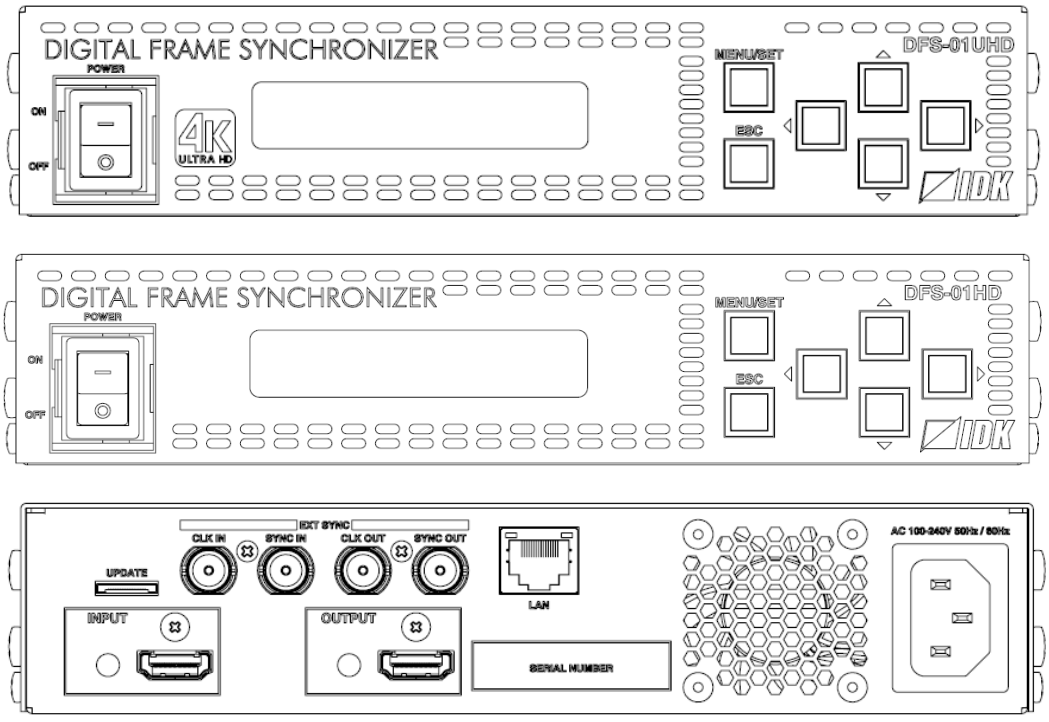
4K Digital Frame Synchronizer/Scaler

DFS-01UHD/DFS-01HD

<Command Reference Guide>

Ver.3.4.0



- 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.

IDK Corporation

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Before reading this manual

- Some information contained in this command guide such as exact product appearance, 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: 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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1 About this Guide

This guide explains communication commands for controlling the “DFS-01UHD” and “DFS-01HD” (hereafter referred to as “DFS”, scan-converter equipped frame synchronizer.

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

- Setting I/O, audio, and EDID
- Setting preset memory

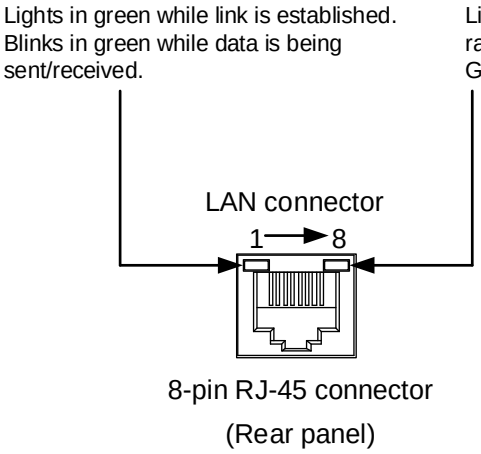
2 Communication configuration and Specifications

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:



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)

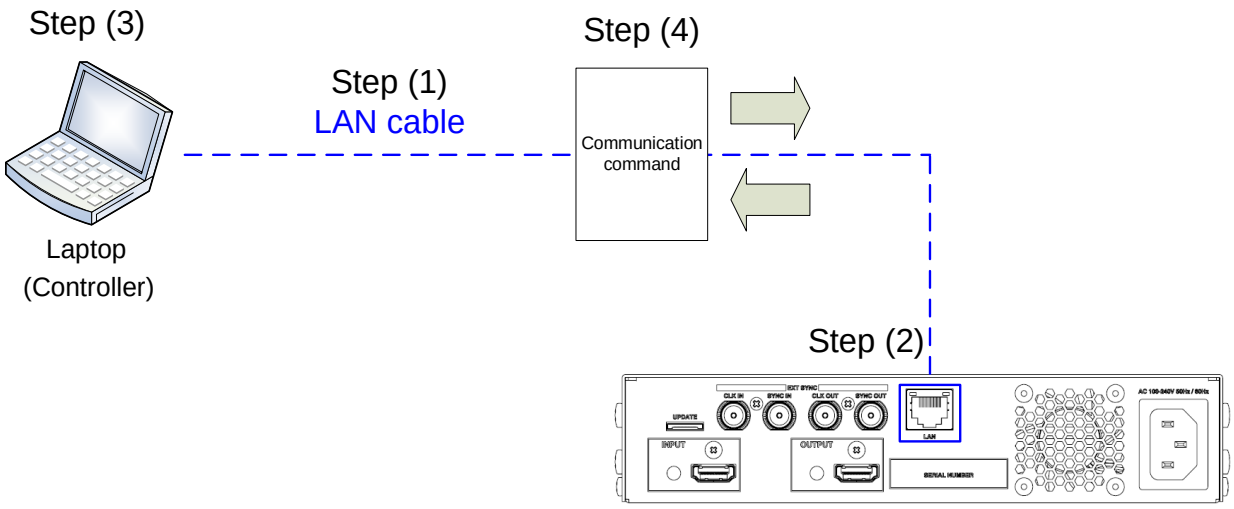
【See: 2.1.4 The number of TCP-IP connections】

2.1.3 Setting up LAN communication

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



[Fig. 2.2] Setting LAN communication

2.1.4 The number of TCP-IP connections

The DFS 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		DFS
Connecting TCP-IP	→	(Occupying 1 port)
Sending command (@xxx)	→	
	←	Replying command (@xxx)
Closing TCP-IP	→	(Releasing 1port)

Note:
As a safeguard, the DFS 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 Command outline

A command consists of “@” (“40” in hexadecimal), 3 one-byte alphabetical characters (upper and lower cases), and parameters (one-byte numbers*). For some commands, several parameters can be specified or no parameter is required. Processing is executed by sending a delimiter at the end of the command.

Example: @SPM,2 ↵

“,” (a comma, “2C” in hexadecimal) is indicated between a command and parameter and between two parameters.

■ If there is an error:
An error command is returned if an undefined command or wrong parameter is included.

Example: @SOT,1 ↵
@ERR,1 ↵

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

3.2 Command list

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3.3 Detailed descriptions

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 3 = Currently cannot be used 4 = Loading EDID from the sink device failed
Getting example	Command	@IOS ↵
	Response	@ERR,2 ↵
	Description	@IOS is sent Command format error
Remarks		

3.3.2 Output timing

@GOT / @SOT		Output resolution
Getting	Command	@GOT ↵
	Response	@GOT, auto, resolution ↵
Setting	Command	@SOT, auto, resolution ↵
	Response	@SOT, auto, resolution ↵
Parameter		auto: Output resolution mode 0 = Resolution can be specified for the “resolution” parameter below 1 = Resolution can be selected automatically [Default]
		resolution: Setting value of output resolution 1 = VGA@60(640x480), 2 = SVGA@60(800x600), 3 = XGA@60(1024x768), 4 = WXGA@60(1280x768), 5 = WXGA@60(1280x800), 6 = Quad-VGA@60(1280x960), 7 = SXGA@60(1280x1024), 8 = WXGA@60(1360x768), 9 = WXGA@60(1366x768), 10 = SXGA+@60(1400x1050), 11 = WXGA+@60(1440x900), 12 = WXGA++@60(1600x900), 13 = UXGA@60(1600x1200), 14 = WSXGA+@60(1680x1050), 15 = VESAHD@60(1920x1080), 16 = WUXGA@60(1920x1200), 17 = QWXGA@60(2048x1152), 18 = WQHD@60(2560x1440), 19 = WQXGA@60(2560x1600), 20 = 480p@59(720x480), 21 = 576p@50(720x576), 22 = 720p@50(1280x720), 23 = 720p@59(1280x720), 24 = 1080i@50(1920x1080), 25 = 1080i@59(1920x1080), 26 = 1080p@50(1920x1080), 27 = 1080p@59(1920x1080), 40 = 2160p@23(3840x2160), 41 = 2160p@29(3840x2160), 42 = 2160p@59(3840x2160)**, 43 = 2160p@23(4096x2160), 44 = 2160p@29(4096x2160), 45 = 2160p@59(4096x2160)**, 46 = 2160p@25(3840x2160), 47 = 2160p@50(3840x2160)**, 48 = 2160p@25(4096x2160), 49 = 2160p@50(4096x2160)** ** Only for DFS-01UHD
Getting example	Command	@GOT ↵
	Response	@GOT,0,7 ↵
	Description	Getting the output resolution SXGA 60 Hz
Setting example	Command	@SOT,0,11 ↵
	Response	@SOT,0,11 ↵
	Description	Setting the output resolution to WXGA+ 60 Hz
Remarks		—

@GUM / @SUM		**Aspect ratio of sink device**
Getting	Command	@GUM ↵
	Response	@GUM, aspect ↵
Setting	Command	@SUM, aspect ↵
	Response	@SUM, aspect ↵
Parameter		aspect: Aspect ratio of sink device 0 = RESOLUTION [Default], 1 = 4:3, 2 = 5:3, 3 = 5:4, 4 = 16:9, 5 = 16:10, 6 = 256:135
Getting example	Command Response	@GUM ↵ @GUM,4 ↵
	Description	Getting the aspect ratio of sink device 16:9
Setting example	Command Response	@SUM,4 ↵ @SUM,4 ↵
	Description	Setting the aspect ratio of sink device to 16:9
Remarks		“256:135” is the aspect ratio of resolution 4096x2160

@GWR / @SWR		**Rotation**
Getting	Command	@GWR ↵
	Response	@GWR, rotate ↵
Setting	Command	@SWR, rotate ↵
	Response	@SWR, rotate ↵
Parameter		rotate: Rotation angle 0 = 0° [Default], 1 = 90°, 2 = 180°, 3 = 270°
Getting example	Command Response	@GWR ↵ @GWR,3 ↵
	Description	Getting the rotation angle 270°
Setting example	Command Response	@SWR,3 ↵ @SWR,3 ↵
	Description	Setting the rotation angle to 270°
Remarks		For 4K or dot clock of 165 MHz or more, only 180° is supported. Even if setting to 90° or 270°, 0° will be applied.

@GWM / @SWM		**Mirror**
Getting	Command	@GWM ↵
	Response	@GWM, mirror ↵
Setting	Command	@SWM, mirror ↵
	Response	@SWM, mirror ↵
Parameter		mirror: Mirror 0 = Not flip image [Default], 1 = Flips image
Getting example	Command	@GWM ↵
	Response	@GWM,1 ↵
	Description	Getting the mirror setting “1” (Flips image)
Setting example	Command	@SWM,1 ↵
	Response	@SWM,1 ↵
	Description	Setting the mirror to “1” (Flips image)
Remarks		—

@GOC / @SOC		**Output contrast**
Getting	Command	@GOC ↵
	Response	@GOC, red, green, blue ↵
Setting	Command	@SOC, red, green, blue ↵
	Response	@SOC, red, green, blue ↵
Parameter		red : Output contrast (Red) green : Output contrast (Green) blue : Output contrast (Blue) 0 to 200 [Default] 100
Getting example	Command	@GOC ↵
	Response	@GOC,105,100,95 ↵
	Description	Getting the output contrast Red: 105%, Green: 100%, Blue: 95%
Setting example	Command	@SOC,105,100,95 ↵
	Response	@SOC,105,100,95 ↵
	Description	Setting the output contrast to 105% for red, 100% for green, 95% for blue
Remarks		—

@GOB / @SOB		**Output brightness**
Getting	Command	@GOB ↵
	Response	@GOB, bright ↵
Setting	Command	@SOB, bright ↵
	Response	@SOB, bright ↵
Parameter		bright: Output brightness 80 to 120 [Default] 100
Getting example	Command	@GOB ↵
	Response	@GOB,110 ↵
	Description	Getting the output brightness 110%
Setting example	Command	@SOB,110 ↵
	Response	@SOB,110 ↵
	Description	Setting the output brightness to 110%
Remarks		—

@GBC / @SBC		**Blank color/Background color**
Getting	Command	@GBC ↵
	Response	@GBC, m_red, m_green, m_blue, b_red, b_green, b_blue ↵
Setting	Command	@SBC, m_red, m_green, m_blue, b_red, b_green, b_blue ↵
	Response	@SBC, m_red, m_green, m_blue, b_red, b_green, b_blue ↵
Parameter		m_red : Blank color (Red) m_green: Blank color (Green) m_blue : Blank color (Blue) b_red : Background color (Red) b_green : Background color (Green) b_blue : Background color (Blue) 0 to 255 [Default] 0 (Black)
Getting example	Command	@GBC ↵
	Response	@GBC,0,0,0,0,0,0 ↵
	Description	Getting the Blank and background colors All: 0 (black)
Setting example	Command	@SBC,0,0,0,0,0,0 ↵
	Response	@SBC,0,0,0,0,0,0 ↵
	Description	Setting all blank and background colors to “0” (black)
Remarks		—

@GTP / @STP		**Test pattern**
Getting	Command	@GTP ↵
	Response	@GTP, pattern ↵
Setting	Command	@STP, pattern ↵
	Response	@STP, pattern ↵
Parameter		pattern: Test pattern 0 = OFF [Default], 1 = COLOR BAR, 2 = 16 STEP GRAY, 3 = 256 STEP GRAY, 4 = 100% WHITE RASTER, 5 = 100% RED RASTER, 6 = 100% GREEN RASTER, 7 = 100% BLUE RASTER, 8 = CROSS HATCH, 9 = VERTICAL STRIPE 10 = OUTPUT FRAME
Getting example	Command	@GTP ↵
	Response	@GTP,1 ↵
	Description	Getting the test pattern COLOR BAR
Setting example	Command	@STP,1 ↵
	Response	@STP,1 ↵
	Description	Setting the test pattern to COLOR BAR
Remarks		―

3.3.3 Setting output

@GDM / @SDM		Output mode
Getting	Command	@GDM ↵
	Response	@GDM, mode ↵
Setting	Command	@SDM, mode ↵
	Response	@SDM, mode ↵
Parameter		mode: Output mode 0 = HDMI RGB MODE [Default], 1 = DVI MODE, 2 = HDMI YCbCr4:2:2 MODE, 3 = HDMI YCbCr4:4:4 MODE 4 = HDMI YCbCr4:2:0 MODE** ** Only for DFS-01UHD
Getting example	Command Response	@GDM ↵ @GDM,0 ↵
	Description	Getting the output mode HDMI RGB MODE
Setting example	Command Response	@SDM,0 ↵ @SDM,0 ↵
	Description	Setting the output mode to HDMI RGB MODE
Remarks		**HDMI YCbCr4:2:0 is available if output resolution is set to 3840x2160p @50/59 or 4096x2160p @50/59

@GHM / @SHM		Output mode for EDID error
Getting	Command	@GHM ↵
	Response	@GHM, mode ↵
Setting	Command	@SHM, mode ↵
	Response	@SHM, mode ↵
Parameter		mode: Output mode 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 (without SCDC) device 2 = Always the sink device is treated as a HDMI (without SCDC) device 3 = In case of EDID load error, the sink device is treated as a HDMI (with SCDC) device** 4 = Always the sink device is treated as a HDMI (with SCDC) device** ** Only for DFS-01UHD
Getting example	Command Response	@GHM ↵ @GHM,0 ↵
	Description	Getting the output mode for EDID error “0” (In case of EDID load error, the sink device is treated as a DVI device.)
Setting example	Command Response	@SHM,0 ↵ @SHM,0 ↵
	Description	Setting the output mode for EDID error to “0” (In case of EDID load error, the sink device is treated as a DVI device)
Remarks		This setting is available if the output mode is set to a value other than “DVI”.

@GEN / @SEN		**HDCP output**
Getting	Command	@GEN ↵
	Response	@GEN, hdcp ↵
Setting	Command	@SEN, hdcp ↵
	Response	@SEN, hdcp ↵
Parameter		hdcp: HDCP output 0 = HDCP is encrypted, 1 = HDCP is encrypted only if input signal is with HDCP, 2 = HDCP is encrypted at all times [Default],
Getting example	Command	@GEN ↵
	Response	@GEN,1 ↵
	Description	Getting the HDCP output HDCP is encrypted only if input signal is with HDCP
Setting example	Command	@SEN,1 ↵
	Response	@SEN,1 ↵
	Description	Setting to “1” (HDCP is encrypted only if input signal is with HDCP)
Remarks		—

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

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

3.3.4 Input timing

@GPI / @SPI		**Start position**
Getting	Command	@GPI ↵
	Response	@GPI, h_posi, v_posi ↵
Setting	Command	@SPI, h_posi, v_posi ↵
	Response	@SPI, h_posi, v_posi ↵
Parameter		h_posi: Horizontal start position (Dot) -100 to +100 [Default] +0
		v_posi: Vertical start position (Line) -30 to +30 [Default] +0
Getting example	Command	@GPI ↵
	Response	@GPI,+0,+0 ↵
	Description	Getting the start positions Horizontal and Vertical start positions: 0
Getting example	Command	@GPI ↵
	Response	@GPI,-3 ↵
	Description	No input signal (If no input signal is input, "@GPI,-3↵" will be replied.)
Setting example	Command	@SPI,0,0 ↵
	Response	@SPI,0,0 ↵
	Description	Setting the horizontal and vertical start positions to "0"
Remarks		If no signal is input, the setting command is not applied.

@GSI / @SSI		**Active area**
Getting	Command	@GSI ↵
	Response	@GSI, h_size, v_size ↵
Setting	Command	@SSI, h_size, v_size ↵
	Response	@SSI, h_size, v_size ↵
Parameter		h_size: Horizontal active area (Dot) -100 to +100 [Default] +0
		v_size: Vertical active area (Line) -30 to +30 [Default] +0
Getting example	Command	@GSI ↵
	Response	@GSI,+0,+0 ↵
	Description	Getting the active area Horizontal and Vertical active area: 0
Getting example	Command	@GSI ↵
	Response	@GSI,-3 ↵
	Description	No input signal (If no input signal is input, "@GSI,-3↵" will be replied.)
Setting example	Command	@SSI,0,0 ↵
	Response	@SSI,0,0 ↵
	Description	Setting the horizontal and vertical active areas to "0"
Remarks		If no signal is input, the setting command is not applied.

@GAP / @SAP		**Aspect ratio**
Getting	Command	@GAP ↵
	Response	@GAP, aspect ↵
Setting	Command	@SAP, aspect ↵
	Response	@SAP, aspect ↵
Parameter		aspect: Aspect ratio of input signal 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
Getting example	Command	@GAP ↵
	Response	@GAP,0 ↵
	Description	Getting the aspect ratio of input signal AUTO
Getting example	Command	@GAP ↵
	Response	@GAP,-3 ↵
	Description	No input signal (If no input signal is input, "@GAP,-3↵" will be replied.)
Setting example	Command	@SAP,0 ↵
	Response	@SAP,0 ↵
	Description	Setting the aspect ratio of input signal to AUTO.
Remarks		If no signal is input, the setting command is not applied.

@GFL / @SFL		**Sharpness**
Getting	Command	@GFL ↵
	Response	@GFL, sharp ↵
Setting	Command	@SFL, sharp ↵
	Response	@SFL, sharp ↵
Parameter		sharp: Sharpness -5 to 15 [Default] 0
Getting example	Command	@GFL ↵
	Response	@GFL,0 ↵
	Description	Getting the sharpness "0"
Getting example	Command	@GFL ↵
	Response	@GFL,-3 ↵
	Description	No input signal (If no input signal is input, "@GFL,-3↵" will be replied.)
Setting example	Command	@SFL,0 ↵
	Response	@SFL,0 ↵
	Description	Setting the sharpness to "0"
Remarks		If no signal is input, the setting command is not applied.

@GIC / @SIC		**Input contrast**
Getting	Command	@GIC ↵
	Response	@GIC, red, green, blue ↵
Setting	Command	@SIC, red, green, blue ↵
	Response	@SIC, red, green, blue ↵
Parameter		red : Input contrast (Red) green : Input contrast (Green) blue : Input contrast (Blue) 0 to 200 [Default] 100
Getting example	Command	@GIC ↵
	Response	@GIC,105,100,95 ↵
	Description	Getting the input contrast Red: 105%, Green: 100%, Blue 95%.
Getting example	Command	@GIC ↵
	Response	@GIC,-3 ↵
	Description	No input signal (If no input signal is input, "@GIC,-3↵" will be replied.)
Setting example	Command	@SIC,105,100,95 ↵
	Response	@SIC,105,100,95 ↵
	Description	Setting the input contrast to Red: 105%; green 100%; blue 95%
Remarks		If no signal is input, the setting command is not applied.

@GIB / @SIB		**Input brightness**
Getting	Command	@GIB ↵
	Response	@GIB, bright ↵
Setting	Command	@SIB, bright ↵
	Response	@SIB, bright ↵
Parameter		bright: Input brightness 80 to 120 [Default] 100
Getting example	Command	@GIB ↵
	Response	@GIB,110 ↵
	Description	Getting the input brightness 110%
Getting example	Command	@GIB ↵
	Response	@GIB,-3 ↵
	Description	No input signal (If no input signal is input, "@GIB,-3↵" will be replied.)
Setting example	Command	@SIB,110 ↵
	Response	@SIB,110 ↵
	Description	Selecting the input brightness to 110%
Remarks		If no signal is input, the setting command is not applied.

@GHU / @SHU		**Hue**
Getting	Command	@GHU ↵
	Response	@GHU, hue ↵
Setting	Command	@SHU, hue ↵
	Response	@SHU, hue ↵
Parameter		hue: 0 to 359 [Default] 0
Getting example	Command	@GHU ↵
	Response	@GHU,0 ↵
	Description	Getting the HUEs 0°
Getting example	Command	@GHU ↵
	Response	@GHU,-3 ↵
	Description	No input signal (If no input signal is input, "@GHU,-3↵" will be replied.)
Setting example	Command	@SHU,0 ↵
	Response	@SHU,0 ↵
	Description	Setting the hue to 0°
Remarks		If no signal is input, the setting command is not applied.

@GSR / @SSR		**Saturation**
Getting	Command	@GSR ↵
	Response	@GSR, saturation ↵
Setting	Command	@SSR, saturation ↵
	Response	@SSR, saturation ↵
Parameter		saturation: 0 to 200 [Default] 100
Getting example	Command	@GSR ↵
	Response	@GSR,100 ↵
	Description	Getting the saturations 100%
Getting example	Command	@GSR ↵
	Response	@GSR,-3 ↵
	Description	No input signal (If no input signal is input, "@GSR,-3↵" will be replied.)
Setting example	Command	@SSR,105 ↵
	Response	@SSR,105 ↵
	Description	Setting the saturation to 105%
Remarks		If no signal is input, the setting command is not applied.

@GGM / @SGM		**Gamma**
Getting	Command	@GGM ↵
	Response	@GGM, gamma ↵
Setting	Command	@SGM, gamma ↵
	Response	@SGM, gamma ↵
Parameter		gamma: 1 to 30 = 0.1 to 3.0 [Default] 10 = 1.0
Getting example	Command Response	@GGM ↵ @GGM,10 ↵
	Description	Getting the output gamma 1.0
Getting example	Command Response	@GGM ↵ @GGM,-3 ↵
	Description	No input signal (If no input signal is input, "@GGM,-3↵" will be replied.)
Setting example	Command Response	@SGM,10 ↵ @SGM,10 ↵
	Description	Setting the gamma to 1.0
Remarks		If no signal is input, the setting command is not applied.

@GEF / @SEF		**Input video settings**
Getting	Command	@GEF ↵
	Response	@GEF, h_size, v_size, h_posi, v_posi, aspect, red, green, blue, bright, gamma, sharpness, hue, saturation ↵
Setting	Command	@SEF, h_size, v_size, h_posi, v_posi, aspect, red, green, blue, bright, gamma, sharpness, hue, saturation ↵
	Response	@SEF, h_size, v_size, h_posi, v_posi, aspect, red, green, blue, bright, gamma, sharpness, hue, saturation ↵
Parameter		h_size: Horizontal active area (Dot) -100 to +100 [Default] +0
		v_size: Vertical active area (Line) -30 to +30 [Default] +0
		h_posi: Horizontal start position (Dot) -100 to +100 [Default] +0
		v_posi: Vertical start position (Line) -30 to +30 [Default] +0
		aspect: Aspect ratio of input signal 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
		red : Input contrast (Red) green : Input contrast (Green) blue : Input contrast (Blue) 0 to 200 [Default] 100
		bright: Input brightness 80 to 120 [Default] 100

@GEF / @SEF		**Input video settings (Cont'd)**
Parameter		gamma: 1 to 30 = 0.1 to 3.0 [Default] 10 = 1.0
		sharpness: -5 to 15 [Default] 0
		hue: 0 to 359 [Default] 0
		saturation: 0 to 200 [Default] 100
Getting example	Command	@GEF ↵
	Response	@GEF,+0,+0,+0,+0,0,100,100,100,100,10,0,0,100 ↵
	Description	Getting the input video settings - Horizontal and Vertical active area : 0 - Horizontal and Vertical start position : 0 - Aspect ratio : AUTO - Contrast : 100% for all red, green and blue - Brightness : 100% - Gamma : 1.0 - Sharpness : 0 - Hue : 0° - Saturation : 100%
Getting example	Command	@GEF ↵
	Response	@GEF,-3 ↵
	Description	No input signal (If no input signal is input, "@GPI,-3↵" will be replied.)
Setting example	Command	@SEF,+0,+0,+0,+0,0,100,100,100,100,10,0,0,100 ↵
	Response	@SEF,+0,+0,+0,+0,0,100,100,100,100,10,0,0,100 ↵
	Description	Setting the input video as follows: - Horizontal and Vertical active area : 0 - Horizontal and Vertical start position : 0 - Aspect ratio : AUTO - Contrast : 100% for all red, green and blue - Brightness : 100% - Gamma : 1.0 - Sharpness : 0 - Hue : 0° - Saturation : 100%
Remarks		If no signal is input, the setting command is not applied.

3.3.5 Setting input

@GDT / @SDT		**No-signal input monitoring**
Getting	Command	@GDT ↵
	Response	@GDT, time ↵
Setting	Command	@SDT, time ↵
	Response	@SDT, time ↵
Parameter		time: No-signal input monitoring time 0 = OFF, 3 to 15 = 3 sec. to 15 sec. [Default] 10 = 10 sec.
Getting example	Command	@GDT ↵
	Response	@GDT,6 ↵
	Description	Getting the no-signal input monitoring time 6 sec.
Setting example	Command	@SDT,6 ↵
	Response	@SDT,6 ↵
	Description	Setting the monitoring time to 6 seconds
Remarks		―

@GHE / @SHE		**HDCP input enabled/disabled**
Getting	Command	@GHE ↵
	Response	@GHE, hdcp ↵
Setting	Command	@SHE, hdcp ↵
	Response	@SHE, hdcp ↵
Parameter		hdcp: HDCP input enabled/disabled 0 = DISABLE, 1 = HDCP 1.4 (ENABLE) [Default] DFS-01HD, 2 = HDCP 2.2 (ENABLE)** [Default] DFS-01UHD ** Only for DFS-01UHD
Getting example	Command	@GHE ↵
	Response	@GHE,1 ↵
	Description	Getting the HDCP enabled/disabled HDCP 1.4 input is enabled
Setting example	Command	@SHE,0 ↵
	Response	@SHE,0 ↵
	Description	Setting the HDCP input to be disabled
Remarks		―

3.3.6 Setting videowall

@GVW / @SVW		**Videowall configuration/Display position**
Getting	Command	@GVW ↵
	Response	@GVW, h_type, v_type, h_posi, v_posi ↵
Setting	Command	@SVW, h_type, v_type, h_posi, v_posi ↵
	Response	@SVW, h_type, v_type, h_posi, v_posi ↵
Parameter		h_type: Videowall horizontal screen number 0 = Not control, 1 to 20 = 1 to 20 screens [Default] 1 screen
		v_type: Videowall vertical screen number 0 = Not control, 1 to 20 = 1 to 20 screens [Default] 1 screen
		h_posi: Videowall horizontal display position 0 = Not control, 1 to 20 = 1 to 20 from left [Default] 1 from left
		v_posi: Videowall vertical display position 0 = Not control, 1 to 20 = 1 to 20 from top [Default] 1 from top
Getting example	Command	@GVW ↵
	Response	@GVW,2,2,1,1 ↵
	Description	Getting the videowall configuration 2x2; 1 from left, 1 from top
Setting example	Command	@SVW,2,2,1,1 ↵
	Response	@SVW,2,2,1,1 ↵
	Description	Setting the videowall configuration to 2x2; 1 from left, 1 from top
Remarks		—

@GMR / @SMR		**Size/position**
Getting	Command	@GMR ↵
	Response	@GMR, h_zoom, v_zoom, h_posi, v_posi ↵
Setting	Command	@SMR, h_zoom, v_zoom, h_posi, v_posi ↵
	Response	@SMR, h_zoom, v_zoom, h_posi, v_posi ↵
Parameter		h_zoom: Horizontal size 200 to 21000 = 20.0% to 2100.0% [Default] 1000 (100.0%)
		v_zoom: Vertical size 200 to 21000 = 20.0% to 2100.0% [Default] 1000 (100.0%)
		h_posi: Horizontal position --21000 to +21000 = -2100.0% to +2100.0% [Default] +0 (0.0%)
		v_posi: Vertical position --21000 to +21000 = -2100.0% to +2100.0% [Default] +0 (0.0%)
Getting example	Command Response	@GMR ↵ @GMR,1000,1000,+0,+0 ↵
	Description	Getting the sizes and positions Horizontal size: 100.0%; Vertical size: 100.0%; Horizontal position: 0.0%; Vertical position: 0.0%
Setting example	Command Response	@SMR,1000,1000,0,0 ↵ @SMR,1000,1000,0,0 ↵
	Description	Setting the Horizontal size to 100.0%, Vertical size to 100.0%, Horizontal position to 0.0%, Vertical position to 0.0%.
Remarks		—

@GES / @SES		**External synchronization**
Getting	Command	@GES ↵
	Response	@GES, ext_sync ↵
Setting	Command	@SES, ext_sync ↵
	Response	@SES, ext_sync ↵
Parameter		ext_sync: External synchronization 0 = Detects external synchronous signal input, 1 = Not detect external synchronous signal input, External synchronization function: Disabled [Default], 2 = Not detect external synchronous signal input, External synchronization function: Always enabled
Getting example	Command Response	@GES ↵ @GES,0 ↵
	Description	Getting the external synchronization setting “0” (Detects external synchronous signal input)
Setting example	Command Response	@SES,0 ↵ @SES,0 ↵
	Description	Setting to “0” (Detects external synchronous signal input)
Remarks		—

3.3.7 Setting audio

@GSL / @SSL		**Audio output level**
Getting	Command	@GSL ↵
	Response	@GSL, level ↵
Setting	Command	@SSL, level ↵
	Response	@SSL, level ↵
Parameter		level: Audio output level -60 to 10 [Default] 0
Getting example	Command	@GSL ↵
	Response	@GSL,-4 ↵
	Description	Getting the audio output level -4 dB
Setting example	Command	@SSL,-4 ↵
	Response	@SSL,-4 ↵
	Description	Setting the audio output level to -4 dB
Remarks		―

@GOL		**Limit status of audio output level**
Getting	Command	@GOL ↵
	Response	@GOL, out ↵
Parameter		out: Limit status of audio output level -1 = minimum settable value (-60 dB), 0 = not limit status, 1 = maximum settable value (+10 dB)
Getting example	Command	@GOL ↵
	Response	@GOL,1 ↵
	Description	Getting the limit status of audio output level Maximum settable value
Remarks		―

@SOL		**Audio output level adjustment**
Setting	Command	@SOL, updown ↵
	Response	@SOL, updown ↵
Parameter		updown: Adjust value -70 to 70 The specified value is added to the current audio output level. If the total value exceeds the limit value (-60 to +10), the limit value will be applied.
Setting example	Command	@SOL,-1 ↵
	Response	@SOL,-1 ↵
	Description	Lower 1 dB of audio output level
Remarks		―

@GAM / @SAM		**Muting/unmuting audio output**
Getting	Command	@GAM ↵
	Response	@GAM, mute ↵
Setting	Command	@SAM, mute ↵
	Response	@SAM, mute ↵
Parameter		mute: Audio output mute 0 = Mute OFF [Default], 1 = Mute ON
Getting example	Command	@GAM ↵
	Response	@GAM,0 ↵
	Description	Getting the audio output mute Mute OFF
Setting example	Command	@SAM,1 ↵
	Response	@SAM,1 ↵
	Description	Setting the audio output to mute ON
Remarks		—

@GMD / @SMD		**LPCM analog output**
Getting	Command	@GMD ↵
	Response	@GMD, out ↵
Setting	Command	@SMD, out ↵
	Response	@SMD, out ↵
Parameter		out: LPCM analog output 0 = AUTO [Default], 1 = DOWN MIX, 2 = CH1/CH2 STEREO, 3 = CH3/CH4 STEREO, 4 = CH5/CH6 STEREO, 5 = CH7/CH8 STEREO, 6 = CH1/CH2 MONO, 7 = CH3/CH4 MONO, 8 = CH5/CH6 MONO, 9 = CH7/CH8 MONO
Getting example	Command	@GMD ↵
	Response	@GMD,6 ↵
	Description	Getting the LPCM analog output Outputs monaural audio of CH1/CH2
Setting example	Command	@SMD,1 ↵
	Response	@SMD,1 ↵
	Description	Setting the LPCM analog output to downmixed
Remarks		—

@GLO / @SLO		**Lip Sync**
Getting	Command	@GLO ↵
	Response	@GLO, frame ↵
Setting	Command	@SLO, frame ↵
	Response	@SLO, frame ↵
Parameter		frame: Lip Sync 0 to 16 [Default] 0
Getting example	Command	@GLO ↵
	Response	@GLO,0 ↵
	Description	Getting the Lip Sync 0 frame.
Setting example	Command	@SLO,2 ↵
	Response	@SLO,2 ↵
	Description	Setting the Lip Sync to 2 frames
Remarks		—

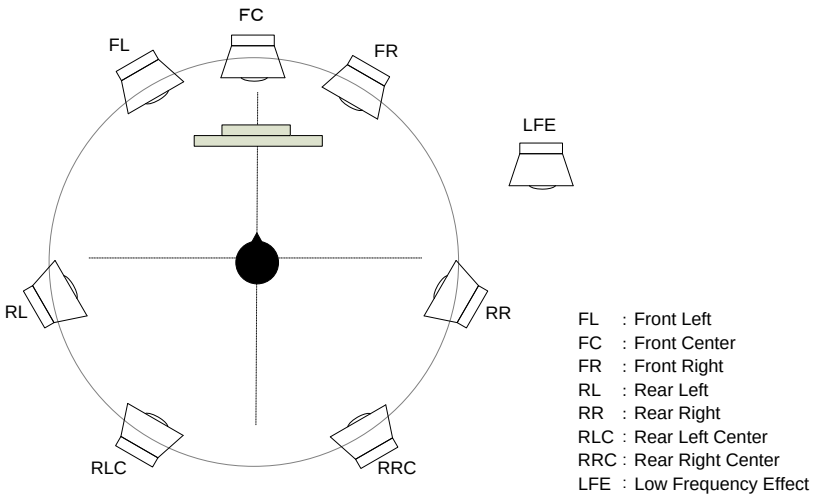
@GAT / @SAT		**Test tone**
Getting	Command	@GAT ↵
	Response	@GAT, tone, speaker ↵
Setting	Command	@SAT, tone, speaker ↵
	Response	@SAT, tone, speaker ↵
Parameter		tone: Test tone 0 = OFF [Default], 1 = 1 kHz, 2 = 400 Hz
		speaker: Speaker 0 = ALL [Default], 1 = FRONT L/R, 2 = REAR L/R, 3 = REAR L/R CENTER, 4 = FRONT LEFT, 5 = FRONT RIGHT, 6 = LOW FREQUENCY EFFECT, 7 = FRONT CENTER, 8 = REAR LEFT, 9 = REAR RIGHT, 10 = REAR LEFT CENTER, 11 = REAR RIGHT CENTER
Getting example	Command	@GAT ↵
	Response	@GAT,2,1 ↵
	Description	Getting the test tone output Outputs test tone (400 Hz) to FRONT L/R
Setting example	Command	@SAT,1,0 ↵
	Response	@SAT,1,0 ↵
	Description	Setting the test tone of 1k Hz to all speakers
Remarks		—

3.3.8 Setting EDID

@GED / @SED		**EDID resolution**
Getting	Command	@GED ↵
	Response	@GED, edid ↵
Setting	Command	@SED, edid ↵
	Response	@SED, edid ↵
Parameter		edid: resolution of EDID 0 = External EDID, 1 = Copied EDID, 2 = 1080p(1920x1080), 3 = 720p(1280x720), 4 = 1080i(1920x1080), 5 = 1080p@24/25/30/50(1920x1080) 6 = SVGA(800x600), 7 = XGA(1024x768), 8 = VESA720(1280x720), 9 = WXGA(1280x768), 10 = WXGA(1280x800), 11 = Quad-VGA(1280x960), 12 = SXGA(1280x1024), 13 = WXGA(1360x768/1366x768), 14 = SXGA+(1400x1050), 15 = WXGA+(1440x900), 16 = WXGA++(1600x900), 17 = UXGA(1600x1200), 18 = WSXGA+(1680x1050), 19 = VESA1080(1920x1080), 20 = WUXGA(1920x1200), 21 = QWXGA(2048x1152), 22 = WQHD(2560x1440), 23 = WQXGA(2560x1600), 40 = 2160p@30(3840x2160), 41 = 2160p@60(4:2:0)(3840x2160)**, 42 = 2160p@60(4:4:4)(3840x2160)**, 43 = 4096x2160@30, 44 = 4096x2160@60(4:2:0)**, 45 = 4096x2160@60(4:4:4)** ** Only for DFS-01UHD [Default] DFS-01UHD 42 = 2160p@60(4:4:4)(3840x2160) DFS-01HD 2 = 1080p(1920x1080)
Getting example	Command Response	@GED ↵ @GED,0 ↵
	Description	Getting the EDID resolution External EDID
Setting example	Command Response	@SED,2 ↵ @SED,2 ↵
	Description	Setting the EDID resolution to 1080p
Remarks		In order to use a copied EDID, read EDID data from the sink device in "**@RME Copying EDID**" in advance.

@RME		**Copying EDID**
Setting	Command	@RME ↵
	Response	@RME ↵
Parameter		―
Setting example	Command	@RME ↵
	Response	@RME ↵
	Description	Recalling the sink device EDID and saving it as copied EDID
Remarks		**@GED / @SED EDID resolution**

@GDI / @SDI		**Deep Color input**
Getting	Command	@GDI ↵
	Response	@GDI, color ↵
Setting	Command	@SDI, color ↵
	Response	@SDI, color ↵
Parameter		color: Color depth 0 = 24 bit/pixel (8 bit/component) [Default], 1 = 30 bit/pixel (10 bit/component)
Getting example	Command	@GDI ↵
	Response	@GDI,1 ↵
	Description	Getting the color depth 30 bit/pixel (10 bit/component)
Setting example	Command	@SDI,0 ↵
	Response	@SDI,0 ↵
	Description	Setting the color depth to 24 bit/pixel (8 bit/component)
Remarks		The setting will be applied only if "**@GED / @SED EDID resolution**" is set to a value other than "0" and "1".

<table>
<tr><td colspan="2">@GSP / @SSP</td><td>Speaker configuration</td></tr>
<tr><td rowspan="2">Getting</td><td>Command</td><td>@GSP ↵</td></tr>
<tr><td>Response</td><td>@GSP, number ↵</td></tr>
<tr><td rowspan="2">Setting</td><td>Command</td><td>@SSP, number ↵</td></tr>
<tr><td>Response</td><td>@SSP, number ↵</td></tr>
<tr><td colspan="2">Parameter</td><td>number: The number of speakers
0 = 2 channels [Default], 1 = 2.1 channels,
2 = 5.1 channels, 3 = 7.1 channels
 

<table>
<tr><th>Number of channels</th><th>FL/FR</th><th>LFE</th><th>FC</th><th>RL/RR</th><th>RLC/RRC</th></tr>
<tr><td>2 channels</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
<tr><td>2.1 channels</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
<tr><td>5.1 channels</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr>
<tr><td>7.1 channels</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr>
</table></td></tr>
<tr><td rowspan="3">Getting example</td><td>Command
Response</td><td>@GSP ↵
@GSP,1 ↵</td></tr>
<tr><td>Description</td><td>Getting the speaker configuration
2.1 channels</td></tr>
<tr><td rowspan="3">Setting example</td><td>Command
Response</td><td>@SSP,2 ↵
@SSP,2 ↵</td></tr>
<tr><td>Description</td><td>Setting the number of speakers to 5.1 channel</td></tr>
<tr><td colspan="2">Remarks</td><td>The setting will be applied only if “@GED / @SED EDID resolution” is set to a value other than “0” and “1”.</td></tr>
</table>

<table>
<tr><th colspan="2">@GAF / @SAF</th><th>Audio format</th></tr>
<tr><td rowspan="2">Getting</td><td>Command</td><td>@GAF ↵</td></tr>
<tr><td>Response</td><td>@GAF, format_1, frequency_1, format_2, frequency_2, format_3, frequency_3, format_4, frequency_4, format_5, frequency_5, format_6, frequency_6, format_7, frequency_7 ↵</td></tr>
<tr><td rowspan="2">Setting</td><td>Command</td><td>@SAF, format_1, frequency_1 (, format_2, frequency_2･･･) ↵</td></tr>
<tr><td>Response</td><td>@SAF, format_1, frequency_1 (, format_2, frequency_2･･･) ↵</td></tr>
<tr><td colspan="2">Parameter</td><td>format_1-7: Audio format
0 = LPCM, 1 = Dolby Digital, 2 = AAC,
3 = Dolby Digital Plus, 4 = DTS, 5 = DTS-HD,
6 = Dolby TrueHD</td></tr>
<tr><td colspan="2"></td><td>frequency_1-7: The maximum sampling frequency
0 = Not output, 1 = Output, 2 = 32 kHz,
3 = 44.1 kHz, 4 = 48 kHz, 5 = 88.2 kHz,
6 = 96 kHz, 8 = 192 kHz
[Default]: LPCM: 48 kHz, other formats: not output

Maximum sampling frequency depends on the audio format
32 kHz to 192 kHz can be specified for LPCM
<table>
<tr><th>Audio format</th><th>Maximum sampling frequency</th></tr>
<tr><td>LPCM</td><td>32/44.1/48/88.2/96/192 kHz</td></tr>
<tr><td>Dolby Digital</td><td>Disabled/Enabled (48 kHz)</td></tr>
<tr><td>AAC</td><td>Disabled/Enabled (96 kHz)</td></tr>
<tr><td>Dolby Digital Plus</td><td>Disabled/Enabled (48 kHz)</td></tr>
<tr><td>DTS</td><td>Disabled/Enabled (96 kHz)</td></tr>
<tr><td>DTS-HD</td><td>Disabled/Enabled (192 kHz)</td></tr>
<tr><td>Dolby TrueHD</td><td>Disabled/Enabled (192 kHz)</td></tr>
</table></td></tr>
<tr><td rowspan="2">Getting example</td><td>Command
Response</td><td>@GAF ↵
@GAF,0,4,1,0,2,0,3,0,4,0,5,0,6,0 ↵</td></tr>
<tr><td>Description</td><td>Getting the audio format
Maximum sampling frequency of LPCM: 48 kHz
Other format: output disabled</td></tr>
<tr><td rowspan="2">Setting example</td><td>Command
Response</td><td>@SAF,0,8 ↵
@SAF,0,8 ↵</td></tr>
<tr><td>Description</td><td>Setting the audio format and maximum sampling frequency of LPCM to 192 kHz</td></tr>
<tr><td colspan="2">Remarks</td><td>For the setting command, specify both format and frequency.
Since LPCM is enabled at all times, you can skip frequency setting.
The setting will be applied only if “@GED / @SED EDID resolution” is set to a value other than “0” and “1”.</td></tr>
</table>

3.3.9 Setting 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: Upper bit of the IP address to unit_4: lower bit of the IP address 0 to 255 = 8 bit (Decimal notation) [Default] 192.168.1.199
Getting example	Command	@GIP ↵
	Response	@GIP,192,168,3,2 ↵
	Description	Getting the IP address of the DFS IP address: 192.168.3.2
Setting example	Command	@SIP,192,168,3,2 ↵
	Response	@SIP,192,168,3,2 ↵
	Description	Setting the IP address to 192.168.3.2
Remarks		If IP address or communication setting is changed, the communication may be disabled. Change the environmental settings based on the DFS 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,255,255,192,0 ↵
	Description	Getting the subnet mask of the DFS Subnet mask: 255.255.192.0 (= 18 bit)
Setting example	Command	@SSB,255,255,192,0 ↵
	Response	@SSB,255,255,192,0 ↵
	Description	Setting the subnet mask to 255.255.192.0 (= 18 bit)
Remarks		If IP address or communication setting is changed, the communication may be disabled. Change the environmental settings based on the DFS 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, 6000 to 6999 [Default] 1100
		connection: 8-connection mode enabled/disabled 0 = Disabled (Up to 4 connections for WEB browser control, up to 4 connections for communication command control) [Default], 1 = Enabled (Up to 8 connections for communication command control)
Getting example	Command Response	@GLP ↵ @GLP,1100,0 ↵
	Description	Getting the TCP port number 1100, 8-connection mode disabled
Setting example	Command Response	@SLP,1100,0 ↵ @SLP,1100,0 ↵
	Description	Setting the TCP port number to 1100 and disabling 8-connection mode
Remarks		If IP address or communication setting is changed, the communication may be disabled. Change the environmental settings based on the DFS 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 Response	@GMC ↵ @GMC,00,08,E5,5F,00,00 ↵
	Description	Getting the MAC address MAC address: 00-08-E5-5F-00-00
Remarks		—

3.3.10 Setting preset memory

@RPM		**Recalling preset memory**
Setting	Command	@RPM, preset ↵
	Response	@RPM, preset ↵
Parameter		preset: Preset memory number 1 to 16
Setting example	Command	@RPM,3 ↵
	Response	@RPM,3 ↵
	Description	Recalling Preset memory 3
Remarks		Once preset memory is loaded, all settings of video and audio I/O except for some environmental settings will be updated.

@SPM		**Saving preset memory**
Setting	Command	@SPM, preset (, name) ↵
	Response	@SPM, preset (, name) ↵
Parameter		preset: Preset memory number 1 to 16
		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,2 ↵
	Response	@SPM,2 ↵
	Description	Saving the current settings in Preset memory 2 without changing the memory name
Setting example	Command	@SPM,2,MEMORY2 ↵
	Response	@SPM,2,MEMORY2 ↵
	Description	Saving the current settings in Preset memory 2 with the name of MEMORY2
Remarks		―

3.3.11 Advanced setting

<table>
<tr><td colspan="2">@GIS</td><td>Input signal status</td></tr>
<tr><td rowspan="2">Getting</td><td>Command</td><td>@GIS, mode ↵</td></tr>
<tr><td>Response</td><td>@GIS, mode, status_1 (, status_2, status_3, status_4) ↵</td></tr>
<tr><td colspan="2">Parameter</td><td>mode: Status
0 = All statuses of input signals, 1 = Input mode/color depth/HDCP,
2 = Input resolution/vertical synchronous frequency,
3 = Input audio/sampling frequency,
4 = Input HDCP status

status_1: Input mode/color depth/HDCP
<table><tr><th>Input mode</th><th>Description</th></tr><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 signal is input</td></tr></table><table><tr><th>Color depth</th><th>Description</th></tr><tr><td>24</td><td>24 bit/pixel (8 bit/component)</td></tr><tr><td>30</td><td>30 bit/pixel (10 bit/component)</td></tr></table>
status_2: Input resolution/Vertical synchronous frequency
<table><tr><th>Reply example</th><th>Description</th></tr><tr><td>1920x1080p 59.94Hz</td><td>1920x1080p is input and the vertical synchronous frequency will be replied.</td></tr><tr><td>NO SIGNAL</td><td>No video signal is input.</td></tr></table>
status_3: Input audio/sampling frequency
<table><tr><th>Reply example</th><th>Description</th></tr><tr><td>L-PCM 48kHz</td><td>LPCM signal is input, which replies the sampling frequency.</td></tr><tr><td>L-PCM 48kHz M</td><td>Multi-channel LPCM signal is input.</td></tr><tr><td>COMPRESSED AUDIO</td><td>Compressed audio signal (such as Dolby Digital and DTS) is input (The DFS does not recognize detailed formats. “COMPRESSED AUDIO” is sent to all compressed audios).</td></tr><tr><td>NO SIGNAL</td><td>No video signal is input.</td></tr></table>
status_4: HDCP input status
<table><tr><th>Reply example</th><th>Description</th></tr><tr><td>HDCP 1.4</td><td>HDCP 1.4.</td></tr><tr><td>HDCP 2.2 Type0*</td><td>HDCP 2.2 stream type 0</td></tr><tr><td>HDCP 2.2 Type1*</td><td>HDCP 2.2 stream type 1</td></tr><tr><td>HDCP OFF</td><td>No HDCP</td></tr><tr><td>NO SIGNAL</td><td>No video signal is input.</td></tr></table>
* Returned only for DFS-01UHD</td></tr>
</table>

@GIS		**Input signal status (Cont'd)**
Getting example	Command	@GIS,0 ↵
	Response	@GIS,0,H24,1920x1080p 59.94Hz,L-PCM 48kHz,HDCP 1.4 ↵
	Description	Getting all input statuses - Input mode : HDMI mode - Color depth : 24 bit/pixel (8 bit/component) - Input resolution/Vertical synchronous frequency: 1080p 59.94 Hz - Input audio/sampling frequency : 2 channel LPCM 48kHz - HDCP : HDCP 1.4
Remarks		—

@GOS		**Sink device status**
Getting	Command	@GOS, mode ↵
	Response	@GOS, mode, status_1 (, status_2) ↵
Parameter		mode: Status 0 = All statuses of sink device, 1 = HDCP of sink device, 2 = HDCP authentication between the DFS and sink device

status_1: HDCP of sink device

Reply example	Description
HDCP 1.4 SUPPORT	Device with HDCP 1.4 is connected.
HDCP 2.2 SUPPORT	Sink device with HDCP 2.2 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 DFS and sink device

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
UNCONNECTED	Sink device is not connected.

Getting example	Command	@GOS,0 ↵
	Response	@GOS,0,HDCP 1.4 SUPPORT,HDCP OK ↵
	Description	Getting all statuses of sink device - HDCP of the sink device: HDCP 1.4 - HDCP authentication : Succeeded
Remarks		—

@GST		**Internal temperature**
Getting	Command	@GST ↵
	Response	@GST, temp, status ↵
Parameter		temp: Internal temperature value The value of temperature x 100 e.g.) 38.75°C: 3875
		status: Internal temperature status 0 = No problem detected, 1 = Problem detected
Getting example	Command Response	@GST ↵ @GST,3425,0 ↵
	Description	Getting the internal temperature Temperature: 34.25°C; status: Normal
Remarks		—

@GFS		**Cooling fan status**
Getting	Command	@GFS ↵
	Response	@GFS, rpm, status ↵
Parameter		rpm: Cooling fan rotation speed
		status: Cooling fan rotations 0 = No problem detected, 1 = Problem detected
Getting example	Command Response	@GFS ↵ @GFS,3720,0 ↵
	Description	Getting the cooling fan rotations All cooling fan speed: 3720 rpm; status: Normal
Remarks		—

@GPS		**Voltage status**
Getting	Command	@GPS ↵
	Response	@GPS, voltage, status ↵
Parameter		voltage: Power supply voltage = The power supply voltage x 1000 e.g.) 12.210 V: 12210
		status: Voltage status 0 = No problem detected, 1 = Problem detected
Getting example	Command Response	@GPS ↵ @GPS,12210,0 ↵
	Description	Getting the voltage status Voltage: 12.210 V; status: Normal
Remarks		—

@GHC		**System check**
Getting	Command	@GHC ↵
	Response	@GHC, temp, rpm, voltage ↵
Parameter		temp : Internal temperature status 0 = No problem detected, 1 = Problem detected
		rpm : Cooling fan status 0 = No problem detected, 1 = Problem detected
		voltage : Power-supply status 0 = No problem detected, 1 = Problem detected
Getting example	Command	@GHC ↵
	Response	@GHC,0,0,0 ↵
	Description	Getting the system check result No problem in internal temperature, cooling fan or power supply status
Remarks		―

@GLM / @SLM		**Key function lock**
Getting	Command	@GLM ↵
	Response	@GLM, lock ↵
Setting	Command	@SLM, lock ↵
	Response	@SLM, lock ↵
Parameter		lock: Key function lock 0 = Releasing lock [Default], 1 = Locking, 2 = Changing the current setting
Getting example	Command	@GLM ↵
	Response	@GLM,1 ↵
	Description	Getting the key function lock status Locked
Setting example	Command	@SLM,1 ↵
	Response	@SLM,1 ↵
	Description	Enabling the key function lock
Remarks		―

@GIV		**Version**
Getting	Command	@GIV ↵
	Response	@GIV, id, ver ↵
Parameter		id : Model number ver : Firmware version
Getting example	Command	@GIV ↵
	Response	@GIV,DFS-01UHD,1.00R0 ↵
	Description	Getting the product information Model number and firmware version are replied
Remarks		―

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