Panasonic®

Administrator Guide

SIP Phone

Model No. KX-HDV100

Thank you for purchasing this Panasonic product.
Please read this manual carefully before using this product and save this manual for future use.

In this manual, the suffix of each model number is omitted unless necessary.

Document Version 2017-07

Introduction

Outline

This Administrator Guide provides detailed information on the configuration and management of this unit.

Audience

This Administrator Guide contains explanations about the installation, maintenance, and management of the unit and is aimed at network administrators and phone system dealers.
Technical descriptions are included in this guide. Prior knowledge of networking and VoIP (Voice over Internet Protocol) is required.

Related Documentation

Quick Start Guide
Briefly describes basic information about the installation of the unit.

Operating Instructions
Describes information about the installation and operation of the unit.

Manuals and supporting information are provided on the Panasonic Web site at:
https://panasonic.net/cns/pcc/support/sipphone/

Technical Support

When technical support is required, contact your phone system dealer/service provider.

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NOTES

- The screen shots shown in this guide are provided for reference only, and may differ from the screens displayed on your PC.

Table of Contents

Section 1

Initial Setup

This section provides an overview of the setup procedures for the unit.

1.1 Setup

1.1.1 Factory Defaults

Many of the settings for this unit have been configured before the unit ships.
Where possible, these settings are configured with the optimum or most common values for the setting. For example, the port number of the SIP (Session Initiation Protocol) server is set to "5060".
However, many of the settings, such as the address of the SIP server or the phone number, have not been pre-configured, and they must be modified depending on the usage environment. If the port number of the SIP server is not "5060", the value of this setting must be changed.
This unit thus will not function properly using only the factory default settings. The settings for each feature must be configured according to the environment in which the unit is used.

1.1.2 Language Selection for the Unit

You can change the language used on the LCD.
In addition, various settings can be configured by accessing the Web user interface from a PC on the same network (→ see **Section 4 Web User Interface Programming**). You can select the language for the Web user interface.

Note

- To select the display language for the unit, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).
- To select the display language for the Web user interface, see **4.4.1 Language Settings**.

1.1.3 Basic Network Setup

This section describes the basic network settings that you must configure before you can use the unit on your network.
You must configure the following network settings:

- IP Address Mode (IPv4 or IPv6 or IPv4/IPv6 Dual) settings
- TCP/IP settings (DHCP / RA for IPv6 / static IP)
- DNS server settings

For details about basic network settings via the Web user interface, see **4.3.1 Basic Network Settings**.

TCP/IP Settings for IPv4 (DHCP or Static IP Address Assignment)

A unique IP address must be assigned to the unit so that it can communicate on the network. How you assign an IP address depends on your network environment. This unit supports the following 2 methods for assigning an IP address:

Obtaining an IP Address Automatically from a DHCP Server

You can configure the unit to automatically obtain its IP address when it starts up from a DHCP server running on your network. With this method, the system can efficiently manage a limited number of IP addresses. Note that the IP address assigned to the unit may vary every time the unit is started up.
For details about the DHCP server, consult your network administrator.

Using a Static IP Address Specified by Your Network Administrator

If IP addresses for network devices are specified individually by your network administrator, you will need to manually configure settings such as the IP address, subnet mask, default gateway, and DNS servers.
For details about the required network settings, consult your network administrator.

TCP/IP Settings for IPv6 (DHCP, RA or Static IP Address Assignment)

A unique IP address must be assigned to the unit so that it can communicate on the network. How you assign an IP address depends on your network environment. This unit supports the following 3 methods for assigning an IP address:

Obtaining an IP Address Automatically from a DHCP Server

You can configure the unit to automatically obtain its IP address when it starts up from a DHCP server running on your network. With this method, the system can efficiently manage a limited number of IP addresses. Note that the IP address assigned to the unit may vary every time the unit is started up.
For details about the DHCP server, consult your network administrator.

Using a Static IP Address Specified by Your Network Administrator

If IP addresses for network devices are specified individually by your network administrator, you will need to manually configure settings such as the IP address, Prefix, default gateway, and DNS servers.
For details about the required network settings, consult your network administrator.

Using a RA (Router Advertisement)

An IPv6 address can be assigned using Stateless Autoconfiguration. This enables the setting of addresses for only the router and the node without the need to manage information.
For details about the required network settings, consult your network administrator.

DNS Server Settings

You can configure the unit to use 2 DNS servers: a primary DNS server is DNS1 and a secondary DNS server is DNS2. The primary DNS1 server receives priority over the secondary DNS2 server. If the primary DNS1 server returns no reply, the secondary DNS2 server will be used.
For details about configuring the DNS server settings using the unit, or using the Web user interface, see **Configuring the Network Settings of the Unit** in this section.

DNS Priority Using Configuration File

The setting for DNS server(s) may be configured using the configuration files by your phone system dealer/ service provider (→ see "**DHCP_DNS_ENABLE**", "**DHCP_DNS_ENABLE_IPV6**", "**USER_DNS1_ADDR**"/"**USER_DNS2_ADDR**" (for IPv4) and "**USER_DNS1_ADDR_IPV6**"/"**USER_DNS2_ADDR_IPV6**" (for IPv6) in **5.3.2 Basic Network Settings**).

- When "**DHCP_DNS_ENABLE**" (for IPv4) is set to "**Y**", you can manually configure the DNS server address by using "**USER_DNS1_ADDR**" or ("**USER_DNS1_ADDR**" and "**USER_DNS2_ADDR**"). When set to "**N**", the DNS server address will be automatically transmitted. This setting is available only when ("**IP_ADDR_MODE**"="0" or "**IP_ADDR_MODE**"="2") and "**CONNECTION_TYPE**"="1".
- When "**DHCP_DNS_ENABLE_IPV6**" (for IPv6) is set to "**Y**", you can manually configure the DNS server address by using "**USER_DNS1_ADDR_IPV6**" or ("**USER_DNS1_ADDR_IPV6**" and "**USER_DNS2_ADDR_IPV6**"). When set to "**N**", the DNS server address will be automatically transmitted. This setting is available only when ("**IP_ADDR_MODE**"="1" or "**IP_ADDR_MODE**"="2") and "**CONNECTION_TYPE_IPV6**"="1".

Configuring the Network Settings of the Unit

The following procedures explain how to change the network settings via the unit.
For details about the individual network settings that can be configured via the unit, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).
For details about configuring network settings via the Web user interface, see **4.3.1 Basic Network Settings**.

To configure IP Mode (IPv4, IPv6, IPv4&IPv6)

1. MENU
2. [▲]/[▼]: "System Settings" → OK
3. [▲]/[▼]: "Network Settings" → OK
4. [▲]/[▼]: "IP Mode Select" → OK
5. [▲]/[▼]: "IPv4" / "IPv6" / "IPv4&IPv6" → OK
   - The initial value is "IPv4".

Configuring the Network Settings Using IPv4

To configure network settings automatically

1. MENU
2. [▲]/[▼]: "System Settings" → OK
3. [▲]/[▼]: "Network Settings" → OK
4. [▲]/[▼]: "IPv4 Settings" → OK
5. [▲]/[▼]: "DHCP" → OK
6. [▲]/[▼]: "Auto" → OK
   - Select "Manual" to enter the addresses for DNS1 (primary DNS server) and, if necessary, DNS2 (secondary DNS server) manually, and then press OK.

To configure network settings manually

1. MENU
2. [▲]/[▼]: "System Settings" → OK
3. [▲]/[▼]: "Network Settings" → OK
4. [▲]/[▼]: "IPv4 Settings" → OK
5. [▲]/[▼]: "Static" → OK
6. Enter the IP address, subnet mask, default gateway, DNS1 (primary DNS server), and, if necessary, DNS2 (secondary DNS server), and then press OK.

Configuring the Network Settings Using IPv6

To configure network settings automatically using DHCP

1. MENU
2. [▲]/[▼]: "System Settings" → OK
3. [▲]/[▼]: "Network Settings" → OK
4. [▲]/[▼]: "IPv6 Settings" → OK
5. [▲]/[▼]: "DHCP" → OK

6. [▲]/[▼]: "Auto" → OK
   - Select "Manual" to enter the addresses for DNS1 (primary DNS server) and, if necessary, DNS2 (secondary DNS server) manually, and then press OK.

To configure network settings automatically using RA

1. MENU
2. [▲]/[▼]: "System Settings" → OK
3. [▲]/[▼]: "Network Settings" → OK
4. [▲]/[▼]: "IPv6 Settings" → OK
5. [▲]/[▼]: "RA" → OK
6. Enter the addresses for DNS1 (primary DNS server) and, if necessary, DNS2 (secondary DNS server) manually, and then press OK.

To configure network settings manually

1. MENU
2. [▲]/[▼]: "System Settings" → OK
3. [▲]/[▼]: "Network Settings" → OK
4. [▲]/[▼]: "IPv6 Settings" → OK
5. [▲]/[▼]: "Static" → OK
6. Enter the IP address, Prefix (for IPv6), Default Gateway, DNS1 (primary DNS server), and, if necessary, DNS2 (secondary DNS server), and then press OK.

Note

- If your phone system dealer/service provider does not allow you these settings, you cannot change them even though the unit shows the setting menu. Contact your phone system dealer/service provider for further information.
- If you select "DHCP" for the connection mode, all the settings concerning static connection will be ignored, even if they have been specified.
- If you select "DHCP" for the connection mode and "Auto" for DNS, the DNS server settings (DNS1 and DNS2) will be ignored, even if they have been specified.

1.1.4 Overview of Programming

There are 3 types of programming, as shown in the table below:

Programming Type	Description	References
Phone user interface programming	Configuring the unit's settings directly from the unit.	→ 1.1.5 Phone User Interface Programming → Section 3 Phone User Interface Programming
Web user interface programming	Configuring the unit's settings by accessing the Web user interface from a PC connected to the same network.	→ 1.1.6 Web User Interface Programming → Section 4 Web User Interface Programming
Configuration file programming	Configuring the unit's settings beforehand by creating configuration files (pre-provisioning), and having the unit download the files from a server on the Internet and configure its own settings (provisioning).	→ Section 2 General Information on Provisioning → Section 5 Configuration File Programming

1.1.5 Phone User Interface Programming

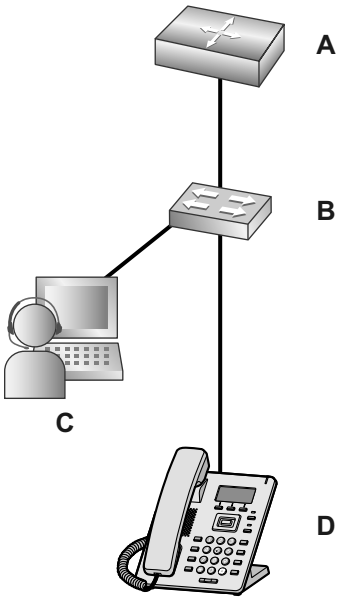
You can change the settings directly from the unit.
For details about the operations, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).
For details about additional features available with direct commands, see **Section 3 Phone User Interface Programming**.

1.1.5.1 Changing the Language for Phone User Interface Programming

You can change the language used on the LCD. Because the language settings for the LCD of the unit are not synchronized, you must set the languages individually for the unit.
For details about changing the setting, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

1.1.6 Web User Interface Programming

After connecting the unit to your network, you can configure the unit's settings by accessing the Web user interface from a PC connected to the same network. For details, see **Section 4 Web User Interface Programming**.



A. Router
B. Switching Hub
C. PC
D. KX-HDV100

1.1.6.1 Password for Web User Interface Programming

To program the unit via the Web user interface, a login account is required. There are 2 types of accounts, and each has different access privileges.

- **User:** User accounts are for use by end users. Users can change the settings that are specific to the unit.

- **Administrator:** Administrator accounts are for use by administrators to manage the system configuration. Administrators can change all the settings, including the network settings, in addition to the settings that can be changed from a User account.

A separate password is assigned to each account.
For details, see **Access Levels (IDs and Passwords)** in **1.1.6.3 Before Accessing the Web User Interface**.

Notice

- You should manage the passwords carefully, and change them regularly.

1.1.6.2 Changing the Language for Web User Interface Programming

When accessing the unit via the Web user interface on a PC connected to the same network, various menus and settings are displayed. You can change the language used for displaying these setting items. Because the language setting for the Web user interface is not synchronized with those of the unit, you must set the languages for each independently.
For details, see **4.4.1 Language Settings**.

1.1.6.3 Before Accessing the Web User Interface

Recommended Environment

This unit supports the following specifications:

HTTP Version	HTTP/1.0 (RFC 1945), HTTP/1.1 (RFC 2616)
Authentication Method	Digest

The Web user interface will operate correctly in the following environments:

Operating System	Microsoft® Windows® 7 or Windows 8 operating system
Web Browser	Windows Internet Explorer® 7, Windows Internet Explorer 8, Windows Internet Explorer 9, Windows Internet Explorer 10, Windows Internet Explorer 11 web browser, Firefox® (32.0.3), Google Chrome™ (37.0.2062.103)
Language (recommended)	English

Opening/Closing the Web Port

To access the Web user interface, you must open the unit's Web port beforehand. For details, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

Configuring Settings from the Unit

To open the unit's Web port

1. MENU
2. **[▲]/[▼]: "`Basic Settings`"** → OK
3. **[▲]/[▼]: "`Other Option`"** → OK
4. **[▲]/[▼]: "`Embedded Web`"** → OK
5. **[▲]/[▼]: "`On`" for "`Embedded Web`"** → OK

To close the unit's Web port

1. MENU
2. [▲]/[▼]: "Basic Settings" → OK
3. [▲]/[▼]: "Other Option" → OK
4. [▲]/[▼]: "Embedded Web" → OK
5. [▲]/[▼]: "Off" for "Embedded Web" → OK

Note

- The "Embedded Web" settings can also be configured with the following procedure.
  1. MENU
  2. [▲]/[▼]: "System Settings" → OK
  3. [▲]/[▼]: "Network Settings" → OK
  4. [▲]/[▼]: "Embedded Web" → OK

Configuring Settings from the Web User Interface

To close the unit's Web port

1. In the Web user interface, click **[Web Port Close]**.
2. Click **OK**.

Note

- The Web port of the unit will be closed automatically in the following conditions:
  – 3 consecutive unsuccessful login attempts occur.
- The Web port can be set to stay open continuously, through Configuration file programming (→ see "HTTPD_PORTOPEN_AUTO" in **5.3.8 HTTPD/WEB Settings**). However, please recognize the possibility of unauthorized access to the unit by doing so.

Access Levels (IDs and Passwords)

2 accounts with different access privileges are provided for accessing the Web user interface: User and Administrator. Each account has its own ID and password, which are required to log in to the Web user interface.

Account	Target User	ID (default)	Password (default)	Password Restrictions
User	End users	user	-blank- (NULL)	• When logged in as User, you can change the password for the User account (→ see **4.4.2 User Password Settings**). • The password can consist of 6 to 64 ASCII characters (case-sensitive) (→ see **Entering Characters** in **1.1.6.4 Accessing the Web User Interface**).

Account	Target User	ID (default)	Password (default)	Password Restrictions
Administrator	Network administrators, etc.	admin	adminpass	• When logged in as Administrator, you can change the password for both the User and Administrator accounts (→ see **4.4.3 Admin Password Settings**). • The password can consist of 6 to 64 ASCII characters (case-sensitive) (→ see **Entering Characters** in **1.1.6.4 Accessing the Web User Interface**).

Notice

- Only one account can be logged in to the Web user interface at a time. If you try to access the Web user interface while someone is logged in, you will be denied access.
- You cannot log in to the Web user interface even under the same account as someone who is already logged in.
- The user password is required to change the settings.
- The IDs can be changed through configuration file programming (→ see "**ADMIN_ID**" and "**USER_ID**" in **5.3.8 HTTPD/WEB Settings**).
- If you forget your account IDs or passwords, consult your phone system dealer/service provider.

1.1.6.4 Accessing the Web User Interface

The unit can be configured from the Web user interface.

To access the Web user interface

1. Open your Web browser, and then enter "http://" followed by the unit's IP address into the address field of your browser.
   a. When the IP address is 192.168.0.1 (IPv4), access the following URL.
   http://192.168.0.1/
   b. When the IP address is 2001:db8:1f70::999:de8:7648:6e8 (IPv6), access the following URL. With IPv6, the IP address is enclosed in square brackets ("[" and "]").
   http://[2001:db8:1f70::999:de8:7648:6e8]/

   Note

   - To determine the unit's IP address, perform the following operations on the unit:
     1. MENU
     2. **[▲]/[▼]: "System Settings"** → OK
     3. **[▲]/[▼]: "Status"** → OK
     4. **[▲]/[▼]: "IPv4 Settings"/"IPv6 Settings"** → OK
     5. **[▲]/[▼]: "IP Address".**

2. For authentication, enter your ID (username) and password, and then click **OK**.

   Notice

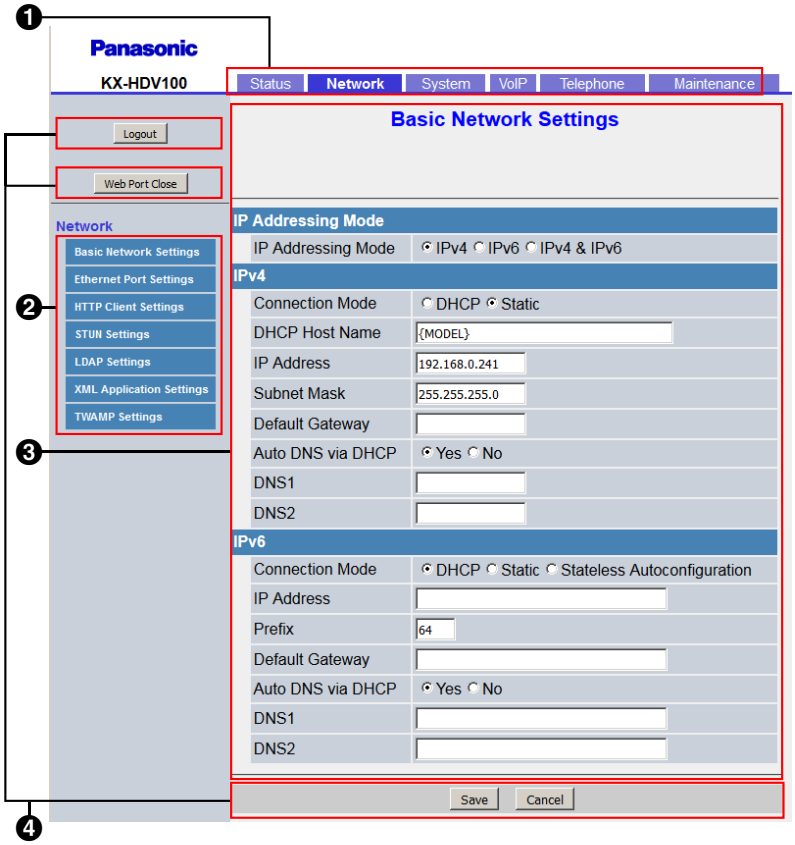
   - The default ID for the User account is "user", and the default password is blank. The ID cannot be changed from the Web user interface, but it can be changed through configuration file programming.

- When you log in as User to the Web user interface for the first time, the **[User Password Settings]** screen (→ see **4.4.2 User Password Settings**) will be displayed. Enter a new password, and then perform authentication again with the new password to log in to the Web user interface.
- The default ID for the Administrator account is "admin", and the default password is "adminpass". The ID cannot be changed from the Web user interface, but it can be changed through configuration file programming.

3. The Web user interface window is displayed. Configure the settings for the unit as desired.
4. You can log out from the Web user interface at any time by clicking **[Web Port Close]**.

Controls on the Window

The Web user interface window contains various controls for navigating and configuring settings. The following figure shows the controls that are displayed on the **[Basic Network Settings]** screen as an example:



Note

- Actual default values may vary depending on your phone system dealer/service provider.
- When you log in to the Web user interface with the User account, the languages of messages displayed on the configuration screen may differ depending on the country/area of use.

❶ **Tabs**
Tabs are the top categories for classifying settings. When you click a tab, the corresponding menu items and the configuration screen of the first menu item appear. There are 6 tabs for the Administrator account and 3 tabs for the User account. For details about the account types, see **Access Levels (IDs and Passwords)** in this section.

❷ **Menu**
The menu displays the sub-categories of the selected tab.

❸ **Configuration Screen**
Clicking a menu displays the corresponding configuration screen, which contains the actual settings, grouped into sections. For details, see **4.2 Status** to **4.7.6 Restart**.

❹ **Buttons**
The following standard buttons are displayed in the Web user interface:

Button	Function
Logout	Logs out of the Web user interface.
Web Port Close	Closes the Web port of the unit and logs you out of the Web user interface after a confirmation message is displayed.
Save	Applies changes and displays a result message (→ see **Result Messages** in this section).
Cancel	Discards changes. The settings on the current screen will return to the values they had before being changed.
Refresh	Updates the status information displayed on the screen. This button is displayed in the upper-right area of the **[Network Status]** and **[VoIP Status]** screens.

Entering Characters

In the Web user interface, when specifying a name, message, password, or other text item, you can enter any of the ASCII characters displayed in the following table with a white background.

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
20	SP	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	

However, there are additional limitations for certain types of fields as follows:

- Number field
  – You may only enter a sequence of numeric characters.
- IP Address field
  – You can enter the IP address using dotted-decimal notation (i.e., "n.n.n.n" where n=0–255).
- FQDN field
  – You can enter the IP address using dotted-decimal notation (i.e., "n.n.n.n" where n=0–255).
  – With IPv6, the IP address is enclosed in square brackets ("[" and "]").
  Example: http://[2001:db8:1f70::999:de8:7648:6e8]/
- Display Name field (→ see **[Display Name]** in **4.6.2.1 Call Features**)
  – This is the only field in which you can enter Unicode characters.

Result Messages

When you click **[Save]** after changing the settings on the current configuration screen, one of the following messages will appear in the upper-left area of the current configuration screen:

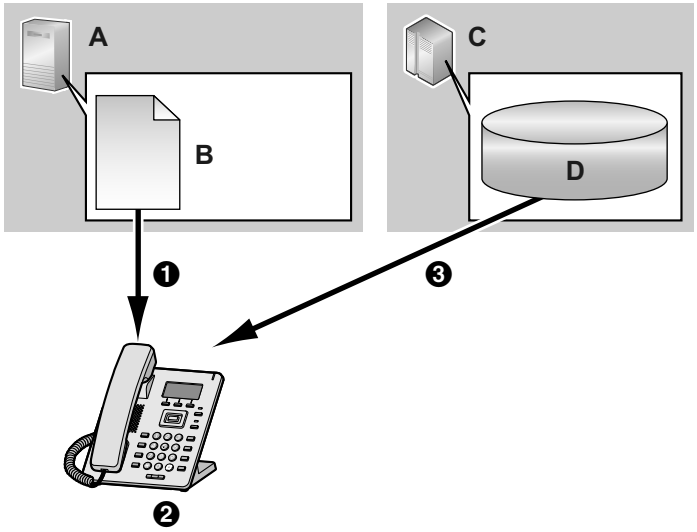
Result Message	Description	Applicable Screens
Complete	The operation has successfully completed.	All screens except **4.6.7 Export Phonebook**
Failed (Parameter Error)	The operation failed because: • Some specified values are out of range or invalid.	All screens
Failed (Memory Access Failure)	The operation failed because: • Access error to the flash memory occurred while reading or writing the data.	All screens
Failed (Transfer Failure)[*1]	The operation failed because: • A network error occurred during the data transmission.	All screens
Failed (Busy)	The operation failed because: • The unit is in an operation that accesses the flash memory of the unit.	All screens
	• When attempting to import/export the phonebook data, the unit is on a call. • While transferring the phonebook data, a call arrived at the unit.	**4.6.6 Import Phonebook** **4.6.7 Export Phonebook**
Failed (Canceled)	The operation failed because: • While transferring the phonebook data, the connection with the unit was interrupted.	**4.6.6 Import Phonebook** **4.6.7 Export Phonebook**
Failed (Invalid File)	The operation failed because: • Analysis of the received data failed.	**4.6.6 Import Phonebook**
Failed (File Size Error)	The operation failed because: • The size of the imported phonebook is too large.	**4.6.6 Import Phonebook**
No Data	The operation failed because: • The imported phonebook file contains no valid phonebook entries.	**4.6.6 Import Phonebook**
	• No phonebook entry is registered in the export source the unit.	**4.6.7 Export Phonebook**

[*1] "Failed (Transfer Failure)" may not be displayed depending on your Web browser.

1.2 Firmware Update

1.2.1 Firmware Update

You can update the unit's firmware to improve the unit's operation. You can configure the unit so that it automatically downloads the new firmware file from a specified location. The firmware update will be executed when the unit is restarted.
For details, see **Section 7 Firmware Update**.



A. Provisioning server
B. Configuration file
C. Firmware server
D. Firmware

❶ Download
❷ Check for update
❸ Firmware download and update

Section 2

General Information on Provisioning

This section provides an overview of the configuration file programming procedures for the unit, including pre-provisioning and provisioning.

2.1 Pre-provisioning

2.1.1 What is Pre-provisioning?

Pre-provisioning is an auto-provisioning mechanism that automatically obtains the server address saved in the configuration file administered by the carrier or distributor.
There are two methods for automatically obtaining the server address saved in the configuration file.

1. SIP PnP
   The phone multicasts a SIP SUBSCRIBE message and obtains a provisioning server address via a SIP NOTIFY message.
2. DHCP options
   The phone obtains a provisioning server address via the DHCP option information. DHCP options 66, 159 and 160 will be used when the phone's IP address mode is IPv4, and DHCP option 17 will be used when the phone's IP address mode is IPv6.

2.1.2 How to Obtain a Pre-provisioning Server Address

Upon startup, the phone will attempt to obtain a pre-provisioning server address as follows.

1. When the phone's IP address mode is IPv4
   The phone will attempt to obtain a pre-provisioning server address using SIP PnP, but when it cannot, it will attempt to do so from DHCPv4 options.
2. When the phone's IP address mode is IPv6
   The phone will attempt to obtain a pre-provisioning server address from DHCPv6 options.
3. When the phone's IP address mode is IPv4/v6 Dual
   The phone will attempt to obtain a pre-provisioning server address using SIP PnP, but when it cannot, it will attempt to do so from DHCPv4 options. When this is not possible, it will attempt to do so from DHCPv6 options.

Note

- The SIP PnP function is enabled in the initial state. It can be enabled or disabled from the configuration parameter "**`SIPPNP_PROV_ENABLE`**".

2.1.3 Server Address Formats

1. Basic format
   Format: <scheme>://<user>:<password>@<host>:<port>/<url-path>/<file name>
   * The server name (<host>) may be the IP address or the domain.
   * Maximum length: 384 characters
2. Macros used with file names

Macro Format {XXXX}	Macro Expansion
{MAC}	If the URL contains {MAC}, it will be replaced with the device's MAC address in uppercase letters. Example: {MAC} → 0080F0C571EB
{mac}	If the URL contains {mac}, it will be replaced with the device's MAC address in lowercase letters. Example: {mac} → 0080f0C571eb

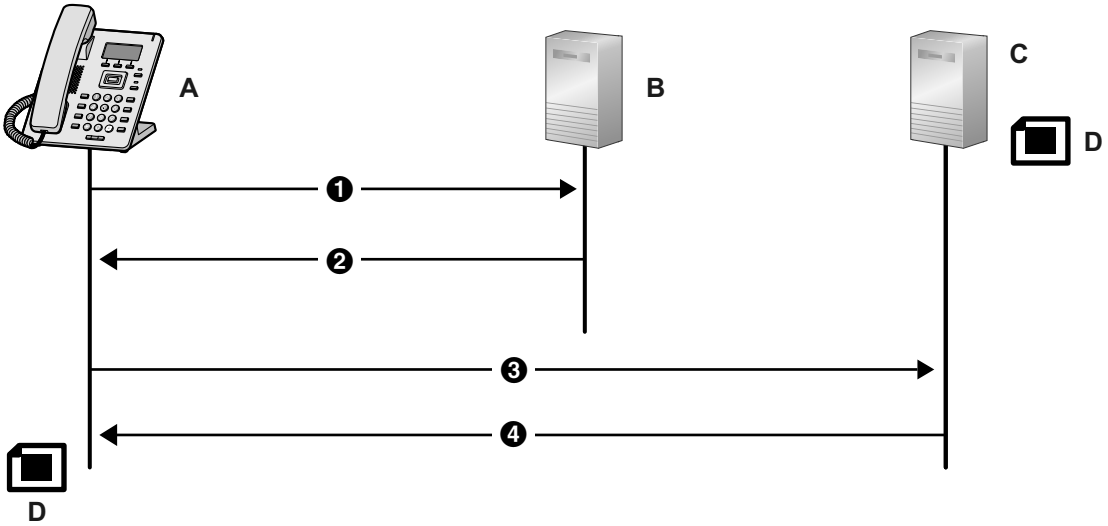
Macro Format {XXXX}	Macro Expansion
{MODEL}	If the URL contains {MODEL}, it will be replaced with the device's model name. Example: {MODEL} → KX-HDV100
{fwver}	If the URL contains {fwver}, it will be replaced with the device's firmware version. Example: {fwver} → 01.000

Note

- Macros distinguish between uppercase and lowercase letters.
- Macros not specified above will be treated as strings of characters.

2.1.4 Obtaining a Provisioning Server Address via SIP PnP

1. Basic Sequence
   At startup, the phone will multicast a SIP SUBSCRIBE message for the ua-profile event, receive a SIP NOTIFY message from the PnP server and obtain a pre-provisioning server address. It will then obtain a provisioning server address from the pre-provisioning server.



A. KX-HDV100
B. PnP Server
C. Pre-provisioning Server
D. xxxxxxxxxxxx.cfg

❶ SUBSCRIBE (multicast)
❷ NOTIFY (unicast)
Body http://server/{MODEL}.cfg
❸ HTTP GET {MODEL}.cfg
❹ 200OK

Obtain provisioning server information

CFG_STANDARD_FILE_PATH
CFG_PRODUCT_FILE_PATH
CFG_MASTER_FILE_PATH

2. Provisioning server URL formats
   Format: <scheme>://<user>:<password>@<host>:<port>/<url-path>/<file name>

<scheme>	Mandatory	Protocol (TFTP/FTP/HTTP/HTTPS)
<user>	Optional	User name
<password>	Optional	Password
<host>	Mandatory	IP Address or Domain
<port>	Optional	Port number
<url-path>	Optional	Full path of the resource
<file name>	Mandatory	File name

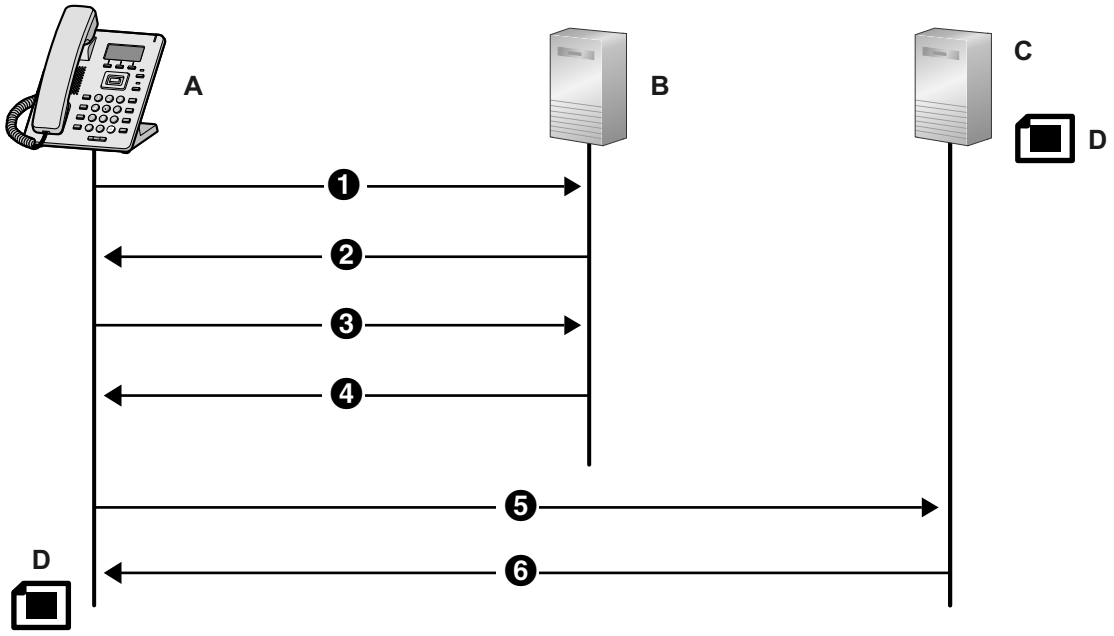
   1. Case 1: Protocol, server name and file name
      http://10.0.0.1/{MODEL}.cfg
      http://prov.com/{MODEL}.cfg
   2. Case 2: Protocol, server name, path and file name
      http://10.0.0.1/pana/{MODEL}.cfg
      http://prov.com/pana/{MODEL}.cfg
   3. Case 3 Protocol, user name, password, server name and file name
      http://id:pass@10.0.0.1/{MAC}.cfg
      http://id:pass@prov.com/{MAC}.cfg

2.1.5 Obtaining a Provisioning Server Address from DHCP Options

1. DHCPv4
   a. Basic Sequence
      In a DHCPv4 environment, the phone will transmit a DHCP DISCOVER message for DHCP options (66, 67, 159 and 160), receive a DHCP OFFER message, obtain a pre-provisioning server address and obtain a provisioning server address from the pre-provisioning server.

      Note
      - DHCP options (66, 159 and 160) are enabled in the initial state and can be enabled and disabled from the configuration parameters.

DHCP options	Configuration parameter	Priority
Option 66	**OPTION66_ENABLE**	3
Option 159	**OPTION159_PROV_ENABLE**	2
Option 160	**OPTION160_PROV_ENABLE**	1



A. KX-HDV100
B. DHCP Server
C. Pre-provisioning Server
D. KX-HDV100.cfg

❶ DHCP DISCOVER
❷ DHCP OFFER
❸ DHCP REQUEST
❹ DHCP ACK
❺ TFTP {MODEL}.cfg
❻ 200OK

Obtain provisioning server information
CFG_STANDARD_FILE_PATH
CFG_PRODUCT_FILE_PATH
CFG_MASTER_FILE_PATH

b. Format for pre-provisioning files obtained from DHCP option 67
Format: <path>/<file name>

<path>	Optional	path
<file name>	Mandatory	file name

1. Case 1: File name only
   {MODEL}.cfg
2. Case 2: Path and file name
   pana/{MODEL}.cfg

c. Format for pre-provisioning server address obtained from DHCP options 159 and 160
Format: <scheme>://<user>:<password>@<host>:<port>/<path>

<scheme>	Mandatory	Protocol (TFTP/FTP/HTTP/HTTPS)

<user>	Optional	User name
<password>	Optional	Password
<host>	Mandatory	IP Address or Domain
<port>	Optional	Port number
<path>	Optional	Path

The obtained file is the <path>/<file name> set in DHCP option 67.
If DHCP option 67 is not set, {MODEL}.cfg is obtained.
The examples in parentheses below are when {MODEL}.cfg is set for DHCP option 67.

1. Case 1: Protocol and server name
   http://10.0.0.1 (http://10.0.0.1/{MODEL}.cfg)
   http://prov.com (http://prov.com/{MODEL}.cfg)
2. Case 2: Protocol, server name and path
   http://10.0.0.1/pana (http://10.0.0.1/pana/{MODEL}.cfg)
   http://prov.com/pana (http://prov.com/pana/{MODEL}.cfg)
3. Case 3: Protocol, user name, password and server name
   http://id:pass@10.0.0.1 (http://id:pass@10.0.0.1/{MODEL}.cfg)
   http://id:pass@prov.com (http://id:pass@prov.com/{MODEL}.cfg)

d. Format for pre-provisioning server address obtained from DHCP option 66
Format: <scheme>://<user>:<password>@<host>:<port>/<path>

<scheme>	Optional	Protocol (TFTP/FTP/HTTP/HTTPS)
<user>	Optional	User name
<password>	Optional	Password
<host>	Mandatory	IP Address or Domain
<port>	Optional	Port number
<path>	Optional	Path

If DHCP option 66 does not include <scheme>, {MODEL}.cfg is obtained.
If the last character of DHCP option 66 is "/", {MODEL}.cfg is obtained.
Otherwise DHCP option 66 includes <file name>.

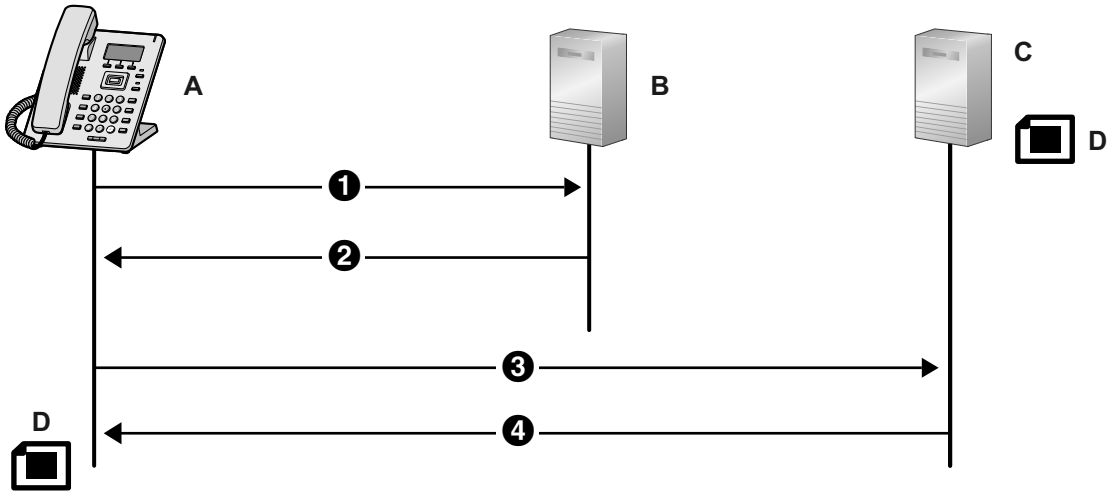
1. Case 1: Protocol and server name
   http://10.0.0.1 (http://10.0.0.1/{MODEL}.cfg)
   http://prov.com (http://prov.com/{MODEL}.cfg)
2. Case 2: Protocol, server name and path
   http://10.0.0.1/pana (http://10.0.0.1/pana/{MODEL}.cfg)
   http://prov.com/pana (http://prov.com/pana/{MODEL}.cfg)
3. Case 3: Protocol, user name, password and server name
   http://id:pass@10.0.0.1 (http://id:pass@10.0.0.1/{MODEL}.cfg)
   http://id:pass@prov.com (http://id:pass@prov.com/{MODEL}.cfg)
4. Case 4: Server name
   tftp://10.0.0.1 (tftp://10.0.0.1/{MODEL}.cfg)
   tftp://prov.com (tftp://prov.com/{MODEL}.cfg)

2. DHCPv6

a. In a DHCPv6 environment, the phone will transmit a DHCPv6 REQUEST message for DHCP option 17, receive a DHCPv6 REPLY message, obtain a pre-provisioning server address and obtain a provisioning server address from the pre-provisioning server.

Note

- DHCP option 17 is enabled in the initial state and can be enabled and disabled from the configuration parameters ("**DHCPV6_OPTION17_PROV_ENABLE**").



A. KX-HDV100
B. DHCP Server
C. Pre-provisioning Server
D. KX-HDV100.cfg

❶ DHCPv6 REQUEST
❷ DHCPv6 REPLY
❸ TFTP {MODEL}.cfg
❹ 200OK

Obtain provisioning server information
CFG_STANDARD_FILE_PATH
CFG_PRODUCT_FILE_PATH
CFG_MASTER_FILE_PATH

b. Format for pre-provisioning addresses obtained from DHCPv6 option 17
Format: <scheme>://<user>:<password>@<host>:<port>/<url-path>

<scheme>	Mandatory	Protocol (TFTP/FTP/HTTP/HTTPS)
<user>	Optional	User name
<password>	Optional	Password
<host>	Mandatory	IP Address or Domain
<port>	Optional	Port number
<url-path>	Optional	Full path of the resource
<file name>	Mandatory	File name

1. Case 1: Protocol, server name, and file name
http://[2001:0db8:bd05:01d2:288a:1fc0:0001:10ee]/{MODEL}.cfg
http://prov.com/{MODEL}.cfg

2. Case 2: Protocol, server name, path and file name
   http://[2001:db8::1234:0:0:9abc]/pana/{MODEL}.cfg
   http://prov.com/pana/{MODEL}.cfg
3. Case 3: Protocol, user name, password, server name and file name
   http://id:pass@[2001:db8::9abc]/{MAC}.cfg
   http://id:pass@prov.com/{MAC}.cfg

2.2 Provisioning

2.2.1 What is Provisioning?

After pre-provisioning has been performed (→ see **2.1 Pre-provisioning**), you can set up the unit automatically by downloading the configuration file stored on the provisioning server into the unit. This is called "provisioning".

2.2.2 Protocols for Provisioning

Provisioning can be performed over HTTP, HTTPS, FTP, and TFTP. The protocol you should use differs depending on how you will perform provisioning. Normally, HTTP, HTTPS, or FTP is used for provisioning. If you are transmitting encrypted configuration files, it is recommended that you use HTTP. If you are transmitting unencrypted configuration files, it is recommended that you use HTTPS. You may not be able to use FTP depending on the conditions of the network router or the network to be used.

2.2.3 Configuration File

This section gives concrete examples of the functions of the configuration file and how to manage it.
The configuration file is a text file that contains the various settings that are necessary for operating the unit. The files are normally stored on a server maintained by your phone system dealer/service provider, and will be downloaded to the units as required. All configurable settings can be specified in the configuration file. You can ignore settings that already have the desired values. Only change parameters as necessary.
For details about setting parameters and their descriptions, see **Section 5 Configuration File Programming**.

Using 3 Types of Configuration Files

The unit can download up to 3 configuration files. One way to take advantage of this is by classifying the configuration files into the following 3 types:

Type	Usage
Master configuration file	Configure settings that are common to all units, such as the SIP server address, and the IP addresses of the DNS and NTP (Network Time Protocol) servers managed by your phone system dealer/service provider. This configuration file is used by all the units. Example of the configuration file's URL: http://prov.example.com/Panasonic/ConfigCommon.cfg

Type	Usage
Product configuration file	Configure settings that are required for a particular model, such as the default setting of the privacy mode. This configuration file is used by all the units that have the same model name. The same number of configuration files as models being used on the network are stored on the provisioning server, and units with the same model name download the corresponding configuration file. Example of the configuration file's URL: http://prov.example.com/Panasonic/Config{MODEL}.cfg **Note** • When a unit requests the configuration file, "{MODEL}" is replaced by the model name of the unit.
Standard configuration file	Configure settings that are unique to each unit, such as the phone number, user ID, password, etc. The same number of configuration files as units are stored on the provisioning server, and each unit downloads the corresponding standard configuration file. Example of the configuration file's URL: http://prov.example.com/Panasonic/Config{MAC}.cfg **Note** • When a unit requests the configuration file, "{MAC}" is replaced by the MAC address of the unit.

Depending on the situation, you can use all 3 types of configuration files, and can also use only a standard configuration file.
The above example shows only one possible way to use configuration files. Depending on the requirements of your phone system dealer/service provider, there are a number of ways to use configuration files effectively.

Using 2 Types of Configuration Files

The following table shows an example of using 2 types of configuration files: a master configuration file to configure settings common to all units, and product configuration files to configure settings common to particular groups.

Using Product Configuration Files According to the Position Groups

You can use product configuration files for different groups or for multiple users within the same group.

Department Name	URL of Product Configuration File
Sales	http://prov.example.com/Panasonic/ConfigSales.cfg
Planning	http://prov.example.com/Panasonic/ConfigPlanning.cfg

2.2.4 Downloading Configuration Files

Downloading a Configuration File via the Web User Interface

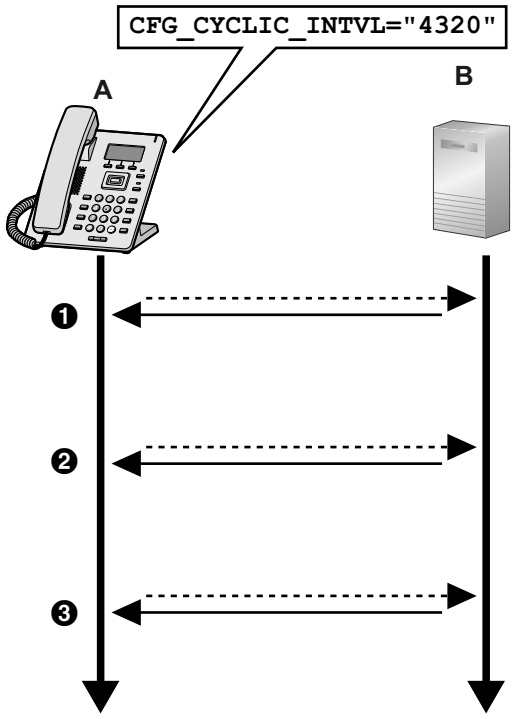
The following procedure describes how to enable downloading a configuration file via the Web User Interface to be used for programming the unit.

1. Confirm that the provisioning server's IP address/FQDN and directory are correct, and store the configuration files in the directory (e.g., http://provisioning.example.com/Panasonic/Config_Sample.cfg).
2. Enter the IP address of the unit into the PC's Web browser (→ see **1.1.6.3 Before Accessing the Web User Interface**).
3. Log in as the administrator (→ see **Access Levels (IDs and Passwords)** in **1.1.6.3 Before Accessing the Web User Interface**).
4. Click the **[Maintenance]** tab, and then select **[Provisioning Maintenance]**.
5. Enter the URL set up in Step 1 in **[Standard File URL]**.
6. Click **[Save]**.

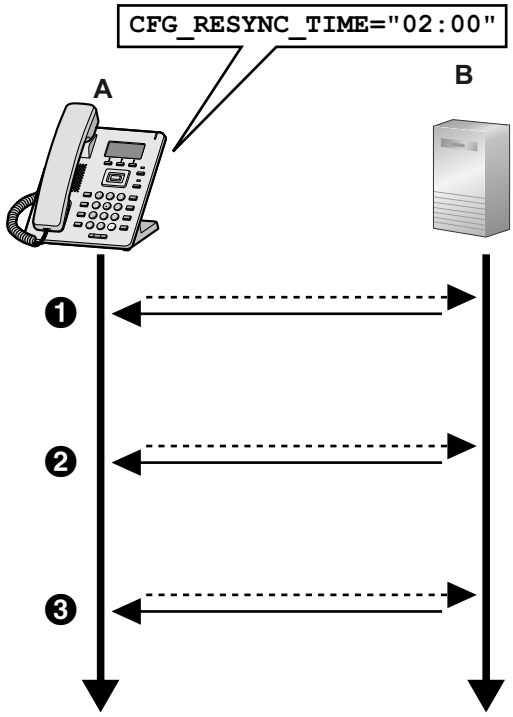
Timing of Downloading

A unit downloads configuration files when it starts up, at regular intervals, and when directed to do so by the server.

Download Timing	Explanation
Startup	The configuration files are downloaded when the unit starts up.

Download Timing	Explanation
At regular intervals of time	The configuration files are downloaded at specified intervals of time, set in minutes. In the example below, the unit has been programmed to download configuration files from the provisioning server every 3 days (4320 minutes).  **A.** KX-HDV100 **B.** Provisioning Server ❶ Power on ❷ 3 days later ❸ 6 days later - - -▶ : Check ◀— : Download

Download Timing	Explanation
	The configuration files are downloaded periodically under the following conditions: • In the configuration file, add the line, `CFG_CYCLIC="Y"`. – Set an interval (minutes) by specifying "`CFG_CYCLIC_INTVL`". • In the Web user interface: – Click the **[Maintenance]** tab, click **[Provisioning Maintenance]**, and then select **[Yes]** for **[Cyclic Auto Resync]**. – Enter an interval (minutes) in **[Resync Interval]**. **Note** • The interval may be determined by your phone system dealer/ service provider. A maximum interval of 28 days (40320 minutes) can be set on the unit.

Download Timing	Explanation
At a specified time each day	After the unit is powered on, it will download configuration files once per day at the specified time.  **A.** KX-HDV100 **B.** Provisioning Server ❶ power on at 12:00 ❷ 02:00 ❸ 02:00 - - -▶ : Check ◀— : Download • In the configuration file: – Set a time by specifying "`CFG_RESYNC_TIME`". • In the Web user interface: – Click the **[Maintenance]** tab, click **[Provisioning Maintenance]**, and then enter the time in **[Time Resync]**. **Note** • The time is specified using a 24-hour clock ("00:00" to "23:59").

Download Timing	Explanation
When directed	When a setting needs to be changed immediately, units can be directed to download the configuration files by sending them a NOTIFY message that includes a special event from the SIP server. • In the configuration file: – Specify the special event text in "**CFG_RESYNC_FROM_SIP**". • In the Web user interface: – Click the **[Maintenance]** tab, click **[Provisioning Maintenance]**, and then enter the special event text in **[Header Value for Resync Event]**. Generally, "check-sync" or "resync" is set as the special event text.

2.2.5 Provisioning Server Setting Example

This section gives an example of how to set up the units and provisioning server when configuring 2 units with configuration files. The standard configuration files and the master configuration file are used in this example.

Conditions

Item	Description/Setting
Provisioning server FQDN	prov.example.com
Units' MAC addresses	• 0080F0111111 • 0080F0222222
URL of the configuration files	Configure the following 2 settings either by pre-provisioning or through the Web user interface. The values of both settings must be the same. • **CFG_STANDARD_FILE_PATH="http://prov.example.com/Panasonic/Config{MAC}.cfg"** • **CFG_MASTER_FILE_PATH="http://prov.example.com/Panasonic/ConfigCommon.cfg"**
Directory on the provisioning server containing the configuration files	Create the "Panasonic" directory just under the HTTP root directory of the provisioning server.
File name of configuration files	Store the following configuration files in the "Panasonic" directory. • Contains the common settings for the 2 units: – ConfigCommon.cfg • Contains the settings unique to each unit: – Config0080F0111111.cfg – Config0080F0222222.cfg

To set up the provisioning server

1. Connect the units to the network, and turn them on.
   a. The unit with the MAC address 0080F0111111 accesses the following URLs:
   http://prov.example.com/Panasonic/ConfigCommon.cfg
   http://prov.example.com/Panasonic/Config0080F0111111.cfg
   b. The unit with the MAC address 0080F0222222 accesses the following URLs:
   http://prov.example.com/Panasonic/ConfigCommon.cfg
   http://prov.example.com/Panasonic/Config0080F0222222.cfg

Example Provisioning Direction from the Server

The following figure shows an example NOTIFY message from the server, directing the units to perform provisioning. The text "check-sync" is specified for "**CFG_RESYNC_FROM_SIP**".

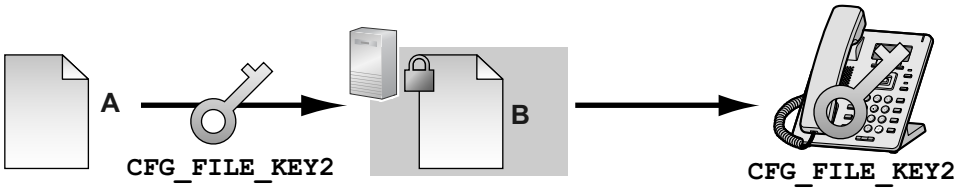
```
NOTIFY sip:1234567890@sip.example.com SIP/2.0
Via: SIP/2.0/UDP xxx.xxx.xxx.xxx:5060;branch=abcdef-ghijkl
From: sip:prov@sip.example.com
To: sip:1234567890@sip.example.com
Date: Wed, 1 Jan 2014 01:01:01 GMT
Call-ID: 123456-1234567912345678
CSeq: 1 NOTIFY
Contact: sip:xxx.xxx.xxx.xxx:5060
Event: check-sync
Content-Length: 0
```

2.2.6 Encryption

Secure Provisioning Methods

In order to perform provisioning securely, there are 2 methods for transferring configuration files securely between the unit and the server.
Which method is used depends on the environment and equipment available from the phone system.

Method 1: Transferring Encrypted Configuration Files



A. Unencrypted configuration file
B. Encrypted configuration file

To use this method, an encryption key is required to encrypt and decrypt the configuration files. A preset encryption key unique to each unit, an encryption key set by your phone system dealer/service provider, etc., is used for the encryption. When the unit downloads an encrypted configuration file, it will decrypt the file using the same encryption key, and then configure the settings automatically.

Method 2: Transferring Configuration Files Using HTTPS

This method uses SSL, which is commonly used on the Internet, to transfer configuration files between the unit and server. For more secure communication, you can use a root certificate.

Notice

- To avoid redundant data transfer over the network, important data, such as the encryption key used to encrypt the configuration files and the root certificate for SSL, should be configured through pre-provisioning as much as possible.
- It is recommended that you encrypt the data in order to keep the communication secure when transferring configuration files.
  However, if you are using the units within a secure environment, such as within an intranet, it is not necessary to encrypt the data.

To decrypt configuration files, the unit uses the encryption key registered to it beforehand. The unit determines the encryption status by checking the extension of the downloaded configuration file.
For details about encrypting configuration files, contact the appropriate person in your organization.

Extension of Configuration File	Configuration File Parameters Used for Decrypting
".e2c"	`CFG_FILE_KEY2`
".e3c"	`CFG_FILE_KEY3`
Other than ".e2c", and ".e3c"	Processed as unencrypted configuration files. The extension ".cfg" should be used for unencrypted configuration files.

Comparison of the 2 Methods

The following table compares the characteristics for the 2 transfer methods.

	Transferring Encrypted Configuration Files	Transferring Configuration Files Using HTTPS
Provisioning server load	Light	Heavy (The server encrypts data for each transmission.)
Operation load	Necessary to encrypt data beforehand.	Unnecessary to encrypt data beforehand.
Management of configuration files	Files must be decrypted and re-encrypted for maintenance.	It is easy to manage files because they are not encrypted on the server.
Security of data on the server when operating	High	Low (Configuration files are readable by anyone with access to the server.)

Moreover, there is another method: configuration files are not encrypted while stored on the server, and then, using the encryption key registered to the unit beforehand, they are encrypted when they are transferred. This method is particularly useful when several units are configured to download a common configuration file using different encryption keys. However, as when downloading an unencrypted configuration file using HTTPS, the server will be heavily burdened when transferring configuration files.

2.3 Priority of Setting Methods

The same settings can be configured by different configuration methods: provisioning, Web user interface programming, etc. This section explains which value is applied when the same setting is specified by multiple methods.
The following table shows the priority with which settings from each method are applied (lower numbers indicate higher priority):

Priority	Setting Method
3	The factory default settings for the unit
2	Pre-provisioning with the configuration file

Priority	Setting Method	
1	1-1	Provisioning with the standard configuration file
	1-2	Provisioning with the product configuration file
	1-3	Provisioning with the master configuration file
	Settings configured from the Web user interface or the phone user interface	

According to the table, settings configured later override previous settings (i.e., settings listed lower in the table have a higher priority).

Notice

- Make sure to perform Reset to Factory Default before connecting the unit to a different phone system.

Contact your phone system dealer/service provider for further information.

2.4 Configuration File Specifications

The specifications of the configuration files are as follows:

File Format

The configuration file is in plain text format.

Lines in Configuration Files

A configuration file consists of a sequence of lines, with the following conditions:

- Each line must end with "<CR><LF>".

  Note

  <CR> or <LF> alone may be acceptable under certain conditions.
- Lines that begin with "**#**" are considered comments.
- Configuration files must start with a comment line containing the following designated character sequence (44 bytes):
  # Panasonic SIP Phone Standard Format File #
  The hexadecimal notation of this sequence is:
  23 20 50 61 6E 61 73 6F 6E 69 63 20 53 49 50 20
  50 68 6F 6E 65 20 53 74 61 6E 64 61 72 64 20 46
  6F 72 6D 61 74 20 46 69 6C 65 20 23
- To prevent the designated character sequence being altered by chance, it is recommended that the configuration file starts with the comment line shown below:
  # Panasonic SIP Phone Standard Format File # DO NOT CHANGE THIS LINE!
- Configuration files must end with an empty line.
- Each parameter line is written in the form of XXX="yyy" (XXX: parameter name, yyy: parameter value). The value must be enclosed by double quotation marks.
- A parameter line written over multiple lines is not allowed. It will cause an error on the configuration file, resulting in invalid provisioning.

Configuration Parameters

- This unit supports one telephone line. However, for some parameters, the line number must be specified. For example, "**VM_NUMBER_1**" is a parameter to a set voice mail server for telephone line 1.
- Some parameter values can be specified as "empty" to set the parameter values to empty.
  Example:

NTP_ADDR=""

- The parameters have no order.
- If the same parameter is specified in a configuration file more than once, the value specified first is applied.
- All configurable settings can be specified in the configuration file. You can ignore settings that already have the desired values. Only change parameters as necessary.
- Boolean parameters (BOOLEAN) accept all of the following configurations.
  "**Y**": "**Y**", "**y**", "**Yes**", "**YES**", "**yes**"
  "**N**": "**N**", "**n**", "**No**", "**NO**", "**no**"

Parameter Extensions

You can use parameter extensions to specify parameters as Read-Only or Carrier Default.

Read-Only Specification

- When "?R" or "?r" is specified, the phone user interface and Web user interface for the parameter in question is restricted to Read-Only.
  * Restricting the phone user interface to Read-Only
  The Read-Only parameter settings menu appears, but an error occurs during registration.
  * Restricting the Web user interface to Read-Only
  The Read-Only parameter settings menu appears grayed out and nothing can be entered.

  Note

  - Parameters that can be configured from the device and from the Web can be confirmed from footnotes 1-3 on the parameter names in "5.1 Configuration File Parameter List".
- When "?R" or "?r" is not specified, the phone user interface and Web user interface are both readable and writable.
  * Optional specifications for "?R" and "?r" are enabled when the last parameter in question is configured.

Carrier Default Specification

- When "?!" is specified, applicable parameter values are managed as carrier default values when applied to operational information.
  * Carrier default values are applied once a reset to carrier defaults is executed. Carrier defaults will also be initialized when a reset to device defaults is executed.
  * Once "?!" is specified, the parameter in question will be designated as a carrier default even if said parameter is configured without "?!". (This setting will remain in place until restored to factory default.)

Specification of Multiple Parameter Extensions

- One parameter can be assigned multiple extensions.
  Example: XXX**?R?!=**"" / XXX**?!?r=**""

Parameter Extension Configuration Example

1. In the configuration file, set IP Addressing Mode to IPv4 and Read-Only
   Example parameter: IP_ADDR_MODE**?R**="0" ("0": IPv4)
2. If an error occurs when attempting to set the IP Mode to IPv6, see **To configure IP Mode (IPv4, IPv6, IPv4&IPv6)** in **Configuring the Network Settings of the Unit**.

2.5 Configuration File Examples

The following examples of configuration files are provided on the Panasonic Web site (→ see **Introduction**).

- Simplified Example of the Configuration File
- Comprehensive Example of the Configuration File

2.5.1 Examples of Codec Settings

Setting the Codec Priority to (1)G.729A, (2)PCMU, (3)G.722

```
## Codec Settings
# Enable G722
CODEC_ENABLE0_1="Y"
CODEC_PRIORITY0_1="3"
# Disable PCMA
CODEC_ENABLE1_1="N"
# Enable G729A
CODEC_ENABLE3_1="Y"
CODEC_PRIORITY3_1="1"
# Enable PCMU
CODEC_ENABLE4_1="Y"
CODEC_PRIORITY4_1="2"
```

Setting Narrow-band Codecs (PCMA and G.729A)

```
## Codec Settings
# Disable G722
CODEC_ENABLE0_1="N"
# Enable PCMA
CODEC_ENABLE1_1="Y"
CODEC_PRIORITY1_1="1"
# Enable G729A
CODEC_ENABLE3_1="Y"
CODEC_PRIORITY3_1="1"
# Disable PCMU
CODEC_ENABLE4_1="N"
```

Setting the G.729A Codec Only

```
## Codec Settings
# Disable G722
CODEC_ENABLE0_1="N"
# Disable PCMA
CODEC_ENABLE1_1="N"
# Enable G729A
CODEC_ENABLE3_1="Y"
CODEC_PRIORITY3_1="1"
# Disable PCMU
CODEC_ENABLE4_1="N"
```

2.5.2 Example with Incorrect Descriptions

The following listing shows an example of a configuration file that contains incorrect formatting:

❶ An improper description is entered in the first line. A configuration file must start with the designated character sequence "`# Panasonic SIP Phone Standard Format File #`".

❷ Comment lines start in the middle of the lines.

Incorrect Example

```
# This is a simplified sample configuration file. —❶

##############################################################
# Configuration Setting #
##############################################################

CFG_STANDARD_FILE_PATH="http://config.example.com/0123456789AB.cfg"
                                        # URL of this configuration file

##############################################################
# SIP Settings #
# Suffix "_1" indicates this parameter is for "line 1". #
##############################################################

SIP_RGSTR_ADDR_1="registrar.example.com" # IP Address or FQDN of SIP registrar server —❷
SIP_PRXY_ADDR_1="proxy.example.com"      # IP Address or FQDN of proxy server
```

Section 3

Phone User Interface Programming

This section explains how to configure the unit by entering direct commands through the phone user interface.

3.1 Phone User Interface Programming

This section provides information about the features that can be configured directly from the unit.

3.1.1 Configuring the Network Settings of the Unit

You can configure the Network Settings directly from the unit.
(→ see **Configuring the Network Settings of the Unit**)

3.1.2 Opening/Closing the Web Port

To access the Web user interface, you must open the unit's Web port beforehand.
(→ see **Opening/Closing the Web Port**)

Section 4

Web User Interface Programming

This section provides information about the settings available in the Web user interface.

4.1 Web User Interface Setting List

The following tables show all the settings that you can configure from the Web user interface and the access levels. For details about each setting, see the reference pages listed.
For details about setting up Web user interface programming, see **1.1.6 Web User Interface Programming**.

Status

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Version Information	Version Information	Model	✓	✓	Page 70
		IPL Version	✓	✓	Page 70
		Firmware Version	✓	✓	Page 70
Network Status	Network Common	MAC Address	✓	✓	Page 71
		Ethernet Link Status	✓	✓	Page 71
		IP Address Mode	✓	✓	Page 71
	IPv4	Connection Mode	✓	✓	Page 72
		IP Address	✓	✓	Page 72
		Subnet Mask	✓	✓	Page 72
		Default Gateway	✓	✓	Page 72
		DNS1	✓	✓	Page 72
		DNS2	✓	✓	Page 73
	IPv6	Connection Mode	✓	✓	Page 73
		IP Address	✓	✓	Page 73
		Prefix	✓	✓	Page 73
		Default Gateway	✓	✓	Page 73
		DNS1	✓	✓	Page 74
		DNS2	✓	✓	Page 74
	VLAN	Setting Mode	✓	✓	Page 74
		VLAN ID	✓	✓	Page 74
		VLAN Priority	✓	✓	Page 74
VoIP Status	VoIP Status	Phone Number	✓	✓	Page 75

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
		VoIP Status	✓	✓	Page 75

[*1] The access levels are abbreviated as follows:
U: User; A: Administrator
A check mark indicates that the setting is available for that access level.

Network

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Basic Network Settings	IP Addressing Mode	IP Addressing Mode[*2]		✓	Page 76
	IPv4	Connection Mode[*2]		✓	Page 77
		DHCP Host Name[*3]		✓	Page 77
		IP Address[*2]		✓	Page 77
		Subnet Mask[*2]		✓	Page 78
		Default Gateway[*2]		✓	Page 78
		Auto DNS via DHCP[*2]		✓	Page 78
		DNS1[*2]		✓	Page 78
		DNS2[*2]		✓	Page 79
	IPv6	Connection Mode[*2]		✓	Page 79
		IP Address[*2]		✓	Page 79
		Prefix[*2]		✓	Page 79
		Default Gateway[*2]		✓	Page 80
		Auto DNS via DHCP[*2]		✓	Page 80
		DNS1[*2]		✓	Page 80
		DNS2[*2]		✓	Page 80
Ethernet Port Settings	Link Speed/Duplex Mode	LAN Port[*2]		✓	Page 81
	LLDP	Enable LLDP[*2]		✓	Page 82
		Packet Interval[*3]		✓	Page 82
	CDP	Enable CDP[*2]		✓	Page 82
		Packet Interval[*2]		✓	Page 82
	VLAN	Enable VLAN[*2]		✓	Page 83

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
		VLAN ID[*2]		✓	Page 83
		Priority[*2]		✓	Page 83
HTTP Client Settings	HTTP Client	HTTP Version[*3]		✓	Page 84
		HTTP User Agent[*3]		✓	Page 84
		Authentication ID[*2]		✓	Page 85
		Authentication Password[*2]		✓	Page 85
	Proxy Server	Enable Proxy[*3]		✓	Page 85
		Proxy Server Address[*3]		✓	Page 86
		Proxy Server Port[*3]		✓	Page 86
STUN Settings	STUN	Server Address[*3]		✓	Page 86
		Port[*3]		✓	Page 87
		Binding Interval[*3]		✓	Page 87
LDAP Settings	LDAP	Enable LDAP[*3]		✓	Page 87
		Server Address[*3]		✓	Page 88
		Port[*3]		✓	Page 88
		User ID[*3]		✓	Page 88
		Password[*3]		✓	Page 88
		Max Hits[*3]		✓	Page 88
		Name Filter[*3]		✓	Page 89
		Number Filter[*3]		✓	Page 89
		Name Attributes[*3]		✓	Page 89
		Number Attributes[*3]		✓	Page 89
		Distinguished Name(Base DN)[*3]		✓	Page 89
		Enable DNS SRV lookup[*3]		✓	Page 90
XML Application Settings	XML Application	Enable XMLAPP[*3]		✓	Page 90
		User ID[*3]		✓	Page 91
		Password[*3]		✓	Page 91
		Local XML Port[*3]		✓	Page 91
	XML Phonebook	LDAP URL[*3]		✓	Page 91
		User ID[*3]		✓	Page 91
		Password[*3]		✓	Page 92

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
		Max Hits[*3]		✓	Page 92
TWAMP Settings	TWAMP	Enable TWAMP[*3]		✓	Page 92
		Control Port[*3]		✓	Page 93
		Test Port[*3]		✓	Page 93
		Wait Time for Control[*3]		✓	Page 93
		Wait Time for Reflector[*3]		✓	Page 93

[*1] The access levels are abbreviated as follows:
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[*2] This setting can also be configured through other programming methods (phone user interface programming or configuration file programming).
[*3] This setting can also be configured through configuration file programming.

System

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Language Settings	Selectable Language	IP Phone[*3]		✓	Page 94
		Web Language[*3]		✓	Page 95
	Language Settings	IP Phone[*3]	✓	✓	Page 96
		Web Language[*3]	✓	✓	Page 96
User Password Settings	User Password	Current Password	✓	✓	Page 98
		New Password[*3]	✓	✓	Page 98
		Confirm New Password	✓	✓	Page 98
Admin Password Settings	Admin Password	Current Password		✓	Page 99
		New Password[*3]		✓	Page 99
		Confirm New Password		✓	Page 99
Time Adjust Settings	Synchronization	Server Address[*3]		✓	Page 100
		Synchronization Interval[*3]		✓	Page 100
	Time Zone	Time Zone[*3]		✓	Page 100

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
	Daylight Saving Time (Summer Time)	Enable DST (Enable Summer Time)[*3]		✓	Page 101
		DST Offset (Summer Time Offset)[*3]		✓	Page 101
	Start Day and Time of DST (Start Day and Time of Summer Time)	Month[*3]		✓	Page 101
		Day of Week		✓	Page 102
		Time[*3]		✓	Page 102
	End Day and Time of DST (End Day and Time of Summer Time)	Month[*3]		✓	Page 102
		Day of Week		✓	Page 103
		Time[*3]		✓	Page 104
Advanced Settings	Soft Key during IDLE Status	Soft Key A (Left)[*3]		✓	Page 104
		Soft Key B (Center)[*3]		✓	Page 105
		Soft Key C (Right)[*3]		✓	Page 105
	IP Phone	Enable Admin Ability[*3]		✓	Page 105
		Enable IP Phone Lock[*3]		✓	Page 105
		Password for Unlocking[*3]		✓	Page 106
		Missed Call Notification	–	–	–
		– Message[*2]		✓	Page 106
		– LED[*2]		✓	Page 106
		Voice Message Notification	–	–	–
		– Message[*2]		✓	Page 106
		– LED[*2]		✓	Page 107
		– Alarm[*2]		✓	Page 107

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[*3] This setting can also be configured through configuration file programming.

VoIP

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
SIP Settings	User Agent	User Agent[*3]		✓	Page 108
	NAT Identity	Enable Rport (RFC 3581)[*3]		✓	Page 109
		Enable Port Punching for SIP[*3]		✓	Page 109
		Enable Port Punching for RTP[*3]		✓	Page 109

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
SIP Settings [Line 1]	Basic	Phone Number[*3]		✓	Page 110
		Registrar Server Address[*3]		✓	Page 110
		Registrar Server Port[*3]		✓	Page 111
		Proxy Server Address[*3]		✓	Page 111
		Proxy Server Port[*3]		✓	Page 111
		Presence Server Address[*3]		✓	Page 111
		Presence Server Port[*3]		✓	Page 111
		Outbound Proxy Server Address[*3]		✓	Page 112
		Outbound Proxy Server Port[*3]		✓	Page 112
		Service Domain[*3]		✓	Page 112
		Authentication ID[*3]		✓	Page 112
		Authentication Password[*3]		✓	Page 112
	Advanced	SIP Packet QoS (DSCP)[*3]		✓	Page 113
		Enable DNS SRV lookup[*3]		✓	Page 113
		SRV lookup Prefix for UDP[*3]		✓	Page 113
		SRV lookup Prefix for TCP[*3]		✓	Page 114
		SRV lookup Prefix for TLS[*3]		✓	Page 114
		Local SIP Port[*3]		✓	Page 114
		SIP URI[*3]		✓	Page 114
		T1 Timer[*3]		✓	Page 115
		T2 Timer[*3]		✓	Page 115
		REGISTER Expires Timer[*3]		✓	Page 115
		Enable Session Timer (RFC 4028)[*3]		✓	Page 116
		Session Timer Method[*3]		✓	Page 116
		Enable 100rel (RFC 3262)[*3]		✓	Page 116
		Enable SSAF (SIP Source Address Filter)[*3]		✓	Page 116
		Enable c=0.0.0.0 Hold (RFC 2543)[*3]		✓	Page 117
		Transport Protocol[*3]		✓	Page 117
		TLS Mode[*3]		✓	Page 117

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
VoIP Settings	RTP	RTP Packet Time[*3]		✓	Page 118
		Minimum RTP Port Number[*3]		✓	Page 118
		Maximum RTP Port Number[*3]		✓	Page 118
		Telephone-event Payload Type[*3]		✓	Page 119
	Voice Quality Report	Server Address[*3]		✓	Page 119
		Port[*3]		✓	Page 119
		Enable PUBLISH[*3]		✓	Page 119
		Alert Report Trigger[*3]		✓	Page 120
		Threshold MOS-LQ (Critical)[*3]		✓	Page 120
		Threshold MOS-LQ (Warning)[*3]		✓	Page 120
		Threshold Delay (Critical)[*3]		✓	Page 120
		Threshold Delay (Warning)[*3]		✓	Page 120
VoIP Settings [Line1]	Basic	G.722	–	–	–
		- Enable[*3]		✓	Page 121
		- Priority[*3]		✓	Page 121
		PCMA	–	–	–
		- Enable[*3]		✓	Page 122
		- Priority[*3]		✓	Page 122
		G.729A	–	–	–
		- Enable[*3]		✓	Page 122
		- Priority[*3]		✓	Page 122
		PCMU	–	–	–
		- Enable[*3]		✓	Page 122
		- Priority[*3]		✓	Page 123
		DTMF Type		✓	Page 123
	Advanced	RTP Packet QoS (DSCP)[*3]		✓	Page 123
		RTCP Packet QoS (DSCP)[*3]		✓	Page 123
		Enable RTCP[*3]		✓	Page 124
		Enable RTCP-XR[*3]		✓	Page 124
		RTCP&RTCP-XR Interval[*3]		✓	Page 124

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
		SRTP Mode[*3]		✓	Page 124
		Enable Mixed SRTP & RTP by Conference[*3]		✓	Page 125
		Enable Mixed SRTP & RTP by Transfer[*3]		✓	Page 125

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U: User; A: Administrator
A check mark indicates that the setting is available for that access level.
[*2] This setting can also be configured through other programming methods (phone user interface programming or configuration file programming).
[*3] This setting can also be configured through configuration file programming.

Telephone

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Call Control	Call Control	Send SUBSCRIBE to Voice Mail Server[*3]		✓	Page 126
		Conference Server URI[*3]		✓	Page 127
		First-digit Timeout[*3]		✓	Page 127
		Inter-digit Timeout[*3]		✓	Page 127
		Timer for Dial Plan[*3]		✓	Page 127
		Enable # Key as delimiter[*3]		✓	Page 127
		International Call Prefix[*3]		✓	Page 128
		Country Calling Code[*3]		✓	Page 128
		National Access Code[*3]		✓	Page 128
		Call Park Number[*3]		✓	Page 128
		Enable Call Park Key[*3]		✓	Page 129
		Directed Call Pickup[*3]		✓	Page 129
		Private Hold[*3]		✓	Page 129
	Emergency Call Phone Numbers	1–5[*3]		✓	Page 129
	Call Rejection Phone Numbers	1–30[*2]	✓	✓	Page 130

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Call Control [Line 1]	Call Features	Display Name[*3]		✓	Page 130
		Voice Mail Access Number[*3]		✓	Page 131
		Enable Anonymous Call[*2]	✓	✓	Page 131
		Enable Block Anonymous Call[*2]	✓	✓	Page 131
		Enable Do Not Disturb[*2]	✓	✓	Page 131
		Enable Call Waiting[*3]		✓	Page 132
		Enable Call Forwarding Always[*2]	✓	✓	Page 132
		Forwarding Number (Always)[*2]	✓	✓	Page 132
		Enable Call Forwarding Busy[*2]	✓	✓	Page 132
		Forwarding Number (Busy)[*2]	✓	✓	Page 132
		Enable Call Forwarding No Answer[*2]	✓	✓	Page 133
		Forwarding Number (No Answer)[*2]	✓	✓	Page 133
		Ring Counts (No Answer)[*2]	✓	✓	Page 133
		Enable Key Synchronization[*3]		✓	Page 133
		MoH Server URI[*3]		✓	Page 133
		Resource List URI[*3]		✓	Page 134
	Dial Plan	Dial Plan (max 1000 columns)[*3]		✓	Page 134
		Call Even If Dial Plan Does Not Match[*3]		✓	Page 134
Hotline Settings	Hotline	Enable[*3]		✓	Page 135
		Hotline Number [*3]	✓	✓	Page 135
		Hotline Delay[*3]		✓	Page 135
Program Key	Program Key	No.1-2[*2]	–	–	–
		Type[*2]	✓	✓	Page 136
		Parameter[*2]	✓	✓	Page 136

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Tone Settings	Dial Tone	Tone Frequencies[*3]		✓	Page 137
		Tone Timings[*3]		✓	Page 138
	Busy Tone	Tone Frequencies[*3]		✓	Page 138
		Tone Timings[*3]		✓	Page 138
	Ringing Tone	Tone Frequencies[*3]		✓	Page 139
		Tone Timings[*3]		✓	Page 139
	Stutter Tone	Tone Frequencies[*3]		✓	Page 139
		Tone Timings[*3]		✓	Page 140
	Reorder Tone	Tone Frequencies[*3]		✓	Page 140
		Tone Timings[*3]		✓	Page 140
Import Phonebook	Import Phonebook	File Name	✓	✓	Page 141
Export Phonebook	Export Phonebook	–	✓	✓	Page 142

[*1] The access levels are abbreviated as follows:
U: User; A: Administrator
A check mark indicates that the setting is available for that access level.
[*2] This setting can also be configured through other programming methods (phone user interface programming or configuration file programming).
[*3] This setting can also be configured through configuration file programming.

Maintenance

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Provisioning Maintenance	Provisioning Maintenance	Standard File URL[*3]		✓	Page 143
		Product File URL[*3]		✓	Page 143
		Master File URL[*3]		✓	Page 143
		Cyclic Auto Resync[*3]		✓	Page 144
		Resync Interval[*3]		✓	Page 144
		Time Resync[*3]		✓	Page 144
		Header Value for Resync Event[*3]		✓	Page 144

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	A	
Firmware Maintenance	Firmware Maintenance	Enable Firmware Update[*3]		✓	Page 145
		Firmware File URL[*3]		✓	Page 145
Upgrade Firmware	Upgrade Firmware	Firmware File URL		✓	Page 146
Export Logging File	Export Logging File	Logging File Type		✓	Page 146
Reset to Defaults	Reset to Carrier Defaults	The following settings will be reset to carrier default values when you click **[Reset to Carrier Defaults]**.		✓	Page 147
Restart	Restart	Click **[Restart]** to proceed. Restarting will take a few moments.		✓	Page 147

[*1] The access levels are abbreviated as follows:
U: User; A: Administrator
A check mark indicates that the setting is available for that access level.

[*2] This setting can also be configured through other programming methods (phone user interface programming or configuration file programming).

[*3] This setting can also be configured through configuration file programming.

4.2 Status

This section provides detailed descriptions about all the settings classified under the **[Status]** tab.

4.2.1 Version Information

This screen allows you to view the current version information such as the model number and the firmware version of the unit.

4.2.1.1 Version Information

Model

Description	Indicates the model number of the unit (reference only).
Value Range	Model number

IPL Version

Description	Indicates the version of the IPL (Initial Program Load) that runs when starting the unit and the SIP software version of the unit (reference only).
Value Range	IPL version ("nn.nnn" [n=0–9]) SIP software version ("[SIP: n.nn]" [n=0–9])

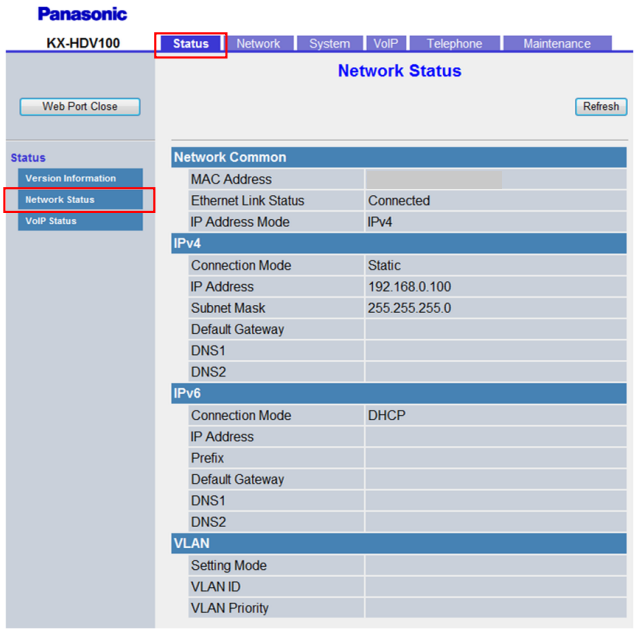
Firmware Version

Description	Indicates the version of the firmware that is currently installed on the unit (reference only).
Value Range	Firmware version ("nn.nnn" [n=0–9])

4.2.2 Network Status

This screen allows you to view the current network information of the unit, such as the MAC address, IP address, Ethernet port status, etc.

Clicking **[Refresh]** updates the information displayed on the screen.



4.2.2.1 Network Common

MAC Address

Description	Indicates the MAC address of the unit (reference only).
Value Range	Not applicable.

Ethernet Link Status

Description	Indicates the current connection status of the Ethernet LAN port (reference only).
Value Range	• Connected

IP Address Mode

Description	Indicates the current IP Address Mode.
Value Range	• IPv4 • IPv6 • IPv4&IPv6

4.2.2.2 IPv4

Connection Mode

Description	Indicates whether the IP address of the unit is assigned automatically (DHCP) or manually (static) (reference only).
Value Range	• DHCP • Static

IP Address

Description	Indicates the currently assigned IP address of the unit (reference only).
Value Range	IP address

Subnet Mask

Description	Indicates the specified subnet mask for the unit (reference only).
Value Range	Subnet mask

Default Gateway

Description	Indicates the specified IP address of the default gateway for the network (reference only). **Note** • If the default gateway address is not specified, this field will be left blank.
Value Range	IP address of the default gateway

DNS1

Description	Indicates the specified IP address of the primary DNS server (reference only). **Note** • If the primary DNS server address is not specified, this field will be left blank.
Value Range	IP address of the primary DNS server

DNS2

Description	Indicates the specified IP address of the secondary DNS server (reference only). **Note** • If the secondary DNS server address is not specified, this field will be left blank.
Value Range	IP address of the secondary DNS server

4.2.2.3 IPv6

Connection Mode

Description	Indicates whether the IP address of the unit is assigned automatically (DHCP) or manually (static) (reference only).
Value Range	• Static • DHCP • Stateless Autoconfiguration

IP Address

Description	Indicates the currently assigned IP address of the unit (reference only).
Value Range	IP address

Prefix

Description	Indicates the prefix for IPv6.
Value Range	0–128

Default Gateway

Description	Indicates the specified IP address of the default gateway for the network (reference only). **Note** • If the default gateway address is not specified, this field will be left blank.
Value Range	IP address of the default gateway

DNS1

Description	Indicates the specified IP address of the primary DNS server (reference only). **Note** • If the primary DNS server address is not specified, this field will be left blank.
Value Range	IP address of the primary DNS server

DNS2

Description	Indicates the specified IP address of the secondary DNS server (reference only). **Note** • If the secondary DNS server address is not specified, this field will be left blank.
Value Range	IP address of the secondary DNS server

4.2.2.4 VLAN

Setting Mode

Description	Indicates the specified VLAN feature (reference only).
Value Range	• Disable • LLDP • CDP • LLDP/CDP • Manual

VLAN ID

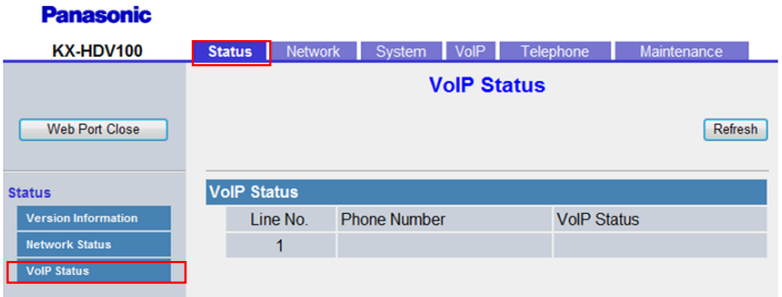
Description	Indicates the VLAN ID (reference only) for the IP Phone.
Value Range	0–4094

VLAN Priority

Description	Indicates the priority number (reference only) for the IP Phone.
Value Range	0–7

4.2.3 VoIP Status

This screen allows you to view the current VoIP status of each line's unit.
Clicking **[Refresh]** updates the information displayed on the screen.



4.2.3.1 VoIP Status

Phone Number

Description	Indicates the currently assigned phone numbers (reference only). **Note** • The corresponding field is blank if a line has not yet been leased or if the unit has not been configured.
Value Range	Max. 32 digits

VoIP Status

Description	Indicates the current VoIP status of each line (reference only).
Value Range	• Registered: The unit has been registered to the SIP server, and the line can be used. • Registering: The unit is being registered to the SIP server, and the line cannot be used. • Blank: The line has not been leased, the unit has not been configured yet, or a SIP authentication failure has occurred. **Note** • Immediately after starting up the unit, the phone numbers of the lines will be displayed, but the status of the line may not be displayed because the unit is still being registered to the SIP server. To display the status, wait about 30 to 60 seconds, and then click **[Refresh]** to obtain updated status information.

4.3 Network

This section provides detailed descriptions about all the settings classified under the **[Network]** tab.

4.3.1 Basic Network Settings

This screen allows you to change basic network settings such as whether to use a DHCP server, and the IP address of the unit.

Note

- Changes to the settings on this screen are applied when the message "Complete" appears after clicking **[Save]**. Because the IP address of the unit will probably be changed if you change these settings, you will not be able to continue using the Web user interface. To continue configuring the unit from the Web user interface, log in to the Web user interface again after confirming the newly assigned IP address of the unit using the phone user interface. In addition, if the IP address of the PC from which you try to access the Web user interface has been changed, close the Web port once by selecting "**Off**" for "**Embedded Web**" on the unit (→ see **Opening/Closing the Web Port** in **1.1.6.3 Before Accessing the Web User Interface**).

4.3.1.1 IP Addressing Mode

IP Addressing Mode

Description	Selects the IP addressing mode.
Value Range	• IPv4 • IPv6 • IPv4&IPv6

Default Value	IPv4
Configuration File Reference	IP_ADDR_MODE (Page 178)

4.3.1.2 IPv4

Connection Mode

Description	Selects the IP address setting mode for IPv4.
Value Range	• Static • DHCP
Default Value	DHCP
Configuration File Reference	CONNECTION_TYPE (Page 178)

DHCP Host Name

Description	Specifies the host name to option12 in DHCPv4 or option15 in DHCPv6. **Note** • This setting is available only when **[Connection Mode]** is set to **[DHCP]**.
Value Range	Max. 64 characters
Default Value	{MODEL}
Configuration File Reference	DHCP_HOST_NAME (Page 181)

IP Address

Description	Specifies the IP address for IPv4. **Note** • This setting is available only when **[Connection Mode]** is set to **[Static]**.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Not stored.
Configuration File Reference	STATIC_IP_ADDRESS (Page 179)

Subnet Mask

Description	Specifies the subnet mask for IPv4. **Note** • This setting is available only when **[Connection Mode]** is set to **[Static]**.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Not stored.
Configuration File Reference	STATIC_SUBNET (Page 179)

Default Gateway

Description	Specifies the default gateway for IPv4. **Note** • This setting is available only when **[Connection Mode]** is set to **[Static]**.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Not stored.
Configuration File Reference	STATIC_GATEWAY (Page 179)

Auto DNS via DHCP

Description	Selects whether to enable or disable the DNS server obtained by DHCPv4. **Note** • This setting is available only when **[Connection Mode]** is set to **[DHCP]**.
Value Range	• Yes: Use DNS obtained by DHCPv4 • No: Not use (use static DNS)
Default Value	Yes
Configuration File Reference	DHCP_DNS_ENABLE (Page 180)

DNS1

Description	Specifies the IP address of primary DNS server for IPv4.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Not stored.

Configuration File Reference	USER_DNS1_ADDR (Page 180)

DNS2

Description	Specifies the IP address of secondary DNS server for IPv4.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Not stored.
Configuration File Reference	USER_DNS2_ADDR (Page 180)

4.3.1.3 IPv6

Connection Mode

Description	Selects the IP address setting mode for IPv6.
Value Range	• Static • DHCP • Stateless Autoconfiguration
Default Value	DHCP
Configuration File Reference	CONNECTION_TYPE_IPV6 (Page 181)

IP Address

Description	Specifies the IP address for IPv6. **Note** • This setting is available only when **[Connection Mode]** is set to **[Static]**.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]
Default Value	Not stored.
Configuration File Reference	STATIC_IP_ADDRESS_IPV6 (Page 182)

Prefix

Description	Specifies the prefix for IPv6. **Note** • This setting is available only when **[Connection Mode]** is set to **[Static]**.
Value Range	0–128

Default Value	64
Configuration File Reference	PREFIX_IPV6 (Page 182)

Default Gateway

Description	Specifies the default gateway for IPv6. **Note** • This setting is available only when **[Connection Mode]** is set to **[Static]**.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]
Default Value	Not stored.
Configuration File Reference	STATIC_GATEWAY_IPV6 (Page 182)

Auto DNS via DHCP

Description	Selects whether to enable or disable the DNS server obtained by DHCPv6. **Note** • This setting is available only when **[Connection Mode]** is set to **[DHCP]**.
Value Range	• Yes: Use DNS obtained by DHCPv6 • No: Not use (use static DNS)
Default Value	Yes
Configuration File Reference	DHCP_DNS_ENABLE_IPV6 (Page 183)

DNS1

Description	Specifies the IP address of primary DNS server for IPv6.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]
Default Value	Not stored.
Configuration File Reference	USER_DNS1_ADDR_IPV6 (Page 182)

DNS2

Description	Specifies the IP address of secondary DNS server for IPv6.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]

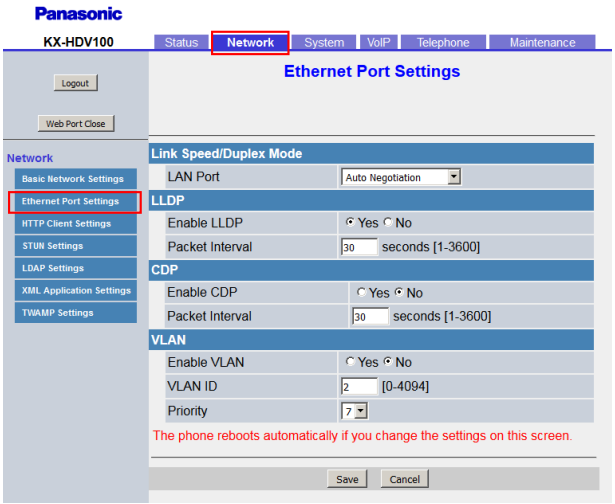
Default Value	Not stored.
Configuration File Reference	USER_DNS2_ADDR_IPV6 (Page 182)

4.3.2 Ethernet Port Settings

This screen allows you to change the connection mode of the Ethernet ports, LLDP and the VLAN settings.

Note

- When you change the settings on this screen and click **[Save]**, after the message "Complete" has been displayed, the unit will restart automatically with the new settings applied. If a unit is on a call when "Complete" has been displayed, the unit will restart after the unit returns to idle.



4.3.2.1 Link Speed/Duplex Mode

LAN Port

Description	Selects the connection mode (link speed and duplex mode) of the LAN port.
Value Range	• Auto Negotiation • 100Mbps/Full Duplex • 100Mbps/Half Duplex • 10Mbps/Full Duplex • 10Mbps/Half Duplex
Default Value	Auto Negotiation
Configuration File Reference	PHY_MODE_LAN (Page 183)

4.3.2.2 LLDP

Enable LLDP

Description	Selects whether to enable or disable the LLDP-MED feature. **Note** • You should specify "**`Yes`**" for only one of "**`Enable LLDP`**", or "**`Enable VLAN`**". • If "**`Yes`**" is specified for two or more of the parameters above, the settings are prioritized as follows: "**`Enable VLAN`**" > "**`Enable LLDP`**". Therefore, if "**`Yes`**" is specified for both "**`Enable VLAN`**" and "**`Enable LLDP`**", the VLAN-related settings are used.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	LLDP_ENABLE (Page 184)

Packet Interval

Description	Specifies the interval, in seconds, between sending each LLDP frame.
Value Range	1–3600
Default Value	30
Configuration File Reference	LLDP_INTERVAL (Page 185)

4.3.2.3 CDP

Enable CDP

Description	Selects whether to enable the CDP feature.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	CDP_ENABLE (Page 185)

Packet Interval

Description	Specifies the interval, in seconds, between sending CDP frames.
Value Range	1–3600
Default Value	30

Configuration File Reference	CDP_INTERVAL (Page 185)

4.3.2.4 VLAN

Enable VLAN

Description	Selects whether to use the VLAN feature to perform VoIP communication securely. **Note** • You should specify "**`Yes`**" for only one of "**`Enable LLDP`**", or "**`Enable VLAN`**". • If "**`Yes`**" is specified for two or more of the parameters above, the settings are prioritized as follows: "**`Enable VLAN`**" > "**`Enable LLDP`**". Therefore, if "**`Yes`**" is specified for both "**`Enable VLAN`**" and "**`Enable LLDP`**", the VLAN-related settings are used.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	VLAN_ENABLE (Page 183)

VLAN ID

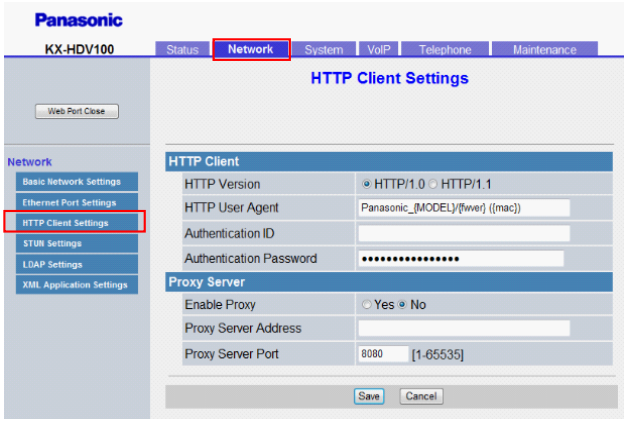
Description	Specifies the VLAN ID for the IP Phone.
Value Range	0–4094
Default Value	2
Configuration File Reference	VLAN_ID_IP_PHONE (Page 184)

Priority

Description	Selects the priority for the IP Phone.
Value Range	0–7
Default Value	7
Configuration File Reference	VLAN_PRI_IP_PHONE (Page 184)

4.3.3 HTTP Client Settings

This screen allows you to change the HTTP client settings for the unit in order to access the HTTP server of your phone system and download configuration files.



4.3.3.1 HTTP Client

HTTP Version

Description	Selects which version of the HTTP protocol to use for HTTP communication.
Value Range	• HTTP/1.0 • HTTP/1.1 **Note** • For this unit, it is strongly recommended that you select **[HTTP/1.0]**. However, if the HTTP server does not function well with HTTP/1.0, try changing the setting **[HTTP/1.1]**.
Default Value	HTTP/1.0
Configuration File Reference	HTTP_VER (Page 193)

HTTP User Agent

Description	Specifies the text string to send as the user agent in the header of HTTP requests.

Value Range	Max. 64 characters **Note** • If "{mac}" is included in this parameter, it will be replaced with the unit's MAC address in lower-case. • If "{MAC}" is included in this parameter, it will be replaced with the unit's MAC address in upper-case. • If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name. • If "{fwver}" is included in this parameter, it will be replaced with the firmware version of the unit.
Default Value	Panasonic_{MODEL}/{fwver} ({mac})
Configuration File Reference	HTTP_USER_AGENT (Page 193)

Authentication ID

Description	Specifies the ID for the User account. If set, this name must be entered to access the Web user interface at the User access level.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	HTTP_AUTH_ID (Page 194)

Authentication Password

Description	Specifies the password for the User account. If set, this password must be entered to access the Web user interface at the User access level.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	HTTP_AUTH_PASS (Page 194)

4.3.3.2 Proxy Server

Enable Proxy

Description	Selects whether to enable or disable the HTTP proxy feature.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	HTTP_PROXY_ENABLE (Page 194)

Proxy Server Address

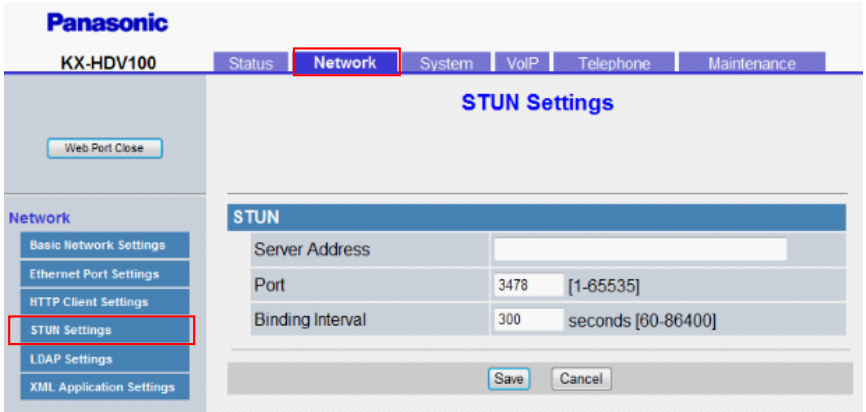
Description	Specifies the IP address or FQDN of the proxy server.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	HTTP_PROXY_ADDR (Page 194)

Proxy Server Port

Description	Specifies the port number of the proxy server.
Value Range	1–65535
Default Value	8080
Configuration File Reference	HTTP_PROXY_PORT (Page 194)

4.3.4 STUN Settings

This screen allows you to change the STUN Settings.



4.3.4.1 STUN

STUN: Simple Traversal of UDP through NATs

Server Address

Description	Specifies the host name or IP address of the STUN server for the CPE to send Binding Requests.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	STUN_SERV_ADDR (Page 220)

Port

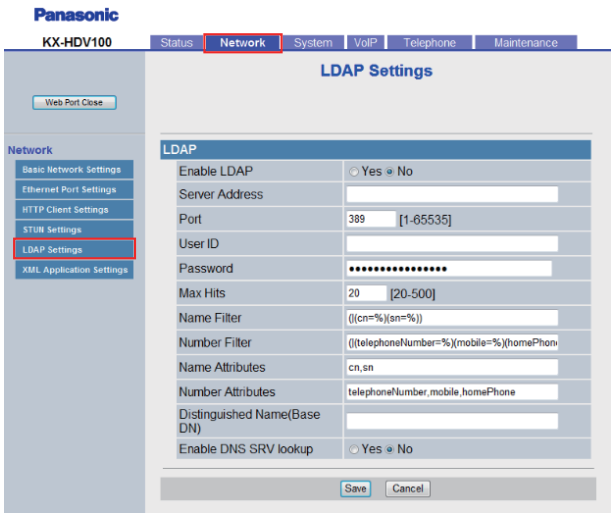
Description	Specifies the port number of the STUN server for the CPE to send Binding Requests.
Value Range	1–65535
Default Value	3478
Configuration File Reference	STUN_SERV_PORT (Page 220)

Binding Interval

Description	Specifies the interval of the sending binding request.
Value Range	60–86400
Default Value	300
Configuration File Reference	STUN_INTVL (Page 221)

4.3.5 LDAP Settings

This screen allows you to change the LDAP Settings.



4.3.5.1 LDAP

Enable LDAP

Description	Selects whether to enable or disable the LDAP service.
Value Range	• Yes • No
Default Value	No

Configuration File Reference	LDAP_ENABLE (Page 205)

Server Address

Description	Specifies the server host of LDAP. **Note** • The LDAP server address should start with "ldap://" or "ldaps://".
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	LDAP_SERVER (Page 206)

Port

Description	Specifies the port of server.
Value Range	1–65535
Default Value	389
Configuration File Reference	LDAP_SERVER_PORT (Page 206)

User ID

Description	Specifies the authentication ID required to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	LDAP_USERID (Page 207)

Password

Description	Specifies the authentication password required to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	LDAP_PASSWORD (Page 207)

Max Hits

Description	Specifies the maximum number of search results to be returned by the LDAP server.

Value Range	20–500
Default Value	20
Configuration File Reference	LDAP_MAXRECORD (Page 206)

Name Filter

Description	Specifies the name filter which is the search criteria for name look up.
Value Range	Max. 256 characters
Default Value	(|(cn=%)(sn=%))
Configuration File Reference	LDAP_NAME_FILTER (Page 207)

Number Filter

Description	Specifies the number filter which is the search criteria for number look up.
Value Range	Max. 256 characters
Default Value	(|(telephoneNumber=%)(mobile =%)(homePhone =%))
Configuration File Reference	LDAP_NUMB_FILTER (Page 207)

Name Attributes

Description	Specifies the name attributes of each record which are to be returned in the LDAP search result.
Value Range	Max. 256 characters
Default Value	cn,sn
Configuration File Reference	LDAP_NAME_ATTRIBUTE (Page 208)

Number Attributes

Description	Specifies the number attributes of each record which are to be returned in the LDAP search result.
Value Range	Max. 256 characters
Default Value	telephoneNumber,mobile,homePhone
Configuration File Reference	LDAP_NUMB_ATTRIBUTE (Page 208)

Distinguished Name(Base DN)

Description	Specifies the entry information on the screen.

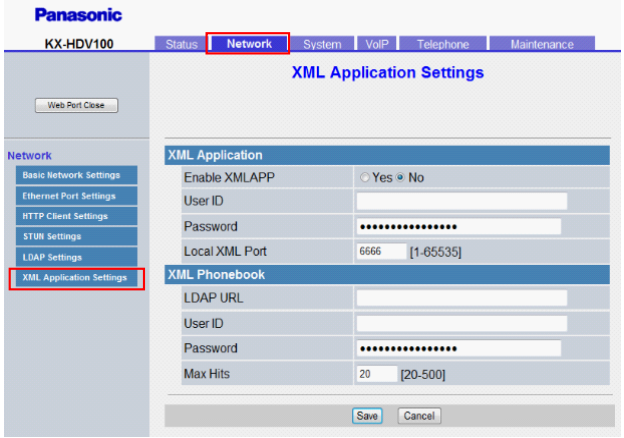
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	LDAP_BASEDN (Page 208)

Enable DNS SRV lookup

Description	Selects whether to request the DNS server to translate domain names into IP addresses using the SRV record.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	LDAP_DNSSRV_ENABLE (Page 205)

4.3.6 XML Application Settings

This screen allows you to configure the various URLs used with the XML application feature.



4.3.6.1 XML Application

Enable XMLAPP

Description	Selects whether to enable or disable the XML application feature.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	XMLAPP_ENABLE (Page 203)

User ID

Description	Specifies the authentication ID required to access the XML application server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_USERID (Page 203)

Password

Description	Specifies the authentication password used to access the XML application server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_USERPASS (Page 203)

Local XML Port

Description	Specifies the local HTTP port for XML application.
Value Range	1–65535
Default Value	6666
Configuration File Reference	XML_HTTPD_PORT (Page 205)

4.3.6.2 XML Phonebook

LDAP URL

Description	Specifies the URL that is accessed when the phonebook is accessed, to check for XML data.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_LDAP_URL (Page 203)

User ID

Description	Specifies the authentication ID required to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_LDAP_USERID (Page 204)

Password

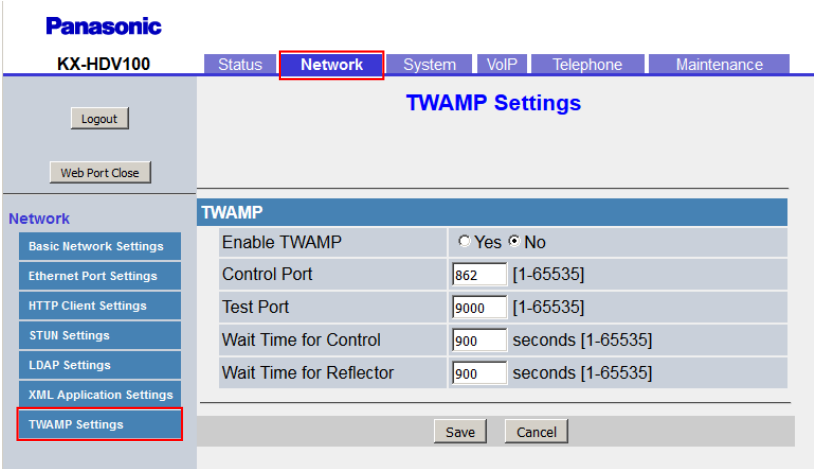
Description	Specifies the authentication password used to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_LDAP_USERPASS (Page 204)

Max Hits

Description	Specifies the maximum number of search results to be returned by the LDAP server.
Value Range	20–500
Default Value	20
Configuration File Reference	XMLAPP_LDAP_MAXRECORD (Page 204)

4.3.7 TWAMP Settings

This screen allows you to change the TWAMP settings.



4.3.7.1 TWAMP

Enable TWAMP

Description	Selects whether to enable the TWAMP server function.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	TWAMP_ENABLE (Page 297)

Control Port

Description	Specifies the port for the TWAMP control session.
Value Range	1–65535
Default Value	862
Configuration File Reference	TWAMP_CONTROL_PORT (Page 297)

Test Port

Description	Specifies the port for the TWAMP test session.
Value Range	1–65535
Default Value	9000
Configuration File Reference	TWAMP_TEST_PORT (Page 297)

Wait Time for Control

Description	Specifies the time, in seconds, for the TWAMP server to wait for incoming packets for maintaining the session.
Value Range	1–65535
Default Value	900
Configuration File Reference	TWAMP_SERVER_WAIT_TIME (Page 297)

Wait Time for Reflector

Description	Specifies the time, in seconds, for the TWAMP reflector to wait for incoming packets for maintaining the session.
Value Range	1–65535
Default Value	900
Configuration File Reference	TWAMP_REFLECTOR_WAIT_TIME (Page 298)

4.4 System

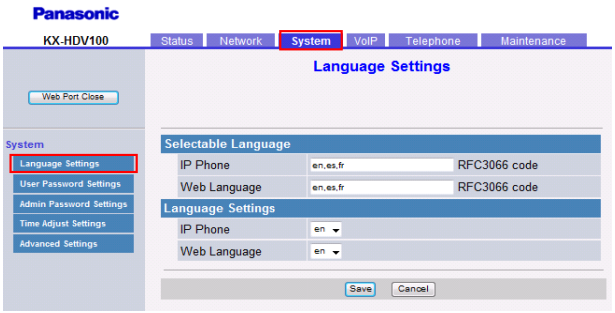
This section provides detailed descriptions about all the settings classified under the **[System]** tab.

4.4.1 Language Settings

This screen allows you to select the language used for the Web user interface. The language setting is only applicable when you log in to the Web user interface as User.

Note

- If you change the language while logged in to the Web user interface with the User account, the language will be changed after the message "Complete" is displayed. If you are logged in with the Administrator account, the language will be changed when a user logs in to the Web user interface as User.
- The language used for the Web user interface for the Administrator account is always English.
- The language used for the unit remains unchanged even if the language for the Web user interface is changed.



4.4.1.1 Selectable Language

IP Phone

Description	Specifies the selectable language on the unit. Up to 10 languages separated by commas can be registered. (e.g., "en,es,fr,de,it,nl,pt")

Value Range	• en: English • es: Spanish • fr: French • de: German • it: Italian • da: Danish • nl: Dutch • sv: Swedish • fi: Finnish • el: Greek • hu: Hungarian • pt: Portuguese • pl: Polish • sk: Slovakian • cs: Czech • sh: Croatian • ru: Russian • uk: Ukrainian • tr: Turkish • no: Norwegian • ro: Romanian • ct: Custom • kk: Kazakh • me: Montenegrin
Default Value	Depends on the country or area.
Configuration File Reference	AVAILABLE_LANGUAGE (Page 218)

Web Language

Description	Specifies the selectable language on the Web. Up to 10 languages separated by commas can be registered. (e.g., "en,es,fr,de,it,nl,pt")

Value Range	• en: English • es: Spanish • fr: French • de: German • it: Italian • nl: Dutch • el: Greek • hu: Hungarian • pt: Portuguese • pl: Polish • sk: Slovakian • cs: Czech • sh: Croatian • ru: Russian • uk: Ukrainian • tr: Turkish • ro: Romanian • ct: Custom • kk: Kazakh • me: Montenegrin
Default Value	Depends on the country or area.
Configuration File Reference	AVAILABLE_LANGUAGE_WEB (Page 219)

4.4.1.2 Language Settings

IP Phone

Description	Selects the default language on the unit. You can select a language from the languages set in **IP Phone** in **4.4.1.1 Selectable Language**.
Value Range	en, es, fr, de, it, da, nl, sv, fi, el, hu, pt, pl, sk, cs, sh, ru, uk, tr, no, ro, ct, kk → see **IP Phone** in **4.4.1.1 Selectable Language**
Default Value	en
Configuration File Reference	DEFAULT_LANGUAGE (Page 218)

Web Language

Description	Selects the default language on the web. You can select a language from the languages set in **Web Language** in **4.4.1.1 Selectable Language**.

Value Range	• en: English • es: Spanish • fr: French • de: German • it: Italian • nl: Dutch • el: Greek • hu: Hungarian • pt: Portuguese • pl: Polish • sk: Slovakian • cs: Czech • sh: Croatian • ru: Russian • uk: Ukrainian • tr: Turkish • ro: Romanian • ct: Custom • kk: Kazakh • me: Montenegrin
Default Value	en
Configuration File Reference	WEB_LANGUAGE (Page 219)

4.4.2 User Password Settings

This screen allows you to change the password used to authenticate the User account when logging in to the Web user interface.

Note

- For security reasons, the characters entered for the password are masked by special characters, which differ depending on the Web browser.
- After you change the user password, the next time you access the Web user interface, the authentication dialog box appears. Three consecutive login failures will result in an error ("401 Unauthorized"). This restriction only applies the first time you attempt to log in after changing the password. In all other circumstances, an error occurs after 3 unsuccessful login attempts.

4.4.2.1 User Password

Current Password

Description	Specifies the current password to use to authenticate the User account when logging in to the Web user interface.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space)
Default Value	Not stored.

New Password

Description	Specifies the new password to use to authenticate the User account when logging in to the Web user interface.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space) **Note** • A hyphen (-) cannot be used as the first character.
Default Value	Not stored. **Note** • When a user logs in to the Web user interface for the first time, after clicking **OK** on the authentication dialog box, the **[Initial User Password Settings]** screen is displayed automatically to make the user set a password.
Configuration File Reference	USER_PASS (Page 196)

Confirm New Password

Description	Specifies the same password that you entered in **[New Password]** for confirmation.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space)
Default Value	Not stored.

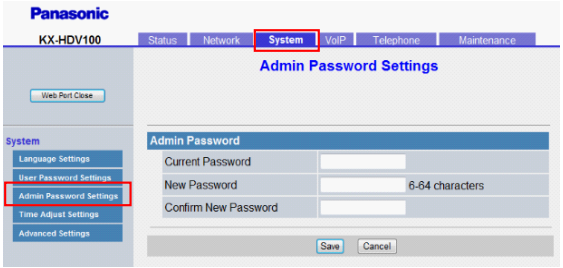
4.4.3 Admin Password Settings

This screen allows you to change the password used to authenticate the Administrator account when logging in to the Web user interface.

Note

- For security reasons, the characters entered for the password are masked by special characters, which differ depending on the Web browser.
- After you change the administrator password, the next time you access the Web user interface, the authentication dialog box appears. Three consecutive login failures will result in an error ("401

Unauthorized"). This restriction only applies the first time you attempt to log in after changing the password. In all other circumstances, an error occurs after 3 unsuccessful login attempts.



4.4.3.1 Admin Password

Current Password

Description	Specifies the current password to use to authenticate the Administrator account when logging in to the Web user interface.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space)
Default Value	adminpass

New Password

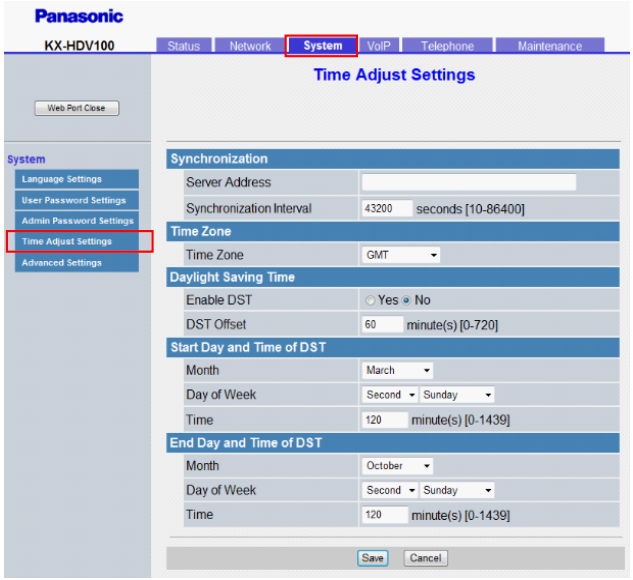
Description	Specifies the new password to use to authenticate the Administrator account when logging in to the Web user interface.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space) **Note** • A hyphen (-) cannot be used as the first character.
Default Value	Not stored.
Configuration File Reference	ADMIN_PASS (Page 197)

Confirm New Password

Description	Specifies the same password that you entered in **[New Password]** for confirmation.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space)
Default Value	Not stored.

4.4.4 Time Adjust Settings

This screen allows you to enable automatic clock adjustment using an NTP server and configure the settings for DST (Daylight Saving Time), also known as Summer Time.



4.4.4.1 Synchronization

Server Address

Description	Specifies the IP address or FQDN of NTP server.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	NTP_ADDR (Page 211)

Synchronization Interval

Description	Specifies the interval, in seconds, between synchronizations with the NTP server.
Value Range	10–86400
Default Value	43200
Configuration File Reference	TIME_QUERY_INTVL (Page 212)

4.4.4.2 Time Zone

Time Zone

Description	Selects your time zone.

Value Range	GMT -12:00–GMT +13:00
Default Value	GMT
Configuration File Reference	TIME_ZONE (Page 213)

4.4.4.3 Daylight Saving Time (Summer Time)

Enable DST (Enable Summer Time)

Description	Selects whether to enable Daylight Saving Time (Summer Time).
Value Range	• Yes • No
Default Value	No
Configuration File Reference	DST_ENABLE (Page 214)

DST Offset (Summer Time Offset)

Description	Specifies the amount of time, in minutes, to change the time when "DST_ENABLE" is set to "Y".
Value Range	0–720 (min)
Default Value	60
Configuration File Reference	DST_OFFSET (Page 214)

4.4.4.4 Start Day and Time of DST (Start Day and Time of Summer Time)

Month

Description	Selects the month in which DST (Summer Time) starts.
Value Range	• January • February • March • April • May • June • July • August • September • October • November • December
Default Value	March
Configuration File Reference	DST_START_MONTH (Page 214)

Day of Week

Using the 2 following settings, specify on which day of the selected month DST (Summer Time) starts. For example, to specify the second Sunday, select **[Second]** and **[Sunday]**.

Description	Selects the number of the week on which DST (Summer Time) starts.
Value Range	• First • Second • Third • Fourth • Last
Default Value	Second
Configuration File Reference	DST_START_ORDINAL_DAY (Page 215)

Description	Selects the day of the week on which DST (Summer Time) starts.
Value Range	• Sunday • Monday • Tuesday • Wednesday • Thursday • Friday • Saturday
Default Value	Sunday
Configuration File Reference	DST_START_DAY_OF_WEEK (Page 215)

Time

Description	Specifies the start time of DST (Summer Time) in minutes after 12:00 AM.
Value Range	0–1439 (min)
Default Value	120
Configuration File Reference	DST_START_TIME (Page 215)

4.4.4.5 End Day and Time of DST (End Day and Time of Summer Time)

Month

Description	Selects the month in which DST (Summer Time) ends.

Value Range	• January • February • March • April • May • June • July • August • September • October • November • December
Default Value	November
Configuration File Reference	DST_STOP_MONTH (Page 216)

Day of Week

Using the 2 following settings, specify on which day of the selected month DST (Summer Time) ends. For example, to specify the second Sunday, select **[Second]** and **[Sunday]**.

Description	Selects the number of the week on which DST (Summer Time) ends.
Value Range	• First • Second • Third • Fourth • Last
Default Value	First
Configuration File Reference	DST_STOP_ORDINAL_DAY (Page 216)

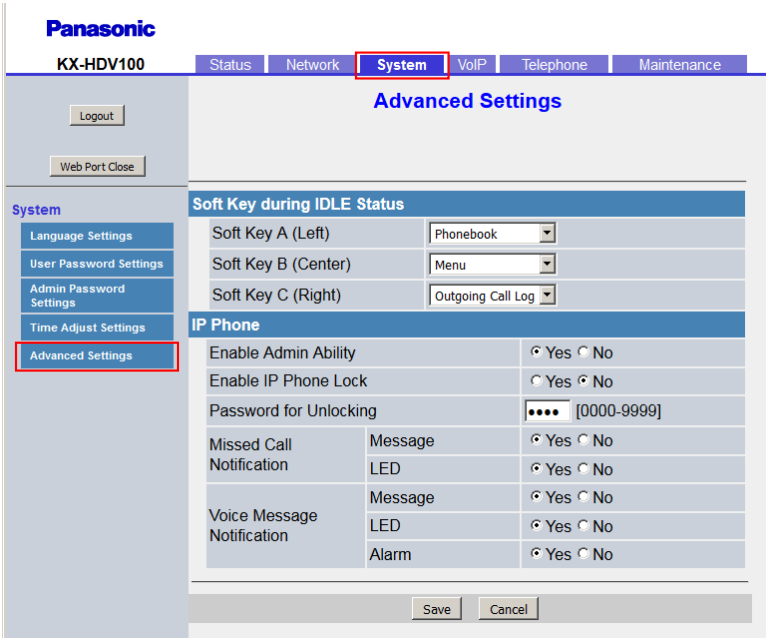
Description	Selects the day of the week on which DST (Summer Time) ends.
Value Range	• Sunday • Monday • Tuesday • Wednesday • Thursday • Friday • Saturday
Default Value	Sunday
Configuration File Reference	DST_STOP_DAY_OF_WEEK (Page 217)

Time

Description	Specifies the end time of DST (Summer Time) in minutes after 12:00 AM.
Value Range	0–1439 (min)
Default Value	120
Configuration File Reference	DST_STOP_TIME (Page 217)

4.4.5 Advanced Settings

This screen allows you to change the Soft Key function settings.



4.4.5.1 Soft Key during IDLE Status

Soft Key A (Left)

Description	Selects soft key (A) during IDLE state.
Value Range	• Phonebook • Menu • Outgoing Call Log • Incoming Call Log • Redial
Default Value	Phonebook
Configuration File Reference	IDLE_SOFT_KEY_A (Page 286)

Soft Key B (Center)

Description	Selects soft key (B) during IDLE state.
Value Range	• Phonebook • Menu • Outgoing Call Log • Incoming Call Log • Redial
Default Value	Menu
Configuration File Reference	IDLE_SOFT_KEY_B (Page 286)

Soft Key C (Right)

Description	Selects soft key (C) during IDLE state.
Value Range	• Phonebook • Menu • Outgoing Call Log • Incoming Call Log • Redial
Default Value	Outgoing Call Log
Configuration File Reference	IDLE_SOFT_KEY_C (Page 286)

4.4.5.2 IP Phone

Enable Admin Ability

Description	Selects whether to enable admin rights for the unit.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	ADMIN_ABILITY_ENABLE (Page 287)

Enable IP Phone Lock

Description	Selects whether to enable locking the unit.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	SYS_LOCK_ENABLE (Page 267)

Password for Unlocking

Description	Specifies the password for unlocking the unit.
Value Range	Null, 4 digits (0–9)
Default Value	Not stored.
Configuration File Reference	SYS_LOCK_PASSWORD (Page 267)

Missed Call Notification—Message

Description	Selects whether to display "Missed Calls" on the screen in standby mode. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	NOTIFY_MISSEDCALL_ENABLE (Page 173)

Missed Call Notification—LED

Description	Selects whether the LED is used to indicate a missed call. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	NOTIFY_MISSEDCALL_LED_ENABLE (Page 173)

Voice Message Notification—Message

Description	Selects whether to display "Voice MSG" on the screen in standby mode. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• Yes • No
Default Value	Yes

Configuration File Reference	NOTIFY_VOICEMAIL_ENABLE (Page 174)

Voice Message Notification—LED

Description	Selects whether the LED is used to indicate a new voice message. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	NOTIFY_VOICEMAIL_LED_ENABLE (Page 174)

Voice Message Notification—Alarm

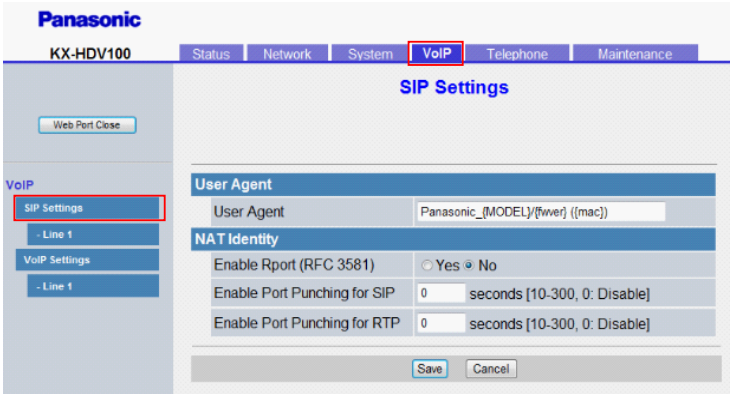
Description	Selects whether an alarm sound is used to indicate a new voice message. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	NOTIFY_VOICEMAIL_ALARM_ENABLE (Page 174)

4.5 VoIP

This section provides detailed descriptions about all the settings classified under the **[VoIP]** tab.

4.5.1 SIP Settings

This screen allows you to change the SIP settings that are common to all lines.



4.5.1.1 User Agent

User Agent

Description	Specifies the text string to send as the user agent in the headers of SIP messages.
Value Range	Max. 64 characters **Note** • If "{mac}" is included in this field, it will be replaced with the unit's MAC address in lower-case. • If "{MAC}" is included in this field, it will be replaced with the unit's MAC address in upper-case. • If "{MODEL}" is included in this field, it will be replaced with the unit's model name. • If "{fwver}" is included in this field, it will be replaced with the firmware version of the unit. • If "{sipver}" is included in this parameter, it will be replaced with the SIP software version of the unit.
Default Value	Panasonic-{MODEL}/{fwver} ({mac})
Configuration File Reference	SIP_USER_AGENT (Page 222)

4.5.1.2 NAT Identity

Enable Rport (RFC 3581)

Description	Selects whether to add the 'rport' parameter to the top Via header field value of requests generated.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	SIP_ADD_RPORT (Page 221)

Enable Port Punching for SIP

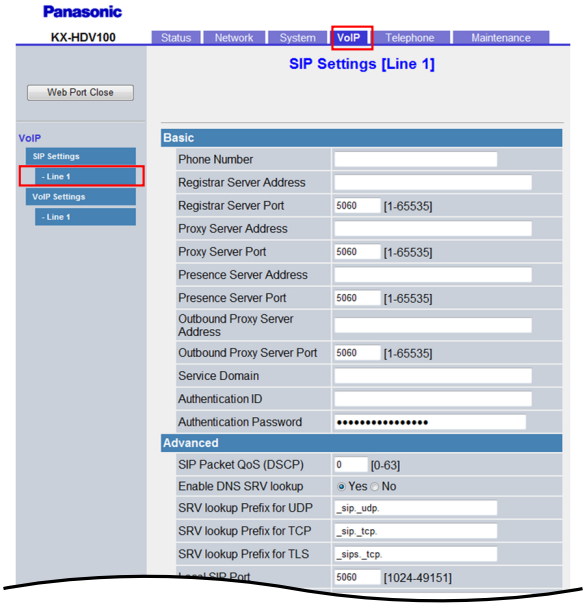
Description	Specifies the interval, in seconds, between transmissions of the Keep Alive packet in order to maintain the NAT binding information for SIP packet.
Value Range	0, 10–300 0: Disable
Default Value	0
Configuration File Reference	PORT_PUNCH_INTVL (Page 221)

Enable Port Punching for RTP

Description	Specifies the interval, in seconds, between transmissions of the Keep Alive packet in order to maintain the NAT binding information for RTP packet.
Value Range	0, 10–300 0: Disable
Default Value	0
Configuration File Reference	RTP_PORT_PUNCH_INTVL (Page 222)

4.5.2 SIP Settings [Line 1]

This screen allows you to change the SIP settings that are specific to each line.



4.5.2.1 Basic

Phone Number

Description	Specifies the phone number to use as the user ID required for registration to the SIP registrar server. **Note** • When registering using a user ID that is not a phone number, you should use the **[SIP URI]** setting.
Value Range	Max. 32 characters
Default Value	Not stored.
Configuration File Reference	PHONE_NUMBER_n (Page 223)

Registrar Server Address

Description	Specifies the IP address or FQDN of the SIP registrar server.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	SIP_RGSTR_ADDR_n (Page 223)

Registrar Server Port

Description	Specifies the port number to use for communication with the SIP registrar server.
Value Range	1–65535
Default Value	5060
Configuration File Reference	SIP_RGSTR_PORT_n (Page 224)

Proxy Server Address

Description	Specifies the IP address or FQDN of the SIP proxy server.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	SIP_PRXY_ADDR_n (Page 224)

Proxy Server Port

Description	Specifies the port number to use for communication with the SIP proxy server.
Value Range	1–65535
Default Value	5060
Configuration File Reference	SIP_PRXY_PORT_n (Page 224)

Presence Server Address

Description	Specifies the IP address or FQDN of the SIP presence server.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	SIP_PRSNC_ADDR_n (Page 224)

Presence Server Port

Description	Specifies the port number to use for communication with the SIP presence server.
Value Range	1–65535
Default Value	5060
Configuration File Reference	SIP_PRSNC_PORT_n (Page 225)

Outbound Proxy Server Address

Description	Specifies the IP address or FQDN of the SIP outbound proxy server.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	SIP_OUTPROXY_ADDR_n (Page 225)

Outbound Proxy Server Port

Description	Specifies the port number to use for communication with the SIP outbound proxy server.
Value Range	1–65535
Default Value	5060
Configuration File Reference	SIP_OUTPROXY_PORT_n (Page 225)

Service Domain

Description	Specifies the domain name provided by your phone system dealer/ service provider. The domain name is the part of the SIP URI that comes after the "@" symbol.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	SIP_SVCDOMAIN_n (Page 226)

Authentication ID

Description	Specifies the authentication ID required to access the SIP server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	SIP_AUTHID_n (Page 226)

Authentication Password

Description	Specifies the authentication password used to access the SIP server.
Value Range	Max. 128 characters
Default Value	Not stored.
Configuration File Reference	SIP_PASS_n (Page 226)

4.5.2.2 Advanced

SIP Packet QoS (DSCP)

Description	Specifies the DSCP (Differentiated Services Code Point) level of DiffServ applied to SIP packets.
Value Range	0–63
Default Value	0
Configuration File Reference	DSCP_SIP_n (Page 227)

Enable DNS SRV lookup

Description	Selects whether to request the DNS server to translate domain names into IP addresses using the SRV record.
Value Range	• Yes • No **Note** • If you select **[Yes]**, the unit will perform a DNS SRV lookup for a SIP registrar server, SIP proxy server, SIP outbound proxy server, or SIP presence server. If you select **[No]**, the unit will not perform a DNS SRV lookup for a SIP registrar server, SIP proxy server, SIP outbound proxy server, or SIP presence server.
Default Value	Yes
Configuration File Reference	SIP_DNSSRV_ENA_n (Page 227)

SRV lookup Prefix for UDP

Description	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using UDP. **Note** • This setting is available only when **[Enable DNS SRV lookup]** is set to **[Yes]**.
Value Range	Max. 32 characters
Default Value	_sip._udp.
Configuration File Reference	SIP_UDP_SRV_PREFIX_n (Page 227)

SRV lookup Prefix for TCP

Description	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using TCP. **Note** • This setting is available only when **[Enable DNS SRV lookup]** is set to **[Yes]**.
Value Range	Max. 32 characters
Default Value	_sip._tcp.
Configuration File Reference	SIP_TCP_SRV_PREFIX_n (Page 228)

SRV lookup Prefix for TLS

Description	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using TLS. **Note** • This setting is available only when **[Enable DNS SRV lookup]** is set to **[Yes]**.
Value Range	Max. 32 characters
Default Value	_sips._tls.
Configuration File Reference	SIP_TLS_SRV_PREFIX_n (Page 249)

Local SIP Port

Description	Specifies the source port number used by the unit for SIP communication.
Value Range	1024–49151
Default Value	5060 (for Line 1)
Configuration File Reference	SIP_SRC_PORT_n (Page 226)

SIP URI

Description	Specifies the unique ID used by the SIP registrar server, which consists of "sip:", a user part, the "@" symbol, and a host part, for example, "sip:user@example.com", "2405551111_1". **Note** • When registering using a user ID that is not a phone number, you should use this setting. • In a SIP URI, the user part ("user" in the example above) can contain up to 63 characters, and the host part ("example.com" in the example above) can contain up to 316 characters.

Value Range	Max. 384 characters
Default Value	Not stored.
Configuration File Reference	SIP_URI_n (Page 223)

T1 Timer

Description	Specifies the default interval, in milliseconds, between transmissions of SIP messages.
Value Range	• 250 • 500 • 1000 • 2000 • 4000
Default Value	500
Configuration File Reference	SIP_TIMER_T1_n (Page 230)

T2 Timer

Description	Specifies the maximum interval, in seconds, between transmissions of SIP messages.
Value Range	• 2 • 4 • 8 • 16 • 32
Default Value	4
Configuration File Reference	SIP_TIMER_T2_n (Page 230)

REGISTER Expires Timer

Description	Specifies the length of time, in seconds, that the registration remains valid. This value is set in the "Expires" header of the REGISTER request.
Value Range	1–4294967295
Default Value	3600
Configuration File Reference	REG_EXPIRE_TIME_n (Page 228)

Enable Session Timer (RFC 4028)

Description	Specifies the length of time, in seconds, that the unit waits before terminating SIP sessions when no reply to repeated requests is received.
Value Range	0, 60–65535
Default Value	0
Configuration File Reference	SIP_SESSION_TIME_n (Page 229)

Session Timer Method

Description	Selects the refreshing method of SIP sessions.
Value Range	• INVITE • UPDATE • INVITE/UPDATE
Default Value	INVITE
Configuration File Reference	SIP_SESSION_METHOD_n (Page 230)

Enable 100rel (RFC 3262)

Description	Specifies whether to add the option tag 100rel to the "Supported" header of the INVITE message.
Value Range	• Yes • No **Note** • If you select **[Yes]**, the Reliability of Provisional Responses function will be enabled. The option tag 100rel will be added to the "Supported" header of the INVITE message and to the "Require" header of the "1xx" provisional message. If you select **[No]**, the option tag 100rel will not be used.
Default Value	Yes
Configuration File Reference	SIP_100REL_ENABLE_n (Page 232)

Enable SSAF (SIP Source Address Filter)

Description	Selects whether to enable SSAF for the SIP servers (registrar server, proxy server, and presence server).
Value Range	• Yes • No
Default Value	No
Configuration File Reference	SIP_DETECT_SSAF_n (Page 235)

Enable c=0.0.0.0 Hold (RFC 2543)

Description	Selects whether to enable the RFC 2543 Call Hold feature on this line.
Value Range	• Yes • No **Note** • If you select **[Yes]**, the "c=0.0.0.0" syntax will be set in SDP when sending a re-INVITE message to hold the call. If you select **[No]**, the "c=x.x.x.x" syntax will be set in SDP.
Default Value	Yes
Configuration File Reference	RFC2543_HOLD_ENABLE_n (Page 242)

Transport Protocol

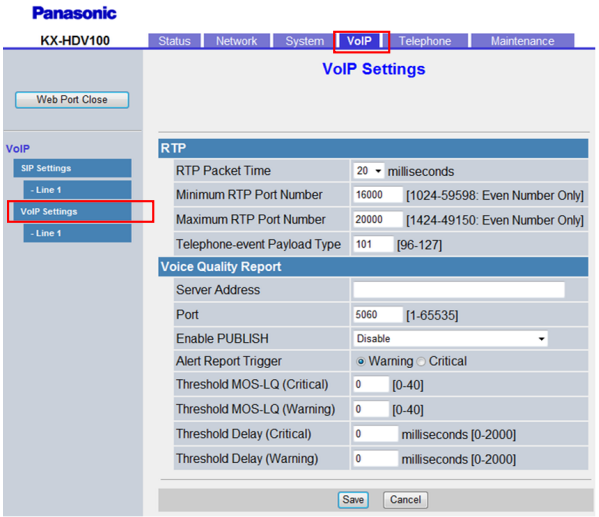
Description	Selects which transport layer protocol to use for sending SIP packets.
Value Range	• UDP • TCP • TLS
Default Value	UDP
Configuration File Reference	SIP_TRANSPORT_n (Page 248)

TLS Mode

Description	Select the secure SIP protocol.
Value Range	• SIPS • SIP-TLS
Default Value	SIPS
Configuration File Reference	SIP_TLS_MODE_n (Page 249)

4.5.3 VoIP Settings

This screen allows you to change the VoIP settings that are common to all lines.



4.5.3.1 RTP

RTP Packet Time

Description	Selects the interval, in milliseconds, between transmissions of RTP packets.
Value Range	• 20 • 30 • 40 • 60
Default Value	20
Configuration File Reference	RTP_PTIME (Page 256)

Minimum RTP Port Number

Description	Specifies the lowest port number that the unit will use for RTP packets.
Value Range	1024–59598 (even number only)
Default Value	16000
Configuration File Reference	RTP_PORT_MIN (Page 255)

Maximum RTP Port Number

Description	Specifies the highest port number that the unit will use for RTP packets.
Value Range	1424–59998 (even number only)

Default Value	20000
Configuration File Reference	RTP_PORT_MAX (Page 256)

Telephone-event Payload Type

Description	Specifies the RFC 2833 payload type for DTMF tones. **Note** • This setting is available only when **[DTMF Type]** is set to **[RFC2833]**.
Value Range	96–127
Default Value	101
Configuration File Reference	TELEVENT_PAYLOAD (Page 243)

4.5.3.2 Voice Quality Report

Server Address

Description	Specifies the IP address or FQDN of the collector server.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	VQREPORT_COLLECTOR_ADDRESS (Page 259)

Port

Description	Specifies the port of the collector server.
Value Range	1–65535
Default Value	5060
Configuration File Reference	VQREPORT_COLLECTOR_PORT (Page 260)

Enable PUBLISH

Description	Selects the sending type of the VQ report using PUBLISH.
Value Range	• Disable • End of Session Report Using PUBLISH • Interval report Using PUBLISH • Alert Report Using PUBLISH
Default Value	Disable
Configuration File Reference	VQREPORT_SEND (Page 260)

Alert Report Trigger

Description	Selects the trigger to notify the VQ report.
Value Range	• Warning • Critical
Default Value	Warning
Configuration File Reference	ALERT_REPORT_TRIGGER (Page 260)

Threshold MOS-LQ (Critical)

Description	Specifies the criteria (critical) to send the VQ report when the MOSQ occurs.
Value Range	0–40
Default Value	0
Configuration File Reference	ALERT_REPORT_MOSQ_CRITICAL (Page 260)

Threshold MOS-LQ (Warning)

Description	Specifies the criteria (warning) to send the VQ report when the MOSQ occurs.
Value Range	0–40
Default Value	0
Configuration File Reference	ALERT_REPORT_MOSQ_WARNING (Page 261)

Threshold Delay (Critical)

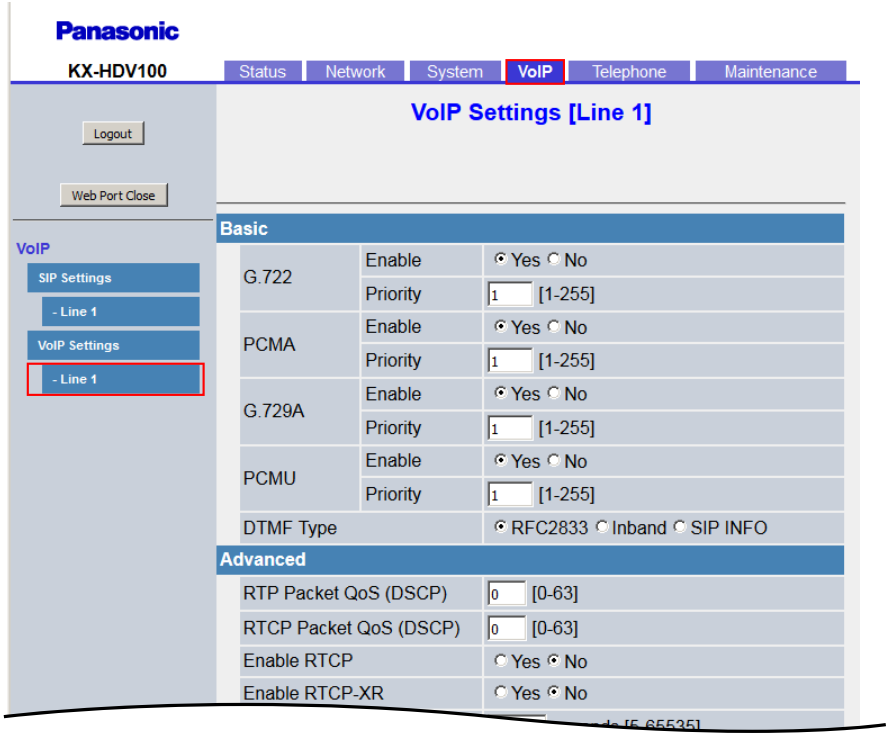
Description	Specifies the criteria (critical) to send the VQ report when a delay occurs.
Value Range	0–2000
Default Value	0
Configuration File Reference	ALERT_REPORT_DELAY_CRITICAL (Page 261)

Threshold Delay (Warning)

Description	Specifies the criteria (warning) to send the VQ report when a delay occurs.
Value Range	0–2000
Default Value	0
Configuration File Reference	ALERT_REPORT_DELAY_WARNING (Page 261)

4.5.4 VoIP Settings [Line 1]

This screen allows you to change the VoIP settings that are specific to each line.



4.5.4.1 Basic

G.722 (Enable)

Description	Selects whether to enable the G.722 codec for voice data transmission.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	CODEC_ENABLEx_n (Page 251)

G.722 (Priority)

Description	Specifies the numerical order usage priority for the G.722 codec.
Value Range	1–255
Default Value	1
Configuration File Reference	CODEC_PRIORITYx_n (Page 252)

PCMA (Enable)

Description	Selects whether to enable the PCMA codec for voice data transmission.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	CODEC_ENABLEx_n (Page 251)

PCMA (Priority)

Description	Specifies the numerical order usage priority for the PCMA codec.
Value Range	1–255
Default Value	1
Configuration File Reference	CODEC_PRIORITYx_n (Page 252)

G.729A (Enable)

Description	Selects whether to enable the G.729A codec for voice data transmission.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	CODEC_ENABLEx_n (Page 251)

G.729A (Priority)

Description	Specifies the numerical order usage priority for the G.729A codec.
Value Range	1–255
Default Value	1
Configuration File Reference	CODEC_PRIORITYx_n (Page 252)

PCMU (Enable)

Description	Selects whether to enable the PCMU codec for voice data transmission.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	CODEC_ENABLEx_n (Page 251)

PCMU (Priority)

Description	Specifies the numerical order usage priority for the PCMU codec.
Value Range	1–255
Default Value	1
Configuration File Reference	CODEC_PRIORITYx_n (Page 252)

DTMF Type

Description	Selects the method for transmitting DTMF (Dual Tone Multi-Frequency) tones.
Value Range	• RFC2833 • Inband • SIP INFO **Note** • RFC2833 refers to Outband DTMF. • Inband refers to Inband DTMF.
Default Value	RFC2833
Configuration File Reference	DTMF_METHOD_n (Page 253)

4.5.4.2 Advanced

RTP Packet QoS (DSCP)

Description	Specifies the DSCP level of DiffServ applied to RTP packets.
Value Range	0–63
Default Value	0
Configuration File Reference	DSCP_RTP_n (Page 254)

RTCP Packet QoS (DSCP)

Description	Specifies the DSCP level of DiffServ applied to RTCP/RTCP-XR packets.
Value Range	0–63
Default Value	0
Configuration File Reference	DSCP_RTCP_n (Page 254)

Enable RTCP

Description	Selects whether to enable or disable RTCP.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	RTCP_ENABLE_n (Page 256)

Enable RTCP-XR

Description	Selects whether to enable or disable RTCP-XR.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	RTCPXR_ENABLE_n (Page 257)

RTCP&RTCP-XR Interval

Description	Specifies the interval, in seconds, between RTCP/RTCP-XR packets.
Value Range	5–65535
Default Value	5
Configuration File Reference	RTCP_INTVL_n (Page 256)

SRTP Mode

Description	Selects the mode of SRTP feature.

Value Range	• 0: SRTP • 1: RTP/SRTP • 2: Panasonic Original • 3: SRTP/RTP **Note** • 0: SRTP Use only SRTP for outgoing and incoming calls. • 1: RTP/SRTP Use only RTP for outgoing calls, and RTP or SRTP for incoming calls. • 2: Panasonic Original Use RTP or SRTP for both outgoing and incoming calls. This value is valid only when the unit is connected to a Panasonic PBX. "**SRTP_MIX_TRANSFER_ENABLE_n**" must also be set to "**Y**". • 3: SRTP/RTP If you are using "RTP/AVP" and append "a=crypto", and the response message includes "a=crypto", the conversation will be established with SRTP. If "a=crypto" is not included, the conversation will be established with RTP.
Default Value	1: RTP/SRTP
Configuration File Reference	SRTP_CONNECT_MODE_n (Page 258)

Enable Mixed SRTP & RTP by Conference

Description	Selects whether to allow conferences where each participant can use either SRTP or RTP.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	SRTP_MIX_CONFERENCE_ENABLE_n (Page 258)

Enable Mixed SRTP & RTP by Transfer

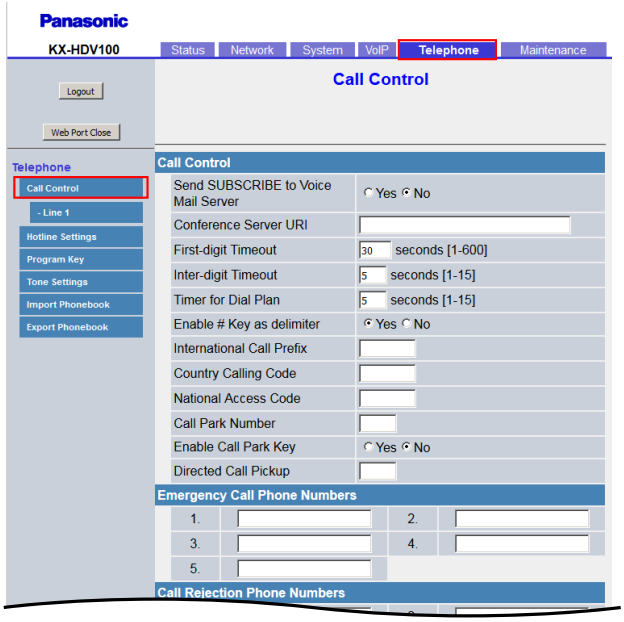
Description	Selects whether to allow call transfers between a user who is using SRTP and a user who is using RTP.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	SRTP_MIX_TRANSFER_ENABLE_n (Page 258)

4.6 Telephone

This section provides detailed descriptions about all the settings classified under the **[Telephone]** tab.

4.6.1 Call Control

This screen allows you to configure various call features that are common to all lines.



4.6.1.1 Call Control

Send SUBSCRIBE to Voice Mail Server

Description	Selects whether to send the SUBSCRIBE request to a voice mail server. **Note** • Your phone system must support voice mail.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	VM_SUBSCRIBE_ENABLE (Page 282)

Conference Server URI

Description	Specifies the URI for a conference server, which consists of "sip:", a user part, the "@" symbol, and a host part, for example, "sip:conference@example.com". **Note** • Availability depends on your phone system.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	CONFERENCE_SERVER_URI (Page 291)

First-digit Timeout

Description	Specifies the length of time, in seconds, within which the first digits of a dial number must be dialed.
Value Range	1–600 (s)
Default Value	30
Configuration File Reference	FIRSTDIGIT_TIM (Page 262)

Inter-digit Timeout

Description	Specifies the length of time, in seconds, within which subsequent digits of a dial number must be dialed.
Value Range	1–15 (s)
Default Value	5
Configuration File Reference	INTDIGIT_TIM (Page 263)

Timer for Dial Plan

Description	Specifies the length of time, in seconds, that the unit waits when a "T" or "t" has been entered in the dial plan.
Value Range	1–15 (s)
Default Value	5
Configuration File Reference	MACRODIGIT_TIM (Page 285)

Enable # Key as delimiter

Description	Selects whether the # key is treated as a regular dialed digit or a delimiter, when dialed as or after the second digit.

Value Range	• Yes: # is treated as the end of dialing delimiter. • No: # is treated as a regular dialed digit.
Default Value	Yes
Configuration File Reference	POUND_KEY_DELIMITER_ENABLE (Page 263)

International Call Prefix

Description	Specifies the number to be shown in the place of the first "+" symbol when the phone number for incoming international calls contains "+".
Value Range	Max. 8 characters (consisting of 0–9, *, and #)
Default Value	Not stored.
Configuration File Reference	INTERNATIONAL_ACCESS_CODE (Page 285)

Country Calling Code

Description	Specifies the country/area calling code to be used for comparative purposes when dialing a number from the incoming call log that contains a "+" symbol.
Value Range	Max. 8 characters (consisting of 0–9, *, and #)
Default Value	Not stored.
Configuration File Reference	COUNTRY_CALLING_CODE (Page 285)

National Access Code

Description	When dialing a number from the incoming call log that contains a "+" symbol and the country calling code matches, the country calling code is removed and the national access code is added.
Value Range	Max. 8 characters (consisting of 0–9, *, and #)
Default Value	Not stored.
Configuration File Reference	NATIONAL_ACCESS_CODE (Page 285)

Call Park Number

Description	Specifies the call parking number.
Value Range	0–4 digits (0–9, *, #)
Default Value	Not stored.
Configuration File Reference	NUM_PLAN_PARKING (Page 264)

Enable Call Park Key

Description	Selects whether to display "Call Park" in the Call Parking Func menu.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	CALLPARK_KEY_ENABLE (Page 265)

Directed Call Pickup

Description	Specifies the feature number assigned to a BLF for performing call pickup.
Value Range	0–4 digits (0–9, *, #)
Default Value	Not stored.
Configuration File Reference	NUM_PLAN_PICKUP_DIRECT (Page 267)

Private Hold

Description	Selects whether to enable or disable "Private Hold".
Value Range	• Yes • No
Default Value	No
Configuration File Reference	PRIVATE_HOLD_ENABLE (Page 176)

4.6.1.2 Emergency Call Phone Numbers

1–5

Description	Specifies the phone numbers used for making emergency calls. A user can dial any of the specified phone numbers at any time regardless of any restrictions imposed on the unit. A maximum of 5 phone numbers can be specified.
Value Range	Max. 32 characters (except &, ", ', :, ;, <, >)
Default Value	Not stored.
Configuration File Reference	EMERGENCY_CALLx (Page 287)

4.6.1.3 Call Rejection Phone Numbers

1–30

Description	Specifies the phone numbers to reject incoming calls from. A maximum of 30 phone numbers can be specified.
Value Range	Max. 32 characters (except &, ", ', :, ;, <, >)
Default Value	Not stored.
Configuration File Reference	CALL_REJECTIONx (Page 287)

4.6.2 Call Control [Line 1]

This screen allows you to configure various call features that are specific to each line.

4.6.2.1 Call Features

Display Name

Description	Specifies the name to display as the caller on the other party's phone when you make a call.

Value Range	Max. 24 characters **Note** • You can use Unicode characters for this setting.
Default Value	Not stored.
Configuration File Reference	DISPLAY_NAME_n (Page 282)

Voice Mail Access Number

Description	Specifies the phone number used to access the voice mail server. **Note** • Your phone system must support voice mail.
Value Range	Max. 32 characters
Default Value	Not stored.
Configuration File Reference	VM_NUMBER_n (Page 283)

Enable Anonymous Call

Description	Selects whether to make calls without transmitting the phone number to the called party.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	ANONYMOUS_CALL_ENABLE_n (Page 281)

Enable Block Anonymous Call

Description	Selects whether to accept or reject the incoming call without the called party's phone number.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	BLOCK_ANONYMOUS_CALL_ENABLE_n (Page 281)

Enable Do Not Disturb

Description	Selects whether to reject the all incoming calls.
Value Range	• Yes • No

Default Value	No

Enable Call Waiting

Description	Selects whether to enable Call Waiting.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	CW_ENABLE_n (Page 291)

Enable Call Forwarding Always

Description	Selects whether to forward all incoming calls to a specified destination.
Value Range	• Yes • No
Default Value	No

Forwarding Number (Always)

Description	Specifies the phone number of the destination to forward all incoming calls to.
Value Range	Max. 32 characters
Default Value	Not stored.

Enable Call Forwarding Busy

Description	Selects whether to forward incoming calls to a specified destination when the line is in use.
Value Range	• Yes • No
Default Value	No

Forwarding Number (Busy)

Description	Specifies the phone number of the destination to forward calls to when the line is in use.
Value Range	Max. 32 characters
Default Value	Not stored.

Enable Call Forwarding No Answer

Description	Selects whether to forward incoming calls to a specified destination when a call is not answered after it has rung a specified number of times.
Value Range	• Yes • No
Default Value	No

Forwarding Number (No Answer)

Description	Specifies the phone number of the destination to forward calls to when a call is not answered after it has rung a specified number of times.
Value Range	Max. 32 characters
Default Value	Not stored.

Ring Counts (No Answer)

Description	Specifies the number of times that an incoming call rings until the call is forwarded.
Value Range	0, 2–20
Default Value	3

Enable Key Synchronization

Description	Selects whether to synchronize the Do Not Disturb and Call Forward settings. **Note** • Even if you select **[Yes]**, this feature may not function properly if your phone system does not support it. Before you configure this setting, consult your phone system dealer/service provider.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	FWD_DND_SYNCHRO_ENABLE_n (Page 288)

MoH Server URI

Description	Specifies MoH server URI for each line.
Value Range	Max. 384 characters

Default Value	Not stored.
Configuration File Reference	MOH_SERVER_URI_n (Page 289)

Resource List URI

Description	Specifies the URI for the resource list, which consists of "sip:", a user part, the "@" symbol, and a host part.
Value Range	Max. 256 characters
Default Value	Not stored.
Configuration File Reference	RESOURCELIST_URI_n (Page 292)

4.6.2.2 Dial Plan

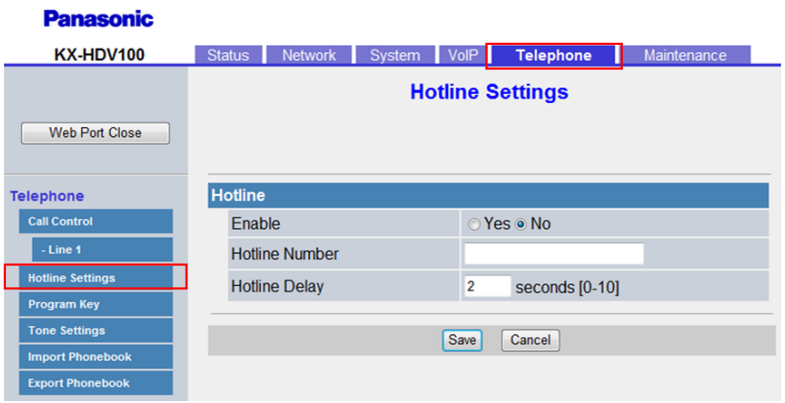
Dial Plan (max 1000 columns)

Description	Specifies a dial format, such as specific phone numbers, that control which numbers can be dialed or how to handle the call when making a call. For details, see **6.2 Dial Plan**.
Value Range	Max. 1000 characters
Default Value	Not stored.
Configuration File Reference	DIAL_PLAN_n (Page 283)

Call Even If Dial Plan Does Not Match

Description	Selects whether to make a call even if the dialed number does not match any of the dial formats specified in **[Dial Plan]**.
Value Range	• Yes • No **Note** • If you select **[Yes]**, calls will be made even if the dialed number does not match the dial formats specified in **[Dial Plan]** (i.e., dial plan filtering is disabled). If you select **[No]**, calls will not be made if the dialed number does not match one of the dial formats specified in **[Dial Plan]** (i.e., dial plan filtering is enabled).
Default Value	Yes
Configuration File Reference	DIAL_PLAN_NOT_MATCH_ENABLE_n (Page 284)

4.6.3 Hotline Settings



4.6.3.1 Hotline

Enable

Description	Selects whether to enable or disable the Hot line feature.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	HOTLINE_ENABLE (Page 281)

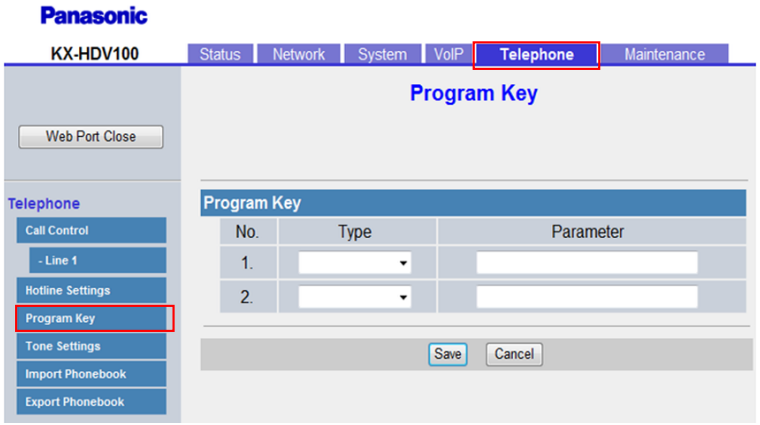
Hotline Number

Description	Specifies the Hot line number.
Value Range	Max. 32 characters
Default Value	Not stored.
Configuration File Reference	HOTLINE_NUMBER (Page 282)

Hotline Delay

Description	Specifies a time after off hook for Hot line.
Value Range	0–10 (s)
Default Value	2
Configuration File Reference	HOTLINE_TIM (Page 282)

4.6.4 Program Key (No. 1–2)



Type

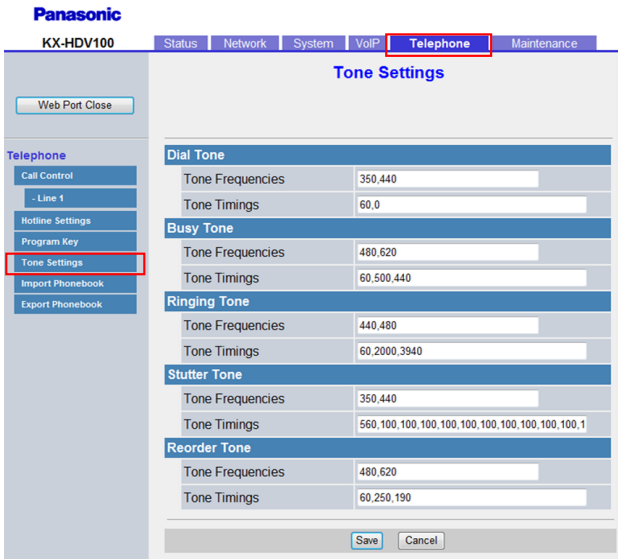
Description	Selected a particular Facility Action for the flexible button. No facility action will be taken for the button if the string is empty or invalid.
Value Range	• One Touch Dial • BLF
Default Value	Not stored.
Configuration File Reference	FLEX_BUTTON_FACILITY_ACTx (Page 269)

Parameter

Description	Specifies an optional argument associated with the specified Facility Action for the flexible button.
Value Range	Max. 32 characters
Default Value	Not stored.
Configuration File Reference	FLEX_BUTTON_FACILITY_ARGx (Page 269)

4.6.5 Tone Settings

This screen allows you to configure the dual-tone frequencies and ringtone patterns of each tone.



4.6.5.1 Dial Tone

Tone Frequencies

Description	Specifies the dual-tone frequencies, in hertz, of dial tones using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (0: No tone) **Note** • If the value for this setting is "350,440", the unit will use a mixed signal of a 350 Hz tone and a 440 Hz tone.
Default Value	350,440
Configuration File Reference	DIAL_TONE1_FRQ (Page 272)

Tone Timings

Description	Specifies the pattern, in milliseconds, of dial tones using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • The unit will not play the tone for the duration of the first value, play it for the duration of the second value, stop it for the duration of the third value, play it again for the duration of the fourth value, and so on. The whole sequence will then repeat. For example, if the value for this setting is "100,100,100,0", the unit will not play the tone for 100 ms, play it for 100 ms, stop it for 100 ms, and then play it continuously. • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).
Value Range	0–16000 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,0
Configuration File Reference	DIAL_TONE1_TIMING (Page 272)

4.6.5.2 Busy Tone

Tone Frequencies

Description	Specifies the dual-tone frequencies, in hertz, of busy tones using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (0: No tone) **Note** • If the value for this setting is "480,620", the unit will use a mixed signal of a 480 Hz tone and a 620 Hz tone.
Default Value	480,620
Configuration File Reference	BUSY_TONE_FRQ (Page 275)

Tone Timings

Description	Specifies the pattern, in milliseconds, of busy tones using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas.
Value Range	0–16000 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,500,440

Configuration File Reference	BUSY_TONE_TIMING (Page 275)

4.6.5.3 Ringing Tone

Tone Frequencies

Description	Specifies the dual-tone frequencies, in hertz, of ringback tones using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (0: No tone) **Note** • f the value for this setting is "440,480", the unit will use a mixed signal of a 440 Hz tone and a 480 Hz tone.
Default Value	440,480
Configuration File Reference	RINGBACK_TONE_FRQ (Page 277)

Tone Timings

Description	Specifies the pattern, in milliseconds, of ringback tones using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).
Value Range	0–16000 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,2000,3940
Configuration File Reference	RINGBACK_TONE_TIMING (Page 277)

4.6.5.4 Stutter Tone

Tone Frequencies

Description	Specifies the dual-tone frequencies, in hertz, of stutter dial tones to notify that a voice mail is waiting, using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (0: No tone) **Note** • If the value for this setting is "350,440", the unit will use a mixed signal of a 350 Hz tone and a 440 Hz tone.
Default Value	350,440

Configuration File Reference	DIAL_TONE4_FRQ (Page 274)

Tone Timings

Description	Specifies the pattern, in milliseconds, of stutter dial tones to notify that a voice mail is waiting, using up to 22 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 560 milliseconds or more for the first value (off 1).
Value Range	0–16000 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	560,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,0
Configuration File Reference	DIAL_TONE4_TIMING (Page 274)

4.6.5.5 Reorder Tone

Tone Frequencies

Description	Specifies the dual-tone frequencies, in hertz, of reorder tones using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (0: No tone) **Note** • If the value for this setting is "480,620", the unit will use a mixed signal of a 480 Hz tone and a 620 Hz tone.
Default Value	480,620
Configuration File Reference	REORDER_TONE_FRQ (Page 276)

Tone Timings

Description	Specifies the pattern, in milliseconds, of reorder tones using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).
Value Range	0–16000 (0: Infinite time)

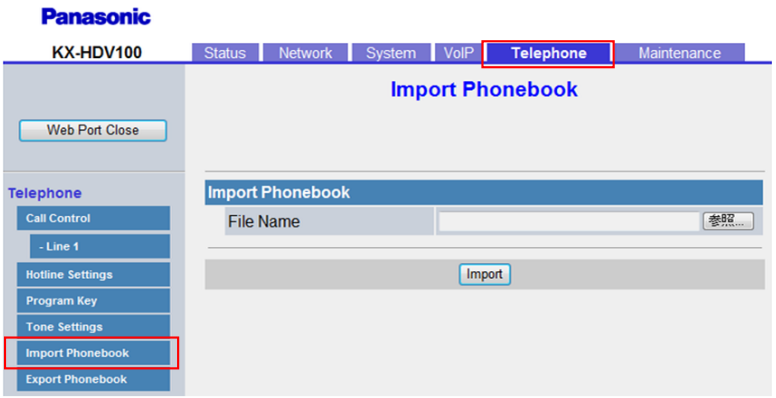
Default Value	60,250,190 **Note** • Avoid setting 1–50 for any of the values.
Configuration File Reference	REORDER_TONE_TIMING (Page 276)

4.6.6 Import Phonebook

This screen allows you to import phonebook data from a PC to the specified unit. For details, see **6.1.1 Import/ Export Operation**.

Note

- If the existing phonebook data has an entry with the same name and phone number as an imported entry, the imported entry is not added as a new entry.
- When you begin transferring the phonebook data, the "Now Processing File Data" screen is displayed, and the screen is periodically reloaded. Depending on your Web browser, the screen might not reload automatically, and you will need to click the text "HERE" before the timer expires in order for the import operation to function properly.



4.6.6.1 Import Phonebook

File Name

Description	Specifies the path of the TSV (Tab-separated Value) file to import from the PC.
Value Range	No limitation **Note** • There are no limitations for the field entry. However, it is recommended that paths of less than 256 characters be used: longer paths may cause longer data transfer times and result in an internal error.
Default Value	Not stored.

4.6.7 Export Phonebook

This screen allows you to save the phonebook data stored in the unit as a TSV file on a PC. For details, see **6.1.1 Import/Export Operation**.

Note

- When you begin transferring the phonebook data, the "Now Processing File Data" screen is displayed, and the screen is periodically reloaded. Click the text "HERE" in the message to display the **[Export Phonebook]** screen again. If you do not, the "Now Processing File Data" screen remains displayed even if the export is complete. Depending on your Web browser, the screen might not reload automatically, and you will need to click the text "HERE" before the timer expires in order for the export operation to function properly.
- Depending on the security settings of your Web browser, pop-up menus might be blocked at the time of export. The security warning window may be displayed on another screen even if the Pop-up Blocker settings are set to enable, and the file may not be exported successfully. In this case, try the export operation again or disable the Pop-up Blocker feature of your Web browser.

4.6.7.1 Export Phonebook

Export Phonebook

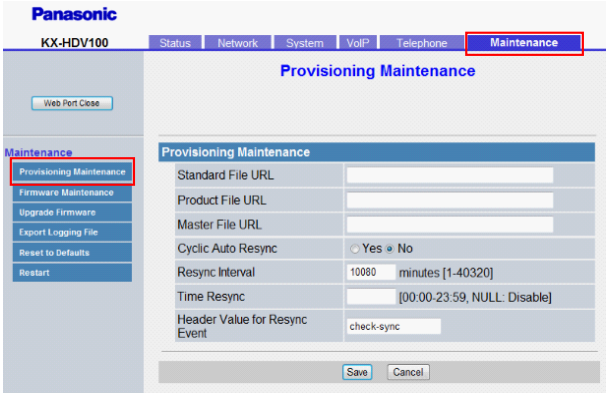
Click **[Export]** button to export the phonebook from this unit.

4.7 Maintenance

This section provides detailed descriptions about all the settings classified under the **[Maintenance]** tab.

4.7.1 Provisioning Maintenance

This screen allows you to change the provisioning setup to download the configuration files from the provisioning server of your phone system.



4.7.1.1 Provisioning Maintenance

Standard File URL

Description	Specifies the URL of the standard configuration file, which is used when every unit needs different settings.
Value Range	Max. 384 characters
Default Value	Not stored.
Configuration File Reference	CFG_STANDARD_FILE_PATH (Page 187)

Product File URL

Description	Specifies the URL of the product configuration file, which is used when all units with the same model number need the same settings.
Value Range	Max. 384 characters
Default Value	Not stored.
Configuration File Reference	CFG_PRODUCT_FILE_PATH (Page 187)

Master File URL

Description	Specifies the URL of the master configuration file, which is used when all units need the same settings.

Value Range	Max. 384 characters
Default Value	Not stored.
Configuration File Reference	CFG_MASTER_FILE_PATH (Page 187)

Cyclic Auto Resync

Description	Selects whether the unit periodically checks for updates of configuration files.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	CFG_CYCLIC (Page 188)

Resync Interval

Description	Specifies the interval, in minutes, between periodic checks for updates of the configuration files.
Value Range	1–40320
Default Value	10080
Configuration File Reference	CFG_CYCLIC_INTVL (Page 188)

Time Resync

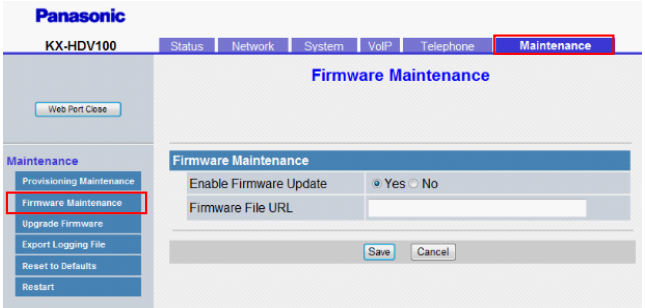
Description	Specifies the time (hour:minute) that the unit checks for updates of configuration files.
Value Range	00:00–23:59
Default Value	Not stored.
Configuration File Reference	CFG_RESYNC_TIME (Page 188)

Header Value for Resync Event

Description	Specifies the value of the "Event" header sent from the SIP server to the unit so that the unit can access the configuration files on the provisioning server.
Value Range	Max. 15 characters
Default Value	check-sync
Configuration File Reference	CFG_RESYNC_FROM_SIP (Page 189)

4.7.2 Firmware Maintenance

This screen allows you to perform firmware updates automatically.



4.7.2.1 Firmware Maintenance

Enable Firmware Update

Description	Selects whether to perform firmware updates when the unit detects a newer version of firmware. **Note** • Manual firmware updates from the Web user interface (→ see **4.7.3 Upgrade Firmware**) can be performed regardless of this setting. • Firmware updates using TR-069 can be performed regardless of this setting.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	FIRM_UPGRADE_ENABLE (Page 192)

Firmware File URL

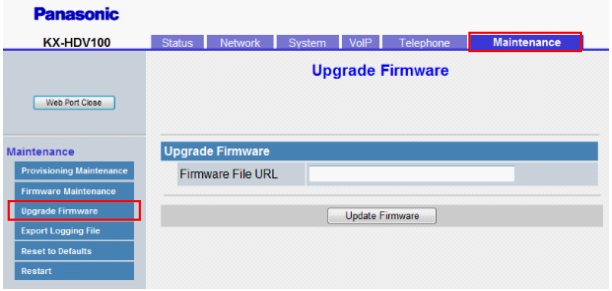
Description	Specifies the URI where the firmware file is stored. **Note** • This setting is available only when **[Enable Firmware Update]** is set to **[Yes]**.
Value Range	Max. 384 characters
Default Value	Not stored.
Configuration File Reference	FIRM_FILE_PATH (Page 192)

4.7.3 Upgrade Firmware

This screen allows you to download the Upgrade Firmware data from an HTTP server.
You can upgrade the firmware manually, irrespective of the **[Enable Firmware Update]** setting.

Note

- After the firmware has been successfully updated, the unit will restart automatically.



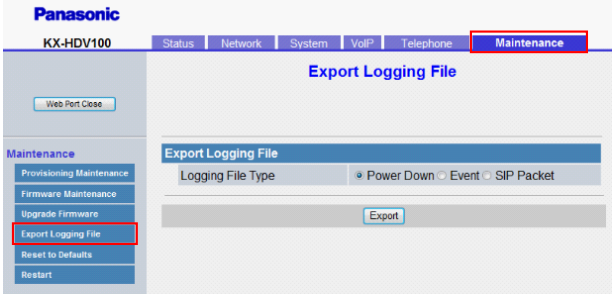
4.7.3.1 Upgrade Firmware

Firmware File URL

Description	Specifies the URI where the firmware file is stored.
Value Range	Max. 384 characters
Default Value	Not stored.

4.7.4 Export Logging File

This screen allows you to specify the Logging File to export when logging.



4.7.4.1 Export Logging File

Logging File Type

Description	Selects the Logging File Type setting.

Value Range	• Power Down • Event • SIP Packet **Note** • The line break code for the log file is <LF>. • If a file is exported when Power Down is selected, the saved file is power.log. • If a file is exported when Event is selected, the saved file is event_log.txt. • If a file is exported when SIP Packet is selected, the saved file is sip_trace_log.txt.
Default Value	Power Down

4.7.5 Reset to Defaults

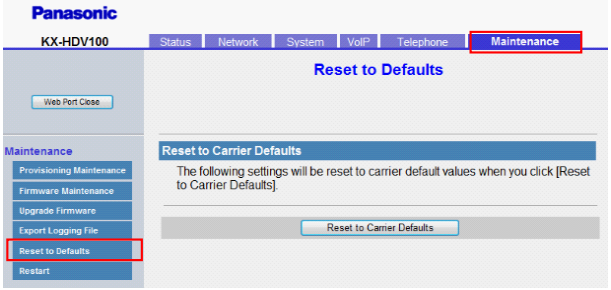
This screen allows you to reset the carrier default settings made through the Web user interface to their default values by clicking **[Reset to Carrier Defaults]**. After you click this button, a dialog box is displayed, asking whether you want to reset the settings. Click **OK** to reset, or **Cancel** not to.

Notice

- After resetting the settings, the unit will restart even if it is being accessed through the phone user interface, or on calls.

Note

- You can specify carrier default using configuration parameter extensions. Those parameters will be reset to the specified carrier default values. (→ see **Parameter Extensions**)

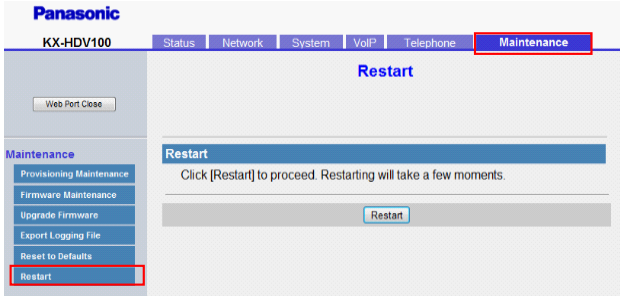


4.7.6 Restart

This screen allows you to restart the unit by clicking **[Restart]**. After you click this button, a dialog box is displayed, asking whether you want to restart the unit. Click **OK** to perform a restart, or **Cancel** not to.

Notice

- The unit will restart even if it is being accessed through the phone user interface, or on calls.



Section 5

Configuration File Programming

This section provides information about the configuration parameters used in the configuration files.

5.1 Configuration File Parameter List

The following tables show all the parameters that can be programmed using configuration file programming.
For details about each parameter, see the reference pages listed.
For details about configuration file specifications, see **2.4 Configuration File Specifications**.

System Settings

Parameter Name	Ref.
FACTORY_RESET_ENABLE	Page 171
FWD_DND_MENU_ENABLE	Page 171
BLOCK_CID_MENU_ENABLE	Page 171
BLOCK_ANONY_MENU_ENABLE	Page 171
ANONY_CALL_MENU_ENABLE	Page 172
AUTO_INPUT_KEY_TIME	Page 172
START_DIAL_POUND_KEY	Page 172
TIME_ZONE_SET_ENABLE	Page 172
CALL_SETTINGS_MENU_ENABLE	Page 172
ECO_MODE_MENU_ENABLE	Page 173
NOTIFICATION_MENU_ENABLE	Page 173
NOTIFY_MISSEDCALL_ENABLE[*1]	Page 173
NOTIFY_MISSEDCALL_LED_ENABLE[*1]	Page 173
NOTIFY_VOICEMAIL_ENABLE[*1]	Page 174
NOTIFY_VOICEMAIL_LED_ENABLE[*1]	Page 174
NOTIFY_VOICEMAIL_ALARM_ENABLE[*1]	Page 174
NOTIFICATION_ALARM_TYPE	Page 175
CODEC_VAD_CNG_ENABLE[*3]	Page 175
BOOTLOG_SERVER_URI	Page 175
DISPLAY_DIVERSION_ENABLE	Page 176
ERROR_AUTO_REBOOT_TIME	Page 176
DELAY_RING_TIME_n	Page 176
OFF_HOOK_MONITOR_ENABLE	Page 176
PRIVATE_HOLD_ENABLE[*2]	Page 176
CONF_OWNER_OUT_ENABLE	Page 177
PCAP_ENABLE	Page 177

Parameter Name	Ref.
PCAP_REMOTE_ID	Page 177
PCAP_REMOTE_PASS	Page 177
PCAP_REMOTE_PORT	Page 178
DTMF_OUT_ENABLE	Page 178
CANCEL_OPERATION_MODE	Page 178

Basic Network Settings

Parameter Name	Ref.
IP_ADDR_MODE*1	Page 178
CONNECTION_TYPE*1	Page 178
STATIC_IP_ADDRESS*1	Page 179
STATIC_SUBNET*1	Page 179
STATIC_GATEWAY*1	Page 179
USER_DNS1_ADDR*1	Page 180
USER_DNS2_ADDR*1	Page 180
DHCP_DNS_ENABLE*1	Page 180
DHCP_HOST_NAME*2	Page 181
DHCP_VENDOR_CLASS	Page 181
CONNECTION_TYPE_IPV6*1	Page 181
STATIC_IP_ADDRESS_IPV6*1	Page 182
PREFIX_IPV6*1	Page 182
STATIC_GATEWAY_IPV6*1	Page 182
USER_DNS1_ADDR_IPV6*1	Page 182
USER_DNS2_ADDR_IPV6*1	Page 182
DHCP_DNS_ENABLE_IPV6*1	Page 183

Ethernet Port Settings

Parameter Name	Ref.
PHY_MODE_LAN*1	Page 183
VLAN_ENABLE*1	Page 183
VLAN_ID_IP_PHONE*1	Page 184

Parameter Name	Ref.
VLAN_PRI_IP_PHONE[*1]	Page 184
LLDP_ENABLE[*1]	Page 184
LLDP_INTERVAL[*2]	Page 185
CDP_ENABLE[*1]	Page 185
CDP_INTERVAL[*2]	Page 185

Pre-Provisioning Settings

Parameter Name	Ref.
SIPPNP_PROV_ENABLE	Page 186
OPTION66_ENABLE	Page 186
OPTION159_PROV_ENABLE	Page 186
OPTION160_PROV_ENABLE	Page 186
DHCPV6_OPTION17_PROV_ENABLE	Page 187

Provisioning Settings

Parameter Name	Ref.
CFG_STANDARD_FILE_PATH[*2]	Page 187
CFG_PRODUCT_FILE_PATH[*2]	Page 187
CFG_MASTER_FILE_PATH[*2]	Page 187
CFG_CYCLIC[*2]	Page 188
CFG_CYCLIC_INTVL[*2]	Page 188
CFG_RESYNC_TIME[*2]	Page 188
CFG_RTRY_INTVL	Page 188
CFG_RESYNC_FROM_SIP[*2]	Page 189
CFG_RESYNC_ACTION	Page 189
CFG_FILE_KEY2	Page 189
CFG_FILE_KEY3	Page 190
CFG_FILE_KEY_LENGTH	Page 190
CFG_ROOT_CERTIFICATE_PATH	Page 190
CFG_CLIENT_CERT_PATH	Page 190
CFG_PKEY_PATH	Page 191

Parameter Name	Ref.
HTTP_SSL_VERIFY	Page 191
CFG_RESYNC_DURATION	Page 191
CFG_BOOTUP_DURATION_ENABLE	Page 191

Firmware Update Settings

Parameter Name	Ref.
FIRM_UPGRADE_ENABLE*2	Page 192
FIRM_FILE_PATH*2	Page 192
FIRM_VERSION	Page 192
FWDL_RANDOM_DURATION	Page 193

HTTP Settings

Parameter Name	Ref.
HTTP_VER*2	Page 193
HTTP_USER_AGENT*2	Page 193
HTTP_AUTH_ID*1	Page 194
HTTP_AUTH_PASS*1	Page 194
HTTP_PROXY_ENABLE*2	Page 194
HTTP_PROXY_ADDR*2	Page 194
HTTP_PROXY_PORT*2	Page 194
HTTP_PROXY_ID	Page 195
HTTP_PROXY_PASS	Page 195

HTTPD/WEB Settings

Parameter Name	Ref.
HTTPD_LISTEN_PORT	Page 195
HTTPD_PORTOPEN_AUTO	Page 195
HTTPD_PORTCLOSE_TM	Page 196
USER_ID	Page 196
USER_PASS*2	Page 196
ADMIN_ID	Page 197

Parameter Name	Ref.
ADMIN_PASS*2	Page 197

TR-069 Settings

Parameter Name	Ref.
ACS_URL	Page 197
ACS_USER_ID	Page 198
ACS_PASS	Page 198
PERIODIC_INFORM_ENABLE	Page 198
PERIODIC_INFORM_INTERVAL	Page 198
PERIODIC_INFORM_TIME	Page 199
CON_REQ_USER_ID	Page 199
CON_REQ_PASS	Page 199
ANNEX_G_STUN_ENABLE	Page 200
ANNEX_G_STUN_SERV_ADDR	Page 200
ANNEX_G_STUN_SERV_PORT	Page 200
ANNEX_G_STUN_USER_ID	Page 201
ANNEX_G_STUN_PASS	Page 201
ANNEX_G_STUN_MAX_KEEP_ALIVE	Page 201
ANNEX_G_STUN_MIN_KEEP_ALIVE	Page 201
UDP_CON_REQ_ADDR_NOTIFY_LIMIT	Page 202
DEVICE_PROVISIONING_CODE	Page 202
TR069_REGISTERING	Page 202
TR069_REGISTERED	Page 202

XML Settings

Parameter Name	Ref.
XMLAPP_ENABLE*2	Page 203
XMLAPP_USERID*2	Page 203
XMLAPP_USERPASS*2	Page 203
XMLAPP_LDAP_URL*2	Page 203
XMLAPP_LDAP_USERID*2	Page 204

Parameter Name	Ref.
XMLAPP_LDAP_USERPASS*2	Page 204
XMLAPP_NPB_SEARCH_TIMER	Page 204
XMLAPP_LDAP_MAXRECORD*2	Page 204
XML_HTTPD_PORT*2	Page 205
XML_ERROR_INFORMATION	Page 205

LDAP Settings

Parameter Name	Ref.
LDAP_ENABLE*2	Page 205
LDAP_DNSSRV_ENABLE*2	Page 205
LDAP_SERVER*2	Page 206
LDAP_SERVER_PORT*2	Page 206
LDAP_MAXRECORD*2	Page 206
LDAP_NUMB_SEARCH_TIMER	Page 206
LDAP_NAME_SEARCH_TIMER	Page 206
LDAP_USERID*2	Page 207
LDAP_PASSWORD*2	Page 207
LDAP_NAME_FILTER*2	Page 207
LDAP_NUMB_FILTER*2	Page 207
LDAP_NAME_ATTRIBUTE*2	Page 208
LDAP_NUMB_ATTRIBUTE*2	Page 208
LDAP_BASEDN*2	Page 208
LDAP_SSL_VERIFY	Page 208
LDAP_ROOT_CERT_PATH	Page 208
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SNMP Settings

Parameter Name	Ref.
SNMP_ENABLE	Page 209

Parameter Name	Ref.
SNMP_TRUST_IP	Page 210
SNMP_TRUST_PORT	Page 210
SNMP_RO_COMMUNITY_STRING	Page 210
SNMP_SECURITY_TYPE	Page 210
SNMP_SECURITY_USER	Page 210
SNMP_AUTH_TYPE	Page 211
SNMP_AUTH_PASSWORD	Page 211
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SNMP_ENCRYPT_PASSWORD	Page 211

NTP Settings

Parameter Name	Ref.
NTP_ADDR*2	Page 211
TIME_SYNC_INTVL	Page 212
TIME_QUERY_INTVL*2	Page 212

Time Settings

Parameter Name	Ref.
LOCAL_TIME_ZONE_POSIX	Page 212
TIME_ZONE*2	Page 213
DST_ENABLE*2	Page 214
DST_OFFSET*2	Page 214
DST_START_MONTH*2	Page 214
DST_START_ORDINAL_DAY*2	Page 215
DST_START_DAY_OF_WEEK*2	Page 215
DST_START_TIME*2	Page 215
DST_STOP_MONTH*2	Page 216
DST_STOP_ORDINAL_DAY*2	Page 216
DST_STOP_DAY_OF_WEEK*2	Page 217
DST_STOP_TIME*2	Page 217

Network Phonebook (Common)

Parameter Name	Ref.
ONLY_NPB_ENABLE	Page 217
NETWORK_SEARCH_ENABLE	Page 218
NW_PHONEBOOK_ADVANCED_SERACH	Page 218

Language Settings

Parameter Name	Ref.
AVAILABLE_LANGUAGE*2	Page 218
DEFAULT_LANGUAGE*2	Page 218
LANGUAGE_PATHx	Page 219
LANGUAGE_VERx	Page 219
AVAILABLE_LANGUAGE_WEB*2	Page 219
WEB_LANGUAGE*2	Page 219
WEB_LANGUAGE_PATHx	Page 219
WEB_LANGUAGE_VERx	Page 220

NAT Settings

Parameter Name	Ref.
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STUN_SERV_PORT*2	Page 220
STUN_2NDSERV_ADDR	Page 220
STUN_2NDSERV_PORT	Page 221
STUN_INTVL*2	Page 221
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PORT_PUNCH_INTVL*2	Page 221
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SIP Settings

Parameter Name	Ref.
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SIP_RGSTR_PORT_n*2	Page 224
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DSCP_SIP_n*2	Page 227
SIP_DNSSRV_ENA_n*2	Page 227
SIP_UDP_SRV_PREFIX_n*2	Page 227
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REG_INTERVAL_RATE_n	Page 228
REG_RTX_INTVL_n	Page 229
USE_DEL_REG_OPEN_n	Page 229
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SIP_SESSION_TIME_n*2	Page 229
SIP_SESSION_METHOD_n*2	Page 230
SIP_TIMER_T1_n*2	Page 230
SIP_TIMER_T2_n*2	Page 230
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SIP_TIMER_B_n	Page 231

Parameter Name	Ref.
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SIP_TIMER_F_n	Page 231
SIP_TIMER_H_n	Page 232
SIP_TIMER_J_n	Page 232
SIP_100REL_ENABLE_n*2	Page 232
SIP_18X_RTX_INTVL_n	Page 233
SIP_SUBS_EXPIRE_n	Page 233
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SIP_P_PREFERRED_ID_n	Page 234
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ADD_USER_PHONE_n	Page 234
SIP_ANM_DISPNAME_n	Page 234
SIP_ANM_USERNAME_n	Page 235
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SIP_DETECT_SSAF_n*2	Page 235
SIP_RCV_DET_HEADER_n	Page 236
SIP_RCV_DET_REQURI_n	Page 236
SIP_CONTACT_ON_ACK_n	Page 237
VOICE_MESSAGE_AVAILABLE	Page 237
SIP_INVITE_EXPIRE_n	Page 237
SIP_FOVR_NORSP_n	Page 237
SIP_FOVR_MAX_n	Page 238
SIP_FOVR_MODE_n	Page 238
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ADD_TRANSPORT_UDP_n	Page 240
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ENH_FOVR_RANDOM_TIMER_n	Page 246
ENH_FOVR_RANDOM_MAX_TIME_n	Page 246
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SIP-TLS Settings

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SIP_TLS_SRV_PREFIX_n*2	Page 249
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SIP_TLS_ROOT_CERT_PATH	Page 250
SIP_TLS_CLIENT_CERT_PATH	Page 250
SIP_TLS_PKEY_PATH	Page 250
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CODEC Settings

Parameter Name	Ref.
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DTMF Settings

Parameter Name	Ref.
DTMF_METHOD_n*2	Page 253
OUTBANDDTMF_VOL	Page 253
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DTMF_SIGNAL_LEN	Page 253
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RTP/RTCP/RTCP-XR Settings

Parameter Name	Ref.
DSCP_RTP_n*2	Page 254
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Parameter Name	Ref.
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RTP_PORT_MIN*2	Page 255
RTP_PORT_MAX*2	Page 256
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RTCP_SEND_BY_SDP_n	Page 257
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SRTP Settings

Parameter Name	Ref.
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SRTP_MIX_TRANSFER_ENABLE_n*2	Page 258
SRTP_HELD_CALL_RTP_ENABLE	Page 259
DISPLAY_SRTP_CALL_ENABLE	Page 259

VQ Report by PUBLISH

Parameter Name	Ref.
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VQREPORT_COLLECTOR_PORT*2	Page 260
VQREPORT_SEND*2	Page 260
ALERT_REPORT_TRIGGER*2	Page 260
ALERT_REPORT_MOSQ_CRITICAL*2	Page 260
ALERT_REPORT_MOSQ_WARNING*2	Page 261
ALERT_REPORT_DELAY_CRITICAL*2	Page 261
ALERT_REPORT_DELAY_WARNING*2	Page 261
VQREPORT_SIGNAL_COMPRESSION	Page 261

Parameter Name	Ref.
VQREPORT_SEND_OPT_CODEC_ENABLE	Page 261
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Telephone Settings

Parameter Name	Ref.
POWER_ON_DISPLAY_LOGO_PATH	Page 262
FIRSTDIGIT_TIM*2	Page 262
INTDIGIT_TIM*2	Page 263
POUND_KEY_DELIMITER_ENABLE*2	Page 263
RINGTONE_SETTING_n*3	Page 263
DISPLAY_NAME_REPLACE	Page 263
NUMBER_MATCHING_LOWER_DIGIT	Page 264
NUMBER_MATCHING_UPPER_DIGIT	Page 264
FLASH_RECALL_TERMINATE	Page 264
FLASHHOOK_CONTENT_TYPE	Page 264
NUM_PLAN_PARKING*2	Page 264
CALLPARK_KEY_ENABLE*2	Page 265
NUM_PLAN_PARK_RETRIEVING	Page 265
IDLE_SOFT_KEY_PARK_RETRIEVING	Page 265
HOLD_RECALL_TIM	Page 265
HOLD_TRANSFER_OPERATION	Page 266
ONHOOK_TRANSFER_ENABLE	Page 266
ONHOOK_HOLD_TRNS_ENABLE	Page 266
BLIND_TRANSFER_ENABLE	Page 266
SYS_LOCK_ENABLE*2	Page 267
SYS_LOCK_PASSWORD*2	Page 267
PAUSE_INPUT_ENABLE	Page 267
NUM_PLAN_PICKUP_DIRECT*2	Page 267
CNIP_FROM_ENABLE	Page 267
IDLE_DISPLAY_TYPE*3	Page 268
CNIP_CALL_PAI_ENABLE	Page 268
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Parameter Name	Ref.
RINGER_VOLUME_LEVEL	Page 268
RINGER_VOL_OPERATION_ENABLE	Page 269

Flexible Button Settings

Parameter Name	Ref.
FLEX_BUTTON_FACILITY_ACTx[*1]	Page 269
FLEX_BUTTON_FACILITY_ARGx[*1]	Page 269
FLEX_BUTTON_QUICK_DIALx	Page 270

Tone Settings

Parameter Name	Ref.
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OUTSIDE_DIAL_TONE_GAIN	Page 270
OUTSIDE_DIAL_TONE_RPT	Page 270
OUTSIDE_DIAL_TONE_TIMING	Page 270
CONFIRMATION_TONE5_FRQ	Page 271
CONFIRMATION_TONE5_GAIN	Page 271
REORDER_TONE_ENABLE	Page 271
TONE_LEN_DISCONNECT	Page 271
DIAL_TONE1_FRQ[*2]	Page 272
DIAL_TONE1_GAIN	Page 272
DIAL_TONE1_RPT	Page 272
DIAL_TONE1_TIMING[*2]	Page 272
DIAL_TONE2_FRQ	Page 273
DIAL_TONE2_GAIN	Page 273
DIAL_TONE2_RPT	Page 273
DIAL_TONE2_TIMING	Page 273
DIAL_TONE4_FRQ	Page 274
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DIAL_TONE4_RPT	Page 274
DIAL_TONE4_TIMING	Page 274

Parameter Name	Ref.
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BUSY_TONE_GAIN	Page 275
BUSY_TONE_RPT	Page 275
BUSY_TONE_TIMING*2	Page 275
REORDER_TONE_FRQ*2	Page 276
REORDER_TONE_GAIN	Page 276
REORDER_TONE_RPT	Page 276
REORDER_TONE_TIMING*2	Page 276
RINGBACK_TONE_FRQ*2	Page 277
RINGBACK_TONE_GAIN	Page 277
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KEY_PAD_TONE*3	Page 281

Call Control Settings

Parameter Name	Ref.
ANONYMOUS_CALL_ENABLE_n*1	Page 281
BLOCK_ANONYMOUS_CALL_ENABLE_n*1	Page 281
HOTLINE_ENABLE*2	Page 281
HOTLINE_NUMBER*2	Page 282
HOTLINE_TIM*2	Page 282

Parameter Name	Ref.
DISPLAY_NAME_n[*2]	Page 282
VM_SUBSCRIBE_ENABLE[*2]	Page 282
VM_NUMBER_n[*2]	Page 283
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DIAL_PLAN_n[*2]	Page 283
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MACRODIGIT_TIM[*2]	Page 285
INTERNATIONAL_ACCESS_CODE[*2]	Page 285
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IDLE_SOFT_KEY_A[*2]	Page 286
IDLE_SOFT_KEY_B[*2]	Page 286
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ADMIN_ABILITY_ENABLE[*2]	Page 287
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CALL_REJECTIONx[*1]	Page 287
CALLPARK_NOTIFICATION_ENABLE_n	Page 287
SHARED_STOP_LINE_SEIZE	Page 288
SHARED_CALL_ENABLE_n	Page 288
FWD_DND_SYNCHRO_ENABLE_n[*2]	Page 288
FWD_SYNCHRO_FORCE_DISABLE_n	Page 289
MOH_SERVER_URI_n[*2]	Page 289
FWD_DND_CONTROL_ENABLE	Page 289
FWD_DND_SYNCHRO_MODE	Page 290
FWD_DND_MISSEDLOG_ENABLE	Page 290
HOLD_AND_CALL_ENABLE	Page 290
AUTO_CALL_HOLD	Page 290
SIP_RESPONSE_CODE_DND	Page 290
SIP_RESPONSE_CODE_CALL_REJECT	Page 291
CW_ENABLE_n[*2]	Page 291

Parameter Name	Ref.
RETURN_VOL_SET_DEFAULT_ENABLE	Page 291
CONFERENCE_SERVER_URI*2	Page 291
CONF_SERVER_HOLD_ENABLE	Page 292
RESOURCELIST_URI_n*2	Page 292
TALKING_SOFT_KEY_A	Page 292
TALKING_SOFT_KEY_B	Page 293
TALKING_SOFT_KEY_C	Page 294
REMOVE_PREFIX_ENABLE	Page 294

Logging Settings

Parameter Name	Ref.
SYSLOG_ADDR	Page 294
SYSLOG_PORT	Page 295
LOGGING_LEVEL_DNS	Page 295
LOGGING_LEVEL_NW1	Page 295
LOGGING_LEVEL_FILE	Page 295
LOGGING_LEVEL_SIP	Page 295
LOGGING_LEVEL_TR069	Page 296
LOGGING_LEVEL_STUN	Page 296
LOGGING_LEVEL_NW2	Page 296
LOGGING_LEVEL_CFGPARSE	Page 296
SYSLOG_OUT_START	Page 296

TWAMP Settings

Parameter Name	Ref.
TWAMP_ENABLE*2	Page 297
TWAMP_CONTROL_PORT*2	Page 297
TWAMP_TEST_PORT*2	Page 297
TWAMP_SERVER_WAIT_TIME*2	Page 297
TWAMP_REFLECTOR_WAIT_TIME*2	Page 298

Parameter Name	Ref.
TWAMP_PADDING_ZERO	Page 298

*1 This setting can also be configured through other programming methods (phone user interface programming or Web user interface programming).
*2 This setting can also be configured through the Web user interface.
*3 This setting can also be configured through the Phone user interface programming.

5.2 General Information on the Configuration Files

5.2.1 Configuration File Parameters

The information on each parameter that can be written in a configuration file is shown in the tables below. The information includes parameter name (as the title of the table), value format, description, permitted value range, default value of each parameter, phone user interface reference, and Web user interface reference.

Parameter Name

This is the system-predefined parameter name and cannot be changed.

Note

- Certain parameter names end with "**_n**". This unit supports one telephone line. However, for some parameters, a line number must be specified.

Value Format

Each parameter value is categorized into Integer, Boolean, or String. Some parameters require a composite form such as "Comma-separated Integer" or "Comma-separated String".

- **Integer**: a numerical value, described as a sequence of numerical characters, optionally preceded by a "-" (minus)
  An empty string is not allowed.
- **Boolean**: "**Y**" or "**N**"
- **String**: sequence of alphanumerical characters
  For details about available characters, see **5.2.2 Characters Available for String Values**.
- **Comma-separated Integer**: a list of integers, separated by commas
  No space characters are allowed.
- **Comma-separated String**: a list of strings, separated by commas
  No space characters are allowed.
- **IPADDR**: IPv4 address format.
- **IPADDR-V6**: IPv6 address format (can be abbreviated).

Description

Describes the details of the parameter.

Value Range

Indicates the permitted value range of the parameter.

Default Value

Indicates the factory default value of the parameter.
Actual default values may vary depending on your phone system dealer/service provider.

Phone User Interface Reference

Provides the reference page of the corresponding parameter in phone user interface programming.

Web User Interface Reference

Provides the reference page of the corresponding parameter in Web user interface programming.

5.2.2 Characters Available for String Values

Unless noted otherwise in "Value Range", only ASCII characters can be used for parameter values. Unicode characters can also be used in some parameter values.
Available ASCII characters are shown on a white background in the following table:

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
20	SP	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	

5.3 System Settings

5.3.1 System Settings

FACTORY_RESET_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the operation of factory default and carrier default.
Value Range	• **Y**: Enable factory reset operation • **N**: Disable
Default Value	**Y**

FWD_DND_MENU_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the "FWD/DND" setting is displayed in MENU and the Web user interface.
Value Range	• **Y**: Displayed • **N**: Not displayed
Default Value	**Y**

BLOCK_CID_MENU_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable displaying the "Block Caller ID" setting on the phone screen and in the Web user interface.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**Y**

BLOCK_ANONY_MENU_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the "Block Anonymous" setting is displayed in MENU and the Web user interface.
Value Range	• **Y**: Displayed • **N**: Not displayed
Default Value	**Y**

ANONY_CALL_MENU_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the "Anonymous Call" setting is displayed in MENU and the Web user interface.
Value Range	• `Y`: Displayed • `N`: Not displayed
Default Value	`Y`

AUTO_INPUT_KEY_TIME

Value Format	INTEGER
Description	Specifies the number of seconds after which the cursor automatically moves to the next position during character input.
Value Range	0–3 [0: off]
Default Value	0

START_DIAL_POUND_KEY

Value Format	BOOLEAN
Description	Specifies whether to send the dialed number when the # key is pressed during pre-dialing.
Value Range	• `Y`: Enable dialing by using # • `N`: Disable
Default Value	`N`

TIME_ZONE_SET_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the "Time Zone" setting is displayed in MENU and the Web user interface.
Value Range	• `Y`: Displayed • `N`: Not displayed
Default Value	`N`

CALL_SETTINGS_MENU_ENABLE

Value Format	BOOLEAN

Description	Specifies whether the "Call Settings" setting is displayed in MENU and the Web user interface.
Value Range	• **Y**: Displayed • **N**: Not displayed
Default Value	**Y**

ECO_MODE_MENU_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the "ECO Mode" setting is displayed under MENU.
Value Range	• **Y**: Enable displaying the ECO mode function under MENU. • **N**: Disable
Default Value	**Y**

NOTIFICATION_MENU_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to display the notification settings under MENU.
Value Range	• **Y**: Display the notification settings • **N**: Do not display
Default Value	**Y**

NOTIFY_MISSEDCALL_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to display "Missed Calls" on the screen in standby mode. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• **Y**: Enable displaying "Missed Calls" in standby mode. • **N**: Disable
Default Value	**Y**
Web User Interface Reference	Missed Call Notification—Message (Page 106)

NOTIFY_MISSEDCALL_LED_ENABLE

Value Format	BOOLEAN

Description	Specifies whether the LED is used to indicate a missed call. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• **Y**: Enable LED indication for a missed call. • **N**: Disable
Default Value	**Y**
Web User Interface Reference	Missed Call Notification—LED (Page 106)

NOTIFY_VOICEMAIL_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to display "Voice MSG" on the screen in standby mode. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• **Y**: Enable displaying "Voice MSG" in standby mode. • **N**: Disable
Default Value	**Y**
Web User Interface Reference	Voice Message Notification—Message (Page 106)

NOTIFY_VOICEMAIL_LED_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the LED is used to indicate a new voice message. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• **Y**: Enable LED indication for voice messages. • **N**: Disable
Default Value	**Y**
Web User Interface Reference	Voice Message Notification—LED (Page 107)

NOTIFY_VOICEMAIL_ALARM_ENABLE

Value Format	BOOLEAN

Description	Specifies whether an alarm sound is used to indicate a new voice message. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• **Y**: Enable alarms sound for voice messages. • **N**: Disable
Default Value	**Y**
Web User Interface Reference	Voice Message Notification—Alarm (Page 107)

NOTIFICATION_ALARM_TYPE

Value Format	INTEGER
Description	Specifies whether a voice mail alarm notification is used only the first time or every time. **Note** • This setting is available only when "**NOTIFICATION_MENU_ENABLE**" is set to "**Y**".
Value Range	• 0: First time only • 1: Every time
Default Value	0

CODEC_VAD_CNG_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable the VAD and CNG functions. (VAD: Voice Activity Detector, CNG: Comfort Noise Generator)
Value Range	• **Y**: Enable the VAD and CNG functions • **N**: Disable
Default Value	**N**

BOOTLOG_SERVER_URI

Value Format	STRING
Description	Specifies the URI for a boot logging server.
Value Range	Max. 256 characters
Default Value	Empty string

DISPLAY_DIVERSION_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the "Diversion" call information is displayed when receiving an incoming call.
Value Range	• `Y`: Enable displaying the "Diversion" information • `N`: Disable
Default Value	`N`

ERROR_AUTO_REBOOT_TIME

Value Format	INTEGER
Description	Specifies the amount of time, in hours, until the unit automatically reboots when the SIP registration has been removed for all accounts.
Value Range	0, 1–72 0: Disable
Default Value	0

DELAY_RING_TIME_n

Parameter Name Example	DELAY_RING_TIME_1
Value Format	INTEGER
Description	Specifies the length of time, in seconds, until the unit rings.
Value Range	0–30 0: Disable
Default Value	0

OFF_HOOK_MONITOR_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the Off-hook Monitor function.
Value Range	• `Y`: Enable Off-hook Monitor • `N`: Disable
Default Value	`Y`

PRIVATE_HOLD_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable "Private Hold".

Value Range	• **Y**: Enable private hold • **N**: Disable
Default Value	**N**
Web User Interface Reference	Private Hold (Page 129)

CONF_OWNER_OUT_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to allow the remaining two parties in a three-party conference to continue the conversation if the conference originator leaves the conference call (Unattended Conference).
Value Range	• **Y**: Enable Unattended Conference • **N**: Disable
Default Value	**N**

PCAP_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable packet capturing using the Wireshark utility (PCAP Remote).
Value Range	• **Y**: Enable PCAP Remote • **N**: Disable
Default Value	**N**

PCAP_REMOTE_ID

Value Format	STRING
Description	Specifies the ID of the IP phone whose packets will be captured using the Wireshark utility (PCAP Remote).
Value Range	1–16 characters
Default Value	Empty string

PCAP_REMOTE_PASS

Value Format	STRING
Description	Specifies the password of the IP phone whose packets will be captured using the Wireshark utility (PCAP Remote).
Value Range	0, 6–64 characters
Default Value	Empty string

PCAP_REMOTE_PORT

Value Format	INTEGER
Description	Specifies the port of the IP phone to use for capturing packets using the Wireshark utility (PCAP Remote).
Value Range	1–65535
Default Value	2002

DTMF_OUT_ENABLE

Value Format	BOOLEAN
Description	Specifies whether received outband DTMF signals are output audibly.
Value Range	• `Y`: Enable audible outband DTMF • `N`: Disable
Default Value	`Y`

CANCEL_OPERATION_MODE

Value Format	INTEGER
Description	Specifies the operation of the [CANCEL] button when a line is in use.
Value Range	• 0: Cancel the current operation • 1: Return to standby mode
Default Value	0

5.3.2 Basic Network Settings

IP_ADDR_MODE

Value Format	INTEGER
Description	Specifies the IP addressing mode.
Value Range	• 0: IPv4 • 1: IPv6 • 2: IPv4&IPv6
Default Value	0
Web User Interface Reference	IP Addressing Mode (Page 76)

CONNECTION_TYPE

Value Format	INTEGER

Description	Specifies whether to assign the IP address automatically (DHCP) or manually (static) for IPv4.
Value Range	• 0: Static • 1: DHCP
Default Value	1
Web User Interface Reference	Connection Mode (Page 77)

STATIC_IP_ADDRESS

Value Format	IPADDR
Description	Specifies the IP address for the unit for IPv4. **Note** • This setting is available only when "CONNECTION_TYPE" is set to "0". • When you specify this parameter, you must specify "STATIC_SUBNET" together in a configuration file.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Empty string
Web User Interface Reference	IP Address (Page 77)

STATIC_SUBNET

Value Format	IPADDR
Description	Specifies the subnet mask for IPv4. **Note** • This setting is available only when "CONNECTION_TYPE" is set to "0". • When you specify this parameter, you must specify "STATIC_IP_ADDRESS" together in a configuration file.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Empty string
Web User Interface Reference	Subnet Mask (Page 78)

STATIC_GATEWAY

Value Format	IPADDR

Description	Specifies the IP address of the default gateway for the IPv4 network where the unit is connected. **Note** • This setting is available only when "CONNECTION_TYPE" is set to "0". • When you specify this parameter, you must specify "STATIC_IP_ADDRESS" and "STATIC_SUBNET" together in a configuration file.
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Empty string
Web User Interface Reference	Default Gateway (Page 78)

USER_DNS1_ADDR

Value Format	IPADDR
Description	Specifies the IP address of the primary DNS server for IPv4. **Note** • This setting is available only when "CONNECTION_TYPE" is set to "0".
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Empty string
Web User Interface Reference	DNS1 (Page 78)

USER_DNS2_ADDR

Value Format	IPADDR
Description	Specifies the IP address of the secondary DNS server for IPv4. **Note** • This setting is available only when "CONNECTION_TYPE" is set to "0".
Value Range	Max. 15 characters n.n.n.n [n=0–255]
Default Value	Empty string
Web User Interface Reference	DNS2 (Page 79)

DHCP_DNS_ENABLE

Value Format	BOOLEAN

Description	Specifies whether to enable or disable using the DNS server obtained by DHCPv4. **Note** • This setting is available only when "CONNECTION_TYPE" is set to "1".
Value Range	• `Y`: Not use (use static DNS) • `N`: Use DNS obtained by DHCPv4
Default Value	`N`
Web User Interface Reference	Auto DNS via DHCP (Page 78)

DHCP_HOST_NAME

Value Format	STRING
Description	Specifies the host name to option12 in DHCPv4 or option15 in DHCPv6.
Value Range	Max. 64 characters
Default Value	{MODEL}
Web User Interface Reference	DHCP Host Name (Page 77)

DHCP_VENDOR_CLASS

Value Format	STRING
Description	Specifies the vendor class to option60 in DHCPv4 or option16 in DHCPv6.
Value Range	Max. 64 characters
Default Value	Panasonic

CONNECTION_TYPE_IPV6

Value Format	INTEGER
Description	Specifies the IP address setting mode for IPv6.
Value Range	• 0: Static • 1: DHCP • 2: Stateless Autoconfiguration
Default Value	1
Web User Interface Reference	Connection Mode (Page 79)

STATIC_IP_ADDRESS_IPV6

Value Format	IPADDR-V6
Description	Specifies the IP address for IPv6.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]
Default Value	Empty string
Web User Interface Reference	IP Address (Page 79)

PREFIX_IPV6

Value Format	INTEGER
Description	Specifies the prefix for IPv6.
Value Range	0–128
Default Value	64
Web User Interface Reference	Prefix (Page 79)

STATIC_GATEWAY_IPV6

Value Format	IPADDR-V6
Description	Specifies the default gateway for IPv6.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]
Default Value	Empty string
Web User Interface Reference	Default Gateway (Page 80)

USER_DNS1_ADDR_IPV6

Value Format	IPADDR-V6
Description	Specifies the IP address of primary DNS server for IPv6.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]
Default Value	Empty string
Web User Interface Reference	DNS1 (Page 80)

USER_DNS2_ADDR_IPV6

Value Format	IPADDR-V6

Description	Specifies the IP address of secondary DNS server for IPv6.
Value Range	Max. 39 characters n:n:n:n:n:n:n:n [n=0-FFFF, abbreviation available]
Default Value	Empty string
Web User Interface Reference	DNS2 (Page 80)

DHCP_DNS_ENABLE_IPV6

Value Format	BOOLEAN
Description	Specifies whether to enable or disable using the DNS server obtained by DHCPv6.
Value Range	• `Y`: Not use (use static DNS) • `N`: Use DNS obtained by DHCPv6
Default Value	`N`
Web User Interface Reference	Auto DNS via DHCP (Page 80)

5.3.3 Ethernet Port Settings

PHY_MODE_LAN

Value Format	INTEGER
Description	Specifies the link speed and duplex mode of the LAN port.
Value Range	• 1: Auto • 2: 100Mbps/Full Duplex • 3: 100Mbps/Half Duplex • 4: 10Mbps/Full Duplex • 5: 10Mbps/Half Duplex
Default Value	1
Web User Interface Reference	LAN Port (Page 81)

VLAN_ENABLE

Value Format	BOOLEAN

Description	Specifies whether to use the VLAN feature to perform VoIP communication securely. **Note** • You should specify "**Y**" for only one of "**LLDP_ENABLE**" or "**VLAN_ENABLE**". If "**Y**" is specified for two or more of the parameters above, the settings are prioritized as follows: "**VLAN_ENABLE**" > "**LLDP_ENABLE**". Therefore, if "**Y**" is specified for both "**VLAN_ENABLE**" and "**LLDP_ENABLE**", the VLAN-related settings are used.
Value Range	• **Y** (Enable) • **N** (Disable)
Default Value	**N**
Web User Interface Reference	Enable VLAN (Page 83)

VLAN_ID_IP_PHONE

Value Format	INTEGER
Description	Specifies the VLAN ID for this unit.
Value Range	0–4094
Default Value	2
Web User Interface Reference	VLAN ID (Page 83)

VLAN_PRI_IP_PHONE

Value Format	INTEGER
Description	Specifies the priority number for the unit.
Value Range	0–7
Default Value	7
Web User Interface Reference	Priority (Page 83)

LLDP_ENABLE

Value Format	BOOLEAN

Description	Specifies whether to enable or disable the LLDP-MED feature. **Note** • You should specify "**Y**" for only one of "**LLDP_ENABLE**", or "**VLAN_ENABLE**". If "**Y**" is specified for two or more of the parameters above, the settings are prioritized as follows: **VLAN_ENABLE** >**LLDP_ENABLE**. Therefore, if "**Y**" is specified for both "**VLAN_ENABLE**" and "**LLDP_ENABLE**", the VLAN-related settings are used.
Value Range	• **Y**: Enable LLDP-MED • **N**: Disable
Default Value	**Y**
Web User Interface Reference	Enable LLDP (Page 82)

LLDP_INTERVAL

Value Format	INTEGER
Description	Specifies the interval, in seconds, between sending each LLDP frame.
Value Range	1–3600
Default Value	30
Web User Interface Reference	Packet Interval (Page 82)

CDP_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable the CDP feature.
Value Range	• **Y**: Enable CDP • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable CDP (Page 82)

CDP_INTERVAL

Value Format	INTEGER
Description	Specifies the interval, in seconds, between sending CDP frames.
Value Range	1–3600
Default Value	30
Web User Interface Reference	Packet Interval (Page 82)

5.3.4 Pre-Provisioning Settings

SIPPNP_PROV_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the SIP PNP provisioning.
Value Range	• `Y`: Enable SIP PnP provisioning • `N`: Disable
Default Value	`Y`

OPTION66_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the DHCP option 66 provisioning. **Note** • The unit will try to download configuration files through the TFTP server, the IP address or FQDN of which is specified in the option number 66 field.
Value Range	• `Y`: Enable DHCP option66 provisioning • `N`: Disable
Default Value	`Y`

OPTION159_PROV_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the DHCP option159 provisioning.
Value Range	• `Y`: Enable DHCP option159 provisioning • `N`: Disable
Default Value	`Y`

OPTION160_PROV_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the DHCP option160 provisioning.
Value Range	• `Y`: Enable DHCP option160 provisioning • `N`: Disable
Default Value	`Y`

DHCPV6_OPTION17_PROV_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable DHCPv6 option17 provisioning.
Value Range	• `Y`: Enable DHCPv6 option17 provisioning • `N`: Disable
Default Value	`Y`

5.3.5 Provisioning Settings

CFG_STANDARD_FILE_PATH

Value Format	STRING
Description	Specifies the URL of the standard configuration file, which is used when every unit needs different settings.
Value Range	Max. 384 characters
Default Value	Empty string
Web User Interface Reference	Standard File URL (Page 143)

CFG_PRODUCT_FILE_PATH

Value Format	STRING
Description	Specifies the URL of the product configuration file, which is used when all units with the same model number need the same settings.
Value Range	Max. 384 characters
Default Value	Empty string
Web User Interface Reference	Product File URL (Page 143)

CFG_MASTER_FILE_PATH

Value Format	STRING
Description	Specifies the URL of the master configuration file, which is used when all units need the same settings.
Value Range	Max. 384 characters
Default Value	Empty string
Web User Interface Reference	Master File URL (Page 143)

CFG_CYCLIC

Value Format	BOOLEAN
Description	Specifies whether the unit periodically checks for updates of configuration files.
Value Range	• `Y`: Enable periodic synchronization • `N`: Disable
Default Value	`N`
Web User Interface Reference	Cyclic Auto Resync (Page 144)

CFG_CYCLIC_INTVL

Value Format	INTEGER
Description	Specifies the interval, in minutes, between periodic checks for updates of the configuration files.
Value Range	1–40320
Default Value	10080
Web User Interface Reference	Resync Interval (Page 144)

CFG_RESYNC_TIME

Value Format	STRING
Description	Specifies the time (hour:minute) that the unit checks for updates of configuration files.
Value Range	00:00–23:59 **Note** • If the value for this setting is any valid value other than an empty string, the unit downloads the configuration files at the fixed time, and the settings specified in "`CFG_CYCLIC`", "`CFG_CYCLIC_INTVL`", and "`CFG_RTRY_INTVL`" are disabled. • If the value for this setting is an empty string, downloading the configuration files at the fixed time are disabled.
Default Value	Empty string
Web User Interface Reference	Time Resync (Page 144)

CFG_RTRY_INTVL

Value Format	INTEGER

Description	Specifies the period of time, in minutes, that the unit will retry checking for an update of the configuration files after a configuration file access error has occurred.
Value Range	1–1440
Default Value	30

CFG_RESYNC_FROM_SIP

Value Format	STRING
Description	Specifies the value of the "Event" header sent from the SIP server to the unit so that the unit can access the configuration files on the provisioning server.
Value Range	Max. 15 characters
Default Value	check-sync
Web User Interface Reference	Header Value for Resync Event (Page 144)

CFG_RESYNC_ACTION

Value Format	INTEGER
Description	Specifies the value of the action after received resync NOTIFY.
Value Range	• 0: Provisioning • 1: TR-069 Inform • 2: Reboot
Default Value	0

CFG_FILE_KEY2

Value Format	STRING
Description	Specifies the encryption key (password) used to decrypt configuration files. **Note** • If the extension of the configuration file is ".e2c", the configuration file will be decrypted using this key.
Value Range	32 characters **Note** • If an empty string is set for this parameter, decryption with this value is disabled.
Default Value	Empty string

CFG_FILE_KEY3

Value Format	STRING
Description	Specifies the encryption key (password) used to decrypt configuration files. **Note** • If the extension of the configuration file is ".e3c", the configuration file will be decrypted using this key.
Value Range	32 characters **Note** • If an empty string is set for this parameter, decryption with this value is disabled.
Default Value	Empty string

CFG_FILE_KEY_LENGTH

Value Format	INTEGER
Description	Specifies the key lengths in bits used to decrypt configuration files.
Value Range	128,192, 256
Default Value	192

CFG_ROOT_CERTIFICATE_PATH

Value Format	STRING
Description	Specifies the URI where the root certificate is stored. **Note** • Changing this setting may require restarting the unit.
Value Range	Max. 384 characters
Default Value	Empty string

CFG_CLIENT_CERT_PATH

Value Format	STRING
Description	Specifies the URI where the client certificate is stored.
Value Range	Max. 384 characters
Default Value	Empty string

CFG_PKEY_PATH

Value Format	STRING
Description	Specifies the URI where the private key is stored.
Value Range	Max. 384 characters
Default Value	Empty string

HTTP_SSL_VERIFY

Value Format	INTEGER
Description	Specifies whether to enable the verification of the root certificate.
Value Range	• 0: No verification of root certificate • 1: Simple verification of root certificate • 2: Precise verification of root certificate **Note** • If set to "0", the verification of the root certificate is disabled. • If set to "1", the verification of the root certificate is enabled. In this case, the validity of the certificate's date, certificate's chain, and the confirmation of the root certificate will be verified. • If set to "2", precise certificate verification is enabled. In this case, the validity of the server name will be verified in addition to the items verified when "1" is set. • If the unit has not obtained the current time, verification will not be performed irrelevant of this setting. In order to perform verification it is necessary to first set up the NTP server.
Default Value	0

CFG_RESYNC_DURATION

Value Format	INTEGER
Description	Specifies, in minutes, a time range during which connected units can access the server. Units will download configuration files at a random time within this range.
Value Range	0–1439
Default Value	0

CFG_BOOTUP_DURATION_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable "`CFG_RESYNC_TIME`" and "`CFG_RESYNC_DURATION`" at startup.

Value Range	• `Y`: Enable • `N`: Disable
Default Value	`Y`

5.3.6 Firmware Update Settings

FIRM_UPGRADE_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to perform firmware updates when the unit detects a newer version of firmware. **Note** • Manual firmware updates from the Web user interface (→ see **4.7.3 Upgrade Firmware**) can be performed regardless of this setting. • Firmware updates using TR-069 can be performed regardless of this setting.
Value Range	• `Y`: Enable firmware updates • `N`: Disable firmware updates
Default Value	`Y`
Web User Interface Reference	Enable Firmware Update (Page 145)

FIRM_FILE_PATH

Value Format	STRING
Description	Specifies the URL where the firmware file is stored. **Note** • This setting is available only when "`FIRM_UPGRADE_ENABLE`" is set to "`Y`".
Value Range	Max. 384 characters
Default Value	Empty string
Web User Interface Reference	Firmware File URL (Page 145)

FIRM_VERSION

Value Format	STRING
Description	Specifies the firmware version of the unit.
Value Range	Max. 32 characters
Default Value	Empty string

FWDL_RANDOM_DURATION

Value Format	INTEGER
Description	Specifies, in minutes, a time range during which connected units can access the server. Units will download the firmware file at a random time within this range.
Value Range	0–1439
Default Value	0

5.3.7 HTTP Settings

HTTP_VER

Value Format	INTEGER
Description	Specifies which version of the HTTP protocol to use for HTTP communication.
Value Range	• 1: Use HTTP/1.0 • 0: Use HTTP/1.1 **Note** • For this unit, it is strongly recommended that you specify "1" for this setting. However, if the HTTP server does not function well with HTTP 1.0, try changing the setting "0".
Default Value	1
Web User Interface Reference	HTTP Version (Page 84)

HTTP_USER_AGENT

Value Format	STRING
Description	Specifies the text string to send as the user agent in the header of HTTP requests.
Value Range	Max. 64 characters **Note** • If "{mac}" is included in this parameter, it will be replaced with the unit's MAC address in lower-case. • If "{MAC}" is included in this parameter, it will be replaced with the unit's MAC address in upper-case. • If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name. • If "{fwver}" is included in this parameter, it will be replaced with the firmware version of the unit.
Default Value	Panasonic_{MODEL}/{fwver} ({mac})
Web User Interface Reference	HTTP User Agent (Page 84)

HTTP_AUTH_ID

Value Format	STRING
Description	Specifies the authentication ID required to access the HTTP server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	Authentication ID (Page 85)

HTTP_AUTH_PASS

Value Format	STRING
Description	Specifies the authentication password required to access the HTTP server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	Authentication Password (Page 85)

HTTP_PROXY_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the HTTP proxy feature.
Value Range	• **Y**: Enable HTTP proxy connect • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable Proxy (Page 85)

HTTP_PROXY_ADDR

Value Format	STRING
Description	Specifies the IP address or FQDN of the proxy server.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Proxy Server Address (Page 86)

HTTP_PROXY_PORT

Value Format	INTEGER

Description	Specifies the port of the proxy server.
Value Range	1–65535
Default Value	8080
Web User Interface Reference	Proxy Server Port (Page 86)

HTTP_PROXY_ID

Value Format	STRING
Description	Specifies the user ID for connecting HTTP proxy.
Value Range	Max. 128 characters
Default Value	Empty string

HTTP_PROXY_PASS

Value Format	STRING
Description	Specifies the password for connecting HTTP proxy.
Value Range	Max. 128 characters
Default Value	Empty string

5.3.8 HTTPD/WEB Settings

HTTPD_LISTEN_PORT

Value Format	INTEGER
Description	Specifies the port number of own HTTP server.
Value Range	80, 1024–49151
Default Value	80

HTTPD_PORTOPEN_AUTO

Value Format	BOOLEAN
Description	Specifies whether the unit's Web port is always open.

Value Range	• **Y**: Web port is always open • **N**: Web port is closed (can be opened temporarily through phone user interface programming) **Notice** • If you want to set to "**Y**", please fully recognize the possibility of unauthorized access to the unit through the Web user interface and change this setting at your own risk. In addition, please take full security measures for connecting to an external network and control all passwords for logging in to the Web user interface.
Default Value	**N**

HTTPD_PORTCLOSE_TM

Value Format	INTEGER
Description	Specifies port close time when keeping the no action.
Value Range	1–1440
Default Value	30

USER_ID

Value Format	STRING
Description	Specifies the account ID used to access the Web user interface with the User account.
Value Range	Max. 16 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space) **Note** • An empty string is not allowed. • A hyphen (-) cannot be used as the first character.
Default Value	user

USER_PASS

Value Format	STRING
Description	Specifies the password to use to authenticate the User account when logging in to the Web user interface.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space) **Note** • A hyphen (-) cannot be used as the first character.

Default Value	Empty string (only before a user accesses the Web user interface for the first time)
Web User Interface Reference	New Password (Page 98)

ADMIN_ID

Value Format	STRING
Description	Specifies the account ID used to access the Web user interface with the Admin account.
Value Range	Max. 16 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space) **Note** • An empty string is not allowed. • A hyphen (-) cannot be used as the first character.
Default Value	admin

ADMIN_PASS

Value Format	STRING
Description	Specifies the password to use to authenticate the Administrator account when logging in to the Web user interface.
Value Range	6–64 characters (except !, ", #, $, %, &, ', (,), @, *, +, ,, /, :, ;, <, =, >, ?, [,], ^, `, {, |, }, ~, \ and space) **Note** • A hyphen (-) cannot be used as the first character.
Default Value	adminpass
Web User Interface Reference	New Password (Page 99)

5.3.9 TR-069 Settings

ACS_URL

Value Format	STRING
Description	Specifies the URL of the Auto-Configuration Server for using TR-069. **Note** • This parameter must be in the form of a valid HTTP or HTTPS URL, as defined in RFC 3986.
Value Range	Max. 256 characters

Default Value	Empty string

ACS_USER_ID

Value Format	STRING
Description	Specifies the user ID for the Auto-Configuration Server for using TR-069.
Value Range	Max. 256 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string

ACS_PASS

Value Format	STRING
Description	Specifies the user password for the Auto-Configuration Server for using TR-069.
Value Range	Max. 256 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string

PERIODIC_INFORM_ENABLE

Value Format	BOOLEAN
Description	Specifies whether or not the CPE (Customer Premises Equipment) must periodically send CPE information to the ACS (Auto-Configuration Server) using the Inform method call.
Value Range	• **`Y`**: Enable • **`N`**: Disable
Default Value	**`N`**

PERIODIC_INFORM_INTERVAL

Value Format	INTEGER
Description	Specifies the interval length, in seconds, when the CPE must attempt to connect with the ACS and call the Inform method. **Note** • This setting is available only when "**`PERIODIC_INFORM_ENABLE`**" is set to "**`Y`**".
Value Range	30–2419200
Default Value	86400

PERIODIC_INFORM_TIME

Value Format	STRING
Description	Specifies the time (UTC) to determine when the CPE will initiate the periodic Inform method calls. **Note** • Each Inform call must occur at this reference time plus or minus an integer multiple of the "**PERIODIC_INFORM_INTERVAL**". This "**PERIODIC_INFORM_TIME**" parameter is used only to set the "phase" of the periodic Informs. The actual value can be arbitrarily set far into the past or future. For example, if "**PERIODIC_INFORM_INTERVAL**" is set to 86400 (one day) and if "**PERIODIC_INFORM_TIME**" is set to midnight on a certain day, then periodic Informs will occur every day at midnight, starting from the set date. • If the time is set to "unknown time", the start time depends on the CPE's settings. However, the "**PERIODIC_INFORM_INTERVAL**" must still be adhered to. If absolute time is not available to the CPE, its periodic Inform behavior must be the same as if the "**PERIODIC_INFORM_TIME**" parameter was set to the "unknown time". • Time zones other than UTC are not supported.
Value Range	4–32 characters date and time format
Default Value	0001-01-01T00:00:00Z

CON_REQ_USER_ID

Value Format	STRING
Description	Specifies the user name used to authenticate an ACS making a Connection Request to the CPE.
Value Range	Max. 256 characters
Default Value	Empty string

CON_REQ_PASS

Value Format	STRING
Description	Specifies the password used to authenticate an ACS making a Connection Request to the CPE. **Note** • When the "**CON_REQ_USER_ID**" parameter is specified, an empty string for this parameter is not allowed.
Value Range	Max. 256 characters

Default Value	Empty string

ANNEX_G_STUN_ENABLE

Value Format	BOOLEAN
Description	Specifies whether or not the CPE can use STUN. This applies only to the use of STUN in association with the ACS to allow UDP Connection Requests.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**N**

ANNEX_G_STUN_SERV_ADDR

Value Format	STRING
Description	Specifies the host name or IP address of the STUN server for the CPE to send Binding Requests. **Note** • This setting is available only when "**ANNEX_G_STUN_ENABLE**" is set to "**Y**". • If the value for this setting is an empty string and "**ANNEX_G_STUN_ENABLE**" is set to "**Y**", the CPE must use the address of the ACS extracted from the host portion of the ACS URL.
Value Range	Max. 256 characters
Default Value	Empty string

ANNEX_G_STUN_SERV_PORT

Value Format	INTEGER
Description	Specifies the port number of the STUN server for the CPE to send Binding Requests. **Note** • This setting is available only when "**ANNEX_G_STUN_ENABLE**" is set to "**Y**".
Value Range	1–65535
Default Value	3478

ANNEX_G_STUN_USER_ID

Value Format	STRING
Description	Specifies the STUN user name to be used in Binding Requests (only if message integrity has been requested by the STUN server). **Note** • If the value for this setting is an empty string, the CPE must not send STUN Binding Requests with message integrity.
Value Range	Max. 256 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string

ANNEX_G_STUN_PASS

Value Format	STRING
Description	Specifies the STUN password to be used in computing the MESSAGE-INTEGRITY attribute used in Binding Requests (only if message integrity has been requested by the STUN server). When read, this parameter returns an empty string, regardless of the actual value.
Value Range	Max. 256 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string

ANNEX_G_STUN_MAX_KEEP_ALIVE

Value Format	INTEGER
Description	Specifies the maximum period, in seconds, that STUN Binding Requests must be sent by the CPE for the purpose of maintaining the binding in the Gateway. This applies specifically to Binding Requests sent from the UDP Connection Request address and port. **Note** • This setting is available only when "**`ANNEX_G_STUN_ENABLE`**" is set to "**`Y`**".
Value Range	1–3600
Default Value	300

ANNEX_G_STUN_MIN_KEEP_ALIVE

Value Format	INTEGER

Description	Specifies the minimum period, in seconds, that STUN Binding Requests can be sent by the CPE for the purpose of maintaining the binding in the Gateway. This limit applies only to Binding Requests sent from the UDP Connection Request address and port, and only those that do not contain the BINDING-CHANGE attribute. **Note** • This setting is available only when "**ANNEX_G_STUN_ENABLE**" is set to "**Y**".
Value Range	1–3600
Default Value	30

UDP_CON_REQ_ADDR_NOTIFY_LIMIT

Value Format	INTEGER
Description	Specifies the minimum time, in seconds, between Active Notifications resulting from changes to the "UDPConnectionRequestAddress" (if Active Notification is enabled).
Value Range	0–65535
Default Value	0

DEVICE_PROVISIONING_CODE

Value Format	STRING
Description	Specifies the device provisioning code for use with TR-106 parameters.
Value Range	Max. 64 characters
Default Value	Empty string

TR069_REGISTERING

Value Format	STRING
Description	Specifies the line status that TR-069 outputs while the line is being registered.
Value Range	Max. 16 characters
Default Value	Error

TR069_REGISTERED

Value Format	STRING
Description	Specifies the line status that TR-069 outputs when the line has been registered.

Value Range	Max. 16 characters
Default Value	Registering

5.3.10 XML Settings

XMLAPP_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable the XML application feature.
Value Range	• **Y**: Enable XML application • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable XMLAPP (Page 90)

XMLAPP_USERID

Value Format	STRING
Description	Specifies the authentication ID required to access the XML application server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	User ID (Page 91)

XMLAPP_USERPASS

Value Format	STRING
Description	Specifies the authentication password used to access the XML application server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	Password (Page 91)

XMLAPP_LDAP_URL

Value Format	STRING
Description	Specifies the URL that is accessed when the phonebook is accessed, to check for XML data.
Value Range	Max. 256 characters

Default Value	Empty string
Web User Interface Reference	LDAP URL (Page 91)

XMLAPP_LDAP_USERID

Value Format	STRING
Description	Specifies the authentication ID required to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	User ID (Page 91)

XMLAPP_LDAP_USERPASS

Value Format	STRING
Description	Specifies the authentication password used to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	Password (Page 92)

XMLAPP_NPB_SEARCH_TIMER

Value Format	INTEGER
Description	Specifies the time which is for searching XML phonebook.
Value Range	1–65535
Default Value	30

XMLAPP_LDAP_MAXRECORD

Value Format	INTEGER
Description	Specifies the maximum number of search results to be returned by the LDAP server.
Value Range	20–500
Default Value	20
Web User Interface Reference	Max Hits (Page 92)

XML_HTTPD_PORT

Value Format	INTEGER
Description	Specifies the local HTTP port for XML application.
Value Range	1–65535
Default Value	6666
Web User Interface Reference	Local XML Port (Page 91)

XML_ERROR_INFORMATION

Value Format	BOOLEAN
Description	Specifies whether to display an error information when an error occurs.
Value Range	• **Y**: Error information is displayed • **N**: Error information is not displayed
Default Value	**Y**

5.3.11 LDAP Settings

LDAP_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the LDAP service.
Value Range	• **Y**: Enable LDAP service • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable LDAP (Page 87)

LDAP_DNSSRV_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to request the DNS server to translate domain names into IP addresses using the SRV record.
Value Range	• **Y**: Enable DNS SRV lookup • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable DNS SRV lookup (Page 90)

LDAP_SERVER

Value Format	STRING
Description	Specifies the server host of LDAP.
Value Range	Max. 256 characters **Note** • The LDAP server address should start with "ldap://" or "ldaps://".
Default Value	Empty string
Web User Interface Reference	Server Address (Page 88)

LDAP_SERVER_PORT

Value Format	INTEGER
Description	Specifies the port of the LDAP server.
Value Range	1–65535
Default Value	389
Web User Interface Reference	Port (Page 88)

LDAP_MAXRECORD

Value Format	INTEGER
Description	Specifies the maximum number of search results to be returned by the LDAP server.
Value Range	20–500
Default Value	20
Web User Interface Reference	Max Hits (Page 88)

LDAP_NUMB_SEARCH_TIMER

Value Format	INTEGER
Description	Specifies the timer for searching telephone number.
Value Range	1–65535
Default Value	30

LDAP_NAME_SEARCH_TIMER

Value Format	INTEGER

Description	Specifies the timer for searching name.
Value Range	1–65535
Default Value	5

LDAP_USERID

Value Format	STRING
Description	Specifies the authentication ID required to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	User ID (Page 88)

LDAP_PASSWORD

Value Format	STRING
Description	Specifies the authentication password required to access the LDAP server.
Value Range	Max. 128 characters
Default Value	Empty string
Web User Interface Reference	Password (Page 88)

LDAP_NAME_FILTER

Value Format	STRING
Description	Specifies the name filter which is the search criteria for name look up.
Value Range	Max. 256 characters
Default Value	(|(cn=%)(sn=%))
Web User Interface Reference	Name Filter (Page 89)

LDAP_NUMB_FILTER

Value Format	STRING
Description	Specifies the number filter which is the search criteria for number look up.
Value Range	Max. 256 characters
Default Value	(|(telephoneNumber=%)(mobile=%)(homePhone=%))
Web User Interface Reference	Number Filter (Page 89)

LDAP_NAME_ATTRIBUTE

Value Format	STRING
Description	Specifies the name attributes of each record which are to be returned in the LDAP search result.
Value Range	Max. 256 characters
Default Value	cn,sn
Web User Interface Reference	Name Attributes (Page 89)

LDAP_NUMB_ATTRIBUTE

Value Format	STRING
Description	Specifies the number attributes of each record which are to be returned in the LDAP search result.
Value Range	Max. 256 characters
Default Value	telephoneNumber,mobile,homePhone
Web User Interface Reference	Number Attributes (Page 89)

LDAP_BASEDN

Value Format	STRING
Description	Specifies the entry information on the screen.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Distinguished Name(Base DN) (Page 89)

LDAP_SSL_VERIFY

Value Format	INTEGER
Description	Specifies whether to enable the verification of the root certificate.
Value Range	0: No verification 1: Simple verification 2: Precise verification
Default Value	0

LDAP_ROOT_CERT_PATH

Value Format	STRING

Description	Specifies the URI where the root certificate is stored.
Value Range	Max. 384 characters
Default Value	Empty string

LDAP_CLIENT_CERT_PATH

Value Format	STRING
Description	Specifies the URI where the client certificate is stored.
Value Range	Max. 384 characters
Default Value	Empty string

LDAP_PKEY_PATH

Value Format	STRING
Description	Specifies the URI where the private key is stored.
Value Range	Max. 384 characters
Default Value	Empty string

LDAP_DISPLAY_FORMAT

Value Format	STRING
Description	Specifies the display name by using the attributes of each record returned in the LDAP search results.
Value Range	Max. 256 characters (LDAP attributes) A unit uses the initial settings for the display if this setting is NULL.
Default Value	Empty string

5.3.12 SNMP Settings

Note

- Changing SNMP setting may require restarting the unit.

SNMP_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable SNMP feature.
Value Range	• `Y`: Enable SNMP • `N`: Disable

Default Value	N

SNMP_TRUST_IP

Value Format	STRING
Description	Specifies the IP address or FQDN of the trusted SNMP server.
Value Range	Max. 256 characters
Default Value	Empty string

SNMP_TRUST_PORT

Value Format	INTEGER
Description	Specifies the port of the trusted SNMP server.
Value Range	1–65535
Default Value	161

SNMP_RO_COMMUNITY_STRING

Value Format	STRING
Description	Specifies the community name for read-only.
Value Range	Max. 32 characters
Default Value	Empty string

SNMP_SECURITY_TYPE

Value Format	INTEGER
Description	Specifies the security type of SNMPv3.
Value Range	0: noAuthNoPriv 1: AuthNoPriv 2: AuthPriv
Default Value	0

SNMP_SECURITY_USER

Value Format	STRING
Description	Specifies the security user ID for authentication and encryption of SNMPv3.
Value Range	Max. 32 characters

Default Value	Empty string

SNMP_AUTH_TYPE

Value Format	INTEGER
Description	Specifies the authentication type of SNMPv3.
Value Range	0: MD5 1: SHA
Default Value	0

SNMP_AUTH_PASSWORD

Value Format	STRING
Description	Specifies the authentication password of SNMPv3.
Value Range	0, 8–64 characters
Default Value	Empty string

SNMP_ENCRYPT_TYPE

Value Format	INTEGER
Description	Specifies the encryption type of SNMPv3.
Value Range	0: DES 1: AES
Default Value	1

SNMP_ENCRYPT_PASSWORD

Value Format	STRING
Description	Specifies the encryption password of SNMPv3.
Value Range	0, 8–64 characters
Default Value	Empty string

5.3.13 NTP Settings

NTP_ADDR

Value Format	STRING
Description	Specifies the IP address or FQDN of NTP server.

Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Server Address (Page 100)

TIME_SYNC_INTVL

Value Format	INTEGER
Description	Specifies the interval, in seconds, to resynchronize after having detected no reply from the NTP server.
Value Range	10–86400
Default Value	60

TIME_QUERY_INTVL

Value Format	INTEGER
Description	Specifies the interval, in seconds, between synchronizations with the NTP server.
Value Range	10–86400
Default Value	43200
Web User Interface Reference	Synchronization Interval (Page 100)

5.3.14 Time Settings

LOCAL_TIME_ZONE_POSIX

Value Format	STRING

Description	Specifies a IEEE 1003.1 (POSIX)-compliant local time zone definition (e.g., "EST+5 EDT,M4.1.0/2,M10.5.0/2"). **Note** • If this parameter is specified, the following parameters are disabled, and operation will be based on this parameter. – `TIME_ZONE` – `DST_ENABLE` – `DST_OFFSET` – `DST_START_MONTH` – `DST_START_ORDINAL_DAY` – `DST_START_DAY_OF_WEEK` – `DST_START_TIME` – `DST_STOP_MONTH` – `DST_STOP_ORDINAL_DAY` – `DST_STOP_DAY_OF_WEEK` – `DST_STOP_TIME`
Value Range	Max. 70 characters
Default Value	Empty string

TIME_ZONE

Value Format	INTEGER
Description	Specifies the offset of local standard time from UTC (GMT), in minutes.
Value Range	-720–780 **Note** • Only the following values are available: -720 (GMT -12:00), -660 (GMT -11:00), -600 (GMT -10:00), -540 (GMT -09:00), -480 (GMT -08:00), -420 (GMT -07:00), -360 (GMT -06:00), -300 (GMT -05:00), -240 (GMT -04:00), -210 (GMT -03:30), -180 (GMT -03:00), -120 (GMT -02:00), -60 (GMT -01:00), 0 (GMT), 60 (GMT +01:00), 120 (GMT +02:00), 180 (GMT +03:00), 210 (GMT +03:30), 240 (GMT +04:00), 270 (GMT +04:30), 300 (GMT +05:00), 330 (GMT +05:30), 345 (GMT +05:45), 360 (GMT +06:00), 390 (GMT +06:30), 420 (GMT +07:00), 480 (GMT +08:00), 540 (GMT +09:00), 570 (GMT +09:30), 600 (GMT +10:00), 660 (GMT +11:00), 720 (GMT +12:00), 780 (GMT +13:00) • If your location is west of Greenwich (0 [GMT]), the value should be minus. For example, the value for New York City, U.S.A. is "-300" (Eastern Standard Time being 5 hours behind GMT). • This parameter is disabled when the "`LOCAL_TIME_ZONE_POSIX`" parameter is specified.
Default Value	0
Web User Interface Reference	Time Zone (Page 100)

DST_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable DST (Summer Time). **Note** • This parameter is disabled when the "**LOCAL_TIME_ZONE_POSIX**" parameter is specified.
Value Range	• **Y** (Enable DST [Summer Time]) • **N** (Disable DST [Summer Time])
Default Value	**N**
Web User Interface Reference	Enable DST (Enable Summer Time) (Page 101)

DST_OFFSET

Value Format	INTEGER
Description	Specifies the amount of time, in minutes, to change the time when "**DST_ENABLE**" is set to "**Y**". **Note** • This parameter is disabled when the "**LOCAL_TIME_ZONE_POSIX**" parameter is specified.
Value Range	0–720 **Note** • This parameter is usually set to "60".
Default Value	60
Web User Interface Reference	DST Offset (Summer Time Offset) (Page 101)

DST_START_MONTH

Value Format	INTEGER
Description	Specifies the month in which DST (Summer Time) starts. **Note** • This parameter is disabled when the "**LOCAL_TIME_ZONE_POSIX**" parameter is specified.
Value Range	1–12
Default Value	3
Web User Interface Reference	Month (Page 101)

DST_START_ORDINAL_DAY

Value Format	INTEGER
Description	Specifies the number of the week on which DST (Summer Time) starts. The actual start day is specified in "**DST_START_DAY_OF_WEEK**". For example, to specify the second Sunday, specify "2" in this parameter, and "0" in the next parameter. **Note** • This parameter is disabled when the "**LOCAL_TIME_ZONE_POSIX**" parameter is specified.
Value Range	1–5 – 1: the first week of the month – 2: the second week of the month – 3: the third week of the month – 4: the fourth week of the month – 5: the last week of the month
Default Value	2
Web User Interface Reference	Day of Week (Page 102)

DST_START_DAY_OF_WEEK

Value Format	INTEGER
Description	Specifies the day of the week on which DST (Summer Time) starts. **Note** • This parameter is disabled when the "**LOCAL_TIME_ZONE_POSIX**" parameter is specified.
Value Range	0–6 – 0: Sunday – 1: Monday – 2: Tuesday – 3: Wednesday – 4: Thursday – 5: Friday – 6: Saturday
Default Value	0
Web User Interface Reference	Day of Week (Page 102)

DST_START_TIME

Value Format	INTEGER

Description	Specifies the start time of DST (Summer Time) in minutes after 12:00 AM. **Note** • This parameter is disabled when the "`LOCAL_TIME_ZONE_POSIX`" parameter is specified.
Value Range	0–1439
Default Value	120
Web User Interface Reference	Time (Page 102)

DST_STOP_MONTH

Value Format	INTEGER
Description	Specifies the month in which DST (Summer Time) ends. **Note** • This parameter is disabled when the "`LOCAL_TIME_ZONE_POSIX`" parameter is specified.
Value Range	1–12
Default Value	11
Web User Interface Reference	Month (Page 102)

DST_STOP_ORDINAL_DAY

Value Format	INTEGER
Description	Specifies the number of the week on which DST (Summer Time) ends. The actual end day is specified in "`DST_STOP_DAY_OF_WEEK`". For example, to specify the second Sunday, specify "2" in this parameter, and "0" in the next parameter. **Note** • This parameter is disabled when the "`LOCAL_TIME_ZONE_POSIX`" parameter is specified.
Value Range	1–5 – 1: the first week of the month – 2: the second week of the month – 3: the third week of the month – 4: the fourth week of the month – 5: the last week of the month
Default Value	1
Web User Interface Reference	Day of Week (Page 103)

DST_STOP_DAY_OF_WEEK

Value Format	INTEGER
Description	Specifies the day of the week on which DST (Summer Time) ends. **Note** • This parameter is disabled when the "`LOCAL_TIME_ZONE_POSIX`" parameter is specified.
Value Range	0–6 – 0: Sunday – 1: Monday – 2: Tuesday – 3: Wednesday – 4: Thursday – 5: Friday – 6: Saturday
Default Value	0
Web User Interface Reference	Day of Week (Page 103)

DST_STOP_TIME

Value Format	INTEGER
Description	Specifies the end time of DST (Summer Time) in minutes after 12:00 AM. **Note** • This parameter is disabled when the "`LOCAL_TIME_ZONE_POSIX`" parameter is specified.
Value Range	0–1439
Default Value	120
Web User Interface Reference	Time (Page 104)

5.3.15 Network Phonebook (Common)

ONLY_NPB_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to be available the unit phonebook when the network phonebook is enabled.
Value Range	• `Y`: Do not use unit phonebook • `N`: Use unit phonebook
Default Value	`N`

NETWORK_SEARCH_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to perform the phonebook search at the time of the receiving the incoming or the searching the received log.
Value Range	• `Y`: Enable phonebook search • `N`: Disable
Default Value	`N`

NW_PHONEBOOK_ADVANCED_SERACH

Value Format	BOOLEAN
Description	Specifies whether to perform a narrowing search with the LDAP phonebook.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`

5.3.16 Language Settings

AVAILABLE_LANGUAGE

Value Format	STRING
Description	Specifies the selectable language on the unit.
Value Range	en, es, fr, de, it, da, nl, sv, fi, el, hu, pt, pl, sk, cs, sh, ru, uk, tr, no, ro, ct, kk, me → see **4.4.1.1 Selectable Language**
Web User Interface Reference	IP Phone (Page 94)

DEFAULT_LANGUAGE

Value Format	STRING
Description	Specifies the default language on the unit.
Value Range	en, es, fr, de, it, da, nl, sv, fi, el, hu, pt, pl, sk, cs, sh, ru, uk, tr, no, ro, ct, kk, me → see **4.4.1.1 Selectable Language**
Default Value	en
Web User Interface Reference	IP Phone (Page 96)

LANGUAGE_PATHx

Parameter Name Example	`LANGUAGE_PATH1`, `LANGUAGE_PATH2`, …, `LANGUAGE_PATH10`
Value Format	STRING
Description	Specifies the URI of the language file. x=1–10
Value Range	Max. 384 characters
Default Value	Empty string

LANGUAGE_VERx

Parameter Name Example	`LANGUAGE_VER1`, `LANGUAGE_VER2`, …, `LANGUAGE_VER10`
Value Format	STRING
Description	Specifies the version of the language file. x=1–10
Value Range	"00.000.000"–"15.999.999"
Default Value	Empty string

AVAILABLE_LANGUAGE_WEB

Value Format	STRING
Description	Specifies the selectable language on the Web.
Value Range	en, es, fr, de, it, nl, el, hu, pt, pl, sk, cs, sh, ru, uk, tr, ro, ct, kk, me → see **4.4.1.1 Selectable Language**
Web User Interface Reference	Web Language (Page 95)

WEB_LANGUAGE

Value Format	STRING
Description	Specifies the default language on the unit.
Value Range	en, es, fr, de, it, nl, el, hu, pt, pl, sk, cs, sh, ru, uk, tr, ro, ct, kk, me → see **4.4.1.1 Selectable Language**
Default Value	en
Web User Interface Reference	Web Language (Page 96)

WEB_LANGUAGE_PATHx

Parameter Name Example	`WEB_LANGUAGE_PATH1`, `WEB_LANGUAGE_PATH2`, …, `WEB_LANGUAGE_PATH10`

Value Format	STRING
Description	Specifies the URI of the language file. x=1–10
Value Range	Max. 384 characters
Default Value	Empty string

WEB_LANGUAGE_VERx

Parameter Name Example	**`WEB_LANGUAGE_VER1`**, **`WEB_LANGUAGE_VER2`**, …, **`WEB_LANGUAGE_VER10`**
Value Format	STRING
Description	Specifies the version of the language file. x=1–10
Value Range	"00.000.000"–"15.999.999"
Default Value	Empty string

5.3.17 NAT Settings

STUN_SERV_ADDR

Value Format	STRING
Description	Specifies the IP address or FQDN of the primary STUN server.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Server Address (Page 86)

STUN_SERV_PORT

Value Format	INTEGER
Description	Specifies the port of the primary STUN server.
Value Range	1–65535
Default Value	3478
Web User Interface Reference	Port (Page 87)

STUN_2NDSERV_ADDR

Value Format	STRING
Description	Specifies the IP address or FQDN of the secondary STUN server.

Value Range	Max. 256 characters
Default Value	Empty string

STUN_2NDSERV_PORT

Value Format	INTEGER
Description	Specifies the port number of the secondary STUN server.
Value Range	1–65535
Default Value	3478

STUN_INTVL

Value Format	INTEGER
Description	Specifies the interval of the sending binding request.
Value Range	60–86400
Default Value	300
Web User Interface Reference	Binding Interval (Page 87)

SIP_ADD_RPORT

Value Format	BOOLEAN
Description	Specifies whether to add the 'rport' parameter to the top Via header field value of requests generated.
Value Range	• **Y**: Enable Rport • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable Rport (RFC 3581) (Page 109)

PORT_PUNCH_INTVL

Value Format	INTEGER
Description	Specifies the interval, in seconds, between transmissions of the Keep Alive packet in order to maintain the NAT binding information for SIP packet.
Value Range	0, 10–300 0: Disable
Default Value	0
Web User Interface Reference	Enable Port Punching for SIP (Page 109)

RTP_PORT_PUNCH_INTVL

Value Format	INTEGER
Description	Specifies the interval, in seconds, between transmissions of the Keep Alive packet in order to maintain the NAT binding information for RTP packet.
Value Range	0, 10–300 0: Disable
Default Value	0
Web User Interface Reference	Enable Port Punching for RTP (Page 109)

EXTERNAL_RTP_PORTx

Value Format	INTEGER
Description	x=1–3 Specifies the port number of the router in Static NAT status.
Value Range	0, 1024–59998 (only even ports) 0: Disable
Default Value	0

5.3.18 SIP Settings

SIP_USER_AGENT

Value Format	STRING
Description	Specifies the text string to send as the user agent in the headers of SIP messages.
Value Range	Max. 64 characters **Note** • If "{mac}" is included in this parameter, it will be replaced with the unit's MAC address in lower-case. • If "{MAC}" is included in this parameter, it will be replaced with the unit's MAC address in upper-case. • If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name. • If "{fwver}" is included in this parameter, it will be replaced with the firmware version of the unit. • If "{sipver}" is included in this parameter, it will be replaced with the SIP software version of the unit.
Default Value	Panasonic-{MODEL}/{fwver} ({mac})
Web User Interface Reference	User Agent (Page 108)

PHONE_NUMBER_n

Parameter Name Example	`PHONE_NUMBER_1`
Value Format	STRING
Description	Specifies the phone number to use as the user ID required for registration to the SIP registrar server. **Note** • When registering using a user ID that is not a phone number, you should use the "`SIP_URI_n`" setting.
Value Range	Max. 32 characters
Default Value	Empty string
Web User Interface Reference	Phone Number (Page 110)

SIP_URI_n

Parameter Name Example	`SIP_URI_1`
Value Format	STRING
Description	Specifies the unique ID used by the SIP registrar server, which consists of "sip:", a user part, the "@" symbol, and a host part, for example, "sip:user@example.com", "2405551111_1". **Note** • When registering using a user ID that is not a phone number, you should use this setting. • In a SIP URI, the user part ("user" in the example above) can contain up to 63 characters, and the host part ("example.com" in the example above) can contain up to 127 characters.
Value Range	Max. 384 characters
Default Value	Empty string
Web User Interface Reference	SIP URI (Page 114)

SIP_RGSTR_ADDR_n

Parameter Name Example	`SIP_RGSTR_ADDR_1`
Value Format	STRING
Description	Specifies the IP address or FQDN of the SIP registrar server.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Registrar Server Address (Page 110)

SIP_RGSTR_PORT_n

Parameter Name Example	`SIP_RGSTR_PORT_1`
Value Format	INTEGER
Description	Specifies the port number to use for communication with the SIP registrar server.
Value Range	1–65535
Default Value	5060
Web User Interface Reference	Registrar Server Port (Page 111)

SIP_PRXY_ADDR_n

Parameter Name Example	`SIP_PRXY_ADDR_1`
Value Format	STRING
Description	Specifies the IP address or FQDN of the SIP proxy server.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Proxy Server Address (Page 111)

SIP_PRXY_PORT_n

Parameter Name Example	`SIP_PRXY_PORT_1`
Value Format	INTEGER
Description	Specifies the port number to use for communication with the SIP proxy server.
Value Range	1–65535
Default Value	5060
Web User Interface Reference	Proxy Server Port (Page 111)

SIP_PRSNC_ADDR_n

Parameter Name Example	`SIP_PRSNC_ADDR_1`
Value Format	STRING
Description	Specifies the IP address or FQDN of the SIP presence server.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Presence Server Address (Page 111)

SIP_PRSNC_PORT_n

Parameter Name Example	`SIP_PRSNC_PORT_1`
Value Format	INTEGER
Description	Specifies the port number to use for communication with the SIP presence server.
Value Range	1–65535
Default Value	5060
Web User Interface Reference	Presence Server Port (Page 111)

SIP_OUTPROXY_ADDR_n

Parameter Name Example	`SIP_OUTPROXY_ADDR_1`
Value Format	STRING
Description	Specifies the IP address or FQDN of the SIP outbound proxy server.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Outbound Proxy Server Address (Page 112)

SIP_OUTPROXY_PORT_n

Parameter Name Example	`SIP_OUTPROXY_PORT_1`
Value Format	INTEGER
Description	Specifies the port number to use for communication with the SIP outbound proxy server.
Value Range	1–65535
Default Value	5060
Web User Interface Reference	Outbound Proxy Server Port (Page 112)

SIP_DNSSRV_ENA_NAPTR_n

Parameter Name Example	`SIP_DNSSRV_ENA_NAPTR_1`
Value Format	BOOLEAN
Description	Specifies whether to enable the use of the NAPTR sequence.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`

SIP_SVCDOMAIN_n

Parameter Name Example	`SIP_SVCDOMAIN_1`
Value Format	STRING
Description	Specifies the domain name provided by your phone system dealer/ service provider. The domain name is the part of the SIP URI that comes after the "@" symbol.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Service Domain (Page 112)

SIP_AUTHID_n

Parameter Name Example	`SIP_AUTHID_1`
Value Format	STRING
Description	Specifies the authentication ID required to access the SIP server.
Value Range	Max. 128 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication ID (Page 112)

SIP_PASS_n

Parameter Name Example	`SIP_PASS_1`
Value Format	STRING
Description	Specifies the authentication password used to access the SIP server.
Value Range	Max. 128 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication Password (Page 112)

SIP_SRC_PORT_n

Parameter Name Example	`SIP_SRC_PORT_1`
Value Format	INTEGER
Description	Specifies the source port number used by the unit for SIP communication.
Value Range	1024–49151
Default Value	`SIP_SRC_PORT_1`="5060"

Web User Interface Reference	Local SIP Port (Page 114)

DSCP_SIP_n

Parameter Name Example	`DSCP_SIP_1`
Value Format	INTEGER
Description	Specifies the DSCP level of DiffServ applied to SIP packets.
Value Range	0–63
Default Value	0
Web User Interface Reference	SIP Packet QoS (DSCP) (Page 113)

SIP_DNSSRV_ENA_n

Parameter Name Example	`SIP_DNSSRV_ENA_1`
Value Format	BOOLEAN
Description	Specifies whether to request the DNS server to translate domain names into IP addresses using the SRV record.
Value Range	• `Y` (Enable DNS SRV lookup) • `N` (Disable DNS SRV lookup) **Note** • If set to "`Y`", the unit will perform a DNS SRV lookup for a SIP registrar server, SIP proxy server, SIP outbound proxy server, or SIP presence server. • If set to "`N`", the unit will not perform a DNS SRV lookup for a SIP registrar server, SIP proxy server, SIP outbound proxy server, or SIP presence server.
Default Value	`Y`
Web User Interface Reference	Enable DNS SRV lookup (Page 113)

SIP_UDP_SRV_PREFIX_n

Parameter Name Example	`SIP_UDP_SRV_PREFIX_1`
Value Format	STRING
Description	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using UDP. **Note** • This setting is available only when "`SIP_DNSSRV_ENA_n`" is set to "`Y`".
Value Range	Max. 32 characters

Default Value	_sip._udp.
Web User Interface Reference	SRV lookup Prefix for UDP (Page 113)

SIP_TCP_SRV_PREFIX_n

Parameter Name Example	**`SIP_TCP_SRV_PREFIX_1`**
Value Format	STRING
Description	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using TCP. **Note** • This setting is available only when "**`SIP_DNSSRV_ENA_n`**" is set to "**`Y`**".
Value Range	Max. 32 characters
Default Value	_sip._tcp.
Web User Interface Reference	SRV lookup Prefix for TCP (Page 114)

REG_EXPIRE_TIME_n

Parameter Name Example	**`REG_EXPIRE_TIME_1`**
Value Format	INTEGER
Description	Specifies the length of time, in seconds, that the registration remains valid. This value is set in the "Expires" header of the REGISTER request.
Value Range	1–4294967295
Default Value	3600
Web User Interface Reference	REGISTER Expires Timer (Page 115)

REG_INTERVAL_RATE_n

Parameter Name Example	**`REG_INTERVAL_RATE_1`**
Value Format	INTEGER
Description	Specifies the percentage of the "expires" value after which to refresh registration by sending a new REGISTER message in the same dialog.
Value Range	1–100
Default Value	50

REG_RTX_INTVL_n

Parameter Name Example	`REG_RTX_INTVL_1`
Value Format	INTEGER
Description	Specifies the interval, in seconds, between transmissions of the REGISTER request when a registration results in failure (server no reply or error reply).
Value Range	1–86400
Default Value	10

USE_DEL_REG_OPEN_n

Parameter Name Example	`USE_DEL_REG_OPEN_1`
Value Format	BOOLEAN
Description	Specifies whether to enable cancelation before registration when, for example, the unit is turned on.
Value Range	• `Y`: Send un-REGISTER • `N`: Does not send
Default Value	`N`

USE_DEL_REG_CLOSE_n

Parameter Name Example	`USE_DEL_REG_CLOSE_1`
Value Format	BOOLEAN
Description	Specifies whether to enable the cancelation of registration before the SIP function shuts down when, for example, the configuration has changed.
Value Range	• `Y`: Send un-REGISTER • `N`: Does not send
Default Value	`N`

SIP_SESSION_TIME_n

Parameter Name Example	`SIP_SESSION_TIME_1`
Value Format	INTEGER
Description	Specifies the length of time, in seconds, that the unit waits before terminating SIP sessions when no reply to repeated requests is received. For details, refer to RFC 4028.
Value Range	0, 60–65535 (0: Disable)
Default Value	0

Web User Interface Reference	Enable Session Timer (RFC 4028) (Page 116)

SIP_SESSION_METHOD_n

Parameter Name Example	`SIP_SESSION_METHOD_1`
Value Format	INTEGER
Description	Specifies the refreshing method of SIP sessions.
Value Range	0–2 • 0: reINVITE • 1: UPDATE • 2: AUTO
Default Value	0
Web User Interface Reference	Session Timer Method (Page 116)

SIP_TIMER_T1_n

Parameter Name Example	`SIP_TIMER_T1_1`
Value Format	INTEGER
Description	Specifies the default interval, in milliseconds, between transmissions of SIP messages. For details, refer to RFC 3261.
Value Range	• 250 • 500 • 1000 • 2000 • 4000
Default Value	500
Web User Interface Reference	T1 Timer (Page 115)

SIP_TIMER_T2_n

Parameter Name Example	`SIP_TIMER_T2_1`
Value Format	INTEGER
Description	Specifies the maximum interval, in seconds, between transmissions of SIP messages. For details, refer to RFC 3261.
Value Range	• 2 • 4 • 8 • 16 • 32
Default Value	4

Web User Interface Reference	T2 Timer (Page 115)

SIP_TIMER_T4_n

Parameter Name Example	`SIP_TIMER_T4_1`
Value Format	INTEGER
Description	Specifies the maximum period, in seconds, that a message can remain on the network.
Value Range	• 0 • 1 • 2 • 3 • 4 • 5
Default Value	5

SIP_TIMER_B_n

Parameter Name Example	`SIP_TIMER_B_1`
Value Format	INTEGER
Description	Specifies the value of SIP timer B (INVITE transaction timeout timer), in milliseconds. For details, refer to RFC 3261.
Value Range	250–64000
Default Value	32000

SIP_TIMER_D_n

Parameter Name Example	`SIP_TIMER_D_1`
Value Format	INTEGER
Description	Specifies the value of SIP timer D (wait time for answer resending), in milliseconds. For details, refer to RFC 3261.
Value Range	0, 250–64000
Default Value	5000

SIP_TIMER_F_n

Parameter Name Example	`SIP_TIMER_F_1`
Value Format	INTEGER

Description	Specifies the value of SIP timer F (non-INVITE transaction timeout timer), in milliseconds. For details, refer to RFC 3261.
Value Range	250–64000
Default Value	32000

SIP_TIMER_H_n

Parameter Name Example	`SIP_TIMER_H_1`
Value Format	INTEGER
Description	Specifies the value of SIP timer H (wait time for ACK reception), in milliseconds. For details, refer to RFC 3261.
Value Range	250–64000
Default Value	32000

SIP_TIMER_J_n

Parameter Name Example	`SIP_TIMER_J_1`
Value Format	INTEGER
Description	Specifies the value of SIP timer J (wait time for non-INVITE request resending), in milliseconds. For details, refer to RFC 3261.
Value Range	0, 250–64000
Default Value	5000

SIP_100REL_ENABLE_n

Parameter Name Example	`SIP_100REL_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to add the option tag 100rel to the "Supported" header of the INVITE message. For details, refer to RFC 3262.
Value Range	• `Y`: Enable 100rel function • `N`: Disable 100rel function **Note** • If set to "`Y`", the Reliability of Provisional Responses function will be enabled. The option tag 100rel will be added to the "Supported" header of the INVITE message and to the "Require" header of the "1xx" provisional message. • If set to "`N`", the option tag 100rel will not be used.
Default Value	`Y`
Web User Interface Reference	Enable 100rel (RFC 3262) (Page 116)

SIP_18X_RTX_INTVL_n

Parameter Name Example	`SIP_18X_RTX_INTVL_1`
Value Format	INTEGER
Description	Specifies the retransmission interval, in seconds, for "18x" responses.
Value Range	0, 1–600 (0: Disable)
Default Value	0

SIP_SUBS_EXPIRE_n

Parameter Name Example	`SIP_SUBS_EXPIRE_1`
Value Format	INTEGER
Description	Specifies the length of time, in seconds, that the subscription remains valid. This value is set in the "Expires" header of the SUBSCRIBE request.
Value Range	1–4294967295
Default Value	3600

SUB_INTERVAL_RATE_n

Parameter Name Example	`SUB_INTERVAL_RATE_1`
Value Format	INTEGER
Description	Specifies the percentage of the "expires" value after which to refresh subscriptions by sending a new SUBSCRIBE message in the same dialog.
Value Range	1–100
Default Value	50

SUB_RTX_INTVL_n

Parameter Name Example	`SUB_RTX_INTVL_1`
Value Format	INTEGER
Description	Specifies the interval, in seconds, between transmissions of SUBSCRIBE requests when a subscription results in failure (server no reply or error reply).
Value Range	1–86400
Default Value	10

SIP_P_PREFERRED_ID_n

Parameter Name Example	`SIP_P_PREFERRED_ID_1`
Value Format	BOOLEAN
Description	Specifies whether to add the "P-Preferred-Identity" header to SIP messages.
Value Range	• `Y`: Add the "P-Preferred-Identity" header • `N`: Do not add the "P-Preferred-Identity" header
Default Value	`N`

SIP_PRIVACY_n

Parameter Name Example	`SIP_PRIVACY_1`
Value Format	BOOLEAN
Description	Specifies whether to add the "Privacy" header to SIP messages.
Value Range	• `Y`: Add the "Privacy" header • `N`: Do not add the "Privacy" header
Default Value	`N`

ADD_USER_PHONE_n

Parameter Name Example	`ADD_USER_PHONE_1`
Value Format	BOOLEAN
Description	Specifies whether to add "user=phone" to the SIP URI in SIP messages.
Value Range	• `Y`: Add "user=phone" • `N`: Do not add "user=phone" **Note** • SIP URI example: – "`sip:1111@tokyo.example.com;user=phone`", when set to "`Y`" – "`sip:1111@tokyo.example.com`", when set to "`N`"
Default Value	`N`

SIP_ANM_DISPNAME_n

Parameter Name Example	`SIP_ANM_DISPNAME_1`
Value Format	INTEGER

Description	Specifies the text string to set as the display name in the "From" header when making anonymous calls.
Value Range	• 0: Use normal display name • 1: Use "Anonymous" for display name • 2: Do not send a display name
Default Value	1

SIP_ANM_USERNAME_n

Parameter Name Example	`SIP_ANM_USERNAME_1`
Value Format	INTEGER
Description	Specifies the text string to set as the user name in the "From" header when making anonymous calls.
Value Range	• 0: Use normal user name • 1: Use "anonymous" for user name • 2: Do not send a user name
Default Value	0

SIP_ANM_HOSTNAME_n

Parameter Name Example	`SIP_ANM_HOSTNAME_1`
Value Format	BOOLEAN
Description	Specifies whether to set an anonymous host name in the "From" header when making anonymous calls.
Value Range	• `Y`: Use "anonymous.invalid" for host name • `N`: Use normal host name
Default Value	`N`

SIP_DETECT_SSAF_n

Parameter Name Example	`SIP_DETECT_SSAF_1`
Value Format	BOOLEAN
Description	Specifies whether to enable SSAF for the SIP servers (registrar server, proxy server, and presence server).

Value Range	• **Y**: Enable SSAF • **N**: Disable SSAF **Note** • If set to "**Y**", the unit receives SIP messages only from the source addresses stored in the SIP servers (registrar server, proxy server, and presence server), and not from other addresses. However, if "**SIP_OUTPROXY_ADDR_n**" in **5.3.18 SIP Settings** is specified, the unit also receives SIP messages from the source address stored in the SIP outbound proxy server.
Default Value	**N**
Web User Interface Reference	Enable SSAF (SIP Source Address Filter) (Page 116)

SIP_RCV_DET_HEADER_n

Parameter Name Example	**SIP_RCV_DET_HEADER_1**
Value Format	BOOLEAN
Description	Specifies whether to check the user name part of the SIP URI in the "To" header when receiving the INVITE message with an incorrect target SIP URI.
Value Range	• **Y**: Enable username check • **N**: Disable username check **Note** • If set to "**Y**", the unit will return an error reply when it receives the INVITE message with an incorrect target SIP URI. • If set to "**N**", the unit will not check the user name part of the SIP URI in the "To" header.
Default Value	**N**

SIP_RCV_DET_REQURI_n

Parameter Name Example	**SIP_RCV_DET_REQURI_1**
Value Format	BOOLEAN
Description	Specifies whether to check ReqURI that is the part of SIP URI in "To" header when INVITE with wrong target SIP URI is received.
Value Range	• **Y** • **N**
Default Value	**N**

SIP_CONTACT_ON_ACK_n

Parameter Name Example	`SIP_CONTACT_ON_ACK_1`
Value Format	BOOLEAN
Description	Specifies whether to add the "Contact" header to SIP ACK message.
Value Range	• `Y`: Add the "Contact" header • `N`: Do not add the "Contact" header
Default Value	`N`

VOICE_MESSAGE_AVAILABLE

Value Format	BOOLEAN
Description	Specifies how the existence of voice messages is determined when a "Messages-Waiting: yes" message is received.
Value Range	• `Y`: Determines that voice messages exist when "Messages-Waiting: yes" is received with a "Voice-Message" line included. • `N`: Determines that voice messages exist when "Messages-Waiting: yes" is received even without a "Voice-Message" line included.
Default Value	`Y`

SIP_INVITE_EXPIRE_n

Parameter Name Example	`SIP_INVITE_EXPIRE_1`
Value Format	INTEGER
Description	Specifies the period, in seconds, in which the INVITE message will expire.
Value Range	0, 60–65535 (0: Disable)
Default Value	0

SIP_FOVR_NORSP_n

Parameter Name Example	`SIP_FOVR_NORSP_1`
Value Format	BOOLEAN
Description	Specifies whether to perform the fail-over process when the unit detects that the SIP server is not replying to SIP message.

Value Range	• `Y`: Enable fail-over • `N`: Disable fail-over **Note** • If set to "`Y`", the unit will try to use the other SIP servers via the DNS SRV and A records. • If set to "`N`", the unit will not try to use the other SIP servers.
Default Value	`Y`

SIP_FOVR_MAX_n

Parameter Name Example	`SIP_FOVR_MAX_1`
Value Format	INTEGER
Description	Specifies the maximum number of servers (including the first [normal] server) used in the fail-over process.
Value Range	1–4
Default Value	2

SIP_FOVR_MODE_n

Parameter Name Example	`SIP_FOVR_MODE_1`
Value Format	BOOLEAN
Description	Specifies whether INVITE/SUBSCRIBE will also follow the REGISTER Failover result.
Value Range	• `Y`: INVITE/SUBSCRIBE will follow the REGISTER Failover result. • `N`: INVITE/SUBSCRIBE will not follow the REGISTER Failover result.
Default Value	`N`

SIP_FOVR_DURATION_n

Parameter Name Example	`SIP_FOVR_DURATION_1`
Value Format	INTEGER
Description	Specifies the number of transmission times for the REGISTER method at the Failover destination.
Value Range	0–255
Default Value	0

SIP_ADD_ROUTE_n

Parameter Name Example	`SIP_ADD_ROUTE_1`
Value Format	BOOLEAN
Description	Specifies whether or not to add Route headers when setting OutBoundProxy. **Note** • Route headers are not added when OutBoundProxy and other server settings are the same.
Value Range	• `Y`: Route headers are added • `N`: Route headers are not added
Default Value	`Y`

SIP_REQURI_PORT_n

Parameter Name Example	`SIP_REQURI_PORT_1`
Value Format	BOOLEAN
Description	Specifies whether to add the port parameter to the Request-Line in the initial SIP request.
Value Range	• `Y`: Add the port parameter • `N`: Do not add the port parameter **Note** • Request URI in REGISTER example: – If set to "`Y`", the port parameter is added to the Request-Line, as follows: Request-Line: REGISTER sip:192.168.0.10:5060 SIP/2.0 – If set to "`N`", the port parameter is not added to the Request-Line, as follows: Request-Line: REGISTER sip:192.168.0.10 SIP/2.0
Default Value	`Y`

ADD_EXPIRES_HEADER_n

Parameter Name Example	`ADD_EXPIRES_HEADER_1`
Value Format	BOOLEAN
Description	Specifies whether to add an "Expires" header to REGISTER (adds an "expires" parameter to the "Contact" header).
Value Range	• `Y`: Add Expires Header • `N`: Do not add Expires Header
Default Value	`N`

ADD_TRANSPORT_UDP_n

Parameter Name Example	`ADD_TRANSPORT_UDP_1`
Value Format	BOOLEAN
Description	Specifies whether to add the attribute "transport=udp" to the SIP header URI.
Value Range	• `Y`: Add Transport UDP • `N`: Do not add Transport UDP
Default Value	`N`

SIP_ADD_DIVERSION_n

Parameter Name Example	`SIP_ADD_DIVERSION_1`
Value Format	INTEGER
Description	Specifies whether to add Diversion header information.
Value Range	0–2 – 0: Do not add Diversion header information – 1: Use own diversion information only for the Diversion header – 2: Add diversion information to existing Diversion header
Default Value	0

TRANSFER_RECALL_TIM

Value Format	INTEGER
Description	Specifies the time that the original call is resumed when the forwarding party does not response by Refer method for call transfer.
Value Range	0, 1–240
Default Value	0

SIGNAL_COMPRESSION_n

Parameter Name Example	`SIGNAL_COMPRESSION_1`
Value Format	INTEGER
Description	Specifies whether to use signal compression. When using signal compression, select Required or Supported.
Value Range	• 0: Disable • 1: Enable (Required) • 2: Enable (Supported)
Default Value	0

MAX_BREADTH_n

Parameter Name Example	`MAX_BREADTH_1`
Value Format	INTEGER
Description	Specifies the Max Breadth that is max Folk number at Proxy.
Value Range	0–99 (0: Not add max-breadth header)
Default Value	60

MUTIPART_BOUNDARY_DELIMITTER_n

Parameter Name Example	`MUTIPART_BOUNDARY_DELIMITTER_1`
Value Format	STRING
Description	Specifies the strings that indicates the boundary for Multipart Bodies.
Value Range	Max. 70 characters
Default Value	boundary1

RINGTONE_183_180_ENABLE_n

Parameter Name Example	`RINGTONE_183_180_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to ring the local ringback tone when 180 is received after receiving 183 Early media.
Value Range	• `Y`: Performs ringback tone after early media • `N`: Does not perform
Default Value	`N`

SIP_403_REG_SUB_RTX_n

Parameter Name Example	`SIP_403_REG_SUB_RTX_1`
Value Format	BOOLEAN
Description	Specifies whether or not to send a request when a 403 Forbidden reply is received from the server in response to a REGISTER or SUBSCRIBE.
Value Range	• `Y`: Send • `N`: Do not send
Default Value	`N`

SIP_FORK_MODE_n

Parameter Name Example	`SIP_FORK_MODE_1`
Value Format	BOOLEAN
Description	Specifies whether to use SIP Fork.
Value Range	• `Y`: Use SIP Fork • `N`: Not use SIP Fork
Default Value	`Y`

AKA_AUTHENTICATION_ENABLE_n

Parameter Name Example	`AKA_AUTHENTICATION_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to use AKA authentication.
Value Range	• `Y`: Use AKA authentication • `N`: Not use AKA authentication
Default Value	`N`

RFC2543_HOLD_ENABLE_n

Parameter Name Example	`RFC2543_HOLD_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to enable the RFC 2543 Call Hold feature on this line.
Value Range	• `Y`: Enable RFC 2543 Call Hold • `N`: Disable RFC 2543 Call Hold **Note** • If set to "`Y`", the "c=0.0.0.0" syntax will be set in SDP when sending a re-INVITE message to hold the call. • If set to "`N`", the "c=x.x.x.x" syntax will be set in SDP.
Default Value	`Y`
Web User Interface Reference	Enable c=0.0.0.0 Hold (RFC 2543) (Page 117)

SIP_HOLD_ATTRIBUTE_n

Parameter Name Example	`SIP_HOLD_ATTRIBUTE_1`
Value Format	INTEGER
Description	Specifies whether to set "a=inactive " or not when the call is on hold.

Value Range	• 0: send only • 1: inactive
Default Value	0

SDP_USER_ID_n

Parameter Name Example	`SDP_USER_ID_1`
Value Format	STRING
Description	Specifies the user ID used in the "o=" line field of SDP.
Value Range	Max. 32 characters
Default Value	Empty string

TELEVENT_PAYLOAD

Value Format	INTEGER
Description	Specifies the RFC 2833 payload type for DTMF tones. **Note** • This setting is available only when "`DTMF_METHOD_n`" is set to "`0`".
Value Range	96–127
Default Value	101
Web User Interface Reference	Telephone-event Payload Type (Page 119)

HOLD_SOUND_PATH_n

Parameter Name Example	`HOLD_SOUND_PATH_1`
Value Format	INTEGER
Description	Specifies whether the unit's hold tone or the network server's hold tone (Music on hold) is played when a party is put on hold. **Note** • It is necessary to set the following parameters to play the unit's hold tone. – `HOLD_TONE_FRQ` – `HOLD_TONE_GAIN`
Value Range	0–1 – 0: The unit's hold tone is played. – 1: The network server's hold tone (Music on hold) is played.
Default Value	0

KEEP_EARLYMEDIA_n

Parameter Name Example	`KEEP_EARLYMEDIA_1`
Value Format	BOOLEAN
Description	Specifies whether to continue Early Media call or not when 18x without SDP is received after Early Media connection is established while making a call.
Value Range	• `Y`: Continues • `N`: Does not continue (Switch to ringback tone)
Default Value	`N`

RFC3327_SUPPORT_PATH

Value Format	BOOLEAN
Description	Specifies whether to add "supported: path" to support Path header.
Value Range	• `Y`: Adds supported: path • `N`: Does not add
Default Value	Y

RFC4244_SUPPORT_HISTORY

Value Format	BOOLEAN
Description	Specifies whether to add "supported: history" to support History info header.
Value Range	• `Y`: Adds supported: history • `N`: Does not add
Default Value	`N`

RFC3319_SUPPORT_JOIN

Value Format	BOOLEAN
Description	Specifies whether to add "supported: join" to support join header.
Value Range	• `Y`: Adds supported: join • `N`: Does not add
Default Value	`N`

RFC6947_DRAFT08_ALTC

Value Format	BOOLEAN

Description	Specifies whether to support RFC6947 draft08 when the attvalue is not attached after altc.
Value Range	• **Y**: Performs ALTC by Draft08 • **N**: Performs ALTC by RFC6947
Default Value	**Y**

RFC5627_SUPPORT_GRUU_n

Parameter Name Example	**RFC5627_SUPPORT_GRUU_1**
Value Format	BOOLEAN
Description	Specifies whether to add "supported: gruu" to support join header.
Value Range	• **Y**: Adds supported: gruu • **N**: Does not add
Default Value	**N**

ESCAPECODE_CONVERSION

Value Format	BOOLEAN
Description	Specifies whether to convert "#" code to "%23".
Value Range	• **Y**: Convert "#" code to "%23" • **N**: Does not convert
Default Value	**Y**

SIP_REPLACE_ENABLE_n

Parameter Name Example	**SIP_REPLACE_ENABLE_1**
Value Format	BOOLEAN
Description	Specifies whether to use "Replaces" Header.
Value Range	• **Y**: Use "Replaces" Header • **N**: Do not use "Replaces" Header
Default Value	**Y**

SIP_REFRESHER_n

Parameter Name Example	**SIP_REFRESHER_1**
Value Format	INTEGER
Description	Specifies whether to add the refresher parameter for Session Expire in SIP INVITE.

Value Range	0–2 – 0: Do not add the refresher parameter – 1: Add the refresher parameter with the value "UAS" – 2: Add the refresher parameter with the value "UAC"
Default Value	0

ENH_FOVR_ENABLE_n

Parameter Name Example	**ENH_FOVR_ENABLE_1**
Value Format	BOOLEAN
Description	Specifies whether to enable Enhanced Failover mode.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**N**

ENH_FOVR_RANDOM_TIMER_n

Parameter Name Example	**ENH_FOVR_RANDOM_TIMER_1**
Value Format	BOOLEAN
Description	Specifies whether the retry timer is a fixed value or a random value when the unit re-sends a REGISTER request when a failover failure has occurred. **Note** • This setting is available only when "**ENH_FOVR_ENABLE_n**" is set to "**Y**". • For the fixed value setting, see "**REG_RTX_INTVL_n**".
Value Range	• **Y**: Use a random value • **N**: Use a fixed value
Default Value	**N**

ENH_FOVR_RANDOM_MAX_TIME_n

Parameter Name Example	**ENH_FOVR_RANDOM_MAX_TIME_1**
Value Format	INTEGER
Description	Specifies the maximum value, in seconds, of the retry timer, which determines the interval for re-sending REGISTER requests, when the retry timer is set to be a random value. **Note** • This setting is available only when "**ENH_FOVR_RANDOM_TIMER_n**" is set to "**Y**".

Value Range	10–86400
Default Value	15

ENH_FOVR_RANDOM_MIN_TIME_n

Parameter Name Example	`ENH_FOVR_RANDOM_MIN_TIME_1`
Value Format	INTEGER
Description	Specifies the minimum value, in seconds, of the retry timer, which determines the interval for re-sending REGISTER requests, when the retry timer is set to be a random value. **Note** • This setting is available only when "`ENH_FOVR_RANDOM_TIMER_n`" is set to "`Y`".
Value Range	10–86400
Default Value	10

SIP_INC_INVITE_RTP_MODE_n

Parameter Name Example	`SIP_INC_INVITE_RTP_MODE_1`
Value Format	INTEGER
Description	Specifies whether to send RTP after receiving a second INVITE.
Value Range	• 0: Start receiving RTP after receiving a second INVITE • 1: Start sending/receiving RTP after receiving a second INVITE
Default Value	0

SIP_183_TALK_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the unit's state is "Talking" or "Calling" when it receives a SIP 183 message.
Value Range	• `Y`: Talking • `N`: Calling
Default Value	`N`

SEND_180_ALERT_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to send 180 before an alert.

Value Range	• `Y`: Send 180 • `N`: Do not send 180
Default Value	`N`

INVITE_403_REGSEND_ENABLE_n

Parameter Name Example	`INVITE_403_REGSEND_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to enable sending a REGISTER request to the SIP server after receiving 403 error in response to an INVITE request.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`

ENH_FOVR_408_ENABLE_n

Parameter Name Example	`ENH_FOVR_408_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to enable failover after receiving a 408 error from the SIP server.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`

ESCAPECODE_CONVERSION_RFC3986

Value Format	BOOLEAN
Description	Specifies whether to comply with RFC2396 or RFC3986 for reserved characters.
Value Range	• `Y`: RFC3986 compliant • `N`: RFC2396 compliant
Default Value	`N`

5.3.19 SIP-TLS Settings

SIP_TRANSPORT_n

Parameter Name Example	`SIP_TRANSPORT_1`
Value Format	INTEGER

Description	Specifies which transport layer protocol to use for sending SIP packets.
Value Range	• 0: UDP • 1: TCP • 2: TLS
Default Value	0
Web User Interface Reference	Transport Protocol (Page 117)

SIP_TLS_MODE_n

Parameter Name Example	`SIP_TLS_MODE_1`
Value Format	INTEGER
Description	Select the secure SIP protocol.
Value Range	• 0: SIPS • 1: SIP-TLS
Default Value	0
Web User Interface Reference	TLS Mode (Page 117)

SIP_TLS_RECONNECT_n

Parameter Name Example	`SIP_TLS_RECONNECT_1`
Value Format	BOOLEAN
Description	Specifies whether to perform TLS reconnect after TLS session is disconnected.
Value Range	• `Y`: Performs TLS connection automatically • `N`: Does not perform
Default Value	`Y`

SIP_TLS_SRV_PREFIX_n

Parameter Name Example	`SIP_TLS_SRV_PREFIX_1`
Value Format	STRING
Description	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using TLS.
Value Range	Max. 32 characters
Default Value	_sips._tcp.
Web User Interface Reference	SRV lookup Prefix for TLS (Page 114)

SIP_TLS_VERIFY_n

Parameter Name Example	`SIP_TLS_VERIFY_1`
Value Format	INTEGER
Description	Specifies whether to enable the verification of the root certificate.
Value Range	• 0: No verification • 1: Simple verification • 2: Precise verification
Default Value	0

SIP_TLS_ROOT_CERT_PATH

Value Format	STRING
Description	Specifies the URI where the root certificate is stored.
Value Range	Max. 384 characters
Default Value	Empty string

SIP_TLS_CLIENT_CERT_PATH

Value Format	STRING
Description	Specifies the URI where the client certificate is stored.
Value Range	Max. 384 characters
Default Value	Empty string

SIP_TLS_PKEY_PATH

Value Format	STRING
Description	Specifies the URI where the private key is stored.
Value Range	Max. 384 characters
Default Value	Empty string

SIP_TLS_RANDOM_PORT

Value Format	BOOLEAN

Description	Specifies whether to assign a random port (ephemeral port) number or a static port number. **Note** • All lines that use SIP-TLS are defined by this parameter. • UDP/TCP ports are unaffected by this parameter.
Value Range	• **Y**: Assign a random TLS port number • **N**: Assign a static TLS port number (Refer to **SIP_SRC_PORT_n**)
Default Value	**Y**

5.3.20 CODEC Settings

CODEC_G729_PARAM_n

Parameter Name Example	**CODEC_G729_PARAM_1**
Value Format	INTEGER
Description	Specifies whether to add an attribute line, "a=fmtp:18 annexb=no", to SDP when the codec is set to "**G729A**".
Value Range	• 0: Do not add "a=fmtp:18 annexb=no" • 1: Add "a=fmtp:18 annexb=no"
Default Value	0

CODEC_ENABLEx_n

Parameter Name Example	**CODEC_ENABLEx_1**
Value Format	BOOLEAN
Description	Specifies whether to enable the codec specified in the parameter list. **Note** • The "x" character in the parameter title should be changed to one of the following numbers, according to the codec to be changed. – **0**: G.722 – **1**: PCMA – **3**: G.729A – **4**: PCMU • For codec setting examples, see **2.5.1 Examples of Codec Settings**.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**Y**

Web User Interface Reference	• G.722 (Enable) (Page 121) • PCMA (Enable) (Page 122) • G.729A (Enable) (Page 122) • PCMU (Enable) (Page 122)

CODEC_PRIORITYx_n

Parameter Name Example	`CODEC_PRIORITYx_1`
Value Format	INTEGER
Description	Specifies the priority order for the codec. **Note** • The "x" character in the parameter title should be changed to one of the following numbers, according to the codec to be changed. – `0`: G.722 – `1`: PCMA – `3`: G.729A – `4`: PCMU • For codec setting examples, see **2.5.1 Examples of Codec Settings**.
Value Range	1–255
Default Value	1
Web User Interface Reference	• G.722 (Priority) (Page 121) • PCMA (Priority) (Page 122) • G.729A (Priority) (Page 122) • PCMU (Priority) (Page 123)

CODEC_G711_REQ

Value Format	INTEGER
Description	Specifies whether to automatically select "PCMU" as the codec when a codec other than "PCMU" is selected.
Value Range	• 0: Do not set "PCMU" • 1: Set "PCMU"
Default Value	1

5.3.21 DTMF Settings

DTMF_METHOD_n

Parameter Name Example	`DTMF_METHOD_1`
Value Format	INTEGER
Description	Specifies the method to notify the DTMF.
Value Range	• 0: RFC2833 • 1: Inband • 2: SIP INFO • 3: RFC2833&SIP INFO **Note** • RFC2833 refers to Outband DTMF. • Inband refers to Inband DTMF.
Default Value	0
Web User Interface Reference	DTMF Type (Page 123)

OUTBANDDTMF_VOL

Value Format	INTEGER
Description	Specifies the volume (in decibels [dB]) of the DTMF tone using RFC 2833.
Value Range	-63–0
Default Value	-5

INBANDDTMF_VOL

Value Format	INTEGER
Description	Specifies the volume (in decibels [dB]) of in-band DTMF tones.
Value Range	-46–0
Default Value	-5

DTMF_SIGNAL_LEN

Value Format	INTEGER
Description	Specifies the length of the DTMF signal, in milliseconds.
Value Range	60–200
Default Value	180

DTMF_INTDIGIT_TIM

Value Format	INTEGER
Description	Specifies the interval, in milliseconds, between DTMF signals.
Value Range	60–200
Default Value	90

5.3.22 RTP/RTCP/RTCP-XR Settings

DSCP_RTP_n

Parameter Name Example	`DSCP_RTP_1`
Value Format	INTEGER
Description	Specifies the DSCP level of DiffServ applied to RTP packets.
Value Range	0–63
Default Value	0
Web User Interface Reference	RTP Packet QoS (DSCP) (Page 123)

DSCP_RTCP_n

Parameter Name Example	`DSCP_RTCP_1`
Value Format	INTEGER
Description	Specifies the DSCP level of DiffServ applied to RTCP/RTCP-XR packets.
Value Range	0–63
Default Value	0
Web User Interface Reference	RTCP Packet QoS (DSCP) (Page 123)

MAX_DELAY_n

Parameter Name Example	`MAX_DELAY_1`
Value Format	INTEGER
Description	Specifies the maximum delay, in 10-millisecond units, of the jitter buffer.

Value Range	3–50 (× 10 ms) **Note** • This setting is subject to the following conditions: – This value must be greater than "**NOM_DELAY**" – This value must be greater than "**MIN_DELAY**" – "**NOM_DELAY**" must be greater than or equal to "**MIN_DELAY**"
Default Value	20

MIN_DELAY_n

Parameter Name Example	**MIN_DELAY_1**
Value Format	INTEGER
Description	Specifies the minimum delay, in 10-millisecond units, of the jitter buffer.
Value Range	1 or 2 (× 10 ms) **Note** • This setting is subject to the following conditions: – This value must be less than or equal to "**NOM_DELAY**" – This value must be less than "**MAX_DELAY**" – "**MAX_DELAY**" must be greater than "**NOM_DELAY**"
Default Value	2

NOM_DELAY_n

Parameter Name Example	**NOM_DELAY_1**
Value Format	INTEGER
Description	Specifies the initial delay, in 10-millisecond units, of the jitter buffer.
Value Range	1–7 (× 10 ms) **Note** • This setting is subject to the following conditions: – This value must be greater than or equal to "**MIN_DELAY**" – This value must be less than "**MAX_DELAY**"
Default Value	1

RTP_PORT_MIN

Value Format	INTEGER
Description	Specifies the lowest port number that the unit will use for RTP packets.
Value Range	1024–59598 (only even)

Default Value	16000
Web User Interface Reference	Minimum RTP Port Number (Page 118)

RTP_PORT_MAX

Value Format	INTEGER
Description	Specifies the highest port number that the unit will use for RTP packets.
Value Range	1424–59998 (only even)
Default Value	20000
Web User Interface Reference	Maximum RTP Port Number (Page 118)

RTP_PTIME

Value Format	INTEGER
Description	Specifies the interval, in milliseconds, between transmissions of RTP packets.
Value Range	• 20 • 30 • 40 • 60
Default Value	20
Web User Interface Reference	RTP Packet Time (Page 118)

RTCP_ENABLE_n

Parameter Name Example	**`RTCP_ENABLE_1`**
Value Format	BOOLEAN
Description	Specifies whether to enable or disable RTCP (Real-Time Transport Control Protocol). For details, refer to RFC 3550.
Value Range	• **`Y`**: Enable RTCP • **`N`**: Disable RTCP
Default Value	**`N`**
Web User Interface Reference	Enable RTCP (Page 124)

RTCP_INTVL_n

Parameter Name Example	**`RTCP_INTVL_1`**
Value Format	INTEGER

Description	Specifies the interval, in seconds, between RTCP/RTCP-XR packets.
Value Range	5–65535
Default Value	5
Web User Interface Reference	RTCP&RTCP-XR Interval (Page 124)

RTCP_SEND_BY_SDP_n

Parameter Name Example	**`RTCP_SEND_BY_SDP_1`**
Value Format	INTEGER
Description	Specifies whether to send RTCP signals by SDP (Session Description Protocol).
Value Range	0–1 – 0: Send RTCP signals using the value specified in "**`RTCP_INTVL_n`**", if the "**`RTCP_ENABLE_n`**" parameter is enabled. – 1: Send RTCP signals using the value specified in the SDP attribute "a=rtcp:".
Default Value	0

RTP_CLOSE_ENABLE_n

Parameter Name Example	**`RTP_CLOSE_ENABLE_1`**
Value Format	BOOLEAN
Description	Specifies whether to enable processing to close held RTP sockets.
Value Range	• **`Y`**: Enable RTP Close • **`N`**: Disable RTP Close
Default Value	**`N`**

RTCPXR_ENABLE_n

Parameter Name Example	**`RTCPXR_ENABLE_1`**
Value Format	BOOLEAN
Description	Specifies whether to enable or disable RTCP-XR.
Value Range	• **`Y`**: Enable RTCP-XR • **`N`**: Disable
Default Value	**`N`**
Web User Interface Reference	Enable RTCP-XR (Page 124)

5.3.23 SRTP Settings

SRTP_CONNECT_MODE_n

Parameter Name Example	**SRTP_CONNECT_MODE_1**
Value Format	INTEGER
Description	Specifies the mode of SRTP feature.
Value Range	• 0: SRTP • 1: RTP/SRTP • 2: Panasonic Original • 3: SRTP/RTP **Note** • 0: Use only SRTP for outgoing and incoming calls. • 1: Use only RTP for outgoing calls, and RTP or SRTP for incoming calls. • 2: Use RTP or SRTP for both outgoing and incoming calls. This value is valid only when the unit is connected to a Panasonic PBX. "**SRTP_MIX_TRANSFER_ENABLE_n**" must also be set to "**Y**". • 3: If you are using "RTP/AVP" and append "a=crypto", and the response message includes "a=crypto", the conversation will be established with SRTP. If "a=crypto" is not included, the conversation will be established with RTP.
Default Value	1
Web User Interface Reference	SRTP Mode (Page 124)

SRTP_MIX_CONFERENCE_ENABLE_n

Parameter Name Example	**SRTP_MIX_CONFERENCE_ENABLE_1**
Value Format	BOOLEAN
Description	Specifies whether to allow conferences where each participant can use either SRTP or RTP.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable Mixed SRTP & RTP by Conference (Page 125)

SRTP_MIX_TRANSFER_ENABLE_n

Parameter Name Example	**SRTP_MIX_TRANSFER_ENABLE_1**
Value Format	BOOLEAN

Description	Specifies whether to allow call transfers between a user who is using SRTP and a user who is using RTP.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`
Web User Interface Reference	Enable Mixed SRTP & RTP by Transfer (Page 125)

SRTP_HELD_CALL_RTP_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to allow playing the melody on hold over RTP on a call that is using SRTP.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`Y`

DISPLAY_SRTP_CALL_ENABLE

Value Format	BOOLEAN
Description	Selects whether an icon is displayed when the unit is using encrypted call mode (SRTP). **Note** • If you enable displaying the encrypted call mode icon during SRTP calls, it is recommended that you set `SIP_TRANSPORT_n`="2" to encrypt the SIP packets using TLS encryption.
Value Range	• `Y`: Display an icon for encrypted calls • `N`: Disable
Default Value	`N`

5.3.24 VQ Report by PUBLISH

VQREPORT_COLLECTOR_ADDRESS

Value Format	STRING
Description	Specifies the IP address or FQDN of the collector server.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Server Address (Page 119)

VQREPORT_COLLECTOR_PORT

Value Format	INTEGER
Description	Specifies the port of the collector server.
Value Range	1–65535
Default Value	5060
Web User Interface Reference	Port (Page 119)

VQREPORT_SEND

Value Format	INTEGER
Description	Specifies the sending type of the VQ report using PUBLISH.
Value Range	• 0: Disable • 1: End of Session Report Using PUBLISH • 2: Interval report Using PUBLISH • 3: Alert Report Using PUBLISH
Default Value	0
Web User Interface Reference	Enable PUBLISH (Page 119)

ALERT_REPORT_TRIGGER

Value Format	INTEGER
Description	Specifies the trigger to notify the VQ report.
Value Range	• 0: Warning • 1: Critical
Default Value	0
Web User Interface Reference	Alert Report Trigger (Page 120)

ALERT_REPORT_MOSQ_CRITICAL

Value Format	INTEGER
Description	Specifies the critical criteria to send VQ report at the time of occurring the MOSQ.
Value Range	0–40
Default Value	0
Web User Interface Reference	Threshold MOS-LQ (Critical) (Page 120)

ALERT_REPORT_MOSQ_WARNING

Value Format	INTEGER
Description	Specifies the warning criteria to send VQ report at the time of occurring the MOSQ.
Value Range	0–40
Default Value	0
Web User Interface Reference	Threshold MOS-LQ (Warning) (Page 120)

ALERT_REPORT_DELAY_CRITICAL

Value Format	INTEGER
Description	Specifies the critical criteria to send VQ report at the time of occurring the delay.
Value Range	0–2000
Default Value	0
Web User Interface Reference	Threshold Delay (Critical) (Page 120)

ALERT_REPORT_DELAY_WARNING

Value Format	INTEGER
Description	Specifies the warning criteria to send VQ report at the time of occurring the delay.
Value Range	0–2000
Default Value	0
Web User Interface Reference	Threshold Delay (Warning) (Page 120)

VQREPORT_SIGNAL_COMPRESSION

Value Format	BOOLEAN
Description	Specifies whether to use signal compression for sending VQ report.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**N**

VQREPORT_SEND_OPT_CODEC_ENABLE

Value Format	BOOLEAN

Description	Specifies whether to enable the sending of VQREPORT (SIP-PUBLISH) when the codec is changed.
Value Range	• **Y**: Send VQREPORT when a change of codec is detected • **N**: Send VQREPORT at the end of a conversation
Default Value	**N**

VQREPORT_SEND_OPT_NW_CHANGE

Value Format	INTEGER
Description	Specifies the number of consecutive times the MOS (Mean Opinion Score) value may fall below the threshold value specified by either **ALERT_REPORT_MOSQ_CRITICAL** or **ALERT_REPORT_MOSQ_WARNING** before the phone sends VQREPORT. The **ALERT_REPORT_TRIGGER** setting determines whether **ALERT_REPORT_MOSQ_CRITICAL** or **ALERT_REPORT_MOSQ_WARNING** is used as the threshold.
Value Range	0–5 (The number of consecutive times. 0: Disable) **Note** • If "2" is specified and the MOS value falls within the threshold 2 consecutive times, VQREPORT is sent.
Default Value	0

5.3.25 Telephone Settings

POWER_ON_DISPLAY_LOGO_PATH

Value Format	STRING
Description	Specifies URI for logo image file displayed when power is turned on. **Note** • Size: 132 × 64 • File type: BMP (1 bit)
Value Range	Max. 384 characters
Default Value	Empty string

FIRSTDIGIT_TIM

Value Format	INTEGER
Description	Specifies the length of time, in seconds, within which the first digits of a dial number must be dialed.
Value Range	1–600 (s)

Default Value	30
Web User Interface Reference	First-digit Timeout (Page 127)

INTDIGIT_TIM

Value Format	INTEGER
Description	Specifies the length of time, in seconds, within which subsequent digits of a dial number must be dialed.
Value Range	1–15 (s)
Default Value	5
Web User Interface Reference	Inter-digit Timeout (Page 127)

POUND_KEY_DELIMITER_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the # key is treated as a regular dialed digit or a delimiter, when dialed as or after the second digit.
Value Range	• **Y**: # is treated as the end of dialing delimiter • **N**: # is treated as a regular dialed digit
Default Value	**Y**
Web User Interface Reference	Enable # Key as delimiter (Page 127)

RINGTONE_SETTING_n

Parameter Name Example	**RINGTONE_SETTING_1**
Value Format	INTEGER
Description	Specifies the ringtone to each line for a unit.
Value Range	1–32
Default Value	**RINGTONE_SETTING_1=1**

DISPLAY_NAME_REPLACE

Value Format	BOOLEAN
Description	Specifies whether the name saved in the phonebook is used in place of the name display if a matching entry is found.
Value Range	• **Y**: Enable Display Name Replace • **N**: Disable Display Name Replace
Default Value	**Y**

NUMBER_MATCHING_LOWER_DIGIT

Value Format	INTEGER
Description	Specifies the minimum number of digits with which to match a phonebook entry with an incoming call's caller ID.
Value Range	0–15
Default Value	7

NUMBER_MATCHING_UPPER_DIGIT

Value Format	INTEGER
Description	Specifies the maximum number of digits with which to match a phonebook entry with an incoming call's caller ID.
Value Range	0–15
Default Value	10

FLASH_RECALL_TERMINATE

Value Format	BOOLEAN
Description	Specifies the function of the FLASH/RECALL button during a conversation.
Value Range	• `Y`: Terminate • `N`: EFA
Default Value	`Y`

FLASHHOOK_CONTENT_TYPE

Value Format	STRING
Description	Specifies the type of signal sent when sending a flash hook event.
Value Range	• `Signal` • `flashhook`
Default Value	`Signal`

NUM_PLAN_PARKING

Value Format	STRING
Description	Specifies the call parking number.
Value Range	0–4 digits (0–9,*, #)
Default Value	Empty string

Web User Interface Reference	Call Park Number (Page 128)

CALLPARK_KEY_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to display "Call Park" in the Call Parking Func menu.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable Call Park Key (Page 129)

NUM_PLAN_PARK_RETRIEVING

Value Format	STRING
Description	Specifies the park retrieve number.
Value Range	0–4 digits (0–9,*, #)
Default Value	Empty string

IDLE_SOFT_KEY_PARK_RETRIEVING

Value Format	INTEGER
Description	Specifies whether to have soft key for the park retrieving. **Note** • This feature is available only when "**CALLPARK_NOTIFICATION_ENABLE_n**" is set to "**Y**", and "**NUM_PLAN_PARK_RETRIEVING**" is set (→ see **CALLPARK_NOTIFICATION_ENABLE_n**, **NUM_PLAN_PARK_RETRIEVING**).
Value Range	• 0: Not Use • 1: Soft Key A (Left) • 2: Soft Key B (Center) • 3: Soft Key C (Right)
Default Value	0

HOLD_RECALL_TIM

Value Format	INTEGER
Description	Specifies the duration of the hold recall timer. If set to "0", the function is disabled.

Value Range	0–240 (0: Disable)
Default Value	60

HOLD_TRANSFER_OPERATION

Value Format	BOOLEAN
Description	Specifies whether to transfer a call by Hold button.
Value Range	• **Y**: Enable (Press the Hold button to transfer a call.) talk → hold → 2nd talk → Transfer (or on-hook) • **N**: Disable (Press the Transfer button to transfer a call.) talk → transfer → 2nd talk → transfer (or on-hook)
Default Value	**N**

ONHOOK_TRANSFER_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable on hook transfer when **HOLD_TRANSFER_OPERATION="N"**.
Value Range	• **Y**: Enable On-hook Transfer • **N**: Disable On-hook Transfer
Default Value	**Y**

ONHOOK_HOLD_TRNS_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable on hook transfer when **HOLD_TRANSFER_OPERATION="Y"**.
Value Range	• **Y**: Enable On-hook Transfer • **N**: Disable On-hook Transfer
Default Value	**N**

BLIND_TRANSFER_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable blind transfer.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**Y**

SYS_LOCK_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable locking the unit.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`
Web User Interface Reference	Enable IP Phone Lock (Page 105)

SYS_LOCK_PASSWORD

Value Format	STRING
Description	Specifies the password for unlocking the unit.
Value Range	Null, 4 digits (0–9)
Default Value	Empty string
Web User Interface Reference	Password for Unlocking (Page 106)

PAUSE_INPUT_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable pause input.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`

NUM_PLAN_PICKUP_DIRECT

Value Format	STRING
Description	Specifies the feature number assigned to a BLF for performing call pickup.
Value Range	0–4 digits (0–9, *, #)
Default Value	Empty string
Web User Interface Reference	Directed Call Pickup (Page 129)

CNIP_FROM_ENABLE

Value Format	BOOLEAN

Description	Specifies whether to use the "FROM" header or the "PAI" header in CNIP (Calling Number Identification Presentation).
Value Range	• `Y`: Use "FROM" header • `N`: Use "PAI" header
Default Value	`N`

IDLE_DISPLAY_TYPE

Value Format	INTEGER
Description	Specifies what is shown on the display in standby mode.
Value Range	• 0: Off • 1: Phone Number • 2: Phone Number and Name • 3: Name **Note** • "Name" is the display name for the line.
Default Value	1

CNIP_CALL_PAI_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable using the "PAI" header in CNIP (Calling Number Identification Presentation) on the display when calling.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`Y`

SUBS_CALLPARK_AREA_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to send "SUBSCRIBE" for each call park area.
Value Range	• `Y`: Enable sending "SUBSCRIBE" for each call park area. • `N`: Disable
Default Value	`N`

RINGER_VOLUME_LEVEL

Value Format	INTEGER
Description	Specifies the value of the ringer volume.

Value Range	0–8
Default Value	5

RINGER_VOL_OPERATION_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable ringer volume adjustment.
Value Range	• `Y`: Enable ringer volume adjustment • `N`: Disable
Default Value	`Y`

5.3.26 Flexible Button Settings

FLEX_BUTTON_FACILITY_ACTx

Parameter Name Example	`FLEX_BUTTON_FACILITY_ACT1`, `FLEX_BUTTON_FACILITY_ACT2`
Value Format	STRING
Description	x=1–2 Specifies a particular Facility Action for the flexible button. No facility action will be taken for the button if the string is empty or invalid. **Note** • If this parameter is specified, "FLEX_BUTTON_QUICK_DIALx" should be an empty string.
Value Range	X_PANASONIC_IPTEL_ONETOUCH, X_PANASONIC_IPTEL_BLF
Default Value	Empty string
Web User Interface Reference	Type (Page 136)

FLEX_BUTTON_FACILITY_ARGx

Parameter Name Example	`FLEX_BUTTON_FACILITY_ARG1`, `FLEX_BUTTON_FACILITY_ARG2`
Value Format	STRING
Description	x=1–2 Specifies an optional argument associated with the specified Facility Action for the flexible button.
Value Range	Max. 32 characters
Default Value	Empty string
Web User Interface Reference	Parameter (Page 136)

FLEX_BUTTON_QUICK_DIALx

Parameter Name Example	`FLEX_BUTTON_QUICK_DIAL_1`
Value Format	STRING
Description	x=1–2 Specifies a quick dial destination number to be used for the flexible button.
Value Range	Max. 32 digits (0–9, *, #)
Default Value	Empty string

5.3.27 Tone Settings

OUTSIDE_DIAL_TONE_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of Second Dial Tone using max. 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0=No tone)
Default Value	420

OUTSIDE_DIAL_TONE_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of Second Dial Tone
Value Range	-24–24 (dB)
Default Value	0

OUTSIDE_DIAL_TONE_RPT

Value Format	INTEGER
Description	Specifies whether Second Dial Tone is repeated.
Value Range	0: No Repeat 1: Repeat
Default Value	0

OUTSIDE_DIAL_TONE_TIMING

Value Format	Comma-separated Integer

Description	Specifies the pattern, in milliseconds, of Second Dial Tone using Max. 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas.
Value Range	0–16000 (msec) (0=Continuous)
Default Value	60,0

CONFIRMATION_TONE5_FRQ

Value Format	Comma-separated Integer
Description	Specifies the confirmation tone 5 frequencies, in hertz, of confirmation tone 5 using Max. 2 whole numbers separated by a comma.
Value Range	200–2000 (Hz) (0: no tone)
Default Value	1000

CONFIRMATION_TONE5_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of confirmation tone 5.
Value Range	-24–24 (dB)
Default Value	0

REORDER_TONE_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable reorder tone.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**Y**

TONE_LEN_DISCONNECT

Value Format	INTEGER
Description	Specifies the duration, in seconds, that a disconnect tone will be heard when the other party ends a call and the unit is being used.
Value Range	1–15 (s)
Default Value	3

DIAL_TONE1_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of Dial Tone 1 using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	350,440
Web User Interface Reference	Tone Frequencies (Page 137)

DIAL_TONE1_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of Dial Tone 1.
Value Range	-24–24 (dB)
Default Value	0

DIAL_TONE1_RPT

Value Format	INTEGER
Description	Specifies whether Dial Tone 1 is repeated.
Value Range	0–1 • 0: No Repeat • 1: Repeat
Default Value	0

DIAL_TONE1_TIMING

Value Format	Comma-separated Integer
Description	Specifies the pattern, in milliseconds, of Dial Tone 1 using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).
Value Range	0–16000 (msec) (0=Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,0
Web User Interface Reference	Tone Timings (Page 138)

DIAL_TONE2_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of Dial Tone 2 using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	350,440

DIAL_TONE2_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of Dial Tone 2.
Value Range	-24–24 (dB)
Default Value	0

DIAL_TONE2_RPT

Value Format	INTEGER
Description	Specifies whether Dial Tone 2 is repeated.
Value Range	0–1 • 0: No Repeat • 1: Repeat
Default Value	0

DIAL_TONE2_TIMING

Value Format	Comma-separated Integer
Description	Specifies the pattern, in milliseconds, of Dial Tone 2 using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).
Value Range	0–16000 (msec) (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,0

DIAL_TONE4_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of Dial Tone 4 (stutter dial tones) to notify that a voice mail is waiting, using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	350,440
Web User Interface Reference	Tone Frequencies (Page 139)

DIAL_TONE4_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of Dial Tone 4 (stutter-type dial tone).
Value Range	-24–24 (dB)
Default Value	0

DIAL_TONE4_RPT

Value Format	INTEGER
Description	Specifies whether Dial Tone 4 (stutter-type dial tone) is repeated.
Value Range	0–1 – 0: No Repeat – 1: Repeat
Default Value	0

DIAL_TONE4_TIMING

Value Format	Comma-separated Integer
Description	Specifies the pattern, in milliseconds, of Dial Tone 4 (stutter dial tones) to notify that a voice mail is waiting, using up to 22 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 560 milliseconds or more for the first value (off 1).
Value Range	0–16000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	560,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,0

Web User Interface Reference	Tone Timings (Page 140)

BUSY_TONE_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of busy tones using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	480,620
Web User Interface Reference	Tone Frequencies (Page 138)

BUSY_TONE_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of the busy tone.
Value Range	-24–24 (dB)
Default Value	0

BUSY_TONE_RPT

Value Format	INTEGER
Description	Specifies whether the busy tone is repeated.
Value Range	0–1 – 0: No Repeat – 1: Repeat
Default Value	1

BUSY_TONE_TIMING

Value Format	Comma-separated Integer
Description	Specifies the pattern, in milliseconds, of busy tones using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).
Value Range	0–16000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.

Default Value	60,500,440
Web User Interface Reference	Tone Timings (Page 138)

REORDER_TONE_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of reorder tones using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	480,620
Web User Interface Reference	Tone Frequencies (Page 140)

REORDER_TONE_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of the reorder tone.
Value Range	-24–24 (dB)
Default Value	0

REORDER_TONE_RPT

Value Format	INTEGER
Description	Specifies whether the reorder tone is repeated.
Value Range	0–1 – 0: No Repeat – 1: Repeat
Default Value	1

REORDER_TONE_TIMING

Value Format	Comma-separated Integer
Description	Specifies the pattern, in milliseconds, of reorder tones using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).

Value Range	0–16000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,250,190
Web User Interface Reference	Tone Timings (Page 140)

RINGBACK_TONE_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of ringback tones using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	440,480
Web User Interface Reference	Tone Frequencies (Page 139)

RINGBACK_TONE_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of the ringback tone.
Value Range	-24–24 (dB)
Default Value	0

RINGBACK_TONE_RPT

Value Format	INTEGER
Description	Specifies whether the ringback tone is repeated.
Value Range	0–1 – 0: No Repeat – 1: Repeat
Default Value	1

RINGBACK_TONE_TIMING

Value Format	Comma-separated Integer

Description	Specifies the pattern, in milliseconds, of ringback tones using up to 10 whole numbers (off 1, on 1, off 2, on 2…) separated by commas. **Note** • It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).
Value Range	0–16000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,2000,3940
Web User Interface Reference	Tone Timings (Page 139)

HOLD_ALARM_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of the hold alarm using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	425

HOLD_ALARM_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of the hold alarm.
Value Range	-24–24 (dB)
Default Value	0

CW_TONE1_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of call waiting tone 1 using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	425

CW_TONE1_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of call waiting tone 1.

Value Range	-24–24 (dB)
Default Value	0

HOLD_TONE_FRQ

Value Format	Comma-separated Integer
Description	Specifies the dual-tone frequencies, in hertz, of the hold tone using 2 whole numbers separated by a comma.
Value Range	0, 200–2000 (Hz) (0: No tone)
Default Value	425

HOLD_TONE_GAIN

Value Format	INTEGER
Description	Specifies the gain, in decibels, of the hold tone.
Value Range	-24–24 (dB)
Default Value	0

BELL_CORE_PATTERN1_TIMING

Value Format	Comma-separated Integer
Description	Specifies the cadence, in milliseconds, of pattern ID 1, described in the LSSGR, GR-506-CORE, "Signaling for Analog Interfaces" section 14, using up to 8 whole numbers (on 1, off 1, on 2, off 2…) separated by commas.
Value Range	0–5000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	2000,4000

BELL_CORE_PATTERN2_TIMING

Value Format	Comma-separated Integer
Description	Specifies the cadence, in milliseconds, of pattern ID 2, described in the LSSGR, GR-506-CORE, "Signaling for Analog Interfaces" section 14, using up to 8 whole numbers (on 1, off 1, on 2, off 2…) separated by commas.

Value Range	0–5000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	800,400,800,4000

BELL_CORE_PATTERN3_TIMING

Value Format	Comma-separated Integer
Description	Specifies the cadence, in milliseconds, of pattern ID 3, described in the LSSGR, GR-506-CORE, "Signaling for Analog Interfaces" section 14, using up to 8 whole numbers (on 1, off 1, on 2, off 2…) separated by commas.
Value Range	0–5000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	400,200,400,200,800,4000

BELL_CORE_PATTERN4_TIMING

Value Format	Comma-separated Integer
Description	Specifies the cadence, in milliseconds, of pattern ID 4, described in the LSSGR, GR-506-CORE, "Signaling for Analog Interfaces" section 14, using up to 8 whole numbers (on 1, off 1, on 2, off 2…) separated by commas.
Value Range	0–5000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	300,200,1000,200,300,4000

BELL_CORE_PATTERN5_TIMING

Value Format	Comma-separated Integer
Description	Specifies the cadence, in milliseconds, of pattern ID 5, described in the LSSGR, GR-506-CORE, "Signaling for Analog Interfaces" section 14, using up to 8 whole numbers (on 1, off 1, on 2, off 2…) separated by commas.
Value Range	0–5000 (msec) (0: Continuous) **Note** • Avoid setting 1–50 for any of the values.
Default Value	500

KEY_PAD_TONE

Value Format	INTEGER
Description	Specifies whether a tone is heard in response to key presses.
Value Range	• 0: Off • 1: On
Default Value	1

5.3.28 Call Control Settings

ANONYMOUS_CALL_ENABLE_n

Parameter Name Example	`ANONYMOUS_CALL_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to make calls without transmitting the phone number to the called party.
Value Range	• `Y`: Enable anonymous call • `N`: Disable
Default Value	`N`
Web User Interface Reference	Enable Anonymous Call (Page 131)

BLOCK_ANONYMOUS_CALL_ENABLE_n

Parameter Name Example	`BLOCK_ANONYMOUS_CALL_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to accept or reject the incoming call without the called party's phone number.
Value Range	• `Y`: Enable anonymous call block • `N`: Disable
Default Value	`N`
Web User Interface Reference	Enable Block Anonymous Call (Page 131)

HOTLINE_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable or disable the Hot line feature.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`N`

Web User Interface Reference	Enable (Page 135)

HOTLINE_NUMBER

Value Format	STRING
Description	Specifies the Hot line number.
Value Range	Max. 32 characters
Default Value	Empty string
Web User Interface Reference	Hotline Number (Page 135)

HOTLINE_TIM

Value Format	INTEGER
Description	Specifies a time after off hook for Hot line.
Value Range	0–10 (s)
Default Value	2
Web User Interface Reference	Hotline Delay (Page 135)

DISPLAY_NAME_n

Parameter Name Example	`DISPLAY_NAME_1`
Value Format	STRING
Description	Specifies the name to display as the caller on the other party's phone when you make a call.
Value Range	Max. 24 characters **Note** • You can use Unicode characters for this setting.
Default Value	Empty string
Web User Interface Reference	Display Name (Page 130)

VM_SUBSCRIBE_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to send the SUBSCRIBE request to a voice mail server. **Note** • Your phone system must support voice mail.

Value Range	• `Y`: Send the SUBSCRIBE request • `N`: Do not send the SUBSCRIBE request
Default Value	`N`
Web User Interface Reference	Send SUBSCRIBE to Voice Mail Server (Page 126)

VM_NUMBER_n

Parameter Name Example	`VM_NUMBER_1`
Value Format	STRING
Description	Specifies the phone number used to access the voice mail server. **Note** • Your phone system must support voice mail.
Value Range	Max. 32 characters
Default Value	Empty string
Web User Interface Reference	Voice Mail Access Number (Page 131)

VM_SUBSCRIBE_SPECIFIC_n

Parameter Name Example	`VM_SUBSCRIBE_SPECIFIC_1`
Value Format	STRING
Description	Specifies the defined name of a voice mail box.
Value Range	Max. 32 characters
Default Value	Empty string

DISPLAY_VM_WITH_NUMBER

Value Format	BOOLEAN
Description	Specifies whether to enable displaying the number of unread voice messages.
Value Range	• `Y`: Enable • `N`: Disable
Default Value	`Y`

DIAL_PLAN_n

Parameter Name Example	`DIAL_PLAN_1`
Value Format	STRING

Description	Specifies a dial format, such as specific phone numbers, that control which numbers can be dialed or how to handle the call when making a call. For details, see **6.2 Dial Plan**.
Value Range	Max. 1000 characters
Default Value	Empty string
Web User Interface Reference	Dial Plan (max 1000 columns) (Page 134)

DIAL_PLAN_NOT_MATCH_ENABLE_n

Parameter Name Example	`DIAL_PLAN_NOT_MATCH_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether to enable dial plan filtering so that a call is not made when the dialed number does not match any of the dial formats specified in "`DIAL_PLAN_n`".
Value Range	• `Y`: Enable dial plan filtering • `N`: Disable dial plan filtering **Note** • If set to "`Y`", the dialed number will not be sent to the line when the number dialed by the user does not match any of the dial formats specified in the dial plan. • If set to "`N`", the dialed number will be sent to the line, even if the number dialed by the user does not match any of the dial formats specified in the dial plan.
Default Value	`N`
Web User Interface Reference	Call Even If Dial Plan Does Not Match (Page 134)

DIALPLAN_REPLACE_LOG_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to log the number after it was modified by the Dial Plan or the number as it was input.
Value Range	• `Y`: Log the number in the outgoing call log after it was modified by the Dial Plan • `N`: Log the number in the outgoing call log as it was input
Default Value	`Y`

DIALPLAN_MEMORY_DIAL_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable Dial Plan processing for memory dialing.

Value Range	• `Y`: Enable Dial Plan • `N`: Disable
Default Value	`Y`

MACRODIGIT_TIM

Value Format	INTEGER
Description	Specifies the length of time, in seconds, that the unit waits when a "T" or "t" has been entered in the dial plan.
Value Range	1–15
Default Value	5
Web User Interface Reference	Timer for Dial Plan (Page 127)

INTERNATIONAL_ACCESS_CODE

Value Format	STRING
Description	Specifies the number to be shown in the place of the first "+" symbol when the phone number for incoming international calls contains "+".
Value Range	Max. 8 characters (consisting of 0–9, *, and #) **Note** • No other characters are allowed.
Default Value	Empty string
Web User Interface Reference	International Call Prefix (Page 128)

COUNTRY_CALLING_CODE

Value Format	STRING
Description	Specifies the country/area calling code to be used for comparative purposes when dialing a number from the incoming call log that contains a "+" symbol.
Value Range	Max. 8 characters (consisting of 0–9)
Default Value	Empty string
Web User Interface Reference	Country Calling Code (Page 128)

NATIONAL_ACCESS_CODE

Value Format	STRING

Description	When dialing a number from the incoming call log that contains a "+" symbol and the country calling code matches, the country calling code is removed and the national access code is added.
Value Range	Max. 8 characters (consisting of 0–9, *, and #)
Default Value	Empty string
Web User Interface Reference	National Access Code (Page 128)

IDLE_SOFT_KEY_A

Value Format	INTEGER
Description	Specifies the Soft Key A (Left) during IDLE state.
Value Range	• 1: Phonebook • 2: Menu • 3: Outgoing Call Log • 4: Incoming Call Log • 5: Redial
Default Value	1
Web User Interface Reference	Soft Key A (Left) (Page 104)

IDLE_SOFT_KEY_B

Value Format	INTEGER
Description	Specifies the Soft Key B (Center) during IDLE state.
Value Range	• 1: Phonebook • 2: Menu • 3: Outgoing Call Log • 4: Incoming Call Log • 5: Redial
Default Value	2
Web User Interface Reference	Soft Key B (Center) (Page 105)

IDLE_SOFT_KEY_C

Value Format	INTEGER
Description	Specifies the Soft Key C (Right) during IDLE state.
Value Range	• 1: Phonebook • 2: Menu • 3: Outgoing Call Log • 4: Incoming Call Log • 5: Redial

Default Value	3
Web User Interface Reference	Soft Key C (Right) (Page 105)

ADMIN_ABILITY_ENABLE

Value Format	BOOLEAN
Description	Specifies admin rights. **Note** If you attempt to configure System Settings without enabling admin rights, an error will occur and configuration will not be possible.
Value Range	• **Y**: Admin • **N**: Non Admin
Default Value	**Y**
Web User Interface Reference	Enable Admin Ability (Page 105)

EMERGENCY_CALLx

Parameter Name Example	**EMERGENCY_CALL1**, **EMERGENCY_CALL2**, …, **EMERGENCY_CALL5**
Value Format	STRING
Description	Specifies the emergency number. (Up to 5 emergency numbers)
Value Range	Max. 32 characters (except &, ", ', :, ;, <, >)
Default Value	Empty string
Web User Interface Reference	1–5 (Page 129)

CALL_REJECTIONx

Parameter Name Example	**CALL_REJECTION1**, **CALL_REJECTION2**, …, **CALL_REJECTION30**
Value Format	STRING
Description	Specifies the rejected number per line. (Up to 30 rejected numbers)
Value Range	Max. 32 characters (except &, ", ', :, ;, <, >)
Default Value	Empty string
Web User Interface Reference	1–30 (Page 130)

CALLPARK_NOTIFICATION_ENABLE_n

Parameter Name Example	**CALLPARK_NOTIFICATION_ENABLE_1**
Value Format	BOOLEAN

Description	Specifies whether to respond to call park notifications from the server.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**N**

SHARED_STOP_LINE_SEIZE

Value Format	BOOLEAN
Description	Specifies whether to stop seizing the line of the Shared Call at the unit side or not.
Value Range	• **Y**: Stop seizing line • **N**: Seize line
Default Value	**N**

SHARED_CALL_ENABLE_n

Parameter Name Example	**SHARED_CALL_ENABLE_1**
Value Format	BOOLEAN
Description	Specifies whether to enable the Shared Call feature of the SIP server, which is used to share one line among the units. **Note** • Availability depends on your phone system.
Value Range	• **Y**: Enable shared call • **N**: Disable shared call **Note** • If set to "**Y**", the SIP server will control the line by using a shared-call signaling method. • If set to "**N**", the SIP server will control the line by using a standard signaling method.
Default Value	**N**

FWD_DND_SYNCHRO_ENABLE_n

Parameter Name Example	**FWD_DND_SYNCHRO_ENABLE_1**
Value Format	BOOLEAN

Description	Specifies whether to synchronize the Do Not Disturb and Call Forward settings, configured via the Web user interface or phone user interface, between the unit and the portal server that is provided by your phone system dealer/service provider. **Note** • Even if you specify "**Y**", this feature may not function properly if your phone system does not support it. Before you configure this setting, consult your phone system dealer/service provider.
Value Range	• **Y**: Enable Do Not Disturb/Call Forward synchronization • **N**: Disable Do Not Disturb/Call Forward synchronization
Default Value	**N**
Web User Interface Reference	Enable Key Synchronization (Page 133)

FWD_SYNCHRO_FORCE_DISABLE_n

Parameter Name Example	**FWD_SYNCHRO_FORCE_DISABLE_1**
Value Format	BOOLEAN
Description	Specifies whether to synchronize the Call Forward settings in "**FWD_DND_SYNCHRO_ENABLE_n**".
Value Range	• **Y**: Do not synchronize • **N**: Synchronize
Default Value	**N**

MOH_SERVER_URI_n

Parameter Name Example	**MOH_SERVER_URI_1**
Value Format	STRING
Description	Specifies MoH server URI for each line.
Value Range	Max. 384 characters
Default Value	Empty string
Web User Interface Reference	MoH Server URI (Page 133)

FWD_DND_CONTROL_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable the telephone for FWD/DND.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**Y**

FWD_DND_SYNCHRO_MODE

Value Format	INTEGER
Description	Specifies the mode of FWD/DND synchronizing with server.
Value Range	• 1: as feature event • 2: Panasonic original • 3: Entel
Default Value	1

FWD_DND_MISSEDLOG_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable the unit to save forwarded calls and rejected calls on a Missed Call log when "FWD/DND" feature is activated.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**Y**

HOLD_AND_CALL_ENABLE

Value Format	BOOLEAN
Description	Specifies whether making new call after holding the call or not.
Value Range	• **Y**: Enable (Hold and Call) • **N**: Disable (Hold)
Default Value	**N**

AUTO_CALL_HOLD

Value Format	BOOLEAN
Description	Specifies whether calls are disconnected or held when an other line is selected while having a conversation.
Value Range	• **Y**: Enable Auto Call Hold • **N**: Disable Auto Call Hold
Default Value	**Y**

SIP_RESPONSE_CODE_DND

Value Format	INTEGER

Description	Specifies the response code when a call is received in Do Not Disturb mode.
Value Range	400–699
Default Value	403

SIP_RESPONSE_CODE_CALL_REJECT

Value Format	INTEGER
Description	Specifies the response code when a call is rejected.
Value Range	400–699
Default Value	603

CW_ENABLE_n

Parameter Name Example	`CW_ENABLE_1`
Value Format	BOOLEAN
Description	Specifies whether automatic call waiting is enabled.
Value Range	• `Y`: Enable Call Waiting • `N`: Disable Call Waiting
Default Value	`Y`
Web User Interface Reference	Enable Call Waiting (Page 132)

RETURN_VOL_SET_DEFAULT_ENABLE

Value Format	BOOLEAN
Description	Specifies whether the volume is returned to its default setting after each call.
Value Range	• `Y`: Volume returns to the default setting after each call • `N`: Volume does not change after each call
Default Value	`N`

CONFERENCE_SERVER_URI

Value Format	STRING

Description	Specifies the URI for a conference server, which consists of "sip:", a user part, the "@" symbol, and a host part, for example, "sip:conference@example.com". **Note** • Availability depends on your phone system.
Value Range	Max. 256 characters (except ", &, ', :, ;, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Conference Server URI (Page 127)

CONF_SERVER_HOLD_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to hold the call when connecting an N-party conference.
Value Range	• `Y`: Hold the call • `N`: Do not hold the call
Default Value	`N`

RESOURCELIST_URI_n

Parameter Name Example	`RESOURCELIST_URI_1`
Value Format	STRING
Description	Specifies the URI for the resource list, which consists of "sip:", a user part, the "@" symbol, and a host part.
Value Range	Max. 256 characters
Default Value	Empty string
Web User Interface Reference	Resource List URI (Page 134)

TALKING_SOFT_KEY_A

Value Format	INTEGER
Description	Specifies the display icon of soft key A during a call.

Value Range	• 0: Original • 1: Line • 2: Menu • 3: Blind (Used when performing Blind Transfer) • 4: Flash/Recall • 5: Incoming Log • 6: Outgoing Log • 7: Phonebook • 8: Park (Used when performing Call Park) • 9: Pause • 10: Private Hold **Note** • The following features are applied to the soft key only when the corresponding parameters are enabled. Otherwise, the soft key will remain in its original setting. – Blind: **BLIND_TRANSFER_ENABLE** – Park: **CALLPARK_KEY_ENABLE** – Pause: **PAUSE_INPUT_ENABLE** – Private Hold: **PRIVATE_HOLD_ENABLE**
Default Value	0

TALKING_SOFT_KEY_B

Value Format	INTEGER
Description	Specifies the display icon of soft key B during a call.
Value Range	• 0: Original • 1: Line • 2: Menu • 3: Blind (Used when performing Blind Transfer) • 4: Flash/Recall • 5: Incoming Log • 6: Outgoing Log • 7: Phonebook • 8: Park (Used when performing Call Park) • 9: Pause • 10: Private Hold **Note** • The following features are applied to the soft key only when the corresponding parameters are enabled. Otherwise, the soft key will remain in its original setting. – Blind: **BLIND_TRANSFER_ENABLE** – Park: **CALLPARK_KEY_ENABLE** – Pause: **PAUSE_INPUT_ENABLE** – Private Hold: **PRIVATE_HOLD_ENABLE**
Default Value	0

TALKING_SOFT_KEY_C

Value Format	INTEGER
Description	Specifies the display icon of soft key C during a call.
Value Range	• 0: Original • 1: Line • 2: Menu • 3: Blind (Used when performing Blind Transfer) • 4: Flash/Recall • 5: Incoming Log • 6: Outgoing Log • 7: Phonebook • 8: Park (Used when performing Call Park) • 9: Pause • 10: Private Hold **Note** • The following features are applied to the soft key only when the corresponding parameters are enabled. Otherwise, the soft key will remain in its original setting. – Blind: **BLIND_TRANSFER_ENABLE** – Park: **CALLPARK_KEY_ENABLE** – Pause: **PAUSE_INPUT_ENABLE** – Private Hold: **PRIVATE_HOLD_ENABLE**
Default Value	0

REMOVE_PREFIX_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable omitting "+" included in overseas telephone numbers when making or receiving a call.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**N**

5.3.29 Logging Settings

SYSLOG_ADDR

Value Format	STRING
Description	Specifies the IP address or FQDN of Syslog server.
Value Range	Max. 256 characters
Default Value	Empty string

SYSLOG_PORT

Value Format	INTEGER
Description	Specifies the port of Syslog server.
Value Range	1–65535
Default Value	514

LOGGING_LEVEL_DNS

Value Format	INTEGER
Description	Specifies the log level of DNS.
Value Range	0–6
Default Value	0

LOGGING_LEVEL_NW1

Value Format	INTEGER
Description	Specifies the log level of SNTP.
Value Range	0–6
Default Value	0

LOGGING_LEVEL_FILE

Value Format	INTEGER
Description	Specifies the log level of FILE downloading.
Value Range	0–6
Default Value	6

LOGGING_LEVEL_SIP

Value Format	INTEGER
Description	Specifies the log level of SIP.
Value Range	0–6
Default Value	0

LOGGING_LEVEL_TR069

Value Format	INTEGER
Description	Specifies the log level of TR-069.
Value Range	0–6
Default Value	0

LOGGING_LEVEL_STUN

Value Format	INTEGER
Description	Specifies the log level of STUN.
Value Range	0–6
Default Value	0

LOGGING_LEVEL_NW2

Value Format	INTEGER
Description	Specifies the log level of XML and LDAP.
Value Range	0–6
Default Value	0

LOGGING_LEVEL_CFGPARSE

Value Format	INTEGER
Description	Specifies the log level of configuration parse.
Value Range	0–6
Default Value	0

SYSLOG_OUT_START

Value Format	BOOLEAN
Description	Specifies whether to enable or disable exporting of the Application Log.
Value Range	• **Y**: Enable export to syslog • **N**: Disable
Default Value	**N**

5.3.30 TWAMP Settings

TWAMP_ENABLE

Value Format	BOOLEAN
Description	Specifies whether to enable the TWAMP server function.
Value Range	• **Y**: Enable the TWAMP server function. • **N**: Disable
Default Value	**N**
Web User Interface Reference	Enable TWAMP (Page 92)

TWAMP_CONTROL_PORT

Value Format	INTEGER
Description	Specifies the port for the TWAMP control session.
Value Range	1–65535
Default Value	862
Web User Interface Reference	Control Port (Page 93)

TWAMP_TEST_PORT

Value Format	INTEGER
Description	Specifies the port for the TWAMP test session.
Value Range	1–65535
Default Value	9000
Web User Interface Reference	Test Port (Page 93)

TWAMP_SERVER_WAIT_TIME

Value Format	INTEGER
Description	Specifies the time, in seconds, for the TWAMP server to wait for incoming packets for maintaining the session.
Value Range	1–65535
Default Value	900
Web User Interface Reference	Wait Time for Control (Page 93)

TWAMP_REFLECTOR_WAIT_TIME

Value Format	INTEGER
Description	Specifies the time, in seconds, for the TWAMP reflector to wait for incoming packets for maintaining the session.
Value Range	1–65535
Default Value	900
Web User Interface Reference	Wait Time for Reflector (Page 93)

TWAMP_PADDING_ZERO

Value Format	BOOLEAN
Description	Specifies the packet padding for the TWAMP test session.
Value Range	• `Y`: All zeros • `N`: Random
Default Value	`N`

Section 6

Useful Telephone Functions

This section explains phone number settings, dial plan settings, the phonebook import/export function.

6.1 Phonebook Import and Export

This section explains how to import and export phonebook data. Phonebook data of the unit includes names and phone numbers.
Phonebook data on the unit can be exported, edited with editor tools, and imported again. In addition, phonebook data created with other software can be imported into the unit.
You can use the phonebook import and export functions as follows.

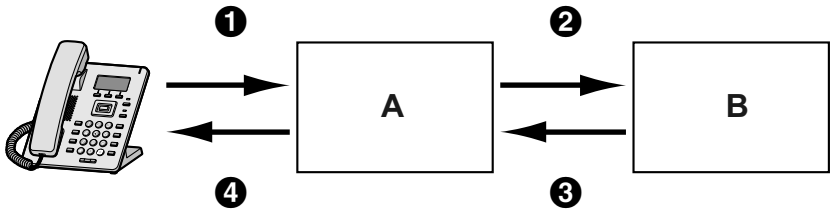
A. Phonebook data
B. Microsoft Excel
C. Microsoft Outlook

Note

It takes approximately 7 minutes to import a phonebook that contains 500 entries.

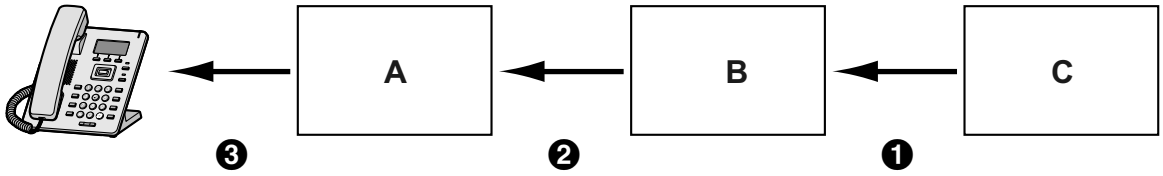
Editing Phonebook Data on a PC

The phonebook data stored on the unit can be edited using a program such as Microsoft Excel® spreadsheet software. For details about the operation, see **6.1.2 Editing with Microsoft Excel**.
You can export the phonebook data to the PC, edit the exported file using appropriate software, and then import it into the unit.



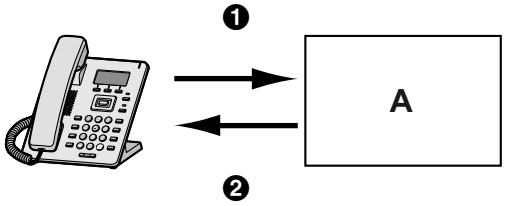
Importing Address Book Data from a PC

You can import address book data stored in programs, such as Microsoft Outlook® messaging and collaboration client, into the unit.
First, export address book data from the e-mail software to a program such as Microsoft Excel, edit it as necessary, and then import the exported data into the unit.
For details about the operation, see **6.1.3 Exporting Data from Microsoft Outlook**.



Backing up Phonebook Data

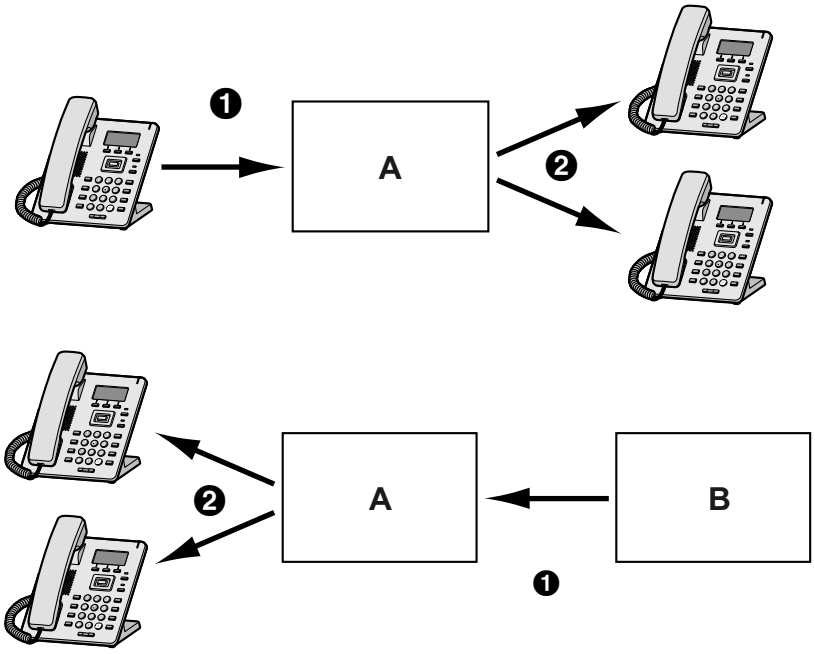
You can export the phonebook data from the unit to a PC and keep the file as a backup in case of data loss or for use when exchanging the unit.



Importing the Same Phonebook Data to other Units

You can export the phonebook data created on a unit to a PC, and then import it into other units.

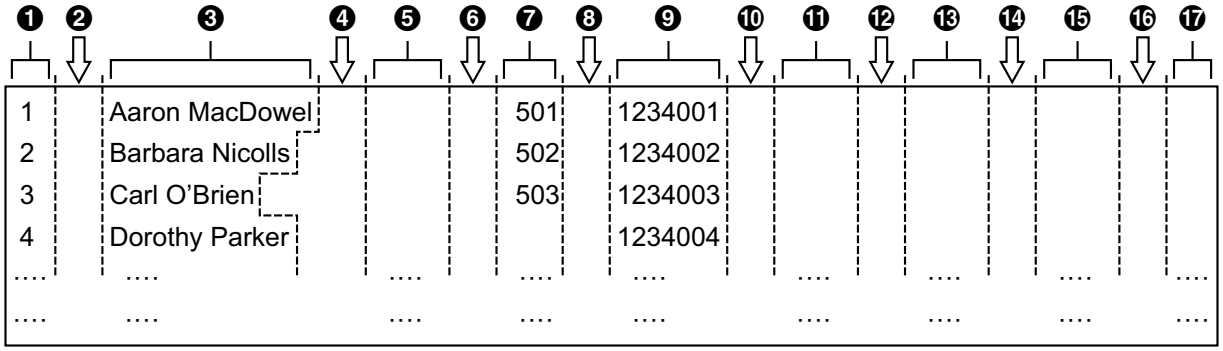
You can also import phonebook data created on a PC to other units.



Import/Export File Format

The file format used for importing and exporting the phonebook data is "TSV". When importing or exporting using Microsoft Excel, "CSV (Comma-separated Value)" is generally used as the file format.
A phonebook entry in the unit has 9 fields. An entry in the phonebook data is represented in text as "record ID <TAB> name <TAB> reserved <TAB> phone number <TAB> phone number <TAB> phone number <TAB> phone number <TAB> phone number <TAB> reserved <line break>".
The text data can be edited using any text editing software that supports UTF-16 encoding with a BOM and little endian byte ordering. When you save the text file, it must be saved using the same format, or the text might become garbled.

Phonebook Data in Text Format



❶ Record ID (Unique ID: 1–500)
❷ Tab
❸ Name (up to 24 characters)
❹ Tab
❺ Reserved (up to 24 characters)
❻ Tab
❼ Phone number (up to 32 digits)
❽ Tab
❾ Phone number (up to 32 digits)
❿ Tab
⓫ Phone number (up to 32 digits)
⓬ Tab
⓭ Phone number (up to 32 digits)
⓮ Tab
⓯ Phone number (up to 32 digits)
⓰ Tab
⓱ Reserved

6.1.1 Import/Export Operation

The following procedures explain how to import phonebook data to units, and how to export phonebook data from units to a PC through the Web user interface.
For details about the settings, see **4.6.6 Import Phonebook** or **4.6.7 Export Phonebook**.

To import phonebook data

1. Click the **[Telephone]** tab, and then click **[Import Phonebook]**.
2. In **[File Name]**, enter the full path to the file that you want to import, or click **Browse** to select the phonebook data file that you want to import.
3. Click **[Import]**.

To export the phonebook data

1. Click the **[Telephone]** tab, and then click **[Export Phonebook]**.
2. Click **[Export]**.

3. On the "Now Processing File Data" screen, click the text "HERE" in the displayed message, or wait until **File Download** window appears.

   Note

   - Depending on the security settings of your Web browser, pop-up menus might be blocked. If the file cannot be exported successfully, try the export operation again or change the security settings of your Web browser.
4. Click **Save** on **File Download** window.
5. On the **Save As** window, select a folder to save the exported phonebook data to, enter the file name in **File name**, select **TSV File** for **Save as type**, and click **Save**.
   If the file is downloaded successfully, the **Download complete** window appears.
6. Click **Close**.
7. To exit the operation, click the text "HERE" in the displayed message.
   The **[Export Phonebook]** screen returns.

Note

- Make sure that the import source or unit is in standby mode.
- The import source or unit must be specified at the time of import/export. The imported data is added to the existing phonebook data.
  - If the existing phonebook data has an entry with the same record ID as an imported entry, the entry is overwritten with the imported entry.
  - If the existing phonebook data has an entry with no record ID, it will be left in the phonebook.
  - If the imported phonebook data has an entry with no record ID, the imported entry is added as a new entry unless an existing entry with the same name and phone number is found.

  Phonebook entries that are added via the unit are not assigned record IDs. Therefore, it is recommended to export phonebook data from the unit, assign record IDs manually and then re-import them. Doing so can help manage phonebook data.
- The phonebook for a unit has the following limitations:
  - A maximum of 500 phonebook entries can be stored in the unit. If the unit already has phonebook data, it accepts up to the 500th entry, including the existing entries. The rest of the entries will not be imported, and the message "`Memory Full`" is displayed on the unit.
  - The name can contain up to 24 characters.
  - The phone number can contain up to 32 digits.
  - Phonebook entries exceeding the characters or digits limits cannot be imported properly.
- If the export is interrupted by an operation on the unit, only the data that has been successfully exported before the interruption is exported to a file.

6.1.2 Editing with Microsoft Excel

You can edit exported phonebook data on a PC with software such as Microsoft Excel. You can then import the phonebook data into units.

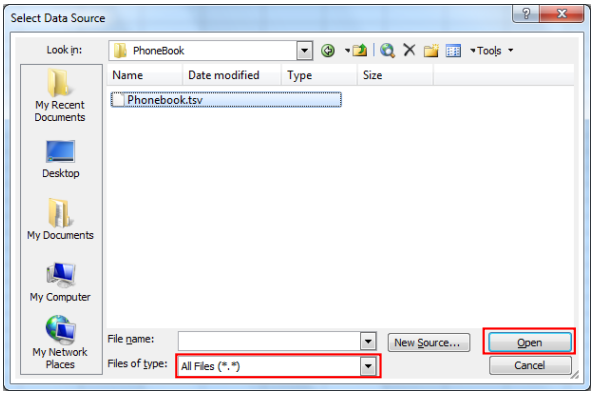
To open the phonebook data on a PC

1. Open Microsoft Excel.
2. Click **Office Button**, and then **Open**.

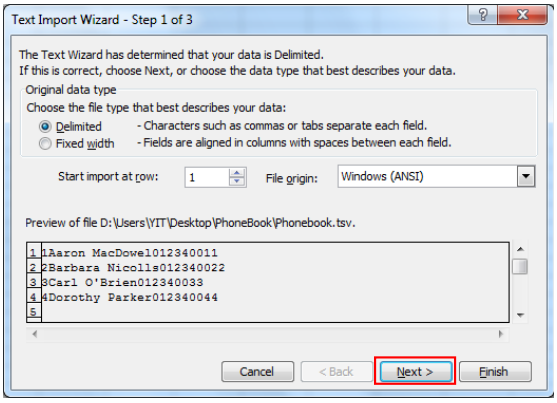
   Note

   - Make sure to open a TSV file in this procedure. If you change the extension of a TSV file to ".csv", the file will open by simply double-clicking it. However, the character encoding of the file might not be recognized properly, resulting in garbled characters, or the phone numbers might be recognized as numbers, resulting in data alteration.

3. Select **All Files** for the file type, select the exported phonebook data file, and click **Open**.



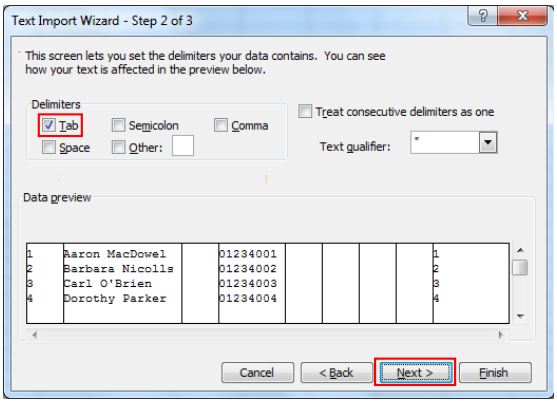
4. On the **Text Import Wizard - Step 1 of 3** window, click **Next**.



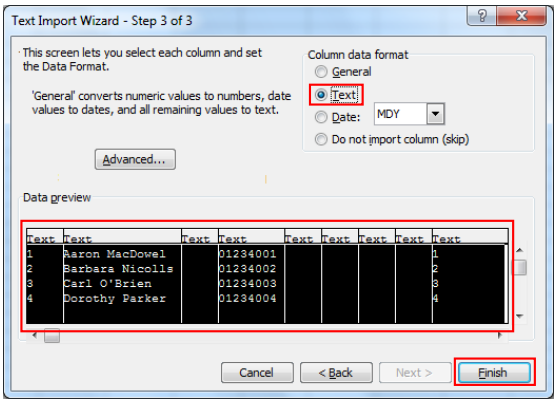
Note

- Regardless of what is selected for **File origin**, the file will be processed normally if the format is appropriate.

5. On the **Text Import Wizard - Step 2 of 3** window, select **Tab** for **Delimiters**, and then click **Next**.



6. On the **Text Import Wizard - Step 3 of 3** window, select all columns in **Data preview**, select **Text** in **Column data format**, and then click **Finish**.
   The TSV file will be opened.



Note

- Phone numbers must be treated as text strings. Otherwise, a "0" at the beginning of a phone number might disappear when exported.

To save the phonebook data for importing to the unit

1. After editing the phonebook entries, click **Office Button**, and then **Save As**.
2. Enter a file name in **File name**, and select **Unicode Text** in **Save as type**.
   The file will be saved in UTF-16 little endian with a BOM. Fields will be separated by tabs.
3. Click **Save**.
   A message warning you about file compatibility will be displayed.
4. Click **Yes**.
   The file will be saved as a Unicode text file, with the fields separated by tabs.

Note

- The procedure may vary depending on the software version of Microsoft Excel. Therefore, files exported and imported between the unit and Microsoft Excel are not always compatible with each other.

6.1.3 Exporting Data from Microsoft Outlook

You can export address book data stored in programs such as Microsoft Outlook, and then edit the exported data with a program such as Microsoft Excel in order to import it to the unit.

To export the Microsoft Outlook address book data

1. In Microsoft Outlook, click **File**, and then click **Import and Export**.
2. Select **Export to a file**, and click **Next**.
3. Select **Tab Separated Values (Windows)**, and click **Next**.
4. Select **Contacts**, and click **Next**.
5. Click **Browse**, select a folder, and then enter the file name to export the data to.
6. Click **OK**.
7. On the **Export to a File** window, click **Next**.
8. Click **Map Custom Fields**.
9. Clear all items in the **To** list by clicking **Clear Map**. Then, drag only **Last Name** and **Business Phone** from the **From** list to the **To** list, and click **OK**.

10. On the **Export to a File** window, click **Finish**.
    The data will be exported.

Note

- You can export data from Microsoft Outlook Express by using a similar procedure. It is also possible to export data from other applications that are compatible with Microsoft Excel.
- You can open the exported file in Microsoft Excel, and then import it to the unit. For details, see **6.1.2 Editing with Microsoft Excel**.
- First and middle names are not exported using this procedure. You can export all necessary items and edit the entry before importing them to the unit.
- In the file exported from Microsoft Outlook, fields are separated by tabs and encoded using the default character encoding for your operating system.

6.2 Dial Plan

The dial plan settings control how numbers dialed by the user are transmitted over the network. Dial plan settings can be configured on a per-line basis. These settings can be programmed either through the Web user interface (→ see **4.6.2.2 Dial Plan**) or by configuration file programming (→ see **5.3.28 Call Control Settings**).

6.2.1 Dial Plan Settings

To set Dial Plan

1. In the Web user interface, click the **[Telephone]** tab, and then click **[Call Control [Line 1]–[Line x]]**.
2. In **[Dial Plan]**, enter the desired dial format.
   For details about available characters for the dial format, see **Available Values for the Dial Plan Field** in this section.
3. Select **[Yes]** or **[No]** for **[Call Even If Dial Plan Does Not Match]**.
   - If you select **[Yes]**, the call will be made even if the user dials a phone number that does not match the dial format in **[Dial Plan]**.
   - If you select **[No]**, the call will be made only if the user dials a phone number that matches the dial format in **[Dial Plan]**.

Note

- For details about configuring these settings by configuration file programming, see "`DIAL_PLAN_n`" and "`DIAL_PLAN_NOT_MATCH_ENABLE_n`" in **5.3.28 Call Control Settings**.

Available Values for the Dial Plan Field

The following table explains which characters you can use in the dial format, and what the characters mean.

Element	Available Value	Description
String	0–9, [, -,], <, :, >, *, #, !, S, s, T, t, X, x, ., |, +	You can enter dial plan descriptions using a combination of the characters listed as available values.
Digit	0–9, *, #, +	**Example: "123"** If the dialed phone number is "123", the call is made immediately.

Element	Available Value	Description
Wildcard	X, x	**Example: "12xxxxx"** If the dialed phone number is "12" followed by any 5-digit number, the call is made immediately.
Range	[ ]	**Example: "[123]"** If the dialed phone number is either one of "1", "2", or "3", the call is made immediately.
Subrange	-	**Example: "[1-5]"** If the dialed phone number is "1", "2", "3", "4", or "5", the call is made immediately. • A subrange is only valid for single-digit numbers. For example, "[4-9]" is valid, but "[12-21]" is invalid.
Repeat	.	**Example: "1."** If the dialed phone number is "1" followed by zero or more "1"s (e.g., "11", "111"), the call is made.
Substitution	<(before):(after)>	**Example: "<101:9999>"** If the dialed phone number is "101", "101" is replaced by "9999", and then the call is made immediately.
Timer	S, s (second)	**Example: "1x.S2"** If the dialed phone number begins with "1", the call is made after a lapse of 2 seconds. • The number (0–9) followed by "S" or "s" shows the duration in seconds until the call is made.
Macro Timer	T, t	**Example: "1x.T"** If the dialed phone number begins with "1", the call is made after a lapse of "T" seconds. • The value of "T" or "t" can be configured through the Web user interface (→ see **[Timer for Dial Plan]** in **4.6.1.1 Call Control**).
Reject	!	**Example: "123xxx!"** If the dialed phone number is "123" followed by 3 digits, the call is not made.
Alternation	|	**Example: "1xxxx|2xxx"** If the dialed phone number is "1" followed by 4 digits, or "2" followed by 3 digits, the call is made immediately. You can use this element to specify multiple numbers.
Comma	,	Example: "9,xxxxxxxxxxx.T" If 9 is dialed, the second dial tone is heard, and then 11 digits are dialed, the call is made after waiting "T" seconds. * The dialing will include the initially dialed "9".

Note

- You can enter up to 1000 characters in **[Dial Plan]**.
- You can assign up to 100 dial plans separated by "|" in **[Dial Plan]**.
- You can assign up to 32 digits per dial plan in **[Dial Plan]**.
- You can assign up to 10 substitutions in **[Dial Plan]**.
- After the user completes dialing, the unit immediately sends all the dialed digits if **[Call Even If Dial Plan Does Not Match]** is set to **[Yes]** in the Web user interface or if

"**DIAL_PLAN_NOT_MATCH_ENABLE_n**" is set to "**N**" in a configuration file. The unit recognizes the end of dialing as follows:

– The inter-digit timer expires (→ see **[Inter-digit Timeout]** in **4.6.1.1 Call Control** in the Web user interface or "**INTDIGIT_TIM**" in **5.3.25 Telephone Settings** in the configuration file).
– The user presses **[ENTER]** or the # key.
– The call is initiated after going off-hook (pre-dial).

Dial Plan Example

The following example shows dial plans containing character sequences separated by "|".
Example: "[2346789]11|01[2-9]x.|[2-9]xxxxxxxxx"

Complete Match:

Example: "**[2346789]11**|01[2-9]x.|[2-9]xxxxxxxxx"

- If the dialed phone number is "211", "911" and so on, the call is made immediately.

Example: "[2346789]11|01[2-9]x.|**[2-9]xxxxxxxxx**"

- If the dialed phone number is "2123456789", "5987654321" and so on, the call is made immediately.

Partial Match (when the dial plan contains "."):

Example: "[2346789]11|**01[2-9]x.**|[2-9]xxxxxxxxx"

- If the dialed phone number is "01254", "012556" and so on, the call is made after the inter-digit timer expires.

Partial Match (when the dial plan does not contain "."):

Example: "**[2346789]11**|01[2-9]x.|[2-9]xxxxxxxxx"

- If the dialed phone number is "21", "91" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[Yes]**, the call is made after the inter-digit timer expires.
- If the dialed phone number is "21", "91" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[No]**, the call is denied after the inter-digit timer expires.

Example: "[2346789]11|01[2-9]x.|**[2-9]xxxxxxxxx**"

- If the dialed phone number is "21234567", "598765432" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[Yes]**, the call is made after the inter-digit timer expires.
- If the dialed phone number is "21234567", "598765432" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[No]**, the call is denied after the inter-digit timer expires.

No Match:

Example: "[2346789]11|01[2-9]x.|[2-9]xxxxxxxxx"

- If the dialed phone number is "0011", "1011" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[Yes]**, the call is made after the inter-digit timer expires.
- If the dialed phone number is "0011", "1011" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[No]**, the call is denied.

Section 7

Firmware Update

This section explains how to update the firmware of the unit.

7.1 Firmware Server Setup

No special server is necessary for the firmware update. You can use an HTTP server as the firmware server by simply setting its URL.

Note

- This feature is available only in IPv4 mode.
- A firmware update takes about 4 minutes.
- The unit will restart after the firmware update is complete.
- The unit cannot be used while the firmware is being updated.
- It is recommended to select a time for updating in which the unit will not be used. (For details about the timing of updating configuration files, see **2.2.4 Downloading Configuration Files**.)

7.2 Firmware Update Settings

Firmware updates are provided by the manufacturer when necessary.
The firmware update will be executed by setting the corresponding parameters using configuration file programming (→ see **5.3.6 Firmware Update Settings**) or Web user interface programming (→ see **4.7.2 Firmware Maintenance**). The following shows the parameters and the setting procedures:

Firmware Update Enable/Disable

- In a configuration file, add the line, **`FIRM_UPGRADE_ENABLE="Y"`**.
- In the Web user interface, click the **[Maintenance]** tab, click **[Firmware Maintenance]**, and then select **[Yes]** for **[Enable Firmware Update]**.

Firmware Version Number

- In a configuration file, specify the new version number in "**`FIRM_VERSION`**".

Firmware Server URL

- In a configuration file, specify the URL in "**`FIRM_FILE_PATH`**".
- In the Web user interface, click the **[Maintenance]** tab, click **[Firmware Maintenance]**, and then enter the URL in **[Firmware File URL]**.

Configuration Parameter Example

By setting the parameters as shown in the following example, the unit will automatically download the firmware file from the specified URL, "http://firm.example.com/firm/01.050.fw", and perform the update operation if the currently used firmware version is older than 01.050.

Example

```
FIRM_UPGRADE_ENABLE="Y"
FIRM_VERSION="01.050"
FIRM_FILE_PATH="http://firm.example.com/firm/01.050.fw"
```

7.3 Executing Firmware Update

After configuring the firmware update settings in the configuration file, the firmware will be updated when the configuration file is downloaded. The firmware update procedure is detailed below.

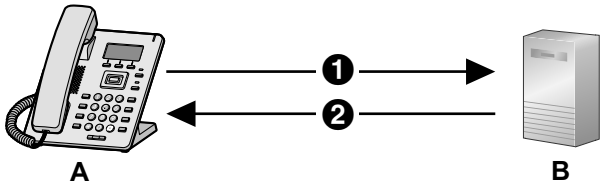
The firmware update process

Note

- Downgrading the firmware is not recommended. Operation cannot be guaranteed after performing a downgrade.

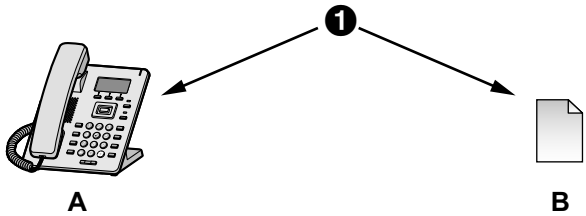
Step 1
The unit downloads a configuration file from the provisioning server.

- For details about setting the timing of when configuration files are downloaded, see **2.2.4 Downloading Configuration Files**.



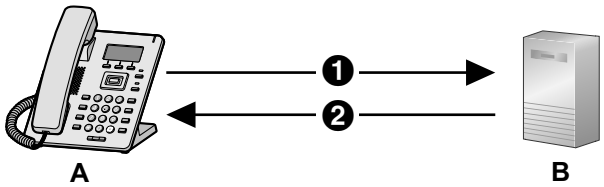
❶ Provisioning Server Address
❷ Configuration File
A. KX-HDV100
B. Provisioning Server

Step 2
The unit compares the version number of the firmware in the configuration file to the unit's current firmware version.
(In this example, the unit is using version 01.000 and the configuration file specifies version 01.050.)



❶ Compare
A. KX-HDV100
Current Version 01.000
B. Provisioned Configuration File
FIRM_VERSION="01.050"

Step 3
When a newer firmware version is specified in the configuration file, the unit will download the firmware from the address specified under "**`FIRM_FILE_PATH`**" in the configuration file.



❶ http://firm.example.com/firm/01.050.fw
❷ 01.050.fw
A. KX-HDV100
B. Firmware Server

Step 4
Once the newer firmware is downloaded, it is applied to the unit and the unit automatically restarts.

A

Version 01.050 Updated

7.4 Upgrade Firmware

When an updated version of the firmware is provided on a Web site or other means, you can perform the firmware update manually using Web user interface programming.
For details about the manual firmware update, see **4.7.3 Upgrade Firmware**.

To manually update the firmware

1. In the Web user interface, click the **[Maintenance]** tab, and then click **[Upgrade Firmware]**.
2. Enter a URL in **[Firmware File URL]**.
   Example: http://firm.example.com/firm/01.050.fw
3. Click **[Upgrade Firmware]**.

Note

- You can use an HTTP server as the firmware server by simply setting its URL.
- A firmware update takes about 4 minutes.
- The unit will restart after the firmware update is complete.
- The unit cannot be used while the firmware is being updated.

Section 8

Troubleshooting

This section provides information about troubleshooting.

8.1 Troubleshooting

If you still have difficulties after following the instructions in this section, disconnect the unit from the AC outlet, then connect the AC adaptor again. If using PoE, disconnect the LAN cable, then connect the LAN cable again.

General Use

Problem	Cause/Solution
The display is blank.	• The unit may not be receiving power. The unit is not designed to function when there is a power failure. Make sure that the AC adaptor is connected and receiving power.
I cannot hear a dial tone.	• Network settings may not be correct. • Many installation issues can be resolved by resetting all the equipment. First, shut down your modem, router, hub, unit, and PC. Then turn the devices back on, one at a time, in this order: modem, router, hub, unit, PC. • If you cannot access Internet Web pages using your PC, check to see if your phone system is having connection issues in your area. • Check the VoIP status in the Web user interface and confirm that each line is registered properly (→ see **To check the setting status in the Web user interface** in this section). • Check that the SIP server address, URLs of the configuration files, encryption key, and other required settings are correct. • Check the firewall and port forwarding settings on the router. • For details about the settings, consult your network administrator or phone system dealer.

Making/Answering Calls, Intercom

Problem	Cause/Solution
The unit does not ring.	• Check the VoIP status in the Web user interface and confirm that each line is registered properly (→ see **To check the setting status in the Web user interface** in this section). • Check that the SIP server address, URLs of the configuration files, encryption key, and other required settings are correct. • Check the firewall and port forwarding settings on the router. • Check **[Call Control]** for each line in the **[Telephone]** tab in the Web user interface. – If **[Enable Do Not Disturb]** is set to **[Yes]**, the unit does not receive calls (→ see **4.6.2.1 Call Features**). – If **[Enable Call Forwarding No Answer]** is set to **[Yes]**, the unit does not receive calls (→ see **4.6.2.1 Call Features**). – If **[Enable Block Anonymous Call]** is set to **[Yes]**, the unit does not receive anonymous calls (→ see **4.6.2.1 Call Features**). • Check that **[Enable Do Not Disturb]**, **[Enable Call Forwarding No Answer]**, and **[Enable Block Anonymous Call]** are not controlled by your phone system. • For details about settings, consult your network administrator or phone system dealer.
I cannot make a call.	• Check the VoIP status in the Web user interface and confirm that each line is registered properly (→ see **To check the setting status in the Web user interface** in this section). • Check that the SIP server address, URLs of the configuration files, encryption key, and other required settings are correct. • Check the firewall and port forwarding settings on the router. • For details about settings, consult your network administrator or phone system dealer.

Password for Web User Interface Programming

Problem	Cause/Solution
I have lost the login password of the Web user interface for the Administrator or User account.	• Consult your network administrator or phone system dealer. For security reasons, it is recommended that the passwords are set again immediately (→ see **4.4.3 Admin Password Settings** or **4.4.2 User Password Settings**).

Time

Problem	Cause/Solution
The time is not correct.	• In the Web user interface, you can set NTP synchronization and DST (Summer Time) control to adjust the time automatically (→ see **4.4.4 Time Adjust Settings**). • If the time is still incorrect even after setting NTP synchronization, check the firewall and port forwarding settings on the router.

Error Codes

During operation, error messages might appear on the unit. The following table lists these messages and possible causes and solutions.

Error code	Probable Cause	Solution
Error:001	LAN disconnection detected	Check the LAN cables connections.
Error:002	Overlapping IP addresses	Check the IP addresses and re-set them. For making settings using a unit, see 1.1.3 Basic Network Setup.
Error:003	The REGISTER of the SIP server has not been registered.	Consult your network administrator or phone system dealer.

Error Message

Error Message	Probable Cause	Solution
Need Repair	Hardware failure	Consult your network administrator or phone system dealer.

Checking the Status of the Unit

You can check the status of the unit by using Web user interface programming (→ see **4.2.2 Network Status** and **4.2.3 VoIP Status**) or by looking at system logs (→ see **5.3.29 Logging Settings**) sent from the unit.

To check the setting status in the Web user interface

1. Click the **[Status]** tab, and then click **[Network Status]** to check the network settings.
2. Check the status displayed.
3. Click **[VoIP Status]** to check the VoIP settings.
4. Check the status displayed.

To check the setting status using the Unit

1. MENU
2. **[▲]/[▼]: "System Settings"** → OK

3. **[▲]/[▼]: "Status" → OK**

Export Logging File

Export the log file using the Web user interface (→ see **4.7.4 Export Logging File**).

Section 9

Appendix

9.1 Revision History

9.1.1 KX-HDV100 Software File Version 02.015 or later

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- 4.5.4 VoIP Settings [Line 1]—SRTP Mode (Page 124)
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