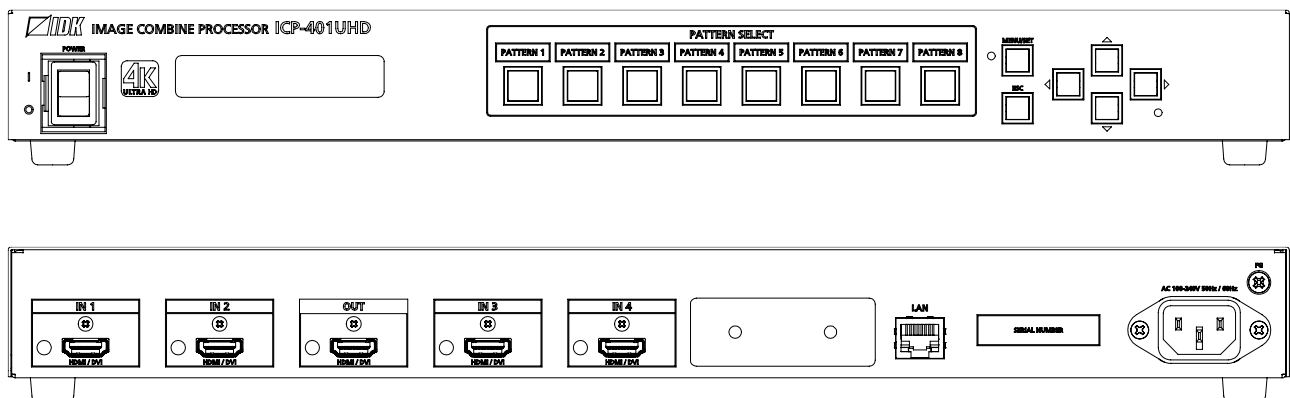


4K@60/HDCP 2.2 Multi-window Processor

ICP-401UHD

<Command Reference Guide>

Ver.1.2.0



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

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Before reading this manual

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- Some information contained in this Command guide such as exact product appearance, diagrams, menu operations, communication commands, and so on may differ depending on the product version.
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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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1 About this Guide

This guide explains how to control the ICP-401UHD (hereafter referred to as “ICP”) using commands through LAN communication.

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

- Switching and saving window pattern
- Setting input, output, and EDID
- Setting preset memory

2 Communication Configuration and Specifications

2.1 LAN communication

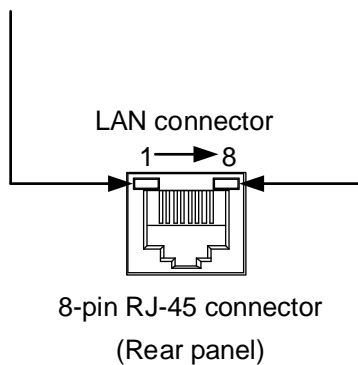
2.1.1 LAN connector specification

It supports Auto MDI/MDI-X, which distinguishes/switches straight and cross cables automatically.

Pin assignments of LAN connector:

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

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



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. 2.1] LAN connector

2.1.2 LAN communication specification

[Table 2.1] Specification of LAN communication

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

Note:

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

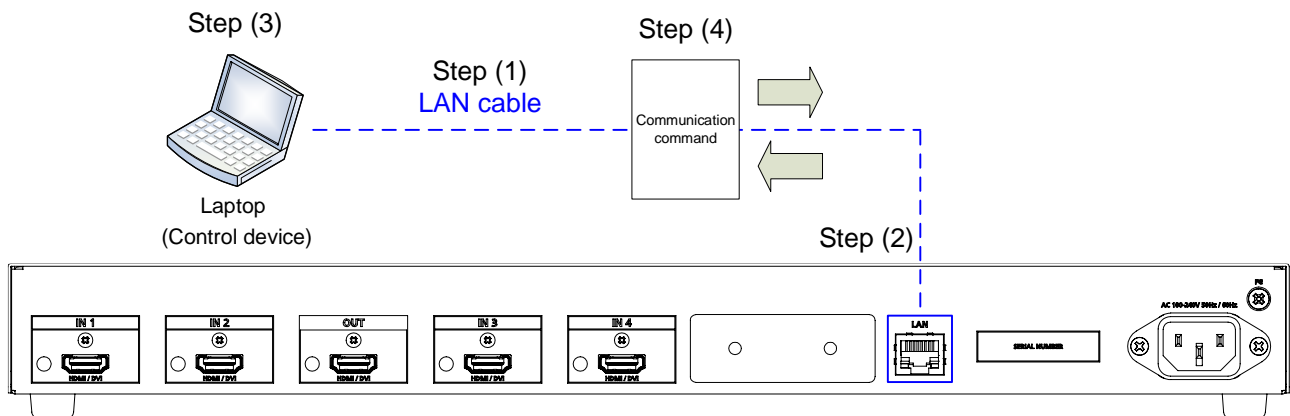
【See: 2.1.4 The number of TCP-IP connections】

2.1.3 Setting up LAN communication

- (1) Connect the ICP and the control device via a LAN cable.
- (2) Set up LAN communication as follows:
 - Set IP address and subnet mask
 - TCP port number: 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 ICP in step (2) above.
- (4) Send a communication command from the control device to the ICP in order to check the control status of the ICP.



[Fig. 2.2] Setting LAN communication

2.1.4 The number of TCP-IP connections

The ICP 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 2.2] Increasing connections

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

Note:

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

3 Command

3.1 Summary

A command consists of "@" ("40" in hexadecimal), 3 one-byte alphabetical characters (upper and lower cases), 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]
@RWM: Recalling Window Pattern
@RPM : Recalling Preset Memory

@GIV : Getting Product ID & Firmware Version

3.2 Command list

Error status

Command	Function	Page
@ERR	Error status	13

Input setting

Command	Function	Page
@GDT / @SDT	No-signal input monitoring	14
@GHE / @SHE	HDCP input setting	14

Input timing

Command	Function	Page
@GPI / @SPI	Start position	15
@GSI / @SSI	Active area	15
@GAP / @SAP	Aspect ratio	16
@GIC / @SIC	Contrast	17
@GIB / @SIB	Brightness	17
@GBL / @SBL	Blank color	18
@GEF / @SEF	Input video settings	19

Window setting

Command	Function	Page
@GOP / @SOP	Window position/size	21
@GQP / @SQP	Window start position/display size	22
@GBC / @SBC	Window background color	23
@GPR / @SPR	Window layer order	23
@GTO / @STO	Window overlay titling	24
@GTN / @STN	Editing window overlay titling	24
@GWV / @SWV	Window hiding	25
@GWS / @SWS	Window transition effect	25

Pattern memory

Command	Function	Page
@RWM	Recalling window pattern	26
@SWM	Saving window pattern	26
@GLK / @SLK	Linking window pattern and preset memory	26

Output setting

Command	Function	Page
@GDM / @SDM	Output mode	27
@GHM / @SHM	Sink device EDID check	27
@GMK / @SMK	Hot plug ignoring duration	28
@GDC / @SDC	Deep Color	28
@GEN / @SEN	HDCP output	29

Output timing

Command	Function	Page
@GOT / @SOT	Output resolution	30
@GUM / @SUM	Aspect ratio of sink device	31
@GTP / @STP	Test pattern	32
@GMR / @SMR	Display size/position	33
@GEC / @SEC	Background color	34
@GOA / @SOA	Output video settings	35

Audio setting

Command	Function	Page
@GAM / @SAM	Audio output mute	38
@GSO / @SSO	Audio input level	38
@GSL / @SSL	Audio output level	39
@GAS / @SAS	Selecting audio input channel	39
@GAT / @SAT	Test tone	40

EDID setting

Command	Function	Page
@GED / @SED	EDID resolution	41
@RME	Copying EDID	42
@GDI / @SDI	Deep Color	42
@GAF / @SAF	LPCM Audio	43

LAN communication

Command	Function	Page
@GIP / @SIP	IP address	44
@GSB / @SSB	Subnet mask	44
@GLP / @SLP	TCP port number	45
@GMC	MAC address	45

Preset memory

Command	Function	Page
@RPM	Recalling preset memory	46
@SPM	Saving preset memory	46

Other settings

Command	Function	Page
@GLS / @SLS	Key function lock	47
@GLM / @SLM	Grouping front key function lock	47
@GIS	Input signal status	48
@GOS	Sink device status	50
@GST	Temperature status	51
@GFS	Fan status	51
@GPS	Voltage status	51
@GHC	System status	52
@GIV	Viewing version information	52

3.3 Details of commands

3.3.1 Error status

@ERR		Error status
Description		Response in case the command is not executed
Response		@ERR, error ↴
Parameter		error: Error status 1 = Erroneous parameter format or value 2 = Undefined command or wrong format 4 = Loading EDID from the sink device failed
Getting example	Command	@SDT ↴
	Response	@ERR,1 ↴
	Description	@SDT is sent. Command format error
Remarks		—

3.3.2 Input setting

@GDT / @SDT		No-signal input monitoring
Getting	Command	@GDT
	Response	@GDT, time_1, ..., time_4
Setting	Command	@SDT, in_1, time_1 (,in_2, time_2...)
	Response	@SDT, in_1, time_1 (,in_2, time_2...)
Parameter		time_1-4: No-signal input monitoring time 0 = OFF, 3 to 15 = 3 sec. to 15 sec. [Default] 10 = 10 sec.
		in_1-4: Input channel 0 = All inputs, 1 to 4 = IN1 to IN4
Getting example	Command	@GDT
	Response	@GDT,10,10,10,10
	Description	Getting the no-signal input monitoring time All input channels: 10 sec.
Setting example	Command	@SDT,0,4
	Response	@SDT,0,4
	Description	Setting the monitoring time of all input channels to 4 sec.
Remarks		—

@GHE / @SHE		HDCP input setting
Getting	Command	@GHE
	Response	@GHE, hdcp_1, ..., hdcp_4
Setting	Command	@SHE, in_1, hdcp_1 (,in_2, hdcp_2...)
	Response	@SHE, in_1, hdcp_1 (,in_2, hdcp_2...)
Parameter		hdcp_1-4: HDCP input 0 = Disabled 1 = HDCP 1.4 2 = HDCP2.2 [Default]
		in_1-4: Input channel 0 = All inputs, 1 to 4 = IN1 to IN4
Getting example	Command	@GHE
	Response	@GHE,2,2,2,2
	Description	Getting HDCP input setting All input channels: HDCP 2.2 enabled
Setting example	Command	@SHE,0,0
	Response	@SHE,0,0
	Description	Setting HDCP input of all input channels to be disabled
Remarks		—

3.3.3 Input timing

@GPI / @SPI		Start position
Getting	Command	@GPI, in ↵
	Response	@GPI, in, h_posi, v_posi ↵
Setting	Command	@SPI, in, h_posi, v_posi ↵
	Response	@SPI, in, h_posi, v_posi ↵
Parameter		in: Input channel 1 to 4 = IN1 to IN4 h_posi: Horizontal start position (by 0.01%) v_posi: Vertical start position (by 0.01%) 0 to 10000 = 0% to 100% [Default] 0 = 0%
Getting example	Command	@GPI,1 ↵
	Response	@GPI,1,0,0 ↵
	Description	Getting the IN1 start position Horizontal and vertical start positions: 0%
Setting example	Command	@SPI,1,0,0 ↵
	Response	@SPI,1,0,0 ↵
	Description	Setting the IN1 horizontal and vertical positions to 0%
Remarks		—

@GSI / @SSI		Active area
Getting	Command	@GSI, in ↵
	Response	@GSI, in, h_size, v_size ↵
Setting	Command	@SSI, in, h_size, v_size ↵
	Response	@SSI, in, h_size, v_size ↵
Parameter		in: Input channel 1 to 4 = IN1 to IN4 h_size: Horizontal active area (by 0.01%) v_size: Vertical active area (by 0.01%) 0 to 10000 = 0% to 100% [Default] 10000 = 100%
Getting example	Command	@GSI,1 ↵
	Response	@GSI,1,10000,10000 ↵
	Description	Getting the IN1 active area Horizontal and vertical active areas: 100%
Setting example	Command	@SSI,1,10000,10000 ↵
	Response	@SSI,1,10000,10000 ↵
	Description	Setting the IN1 horizontal and vertical active areas to 100%
Remarks		—

@GAP / @SAP		Aspect ratio
Getting	Command	@GAP, in <input type="checkbox"/>
	Response	@GAP, in, aspect, val <input type="checkbox"/>
Setting	Command	@SAP, in, aspect (,val) <input type="checkbox"/>
	Response	@SAP, in, aspect (,val) <input type="checkbox"/>
Parameter		in: Input channel 1 to 4 = IN1 to IN4 aspect: Input video aspect ratio 0 = AUTO [Default], 1 = FULL, 2 = 4:3, 3 = 5:3, 4 = 5:4, 5 = 16:9, 6 = 16:10, 7 = 16:9 LETTER BOX, 8 = 64:27, 9 = 256:135, 10 = Value of "val" val: Aspect ratio (Horizontal/vertical) 33333 to 300000 = 0.33333 to 3
Getting example	Command	@GAP,1 <input type="checkbox"/>
	Response	@GAP,1,0,100000 <input type="checkbox"/>
	Description	Getting the IN1 aspect ratio AUTO
Setting example	Command	@SAP,1,0 <input type="checkbox"/>
	Response	@SAP,1,0 <input type="checkbox"/>
	Description	Setting the IN1 aspect ratio to AUTO
Setting example	Command	@SAP,1,10,150000 <input type="checkbox"/>
	Response	@SAP,1,10,150000 <input type="checkbox"/>
	Description	The aspect ratio is specified to 1.5.
Remarks		—

@GIC / @SIC		Contrast
Getting	Command	@GIC, in ↵
	Response	@GIC, in, red, green, blue ↵
Setting	Command	@SIC, in, red, green, blue ↵
	Response	@SIC, in, red, green, blue ↵
Parameter		in: Input channel 1 to 4 = IN1 to IN4 red : Contrast (Red) green : Contrast (Green) blue : Contrast (Blue) 0 to 200 = 0% to 200% [Default] 100 = 100%
Getting example	Command	@GIC,1 ↵
	Response	@GIC,1,100,100,100 ↵
	Description	Getting the IN1 contrast Red, Green and Blue: 100%
Setting example	Command	@SIC,1,100,100,100 ↵
	Response	@SIC,1,100,100,100 ↵
	Description	Setting the IN1 contrast to 100% for all (red, green and blue)
Remarks		—

@GIB / @SIB		Brightness
Getting	Command	@GIB, in ↵
	Response	@GIB, in, brightness ↵
Setting	Command	@SIB, in, brightness ↵
	Response	@SIB, in, brightness ↵
Parameter		in: Input channel 1 to 4 = IN1 to IN4 brightness: 0 to 200 = 0% to 200% [Default] 100 = 100%
Getting example	Command	@GIB,1 ↵
	Response	@GIB,1,100 ↵
	Description	Getting the IN1 brightness 100%
Setting example	Command	@SIB,1,100 ↵
	Response	@SIB,1,100 ↵
	Description	Setting the IN1 brightness to 100%
Remarks		—

@GBL / @SBL		Blank color
Getting	Command	@GBL, in ↵
	Response	@GBL, in, red, green, blue ↵
Setting	Command	@SBL, in, red, green, blue ↵
	Response	@SBL, in, red, green, blue ↵
Parameter		in: Input channel 1 to 4 = IN1 to IN4 red : Blank color (Red) green : Blank color (Green) blue : Blank color (Blue) 0 to 255 [Default] 0
Getting example	Command	@GBL,1 ↵
	Response	@GBL,1,0,0,0 ↵
	Description	Getting the IN1 blank color Red, Green and Blue: "0" (Black)
Setting example	Command	@SBL,1,0,0,0 ↵
	Response	@SBL,1,0,0,0 ↵
	Description	Setting the IN1 black color to "0" (black) for all (red, green and blue)
Remarks		—

@GEF / @SEF		Input video settings
Getting	Command	@GEF, in ↵
	Response	@GEF, in, h_size, v_size, h_posi, v_posi, aspect, c_red, c_green, c_blue, brightness, b_red, b_green, b_blue ↵
Setting	Command	@SEF, in, h_size, v_size, h_posi, v_posi, aspect, c_red, c_green, c_blue, brightness, b_red, b_green, b_blue ↵
	Response	@SEF, in, h_size, v_size, h_posi, v_posi, aspect, c_red, c_green, c_blue, brightness, b_red, b_green, b_blue ↵
Parameter		<p>in: Input channel 1 to 4 = IN1 to IN4</p> <p>h_size : Horizontal start position (by 0.01%) v_size : Vertical start position (by 0.01%) 0 to 10000 = 0% to 100% [Default] 10000 = 100%</p> <p>h_posi : Horizontal active area (by 0.01%) v_posi : Vertical active area (by 0.01%) 0 to 10000 = 0% to 100% [Default] 0 = 0%</p> <p>aspect: Input video aspect ratio 0 = AUTO [Default], 1 = FULL, 2 = 4:3, 3 = 5:3, 4 = 5:4, 5 = 16:9, 6 = 16:10, 7 = 16:9 LETTER BOX, 8 = 64:27, 9=256:135, 10 = Aspect ratio specified using @GAP / @SAP</p> <p>c_red : Contrast (Red) c_green : Contrast (Green) c_blue : Contrast (Blue) 0 to 200 = 0% to 200% [Default] 100 = 100%</p> <p>brightness: 0 to 200 = 0% to 200% [Default] 100 = 100%</p> <p>b_red : Blank color (Red) b_green: Blank color (Green) b_blue : Blank color (Blue) 0 to 255 [Default] 0</p>

@GEF / @SEF		Input video settings (Cont'd)
Getting example	Command	@GEF,1 ☐
	Response	@GEF,1,10000,10000,0,0,0,100,100,100,100,50,50,50 ☐
	Description	Getting the IN1 input video settings - Horizontal and vertical active area : 100% - Horizontal and vertical start position: 0% - Input video aspect ratio : AUTO - Contrast : 100% for all (red, green and blue) - Brightness : 100% - Blank color : 50% for all (red, green and blue)
Setting example	Command	@SEF,1,10000,10000,0,0,0,100,100,100,100,50,50,50 ☐
	Response	@SEF,1,10000,10000,0,0,0,100,100,100,100,50,50,50 ☐
	Description	Setting the IN1 input video as follows: - Horizontal and vertical active area : 100% - Horizontal and vertical start position: 0% - Input video aspect ratio : AUTO - Contrast : 100% for all (red, green and blue) - Brightness : 100% - Blank color : 50% for all (red, green and blue)
Remarks		—

3.3.4 Window setting

@GOP / @SOP		Window position/size
Getting	Command	@GOP, in <input type="checkbox"/>
	Response	@GOP, in, h_posi, v_posi, h_size, v_size <input type="checkbox"/>
Setting	Command	@SOP, in, h_posi, v_posi, h_size, v_size <input type="checkbox"/>
	Response	@SOP, in, h_posi, v_posi, h_size, v_size <input type="checkbox"/>
Parameter		in: Input channel 1 to 4 = IN1 to IN4
		h_posi: Horizontal window position (by 0.01%) v_posi: Vertical window position (by 0.01%) 0 to 10000 = 0 to 100% [Default] 0 = 0 %
		h_size: Horizontal window size (by 0.01%) v_size: Vertical window size (by 0.01%) 2000 to 10000 = 20% to 100% [Default] 10000 = 100 %
Getting example	Command	@GOP,1 <input type="checkbox"/>
	Response	@GOP,1,0,0,10000,10000 <input type="checkbox"/>
	Description	Getting the IN1 window position/sizes - Horizontal window position: 0% - Vertical window position : 0% - Horizontal window size : 100% - Vertical window size : 100%
Setting example	Command	@SOP,1,0,0,10000,10000 <input type="checkbox"/>
	Response	@SOP,1,0,0,10000,10000 <input type="checkbox"/>
	Description	Setting the IN1 window position/size as follows: - Horizontal window position: 0% - Vertical window position : 0% - Horizontal window size : 100% - Vertical window size : 100%
Remarks		—

@GQP / @SQP		Window start position/display size
Getting	Command	@GQP, in [↵]
	Response	@GQP, in, h_posi, v_posi, h_size, v_size [↵]
Setting	Command	@SQP, in, h_posi, v_posi, h_size, v_size [↵]
	Response	@SQP, in, h_posi, v_posi, h_size, v_size [↵]
Parameter		<p>in: Input channel 1 to 4 = IN1 to IN4</p> <p>h_posi: Horizontal window start position (by 0.01%) v_posi: Vertical window start position (by 0.01%) -40000 to +40000 = -400% to +400% [Default] 0 = 0%</p> <p>h_size: Horizontal window display size (by 0.01%) v_size: Vertical window display size (by 0.01%) 2000 to 40000 = 20% to 400% [Default] 10000 = 100%</p>
Getting example	Command	@GQP,1 [↵]
	Response	@GQP,1,0,0,10000,10000 [↵]
	Description	<p>Getting the IN1 window start position/display size</p> <ul style="list-style-type: none"> - Horizontal window start position: 0% - Vertical window start position : 0% - Horizontal window display size : 100% - Vertical window display size : 100%
Setting example	Command	@SQP,1,0,0,10000,10000 [↵]
	Response	@SQP,1,0,0,10000,10000 [↵]
	Description	<p>Setting the IN1 window start position/display size as follows:</p> <ul style="list-style-type: none"> - Horizontal window start position: 0% - Vertical window start position : 0% - Horizontal window display size : 100% - Vertical window display size : 100%
Remarks		—

@GBC / @SBC		Window background color
Getting	Command	@GBC, in <input type="checkbox"/>
	Response	@GBC, in, red, green, blue <input type="checkbox"/>
Setting	Command	@SBC, in, red, green, blue <input type="checkbox"/>
	Response	@SBC, in, red, green, blue <input type="checkbox"/>
Parameter		in: Input channel 1 to 4 = IN1 to IN4 red : Window background color (Red) green : Window background color (Green) blue : Window background color (Blue) 0 to 255 [Default] 0
Getting example	Command	@GBC,1 <input type="checkbox"/>
	Response	@GBC,1,0,0,0 <input type="checkbox"/>
	Description	Getting the IN1 window background color Red, Green and Blue: "0" (Black)
Setting example	Command	@SBC,1,0,0,0 <input type="checkbox"/>
	Response	@SBC,1,0,0,0 <input type="checkbox"/>
	Description	Setting the IN1 window background color to "0" (black) for all (red, green and blue)
Remarks		—

@GPR / @SPR		Window layer order
Getting	Command	@GPR <input type="checkbox"/>
	Response	@GPR, priority_in1, priority_in2, priority_in3, priority_in4 <input type="checkbox"/>
Setting	Command	@SPR, priority_in1, priority_in2, priority_in3, priority_in4 <input type="checkbox"/>
	Response	@SPR, priority_in1, priority_in2, priority_in3, priority_in4 <input type="checkbox"/>
Parameter		priority_in1-in4: Window layer order 1 to 4 = Front to back [Default] IN1 > IN2 > IN3 > IN4
Getting example	Command	@GPR <input type="checkbox"/>
	Response	@GPR,1,2,3,4 <input type="checkbox"/>
	Description	Getting the window layer order IN1 > IN2 > IN3 > IN4
Setting example	Command	@SPR,1,2,3,4 <input type="checkbox"/>
	Response	@SPR,1,2,3,4 <input type="checkbox"/>
	Description	Setting the window layer order to "IN1 > IN2 > IN3 > IN4"
Remarks		—

@GTO / @STO		Window overlay titling
Getting	Command	@GTO, in
	Response	@GTO, in, disp
Setting	Command	@STO, in, disp
	Response	@STO, in, disp
Parameter		in: Input channel 1 to 4 = IN1 to IN4 disp: Overlay titling 0 = Not display [Default] 1 = Display
Getting example	Command	@GTO,1
	Response	@GTO,1,0
	Description	Getting the IN1 overlay titling Not display
Setting example	Command	@STO,1,1
	Response	@STO,1,1
	Description	Enabling IN1 overlay titling
Remarks		—

@GTN / @STN		Editing window overlay titling
Getting	Command	@GTN, in, line
	Response	@GTN, in, line, string
Setting	Command	@STN, in, line, string
	Response	@STN, in, line, string
Parameter		in: Input channel 1 to 4 = IN1 to IN4 line: Line number 1 = First line, 2 = Second line string: Window overlay titling Up to 16 characters in ASCII codes (0x20 to 0x7D) [Default] window1 = INPUT1, window2 = INPUT2, window3 = INPUT3, window4 = INPUT4
Getting example	Command	@GTN,1,1
	Response	@GTN,1,1,INPUT1
	Description	Getting the first line character string of IN1 window
Setting example	Command	@STN,1,1,INPUT1
	Response	@STN,1,1,INPUT1
	Description	Setting the first line character string of IN1 window to "INPUT1,"
Remarks		—

@GWV / @SWV		Window hiding
Getting	Command	@GWV, in
	Response	@GWV, in, disp
Setting	Command	@SWV, in, disp
	Response	@SWV, in, disp
Parameter		in: Input channel 1 to 4 = IN1 to IN4
		disp: Window hiding 0 = Not display 1 = Display [Default]
Getting example	Command	@GWV,1
	Response	@GWV,1,1
	Description	Getting the IN1 window hiding Display
Setting example	Command	@SWV,1,1
	Response	@SWV,1,1
	Description	Displaying the IN1 window
Remarks		—

@GWS / @SWS		Window transition effect
Getting	Command	@GWS, out
	Response	@GWS, out, mode
Setting	Command	@SWS, out, mode
	Response	@SWS, out, mode
Parameter		out: Output channel 1, fixed
		mode: Window transition effect 0 = Cut [Default] 1 = Fade out/in
Getting example	Command	@GWS,1
	Response	@GWS,1,1
	Description	Getting the window transition effect Fade out/in
Setting example	Command	@SWS,1,1
	Response	@SWS,1,1
	Description	Setting the window transition effect to fade out/in
Remarks		—

3.3.5 Pattern memory

@RWM		Recalling window pattern
Setting	Command	@RWM, pattern
	Response	@RWM, pattern
Parameter		pattern: The number of pattern memory 1 to 32 = Pattern memory 1 to Pattern memory 32
Setting example	Command	@RWM,1
	Response	@RWM,1
	Description	Recalling the window pattern 1
Remarks		—

@SWM		Saving window pattern
Setting	Command	@SWM, pattern (,name)
	Response	@SWM, pattern (,name)
Parameter		pattern: The number of pattern memory 1 to 32 = Pattern memory 1 to Pattern memory 32 name: Pattern name Up to 10 characters in ASCII codes (0x20 to 0x7D)
Setting example	Command	@SWM,1,PATTERN1
	Response	@SWM,1,PATTERN1
	Description	Saving the current window settings in pattern memory 1 with the name of "PATTERN1"
Remarks		If you do not specify pattern name, only window pattern settings are saved without changing the pattern name.

@GLK / @SLK		Linking window pattern and preset memory
Getting	Command	@GLK, pattern
	Response	@GLK, pattern, preset
Setting	Command	@SLK, pattern, preset
	Response	@SLK, pattern, preset
Parameter		pattern: The number of pattern memory 1 to 32 = Pattern memory 1 to Pattern memory 32 preset: The number of preset memory 0 = OFF [Default] 1 = Preset memory 1 to 32 = Preset memory 32
Getting example	Command	@GLK,1
	Response	@GLK,1,0
	Description	Getting the linking status of window pattern 1 OFF
Setting example	Command	@SLK,1,1
	Response	@SLK,1,1
	Description	Linking window pattern1 with preset memoey1
Remarks		—

3.3.6 Output setting

@GDM / @SDM		Output mode
Getting	Command	@GDM ↵
	Response	@GDM, mode ↵
Setting	Command	@SDM, out, mode ↵
	Response	@SDM, out, mode ↵
Parameter		mode: Output mode 0 = AUTO [Default], 1 = DVI, 2 = YCbCr 4:4:4, 3 = YCbCr 4:2:2, 4 = RGB, 5 = YCbCr 4:2:0
		out: Output channel 1, fixed
Getting example	Command	@GDM ↵
	Response	@GDM,0 ↵
	Description	Getting the output mode AUTO
Setting example	Command	@SDM,1,0 ↵
	Response	@SDM,1,0 ↵
	Description	Setting the output mode to AUTO
Remarks		—

@GHM / @SHM		Sink device EDID check
Getting	Command	@GHM ↵
	Response	@GHM, mode ↵
Setting	Command	@SHM, out, mode ↵
	Response	@SHM, out, mode ↵
Parameter		mode: Sink device EDID check method of output channel 0 = In case of EDID load error, the sink device is treated as a DVI device [Default] 1 = In case of EDID load error, the sink device is treated as a HDMI device 2 = Always treats sink device as a HDMI device
		out: Output channel 1, fixed
Getting example	Command	@GHM ↵
	Response	@GHM,0 ↵
	Description	Getting the sink device EDID check method "0" (In case of EDID load error, the sink device is treated as a DVI device.)
Setting example	Command	@SHM,1,0 ↵
	Response	@SHM,1,0 ↵
	Description	Setting the EDID check method to "0" (In case of EDID load error, the sink device is treated as a DVI device.)
Remarks		—

@GMK / @SMK		Hot plug ignoring duration
Getting	Command	@GMK ↵
	Response	@GMK, mask ↵
Setting	Command	@SMK, out, mask ↵
	Response	@SMK, out, mask ↵
Parameter		mask: Hot plug ignoring duration 1 = OFF [Default] 2 to 15 = 2 sec. to 15 sec.
		out: Output channel 1, fixed
Getting example	Command	@GMK ↵
	Response	@GMK,1 ↵
	Description	Getting the hot plug ignoring duration OFF
Setting example	Command	@SMK,1,1 ↵
	Response	@SMK,1,1 ↵
	Description	Setting the hot plug ignoring duration to OFF
Remarks		—

@GDC / @SDC		Deep Color
Getting	Command	@GDC ↵
	Response	@GDC, color ↵
Setting	Command	@SDC, out, color ↵
	Response	@SDC, out, color ↵
Parameter		color: Color depth 0 = 24 bit/pixel (8 bit/component) [Default] 1 = 30 bit/pixel (10 bit/component)
		out: Output channel 1, fixed
Getting example	Command	@GDC ↵
	Response	@GDC,0 ↵
	Description	Getting the color depth 24 bit/pixel (8 bit/component)
Setting example	Command	@SDC,1,0 ↵
	Response	@SDC,1,0 ↵
	Description	Setting the color depth to 24 bit/pixel (8bit/component)
Remarks		—

@GEN / @SEN		HDCP output
Getting	Command	@GEN, out ↵
	Response	@GEN, out, hdcp ↵
Setting	Command	@SEN, out, hdcp ↵
	Response	@SEN, out, hdcp ↵
Parameter		<p>out: Output channel 1, fixed</p> <p>hdcp: HDCP output 0 = Once channel with HDCP input is selected, always HDCP is output regardless off input signal status. [Default] 1 = Encrypts HDPC only if input signal has HDCP. 2 = Encrypts HDPC only if input signal has HDCP 1.4.</p>
Getting example	Command	@GEN,1 ↵
	Response	@GEN,1,0 ↵
	Description	Getting the HDCP output "0" (Once channel with HDCP input is selected, always HDCP is output regardless off input signal status.)
Setting example	Command	@SEN,1,1 ↵
	Response	@SEN,1,1 ↵
	Description	Setting the HDCP output to "1" (Encrypts HDPC only if input signal has HDCP.)
Remarks		—

3.3.7 Output timing

@GOT / @SOT		Output resolution
Getting	Command	@GOT, out
	Response	@GOT, out, auto, resolution
Setting	Command	@SOT, out, auto, resolution
	Response	@SOT, out, auto, resolution
Parameter		<p>out: Output channel 1, fixed</p> <p>auto: Output resolution mode 0 = Resolution can be specified for the “resolution” parameter below. 1 = Resolution can be selected automatically [Default]</p> <p>resolution: Output resolution 15 = VESAHD@60 (1920x1080) 16 = WUXGA@60 (1920x1200) 22 = 1080i@50 (1920x1080) 23 = 1080i@59.94 (1920x1080) 24 = 1080p@50 (1920x1080) 25 = 1080p@59.94 (1920x1080) 26 = 2160p@29.97 (3840x2160) 27 = 4096x2160p@29.97(4096x2160) 28 = 2160p@59.94 (3840x2160) [Default] 29 = 4096x2160p@59.94 (4096x2160)</p>
Getting example	Command	@GOT,1
	Response	@GOT,1,1,28
	Description	Getting the output resolution 2160p@59.94 (3840x2160)
Setting example	Command	@SOT,1,0,28
	Response	@SOT,1,0,28
	Description	Setting the output resolution to 2160p@59.94 (3840x2160)
Remarks		—

@GUM / @SUM		Aspect ratio of sink device
Getting	Command	@GUM, out
	Response	@GUM, out, aspect, val
Setting	Command	@SUM, out, aspect (,val)
	Response	@SUM, out, aspect (,val)
Parameter		<p>out: Output channel 1, fixed</p> <p>aspect: Aspect ratio of sink device 0 = AUTO [Default], 1 = 4:3, 2 = 5:3, 3 = 5:4, 4 = 16:9, 5 = 16:10, 6 = 64:27, 7 = 256:135, 8 = Value of "val"</p> <p>val: Aspect ratio (Horizontal/vertical) 33333 to 300000 = 0.33333 to 3</p>
Getting example	Command	@GUM,1
	Response	@GUM,1,0,100000
	Description	Getting the aspect ratio of sink device "1"
Setting example	Command	@SUM,1,0
	Response	@SUM,1,0
	Description	Setting the aspect ratio of sink device to AUTO
Setting example	Command	@SUM,1,8,150000
	Response	@SUM,1,8,150000
	Description	Setting the aspect ratio of sink device to 1.5
Remarks		—

@GTP / @STP		Test pattern
Getting	Command	@GTP, out ↵
	Response	@GTP, out, pattern ↵
Setting	Command	@STP, out, pattern ↵
	Response	@STP, out, pattern ↵
Parameter		out: Output channel 1, fixed pattern: Test pattern 0 = OFF [Default] 1 = V-STRIPES 2 = CROSS HATCH 3 = WHITE RASTER 4 = RED RASTER 5 = GREEN RASTER 6 = BLUE RASTER 7 = COLOR BAR 8 = 8STEP GRAY 9 = V-RAMP
Getting example	Command	@GTP,1 ↵
	Response	@GTP,1,0 ↵
	Description	Getting the test pattern OFF
Setting example	Command	@STP,1,0 ↵
	Response	@STP,1,0 ↵
	Description	Setting the test pattern to OFF
Remarks		—

@GMR / @SMR		Display size/position
Getting	Command	@GMR, out
	Response	@GMR, out, h_size, v_size, h_posi, v_posi
Setting	Command	@SMR, out, h_size, v_size, h_posi, v_posi
	Response	@SMR, out, h_size, v_size, h_posi, v_posi
Parameter		out: Output channel 1, fixed
		h_size : Horizontal size (by 0.01%) v_size : Vertical size (by 0.01%) 2000 to 40000 = 20.0% to 400% [Default] 10000 = 100%
		h_posi : Horizontal position (by 0.01%) v_posi : Vertical position (by 0.01%) -40000 to +40000 = -400% to +400% [Default] 0 = 0%
Getting example	Command	@GMR,1
	Response	@GMR,1,10000,10000,0,0
	Description	Getting the display size and position - Horizontal size : 100% - Vertical size : 100% - Horizontal position : 0% - Vertical position : 0%
Setting example	Command	@SMR,1,10000,10000,0,0
	Response	@SMR,1,10000,10000,0,0
	Description	Setting the display size and position as follows: - Horizontal size : 100% - Vertical size : 100% - Horizontal position : 0% - Vertical position : 0%
Remarks		—

@GEC / @SEC		Background color
Getting	Command	@GEC, out <input type="checkbox"/>
	Response	@GEC, out, red, green, blue <input type="checkbox"/>
Setting	Command	@SEC, out, red, green, blue <input type="checkbox"/>
	Response	@SEC, out, red, green, blue <input type="checkbox"/>
Parameter		out: Output channel 1, fixed red : Background color (Red) green : Background color (Green) blue : Background color (Blue) 0 to 255 [Default] 0
Getting example	Command	@GEC,1 <input type="checkbox"/>
	Response	@GEC,1,0,0,0 <input type="checkbox"/>
	Description	Getting the background color Red, Green and Blue: "0" (black)
Setting example	Command	@SEC,1,0,0,0 <input type="checkbox"/>
	Response	@SEC,1,0,0,0 <input type="checkbox"/>
	Description	Setting the background color to "0" (black) for all (red, green and blue)
Remarks		—

@GOA / @SOA		Output video settings
Getting	Command	@GOA, out ☐
	Response	@GOA, out, auto, resolution, aspect, pattern, h_size, v_size, h_posi, v_posi, red, green, blue ☐
Setting	Command	@SOA, out, auto, resolution, aspect, pattern, h_size, v_size, h_posi, v_posi, red, green, blue ☐
	Response	@SOA, out, auto, resolution, aspect, pattern, h_size, v_size, h_posi, v_posi, red, green, blue ☐
Parameter		out: Output channel 1, fixed
		auto: Output resolution mode 0 = Resolution can be specified for the “resolution” parameter below. 1 = Resolution can be selected automatically [Default]
		resolution: Output resolution 15 = VESAHD@60 (1920x1080) 16 = WUXGA@60 (1920x1200) 22 = 1080i@50 (1920x1080) 23 = 1080i@59.94 (1920x1080) 24 = 1080p@50 (1920x1080) 25 = 1080p@59.94 (1920x1080) 26 = 2160p@29.97 (3840x2160) 27 = 2160p @29.97 (4096x2160) 28 = 2160p@59.94 (3840x2160) [Default] 29 = 4096x2160p@59.94 (4096x2160)
		aspect: Aspect ratio of sink device 0 = AUTO [Default], 1 = 4:3, 2 = 5:3, 3 = 5:4, 4 = 16:9, 5 = 16:10, 6 = 64:27, 7 = 256:135, 8 = Aspect ratio specified using @GUM / @SUM

@GOA / @SOA		Output video settings (Cont'd)
Parameter		pattern: Test pattern 0 = OFF [Default] 1 = V-STRIPES 2 = CROSS HATCH 3 = WHITE RASTER 4 = RED RASTER 5 = GREEN RASTER 6 = BLUE RASTER 7 = COLOR BAR 8 = 8STEP GRAY 9 = V-RAMP
		h_size : Horizontal size v_size : Vertical size 2000 to 40000 = 20.0% to 400% [Default] 10000 = 100%
		h_posi: Horizontal position v_posi: Vertical position -40000 to +40000 = -400% to +400% [Default] 0 = 0%
		red : Background color (Red) green : Background color (Green) blue : Background color (Blue) 0 to 255 [Default] 0
Getting example	Command	@GOA,1 [↵]
	Response	@GOA,1,1,28,0,0,10000,10000,0,0,0,0,0 [↵]
	Description	Getting the output video settings - Output resolution mode : AUTO - Output resolution : 2160p@59.94 (3840x2160) - Aspect ratio of sink device : AUTO - Test pattern : OFF - Horizontal size : 100% - Vertical position : 100% - Horizontal position : 0% - Vertical position : 0% - Background color : "0" (black) for all (red, green and blue)

@GOA / @SOA		Output video settings (Cont'd)
Setting example	Command	@SOA,1,0,28,0,0,10000,10000,0,0,0,0,0 ☐
	Response	@SOA,1,0,28,0,0,10000,10000,0,0,0,0,0 ☐
	Description	Setting the output video settings as follows: - Output resolution mode : Fixed - Output resolution : 2160p@59.94(3840x2160) - Aspect ratio of sink device : AUTO - Test pattern : OFF - Horizontal size : 100% - Vertical position :100% - Horizontal position : 0% - Vertical position : 0% - Background color : "0" (black) for all (red, green and blue)
Remarks		—

3.3.8 Audio setting

@GAM / @SAM		Audio output mute
Getting	Command	@GAM ↵
	Response	@GAM, mute ↵
Setting	Command	@SAM, out, mute ↵
	Response	@SAM, out, mute ↵
Parameter		mute: Audio output mute 0 = OFF [Default], 1 = ON
		out: Output channel 1, fixed
Getting example	Command	@GAM ↵
	Response	@GAM,0 ↵
	Description	Getting the audio output mute OFF
Setting example	Command	@SAM,1,1 ↵
	Response	@SAM,1,1 ↵
	Description	Setting the audio output mute to ON
Remarks		—

@GSO / @SSO		Audio input level
Getting	Command	@GSO ↵
	Response	@GSO, level_1, level_2, level_3, level_4 ↵
Setting	Command	@SSO, in_1, level_1 (, ch_2, level_2···) ↵
	Response	@SSO, in_1, level_1 (, ch_2, level_2···) ↵
Parameter		level_1-4: Audio input level -60 to 10 [Default] 0
		in_1-4: Input channel 0 = All inputs, 1 to 4 = IN1 to IN4
Getting example	Command	@GSO ↵
	Response	@GSO,0,0,0,0 ↵
	Description	Getting the audio input level All input channels: 0 dB
Setting example	Command	@SSO,1,0 ↵
	Response	@SSO,1,0 ↵
	Description	Setting the audio input level to 0 dB
Remarks		—

@GSL / @SSL		Audio output level
Getting	Command	@GSL
	Response	@GSL, level
Setting	Command	@SSL, out, level
	Response	@SSL, out, level
Parameter		level: Audio output level -60 to 10 [Default] 0
		out: Output channel 1, fixed
Getting example	Command	@GSL
	Response	@GSL,0
	Description	Getting the audio output level 0 dB
Setting example	Command	@SSL,1,0
	Response	@SSL,1,0
	Description	Setting the audio output level to 0 dB
Remarks		—

@GAS / @SAS		Selecting audio input channel
Getting	Command	@GAS, out
	Response	@GAS, out, in
Setting	Command	@SAS, out, in
	Response	@SAS, out, in
Parameter		out: Output channel 1, fixed
		in: Audio input channel 0 = OFF, 1 = IN1, 2 = IN2, 3 = IN3, 4 = IN4, 5 = AUTO [Default]
Getting example	Command	@GAS,1
	Response	@GAS,1,5
	Description	Getting the selecting audio input channel AUTO
Setting example	Command	@SAS,1,5
	Response	@SAS,1,5
	Description	Setting the selecting audio input channel to AUTO
Remarks		—

@GAT / @SAT		Test tone
Getting	Command	@GAT ☐
	Response	@GAT, tone ☐
Setting	Command	@SAT, out, tone ☐
	Response	@SAT, out, in ☐
Parameter		tone: Test tone 0 = OFF [Default] 1 = 1000 Hz 2 = 400 Hz
		out: Output channel 1, fixed
Getting example	Command	@GAT ☐
	Response	@GAT,0 ☐
	Description	Getting the test tone OFF
Setting example	Command	@SAT,1,1 ☐
	Response	@SAT,1,1 ☐
	Description	Setting the test tone to 1000 Hz
Remarks		—

3.3.9 EDID setting

@GED / @SED		EDID resolution
Getting	Command	@GED
	Response	@GED,format_1, ... format_4
Setting	Command	@SED,in_1,format_1 (,in_2,format_2···)
	Response	@SED,in_1,format_1 (,in_2,format_2···)
Parameter		<p>format_1 to format_4: EDID resolution of input channels</p> <p>0 = External EDID, 1 to 4 = Copied EDID1 to Copied EDID4, 5 = 1080p (59.94 / 60), 6 = 720p, 7 = 1080i, 8 = 1080p (24 / 25 / 30 / 50), 9 = SVGA (800x600), 10 = XGA (1024x768), 11 = VESA720 (1280x720), 12 = WXGA (1280x768), 13 = WXGA (1280x800), 14 = Quad-VGA (1280x960), 15 = SXGA (1280x1024), 16 = WXGA (1360/1366x768), 17 = SXGA+ (1400x1050), 18 = WXGA+ (1440x900), 19 = WXGA++ (1600x900), 20 = UXGA (1600x1200), 21 = WSXGA+ (1680x1050), 22 = VESA1080 (1920x1080), 23 = WUXGA (1920x1200), 24 = QWXGA (2048x1152), 25 = WQHD (2560x1440), 26 = WQXGA (2560x1600), 41 = 2160p (24 / 25 / 30), 42 = 4096x2160 (24 / 25 / 30), 43 = 2160p (50 / 59.94 / 60, 4:2:0), 44 = 4096x2160 (50 / 59.94 / 60, 4:2:0), 45 = 2160p (50 / 59.94 / 60, 4:4:4) [Default], 46 = 4096x2160 (50 / 59.94 / 60, 4:4:4)</p> <p>in_1-4: Input channel 0 = All inputs, 1 to 4 = IN1 to IN4</p>
Getting example	Command	@GED
	Response	@GED,45,45,45,45
	Description	Getting the EDID resolution All input channels: 2160p (50/59.94/60, 4:4:4)
Setting example	Command	@SED,0,0
	Response	@SED,0,0
	Description	Setting the EDID resolution to External EDID
Remarks		To select 1 to 4 for EDID of each input channel, copy EDID of the sink device using “@RME Copying EDID” command beforehand.

@RME		Copying EDID
Setting	Command	@RME,out,number ↵
	Response	@RME,out,number ↵
Parameter		out: Output channel 1, fixed
		number: Destination COPY DATA number 1 to 4 = Destination 1 to Destination 4
Setting example	Command	@RME,1,1 ↵
	Response	@RME,1,1 ↵
	Description	Setting the sink device EDID connected to OUT to Destination 1
Remarks		—

@GDI / @SDI		Deep Color
Getting	Command	@GDI ↵
	Response	@GDI,color_1, ... color_4 ↵
Setting	Command	@SDI,in_1,color_1 (,in_2,color_2···) ↵
	Response	@SDI,in_1,color_1 (,in_2,color_2···) ↵
Parameter		color_1-4: Deep Color of each input channel 0 = 24 bit/pixel (8 bit/component) [Default] 1 = 30 bit/pixel (10 bit/component)
		in_1-4: Input channel 0 = All inputs, 1 to 4 = IN1 to IN4
Getting example	Command	@GDI ↵
	Response	@GDI,0,0,0,0 ↵
	Description	Getting the Deep Color All input channel: 24 bit/pixel (8bit/component)
Setting example	Command	@SDI,0,0 ↵
	Response	@SDI,0,0 ↵
	Description	Setting the Deep Color of all input channels to 24 bit/pixel (8bit/component)
Remarks		The setting will be applied only if “@GED / @SED EDID resolution” is set to one of values “5” to “46”.

@GAF / @SAF		LPCM Audio
Getting	Command	@GAF,in,format ↵
	Response	@GAF,in,format,frequency ↵
Setting	Command	@SAF,in,format,frequency ↵
	Response	@SAF,in,format,frequency ↵
Parameter		in: Input channel 1 to 4 = IN1 to IN4
		format: Audio format 0, fixed
		frequency: The maximum sampling frequency 1 = 32 kHz, 2 = 44.1 kHz, 3 = 48 kHz, [Default] 4 = 88.2 kHz, 5 = 96 kHz, 7 = 192 kHz
Getting example	Command	@GAF,1,0 ↵
	Response	@GAF,1,0,3 ↵
	Description	Getting the IN1 LPCM 48kHz
Setting example	Command	@SAF,1,0,3 ↵
	Response	@SAF,1,0,3 ↵
	Description	Setting the IN1 LPCM to 48 kHz
Remarks		The setting will be applied only if “@GED / @SED EDID resolution” is set to one of values “5” to “46”.

3.3.10 LAN communication

@GIP / @SIP		IP address
Getting	Command	@GIP ↵
	Response	@GIP,unit_1,unit_2,unit_3,unit_4 ↵
Setting	Command	@SIP,unit_1,unit_2,unit_3,unit_4 ↵
	Response	@SIP,unit_1,unit_2,unit_3,unit_4 ↵
Parameter		unit_1 to unit_4: Upper bit of the IP address to lower bit of the IP address 0 to 255 = 8 bit (Decimal notation) [Default] 192.168.1.199
Getting example	Command	@GIP ↵
	Response	@GIP,192,168,1,200 ↵
	Description	Getting the IP address of the ICP 192.168.1.200
Setting example	Command	@SIP,192,168,1,200 ↵
	Response	@SIP,192,168,1,200 ↵
	Description	Setting the IP address of the ICP to 192.168.1.200
Remarks		If IP address or communication setting is changed, the communication may be disabled. Change the system settings.

@GSB / @SSB		Subnet mask
Getting	Command	@GSB ↵
	Response	@GSB,unit_1,unit_2,unit_3,unit_4 ↵
Setting	Command	@SSB,unit_1,unit_2,unit_3,unit_4 ↵
	Response	@SSB,unit_1,unit_2,unit_3,unit_4 ↵
Parameter		unit_1: Upper bit of the subnet mask to unit_4: lower bit of the subnet mask 0 to 255 = 8 bit (Decimal notation) [Default] 255.255.255.0
Getting example	Command	@GSB ↵
	Response	@GSB,255,255,255,0 ↵
	Description	Getting the subnet mask of the ICP 255.255.255.0
Setting example	Command	@SSB,255,255,255,254 ↵
	Response	@SSB,255,255,255,254 ↵
	Description	Setting the subnet mask of the ICP to 255.255.255.254
Remarks		If IP address or communication setting is changed, the communication may be disabled. Change the system settings.

@GLP / @SLP		TCP port number
Getting	Command	@GLP
	Response	@GLP,port,connection
Setting	Command	@SLP,port,connection
	Response	@SLP,port,connection
Parameter		port: TCP port number 1100 [Default], 6000 to 6999
		connection: 8-connection setting 0 = 8-connection setting OFF (WEB browser 4 connections/communication command control 4 connections) [Default] 1 = 8-connection setting ON (Communication command control 8-connection)
Getting example	Command	@GLP
	Response	@GLP,1100,0
	Description	Getting the TCP port number of ICP 1100; 8 connection setting disabled
Setting example	Command	@SLP,1100,0
	Response	@SLP,1100,0
	Description	Setting the TCP port number and 8-connection setting to 1100 and OFF, respectively
Remarks		If IP address or communication setting is changed, the communication may be disabled. Change the system settings.

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

3.3.11 Preset memory

@RPM		Recalling preset memory
Setting	Command	@RPM,preset ↵
	Response	@RPM,preset ↵
Parameter		preset: The number of preset memory 1 to 32
Setting example	Command	@RPM,1 ↵
	Response	@RPM,1 ↵
	Description	Recalling preset memory 1
Remarks		Once preset memory is recalled, all settings of video and audio in the memory will be updated.

@SPM		Saving preset memory
Setting	Command	@SPM,preset (,name) ↵
	Response	@SPM,preset (,name) ↵
Parameter		preset: The number of preset memory 1 to 32 name: Memory name Up to 10 characters in ASCII codes (20 to 7D) If you do not specify memory name, only crosspoint settings are saved without changing the memory name.
Setting example	Command	@SPM,1,MEMORY1 ↵
	Response	@SPM,1,MEMORY1 ↵
	Description	Saving the current settings in preset memory 1 with the name of MEMORY1
Remarks		—

3.3.12 Other settings

@GLS / @SLS		Key function lock
Getting	Command	@GLS ↵
	Response	@GLS,lock ↵
Setting	Command	@SLS,lock ↵
	Response	@SLS,lock ↵
Parameter		lock: Front key function lock 0 = Unlock [Default], 1 = Lock
Getting example	Command	@GLS ↵
	Response	@GLS,0 ↵
	Description	Getting the lock status Locked
Setting example	Command	@SLS,1 ↵
	Response	@SLS,1 ↵
	Description	Locking front key functions
Remarks		@GLM / @SLM Grouping front key function lock

@GLM / @SLM		Grouping front key function lock
Getting	Command	@GLM ↵
	Response	@GLM,menu,pattern ↵
Setting	Command	@SLM,menu,pattern ↵
	Response	@SLM,menu,pattern ↵
Parameter		menu : MENU/SET, ESC, and arrow keys will be locked/unlocked pattern: PATTERN SELECT keys will be locked/unlocked 0 = Not locked 1 = Locked [Default]
Getting example	Command	@GLM ↵
	Response	@GLM,1,1 ↵
	Description	Getting the target group PATTERN SELECT keys
Setting example	Command	@SLM,1,1 ↵
	Response	@SLM,1,1 ↵
	Description	Setting PATTERN SELECT keys to be locked
Remarks		@GLS / @SLS Key function lock

@GIS		Input signal status												
Getting	Command	@GIS,in,mode [↵]												
	Response	@GIS,in,mode,status_1 (,status_2,status_3) [↵]												
Parameter		in: Input channel 1 to 4 = IN1 to IN4												
		mode: Status 0 = All statuses of input signals 1 = Input signal and HDCP/color depth 2 = Input resolution/input vertical sync frequency 3 = Input audio signal/input sampling frequency												
		status_1: Input signal and HDCP/color depth												
		<table border="1"> <thead> <tr> <th>Reply example</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>d</td> <td>DVI signal, without HDCP</td> </tr> <tr> <td>D</td> <td>DVI signal, with HDCP</td> </tr> <tr> <td>h</td> <td>HDMI signal, without HDCP</td> </tr> <tr> <td>H</td> <td>HDMI signal, with HDCP</td> </tr> <tr> <td>N</td> <td>No input signal</td> </tr> </tbody> </table>	Reply example	Description	d	DVI signal, without HDCP	D	DVI signal, with HDCP	h	HDMI signal, without HDCP	H	HDMI signal, with HDCP	N	No input signal
		Reply example	Description											
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Reply example	Description													
08	24 bit/pixel (8bit/component)													
10	30 bit/pixel (10bit/component)													
12	36 bit/pixel (12bit/component)													
Parameter		status_2: Input resolution/input vertical sync frequency												
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		Reply example	Description											
		1920x1080p 59.94Hz	1920x1080p is input and the vertical sync frequency will be replied.											
1600x1200p 60Hz	1600x1200p is input and the vertical synchronous frequency will be replied.													
NO SIGNAL	No video signal is input.													
status_3: Input audio signal/input sampling frequency														
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NO AUDIO	No audio signal is input.													

@GIS		Input signal status (Cont'd)
Getting example	Command	@GIS,1,0 ☐
	Response	@GIS,1,0,H08,1920x1080p 59.94Hz,L-PCM 48kHz ☐
	Description	Getting the IN1 all input statuses - Input signal and HDCP : HDMI signal, with HDCP - Color depth : 24 bit/pixel (8 bit/component) - Input resolution/input vertical sync frequency : 1080p 59.94 Hz - Input audio signal/input sampling frequency : 2-channel LPCM 48kHz
Remarks		—

@GOS		Sink device status																				
Getting	Command	@GOS,out,mode []																				
	Response	@GOS,out,mode,status_1 (,status_2) []																				
Parameter		<p>out: Output channel 1, fixed</p> <p>mode: Status 0 = All statuses of sink device 1 = HDCP of sink device 2 = HDCP authentication between the ICP and sink device</p> <p>status_1: HDCP of sink device</p> <table border="1"> <thead> <tr> <th>Reply example</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HDCP SUPPORT</td> <td>Device with HDCP 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> <p>status_2: HDCP authentication between the ICP and sink device</p> <table border="1"> <thead> <tr> <th>Reply example</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 authentication processing</td> </tr> </tbody> </table>	Reply example	Description	HDCP SUPPORT	Device with HDCP 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.	Reply example	Description	HDCP OFF	Signal with HDCP is not input	HDCP OK	Authentication succeeded	HDCP ERROR	Authentication failed	HDCP CHECK NOW	Being authentication processing
Reply example	Description																					
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HDCP NOT CHECK	HDCP of sink device is not checked.																					
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HDCP OFF	Signal with HDCP is not input																					
HDCP OK	Authentication succeeded																					
HDCP ERROR	Authentication failed																					
HDCP CHECK NOW	Being authentication processing																					
Getting example	Command	@GOS,1,0 []																				
	Response	@GOS,1,0,HDCP SUPPORT,HDCP OK []																				
	Description	<p>Getting all statuses of sink device</p> <ul style="list-style-type: none"> - HDCP of the sink device: HDCP - HDCP authentication : Succeeded 																				
Remarks		—																				

@GST		Temperature status
Getting	Command	@GST ↵
	Response	@GST, temp_1, status_1, temp_2, status_2 ↵
Parameter		temp_1-2: Temperature (°C)
		status_1-2: Temperature status 0 = No problem detected, 1 = Problem detected
Getting example	Command	@GST ↵
	Response	@GST,36,0,32,0 ↵
	Description	Getting the temperature sensor status Temperature sensor 1 : 36°C; Normal Temperature sensor 2 : 32°C; Normal
Remarks		—

@GFS		Fan status
Getting	Command	@GFS ↵
	Response	@GFS, rpm_1, status_1, rpm_2, status_2 ↵
Parameter		rpm_1-2: Rotation speed (rpm)
		status_1-2: Fan status 0 = No problem detected, 1 = Problem detected
Getting example	Command	@GFS ↵
	Response	@GFS,5010,0,4980,0 ↵
	Description	Getting the fan status Fan 1 : 5010 rpm; Normal Fan 2 : 4980 rpm; Normal
Remarks		—

@GPS		Voltage status
Getting	Command	@GPS ↵
	Response	@GPS, voltage, status ↵
Parameter		voltage: Power supply voltage = The power supply voltage x 1000
		status: Voltage status 0 = No problem detected, 1 = Problem detected
Getting example	Command	@GPS ↵
	Response	@GPS,12010,0 ↵
	Description	Getting voltage status Voltage: 12.010V; status: Normal
Remarks		—

@GHC		System status
Getting	Command	@GHC ↵
	Response	@GHC,temp_status,fan_status,power_status ↵
Parameter		temp_status: Temperature status 0 = No problem detected, 1 = Problem detected
		fan_status: Fan status 0 = No problem detected, 1 = Problem detected
		power_status: Power supply voltage status 0 = No problem detected, 1 = Problem detected
Getting example	Command	@GHC ↵
	Response	@GHC,0,0,0 ↵
	Description	Getting the system status Temperature, fan and power supply voltage status: Normal
Remarks		—

@GIV		Viewing version information
Getting	Command	@GIV ↵
	Response	@GIV,id,ver ↵
Parameter		id : Model number
		ver: Firmware version
Getting example	Command	@GIV ↵
	Response	@GIV,ICP-401UHD,1.00R0 ↵
	Description	Getting firmware version 1.00R0
Remarks		—

User Guide (Command Guide) of ICP-401UHD

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Headquarters

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

Email: idk_eng@idk.co.jp

URL: www.idkav.com

USA

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

Email: sales@idkav.com

URL: www.idkav.com

Europe

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

Email: info@idkav.eu

URL: www.idkav.com



Product information Support

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

Email: info@arvanics.com

URL: www.arvanics.com

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