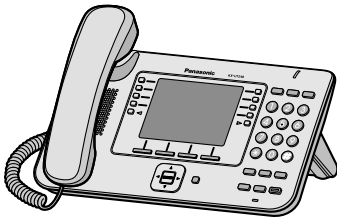# Panasonic®

Administrator Guide

SIP Phone

<KX-UT248>

Model No. KX-UT113/KX-UT123
KX-UT133/KX-UT136
KX-UT248

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

KX-UT113/KX-UT123/KX-UT133/KX-UT136/KX-UT248: Software File Version 01.160 or later

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

Document Version: 2012-06

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

Getting Started
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:
http://www.panasonic.com/sip (for users in the United States)
http://panasonic.net/pcc/support/sipphone (for users in all other countries/areas)

Technical Support

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

Open Source Software Notice

Parts of this product use open source software. For details about the open source software, see the Operating Instructions.

Trademarks

- Microsoft, Excel, Internet Explorer, Outlook, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.
- All other trademarks identified herein are the property of their respective owners.
- Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation.

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 Web Language**.

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:
- TCP/IP settings (DHCP [Dynamic Host Configuration Protocol] or static IP address assignment)
- DNS server settings

TCP/IP Settings (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.

DNS Server Settings

You can configure the unit to use 2 DNS servers: a primary DNS server and a secondary DNS server. If you set both DNS servers, the primary DNS server receives priority over the secondary DNS server. If the primary DNS server returns no reply, the secondary DNS 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 ($\rightarrow$ see "`DNS1_ADDR`" and "`DNS2_ADDR`" in **5.4.2 DNS Settings**).

- If the DNS server addresses specified in the configuration file ($\rightarrow$ see "`DNS_PRIORITY`" in **5.4.2 DNS Settings**) are given priority, the unit first sends its requests to those DNS servers. If a match is not found, the unit then sends its request to the DNS servers that were specified by the DHCP server, or the primary/secondary DNS servers that were specified on the unit or via the Web user interface.
- If the DNS servers that were specified by the DHCP server, or the primary/secondary DNS servers that were specified on the unit or via the Web user interface are given priority, the unit first sends its requests to those DNS servers. If a match is not found, the unit then sends its request to the DNS servers that were specified using the configuration file.

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 ($\rightarrow$ see **Introduction**).
For details about configuring network settings via the Web user interface, see **4.3.1 Basic Network Settings**.

To configure network settings automatically

1. Press **Setting** or **Setup** .
2. Press **[▲]** or **[▼]** to select "`Network Settings`", and then press **[ENTER]**.
3. Press **[▲]** or **[▼]** to select "`Network`", and then press **[ENTER]**.
4. Press **[▲]** or **[▼]** to select "`DHCP`", and then press **[ENTER]**.
5. Press **[▲]** or **[▼]** to select "`Automatic`" for DNS, and then press **[ENTER]**.
   - Select "`Manual`" to enter the addresses for DNS1 (primary DNS server) and, if necessary, DNS2 (secondary DNS server) manually, and then press **[ENTER]**.
6. Press **[CANCEL]**.

To configure network settings manually

1. Press **Setting** or **Setup** .
2. Press **[▲]** or **[▼]** to select "`Network Settings`", and then press **[ENTER]**.
3. Press **[▲]** or **[▼]** to select "`Network`", and then press **[ENTER]**.
4. Press **[▲]** or **[▼]** to select "`STATIC`", and then press **[ENTER]**.
5. Enter the IP address, subnet mask, default gateway, DNS1 (primary DNS server), and, if necessary, DNS2 (secondary DNS server), and then press **[ENTER]**.
6. Press **[CANCEL]**.

Note

- If your phone system dealer does not allow you these settings, you cannot change them even though the unit shows the setting menu. Contact your phone system dealer 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 "`Automatic`" 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**.

Router

Switching
Hub

PC

SIP Phone
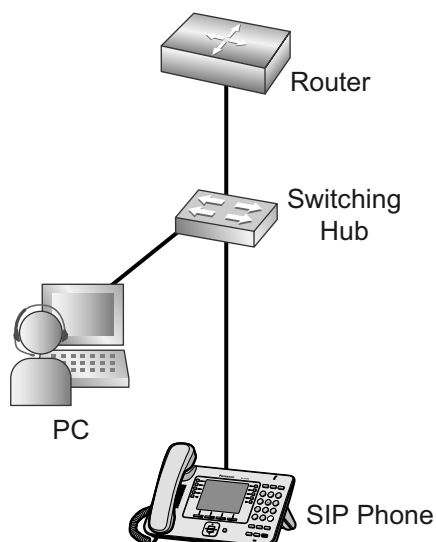
1.1.6.1 Password for Web User Interface Programming

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 Web Language**.

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 (or Basic)

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

Operating System	Microsoft® Windows® XP or Windows 7 operating system
Web Browser	Windows Internet Explorer® 7 or Windows Internet Explorer 8 web browser
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**).
For details about additional features available with direct commands, see **Section 3 Phone User Interface Programming**.

Configuring Settings from the Unit

To open the unit's Web port

1. Press **Setting** or **Setup** .
2. Press **[#][5][3][4]**.
3. Press **[▲]** or **[▼]** to select "**On**" for "**Embedded web**", and then press **[ENTER]**.

To close the unit's Web port

1. Press **Setting** or **Setup** .
2. Press **[#][5][3][4]**.
3. Press **[▲]** or **[▼]** to select "**Off**" for "**Embedded web**", and then press **[ENTER]**.

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:
  – The port close timer configured through the Web user interface expires (→ see **[Port Close Timer]** in **4.4.4.1 Web Server Settings**).
  – 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 **5.4.5 HTTP 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 **4.4.3 Change User Password**). • The password can consist of 6 to 16 ASCII characters (case-sensitive) (→ see **Entering Characters** in **1.1.6.4 Accessing the Web User Interface**).
Administrator	Network administrators, etc.	admin	adminpass	• When logged in as Administrator, you can change the password for both the User and Administrator accounts (→ see **4.4.2 Administrator Password**). • The password can consist of 6 to 16 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 **5.3.1 Login Account Settings**).
- You can reset the account IDs and passwords to their factory default settings by performing Reset Web ID/Password from the unit. For details, see **3.1.4 Reset Web ID/Password**.

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.

Note
- To determine the unit's IP address, perform the following operations on the unit:

   1. Press ▐Setting▌ or ▐Setup▌ .
   2. Press **[▲]** or **[▼]** to select "`Information Display`", and then press **[ENTER]**.
   3. Press **[▲]** or **[▼]** to select "`IP Address`".
   4. Press **[CANCEL]**.
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 **[Change User Password]** screen (→ see **4.4.3 Change User Password**) 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:
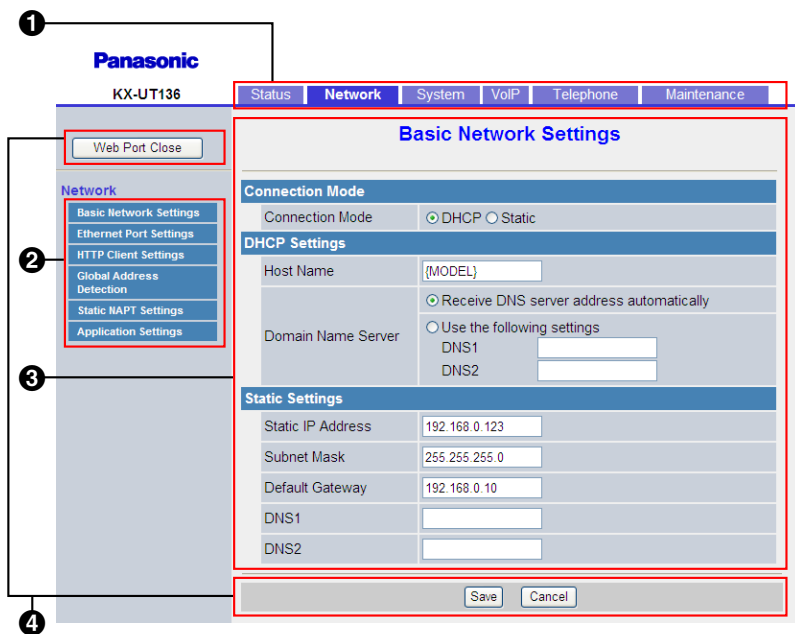
Note
   - The screen shots shown are taken from the Web user interface of the KX-UT136 (or, in some cases, KX-UT248), so the model name may differ from that shown on your PC.
   - Actual default values may vary depending on your phone system dealer.
   - When you log in to the Web user interface with 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 4 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
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 ($\rightarrow$ 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.
  - You cannot leave the field empty.
* IP Address field
  - You can enter the IP address using dotted-decimal notation (i.e., "n.n.n.n" where n=0–255).

- – You cannot enter invalid IP addresses, for example, "0.0.0.0", "255.255.255.255", or "127.0.0.1".
- FQDN field
  - – The field cannot contain ", &, ', <, >, or trailing spaces.
  - – You can enter the IP address using dotted-decimal notation (i.e., "n.n.n.n" where n=0–255).
  - – You cannot enter invalid IP addresses, for example, "0.0.0.0", "255.255.255.255", or "127.0.0.1".
- Authentication ID/Password field
  - – The field cannot contain ", &, ', :, <, >, or space.
  - – The length of user password and administrator password must be from 6 to 16 characters.
- Display Name field (→ see **[Display Name]** in **4.6.2.1 Call Control**)
  - – 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**
	• When updating the firmware, the unit is on a call.	**4.7.2 Local Firmware Update**
Failed (Canceled)	The operation failed because: • While transferring the phonebook data, IP Reset was performed on the unit.	**4.6.6 Import Phonebook** **4.6.7 Export Phonebook**
	• While transferring the firmware file, IP Reset was performed on the unit.	**4.7.2 Local Firmware Update**
	• While transferring the phonebook data, the connection with the unit was interrupted.	**4.6.6 Import Phonebook** **4.6.7 Export Phonebook**

Result Message	Description	Applicable Screens
Failed (Invalid File)	The operation failed because: • The imported UTF-16 text file has an invalid BOM (Byte-order Mark).	**4.6.6 Import Phonebook**
	• The firmware file is corrupted or invalid.	**4.7.2 Local Firmware Update**
Failed (File Size Error)	The operation failed because: • The size of the imported phonebook is too large.	**4.6.6 Import Phonebook**
	• The size of the firmware file is insufficient.	**4.7.2 Local Firmware Update**
Failed (Busy)	The operation failed because: • When attempting to import/export the phonebook data, the connection with the unit has been disconnected.	**4.6.6 Import Phonebook** **4.6.7 Export Phonebook**
Memory Full	The operation failed because: • When attempting to import the phonebook data, the total number of phonebook entries, including the existing entries, exceeds the limit (of up to 100 [for the KX-UT113]/500 [for the KX-UT123/KX-UT133/KX-UT136/KX-UT248] entries).	**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.

Notice

• Do not click the navigation buttons of your Web browser or open a new window to display the screen. Otherwise, an error ("403 Forbidden") will occur when you click **[Save]**.

1.1.7 Other Network Settings

1.1.7.1 Firewall and Router Setup

When the unit is connected to a network that is protected by a firewall and/or router, you need to configure the firewall and/or router so that they do not block communication from the IP address and port number used by the unit.

1.1.7.2 NAT (Network Address Translation) Setup

This section provides information about configuring a router that uses NAT.
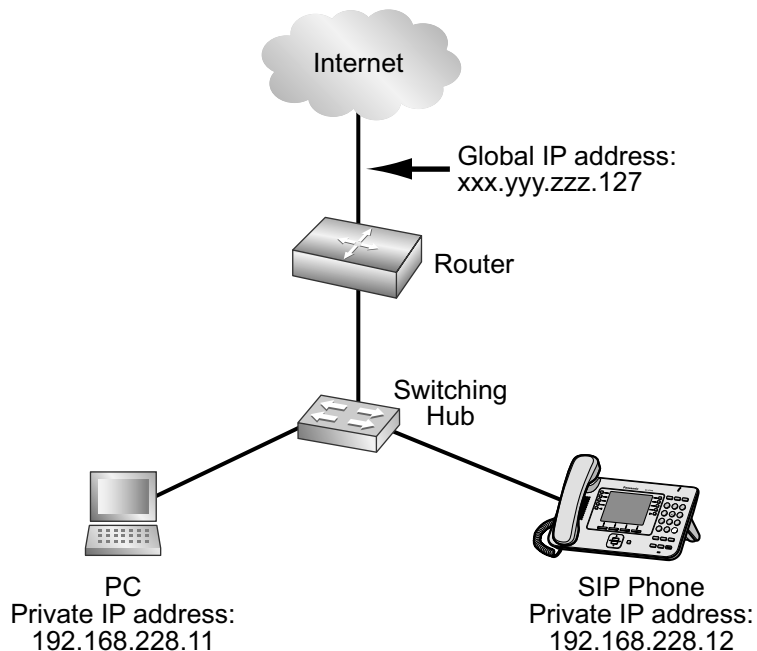
If the unit is connected to a network that uses a NAT router and a private IP address is assigned to each terminal on the network, depending on your phone system's setup, you might need to configure the unit and router so as to use NAT Traversal techniques.
If your phone system dealer provides an outbound proxy service that supports NAT Traversal, you need only to set the IP address of the SIP outbound proxy server to the unit—no other settings are necessary.
However, depending on the phone system of the outbound proxy service, no setting may be necessary because private IP addresses are automatically translated into global IP addresses by the outbound proxy server.
For details about the outbound proxy service, consult your phone system dealer.
When TCP is used to transport the SIP messages, you must always configure the devices for NAT Traversal.

To configure NAT Traversal, you must have the following information:
*   The global IP address of the router.
*   The port numbers you will specify for **[Source Port]** and **[External RTP Port]** through the Web user interface, so that you can configure the appropriate port forwarding settings.

<u>Note</u>
*   Because the IP address of the router needs to be set in the unit, the IP address must be static.

SIP Setup

It might be necessary to manually set the router's global IP address and reception port number in the unit. In addition, it might also be necessary to configure the port forwarding settings of the router so that packets sent from an outside network are sent to the unit. These settings are required for each individual line. For details about Web user interface programming, see **4.3.6 Static NAPT Settings** and **4.5.2.5 SIP Source Port**.

RTP (Real-time Transport Protocol) Setup

If the unit is connected to a network that uses a NAT router and a private IP address is assigned to each terminal on the network, you must configure the RTP function for the unit and router so that the units can perform voice transmission between each other using a peer-to-peer connection.
However, if your phone system supports the SBC (Session Border Controller) function, it is not necessary to configure these settings.
For details about the SBC function, consult your phone system dealer.
For details about Web user interface programming, see **4.3.6 Static NAPT Settings**.

Router Setup

When configuring the port forwarding function, specify the router's reception port number as the unit's port number.
Port forwarding should be configured for the ports specified in **[Source Port]** ($\rightarrow$ see **SIP Setup** in this section) and **[External RTP Port]** ($\rightarrow$ see **RTP (Real-time Transport Protocol) Setup** in this section).
Set the same port number for the source port and destination port, and set the unit's private IP address as the destination address.
Because the unit's private IP address will have to be set in the router's port forwarding configuration again if it is changed, set a static IP address to the unit, or configure the router so that the same IP address is always assigned to the unit if IP addresses are assigned by a DHCP server.
For details about how to configure the router, refer to the documentation for the router.
Because the port forwarding settings depend on the user's network environment, they cannot be programmed using configuration files.

1.1.7.3 Global Address Detection

The global IP address is a unique IP address that is assigned to a particular terminal. If the global IP address assigned to the firewall or the router is changed, the unit will not be able to communicate.
If the global IP addresses of these terminals are assigned by a DHCP server in the higher level network where they are connected, the IP address may differ each time the unit transmits data.
The Global Address Detection feature detects the current global IP address and, if the IP address has changed, sets it automatically to the SIP server. There are 2 methods, using STUN (Simple Traversal of UDP through NATs) or SIP messages, to perform this feature. For details about specifying this setting through the Web user interface, see **4.3.5 Global Address Detection**.

Note
  • For details about server information, consult your network administrator.

1.2 Reset and Firmware Update

1.2.1 Reset

1.2.1.1 Resetting to Factory Default (Factory Setting)

Performing Factory Setting from the phone user interface resets all settings in the unit to their factory defaults. This type of initialization also deletes all other data on the unit, such as the call logs and the phonebook.
To perform this initialization, follow the procedure below:

1. Press **Setting** or **Setup** .
2. Press **[#][1][3][6]**.
3. Press **[▲]** or **[▼]** to select "**Factory Setting**", and then press **[ENTER]**.
4. Press **[▲]** or **[▼]** to select "**Yes**", and then press **[ENTER]**.
5. Press **[▲]** or **[▼]** to select "**Yes**", and then press **[ENTER]**.

Notice

-   After performing Factory Setting, the unit will restart automatically. To avoid problems, it is recommended that you save your settings before performing Factory Setting.

1.2.1.2 Resetting the Network Settings (IP Reset)

Performing IP Reset from the phone user interface restores the basic network settings made through phone user interface programming, Web user interface programming, or configuration file programming to their factory defaults. If the unit is unable to connect to the network after changing network settings, you can restore the network settings to their factory defaults by performing IP Reset, and then try configuring the settings again. Apart from Call Rejection Phone Numbers, all Web user interface and configuration file programming settings will be reset to their factory defaults. However, settings such as the phonebook data, are not cleared by this feature.
To perform this initialization, follow the procedure below:

1. Press **Setting** or **Setup** .
2. Press **[#][1][3][6]**.
3. Press **[▲]** or **[▼]** to select "**IP Reset**", and then press **[ENTER]**.
4. Press **[▲]** or **[▼]** to select "**Yes**", and then press **[ENTER]**.
5. Press **[▲]** or **[▼]** to select "**Yes**", and then press **[ENTER]**.

Notice

-   After performing IP Reset, the unit will restart automatically. To avoid problems, it is recommended that you save your settings before performing IP Reset.

1.2.1.3 Resetting the Settings Made through the Web User Interface (Reset Web Settings)

Performing Reset Web Settings from the Web user interface (→ see **4.7.5 Reset to Defaults**) resets the settings made through the Web user interface to their default values.
When you use this feature, the unit will return to the status just after performing the most recent provisioning or pre-provisioning.

Notice

-   After performing Reset Web Settings, the unit will restart automatically. To avoid problems, it is recommended that you save your settings before performing Reset Web Settings.

Note

-   The settings configured through the phone user interface only will not be reset. However, settings that can be configured through both the phone user interface and Web user interface will be reset.

1.2.2 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**.
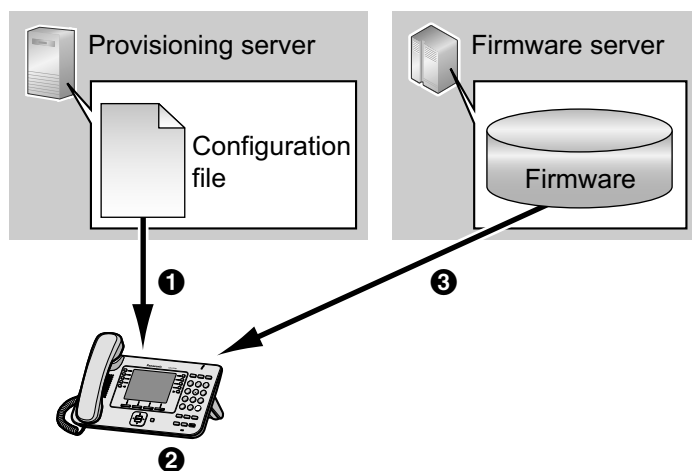
❶ Download
❷ Check for update
❸ Firmware download and update

1.2.2 Firmware 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?

To perform pre-provisioning, you must set the IP address of a TFTP server to the DHCP server option 66 so that the unit can acquire the TFTP server address. When the unit starts up and no configuration has been applied, it will automatically acquire the address of the TFTP server and download the configuration file.
For details about the configuration file, see **2.2.3 Configuration File**.
For details about the settings that can be configured with the configuration files and how to specify the settings, see **Section 5 Configuration File Programming**.
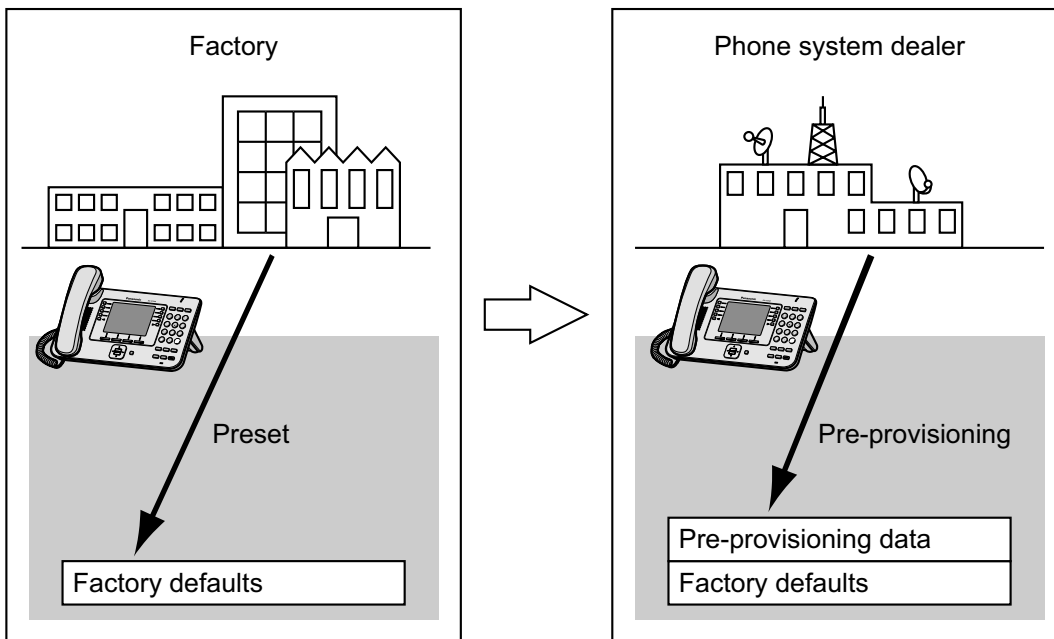
Pre-provisioning can aid the installation process by allowing phone system dealers to configure beforehand the minimum settings required to operate the unit.
For example, phone system dealers can store on the TFTP server a configuration file that contains only the URL of a server where another configuration file is stored. This second configuration file contains settings configured specifically for the usage environment of the user. The user will be able to start using the unit by just connecting it to the network.

Pre-provisioning is performed only once after the unit has been shipped. Once any configuration (such as pre-provisioning, provisioning, or Web user interface programming) has been applied, pre-provisioning will not be performed again.
Note that the settings configured by pre-provisioning cannot be restored once it has been performed. If you want to restore them, consult your phone system dealer.

Although pre-provisioning is often used to specify the location of the configuration files for provisioning, you can configure any of the settings through pre-provisioning. The unit can be made fully operational by configuring settings through pre-provisioning.

2.1.2 Pre-provisioning when Setting Static IP Addresses

To perform pre-provisioning, the unit needs to acquire the TFTP server address from option 66 on a DHCP server. Therefore, pre-provisioning cannot be performed if you use static IP addressing on your network. If you use static IP addressing and want to perform pre-provisioning, construct a small, separate network and connect a DHCP and TFTP server to that network.
In addition, if option 66 of the DHCP server cannot be set, or if you are unauthorized to change this setting, perform pre-provisioning on the separate network, and then connect the unit to the actual network.

2.1.3 Server for Pre-provisioning

The DHCP server and TFTP server play important roles in performing pre-provisioning. This section explains their purposes, uses, and brief descriptions.

Server	Purpose	Description
DHCP server	Used to provide the address of a TFTP server, set in option 66 of the DHCP server, to units that have not been configured yet.	In option 66 of the DHCP server, specify the IP address or FQDN (Fully Qualified Domain Name) of the TFTP server. For details, refer to the documentation for your DHCP server. **Note** • The maximum length of FQDN text is 255 bytes.
TFTP server	Used to store configuration files, and is set as the access point for downloading them automatically.	The unit will download the configuration file "(model name).cfg" stored in the root directory of the TFTP server. For example, if the model name is KX-UTxxx, the unit will download the configuration file "/KX-UTxxx.cfg".

DHCP and TFTP servers may be supplied with your operating system, provided through commercial services, and are also distributed freely on the Internet. Use a server setup that best matches your environment. When installing and setting up the DHCP server and TFTP server, refer to the documentation supplied with the product. For details about connecting servers to the network and managing them, consult your network administrator.

2.1.4 Pre-provisioning Setting Example

This section gives an example of how to perform pre-provisioning.

Assumptions

Item	Description/Setting
TFTP server address	192.168.0.130
Distribution directory of TFTP server	/tftproot
Model name of the unit	KX-UTxxx
MAC address of the unit	0080F0123456

Item	Description/Setting
Provisioning server name (where the configuration file used for provisioning is to be stored)	provisioning.example.com
Distribution directory of the provisioning server	/Panasonic
File name of the configuration file used for provisioning	Config0080F0123456.cfg
URL of the configuration file used for provisioning	http://provisioning.example.com/Panasonic/Config0080F0123456.cfg

Prior Settings

Item	Description/Setting
DHCP server option 66	192.168.0.130
IP address range assigned by DHCP server	192.168.0.16 to 192.168.0.63
File name of the configuration file used for pre-provisioning	KX-UTxxx.cfg
URL of the configuration file used for provisioning that is entered in the configuration file	`CFG_STANDARD_FILE_PATH="http://provisioning.example.com/Panasonic/Config{MAC}.cfg"` **Note** • "{MAC}" is replaced by the MAC address of the unit. (e.g., "0080F0123456")
Stored location of the configuration file on the TFTP server	Configuration file "KX-UTxxx.cfg" is stored in the directory "/tftproot".

The pre-provisioning process

Step 1
Connect the unit to the network, and turn the power on. The unit is assigned an IP address by the DHCP server, and also receives the TFTP server address from the DHCP server using DHCP server option 66.
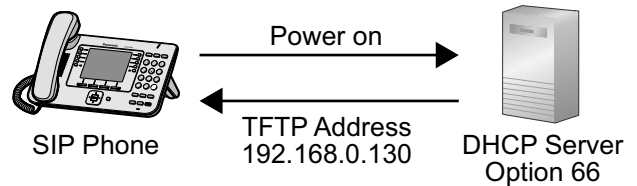
Step 2
The unit downloads the configuration file for pre-provisioning from the TFTP server:
tftp://192.168.0.130/KX-UT248.cfg
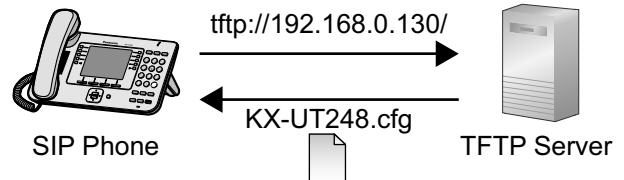
Note

- The file name may be different depending on the phone being used. For example, the file name for KX-UT113 users will be: tftp://192.168.0.130/KX-UT113.cfg

Step 3
The URL of the server where the configuration file for provisioning is stored (provisioning server) is set to the unit:
http://provisioning.example.com/Panasonic/Config{MAC}.cfg

Step 4
The unit will display a message indicating pre-provisioning is complete.
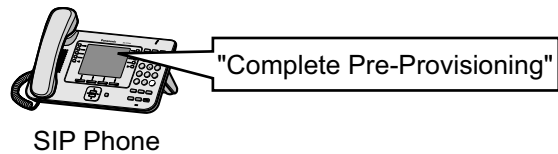
Step 5
When the message is displayed, turn off the unit's power, then turn it back on.
The unit may restart automatically depending on the configuration file programming ($\rightarrow$ see "`OPTION66_REBOOT`" in **5.3.5 Provisioning Settings**).
When the unit is distributed to end users and started up in real circumstances, provisioning will be performed correctly.
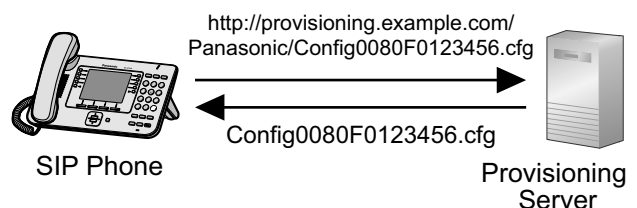
Note

- This example describes the case when only one unit is connected. However, multiple units can be configured through the same procedure without changing any settings, because the MAC address is specified by the {MAC} macro.

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".
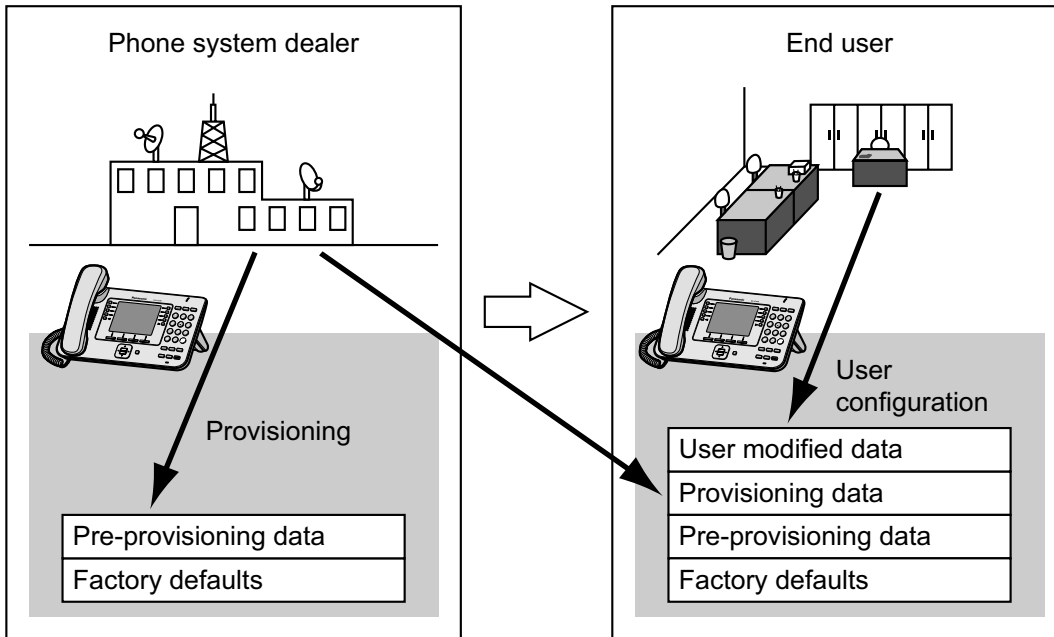
2.2.2 Protocols for Provisioning

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, 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. This configuration file is used by all the units. Example of the configuration file's URL: http://prov.example.com/Panasonic/ConfigCommon.cfg
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, 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
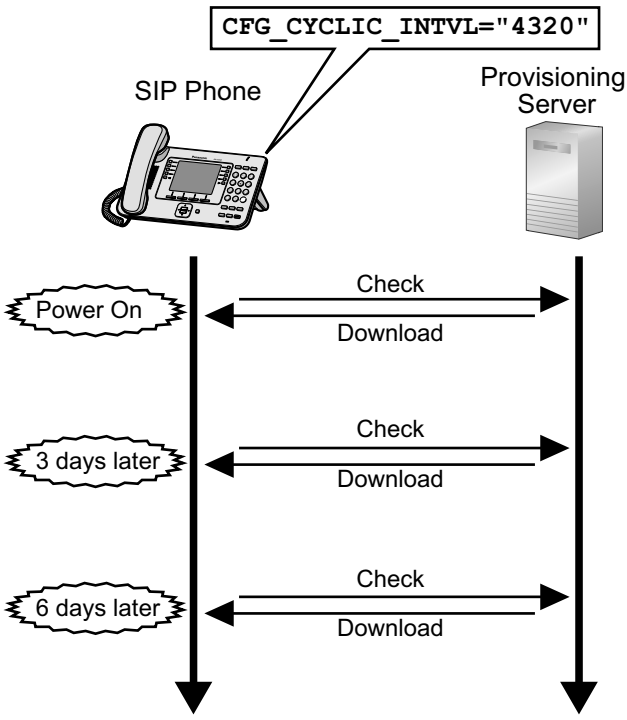
The following procedure describes how to enable downloading a configuration file via the Web User Interface to be used for programming the unit.

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 ($\rightarrow$ see **1.1.6.3 Before Accessing the Web User Interface**).
3. Log in as the administrator ($\rightarrow$ see **Access Levels (IDs and Passwords)** in **1.1.6.3 Before Accessing the Web User Interface**).
4. Click the **[Maintenance]** tab, click **[Provisioning Maintenance]**, and then select **[Yes]** for **[Enable Provisioning]**.
5. Enter the URL set up in Step 1 in **[Standard File URL]**.
6. Click **[Save]**.
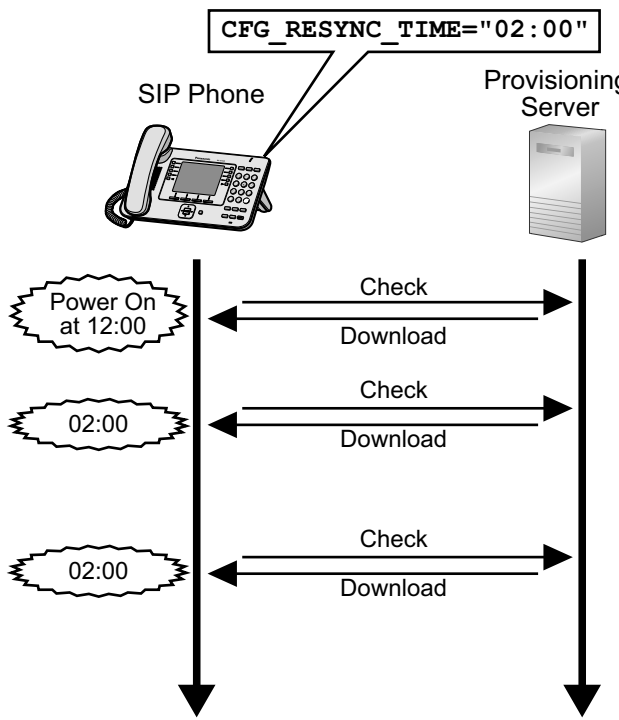
Timing of Downloading

A unit downloads configuration files when it starts up, at regular intervals, and when directed to do so by the server. In addition, you can prohibit units from downloading the configuration files. For details about the settings, see **4.7.3 Provisioning Maintenance** and **5.3.5 Provisioning Settings**.

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 check for and download configuration files from the provisioning server every 3 days (4320 minutes).
	
	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]**.
	
	<u>Note</u>
	• The interval may be determined by your phone system dealer. 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 check for and download configuration files once per day at the specified time.
	
	The configuration files are downloaded at a set time each day:
	• Set a time by specifying "`CFG_RESYNC_TIME`".
	
	Note
	    • If the value for "`CFG_RESYNC_TIME`" 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.
	    • The time is specified using a 24-hour clock ("00:00" to "23:59").

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.

Download Timing	Explanation

None (prohibited)	If you want to prohibit units from changing their settings by downloading configuration files, you can enable this function from the Web user interface. The following operations will be prohibited:
	– Pre-provisioning
	– Provisioning at startup
	– Provisioning at regular intervals
	– Provisioning by sending a NOTIFY message
	• In the configuration file:
	  – Add the line, **PROVISION_ENABLE="N"**.
	• In the Web user interface:
	  – Click the **[Maintenance]** tab, click **[Provisioning Maintenance]**, and then select **[No]** for **[Enable Provisioning]**.
	• To enable provisioning again, in the Web user interface:
	  – Click the **[Maintenance]** tab, click **[Provisioning Maintenance]**, and then select **[Yes]** for **[Enable Provisioning]**.

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: Thu, 1 Jan 2009 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
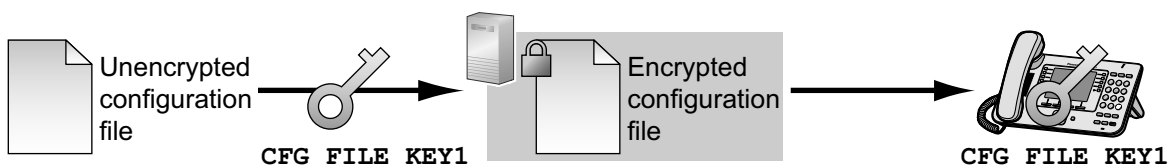
To use this method, an encryption key is required to encrypt and decrypt the configuration files. A preset encryption key unique to each unit, an encryption key set by your phone system dealer, etc., is used for the encryption. When the unit downloads an encrypted configuration file, it will decrypt 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
".e1c"	`CFG_FILE_KEY1`
".e2c"	`CFG_FILE_KEY2`
".e3c"	`CFG_FILE_KEY3`
Other than ".e1c", ".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):

Setting Order	Priority	Setting Method
1	4	The factory default settings for the unit
2	3	Pre-provisioning with the configuration file
3	2–3	Provisioning with the master configuration file
	2–2	Provisioning with the product configuration file
	2–1	Provisioning with the standard configuration file
4	1	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).

If different values are specified for the same setting by the master configuration file and Web user interface programming, the value specified from the Web user interface is applied. This is because values specified from the Web user interface have a higher priority.

For settings configured from the Web user interface and the phone user interface, the value specified most recently receives priority.

Notice
- Make sure to perform Reset to Factory Default before connecting the unit to a different phone system. For details, see **1.2.1.1 Resetting to Factory Default (Factory Setting)**.

2.4 Configuration File Specifications

The specifications of the configuration files are as follows:

File Format

The configuration file is in plain text format.

File Size

The maximum size of a configuration file is 120 KB. Regardless of the number of configuration files, the total size of the configuration files must be 120 KB or less.

Lines in Configuration Files

A configuration file consists of a sequence of lines, with the following conditions:
- Each line must end with "<CR><LF>".
- The maximum length of a line is 537 bytes including "<CR><LF>".
- The following lines are ignored:
    - Lines that exceed the limit of 537 bytes
    - Empty lines
    - Comment lines that start with "**#**"
- 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

- The unit supports multiple telephone lines. For some parameters, the value for each line must be specified independently. A parameter name with the suffix "**_1**" is the parameter for line 1; "**_2**" for line 2, and so on. Examples of setting the line (phone number) for accessing a voice mail server:
  "**VM_NUMBER_1**": for line 1,
  "**VM_NUMBER_2**": for line 2, …,
  "**VM_NUMBER_6**": for line 6

  Note
  - The number of lines available varies depending on the phone being used, as follows:
    – KX-UT113/KX-UT123: 1–2
    – KX-UT133/KX-UT136: 1–4
    – KX-UT248: 1–6
- The maximum length of a parameter name is 32 characters.
- The maximum length of a parameter value is 500 characters excluding double quotation marks.
- No space characters are allowed in the line except when the value includes a space character(s). Example:
  DISPLAY_NAME_1="John Smith" (valid)
  DISPLAY_NAME_1 = "John Smith" (invalid)
- 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.

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)G.726-32, (3)PCMU, (4)G.722

```
## Codec Settings
# Enable G722
CODEC_ENABLE0_1="Y"
CODEC_PRIORITY0_1="4"
# Disable PCMA
CODEC_ENABLE1_1="N"
# Enable G726-32K
CODEC_ENABLE2_1="Y"
CODEC_PRIORITY2_1="2"
# Enable G729A
CODEC_ENABLE3_1="Y"
CODEC_PRIORITY3_1="1"
# Enable PCMU
CODEC_ENABLE4_1="Y"
CODEC_PRIORITY4_1="3"
```

Setting Narrow-band Codecs (PCMA, G.726-32 and G.729A)

```
## Codec Settings
# Disable G722
CODEC_ENABLE0_1="N"
# Enable PCMA
CODEC_ENABLE1_1="Y"
CODEC_PRIORITY1_1="1"
# Enable G726-32K
CODEC_ENABLE2_1="Y"
CODEC_PRIORITY2_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"
# Disable G726-32K
CODEC_ENABLE2_1="N"
# Enable G729A
CODEC_ENABLE3_1="Y"
CODEC_PRIORITY3_1="1"
# Disable PCMU
CODEC_ENABLE4_1="N"
# Do not set PCMU
```

```
CODEC_G711_REQ="0"
```

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.

❸ Space characters are inserted in the middle of the setting line.

❹ A specified value is not in the range allowed for that setting.

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


# Enables DNS SRV lookup
SIP_DNSSRV_ENA_1="Y"


# ID, password for SIP authentication
SIP_AUTHID_1 = "SIP_User"
SIP_PASS_1 = "SIP_Password"              ──❸


# Some Timer Settings #
# Expiration time of SIP registration; "1 hour"
REG_EXPIRE_TIME_1="3600"
# Disables SIP Session Timer (RFC 4028)
SIP_SESSION_TIME_1="0"
```

```
# DTMF will be sent through SDP, according to RFC 2833
OUTBANDDTMF_1="Y"


###########################################################
# Call Control Settings #
###########################################################


# Enables subscription to the Voice Mail server
VM_SUBSCRIBE_ENABLE="Y"
                    └──❹

# Shared Call Settings
SHARED_CALL_ENABLE_1="Y"


# Disables Do Not Disturb, Call Forward synchronization.
FWD_DND_SYNCHRO_ENABLE_1="N"
```

2.6 Setting Configuration File Parameters Using TR-069

TR-069 (Technical Report 069) is a protocol for the remote management of terminals using the technical specifications of CWMP (CPE [Customer Premises Equipment] WAN Management Protocol). TR-069 allows terminals to have their settings configured automatically via connection to ACSs (Auto Configuration Servers). For details about setting up the parameters necessary for using TR-069, see **4.7.4 Management Server** and **5.3.6 Management Server Settings**.

Notice
  • Settings that are configured using TR-069 can also be configured using the standard configuration file. Therefore, take care that settings do not overlap when using both configuration methods together.

Settings configured using TR-069

Requirement	Parameter Name		Ref.
	TR-069 Parameter	**Configuration File Parameter**	
TR-106	Device.Time.NTPServer1	`NTP_ADDR`	Page 199
TR-106	Device.Time.LocalTimeZone	`LOCAL_TIME_ZONE_POSIX`	Page 173
TR-106	Device.ManagementServer.URL	`ACS_URL`	Page 184
TR-106	Device.ManagementServer.Username	`ACS_USER_ID`	Page 184
TR-106	Device.ManagementServer.Password	`ACS_PASS`	Page 185
TR-106	Device.ManagementServer.PeriodicInformEnable	`PERIODIC_INFORM_ENABLE`	Page 185
TR-106	Device.ManagementServer.PeriodicInformInterval	`PERIODIC_INFORM_INTERVAL`	Page 185
TR-106	Device.ManagementServer.PeriodicInformTime	`PERIODIC_INFORM_TIME`	Page 185

Requirement	Parameter Name		Ref.
	TR-069 Parameter	Configuration File Parameter	
TR-106	Device.ManagementServer.Connection RequestUsername	`CON_REQ_USER_ID`	Page 186
TR-106	Device.ManagementServer.Connection RequestPassword	`CON_REQ_PASS`	Page 186
TR-106	Device.ManagementServer.STUNEnabl e	`ANNEX_G_STUN_ENABLE`	Page 187
TR-106	Device.ManagementServer.STUNServe rAddress	`ANNEX_G_STUN_SERV_ADDR`	Page 187
TR-106	Device.ManagementServer.STUNServe rPort	`ANNEX_G_STUN_SERV_PORT`	Page 187
TR-106	Device.ManagementServer.STUNUsern ame	`ANNEX_G_STUN_USER_ID`	Page 187
TR-106	Device.ManagementServer.STUNPass word	`ANNEX_G_STUN_PASS`	Page 188
TR-106	Device.ManagementServer.STUNMaxi mumKeepAlivePeriod	`ANNEX_G_STUN_MAX_KEEP_AL IVE`	Page 188
TR-106	Device.ManagementServer.STUNMinim umKeepAlivePeriod	`ANNEX_G_STUN_MIN_KEEP_AL IVE`	Page 188
TR-106	Device.ManagementServer.UDPConne ctionRequestAddressNotificationLimit	`UDP_CON_REQ_ADDR_NOTIFY_ LIMIT`	Page 189
TR-104	Device.VoiceService.1.VoiceProfile. 1.Line.1.Codec.List. 1.PacketizationPeriod	`RTP_PTIME`	Page 235
TR-104	Device.VoiceService.1.VoiceProfile. {n}.Line.1.Codec.List.{x}.Enable	`CODEC_ENABLEx_n`	Page 231
TR-104	Device.VoiceService.1.VoiceProfile. {n}.Line.1.Codec.List.{x}.Priority	`CODEC_PRIORITYx_n`	Page 231
TR-104	Device.VoiceService.1.VoiceProfile. {n}.RTP.RTCP.TxRepeatInterval	`RTCP_INTVL_n`	Page 233
TR-104	Device.VoiceService.1.VoiceProfile. 1.RTP.LocalPortMin	`RTP_PORT_MIN`	Page 234
TR-104	Device.VoiceService.1.VoiceProfile. 1.RTP.LocalPortMax	`RTP_PORT_MAX`	Page 234
TR-104	Device.VoiceService.1.VoiceProfile. {n}.RTP.DSCPMark	`DSCP_RTP_n`	Page 232
TR-104	Device.VoiceService.1.VoiceProfile. {n}.RTP.RTCP.Enable	`RTCP_ENABLE_n`	Page 235
TR-104	Device.VoiceService.1.VoiceProfile. {n}.Enable	`PROFILE_ENABLEn`	Page 245

Requirement	Parameter Name		Ref.
	TR-069 Parameter	**Configuration File Parameter**	
TR-104	Device.VoiceService.1.VoiceProfile.{n}.DTMFMethod	`OUTBANDDTMF_n`	Page 236
		`DTMF_RELAY_n`	Page 237
TR-104	Device.VoiceService.1.VoiceProfile.{n}.DigitMap	`DIAL_PLAN_n`	Page 239
TR-104	Device.VoiceService.1.VoiceProfile.1.RTP.TelephoneEventPayloadType	`TELEVENT_PAYLOAD`	Page 237
TR-104	Device.VoiceService.1.VoiceProfile.{n}.Line.1.SIP.AuthUserName	`SIP_AUTHID_n`	Page 245
TR-104	Device.VoiceService.1.VoiceProfile.{n}.Line.1.SIP.AuthPassword	`SIP_PASS_n`	Page 246
TR-104	Device.VoiceService.1.VoiceProfile.{n}.Line.1.SIP.URI	`SIP_URI_n`	Page 244
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.ProxyServer	`SIP_PRXY_ADDR_n`	Page 246
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.ProxyServerPort	`SIP_PRXY_PORT_n`	Page 246
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.RegistrarServer	`SIP_RGSTR_ADDR_n`	Page 247
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.RegistrarServerPort	`SIP_RGSTR_PORT_n`	Page 247
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.UserAgentDomain	`SIP_SVCDOMAIN_n`	Page 247
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.UserAgentPort	`SIP_SRC_PORT_n`	Page 246
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.RegisterExpires	`REG_EXPIRE_TIME_n`	Page 248
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.DSCPMark	`DSCP_SIP_n`	Page 249
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerT1	`SIP_TIMER_T1_n`	Page 250
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerT2	`SIP_TIMER_T2_n`	Page 250
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerT4	`SIP_TIMER_T4_n`	Page 251
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerB	`SIP_TIMER_B_n`	Page 262
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerD	`SIP_TIMER_D_n`	Page 262

Requirement	Parameter Name		Ref.
	TR-069 Parameter	**Configuration File Parameter**	
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerF	`SIP_TIMER_F_n`	Page 263
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerH	`SIP_TIMER_H_n`	Page 263
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.TimerJ	`SIP_TIMER_J_n`	Page 263
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.InviteExpires	`SIP_INVITE_EXPIRE_n`	Page 254
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.EventSubscribe.{i}.Notifier	`SIP_PRSNC_ADDR_n`	Page 254
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.EventSubscribe.{i}.NotifierPort	`SIP_PRSNC_PORT_n`	Page 255
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.EventSubscribe.{i}.ExpireTime	`SUB_RTX_INTVL_n`	Page 257
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.RegisterRetryInterval	`REG_RTX_INTVL_n`	Page 258
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.OutboundProxy	`SIP_OUTPROXY_ADDR_n`	Page 259
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.OutboundProxyPort	`SIP_OUTPROXY_PORT_n`	Page 260
TR-104	Device.VoiceService.1.VoiceProfile.{n}.SIP.ProxyServerTransport	`SIP_TRANSPORT_n`	Page 260
TR-104	Device.VoiceService.1.VoiceProfile.{n}.Line.1.DirectoryNumber	`PHONE_NUMBER_n`	Page 244
TR-104	Device.VoiceService.1.VoiceProfile.{n}.Line.1.CallingFeatures.CallerIDName	`DISPLAY_NAME_n`	Page 239
TR-104	Device.VoiceService.1.VoiceProfile.{n}.Line.1.CallingFeatures.CallWaitingEnable	`CW_ENABLE_n`	Page 242
TR-104	Device.VoiceService.1.VoiceProfile.{n}.Line.1.Enable	`LINE_ENABLE_n`	Page 245
TR-104	Device.VoiceService.1.VoiceProfile.1.ButtonMap.Button.{x}.FacilityAction	`FLEX_BUTTON_FACILITY_ACT x`	Page 224
TR-104	Device.VoiceService.1.VoiceProfile.1.ButtonMap.Button.{x}.FacilityActionArgument	`FLEX_BUTTON_FACILITY_ARG x`	Page 224
TR-104	Device.VoiceService.1.VoiceProfile.1.ButtonMap.Button.{x}.QuickDialNumber	`FLEX_BUTTON_QUICK_DIALx`	Page 224

Requirement	Parameter Name		Ref.
	TR-069 Parameter	**Configuration File Parameter**	
TR-104	Device.VoiceService.1.VoiceProfile. 1.ButtonMap.Button.{x}.ButtonMessage	**FLEX_BUTTON_LABELx**	Page 225

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, but that are not mentioned in the Operating Instructions.
To enter direct commands, use the dial keys and soft buttons on the unit.
For details about the other available features, settings and key operations on the phone user interface, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

3.1.1 Phone User Interface Feature List and Direct Commands

The following table shows additional features programmable with direct commands. These commands are hidden from end users.

Direct Command	Feature	Ref.
[#][1][3][6]	Resetting the unit[*1]	Page 29
[#][2][8][9]	Delete all items of phonebook[*1]	Page 56
[#][5][3][4]	Embedded web	Page 22
[#][7][3][1]	Terminal No.	Page 56
[#][7][3][9]	Reset Web ID/Password[*1]	Page 57
[#][2][7][6]	Sound Quality[*2]	Page 57

[*1]   Not displayed on the LCD of the unit.
[*2]   KX-UT113/KX-UT123/KX-UT133/KX-UT136 only

3.1.2 Phonebook deletion

You can delete all items in the phonebook by performing the procedure below from the unit.

To delete all items in the phonebook

1. Press **Setting** or **Setup** .
2. Press **[#][2][8][9]**.
3. Press **[▲]** or **[▼]** to select "**Yes**" to delete all items in the phonebook, and then press **[ENTER]**.

3.1.3 Terminal Number Settings

You can select the terminal number of the unit that you are using from "**Terminal 1**"–"**Terminal 9**", and "**Auto**". The default setting is "**Auto**". "**Auto**" does not assign a fixed terminal number to the unit.
If multiple units try to access the same router simultaneously, errors can occur. Assigning a terminal number 1 to 9 to each of the units may prevent such errors.

To assign a terminal number to the unit

1. Press **Setting** or **Setup** .
2. Press **[#][7][3][1]**.
3. Press **[▲]** or **[▼]** to select the desired terminal number ("**Auto**", "**Terminal 1**"–"**Terminal 9**"), and then press **[ENTER]**.

3.1.4 Reset Web ID/Password

Reset Web ID/Password resets all the IDs and passwords required for users and administrators to access the Web user interface ($\rightarrow$ see **Access Levels (IDs and Passwords)** in **1.1.6.3 Before Accessing the Web User Interface**) to their factory defaults. You can perform this operation from the unit.

To perform Reset Web ID/Password

1. Press ▉Setting▉ or ▉Setup▉ .
2. Press **[#][7][3][9]**.
3. Press **[▲]** or **[▼]** to select "**Yes**" to reset the Web ID/Password, and then press **[ENTER]**.
   All the IDs and passwords are reset, and the unit will restart.

Notice

- For security reasons, it is recommended that the passwords are set again immediately ($\rightarrow$ see **4.4.2 Administrator Password** or **4.4.3 Change User Password**).

3.1.5 Sound Quality (KX-UT113/KX-UT123/KX-UT133/KX-UT136 only)

You can select the parameter of the unit that you are using from "0" or "1". The default setting is "0".
"1" is a special technical parameter. If you select "1", handset sound becomes more stable but there is a risk of echo occurring.

To assign a parameter to the unit

1. Press ▉Setting▉ or ▉Setup▉ .
2. Press **[#][2][7][6]**.
3. Press **[▲]** or **[▼]** to select the parameter ("0" or "1"), and then press **[ENTER]**.

3.1.5 Sound Quality (KX-UT113/KX-UT123/KX-UT133/KX-UT136 only)

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] U	A	Ref.
Version Information	Version Information	Model	✓	✓	Page 72
		Operating Bank	✓	✓	Page 72
		IPL Version	✓	✓	Page 72
		Firmware Version	✓	✓	Page 72
Network Status	Network Status	MAC Address	✓	✓	Page 73
		Ethernet Link Status (LAN Port)	✓	✓	Page 73
		Ethernet Link Status (PC Port) (KX-UT123/KX-UT133/ KX-UT136/KX-UT248 only)	✓	✓	Page 73
		Connection Mode	✓	✓	Page 74
		IP Address	✓	✓	Page 74
		Subnet Mask	✓	✓	Page 74
		Default Gateway	✓	✓	Page 74
		DNS1	✓	✓	Page 75
		DNS2	✓	✓	Page 75
		IEEE802.1X Status (KX-UT248 only)	✓	✓	Page 75
VoIP Status	VoIP Status	Line No.	✓	✓	Page 76
		Phone Number	✓	✓	Page 76
		VoIP Status	✓	✓	Page 76

[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	Connection Mode	Connection Mode[2]	✓[3]	✓	Page 78
	DHCP Settings	Host Name[4]		✓	Page 78
		Domain Name Server[2]	✓[3]	✓	Page 79
	Static Settings	Static IP Address[2]	✓[3]	✓	Page 79
		Subnet Mask[2]	✓[3]	✓	Page 80
		Default Gateway[2]	✓[3]	✓	Page 80
		DNS1[2]	✓[3]	✓	Page 80
		DNS2[2]	✓[3]	✓	Page 81

Menu Item	Section Title	Setting	Access Level[1] U	Access Level[1] A	Ref.
Ethernet Port Settings	Link Speed/Duplex Mode	LAN Port[5]		✓	Page 82
		PC Port (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)[5]		✓	Page 82
	LLDP Settings	Enable LLDP[2]		✓	Page 83
		LLDP-MED Interval timer[2]		✓	Page 83
		IP Phone	–	–	–
		VLAN ID[2]		✓	Page 83
		Priority[2]		✓	Page 83
		PC	–	–	–
		VLAN ID (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)[2]		✓	Page 84
		Priority (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)[2]		✓	Page 84
	VLAN Settings	Enable VLAN[2]		✓	Page 84
		IP Phone	–	–	–
		VLAN ID[2]		✓	Page 84
		Priority[2]		✓	Page 85
		PC	–	–	–
		VLAN ID (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)[2]		✓	Page 85
		Priority (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)[2]		✓	Page 85
IEEE802.1X Settings (KX-UT248 only)	IEEE802.1X Settings	Enable IEEE802.1X[4]		✓	Page 86
	IEEE802.1X Authentication	Authentication Protocol[4]		✓	Page 86
		Authentication ID[4]		✓	Page 87
		Authentication Password[4]		✓	Page 87

Menu Item	Section Title	Setting	Access Level[1]		Ref.
			U	A	
HTTP Client Settings	HTTP Client Settings	HTTP Version[4]		✓	Page 88
		HTTP User Agent[4]		✓	Page 88
	HTTP Authentication	Authentication ID	✓	✓	Page 88
		Authentication Password	✓	✓	Page 89
	Proxy Server Settings	Enable Proxy		✓	Page 89
		Proxy Server Address		✓	Page 89
		Proxy Server Port		✓	Page 89
Global Address Detection	Global Address Detection	Detection Method		✓	Page 90
		Detection Interval		✓	Page 90
	STUN Server	STUN Server Address[4]		✓	Page 90
		STUN Server Port[4]		✓	Page 91
Static NAPT Settings	Global IP Address	Global IP Address		✓	Page 91
	Enable Global IP Address Usage per Line	Line 1–Line x		✓	Page 92
	External RTP Port	Channel 1–25		✓	Page 92
Application Settings	Application Settings	Application Port[4]		✓	Page 93
		Enable Application[4]		✓	Page 93
	Application Authentication	Authentication ID[4]		✓	Page 93
		Authentication Password[4]		✓	Page 94

[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] If your phone system dealer does not allow you these settings, you cannot change them even though the unit shows the setting menu. Contact your phone system dealer for further information.
[4] This setting can also be configured through configuration file programming.
[5] This setting can also be configured through phone user interface programming.

System

Menu Item	Section Title	Setting	Access Level[1]		Ref.
			U	A	
Web Language	Web Language	Language	✓	✓	Page 94

Menu Item	Section Title	Setting	Access Level[*1]		Ref.
			U	**A**	
Administrator Password	Change Administrator Password	Current Password		✓	Page 95
		New Password[*2]		✓	Page 95
		Confirm New Password[*2]		✓	Page 96
Change User Password	Change User Password	Current Password	✓	✓	Page 96
		New Password[*2]	✓	✓	Page 97
		Confirm New Password[*2]	✓	✓	Page 97
Web Server Settings	Web Server Settings	Web Server Port		✓	Page 98
		Port Close Timer		✓	Page 98
Time Adjust Settings	Synchronization	Enable Synchronization by NTP	✓[*3]	✓	Page 99
		Synchronization Interval[*2]	✓[*3]	✓	Page 99
	Time Server	NTP Server Address[*2]	✓[*3]	✓	Page 100
	Time Zone	Time Zone[*2]	✓[*3]	✓	Page 100
	Daylight Saving Time (Summer Time)	Enable DST (Enable Summer Time)[*2]	✓[*3]	✓	Page 100
		DST Offset (Summer Time Offset)[*2]	✓[*3]	✓	Page 100
	Start Day and Time of DST (Start Day and Time of Summer Time)	Month[*2]	✓[*3]	✓	Page 101
		Day of Week[*2]	✓[*3]	✓	Page 101
		Time[*2]	✓[*3]	✓	Page 102
	End Day and Time of DST (End Day and Time of Summer Time)	Month[*2]	✓[*3]	✓	Page 102
		Day of Week[*2]	✓[*3]	✓	Page 102
		Time[*2]	✓[*3]	✓	Page 103

[*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 configuration file programming.
[*3] If your phone system dealer does not allow you these settings, you cannot change them even though the unit shows the setting menu. Contact your phone system dealer for further information.

VoIP

Menu Item	Section Title	Setting	Access Level[1] U	A	Ref.
SIP Settings	SIP Setting	SIP User Agent[2]		✓	Page 104
SIP Settings [Line 1]–[Line x]	Phone Number	Phone Number[2]		✓	Page 105
		SIP URI[2]		✓	Page 106
	SIP Server	Registrar Server Address[2]		✓	Page 106
		Registrar Server Port[2]		✓	Page 106
		Proxy Server Address[2]		✓	Page 106
		Proxy Server Port[2]		✓	Page 107
		Presence Server Address[2]		✓	Page 107
		Presence Server Port[2]		✓	Page 107
	Outbound Proxy Server	Outbound Proxy Server Address[2]		✓	Page 107
		Outbound Proxy Server Port[2]		✓	Page 107
	SIP Service Domain	Service Domain[2]		✓	Page 108
	SIP Source Port	Source Port[2]		✓	Page 108
	SIP Authentication	Authentication ID[2]		✓	Page 108
		Authentication Password[2]		✓	Page 109
	DNS	Enable DNS SRV lookup[2]		✓	Page 109
		SRV lookup Prefix for UDP[2]		✓	Page 109
		SRV lookup Prefix for TCP[2]		✓	Page 110
	Transport Protocol of SIP	Transport Protocol[2]		✓	Page 110
	Timer Settings	T1 Timer[2]		✓	Page 110
		T2 Timer[2]		✓	Page 110
		Timer B[2]		✓	Page 111
		Timer D[2]		✓	Page 111
		Timer F[2]		✓	Page 111
		Timer H[2]		✓	Page 111
		Timer J[2]		✓	Page 112
	Quality of Service (QoS)	SIP Packet QoS (DSCP)[2]		✓	Page 112

Menu Item	Section Title	Setting	Access Level[1]		Ref.
			U	A	
	SIP extensions	Supports 100rel (RFC 3262)[2]		✓	Page 112
		Supports Session Timer (RFC 4028)[2]		✓	Page 112
	NAT Identity	Keep Alive Interval[2]		✓	Page 113
		Supports Rport (RFC 3581)[2]		✓	Page 113
	Security	Enable SSAF (SIP Source Address Filter)[2]		✓	Page 113
VoIP Settings	RTP Settings	RTP Packet Time[2]		✓	Page 114
		Minimum RTP Port Number[2]		✓	Page 114
		Maximum RTP Port Number[2]		✓	Page 115
		Telephone-event Payload Type[2]		✓	Page 115
VoIP Settings [Line 1]–[Line x]	Quality of Service (QoS)	RTP Packet QoS (DSCP)[2]		✓	Page 116
		RTCP Packet QoS (DSCP)[2]		✓	Page 116
	Statistical Information	RTCP Enable[2]		✓	Page 117
		RTCP Interval[2]		✓	Page 117
	Jitter Buffer	Maximum Delay[2]		✓	Page 117
		Minimum Delay[2]		✓	Page 117
		Initial Delay[2]		✓	Page 118
	DTMF	DTMF Type[2]		✓	Page 118
		DTMF Relay[2]		✓	Page 118
	Call Hold	Supports RFC 2543 (c=0.0.0.0)[2]		✓	Page 119

Menu Item	Section Title	Setting	Access Level[1]		Ref.
			U	**A**	
	CODEC Preferences	G722	–	–	–
		Enable[2]		✓	Page 119
		Priority[2]		✓	Page 119
		PCMA	–	–	–
		Enable[2]		✓	Page 120
		Priority[2]		✓	Page 120
		G726-32	–	–	–
		Enable[2]		✓	Page 120
		Priority[2]		✓	Page 120
		G729A	–	–	–
		Enable[2]		✓	Page 120
		Priority[2]		✓	Page 121
		PCMU	–	–	–
		Enable[2]		✓	Page 121
		Priority[2]		✓	Page 121

[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 configuration file programming.

Telephone

Menu Item	Section Title	Setting	Access Level[1] U	Access Level[1] A	Ref.
Call Control	Call Control	Send SUBSCRIBE to Voice Mail Server[2]		✓	Page 122
		Conference Server URI[2]		✓	Page 123
		Inter-digit Timeout[2]		✓	Page 123
		Timer for Dial Plan[2]		✓	Page 123
		International Call Prefix[2]		✓	Page 123
		Country Calling Code[2]		✓	Page 124
		National Access Code[2]		✓	Page 124
		Default Line for Outgoing[2]	✓	✓	Page 124
		Flash/Recall Button[2]		✓	Page 124
		Flash Hook Event[2]		✓	Page 125
		Direct Call Pickup[2]		✓	Page 125
	Call Rejection Phone Numbers	1–30	✓	✓	Page 125

Menu Item	Section Title	Setting	Access Level[1]		Ref.
			U	A	
Call Control [Line 1]–[Line x]	Call Control	Display Name[2]	✓	✓	Page 126
		Voice Mail Access Number[2]		✓	Page 126
		Enable Shared Call[2]		✓	Page 127
		Synchronize Do Not Disturb and Call Forward[2]		✓	Page 127
		Resource List URI[2]		✓	Page 128
	Dial Plan	Dial Plan (max 1000 columns)[2]		✓	Page 128
		Call Even If Dial Plan Does Not Match[2]		✓	Page 128
	Call Features	Block Caller ID	✓	✓	Page 129
		Block Anonymous Call	✓	✓	Page 129
		Do Not Disturb	✓	✓	Page 130
	Call Forward	Unconditional	–	–	–
		Enable Call Forward	✓	✓	Page 130
		Phone Number	✓	✓	Page 131
		Busy	–	–	–
		Enable Call Forward	✓	✓	Page 131
		Phone Number	✓	✓	Page 132
		No Answer	–	–	–
		Enable Call Forward	✓	✓	Page 132
		Phone Number	✓	✓	Page 133
		Ring Count	✓	✓	Page 133
Flexible Button Settings (KX-UT133/ KX-UT136/ KX-UT248 only)	Flexible Button Settings	Type (No. 1–24)[2]	✓	✓	Page 134
		Parameter (No. 1–24)[2]	✓	✓	Page 134
		Label Name (No. 1–24)[2]	✓	✓	Page 135

Menu Item	Section Title	Setting	Access Level[1]		Ref.
			U	A	
Tone Settings	Dial Tone	Tone Frequencies[2]		✓	Page 135
		Tone Timings[2]		✓	Page 136
	Busy Tone	Tone Frequencies[2]		✓	Page 136
		Tone Timings[2]		✓	Page 137
	Ringing Tone	Tone Frequencies[2]		✓	Page 137
		Tone Timings[2]		✓	Page 137
	Stutter Tone	Tone Frequencies[2]		✓	Page 138
		Tone Timings[2]		✓	Page 138
	Reorder Tone	Tone Frequencies[2]		✓	Page 138
		Tone Timings[2]		✓	Page 139
Telephone Settings	Telephone Settings	Key Click Tone[2]	✓	✓	Page 139
		Extension PIN[2]	✓	✓	Page 140
		Number Matching Lower Digit[2]		✓	Page 140
		Number Matching Upper Digit[2]		✓	Page 140
Import Phonebook	Import Phonebook	File Name	✓	✓	Page 141
Export Phonebook	Export Phonebook	–	✓	✓	Page 141
Application Settings	Application Bootup URL	URL[2]		✓	Page 142
	Application initial URL	URL[2]		✓	Page 143
	Incoming call URL	URL[2]		✓	Page 143
	Talking URL	URL[2]		✓	Page 143
	Making call URL	URL[2]		✓	Page 143
	Call log URL	URL[2]		✓	Page 144
	Idling URL	URL[2]		✓	Page 144
	Network Phone Book URL	URL[2]		✓	Page 144
	Network Phone Book URL Authentication	Authentication ID[2]		✓	Page 144
		Authentication Password[2]		✓	Page 145

[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 configuration file programming.

Maintenance

Menu Item	Section Title	Setting	Access Level[1]		Ref.
			U	**A**	
Firmware Maintenance	Firmware Maintenance	Enable Firmware Update[2]		✓	Page 145
		Update Type[2]		✓	Page 146
		Firmware File URL[2]		✓	Page 146
Local Firmware Update	Local Firmware Update	Encryption		✓	Page 147
		File Name		✓	Page 147
Provisioning Maintenance	Provisioning Maintenance	Enable Provisioning[2]		✓	Page 148
		Standard File URL[2]		✓	Page 148
		Product File URL[2]		✓	Page 149
		Master File URL[2]		✓	Page 149
		Cyclic Auto Resync[2]		✓	Page 149
		Resync Interval[2]		✓	Page 150
		Header Value for Resync Event[2]		✓	Page 150
Management Server	Management Server	Management Server URL[2]		✓	Page 151
	Management Server Authentication	Authentication ID[2]		✓	Page 151
		Authentication Password[2]		✓	Page 151
Reset to Defaults	Reset Web Data	–		✓	Page 151
Restart	Restart	–		✓	Page 152

[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 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.
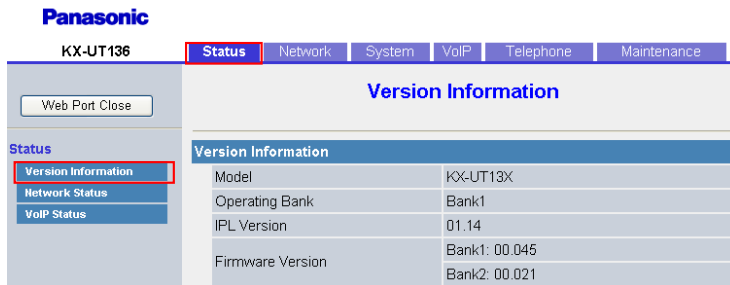
4.2.1.1 Version Information

Model

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

Operating Bank

Description	Indicates the storage area of the firmware that is currently operating (reference only).
Value Range	• Bank1 • Bank2
Default Value	Not applicable.

IPL Version

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

Firmware Version

Description	Indicates the version of the firmware that is currently installed on the unit (reference only).
Value Range	Bank1 (Bank2): Firmware version ("nn.nnn" [n=0–9])

Default Value	Current firmware version

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 Status

MAC Address

Description	Indicates the MAC address of the unit (reference only).
Value Range	Not applicable.
Default Value	Default MAC address (example: 0080F0ABCDEF)

Ethernet Link Status (LAN Port)

Description	Indicates the current connection status of the Ethernet LAN port (reference only).
Value Range	• Connected • Not connected
Default Value	Not applicable.

Ethernet Link Status (PC Port) (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)

Description	Indicates the current connection status of the Ethernet PC port (reference only).

Value Range	• Connected • Not connected
Default Value	Not applicable.

Connection Mode

Description	Indicates whether the IP address of the unit is assigned automatically (DHCP) or manually (static) (reference only).
Value Range	• DHCP • Static
Default Value	Not applicable.

IP Address

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

Subnet Mask

Description	Indicates the specified subnet mask for the unit (reference only).
Value Range	Subnet mask
Default Value	Current 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
Default Value	Not applicable.

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
Default Value	Not applicable.

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
Default Value	Not applicable.

IEEE802.1X Status (KX-UT248 only)

Description	Indicates the current status of IEEE 802.1X settings.
Value Range	• Authenticating • Authenticated • Authenticated In Condition • Failed (Time Out) • Failed • Not Connected • Disabled
Default Value	Not applicable.

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

Line No.

Description	Indicates the line number to which a phone number is assigned (reference only). **Note** • The available line number varies depending on the type of the unit being used.
Value Range	• Line 1–Line 2 (for KX-UT113/KX-UT123) • Line 1–Line 4 (for KX-UT133/KX-UT136) • Line 1–Line 6 (for KX-UT248)
Default Value	Not applicable.

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
Default Value	Not applicable.

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.
Default Value	Not applicable.

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 Connection Mode

Connection Mode

Description	Selects whether to assign the IP address automatically (DHCP) or manually (static).
Value Range	• DHCP • Static
Default Value	DHCP
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Configuration File Reference	CONNECTION_TYPE (Page 189)

4.3.1.2 DHCP Settings

Host Name

Description	Specifies the host name for the unit to send to the DHCP server. **Note** • This setting is available only when **[Connection Mode]** is set to **[DHCP]**.

Value Range	Max. 63 characters
	Note • You cannot leave this field empty. • If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name.
Default Value	{MODEL}
Configuration File Reference	HOST_NAME (Page 190)

Domain Name Server

Description	Selects whether to receive DNS server addresses automatically or to assign a DNS server addresses (up to 2) manually.
	Note • This setting is available only when **[Connection Mode]** is set to **[DHCP]**.

Value Range	• Receive DNS server address automatically
	• Use the following settings
	   – DNS1
	   – DNS2
	
	Note
	• If you select **[Use the following settings]**, specify the IP address(es) of the primary and, if necessary, secondary DNS server(s) manually. The permissible values are:
	Max. 15 characters ("n.n.n.n" [n=0–255], except "0.0.0.0", "255.255.255.255", "127.0.0.1", etc.)

Default Value	Receive DNS server address automatically
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Configuration File Reference	DHCP_DNS_ENABLE (Page 190)

4.3.1.3 Static Settings

Static IP Address

Description	Specifies the IP address for the unit.
	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], except "0.0.0.0", "255.255.255.255", "127.0.0.1", etc.)
Default Value	Not stored.

Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Configuration File Reference	STATIC_IP_ADDRESS (Page 190)

Subnet Mask

Description	Specifies the subnet mask for the unit. **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], except "0.0.0.0", "255.255.255.255", "127.0.0.1", etc.)
Default Value	Not stored.
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Configuration File Reference	STATIC_SUBNET (Page 191)

Default Gateway

Description	Specifies the IP address of the default gateway for the network where the unit is connected. **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], except "0.0.0.0", "255.255.255.255", "127.0.0.1", etc.)
Default Value	Not stored.
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Configuration File Reference	STATIC_GATEWAY (Page 191)

DNS1

Description	Specifies the IP address of the primary DNS server. **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], except "0.0.0.0", "255.255.255.255", "127.0.0.1", etc.)
Default Value	Not stored.

Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Configuration File Reference	USER_DNS1_ADDR (Page 192)

DNS2

Description	Specifies the IP address of the secondary DNS server.
	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], except "0.0.0.0", "255.255.255.255", "127.0.0.1", etc.)
Default Value	Not stored.
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Configuration File Reference	USER_DNS2_ADDR (Page 192)

4.3.2 Ethernet Port Settings

This screen allows you to change the connection mode of the Ethernet ports 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.
- Incorrect settings may cause a network failure. In such a case, you cannot access the Web user interface anymore. To access it again, you need to correct the speed/duplex settings or perform IP

Reset through phone user interface programming. For details, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

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 • 100 Mbps/Full Duplex • 100 Mbps/Half Duplex • 10 Mbps/Full Duplex • 10 Mbps/Half Duplex **Note** • The KX-UT248 supports Gigabit Ethernet. When connecting to a network that supports Gigabit Ethernet, select **[Auto Negotiation]**.
Default Value	Auto Negotiation

PC Port (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)

Description	Selects the connection mode (link speed and duplex mode) of the PC port.

Value Range	• Auto Negotiation • 100 Mbps/Full Duplex • 100 Mbps/Half Duplex • 10 Mbps/Full Duplex • 10 Mbps/Half Duplex **Note** • The KX-UT248 supports Gigabit Ethernet. When connecting to a network that supports Gigabit Ethernet, select **[Auto Negotiation]**.
Default Value	Auto Negotiation

4.3.2.2 LLDP Settings

Enable LLDP

Description	Selects whether to enable or disable sending and receiving LLDP frames.
Value Range	• Y (Enable) • N (Disable)
Default Value	Y
Configuration File Reference	LLDP_ENABLE (Page 201)

LLDP-MED Interval timer

Description	Specifies the interval, in seconds, between sending each LLDP frame.
Value Range	1–3600
Default Value	30
Configuration File Reference	LLDP_INTERVAL (Page 202)

IP Phone (VLAN ID)

Description	Indicates the VLAN ID of the phone using LLDP (reference only).
Value Range	1–4094
Default Value	Not applicable.

IP Phone (Priority)

Description	Indicates the priority value of the phone using LLDP (reference only).
Value Range	0–7

Default Value	Not applicable.

PC (VLAN ID) (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)

Description	Specifies the VLAN ID of the PC when the LLDP feature is enabled.
Value Range	0–4094
Default Value	0
Configuration File Reference	LLDP_VLAN_ID_PC (Page 202)

PC (Priority) (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)

Description	Specifies the priority number of the PC when the LLDP feature is enabled.
Value Range	0–7
Default Value	0
Configuration File Reference	LLDP_VLAN_PRI_PC (Page 202)

4.3.2.3 VLAN Settings

Enable VLAN

Description	Selects whether to use the VLAN feature to perform VoIP communication securely. **Note** • You cannot set this parameter if **[Enable IEEE802.1X]** is set to **[Yes]** (KX-UT248 only).
Value Range	• Yes • No
Default Value	No
Configuration File Reference	VLAN_ENABLE (Page 194)

IP Phone (VLAN ID)

Description	Specifies the VLAN ID for this unit. **Note** • You cannot set this parameter if **[Enable IEEE802.1X]** is set to **[Yes]** (KX-UT248 only).
Value Range	1–4094
Default Value	2

Configuration File Reference	VLAN_ID_IP_PHONE (Page 194)

IP Phone (Priority)

Description	Selects the priority number for the unit. **Note** • You cannot set this parameter if **[Enable IEEE802.1X]** is set to **[Yes]** (KX-UT248 only).
Value Range	0–7
Default Value	7
Configuration File Reference	VLAN_PRI_IP_PHONE (Page 194)

PC (VLAN ID) (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)

Description	Specifies the VLAN ID for the PC. **Note** • You cannot set this parameter if **[Enable IEEE802.1X]** is set to **[Yes]** (KX-UT248 only).
Value Range	1–4094
Default Value	1
Configuration File Reference	VLAN_ID_PC (Page 195)

PC (Priority) (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only)

Description	Selects the priority number for the PC. **Note** • You cannot set this parameter if **[Enable IEEE802.1X]** is set to **[Yes]** (KX-UT248 only).
Value Range	0–7
Default Value	0
Configuration File Reference	VLAN_PRI_PC (Page 195)

4.3.3 IEEE802.1X Settings (KX-UT248 only)

This screen allows you to configure settings relating to the IEEE 802.1X networking protocol.

4.3.3.1 IEEE802.1X Settings

Enable IEEE802.1X

Description	Selects whether to use the IEEE 802.1X protocol. **Note** • You cannot set this parameter if **[Enable VLAN]** is set to **[Yes]**.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	IEEE8021X_ENABLE (Page 195)

4.3.3.2 IEEE802.1X Authentication

Authentication Protocol

Description	Specifies the authentication method used with the IEEE 802.1X protocol. **Note** • You cannot set this parameter if **[Enable VLAN]** is set to **[Yes]**.
Value Range	• EAP-MD5 • PEAP
Default Value	EAP-MD5
Configuration File Reference	IEEE8021X_AUTH_PRTCL (Page 196)

Authentication ID

Description	Specifies the authentication ID required for IEEE 802.1X authentication. **Note** • You cannot set this parameter if **[Enable VLAN]** is set to **[Yes]**.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	IEEE8021X_USER_ID (Page 196)

Authentication Password

Description	Specifies the authentication password used for IEEE 802.1X authentication. **Note** • You cannot set this parameter if **[Enable VLAN]** is set to **[Yes]**.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	IEEE8021X_USER_PASS (Page 196)

4.3.4 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.

4.3.4.1 HTTP Client Settings

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 197)

HTTP User Agent

Description	Specifies the text string to send as the user agent in the header of HTTP requests.
Value Range	Max. 40 characters **Note** • You cannot leave this field empty. • 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.
Default Value	Panasonic_{MODEL}/{fwver} ({mac})
Configuration File Reference	HTTP_USER_AGENT (Page 197)

4.3.4.2 HTTP Authentication

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. 127 characters
Default Value	Not stored.

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. 127 characters
Default Value	Not stored.

4.3.4.3 Proxy Server Settings

Enable Proxy

Description	Selects whether to use the proxy server.
Value Range	• Yes • No
Default Value	No

Proxy Server Address

Description	Specifies the IP address or FQDN of the proxy server.
Value Range	Max. 127 characters **Note** • You cannot leave this field empty if **[Enable Proxy]** is set to **[Yes]**.
Default Value	Not stored.

Proxy Server Port

Description	Specifies the port number of the proxy server.
Value Range	1–65535
Default Value	8080

4.3.5 Global Address Detection

This screen allows you to configure the Global Address Detection feature and STUN server settings. The global IP address of the network the unit is connected to will be detected periodically. If the global IP address has changed, the new address will be registered to the SIP server.

Note
- If the unit is connected directly to the Internet, or the network global address is static (i.e., does not change), you do not need to configure Global Address Detection.

4.3.5.1 Global Address Detection

Detection Method

Description	Selects the method to use for detecting the global IP address.
Value Range	• STUN • SIP
Default Value	STUN

Detection Interval

Description	Specifies the interval, in seconds, to wait between attempts to detect the global IP address.
Value Range	0, 10–65535 (0: Disable) **Note** • When **[Detection Method]** is set to **[SIP]**, the value "0" disables detection and a value other than "0" enables detection.
Default Value	0

4.3.5.2 STUN Server

STUN Server Address

Description	Specifies the IP address or FQDN of the STUN server.
Value Range	Max. 127 characters
Default Value	Not stored.
Configuration File Reference	STUN_SERV_ADDR (Page 200)

STUN Server Port

Description	Specifies the port number of the STUN server.
Value Range	1–65535
Default Value	3478
Configuration File Reference	STUN_SERV_PORT (Page 200)

4.3.6 Static NAPT Settings

This screen allows you to configure the NAPT (Network Address Port Translation) settings. If the unit is connected behind a router that uses NAT/NAPT to translate between private and global IP addresses, VoIP packets might be blocked by the router, depending on the SIP server. To avoid this problem, this setting is required. For details, see **1.1.7.2 NAT (Network Address Translation) Setup**.

4.3.6.1 Global IP Address

Global IP Address

Description	Specifies the global IP address of your network.
	Note
	• You must enter a value in this field if at least 1 of **[Line 1]**– **[Line x]** is set to **[Yes]**, or when port numbers are specified in **[Channel 1–25]**.
	• The available line number and the channel number vary depending on the type of the unit being used.
	• The global IP address will reflect SIP messages and RTP packets.

Value Range	IP address in dotted-decimal notation ("n.n.n.n" [n=0–255]) (Max. 15 digits)
Default Value	Not stored.

4.3.6.2 Enable Global IP Address Usage per Line

Line 1–Line x

Description	Selects whether to enable the NAT Traversal feature for each line.
	
	Note
	• The number of lines available varies depending on the phone being used, as follows:
	   – KX-UT113/KX-UT123: 1–2
	   – KX-UT133/KX-UT136: 1–4
	   – KX-UT248: 1–6

Value Range	• Yes • No
Default Value	No

4.3.6.3 External RTP Port

Channel 1–25

Description	Specifies the external RTP port number used for voice communication for each channel.
	
	Note
	• The number of channels available varies depending on the phone being used, as follows:
	   – KX-UT113/KX-UT123: 1–3
	   – KX-UT133/KX-UT136/KX-UT248: 1–25

Value Range	0, 1024–49150 (0: Disable, even number only) **Note** • Each channel must be set to a unique port number, and all port numbers must be an even number. • You cannot specify here the same port number as any of the port numbers specified for the individual lines in **[Source Port]** in **4.5.2.5 SIP Source Port**. In addition, you cannot specify a port number that is 1 less than a port number specified in **[Source Port]** if the source port number is an odd number. • All channels must be set to either enable or disable at the same time.
Default Value	0

4.3.7 Application Settings

This screen allows you to configure settings related to the XML application feature.

4.3.7.1 Application Settings

Application Port

Description	Specifies the port number for receiving XML application data.
Value Range	1–65535
Default Value	6666
Configuration File Reference	XML_HTTPD_PORT (Page 230)

Enable Application

Description	Selects whether to enable the XML application feature.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	XMLAPP_ENABLE (Page 225)

4.3.7.2 Application Authentication

Authentication ID

Description	Specifies the authentication ID required to access the XML application server.
Value Range	Max. 63 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	XMLAPP_USERID (Page 225)

Authentication Password

Description	Specifies the authentication password used to access the XML application server.
Value Range	Max. 63 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	XMLAPP_USERPASS (Page 226)

4.4 System

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

4.4.1 Web Language

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.
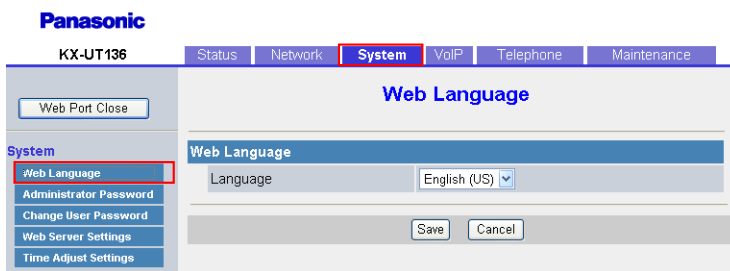
4.4.1.1 Web Language

Language

Description	Selects the language used for the Web user interface.

Value Range	• English (US)
	• English (UK)
	• Deutsch
	• Français
	• Español
	• Italiano
	• Portugués
	• Русский
Default Value	English (US)

4.4.2 Administrator Password

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. Two 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 Change Administrator 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	6–16 characters (except ", &, ', :, <, >, and space)
Default Value	adminpass
Configuration File Reference	ADMIN_PASS (Page 167)

New Password

Description	Specifies the new password to use to authenticate the Administrator account when logging in to the Web user interface.

Value Range	6–16 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	ADMIN_PASS (Page 167)

Confirm New Password

Description	Specifies the same password that you entered in **[New Password]** for confirmation.
Value Range	6–16 characters (except ", &, ', :, <, >, and space) **Note** • This value must be the same as the value entered in **[New Password]**.
Default Value	Not stored.
Configuration File Reference	ADMIN_PASS (Page 167)

4.4.3 Change User Password

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. Two 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 Change 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	6–16 characters (except ", &, ', :, <, >, and space)

Default Value	Not stored.
Configuration File Reference	USER_PASS (Page 168)

New Password

Description	Specifies the new password to use to authenticate the User account when logging in to the Web user interface.
Value Range	6–16 characters (except ", &, ', :, <, >, and space)
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 **[Change User Password]** screen is displayed automatically to make the user set a password.
Configuration File Reference	USER_PASS (Page 168)

Confirm New Password

Description	Specifies the same password that you entered in **[New Password]** for confirmation.
Value Range	6–16 characters (except ", &, ', :, <, >, and space) **Note** • This value must be the same as the value entered in **[New Password]**.
Default Value	Not stored.
Configuration File Reference	USER_PASS (Page 168)

4.4.4 Web Server Settings

This screen allows you to change the Web server settings.

4.4.4.1 Web Server Settings

Web Server Port

Description	Specifies the port number used by the Web server.
Value Range	80, 1024–49151 **Note** • You cannot specify here the same port number as any of the port numbers specified for the individual lines in **[Source Port]** in **4.5.2.5 SIP Source Port**.
Default Value	80 **Note** • When you change the default value of the port number to a value other than "80", such as "8080", enter the URL for accessing the Web user interface using the following format: "http://192.168.0.100:8080/" (192.168.0.100: IP address of the unit)

Port Close Timer

Description	Specifies the length of time, in minutes, to keep the Web port open when there has been no communication between the unit and the PC. If the specified length of time elapses without any communication, the Web port closes automatically. Communication is detected when you click a tab, menu item, the **[Save]** button, or by reloading the application or pressing the F5 key.
Value Range	1–1440
Default Value	30

4.4.5 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.

4.4.5.1 Synchronization

Enable Synchronization by NTP

Description	Selects whether to enable the unit to automatically adjust its clock according to the time information provided by an NTP server.
Value Range	• Yes • No **Note** • Even if you select **[Yes]**, this feature will not function properly if the NTP server address setting is invalid.
Default Value	Yes

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 199)

4.4.5.2 Time Server

NTP Server Address

Description	Specifies the IP address or FQDN of the NTP server.
Value Range	Max. 127 characters
Default Value	Not stored.
Configuration File Reference	NTP_ADDR (Page 199)

4.4.5.3 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 168)

4.4.5.4 Daylight Saving Time (Summer Time)

Enable DST (Enable Summer Time)

Description	Selects whether to enable DST (Summer Time).
Value Range	• Yes • No
Default Value	No
Configuration File Reference	DST_ENABLE (Page 169)

DST Offset (Summer Time Offset)

Description	Specifies the amount of time, in minutes, to change the time when **[Enable DST (Enable Summer Time)]** is set to **[Yes]**.
Value Range	0–720
Default Value	60
Configuration File Reference	DST_OFFSET (Page 169)

4.4.5.5 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 170)

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 170)

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 170)

Time

Description	Specifies the start time of DST (Summer Time) in minutes after 12:00 AM.
Value Range	0–1439
Default Value	120
Configuration File Reference	DST_START_TIME (Page 171)

4.4.5.6 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	October
Configuration File Reference	DST_STOP_MONTH (Page 171)

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	Second
Configuration File Reference	DST_STOP_ORDINAL_DAY (Page 172)

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 172)

Time

| Description	Specifies the end time of DST (Summer Time) in minutes after 12:00 AM.
Value Range	0–1439
Default Value	120
Configuration File Reference	DST_STOP_TIME (Page 172)

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 SIP Setting

SIP User Agent

Description	Specifies the text string to send as the user agent in the headers of SIP messages.
Value Range	Max. 40 characters **Note** - You cannot leave this field empty. - 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.
Default Value	Panasonic_{MODEL}/{fwver} ({mac})
Configuration File Reference	SIP_USER_AGENT (Page 243)

4.5.2 SIP Settings [Line 1]–[Line x]

This screen allows you to change the SIP settings that are specific to each line. The number of lines available varies depending on the phone being used, as follows:
- KX-UT113/KX-UT123: 1–2
- KX-UT133/KX-UT136: 1–4
- KX-UT248: 1–6

Note
- When registering multiple phone numbers on a KX-UT133/KX-UT136/KX-UT248, it is necessary to set up DN buttons (flexible buttons). Otherwise, calls cannot be made.

For details about flexible buttons, see **4.6.3 Flexible Button Settings (KX-UT133/KX-UT136/ KX-UT248 only)**.

4.5.2.1 Phone Number

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 244)

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". **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. 195 characters (except ", &, ', :, ;, <, >, and space)
Default Value	Not stored.
Configuration File Reference	SIP_URI_n (Page 244)

4.5.2.2 SIP Server

Registrar Server Address

Description	Specifies the IP address or FQDN of the SIP registrar server.
Value Range	Max. 127 characters
Default Value	Not stored.
Configuration File Reference	SIP_RGSTR_ADDR_n (Page 247)

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 247)

Proxy Server Address

Description	Specifies the IP address or FQDN of the SIP proxy server.
Value Range	Max. 127 characters
Default Value	Not stored.
Configuration File Reference	SIP_PRXY_ADDR_n (Page 246)

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 246)

Presence Server Address

Description	Specifies the IP address or FQDN of the SIP presence server.
Value Range	Max. 127 characters
Default Value	Not stored.
Configuration File Reference	SIP_PRSNC_ADDR_n (Page 254)

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 255)

4.5.2.3 Outbound Proxy Server

Outbound Proxy Server Address

Description	Specifies the IP address or FQDN of the SIP outbound proxy server.
Value Range	Max. 127 characters
Default Value	Not stored.
Configuration File Reference	SIP_OUTPROXY_ADDR_n (Page 259)

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 260)

4.5.2.4 SIP Service Domain

Service Domain

Description	Specifies the domain name provided by your phone system dealer. The domain name is the part of the SIP URI that comes after the "@" symbol.
Value Range	Max. 127 characters
Default Value	Not stored.
Configuration File Reference	SIP_SVCDOMAIN_n (Page 247)

4.5.2.5 SIP Source Port

Source Port

Description	Specifies the source port number used by the unit for SIP communication.
Value Range	1024–49151 **Note** • You cannot specify here the same port number as any of the port numbers in **[Channel 1–25]** in **4.3.6.3 External RTP Port** (if they are configured). In addition, you cannot specify a port number that is 1 greater than a port number specified in **[Channel 1–25]**. • The available channel number varies depending on the type of the unit being used. • The SIP port number for each line must be unique. • You cannot specify the same port number as the port number specified in **[Web Server Port]** in **4.4.4.1 Web Server Settings**.
Default Value	5060 (for Line 1) 5070 (for Line 2) 5080 (for Line 3) 5090 (for Line 4) 5100 (for Line 5) 5110 (for Line 6)
Configuration File Reference	SIP_SRC_PORT_n (Page 246)

4.5.2.6 SIP Authentication

Authentication ID

Description	Specifies the authentication ID required to access the SIP server.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.

Configuration File Reference	SIP_AUTHID_n (Page 245)

Authentication Password

Description	Specifies the authentication password used to access the SIP server.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	SIP_PASS_n (Page 246)

4.5.2.7 DNS

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 252)

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 253)

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 253)

4.5.2.8 Transport Protocol of SIP

Transport Protocol

Description	Selects which transport layer protocol to use for sending SIP packets.
Value Range	• UDP • TCP
Default Value	UDP
Configuration File Reference	SIP_TRANSPORT_n (Page 260)

4.5.2.9 Timer Settings

T1 Timer

Description	Selects 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
Configuration File Reference	SIP_TIMER_T1_n (Page 250)

T2 Timer

Description	Selects 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
Configuration File Reference	SIP_TIMER_T2_n (Page 250)

Timer B

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
Configuration File Reference	SIP_TIMER_B_n (Page 262)

Timer D

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
Configuration File Reference	SIP_TIMER_D_n (Page 262)

Timer F

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
Configuration File Reference	SIP_TIMER_F_n (Page 263)

Timer H

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
Configuration File Reference	SIP_TIMER_H_n (Page 263)

Timer J

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
Configuration File Reference	SIP_TIMER_J_n (Page 263)

4.5.2.10 Quality of Service (QoS)

SIP Packet QoS (DSCP)

Description	Selects 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 249)

4.5.2.11 SIP extensions

Supports 100rel (RFC 3262)

Description	Selects whether to add the option tag 100rel to the "Supported" header of the INVITE message. For details, refer to RFC 3262.
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	No
Configuration File Reference	SIP_100REL_ENABLE_n (Page 253)

Supports 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. For details, refer to RFC 4028.
Value Range	0, 60–65535 (0: Disable)

Default Value	0
Configuration File Reference	SIP_SESSION_TIME_n (Page 248)

4.5.2.12 NAT Identity

Keep Alive Interval

Description	Specifies the interval, in seconds, between transmissions of the Keep Alive packet to the unit in order to maintain the NAT binding information. **Note** • This setting is available only when **[Transport Protocol]** is set to **[UDP]**.
Value Range	0, 10–300 (0: Disable)
Default Value	0
Configuration File Reference	PORT_PUNCH_INTVL_n (Page 256)

Supports Rport (RFC 3581)

Description	Selects whether to add the 'rport' parameter to the top Via header field value of requests generated. For details, refer to RFC 3581.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	SIP_ADD_RPORT_n (Page 256)

4.5.2.13 Security

Enable SSAF (SIP Source Address Filter)

Description	Selects whether to enable SSAF (SIP Source Address Filter) for the SIP servers (registrar server, proxy server, and presence server).
Value Range	• Yes • No **Note** • If you select **[Yes]**, 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 **[Outbound Proxy Server Address]** in **4.5.2.3 Outbound Proxy Server** is specified, the unit also receives SIP messages from the source address stored in the SIP outbound proxy server.

Default Value	No
Configuration File Reference	SIP_DETECT_SSAF_n (Page 261)

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 Settings
RTP Packet Time

Description	Selects the interval, in milliseconds, between transmissions of RTP packets.
Value Range	• 20 • 30 • 40
Default Value	20
Configuration File Reference	RTP_PTIME (Page 235)

Minimum RTP Port Number

Description	Specifies the lowest port number that the unit will use for RTP packets. **Note** • If port numbers are specified in **[Channel 1–25]** in **4.3.6.3 External RTP Port**, this setting is ignored and the corresponding external RTP port is enabled. • The available channel number varies depending on the type of the unit being used.

Value Range	1024–48750 (even number only)
	Note
	• The value for this setting must be less than or equal to "**[Maximum RTP Port Number]** - 400".
	• Changing this setting may affect the number of simultaneous calls that can be made. Therefore, when setting this parameter, be aware that the maximum number of necessary ports can be calculated as shown below:
	No. of lines × No. of channels × 2 × 10 (No. of terminals)
Default Value	16000
Configuration File Reference	RTP_PORT_MIN (Page 234)

Maximum RTP Port Number

Description	Specifies the highest port number that the unit will use for RTP packets.
	Note
	• If port numbers are specified in **[Channel 1–25]** in **4.3.6.3 External RTP Port**, this setting is ignored and the corresponding external RTP port is enabled.
	• The available channel number varies depending on the type of the unit being used.
Value Range	1424–49150 (even number only)
	Note
	• The value for this setting must be greater than or equal to "**[Minimum RTP Port Number]** + 400".
	• Changing this setting may affect the number of simultaneous calls that can be made. Therefore, when setting this parameter, be aware that the maximum number of necessary ports can be calculated as shown below:
	No. of lines × No. of channels × 2 × 10 (No. of terminals)
Default Value	20000
Configuration File Reference	RTP_PORT_MAX (Page 234)

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 **[Outband]**.
Value Range	96–127
Default Value	101
Configuration File Reference	TELEVENT_PAYLOAD (Page 237)

4.5.4 VoIP Settings [Line 1]–[Line x]

This screen allows you to change the VoIP settings that are specific to each line. The number of lines available varies depending on the phone being used, as follows:

• KX-UT113/KX-UT123: 1–2
• KX-UT133/KX-UT136: 1–4
• KX-UT248: 1–6
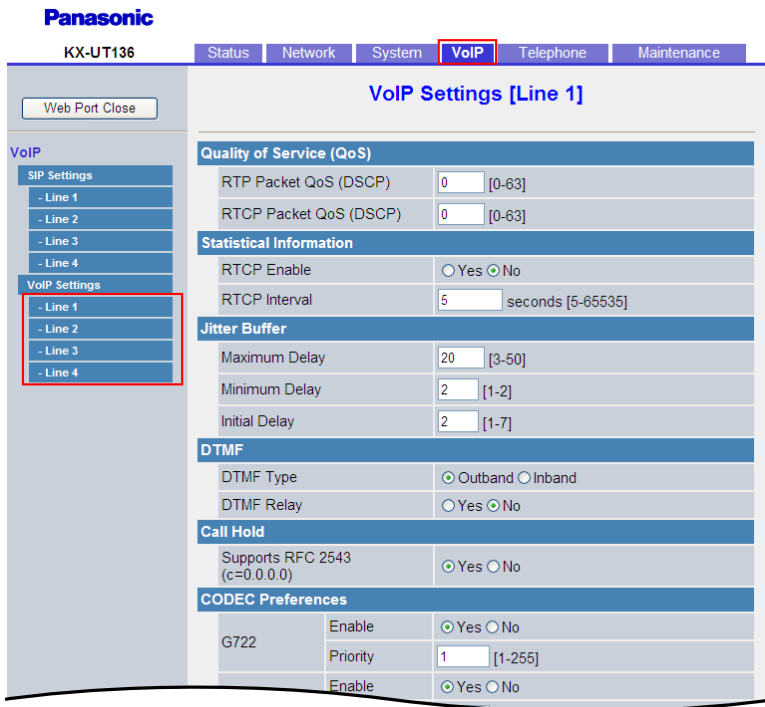
4.5.4.1 Quality of Service (QoS)

RTP Packet QoS (DSCP)

Description	Selects the DSCP level of DiffServ applied to RTP packets.
Value Range	0–63
Default Value	0
Configuration File Reference	DSCP_RTP_n (Page 232)

RTCP Packet QoS (DSCP)

Description	Selects the DSCP level of DiffServ applied to RTCP packets.
Value Range	0–63
Default Value	0

Configuration File Reference	DSCP_RTCP_n (Page 232)

4.5.4.2 Statistical Information

RTCP Enable

Description	Selects whether to enable or disable RTCP (Real-Time Transport Control Protocol). For details, refer to RFC 3550.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	RTCP_ENABLE_n (Page 235)

RTCP Interval

Description	Specifies the interval, in seconds, between RTCP packets.
Value Range	5–65535
Default Value	5
Configuration File Reference	RTCP_INTVL_n (Page 233)

4.5.4.3 Jitter Buffer

Maximum Delay

Description	Specifies the maximum delay, in 10-millisecond units, of the jitter buffer.
Value Range	3–50 ($\times$ 10 ms) **Note** • This setting is subject to the following conditions: – This value must be greater than **[Initial Delay]** – This value must be greater than **[Minimum Delay]** – **[Initial Delay]** must be greater than or equal to **[Minimum Delay]**
Default Value	20 ($\times$ 10 ms)
Configuration File Reference	MAX_DELAY_n (Page 233)

Minimum Delay

Description	Specifies the minimum delay, in 10-millisecond units, of the jitter buffer.

Value Range	1 or 2 ($\times$ 10 ms)
	
	Note
	• This setting is subject to the following conditions:
	  – This value must be less than or equal to **[Initial Delay]**
	  – This value must be less than **[Maximum Delay]**
	  – **[Maximum Delay]** must be greater than **[Initial Delay]**

Default Value	2 ($\times$ 10 ms)
Configuration File Reference	MIN_DELAY_n (Page 233)

Initial Delay

Description	Specifies the initial delay, in 10-millisecond units, of the jitter buffer.

Value Range	1–7 ($\times$ 10 ms)
	
	Note
	• This setting is subject to the following conditions:
	  – This value must be greater than or equal to **[Minimum Delay]**
	  – This value must be less than **[Maximum Delay]**

Default Value	2 ($\times$ 10 ms)
Configuration File Reference	NOM_DELAY_n (Page 234)

4.5.4.4 DTMF

DTMF Type

Description	Selects the method for transmitting DTMF (Dual Tone Multi-Frequency) tones.
Value Range	• Outband • Inband **Note** • If you select **[Outband]**, DTMF tones will be sent through SDP (Session Description Protocol), compliant with RFC 2833. If you select **[Inband]**, DTMF tones will be encoded in the RTP stream.
Default Value	Outband
Configuration File Reference	OUTBANDDTMF_n (Page 236)

DTMF Relay

Description	Selects whether DTMF tones are sent in the SIP INFO message.

Value Range	• Yes • No **Note** • If you select **[Yes]**, DTMF tones will be sent in the SIP INFO message. If you select **[No]**, the method selected in **[DTMF Type]** will be used.
Default Value	No
Configuration File Reference	DTMF_RELAY_n (Page 237)

4.5.4.5 Call Hold

Supports RFC 2543 (c=0.0.0.0)

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 238)

4.5.4.6 CODEC Preferences

G722 (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 231)

G722 (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 231)

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 231)

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 231)

G726–32 (Enable)

Description	Selects whether to enable the G.726-32 codec for voice data transmission.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	CODEC_ENABLEx_n (Page 231)

G726–32 (Priority)

Description	Specifies the numerical order usage priority for the G.726-32 codec.
Value Range	1–255
Default Value	1
Configuration File Reference	CODEC_PRIORITYx_n (Page 231)

G729A (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 231)

G729A (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 231)

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 231)

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 231)

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.
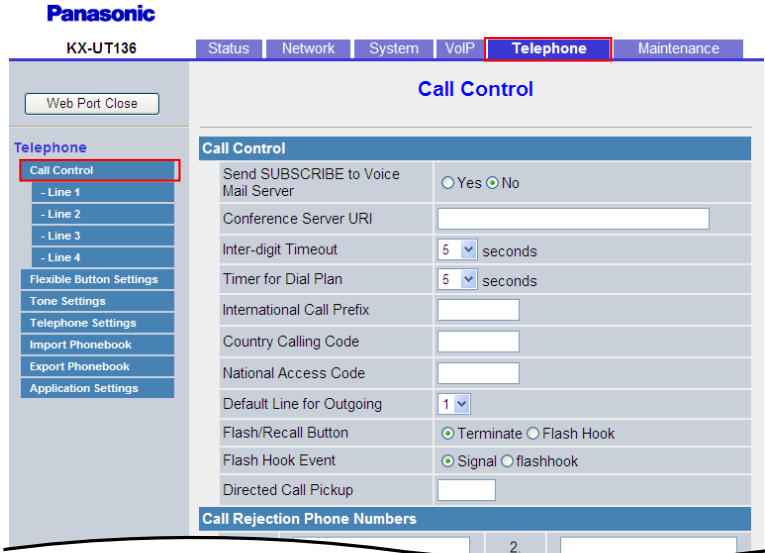
4.6.1.1 Call Control

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 202)

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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** • In a SIP URI, the user part ("conference" 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. • Availability depends on your phone system.
Value Range	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
Default Value	Not stored.
Configuration File Reference	CONFERENCE_SERVER_URI (Page 203)

Inter-digit Timeout

Description	Specifies the length of time, in seconds, within which subsequent digits of a dial number must be dialed. When this timer expires after the last key was pressed, dialing will start.
Value Range	1–15
Default Value	5
Configuration File Reference	INTDIGIT_TIM (Page 203)

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
Default Value	5
Configuration File Reference	MACRODIGIT_TIM (Page 203)

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 204)

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)
Default Value	Not stored.
Configuration File Reference	COUNTRY_CALLING_CODE (Page 204)

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 204)

Default Line for Outgoing

Description	Specifies the line used to make an outgoing call when no line is specified in the dialing operation. **Note** • The available line number may vary depending on the type of the unit being used.
Value Range	1–2 (for KX-UT113/KX-UT123) 1–4 (for KX-UT133/KX-UT136) 1–6 (for KX-UT248)
Default Value	1
Configuration File Reference	DEFAULT_LINE_SELECT (Page 204)

Flash/Recall Button

Description	Selects the function of the FLASH/RECALL button during a conversation.
Value Range	• Terminate • Flash Hook
Default Value	Terminate
Configuration File Reference	FLASH_RECALL_TERMINATE (Page 242)

Flash Hook Event

Description	Specifies the type of signal sent when sending a flash hook event.
Value Range	• Signal • flashhook
Default Value	Signal
Configuration File Reference	FLASHHOOK_CONTENT_TYPE (Page 242)

Direct Call Pickup

Description	Specifies the feature number assigned to a BLF for performing call pickup.
Value Range	Max. 4 characters (consisting of 0–9, *, and #)
Default Value	Not stored.
Configuration File Reference	NUM_PLAN_PICKUP_DIRECT (Page 205)

4.6.1.2 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. **Note** • You can also configure this setting through the phone user interface. If these settings are changed through the phone user interface while being changed through the Web user interface, the settings made through the phone user interface will be overwritten by the settings made through the Web user interface.
Value Range	Max. 32 characters **Note** • Even if you specify nonconsecutive fields (e.g., fields 1, 5, and 30), they will be rearranged into consecutive fields after you save the settings (i.e., 1, 2, and 3). • If the phone number contains characters other than 0–9, *, #, and +, the number may not be rejected correctly.
Default Value	Not stored.

4.6.2 Call Control [Line 1]–[Line x]

This screen allows you to configure various call features that are specific to each line. The number of lines available varies depending on the phone being used, as follows:
• KX-UT113/KX-UT123: 1–2

- KX-UT133/KX-UT136: 1–4
- KX-UT248: 1–6

4.6.2.1 Call Control

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 239)

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 239)

Enable Shared Call

Description	Selects whether to enable the Shared Call feature of the SIP server, which is used to share one line among the units. **Note** • You cannot set both **[Enable Shared Call]** and **[Synchronize Do Not Disturb and Call Forward]** to **[Yes]** at the same time. • Availability depends on your phone system.
Value Range	• Yes • No **Note** • If you select **[Yes]**, the SIP server will control the line by using a shared-call signaling method. If you select **[No]**, the SIP server will control the line by using a standard signaling method.
Default Value	No
Configuration File Reference	SHARED_CALL_ENABLE_n (Page 240)

Synchronize Do Not Disturb and Call Forward

Description	Selects 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. **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. • You cannot set both **[Enable Shared Call]** and **[Synchronize Do Not Disturb and Call Forward]** to **[Yes]** at the same time.
Value Range	• Yes • No
Default Value	No
Configuration File Reference	FWD_DND_SYNCHRO_ENABLE_n (Page 241)

Resource List URI

Description	Specifies the Uniform Resource Identifier string for the resource list, which consists of "sip:", a user part, the "@" symbol, and a host part, for example, "sip:user@example.com". For details, refer to RFC 4662. **Note** • 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. • When the BLF feature is assigned to a flexible button, it may be necessary to specify this parameter depending on your phone system. For details about flexible buttons, see **6.3 Flexible Buttons (KX-UT133/KX-UT136/KX-UT248 only)**.
Value Range	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
Default Value	Not stored.
Configuration File Reference	RESOURCELIST_URI_n (Page 241)

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 **Note** • Entering more than 1000 characters in this field causes an error and the previous value remains effective.
Default Value	Not stored.
Configuration File Reference	DIAL_PLAN_n (Page 239)

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 240)

4.6.2.3 Call Features

Block Caller ID

Description	Selects whether to make calls without transmitting the phone number to the called party. **Note** • Availability depends on your phone system.
Value Range	• Yes • No
Default Value	No

Block Anonymous Call

Description	Selects whether to reject incoming calls that do not show the caller's number.
Value Range	• Yes • No
Default Value	No

Do Not Disturb

Description	Selects whether to enable the Do Not Disturb feature for incoming calls. **Note** - If Do Not Disturb has been enabled on the server, the server rejects incoming calls and the unit does not receive any calls, even if you have selected **[No]** for this setting. - If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	• Yes • No
Default Value	No

4.6.2.4 Call Forward

Unconditional (Enable Call Forward)

Description	Selects whether to forward all incoming calls to a specified destination. **Note** - If Do Not Disturb has been enabled on the server, the server rejects incoming calls and the unit does not receive any calls, even if you have selected **[Yes]** for this setting. - If you have selected **[Yes]** for this setting and Call Forward has been enabled on the server, but the forwarding destinations differ, incoming calls are forwarded to the destination set on the server. - If Call Forward has been enabled on the server, incoming calls are forwarded to the destination set on the server, even if you have selected **[No]** for this setting. - You can synchronize the Do Not Disturb and Call Forward settings from the Web user interface ($\rightarrow$ see **[Synchronize Do Not Disturb and Call Forward]** in **4.6.2.1 Call Control**) or through configuration file programming ($\rightarrow$ see "`FWD_DND_SYNCHRO_ENABLE_n`" in **5.7.1 Call Control Settings**). - If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	• Yes • No
Default Value	No

Unconditional (Phone Number)

Description	Specifies the phone number of the destination to forward all incoming calls to. **Note** • If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	Max. 32 characters **Note** • You cannot leave this field empty if **[Unconditional (Enable Call Forward)]** is set to **[Yes]**.
Default Value	Not stored.

Busy (Enable Call Forward)

Description	Selects whether to forward incoming calls to a specified destination when the line is in use. **Note** • If Do Not Disturb has been enabled on the server, the server rejects incoming calls and the unit does not receive any calls, even if you have selected **[Yes]** for this setting. • If you have selected **[Yes]** for this setting and Call Forward has been enabled on the server, but the forwarding destinations differ, incoming calls are forwarded to the destination set on the server. • If Call Forward has been enabled on the server, incoming calls are forwarded to the destination set on the server, even if you have selected **[No]** for this setting. • You can synchronize the Do Not Disturb and Call Forward settings from the Web user interface ($\rightarrow$ see **[Synchronize Do Not Disturb and Call Forward]** in **4.6.2.1 Call Control**) or through configuration file programming ($\rightarrow$ see "`FWD_DND_SYNCHRO_ENABLE_n`" in **5.7.1 Call Control Settings**). • If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	• Yes • No
Default Value	No

Busy (Phone Number)

Description	Specifies the phone number of the destination to forward calls to when the line is in use. **Note** If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	Max. 32 characters **Note** You cannot leave this field empty if **[Busy (Enable Call Forward)]** is set to **[Yes]**.
Default Value	Not stored.

No Answer (Enable Call Forward)

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. **Note** - If Do Not Disturb has been enabled on the server, the server rejects incoming calls and the unit does not receive any calls, even if you have selected **[Yes]** for this setting. - If you have selected **[Yes]** for this setting and Call Forward has been enabled on the server, but the forwarding destinations differ, incoming calls are forwarded to the destination set on the server. - If Call Forward has been enabled on the server, incoming calls are forwarded to the destination set on the server, even if you have selected **[No]** for this setting. - You can synchronize the Do Not Disturb and Call Forward from the Web user interface (→ see **[Synchronize Do Not Disturb and Call Forward]** in **4.6.2.1 Call Control**) or through configuration file programming (→ see "`FWD_DND_SYNCHRO_ENABLE_n`" in **5.7.1 Call Control Settings**). - If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	• Yes • No
Default Value	No

No Answer (Phone Number)

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. **Note** If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	Max. 32 characters **Note** You cannot leave this field empty if **[No Answer (Enable Call Forward)]** is set to **[Yes]**.
Default Value	Not stored.

No Answer (Ring Count)

Description	Specifies the number of times that an incoming call rings until the call is forwarded. **Note** If you change this setting when **[Synchronize Do Not Disturb and Call Forward]** is set to **[Yes]**, the change to this setting is not immediately applied on this screen. In this case, reload the screen to confirm that the change is applied.
Value Range	0, 2–20 (0: No ring)
Default Value	3

4.6.3 Flexible Button Settings (KX-UT133/KX-UT136/KX-UT248 only)

This screen allows you to configure various features for each flexible button. For more details, see **6.3 Flexible Buttons (KX-UT133/KX-UT136/KX-UT248 only)**.
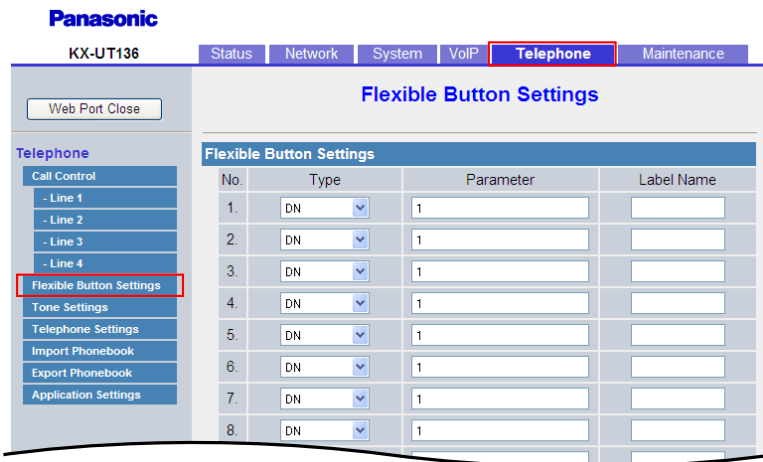
4.6.3.1 Flexible Button Settings

Type (No. 1–24)

Description	Selects the feature to be assigned to each flexible button.
Value Range	• DN • One-Touch • Headset • BLF • ACD • Wrap Up
Default Value	DN
Configuration File Reference	FLEX_BUTTON_FACILITY_ACTx (Page 224)

Parameter (No. 1–24)

Description	Specifies the necessary values for the features assigned to flexible buttons.
Value Range	Max. 32 characters
Default Value	1
Configuration File Reference	FLEX_BUTTON_FACILITY_ARGx (Page 224)

Label Name (No. 1–24)

Description	Specifies the message to be displayed on the screen when the flexible button is pressed.
Value Range	Max. 10 characters **Note** • You can use Unicode characters for this setting.
Default Value	**For KX-UT133/KX-UT136:** Not stored. **For KX-UT248:** No. 1: 1, No. 2: 2, No. 3: 3... No. 24: 24
Configuration File Reference	FLEX_BUTTON_LABELx (Page 225)

4.6.4 Tone Settings

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

4.6.4.1 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 209)

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 209)

4.6.4.2 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)
Default Value	480,620
Configuration File Reference	BUSY_TONE_FRQ (Page 212)

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. **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	60,500,440
Configuration File Reference	BUSY_TONE_TIMING (Page 212)

4.6.4.3 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)
Default Value	440,480
Configuration File Reference	RINGBACK_TONE_FRQ (Page 214)

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 214)

4.6.4.4 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)
Default Value	350,440
Configuration File Reference	DIAL_TONE4_FRQ (Page 211)

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	560,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,0
Configuration File Reference	DIAL_TONE4_TIMING (Page 211)

4.6.4.5 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)
Default Value	480,620
Configuration File Reference	REORDER_TONE_FRQ (Page 213)

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 213)

4.6.5 Telephone Settings

This screen allows you to configure various telephone settings.

4.6.5.1 Telephone Settings

Key Click Tone

Description	Selects whether a tone is heard in response to key presses.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	KEY_PAD_TONE (Page 208)

Extension PIN

Description	Specifies the Personal Identification Number (PIN) of the extension. This is used to lock access to the call log and phonebook list. For details, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).
Value Range	Max. 10 digits
Default Value	0000000000
Configuration File Reference	EXTENSION_PIN (Page 221)

Number Matching Lower Digit

Description	Specifies the minimum number of digits with which to match a phonebook entry with an incoming call's caller ID. To specify exact matching of entire numbers only, specify "0".
Value Range	0–15
Default Value	7
Configuration File Reference	NUMBER_MATCHING_LOWER_DIGIT (Page 219)

Number Matching Upper Digit

Description	Specifies the maximum number of digits with which to match a phonebook entry with an incoming call's caller ID. To specify exact matching of entire numbers only, specify "0".
Value Range	0–15
Default Value	10
Configuration File Reference	NUMBER_MATCHING_UPPER_DIGIT (Page 220)

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.
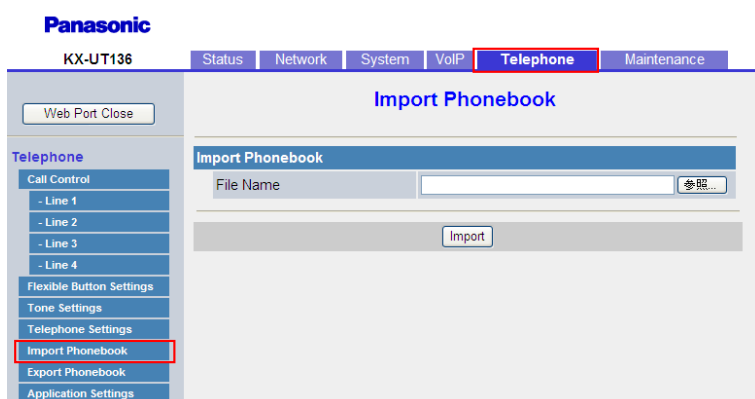
4.6.6.1 Import Phonebook

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.
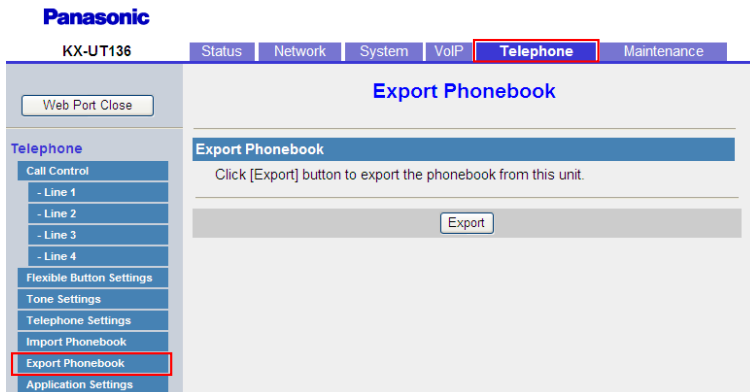
4.6.8 Application Settings

This screen allows you to configure the various URLs used with the XML application feature.
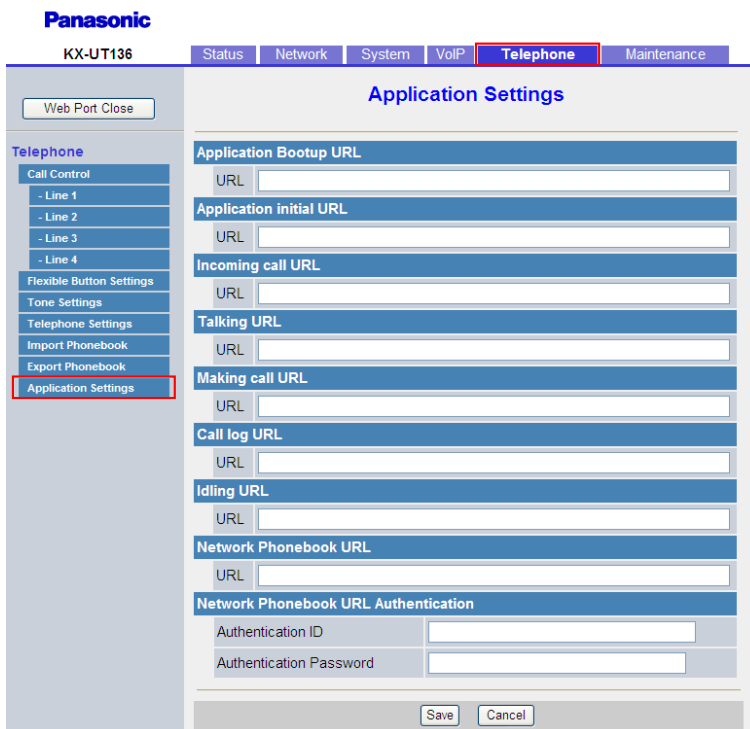
4.6.8.1 Application Bootup URL

URL

Description	Specifies the URL that is accessed when the unit starts up, to check for XML data.

Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_START_URL (Page 226)

4.6.8.2 Application initial URL

URL

Description	Specifies the URL that is accessed when the application is started from the unit's menu, to check for XML data.
Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_INITIAL_URL (Page 226)

4.6.8.3 Incoming call URL

URL

Description	Specifies the URL that is accessed when the unit receives a call, to check for XML data.
Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_INCOMING_URL (Page 226)

4.6.8.4 Talking URL

URL

Description	Specifies the URL that is accessed when the unit is on a call, to check for XML data.
Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_TALKING_URL (Page 227)

4.6.8.5 Making call URL

URL

Description	Specifies the URL that is accessed when the unit makes a call, to check for XML data.

Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_MAKECALL_URL (Page 227)

4.6.8.6 Call log URL

URL

Description	Specifies the URL that is accessed when the call log is accessed, to check for XML data.
Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_CALLLOG_URL (Page 227)

4.6.8.7 Idling URL

URL

Description	Specifies the URL that is accessed when the unit is idle, to check for XML data.
Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_IDLING_URL (Page 227)

4.6.8.8 Network Phone Book URL

URL

Description	Specifies the URL that is accessed when the phonebook is accessed, to check for XML data.
Value Range	Max. 244 characters
Default Value	Not stored.
Configuration File Reference	XMLAPP_LDAP_URL (Page 228)

4.6.8.9 Network Phone Book URL Authentication

Authentication ID

Description	Specifies the authentication ID required to access the network phonebook server.

Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	XMLAPP_LDAP_USERID (Page 228)

Authentication Password

Description	Specifies the authentication password used to access the network phonebook server.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Not stored.
Configuration File Reference	XMLAPP_LDAP_USERPASS (Page 228)

4.7 Maintenance

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

4.7.1 Firmware Maintenance

This screen allows you to perform firmware updates automatically or manually.

4.7.1.1 Firmware Maintenance

Enable Firmware Update

Description	Selects whether to perform firmware updates when the unit detects a newer version of firmware. **Note** • Changing this setting may require restarting the unit. • Local firmware updates from the Web user interface (→ see **4.7.2 Local Firmware Update**) 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 175)

Update Type

Description	Selects whether to display a confirmation message asking the user to perform a firmware update (manual) or perform the firmware update without asking the user (automatic) when the unit detects a newer version of firmware. **Note** • This setting is available only when **[Enable Firmware Update]** is set to **[Yes]**. • Changing this setting may require restarting the unit.
Value Range	• Automatic • Manual
Default Value	Automatic
Configuration File Reference	FIRM_UPGRADE_AUTO (Page 176)

Firmware File URL

Description	Specifies the URL where the firmware file is stored. **Note** • This setting is available only when **[Enable Firmware Update]** is set to **[Yes]**. • Changing this setting may require restarting the unit.
Value Range	Max. 500 characters
Default Value	Not stored.
Configuration File Reference	FIRM_FILE_PATH (Page 176)

4.7.2 Local Firmware Update

This screen allows you to manually update the unit's firmware from a PC by clicking **[Update Firmware]**.

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

4.7.2.1 Local Firmware Update

Encryption

Description	Selects whether the firmware files are encrypted or not.
Value Range	• Yes • No
Default Value	Yes

File Name

| Description	Specifies the path of the firmware file to be imported.
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.

4.7.3 Provisioning Maintenance

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

Note

- Each unit can accept up to 3 configuration files. For details about provisioning, see **2.2 Provisioning**.

4.7.3.1 Provisioning Maintenance

Enable Provisioning

Description	Selects whether the unit is automatically configured by downloading the configuration files from the provisioning server of your phone system. **Note** • Downloading configuration files using TR-069 can be performed regardless of this setting.
Value Range	• Yes • No
Default Value	Yes
Configuration File Reference	PROVISION_ENABLE (Page 178)

Standard File URL

Description	Specifies the URL of the standard configuration file, which is used when every unit needs different settings. **Note** • When you change this setting, set **[Enable Provisioning]** to **[Yes]** at the same time.
Value Range	Max. 500 characters
Default Value	http://provisioning.e-connecting.net/redirect/conf/{mac}.cfg
Configuration File Reference	CFG_STANDARD_FILE_PATH (Page 178)

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. **Note** • When you change this setting, set **[Enable Provisioning]** to **[Yes]** at the same time.
Value Range	Max. 500 characters
Default Value	Not stored. **Note** • The URL specified by your phone system dealer may be preset in the unit.
Configuration File Reference	CFG_PRODUCT_FILE_PATH (Page 179)

Master File URL

Description	Specifies the URL of the master configuration file, which is used when all units need the same settings. **Note** • When you change this setting, set **[Enable Provisioning]** to **[Yes]** at the same time.
Value Range	Max. 500 characters
Default Value	Not stored. **Note** • The URL specified by your phone system dealer may be preset in the unit.
Configuration File Reference	CFG_MASTER_FILE_PATH (Page 180)

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 182)

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 183)

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 **Note** • You cannot leave this field empty.
Default Value	check-sync
Configuration File Reference	CFG_RESYNC_FROM_SIP (Page 184)

4.7.4 Management Server

This screen allows you to configure the management server.

4.7.4.1 Management Server

Management Server URL

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	Not stored.
Configuration File Reference	ACS_URL (Page 184)

4.7.4.2 Management Server Authentication

Authentication ID

Description	Specifies the user ID for the Auto-Configuration Server for using TR-069.
Value Range	Max. 255 characters
Default Value	Not stored.
Configuration File Reference	ACS_USER_ID (Page 184)

Authentication Password

Description	Specifies the user password for the Auto-Configuration Server for using TR-069.
Value Range	Max. 255 characters
Default Value	Not stored.
Configuration File Reference	ACS_PASS (Page 185)

4.7.5 Reset to Defaults

This screen allows you to reset the settings made through the Web user interface to their default values by clicking **[Reset Web Settings]**. 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. For details about the reset, see **1.2.1.3 Resetting the Settings Made through the Web User Interface (Reset Web Settings)**.

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

Note

- If you have changed the default password for the Administrator account and successfully reset the settings (the message "Complete" is displayed), the next time you access the Web user interface, the authentication dialog box appears.
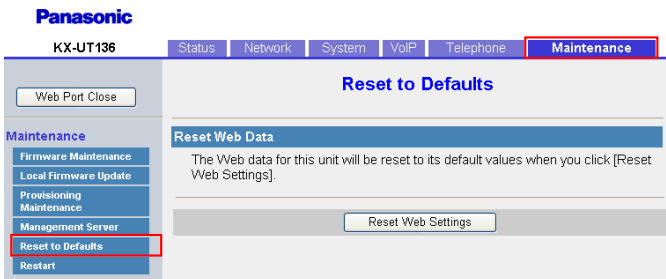
4.7.6 Restart

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.
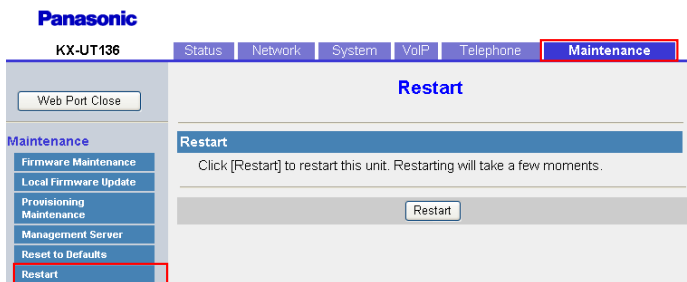
Section 5

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

Category	Parameter Name	Ref.
Login Account Settings	**ADMIN_ID**	Page 167
	ADMIN_PASS[1]	Page 167
	USER_ID	Page 168
	USER_PASS[1]	Page 168
System Time Settings	**TIME_ZONE**[1]	Page 168
	DST_ENABLE[1]	Page 169
	DST_OFFSET[1]	Page 169
	DST_START_MONTH[1]	Page 170
	DST_START_ORDINAL_DAY[1]	Page 170
	DST_START_DAY_OF_WEEK[1]	Page 170
	DST_START_TIME[1]	Page 171
	DST_STOP_MONTH[1]	Page 171
	DST_STOP_ORDINAL_DAY[1]	Page 172
	DST_STOP_DAY_OF_WEEK[1]	Page 172
	DST_STOP_TIME[1]	Page 172
	LOCAL_TIME_ZONE_POSIX	Page 173
Syslog Settings	**SYSLOG_EVENT_SIP**	Page 173
	SYSLOG_EVENT_CFG	Page 174
	SYSLOG_EVENT_VOIP	Page 174
	SYSLOG_EVENT_TEL	Page 174
	SYSLOG_ADDR	Page 174
	SYSLOG_PORT	Page 175
	SYSLOG_RTPSMLY_INTVL_n	Page 175

Category	Parameter Name	Ref.
Firmware Update Settings	**FIRM_UPGRADE_ENABLE**[*1]	Page 175
	FIRM_VERSION	Page 176
	FIRM_UPGRADE_AUTO[*1]	Page 176
	FIRM_FILE_PATH[*1]	Page 176
Provisioning Settings	**OPTION66_ENABLE**	Page 177
	OPTION66_REBOOT	Page 177
	PROVISION_ENABLE[*1]	Page 178
	CFG_STANDARD_FILE_PATH[*1]	Page 178
	CFG_PRODUCT_FILE_PATH[*1]	Page 179
	CFG_MASTER_FILE_PATH[*1]	Page 180
	CFG_FILE_KEY1	Page 181
	CFG_FILE_KEY2	Page 182
	CFG_FILE_KEY3	Page 182
	CFG_FILE_KEY_LENGTH	Page 182
	CFG_CYCLIC[*1]	Page 182
	CFG_CYCLIC_INTVL[*1]	Page 183
	CFG_RTRY_INTVL	Page 183
	CFG_RESYNC_TIME	Page 183
	CFG_RESYNC_DURATION	Page 184
	CFG_RESYNC_FROM_SIP[*1]	Page 184

Category	Parameter Name	Ref.
Management Server Settings	**ACS_URL**[1]	Page 184
	ACS_USER_ID[1]	Page 184
	ACS_PASS[1]	Page 185
	PERIODIC_INFORM_ENABLE	Page 185
	PERIODIC_INFORM_INTERVAL	Page 185
	PERIODIC_INFORM_TIME	Page 185
	CON_REQ_USER_ID	Page 186
	CON_REQ_PASS	Page 186
	ANNEX_G_STUN_ENABLE	Page 187
	ANNEX_G_STUN_SERV_ADDR	Page 187
	ANNEX_G_STUN_SERV_PORT	Page 187
	ANNEX_G_STUN_USER_ID	Page 187
	ANNEX_G_STUN_PASS	Page 188
	ANNEX_G_STUN_MAX_KEEP_ALIVE	Page 188
	ANNEX_G_STUN_MIN_KEEP_ALIVE	Page 188
	UDP_CON_REQ_ADDR_NOTIFY_LIMIT	Page 189

[1]   This setting can also be configured through the Web user interface.

Network Settings

Category	Parameter Name	Ref.
IP Settings	**CONNECTION_TYPE**[1]	Page 189
	HOST_NAME[2]	Page 190
	DHCP_DNS_ENABLE[1]	Page 190
	STATIC_IP_ADDRESS[1]	Page 190
	STATIC_SUBNET[1]	Page 191
	STATIC_GATEWAY[1]	Page 191
	USER_DNS1_ADDR[1]	Page 192
	USER_DNS2_ADDR[1]	Page 192
DNS Settings	**DNS_QRY_PRLL**	Page 192
	DNS_PRIORITY	Page 193
	DNS1_ADDR	Page 193
	DNS2_ADDR	Page 193

Category	Parameter Name	Ref.
Ethernet Port Settings	**VLAN_ENABLE**[1]	Page 194
	VLAN_ID_IP_PHONE[1]	Page 194
	VLAN_PRI_IP_PHONE[1]	Page 194
	VLAN_ID_PC[1]	Page 195
	VLAN_PRI_PC[1]	Page 195
IEEE 802.1X Settings (KX-UT248 only)	**IEEE8021X_ENABLE**[2]	Page 195
	IEEE8021X_AUTH_PRTCL[2]	Page 196
	IEEE8021X_USER_ID[2]	Page 196
	IEEE8021X_USER_PASS[2]	Page 196
HTTP Settings	**HTTPD_PORTOPEN_AUTO**	Page 197
	HTTP_VER[2]	Page 197
	HTTP_USER_AGENT[2]	Page 197
	HTTP_SSL_VERIFY	Page 198
	CFG_ROOT_CERTIFICATE_PATH	Page 198
Time Adjust Settings	**NTP_ADDR**[2]	Page 199
	TIME_SYNC_INTVL	Page 199
	TIME_QUERY_INTVL[2]	Page 199
STUN Settings	**STUN_SERV_ADDR**[2]	Page 200
	STUN_SERV_PORT[2]	Page 200
	STUN_2NDSERV_ADDR	Page 200
	STUN_2NDSERV_PORT	Page 200
Miscellaneous Network Settings	**NW_SETTING_ENABLE**	Page 201
	CUSTOM_WEB_PAGE	Page 201
LLDP-MED Settings	**LLDP_ENABLE**	Page 201
	LLDP_INTERVAL	Page 202
	LLDP_VLAN_ID_PC	Page 202
	LLDP_VLAN_PRI_PC	Page 202

[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.

Telephone Settings

Category	Parameter Name	Ref.
Call Control Settings	VM_SUBSCRIBE_ENABLE[1]	Page 202
	CONFERENCE_SERVER_URI[1]	Page 203
	FIRSTDIGIT_TIM	Page 203
	INTDIGIT_TIM[1]	Page 203
	MACRODIGIT_TIM[1]	Page 203
	INTERNATIONAL_ACCESS_CODE[1]	Page 204
	COUNTRY_CALLING_CODE[1]	Page 204
	NATIONAL_ACCESS_CODE[1]	Page 204
	DEFAULT_LINE_SELECT[1]	Page 204
	DATA_LINE_MODE	Page 205
	NUM_PLAN_PICKUP_DIRECT[1]	Page 205
	TALK_PACKAGE	Page 205
	HOLD_PACKAGE	Page 206
	HOLD_RECALL_TIM	Page 206
	AUTO_ANS_RING_TIM	Page 206
	RINGING_OFF_SETTING_ENABLE	Page 206
	AUTO_CALL_HOLD	Page 207
	REDIALKEY_CALLLOG_ENABLE	Page 207
	ONHOOK_TRANSFER_ENABLE	Page 207
	DISCONNECTION_MODE	Page 207
	TONE_LEN_DISCONNECT_HANDSET	Page 207
	TONE_LEN_DISCONNECT_HANDSFREE	Page 208
	KEY_PAD_TONE[1]	Page 208
	HOLD_AND_CALL_ENABLE	Page 208
	HOLD_TRANSFER_OPERATION	Page 208

Category	Parameter Name	Ref.
Tone Settings	DIAL_TONE1_FRQ[*1]	Page 209
	DIAL_TONE1_GAIN	Page 209
	DIAL_TONE1_RPT	Page 209
	DIAL_TONE1_TIMING[*1]	Page 209
	DIAL_TONE2_FRQ	Page 210
	DIAL_TONE2_GAIN	Page 210
	DIAL_TONE2_RPT	Page 210
	DIAL_TONE2_TIMING	Page 211
	DIAL_TONE4_FRQ[*1]	Page 211
	DIAL_TONE4_GAIN	Page 211
	DIAL_TONE4_RPT	Page 211
	DIAL_TONE4_TIMING[*1]	Page 211
	BUSY_TONE_FRQ[*1]	Page 212
	BUSY_TONE_GAIN	Page 212
	BUSY_TONE_RPT	Page 212
	BUSY_TONE_TIMING[*1]	Page 212
	REORDER_TONE_FRQ[*1]	Page 213
	REORDER_TONE_GAIN	Page 213
	REORDER_TONE_RPT	Page 213
	REORDER_TONE_TIMING[*1]	Page 213
	RINGBACK_TONE_FRQ[*1]	Page 214
	RINGBACK_TONE_GAIN	Page 214
	RINGBACK_TONE_RPT	Page 214
	RINGBACK_TONE_TIMING[*1]	Page 214
	HOLD_ALARM_FRQ	Page 215
	HOLD_ALARM_GAIN	Page 215
	HOLD_ALARM_RPT	Page 215
	HOLD_ALARM_TIMING	Page 215
	CW_TONE1_FRQ	Page 216
	CW_TONE1_GAIN	Page 216

Category	Parameter Name	Ref.
	`CW_TONE1_RPT`	Page 216
	`CW_TONE1_TIMING`	Page 216
	`HOLD_TONE_FRQ`	Page 217
	`HOLD_TONE_GAIN`	Page 217
	`HOLD_TONE_RPT`	Page 217
	`HOLD_TONE_TIMING`	Page 217
	`BELL_CORE_PATTERN1_TIMING`	Page 218
	`BELL_CORE_PATTERN2_TIMING`	Page 218
	`BELL_CORE_PATTERN3_TIMING`	Page 218
	`BELL_CORE_PATTERN4_TIMING`	Page 219
	`BELL_CORE_PATTERN5_TIMING`	Page 219
Telephone Settings	`DISPLAY_NAME_REPLACE`	Page 219
	`NUMBER_MATCHING_LOWER_DIGIT`[1]	Page 219
	`NUMBER_MATCHING_UPPER_DIGIT`[1]	Page 220
	`DISPLAY_DATE_PATTERN`	Page 220
	`DISPLAY_TIME_PATTERN`	Page 220
	`DEFAULT_LANGUAGE`	Page 220
	`EXTENSION_PIN`[1]	Page 221
	`POUND_KEY_DELIMITER_ENABLE`	Page 221
Miscellaneous Telephone Settings	`ADJDATA_GAIN`	Page 222
	`ADJDATA_ATT(KX-UT113/KX-UT123/KX-UT133/KX-UT136 only)`	Page 223
Flexible Button Settings (KX-UT133/KX-UT136/KX-UT248 only)	`FLEX_BUTTON_FACILITY_ACTx`[1]	Page 224
	`FLEX_BUTTON_FACILITY_ARGx`[1]	Page 224
	`FLEX_BUTTON_QUICK_DIALx`[1]	Page 224
	`FLEX_BUTTON_LABELx`[1]	Page 225

Category	Parameter Name	Ref.
XML Application Settings	**XMLAPP_ENABLE**[1]	Page 225
	XMLAPP_USERID[1]	Page 225
	XMLAPP_USERPASS[1]	Page 226
	XMLAPP_START_URL[1]	Page 226
	XMLAPP_INITIAL_URL[1]	Page 226
	XMLAPP_INCOMING_URL[1]	Page 226
	XMLAPP_TALKING_URL[1]	Page 227
	XMLAPP_MAKECALL_URL[1]	Page 227
	XMLAPP_CALLLOG_URL[1]	Page 227
	XMLAPP_IDLING_URL[1]	Page 227
	XMLAPP_LDAP_URL[1]	Page 228
	XMLAPP_LDAP_USERID[1]	Page 228
	XMLAPP_LDAP_USERPASS[1]	Page 228
	XML_INITIATE_KEY_SOFT1	Page 228
	XML_INITIATE_KEY_SOFT2	Page 229
	XML_INITIATE_KEY_SOFT3	Page 229
	XML_INITIATE_KEY_SOFT4	Page 229
	XML_INITIATE_KEY_FWDDND	Page 229
	XML_INITIATE_KEY_FLASH	Page 229
	XML_ERROR_INFORMATION	Page 230
	XML_HTTPD_PORT	Page 230

[1]   This setting can also be configured through the Web user interface.

VoIP Settings

Category	Parameter Name	Ref.
Codec Settings	**CODEC_G711_REQ**	Page 230
	CODEC_G729_PARAM	Page 231
	CODEC_ENABLEx_n[1]	Page 231
	CODEC_PRIORITYx_n[1]	Page 231

Category	Parameter Name	Ref.
RTP Settings	DSCP_RTP_n[*1]	Page 232
	DSCP_RTCP_n[*1]	Page 232
	RTCP_INTVL_n[*1]	Page 233
	MAX_DELAY_n[*1]	Page 233
	MIN_DELAY_n[*1]	Page 233
	NOM_DELAY_n[*1]	Page 234
	RTP_PORT_MIN[*1]	Page 234
	RTP_PORT_MAX[*1]	Page 234
	RTP_PTIME[*1]	Page 235
	RTCP_ENABLE_n[*1]	Page 235
	RTCP_SEND_BY_SDP_n	Page 236
	RTP_CLOSE_ENABLE_n	Page 236
Miscellaneous VoIP Settings	OUTBANDDTMF_n[*1]	Page 236
	DTMF_RELAY_n[*1]	Page 237
	OUTBANDDTMF_VOL	Page 237
	INBANDDTMF_VOL	Page 237
	TELEVENT_PAYLOAD[*1]	Page 237
	RFC2543_HOLD_ENABLE_n[*1]	Page 238
	DTMF_SIGNAL_LEN	Page 238
	DTMF_INTDIGIT_TIM	Page 238

[*1]   This setting can also be configured through the Web user interface.

Line Settings

Category	Parameter Name	Ref.
Call Control Settings	DISPLAY_NAME_n[*1]	Page 239
	VM_NUMBER_n[*1]	Page 239
	DIAL_PLAN_n[*1]	Page 239
	DIAL_PLAN_NOT_MATCH_ENABLE_n[*1]	Page 240
	SHARED_CALL_ENABLE_n[*1]	Page 240
	FWD_DND_SYNCHRO_ENABLE_n[*1]	Page 241
	RESOURCELIST_URI_n[*1]	Page 241
	CW_ENABLE_n	Page 242
	RETURN_VOL_SET_DEFAULT_ENABLE	Page 242
	FLASH_RECALL_TERMINATE[*1]	Page 242
	FLASHHOOK_CONTENT_TYPE[*1]	Page 242
	VOICE_MESSAGE_AVAILABLE	Page 243
	HOLD_SOUND_PATH_n	Page 243
SIP Settings	SIP_USER_AGENT[*1]	Page 243
	PHONE_NUMBER_n[*1]	Page 244
	SIP_URI_n[*1]	Page 244
	LINE_ENABLE_n	Page 245
	PROFILE_ENABLEn	Page 245
	SIP_AUTHID_n[*1]	Page 245
	SIP_PASS_n[*1]	Page 246
	SIP_SRC_PORT_n[*1]	Page 246
	SIP_PRXY_ADDR_n[*1]	Page 246
	SIP_PRXY_PORT_n[*1]	Page 246
	SIP_RGSTR_ADDR_n[*1]	Page 247
	SIP_RGSTR_PORT_n[*1]	Page 247
	SIP_SVCDOMAIN_n[*1]	Page 247
	REG_EXPIRE_TIME_n	Page 248
	REG_INTERVAL_RATE_n	Page 248
	SIP_SESSION_TIME_n[*1]	Page 248
	SIP_SESSION_METHOD_n	Page 248
	DSCP_SIP_n[*1]	Page 249

Category	Parameter Name	Ref.
	`SIP_2NDPROXY_ADDR_n`	Page 249
	`SIP_2NDPROXY_PORT_n`	Page 249
	`SIP_2NDRGSTR_ADDR_n`	Page 250
	`SIP_2NDRGSTR_PORT_n`	Page 250
	`SIP_TIMER_T1_n`[1]	Page 250
	`SIP_TIMER_T2_n`[1]	Page 250
	`SIP_TIMER_T4_n`	Page 251
	`SIP_FOVR_NORSP_n`	Page 251
	`SIP_FOVR_MAX_n`	Page 252
	`SIP_REFRESHER_n`	Page 252
	`SIP_DNSSRV_ENA_n`[1]	Page 252
	`SIP_UDP_SRV_PREFIX_n`[1]	Page 253
	`SIP_TCP_SRV_PREFIX_n`[1]	Page 253
	`SIP_100REL_ENABLE_n`[1]	Page 253
	`SIP_INVITE_EXPIRE_n`	Page 254
	`SIP_18X_RTX_INTVL_n`	Page 254
	`SIP_PRSNC_ADDR_n`[1]	Page 254
	`SIP_PRSNC_PORT_n`[1]	Page 255
	`SIP_2NDPRSNC_ADDR_n`	Page 255
	`SIP_2NDPRSNC_PORT_n`	Page 255
	`USE_DEL_REG_OPEN_n`	Page 255
	`USE_DEL_REG_CLOSE_n`	Page 256
	`PORT_PUNCH_INTVL_n`[1]	Page 256
	`SIP_ADD_RPORT_n`[1]	Page 256
	`SIP_REQURI_PORT_n`	Page 257
	`SIP_SUBS_EXPIRE_n`	Page 257
	`SUB_RTX_INTVL_n`	Page 257
	`REG_RTX_INTVL_n`	Page 258
	`SIP_P_PREFERRED_ID_n`	Page 258
	`SIP_PRIVACY_n`	Page 258
	`ADD_USER_PHONE_n`	Page 259
	`SDP_USER_ID_n`	Page 259
	`SUB_INTERVAL_RATE_n`	Page 259

Category	Parameter Name	Ref.
	SIP_OUTPROXY_ADDR_n[*1]	Page 259
	SIP_OUTPROXY_PORT_n[*1]	Page 260
	SIP_TRANSPORT_n[*1]	Page 260
	SIP_ANM_DISPNAME_n	Page 260
	SIP_ANM_USERNAME_n	Page 261
	SIP_ANM_HOSTNAME_n	Page 261
	SIP_DETECT_SSAF_n[*1]	Page 261
	SIP_RCV_DET_HEADER_n	Page 262
	SIP_CONTACT_ON_ACK_n	Page 262
	SIP_TIMER_B_n[*1]	Page 262
	SIP_TIMER_D_n[*1]	Page 262
	SIP_TIMER_F_n[*1]	Page 263
	SIP_TIMER_H_n[*1]	Page 263
	SIP_TIMER_J_n[*1]	Page 263
	ADD_TRANSPORT_UDP_n	Page 264
	ADD_EXPIRES_HEADER_n	Page 264
	SIP_HOLD_HOLDRECEIVE_n	Page 264
	SIP_ADD_DIVERSION_n	Page 264
	SIP_RESPONSE_CODE_DND	Page 265
	SIP_RESPONSE_CODE_CALL_REJECT	Page 265
	SIP_FOVR_MODE_n	Page 265
	SIP_FOVR_DURATION_n	Page 265
	SIP_ADD_ROUTE_n	Page 266
	SIP_403_REG_SUB_RTX_n	Page 266

[*1]   This setting can also be configured through the Web user interface.

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 signifies that these settings can be made to each line individually. The number of lines available varies depending on the phone being used, as follows:
  - KX-UT113/KX-UT123: 1–2
  - KX-UT133/KX-UT136: 1–4
  - KX-UT248: 1–6

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.

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.

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 Login Account Settings

ADMIN_ID

Value Format	String
Description	Specifies the account ID used to access the Web user interface with the Administrator account.
Value Range	Max. 16 characters (except ", &, ', :, <, >, and space) **Note** • An empty string is not allowed.
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	6–16 characters (except ", &, ', :, <, >, and space)
Default Value	adminpass
Web User Interface Reference	• Current Password (Page 95) • New Password (Page 95) • Confirm New Password (Page 96)

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.
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	6–16 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string (only before a user accesses the Web user interface for the first time)
Web User Interface Reference	• Current Password (Page 96) • New Password (Page 97) • Confirm New Password (Page 97)

5.3.2 System Time Settings

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 100)

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 100)

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 fifth week of the month

Default Value	2
Web User Interface Reference	Day of Week (Page 101)

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 101)

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	10
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 fifth week of the month
Default Value	2
Web User Interface Reference	Day of Week (Page 102)

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 102)

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 103)

LOCAL_TIME_ZONE_POSIX

Value Format	String
Description	Specifies a IEEE 1003.1 (POSIX)-compliant local time zone definition (e.g., "EST+5:00:00EDT+4:00:00,M4.1.0/2:00:00,M10.5.0/2:00:00").
	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

5.3.3 Syslog Settings

SYSLOG_EVENT_SIP

Value Format	Integer
Description	Specifies which SIP-related syslog events are sent to the syslog server.
	Note
	• If the level of the event is higher than or equal to the set value, the log is sent to the syslog server.

Value Range	0–6
	– 0: no logs sent
	– 1: emergency (highest)
	– 2: alert
	– 3: critical
	– 4: error
	– 5: warning
	– 6: information (lowest)
Default Value	0

SYSLOG_EVENT_CFG

Value Format	Integer
Description	Specifies the threshold of syslog events regarding configuration.
Value Range	0–6
Default Value	0

SYSLOG_EVENT_VOIP

Value Format	Integer
Description	Specifies the threshold of syslog events regarding VoIP operation.
Value Range	0–6
Default Value	0

SYSLOG_EVENT_TEL

Value Format	Integer
Description	Specifies the threshold of syslog events regarding telephone functions. **Note** • This setting is not applicable for the current version. No logs will be sent to the syslog server, even if values "1–6" are specified.
Value Range	0–6
Default Value	0

SYSLOG_ADDR

Value Format	String
Description	Specifies the IP address or FQDN of the syslog server.
Value Range	Max. 127 characters (IP address in dotted-decimal notation or FQDN)

Default Value	Empty string

SYSLOG_PORT

Value Format	Integer
Description	Specifies the port number of the syslog server.
Value Range	1–65535
Default Value	514

SYSLOG_RTPSMLY_INTVL_n

Parameter Name Example	`SYSLOG_RTPSMLY_INTVL_1`, `SYSLOG_RTPSMLY_INTVL_2`, …, `SYSLOG_RTPSMLY_INTVL_6`
Value Format	Integer
Description	Specifies the interval, in seconds, to send summarized information of RTP packets to the syslog server.
Value Range	0, 5–65535 (0: No information sent)
Default Value	20

5.3.4 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** • Changing this setting may require restarting the unit. • Local firmware updates from the Web user interface ($\rightarrow$ see **4.7.2 Local Firmware Update**) 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_VERSION

Value Format	String
Description	Specifies the firmware version of the unit. **Note** • Changing this setting may require restarting the unit.
Value Range	00.000–15.999
Default Value	Empty string

FIRM_UPGRADE_AUTO

Value Format	Boolean
Description	Specifies whether to display a confirmation message asking the user to perform a firmware update (manual) or perform the firmware update without asking the user (automatic) when the unit detects a newer version of firmware. **Note** • This setting is available only when "**FIRM_UPGRADE_ENABLE**" is set to "**Y**". • Changing this setting may require restarting the unit.
Value Range	• **Y** (Enable automatic firmware update) • **N** (Disable automatic firmware update)
Default Value	**Y**
Web User Interface Reference	Update Type (Page 146)

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**". • Changing this setting may require restarting the unit.

Value Range	Max. 500 characters
	Note
	• The format must be RFC 1738 compliant, as follows: "\<scheme\>://\<user\>:\<password\>@\<host\>:\<port\>/\<url-path\>".
	– "\<user\>" must be less than 128 characters.
	– "\<password\>" must be less than 128 characters.
	– "\<user\>:\<password\>@" may be empty.
	– The total of "\<scheme\>://" and "\<host\>:\<port\>/\<url-path\>" must be less than 245 characters.
	– ":\<port\>" can be omitted if you do not need to specify the port number.
	• If "{mac}" is included in this URL, it will be replaced with the unit's MAC address in lower-case.
	• If "{MAC}" is included in this URL, it will be replaced with the unit's MAC address in upper-case.
	• If "{MODEL}" is included in this URL, it will be replaced with the unit's model name.
	• If "{fwver}" is included in this URL, it will be replaced with "`FIRM_VERSION`" depending on the system. Note that this rule differs from other parameters such as "`SIP_USER_AGENT`".
Default Value	Empty string
Web User Interface Reference	Firmware File URL (Page 146)

5.3.5 Provisioning Settings

OPTION66_ENABLE

Value Format	Boolean
Description	Specifies whether to enable the unit to look for option 66 to receive the TFTP server address or FQDN from the DHCP server.
	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 option 66)
	• `N` (Disable option 66)
Default Value	`Y`

OPTION66_REBOOT

Value Format	Boolean
Description	Specifies whether the unit restarts automatically after pre-provisioning has completed successfully using DHCP server option 66. For details, see **2.1.4 Pre-provisioning Setting Example**.

Value Range	• `Y` (Restart automatically) • `N` (Do not restart automatically)
Default Value	`N`

PROVISION_ENABLE

Value Format	Boolean
Description	Specifies whether the unit is automatically configured by downloading the configuration files from the provisioning server of your phone system. **Note** • Downloading configuration files using TR-069 can be performed regardless of this setting.
Value Range	• `Y` (Enable configuration file download) • `N` (Disable configuration file download)
Default Value	`Y`
Web User Interface Reference	Enable Provisioning (Page 148)

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. **Note** • When you change this setting, set "`PROVISION_ENABLE`" to "`Y`" at the same time.

Value Range	Max. 500 characters
	Note
	• The format must be RFC 1738 compliant, as follows: "<scheme>://<user>:<password>@<host>:<port>/<url-path>"
	– "<user>" must be less than 128 characters.
	– "<password>" must be less than 128 characters.
	– "<user>:<password>@" may be empty.
	– The total of "<scheme>://" and "<host>:<port>/<url-path>" must be less than 245 characters.
	– ":<port>" can be omitted if you do not need to specify the port number.
	• If "{mac}" is included in this URL, it will be replaced with the unit's MAC address in lower-case.
	• If "{MAC}" is included in this URL, it will be replaced with the unit's MAC address in upper-case.
	• If "{MODEL}" is included in this URL, it will be replaced with the unit's model name.
	• If "{fwver}" is included in this URL, it will be replaced with the unit's firmware version.
	• If this URL ends with "/" (slash), "Config{mac}.cfg" is automatically added at the end of the URL. For example, `CFG_STANDARD_FILE_PATH="http://host/dir/"` becomes `CFG_STANDARD_FILE_PATH="http://host/dir/Config{mac}.cfg"`.
Default Value	http://provisioning.e-connecting.net/redirect/conf/{mac}.cfg
Web User Interface Reference	Standard File URL (Page 148)

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.
	Note
	• When you change this setting, set "`PROVISION_ENABLE`" to "`Y`" at the same time.

Value Range	Max. 500 characters
	Note
	• The format must be RFC 1738 compliant, as follows: "\<scheme\>://\<user\>:\<password\>@\<host\>:\<port\>/\<url-path\>"
	– "\<user\>" must be less than 128 characters.
	– "\<password\>" must be less than 128 characters.
	– "\<user\>:\<password\>@" may be empty.
	– The total of "\<scheme\>://" and "\<host\>:\<port\>/\<url-path\>" must be less than 245 characters.
	– ":\<port\>" can be omitted if you do not need to specify the port number.
	• If "{mac}" is included in this URL, it will be replaced with the unit's MAC address in lower-case.
	• If "{MAC}" is included in this URL, it will be replaced with the unit's MAC address in upper-case.
	• If "{MODEL}" is included in this URL, it will be replaced with the unit's model name.
	• If "{fwver}" is included in this URL, it will be replaced with the unit's firmware version.
	• If this URL ends with "/" (slash), "{MODEL}.cfg" is automatically added at the end of the URL. For example, `CFG_PRODUCT_FILE_PATH="http://host/dir/"` becomes `CFG_PRODUCT_FILE_PATH="http://host/dir/{MODEL}.cfg"`.
Default Value	Empty string
	Note
	• The URL specified by your phone system dealer may be preset in the unit.
Web User Interface Reference	Product File URL (Page 149)

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.
	Note
	• When you change this setting, set "`PROVISION_ENABLE`" to "`Y`" at the same time.

Value Range	Max. 500 characters
	Note
	• The format must be RFC 1738 compliant, as follows: "\<scheme>://\<user>:\<password>@\<host>:\<port>/\<url-path>"
	– "\<user>" must be less than 128 characters.
	– "\<password>" must be less than 128 characters.
	– "\<user>:\<password>@" may be empty.
	– The total of "\<scheme>://" and "\<host>:\<port>/\<url-path>" must be less than 245 characters.
	– ":\<port>" can be omitted if you do not need to specify the port number.
	• If "{mac}" is included in this URL, it will be replaced with the unit's MAC address in lower-case.
	• If "{MAC}" is included in this URL, it will be replaced with the unit's MAC address in upper-case.
	• If "{MODEL}" is included in this URL, it will be replaced with the unit's model name.
	• If "{fwver}" is included in this URL, it will be replaced with the unit's firmware version.
	• If this URL ends with "/" (slash), "sip.cfg" is automatically added at the end of the URL. For example, `CFG_MASTER_FILE_PATH="http://host/dir/"` becomes `CFG_MASTER_FILE_PATH="http://host/dir/sip.cfg"`.
Default Value	Empty string
	Note
	• The URL specified by your phone system dealer may be preset in the unit.
Web User Interface Reference	Master File URL (Page 149)

CFG_FILE_KEY1

Value Format	String
Description	Specifies the encryption key (password) used to decrypt configuration files.
	Note
	• If the extension of the configuration file is ".e1c", the configuration file will be decrypted using this key.
Value Range	32-byte characters
	Note
	• If an empty string is set for this parameter, decryption with this value is disabled.
Default Value	A unique value is preset to each unit.

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-byte 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-byte 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
Default Value	128

CFG_CYCLIC

Value Format	Boolean
Description	Specifies whether the unit periodically checks for updates of configuration files.

Value Range	• **Y** (Enable periodic synchronization of configuration files) • **N** (Disable periodic synchronization of configuration files)
Default Value	**N**
Web User Interface Reference	Cyclic Auto Resync (Page 149)

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 150)

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. **Note** • This setting is available only when "**CFG_CYCLIC**" is set to "**Y**".
Value Range	1–1440
Default Value	30

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

CFG_RESYNC_DURATION

Value Format	Integer
Description	Specifies the time period, in minutes, added to "`CFG_RESYNC_TIME`" to create a range within which the unit checks for updates of configuration files. The check will be performed at a random time within this range.
Value Range	0–1439
Default Value	0

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 **Note** • An empty string is not allowed.
Default Value	check-sync
Web User Interface Reference	Header Value for Resync Event (Page 150)

5.3.6 Management Server 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
Web User Interface Reference	Management Server URL (Page 151)

ACS_USER_ID

Value Format	String
Description	Specifies the user ID for the Auto-Configuration Server for using TR-069.

Value Range	Max. 255 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication ID (Page 151)

ACS_PASS

Value Format	String
Description	Specifies the user password for the Auto-Configuration Server for using TR-069.
Value Range	Max. 255 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication Password (Page 151)

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
Default Value	0001-01-01T00:00:00Z (unknown time)

CON_REQ_USER_ID

Value Format	String
Description	Specifies the username used to authenticate an ACS making a Connection Request to the CPE.
Value Range	Max. 63 characters (except ", &, ', :, <, >, and space)
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. 63 characters (except ", &, ', :, <, >, and space)
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 username 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

5.4 Network Settings

5.4.1 IP Settings

CONNECTION_TYPE

Value Format	Integer
Description	Specifies whether to assign the IP address automatically (DHCP) or manually (static). **Note** • This setting is available only when "`NW_SETTING_ENABLE`" is set to "`N`".
Value Range	• 1 (DHCP) • 0 (Static)
Default Value	1
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Web User Interface Reference	Connection Mode (Page 78)

HOST_NAME

Value Format	String
Description	Specifies the host name for the unit to send to the DHCP server. **Note** • This setting is available only when "`CONNECTION_TYPE`" is set to "`1`".
Value Range	Max. 63 characters **Note** • An empty string is not allowed. • If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name.
Default Value	{MODEL}
Web User Interface Reference	Host Name (Page 78)

DHCP_DNS_ENABLE

Value Format	Boolean
Description	Specifies whether to receive DNS server addresses automatically or to assign a DNS server addresses (up to 2) manually. **Note** • This setting is available only when "`CONNECTION_TYPE`" is set to "`1`" and when "`NW_SETTING_ENABLE`" is set to "`N`".
Value Range	• `Y` (Use "`USER_DNS1_ADDR`" or, "`USER_DNS1_ADDR`" and "`USER_DNS2_ADDR`") • `N` (Receive DNS server address automatically)
Default Value	`N`
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Web User Interface Reference	Domain Name Server (Page 79)

STATIC_IP_ADDRESS

Value Format	String
Description	Specifies the IP address for the unit. **Note** • This setting is available only when "`CONNECTION_TYPE`" is set to "`0`" and when "`NW_SETTING_ENABLE`" is set to "`N`". • When you specify this parameter, you must specify "`STATIC_SUBNET`" together in a configuration file.

Value Range	IP address in dotted-decimal notation
Default Value	Empty string
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Web User Interface Reference	Static IP Address (Page 79)

STATIC_SUBNET

Value Format	String
Description	Specifies the subnet mask for the unit. **Note** • This setting is available only when "**CONNECTION_TYPE**" is set to "**0**" and when "**NW_SETTING_ENABLE**" is set to "**N**". • When you specify this parameter, you must specify "**STATIC_IP_ADDRESS**" together in a configuration file.
Value Range	IP address in dotted-decimal notation
Default Value	Empty string
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Web User Interface Reference	Subnet Mask (Page 80)

STATIC_GATEWAY

Value Format	String
Description	Specifies the IP address of the default gateway for the network where the unit is connected. **Note** • This setting is available only when "**CONNECTION_TYPE**" is set to "**0**" and when "**NW_SETTING_ENABLE**" is set to "**N**". • When you specify this parameter, you must specify "**STATIC_IP_ADDRESS**" and "**STATIC_SUBNET**" together in a configuration file.
Value Range	IP address in dotted-decimal notation
Default Value	Empty string
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Web User Interface Reference	Default Gateway (Page 80)

USER_DNS1_ADDR

Value Format	String
Description	Specifies the IP address of the primary DNS server. **Note** • This setting is available only when "`CONNECTION_TYPE`" is set to "`0`" and when "`NW_SETTING_ENABLE`" is set to "`N`".
Value Range	IP address in dotted-decimal notation
Default Value	Empty string
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Web User Interface Reference	DNS1 (Page 80)

USER_DNS2_ADDR

Value Format	String
Description	Specifies the IP address of the secondary DNS server. **Note** • This setting is available only when "`CONNECTION_TYPE`" is set to "`0`" and when "`NW_SETTING_ENABLE`" is set to "`N`".
Value Range	IP address in dotted-decimal notation
Default Value	Empty string
Phone User Interface Reference	Configuring the Network Settings of the Unit (Page 19)
Web User Interface Reference	DNS2 (Page 81)

5.4.2 DNS Settings

DNS_QRY_PRLL

Value Format	Boolean
Description	Specifies the DNS query method as parallel or sequential.

Value Range	• **Y** (Parallel) • **N** (Sequential) **<u>Note</u>** • If set to "**Y**", the unit sends out all DNS queries at the same time. The first DNS reply will be accepted and used by the unit. • If set to "**N**", the unit sends DNS queries sequentially. The unit sends a request to the DNS server with the highest priority for a preprogrammed time period (5 seconds). When the timer expires, the unit sends a request to the DNS server with the second priority.
Default Value	**Y**

DNS_PRIORITY

Value Format	Boolean
Description	Specifies the priority of the DNS server.
Value Range	• **Y** ("**DNS1_ADDR**" and "**DNS2_ADDR**" have first priority.) • **N** ("**DNS1_ADDR**" and "**DNS2_ADDR**" have no priority.) **<u>Note</u>** • If set to "**Y**", the DNS servers specified in "**DNS1_ADDR**" and "**DNS2_ADDR**" will be queried first. If the queries fail, the DNS server specified by the user (DHCP or static) will be queried. • If set to "**N**", the DNS server specified by the user (DHCP or static) will be queried first. If the query fails, the DNS servers specified in "**DNS1_ADDR**" and "**DNS2_ADDR**" will be queried.
Default Value	**N**

DNS1_ADDR

Value Format	String
Description	Specifies the IP address of the primary DNS server for your phone system dealer.
Value Range	IP address in dotted-decimal notation
Default Value	Empty string

DNS2_ADDR

Value Format	String
Description	Specifies the IP address of the secondary DNS server for your phone system dealer.
Value Range	IP address in dotted-decimal notation

Default Value	Empty string

5.4.3 Ethernet Port Settings

VLAN_ENABLE

Value Format	Boolean
Description	Specifies whether to use the VLAN feature to perform VoIP communication securely. **Note** • This setting is available only when both "**NW_SETTING_ENABLE**" and "**IEEE8021X_ENABLE**" (KX-UT248 only) are set to "**N**".
Value Range	• **Y** (Enable) • **N** (Disable)
Default Value	**N**
Web User Interface Reference	Enable VLAN (Page 84)

VLAN_ID_IP_PHONE

Value Format	Integer
Description	Specifies the VLAN ID for this unit. **Note** • This setting is available only when both "**NW_SETTING_ENABLE**" and "**IEEE8021X_ENABLE**" (KX-UT248 only) are set to "**N**".
Value Range	1–4094
Default Value	2
Web User Interface Reference	IP Phone (VLAN ID) (Page 84)

VLAN_PRI_IP_PHONE

Value Format	Integer
Description	Specifies the priority number for the unit. **Note** • This setting is available only when both "**NW_SETTING_ENABLE**" and "**IEEE8021X_ENABLE**" (KX-UT248 only) are set to "**N**".
Value Range	0–7

Default Value	7
Web User Interface Reference	IP Phone (Priority) (Page 85)

VLAN_ID_PC

Value Format	Integer
Description	Specifies the VLAN ID for the PC. **Note** • This setting is available only when both "**NW_SETTING_ENABLE**" and "**IEEE8021X_ENABLE**" (KX-UT248 only) are set to "**N**".
Value Range	1–4094
Default Value	1
Web User Interface Reference	PC (VLAN ID) (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only) (Page 85)

VLAN_PRI_PC

Value Format	Integer
Description	Specifies the priority number for the PC. **Note** • This setting is available only when both "**NW_SETTING_ENABLE**" and "**IEEE8021X_ENABLE**" (KX-UT248 only) are set to "**N**".
Value Range	0–7
Default Value	0
Web User Interface Reference	PC (Priority) (KX-UT123/KX-UT133/KX-UT136/KX-UT248 only) (Page 85)

5.4.4 IEEE 802.1X Settings (KX-UT248 only)

IEEE8021X_ENABLE

Value Format	Boolean
Description	Selects whether to use the IEEE 802.1X protocol. **Note** • This setting is available only when "**VLAN_ENABLE**" is set to "**N**".

Value Range	• **Y** (Enable) • **N** (Disable)
Default Value	**N**
Web User Interface Reference	Enable IEEE802.1X (Page 86)

IEEE8021X_AUTH_PRTCL

Value Format	Integer
Description	Specifies the authentication method used with the IEEE 802.1X protocol. **Note** • This setting is available only when "**VLAN_ENABLE**" is set to "**N**".
Value Range	• 1 (PEAP) • 0 (EAP-MD5)
Default Value	0
Web User Interface Reference	Authentication Protocol (Page 86)

IEEE8021X_USER_ID

Value Format	String
Description	Specifies the authentication ID required for IEEE 802.1X authentication. **Note** • This setting is available only when "**VLAN_ENABLE**" is set to "**N**".
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication ID (Page 87)

IEEE8021X_USER_PASS

Value Format	String
Description	Specifies the authentication password used for IEEE 802.1X authentication. **Note** • This setting is available only when "**VLAN_ENABLE**" is set to "**N**".
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)

Default Value	Empty string
Web User Interface Reference	Authentication Password (Page 87)

5.4.5 HTTP Settings

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**

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 88)

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. 40 characters
	Note • An empty string is not allowed. • 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 88)

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_ROOT_CERTIFICATE_PATH

Value Format	String
Description	Specifies the URI of the root certificate. **Note** • Changing this setting may require restarting the unit.

Value Range	Max. 500 characters
	Note
	• The format must be RFC 1738 compliant, as follows: "\<scheme\>://\<user\>:\<password\>@\<host\>:\<port\>/\<url-path\>"
	– "\<user\>" must be less than 128 characters.
	– "\<password\>" must be less than 128 characters.
	– "\<user\>:\<password\>@" may be empty.
	– The total of "\<scheme\>://" and "\<host\>:\<port\>/\<url-path\>" must be less than 245 characters.
	– ":\<port\>" can be omitted if you do not need to specify the port number.
Default Value	Empty string

5.4.6 Time Adjust Settings

NTP_ADDR

Value Format	String
Description	Specifies the IP address or FQDN of the NTP server.
Value Range	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
Default Value	Empty string
Web User Interface Reference	NTP 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 99)

5.4.7 STUN Settings

STUN_SERV_ADDR

Value Format	String
Description	Specifies the IP address or FQDN of the STUN server.
Value Range	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
Default Value	Empty string
Web User Interface Reference	STUN Server Address (Page 90)

STUN_SERV_PORT

Value Format	Integer
Description	Specifies the port number of the STUN server.
Value Range	1–65535
Default Value	3478
Web User Interface Reference	STUN Server Port (Page 91)

STUN_2NDSERV_ADDR

Value Format	String
Description	Specifies the IP address of the secondary STUN server. **Note** • This setting is available only when "`STUN_SERV_ADDR`" is specified in IP address notation.
Value Range	IP address in dotted-decimal notation
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

5.4.8 Miscellaneous Network Settings

NW_SETTING_ENABLE

Value Format	Boolean
Description	Specifies whether to enable the network settings from the unit. **Note** • If you change this setting to "**N**" when the network settings (with the exception of "**HOST_NAME**") in **5.4.1 IP Settings** have been made through Web user interface programming, clear these settings once by performing Reset Web Settings from the Web user interface, and then change this setting to "**N**".
Value Range	• **Y** (Enable network settings) • **N** (Disable network settings)
Default Value	**Y**

CUSTOM_WEB_PAGE

Value Format	Integer
Description	Specifies whether to enable the settings in **4.3.1 Basic Network Settings** and **4.4.5 Time Adjust Settings** from the Web user interface when logged in with the User account.
Value Range	0–3 – 0: Enable "Basic Network Settings" and "Time Adjust Settings" – 1: Disable "Basic Network Settings" – 2: Disable "Time Adjust Settings" – 3: Disable "Basic Network Settings" and "Time Adjust Settings"
Default Value	0

5.4.9 LLDP-MED Settings

LLDP_ENABLE

Value Format	Integer
Description	Selects whether to enable or disable sending and receiving LLDP frames.
Value Range	• **Y**: Enable • **N**: Disable
Default Value	**Y**

LLDP_INTERVAL

Value Format	Integer
Description	Specifies the interval, in seconds, between sending each LLDP frame.
Value Range	1–3600
Default Value	30

LLDP_VLAN_ID_PC

Value Format	Integer
Description	Specifies the VLAN ID for the PC port when LLDP is on.
Value Range	0–4094
Default Value	0

LLDP_VLAN_PRI_PC

Value Format	Integer
Description	Specifies the VLAN Priority for the PC port when LLDP is on.
Value Range	0–7
Default Value	0

5.5 Telephone Settings

5.5.1 Call Control Settings

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 122)

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** • In a SIP URI, the user part ("conference" 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. • Availability depends on your phone system.
Value Range	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Conference Server URI (Page 123)

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. When this timer expires, the unit will play a busy tone.
Value Range	1–600
Default Value	30

INTDIGIT_TIM

Value Format	Integer
Description	Specifies the length of time, in seconds, within which subsequent digits of a dial number must be dialed. When this timer expires after the last key was pressed, dialing will start.
Value Range	1–15
Default Value	5
Web User Interface Reference	Inter-digit Timeout (Page 123)

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 123)

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 ("+" is deleted)
Web User Interface Reference	International Call Prefix (Page 123)

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 124)

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 124)

DEFAULT_LINE_SELECT

Value Format	Integer

Description	Specifies the line used to make an outgoing call when no line is specified in the dialing operation. **Note** The available line number varies depending on the type of the unit being used.
Value Range	1–2 (for KX-UT113/KX-UT123) 1–4 (for KX-UT133/KX-UT136) 1–6 (for KX-UT248)
Default Value	1
Web User Interface Reference	Default Line for Outgoing (Page 124)

DATA_LINE_MODE

Value Format	Boolean
Description	Specifies whether to enable sending and receiving using data line mode.
Value Range	**Y** (Enable Data Line Mode) **N** (Disable Data Line Mode)
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	Max. 4 characters (consisting of 0–9, *, and #)
Default Value	Empty string
Web User Interface Reference	Direct Call Pickup (Page 125)

TALK_PACKAGE

Value Format	Boolean
Description	Specifies whether to enable the Click to Answer/Retrieve functions. **Note** When this parameter is set to "**Y**", "talk" is added to the Allow-Events header.
Value Range	**Y** (Enable Talk Package) **N** (Disable Talk Package)
Default Value	**N**

HOLD_PACKAGE

Value Format	Boolean
Description	Specifies whether to enable the Click to Hold function. **Note** • When this parameter is set to "**Y**", "hold" is added to the Allow-Events header.
Value Range	• **Y** (Enable Hold Package) • **N** (Disable Hold Package)
Default Value	**N**

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

AUTO_ANS_RING_TIM

Value Format	Integer
Description	Specifies the number of seconds a phone in Auto Answer mode will ring before a conversation is established automatically when it receives a call.
Value Range	0–15
Default Value	5

RINGING_OFF_SETTING_ENABLE

Value Format	Boolean
Description	Specifies whether incoming call ringing can be turned off for the phone. If disabled, users cannot prevent incoming calls from ringing.
Value Range	• **Y** (Enable Ringing Off setting) • **N** (Disable Ringing Off setting)
Default Value	**Y**

AUTO_CALL_HOLD

Value Format	Boolean
Description	Selects whether calls are disconnected or held when a DN button is pressed while having a conversation.
Value Range	• `Y` (Enable Auto Call Hold) • `N` (Disable Auto Call Hold)
Default Value	`N`

REDIALKEY_CALLLOG_ENABLE

Value Format	Boolean
Description	Specifies whether the call log is displayed when the Redial button is pressed while on-hook.
Value Range	• `Y` (Displays outgoing call log by pressing the Redial button.) • `N` (Not display call log by pressing the Redial button.)
Default Value	`N`

ONHOOK_TRANSFER_ENABLE

Value Format	Boolean
Description	Specifies whether transfer operations are permitted while on-hook.
Value Range	• `Y` (Enable On-hook Transfer) • `N` (Disable On-hook Transfer)
Default Value	`Y`

DISCONNECTION_MODE

Value Format	Integer
Description	Selects the tone heard (reorder tone or busy tone) when a dial operation fails.
Value Range	1–2 – 1: Mode1 (ROT) – 2: Mode2 (BT)
Default Value	1

TONE_LEN_DISCONNECT_HANDSET

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 handset is being used.
Value Range	1–15
Default Value	10

TONE_LEN_DISCONNECT_HANDSFREE

Value Format	Integer
Description	Specifies the duration, in seconds, that a disconnect tone will be heard while in hands-free mode when the other party ends a call.
Value Range	1–15
Default Value	3

KEY_PAD_TONE

Value Format	Boolean
Description	Selects whether a tone is heard in response to key presses.
Value Range	• `Y` (Enable Key Pad Tone) • `N` (Disable Key Pad Tone)
Default Value	`Y`
Web User Interface Reference	Key Click Tone (Page 139)

HOLD_AND_CALL_ENABLE

Value Format	Boolean
Description	Specifies whether or not to enable making a call while having a call on hold.
Value Range	• `Y`: Hold and Call • `N`: Hold and Idle
Default Value	`Y`

HOLD_TRANSFER_OPERATION

Value Format	Boolean
Description	Specifies the method of transferring calls.
Value Range	• `Y`: Enable (Press the Hold button to transfer a call.) • `N`: Disable (Press the Transfer button to transfer a call.)
Default Value	`N`

5.5.2 Tone Settings

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 (0: No tone)
Default Value	350,440
Web User Interface Reference	Tone Frequencies (Page 135)

DIAL_TONE1_GAIN

Value Format	Integer
Description	Specifies the gain, in decibels, of Dial Tone 1.
Value Range	-24–6
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 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,0

Web User Interface Reference	Tone Timings (Page 136)

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 (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	-24–6
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 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,0

DIAL_TONE4_FRQ

Value Format	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 (0: No tone)
Default Value	350,440
Web User Interface Reference	Tone Frequencies (Page 138)

DIAL_TONE4_GAIN

Value Format	Integer
Description	Specifies the gain, in decibels, of Dial Tone 4 (stutter-type dial tone).
Value Range	-24–6
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 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	560,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,100,0

Web User Interface Reference	Tone Timings (Page 138)

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 (0: No tone)
Default Value	480,620
Web User Interface Reference	Tone Frequencies (Page 136)

BUSY_TONE_GAIN

Value Format	Integer
Description	Specifies the gain, in decibels, of the busy tone.
Value Range	-24–6
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 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.

Default Value	60,500,440
Web User Interface Reference	Tone Timings (Page 137)

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 (0: No tone)
Default Value	480,620
Web User Interface Reference	Tone Frequencies (Page 138)

REORDER_TONE_GAIN

Value Format	Integer
Description	Specifies the gain, in decibels, of the reorder tone.
Value Range	-24–6
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 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	60,250,190
Web User Interface Reference	Tone Timings (Page 139)

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 (0: No tone)
Default Value	440,480
Web User Interface Reference	Tone Frequencies (Page 137)

RINGBACK_TONE_GAIN

Value Format	Integer
Description	Specifies the gain, in decibels, of the ringback tone.
Value Range	-24–6
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 (0: Infinite time)
	Note
	• Avoid setting 1–50 for any of the values.
Default Value	60,2000,3940
Web User Interface Reference	Tone Timings (Page 137)

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 (0: No tone)
Default Value	425

HOLD_ALARM_GAIN

Value Format	Integer
Description	Specifies the gain, in decibels, of the hold alarm.
Value Range	-24–6
Default Value	0

HOLD_ALARM_RPT

Value Format	Integer
Description	Specifies whether the hold alarm is repeated.
Value Range	0–1 – 0: No Repeat – 1: Repeat
Default Value	1

HOLD_ALARM_TIMING

Value Format	Comma-separated Integer

Description	Specifies the pattern, in milliseconds, of the hold alarm using up to 10 whole numbers (on 1, off 1, on 2, off 2…) separated by commas.
Value Range	0–16000 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	120,14880

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 (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	-24–6
Default Value	0

CW_TONE1_RPT

Value Format	Integer
Description	Specifies whether call waiting tone 1 is repeated.
Value Range	0–1 – 0: No Repeat – 1: Repeat
Default Value	1

CW_TONE1_TIMING

Value Format	Comma-separated Integer
Description	Specifies the pattern, in milliseconds, of call waiting tone 1 using up to 10 whole numbers (on 1, off 1, on 2, off 2…) separated by commas.

Value Range	0–16000 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	120,120,120,120,120,14400

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 (0: No tone)
Default Value	425

HOLD_TONE_GAIN

Value Format	Integer
Description	Specifies the gain, in decibels, of the hold tone.
Value Range	-24–6
Default Value	0

HOLD_TONE_RPT

Value Format	Integer
Description	Specifies whether the hold tone is repeated.
Value Range	0–1 – 0: No Repeat – 1: Repeat
Default Value	1

HOLD_TONE_TIMING

Value Format	Comma-separated Integer
Description	Specifies the pattern, in milliseconds, of the hold tone 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 500 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	500,190,190,190,2890

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 (0: Infinite time) **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 (0: Infinite time) **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 (0: Infinite time) **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 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	300,200,1000,200,300,4000

BELL_CORE_PATTERN5_TIMING

Value Format	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 (0: Infinite time) **Note** • Avoid setting 1–50 for any of the values.
Default Value	500

5.5.3 Telephone Settings

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. To specify exact matching of entire numbers only, specify "0".

Value Range	0–15
Default Value	7
Web User Interface Reference	Number Matching Lower Digit (Page 140)

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. To specify exact matching of entire numbers only, specify "0".
Value Range	0–15
Default Value	10
Web User Interface Reference	Number Matching Upper Digit (Page 140)

DISPLAY_DATE_PATTERN

Value Format	Integer
Description	Selects the display order pattern for the day and month of the date.
Value Range	0–2 – 0: Not specified – 1: DDMM – 2: MMDD
Default Value	0

DISPLAY_TIME_PATTERN

Value Format	Integer
Description	Selects the display type for the time (12- or 24-hour format).
Value Range	0–2 – 0: Not specified – 1: 12H – 2: 24H
Default Value	0

DEFAULT_LANGUAGE

Value Format	String
Description	Selects the language to use for the menus and display items on the phone.

Value Range	Only the following values are available: • **en-GB** (English (UK)) • **de** (German) • **fr** (French) • **it** (Italian) • **es** (Spanish) • **nl** (Dutch) • **sv** (Swedish) • **da** (Danish) • **pt** (Portuguese) • **ru** (Russian) • **el** (Greek) • **pl** (Polish) • **cs** (Czech) • **sk** (Slovak) • **hu** (Hungarian) • **hr** (Croatian) • **uk** (Ukrainian) • **en-US** (English (US)) • **fr-CA** (French (Canadian)) • **bs** (Bosnian) • **ro** (Romanian) • **sl** (Slovene) • **sr** (Serbian) • **tr** (Turkish)
Default Value	**en-US**

EXTENSION_PIN

Value Format	String
Description	Specifies the PIN (Personal Identification Number) of the extension. This is used to lock access to the call log and phonebook list. For details, refer to the Operating Instructions on the Panasonic Web site ($\rightarrow$ see **Introduction**).
Value Range	Max. 10 digits (consisting of 0–9)
Default Value	0000000000
Web User Interface Reference	Extension PIN (Page 140)

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**

5.5.4 Miscellaneous Telephone Settings

ADJDATA_GAIN

Value Format	String
Description	Specifies the gain, in decibels, of 30 separate acoustic settings. Each setting is denoted by a 2 digit hexadecimal number. Enter the change in gain from the default value for each setting. Enter "00" if you do not want to change the setting.
Value Range	06: +6dB 05: +5dB 04: +4dB 03: +3dB 02: +2dB 01: +1dB 00: No change FF: -1dB FE: -2dB FD: -3dB FC: -4dB FB: -5dB FA: -6dB

	Note
	• It is necessary to specify 2 digits for each of the 30 acoustic settings (i.e., a total of 60 digits in succession). Even if you are not changing a value, you must enter "00". The digit order (offset) of each setting is as follows:
	  – 00 = Handset Sending Level (Wide Band)
	  – 02 = Handset Sending Level (Narrow Band)
	  – 04 = Handset Receiving Level (Wide Band)
	  – 06 = Handset Receiving Level (Narrow Band)
	  – 08 = Handset Sidetone Level (Wide Band)
	  – 10 = Handset Sidetone Level (Narrow Band)
	  – 12 = EHS Sending Level (Wide Band)
	  – 14 = EHS Sending Level (Narrow Band)
	  – 16 = EHS Receiving Level (Wide Band)
	  – 18 = EHS Receiving Level (Narrow Band)
	  – 20 = EHS Sidetone Level (Wide Band)
	  – 22 = EHS Sidetone Level (Narrow Band)
	  – 24 = Headset Sending Level (Wide Band)
	  – 26 = Headset Sending Level (Narrow Band)
	  – 28 = Headset Receiving Level (Wide Band)
	  – 30 = Headset Receiving Level (Narrow Band)
	  – 32 = Headset Sidetone Level (Wide Band)
	  – 34 = Headset Sidetone Level (Narrow Band)
	  – 36 = Reserved
	  – 38 = Reserved
	  – 40 = Reserved
	  – 42 = Reserved
	  – 44 = Reserved
	  – 46 = Reserved
	  – 48 = SP-PHONE Sending Level (Wide Band)
	  – 50 = SP-PHONE Sending Level (Narrow Band)
	  – 52 = SP-PHONE Receiving Level (Wide Band)
	  – 54 = SP-PHONE Receiving Level (Narrow Band)
	  – 56 = Reserved
	  – 58 = Ringer Volume Level
	For example, the following line in a configuration file would change the Handset Receiving Level (Wide Band) gain -3 decibels.
	ADJDATA_GAIN = "0000FD00...00"
	(… is the equivalent of fifty 0s.)

Default Value	Empty string

ADJDATA_ATT (KX-UT113/KX-UT123/KX-UT133/KX-UT136 only)

Value Format	Integer
Description	Specifies the switching parameter for using the handset to make a call.
Value Range	0: Regular parameter 1: Extended parameter

Default Value	0

5.5.5 Flexible Button Settings (KX-UT133/KX-UT136/KX-UT248 only)

FLEX_BUTTON_FACILITY_ACTx

Value Format	String
Description	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	Only the following values are available: X_PANASONIC_IPTEL_DN, X_PANASONIC_IPTEL_HEADSET, X_PANASONIC_IPTEL_CONTACT, X_PANASONIC_IPTEL_ONETOUCH, X_PANASONIC_IPTEL_ACD, X_PANASONIC_IPTEL_WRAPUP
Default Value	`X_PANASONIC_IPTEL_DN`
Web User Interface Reference	Type (No. 1–24) (Page 134)

FLEX_BUTTON_FACILITY_ARGx

Value Format	String
Description	Optional argument associated with the specified Facility Action for the flexible button. For details, see **6.3.1 Flexible Button Settings**.
Value Range	Max. 32 characters
Default Value	1
Web User Interface Reference	Parameter (No. 1–24) (Page 134)

FLEX_BUTTON_QUICK_DIALx

Value Format	String

Description	Specifies a quick dial destination number to be used for the flexible button. **Note** • If this parameter is specified, "**FLEX_BUTTON_FACILITY_ACTx**" should be an empty string. • This parameter cannot be specified via Web user interface programming. Therefore, when using Web user programming and configuration file programming in conjunction, "**FLEX_BUTTON_FACILITY_ACTx**" should be set to "**X_PANASONIC_IPTEL_ONETOUCH**".
Value Range	Max. 32 characters (consisting of 0–9, *, and #)
Default Value	Empty string

FLEX_BUTTON_LABELx

Value Format	String
Description	Specifies the message to be displayed on the screen when the flexible button is pressed.
Value Range	Max. 10 characters **Note** • You can use Unicode characters for this setting.
Default Value	**For KX-UT133/KX-UT136:** Not stored. **For KX-UT248:** No. 1: 1, No. 2: 2, No. 3: 3... No. 24: 24
Web User Interface Reference	Label Name (No. 1–24) (Page 135)

5.5.6 XML Application Settings

XMLAPP_ENABLE

Value Format	Boolean
Description	Selects whether to enable the XML application feature.
Value Range	• **Y** (The port is opened.) • **N** (The port is closed.)
Default Value	**N**
Web User Interface Reference	Enable Application (Page 93)

XMLAPP_USERID

Value Format	String

Description	Specifies the authentication ID required to access the XML application server.
Value Range	Max. 63 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication ID (Page 93)

XMLAPP_USERPASS

Value Format	String
Description	Specifies the authentication password used to access the XML application server.
Value Range	Max. 63 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication Password (Page 94)

XMLAPP_START_URL

Value Format	String
Description	Specifies the URL that is accessed when the unit starts up, to check for XML data.
Value Range	Max. 244 characters
Default Value	Empty string
Web User Interface Reference	URL (Page 142)

XMLAPP_INITIAL_URL

Value Format	String
Description	Specifies the URL that is accessed when the application is started from the unit's menu, to check for XML data.
Value Range	Max. 244 characters
Default Value	Empty string
Web User Interface Reference	URL (Page 143)

XMLAPP_INCOMING_URL

Value Format	String
Description	Specifies the URL that is accessed when the unit receives a call, to check for XML data.

Value Range	Max. 244 characters
Default Value	Empty string
Web User Interface Reference	URL (Page 143)

XMLAPP_TALKING_URL

Value Format	String
Description	Specifies the URL that is accessed when the unit is on a call, to check for XML data.
Value Range	Max. 244 characters
Default Value	Empty string
Web User Interface Reference	URL (Page 143)

XMLAPP_MAKECALL_URL

Value Format	String
Description	Specifies the URL that is accessed when the unit makes a call, to check for XML data.
Value Range	Max. 244 characters
Default Value	Empty string
Web User Interface Reference	URL (Page 143)

XMLAPP_CALLLOG_URL

Value Format	String
Description	Specifies the URL that is accessed when the call log is accessed, to check for XML data.
Value Range	Max. 244 characters
Default Value	Empty string
Web User Interface Reference	URL (Page 144)

XMLAPP_IDLING_URL

Value Format	String
Description	Specifies the URL that is accessed when the unit is idle, to check for XML data.
Value Range	Max. 244 characters
Default Value	Empty string

Web User Interface Reference	URL (Page 144)

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. 244 characters
Default Value	Empty string
Web User Interface Reference	URL (Page 144)

XMLAPP_LDAP_USERID

Value Format	String
Description	Specifies the authentication ID required to access the network phonebook server.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication ID (Page 144)

XMLAPP_LDAP_USERPASS

Value Format	String
Description	Specifies the authentication password used to access the networkphonebook server.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication Password (Page 145)

XML_INITIATE_KEY_SOFT1

Value Format	Boolean
Description	Specifies whether to activate the XML application or operate normally when the corresponding button is pressed during standby mode.
Value Range	**Y**: Activate XML application **N**: Normal operation
Default Value	**N**

XML_INITIATE_KEY_SOFT2

Value Format	Boolean
Description	Specifies whether to activate the XML application or operate normally when the corresponding button is pressed during standby mode.
Value Range	Y: Activate XML application N: Normal operation
Default Value	N

XML_INITIATE_KEY_SOFT3

Value Format	Boolean
Description	Specifies whether to activate the XML application or operate normally when the corresponding button is pressed during standby mode.
Value Range	Y: Activate XML application N: Normal operation
Default Value	N

XML_INITIATE_KEY_SOFT4

Value Format	Boolean
Description	Specifies whether to activate the XML application or operate normally when the corresponding button is pressed during standby mode.
Value Range	Y: Activate XML application N: Normal operation
Default Value	N

XML_INITIATE_KEY_FWDDND

Value Format	Boolean
Description	Specifies whether to activate the XML application or operate normally when the corresponding button is pressed during standby mode.
Value Range	Y: Activate XML application N: Normal operation
Default Value	N

XML_INITIATE_KEY_FLASH

Value Format	Boolean

Description	Specifies whether to activate the XML application or operate normally when the corresponding button is pressed during standby mode.
Value Range	`Y`: Activate XML application `N`: Normal operation
Default Value	`N`

XML_ERROR_INFORMATION

Value Format	Boolean
Description	Specifies whether to display an error when an error occurs while operating an XML application.
Value Range	`Y`: Error displayed `N`: Error not displayed
Default Value	`Y`

XML_HTTPD_PORT

Value Format	Integer
Description	Specifies the destination port number for XML feature connection requests.
Value Range	1024-49151
Default Value	6666

5.6 VoIP Settings

5.6.1 Codec Settings

CODEC_G711_REQ

Value Format	Integer
Description	Specifies whether to set "`PCMU`" as a codec selection automatically when the codec is set to any codec selection other than "`PCMU`".
Value Range	• 0 (Do not set "`PCMU`") • 1 (Set "`PCMU`")
Default Value	1

CODEC_G729_PARAM

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`, `CODEC_ENABLEx_2`, …, `CODEC_ENABLEx_6`
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
	  – `2`: G.726-32
	  – `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	• G722 (Enable) (Page 119) • PCMA (Enable) (Page 120) • G726–32 (Enable) (Page 120) • G729A (Enable) (Page 120) • PCMU (Enable) (Page 121)

CODEC_PRIORITYx_n

Parameter Name Example	`CODEC_PRIORITYx_1`, `CODEC_PRIORITYx_2`, …, `CODEC_PRIORITYx_6`
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
	– **2**: G.726-32
	– **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	• G722 (Priority) (Page 119)
	• PCMA (Priority) (Page 120)
	• G726–32 (Priority) (Page 120)
	• G729A (Priority) (Page 121)
	• PCMU (Priority) (Page 121)

5.6.2 RTP Settings

DSCP_RTP_n

Parameter Name Example	**DSCP_RTP_1**, **DSCP_RTP_2**, …, **DSCP_RTP_6**
Value Format	Integer
Description	Selects 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 116)

DSCP_RTCP_n

Parameter Name Example	**DSCP_RTCP_1**, **DSCP_RTCP_2**, …, **DSCP_RTCP_6**
Value Format	Integer
Description	Selects the DSCP level of DiffServ applied to RTCP packets.
Value Range	0–63
Default Value	0
Web User Interface Reference	RTCP Packet QoS (DSCP) (Page 116)

RTCP_INTVL_n

Parameter Name Example	**RTCP_INTVL_1**, **RTCP_INTVL_2**, …, **RTCP_INTVL_6**
Value Format	Integer
Description	Specifies the interval, in seconds, between RTCP packets.
Value Range	5–65535
Default Value	5
Web User Interface Reference	RTCP Interval (Page 117)

MAX_DELAY_n

Parameter Name Example	**MAX_DELAY_1**, **MAX_DELAY_2**, …, **MAX_DELAY_6**
Value Format	Integer
Description	Specifies the maximum delay, in 10-millisecond units, of the jitter buffer.

Value Range	3–50 ($\times$ 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
Web User Interface Reference	Maximum Delay (Page 117)

MIN_DELAY_n

Parameter Name Example	**MIN_DELAY_1**, **MIN_DELAY_2**, …, **MIN_DELAY_6**
Value Format	Integer
Description	Specifies the minimum delay, in 10-millisecond units, of the jitter buffer.

Value Range	1 or 2 ($\times$ 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
Web User Interface Reference	Minimum Delay (Page 117)

NOM_DELAY_n

Parameter Name Example	`NOM_DELAY_1`, `NOM_DELAY_2`, …, `NOM_DELAY_6`
Value Format	Integer
Description	Specifies the initial delay, in 10-millisecond units, of the jitter buffer.

Value Range	1–7 ($\times$ 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	2
Web User Interface Reference	Initial Delay (Page 118)

RTP_PORT_MIN

Value Format	Integer
Description	Specifies the lowest port number that the unit will use for RTP packets. **Note** • If port numbers are specified in **[Channel 1–25]** in **4.3.6.3 External RTP Port** in the Web user interface, this setting is ignored and the corresponding external RTP port is enabled.
Value Range	1024–48750 (even number only) **Note** • The value for this setting must be less than or equal to "`RTP_PORT_MAX`" - 400. • Changing this setting may affect the number of simultaneous calls that can be made. Therefore, when setting this parameter, be aware that the maximum number of necessary ports can be calculated as shown below: No. of lines $\times$ No. of channels $\times$ 2 $\times$ 10 (No. of terminals)
Default Value	16000
Web User Interface Reference	Minimum RTP Port Number (Page 114)

RTP_PORT_MAX

Value Format	Integer

Description	Specifies the highest port number that the unit will use for RTP packets. **Note** • If port numbers are specified in **[Channel 1–25]** in **4.3.6.3 External RTP Port** in the Web user interface, this setting is ignored and the corresponding external RTP port is enabled.
Value Range	1424–49150 (even number only) **Note** • The value for this setting must be greater than or equal to "`RTP_PORT_MIN`" + 400. • Changing this setting may affect the number of simultaneous calls that can be made. Therefore, when setting this parameter, be aware that the maximum number of necessary ports can be calculated as shown below: No. of lines × No. of channels × 2 × 10 (No. of terminals)
Default Value	20000
Web User Interface Reference	Maximum RTP Port Number (Page 115)

RTP_PTIME

Value Format	Integer
Description	Specifies the interval, in milliseconds, between transmissions of RTP packets.
Value Range	• 20 • 30 • 40
Default Value	20
Web User Interface Reference	RTP Packet Time (Page 114)

RTCP_ENABLE_n

Parameter Name Example	`RTCP_ENABLE_1`, `RTCP_ENABLE_2`, …, `RTCP_ENABLE_6`
Value Format	Boolean
Description	Selects 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	RTCP Enable (Page 117)

RTCP_SEND_BY_SDP_n

Parameter Name Example	`RTCP_SEND_BY_SDP_1`, `RTCP_SEND_BY_SDP_2`, …, `RTCP_SEND_BY_SDP_6`
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`, `RTP_CLOSE_ENABLE_2`, …, `RTP_CLOSE_ENABLE_6`
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	`Y`

5.6.3 Miscellaneous VoIP Settings

OUTBANDDTMF_n

Parameter Name Example	`OUTBANDDTMF_1`, `OUTBANDDTMF_2`, …, `OUTBANDDTMF_6`
Value Format	Boolean
Description	Specifies the method for transmitting DTMF tones.
Value Range	• `Y` (Outband [use telephone-event]) • `N` (Inband) **Note** • If set to "`Y`", DTMF tones will be sent through SDP, compliant with RFC 2833. • If set to "`N`", DTMF tones will be encoded in the RTP stream.
Default Value	`Y`
Web User Interface Reference	DTMF Type (Page 118)

DTMF_RELAY_n

Parameter Name Example	`DTMF_RELAY_1`, `DTMF_RELAY_2`, …, `DTMF_RELAY_6`
Value Format	Boolean
Description	Selects whether DTMF tones are sent in the SIP INFO message.
Value Range	• `Y` • `N` **Note** • If set to "`Y`", DTMF tones will be sent in the SIP INFO message. • If set to "`N`", the method selected in "`OUTBANDDTMF_n`" will be used.
Default Value	`N`
Web User Interface Reference	DTMF Relay (Page 118)

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

TELEVENT_PAYLOAD

Value Format	Integer
Description	Specifies the RFC 2833 payload type for DTMF tones. **Note** • This setting is available only when "`OUTBANDDTMF_n`" is set to "`Y`".
Value Range	96–127
Default Value	101

Web User Interface Reference	Telephone-event Payload Type (Page 115)

RFC2543_HOLD_ENABLE_n

Parameter Name Example	`RFC2543_HOLD_ENABLE_1`, `RFC2543_HOLD_ENABLE_2`, …, `RFC2543_HOLD_ENABLE_6`
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	Supports RFC 2543 (c=0.0.0.0) (Page 119)

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

5.7 Line Settings

5.7.1 Call Control Settings

DISPLAY_NAME_n

Parameter Name Example	`DISPLAY_NAME_1`, `DISPLAY_NAME_2`, …, `DISPLAY_NAME_6`
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 126)

VM_NUMBER_n

Parameter Name Example	`VM_NUMBER_1`, `VM_NUMBER_2`, …, `VM_NUMBER_6`
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 126)

DIAL_PLAN_n

Parameter Name Example	`DIAL_PLAN_1`, `DIAL_PLAN_2`, …, `DIAL_PLAN_6`
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. 500 characters
Default Value	Empty string
Web User Interface Reference	Dial Plan (max 1000 columns) (Page 128)

DIAL_PLAN_NOT_MATCH_ENABLE_n

Parameter Name Example	`DIAL_PLAN_NOT_MATCH_ENABLE_1`, `DIAL_PLAN_NOT_MATCH_ENABLE_2`, …, `DIAL_PLAN_NOT_MATCH_ENABLE_6`
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 128)

SHARED_CALL_ENABLE_n

Parameter Name Example	`SHARED_CALL_ENABLE_1`, `SHARED_CALL_ENABLE_2`, …, `SHARED_CALL_ENABLE_6`
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** • You cannot set both "`SHARED_CALL_ENABLE_n`" and "`FWD_DND_SYNCHRO_ENABLE_n`" to "`Y`" at the same time. • 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`
Web User Interface Reference	Enable Shared Call (Page 127)

FWD_DND_SYNCHRO_ENABLE_n

Parameter Name Example	`FWD_DND_SYNCHRO_ENABLE_1`, `FWD_DND_SYNCHRO_ENABLE_2`, …, `FWD_DND_SYNCHRO_ENABLE_6`
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. **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. • You cannot set both "`SHARED_CALL_ENABLE_n`" and "`FWD_DND_SYNCHRO_ENABLE_n`" to "`Y`" at the same time.
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	Synchronize Do Not Disturb and Call Forward (Page 127)

RESOURCELIST_URI_n

Parameter Name Example	`RESOURCELIST_URI_1`, `RESOURCELIST_URI_2`, …, `RESOURCELIST_URI_6`
Value Format	String
Description	Specifies the Uniform Resource Identifier string for the resource list, which consists of "sip:", a user part, the "@" symbol, and a host part, for example, "sip:user@example.com". For details, refer to RFC 4662. **Note** • 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. • When the BLF feature is assigned to a flexible button, it may be necessary to specify this parameter depending on your phone system. For details about flexible buttons, see **6.3 Flexible Buttons (KX-UT133/KX-UT136/KX-UT248 only)**.
Value Range	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Resource List URI (Page 128)

CW_ENABLE_n

Parameter Name Example	**CW_ENABLE_1**, **CW_ENABLE_2**, …, **CW_ENABLE_6**
Value Format	Boolean
Description	Specifies whether automatic call waiting is enabled.
Value Range	• **Y** (Enable Call Waiting) • **N** (Disable Call Waiting)
Default Value	**Y**

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**

FLASH_RECALL_TERMINATE

Value Format	Boolean
Description	Selects the function of the FLASH/RECALL button during a conversation.
Value Range	• **Y** (Terminate) • **N** (EFA)
Default Value	**Y**
Web User Interface Reference	Flash/Recall Button (Page 124)

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**
Web User Interface Reference	Flash Hook Event (Page 125)

VOICE_MESSAGE_AVAILABLE

Value Format	Boolean
Description	Selects 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**

HOLD_SOUND_PATH_n

Parameter Name Example	**HOLD_SOUND_PATH_1**, **HOLD_SOUND_PATH_2**, …, **HOLD_SOUND_PATH_6**
Value Format	Integer

Description	Selects 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**
	    — **HOLD_TONE_RPT**
	    — **HOLD_TONE_TIMING**

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

5.7.2 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. 40 characters
	Note • An empty string is not allowed. • 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	SIP User Agent (Page 104)

PHONE_NUMBER_n

Parameter Name Example	**PHONE_NUMBER_1**, **PHONE_NUMBER_2**, …, **PHONE_NUMBER_6**
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 105)

SIP_URI_n

Parameter Name Example	**SIP_URI_1**, **SIP_URI_2**, …, **SIP_URI_6**
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". **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. 195 characters (except ", &, ', :, ;, <, >, and space)

Default Value	Empty string
Web User Interface Reference	SIP URI (Page 106)

LINE_ENABLE_n

Parameter Name Example	`LINE_ENABLE_1`, `LINE_ENABLE_2`, …, `LINE_ENABLE_6`
Value Format	String
Description	Specifies whether a line is enabled or disabled. **Note** • Even when this parameter is enabled, if the "`PROFILE_ENABLEn`" parameter is disabled, the line will be disabled.
Value Range	• `Disabled` • `Enabled`
Default Value	`Enabled`

PROFILE_ENABLEn

Parameter Name Example	`PROFILE_ENABLE1`, `PROFILE_ENABLE2`, …, `PROFILE_ENABLE6`
Value Format	String
Description	Specifies whether a line is enabled or disabled. **Note** • Even when this parameter is enabled, if the "`LINE_ENABLE_n`" parameter is disabled, the line will be disabled.
Value Range	• `Disabled` • `Enabled`
Default Value	`Enabled`

SIP_AUTHID_n

Parameter Name Example	`SIP_AUTHID_1`, `SIP_AUTHID_2`, …, `SIP_AUTHID_6`
Value Format	String
Description	Specifies the authentication ID required to access the SIP server.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication ID (Page 108)

SIP_PASS_n

Parameter Name Example	SIP_PASS_1, SIP_PASS_2, …, SIP_PASS_6
Value Format	String
Description	Specifies the authentication password used to access the SIP server.
Value Range	Max. 127 characters (except ", &, ', :, <, >, and space)
Default Value	Empty string
Web User Interface Reference	Authentication Password (Page 109)

SIP_SRC_PORT_n

Parameter Name Example	SIP_SRC_PORT_1, SIP_SRC_PORT_2, …, SIP_SRC_PORT_6
Value Format	Integer
Description	Specifies the source port number used by the unit for SIP communication.
Value Range	1024–49151 **Note** • The SIP port number for each line must be unique.
Default Value	5060 (for SIP_SRC_PORT_1) 5070 (for SIP_SRC_PORT_2) 5080 (for SIP_SRC_PORT_3) 5090 (for SIP_SRC_PORT_4) 5100 (for SIP_SRC_PORT_5) 5110 (for SIP_SRC_PORT_6)
Web User Interface Reference	Source Port (Page 108)

SIP_PRXY_ADDR_n

Parameter Name Example	SIP_PRXY_ADDR_1, SIP_PRXY_ADDR_2, …, SIP_PRXY_ADDR_6
Value Format	String
Description	Specifies the IP address or FQDN of the SIP proxy server.
Value Range	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
Default Value	Empty string
Web User Interface Reference	Proxy Server Address (Page 106)

SIP_PRXY_PORT_n

Parameter Name Example	SIP_PRXY_PORT_1, SIP_PRXY_PORT_2, …, SIP_PRXY_PORT_6

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 107)

SIP_RGSTR_ADDR_n

Parameter Name Example	`SIP_RGSTR_ADDR_1`, `SIP_RGSTR_ADDR_2`, …, `SIP_RGSTR_ADDR_6`
Value Format	String
Description	Specifies the IP address or FQDN of the SIP registrar server.
Value Range	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
Default Value	Empty string
Web User Interface Reference	Registrar Server Address (Page 106)

SIP_RGSTR_PORT_n

Parameter Name Example	`SIP_RGSTR_PORT_1`, `SIP_RGSTR_PORT_2`, …, `SIP_RGSTR_PORT_6`
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 106)

SIP_SVCDOMAIN_n

Parameter Name Example	`SIP_SVCDOMAIN_1`, `SIP_SVCDOMAIN_2`, …, `SIP_SVCDOMAIN_6`
Value Format	String
Description	Specifies the domain name provided by your phone system dealer. The domain name is the part of the SIP URI that comes after the "@" symbol.
Value Range	Max. 127 characters
Default Value	Empty string
Web User Interface Reference	Service Domain (Page 108)

REG_EXPIRE_TIME_n

Parameter Name Example	`REG_EXPIRE_TIME_1`, `REG_EXPIRE_TIME_2`, …, `REG_EXPIRE_TIME_6`
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

REG_INTERVAL_RATE_n

Parameter Name Example	`REG_INTERVAL_RATE_1`, `REG_INTERVAL_RATE_2`, …, `REG_INTERVAL_RATE_6`
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	90

SIP_SESSION_TIME_n

Parameter Name Example	`SIP_SESSION_TIME_1`, `SIP_SESSION_TIME_2`, …, `SIP_SESSION_TIME_6`
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	Supports Session Timer (RFC 4028) (Page 112)

SIP_SESSION_METHOD_n

Parameter Name Example	`SIP_SESSION_METHOD_1`, `SIP_SESSION_METHOD_2`, …, `SIP_SESSION_METHOD_6`
Value Format	Integer
Description	Selects the refreshing method of SIP sessions.

Value Range	0–2
	− 0: reINVITE
	− 1: UPDATE
	− 2: AUTO
Default Value	0

DSCP_SIP_n

Parameter Name Example	`DSCP_SIP_1`, `DSCP_SIP_2`, …, `DSCP_SIP_6`
Value Format	Integer
Description	Selects 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 112)

SIP_2NDPROXY_ADDR_n

Parameter Name Example	`SIP_2NDPROXY_ADDR_1`, `SIP_2NDPROXY_ADDR_2`, …, `SIP_2NDPROXY_ADDR_6`
Value Format	String
Description	Specifies the IP address of the secondary SIP proxy server. **Note** • This setting is available only when "`SIP_PRXY_ADDR_n`" is specified in IP address notation.
Value Range	IP address in dotted-decimal notation
Default Value	Empty string

SIP_2NDPROXY_PORT_n

Parameter Name Example	`SIP_2NDPROXY_PORT_1`, `SIP_2NDPROXY_PORT_2`, …, `SIP_2NDPROXY_PORT_6`
Value Format	Integer
Description	Specifies the port number to use for communication with the secondary SIP proxy server.
Value Range	1–65535
Default Value	5060

SIP_2NDRGSTR_ADDR_n

Parameter Name Example	`SIP_2NDRGSTR_ADDR_1`, `SIP_2NDRGSTR_ADDR_2`, …, `SIP_2NDRGSTR_ADDR_6`
Value Format	String
Description	Specifies the IP address of the secondary SIP registrar server. **Note** • This setting is available only when "`SIP_RGSTR_ADDR_n`" is specified in IP address notation.
Value Range	IP address in dotted-decimal notation
Default Value	Empty string

SIP_2NDRGSTR_PORT_n

Parameter Name Example	`SIP_2NDRGSTR_PORT_1`, `SIP_2NDRGSTR_PORT_2`, …, `SIP_2NDRGSTR_PORT_6`
Value Format	Integer
Description	Specifies the port number to use for communication with the secondary SIP registrar server.
Value Range	1–65535
Default Value	5060

SIP_TIMER_T1_n

Parameter Name Example	`SIP_TIMER_T1_1`, `SIP_TIMER_T1_2`, …, `SIP_TIMER_T1_6`
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 110)

SIP_TIMER_T2_n

Parameter Name Example	`SIP_TIMER_T2_1`, `SIP_TIMER_T2_2`, …, `SIP_TIMER_T2_6`
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 110)

SIP_TIMER_T4_n

Parameter Name Example	`SIP_TIMER_T4_1`, `SIP_TIMER_T4_2`, …, `SIP_TIMER_T4_6`
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	0

SIP_FOVR_NORSP_n

Parameter Name Example	`SIP_FOVR_NORSP_1`, `SIP_FOVR_NORSP_2`, …, `SIP_FOVR_NORSP_6`
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`, `SIP_FOVR_MAX_2`, …, `SIP_FOVR_MAX_6`
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_REFRESHER_n

Parameter Name Example	`SIP_REFRESHER_1`, `SIP_REFRESHER_2`, …, `SIP_REFRESHER_6`
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

SIP_DNSSRV_ENA_n

Parameter Name Example	`SIP_DNSSRV_ENA_1`, `SIP_DNSSRV_ENA_2`, …, `SIP_DNSSRV_ENA_6`
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 109)

SIP_UDP_SRV_PREFIX_n

Parameter Name Example	`SIP_UDP_SRV_PREFIX_1`, `SIP_UDP_SRV_PREFIX_2`, …, `SIP_UDP_SRV_PREFIX_6`
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 109)

SIP_TCP_SRV_PREFIX_n

Parameter Name Example	`SIP_TCP_SRV_PREFIX_1`, `SIP_TCP_SRV_PREFIX_2`, …, `SIP_TCP_SRV_PREFIX_6`
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 110)

SIP_100REL_ENABLE_n

Parameter Name Example	`SIP_100REL_ENABLE_1`, `SIP_100REL_ENABLE_2`, …, `SIP_100REL_ENABLE_6`
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	**N**
Web User Interface Reference	Supports 100rel (RFC 3262) (Page 112)

SIP_INVITE_EXPIRE_n

Parameter Name Example	**SIP_INVITE_EXPIRE_1**, **SIP_INVITE_EXPIRE_2**, …, **SIP_INVITE_EXPIRE_6**
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_18X_RTX_INTVL_n

Parameter Name Example	**SIP_18X_RTX_INTVL_1**, **SIP_18X_RTX_INTVL_2**, …, **SIP_18X_RTX_INTVL_6**
Value Format	Integer
Description	Specifies the retransmission interval, in seconds, for "18x" responses.
Value Range	0, 1–600 (0: Disable)
Default Value	0

SIP_PRSNC_ADDR_n

Parameter Name Example	**SIP_PRSNC_ADDR_1**, **SIP_PRSNC_ADDR_2**, …, **SIP_PRSNC_ADDR_6**
Value Format	String
Description	Specifies the IP address or FQDN of the SIP presence server.
Value Range	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
Default Value	Empty string
Web User Interface Reference	Presence Server Address (Page 107)

SIP_PRSNC_PORT_n

Parameter Name Example	`SIP_PRSNC_PORT_1`, `SIP_PRSNC_PORT_2`, …, `SIP_PRSNC_PORT_6`
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 107)

SIP_2NDPRSNC_ADDR_n

Parameter Name Example	`SIP_2NDPRSNC_ADDR_1`, `SIP_2NDPRSNC_ADDR_2`, …, `SIP_2NDPRSNC_ADDR_6`
Value Format	String
Description	Specifies the IP address of the secondary presence server. **Note** • This setting is available only when "`SIP_PRSNC_ADDR_n`" is specified in IP address notation.
Value Range	IP address in dotted-decimal notation
Default Value	Empty string

SIP_2NDPRSNC_PORT_n

Parameter Name Example	`SIP_2NDPRSNC_PORT_1`, `SIP_2NDPRSNC_PORT_2`, …, `SIP_2NDPRSNC_PORT_6`
Value Format	Integer
Description	Specifies the port number to use for communication with the secondary SIP presence server.
Value Range	1–65535
Default Value	5060

USE_DEL_REG_OPEN_n

Parameter Name Example	`USE_DEL_REG_OPEN_1`, `USE_DEL_REG_OPEN_2`, …, `USE_DEL_REG_OPEN_6`
Value Format	Boolean
Description	Specifies whether to enable cancelation before registration when, for example, the unit is turned on.

Value Range	• **Y** (Enable cancelation before registration) • **N** (Disable cancelation before registration)
Default Value	**N**

USE_DEL_REG_CLOSE_n

Parameter Name Example	**USE_DEL_REG_CLOSE_1**, **USE_DEL_REG_CLOSE_2**, …, **USE_DEL_REG_CLOSE_6**
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** (Enable registration cancelation before shutting down) • **N** (Disable registration cancelation before shutting down) **Note** • If set to "**Y**", registration cancelation is enabled. • If set to "**N**", registration cancelation is disabled even when the SIP stack is shutting down.
Default Value	**N**

PORT_PUNCH_INTVL_n

Parameter Name Example	**PORT_PUNCH_INTVL_1**, **PORT_PUNCH_INTVL_2**, …, **PORT_PUNCH_INTVL_6**
Value Format	Integer
Description	Specifies the interval, in seconds, between transmissions of the Keep Alive packet to the unit in order to maintain the NAT binding information. **Note** • This setting is available only when "**SIP_TRANSPORT_n**" is set to "0" for UDP.
Value Range	0, 10–300 (0: Disable)
Default Value	0
Web User Interface Reference	Keep Alive Interval (Page 113)

SIP_ADD_RPORT_n

Parameter Name Example	**SIP_ADD_RPORT_1**, **SIP_ADD_RPORT_2**, …, **SIP_ADD_RPORT_6**
Value Format	Boolean
Description	Selects whether to add the 'rport' parameter to the top Via header field value of requests generated. For details, refer to RFC 3581.

Value Range	• **Y** (Add Rport [RFC 3581])
	• **N** (Do not add Rport [RFC 3581])
Default Value	**N**
Web User Interface Reference	Supports Rport (RFC 3581) (Page 113)

SIP_REQURI_PORT_n

Parameter Name Example	**SIP_REQURI_PORT_1**, **SIP_REQURI_PORT_2**, …, **SIP_REQURI_PORT_6**
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**

SIP_SUBS_EXPIRE_n

Parameter Name Example	**SIP_SUBS_EXPIRE_1**, **SIP_SUBS_EXPIRE_2**, …, **SIP_SUBS_EXPIRE_6**
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_RTX_INTVL_n

Parameter Name Example	**SUB_RTX_INTVL_1**, **SUB_RTX_INTVL_2**, …, **SUB_RTX_INTVL_6**
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	10–86400
Default Value	10

REG_RTX_INTVL_n

Parameter Name Example	`REG_RTX_INTVL_1`, `REG_RTX_INTVL_2`, …, `REG_RTX_INTVL_6`
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	10–86400
Default Value	10

SIP_P_PREFERRED_ID_n

Parameter Name Example	`SIP_P_PREFERRED_ID_1`, `SIP_P_PREFERRED_ID_2`, …, `SIP_P_PREFERRED_ID_6`
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`, `SIP_PRIVACY_2`, …, `SIP_PRIVACY_6`
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`, `ADD_USER_PHONE_2`, …, `ADD_USER_PHONE_6`
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`

SDP_USER_ID_n

Parameter Name Example	`SDP_USER_ID_1`, `SDP_USER_ID_2`, …, `SDP_USER_ID_6`
Value Format	String
Description	Specifies the user ID used in the "o=" line field of SDP.
Value Range	Max. 32 characters (except ", &, ', :, <, >, and space)
Default Value	-

SUB_INTERVAL_RATE_n

Parameter Name Example	`SUB_INTERVAL_RATE_1`, `SUB_INTERVAL_RATE_2`, …, `SUB_INTERVAL_RATE_6`
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	90

SIP_OUTPROXY_ADDR_n

Parameter Name Example	`SIP_OUTPROXY_ADDR_1`, `SIP_OUTPROXY_ADDR_2`, …, `SIP_OUTPROXY_ADDR_6`
Value Format	String

Description	Specifies the IP address or FQDN of the SIP outbound proxy server.
Value Range	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
Default Value	Empty string
Web User Interface Reference	Outbound Proxy Server Address (Page 107)

SIP_OUTPROXY_PORT_n

Parameter Name Example	`SIP_OUTPROXY_PORT_1`, `SIP_OUTPROXY_PORT_2`, …, `SIP_OUTPROXY_PORT_6`
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 107)

SIP_TRANSPORT_n

Parameter Name Example	`SIP_TRANSPORT_1`, `SIP_TRANSPORT_2`, …, `SIP_TRANSPORT_6`
Value Format	Integer
Description	Specifies which transport layer protocol to use for sending SIP packets.
Value Range	• 0 (UDP) • 1 (TCP)
Default Value	0
Web User Interface Reference	Transport Protocol (Page 110)

SIP_ANM_DISPNAME_n

Parameter Name Example	`SIP_ANM_DISPNAME_1`, `SIP_ANM_DISPNAME_2`, …, `SIP_ANM_DISPNAME_6`
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, SIP_ANM_USERNAME_2, …, SIP_ANM_USERNAME_6
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, SIP_ANM_HOSTNAME_2, …, SIP_ANM_HOSTNAME_6
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, SIP_DETECT_SSAF_2, …, SIP_DETECT_SSAF_6
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 **5.7.2 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 113)

SIP_RCV_DET_HEADER_n

Parameter Name Example	`SIP_RCV_DET_HEADER_1`, `SIP_RCV_DET_HEADER_2`, …, `SIP_RCV_DET_HEADER_6`
Value Format	Boolean
Description	Specifies whether to check the username 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 username part of the SIP URI in the "To" header.

Default Value	`N`

SIP_CONTACT_ON_ACK_n

Parameter Name Example	`SIP_CONTACT_ON_ACK_1`, `SIP_CONTACT_ON_ACK_2`, …, `SIP_CONTACT_ON_ACK_6`
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`

SIP_TIMER_B_n

Parameter Name Example	`SIP_TIMER_B_1`, `SIP_TIMER_B_2`, …, `SIP_TIMER_B_6`
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
Web User Interface Reference	Timer B (Page 111)

SIP_TIMER_D_n

Parameter Name Example	`SIP_TIMER_D_1`, `SIP_TIMER_D_2`, …, `SIP_TIMER_D_6`

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
Web User Interface Reference	Timer D (Page 111)

SIP_TIMER_F_n

Parameter Name Example	`SIP_TIMER_F_1`, `SIP_TIMER_F_2`, …, `SIP_TIMER_F_6`
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
Web User Interface Reference	Timer F (Page 111)

SIP_TIMER_H_n

Parameter Name Example	`SIP_TIMER_H_1`, `SIP_TIMER_H_2`, …, `SIP_TIMER_H_6`
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
Web User Interface Reference	Timer H (Page 111)

SIP_TIMER_J_n

Parameter Name Example	`SIP_TIMER_J_1`, `SIP_TIMER_J_2`, …, `SIP_TIMER_J_6`
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
Web User Interface Reference	Timer J (Page 112)

ADD_TRANSPORT_UDP_n

Parameter Name Example	`ADD_TRANSPORT_UDP_1`, `ADD_TRANSPORT_UDP_2`, …, `ADD_TRANSPORT_UDP_6`
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`

ADD_EXPIRES_HEADER_n

Parameter Name Example	`ADD_EXPIRES_HEADER_1`, `ADD_EXPIRES_HEADER_2`, …, `ADD_EXPIRES_HEADER_6`
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	`Y`

SIP_HOLD_HOLDRECEIVE_n

Parameter Name Example	`SIP_HOLD_HOLDRECEIVE_1`, `SIP_HOLD_HOLDRECEIVE_2`, …, `SIP_HOLD_HOLDRECEIVE_6`
Value Format	Boolean
Description	Specifies whether to allow re-INVITE for calls on hold.
Value Range	• `Y` (Enable SIP Hold Receive) • `N` (Disable SIP Hold Receive)
Default Value	`Y`

SIP_ADD_DIVERSION_n

Parameter Name Example	`SIP_ADD_DIVERSION_1`, `SIP_ADD_DIVERSION_2`, …, `SIP_ADD_DIVERSION_6`
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	1

SIP_RESPONSE_CODE_DND

Value Format	Integer
Description	Selects 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	Selects the response code when a call is rejected.
Value Range	400–699
Default Value	603

SIP_FOVR_MODE_n

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

Value Format	Integer
Description	Specifies the number of transmission times for the REGISTER method at the Failover destination.
Value Range	0–10
Default Value	0

SIP_ADD_ROUTE_n

Value Format	Boolean
Description	Specifies whether or not to add Route headers when setting OutBoundProxy. **<u>Note</u>** • 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_403_REG_SUB_RTX_n

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 an INVITE or SUBSCRIBE.
Value Range	• `Y` (Send) • `N` (Do not send)
Default Value	`N`

Section 6

Useful Telephone Functions

This section explains phone number settings, dial plan, and 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.

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.
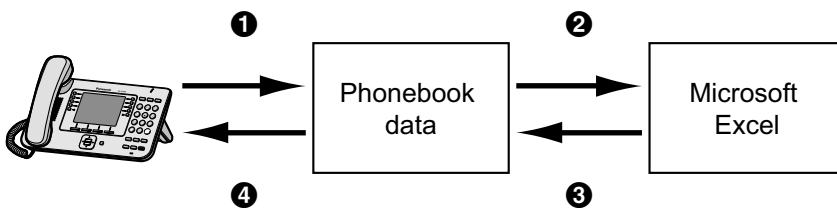
Importing Address Book Data from a PC

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**.
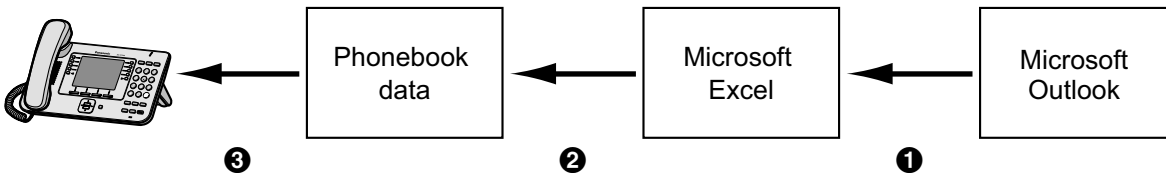
Backing up Phonebook Data

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.
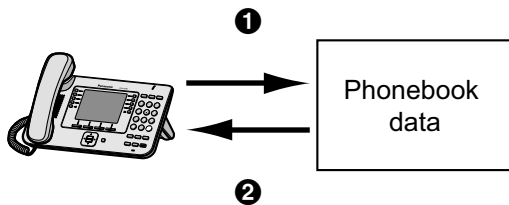
Importing the Same Phonebook Data to other Units

You can export the phonebook data created on a unit to a PC, and then import it into other units.
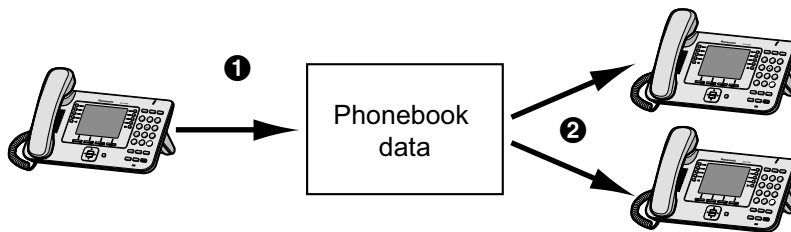
You can also import phonebook data created on a PC to other units.
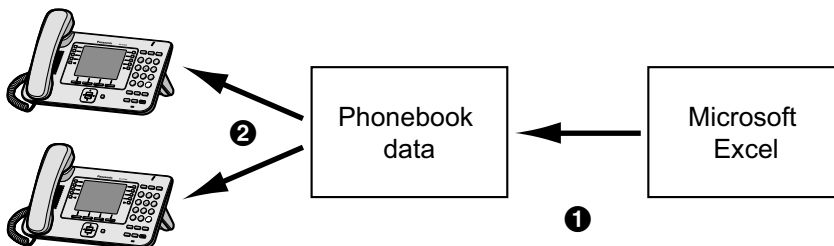
Import/Export File Format

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> nickname <TAB> phone number <TAB> phone number <TAB> phone number <TAB> phone number <TAB> phone number <TAB> ringtone <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	❷	❸	❹	❺	❻	❼	❽	❾	❿	⓫	⓬	⓭	⓮	⓯	⓰	⓱
1		Aaron MacDowel				501		1234001								3
2		Barbara Nicolls				502		1234002								3
3		Carl O'Brien				503		1234003								3
4		Dorothy Parker						1234004								5
....		....		....		....		....		....		....		....		....
....		....		....		....		....		....		....		....		....

❶ Record ID (Unique ID: 1–65535)
❷ Tab
❸ Name (up to 24 characters)
❹ Tab
❺ Nick name (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 Ringtone (1–32)

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 100 (for the KX-UT113)/500 (for the KX-UT123/KX-UT133/KX-UT136/KX-UT248) 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**.
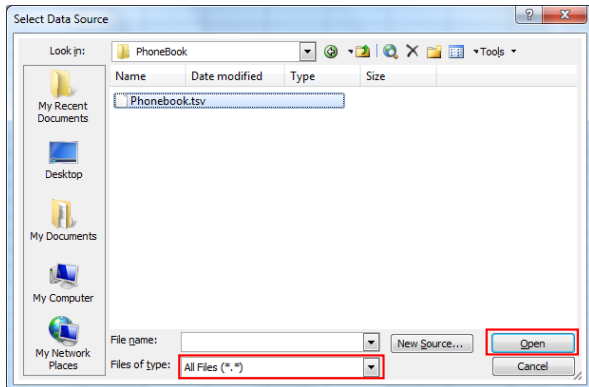
4. On the **Text Import Wizard - Step 1 of 3** window, click **Next**.
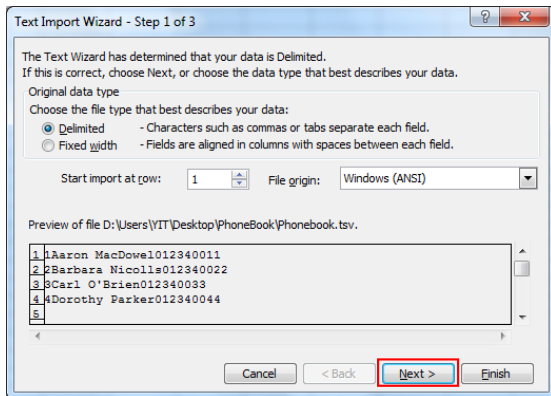
Note
   - Regardless of what is selected for **File origin**, the file will be processed normally if the format is appropriate.

5. On the **Text Import Wizard - Step 2 of 3** window, select **Tab** for **Delimiters**, and then click **Next**.
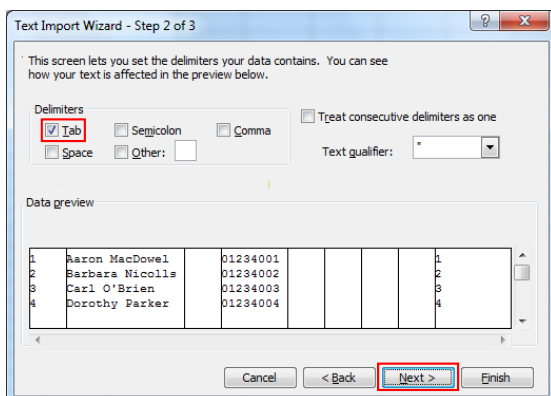
6. On the **Text Import Wizard - Step 3 of 3** window, select all columns in **Data preview**, select **Text** in **Column data format**, and then click **Finish**.
The TSV file will be opened.
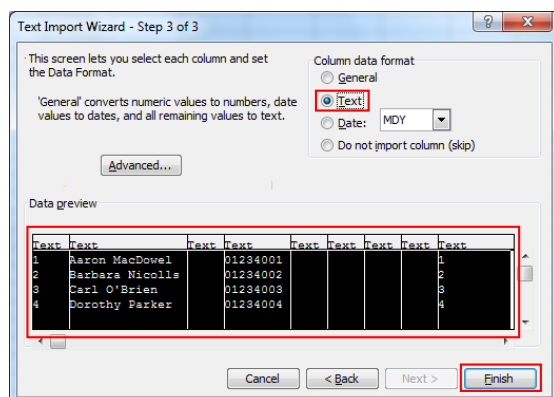
Note

* 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 **5.7.1 Call Control Settings**).

[Dial Plan Flowchart]

When a user dials a single digit on a unit, the following sequence of events begins.
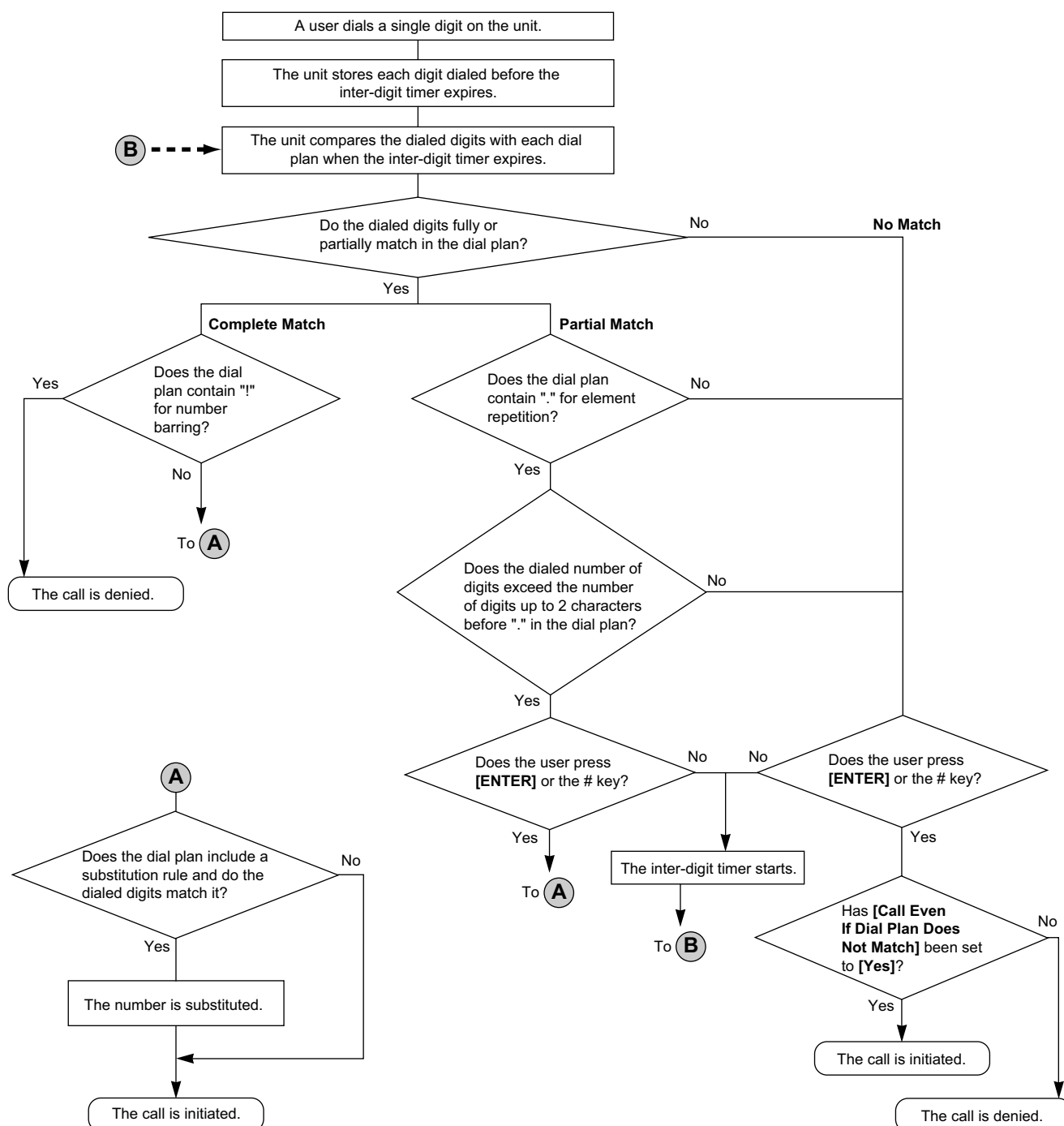
6.2.1 Dial Plan Settings

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.
   The dial plan settings can be configured for each line separately.

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 **5.7.1 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.
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.

Element	Available Value	Description
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.

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 **5.5.1 Call Control 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.

6.3 Flexible Buttons (KX-UT133/KX-UT136/ KX-UT248 only)

You can customize the flexible buttons on the unit. They can then be used to make or receive outside calls or as feature buttons. These settings can be programmed either through the Web user interface (→ see **4.6.3 Flexible Button Settings (KX-UT133/KX-UT136/KX-UT248 only)** or by configuration file programming (→ see **5.5.5 Flexible Button Settings (KX-UT133/KX-UT136/KX-UT248 only)**.

Note
- This feature may not be supported on your phone system.

The following types of flexible buttons are available:

Button	Description	Lamp Indication
DN	Used to seize the line assigned to the DN (Directory Number) button. When a call arrives at the DN button, pressing the button answers the call. **Notice** - At least 2 DN buttons must be assigned to each line. If DN buttons are not assigned, calls cannot be made or answered. **Note** - The shared line (shared call) feature is an optional feature and may not be supported on your phone system.	**Off**: Idle **Green on**: The extension is on a call using the DN button. **Flashing green rapidly**: The DN extension is receiving an incoming call. **Flashing green slowly**: A call is on hold at the DN extension. **Red on**: A shared line is in use or on hold (private). **Flashing red slowly**: A shared line is on hold (normal).
One-Touch	Used to access a desired party or system feature using the One-Touch Dialing feature.	–
Headset	Used to enable or disable talking using the headset.	**Off**: Headset off **Red on**: Headset on

Button	Description	Lamp Indication

BLF	Used to show the current status of another extension, call the extension and transfer calls to it.
	This button can also be used to perform Directed Call Pickup ($\rightarrow$ see **[Direct Call Pickup]** in **4.6.1.1 Call Control** in the Web user interface or "`NUM_PLAN_PICKUP_DIRECT`" in **5.5.1 Call Control Settings** in the configuration file).
	
	Note
	  • BLF (Busy Lamp Field) is an optional feature and may not be supported on your phone system.
	  • It may be necessary to specify the Resource List URI to use this feature, depending on your phone system ($\rightarrow$ see **[Resource List URI]** in **4.6.2.1 Call Control** in the Web user interface or "`RESOURCELIST_URI_n`" in **5.7.1 Call Control Settings** in the configuration file).
		Off: The BLF extension is idle.
		Red on: A corresponding BLF extension is using the line.
		Flashing red rapidly: The BLF extension is receiving an incoming call.

ACD	Used to log in or log out of a group when ACD (Automatic Call Distribution) is enabled. **Note** • ACD is an optional feature and may not be supported on your phone system.	**Off**: Logged in **Red on**: Logged out
Wrap Up	The Wrap Up button alternates the setting of Wrap Up mode, Not Ready mode or Ready mode for incoming calls. In Wrap Up mode/Not Ready mode for incoming calls, incoming calls will not be received through the ACD (Automatic Call Distribution) group.	**Off**: Ready mode for incoming calls **Red on**: Not Ready mode for incoming calls **Flashing red**: Wrap Up mode

6.3.1 Flexible Button Settings

To set Flexible Buttons

1. In the Web user interface, click the **[Telephone]** tab, and then click **[Flexible Button Settings]**.
2. Enter settings as described in the following table.
   When it is necessary to set both parameter 1 and parameter 2, enter a comma between the values.

Button	Parameter 1		Parameter 2	
	Description	Value	Description	Value
DN	Ringtone	1–32	Line No.	• 1–4 (for KX-UT133/ KX-UT136) • 1–6 (for KX-UT248)
One-Touch	Phone Number	Up to 32 digits	–	–
Headset	–	–	–	–
BLF	Extension Number[*1]	Up to 32 digits	–	–
ACD	Line No.	• 1–4 (for KX-UT133/ KX-UT136) • 1–6 (for KX-UT248)	–	–
Wrap Up	Line No.	• 1–4 (for KX-UT133/ KX-UT136) • 1–6 (for KX-UT248)	–	–

[*1] You can also assign extension numbers automatically to BLF buttons using the information in the server's resource list without having to input information here.

Note

- For details about configuring these settings by configuration file programming, see **5.5.5 Flexible Button Settings (KX-UT133/KX-UT136/KX-UT248 only)**.

[Setting Example]

The following screen shows an example of setting flexible buttons.

Description:

- Button 1 is set to log in and log out of an ACD group on line 1.
- Button 2 is set to enable or disable talking using the headset.
- Buttons 3 and 4 are set to make/receive calls on line 1 using ringtone 1.
- Buttons 5 and 6 are set to make/receive calls on line 2 using ringtone 2.
- Buttons 7 and 8 are set to make calls to a certain destination using the One-Touch Dialing feature.
- Buttons 9, 10 and 11 are set to show the status of a certain extension. They can also be used to call that extension and transfer calls to it.[1]

[1] You can also assign extension numbers automatically to BLF buttons using the information in the server's resource list without having to input information here.

6.3.1 Flexible Button Settings

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, HTTPS, FTP, or TFTP server as the firmware server by simply setting its URL.

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 **5.3.4 Firmware Update Settings**) or Web user interface programming (→ see **4.7.1 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**".

Automatic Update

- In a configuration file, add the line, **FIRM_UPGRADE_AUTO="Y"**.
- In the Web user interface, click the **[Maintenance]** tab, click **[Firmware Maintenance]**, and then select **[Automatic]** for **[Update Type]**.

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_UPGRADE_AUTO="Y"
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

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**.

Provisioning Server Address

Configuration File

SIP Phone

Provisioning Server
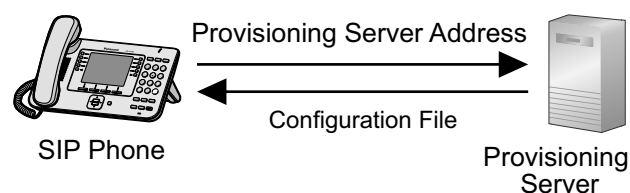
Step 2

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.)

SIP Phone

Version 01.000
Current Version

Compare

Provisioned Configuration File

`FIRM_VERSION="01.050"`
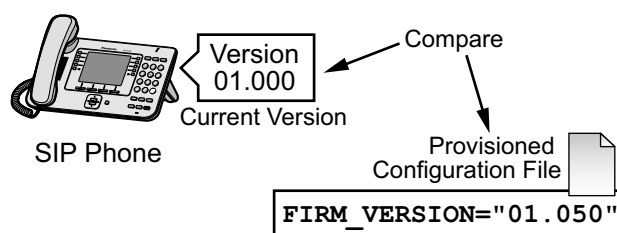
Step 3

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.

http://firm.example.com/ firm/01.050.fw

01.050.fw

SIP Phone

Firmware Server
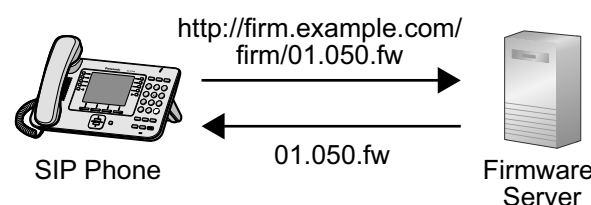
Step 4

Once the newer firmware is downloaded, it is applied to the unit and the unit automatically restarts.

SIP Phone

Version 01.050
Version Updated
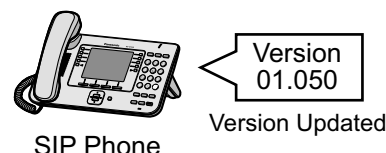
7.4 Local Firmware Update

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 local firmware update, see **4.7.2 Local Firmware Update**.

To manually update the firmware

1. In the Web user interface, click the **[Maintenance]** tab, and then click **[Local Firmware Update]**.
2. Click **Browse**, select the folder where the firmware file is stored, and specify the firmware file on your PC.
3. Click **[Update Firmware]**.

7.4 Local Firmware Update

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
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 (→ see **1.1.7 Other Network Settings**). • For details about the settings, consult your network administrator or phone system dealer.
The unit will not start up correctly.	• Web user interface settings or configuration file settings may not be correct. Perform the following procedure to initialize the settings, and then reconfigure the unit correctly. **1.** Press `Setup` . **2.** Press **[#][1][3][6]**. **3.** Press **[▲]** or **[▼]** to select "`IP Reset`", and then press **[ENTER]**. **4.** Press **[▲]** or **[▼]** to select "`Yes`", and then press **[ENTER]**. **5.** Press **[▲]** or **[▼]** to select "`Yes`", and then press **[ENTER]**. After performing IP Reset, the unit will restart automatically. **Note** • If settings were not initialized after performing this procedure, consult your 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 (→ see **1.1.7 Other Network Settings**).
	• Check **[Call Control]** for each line in the **[Telephone]** tab in the Web user interface.
	  – If **[Do Not Disturb]** is set to **[Yes]**, the unit does not receive calls (→ see **4.6.2.3 Call Features**).
	  – If **[Unconditional (Enable Call Forward)]** is set to **[Yes]**, the unit does not receive calls (→ see **4.6.2.4 Call Forward**).
	  – If **[Block Anonymous Call]** is set to **[Yes]**, the unit does not receive anonymous calls (→ see **4.6.2.3 Call Features**).
	• Check that **[Do Not Disturb]**, **[Enable Call Forward]**, and **[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 (→ see **1.1.7 Other Network Settings**). • 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.	• Reset the password from the unit. The passwords for both Administrator and User will be reset (→ see **3.1.4 Reset Web ID/Password**). For security reasons, it is recommended that the passwords are set again immediately (→ see **4.4.2 Administrator Password** or **4.4.3 Change User Password**).

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 ($\rightarrow$ see **4.4.5 Time Adjust Settings**). • If the time is still incorrect even after setting NTP synchronization, check the firewall and port forwarding settings on the router ($\rightarrow$ see **1.1.7 Other Network Settings**).

Error Codes

When a system error occurs, an error code is displayed on the unit.

Error code	Probable Cause	Solution
10001	MAC address error	Consult your network administrator or phone system dealer.
11001–11006	Device error	Consult your network administrator or phone system dealer.
21001	IEEE 802.1X authentication error (KX-UT248 only)	Consult your network administrator or phone system dealer.
90001	• Transmission error • Unit not registered	• Check network settings. • Check that settings are correct for registration to the SIP server.

Checking the Status of the Unit

You can check the status of the unit by using Web user interface programming ($\rightarrow$ see **4.2.2 Network Status** and **4.2.3 VoIP Status**) or by looking at system logs ($\rightarrow$ see **5.3.3 Syslog 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 send the system logs of specified events to the syslog server

1. Set the following parameters to specify your PC (Windows, Linux® operating system, etc.) as the syslog server:
   – `SYSLOG_ADDR`: Specifies the IP address or FQDN of the syslog server.
   – `SYSLOG_PORT`: Specifies the port number of the syslog server.
2. Set the following parameters to log specific events:
   – `SYSLOG_EVENT_SIP`: Logs SIP-related syslog events.
   – `SYSLOG_EVENT_CFG`: Logs syslog events regarding configuration.

—   **SYSLOG_EVENT_VOIP**: Logs syslog events regarding VoIP operation.

Section 9

Appendix

9.1 Revision History

9.1.1 KX-UT113/KX-UT123/KX-UT133/KX-UT136 Software File Version 01.025

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- 5.7.1 Call Control Settings—VOICE_MESSAGE_AVAILABLE (Page 243)

- 5.7.1 Call Control Settings—HOLD_SOUND_PATH_n (Page 243)

- 5.7.2 SIP Settings—SIP_REQURI_PORT_n (Page 257)

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- 1.2.1.1 Resetting to Factory Default (Factory Setting) (Page 29)

- 1.2.1.2 Resetting the Network Settings (IP Reset) (Page 30)

- 3.1.1 Phone User Interface Feature List and Direct Commands (Page 56)

- 5.5.2 Tone Settings—HOLD_TONE_TIMING (Page 217)

9.1.2 KX-UT113/KX-UT123/KX-UT133/KX-UT136 Software File Version 01.080

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- 4.3.7 Application Settings (Page 93)

- 4.5.4.1 Quality of Service (QoS)—RTCP Packet QoS (DSCP) (Page 116)

- 4.5.4.4 DTMF—DTMF Relay (Page 118)

- 4.6.8 Application Settings (Page 142)

- 5.3.6 Management Server Settings
    – ANNEX_G_STUN_ENABLE (Page 187)
    – ANNEX_G_STUN_SERV_ADDR (Page 187)
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    – ANNEX_G_STUN_USER_ID (Page 187)
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- 5.5.6 XML Application Settings (Page 225)

- 5.6.2 RTP Settings—DSCP_RTCP_n (Page 232)

- 5.6.3 Miscellaneous VoIP Settings—DTMF_RELAY_n (Page 237)

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- 2.6 Setting Configuration File Parameters Using TR-069 (Page 50)

9.1.3 KX-UT113/KX-UT123/KX-UT133/KX-UT136/KX-UT248 Software File Version 01.160

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- 3.1.5 Sound Quality (KX-UT113/KX-UT123/KX-UT133/KX-UT136 only) (Page 57)

- 4.3.2.2 LLDP Settings (Page 83)

- 5.4.9 LLDP-MED Settings (Page 201)

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- 3.1.1 Phone User Interface Feature List and Direct Commands (Page 56)

- 4.3.2 Ethernet Port Settings (Page 81)

- 4.3.2.3 VLAN Settings (Page 84)

- 4.6.3.1 Flexible Button Settings (Page 134)

- 5.3.5 Provisioning Settings (Page 177)

- 5.5.1 Call Control Settings (Page 202)

- 5.5.3 Telephone Settings (Page 219)

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