</th> <th data-bbox="871 309 1345 353">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="472 353 871 510">2</td> <td data-bbox="871 353 1345 510">                                 0: Not connected<br/>                                 1: HDCP is not supported.<br/>                                 2: HDCP 1.4 supported<br/>                                 3: HDCP 2.2 supported                             </td> </tr> </tbody> </table> | Value   | Description | 2 | 0: Not connected<br>1: HDCP is not supported.<br>2: HDCP 1.4 supported<br>3: HDCP 2.2 supported |
|           | Value   | Description   |             |   |   |
|           | 2   | 0: Not connected<br>1: HDCP is not supported.<br>2: HDCP 1.4 supported<br>3: HDCP 2.2 supported |             |   |   |
|           | status_24: SCDC (sink) <table border="1" data-bbox="472 629 1345 790"> <thead> <tr> <th data-bbox="472 629 871 674">Value</th> <th data-bbox="871 629 1345 674">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="472 674 871 790">2</td> <td data-bbox="871 674 1345 790">                                 0: Not connected<br/>                                 1: SCDC is not supported.<br/>                                 2: SCDC supported                             </td> </tr> </tbody> </table>  | Value   | Description | 2 | 0: Not connected<br>1: SCDC is not supported.<br>2: SCDC supported                              |
|           | Value   | Description   |             |   |   |
|           | 2   | 0: Not connected<br>1: SCDC is not supported.<br>2: SCDC supported                              |             |   |   |
|           | status_25: HDR (sink) <table border="1" data-bbox="472 909 1345 1070"> <thead> <tr> <th data-bbox="472 909 871 954">Value</th> <th data-bbox="871 909 1345 954">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="472 954 871 1070">2</td> <td data-bbox="871 954 1345 1070">                                 0: Not connected<br/>                                 1: HDR is not supported.<br/>                                 2: HDR supported                             </td> </tr> </tbody> </table>  | Value   | Description | 2 | 0: Not connected<br>1: HDR is not supported.<br>2: HDR supported                                |
|           | Value   | Description   |             |   |   |
|           | 2   | 0: Not connected<br>1: HDR is not supported.<br>2: HDR supported                                |             |   |   |

| @AOT            |                  | Output signal status (For each channel) (Cont'd)  |
|-----------------|------------------|---|
| Getting example | Command Response | @AOT,1 [↵]<br>@AOT,1,HDC-TR121UHD,1.00R0,21,1,1,1920,1080,59.94,1,2,1,2,1,1,4,1,1,2,2,7,1,2,2,2 [↵]   |
|                 | Description      | Getting all statuses of OUT1 output signal<br><ul style="list-style-type: none"> <li>- Output channel: OUT1</li> <li>- Model number : HDC-TR121UHD</li> <li>- Version : 1.00R0</li> <li>- The number of valid data : 21</li> <li>- Reservation : 1</li> <li>- Selected input : IN1</li> <li>- Horizontal pixels of output video : 1920 pixels</li> <li>- Vertical pixels of output video : 1080 lines</li> <li>- Output video frequency : 59.94 Hz</li> <li>- Progressive or interlace scan : Progressive</li> <li>- HDMI/DVI mode of output video : HDMI signal output</li> <li>- Color space of output video : RGB output</li> <li>- Color range of output video : Full range output</li> <li>- Color depth of output video : 24 bit/pixel (8bit/component)</li> <li>- Hot plug detection : Hot plug is detected.</li> <li>- HDCP encryption : Encryption ends normally.</li> <li>- HDCP output : HDCP 1.4 output</li> <li>- Audio output type : LPCM</li> <li>- Reading EDID : Completed</li> <li>- HDMI/DVI mode (sink) : HDMI mode (LPCM supported)</li> <li>- Color space (sink) : RGB, YCbCr4:2:2, and YCbCr4:4:4 supported</li> <li>- Color depth (sink) : 24 bit/pixel (8bit/component)</li> <li>- HDCP (sink) : HDCP 1.4 supported</li> <li>- SCDC (sink) : SCDC supported</li> <li>- HDR (sink) : HDR supported</li> </ul> |
| Remarks         |                  | —   |

| @GAA  |   | Alarm status  |                          |                          |              |                          |
|---|---|---|--------------------------|--------------------------|--------------|--------------------------|
| Getting   | Command   | @GAA ☐  |                          |                          |              |                          |
|   | Response  | @GAA, status_1, status_2, status_3, status_4, status_5 ☐  |                          |                          |              |                          |
| Parameter   |   | status_1: Model number  |                          |                          |              |                          |
|   |   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDC-TR121UHD</td> <td>Model number</td> </tr> </tbody> </table>   | Value                    | Description              | HDC-TR121UHD | Model number             |
|   |   | Value   | Description              |                          |              |                          |
|   |   | HDC-TR121UHD  | Model number             |                          |              |                          |
|   |   | status_2: Version   |                          |                          |              |                          |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>V1.00R0</td> <td>Version</td> </tr> </tbody> </table>             | Value   | Description   | V1.00R0                  | Version                  |              |                          |
| Value   | Description   |   |                          |                          |              |                          |
| V1.00R0   | Version   |   |                          |                          |              |                          |
| status_3: The number of valid data  |   |   |                          |                          |              |                          |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>"2" (fixed)</td> </tr> </tbody> </table>               | Value   | Description   | 2                        | "2" (fixed)              |              |                          |
| Value   | Description   |   |                          |                          |              |                          |
| 2   | "2" (fixed)   |   |                          |                          |              |                          |
| Getting example   |   | status_4: Power voltage status  |                          |                          |              |                          |
|   |   | <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0: Normal<br/>1: Abnormal</td> </tr> </tbody> </table> | Value                    | Description              | 0            | 0: Normal<br>1: Abnormal |
|   |   | Value   | Description              |                          |              |                          |
|   |   | 0   | 0: Normal<br>1: Abnormal |                          |              |                          |
|   |   | status_5: Internal temperature status   |                          |                          |              |                          |
| <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0: Normal<br/>1: Abnormal</td> </tr> </tbody> </table> | Value   | Description   | 0                        | 0: Normal<br>1: Abnormal |              |                          |
| Value   | Description   |   |                          |                          |              |                          |
| 0   | 0: Normal<br>1: Abnormal  |   |                          |                          |              |                          |
| Command   | @GAA ☐  |   |                          |                          |              |                          |
| Response  | @GAA,HDC-TH121UHD,1.00R0,2,0,0 ☐  |   |                          |                          |              |                          |
| Description   | Getting all alarm statuses<br>- Model number : HDC-TR121UHD<br>- Version : 1.00R0<br>- The number of valid data : 2<br>- Power voltage status : Normal<br>- Internal temperature status: Normal |   |                          |                          |              |                          |
| Remarks   | —   |   |                          |                          |              |                          |

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## User Guide (Command Guide) of HDC-UHD Series

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