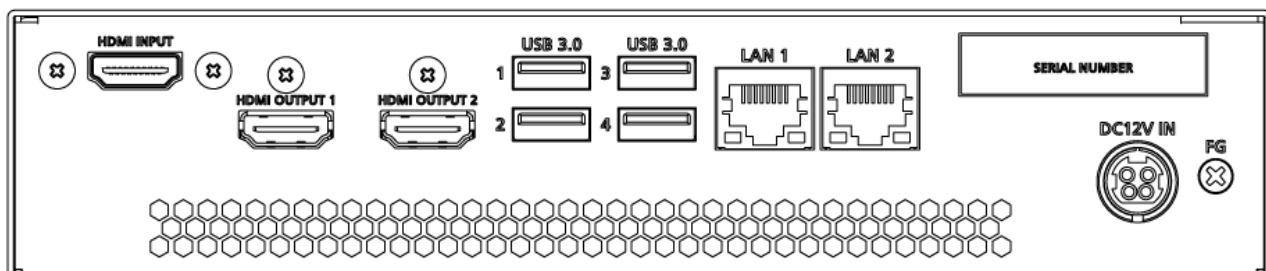
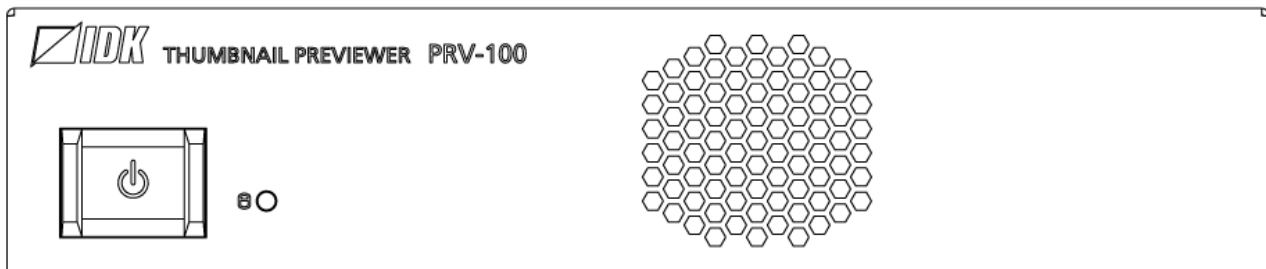


## Thumbnail previewer

# PRV-100

<Command Reference Guide>

Ver.1.1.0



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

## **Trademarks**

- All other company and product names mentioned in this manual are either registered trademarks or trademarks of their respective owners. In this manual, the “®” or “™” marks may not be specified.

## Before reading this manual

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

The reference manual consists of the following two volumes:

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

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# 1 About this Guide

---

This guide explains how to control the PRV-100 (hereafter referred to as “PRV”) using commands through LAN communication.

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

- Capturing thumbnail images
- Setting H.264
- Setting/Changing layout
- Naming channels and images

## 2 Communication configuration and Specifications

---

### 2.1 LAN communication

---

The PRV can be accessed and controlled through LAN communication.

Connecting a control device to the PRV's LAN connector enables system control and status queries per the Command List.

**Tip:**

The PRV can also be controlled from the WEB browser.

Refer to the "PRV-100 User Guide" for details.

#### 2.1.1 Setting up LAN communication

---

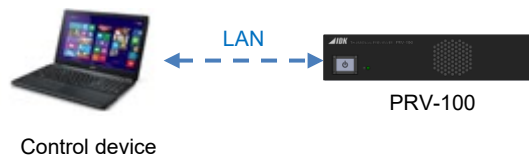
- (1) Connect the PRV and the control device via a LAN cable.
- (2) Factory default values of LAN communication are follows.

LAN1 : DHCP

LAN2 : 192.168.1.199

Establish the connection from the control device to the TCP port number 1100.

- (3) Send a communication command from the control device to the PRV in order to check the control status of the PRV.

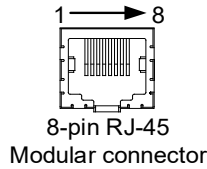


**[Fig. 2.1] LAN communication setup**

## 2.1.2 LAN connector specification

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

Pin assignments of LAN connector:



Pin number	Signal name			
	MDI		MDI-X	
	1000BASE-T	100BASE-TX/10BASE-T	1000BASE-T	100BASE-TX/10BASE-T
1	TRX+ (Transmitted & Received data +)	TX+ (Transmitted data +)	TRX+ (Transmitted & Received data +)	RX+ (Received data +)
2	TRX- (Transmitted & Received data -)	TX- (Transmitted data -)	TRX- (Transmitted & Received data -)	RX- (Received data -)
3	TRX+ (Transmitted & Received data +)	RX+ (Received data +)	TRX+ (Transmitted & Received data +)	TX+ (Transmitted data +)
4	TRX+ (Transmitted & Received data +)	N.C. (Not connected)*	TRX+ (Transmitted & Received data +)	N.C. (Not connected)*
5	TRX- (Transmitted & Received data -)	N.C. (Not connected)*	TRX- (Transmitted & Received data -)	N.C. (Not connected)*
6	TRX- (Transmitted & Received data -)	RX- (Received data -)	TRX- (Transmitted & Received data -)	TX- (Transmitted data -)
7	TRX+ (Transmitted & Received data +)	N.C. (Not connected)*	TRX+ (Transmitted & Received data +)	N.C. (Not connected)*
8	TRX- (Transmitted & Received data -)	N.C. (Not connected)*	TRX- (Transmitted & Received data -)	N.C. (Not connected)*

\*Not used

[Fig. 2.2] LAN connector

## 2.1.3 LAN communication specification

[Table 2.1] Specification of LAN communication

Physical layer	10Base-T (IEEE802.3i)/100Base-TX (IEEE802.3u)/ 1000Base-T (IEEE802.3ab)
Network layer	ARP, IP, ICMP
Transport layer	TCP Port used for command control : 1100 Port used for WEB browser control(HTTP) : 80
Application layer	HTTP

**Note:**

Up to 8 connections can be used simultaneously.

## 2.1.4 The number of TCP-IP connections

---

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

**Note:**

As a safeguard, the PRV 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: @SVJ,1,1 ↵

“,” (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).

■ **If an error occurs:**

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

Example: @SOT,1 ↵  
          @ERR,2 ↵

## 3.2 Command list

---

### ■ Error status

Command	Function	Page
@ERR	Error status	11

### ■ Setting thumbnail image

Command	Function	Page
@SVJ	Capturing thumbnail image	12
@GVV / @SVV	Channel information	12
@GVN / @SVN	Image in case thumbnail image acquisition failure	13

### ■ H.264 settings

Command	Function	Page
@GSH / @SSH	H.264 streaming status	14
@GDS / @SDS	Setting H.264 streaming	14
@GCS / @SCS	Setting H.264 encode	15

### ■ Setting layout

Command	Function	Page
@GVC / @SVC	Switching layout	16
@GVL / @SVL	Layout	17
@GVP / @SVP	Display pattern	18

### ■ Setting image name

Command	Function	Page
@GVT / @SVT	Text for channel name	20
@GVO / @SVO	Text display position and setting	21

### ■ Communication setting

Command	Function	Page
@GLS / @SLS	LAN setting	23

### ■ Maintenance

Command	Function	Page
@SHU	Shutdown	24
@REB	Reboot	24

### 3.3 Details of commands

---

#### 3.3.1 Error status

---

<b>@ERR</b>		<b>Error status</b>
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 99 = Error other than errors above
Getting example	Command	@GCH ↵
	Response	@ERR,2 ↵
	Description	Sending @GCH Command Undefined command
Remarks		—

### 3.3.2 Setting thumbnail image

<b>@SVJ</b>		<b>Capturing thumbnail image</b>
Setting	Command	@SVJ, ch, reflect ↵
	Response	@SVJ, ch, reflect ↵
Parameter		ch: Channel 1 to 100 = Channel 1 to Channel 100  reflect: 0 = Only acquiring thumbnail image (Not displayed in the preview) 1 = Acquiring and displaying thumbnail image  Only for response: -1 = Thumbnail image could not be acquired (Acquisition failure)
Setting example	Command	@SVJ,1,1 ↵
	Response	@SVJ,1,1 ↵
	Description	Acquiring and displaying the thumbnail image of Channel 1
Remarks		—









<b>@GVV / @SVV</b>		<b>Channel information</b>
Getting	Command	@GVV, view_1 (, view_2···) ↵
	Response	@GVV, view_1, ch_1 (, view_2, ch_2···) ↵
Setting	Command	@SVV, view_1, ch_1 (, view_2, ch_2···) ↵
	Response	@SVV, view_1, ch_1 (, view_2, ch_2···) ↵
Parameter		view_1-100: view number 1 to 100 = View 1 to View 100  ch_1-100: Channel 1 to 100 = Channel 1 to Channel 100, 101 to 200 = Built-in image 1 to Built-in image 100
Getting example	Command	@GVV,1 ↵
	Response	@GVV,1,2 ↵
	Description	Getting the channel information of View 1 Channel 2 is assigned to View 1
Setting example	Command	@SVV,1,2 ↵
	Response	@SVV,1,2 ↵
	Description	Assigning the Channel 2 to View 1
Remarks		—

<b>@GVN / @SVN</b>		<b>Image in case thumbnail image acquisition failure</b>
Getting	Command	@GVN, view_1 (, view_2···) ↵
	Response	@GVN, view_1, img_1 (, view_2, img_2···) ↵
Setting	Command	@SVN, view_1, img_1 (, view_2, img_2···) ↵
	Response	@SVN, view_1, img_1 (, view_2, img_2···) ↵
Parameter		view_1-100: view number 1 to 100 = View 1 to View 100
		img_1-100: Built-in image 0 = Image for thumbnail image acquisition failure 1 to 100 = Built-in image 1 to Built-in image 100
Getting example	Command	@GVN,1 ↵
	Response	@GVN,1,2 ↵
	Description	Getting the set View 1 image that is displayed for when thumbnail image cannot be acquired Image 2 is assigned
Setting example	Command	@SVN,1,2 ↵
	Response	@SVN,1,2 ↵
	Description	Assigning the Built-in image 2 to the View 1
Remarks		—

### 3.3.3 H.264 settings

@GSH / @SSH		H.264 streaming status
Getting	Command	@GSH ↵
	Response	@GSH, start ↵
Setting	Command	@SSH, start ↵
	Response	@SSH, start ↵
Parameter		start: 0 = Stopping streaming, 1 = Starting streaming
Getting example	Command	@GSH ↵
	Response	@GSH,1 ↵
	Description	Getting the H.264 streaming status H.264 is being streamed
Setting example	Command	@SSH,1 ↵
	Response	@SSH,1 ↵
	Description	Setting the H.264 streaming to be started
Remarks		—

@GDS / @SDS		Setting H.264 streaming
Getting	Command	@GDS ↵
	Response	@GDS, delivery_ip, delivery_port, bind_ip ↵
Setting	Command	@SDS, delivery_ip, delivery_port, bind_ip ↵
	Response	@SDS, delivery_ip, delivery_port, bind_ip ↵
Parameter		delivery_ip: IP address of streaming destination 0 to 255 = 8 bit in decimal x 4
		delivery_port: Streaming destination port 1 to 65535 = Port 1 to Port 65535
		bind_ip: Bind address 0 to 255 = 8 bit in decimal x 4
Getting example	Command	@GDS ↵
	Response	@GDS,192.168.1.1,30000,192.168.1.199 ↵
	Description	Getting the H.264 streaming setting - IP address of streaming destination : 192.168.1.1 - Streaming destination port : 30000 - Bind address : 192.168.1.199
Setting example	Command	@SDS,192.168.1.1,30000,192.168.1.199 ↵
	Response	@SDS,192.168.1.1,30000,192.168.1.199 ↵
	Description	Setting the H.264 streaming as follows: - IP address of streaming destination : 192.168.1.1 - Streaming destination port : 30000 - Bind address : 192.168.1.199
Remarks		—

@GCS / @SCS		Setting H.264 encode
Getting	Command	@GCS 
	Response	@GCS, profile, type, resolution, framerate, bitrate, reserved, volume 
Setting	Command	@SCS, profile, type, resolution, framerate, bitrate, reserved, volume 
	Response	@SCS, profile, type, resolution, framerate, bitrate, reserved, volume 
Parameter		<p>profile:  0 = BASELINE,  1 = MAIN,  2 = HIGH</p> <p>type:  "1" fixed</p> <p>resolution:  0 = 1920x1080,  1 = 1280x1024,  2 = 1280x960,  3 = 1280x720,  4 = 1024x768,  5 = 800x600,  6 = 720x576,  7 = 720x480,  8 = 640x480</p> <p>framerate: Frame rate  1 to 60 = 1 fps to 60 fps</p> <p>bitrate: Bit rate  1 to 8000 = 1 kbps to 8000 kbps</p> <p>reserved: Reservation  "0" fixed</p> <p>volume:  0 to 100 = Volume 0 to Volume 100</p>
Getting example	Command	@GCS 
	Response	@GCS,1,1,0,30,4000,0,50 
	Description	Getting the H.264 encode setting - Profile : MAIN - Resolution : 1920x1080 - Frame rate: 30 fps - Bit rate : 4000 kbps - Volume : 50
Setting example	Command	@SCS,1,1,0,30,4000,0,50 
	Response	@SCS,1,1,0,30,4000,0,100 
	Description	Setting H.264 encode as follows: - Profile : MAIN - Resolution : 1920x1080 - Frame rate: 30 fps - Bit rate : 4000 kbps - Volume : 50
Remarks		—

### 3.3.4 Setting layout

---

@GVC / @SVC		Switching layout
Getting	Command	@GVC ↵
	Response	@GVC, layout ↵
Setting	Command	@SVC, layout ↵
	Response	@SVC, layout ↵
Parameter		layout: The number of layouts 1 to 128 = Layout 1 to Layout 128
Getting example	Command	@GVC ↵
	Response	@GVC,1 ↵
	Description	Getting the layout number Layout 1
Setting example	Command	@SVC,1 ↵
	Response	@SVC,1 ↵
	Description	Layout 1 is set to be displayed
Remarks		—











@GVL / @SVL		Layout
Getting	Command	@GVL, layout
	Response	@GVL, layout, pattern, location_x, location_y, width, height, color
Setting	Command	@SVL, layout, pattern, location_x, location_y, width, height, color
	Response	@SVL, layout, pattern, location_x, location_y, width, height, color
Parameter		layout: Layout number 1 to 128 = Layout 1 to Layout 128
		pattern: Display pattern number 1 to 128 = Pattern 1 to Pattern 128
		location_x: Horizontal position 0 to 3840
		location_y: Vertical position 0 to 2160
		width: 1 to 3840
		height: 1 to 2160
		color: Background color #000000 to #FFFFFF = RGB color code (Hex)
Getting example	Command	@GVL,1
	Response	@GVL,1,1,0,0,1920,1080,#000000
	Description	Getting the layout 1 information - Pattern : 1 - Horizontal position : 0 - Vertical position : 0 - Width : 1920 - Height : 1080 - Background color : Black
Setting example	Command	@SVL,1,1,0,0,1920,1080,#000000
	Response	@SVL,1,1,0,0,1920,1080,#000000
	Description	Setting the layout 1 as shows: - Pattern : 1 - Horizontal position : 0 - Vertical position : 0 - Width : 1920 - Height : 1080 - Background color : Black
Remarks		—

<b>@GVP / @SVP</b>		<b>Display pattern</b>
Getting	Command	@GVP, pattern [↵]
	Response	@GVP, pattern, max_width, max_height, view_1, sizemode_1, x_1, y_1, width_1, height_1(,view_2, sizemode_2, x_2, y_2, width_2, height_2···) [↵]
Setting	Command	@SVP, pattern, max_width, max_height, view_1, sizemode_1, x_1, y_1, width_1, height_1(,view_2, sizemode_2, x_2, y_2, width_2, height_2···) [↵]
	Response	@SVP, pattern, max_width, max_height, view_1, sizemode_1, x_1, y_1, width_1, height_1(,use_2, sizemode_2, x_2, y_2, width_2, height_2···) [↵]
Parameter		pattern_1-100: Display pattern number 1 to 128 = Pattern 1 to Pattern 128
		max_width_1-100: Maximum horizontal display capacity 1 to 3840
		max_height_1-100: Maximum vertical display capacity 1 to 2160
		view_1-100: View number 1 to 100 = View 1 to View 100
		sizemode_1-100: Display size and position 0 = Starts from upper left, 1 = Centers images, 2 = Scales images based on monitor size, 3 = Scales and keeps aspect ratio
		x_1-100: Horizontal position 0 to 3840
		y_1-100: Vertical position 0 to 2160
		width_1-100: 0 to 3840
		height_1-100: 0 to 2160





@GVP / @SVP		Display pattern (Cont'd)
Getting example	Command	@GVP,1 ↵
	Response	@GVP,1,1,1,1,3,0,0,1,1 ↵
	Description	Getting the settings of display pattern 1 - Maximum horizontal display capacity: 1 - Maximum vertical display capacity : 1 - View number : View 1 - Display size and position : Scaling and keeping aspect ratio - Horizontal position : 0 - Vertical position : 0 - Width : 1 - Height : 1
Setting example	Command	@SVP,1,1,1,1,3,0,0,1,1 ↵
	Response	@SVP,1,1,1,1,3,0,0,1,1 ↵
	Description	Setting the display pattern 1 as follows: - Maximum horizontal display capacity: 1 - Maximum vertical display capacity : 1 - View number : View 1 - Display size and position : Scaling and keeping aspect ratio - Horizontal position : 0 - Vertical position : 0 - Width : 1 - Height : 1
Remarks		—

### 3.3.5 Setting image name

---

@GVT / @SVT		Text for channel name
Getting	Command	@GVT, ch_1 (, ch_2···) 
	Response	@GVT, ch_1, text_1 (, ch_2, text_2···) 
Setting	Command	@SVT, ch_1, text_1 (, ch_2, text_2···) 
	Response	@SVT, ch_1, text_1 (, ch_2, text_2···) 
Parameter		ch_1-100: Channel 1 to 100 = Channel 1 to Channel 100, 101 to 200 = Built-in image 1 to Built-in image 100
		text_1-100: Text (Up to 25 characters)
Getting example	Command	@GVT,1 
	Response	@GVT,1,Channel 1 
	Description	Getting the text of Channel 1 "Channel 1"
Setting example	Command	@SVT,1,Channel 1 
	Response	@SVT,1,Channel 1 
	Description	Naming the Channel 1 "Channel 1"
Remarks		—

@GVO / @SVO		Text display position and setting
Getting	Command	@GVO, ch_1 (, ch_2···) ↵
	Response	@GVO, ch_1, position_x_1, position_y_1, font_1, size_1, style_1, color_1, frame_color_1, frame_width_1, back_color_1 (, ch_2, position_x_2, position_y_2, font_2, size_2, style_2, color_2, frame_color_2, frame_width_2, back_color_2···) ↵
Setting	Command	@SVO, ch_1, position_x_1, position_y_1, font_1, size_1, style_1, color_1, frame_color_1, frame_width_1, back_color_1 (, ch_2, position_x_2, position_y_2, font_2, size_2, style_2, color_2, frame_color_2, frame_width_2, back_color_2···) ↵
	Response	@SVO, ch_1, position_x_1, position_y_1, font_1, size_1, style_1, color_1, frame_color_1, frame_width_1, back_color_1 (, ch_2, position_x_2, position_y_2, font_2, size_2, style_2, color_2, frame_color_2, frame_width_2, back_color_2···) ↵
Parameter		ch_1-100: Channel 1 to 100 = Channel 1 to Channel 100, 101 to 200 = Built-in image 1 to Built-in image 100
		position_x_1-100: Horizontal position -2 = Right, -1 = Center, 0 to 1920
		position_y_1-100: Vertical position -2 = Bottom, -1 = Middle, 0 to 1080
		font_1-100: Font 0 = Arial, 1 = Georgia, 2 = Impact, 3 = Lucida Console, 4 = Times New Roman, 5 = Verdana, 6 = Meiryo, 7 = Meiryo UI, 8 = MS PGothic, 9 = MS PMincho, 10 = MS Gothic, 11 = MS Mincho
		size_1-100: Font size 1 to 100 = 1 pt to 100 pt
		style_1-100: Font style 0 = Regular, 1 = Bold, 2 = Italic, 3 = Bold&Italic
		color_1-100: Font color #000000 to #FFFFFF = RGB color code (Hex)

@GVO / @SVO		Text display position and setting (Cont'd)
		frame_color_1-100: Frame color 0 = No font frame #000000 to #FFFFFF = RGB color code (Hex)
		frame_width_1-100: Text frame size 1 to 3
		back_color_1-100: Text background color 0 =No background, #000000 to #FFFFFF = RGB color code (Hex)
Getting example	Command Response	@GVO,1  @GVO,1,-1,-2,0,30,0,#FF0000,#000000,1,0 
	Description	Getting Channel 1 text settings - Horizontal position : Center - Vertical position : Bottom - Font : Arial - Font size : 30 pt - Font style : Regular - Font color : Red - Frame color : Black - Text frame size : 1 - Text background color : No background
Setting example	Command Response	@SVO,1,-1,-2,0,30,0,#FF0000,#000000,1,0  @SVO,1,-1,-2,0,30,0,#FF0000,#000000,1,0 
	Description	Setting Channel 1 text as follows: - Horizontal position : Center - Vertical position : Bottom - Font : Arial - Font size : 30 pt - Font style : Regular - Font color : Red - Frame color : Black - Text frame size : 1 - Text background color : No background
Remarks		—

### 3.3.6 Communication setting

@GLS / @SLS		LAN setting
Getting	Command	@GLS, lan ↵
	Response	@GLS, lan, dhcp, ip, subnet, gateway ↵
Setting	Command	@SLS, lan, dhcp, ip, subnet, gateway ↵
	Response	@SLS, lan, dhcp, ip, subnet, gateway ↵
Parameter		lan: LAN connector 1 = LAN1, 2 = LAN2
		dhcp: Getting IP address automatically 0 = Static, 1 = Automatic (DHCP)
		ip: IP address 0 to 255 = 8 bit (in decimal) x4 combinations
		subnet: Subnet mask 0 to 255 = 8 bit (in decimal) x4 combinations
		gateway: Default gateway 0 to 255 = 8 bit (in decimal) x4 combinations
Getting example	Command	@GLS,2 ↵
	Response	@GLS,2,0,192.168.1.199,255.255.255.0,192.168.1.1 ↵
	Description	Getting the LAN 2 information - IP address : Static - IP address : 192.168.1.199 - Subnet mask : 255.255.255.0 - Default gateway: 192.168.1.1
Setting example	Command	@SLS,2,0,192.168.1.199,255.255.255.0,192.168.1.1 ↵
	Response	@SLS,2,0,192.168.1.199,255.255.255.0,192.168.1.1 ↵
	Description	Setting the LAN2 as follows: - IP address : Static - IP address : 192.168.1.199 - Subnet mask : 255.255.255.0 - Default gateway: 192.168.1.1
Remarks		—

### 3.3.7 Maintenance

---

<b>@SHU</b>		<b>Shutdown</b>
Setting	Command	@SHU ↵
	Response	@SHU ↵
Parameter		N/A
Setting example	Command	@SHU ↵
	Response	@SHU ↵
	Description	Shutdown
Remarks		—

<b>@REB</b>		<b>Reboot</b>
Setting	Command	@REB ↵
	Response	@REB ↵
Parameter		N/A
Setting example	Command	@REB ↵
	Response	@REB ↵
	Description	Reboot
Remarks		—



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## User Guide (Command Guide) of PRV-100

Ver.1.1.0

Issued on: 4 March 2020

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