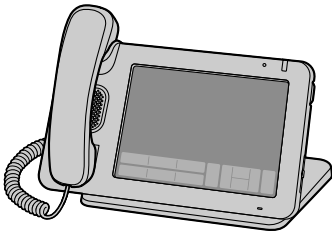


# Panasonic<sup>®</sup>

## Administrator Guide

### Smart Desk Phone

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Model No. **KX-UT670**



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

**KX-UT670: Software File Version 01.070 or later**

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

Document Version: 2012-07

# Introduction

This Administrator Guide provides detailed information on the configuration and management of this unit. 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 the parts of the unit, operation procedures, maintenance, etc.

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)

## NOTES

- The screen shots shown in this guide are provided for reference only, and may differ from the screens displayed on your PC.
- SD Memory Cards that can be used with this unit are collectively referred to as "SD cards". For details about supported SD cards, refer to the appropriate Web site above.
- In this manual, buttons on the unit's key sheet are shown as . Depending on the country/area, the key sheet buttons on your unit will have only an icon (). Other text that appears on the screen is enclosed in square brackets and is shown in a bold typeface: **[Text]**.

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# Table of Contents

<b>1</b>	<b>Initial Setup</b>	<b>15</b>
1.1	Setup	16
1.1.1	Factory Defaults	16
1.1.2	Language Selection for the Unit	16
1.1.3	Basic Network Setup	16
1.1.4	Other Network Settings	18
1.1.4.1	Firewall and Router Setup	18
1.1.4.2	NAT (Network Address Translation) Setup	19
1.1.4.3	Global Address Detection	20
<b>2</b>	<b>General Information on Programming</b>	<b>21</b>
2.1	Overview of Programming	22
2.2	Phone User Interface Programming	22
2.2.1	Changing the Language for Phone User Interface Programming	22
2.3	Web User Interface Programming	23
2.4	Configuration File Programming	24
2.4.1	Configuration File Programming Methods	25
2.4.2	Pre-provisioning	25
2.4.2.1	What is Pre-provisioning?	25
2.4.2.2	Server for Pre-provisioning	25
2.4.2.3	Pre-provisioning Setting Example	26
2.4.3	Provisioning	27
2.4.3.1	What is Provisioning?	27
2.4.3.2	Protocols for Provisioning	27
2.4.3.3	Configuration File	27
2.4.3.4	Downloading Configuration Files	28
2.4.3.5	Provisioning Server Setting Example	31
2.4.3.6	Encryption	32
2.4.4	XML Provisioning	32
2.4.4.1	XML Structure	33
2.4.4.2	XML Element/Attribute Configuration Parameter Table	35
2.4.4.3	Editing XML Configuration Files on your PC	45
2.4.5	Loading Settings Using the SD card	45
2.5	Priority of Setting Methods	46
<b>3</b>	<b>Phone User Interface Programming</b>	<b>47</b>
3.1	Phone User Interface Programming	48
3.1.1	Direct Commands	48
3.1.1.1	Terminal Number Settings	48
3.1.1.2	Reset Web ID/Password	48
3.1.2	Phone User Interface Administrator Menu	49
<b>4</b>	<b>Web User Interface Programming</b>	<b>51</b>
4.1	Web User Interface Setting List	52
4.2	General Information on Web User Interface Programming	61
4.2.1	Password for Web User Interface Programming	61
4.2.2	Changing the Language for Web User Interface Programming	61
4.2.3	Before Accessing the Web User Interface	61
4.2.4	Accessing the Web User Interface	63
4.3	Status	66
4.3.1	Version Information	66
4.3.1.1	Version Information	66

## Table of Contents

---

	Model .....	66
	Firmware Version .....	66
4.3.2	Network Status .....	66
4.3.2.1	Network Status .....	67
	MAC Address .....	67
	Ethernet Link Status (LAN Port) .....	67
	Ethernet Link Status (PC Port) .....	67
	Connection Mode .....	67
	IP Address .....	67
	Subnet Mask .....	67
	Default Gateway .....	68
	DNS1 .....	68
	DNS2 .....	68
4.3.3	VoIP Status .....	68
4.3.3.1	VoIP Status .....	69
	Line No. ....	69
	Phone Number .....	69
	VoIP Status .....	69
<b>4.4</b>	<b>Network .....</b>	<b>69</b>
4.4.1	Basic Network Settings .....	69
4.4.1.1	Connection Mode .....	70
	Connection Mode .....	70
4.4.1.2	DHCP Settings .....	70
	Host Name .....	70
	Domain Name Server .....	71
4.4.1.3	Static Settings .....	71
	Static IP Address .....	71
	Subnet Mask .....	72
	Default Gateway .....	72
	DNS1 .....	72
	DNS2 .....	72
4.4.2	Ethernet Port Settings .....	73
4.4.2.1	Link Speed/Duplex Mode .....	73
	LAN Port .....	73
	PC Port .....	74
4.4.2.2	LLDP Settings .....	74
	LLDP .....	74
	LLDP-MED Interval timer .....	74
	PC (VLAN ID) .....	75
	PC (Priority) .....	75
4.4.2.3	VLAN Settings .....	75
	Enable VLAN .....	75
	IP Phone (VLAN ID) .....	75
	IP Phone (Priority) .....	76
	PC (VLAN ID) .....	76
	PC (Priority) .....	76
4.4.3	HTTP Client Settings .....	77
4.4.3.1	HTTP Client Settings .....	77
	HTTP Version .....	77
	HTTP User Agent .....	77
4.4.3.2	HTTP Authentication .....	78
	Authentication ID .....	78
	Authentication Password .....	78
4.4.3.3	Proxy Server Settings .....	78
	Enable Proxy .....	78

	Proxy Server Address .....	79
	Proxy Server Port .....	79
4.4.4	Global Address Detection .....	79
4.4.4.1	Global Address Detection .....	79
	Detection Method .....	79
	Detection Interval .....	80
4.4.4.2	STUN Server .....	80
	STUN Server Address .....	80
	STUN Server Port .....	80
4.4.5	Static NAPT Settings .....	80
4.4.5.1	Global IP Address .....	81
	Global IP Address .....	81
4.4.5.2	Enable Global IP Address Usage per Line .....	81
	Line 1–Line 6 .....	81
4.4.5.3	External RTP Port .....	82
	Channel 1–25 .....	82
<b>4.5</b>	<b>System .....</b>	<b>82</b>
4.5.1	Web Language .....	82
4.5.1.1	Web Language .....	83
	Language .....	83
4.5.2	Administrator Password .....	83
4.5.2.1	Change Administrator Password .....	84
	Current Password .....	84
	New Password .....	84
	Confirm New Password .....	84
4.5.3	Change User Password .....	85
4.5.3.1	Change User Password .....	85
	Current Password .....	85
	New Password .....	85
	Confirm New Password .....	86
4.5.4	Web Server Settings .....	86
4.5.4.1	Web Server Settings .....	86
	Web Server Port .....	86
	Port Close Timer .....	87
<b>4.6</b>	<b>VoIP .....</b>	<b>87</b>
4.6.1	SIP Settings .....	87
4.6.1.1	SIP Setting .....	88
	SIP User Agent .....	88
4.6.2	SIP Settings [Line 1]–[Line 6] .....	88
4.6.2.1	Phone Number .....	89
	Phone Number .....	89
	SIP URI .....	89
4.6.2.2	SIP Server .....	89
	Registrar Server Address .....	89
	Registrar Server Port .....	89
	Proxy Server Address .....	90
	Proxy Server Port .....	90
	Presence Server Address .....	90
	Presence Server Port .....	90
4.6.2.3	Outbound Proxy Server .....	91
	Outbound Proxy Server Address .....	91
	Outbound Proxy Server Port .....	91
4.6.2.4	SIP Service Domain .....	91
	Service Domain .....	91
4.6.2.5	SIP Source Port .....	91

## Table of Contents

---

	Source Port .....	91
4.6.2.6	SIP Authentication .....	92
	Authentication ID .....	92
	Authentication Password .....	92
4.6.2.7	DNS .....	92
	Enable DNS SRV lookup .....	92
	SRV lookup Prefix for UDP .....	93
	SRV lookup Prefix for TCP .....	93
4.6.2.8	Transport Protocol for SIP .....	93
	Transport Protocol .....	93
4.6.2.9	Timer Settings .....	94
	T1 Timer .....	94
	T2 Timer .....	94
	Timer B .....	94
	Timer D .....	95
	Timer F .....	95
	Timer H .....	95
	Timer J .....	95
4.6.2.10	Quality of Service (QoS) .....	95
	SIP Packet QoS (DSCP) .....	95
4.6.2.11	SIP extensions .....	96
	Supports 100rel (RFC 3262) .....	96
	Supports Session Timer (RFC 4028) .....	96
4.6.2.12	NAT Identity .....	96
	Keep Alive Interval .....	96
	Supports Rport (RFC 3581) .....	97
4.6.2.13	Security .....	97
	Enable SSAF (SIP Source Address Filter) .....	97
4.6.3	VoIP Settings .....	98
4.6.3.1	RTP Settings .....	98
	RTP Packet Time .....	98
	Minimum RTP Port Number .....	98
	Maximum RTP Port Number .....	99
	Telephone-event Payload Type .....	99
4.6.4	VoIP Settings [Line 1]–[Line 6] .....	100
4.6.4.1	Quality of Service (QoS) .....	100
	RTP Packet QoS (DSCP) .....	100
	RTCP Packet QoS (DSCP) .....	100
4.6.4.2	Statistical Information .....	101
	RTCP Enable .....	101
	RTCP Interval .....	101
4.6.4.3	Jitter Buffer .....	101
	Maximum Delay .....	101
	Minimum Delay .....	101
	Initial Delay .....	102
4.6.4.4	DTMF .....	102
	DTMF Type .....	102
	DTMF Relay .....	102
4.6.4.5	Call Hold .....	103
	Supports RFC 2543 (c=0.0.0.0) .....	103
4.6.4.6	CODEC Preferences .....	103
	G722 (Enable) .....	103
	G722 (Priority) .....	103
	PCMA (Enable) .....	104
	PCMA (Priority) .....	104

	G729A (Enable) .....	104
	G729A (Priority) .....	104
	PCMU (Enable) .....	104
	PCMU (Priority) .....	105
<b>4.7</b>	<b>Telephone .....</b>	<b>105</b>
4.7.1	Call Control .....	105
4.7.1.1	Call Control .....	105
	Send SUBSCRIBE to Voice Mail Server .....	105
	Conference Server URI .....	106
	Inter-digit Timeout .....	106
	Timer for Dial Plan .....	106
	International Call Prefix .....	106
	Country Calling Code .....	107
	National Access Code .....	107
	Default Line for Outgoing .....	107
	Flash/Recall Button .....	107
	Flash Hook Event .....	108
	Directed Call Pickup .....	108
4.7.1.2	Call Rejection Phone Numbers .....	108
	1–30 .....	108
4.7.2	Call Control [Line 1]–[Line 6] .....	109
4.7.2.1	Call Control .....	109
	Display Name .....	109
	Voice Mail Access Number .....	109
	Enable Shared Call .....	110
	Synchronize Do Not Disturb and Call Forward .....	110
	Resource List URI .....	111
4.7.2.2	Dial Plan .....	111
	Dial Plan (max 500 columns) .....	111
	Call Even If Dial Plan Does Not Match .....	111
4.7.2.3	Call Features .....	112
	Block Caller ID .....	112
	Block Anonymous Call .....	112
	Do Not Disturb .....	113
4.7.2.4	Call Forward .....	113
	Unconditional (Enable Call Forward) .....	113
	Unconditional (Phone Number) .....	114
	Busy (Enable Call Forward) .....	114
	Busy (Phone Number) .....	115
	No Answer (Enable Call Forward) .....	115
	No Answer (Phone Number) .....	116
	No Answer (Ring Count) .....	116
4.7.3	Tone Settings .....	117
4.7.3.1	Dial Tone .....	117
	Tone Frequencies .....	117
	Tone Timings .....	117
4.7.3.2	Busy Tone .....	118
	Tone Frequencies .....	118
	Tone Timings .....	118
4.7.3.3	Ringtone .....	118
	Tone Frequencies .....	118
	Tone Timings .....	119
4.7.3.4	Stutter Tone .....	119
	Tone Frequencies .....	119
	Tone Timings .....	119

4.7.3.5	Reorder Tone .....	120
	Tone Frequencies .....	120
	Tone Timings .....	120
4.7.4	Telephone Settings .....	120
4.7.4.1	Telephone Settings .....	120
	Number Matching Lower Digit .....	120
	Number Matching Upper Digit .....	121
<b>4.8</b>	<b>Maintenance .....</b>	<b>121</b>
4.8.1	Firmware Maintenance .....	121
4.8.1.1	Firmware Maintenance .....	121
	Enable Firmware Update .....	121
	Firmware File URL .....	122
4.8.2	Provisioning Maintenance .....	122
4.8.2.1	Provisioning Maintenance .....	123
	Enable Provisioning .....	123
	Standard File URL .....	123
	Product File URL .....	123
	Master File URL .....	124
	Cyclic Auto Resync .....	124
	Resync Interval .....	124
	Header Value for Resync Event .....	124
4.8.3	Reset to Defaults .....	125
4.8.4	Restart .....	125
<b>4.9</b>	<b>Result Messages .....</b>	<b>126</b>
<b>5</b>	<b>Configuration File Programming .....</b>	<b>127</b>
<b>5.1</b>	<b>Configuration File Parameter List .....</b>	<b>128</b>
<b>5.2</b>	<b>General Information on the Configuration Files .....</b>	<b>135</b>
5.2.1	Configuration File Specifications for Plain Text Provisioning .....	135
5.2.2	Configuration File Parameters .....	136
5.2.3	Characters Available for String Values .....	137
<b>5.3</b>	<b>Configuration File Examples .....</b>	<b>137</b>
5.3.1	Examples of Codec Settings .....	138
5.3.2	Example with Incorrect Descriptions .....	138
<b>5.4</b>	<b>System Settings .....</b>	<b>140</b>
5.4.1	Login Account Settings .....	140
	ADMIN_ID .....	140
	ADMIN_PASS .....	140
	USER_ID .....	140
	USER_PASS .....	140
5.4.2	System Time Settings .....	141
	TIME_ZONE_COUNTRY .....	141
5.4.3	Syslog Settings .....	143
	SYSLOG_ADDR .....	143
	SYSLOG_PORT .....	143
5.4.4	Firmware Update Settings .....	143
	FIRM_UPGRADE_ENABLE .....	143
	FIRM_VERSION .....	143
	FIRM_FILE_PATH .....	144
5.4.5	Provisioning Settings .....	144
	OPTION66_ENABLE .....	144
	PROVISION_ENABLE .....	145
	CFG_STANDARD_FILE_PATH .....	145
	CFG_PRODUCT_FILE_PATH .....	146
	CFG_MASTER_FILE_PATH .....	147



	CFG_FILE_KEY1 .....	148
	CFG_FILE_KEY2 .....	149
	CFG_FILE_KEY3 .....	149
	CFG_FILE_KEY_LENGTH .....	149
	CFG_CYCLIC .....	149
	CFG_CYCLIC_INTVL .....	150
	CFG_RTRY_INTVL .....	150
	CFG_RESYNC_TIME .....	150
	CFG_RESYNC_FROM_SIP .....	151
<b>5.5</b>	<b>Network Settings .....</b>	<b>151</b>
5.5.1	Ethernet Port Settings .....	151
	LLDP_ENABLE .....	151
	LLDP_INTERVAL .....	152
	LLDP_VLAN_ID_PC .....	152
	LLDP_VLAN_PRI_PC .....	152
	VLAN_ENABLE .....	152
	VLAN_ID_IP_PHONE .....	153
	VLAN_PRI_IP_PHONE .....	153
	VLAN_ID_PC .....	154
	VLAN_PRI_PC .....	154
5.5.2	HTTP Settings .....	154
	HTTPD_PORTOPEN_AUTO .....	154
	HTTP_VER .....	155
	HTTP_USER_AGENT .....	155
	HTTP_SSL_VERIFY .....	156
	CFG_ROOT_CERTIFICATE_PATH .....	156
5.5.3	Time Adjust Settings .....	157
	NTP_ADDR .....	157
	TIME_SYNC_INTVL .....	157
	TIME_QUERY_INTVL .....	157
5.5.4	STUN Settings .....	157
	STUN_SERV_ADDR .....	157
	STUN_SERV_PORT .....	158
	STUN_2NDSERV_ADDR .....	158
	STUN_2NDSERV_PORT .....	158
5.5.5	Miscellaneous Network Settings .....	158
	NW_SETTING_ENABLE .....	158
	CUSTOM_WEB_PAGE .....	159
<b>5.6</b>	<b>Telephone Settings .....</b>	<b>159</b>
5.6.1	Call Control Settings .....	159
	VM_SUBSCRIBE_ENABLE .....	159
	CONFERENCE_SERVER_URI .....	160
	FIRSTDIGIT_TIM .....	160
	INTDIGIT_TIM .....	160
	MACRODIGIT_TIM .....	160
	INTERNATIONAL_ACCESS_CODE .....	161
	COUNTRY_CALLING_CODE .....	161
	NATIONAL_ACCESS_CODE .....	161
	DEFAULT_LINE_SELECT .....	161
	DATA_LINE_MODE .....	162
	NUM_PLAN_PICKUP_DIRECT .....	162
	TALK_PACKAGE .....	162
	HOLD_PACKAGE .....	162
	HOLD_RECALL_TIM .....	163
	AUTO_ANS_RING_TIM .....	163

	RINGING_OFF_SETTING_ENABLE .....	163
	AUTO_CALL_HOLD .....	163
	REDIALKEY_CALLLOG_ENABLE .....	164
	ONHOOK_TRANSFER_ENABLE .....	164
	DISCONNECTION_MODE .....	164
	TONE_LEN_DISCONNECT_HANDSET .....	164
	TONE_LEN_DISCONNECT_HANDSFREE .....	165
	KEY_PAD_TONE .....	165
	DDI_ICD_GROUP_DISPLAY .....	165
5.6.2	Tone Settings .....	166
	DIAL_TONE1_FRQ .....	166
	DIAL_TONE1_GAIN .....	166
	DIAL_TONE1_TIMING .....	166
	DIAL_TONE2_FRQ .....	166
	DIAL_TONE2_GAIN .....	167
	DIAL_TONE2_TIMING .....	167
	DIAL_TONE4_FRQ .....	167
	DIAL_TONE4_GAIN .....	167
	DIAL_TONE4_TIMING .....	167
	BUSY_TONE_FRQ .....	168
	BUSY_TONE_GAIN .....	168
	BUSY_TONE_TIMING .....	168
	REORDER_TONE_FRQ .....	169
	REORDER_TONE_GAIN .....	169
	REORDER_TONE_TIMING .....	169
	RINGBACK_TONE_FRQ .....	169
	RINGBACK_TONE_GAIN .....	170
	RINGBACK_TONE_TIMING .....	170
	HOLD_ALARM_FRQ .....	170
	HOLD_ALARM_GAIN .....	170
	HOLD_ALARM_TIMING .....	170
	CW_TONE1_FRQ .....	171
	CW_TONE1_GAIN .....	171
	CW_TONE1_TIMING .....	171
	HOLD_TONE_FRQ .....	171
	HOLD_TONE_GAIN .....	171
	HOLD_TONE_TIMING .....	172
5.6.3	Telephone Settings .....	172
	DISPLAY_NAME_REPLACE .....	172
	NUMBER_MATCHING_LOWER_DIGIT .....	172
	NUMBER_MATCHING_UPPER_DIGIT .....	172
	DISPLAY_DATE_PATTERN .....	173
	DISPLAY_TIME_PATTERN .....	173
	DEFAULT_LANGUAGE .....	173
	POUND_KEY_DELIMITER_ENABLE .....	174
	WALLPAPER_URI_HOME .....	174
	WALLPAPER_URI_PHONE .....	174
	LOGO_URI_PHONE .....	175
5.6.4	Flexible Button Settings .....	175
	FLEX_BUTTON_FACILITY_ACTx .....	175
	FLEX_BUTTON_FACILITY_ARGx .....	175
	FLEX_BUTTON_LABELx .....	176
<b>5.7</b>	<b>VoIP Settings .....</b>	<b>176</b>
5.7.1	Codec Settings .....	176
	CODEC_G711_REQ .....	176

	CODEC_G729_PARAM .....	177
	CODEC_ENABLEx_n .....	177
	CODEC_PRIORITYx_n .....	177
5.7.2	RTP Settings .....	178
	DSCP_RTP_n .....	178
	DSCP_RTCP_n .....	178
	RTCP_INTVL_n .....	179
	MAX_DELAY_n .....	179
	MIN_DELAY_n .....	179
	NOM_DELAY_n .....	180
	RTP_PORT_MIN .....	180
	RTP_PORT_MAX .....	180
	RTP_PTIME .....	181
	RTCP_ENABLE_n .....	181
	RTCP_SEND_BY_SDP_n .....	182
	RTP_CLOSE_ENABLE_n .....	182
5.7.3	Miscellaneous VoIP Settings .....	182
	OUTBANDDTMF_n .....	182
	DTMF_RELAY_n .....	183
	TELEVENT_PAYLOAD .....	183
	RFC2543_HOLD_ENABLE_n .....	183
	DTMF_SIGNAL_LEN .....	184
	DTMF_INTDIGIT_TIM .....	184
<b>5.8</b>	<b>Line Settings .....</b>	<b>184</b>
5.8.1	Call Control Settings .....	184
	DISPLAY_NAME_n .....	184
	VM_NUMBER_n .....	184
	DIAL_PLAN_n .....	185
	DIAL_PLAN_NOT_MATCH_ENABLE_n .....	185
	SHARED_CALL_ENABLE_n .....	186
	FWD_DND_SYNCHRO_ENABLE_n .....	186
	RESOURCELIST_URI_n .....	187
	CW_ENABLE_n .....	187
	FLASH_RECALL_TERMINATE .....	187
	FLASHHOOK_CONTENT_TYPE .....	188
	VOICE_MESSAGE_AVAILABLE .....	188
5.8.2	SIP Settings .....	188
	SIP_USER_AGENT .....	188
	PHONE_NUMBER_n .....	189
	SIP_URI_n .....	189
	LINE_ENABLE_n .....	189
	PROFILE_ENABLE_n .....	190
	SIP_AUTHID_n .....	190
	SIP_PASS_n .....	190
	SIP_SRC_PORT_n .....	191
	SIP_PRXY_ADDR_n .....	191
	SIP_PRXY_PORT_n .....	191
	SIP_RGSTR_ADDR_n .....	191
	SIP_RGSTR_PORT_n .....	192
	SIP_SVCDOMAIN_n .....	192
	REG_EXPIRE_TIME_n .....	192
	REG_INTERVAL_RATE_n .....	193
	SIP_SESSION_TIME_n .....	193
	SIP_SESSION_METHOD_n .....	193
	DSCP_SIP_n .....	193

## Table of Contents

---

SIP_2NDPROXY_ADDR_n .....	194
SIP_2NDPROXY_PORT_n .....	194
SIP_2NDRGSTR_ADDR_n .....	194
SIP_2NDRGSTR_PORT_n .....	195
SIP_TIMER_T1_n .....	195
SIP_TIMER_T2_n .....	195
SIP_TIMER_T4_n .....	196
SIP_FOVR_NORSP_n .....	196
SIP_FOVR_MAX_n .....	196
SIP_REFRESHER_n .....	197
SIP_DNSSRV_ENA_n .....	197
SIP_UDP_SRV_PREFIX_n .....	197
SIP_TCP_SRV_PREFIX_n .....	198
SIP_100REL_ENABLE_n .....	198
SIP_INVITE_EXPIRE_n .....	198
SIP_18X_RTX_INTVL_n .....	199
SIP_PR SNC_ADDR_n .....	199
SIP_PR SNC_PORT_n .....	199
SIP_2NDPR SNC_ADDR_n .....	200
SIP_2NDPR SNC_PORT_n .....	200
USE_DEL_REG_OPEN_n .....	200
USE_DEL_REG_CLOSE_n .....	200
PORT_PUNCH_INTVL_n .....	201
SIP_ADD_RPORT_n .....	201
SIP_REQUIRE_PORT_n .....	201
SIP_SUBS_EXPIRE_n .....	202
SUB_RTX_INTVL_n .....	202
REG_RTX_INTVL_n .....	203
SIP_P_PREFERRED_ID_n .....	203
SIP_PRIVACY_n .....	203
ADD_USER_PHONE_n .....	203
SDP_USER_ID_n .....	204
SUB_INTERVAL_RATE_n .....	204
SIP_OUTPROXY_ADDR_n .....	204
SIP_OUTPROXY_PORT_n .....	205
SIP_TRANSPORT_n .....	205
SIP_ANM_DISPNAME_n .....	205
SIP_ANM_USERNAME_n .....	205
SIP_ANM_HOSTNAME_n .....	206
SIP_DETECT_SSAF_n .....	206
SIP_RCV_DET_HEADER_n .....	206
SIP_CONTACT_ON_ACK_n .....	207
SIP_TIMER_B_n .....	207
SIP_TIMER_D_n .....	207
SIP_TIMER_F_n .....	208
SIP_TIMER_H_n .....	208
SIP_TIMER_J_n .....	208
ADD_TRANSPORT_UDP_n .....	208
ADD_EXPIRES_HEADER_n .....	209
SIP_HOLD_HOLDRECEIVE_n .....	209
SIP_ADD_DIVERSION_n .....	209
SIP_RESPONSE_CODE_DND .....	210
SIP_RESPONSE_CODE_CALL_REJECT .....	210

## 6 Useful Telephone Functions .....211

---

6.1	Registering One-touch Buttons and BLF Buttons .....	212
6.2	Setting the Feature Number to Access Voice Mail .....	212
6.3	Registering Flexible Buttons .....	212
6.4	Customizing the Phone .....	212
6.5	Adding Applications .....	213
6.6	Dial Plan .....	214
6.6.1	Dial Plan Settings .....	215
<b>7</b>	<b>Firmware Update .....</b>	<b>219</b>
7.1	General Information on Firmware Update .....	220
7.2	Firmware Update Settings .....	220
7.3	Executing Firmware Update .....	221
7.4	Firmware Update Using the SD Card .....	222
<b>8</b>	<b>Backup and Restore .....</b>	<b>223</b>
8.1	Backup and Restore .....	224
<b>9</b>	<b>Resetting the Unit .....</b>	<b>227</b>
9.1	Resetting to Factory Default and Clearing Data/Settings .....	228
9.2	Resetting the Settings Made through the Web User Interface (Reset Web Settings) .....	228
<b>10</b>	<b>Troubleshooting .....</b>	<b>231</b>
10.1	Troubleshooting .....	232
<b>11</b>	<b>Open Source Software .....</b>	<b>237</b>
11.1	License Information .....	238
<b>12</b>	<b>Appendix .....</b>	<b>239</b>
12.1	Revision History .....	240
12.1.1	Software File Version 01.030 .....	240
12.1.2	Software File Version 01.070 .....	241
	<b>Index.....</b>	<b>243</b>



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# **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.

### 1.1.2 Language Selection for the Unit

You can change the language used on the display.

In addition, various settings can be configured by accessing the Web user interface from a PC on the same network. 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 **4.5.1 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
- Ethernet port settings (Ethernet port connection mode, LLDP settings or VLAN settings)
- NTP server settings

## Network Settings

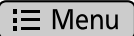
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The following procedures explain how to change the network settings via the unit.

For details about the individual network settings that can be configured via the unit, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

For details about configuring network settings via the Web user interface, see **4.4.1 Basic Network Settings**.

#### **To obtain an IP address from a DHCP server**

1. Press  on the Home screen, and then tap **[Settings]**.
2. Tap **[Network]** and then select **[Basic Network settings]**.
3. In **[Connection mode]**, select **[DHCP]**.
4. In **[DHCP Settings]**, select **[Receive DNS server address automatically]**.
5. Tap **[OK]**.



**Note**

- If you selected **[Use the following settings]** in step 4, enter the addresses for DNS1 (primary DNS server) and, if necessary, DNS2 (secondary DNS server) manually.

**To use a static IP address**

1. Press **[Menu]** on the Home screen, and then tap **[Settings]**.
2. Tap **[Network]** and then select **[Basic Network settings]**.
3. In **[Connection mode]**, select **[STATIC]**.
4. Enter the IP address.
5. Enter the subnet mask.
6. Enter the default gateway.
7. Enter the DNS1 (primary DNS server), and, if necessary, DNS2 (secondary DNS server).
8. Tap **[OK]**.

**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 enable **[Receive DNS server address automatically]**, the DNS server settings (DNS1 and DNS2) will be ignored, even if they have been specified.

## Ethernet Settings

---

The following procedures explain how to change the Ethernet port connection mode (link speed/duplex mode), LLDP (Link Layer Discovery Protocol) settings and VLAN (Virtual Local Area Network) settings via the unit. For details about configuring Ethernet settings via the Web user interface, see **4.4.2 Ethernet Port Settings**.

**Using LLDP**

1. Press **[Menu]** on the Home screen, and then tap **[Settings]**.
2. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
3. Tap **[Ethernet port settings]**.
4. Select the connection mode for **[LAN port]** and **[PC port]**.
5. Check **[Use LLDP]**.
6. Enter the LLDP-MED Timer.
7. Enter the VLAN ID.
8. Enter the priority.
9. Tap **[Save and Reboot]**.

**Using VLAN**

1. Press **[Menu]** on the Home screen, and then tap **[Settings]**.
2. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
3. Tap **[Ethernet port settings]**.
4. Select the connection mode for **[LAN port]** and **[PC port]**.
5. Check **[Use VLAN]**.
6. Enter the VLAN ID.
7. Enter the priority.
8. Tap **[Save and Reboot]**.

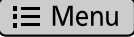
### Note

- For details about the administrator password, see **3.1.2 Phone User Interface Administrator Menu**.
- When both **[Use LLDP]** and **[Use VLAN]** are checked, VLAN settings are prioritized.

## Date and Time (NTP Server) Settings

---

The following procedure explains how to set the date and time using a NTP (Network Time Protocol) server via the unit.

1. Press  **Menu** on the Home screen, and then tap **[Settings]**.
2. Tap **[Date & time]** and then select **[NTP Server]**.
3. Check **[Use NTP server]**.
4. Enter the NTP server's address.
5. Enter the synchronization interval.
6. Tap **[OK]**.

### 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.

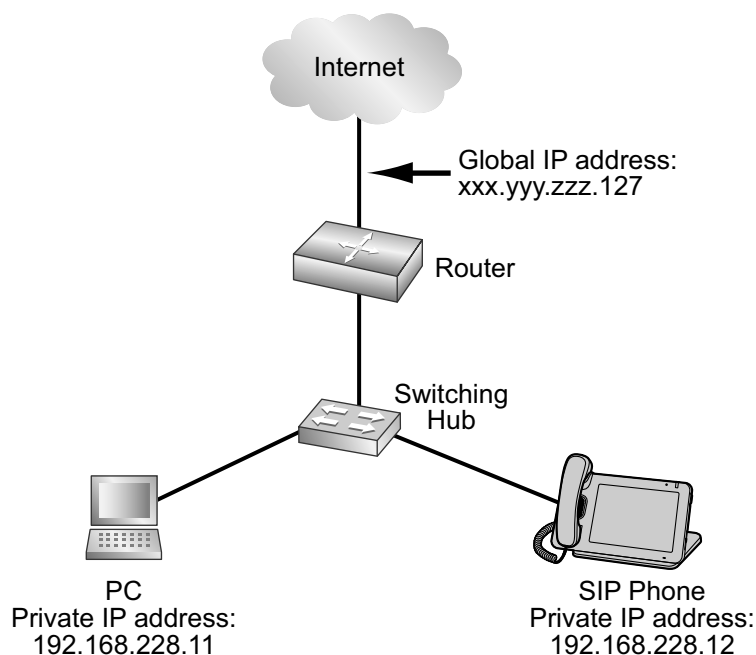
## 1.1.4 Other Network Settings

### 1.1.4.1 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.

## 1.1.4.2 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.

### Note

- 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 **4.4.5 Static NAPT Settings** and **4.6.2.5 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 **4.4.5 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]** (→ see **SIP Setup** in this section) and **[External RTP Port]** (→ 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.

### 1.1.4.3 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 **4.4.4 Global Address Detection**.

#### Note

- For details about server information, consult your network administrator.

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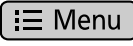
## **Section 2**

# ***General Information on Programming***

*This section describes the various ways of programming the unit.*

## 2.1 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 (via  Menu on the Phone screen or the [Settings] menu).	→ 2.2 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.	→ 2.3 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 or an SD card and configure its own settings (provisioning).	→ 2.4 Configuration File Programming → Section 5 Configuration File Programming

## 2.2 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 more details about phone user interface programming, see **Section 3 Phone User Interface Programming**.

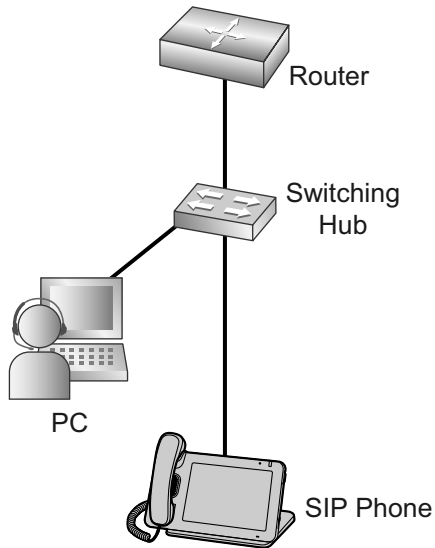
### 2.2.1 Changing the Language for Phone User Interface Programming

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**).

## 2.3 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**.

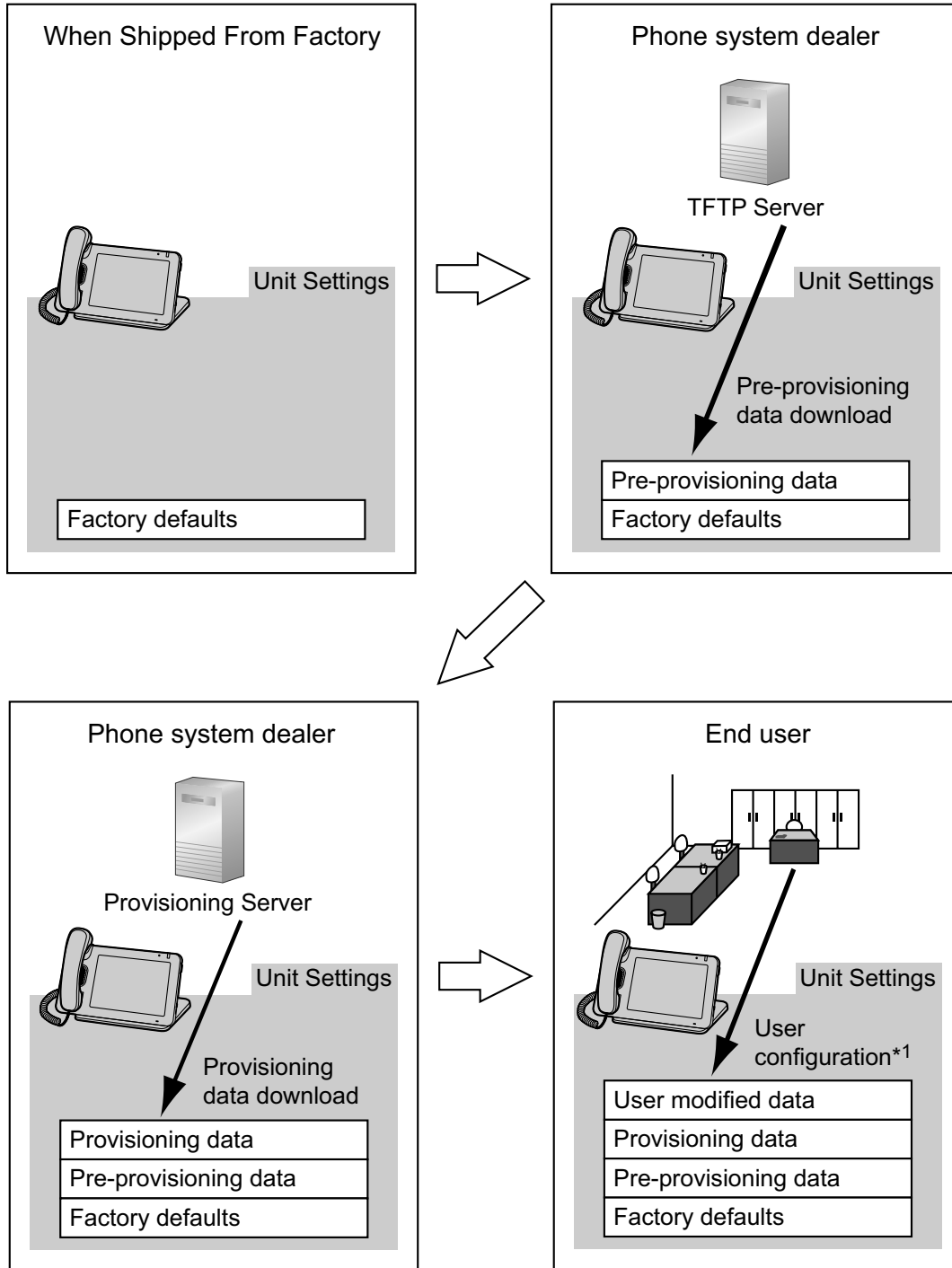


### Note

- Connect the switching hub to the unit's LAN port. The unit will not connect properly if you connect to the unit's PC port.
- While the unit is connected to a switching hub, you can also perform Web user interface programming by connecting a PC to the unit's PC port.
- You can perform Web user interface programming by connecting a PC directly to the unit without using a switching hub or router. In this case, connect the PC to the LAN port of the unit.

## 2.4 Configuration File Programming

You can make settings by creating a configuration file in advance (→ see **2.4.2 Pre-provisioning**). Also, the unit can be set by downloading configuration files from a server (→ see **2.4.3 Provisioning**). For details about programming configuration files, see **Section 5 Configuration File Programming**.



\*1 User configuration refers to Phone user interface programming and Web user interface programming.



## 2.4.1 Configuration File Programming Methods

There are 2 methods to program configuration files:

- **Plain text provisioning:** a provisioning method using plain text configuration files.
- **XML provisioning:** a provisioning method using XML formatted configuration files.

The examples in **2.4.2 Pre-provisioning** and **2.4.3 Provisioning** use the plain text provisioning method. For details about XML provisioning, see **2.4.4 XML Provisioning**.

## 2.4.2 Pre-provisioning

### 2.4.2.1 What is Pre-provisioning?

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.

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.

To restore settings configured by pre-provisioning, return the unit to its factory default state by performing a reset. You can reperform pre-provisioning after resetting the unit.

For details about resetting the unit, see **Section 9 Resetting the Unit**.

### 2.4.2.2 Server for Pre-provisioning

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.

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.	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.  <b>Note</b> <ul style="list-style-type: none"> <li>• The maximum length of FQDN text is 64 bytes.</li> </ul>
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 "KX-UT670.cfg" stored in the root directory of the TFTP server.

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.

### 2.4.2.3 Pre-provisioning Setting Example

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

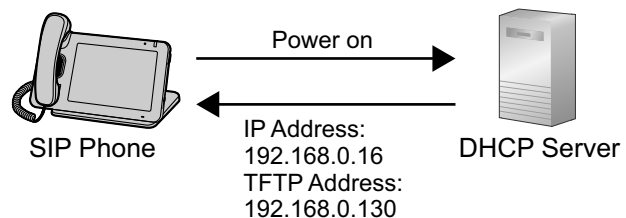
#### Setting Example

Item	Description/Setting
TFTP server address	192.168.0.130
Distribution directory of TFTP server	/tftpboot
Model name of the unit	KX-UT670
MAC address of the unit	0080F0123456
Provisioning server name (the server domain name or URI where the configuration file used for provisioning is to be stored)	provisioning.example.com
File name of the configuration file used for provisioning	Config0080F0123456.cfg
URL of the configuration file used for provisioning	http://provisioning.example.com/Config0080F0123456.cfg
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-UT670.cfg
The setting example as set in KX-UT670.cfg	<pre>CFG_STANDARD_FILE_PATH="http://provisioning.example.com/Config{MAC}.cfg"</pre> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>"{MAC}" is replaced by the MAC address of the unit. (e.g., "0080F0123456")</li> </ul>

#### Step 1

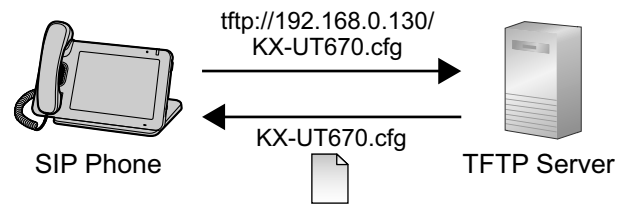
Connect the unit to the network, and turn the power on.

- The unit is assigned the IP address "192.168.0.16" by the DHCP server.
- The unit receives the TFTP server address "192.168.0.130" from the DHCP server using DHCP server option 66.

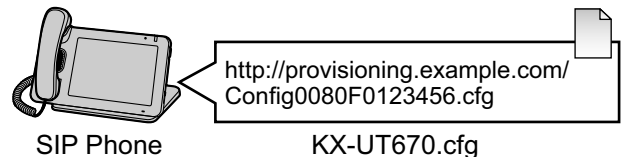


**Step 2**

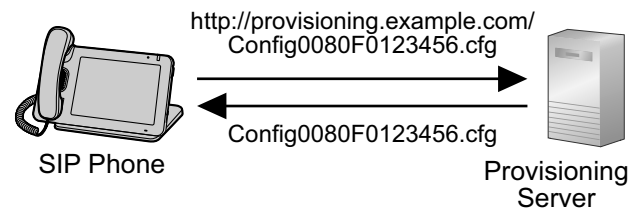
The unit downloads the configuration file for pre-provisioning from the TFTP server.

**Step 3**

The URL of the server where the configuration file for provisioning is stored (provisioning server) is set to the unit.

**Step 4**

The unit will automatically restart. When the unit is distributed to end users and started up in real circumstances, provisioning will be performed correctly.



## 2.4.3 Provisioning

### 2.4.3.1 What is Provisioning?

After pre-provisioning has been performed (→ see **2.4.2 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".

### 2.4.3.2 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.

### 2.4.3.3 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	<p>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.</p> <p>Example of the configuration file's URL: http://prov.example.com/ConfigCommon.cfg</p>
Product configuration file	<p>Configure settings that are required for a particular model. This configuration file is used by all the units that have the same model name.</p> <p>Example of the configuration file's URL: http://prov.example.com/Config{MODEL}.cfg</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>When a unit requests the configuration file, "{MODEL}" is replaced by the model name of the unit.</li> </ul>
Standard configuration file	<p>Configure settings that are unique to each unit, such as the phone number, user ID, password, etc.</p> <p>Example of the configuration file's URL: http://prov.example.com/Config{MAC}.cfg</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>When a unit requests the configuration file, "{MAC}" is replaced by the MAC address of the unit.</li> </ul>

Depending on the situation, you can use all 3 types of configuration files, and can also use only a standard configuration file.

### 2.4.3.4 Downloading Configuration Files

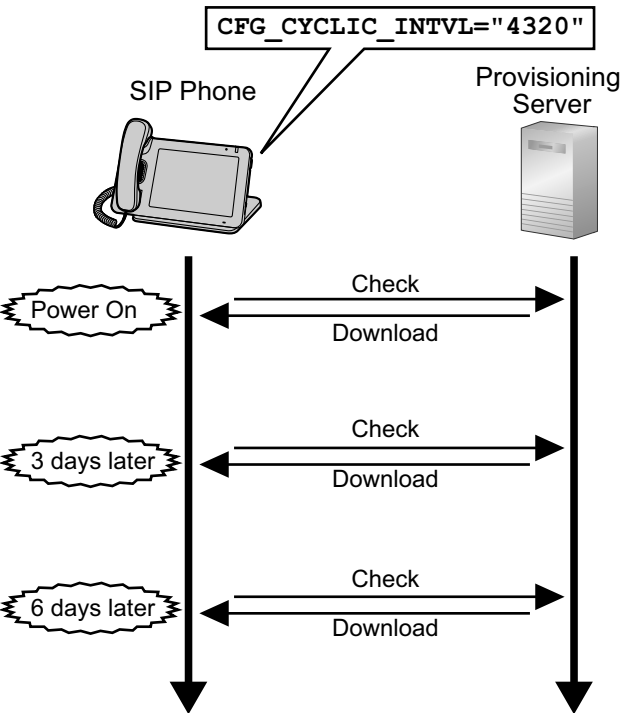
#### Downloading a Configuration File via the Web User Interface

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

1. Confirm that the provisioning server's IP address/FQDN and directory are correct, and store the configuration files in the directory (e.g., http://provisioning.example.com/Panasonic/Config\_Sample.cfg).
2. Enter the IP address of the unit into the PC's Web browser (→ see **4.2.4 Accessing the Web User Interface**).
3. Log in as the administrator.
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 **4.8.2 Provisioning Maintenance** and **5.4.5 Provisioning Settings**.

Download Timing	Explanation
Startup	The configuration files are downloaded when the unit starts up.
At regular intervals of time	<p>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).</p>  <p>The configuration files are downloaded periodically under the following conditions:</p> <ul style="list-style-type: none"> <li>In the configuration file, add the line, <code>CFG_CYCLIC="Y"</code>.       <ul style="list-style-type: none"> <li>Set an interval (minutes) by specifying "<code>CFG_CYCLIC_INTVL</code>".</li> </ul> </li> <li>In the Web user interface:       <ul style="list-style-type: none"> <li>Click the <b>[Maintenance]</b> tab, click <b>[Provisioning Maintenance]</b>, and then select <b>[Yes]</b> for <b>[Cyclic Auto Resync]</b>.</li> <li>Enter an interval (minutes) in <b>[Resync Interval]</b>.</li> </ul> </li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>The interval may be determined by your phone system dealer. A maximum interval of 28 days (40320 minutes) can be set on the unit.</li> </ul>

Download Timing	Explanation
<p>At a specified time each day</p>	<p>After the unit is powered on, it will check for and download configuration files once per day at the specified time.</p> <div style="text-align: center;"> </div> <p>The configuration files are downloaded at a set time each day:</p> <ul style="list-style-type: none"> <li>• Set a time by specifying "CFG_RESYNC_TIME".</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The time is specified using a 24-hour clock ("00:00" to "23:59").</li> <li>• The unit's date and time must be set in order to use this method.</li> </ul>
<p>When directed</p>	<p>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.</p> <ul style="list-style-type: none"> <li>• In the configuration file: <ul style="list-style-type: none"> <li>– Specify the special event text in "CFG_RESYNC_FROM_SIP".</li> </ul> </li> <li>• In the Web user interface: <ul style="list-style-type: none"> <li>– Click the <b>[Maintenance]</b> tab, click <b>[Provisioning Maintenance]</b>, and then enter the special event text in <b>[Header Value for Resync Event]</b>.</li> </ul> </li> </ul> <p>Generally, "check-sync" or "resync" is set as the special event text.</p>

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

### 2.4.3.5 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	<ul style="list-style-type: none"> <li>• 0080F0111111</li> <li>• 0080F0222222</li> </ul>
URL of the configuration files	<p>Configure the following 2 settings either by pre-provisioning or through the Web user interface. The values of both settings must be the same.</p> <ul style="list-style-type: none"> <li>• <code>CFG_STANDARD_FILE_PATH="http://prov.example.com/Config{MAC}.cfg"</code></li> <li>• <code>CFG_MASTER_FILE_PATH="http://prov.example.com/ConfigCommon.cfg"</code></li> </ul>
File name of configuration files	<p>Store the following configuration files in the HTTP root directory.</p> <ul style="list-style-type: none"> <li>• Contains the common settings for the 2 units (master configuration file): <ul style="list-style-type: none"> <li>– ConfigCommon.cfg</li> </ul> </li> <li>• Contains the settings unique to each unit (standard configuration files): <ul style="list-style-type: none"> <li>– Config0080F0111111.cfg</li> <li>– Config0080F0222222.cfg</li> </ul> </li> </ul>

#### 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/ConfigCommon.cfg
    - http://prov.example.com/Config0080F0111111.cfg
  - b. The unit with the MAC address 0080F0222222 accesses the following URLs:
    - http://prov.example.com/ConfigCommon.cfg
    - http://prov.example.com/Config0080F0222222.cfg

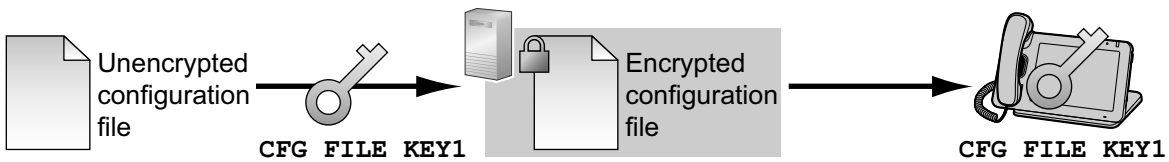
### Example Provisioning Direction from the Server

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
```

## 2.4.3.6 Encryption

### 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.

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.

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.

## 2.4.4 XML Provisioning

XML provisioning is a provisioning method that uses XML formatted configuration files. XML provisioning consists of a configuration file (.xml) and a schema file (.xsd). The benefits of XML formatted configuration files are as follows:

- You can use an XML editor to edit configuration files, which prevents typos in the configuration parameters.
- XML formatted configuration files integrate better with server applications than plain text configuration files.



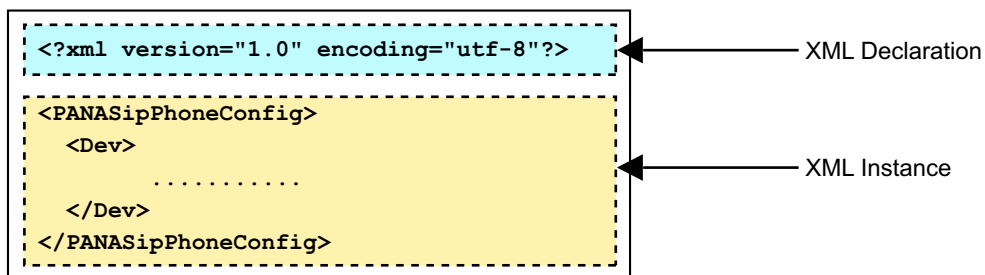
**Note**

- The maximum size of a configuration file is 240 KB.
- The configuration file does not necessarily need to have the ".xml" extension. However, it must start with a comment line containing "# Panasonic SIP Phone Standard Format File #".
- If you are transferring configuration files using an encryption key (→ see 2.4.3.6 Encryption), the file extension must be changed accordingly.

## 2.4.4.1 XML Structure

### XML Syntax

XML configuration files each consist of an XML declaration and XML instance.

**[XML Declaration]**

The XML declaration contains the XML version and character set, as follows:

```
<?xml version="1.0" encoding="utf-8"?>
```

The XML version must be 1.0 and the character set must be UTF-8.

**[XML Instance]**

The XML instance contains the XML configuration data for programming the unit.

### XML Schema File

The XML schema is a description of the type of XML document. The file name should be as follows:

- UT670\_config.xsd

This is not a proprietary schema. The schema uses the "http://www.w3.org/2001/XMLSchema" namespace.

### XML Element/Attribute Configuration Parameters

**Common Description Rules**

- Certain parameter names end with "[n]". This signifies that these settings can be made to each line individually. The unit supports 6 telephone lines.

**Example:**

```
UserAgentPort[n] SIP_SRC_PORT_[n]
  <UserAgentPort1 SIP_SRC_PORT_1="5060" />
  <UserAgentPort2 SIP_SRC_PORT_2="5070" />
  <UserAgentPort3 SIP_SRC_PORT_3="5080" />
  <UserAgentPort4 SIP_SRC_PORT_4="5090" />
  <UserAgentPort5 SIP_SRC_PORT_5="5100" />
  <UserAgentPort6 SIP_SRC_PORT_6="5110" />
```

- Certain parameter names end with "[x]". This signifies that these settings can be made to each button individually. Up to 24 buttons can be configured.

**Example:**

```
Button ID="[x]"
  <Button ID="1">
    <FacilityAction FLEX_BUTTON_FACILITY_ACT1="X_PANASONIC_IPTEL_DN" />
    <FacilityActionArgument FLEX_BUTTON_FACILITY_ARG1="1" />
    <ButtonMessage FLEX_BUTTON_LABEL1="" />
  </Button>
```

- Certain parameter names end with "[y]". This signifies that these settings can be made to each codec individually. The codecs are classified as follows:

- 0: G.722
- 1: PCMA
- 3: G.729A
- 4: PCMU

**Example:**

```
Codec.List ID="[y]"
  <Codec>
    <List ID="0">
      <Enable CODEC_ENABLE0_1="Y" />
      <Priority CODEC_PRIORITY0_1="1" />
    </List>
    <List ID="1">
      <Enable CODEC_ENABLE1_1="Y" />
      <Priority CODEC_PRIORITY1_1="1" />
    </List>
  </Codec>
```

**Predefined Entities of XML**

The following entities must be used when rendering the following characters in XML.

Character	Entity	Description
"	&quot;	Quotation mark
&	&amp;	Ampersand
'	&apos;	Apostrophe
<	&lt;	Less-than sign
>	&gt;	Greater-than sign

## 2.4.4.2 XML Element/Attribute Configuration Parameter Table

Element	Attribute (Configuration Parameter)	Ref.
PANASipPhoneConfig	–	–
Dev	–	–
Srv	–	–
Prof	–	–
Enable	PROFILE_ENABLE [n]	Page 190
DTMFMethod	OUTBANDDTMF_ [n]	Page 182
DigitMap	DIAL_PLAN_ [n]	Page 185
SIP	–	–
ProxyServer	SIP_PRXY_ADDR_ [n]	Page 191
ProxyServerPort	SIP_PRXY_PORT_ [n]	Page 191
ProxyServerTransport	SIP_TRANSPORT_ [n]	Page 205
RegistrarServer	SIP_RGSTR_ADDR_ [n]	Page 191
RegistrarServerPort	SIP_RGSTR_PORT_ [n]	Page 192
UserAgentDomain	SIP_SVCDOMAIN_ [n]	Page 192
UserAgentPort [n]	SIP_SRC_PORT_ [n]	Page 191
OutboundProxy	SIP_OUTPROXY_ADDR_ [n]	Page 204
OutboundProxyPort	SIP_OUTPROXY_PORT_ [n]	Page 205
TimerT1	SIP_TIMER_T1_ [n]	Page 195
TimerT2	SIP_TIMER_T2_ [n]	Page 195
TimerT4	SIP_TIMER_T4_ [n]	Page 196
TimerB	SIP_TIMER_B_ [n]	Page 207
TimerD	SIP_TIMER_D_ [n]	Page 207
TimerF	SIP_TIMER_F_ [n]	Page 208
TimerH	SIP_TIMER_H_ [n]	Page 208
TimerJ	SIP_TIMER_J_ [n]	Page 208
InviteExpires	SIP_INVITE_EXPIRE_ [n]	Page 198

Element	Attribute (Configuration Parameter)	Ref.
RegisterExpires	REG_EXPIRE_TIME_[n]	Page 192
RegisterRetryInterval	REG_RTX_INTVL_[n]	Page 203
DSCPMark	DSCP_SIP_[n]	Page 193
X_P_IPTEL_RegisterIntervalRate	REG_INTERVAL_RATE_[n]	Page 193
DetectReceiveToHeader	SIP_RCV_DET_HEADER_[n]	Page 206
X_P_IPTEL_SIPProxyServer	SIP_2NDPROXY_ADDR_[n]	Page 194
X_P_IPTEL_SIPProxyServerPort2	SIP_2NDPROXY_PORT_[n]	Page 194
X_P_IPTEL_SIPRegistrarServer2	SIP_2NDRGSTR_ADDR_[n]	Page 194
X_P_IPTEL_SIPRegistrarServerPort2	SIP_2NDRGSTR_PORT_[n]	Page 195
SIPRequestURIPort	SIP_REQURI_PORT_[n]	Page 201
EventSubscribe	-	-
Notifier	SIP_PR SNC_ADDR_[n]	Page 199
NotifierPort	SIP_PR SNC_PORT_[n]	Page 199
ExpireTime	SIP_SUBS_EXPIRE_[n]	Page 202
X_P_IPTEL_SIPNotifier2	SIP_2NDPR SNC_ADDR_[n]	Page 200
X_P_IPTEL_SIPNotifierPort2	SIP_2NDPR SNC_PORT_[n]	Page 200
RTP	-	-
LocalPortMin	RTP_PORT_MIN	Page 180
LocalPortMax	RTP_PORT_MAX	Page 180
DSCPMark	DSCP_RTP_[n]	Page 178
TelephoneEventPayloadType	TELEVENT_PAYLOAD	Page 183
RTCP	-	-
Enable	RTCP_ENABLE_[n]	Page 181
TxRepeatInterval	RTCP_INTVL_[n]	Page 179

Element	Attribute (Configuration Parameter)	Ref.
ButtonMap	–	–
Button	ID=" [x] " ([x]:1–24)	–
FacilityAction	FLEX_BUTTON_FACILITY_ACT[x]	Page 175
FacilityActionArgument	FLEX_BUTTON_FACILITY_ARG[x]	Page 175
ButtonMessage	FLEX_BUTTON_LABEL[x]	Page 176
Codec	–	–
PacketizationPeriod	RTP_PTIME	Page 181
Line	ID=" [n] "	–
Enable	LINE_ENABLE_[n]	Page 189
DirectoryNumber	PHONE_NUMBER_[n]	Page 189
SIP	–	–
AuthUserName	SIP_AUTHID_[n]	Page 190
AuthPassword	SIP_PASS_[n]	Page 190
URI	SIP_URI_[n]	Page 189
CallingFeatures	–	–
CallerIDName	DISPLAY_NAME_[n]	Page 184
CallWaitingEnable	CW_ENABLE_[n]	Page 187
CallFeat	–	–
X_P_IPTEL_VoiceMailAccessNumber	VM_NUMBER_[n]	Page 184
X_P_IPTEL_DialPlanNotMatchEnable	DIAL_PLAN_NOT_MATCH_ENABLE_[n]	Page 185
X_P_IPTEL_SharedCallEnable	SHARED_CALL_ENABLE_[n]	Page 186
X_P_IPTEL_FwdDndSynchroEnable	FWD_DND_SYNCHRO_ENABLE_[n]	Page 186

Element	Attribute (Configuration Parameter)	Ref.
X_P_IPTEL_ResourceListUri	RESOURCELIST_URI_[n]	Page 187
Codec	-	-
List	ID=" [y] " ([y]:0-4)	-
Enable	CODEC_ENABLE[y]_[n]	Page 177
Priority	CODEC_PRIORITY[y]_[n]	Page 177
X_P_IPTEL_SIP	-	-
SessionTimer	SIP_SESSION_TIME_[n]	Page 193
SessionMethod	SIP_SESSION_METHOD_[n]	Page 193
FailoverEnable	SIP_FOVR_NORSP_[n]	Page 196
FailoverMax	SIP_FOVR_MAX_[n]	Page 196
RefresherParameter	SIP_REFRESHER_[n]	Page 197
DNSSrvEnable	SIP_DNSSRV_ENA_[n]	Page 197
UDPSrvPrefix	SIP_UDP_SRV_PREFIX_[n]	Page 197
TCPSrvPrefix	SIP_TCP_SRV_PREFIX_[n]	Page 198
SIP100relEnable	SIP_100REL_ENABLE_[n]	Page 198
SIP18XRetransmitInterval	SIP_18X_RTX_INTVL_[n]	Page 199
DelRegisterOpenEnable	USE_DEL_REG_OPEN_[n]	Page 200
DelRegisterCloseEnable	USE_DEL_REG_CLOSE_[n]	Page 200
UserPhoneEnable	ADD_USER_PHONE_[n]	Page 203
TransportUDPEnable	ADD_TRANSPORT_UDP_[n]	Page 208
DelRegisterExpiresEnable	ADD_EXPIRES_HEADER_[n]	Page 209
AddRport	SIP_ADD_RPORT_[n]	Page 201
SubscribeFailerRetryInterval	SUB_RTX_INTVL_[n]	Page 202
PortPunchInterval	PORT_PUNCH_INTVL_[n]	Page 201
DetectSSAF	SIP_DETECT_SSAF_[n]	Page 206

Element	Attribute (Configuration Parameter)	Ref.
SubscribeIntervalRate	SUB_INTERVAL_RATE_[n]	Page 204
HoldReceiveEnable	SIP_HOLD_HOLDRECEIVE_[n]	Page 209
ContactHeaderOnACK	SIP_CONTACT_ON_ACK_[n]	Page 207
AnonymousDisplayName	SIP_ANM_DISPNAME_[n]	Page 205
AnonymousUserName	SIP_ANM_USERNAME_[n]	Page 205
AnonymousHostName	SIP_ANM_HOSTNAME_[n]	Page 206
PreferredIDEnable	SIP_P_PREFERRED_ID_[n]	Page 203
PrivacyEnable	SIP_PRIVACY_[n]	Page 203
AddDiversionHeader	SIP_ADD_DIVERSION_[n]	Page 209
X_P_IPTEL_SDP	–	–
RTCPSendBySDP	RTCP_SEND_BY_SDP_[n]	Page 182
UserID	SDP_USER_ID_[n]	Page 204
RFC2543HoldEnable	RFC2543_HOLD_ENABLE_[n]	Page 183
RTPCloseEnable	RTP_CLOSE_ENABLE_[n]	Page 182
X_P_IPTEL_Jitter	–	–
MaxDelay	MAX_DELAY_[n]	Page 179
MinDelay	MIN_DELAY_[n]	Page 179
NormalDelay	NOM_DELAY_[n]	Page 180
Time	–	–
NTPServer1	NTP_ADDR	Page 157
LocalTimeZone_TIME_ZONE	TIME_ZONE_COUNTRY	Page 141
X_PANASONIC_IPTEL_ErrorRetryInterval	TIME_SYNC_INTVL	Page 157
X_PANASONIC_IPTEL_SynchronizationInterval	TIME_QUERY_INTVL	Page 157
LAN	–	–
X_P_IPTEL_NwSettingEnable	NW_SETTING_ENABLE	Page 158
X_P_IPTEL_HTTP	–	–

Element	Attribute (Configuration Parameter)	Ref.
Version	HTTP_VER	Page 155
CustomWebPage	CUSTOM_WEB_PAGE	Page 159
UserAgent	HTTP_USER_AGENT	Page 155
SSLVerify	HTTP_SSL_VERIFY	Page 156
CertificateFileURL	CFG_ROOT_CERTIFICATE_PATH	Page 156
X_P_IPTEL_Codec	–	–
CodecG711requirement	CODEC_G711_REQ	Page 176
CodecG729Parameter	CODEC_G729_PARAM	Page 177
X_P_IPTEL_STUN	–	–
ServerAddress	STUN_SERV_ADDR	Page 157
ServerPort	STUN_SERV_PORT	Page 158
ServerAddress2	STUN_2NDSERV_ADDR	Page 158
ServerPort2	STUN_2NDSERV_PORT	Page 158
X_P_IPTEL_Syslog	–	–
SyslogAddress	SYSLOG_ADDR	Page 143
SyslogPort	SYSLOG_PORT	Page 143
X_P_IPTEL_HTTPD	–	–
AdminID	ADMIN_ID	Page 140
AdminPass	ADMIN_PASS	Page 140
UserID	USER_ID	Page 140
UserPass	USER_PASS	Page 140
AutoPortOpenEnable	HTTPD_PORTOPEN_AUTO	Page 154
X_P_IPTEL_SIP	–	–
UserAgent	SIP_USER_AGENT	Page 188
ResCode	–	–
Dnd	SIP_RESPONSE_CODE_DND	Page 210



Element	Attribute (Configuration Parameter)	Ref.
CallReject	SIP_RESPONSE_CODE_CALL_REJECT	Page 210
X_P_IPTEL_LLDP	–	–
Enable	LLDP_ENABLE	Page 151
Interval	LLDP_INTERVAL	Page 152
PcID	LLDP_VLAN_ID_PC	Page 152
PcPriority	LLDP_VLAN_PRI_PC	Page 152
X_P_IPTEL_VLAN	–	–
Enable	VLAN_ENABLE	Page 152
IpPhoneID	VLAN_ID_IP_PHONE	Page 153
IpPhonePriority	VLAN_PRI_IP_PHONE	Page 153
PcID	VLAN_ID_PC	Page 154
PcPriority	VLAN_PRI_PC	Page 154
X_P_IPTEL_Provisioning	–	–
ProvisionEnable	PROVISION_ENABLE	Page 145
Option66Enable	OPTION66_ENABLE	Page 144
StandardFileURL	CFG_STANDARD_FILE_PATH	Page 145
ProductFileURL	CFG_PRODUCT_FILE_PATH	Page 146
MasterFileURL	CFG_MASTER_FILE_PATH	Page 147
CyclicEnable	CFG_CYCLIC	Page 149
CyclicInterval	CFG_CYCLIC_INTVL	Page 150
RetryInterval	CFG_RTRY_INTVL	Page 150
ResyncTime	CFG_RESYNC_TIME	Page 150
Key1	CFG_FILE_KEY1	Page 148
Key2	CFG_FILE_KEY2	Page 149
Key3	CFG_FILE_KEY3	Page 149
AesKeyLength	CFG_FILE_KEY_LENGTH	Page 149
ResyncEvent	CFG_RESYNC_FROM_SIP	Page 151
X_P_IPTEL_Update	–	–

Section 2 General Information on Programming

Element	Attribute (Configuration Parameter)	Ref.
Enable	FIRM_UPGRADE_ENABLE	Page 143
Version	FIRM_VERSION	Page 143
FirmwareFileURL	FIRM_FILE_PATH	Page 144
X_P_IPTEL_CallCtrl	-	-
VMSubscribeEnable	VM_SUBSCRIBE_ENABLE	Page 159
TalkPackageEnable	TALK_PACKAGE	Page 162
HoldPackageEnable	HOLD_PACKAGE	Page 162
RingingOffSettingEnable	RINGING_OFF_SETTING_ENABLE	Page 163
AutoCallHoldEnable	AUTO_CALL_HOLD	Page 163
RedialKeyCallLogEnable	REDIALKEY_CALLLOG_ENABLE	Page 164
OnHookTransferEnable	ONHOOK_TRANSFER_ENABLE	Page 164
InternationalCallPrefix	INTERNATIONAL_ACCESS_CODE	Page 161
CountryCallingCode	COUNTRY_CALLING_CODE	Page 161
NationalAccessCode	NATIONAL_ACCESS_CODE	Page 161
SystemOptions	-	-
DisconnectionMode	DISCONNECTION_MODE	Page 164
FlashRecallTerminate	FLASH_RECALL_TERMINATE	Page 187
FlashHookContentType	FLASHHOOK_CONTENT_TYPE	Page 188
PoundKeyDelimiterEnable	POUND_KEY_DELIMITER_ENABLE	Page 174
DefaultLine	DEFAULT_LINE_SELECT	Page 161
Timers	-	-
FirstDigitTimeout	FIRSTDIGIT_TIM	Page 160
IntDigitTim	INTDIGIT_TIM	Page 160
MacroDigitTimeout	MACRODIGIT_TIM	Page 160
HoldRecallTimer	HOLD_RECALL_TIM	Page 163
DisconnectToneLenHandsfree	TONE_LEN_DISCONNECT_HANDSET	Page 164
ToneLenDisconnectHandsfree	TONE_LEN_DISCONNECT_HANDSFREE	Page 165
AutoAnswerRingTimer	AUTO_ANS_RING_TIM	Page 163

Element	Attribute (Configuration Parameter)	Ref.
PickupDirect	NUM_PLAN_PICKUP_DIRECT	Page 162
X_P_IPTEL_DTMF	–	–
SignalLen	DTMF_SIGNAL_LEN	Page 184
InterDigitLen	DTMF_INTDIGIT_TIM	Page 184
X_P_IPTEL_TelSetting	–	–
DisplayNameReplace	DISPLAY_NAME_REPLACE	Page 172
NumberMatchingLowerDigi	NUMBER_MATCHING_LOWER_DIGIT	Page 172
NumberMatchingUpperDigit	NUMBER_MATCHING_UPPER_DIGIT	Page 172
UserInterface	–	–
DatePattern	DISPLAY_DATE_PATTERN	Page 173
TimePattern	DISPLAY_TIME_PATTERN	Page 173
DefaultLanguage	DEFAULT_LANGUAGE	Page 173
X_P_IPTEL_UserSettings	–	–
DataLineMode	DATA_LINE_MODE	Page 162
X_P_IPTEL_Tone	–	–
Description1	–	–
Frequency	DIAL_TONE1_FRQ	Page 166
Gain	DIAL_TONE1_GAIN	Page 166
Timing	DIAL_TONE1_TIMING	Page 166
Description2	–	–
Frequency	DIAL_TONE2_FRQ	Page 166
Gain	DIAL_TONE2_GAIN	Page 167
Timing	DIAL_TONE2_TIMING	Page 167
Description3	–	–
Frequency	DIAL_TONE4_FRQ	Page 167

Section 2 General Information on Programming

Element	Attribute (Configuration Parameter)	Ref.
Gain	DIAL_TONE4_GAIN	Page 167
Timing	DIAL_TONE4_TIMING	Page 167
Description4	–	–
Frequency	BUSY_TONE_FRQ	Page 168
Gain	BUSY_TONE_GAIN	Page 168
Timing	BUSY_TONE_TIMING	Page 168
Description5	–	–
Frequency	REORDER_TONE_FRQ	Page 169
Gain	REORDER_TONE_GAIN	Page 169
Timing	REORDER_TONE_TIMING	Page 169
Description6	–	–
Frequency	RINGBACK_TONE_FRQ	Page 169
Gain	RINGBACK_TONE_GAIN	Page 170
Timing	RINGBACK_TONE_TIMING	Page 170
Description7	–	–
Frequency	HOLD_ALARM_FRQ	Page 170
Gain	HOLD_ALARM_GAIN	Page 170
Timing	HOLD_ALARM_TIMING	Page 170
Description8	–	–
Frequency	CW_TONE1_FRQ	Page 171
Gain	CW_TONE1_GAIN	Page 171
Timing	CW_TONE1_TIMING	Page 171
Description9	–	–
Frequency	HOLD_TONE_FRQ	Page 171
Gain	HOLD_TONE_GAIN	Page 171
Timing	HOLD_TONE_TIMING	Page 172

### 2.4.4.3 Editing XML Configuration Files on your PC

You can edit XML configuration files using Microsoft® XML Notepad 2007, which can be downloaded from the Microsoft Web site. It is useful for basic editing and checking the configuration file using the schema file before uploading to the unit.

The following procedure describes how to read a schema file.

1. Select **[View]** and then select **[Schemas]**.
2. Select **[File]** and then select **[Add schemas]**.
3. Navigate to the schema file you want to open and then click **[Open]**.
4. Click **[OK]**.

### 2.4.5 Loading Settings Using the SD card

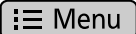
You can load configuration file settings from an SD card. All settings made in configuration files can be configured using this method.

#### Configuration file preparation

##### Notice

- Format the SD card before use. For details about formatting, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).
1. Prepare an SD card.  
For details about supported SD cards, refer to the Panasonic Web site (→ see **Introduction**).
  2. Create a configuration file using a computer's text editor (→ see **5.2.1 Configuration File Specifications for Plain Text Provisioning**).
  3. Save the created configuration file in the root directory of the SD card.

#### To load the configuration file from the SD card

1. Insert the SD card into the unit.
2. Press  **Menu** on the Home screen, and then tap **[Settings]**.
3. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
4. Tap **[Import Configuration file]**.
5. Select the type of configuration file (→ see **2.4.3.3 Configuration File**).
6. Select the file name.
7. Tap **[Import and Restart]**.




##### Note

- In addition to programming the unit, the following functions can be performed using an SD card.
  - Updating the firmware (→ see **7.4 Firmware Update Using the SD Card**).
  - Installing applications (→ see **6.5 Adding Applications**).
- For details about the administrator password, see **3.1.2 Phone User Interface Administrator Menu**.

## 2.5 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:

Priority	Setting Method
High   Low	Settings configured from the Web user interface or the phone user interface (via  Menu on the Home screen or the <b>[Settings]</b> menu)
	Provisioning with the standard configuration file
	Provisioning with the product configuration file
	Provisioning with the master configuration file
	Pre-provisioning with the configuration file
	The factory default settings for the unit

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 **9.1 Resetting to Factory Default and Clearing Data/Settings**.

### Note

- In the case of flexible button settings, configuration file programming has a higher priority than phone user interface programming.

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## **Section 3**

# ***Phone User Interface Programming***

*This section explains how to configure the unit 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.

For details about the other available features, settings and operations on the phone user interface, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

### 3.1.1 Direct Commands

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

Direct Command	Feature	Ref.
[#][7][3][1]	Terminal No.	Page 48
[#][7][3][9]	Reset Web ID/Password <sup>*1</sup>	Page 48

<sup>\*1</sup> Not displayed on the LCD of the unit.



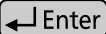
#### Notice

- Direct commands cannot be performed if a USB keyboard is connected to the unit. Disconnect the USB keyboard before performing direct commands.

#### 3.1.1.1 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.

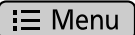


##### To assign a terminal number to the unit

1. Press  **Menu** on the Home screen, and then tap **[Settings]**.
2. Tap **[About phone]**.
3. Press and hold .
4. When the keyboard is displayed, enter **[#][7][3][1]**, and then press .
5. Select the desired terminal number (**[Auto]**, **[Terminal 1]**–**[Terminal 9]**).

#### 3.1.1.2 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 (→ see **Access Levels (IDs and Passwords)** in **4.2.3 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  **Menu** on the Home screen, and then tap **[Settings]**.
2. Tap **[About phone]**.
3. Press and hold .
4. When the keyboard is displayed, enter **[#][7][3][9]**, and then press .



5. Tap **[OK]** to confirm the reset.

#### **Notice**

- For security reasons, it is recommended that the passwords are set again immediately (→ see **4.5.2 Administrator Password** or **4.5.3 Change User Password**).

## 3.1.2 Phone User Interface Administrator Menu

The unit's administrator password is necessary to access the **[Administration]** menu on the unit. In this menu, the administrator can configure the following settings:

Feature	Ref.
<b>Ethernet port settings</b>	Page 17
<b>Import Configuration file</b>	Page 45
<b>Applications</b>	Page 213
<b>Update Firmware</b>	Page 222
<b>Backup and Restore</b>	Page 224
<b>Customize</b>	Page 212
<b>Administrator password</b>	Page 49

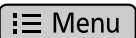
The unit's administrator password is the same as the administrator password for Web user interface programming and the default is also the same. For details, see **Access Levels (IDs and Passwords)** in **4.2.3 Before Accessing the Web User Interface**.

The password can consist of 6 to 16 ASCII characters (case-sensitive) (→ see **Entering Characters** in **4.2.4 Accessing the Web User Interface**).

#### **Notice**

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

#### **To access the unit's administrator menu**

1. Press  **Menu** on the Home screen, and then tap **[Settings]**.
2. Tap **[Administration]**, enter the administrator password, and tap **[OK]**.

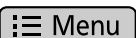
#### **Notice**

- When logging in for the first time, enter the default administrator password ("adminpass"). After logging in, tap **[Administrator password]** and change the password (→ see **To change the administrator password** in this section).

#### **Note**

- You can also change the administrator password using Web user interface programming (→ see **4.5.2.1 Change Administrator Password**) or configuration file programming (→ see **5.4.1 Login Account Settings**).
3. When the **[Administration]** menu is displayed, make the necessary settings.
  4. Tap **[Exit]** to logout.

#### **To change the administrator password**

1. Press  **Menu** on the Home screen, and then tap **[Settings]**.

2. Tap **[Administration]**, enter the administrator password, and tap **[OK]**.
3. Tap **[Administrator password]**, enter the new password, and enter it again for confirmation.
4. Tap **[OK]**.
5. Tap **[Exit]** to logout.

### **Note**

- You can also change the administrator password using Web user interface programming (→ see **4.5.2.1 Change Administrator Password**) or configuration file programming (→ see **5.4.1 Login Account Settings**).

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## **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 **2.3 Web User Interface Programming**.

### Status

Menu Item	Section Title	Setting	Access Level <sup>*1</sup>		Ref.
			U	A	
Version Information	Version Information	Model	✓	✓	Page 66
		OS Version	✓	✓	Page 66
		Firmware Version	✓	✓	Page 66
Network Status	Network Status	MAC Address	✓	✓	Page 67
		Ethernet Link Status (LAN Port)	✓	✓	Page 67
		Ethernet Link Status (PC Port)	✓	✓	Page 67
		Connection Mode	✓	✓	Page 67
		IP Address	✓	✓	Page 67
		Subnet Mask	✓	✓	Page 67
		Default Gateway	✓	✓	Page 68
		DNS1	✓	✓	Page 68
		DNS2	✓	✓	Page 68
VoIP Status	VoIP Status	Line No.	✓	✓	Page 69
		Phone Number	✓	✓	Page 69
		VoIP Status	✓	✓	Page 69

<sup>\*1</sup> 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 <sup>1</sup>		Ref.
			U	A	
Basic Network Settings	Connection Mode	Connection Mode <sup>2</sup>	✓ <sup>3</sup>	✓	Page 70
	DHCP Settings	Host Name		✓	Page 70
		Domain Name Server <sup>2</sup>	✓ <sup>3</sup>	✓	Page 71
	Static Settings	Static IP Address <sup>2</sup>	✓ <sup>3</sup>	✓	Page 71
		Subnet Mask <sup>2</sup>	✓ <sup>3</sup>	✓	Page 72
		Default Gateway <sup>2</sup>	✓ <sup>3</sup>	✓	Page 72
		DNS1 <sup>2</sup>	✓ <sup>3</sup>	✓	Page 72
		DNS2 <sup>2</sup>	✓ <sup>3</sup>	✓	Page 72
Ethernet Port Settings	Link Speed/Duplex Mode	LAN Port <sup>2</sup>		✓	Page 73
		PC Port <sup>2</sup>		✓	Page 74
	LLDP Settings	LLDP <sup>4</sup>		✓	Page 74
		LLDP-MED Interval timer <sup>4</sup>		✓	Page 74
		PC	–	–	–
		VLAN ID <sup>4</sup>		✓	Page 75
		Priority <sup>4</sup>		✓	Page 75
	VLAN Settings	Enable VLAN <sup>4</sup>		✓	Page 75
		IP Phone	–	–	–
		VLAN ID <sup>4</sup>		✓	Page 75
		Priority <sup>4</sup>		✓	Page 76
		PC	–	–	–
		VLAN ID <sup>4</sup>		✓	Page 76
		Priority <sup>4</sup>		✓	Page 75
HTTP Client Settings	HTTP Client Settings	HTTP Version <sup>5</sup>		✓	Page 77
		HTTP User Agent <sup>5</sup>		✓	Page 77
	HTTP Authentication	Authentication ID	✓	✓	Page 78
		Authentication Password	✓	✓	Page 78
	Proxy Server Settings	Enable Proxy		✓	Page 78
		Proxy Server Address		✓	Page 79
		Proxy Server Port		✓	Page 79

## Section 4 Web User Interface Programming

Menu Item	Section Title	Setting	Access Level <sup>*1</sup>		Ref.
			U	A	
Global Address Detection	Global Address Detection	Detection Method		✓	Page 79
		Detection Interval		✓	Page 80
	STUN Server	STUN Server Address <sup>*5</sup>		✓	Page 80
		STUN Server Port <sup>*5</sup>		✓	Page 80
Static NAPT Settings	Global IP Address	Global IP Address		✓	Page 81
	Enable Global IP Address Usage per Line	Line 1–Line 6		✓	Page 81
	External RTP Port	Channel 1–25		✓	Page 82

<sup>\*1</sup> The access levels are abbreviated as follows:

U: User; A: Administrator

A check mark indicates that the setting is available for that access level.

<sup>\*2</sup> This setting can also be configured through phone user interface programming.

<sup>\*3</sup> 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.

<sup>\*4</sup> This setting can also be configured through other programming methods (phone user interface programming or configuration file programming).

<sup>\*5</sup> This setting can also be configured through configuration file programming.

## System

Menu Item	Section Title	Setting	Access Level <sup>*1</sup>		Ref.
			U	A	
Web Language	Web Language	Language	✓	✓	Page 83
Administrator Password	Change Administrator Password	Current Password <sup>*2</sup>		✓	Page 84
		New Password <sup>*2</sup>		✓	Page 84
		Confirm New Password <sup>*2</sup>		✓	Page 84
Change User Password	Change User Password	Current Password <sup>*3</sup>	✓	✓	Page 85
		New Password <sup>*3</sup>	✓	✓	Page 85
		Confirm New Password <sup>*3</sup>	✓	✓	Page 86
Web Server Settings	Web Server Settings	Web Server Port		✓	Page 86
		Port Close Timer		✓	Page 87

<sup>\*1</sup> The access levels are abbreviated as follows:

U: User; A: Administrator

A check mark indicates that the setting is available for that access level.

<sup>\*2</sup> This setting can also be configured through other programming methods (phone user interface programming or configuration file programming).

<sup>\*3</sup> This setting can also be configured through configuration file programming.

## VoIP

Menu Item	Section Title	Setting	Access Level <sup>1</sup>		Ref.
			U	A	
SIP Settings	SIP Setting	SIP User Agent <sup>2</sup>		✓	Page 88
SIP Settings [Line 1]–[Line 6]	Phone Number	Phone Number <sup>2</sup>		✓	Page 89
		SIP URI <sup>2</sup>		✓	Page 89
	SIP Server	Registrar Server Address <sup>2</sup>		✓	Page 89
		Registrar Server Port <sup>2</sup>		✓	Page 89
		Proxy Server Address <sup>2</sup>		✓	Page 90
		Proxy Server Port <sup>2</sup>		✓	Page 90
		Presence Server Address <sup>2</sup>		✓	Page 90
		Presence Server Port <sup>2</sup>		✓	Page 90
	Outbound Proxy Server	Outbound Proxy Server Address <sup>2</sup>		✓	Page 91
		Outbound Proxy Server Port <sup>2</sup>		✓	Page 91
	SIP Service Domain	Service Domain <sup>2</sup>		✓	Page 91
	SIP Source Port	Source Port <sup>2</sup>		✓	Page 91
	SIP Authentication	Authentication ID <sup>2</sup>		✓	Page 92
		Authentication Password <sup>2</sup>		✓	Page 92
	DNS	Enable DNS SRV lookup <sup>2</sup>		✓	Page 92
		SRV lookup Prefix for UDP <sup>2</sup>		✓	Page 93
		SRV lookup Prefix for TCP <sup>2</sup>		✓	Page 93
	Transport Protocol for SIP	Transport Protocol <sup>2</sup>		✓	Page 93
	Timer Settings	T1 Timer <sup>2</sup>		✓	Page 94
		T2 Timer <sup>2</sup>		✓	Page 94
		Timer B <sup>2</sup>		✓	Page 94
		Timer D <sup>2</sup>		✓	Page 95
		Timer F <sup>2</sup>		✓	Page 95
Timer H <sup>2</sup>			✓	Page 95	
Timer J <sup>2</sup>			✓	Page 95	
Quality of Service (QoS)	SIP Packet QoS (DSCP) <sup>2</sup>		✓	Page 95	

## Section 4 Web User Interface Programming

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Menu Item	Section Title	Setting	Access Level <sup>1</sup>		Ref.
			U	A	
	SIP extensions	Supports 100rel (RFC 3262) <sup>2</sup>		✓	Page 96
		Supports Session Timer (RFC 4028) <sup>2</sup>		✓	Page 96
	NAT Identity	Keep Alive Interval <sup>2</sup>		✓	Page 96
		Supports Rport (RFC 3581) <sup>2</sup>		✓	Page 97
	Security	Enable SSAF (SIP Source Address Filter) <sup>2</sup>		✓	Page 97
VoIP Settings	RTP Settings	RTP Packet Time <sup>2</sup>		✓	Page 98
		Minimum RTP Port Number <sup>2</sup>		✓	Page 98
		Maximum RTP Port Number <sup>2</sup>		✓	Page 99
		Telephone-event Payload Type <sup>2</sup>		✓	Page 99



Menu Item	Section Title	Setting	Access Level <sup>1</sup>		Ref.
			U	A	
VoIP Settings [Line 1]–[Line 6]	Quality of Service (QoS)	RTP Packet QoS (DSCP) <sup>2</sup>		✓	Page 100
		RTCP Packet QoS (DSCP) <sup>2</sup>		✓	Page 100
	Statistical Information	RTCP Enable <sup>2</sup>		✓	Page 101
		RTCP Interval <sup>2</sup>		✓	Page 101
	Jitter Buffer	Maximum Delay <sup>2</sup>		✓	Page 101
		Minimum Delay <sup>2</sup>		✓	Page 101
		Initial Delay <sup>2</sup>		✓	Page 102
	DTMF	DTMF Type <sup>2</sup>		✓	Page 102
		DTMF Relay <sup>2</sup>		✓	Page 102
	Call Hold	Supports RFC 2543 (c=0.0.0.0) <sup>2</sup>		✓	Page 103
	CODEC Preferences	G722	–	–	–
		Enable <sup>2</sup>		✓	Page 103
		Priority <sup>2</sup>		✓	Page 103
		PCMA	–	–	–
		Enable <sup>2</sup>		✓	Page 104
		Priority <sup>2</sup>		✓	Page 104
		G729A	–	–	–
		Enable <sup>2</sup>		✓	Page 104
		Priority <sup>2</sup>		✓	Page 104
		PCMU	–	–	–
Enable <sup>2</sup>			✓	Page 104	
Priority <sup>2</sup>			✓	Page 105	

<sup>1</sup> The access levels are abbreviated as follows:

U: User; A: Administrator

A check mark indicates that the setting is available for that access level.

<sup>2</sup> This setting can also be configured through configuration file programming.

## Telephone

Menu Item	Section Title	Setting	Access Level <sup>1</sup>		Ref.
			U	A	
Call Control	Call Control	Send SUBSCRIBE to Voice Mail Server <sup>2</sup>		✓	Page 105
		Conference Server URI <sup>2</sup>		✓	Page 106
		Inter-digit Timeout <sup>2</sup>		✓	Page 106
		Timer for Dial Plan <sup>2</sup>		✓	Page 106
		International Call Prefix <sup>2</sup>		✓	Page 106
		Country Calling Code <sup>2</sup>		✓	Page 107
		National Access Code <sup>2</sup>		✓	Page 107
		Default Line for Outgoing <sup>2</sup>	✓	✓	Page 107
		Flash/Recall Button <sup>2</sup>		✓	Page 107
		Flash Hook Event <sup>2</sup>		✓	Page 108
	Directed Call Pickup <sup>2</sup>		✓	Page 108	
	Call Rejection Phone Numbers	1–30	✓	✓	Page 108

Menu Item	Section Title	Setting	Access Level <sup>1</sup>		Ref.
			U	A	
Call Control [Line 1]–[Line 6]	Call Control	Display Name <sup>2</sup>	✓	✓	Page 109
		Voice Mail Access Number <sup>2</sup>		✓	Page 109
		Enable Shared Call <sup>2</sup>		✓	Page 110
		Synchronize Do Not Disturb and Call Forward <sup>2</sup>		✓	Page 110
		Resource List URI <sup>2</sup>		✓	Page 111
	Dial Plan	Dial Plan (max 500 columns) <sup>2</sup>		✓	Page 111
		Call Even If Dial Plan Does Not Match <sup>2</sup>		✓	Page 111
	Call Features	Block Caller ID	✓	✓	Page 112
		Block Anonymous Call	✓	✓	Page 112
		Do Not Disturb	✓	✓	Page 113
	Call Forward	Unconditional	–	–	–
		Enable Call Forward	✓	✓	Page 113
		Phone Number	✓	✓	Page 114
		Busy	–	–	–
		Enable Call Forward	✓	✓	Page 114
		Phone Number	✓	✓	Page 115
		No Answer	–	–	–
		Enable Call Forward	✓	✓	Page 115
		Phone Number	✓	✓	Page 116
		Ring Count	✓	✓	Page 116
Tone Settings	Dial Tone	Tone Frequencies <sup>2</sup>		✓	Page 117
		Tone Timings <sup>2</sup>		✓	Page 117
	Busy Tone	Tone Frequencies <sup>2</sup>		✓	Page 118
		Tone Timings <sup>2</sup>		✓	Page 118
	Ringing Tone	Tone Frequencies <sup>2</sup>		✓	Page 118
		Tone Timings <sup>2</sup>		✓	Page 119
	Stutter Tone	Tone Frequencies <sup>2</sup>		✓	Page 119
		Tone Timings <sup>2</sup>		✓	Page 119
	Reorder Tone	Tone Frequencies <sup>2</sup>		✓	Page 120
		Tone Timings <sup>2</sup>		✓	Page 120

## Section 4 Web User Interface Programming

Menu Item	Section Title	Setting	Access Level <sup>*1</sup>		Ref.
			U	A	
Telephone Settings	Telephone Settings	Number Matching Lower Digit <sup>*2</sup>		✓	Page 120
		Number Matching Upper Digit <sup>*2</sup>		✓	Page 121

<sup>\*1</sup> The access levels are abbreviated as follows:

U: User; A: Administrator

A check mark indicates that the setting is available for that access level.

<sup>\*2</sup> This setting can also be configured through configuration file programming.

## Maintenance

Menu Item	Section Title	Setting	Access Level <sup>*1</sup>		Ref.
			U	A	
Firmware Maintenance	Firmware Maintenance	Enable Firmware Update <sup>*2</sup>		✓	Page 121
		Firmware File URL <sup>*2</sup>		✓	Page 122
Provisioning Maintenance	Provisioning Maintenance	Enable Provisioning <sup>*2</sup>		✓	Page 123
		Standard File URL <sup>*2</sup>		✓	Page 123
		Product File URL <sup>*2</sup>		✓	Page 123
		Master File URL <sup>*2</sup>		✓	Page 124
		Cyclic Auto Resync <sup>*2</sup>		✓	Page 124
		Resync Interval <sup>*2</sup>		✓	Page 124
		Header Value for Resync Event <sup>*2</sup>		✓	Page 124
Reset to Defaults	Reset Web Data	–		✓	Page 125
Restart	Restart	–		✓	Page 125

<sup>\*1</sup> The access levels are abbreviated as follows:

U: User; A: Administrator

A check mark indicates that the setting is available for that access level.

<sup>\*2</sup> This setting can also be configured through configuration file programming.

## 4.2 General Information on Web User Interface Programming

### 4.2.1 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 4.2.3 **Before Accessing the Web User Interface**.

#### **Notice**

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

### 4.2.2 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 4.5.1 **Web Language**.

### 4.2.3 Before Accessing the Web User Interface

#### Recommended Environment

This unit supports the following specifications:

<b>HTTP Version</b>	HTTP/1.0 (RFC 1945), HTTP/1.1 (RFC 2616)
<b>Authentication Method</b>	Digest (or Basic)

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

<b>Operating System</b>	Microsoft Windows® XP or Windows 7 operating system
<b>Web Browser</b>	Windows Internet Explorer® 7 or Windows Internet Explorer 8 web browser
<b>Language (recommended)</b>	English

#### **Note**


- Please use a computer rather than the unit for Web user interface programming.

## Opening/Closing the Web Port


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

### Configuring Settings from the Unit

#### To open the unit's Web port

1. Press  **Menu** on the Home screen, and then tap **[Settings]**.
2. Tap **[Network]** and then select **[Embedded web]**.
3. Tap **[On]**.

#### To close the unit's Web port

1. Press  **Menu** on the Home screen, and then tap **[Settings]**.
2. Tap **[Network]** and then select **[Embedded web]**.
3. Tap **[Off]**.

### 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 **4.5.4.1 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 **5.5.2 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)	<ul style="list-style-type: none"> <li>• When logged in as User, you can change the password for the User account (→ see <b>4.5.3 Change User Password</b>).</li> <li>• The password can consist of 6 to 16 ASCII characters (case-sensitive) (→ see <b>Entering Characters</b> in <b>4.2.4 Accessing the Web User Interface</b>).</li> </ul>

Account	Target User	ID (default)	Password (default)	Password Restrictions
Administrator	Network administrators, etc.	admin	adminpass	<ul style="list-style-type: none"> <li>When logged in as Administrator, you can change the password for both the User and Administrator accounts (→ see <b>4.5.2 Administrator Password</b>).</li> <li>The password can consist of 6 to 16 ASCII characters (case-sensitive) (→ see <b>4.2.4 Accessing the Web User Interface</b>).</li> </ul>

**Note**

- 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.
- 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 **3.1.1.2 Reset Web ID/Password**.


## 4.2.4 Accessing the Web User Interface

The unit can be configured from the Web user interface.

### To access the Web user interface

- 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:
    - Press  on the Home screen, and then tap **[Settings]**.
    - Tap **[About phone]** and then **[Status]**.
    - Confirm the IP address in **[Network]**.
- For authentication, enter your ID (username) and password, and then click **[OK]**.

**Notice**

- When you log in as User to the Web user interface for the first time, the **[Change User Password]** screen (→ see **4.5.3 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.

**Note**

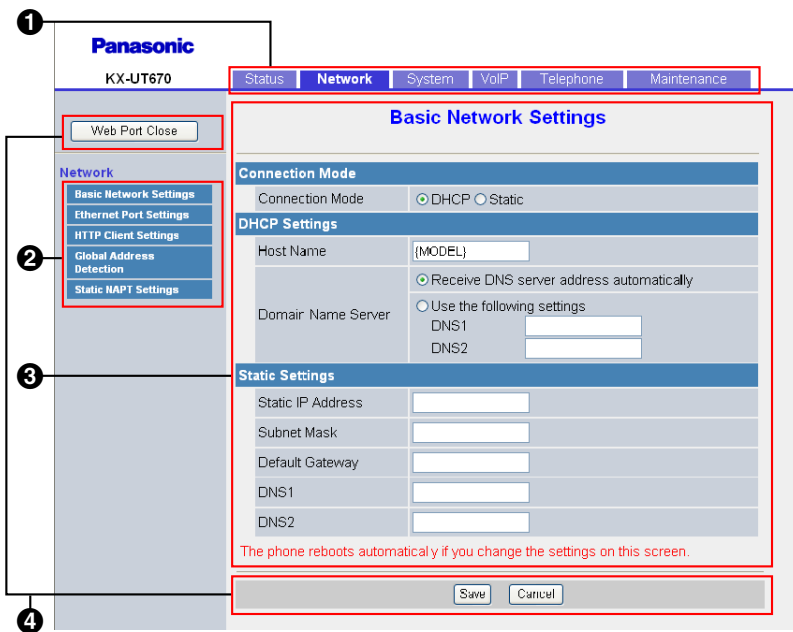
- The default ID for the User account is "user", and the default password is blank. The ID cannot be changed from the Web user interface, but it can be changed through configuration file programming.

## Section 4 Web User Interface Programming

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

## Controls on the Window

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



### Note

- Actual default values may vary depending on your phone system dealer.
- 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.

### 1 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.

### 2 Menu

The menu displays the sub-categories of the selected tab.

### 3 Configuration Screen

Clicking a menu displays the corresponding configuration screen, which contains the actual settings, grouped into sections. For details, see **4.3 Status** to **4.8.4 Restart**.

### 4 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.



Button	Function
Save	Applies changes and displays a result message (→ see <b>4.9 Result Messages</b> 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 <b>[Network Status]</b> and <b>[VoIP Status]</b> 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:

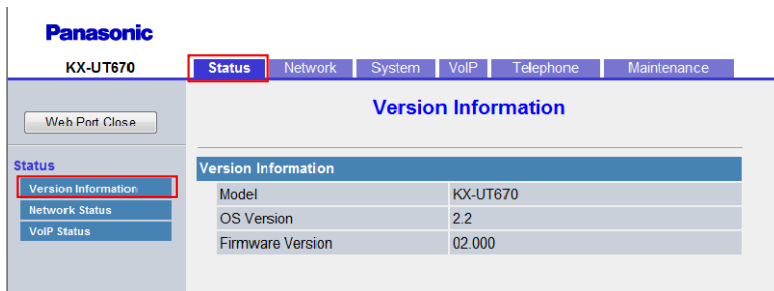
- Number field
  - You may only enter a sequence of numeric characters.
  - You cannot leave the field empty.
- IP Address field
  - You can enter the IP address using dotted-decimal notation (i.e., "n.n.n.n" where n=0–255).
  - You cannot enter invalid IP addresses, for example, "0.0.0.0", "255.255.255.255", 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 **4.7.2.1 Call Control**)
  - This is the only field in which you can enter Unicode characters.

## 4.3 Status

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

### 4.3.1 Version Information

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



#### 4.3.1.1 Version Information

##### Model

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

##### OS Version

Description	
	Indicates the software version that is currently installed on the unit (reference only).

##### Firmware Version

Description	
	Indicates the version of the firmware that is currently installed on the unit (reference only).

### 4.3.2 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.

The screenshot shows the Panasonic KX-UT670 web interface. The 'Status' tab is selected, and the 'Network Status' section is highlighted. The 'Network Status' table displays the following information:

Network Status	
MAC Address	
Ethernet Link Status (LAN Port)	Connected
Ethernet Link Status (PC Port)	Not Connected
Connection Mode	Static
IP Address	192.168.0.228
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS1	192.168.0.1
DNS2	

### 4.3.2.1 Network Status

#### MAC Address

<b>Description</b>	Indicates the MAC address of the unit (reference only).
--------------------	---

#### Ethernet Link Status (LAN Port)

<b>Description</b>	Indicates the current connection status of the Ethernet LAN port (reference only).
--------------------	--

#### Ethernet Link Status (PC Port)

<b>Description</b>	Indicates the current connection status of the Ethernet PC port (reference only).
--------------------	---

#### Connection Mode

<b>Description</b>	Indicates whether the IP address of the unit is assigned automatically (DHCP) or manually (static) (reference only).
--------------------	--

#### IP Address

<b>Description</b>	Indicates the currently assigned IP address of the unit (reference only).
--------------------	---

#### Subnet Mask

<b>Description</b>	Indicates the specified subnet mask for the unit (reference only).
--------------------	--

## Default Gateway

<b>Description</b>	<p>Indicates the specified IP address of the default gateway for the network (reference only).</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If the default gateway address is not specified, this field will be left blank.</li> </ul>
--------------------	---

## DNS1

<b>Description</b>	<p>Indicates the specified IP address of the primary DNS server (reference only).</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If the primary DNS server address is not specified, this field will be left blank.</li> </ul>
--------------------	---

## DNS2

<b>Description</b>	<p>Indicates the specified IP address of the secondary DNS server (reference only).</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If the secondary DNS server address is not specified, this field will be left blank.</li> </ul>
--------------------	---

### 4.3.3 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.



### 4.3.3.1 VoIP Status

#### Line No.

<b>Description</b>	Indicates the line number to which a phone number is assigned (reference only).
--------------------	---

#### Phone Number

<b>Description</b>	Indicates the currently assigned phone numbers (reference only).  <b>Note</b> <ul style="list-style-type: none"> <li>The corresponding field is blank if a line has not yet been leased or if the unit has not been configured.</li> </ul>
--------------------	--

#### VoIP Status

<b>Description</b>	Indicates the current VoIP status of each line (reference only).
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Registered: The unit has been registered to the SIP server, and the line can be used.</li> <li>Registering: The unit is being registered to the SIP server, and the line cannot be used.</li> <li>Blank: The line has not been leased, the unit has not been configured yet, or a SIP authentication failure has occurred.</li> </ul> <b>Note</b> <ul style="list-style-type: none"> <li>The status of the line may not be displayed immediately after starting up the unit because the unit is still being registered to the SIP server. To display the status, wait about 2 to 2.5 minutes, and then click <b>[Refresh]</b> to obtain updated status information.</li> </ul>

## 4.4 Network

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

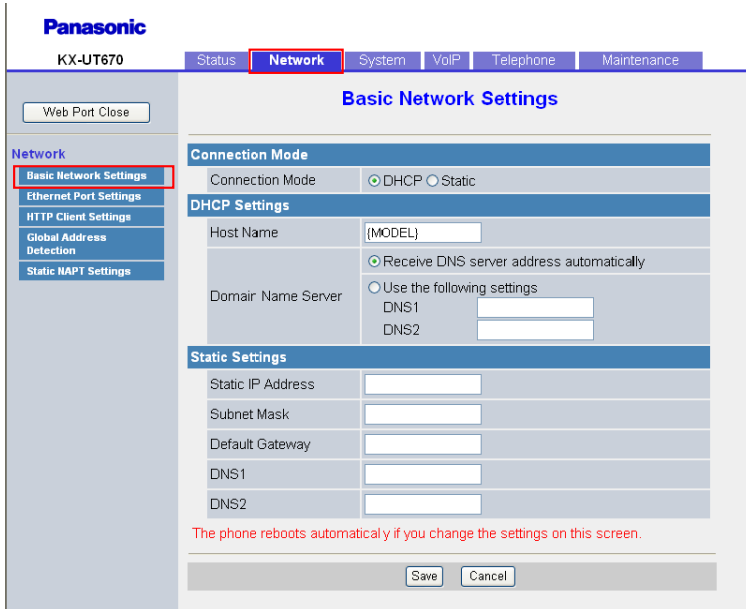
### 4.4.1 Basic Network Settings

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**

- When you change the settings on this screen and click **[Save]**, the message "Complete" is displayed, and then the unit will restart automatically even if the unit is on a call.
- Since 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 **4.2.3 Before Accessing the Web User Interface**).



### 4.4.1.1 Connection Mode

#### Connection Mode

<b>Description</b>	Selects whether to assign the IP address automatically (DHCP) or manually (static).
<b>Value Range</b>	<ul style="list-style-type: none"> <li>DHCP</li> <li>Static</li> </ul>
<b>Default Value</b>	DHCP
<b>Phone User Interface Reference</b>	Network Settings (Page 16)

### 4.4.1.2 DHCP Settings

#### Host Name

<b>Description</b>	Specifies the host name for the unit to send to the DHCP server.
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>This setting is available only when <b>[Connection Mode]</b> is set to <b>[DHCP]</b>.</li> </ul>

<b>Value Range</b>	Max. 63 characters  <b>Note</b> <ul style="list-style-type: none"> <li>You cannot leave this field empty.</li> <li>If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name.</li> </ul>
<b>Default Value</b>	{MODEL}

## Domain Name Server

<b>Description</b>	Selects whether to receive DNS server addresses automatically or to assign a DNS server addresses (up to 2) manually.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when <b>[Connection Mode]</b> is set to <b>[DHCP]</b>.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Receive DNS server address automatically</li> <li>Use the following settings <ul style="list-style-type: none"> <li>DNS1</li> <li>DNS2</li> </ul> </li> </ul> <b>Note</b> <ul style="list-style-type: none"> <li>If you select <b>[Use the following settings]</b>, specify the IP address(es) of the primary and, if necessary, secondary DNS server(s) manually.</li> </ul>
<b>Default Value</b>	Receive DNS server address automatically
<b>Phone User Interface Reference</b>	Network Settings (Page 16)

### 4.4.1.3 Static Settings

#### Static IP Address

<b>Description</b>	Specifies the IP address for the unit.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when <b>[Connection Mode]</b> is set to <b>[Static]</b>.</li> </ul>
<b>Value Range</b>	Max. 15 characters
<b>Default Value</b>	Not stored.
<b>Phone User Interface Reference</b>	Network Settings (Page 16)

## Subnet Mask

<b>Description</b>	Specifies the subnet mask for the unit.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when <b>[Connection Mode]</b> is set to <b>[Static]</b>.</li> </ul>
<b>Value Range</b>	Max. 15 characters
<b>Default Value</b>	Not stored.
<b>Phone User Interface Reference</b>	Network Settings (Page 16)

## Default Gateway

<b>Description</b>	Specifies the IP address of the default gateway for the network where the unit is connected.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when <b>[Connection Mode]</b> is set to <b>[Static]</b>.</li> </ul>
<b>Value Range</b>	Max. 15 characters
<b>Default Value</b>	Not stored.
<b>Phone User Interface Reference</b>	Network Settings (Page 16)

## DNS1

<b>Description</b>	Specifies the IP address of the primary DNS server.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when <b>[Connection Mode]</b> is set to <b>[Static]</b>.</li> </ul>
<b>Value Range</b>	Max. 15 characters
<b>Default Value</b>	Not stored.
<b>Phone User Interface Reference</b>	Network Settings (Page 16)

## DNS2

<b>Description</b>	Specifies the IP address of the secondary DNS server.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when <b>[Connection Mode]</b> is set to <b>[Static]</b>.</li> </ul>
--------------------	--



<b>Value Range</b>	Max. 15 characters
<b>Default Value</b>	Not stored.
<b>Phone User Interface Reference</b>	Network Settings (Page 16)

## 4.4.2 Ethernet Port Settings

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

### Note

- When you change the settings on this screen and click **[Save]**, the message "Complete" is displayed, and then the unit will restart automatically even if the unit is on a call.
- 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**).

**Panasonic**  
KX-UT670

Status **Network** System VoIP Telephone Maintenance

Web Port Close

**Ethernet Port Settings**

**Link Speed/Duplex Mode**

LAN Port Auto Negotiation

PC Port Auto Negotiation

**LLDP Settings**

Enable LLDP  Yes  No

LLDP-MED Interval timer 30 seconds [1-3600]

IP Phone VLAN ID ----  
Priority -

PC VLAN ID 0 [0-4094]  
Priority 0

**VLAN Settings**

Enable VLAN  Yes  No

IP Phone VLAN ID 2 [1-4094]  
Priority 7

PC VLAN ID 1 [1-4094]  
Priority 0

The phone reboots automatically if you change the settings on this screen.

Save Cancel

### 4.4.2.1 Link Speed/Duplex Mode

#### LAN Port

<b>Description</b>	Selects the connection mode (link speed and duplex mode) of the LAN port.
--------------------	---

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Auto Negotiation</li> <li>• 100 Mbps/Full Duplex</li> <li>• 100 Mbps/Half Duplex</li> <li>• 10 Mbps/Full Duplex</li> <li>• 10 Mbps/Half Duplex</li> </ul>
<b>Default Value</b>	Auto Negotiation
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)

## PC Port

<b>Description</b>	Selects the connection mode (link speed and duplex mode) of the PC port.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Auto Negotiation</li> <li>• 100 Mbps/Full Duplex</li> <li>• 100 Mbps/Half Duplex</li> <li>• 10 Mbps/Full Duplex</li> <li>• 10 Mbps/Half Duplex</li> </ul>
<b>Default Value</b>	Auto Negotiation
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)

### 4.4.2.2 LLDP Settings

#### LLDP

<b>Description</b>	Selects whether to enable or disable sending and receiving LLDP frames.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	Yes
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	LLDP_ENABLE (Page 151)

#### LLDP-MED Interval timer

<b>Description</b>	Specifies the interval, in seconds, between sending each LLDP frame.
<b>Value Range</b>	1–3600
<b>Default Value</b>	30
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)

<b>Configuration File Reference</b>	LLDP_INTERVAL (Page 152)
-------------------------------------	--------------------------

## PC (VLAN ID)

<b>Description</b>	Specifies the VLAN ID of the PC port when the LLDP feature is enabled.
<b>Value Range</b>	0–4094
<b>Default Value</b>	0
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	LLDP_VLAN_ID_PC (Page 152)

## PC (Priority)

<b>Description</b>	Specifies the VLAN Priority of the PC port when the LLDP feature is enabled.
<b>Value Range</b>	0–7
<b>Default Value</b>	0
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	LLDP_VLAN_PRI_PC (Page 152)

### 4.4.2.3 VLAN Settings

#### Enable VLAN

<b>Description</b>	Selects whether to use the VLAN feature to perform VoIP communication securely.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	No
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	LLDP_ENABLE (Page 151)

## IP Phone (VLAN ID)

<b>Description</b>	Specifies the VLAN ID for this unit.
<b>Value Range</b>	1–4094
<b>Default Value</b>	2

<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	VLAN_ID_IP_PHONE (Page 153)

## IP Phone (Priority)

---

<b>Description</b>	Selects the priority number for the unit.
<b>Value Range</b>	0–7
<b>Default Value</b>	7
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	VLAN_PRI_IP_PHONE (Page 153)

## PC (VLAN ID)

---

<b>Description</b>	Specifies the VLAN ID for the PC.
<b>Value Range</b>	1–4094
<b>Default Value</b>	1
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	VLAN_ID_PC (Page 154)

## PC (Priority)

---

<b>Description</b>	Selects the priority number for the PC.
<b>Value Range</b>	0–7
<b>Default Value</b>	0
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Configuration File Reference</b>	VLAN_PRI_PC (Page 154)

## 4.4.3 HTTP Client Settings

This screen allows you to change the HTTP client settings for the unit. Configure proxy settings as necessary, according to your network setup. The proxy server is used when accessing the HTTP server of your phone system, downloading configuration files, and when using the unit's Web browser.

### 4.4.3.1 HTTP Client Settings

#### HTTP Version

<b>Description</b>	Selects which version of the HTTP protocol to use for HTTP communication.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>HTTP/1.0</li> <li>HTTP/1.1</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>For this unit, it is strongly recommended that you select <b>[HTTP/1.0]</b>. However, if the HTTP server does not function well with HTTP/1.0, try changing the setting <b>[HTTP/1.1]</b>.</li> </ul>
<b>Default Value</b>	HTTP/1.0
<b>Configuration File Reference</b>	HTTP_VER (Page 155)

#### HTTP User Agent

<b>Description</b>	Specifies the text string to send as the user agent in the header of HTTP requests.
--------------------	---

<b>Value Range</b>	Max. 40 characters  <b>Note</b> <ul style="list-style-type: none"> <li>You cannot leave this field empty.</li> <li>If "{mac}" is included in this field, it will be replaced with the unit's MAC address in lower-case.</li> <li>If "{MAC}" is included in this field, it will be replaced with the unit's MAC address in upper-case.</li> <li>If "{MODEL}" is included in this field, it will be replaced with the unit's model name.</li> <li>If "{fwver}" is included in this field, it will be replaced with the firmware version of the unit.</li> </ul>
<b>Default Value</b>	Panasonic_{MODEL}/{fwver} ({mac})
<b>Configuration File Reference</b>	HTTP_USER_AGENT (Page 155)

### 4.4.3.2 HTTP Authentication

#### Authentication ID

<b>Description</b>	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.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Not stored.

#### Authentication Password

<b>Description</b>	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.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Not stored.

### 4.4.3.3 Proxy Server Settings

#### Enable Proxy

<b>Description</b>	Selects whether to use the proxy server.  <b>Note</b> <ul style="list-style-type: none"> <li>The unit's Web server proxy settings are also used for provisioning and updating the firmware.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>
<b>Default Value</b>	No

## Proxy Server Address

<b>Description</b>	Specifies the IP address or FQDN of the proxy server.
<b>Value Range</b>	Max. 127 characters  <b>Note</b> <ul style="list-style-type: none"> <li>You cannot leave this field empty if <b>[Enable Proxy]</b> is set to <b>[Yes]</b>.</li> </ul>
<b>Default Value</b>	Not stored.

## Proxy Server Port

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

### 4.4.4 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.

**Panasonic**  
KX-UT670

Status **Network** System VoIP Telephone Maintenance

Web Port Close

**Global Address Detection**

**Global Address Detection**

Detection Method  STUN  SIP

Detection Interval 0 second(s) [10-65535, 0: Disable]

**STUN Server**

STUN Server Address 0

STUN Server Port 3478 [1-65535]

Save Cancel

#### 4.4.4.1 Global Address Detection

##### Detection Method

<b>Description</b>	Selects the method to use for detecting the global IP address.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>STUN</li> <li>SIP</li> </ul>

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)  <b>Note</b> <ul style="list-style-type: none"> <li>When <b>[Detection Method]</b> is set to <b>[SIP]</b>, the value "0" disables detection and a value other than "0" enables detection.</li> </ul>
Default Value	0

### 4.4.4.2 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 157)

#### 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 158)

### 4.4.5 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 **1.1.4.2 NAT (Network Address Translation) Setup**.

### 4.4.5.1 Global IP Address

#### Global IP Address

<b>Description</b>	Specifies the global IP address of your network.  <b>Note</b> <ul style="list-style-type: none"> <li>You must enter a value in this field if at least 1 of <b>[Line 1]–[Line 6]</b> is set to <b>[Yes]</b>, or when port numbers are specified in <b>[Channel 1–25]</b>.</li> <li>The global IP address will reflect SIP messages and RTP packets.</li> </ul>
<b>Value Range</b>	IP address in dotted-decimal notation ("n.n.n.n" [n=0–255]) (Max. 15 digits)
<b>Default Value</b>	Not stored.

### 4.4.5.2 Enable Global IP Address Usage per Line

#### Line 1–Line 6

<b>Description</b>	Selects whether to enable the NAT Traversal feature for each line.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>

Default Value	No
---------------	----

### 4.4.5.3 External RTP Port

#### Channel 1–25

<b>Description</b>	Specifies the external RTP port number used for voice communication for each channel.
<b>Value Range</b>	0, 1024–49150 (0: Disable, even number only)  <b>Note</b> <ul style="list-style-type: none"> <li>• Each channel must be set to a unique port number, and all port numbers must be an even number.</li> <li>• You cannot specify here the same port number as any of the port numbers specified for the individual lines in <b>[Source Port]</b> in <b>4.6.2.5 SIP Source Port</b>. In addition, you cannot specify a port number that is 1 less than a port number specified in <b>[Source Port]</b> if the source port number is an odd number.</li> <li>• All channels must be enabled or all channels must be disabled, at the same time.</li> </ul>
<b>Default Value</b>	0

## 4.5 System

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

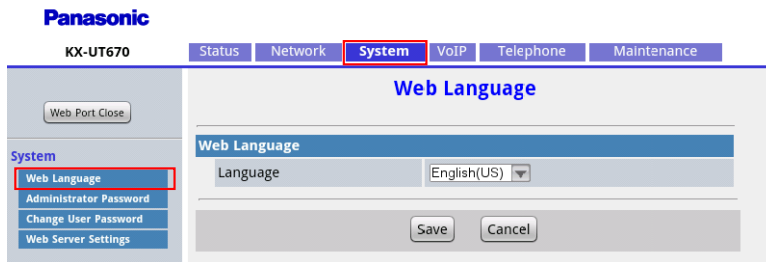
### 4.5.1 Web Language

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.



### 4.5.1.1 Web Language

#### Language

<b>Description</b>	Selects the language used for the Web user interface.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>English (US)</li> <li>English (UK)</li> <li>Deutsch</li> <li>Français</li> <li>Español</li> <li>Italiano</li> <li>Русский</li> <li>日本語</li> </ul>
<b>Default Value</b>	English (US)

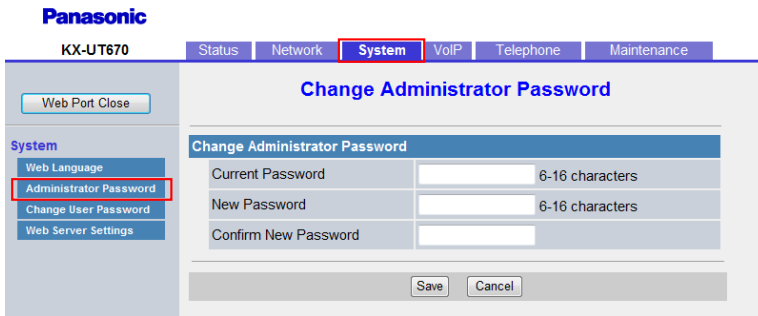
### 4.5.2 Administrator Password

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.



### 4.5.2.1 Change Administrator Password

#### Current Password

<b>Description</b>	Specifies the current password to use to authenticate the Administrator account when logging in to the Web user interface.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	adminpass
<b>Phone User Interface Reference</b>	To change the administrator password (Page 49)
<b>Configuration File Reference</b>	ADMIN_PASS (Page 140)

#### New Password

<b>Description</b>	Specifies the new password to use to authenticate the Administrator account when logging in to the Web user interface.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	Not stored.
<b>Phone User Interface Reference</b>	To change the administrator password (Page 49)
<b>Configuration File Reference</b>	ADMIN_PASS (Page 140)

#### Confirm New Password

<b>Description</b>	Specifies the same password that you entered in <b>[New Password]</b> for confirmation.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)  <b>Note</b> <ul style="list-style-type: none"> <li>This value must be the same as the value entered in <b>[New Password]</b>.</li> </ul>

<b>Default Value</b>	Not stored.
<b>Phone User Interface Reference</b>	To change the administrator password (Page 49)
<b>Configuration File Reference</b>	ADMIN_PASS (Page 140)

### 4.5.3 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.

#### 4.5.3.1 Change User Password

##### Current Password

<b>Description</b>	Specifies the current password to use to authenticate the User account when logging in to the Web user interface.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	USER_PASS (Page 140)

##### New Password

<b>Description</b>	Specifies the new password to use to authenticate the User account when logging in to the Web user interface.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)

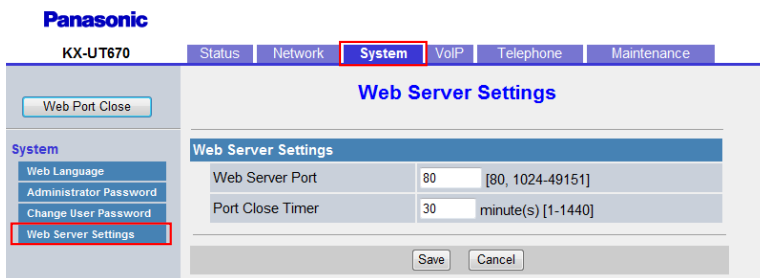
<b>Default Value</b>	Not stored.  <b>Note</b> <ul style="list-style-type: none"> <li>When a user logs in to the Web user interface for the first time, after clicking <b>OK</b> on the authentication dialog box, the <b>[Change User Password]</b> screen is displayed automatically to make the user set a password.</li> </ul>
<b>Configuration File Reference</b>	USER_PASS (Page 140)

## Confirm New Password

<b>Description</b>	Specifies the same password that you entered in <b>[New Password]</b> for confirmation.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)  <b>Note</b> <ul style="list-style-type: none"> <li>This value must be the same as the value entered in <b>[New Password]</b>.</li> </ul>
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	USER_PASS (Page 140)

## 4.5.4 Web Server Settings

This screen allows you to change the Web server settings.



### 4.5.4.1 Web Server Settings

#### Web Server Port

<b>Description</b>	Specifies the port number used by the Web server.
<b>Value Range</b>	80, 1024–49151  <b>Note</b> <ul style="list-style-type: none"> <li>You cannot specify here the same port number as any of the port numbers specified for the individual lines in <b>[Source Port]</b> in 4.6.2.5 SIP Source Port.</li> </ul>

<b>Default Value</b>	80
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>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)</li> </ul>

## Port Close Timer

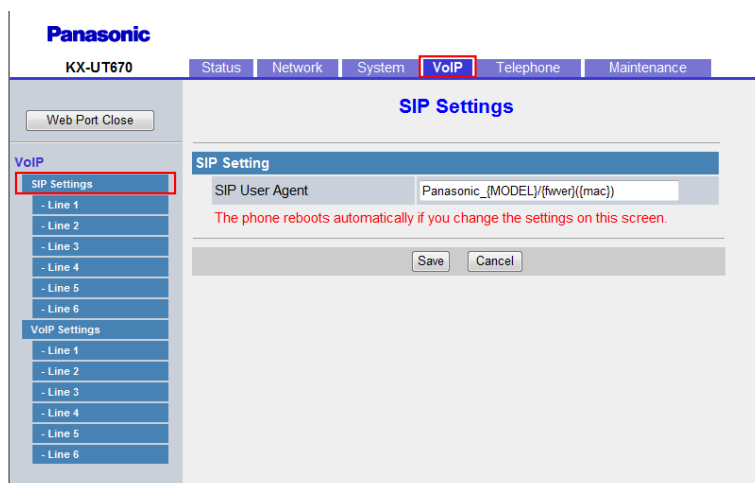
<b>Description</b>	Specifies the length of time, in minutes, to keep the Web port open when there has been no communication between the unit and the PC. If the specified length of time elapses without any communication, the Web port closes automatically. Communication is detected when you click a tab,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

## 4.6 VoIP

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

### 4.6.1 SIP Settings

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



## 4.6.1.1 SIP Setting

### SIP User Agent

<b>Description</b>	Specifies the text string to send as the user agent in the headers of SIP messages.
<b>Value Range</b>	Max. 40 characters  <b>Note</b> <ul style="list-style-type: none"> <li>You cannot leave this field empty.</li> <li>If "{mac}" is included in this field, it will be replaced with the unit's MAC address in lower-case.</li> <li>If "{MAC}" is included in this field, it will be replaced with the unit's MAC address in upper-case.</li> <li>If "{MODEL}" is included in this field, it will be replaced with the unit's model name.</li> <li>If "{fwver}" is included in this field, it will be replaced with the firmware version of the unit.</li> </ul>
<b>Default Value</b>	Panasonic_{MODEL}/{fwver} ({mac})
<b>Configuration File Reference</b>	SIP_USER_AGENT (Page 188)

## 4.6.2 SIP Settings [Line 1]–[Line 6]

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





## 4.6.2.1 Phone Number

### Phone Number

<b>Description</b>	Specifies the phone number to use as the user ID required for registration to the SIP registrar server.  <b>Note</b> <ul style="list-style-type: none"> <li>When registering using a user ID that is not a phone number, you should use the <b>[SIP URI]</b> setting.</li> </ul>
<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	PHONE_NUMBER_n (Page 189)

### SIP URI

<b>Description</b>	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".  <b>Note</b> <ul style="list-style-type: none"> <li>When registering using a user ID that is not a phone number, you should use this setting.</li> <li>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.</li> </ul>
<b>Value Range</b>	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_URI_n (Page 189)

## 4.6.2.2 SIP Server

### Registrar Server Address

<b>Description</b>	Specifies the IP address or FQDN of the SIP registrar server.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_RGSTR_ADDR_n (Page 191)

### Registrar Server Port

<b>Description</b>	Specifies the port number to use for communication with the SIP registrar server.
--------------------	---

<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Configuration File Reference</b>	SIP_RGSTR_PORT_n (Page 192)

## Proxy Server Address

---

<b>Description</b>	Specifies the IP address or FQDN of the SIP proxy server.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_PRXY_ADDR_n (Page 191)

## Proxy Server Port

---

<b>Description</b>	Specifies the port number to use for communication with the SIP proxy server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Configuration File Reference</b>	SIP_PRXY_PORT_n (Page 191)

## Presence Server Address

---

<b>Description</b>	Specifies the IP address or FQDN of the SIP presence server.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_PRSNC_ADDR_n (Page 199)

## Presence Server Port

---

<b>Description</b>	Specifies the port number to use for communication with the SIP presence server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Configuration File Reference</b>	SIP_PRSNC_PORT_n (Page 199)

### 4.6.2.3 Outbound Proxy Server

#### Outbound Proxy Server Address

<b>Description</b>	Specifies the IP address or FQDN of the SIP outbound proxy server.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_OUTPROXY_ADDR_n (Page 204)

#### Outbound Proxy Server Port

<b>Description</b>	Specifies the port number to use for communication with the SIP outbound proxy server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Configuration File Reference</b>	SIP_OUTPROXY_PORT_n (Page 205)

### 4.6.2.4 SIP Service Domain

#### Service Domain

<b>Description</b>	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.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_SVCDOMAIN_n (Page 192)

### 4.6.2.5 SIP Source Port

#### Source Port

<b>Description</b>	Specifies the source port number used by the unit for SIP communication.
--------------------	--

<b>Value Range</b>	1024–49151  <b>Note</b> <ul style="list-style-type: none"> <li>You cannot specify here the same port number as any of the port numbers in <b>[Channel 1–25]</b> in <b>4.4.5.3 External RTP Port</b> (if they are configured). In addition, you cannot specify a port number that is 1 greater than a port number specified in <b>[Channel 1–25]</b>.</li> <li>The SIP port number for each line must be unique.</li> <li>You cannot specify the same port number as the port number specified in <b>[Web Server Port]</b> in <b>4.5.4.1 Web Server Settings</b>.</li> </ul>
<b>Default Value</b>	5060 (for Line 1) 5070 (for Line 2) 5080 (for Line 3) 5090 (for Line 4) 5100 (for Line 5) 5110 (for Line 6)
<b>Configuration File Reference</b>	SIP_SRC_PORT_n (Page 191)

## 4.6.2.6 SIP Authentication

### Authentication ID

<b>Description</b>	Specifies the authentication ID required to access the SIP server.
<b>Value Range</b>	Max. 64 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_AUTHID_n (Page 190)

### Authentication Password

<b>Description</b>	Specifies the authentication password used to access the SIP server.
<b>Value Range</b>	Max. 64 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	SIP_PASS_n (Page 190)

## 4.6.2.7 DNS

### Enable DNS SRV lookup

<b>Description</b>	Selects whether to request the DNS server to translate domain names into IP addresses using the SRV record.
--------------------	---

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If you select <b>[Yes]</b>, 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 <b>[No]</b>, 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.</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	SIP_DNSSRV_ENA_n (Page 197)

## SRV lookup Prefix for UDP

<b>Description</b>	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using UDP.
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when <b>[Enable DNS SRV lookup]</b> is set to <b>[Yes]</b>.</li> </ul>
<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	_sip._udp.
<b>Configuration File Reference</b>	SIP_UDP_SRV_PREFIX_n (Page 197)

## SRV lookup Prefix for TCP

<b>Description</b>	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using TCP.
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when <b>[Enable DNS SRV lookup]</b> is set to <b>[Yes]</b>.</li> </ul>
<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	_sip._tcp.
<b>Configuration File Reference</b>	SIP_TCP_SRV_PREFIX_n (Page 198)

### 4.6.2.8 Transport Protocol for SIP

#### Transport Protocol

<b>Description</b>	Selects which transport layer protocol to use for sending SIP packets.
--------------------	--

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• UDP</li> <li>• TCP</li> </ul>
<b>Default Value</b>	UDP
<b>Configuration File Reference</b>	SIP_TRANSPORT_n (Page 205)

## 4.6.2.9 Timer Settings

### T1 Timer

<b>Description</b>	Selects the default interval, in milliseconds, between transmissions of SIP messages. For details, refer to RFC 3261.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 250</li> <li>• 500</li> <li>• 1000</li> <li>• 2000</li> <li>• 4000</li> </ul>
<b>Default Value</b>	500
<b>Configuration File Reference</b>	SIP_TIMER_T1_n (Page 195)

### T2 Timer

<b>Description</b>	Selects the maximum interval, in seconds, between transmissions of SIP messages. For details, refer to RFC 3261.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 2</li> <li>• 4</li> <li>• 8</li> <li>• 16</li> <li>• 32</li> </ul>
<b>Default Value</b>	4
<b>Configuration File Reference</b>	SIP_TIMER_T2_n (Page 195)

### Timer B

<b>Description</b>	Specifies the value of SIP timer B (INVITE transaction timeout timer), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	250–64000
<b>Default Value</b>	32000
<b>Configuration File Reference</b>	SIP_TIMER_B_n (Page 207)

## Timer D

<b>Description</b>	Specifies the value of SIP timer D (wait time for answer resending), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	0, 250–64000
<b>Default Value</b>	5000
<b>Configuration File Reference</b>	SIP_TIMER_D_n (Page 207)

## Timer F

<b>Description</b>	Specifies the value of SIP timer F (non-INVITE transaction timeout timer), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	250–64000
<b>Default Value</b>	32000
<b>Configuration File Reference</b>	SIP_TIMER_F_n (Page 208)

## Timer H

<b>Description</b>	Specifies the value of SIP timer H (wait time for ACK reception), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	250–64000
<b>Default Value</b>	32000
<b>Configuration File Reference</b>	SIP_TIMER_H_n (Page 208)

## Timer J

<b>Description</b>	Specifies the value of SIP timer J (wait time for non-INVITE request resending), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	0, 250–64000
<b>Default Value</b>	5000
<b>Configuration File Reference</b>	SIP_TIMER_J_n (Page 208)

### 4.6.2.10 Quality of Service (QoS)

#### SIP Packet QoS (DSCP)

<b>Description</b>	Selects the DSCP (Differentiated Services Code Point) level of DiffServ applied to SIP packets.
<b>Value Range</b>	0–63

Default Value	0
Configuration File Reference	DSCP_SIP_n (Page 193)

### 4.6.2.11 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	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If you select <b>[Yes]</b>, 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 <b>[No]</b>, the option tag 100rel will not be used.</li> </ul>
Default Value	No
Configuration File Reference	SIP_100REL_ENABLE_n (Page 198)

#### 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 193)

### 4.6.2.12 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. <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when <b>[Transport Protocol]</b> is set to <b>[UDP]</b>.</li> </ul>
Value Range	0, 10–300 (0: Disable)
Default Value	0
Configuration File Reference	PORT_PUNCH_INTVL_n (Page 201)



## Supports Rport (RFC 3581)

<b>Description</b>	Selects whether to add the "rport" parameter to the top Via header field value of requests generated. For details, refer to RFC 3581.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	No
<b>Configuration File Reference</b>	SIP_ADD_RPORT_n (Page 201)

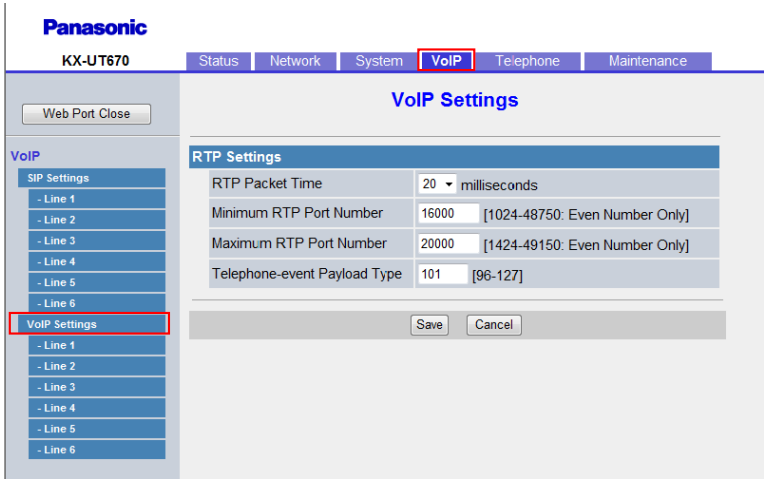
### 4.6.2.13 Security

#### Enable SSAF (SIP Source Address Filter)

<b>Description</b>	Selects whether to enable SSAF (SIP Source Address Filter) for the SIP servers (registrar server, proxy server, and presence server).
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If you select <b>[Yes]</b>, 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 <b>[Outbound Proxy Server Address]</b> in <b>4.6.2.3 Outbound Proxy Server</b> is specified, the unit also receives SIP messages from the source address stored in the SIP outbound proxy server.</li> </ul>
<b>Default Value</b>	No
<b>Configuration File Reference</b>	SIP_DETECT_SSAF_n (Page 206)

## 4.6.3 VoIP Settings

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



### 4.6.3.1 RTP Settings

#### RTP Packet Time

<b>Description</b>	Selects the interval, in milliseconds, between transmissions of RTP packets.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 20</li> <li>• 30 (not available with the G.722 codec)</li> <li>• 40</li> </ul>
<b>Default Value</b>	20
<b>Configuration File Reference</b>	RTP_PTIME (Page 181)

#### Minimum RTP Port Number

<b>Description</b>	<p>Specifies the lowest port number that the unit will use for RTP packets.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If port numbers are specified in <b>[Channel 1–25]</b> in <b>4.4.5.3 External RTP Port</b>, this setting is ignored and the corresponding external RTP port is enabled.</li> </ul>
--------------------	--

<b>Value Range</b>	1024–48750 (even number only)  <b>Note</b> <ul style="list-style-type: none"> <li>The value for this setting must be less than or equal to "[<b>Maximum RTP Port Number</b>] - 400".</li> <li>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)</li> </ul>
<b>Default Value</b>	16000
<b>Configuration File Reference</b>	RTP_PORT_MIN (Page 180)

## Maximum RTP Port Number

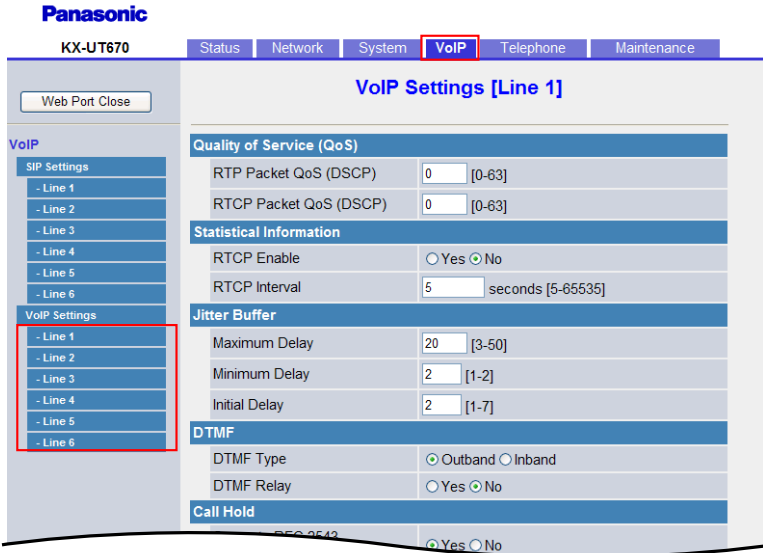
<b>Description</b>	Specifies the highest port number that the unit will use for RTP packets.  <b>Note</b> <ul style="list-style-type: none"> <li>If port numbers are specified in [<b>Channel 1–25</b>] in <b>4.4.5.3 External RTP Port</b>, this setting is ignored and the corresponding external RTP port is enabled.</li> </ul>
<b>Value Range</b>	1424–49150 (even number only)  <b>Note</b> <ul style="list-style-type: none"> <li>The value for this setting must be greater than or equal to "[<b>Minimum RTP Port Number</b>] + 400".</li> <li>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)</li> </ul>
<b>Default Value</b>	20000
<b>Configuration File Reference</b>	RTP_PORT_MAX (Page 180)

## Telephone-event Payload Type

<b>Description</b>	Specifies the RFC 2833 payload type for DTMF tones.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when [<b>DTMF Type</b>] is set to [<b>Outband</b>].</li> </ul>
<b>Value Range</b>	96–127
<b>Default Value</b>	101
<b>Configuration File Reference</b>	TELEVENT_PAYLOAD (Page 183)

## 4.6.4 VoIP Settings [Line 1]–[Line 6]

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



### 4.6.4.1 Quality of Service (QoS)

#### RTP Packet QoS (DSCP)

<b>Description</b>	Selects the DSCP level of DiffServ applied to RTP packets.
<b>Value Range</b>	0–63
<b>Default Value</b>	0
<b>Configuration File Reference</b>	DSCP_RTP_n (Page 178)

#### RTCP Packet QoS (DSCP)

<b>Description</b>	Selects the DSCP level of DiffServ applied to RTCP packets.
<b>Value Range</b>	0–63
<b>Default Value</b>	0
<b>Configuration File Reference</b>	DSCP_RTCP_n (Page 178)

## 4.6.4.2 Statistical Information

### RTCP Enable

<b>Description</b>	Selects whether to enable or disable RTCP (Real-Time Transport Control Protocol). For details, refer to RFC 3550.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	No
<b>Configuration File Reference</b>	RTCP_ENABLE_n (Page 181)

### RTCP Interval

<b>Description</b>	Specifies the interval, in seconds, between RTCP packets.
<b>Value Range</b>	5–65535
<b>Default Value</b>	5
<b>Configuration File Reference</b>	RTCP_INTVL_n (Page 179)

## 4.6.4.3 Jitter Buffer

### Maximum Delay

<b>Description</b>	Specifies the maximum delay, in 10-millisecond units, of the jitter buffer.
<b>Value Range</b>	3–50 (× 10 ms) <b>Note</b> <ul style="list-style-type: none"> <li>• This setting is subject to the following conditions:               <ul style="list-style-type: none"> <li>– This value must be greater than <b>[Initial Delay]</b></li> <li>– This value must be greater than <b>[Minimum Delay]</b></li> <li>– <b>[Initial Delay]</b> must be greater than or equal to <b>[Minimum Delay]</b></li> </ul> </li> </ul>
<b>Default Value</b>	20 (× 10 ms)
<b>Configuration File Reference</b>	MAX_DELAY_n (Page 179)

### Minimum Delay

<b>Description</b>	Specifies the minimum delay, in 10-millisecond units, of the jitter buffer.
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<b>Value Range</b>	1 or 2 (× 10 ms)  <b>Note</b> <ul style="list-style-type: none"> <li>• This setting is subject to the following conditions: <ul style="list-style-type: none"> <li>– This value must be less than or equal to <b>[Initial Delay]</b></li> <li>– This value must be less than <b>[Maximum Delay]</b></li> <li>– <b>[Maximum Delay]</b> must be greater than <b>[Initial Delay]</b></li> </ul> </li> </ul>
<b>Default Value</b>	2 (× 10 ms)
<b>Configuration File Reference</b>	MIN_DELAY_n (Page 179)

## Initial Delay

<b>Description</b>	Specifies the initial delay, in 10-millisecond units, of the jitter buffer.
<b>Value Range</b>	1–7 (× 10 ms)  <b>Note</b> <ul style="list-style-type: none"> <li>• This setting is subject to the following conditions: <ul style="list-style-type: none"> <li>– This value must be greater than or equal to <b>[Minimum Delay]</b></li> <li>– This value must be less than <b>[Maximum Delay]</b></li> </ul> </li> </ul>
<b>Default Value</b>	2 (× 10 ms)
<b>Configuration File Reference</b>	NOM_DELAY_n (Page 180)

### 4.6.4.4 DTMF

#### DTMF Type

<b>Description</b>	Selects the method for transmitting DTMF (Dual Tone Multi-Frequency) tones.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Outband</li> <li>• Inband</li> </ul> <b>Note</b> <ul style="list-style-type: none"> <li>• If you select <b>[Outband]</b>, DTMF tones will be sent through SDP (Session Description Protocol), compliant with RFC 2833. If you select <b>[Inband]</b>, DTMF tones will be encoded in the RTP stream.</li> </ul>
<b>Default Value</b>	Outband
<b>Configuration File Reference</b>	OUTBANDDTMF_n (Page 182)

#### DTMF Relay

<b>Description</b>	Selects whether DTMF tones are sent in the SIP INFO message.
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<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If you select <b>[Yes]</b>, DTMF tones will be sent in the SIP INFO message. If you select <b>[No]</b>, the method selected in <b>[DTMF Type]</b> will be used.</li> </ul>
<b>Default Value</b>	No
<b>Configuration File Reference</b>	DTMF_RELAY_n (Page 183)

#### 4.6.4.5 Call Hold

##### Supports RFC 2543 (c=0.0.0.0)

<b>Description</b>	Selects whether to enable the RFC 2543 Call Hold feature on this line.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If you select <b>[Yes]</b>, 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 <b>[No]</b>, the "c=x.x.x.x" syntax will be set in SDP.</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	RFC2543_HOLD_ENABLE_n (Page 183)

#### 4.6.4.6 CODEC Preferences

##### G722 (Enable)

<b>Description</b>	Selects whether to enable the G.722 codec for voice data transmission.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	CODEC_ENABLEx_n (Page 177)

##### G722 (Priority)

<b>Description</b>	Specifies the numerical order usage priority for the G.722 codec.
<b>Value Range</b>	1–255
<b>Default Value</b>	1
<b>Configuration File Reference</b>	CODEC_PRIORITYx_n (Page 177)

## PCMA (Enable)

<b>Description</b>	Selects whether to enable the PCMA codec for voice data transmission.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	CODEC_ENABLEx_n (Page 177)

## PCMA (Priority)

<b>Description</b>	Specifies the numerical order usage priority for the PCMA codec.
<b>Value Range</b>	1–255
<b>Default Value</b>	1
<b>Configuration File Reference</b>	CODEC_PRIORITYx_n (Page 177)

## G729A (Enable)

<b>Description</b>	Selects whether to enable the G.729A codec for voice data transmission.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	CODEC_ENABLEx_n (Page 177)

## G729A (Priority)

<b>Description</b>	Specifies the numerical order usage priority for the G.729A codec.
<b>Value Range</b>	1–255
<b>Default Value</b>	1
<b>Configuration File Reference</b>	CODEC_PRIORITYx_n (Page 177)

## PCMU (Enable)

<b>Description</b>	Selects whether to enable the PCMU codec for voice data transmission.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	CODEC_ENABLEx_n (Page 177)



## PCMU (Priority)

<b>Description</b>	Specifies the numerical order usage priority for the PCMU codec.
<b>Value Range</b>	1–255
<b>Default Value</b>	1
<b>Configuration File Reference</b>	CODEC_PRIORITYx_n (Page 177)

## 4.7 Telephone

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

### 4.7.1 Call Control

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

The screenshot shows the Panasonic KX-UT670 web interface. The 'Telephone' tab is selected, and the 'Call Control' sub-tab is active. The interface includes a sidebar with navigation options like 'Line 1' through 'Line 6', 'Tone Settings', and 'Telephone Settings'. The main content area is titled 'Call Control' and contains several configuration fields:

- Send SUBSCRIBE to Voice Mail Server:** Radio buttons for Yes and No.
- Conference Server URI:** A text input field.
- Inter-digit Timeout:** A dropdown menu set to 5 seconds.
- Timer for Dial Plan:** A dropdown menu set to 5 seconds.
- International Call Prefix:** A text input field.
- Country Calling Code:** A text input field.
- National Access Code:** A text input field.
- Default Line for Outgoing:** A dropdown menu set to 1.
- Flash/Recall Button:** Radio buttons for Terminate and Flash Hook.
- Flash Hook Event:** Radio buttons for Signal and flashhook.
- Directed Call Pickup:** A text input field.

Below the main settings, there is a section for 'Call Rejection Phone Numbers' with two numbered input fields.

#### 4.7.1.1 Call Control

##### Send SUBSCRIBE to Voice Mail Server

<b>Description</b>	Selects whether to send the SUBSCRIBE request to a voice mail server.  <b>Note</b> <ul style="list-style-type: none"> <li>Your phone system must support voice mail.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>

<b>Default Value</b>	No
<b>Configuration File Reference</b>	VM_SUBSCRIBE_ENABLE (Page 159)

## Conference Server URI

<b>Description</b>	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".  <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> <li>Availability depends on your phone system.</li> </ul>
<b>Value Range</b>	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	CONFERENCE_SERVER_URI (Page 160)

## Inter-digit Timeout

<b>Description</b>	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.
<b>Value Range</b>	1–15
<b>Default Value</b>	5
<b>Configuration File Reference</b>	INTDIGIT_TIM (Page 160)

## Timer for Dial Plan

<b>Description</b>	Specifies the length of time, in seconds, that the unit waits when a "T" or "t" has been entered in the dial plan.
<b>Value Range</b>	1–15
<b>Default Value</b>	5
<b>Configuration File Reference</b>	MACRODIGIT_TIM (Page 160)

## International Call Prefix

<b>Description</b>	Specifies the number to be shown in the place of the first "+" symbol when the phone number for incoming international calls contains "+".
<b>Value Range</b>	Max. 8 characters

<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	INTERNATIONAL_ACCESS_CODE (Page 161)

## Country Calling Code

<b>Description</b>	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.
<b>Value Range</b>	Max. 8 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	COUNTRY_CALLING_CODE (Page 161)

## National Access Code

<b>Description</b>	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.
<b>Value Range</b>	Max. 8 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	NATIONAL_ACCESS_CODE (Page 161)

## Default Line for Outgoing

<b>Description</b>	Specifies the line used to make an outgoing call when no line is specified in the dialing operation.
<b>Value Range</b>	1–6
<b>Default Value</b>	1
<b>Configuration File Reference</b>	DEFAULT_LINE_SELECT (Page 161)

## Flash/Recall Button

<b>Description</b>	Selects the function of the <b>[Flash]</b> key during a conversation.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Terminate</li> <li>• Flash Hook</li> </ul>
<b>Default Value</b>	Terminate
<b>Configuration File Reference</b>	FLASH_RECALL_TERMINATE (Page 187)

## Flash Hook Event

<b>Description</b>	Specifies the type of signal sent when sending a flash hook event.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Signal</li> <li>flashhook</li> </ul>
<b>Default Value</b>	Signal
<b>Configuration File Reference</b>	FLASHHOOK_CONTENT_TYPE (Page 188)

## Directed Call Pickup

<b>Description</b>	Specifies the feature number assigned to a BLF for performing call pickup.
<b>Value Range</b>	Max. 4 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	NUM_PLAN_PICKUP_DIRECT (Page 162)

### 4.7.1.2 Call Rejection Phone Numbers

#### 1–30

<b>Description</b>	<p>Specifies the phone numbers to reject incoming calls from. A maximum of 30 phone numbers can be specified.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Value Range</b>	<p>Max. 32 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If the phone number contains characters other than 0–9, *, #, and +, the number may not be rejected correctly.</li> </ul>
<b>Default Value</b>	Not stored.

## 4.7.2 Call Control [Line 1]–[Line 6]

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

The screenshot shows the Panasonic KX-UT670 web interface. At the top, there are navigation tabs: Status, Network, System, VoIP, Telephone (highlighted), and Maintenance. Below the tabs, the page title is 'Call Control [Line 1]'. On the left, there is a sidebar with 'Telephone' settings, including 'Call Control' (with sub-items Line 1 through Line 6), 'Tone Settings', and 'Telephone Settings'. The main content area is divided into three sections: 'Call Control', 'Dial Plan', and 'Call Features'. The 'Call Control' section has fields for 'Display Name', 'Voice Mail Access Number', and radio buttons for 'Enable Shared Call' and 'Synchronize Do Not Disturb and Call Forward'. The 'Dial Plan' section has a text area for 'Dial Plan (max 500 columns)' and a radio button for 'Call Even If Dial Plan Does Not Match'. The 'Call Features' section has radio buttons for 'Block Caller ID' and 'Anonymous Call'.

### 4.7.2.1 Call Control

#### Display Name

<b>Description</b>	Specifies the name to display as the caller on the other party's phone when you make a call.
<b>Value Range</b>	Max. 24 characters  <b>Note</b> <ul style="list-style-type: none"><li>You can use Unicode characters for this setting.</li></ul>
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	DISPLAY_NAME_n (Page 184)

#### Voice Mail Access Number

<b>Description</b>	Specifies the phone number used to access the voice mail server.  <b>Note</b> <ul style="list-style-type: none"><li>Your phone system must support voice mail.</li></ul>
<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	VM_NUMBER_n (Page 184)

## Enable Shared Call

<b>Description</b>	<p>Selects whether to enable the Shared Call feature of the SIP server, which is used to share one line among the units.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>You cannot set both <b>[Enable Shared Call]</b> and <b>[Synchronize Do Not Disturb and Call Forward]</b> to <b>[Yes]</b> at the same time.</li> <li>Availability depends on your phone system.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If you select <b>[Yes]</b>, the SIP server will control the line by using a shared-call signaling method. If you select <b>[No]</b>, the SIP server will control the line by using a standard signaling method.</li> </ul>
<b>Default Value</b>	No
<b>Configuration File Reference</b>	SHARED_CALL_ENABLE_n (Page 186)

## Synchronize Do Not Disturb and Call Forward

<b>Description</b>	<p>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.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>Even if you select <b>[Yes]</b>, this feature may not function properly if your phone system does not support it. Before you configure this setting, consult your phone system dealer.</li> <li>You cannot set both <b>[Enable Shared Call]</b> and <b>[Synchronize Do Not Disturb and Call Forward]</b> to <b>[Yes]</b> at the same time.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>
<b>Default Value</b>	No
<b>Configuration File Reference</b>	FWD_DND_SYNCHRO_ENABLE_n (Page 186)

## Resource List URI

<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> <li>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 <b>6.3 Registering Flexible Buttons</b>.</li> </ul>
<b>Value Range</b>	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	RESOURCELIST_URI_n (Page 187)

### 4.7.2.2 Dial Plan

#### Dial Plan (max 500 columns)

<b>Description</b>	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 <b>6.6 Dial Plan</b> .
<b>Value Range</b>	Max. 500 characters  <b>Note</b> <ul style="list-style-type: none"> <li>Entering more than 500 characters in this field causes an error and the previous value remains effective.</li> </ul>
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	DIAL_PLAN_n (Page 185)

#### Call Even If Dial Plan Does Not Match

<b>Description</b>	Selects whether to make a call even if the dialed number does not match any of the dial formats specified in <b>[Dial Plan]</b> .
--------------------	---

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If you select <b>[Yes]</b>, calls will be made even if the dialed number does not match the dial formats specified in <b>[Dial Plan]</b> (i.e., dial plan filtering is disabled). If you select <b>[No]</b>, calls will not be made if the dialed number does not match one of the dial formats specified in <b>[Dial Plan]</b> (i.e., dial plan filtering is enabled).</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	DIAL_PLAN_NOT_MATCH_ENABLE_n (Page 185)

### 4.7.2.3 Call Features

#### Block Caller ID

<b>Description</b>	<p>Selects whether to make calls without transmitting the phone number to the called party.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Availability depends on your phone system.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	No

#### Block Anonymous Call

<b>Description</b>	<p>Selects whether to reject incoming calls that do not show the caller's number.</p>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	No



## Do Not Disturb

<b>Description</b>	<p>Selects whether to enable the Do Not Disturb feature for incoming calls.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• 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 <b>[No]</b> for this setting.</li> <li>• If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	No

### 4.7.2.4 Call Forward

#### Unconditional (Enable Call Forward)

<b>Description</b>	<p>Selects whether to forward all incoming calls to a specified destination.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• 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 <b>[Yes]</b> for this setting.</li> <li>• If you have selected <b>[Yes]</b> 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.</li> <li>• 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 <b>[No]</b> for this setting.</li> <li>• You can synchronize the Do Not Disturb and Call Forward settings from the Web user interface (→ see <b>[Synchronize Do Not Disturb and Call Forward]</b> in 4.7.2.1 Call Control) or through configuration file programming (→ see "FWD_DND_SYNCHRO_ENABLE_n" in 5.8.1 Call Control Settings).</li> <li>• If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	No

## Unconditional (Phone Number)

<b>Description</b>	<p>Specifies the phone number of the destination to forward all incoming calls to.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	<p>Max. 32 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>You cannot leave this field empty if <b>[Unconditional (Enable Call Forward)]</b> is set to <b>[Yes]</b>.</li> </ul>
<b>Default Value</b>	Not stored.

## Busy (Enable Call Forward)

<b>Description</b>	<p>Selects whether to forward incoming calls to a specified destination when the line is in use.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>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 <b>[Yes]</b> for this setting.</li> <li>If you have selected <b>[Yes]</b> 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.</li> <li>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 <b>[No]</b> for this setting.</li> <li>You can synchronize the Do Not Disturb and Call Forward settings from the Web user interface (→ see <b>[Synchronize Do Not Disturb and Call Forward]</b> in 4.7.2.1 Call Control) or through configuration file programming (→ see "FWD_DND_SYNCHRO_ENABLE_n" in 5.8.1 Call Control Settings).</li> <li>If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>
<b>Default Value</b>	No

## Busy (Phone Number)

<b>Description</b>	<p>Specifies the phone number of the destination to forward calls to when the line is in use.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	<p>Max. 32 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>You cannot leave this field empty if <b>[Busy (Enable Call Forward)]</b> is set to <b>[Yes]</b>.</li> </ul>
<b>Default Value</b>	Not stored.

## No Answer (Enable Call Forward)

<b>Description</b>	<p>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.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>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 <b>[Yes]</b> for this setting.</li> <li>If you have selected <b>[Yes]</b> 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.</li> <li>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 <b>[No]</b> for this setting.</li> <li>You can synchronize the Do Not Disturb and Call Forward settings from the Web user interface (→ see <b>[Synchronize Do Not Disturb and Call Forward]</b> in 4.7.2.1 Call Control) or through configuration file programming (→ see "FWD_DND_SYNCHRO_ENABLE_n" in 5.8.1 Call Control Settings).</li> <li>If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>
<b>Default Value</b>	No

## No Answer (Phone Number)

<b>Description</b>	<p>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.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	<p>Max. 32 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>You cannot leave this field empty if <b>[No Answer (Enable Call Forward)]</b> is set to <b>[Yes]</b>.</li> </ul>
<b>Default Value</b>	Not stored.

## No Answer (Ring Count)

<b>Description</b>	<p>Specifies the number of times that an incoming call rings until the call is forwarded.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If you change this setting when <b>[Synchronize Do Not Disturb and Call Forward]</b> is set to <b>[Yes]</b>, 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.</li> </ul>
<b>Value Range</b>	0, 2–20 (0: No ring)
<b>Default Value</b>	3

## 4.7.3 Tone Settings

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

The screenshot shows the Panasonic KX-UT670 web interface. The top navigation bar includes 'Status', 'Network', 'System', 'VoIP', 'Telephone' (highlighted), and 'Maintenance'. The left sidebar has 'Telephone' selected, with sub-items like 'Call Control', '- Line 1' through '- Line 6', 'Tone Settings' (highlighted), and 'Telephone Settings'. The main content area is titled 'Tone Settings' and contains the following sections:

- Dial Tone**: Tone Frequencies (350,440), Tone Timings (60,0)
- Busy Tone**: Tone Frequencies (480,620), Tone Timings (60,500,440)
- Ringing Tone**: Tone Frequencies (440,480), Tone Timings (60,2000,3940)
- Stutter Tone**: Tone Frequencies (350,440), Tone Timings (560,100,100,100,100,100,100,100,100,100,1)
- Reorder Tone**: Tone Frequencies (480,620), Tone Timings (60,250,190)

At the bottom of the form are 'Save' and 'Cancel' buttons.

### 4.7.3.1 Dial Tone Tone Frequencies

<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of dial tones using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)  <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Default Value</b>	350,440
<b>Configuration File Reference</b>	DIAL_TONE1_FRQ (Page 166)

### Tone Timings

<b>Description</b>	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.
--------------------	---

<b>Value Range</b>	0–16000 (0: Infinite time)  <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> <li>It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).</li> </ul>
<b>Default Value</b>	60,0
<b>Configuration File Reference</b>	DIAL_TONE1_TIMING (Page 166)

### 4.7.3.2 Busy Tone

#### Tone Frequencies

<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of busy tones using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	480,620
<b>Configuration File Reference</b>	BUSY_TONE_FRQ (Page 168)

#### Tone Timings

<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).</li> </ul>
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	60,500,440
<b>Configuration File Reference</b>	BUSY_TONE_TIMING (Page 168)

### 4.7.3.3 Ringing Tone

#### Tone Frequencies

<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of ringback tones using 2 whole numbers separated by a comma.
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## 4.7.3.5 Reorder Tone

### Tone Frequencies

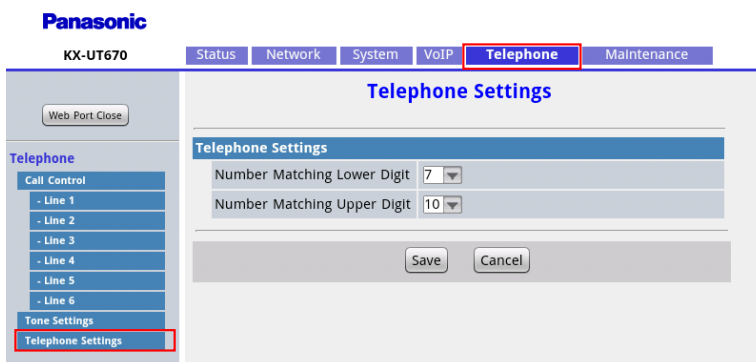
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of reorder tones using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	480,620
<b>Configuration File Reference</b>	REORDER_TONE_FRQ (Page 169)

### Tone Timings

<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).</li> </ul>
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	60,250,190
<b>Configuration File Reference</b>	REORDER_TONE_TIMING (Page 169)

## 4.7.4 Telephone Settings

This screen allows you to configure various telephone settings.



### 4.7.4.1 Telephone Settings

#### Number Matching Lower Digit

<b>Description</b>	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".
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<b>Value Range</b>	0–15
<b>Default Value</b>	7
<b>Configuration File Reference</b>	NUMBER_MATCHING_LOWER_DIGIT (Page 172)

## Number Matching Upper Digit

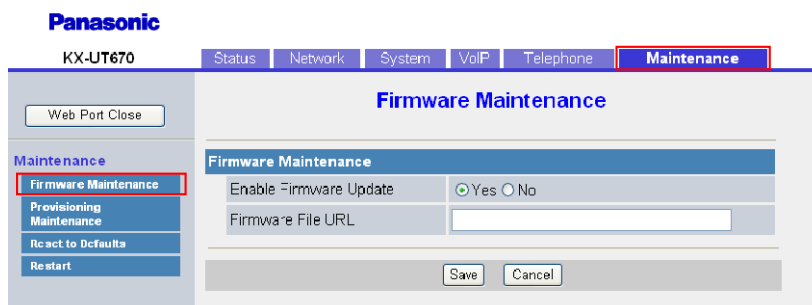
<b>Description</b>	Specifies the maximum number of digits with which to match a phonebook entry with an incoming call's caller ID. To specify exact matching of entire numbers only, specify "0".
<b>Value Range</b>	0–15
<b>Default Value</b>	10
<b>Configuration File Reference</b>	NUMBER_MATCHING_UPPER_DIGIT (Page 172)

## 4.8 Maintenance

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

### 4.8.1 Firmware Maintenance

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



#### 4.8.1.1 Firmware Maintenance

##### Enable Firmware Update

<b>Description</b>	Selects whether to perform firmware updates when the unit detects a newer version of firmware.
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Changing this setting may require restarting the unit.</li> <li>• Firmware updates using the SD card can be performed regardless of this setting (→ see <b>7.4 Firmware Update Using the SD Card</b>).</li> </ul>

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	FIRM_UPGRADE_ENABLE (Page 143)

## Firmware File URL

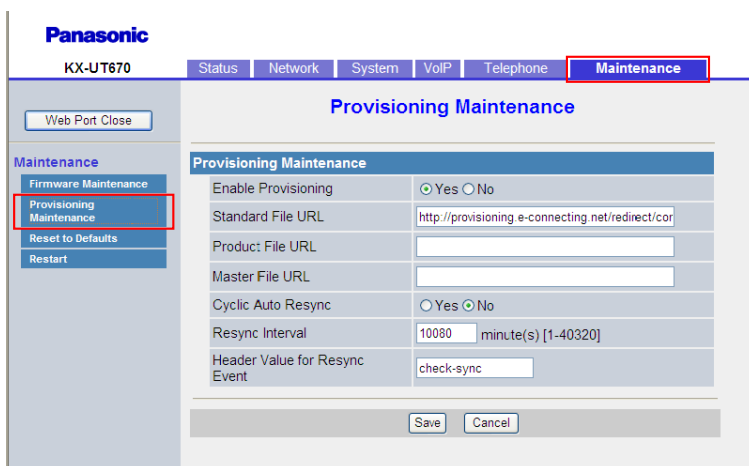
<b>Description</b>	<p>Specifies the URL where the firmware file is stored.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when [<b>Enable Firmware Update</b>] is set to [<b>Yes</b>].</li> <li>• Changing this setting may require restarting the unit.</li> </ul>
<b>Value Range</b>	Max. 500 characters
<b>Default Value</b>	Not stored.
<b>Configuration File Reference</b>	FIRM_FILE_PATH (Page 144)

### 4.8.2 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 **2.4.3 Provisioning**.



## 4.8.2.1 Provisioning Maintenance

### Enable Provisioning

<b>Description</b>	Selects whether the unit is automatically configured by downloading the configuration files from the provisioning server of your phone system.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Default Value</b>	Yes
<b>Configuration File Reference</b>	PROVISION_ENABLE (Page 145)

### Standard File URL

<b>Description</b>	<p>Specifies the URL of the standard configuration file, which is used when every unit needs different settings.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• When you change this setting, set <b>[Enable Provisioning]</b> to <b>[Yes]</b> at the same time.</li> </ul>
<b>Value Range</b>	Max. 500 characters
<b>Default Value</b>	http://provisioning.e-connecting.net/redirect/conf/{mac}.cfg
<b>Configuration File Reference</b>	CFG_STANDARD_FILE_PATH (Page 145)

### Product File URL

<b>Description</b>	<p>Specifies the URL of the product configuration file, which is used when all units with the same model number need the same settings.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• When you change this setting, set <b>[Enable Provisioning]</b> to <b>[Yes]</b> at the same time.</li> </ul>
<b>Value Range</b>	Max. 500 characters
<b>Default Value</b>	<p>Not stored.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• The URL specified by your phone system dealer may be preset in the unit.</li> </ul>
<b>Configuration File Reference</b>	CFG_PRODUCT_FILE_PATH (Page 146)

## Master File URL

<b>Description</b>	Specifies the URL of the master configuration file, which is used when all units need the same settings.  <b>Note</b> <ul style="list-style-type: none"> <li>When you change this setting, set <b>[Enable Provisioning]</b> to <b>[Yes]</b> at the same time.</li> </ul>
<b>Value Range</b>	Max. 500 characters
<b>Default Value</b>	Not stored.  <b>Note</b> <ul style="list-style-type: none"> <li>The URL specified by your phone system dealer may be preset in the unit.</li> </ul>
<b>Configuration File Reference</b>	CFG_MASTER_FILE_PATH (Page 147)

## Cyclic Auto Resync

<b>Description</b>	Selects whether the unit periodically checks for updates of configuration files.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>
<b>Default Value</b>	No
<b>Configuration File Reference</b>	CFG_CYCLIC (Page 149)

## Resync Interval

<b>Description</b>	Specifies the interval, in minutes, between periodic checks for updates of the configuration files.
<b>Value Range</b>	1–40320
<b>Default Value</b>	10080
<b>Configuration File Reference</b>	CFG_CYCLIC_INTVL (Page 150)

## Header Value for Resync Event

<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>If the SIP server directs the unit to access the configuration files on the provisioning server, the unit will be restarted.</li> </ul>
--------------------	--

<b>Value Range</b>	Max. 15 characters  <b>Note</b> • You cannot leave this field empty.
<b>Default Value</b>	check-sync
<b>Configuration File Reference</b>	CFG_RESYNC_FROM_SIP (Page 151)

### 4.8.3 Reset to Defaults

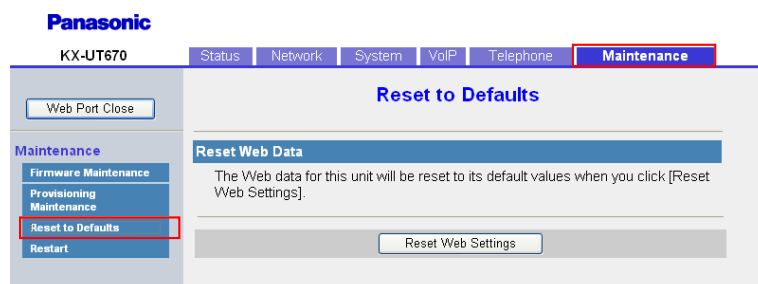
This screen allows you to reset the settings made through the Web user interface to their default values by clicking **[Reset Web Settings]**. After you click this button, a dialog box is displayed, asking whether you want to reset the settings. Click **OK** to reset, or **Cancel** not to. For details about the reset, see **9.2 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.

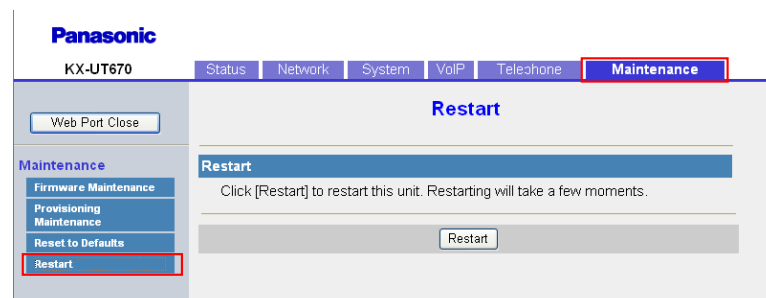


### 4.8.4 Restart

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.



## 4.9 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
Failed (Parameter Error)	The operation failed because: <ul style="list-style-type: none"> <li>Some specified values are out of range or invalid.</li> </ul>	All screens
Failed (Memory Access Failure)	The operation failed because: <ul style="list-style-type: none"> <li>Access error to the flash memory occurred while reading or writing the data.</li> </ul>	All screens
Failed (Transfer Failure) <sup>*1</sup>	The operation failed because: <ul style="list-style-type: none"> <li>A network error occurred during the data transmission.</li> </ul>	All screens
Failed (Busy)	The operation failed because: <ul style="list-style-type: none"> <li>The unit is in an operation that accesses the flash memory of the unit.</li> </ul>	All screens

\*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]**.

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## **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.

### System Settings

Category	Parameter Name	Ref.
Login Account Settings	ADMIN_ID	Page 140
	ADMIN_PASS <sup>*1</sup>	Page 140
	USER_ID	Page 140
	USER_PASS <sup>*1</sup>	Page 140
System Time Settings	TIME_ZONE_COUNTRY	Page 141
Syslog Settings	SYSLOG_ADDR	Page 143
	SYSLOG_PORT	Page 143
Firmware Update Settings	FIRM_UPGRADE_ENABLE <sup>*1</sup>	Page 143
	FIRM_VERSION	Page 143
	FIRM_FILE_PATH <sup>*1</sup>	Page 144
Provisioning Settings	OPTION66_ENABLE	Page 144
	PROVISION_ENABLE <sup>*1</sup>	Page 145
	CFG_STANDARD_FILE_PATH <sup>*1</sup>	Page 145
	CFG_PRODUCT_FILE_PATH <sup>*1</sup>	Page 146
	CFG_MASTER_FILE_PATH <sup>*1</sup>	Page 147
	CFG_FILE_KEY1	Page 148
	CFG_FILE_KEY2	Page 149
	CFG_FILE_KEY3	Page 149
	CFG_FILE_KEY_LENGTH	Page 149
	CFG_CYCLIC <sup>*1</sup>	Page 149
	CFG_CYCLIC_INTVL <sup>*1</sup>	Page 150
	CFG_RTRY_INTVL	Page 150
	CFG_RESYNC_TIME	Page 150
	CFG_RESYNC_FROM_SIP <sup>*1</sup>	Page 151

<sup>\*1</sup> This setting can also be configured through the Web user interface.



## Network Settings

Category	Parameter Name	Ref.
Ethernet Port Settings	LLDP_ENABLE <sup>1</sup>	Page 151
	LLDP_INTERVAL <sup>1</sup>	Page 152
	LLDP_VLAN_ID_PC <sup>1</sup>	Page 152
	LLDP_VLAN_PRI_PC <sup>1</sup>	Page 152
	VLAN_ENABLE <sup>1</sup>	Page 152
	VLAN_ID_IP_PHONE <sup>1</sup>	Page 153
	VLAN_PRI_IP_PHONE <sup>1</sup>	Page 153
	VLAN_ID_PC <sup>2</sup>	Page 154
	VLAN_PRI_PC <sup>2</sup>	Page 154
HTTP Settings	HTTPD_PORTOPEN_AUTO	Page 154
	HTTP_VER <sup>2</sup>	Page 155
	HTTP_USER_AGENT <sup>2</sup>	Page 155
	HTTP_SSL_VERIFY	Page 156
	CFG_ROOT_CERTIFICATE_PATH	Page 156
Time Adjust Settings	NTP_ADDR	Page 157
	TIME_SYNC_INTVL	Page 157
	TIME_QUERY_INTVL	Page 157
STUN Settings	STUN_SERV_ADDR <sup>2</sup>	Page 157
	STUN_SERV_PORT <sup>2</sup>	Page 158
	STUN_2NDSERV_ADDR	Page 158
	STUN_2NDSERV_PORT	Page 158
Miscellaneous Network Settings	NW_SETTING_ENABLE	Page 158
	CUSTOM_WEB_PAGE	Page 159

<sup>1</sup> This setting can also be configured through other programming methods (phone user interface programming or Web user interface programming).

<sup>2</sup> This setting can also be configured through the Web user interface.

## Telephone Settings

Category	Parameter Name	Ref.
Call Control Settings	VM_SUBSCRIBE_ENABLE <sup>1</sup>	Page 159
	CONFERENCE_SERVER_URI <sup>1</sup>	Page 160
	FIRSTDIGIT_TIM	Page 160

## Section 5 Configuration File Programming

Category	Parameter Name	Ref.
	INTDIGIT_TIM <sup>1</sup>	Page 160
	MACRODIGIT_TIM <sup>1</sup>	Page 160
	INTERNATIONAL_ACCESS_CODE <sup>1</sup>	Page 161
	COUNTRY_CALLING_CODE <sup>1</sup>	Page 161
	NATIONAL_ACCESS_CODE <sup>1</sup>	Page 161
	DEFAULT_LINE_SELECT <sup>1</sup>	Page 161
	DATA_LINE_MODE	Page 162
	NUM_PLAN_PICKUP_DIRECT <sup>1</sup>	Page 162
	TALK_PACKAGE	Page 162
	HOLD_PACKAGE	Page 162
	HOLD_RECALL_TIM	Page 163
	AUTO_ANS_RING_TIM	Page 163
	RINGING_OFF_SETTING_ENABLE	Page 163
	AUTO_CALL_HOLD	Page 163
	REDIALKEY_CALLOG_ENABLE	Page 164
	ONHOOK_TRANSFER_ENABLE	Page 164
	DISCONNECTION_MODE	Page 164
	TONE_LEN_DISCONNECT_HANDSET	Page 164
	TONE_LEN_DISCONNECT_HANDSFREE	Page 165
	KEY_PAD_TONE	Page 165
	DDI_ICD_GROUP_DISPLAY	Page 165
Tone Settings	DIAL_TONE1_FRQ <sup>1</sup>	Page 166
	DIAL_TONE1_GAIN	Page 166
	DIAL_TONE1_TIMING <sup>1</sup>	Page 166
	DIAL_TONE2_FRQ	Page 166
	DIAL_TONE2_GAIN	Page 167
	DIAL_TONE2_TIMING	Page 167
	DIAL_TONE4_FRQ <sup>1</sup>	Page 167
	DIAL_TONE4_GAIN	Page 167
	DIAL_TONE4_TIMING <sup>1</sup>	Page 167
	BUSY_TONE_FRQ <sup>1</sup>	Page 168
	BUSY_TONE_GAIN	Page 168
	BUSY_TONE_TIMING <sup>1</sup>	Page 168

Category	Parameter Name	Ref.
	REORDER_TONE_FRQ <sup>*1</sup>	Page 169
	REORDER_TONE_GAIN	Page 169
	REORDER_TONE_TIMING <sup>*1</sup>	Page 169
	RINGBACK_TONE_FRQ <sup>*1</sup>	Page 169
	RINGBACK_TONE_GAIN	Page 170
	RINGBACK_TONE_TIMING <sup>*1</sup>	Page 170
	HOLD_ALARM_FRQ	Page 170
	HOLD_ALARM_GAIN	Page 170
	HOLD_ALARM_TIMING	Page 170
	CW_TONE1_FRQ	Page 171
	CW_TONE1_GAIN	Page 171
	CW_TONE1_TIMING	Page 171
	HOLD_TONE_FRQ	Page 171
	HOLD_TONE_GAIN	Page 171
	HOLD_TONE_TIMING	Page 172
Telephone Settings	DISPLAY_NAME_REPLACE	Page 172
	NUMBER_MATCHING_LOWER_DIGIT <sup>*1</sup>	Page 172
	NUMBER_MATCHING_UPPER_DIGIT <sup>*1</sup>	Page 172
	DISPLAY_DATE_PATTERN	Page 173
	DISPLAY_TIME_PATTERN	Page 173
	DEFAULT_LANGUAGE	Page 173
	POUND_KEY_DELIMITER_ENABLE	Page 174
	WALLPAPER_URI_HOME	Page 174
	WALLPAPER_URI_PHONE	Page 174
	LOGO_URI_PHONE	Page 175
Flexible Button Settings	FLEX_BUTTON_FACILITY_ACTx	Page 175
	FLEX_BUTTON_FACILITY_ARGx	Page 175
	FLEX_BUTTON_LABELx	Page 176

<sup>\*1</sup> This setting can also be configured through the Web user interface.

## VoIP Settings

Category	Parameter Name	Ref.
Codec Settings	CODEC_G711_REQ	Page 176
	CODEC_G729_PARAM	Page 177
	CODEC_ENABLE <sup>x</sup> _n <sup>*1</sup>	Page 177
	CODEC_PRIORITY <sup>x</sup> _n <sup>*1</sup>	Page 177
RTP Settings	DSCP_RTP_n <sup>*1</sup>	Page 178
	DSCP_RTCP_n <sup>*1</sup>	Page 178
	RTCP_INTVL_n <sup>*1</sup>	Page 179
	MAX_DELAY_n <sup>*1</sup>	Page 179
	MIN_DELAY_n <sup>*1</sup>	Page 179
	NOM_DELAY_n <sup>*1</sup>	Page 180
	RTP_PORT_MIN <sup>*1</sup>	Page 180
	RTP_PORT_MAX <sup>*1</sup>	Page 180
	RTP_PTIME <sup>*1</sup>	Page 181
	RTCP_ENABLE_n <sup>*1</sup>	Page 181
	RTCP_SEND_BY_SDP_n	Page 182
	RTP_CLOSE_ENABLE_n	Page 182
	Miscellaneous VoIP Settings	OUTBANDDTMF_n <sup>*1</sup>
DTMF_RELAY_n <sup>*1</sup>		Page 183
TELEVENT_PAYLOAD <sup>*1</sup>		Page 183
RFC2543_HOLD_ENABLE_n <sup>*1</sup>		Page 183
DTMF_SIGNAL_LEN		Page 184
DTMF_INTDIGIT_TIM		Page 184

<sup>\*1</sup> This setting can also be configured through the Web user interface.

## Line Settings

Category	Parameter Name	Ref.
Call Control Settings	DISPLAY_NAME_n <sup>*1</sup>	Page 184
	VM_NUMBER_n <sup>*1</sup>	Page 184
	DIAL_PLAN_n <sup>*1</sup>	Page 185
	DIAL_PLAN_NOT_MATCH_ENABLE_n <sup>*1</sup>	Page 185
	SHARED_CALL_ENABLE_n <sup>*1</sup>	Page 186

Category	Parameter Name	Ref.
	FWD_DND_SYNCHRO_ENABLE_n <sup>1</sup>	Page 186
	RESOURCELIST_URI_n <sup>1</sup>	Page 187
	CW_ENABLE_n	Page 187
	FLASH_RECALL_TERMINATE <sup>1</sup>	Page 187
	FLASHHOOK_CONTENT_TYPE <sup>1</sup>	Page 188
	VOICE_MESSAGE_AVAILABLE	Page 188
SIP Settings	SIP_USER_AGENT <sup>1</sup>	Page 188
	PHONE_NUMBER_n <sup>1</sup>	Page 189
	SIP_URI_n <sup>1</sup>	Page 189
	LINE_ENABLE_n	Page 189
	PROFILE_ENABLEn	Page 190
	SIP_AUTHID_n <sup>1</sup>	Page 190
	SIP_PASS_n <sup>1</sup>	Page 190
	SIP_SRC_PORT_n <sup>1</sup>	Page 191
	SIP_PRXY_ADDR_n <sup>1</sup>	Page 191
	SIP_PRXY_PORT_n <sup>1</sup>	Page 191
	SIP_RGSTR_ADDR_n <sup>1</sup>	Page 191
	SIP_RGSTR_PORT_n <sup>1</sup>	Page 192
	SIP_SVCDOMAIN_n <sup>1</sup>	Page 192
	REG_EXPIRE_TIME_n	Page 192
	REG_INTERVAL_RATE_n	Page 193
	SIP_SESSION_TIME_n <sup>1</sup>	Page 193
	SIP_SESSION_METHOD_n	Page 193
	DSCP_SIP_n <sup>1</sup>	Page 193
	SIP_2NDPROXY_ADDR_n	Page 194
	SIP_2NDPROXY_PORT_n	Page 194
	SIP_2NDRGSTR_ADDR_n	Page 194
	SIP_2NDRGSTR_PORT_n	Page 195
	SIP_TIMER_T1_n <sup>1</sup>	Page 195
	SIP_TIMER_T2_n <sup>1</sup>	Page 195
	SIP_TIMER_T4_n	Page 196
	SIP_FOVR_NORSP_n	Page 196
	SIP_FOVR_MAX_n	Page 196

Category	Parameter Name	Ref.
	SIP_REFRESHER_n	Page 197
	SIP_DNSSRV_ENA_n <sup>1</sup>	Page 197
	SIP_UDP_SRV_PREFIX_n <sup>1</sup>	Page 197
	SIP_TCP_SRV_PREFIX_n <sup>1</sup>	Page 198
	SIP_100REL_ENABLE_n <sup>1</sup>	Page 198
	SIP_INVITE_EXPIRE_n	Page 198
	SIP_18X_RTX_INTVL_n	Page 199
	SIP_PRSNC_ADDR_n <sup>1</sup>	Page 199
	SIP_PRSNC_PORT_n <sup>1</sup>	Page 199
	SIP_2NDPRSNC_ADDR_n	Page 200
	SIP_2NDPRSNC_PORT_n	Page 200
	USE_DEL_REG_OPEN_n	Page 200
	USE_DEL_REG_CLOSE_n	Page 200
	PORT_PUNCH_INTVL_n <sup>1</sup>	Page 201
	SIP_ADD_RPORT_n <sup>1</sup>	Page 201
	SIP_REQURI_PORT_n	Page 201
	SIP_SUBS_EXPIRE_n	Page 202
	SUB_RTX_INTVL_n	Page 202
	REG_RTX_INTVL_n	Page 203
	SIP_P_PREFERRED_ID_n	Page 203
	SIP_PRIVACY_n	Page 203
	ADD_USER_PHONE_n	Page 203
	SDP_USER_ID_n	Page 204
	SUB_INTERVAL_RATE_n	Page 204
	SIP_OUTPROXY_ADDR_n <sup>1</sup>	Page 204
	SIP_OUTPROXY_PORT_n <sup>1</sup>	Page 205
	SIP_TRANSPORT_n <sup>1</sup>	Page 205
	SIP_ANM_DISPNAME_n	Page 205
	SIP_ANM_USERNAME_n	Page 205
	SIP_ANM_HOSTNAME_n	Page 206
	SIP_DETECT_SSAF_n <sup>1</sup>	Page 206
	SIP_RCV_DET_HEADER_n	Page 206
	SIP_CONTACT_ON_ACK_n	Page 207

Category	Parameter Name	Ref.
	SIP_TIMER_B_n <sup>*1</sup>	Page 207
	SIP_TIMER_D_n <sup>*1</sup>	Page 207
	SIP_TIMER_F_n <sup>*1</sup>	Page 208
	SIP_TIMER_H_n <sup>*1</sup>	Page 208
	SIP_TIMER_J_n <sup>*1</sup>	Page 208
	ADD_TRANSPORT_UDP_n	Page 208
	ADD_EXPIRES_HEADER_n	Page 209
	SIP_HOLD_HOLDRECEIVE_n	Page 209
	SIP_ADD_DIVERSION_n	Page 209
	SIP_RESPONSE_CODE_DND	Page 210
	SIP_RESPONSE_CODE_CALL_REJECT	Page 210

<sup>\*1</sup> This setting can also be configured through the Web user interface.

## 5.2 General Information on the Configuration Files

### 5.2.1 Configuration File Specifications for Plain Text Provisioning

The specifications of plain text configuration files are as follows.  
For details about XML provisioning, see **2.4.4 XML Provisioning**.

#### File Format

The configuration file is in plain text format (UTF-8).

#### 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 Plain Text 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 6 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
- 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:  
`SYSLOG_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.

## 5.2.2 Configuration File Parameters

The information on each parameter that can be written in a configuration file is shown in the tables starting from **5.4 System Settings**. The information includes parameter name (as the title of the table), value format, description, permitted value range, default value of each parameter, 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 unit supports 6 telephone lines.

### 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 **5.2.3 Characters Available for String Values**.
- **Comma-separated Integer:** a list of integers, separated by commas  
An empty string is not allowed.
- **Comma-separated String:** a list of strings, separated by commas  
An empty string is not 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.

## 5.2.3 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 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

## 5.3.1 Examples of Codec Settings

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

---

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

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

---

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

### Setting the G.729A Codec Only

---

```
## Codec Settings
# Disable G722
CODEC_ENABLE0_1="N"
# Disable PCMA
CODEC_ENABLE1_1="N"
# Enable G729A
CODEC_ENABLE3_1="Y"
CODEC_PRIORITY3_1="1"
# Disable PCMU
CODEC_ENABLE4_1="N"
# Do not set PCMU
CODEC_G711_REQ="0"
```

## 5.3.2 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"
```

## 5.4 System Settings

### 5.4.1 Login Account Settings

#### ADMIN\_ID

<b>Value Format</b>	String
<b>Description</b>	Specifies the account ID used to access the Web user interface with the Administrator account.
<b>Value Range</b>	Max. 16 characters (except ", &, ', :, <, >, and space)  <b>Note</b> <ul style="list-style-type: none"> <li>An empty string is not allowed.</li> </ul>
<b>Default Value</b>	admin

#### ADMIN\_PASS

<b>Value Format</b>	String
<b>Description</b>	Specifies the password to use to authenticate the Administrator account when logging in to the Web user interface.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	adminpass
<b>Web User Interface Reference</b>	<ul style="list-style-type: none"> <li>Current Password (Page 84)</li> <li>New Password (Page 84)</li> <li>Confirm New Password (Page 84)</li> </ul>

#### USER\_ID

<b>Value Format</b>	String
<b>Description</b>	Specifies the account ID used to access the Web user interface with the User account.
<b>Value Range</b>	Max. 16 characters (except ", &, ', :, <, >, and space)  <b>Note</b> <ul style="list-style-type: none"> <li>An empty string is not allowed.</li> </ul>
<b>Default Value</b>	user

#### USER\_PASS

<b>Value Format</b>	String
---------------------	--------

<b>Description</b>	Specifies the password to use to authenticate the User account when logging in to the Web user interface.
<b>Value Range</b>	6–16 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	Empty string (only before a user accesses the Web user interface for the first time)
<b>Web User Interface Reference</b>	<ul style="list-style-type: none"> <li>• Current Password (Page 85)</li> <li>• New Password (Page 85)</li> <li>• Confirm New Password (Page 86)</li> </ul>

## 5.4.2 System Time Settings

### TIME\_ZONE\_COUNTRY

<b>Value Format</b>	Integer
<b>Description</b>	<p>Specifies the offset of local standard time from UTC (GMT).</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If this setting is configured through phone user interface programming, changes via configuration file programming are ignored.</li> </ul>

<p><b>Value Range</b></p>	<p>-110001–130001</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>Only the following values are available:                      -110001 (Midway Island [GMT-11:00]), -100001 (Hawaii [GMT-10:00]), -90001 (Gambier [GMT-9:00]), -90002 (Alaska [GMT-9:00]), -80001 (Tijuana [GMT-8:00]), -80002 (Pacific Time [GMT-8:00]), -70001 (Chihuahua [GMT-7:00]), -70002 (Mountain Time [GMT-7:00]), -70003 (Arizona [GMT-7:00]), -60001 (Saskatchewan [GMT-6:00]), -60002 (Mexico City [GMT-6:00]), -60003 (Central Time [GMT-6:00]), -60004 (Central America [GMT-6:00]), -50001 (Eastern Time [GMT-5:00]), -50002 (Bogota [GMT-5:00]), -45001 (Venezuela [GMT-4:30]), -40001 (Santiago [GMT-4:00]), -40002 (Manaus [GMT-4:00]), -40003 (Atlantic Time [GMT-4:00]), -35001 (Newfoundland [GMT-3:30]), -30001 (Montevideo [GMT-3:00]), -30002 (Greenland [GMT-3:00]), -30003 (Buenos Aires [GMT-3:00]), -30004 (Brasilia [GMT-3:00]), -20001 (Mid-Atlantic [GMT-2:00]), -10001 (Azores [GMT-1:00]), -10002 (Cape Verde Islands [GMT-1:00]), 1 (Casablanca [GMT+0:00]), 2 (London, Dublin [GMT+0:00]), 10001 (Amsterdam, Berlin [GMT+1:00]), 10002 (Belgrade [GMT+1:00]), 10003 (Brussels [GMT+1:00]), 10004 (Sarajevo [GMT+1:00]), 10005 (W. Africa Time [GMT+1:00]), 10006 (Windhoek [GMT+1:00]), 20001 (Amman, Jordan [GMT+2:00]), 20002 (Athens, Istanbul [GMT+2:00]), 20003 (Beirut, Lebanon [GMT+2:00]), 20004 (Cairo [GMT+2:00]), 20005 (Helsinki [GMT+2:00]), 20006 (Jerusalem [GMT+2:00]), 20007 (Harare [GMT+2:00]), 20008 (Minsk [GMT+2:00]), 20009 (Kaliningrad [GMT+3:00]), 30001 (Baghdad [GMT+3:00]), 30002 (Moscow [GMT+4:00]), 30003 (Kuwait [GMT+3:00]), 30004 (Nairobi [GMT+3:00]), 35001 (Tehran [GMT+3:30]), 40001 (Baku [GMT+4:00]), 40002 (Tbilisi [GMT+4:00]), 40003 (Yerevan [GMT+4:00]), 40004 (Dubai [GMT+4:00]), 45001 (Kabul [GMT+4:30]), 50001 (Islamabad, Karachi [GMT+5:00]), 50002 (Ural'sk [GMT+5:00]), 50003 (Yekaterinburg [GMT+6:00]), 55001 (Kolkata [GMT+5:30]), 55002 (Sri Lanka [GMT+5:30]), 57501 (Kathmandu [GMT+5:45]), 60001 (Astana [GMT+6:00]), 60002 (Novosivirsk [GMT+7:00]), 65001 (Yangon [GMT+6:30]), 70001 (Krasnoyarsk [GMT+8:00]), 70002 (Bangkok [GMT+7:00]), 80001 (Kuala Lumpur [GMT+8:00]), 80002 (Beijing [GMT+8:00]), 80003 (Irkutsk [GMT+9:00]), 80004 (Hong Kong [GMT+8:00]), 80005 (Perth [GMT+8:00]), 80006 (Taipei [GMT+8:00]), 90001 (Tokyo, Osaka [GMT+9:00]), 90002 (Seoul [GMT+9:00]), 90003 (Yakutsk [GMT+10:00]), 95001 (Darwin [GMT+9:30]), 95002 (Adelaide [GMT+9:30]), 100001 (Brisbane [GMT+10:00]), 100002 (Vladivostok [GMT+11:00]), 100003 (Guam [GMT+10:00]), 100004 (Sydney, Canberra [GMT+10:00]), 100005 (Hobart [GMT+10:00]), 110001 (Magadan [GMT+12:00]), 120001 (Marshall Islands [GMT+12:00]), 120002 (Fiji [GMT+12:00]), 120003 (Auckland [GMT+12:00]), 130001 (Tonga [GMT+13:00])</li> </ul>
---------------------------	--

Default Value	1 (Casablanca [GMT+0:00])
---------------	---------------------------

### 5.4.3 Syslog Settings

#### 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

### 5.4.4 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.  <b>Note</b> <ul style="list-style-type: none"> <li>• Changing this setting may require restarting the unit.</li> <li>• Firmware updates using the SD card can be performed regardless of this setting (→ see <b>7.4 Firmware Update Using the SD Card</b>).</li> </ul>
Value Range	<ul style="list-style-type: none"> <li>• <b>Y</b> (Enable firmware updates)</li> <li>• <b>N</b> (Disable firmware updates)</li> </ul>
Default Value	<b>Y</b>
Web User Interface Reference	Enable Firmware Update (Page 121)

#### FIRM\_VERSION

Value Format	String
--------------	--------

<b>Description</b>	Specifies the firmware version of the unit.  <b>Note</b> <ul style="list-style-type: none"> <li>Changing this setting may require restarting the unit.</li> </ul>
<b>Value Range</b>	00.000–15.999
<b>Default Value</b>	Empty string

## FIRM\_FILE\_PATH

<b>Value Format</b>	String
<b>Description</b>	Specifies the URL where the firmware file is stored.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "<b>FIRM_UPGRADE_ENABLE</b>" is set to "Y".</li> <li>Changing this setting may require restarting the unit.</li> </ul>
<b>Value Range</b>	Max. 500 characters  <b>Note</b> <ul style="list-style-type: none"> <li>The format must be RFC 1738 compliant, as follows: <ul style="list-style-type: none"> <li>"&lt;scheme&gt;://&lt;user&gt;:&lt;password&gt;@&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;".</li> <li>"&lt;user&gt;" must be less than 128 characters.</li> <li>"&lt;password&gt;" must be less than 128 characters.</li> <li>"&lt;user&gt;:&lt;password&gt;@" may be empty.</li> <li>The total of "&lt;scheme&gt;://" and "&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;" must be less than 245 characters.</li> <li>":&lt;port&gt;" can be omitted if you do not need to specify the port number.</li> </ul> </li> <li>If "{mac}" is included in this URL, it will be replaced with the unit's MAC address in lower-case.</li> <li>If "{MAC}" is included in this URL, it will be replaced with the unit's MAC address in upper-case.</li> <li>If "{MODEL}" is included in this URL, it will be replaced with the unit's model name.</li> <li>If "{fwver}" is included in this URL, it will be replaced with "<b>FIRM_VERSION</b>" depending on the system. Note that this rule differs from other parameters such as "<b>SIP_USER_AGENT</b>".</li> </ul>
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Firmware File URL (Page 122)

## 5.4.5 Provisioning Settings

### OPTION66\_ENABLE

<b>Value Format</b>	Boolean
---------------------	---------



<b>Description</b>	Specifies whether to enable the unit to look for option 66 to receive the TFTP server address or FQDN from the DHCP server.  <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li><b>Y</b> (Enable option 66)</li> <li><b>N</b> (Disable option 66)</li> </ul>
<b>Default Value</b>	<b>Y</b>

## PROVISION\_ENABLE

<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether the unit is automatically configured by downloading the configuration files from the provisioning server of your phone system.
<b>Value Range</b>	<ul style="list-style-type: none"> <li><b>Y</b> (Enable configuration file download)</li> <li><b>N</b> (Disable configuration file download)</li> </ul>
<b>Default Value</b>	<b>Y</b>
<b>Web User Interface Reference</b>	Enable Provisioning (Page 123)

## CFG\_STANDARD\_FILE\_PATH

<b>Value Format</b>	String
<b>Description</b>	Specifies the URL of the standard configuration file, which is used when every unit needs different settings.  <b>Note</b> <ul style="list-style-type: none"> <li>When you change this setting, set "<b>PROVISION_ENABLE</b>" to "<b>Y</b>" at the same time.</li> </ul>

<b>Value Range</b>	<p>Max. 500 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>The format must be RFC 1738 compliant, as follows: "<code>&lt;scheme&gt;://&lt;user&gt;:&lt;password&gt;@&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;</code>" <ul style="list-style-type: none"> <li>"<code>&lt;user&gt;</code>" must be less than 128 characters.</li> <li>"<code>&lt;password&gt;</code>" must be less than 128 characters.</li> <li>"<code>&lt;user&gt;:&lt;password&gt;@</code>" may be empty.</li> <li>The total of "<code>&lt;scheme&gt;://</code>" and "<code>&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;</code>" must be less than 245 characters.</li> <li>"<code>:&lt;port&gt;</code>" can be omitted if you do not need to specify the port number.</li> </ul> </li> <li>If "<code>{mac}</code>" is included in this URL, it will be replaced with the unit's MAC address in lower-case.</li> <li>If "<code>{MAC}</code>" is included in this URL, it will be replaced with the unit's MAC address in upper-case.</li> <li>If "<code>{MODEL}</code>" is included in this URL, it will be replaced with the unit's model name.</li> <li>If "<code>{fwver}</code>" is included in this URL, it will be replaced with the unit's firmware version.</li> <li>If this URL ends with "/" (slash), "<code>Config{mac}.cfg</code>" is automatically added at the end of the URL. For example, <code>CFG_STANDARD_FILE_PATH="http://host/dir/"</code> becomes <code>CFG_STANDARD_FILE_PATH="http://host/dir/Config{mac}.cfg"</code>.</li> </ul>
<b>Default Value</b>	http://provisioning.e-connecting.net/redirect/conf/{mac}.cfg
<b>Web User Interface Reference</b>	Standard File URL (Page 123)

## CFG\_PRODUCT\_FILE\_PATH

<b>Value Format</b>	String
<b>Description</b>	<p>Specifies the URL of the product configuration file, which is used when all units with the same model number need the same settings.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>When you change this setting, set "<code>PROVISION_ENABLE</code>" to "<code>Y</code>" at the same time.</li> </ul>

<b>Value Range</b>	<p>Max. 500 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>The format must be RFC 1738 compliant, as follows: <ul style="list-style-type: none"> <li>"&lt;scheme&gt;://&lt;user&gt;:&lt;password&gt;@&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;" <ul style="list-style-type: none"> <li>"&lt;user&gt;" must be less than 128 characters.</li> <li>"&lt;password&gt;" must be less than 128 characters.</li> <li>"&lt;user&gt;:&lt;password&gt;@" may be empty.</li> <li>The total of "&lt;scheme&gt;://" and "&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;" must be less than 245 characters.</li> <li>":&lt;port&gt;" can be omitted if you do not need to specify the port number.</li> </ul> </li> <li>If "{mac}" is included in this URL, it will be replaced with the unit's MAC address in lower-case.</li> <li>If "{MAC}" is included in this URL, it will be replaced with the unit's MAC address in upper-case.</li> <li>If "{MODEL}" is included in this URL, it will be replaced with the unit's model name.</li> <li>If "{fwver}" is included in this URL, it will be replaced with the unit's firmware version.</li> <li>If this URL ends with "/" (slash), "{MODEL}.cfg" is automatically added at the end of the URL. For example, <code>CFG_PRODUCT_FILE_PATH="http://host/dir/"</code> becomes <code>CFG_PRODUCT_FILE_PATH="http://host/dir/{MODEL}.cfg"</code>.</li> </ul> </li> </ul>
<b>Default Value</b>	<p>Empty string</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>The URL specified by your phone system dealer may be preset in the unit.</li> </ul>
<b>Web User Interface Reference</b>	Product File URL (Page 123)

## CFG\_MASTER\_FILE\_PATH

<b>Value Format</b>	String
<b>Description</b>	<p>Specifies the URL of the master configuration file, which is used when all units need the same settings.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>When you change this setting, set "<code>PROVISION_ENABLE</code>" to "<code>y</code>" at the same time.</li> </ul>

<b>Value Range</b>	<p>Max. 500 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>The format must be RFC 1738 compliant, as follows: "<code>&lt;scheme&gt;://&lt;user&gt;:&lt;password&gt;@&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;</code>" <ul style="list-style-type: none"> <li>"<code>&lt;user&gt;</code>" must be less than 128 characters.</li> <li>"<code>&lt;password&gt;</code>" must be less than 128 characters.</li> <li>"<code>&lt;user&gt;:&lt;password&gt;@</code>" may be empty.</li> <li>The total of "<code>&lt;scheme&gt;://</code>" and "<code>&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;</code>" must be less than 245 characters.</li> <li>"<code>:&lt;port&gt;</code>" can be omitted if you do not need to specify the port number.</li> </ul> </li> <li>If "{mac}" is included in this URL, it will be replaced with the unit's MAC address in lower-case.</li> <li>If "{MAC}" is included in this URL, it will be replaced with the unit's MAC address in upper-case.</li> <li>If "{MODEL}" is included in this URL, it will be replaced with the unit's model name.</li> <li>If "{fwver}" is included in this URL, it will be replaced with the unit's firmware version.</li> <li>If this URL ends with "/" (slash), "sip.cfg" is automatically added at the end of the URL. For example, <code>CFG_MASTER_FILE_PATH="http://host/dir/"</code> becomes <code>CFG_MASTER_FILE_PATH="http://host/dir/sip.cfg"</code>.</li> </ul>
<b>Default Value</b>	<p>Empty string</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>The URL specified by your phone system dealer may be preset in the unit.</li> </ul>
<b>Web User Interface Reference</b>	Master File URL (Page 124)

## CFG\_FILE\_KEY1

<b>Value Format</b>	String
<b>Description</b>	<p>Specifies the encryption key (password) used to decrypt configuration files.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If the extension of the configuration file is ".e1c", the configuration file will be decrypted using this key.</li> </ul>
<b>Value Range</b>	<p>32-byte characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If an empty string is set for this parameter, decryption with this value is disabled.</li> </ul>
<b>Default Value</b>	A unique value is preset to each unit.

## CFG\_FILE\_KEY2

<b>Value Format</b>	String
<b>Description</b>	Specifies the encryption key (password) used to decrypt configuration files.  <b>Note</b> <ul style="list-style-type: none"> <li>If the extension of the configuration file is ".e2c", the configuration file will be decrypted using this key.</li> </ul>
<b>Value Range</b>	32-byte characters  <b>Note</b> <ul style="list-style-type: none"> <li>If an empty string is set for this parameter, decryption with this value is disabled.</li> </ul>
<b>Default Value</b>	Empty string

## CFG\_FILE\_KEY3

<b>Value Format</b>	String
<b>Description</b>	Specifies the encryption key (password) used to decrypt configuration files.  <b>Note</b> <ul style="list-style-type: none"> <li>If the extension of the configuration file is ".e3c", the configuration file will be decrypted using this key.</li> </ul>
<b>Value Range</b>	32-byte characters  <b>Note</b> <ul style="list-style-type: none"> <li>If an empty string is set for this parameter, decryption with this value is disabled.</li> </ul>
<b>Default Value</b>	Empty string

## CFG\_FILE\_KEY\_LENGTH

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the key lengths in bits used to decrypt configuration files.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>128</li> <li>192</li> <li>256</li> </ul>
<b>Default Value</b>	128

## CFG\_CYCLIC

<b>Value Format</b>	Boolean
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<b>Description</b>	Specifies whether the unit periodically checks for updates of configuration files.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Enable periodic synchronization of configuration files)</li> <li>• <b>N</b> (Disable periodic synchronization of configuration files)</li> </ul>
<b>Default Value</b>	<b>N</b>
<b>Web User Interface Reference</b>	Cyclic Auto Resync (Page 124)

## CFG\_CYCLIC\_INTVL

<b>Value Format</b>	Integer
<b>Description</b>	<p>Specifies the interval, in minutes, between periodic checks for updates of the configuration files.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when "CFG_CYCLIC" is set to "Y".</li> </ul>
<b>Value Range</b>	1–40320
<b>Default Value</b>	10080
<b>Web User Interface Reference</b>	Resync Interval (Page 124)

## CFG\_RTRY\_INTVL

<b>Value Format</b>	Integer
<b>Description</b>	<p>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.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when "CFG_CYCLIC" is set to "Y".</li> </ul>
<b>Value Range</b>	1–1440
<b>Default Value</b>	30

## CFG\_RESYNC\_TIME

<b>Value Format</b>	String
<b>Description</b>	Specifies the time (hour:minute) that the unit checks for updates of configuration files.

<b>Value Range</b>	00:00–23:59  <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> <li>If the value for this setting is an empty string, downloading the configuration files at the fixed time are disabled.</li> </ul>
<b>Default Value</b>	Empty string

## CFG\_RESYNC\_FROM\_SIP

<b>Value Format</b>	String
<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>If the SIP server directs the unit to access the configuration files on the provisioning server, the unit will be restarted.</li> </ul>
<b>Value Range</b>	Max. 15 characters  <b>Note</b> <ul style="list-style-type: none"> <li>An empty string is not allowed.</li> </ul>
<b>Default Value</b>	check-sync
<b>Web User Interface Reference</b>	Header Value for Resync Event (Page 124)

## 5.5 Network Settings

### 5.5.1 Ethernet Port Settings

#### LLDP\_ENABLE

<b>Value Format</b>	Boolean
<b>Description</b>	Selects whether to enable or disable sending and receiving LLDP frames.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable)</li> <li>N (Disable)</li> </ul>
<b>Default Value</b>	Y
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)

<b>Web User Interface Reference</b>	LLDP (Page 74)
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## LLDP\_INTERVAL

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in seconds, between sending each LLDP frame.
<b>Value Range</b>	1–3600
<b>Default Value</b>	30
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Web User Interface Reference</b>	LLDP-MED Interval timer (Page 74)

## LLDP\_VLAN\_ID\_PC

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the VLAN ID for the PC port when LLDP is on.
<b>Value Range</b>	0–4094
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	PC (VLAN ID) (Page 75)

## LLDP\_VLAN\_PRI\_PC

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the VLAN Priority for the PC port when LLDP is on.
<b>Value Range</b>	0–7
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	PC (Priority) (Page 75)

## VLAN\_ENABLE

<b>Value Format</b>	Boolean
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<b>Description</b>	Specifies whether to use the VLAN feature to perform VoIP communication securely.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "NW_SETTING_ENABLE" is set to "N".</li> <li>If this setting is configured through phone user interface programming, changes via configuration file programming are ignored.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable)</li> <li>N (Disable)</li> </ul>
<b>Default Value</b>	N
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Web User Interface Reference</b>	Enable VLAN (Page 75)

## VLAN\_ID\_IP\_PHONE

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the VLAN ID for this unit.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "NW_SETTING_ENABLE" is set to "N".</li> <li>If this setting is configured through phone user interface programming, changes via configuration file programming are ignored.</li> </ul>
<b>Value Range</b>	1–4094
<b>Default Value</b>	2
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Web User Interface Reference</b>	IP Phone (VLAN ID) (Page 75)

## VLAN\_PRI\_IP\_PHONE

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the priority number for the unit.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "NW_SETTING_ENABLE" is set to "N".</li> <li>If this setting is configured through phone user interface programming, changes via configuration file programming are ignored.</li> </ul>

<b>Value Range</b>	0–7
<b>Default Value</b>	7
<b>Phone User Interface Reference</b>	Ethernet Settings (Page 17)
<b>Web User Interface Reference</b>	IP Phone (Priority) (Page 76)

## VLAN\_ID\_PC

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the VLAN ID for the PC.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "NW_SETTING_ENABLE" is set to "N".</li> <li>If this setting is configured through phone user interface programming, changes via configuration file programming are ignored.</li> </ul>
<b>Value Range</b>	1–4094
<b>Default Value</b>	1
<b>Web User Interface Reference</b>	PC (VLAN ID) (Page 76)

## VLAN\_PRI\_PC

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the priority number for the PC.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "NW_SETTING_ENABLE" is set to "N".</li> <li>If this setting is configured through phone user interface programming, changes via configuration file programming are ignored.</li> </ul>
<b>Value Range</b>	0–7
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	PC (Priority) (Page 76)

## 5.5.2 HTTP Settings

### HTTPD\_PORTOPEN\_AUTO

<b>Value Format</b>	Boolean
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<b>Description</b>	Specifies whether the unit's Web port is always open.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Y (Web port is always open)</li> <li>• N (Web port is closed [can be opened temporarily through phone user interface programming])</li> </ul> <p><b>Notice</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>
<b>Default Value</b>	N

## HTTP\_VER

<b>Value Format</b>	Integer
<b>Description</b>	Specifies which version of the HTTP protocol to use for HTTP communication.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 1 (Use HTTP 1.0)</li> <li>• 0 (Use HTTP 1.1)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• 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".</li> </ul>
<b>Default Value</b>	1
<b>Web User Interface Reference</b>	HTTP Version (Page 77)

## HTTP\_USER\_AGENT

<b>Value Format</b>	String
<b>Description</b>	Specifies the text string to send as the user agent in the header of HTTP requests.
<b>Value Range</b>	<p>Max. 40 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• An empty string is not allowed.</li> <li>• If "{mac}" is included in this parameter, it will be replaced with the unit's MAC address in lower-case.</li> <li>• If "{MAC}" is included in this parameter, it will be replaced with the unit's MAC address in upper-case.</li> <li>• If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name.</li> <li>• If "{fwver}" is included in this parameter, it will be replaced with the firmware version of the unit.</li> </ul>

<b>Default Value</b>	Panasonic_{MODEL}/{fwver} ({mac})
<b>Web User Interface Reference</b>	HTTP User Agent (Page 77)

## HTTP\_SSL\_VERIFY

<b>Value Format</b>	Integer
<b>Description</b>	Specifies whether to enable the verification of the root certificate.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 0 (No verification of root certificate)</li> <li>• 1 (Simple verification of root certificate)</li> <li>• 2 (Precise verification of root certificate)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If set to "0", the verification of the root certificate is disabled.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>
<b>Default Value</b>	0

## CFG\_ROOT\_CERTIFICATE\_PATH

<b>Value Format</b>	String
<b>Description</b>	Specifies the URI of the root certificate.  <b>Note</b> <ul style="list-style-type: none"> <li>• Changing this setting may require restarting the unit.</li> </ul>
<b>Value Range</b>	Max. 500 characters  <b>Note</b> <ul style="list-style-type: none"> <li>• The format must be RFC 1738 compliant, as follows: <ul style="list-style-type: none"> <li>– "&lt;scheme&gt;://&lt;user&gt;:&lt;password&gt;@&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;"</li> <li>– "&lt;user&gt;" must be less than 128 characters.</li> <li>– "&lt;password&gt;" must be less than 128 characters.</li> <li>– "&lt;user&gt;:&lt;password&gt;@" may be empty.</li> <li>– The total of "&lt;scheme&gt;:///" and "&lt;host&gt;:&lt;port&gt;/&lt;url-path&gt;" must be less than 245 characters.</li> <li>– ":&lt;port&gt;" can be omitted if you do not need to specify the port number.</li> </ul> </li> </ul>
<b>Default Value</b>	Empty string

## 5.5.3 Time Adjust Settings

### NTP\_ADDR

<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address or FQDN of the NTP server.  <b>Note</b> <ul style="list-style-type: none"> <li>If NTP settings are performed via the unit, this setting is disabled.</li> </ul>
<b>Value Range</b>	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
<b>Default Value</b>	Empty string

### TIME\_SYNC\_INTVL

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in seconds, to resynchronize after having detected no reply from the NTP server.  <b>Note</b> <ul style="list-style-type: none"> <li>If NTP settings are performed via the unit, this setting is disabled.</li> </ul>
<b>Value Range</b>	10–86400
<b>Default Value</b>	60

### TIME\_QUERY\_INTVL

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in seconds, between synchronizations with the NTP server.  <b>Note</b> <ul style="list-style-type: none"> <li>If NTP settings are performed via the unit, this setting is disabled.</li> </ul>
<b>Value Range</b>	10–86400
<b>Default Value</b>	43200

## 5.5.4 STUN Settings

### STUN\_SERV\_ADDR

<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address or FQDN of the STUN server.

<b>Value Range</b>	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	STUN Server Address (Page 80)

## STUN\_SERV\_PORT

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<b>Value Format</b>	Integer
<b>Description</b>	Specifies the port number of the STUN server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	3478
<b>Web User Interface Reference</b>	STUN Server Port (Page 80)

## STUN\_2NDSERV\_ADDR

---

<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address of the secondary STUN server.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "STUN_SERV_ADDR" is specified in IP address notation.</li> </ul>
<b>Value Range</b>	IP address in dotted-decimal notation
<b>Default Value</b>	Empty string

## STUN\_2NDSERV\_PORT

---

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the port number of the secondary STUN server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	3478

## 5.5.5 Miscellaneous Network Settings

### NW\_SETTING\_ENABLE

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<b>Value Format</b>	Boolean
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<b>Description</b>	Specifies whether to enable network and NTP server settings from the unit.  <b>Note</b> <ul style="list-style-type: none"> <li>If you change this setting to "N" when network or NTP server settings have been made through Web user interface programming (→ see <b>4.4.1 Basic Network Settings</b>), clear these settings once by performing Reset Web Settings from the Web user interface, and then change this setting to "N".</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable network and NTP server settings)</li> <li>N (Disable network and NTP server settings)</li> </ul>
<b>Default Value</b>	Y

## CUSTOM\_WEB\_PAGE

<b>Value Format</b>	Integer
<b>Description</b>	Specifies whether to enable the settings in <b>4.4.1 Basic Network Settings</b> from the Web user interface when logged in with the User account.
<b>Value Range</b>	0–1 <ul style="list-style-type: none"> <li>0: Enable "Basic Network Settings"</li> <li>1: Disable "Basic Network Settings"</li> </ul>
<b>Default Value</b>	0

## 5.6 Telephone Settings

### 5.6.1 Call Control Settings

#### VM\_SUBSCRIBE\_ENABLE

<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to send the SUBSCRIBE request to a voice mail server.  <b>Note</b> <ul style="list-style-type: none"> <li>Your phone system must support voice mail.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Send the SUBSCRIBE request)</li> <li>N (Do not send the SUBSCRIBE request)</li> </ul>
<b>Default Value</b>	N
<b>Web User Interface Reference</b>	Send SUBSCRIBE to Voice Mail Server (Page 105)

## CONFERENCE\_SERVER\_URI

<b>Value Format</b>	String
<b>Description</b>	<p>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".</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>Availability depends on your phone system.</li> </ul>
<b>Value Range</b>	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Conference Server URI (Page 106)

## FIRSTDIGIT\_TIM

<b>Value Format</b>	Integer
<b>Description</b>	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.
<b>Value Range</b>	1–600
<b>Default Value</b>	30

## INTDIGIT\_TIM

<b>Value Format</b>	Integer
<b>Description</b>	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.
<b>Value Range</b>	1–15
<b>Default Value</b>	5
<b>Web User Interface Reference</b>	Inter-digit Timeout (Page 106)

## MACRODIGIT\_TIM

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the length of time, in seconds, that the unit waits when a "T" or "t" has been entered in the dial plan.
<b>Value Range</b>	1–15



<b>Default Value</b>	5
<b>Web User Interface Reference</b>	Timer for Dial Plan (Page 106)

## INTERNATIONAL\_ACCESS\_CODE

<b>Value Format</b>	String
<b>Description</b>	Specifies the number to be shown in the place of the first "+" symbol when the phone number for incoming international calls contains "+".
<b>Value Range</b>	Max. 8 characters (consisting of 0–9, *, and #)  <b>Note</b> <ul style="list-style-type: none"> <li>No other characters are allowed.</li> </ul>
<b>Default Value</b>	Empty string ("+" is deleted)
<b>Web User Interface Reference</b>	International Call Prefix (Page 106)

## COUNTRY\_CALLING\_CODE

<b>Value Format</b>	String
<b>Description</b>	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.
<b>Value Range</b>	Max. 8 characters (consisting of 0–9)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Country Calling Code (Page 107)

## NATIONAL\_ACCESS\_CODE

<b>Value Format</b>	String
<b>Description</b>	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.
<b>Value Range</b>	Max. 8 characters (consisting of 0–9, *, and #)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	National Access Code (Page 107)

## DEFAULT\_LINE\_SELECT

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the line used to make an outgoing call when no line is specified in the dialing operation.

<b>Value Range</b>	1–6
<b>Default Value</b>	1
<b>Web User Interface Reference</b>	Default Line for Outgoing (Page 107)

## DATA\_LINE\_MODE

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<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to enable sending and receiving using data line mode.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable Data Line Mode)</li> <li>N (Disable Data Line Mode)</li> </ul>
<b>Default Value</b>	N

## NUM\_PLAN\_PICKUP\_DIRECT

---

<b>Value Format</b>	String
<b>Description</b>	Specifies the feature number assigned to a BLF for performing call pickup.
<b>Value Range</b>	Max. 4 characters (consisting of 0–9, *, and #)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Directed Call Pickup (Page 108)

## TALK\_PACKAGE

---

<b>Value Format</b>	Boolean
<b>Description</b>	<p>Specifies whether to enable the Click to Answer/Retrieve functions.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>When this parameter is set to "Y", "talk" is added to the Allow-Events header.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable Talk Package)</li> <li>N (Disable Talk Package)</li> </ul>
<b>Default Value</b>	N

## HOLD\_PACKAGE

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<b>Value Format</b>	Boolean
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<b>Description</b>	Specifies whether to enable the Click to Hold function.  <b>Note</b> <ul style="list-style-type: none"> <li>When this parameter is set to "Y", "hold" is added to the Allow-Events header.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable Hold Package)</li> <li>N (Disable Hold Package)</li> </ul>
<b>Default Value</b>	N

## HOLD\_RECALL\_TIM

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the duration of the hold recall timer. If set to "0", the function is disabled.
<b>Value Range</b>	0–240 (0: Disable)
<b>Default Value</b>	60

## AUTO\_ANS\_RING\_TIM

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

## RINGING\_OFF\_SETTING\_ENABLE

<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether incoming call ringing can be turned off for the phone. If disabled, users cannot prevent incoming calls from ringing.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable Ringing Off setting)</li> <li>N (Disable Ringing Off setting)</li> </ul>
<b>Default Value</b>	Y

## AUTO\_CALL\_HOLD

<b>Value Format</b>	Boolean
<b>Description</b>	Selects whether calls are disconnected or held when a DN button is pressed while having a conversation.

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <math>\mathcal{Y}</math> (Enable Auto Call Hold)</li> <li>• <math>\mathcal{N}</math> (Disable Auto Call Hold)</li> </ul>
<b>Default Value</b>	$\mathcal{N}$

## REDIALKEY\_CALLLOG\_ENABLE

<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether the call log is displayed when <b>[Redial]</b> is tapped while on-hook.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <math>\mathcal{Y}</math> (Displays outgoing call log when <b>[Redial]</b> is tapped.)</li> <li>• <math>\mathcal{N}</math> (Redials last-called telephone number when <b>[Redial]</b> is tapped.)</li> </ul>
<b>Default Value</b>	$\mathcal{N}$

## ONHOOK\_TRANSFER\_ENABLE

<b>Value Format</b>	Boolean
<b>Description</b>	<p>Specifies whether transfer operations are permitted while on-hook.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• When the mode for users with difficulties operating the touch display directly (Accessibility mode) is enabled through phone user interface programming, this setting is disabled.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <math>\mathcal{Y}</math> (Enable On-hook Transfer)</li> <li>• <math>\mathcal{N}</math> (Disable On-hook Transfer)</li> </ul>
<b>Default Value</b>	$\mathcal{Y}$

## DISCONNECTION\_MODE

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

## TONE\_LEN\_DISCONNECT\_HANDSET

<b>Value Format</b>	Integer
<b>Description</b>	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.

<b>Value Range</b>	1–15
<b>Default Value</b>	10

## TONE\_LEN\_DISCONNECT\_HANDSFREE

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

## KEY\_PAD\_TONE

<b>Value Format</b>	Boolean
<b>Description</b>	Selects whether a tone is heard in response to key presses.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting does not affect the iWnn IME Keyboard. For details about available keyboards, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>If touch tones or selection tones are configured through phone user interface programming, changes to this setting are ignored.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable Key Pad Tone)</li> <li>N (Disable Key Pad Tone)</li> </ul>
<b>Default Value</b>	Y

## DDI\_ICD\_GROUP\_DISPLAY

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the caller information or called party information displayed on the unit when an incoming call is received.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>0: Only the caller name is displayed.</li> <li>1: The caller name is prioritized.</li> <li>2: The ICD (Incoming Call Distribution)/DDI (Direct Dialing In) group name is prioritized.</li> <li>3: Only the ICD/DDI group name is displayed.</li> </ul>
<b>Default Value</b>	1

## 5.6.2 Tone Settings

### DIAL\_TONE1\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of Dial Tone 1 using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	350,440
<b>Web User Interface Reference</b>	Tone Frequencies (Page 117)

### DIAL\_TONE1\_GAIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the gain, in decibels, of Dial Tone 1.
<b>Value Range</b>	-24–6
<b>Default Value</b>	0

### DIAL\_TONE1\_TIMING

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).</li> </ul>
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	60,0
<b>Web User Interface Reference</b>	Tone Timings (Page 117)

### DIAL\_TONE2\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of Dial Tone 2 using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	350,440

## DIAL\_TONE2\_GAIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the gain, in decibels, of Dial Tone 2.
<b>Value Range</b>	-24–6
<b>Default Value</b>	0

## DIAL\_TONE2\_TIMING

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).</li> </ul>
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	60,0

## DIAL\_TONE4\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of Dial Tone 4 (stutter dial tones) to notify that a voice mail is waiting, using 4 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	350,440
<b>Web User Interface Reference</b>	Tone Frequencies (Page 119)

## DIAL\_TONE4\_GAIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the gain, in decibels, of Dial Tone 4 (stutter-type dial tone).
<b>Value Range</b>	-24–6
<b>Default Value</b>	0

## DIAL\_TONE4\_TIMING

<b>Value Format</b>	Comma-separated Integer
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## REORDER\_TONE\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of reorder tones using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	480,620
<b>Web User Interface Reference</b>	Tone Frequencies (Page 120)

## REORDER\_TONE\_GAIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the gain, in decibels, of the reorder tone.
<b>Value Range</b>	-24–6
<b>Default Value</b>	0

## REORDER\_TONE\_TIMING

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).</li> </ul>
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	60,250,190
<b>Web User Interface Reference</b>	Tone Timings (Page 120)

## RINGBACK\_TONE\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of ringback tones using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	440,480
<b>Web User Interface Reference</b>	Tone Frequencies (Page 118)

## RINGBACK\_TONE\_GAIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the gain, in decibels, of the ringback tone.
<b>Value Range</b>	-24–6
<b>Default Value</b>	0

## RINGBACK\_TONE\_TIMING

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>It is recommended that you set a value of 60 milliseconds or more for the first value (off 1).</li> </ul>
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	60,2000,3940
<b>Web User Interface Reference</b>	Tone Timings (Page 119)

## HOLD\_ALARM\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of the hold alarm using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	425

## HOLD\_ALARM\_GAIN

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

## HOLD\_ALARM\_TIMING

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	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.

<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	120,14880

## CW\_TONE1\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of call waiting tone 1 using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	425

## CW\_TONE1\_GAIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the gain, in decibels, of call waiting tone 1.
<b>Value Range</b>	-24–6
<b>Default Value</b>	0

## CW\_TONE1\_TIMING

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	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.
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	120,120,120,120,120,14400

## HOLD\_TONE\_FRQ

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	Specifies the dual-tone frequencies, in hertz, of the hold tone using 2 whole numbers separated by a comma.
<b>Value Range</b>	0, 200–2000 (0: No tone)
<b>Default Value</b>	425

## HOLD\_TONE\_GAIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the gain, in decibels, of the hold tone.

<b>Value Range</b>	-24–6
<b>Default Value</b>	0

## HOLD\_TONE\_TIMING

<b>Value Format</b>	Comma-separated Integer
<b>Description</b>	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.  <b>Note</b> <ul style="list-style-type: none"> <li>It is recommended that you set a value of 500 milliseconds or more for the first value (off 1).</li> </ul>
<b>Value Range</b>	0–16000 (0: Infinite time)
<b>Default Value</b>	500,190,190,190,2890

## 5.6.3 Telephone Settings

### DISPLAY\_NAME\_REPLACE

<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether the name saved in the phonebook is used in place of the name display if a matching entry is found.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable Display Name Replace)</li> <li>N (Disable Display Name Replace)</li> </ul>
<b>Default Value</b>	Y

### NUMBER\_MATCHING\_LOWER\_DIGIT

<b>Value Format</b>	Integer
<b>Description</b>	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" for this parameter and "NUMBER_MATCHING_UPPER_DIGIT".
<b>Value Range</b>	0–15
<b>Default Value</b>	7
<b>Web User Interface Reference</b>	Number Matching Lower Digit (Page 120)

### NUMBER\_MATCHING\_UPPER\_DIGIT

<b>Value Format</b>	Integer
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<b>Description</b>	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" for this parameter and "NUMBER_MATCHING_LOWER_DIGIT".
<b>Value Range</b>	0–15
<b>Default Value</b>	10
<b>Web User Interface Reference</b>	Number Matching Upper Digit (Page 121)

## DISPLAY\_DATE\_PATTERN

<b>Value Format</b>	Integer
<b>Description</b>	Selects the display order pattern for the day and month of the date.  <b>Note</b> <ul style="list-style-type: none"> <li>If the time format or date format are configured through phone user interface programming, changes to this setting are ignored.</li> </ul>
<b>Value Range</b>	0–2 – 0: Not specified – 1: DDMM – 2: MMDD
<b>Default Value</b>	0

## DISPLAY\_TIME\_PATTERN

<b>Value Format</b>	Integer
<b>Description</b>	Selects the display type for the time (12- or 24-hour format).  <b>Note</b> <ul style="list-style-type: none"> <li>If the time format or date format are configured through phone user interface programming, changes to this setting are ignored.</li> </ul>
<b>Value Range</b>	0–2 – 0: Not specified – 1: 12H – 2: 24H
<b>Default Value</b>	0

## DEFAULT\_LANGUAGE

<b>Value Format</b>	String
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<b>Description</b>	Selects the language to use for the menus and display items on the phone.  <b>Note</b> <ul style="list-style-type: none"> <li>If the language locale is configured through phone user interface programming, changes to this setting are ignored.</li> </ul>
<b>Value Range</b>	Only the following values are available: <ul style="list-style-type: none"> <li><b>en-US</b> (English [US])</li> <li><b>en-GB</b> (English [UK])</li> <li><b>de</b> (German)</li> <li><b>fr</b> (French)</li> <li><b>fr-CA</b> (French [Canadian])</li> <li><b>it</b> (Italian)</li> <li><b>es</b> (Spanish)</li> <li><b>nl</b> (Dutch)</li> <li><b>ru</b> (Russian)</li> <li><b>ja</b> (Japanese)</li> </ul>
<b>Default Value</b>	<b>en-US</b>

## POUND\_KEY\_DELIMITER\_ENABLE

<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether the # key is treated as a regular dialed digit or a delimiter, when dialed as or after the second digit.
<b>Value Range</b>	<ul style="list-style-type: none"> <li><b>y</b> (# is treated as the end of dialing delimiter)</li> <li><b>n</b> (# is treated as a regular dialed digit)</li> </ul>
<b>Default Value</b>	<b>y</b>

## WALLPAPER\_URI\_HOME

<b>Value Format</b>	String
<b>Description</b>	Specifies the URI of the wallpaper of the unit's Home screen.  <b>Note</b> <ul style="list-style-type: none"> <li>Only a JPEG, PNG, GIF, or BMP format file that is 5 MB or less can be used.</li> </ul>
<b>Value Range</b>	Max. 500 characters
<b>Default Value</b>	Empty string

## WALLPAPER\_URI\_PHONE

<b>Value Format</b>	String
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<b>Description</b>	Specifies the URI of the wallpaper of the unit's Phone screen.  <b>Note</b> <ul style="list-style-type: none"> <li>Only a JPEG, PNG, or GIF format file that is 5 MB or less can be used. (BMP format files cannot be used.)</li> </ul>
<b>Value Range</b>	Max. 500 characters  <b>Note</b> <ul style="list-style-type: none"> <li>You can insert "b," (black) or "w," (white) before the URI to specify whether the other parts of the screen are a dark or light color.</li> </ul>
<b>Default Value</b>	Empty string

## LOGO\_URI\_PHONE

<b>Value Format</b>	String
<b>Description</b>	Specifies the URI of the logo of the unit's Phone screen.  <b>Note</b> <ul style="list-style-type: none"> <li>Only a JPEG, PNG, or GIF format file that is 5 MB or less can be used. (BMP format files cannot be used.)</li> </ul>
<b>Value Range</b>	Max. 500 characters
<b>Default Value</b>	Empty string

## 5.6.4 Flexible Button Settings

### FLEX\_BUTTON\_FACILITY\_ACTx

<b>Value Format</b>	String
<b>Description</b>	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.
<b>Value Range</b>	Only the following values are available: X_PANASONIC_IPTEL_DN, X_PANASONIC_IPTEL_HEADSET, X_PANASONIC_IPTEL_CONTACT, X_PANASONIC_IPTEL_ONETOUCH
<b>Default Value</b>	X_PANASONIC_IPTEL_DN

### FLEX\_BUTTON\_FACILITY\_ARGx

<b>Value Format</b>	String
<b>Description</b>	Optional argument associated with the specified Facility Action for the flexible button.

<b>Value Range</b>	Max. 32 characters  <b>Note</b> <ul style="list-style-type: none"> <li>The value range differs depending on the flexible button set in "FLEX_BUTTON_FACILITY_ACTx", as follows: <ul style="list-style-type: none"> <li>X_PANASONIC_IPTTEL_DN: 1–32 (ringtone number), 1–6 (line number)</li> <li>X_PANASONIC_IPTTEL_HEADSET: not available</li> <li>X_PANASONIC_IPTTEL_CONTACT: 1–32 digit number</li> <li>X_PANASONIC_IPTTEL_ONETOUCH: 1–32 digit number</li> </ul> </li> </ul> For details about flexible buttons, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b> ).
<b>Default Value</b>	1,1

## FLEX\_BUTTON\_LABELx

<b>Value Format</b>	String
<b>Description</b>	Specifies the message to be displayed on the screen when the flexible button is pressed.  <b>Note</b> <ul style="list-style-type: none"> <li>You can use Unicode characters for this setting.</li> </ul>
<b>Value Range</b>	Max. 10 characters or 30 bytes
<b>Default Value</b>	Empty string

## 5.7 VoIP Settings

### 5.7.1 Codec Settings

#### CODEC\_G711\_REQ

<b>Value Format</b>	Integer
<b>Description</b>	Specifies whether to set "PCMU" as a codec selection automatically when "CODEC_ENABLEx_n" is set to any codec selection other than "PCMU".
<b>Value Range</b>	<ul style="list-style-type: none"> <li>0 (Do not set "PCMU")</li> <li>1 (Set "PCMU")</li> </ul>
<b>Default Value</b>	1



## CODEC\_G729\_PARAM

<b>Value Format</b>	Integer
<b>Description</b>	Specifies whether to add an attribute line, "a=fmtp:18 annexb=no", to SDP when "CODEC_ENABLEx_n" is set to "G729A".
<b>Value Range</b>	<ul style="list-style-type: none"> <li>0 (Do not add "a=fmtp:18 annexb=no")</li> <li>1 (Add "a=fmtp:18 annexb=no")</li> </ul>
<b>Default Value</b>	0

## CODEC\_ENABLEx\_n

<b>Parameter Name Example</b>	CODEC_ENABLEx_1, CODEC_ENABLEx_2, ..., CODEC_ENABLEx_6
<b>Value Format</b>	Boolean
<b>Description</b>	<p>Specifies whether to enable the codec specified in the parameter list.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>The "x" character in the parameter title should be changed to one of the following numbers, according to the codec to be changed. <ul style="list-style-type: none"> <li>0: G.722</li> <li>1: PCMA</li> <li>3: G.729A</li> <li>4: PCMU</li> </ul> </li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable)</li> <li>N (Disable)</li> </ul>
<b>Default Value</b>	Y
<b>Web User Interface Reference</b>	<ul style="list-style-type: none"> <li>G722 (Enable) (Page 103)</li> <li>PCMA (Enable) (Page 104)</li> <li>G729A (Enable) (Page 104)</li> <li>PCMU (Enable) (Page 104)</li> </ul>

## CODEC\_PRIORITYx\_n

<b>Parameter Name Example</b>	CODEC_PRIORITYx_1, CODEC_PRIORITYx_2, ..., CODEC_PRIORITYx_6
<b>Value Format</b>	Integer

<b>Description</b>	Specifies the priority order for the codec.  <b>Note</b> <ul style="list-style-type: none"> <li>• The "x" character in the parameter title should be changed to one of the following numbers, according to the codec to be changed. <ul style="list-style-type: none"> <li>– 0: G.722</li> <li>– 1: PCMA</li> <li>– 3: G.729A</li> <li>– 4: PCMU</li> </ul> </li> <li>• The lower the set value, the higher the priority.</li> </ul>
<b>Value Range</b>	1–255
<b>Default Value</b>	1
<b>Web User Interface Reference</b>	<ul style="list-style-type: none"> <li>• G722 (Priority) (Page 103)</li> <li>• PCMA (Priority) (Page 104)</li> <li>• G729A (Priority) (Page 104)</li> <li>• PCMU (Priority) (Page 105)</li> </ul>

## 5.7.2 RTP Settings

### DSCP\_RTP\_n

<b>Parameter Name Example</b>	DSCP_RTP_1, DSCP_RTP_2, ..., DSCP_RTP_6
<b>Value Format</b>	Integer
<b>Description</b>	Selects the DSCP level of DiffServ applied to RTP packets.
<b>Value Range</b>	0–63
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	RTP Packet QoS (DSCP) (Page 100)

### DSCP\_RTCP\_n

<b>Parameter Name Example</b>	DSCP_RTCP_1, DSCP_RTCP_2, ..., DSCP_RTCP_6
<b>Value Format</b>	Integer
<b>Description</b>	Selects the DSCP level of DiffServ applied to RTCP packets.
<b>Value Range</b>	0–63
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	RTCP Packet QoS (DSCP) (Page 100)

## RTCP\_INTVL\_n

<b>Parameter Name Example</b>	RTCP_INTVL_1, RTCP_INTVL_2, ..., RTCP_INTVL_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in seconds, between RTCP packets.
<b>Value Range</b>	5–65535
<b>Default Value</b>	5
<b>Web User Interface Reference</b>	RTCP Interval (Page 101)

## MAX\_DELAY\_n

<b>Parameter Name Example</b>	MAX_DELAY_1, MAX_DELAY_2, ..., MAX_DELAY_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the maximum delay, in 10-millisecond units, of the jitter buffer.
<b>Value Range</b>	3–50 (× 10 ms)  <b>Note</b> <ul style="list-style-type: none"> <li>• This setting is subject to the following conditions: <ul style="list-style-type: none"> <li>– This value must be greater than "NOM_DELAY"</li> <li>– This value must be greater than "MIN_DELAY"</li> <li>– "NOM_DELAY" must be greater than or equal to "MIN_DELAY"</li> </ul> </li> </ul>
<b>Default Value</b>	20 (× 10 ms)
<b>Web User Interface Reference</b>	Maximum Delay (Page 101)

## MIN\_DELAY\_n

<b>Parameter Name Example</b>	MIN_DELAY_1, MIN_DELAY_2, ..., MIN_DELAY_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the minimum delay, in 10-millisecond units, of the jitter buffer.
<b>Value Range</b>	1 or 2 (× 10 ms)  <b>Note</b> <ul style="list-style-type: none"> <li>• This setting is subject to the following conditions: <ul style="list-style-type: none"> <li>– This value must be less than or equal to "NOM_DELAY"</li> <li>– This value must be less than "MAX_DELAY"</li> <li>– "MAX_DELAY" must be greater than "NOM_DELAY"</li> </ul> </li> </ul>
<b>Default Value</b>	2 (× 10 ms)
<b>Web User Interface Reference</b>	Minimum Delay (Page 101)

## NOM\_DELAY\_n

<b>Parameter Name Example</b>	NOM_DELAY_1, NOM_DELAY_2, ..., NOM_DELAY_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the initial delay, in 10-millisecond units, of the jitter buffer.
<b>Value Range</b>	1–7 (× 10 ms)  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is subject to the following conditions: <ul style="list-style-type: none"> <li>This value must be greater than or equal to "MIN_DELAY"</li> <li>This value must be less than "MAX_DELAY"</li> </ul> </li> </ul>
<b>Default Value</b>	2 (× 10 ms)
<b>Web User Interface Reference</b>	Initial Delay (Page 102)

## RTP\_PORT\_MIN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the lowest port number that the unit will use for RTP packets.  <b>Note</b> <ul style="list-style-type: none"> <li>If port numbers are specified in [Channel 1–25] in <b>4.4.5.3 External RTP Port</b> in the Web user interface, this setting is ignored and the corresponding external RTP port is enabled.</li> </ul>
<b>Value Range</b>	1024–48750 (even number only)  <b>Note</b> <ul style="list-style-type: none"> <li>The value for this setting must be less than or equal to "RTP_PORT_MAX" - 400.</li> <li>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)</li> </ul>
<b>Default Value</b>	16000
<b>Web User Interface Reference</b>	Minimum RTP Port Number (Page 98)

## RTP\_PORT\_MAX

<b>Value Format</b>	Integer
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<b>Description</b>	Specifies the highest port number that the unit will use for RTP packets.  <b>Note</b> <ul style="list-style-type: none"> <li>If port numbers are specified in <b>[Channel 1–25]</b> in <b>4.4.5.3 External RTP Port</b> in the Web user interface, this setting is ignored and the corresponding external RTP port is enabled.</li> </ul>
<b>Value Range</b>	1424–49150 (even number only)  <b>Note</b> <ul style="list-style-type: none"> <li>The value for this setting must be greater than or equal to "RTP_PORT_MIN" + 400.</li> <li>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)</li> </ul>
<b>Default Value</b>	20000
<b>Web User Interface Reference</b>	Maximum RTP Port Number (Page 99)

## RTP\_PTME

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in milliseconds, between transmissions of RTP packets.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>20</li> <li>30 (not available with the G.722 codec)</li> <li>40</li> </ul>
<b>Default Value</b>	20
<b>Web User Interface Reference</b>	RTP Packet Time (Page 98)

## RTCP\_ENABLE\_n

<b>Parameter Name Example</b>	RTCP_ENABLE_1, RTCP_ENABLE_2, ..., RTCP_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	Selects whether to enable or disable RTCP (Real-Time Transport Control Protocol). For details, refer to RFC 3550.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable RTCP)</li> <li>N (Disable RTCP)</li> </ul>
<b>Default Value</b>	N
<b>Web User Interface Reference</b>	RTCP Enable (Page 101)

## RTCP\_SEND\_BY\_SDP\_n

<b>Parameter Name Example</b>	RTCP_SEND_BY_SDP_1, RTCP_SEND_BY_SDP_2, ..., RTCP_SEND_BY_SDP_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies whether to send RTCP signals by SDP (Session Description Protocol).
<b>Value Range</b>	0–1 <ul style="list-style-type: none"> <li>– 0: Send RTCP signals using the value specified in "RTCP_INTVL_n", if the "RTCP_ENABLE_n" parameter is enabled.</li> <li>– 1: Send RTCP signals using the value specified in the SDP attribute "a=rtcp:".</li> </ul>
<b>Default Value</b>	0

## RTP\_CLOSE\_ENABLE\_n

<b>Parameter Name Example</b>	RTP_CLOSE_ENABLE_1, RTP_CLOSE_ENABLE_2, ..., RTP_CLOSE_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to enable processing to close held RTP sockets.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>y</b> (Enable RTP Close)</li> <li>• <b>n</b> (Disable RTP Close)</li> </ul>
<b>Default Value</b>	<b>y</b>

### 5.7.3 Miscellaneous VoIP Settings

#### OUTBANDDTMF\_n

<b>Parameter Name Example</b>	OUTBANDDTMF_1, OUTBANDDTMF_2, ..., OUTBANDDTMF_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies the method for transmitting DTMF tones.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>y</b> (Outband [use telephone-event])</li> <li>• <b>n</b> (Inband)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If set to "y", DTMF tones will be sent through SDP, compliant with RFC 2833.</li> <li>• If set to "n", DTMF tones will be encoded in the RTP stream.</li> </ul>
<b>Default Value</b>	<b>y</b>
<b>Web User Interface Reference</b>	DTMF Type (Page 102)

## DTMF\_RELAY\_n

<b>Parameter Name Example</b>	DTMF_RELAY_1, DTMF_RELAY_2, ..., DTMF_RELAY_6
<b>Value Format</b>	Boolean
<b>Description</b>	Selects whether DTMF tones are sent in the SIP INFO message.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If set to "Y", DTMF tones will be sent in the SIP INFO message.</li> <li>• If set to "N", the method selected in "OUTBANDDTMF_n" will be used.</li> </ul>
<b>Default Value</b>	N
<b>Web User Interface Reference</b>	DTMF Relay (Page 102)

## TELEVENT\_PAYLOAD

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the RFC 2833 payload type for DTMF tones. <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when "OUTBANDDTMF_n" is set to "Y".</li> </ul>
<b>Value Range</b>	96–127
<b>Default Value</b>	101
<b>Web User Interface Reference</b>	Telephone-event Payload Type (Page 99)

## RFC2543\_HOLD\_ENABLE\_n

<b>Parameter Name Example</b>	RFC2543_HOLD_ENABLE_1, RFC2543_HOLD_ENABLE_2, ..., RFC2543_HOLD_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to enable the RFC 2543 Call Hold feature on this line.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Y (Enable RFC 2543 Call Hold)</li> <li>• N (Disable RFC 2543 Call Hold)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• If set to "N", the "c=x.x.x.x" syntax will be set in SDP.</li> </ul>
<b>Default Value</b>	Y

<b>Web User Interface Reference</b>	Supports RFC 2543 (c=0.0.0.0) (Page 103)
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## DTMF\_SIGNAL\_LEN

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the length of the DTMF signal, in milliseconds.
<b>Value Range</b>	60–200 (in 5 millisecond units)
<b>Default Value</b>	180

## DTMF\_INTDIGIT\_TIM

<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in milliseconds, between DTMF signals.
<b>Value Range</b>	60–200 (in 5 millisecond units)
<b>Default Value</b>	90

# 5.8 Line Settings

## 5.8.1 Call Control Settings

### DISPLAY\_NAME\_n

<b>Parameter Name Example</b>	DISPLAY_NAME_1, DISPLAY_NAME_2, ..., DISPLAY_NAME_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the name to display as the caller on the other party's phone when you make a call.
<b>Value Range</b>	Max. 24 characters  <b>Note</b> • You can use Unicode characters for this setting.
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Display Name (Page 109)

### VM\_NUMBER\_n

<b>Parameter Name Example</b>	VM_NUMBER_1, VM_NUMBER_2, ..., VM_NUMBER_6
<b>Value Format</b>	String



<b>Description</b>	Specifies the phone number used to access the voice mail server.  <b>Note</b> <ul style="list-style-type: none"><li>Your phone system must support voice mail.</li></ul>
<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Voice Mail Access Number (Page 109)

## DIAL\_PLAN\_n

<b>Parameter Name Example</b>	DIAL_PLAN_1, DIAL_PLAN_2, ..., DIAL_PLAN_6
<b>Value Format</b>	String
<b>Description</b>	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 <b>6.6 Dial Plan</b> .
<b>Value Range</b>	Max. 500 characters
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Dial Plan (max 500 columns) (Page 111)

## DIAL\_PLAN\_NOT\_MATCH\_ENABLE\_n

<b>Parameter Name Example</b>	DIAL_PLAN_NOT_MATCH_ENABLE_1, DIAL_PLAN_NOT_MATCH_ENABLE_2, ..., DIAL_PLAN_NOT_MATCH_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	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".
<b>Value Range</b>	<ul style="list-style-type: none"> <li><b>Y</b> (Enable dial plan filtering)</li> <li><b>N</b> (Disable dial plan filtering)</li> </ul> <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>
<b>Default Value</b>	<b>N</b>
<b>Web User Interface Reference</b>	Call Even If Dial Plan Does Not Match (Page 111)

## SHARED\_CALL\_ENABLE\_n

<b>Parameter Name Example</b>	SHARED_CALL_ENABLE_1, SHARED_CALL_ENABLE_2, ..., SHARED_CALL_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	<p>Specifies whether to enable the Shared Call feature of the SIP server, which is used to share one line among the units.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>You cannot set both "SHARED_CALL_ENABLE_n" and "FWD_DND_SYNCHRO_ENABLE_n" to "Y" at the same time.</li> <li>Availability depends on your phone system.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable shared call)</li> <li>N (Disable shared call)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If set to "Y", the SIP server will control the line by using a shared-call signaling method.</li> <li>If set to "N", the SIP server will control the line by using a standard signaling method.</li> </ul>
<b>Default Value</b>	N
<b>Web User Interface Reference</b>	Enable Shared Call (Page 110)

## FWD\_DND\_SYNCHRO\_ENABLE\_n

<b>Parameter Name Example</b>	FWD_DND_SYNCHRO_ENABLE_1, FWD_DND_SYNCHRO_ENABLE_2, ..., FWD_DND_SYNCHRO_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	<p>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.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>You cannot set both "SHARED_CALL_ENABLE_n" and "FWD_DND_SYNCHRO_ENABLE_n" to "Y" at the same time.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable Do Not Disturb/Call Forward synchronization)</li> <li>N (Disable Do Not Disturb/Call Forward synchronization)</li> </ul>
<b>Default Value</b>	N
<b>Web User Interface Reference</b>	Synchronize Do Not Disturb and Call Forward (Page 110)

## RESOURCELIST\_URI\_n

<b>Parameter Name Example</b>	RESOURCELIST_URI_1, RESOURCELIST_URI_2, ..., RESOURCELIST_URI_6
<b>Value Format</b>	String
<b>Description</b>	<p>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.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>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 <b>6.1 Registering One-touch Buttons and BLF Buttons</b>.</li> </ul>
<b>Value Range</b>	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Resource List URI (Page 111)

## CW\_ENABLE\_n

<b>Parameter Name Example</b>	CW_ENABLE_1, CW_ENABLE_2, ..., CW_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether automatic call waiting is enabled.
<b>Value Range</b>	<ul style="list-style-type: none"> <li><b>Y</b> (Enable Call Waiting)</li> <li><b>N</b> (Disable Call Waiting)</li> </ul>
<b>Default Value</b>	<b>Y</b>

## FLASH\_RECALL\_TERMINATE

<b>Value Format</b>	Boolean
<b>Description</b>	Selects the function of the <b>[Flash]</b> key during a conversation.
<b>Value Range</b>	<ul style="list-style-type: none"> <li><b>Y</b> (Terminate)</li> <li><b>N</b> (EFA)</li> </ul>
<b>Default Value</b>	<b>Y</b>
<b>Web User Interface Reference</b>	Flash/Recall Button (Page 107)

## FLASHHOOK\_CONTENT\_TYPE

<b>Value Format</b>	String
<b>Description</b>	Specifies the type of signal sent when sending a flash hook event.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <code>Signal</code></li> <li>• <code>flashhook</code></li> </ul>
<b>Default Value</b>	<code>Signal</code>
<b>Web User Interface Reference</b>	Flash Hook Event (Page 108)

## VOICE\_MESSAGE\_AVAILABLE

<b>Value Format</b>	Boolean
<b>Description</b>	Selects how the existence of voice messages is determined when a "Messages-Waiting: yes" message is received.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <code>y</code> (Determines that voice messages exist when "Messages-Waiting: yes" is received with a "Voice-Message" line included.)</li> <li>• <code>n</code> (Determines that voice messages exist when "Messages-Waiting: yes" is received even without a "Voice-Message" line included.)</li> </ul>
<b>Default Value</b>	<code>y</code>

## 5.8.2 SIP Settings

### SIP\_USER\_AGENT

<b>Value Format</b>	String
<b>Description</b>	Specifies the text string to send as the user agent in the headers of SIP messages.
<b>Value Range</b>	<p>Max. 40 characters</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• An empty string is not allowed.</li> <li>• If "{mac}" is included in this parameter, it will be replaced with the unit's MAC address in lower-case.</li> <li>• If "{MAC}" is included in this parameter, it will be replaced with the unit's MAC address in upper-case.</li> <li>• If "{MODEL}" is included in this parameter, it will be replaced with the unit's model name.</li> <li>• If "{fwver}" is included in this parameter, it will be replaced with the firmware version of the unit.</li> </ul>
<b>Default Value</b>	Panasonic_{MODEL}/{fwver} ({mac})
<b>Web User Interface Reference</b>	SIP User Agent (Page 88)

## PHONE\_NUMBER\_n

<b>Parameter Name Example</b>	PHONE_NUMBER_1, PHONE_NUMBER_2, ..., PHONE_NUMBER_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the phone number to use as the user ID required for registration to the SIP registrar server.  <b>Note</b> <ul style="list-style-type: none"> <li>When registering using a user ID that is not a phone number, you should use the "SIP_URI_n" setting.</li> </ul>
<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Phone Number (Page 89)

## SIP\_URI\_n

<b>Parameter Name Example</b>	SIP_URI_1, SIP_URI_2, ..., SIP_URI_6
<b>Value Format</b>	String
<b>Description</b>	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".  <b>Note</b> <ul style="list-style-type: none"> <li>When registering using a user ID that is not a phone number, you should use this setting.</li> <li>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.</li> </ul>
<b>Value Range</b>	Max. 195 characters (except ", &, ', :, ;, <, >, and space)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	SIP URI (Page 89)

## LINE\_ENABLE\_n

<b>Parameter Name Example</b>	LINE_ENABLE_1, LINE_ENABLE_2, ..., LINE_ENABLE_6
<b>Value Format</b>	String
<b>Description</b>	Specifies whether a line is enabled or disabled.  <b>Note</b> <ul style="list-style-type: none"> <li>Even when this parameter is enabled, if the "PROFILE_ENABLEn" parameter is disabled, the line will be disabled.</li> </ul>

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Disabled</li> <li>• Enabled</li> </ul>
<b>Default Value</b>	Enabled

## PROFILE\_ENABLEn

<b>Parameter Name Example</b>	PROFILE_ENABLE1, PROFILE_ENABLE2, ..., PROFILE_ENABLE6
<b>Value Format</b>	String
<b>Description</b>	<p>Specifies whether a line is enabled or disabled.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Even when this parameter is enabled, if the "LINE_ENABLE_n" parameter is disabled, the line will be disabled.</li> </ul>
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Disabled</li> <li>• Enabled</li> </ul>
<b>Default Value</b>	Enabled

## SIP\_AUTHID\_n

<b>Parameter Name Example</b>	SIP_AUTHID_1, SIP_AUTHID_2, ..., SIP_AUTHID_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the authentication ID required to access the SIP server.
<b>Value Range</b>	Max. 64 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Authentication ID (Page 92)

## SIP\_PASS\_n

<b>Parameter Name Example</b>	SIP_PASS_1, SIP_PASS_2, ..., SIP_PASS_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the authentication password used to access the SIP server.
<b>Value Range</b>	Max. 64 characters (except ", &, ', :, <, >, and space)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Authentication Password (Page 92)

## SIP\_SRC\_PORT\_n

<b>Parameter Name Example</b>	SIP_SRC_PORT_1, SIP_SRC_PORT_2, ..., SIP_SRC_PORT_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the source port number used by the unit for SIP communication.
<b>Value Range</b>	1024–49151
<b>Default Value</b>	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)
<b>Web User Interface Reference</b>	Source Port (Page 91)

## SIP\_PRXY\_ADDR\_n

<b>Parameter Name Example</b>	SIP_PRXY_ADDR_1, SIP_PRXY_ADDR_2, ..., SIP_PRXY_ADDR_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address or FQDN of the SIP proxy server.
<b>Value Range</b>	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Proxy Server Address (Page 90)

## SIP\_PRXY\_PORT\_n

<b>Parameter Name Example</b>	SIP_PRXY_PORT_1, SIP_PRXY_PORT_2, ..., SIP_PRXY_PORT_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the port number to use for communication with the SIP proxy server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Web User Interface Reference</b>	Proxy Server Port (Page 90)

## SIP\_RGSTR\_ADDR\_n

<b>Parameter Name Example</b>	SIP_RGSTR_ADDR_1, SIP_RGSTR_ADDR_2, ..., SIP_RGSTR_ADDR_6
<b>Value Format</b>	String

<b>Description</b>	Specifies the IP address or FQDN of the SIP registrar server.
<b>Value Range</b>	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Registrar Server Address (Page 89)

## SIP\_RGSTR\_PORT\_n

<b>Parameter Name Example</b>	SIP_RGSTR_PORT_1, SIP_RGSTR_PORT_2, ..., SIP_RGSTR_PORT_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the port number to use for communication with the SIP registrar server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Web User Interface Reference</b>	Registrar Server Port (Page 89)

## SIP\_SVCDOMAIN\_n

<b>Parameter Name Example</b>	SIP_SVCDOMAIN_1, SIP_SVCDOMAIN_2, ..., SIP_SVCDOMAIN_6
<b>Value Format</b>	String
<b>Description</b>	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.
<b>Value Range</b>	Max. 127 characters
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Service Domain (Page 91)

## REG\_EXPIRE\_TIME\_n

<b>Parameter Name Example</b>	REG_EXPIRE_TIME_1, REG_EXPIRE_TIME_2, ..., REG_EXPIRE_TIME_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the length of time, in seconds, that the registration remains valid. This value is set in the "Expires" header of the REGISTER request.
<b>Value Range</b>	1–4294967295
<b>Default Value</b>	3600



## REG\_INTERVAL\_RATE\_n

<b>Parameter Name Example</b>	REG_INTERVAL_RATE_1, REG_INTERVAL_RATE_2, ..., REG_INTERVAL_RATE_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the percentage of the "expires" value after which to refresh registration by sending a new REGISTER message in the same dialog.
<b>Value Range</b>	1–100
<b>Default Value</b>	90

## SIP\_SESSION\_TIME\_n

<b>Parameter Name Example</b>	SIP_SESSION_TIME_1, SIP_SESSION_TIME_2, ..., SIP_SESSION_TIME_6
<b>Value Format</b>	Integer
<b>Description</b>	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.
<b>Value Range</b>	0, 60–65535 (0: Disable)
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	Supports Session Timer (RFC 4028) (Page 96)

## SIP\_SESSION\_METHOD\_n

<b>Parameter Name Example</b>	SIP_SESSION_METHOD_1, SIP_SESSION_METHOD_2, ..., SIP_SESSION_METHOD_6
<b>Value Format</b>	Integer
<b>Description</b>	Selects the refreshing method of SIP sessions.
<b>Value Range</b>	0–2 – 0: reINVITE – 1: UPDATE – 2: AUTO
<b>Default Value</b>	0

## DSCP\_SIP\_n

<b>Parameter Name Example</b>	DSCP_SIP_1, DSCP_SIP_2, ..., DSCP_SIP_6
<b>Value Format</b>	Integer
<b>Description</b>	Selects the DSCP level of DiffServ applied to SIP packets.
<b>Value Range</b>	0–63

<b>Default Value</b>	0
<b>Web User Interface Reference</b>	SIP Packet QoS (DSCP) (Page 95)

## SIP\_2NDPROXY\_ADDR\_n

<b>Parameter Name Example</b>	SIP_2NDPROXY_ADDR_1, SIP_2NDPROXY_ADDR_2, ..., SIP_2NDPROXY_ADDR_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address of the secondary SIP proxy server.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "SIP_PRXY_ADDR_n" is specified in IP address notation.</li> </ul>
<b>Value Range</b>	IP address in dotted-decimal notation
<b>Default Value</b>	Empty string

## SIP\_2NDPROXY\_PORT\_n

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

## SIP\_2NDRGSTR\_ADDR\_n

<b>Parameter Name Example</b>	SIP_2NDRGSTR_ADDR_1, SIP_2NDRGSTR_ADDR_2, ..., SIP_2NDRGSTR_ADDR_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address of the secondary SIP registrar server.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "SIP_RGSTR_ADDR_n" is specified in IP address notation.</li> </ul>
<b>Value Range</b>	IP address in dotted-decimal notation
<b>Default Value</b>	Empty string

## SIP\_2NDRGSTR\_PORT\_n

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

## SIP\_TIMER\_T1\_n

<b>Parameter Name Example</b>	SIP_TIMER_T1_1, SIP_TIMER_T1_2, ..., SIP_TIMER_T1_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the default interval, in milliseconds, between transmissions of SIP messages. For details, refer to RFC 3261.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 250</li> <li>• 500</li> <li>• 1000</li> <li>• 2000</li> <li>• 4000</li> </ul>
<b>Default Value</b>	500
<b>Web User Interface Reference</b>	T1 Timer (Page 94)

## SIP\_TIMER\_T2\_n

<b>Parameter Name Example</b>	SIP_TIMER_T2_1, SIP_TIMER_T2_2, ..., SIP_TIMER_T2_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the maximum interval, in seconds, between transmissions of SIP messages. For details, refer to RFC 3261.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 2</li> <li>• 4</li> <li>• 8</li> <li>• 16</li> <li>• 32</li> </ul>
<b>Default Value</b>	4
<b>Web User Interface Reference</b>	T2 Timer (Page 94)

## SIP\_TIMER\_T4\_n

<b>Parameter Name Example</b>	SIP_TIMER_T4_1, SIP_TIMER_T4_2, ..., SIP_TIMER_T4_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the maximum period, in seconds, that a message can remain on the network.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 0</li> <li>• 1</li> <li>• 2</li> <li>• 3</li> <li>• 4</li> <li>• 5</li> </ul>
<b>Default Value</b>	0

## SIP\_FOVR\_NORSP\_n

<b>Parameter Name Example</b>	SIP_FOVR_NORSP_1, SIP_FOVR_NORSP_2, ..., SIP_FOVR_NORSP_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to perform the fail-over process when the unit detects that the SIP server is not replying to SIP message.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Enable fail-over)</li> <li>• <b>N</b> (Disable fail-over)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If set to "Y", the unit will try to use the other SIP servers via the DNS SRV and A records.</li> <li>• If set to "N", the unit will not try to use the other SIP servers.</li> </ul>
<b>Default Value</b>	Y

## SIP\_FOVR\_MAX\_n

<b>Parameter Name Example</b>	SIP_FOVR_MAX_1, SIP_FOVR_MAX_2, ..., SIP_FOVR_MAX_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the maximum number of servers (including the first [normal] server) used in the fail-over process.
<b>Value Range</b>	1–4
<b>Default Value</b>	4

## SIP\_REFRESHER\_n

<b>Parameter Name Example</b>	SIP_REFRESHER_1, SIP_REFRESHER_2, ..., SIP_REFRESHER_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies whether to add the refresher parameter for Session Expire in SIP INVITE.
<b>Value Range</b>	0–2 <ul style="list-style-type: none"> <li>– 0: Do not add the refresher parameter</li> <li>– 1: Add the refresher parameter with the value "UAS"</li> <li>– 2: Add the refresher parameter with the value "UAC"</li> </ul>
<b>Default Value</b>	0

## SIP\_DNSSRV\_ENA\_n

<b>Parameter Name Example</b>	SIP_DNSSRV_ENA_1, SIP_DNSSRV_ENA_2, ..., SIP_DNSSRV_ENA_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to request the DNS server to translate domain names into IP addresses using the SRV record.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Enable DNS SRV lookup)</li> <li>• <b>N</b> (Disable DNS SRV lookup)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
<b>Default Value</b>	Y
<b>Web User Interface Reference</b>	Enable DNS SRV lookup (Page 92)

## SIP\_UDP\_SRV\_PREFIX\_n

<b>Parameter Name Example</b>	SIP_UDP_SRV_PREFIX_1, SIP_UDP_SRV_PREFIX_2, ..., SIP_UDP_SRV_PREFIX_6
<b>Value Format</b>	String
<b>Description</b>	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using UDP.  <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when "SIP_DNSSRV_ENA_n" is set to "Y".</li> </ul>

<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	_sip._udp.
<b>Web User Interface Reference</b>	SRV lookup Prefix for UDP (Page 93)

## SIP\_TCP\_SRV\_PREFIX\_n

<b>Parameter Name Example</b>	SIP_TCP_SRV_PREFIX_1, SIP_TCP_SRV_PREFIX_2, ..., SIP_TCP_SRV_PREFIX_6
<b>Value Format</b>	String
<b>Description</b>	Specifies a prefix to add to the domain name when performing a DNS SRV lookup using TCP.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "SIP_DNSSRV_ENA_n" is set to "Y".</li> </ul>
<b>Value Range</b>	Max. 32 characters
<b>Default Value</b>	_sip._tcp.
<b>Web User Interface Reference</b>	SRV lookup Prefix for TCP (Page 93)

## SIP\_100REL\_ENABLE\_n

<b>Parameter Name Example</b>	SIP_100REL_ENABLE_1, SIP_100REL_ENABLE_2, ..., SIP_100REL_ENABLE_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to add the option tag 100rel to the "Supported" header of the INVITE message. For details, refer to RFC 3262.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable 100rel function)</li> <li>N (Disable 100rel function)</li> </ul> <b>Note</b> <ul style="list-style-type: none"> <li>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.</li> <li>If set to "N", the option tag 100rel will not be used.</li> </ul>
<b>Default Value</b>	N
<b>Web User Interface Reference</b>	Supports 100rel (RFC 3262) (Page 96)

## SIP\_INVITE\_EXPIRE\_n

<b>Parameter Name Example</b>	SIP_INVITE_EXPIRE_1, SIP_INVITE_EXPIRE_2, ..., SIP_INVITE_EXPIRE_6
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<b>Value Format</b>	Integer
<b>Description</b>	Specifies the period, in seconds, in which the INVITE message will expire. This value is set in the "Expires" header of the INVITE request.
<b>Value Range</b>	0, 60–65535 (0: Disable)
<b>Default Value</b>	0

## SIP\_18X\_RTX\_INTVL\_n

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

## SIP\_PRSNC\_ADDR\_n

<b>Parameter Name Example</b>	SIP_PRSNC_ADDR_1, SIP_PRSNC_ADDR_2, ..., SIP_PRSNC_ADDR_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address or FQDN of the SIP presence server.
<b>Value Range</b>	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Presence Server Address (Page 90)

## SIP\_PRSNC\_PORT\_n

<b>Parameter Name Example</b>	SIP_PRSNC_PORT_1, SIP_PRSNC_PORT_2, ..., SIP_PRSNC_PORT_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the port number to use for communication with the SIP presence server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Web User Interface Reference</b>	Presence Server Port (Page 90)

## SIP\_2NDPRSNC\_ADDR\_n

<b>Parameter Name Example</b>	SIP_2NDPRSNC_ADDR_1, SIP_2NDPRSNC_ADDR_2, ..., SIP_2NDPRSNC_ADDR_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address of the secondary presence server.  <b>Note</b> <ul style="list-style-type: none"> <li>This setting is available only when "SIP_PRSNC_ADDR_n" is specified in IP address notation.</li> </ul>
<b>Value Range</b>	IP address in dotted-decimal notation
<b>Default Value</b>	Empty string

## SIP\_2NDPRSNC\_PORT\_n

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

## USE\_DEL\_REG\_OPEN\_n

<b>Parameter Name Example</b>	USE_DEL_REG_OPEN_1, USE_DEL_REG_OPEN_2, ..., USE_DEL_REG_OPEN_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to enable cancelation before registration when, for example, the unit is turned on.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>Y (Enable cancelation before registration)</li> <li>N (Disable cancelation before registration)</li> </ul>
<b>Default Value</b>	N

## USE\_DEL\_REG\_CLOSE\_n

<b>Parameter Name Example</b>	USE_DEL_REG_CLOSE_1, USE_DEL_REG_CLOSE_2, ..., USE_DEL_REG_CLOSE_6
<b>Value Format</b>	Boolean



<b>Description</b>	Specifies whether to enable the cancelation of registration before the SIP function shuts down when, for example, the configuration has changed.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Enable registration cancelation before shutting down)</li> <li>• <b>N</b> (Disable registration cancelation before shutting down)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If set to "Y", registration cancelation is enabled.</li> <li>• If set to "N", registration cancelation is disabled even when the SIP stack is shutting down.</li> </ul>
<b>Default Value</b>	<b>N</b>

## PORT\_PUNCH\_INTVL\_n

<b>Parameter Name Example</b>	PORT_PUNCH_INTVL_1, PORT_PUNCH_INTVL_2, ..., PORT_PUNCH_INTVL_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in seconds, between transmissions of the Keep Alive packet to the unit in order to maintain the NAT binding information.
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• This setting is available only when "SIP_TRANSPORT_n" is set to "0" for UDP.</li> </ul>
<b>Value Range</b>	0, 10–300 (0: Disable)
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	Keep Alive Interval (Page 96)

## SIP\_ADD\_RPORT\_n

<b>Parameter Name Example</b>	SIP_ADD_RPORT_1, SIP_ADD_RPORT_2, ..., SIP_ADD_RPORT_6
<b>Value Format</b>	Boolean
<b>Description</b>	Selects whether to add the "rport" parameter to the top Via header field value of requests generated. For details, refer to RFC 3581.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Add Rport [RFC 3581])</li> <li>• <b>N</b> (Do not add Rport [RFC 3581])</li> </ul>
<b>Default Value</b>	<b>N</b>
<b>Web User Interface Reference</b>	Supports Rport (RFC 3581) (Page 97)

## SIP\_REQURI\_PORT\_n

<b>Parameter Name Example</b>	SIP_REQURI_PORT_1, SIP_REQURI_PORT_2, ..., SIP_REQURI_PORT_6
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<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to add the port parameter to the Request-Line in the initial SIP request.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>y</b> (Add the port parameter)</li> <li>• <b>n</b> (Do not add the port parameter)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Request URI in REGISTER example: <ul style="list-style-type: none"> <li>– 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</li> <li>– 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</li> </ul> </li> </ul>
<b>Default Value</b>	y

## SIP\_SUBS\_EXPIRE\_n

<b>Parameter Name Example</b>	SIP_SUBS_EXPIRE_1, SIP_SUBS_EXPIRE_2, ..., SIP_SUBS_EXPIRE_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the length of time, in seconds, that the subscription remains valid. This value is set in the "Expires" header of the SUBSCRIBE request.
<b>Value Range</b>	1–4294967295
<b>Default Value</b>	3600

## SUB\_RTX\_INTVL\_n

<b>Parameter Name Example</b>	SUB_RTX_INTVL_1, SUB_RTX_INTVL_2, ..., SUB_RTX_INTVL_6
<b>Value Format</b>	Integer
<b>Description</b>	<p>Specifies the interval, in seconds, between transmissions of SUBSCRIBE requests when a subscription results in failure (server no reply or error reply).</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Transmissions will not be sent when the "403 Forbidden" error occurred.</li> </ul>
<b>Value Range</b>	10–86400
<b>Default Value</b>	10

## REG\_RTX\_INTVL\_n

<b>Parameter Name Example</b>	REG_RTX_INTVL_1, REG_RTX_INTVL_2, ..., REG_RTX_INTVL_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the interval, in seconds, between transmissions of the REGISTER request when a registration results in failure (server no reply or error reply).  <b>Note</b> <ul style="list-style-type: none"> <li>• Transmissions will not be sent when the "403 Forbidden" error occurred.</li> </ul>
<b>Value Range</b>	10–86400
<b>Default Value</b>	10

## SIP\_P\_PREFERRED\_ID\_n

<b>Parameter Name Example</b>	SIP_P_PREFERRED_ID_1, SIP_P_PREFERRED_ID_2, ..., SIP_P_PREFERRED_ID_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to add the "P-Preferred-Identity" header to SIP messages.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Add the "P-Preferred-Identity" header)</li> <li>• <b>N</b> (Do not add the "P-Preferred-Identity" header)</li> </ul>
<b>Default Value</b>	<b>N</b>

## SIP\_PRIVACY\_n

<b>Parameter Name Example</b>	SIP_PRIVACY_1, SIP_PRIVACY_2, ..., SIP_PRIVACY_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to add the "Privacy" header to SIP messages.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Add the "Privacy" header)</li> <li>• <b>N</b> (Do not add the "Privacy" header)</li> </ul>
<b>Default Value</b>	<b>N</b>

## ADD\_USER\_PHONE\_n

<b>Parameter Name Example</b>	ADD_USER_PHONE_1, ADD_USER_PHONE_2, ..., ADD_USER_PHONE_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to add "user=phone" to the SIP URI in SIP messages.

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Add "user=phone")</li> <li>• <b>N</b> (Do not add "user=phone")</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• SIP URI example: <ul style="list-style-type: none"> <li>– "sip:1111@tokyo.example.com;user=phone", when set to "Y"</li> <li>– "sip:1111@tokyo.example.com", when set to "N"</li> </ul> </li> </ul>
<b>Default Value</b>	<b>N</b>

## SDP\_USER\_ID\_n

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

## SUB\_INTERVAL\_RATE\_n

<b>Parameter Name Example</b>	SUB_INTERVAL_RATE_1, SUB_INTERVAL_RATE_2, ..., SUB_INTERVAL_RATE_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the percentage of the "expires" value after which to refresh subscriptions by sending a new SUBSCRIBE message in the same dialog.
<b>Value Range</b>	1–100
<b>Default Value</b>	90

## SIP\_OUTPROXY\_ADDR\_n

<b>Parameter Name Example</b>	SIP_OUTPROXY_ADDR_1, SIP_OUTPROXY_ADDR_2, ..., SIP_OUTPROXY_ADDR_6
<b>Value Format</b>	String
<b>Description</b>	Specifies the IP address or FQDN of the SIP outbound proxy server.
<b>Value Range</b>	Max. 127 characters (IP address in dotted-decimal notation or FQDN)
<b>Default Value</b>	Empty string
<b>Web User Interface Reference</b>	Outbound Proxy Server Address (Page 91)

## SIP\_OUTPROXY\_PORT\_n

<b>Parameter Name Example</b>	SIP_OUTPROXY_PORT_1, SIP_OUTPROXY_PORT_2, ..., SIP_OUTPROXY_PORT_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the port number to use for communication with the SIP outbound proxy server.
<b>Value Range</b>	1–65535
<b>Default Value</b>	5060
<b>Web User Interface Reference</b>	Outbound Proxy Server Port (Page 91)

## SIP\_TRANSPORT\_n

<b>Parameter Name Example</b>	SIP_TRANSPORT_1, SIP_TRANSPORT_2, ..., SIP_TRANSPORT_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies which transport layer protocol to use for sending SIP packets.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 0 (UDP)</li> <li>• 1 (TCP)</li> </ul>
<b>Default Value</b>	0
<b>Web User Interface Reference</b>	Transport Protocol (Page 93)

## SIP\_ANM\_DISPNAME\_n

<b>Parameter Name Example</b>	SIP_ANM_DISPNAME_1, SIP_ANM_DISPNAME_2, ..., SIP_ANM_DISPNAME_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the text string to set as the display name in the "From" header when making anonymous calls.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 0 (Use normal display name)</li> <li>• 1 (Use "Anonymous" for display name)</li> <li>• 2 (Do not send a display name)</li> </ul>
<b>Default Value</b>	1

## SIP\_ANM\_USERNAME\_n

<b>Parameter Name Example</b>	SIP_ANM_USERNAME_1, SIP_ANM_USERNAME_2, ..., SIP_ANM_USERNAME_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the text string to set as the user name in the "From" header when making anonymous calls.

<b>Value Range</b>	<ul style="list-style-type: none"> <li>• 0 (Use normal user name)</li> <li>• 1 (Use "anonymous" for user name)</li> <li>• 2 (Do not send a user name)</li> </ul>
<b>Default Value</b>	0

## SIP\_ANM\_HOSTNAME\_n

<b>Parameter Name Example</b>	SIP_ANM_HOSTNAME_1, SIP_ANM_HOSTNAME_2, ..., SIP_ANM_HOSTNAME_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to set an anonymous host name in the "From" header when making anonymous calls.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Y (Use "anonymous.invalid" for host name)</li> <li>• N (Use normal host name)</li> </ul>
<b>Default Value</b>	N

## SIP\_DETECT\_SSAF\_n

<b>Parameter Name Example</b>	SIP_DETECT_SSAF_1, SIP_DETECT_SSAF_2, ..., SIP_DETECT_SSAF_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to enable SSAF for the SIP servers (registrar server, proxy server, and presence server).
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• Y (Enable SSAF)</li> <li>• N (Disable SSAF)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• 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 <b>5.8.2 SIP Settings</b> is specified, the unit also receives SIP messages from the source address stored in the SIP outbound proxy server.</li> </ul>
<b>Default Value</b>	N
<b>Web User Interface Reference</b>	Enable SSAF (SIP Source Address Filter) (Page 97)

## SIP\_RCV\_DET\_HEADER\_n

<b>Parameter Name Example</b>	SIP_RCV_DET_HEADER_1, SIP_RCV_DET_HEADER_2, ..., SIP_RCV_DET_HEADER_6
<b>Value Format</b>	Boolean

<b>Description</b>	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.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Enable username check)</li> <li>• <b>N</b> (Disable username check)</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If set to "Y", the unit will return an error reply when it receives the INVITE message with an incorrect target SIP URI.</li> <li>• If set to "N", the unit will not check the username part of the SIP URI in the "To" header.</li> </ul>
<b>Default Value</b>	<b>N</b>

## SIP\_CONTACT\_ON\_ACK\_n

<b>Parameter Name Example</b>	SIP_CONTACT_ON_ACK_1, SIP_CONTACT_ON_ACK_2, ..., SIP_CONTACT_ON_ACK_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to add the "Contact" header to SIP ACK message.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Add the "Contact" header)</li> <li>• <b>N</b> (Do not add the "Contact" header)</li> </ul>
<b>Default Value</b>	<b>N</b>

## SIP\_TIMER\_B\_n

<b>Parameter Name Example</b>	SIP_TIMER_B_1, SIP_TIMER_B_2, ..., SIP_TIMER_B_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the value of SIP timer B (INVITE transaction timeout timer), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	250–64000
<b>Default Value</b>	32000
<b>Web User Interface Reference</b>	Timer B (Page 94)

## SIP\_TIMER\_D\_n

<b>Parameter Name Example</b>	SIP_TIMER_D_1, SIP_TIMER_D_2, ..., SIP_TIMER_D_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the value of SIP timer D (wait time for answer resending), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	0, 250–64000

<b>Default Value</b>	5000
<b>Web User Interface Reference</b>	Timer D (Page 95)

## SIP\_TIMER\_F\_n

<b>Parameter Name Example</b>	SIP_TIMER_F_1, SIP_TIMER_F_2, ..., SIP_TIMER_F_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the value of SIP timer F (non-INVITE transaction timeout timer), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	250–64000
<b>Default Value</b>	32000
<b>Web User Interface Reference</b>	Timer F (Page 95)

## SIP\_TIMER\_H\_n

<b>Parameter Name Example</b>	SIP_TIMER_H_1, SIP_TIMER_H_2, ..., SIP_TIMER_H_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the value of SIP timer H (wait time for ACK reception), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	250–64000
<b>Default Value</b>	32000
<b>Web User Interface Reference</b>	Timer H (Page 95)

## SIP\_TIMER\_J\_n

<b>Parameter Name Example</b>	SIP_TIMER_J_1, SIP_TIMER_J_2, ..., SIP_TIMER_J_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies the value of SIP timer J (wait time for non-INVITE request resending), in milliseconds. For details, refer to RFC 3261.
<b>Value Range</b>	0, 250–64000
<b>Default Value</b>	5000
<b>Web User Interface Reference</b>	Timer J (Page 95)

## ADD\_TRANSPORT\_UDP\_n

<b>Parameter Name Example</b>	ADD_TRANSPORT_UDP_1, ADD_TRANSPORT_UDP_2, ..., ADD_TRANSPORT_UDP_6
<b>Value Format</b>	Boolean



<b>Description</b>	Specifies whether to add the attribute "transport=udp" to the SIP header URI.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Add Transport UDP)</li> <li>• <b>N</b> (Do not add Transport UDP)</li> </ul>
<b>Default Value</b>	<b>N</b>

## ADD\_EXPIRES\_HEADER\_n

<b>Parameter Name Example</b>	ADD_EXPIRES_HEADER_1, ADD_EXPIRES_HEADER_2, ..., ADD_EXPIRES_HEADER_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to add an "Expires" header to REGISTER (adds an "expires" parameter to the "Contact" header).
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Add Expires Header)</li> <li>• <b>N</b> (Do not add Expires Header)</li> </ul>
<b>Default Value</b>	<b>Y</b>

## SIP\_HOLD\_HOLDRECEIVE\_n

<b>Parameter Name Example</b>	SIP_HOLD_HOLDRECEIVE_1, SIP_HOLD_HOLDRECEIVE_2, ..., SIP_HOLD_HOLDRECEIVE_6
<b>Value Format</b>	Boolean
<b>Description</b>	Specifies whether to allow re-INVITE for calls on hold.
<b>Value Range</b>	<ul style="list-style-type: none"> <li>• <b>Y</b> (Enable SIP Hold Receive)</li> <li>• <b>N</b> (Disable SIP Hold Receive)</li> </ul>
<b>Default Value</b>	<b>Y</b>

## SIP\_ADD\_DIVERSION\_n

<b>Parameter Name Example</b>	SIP_ADD_DIVERSION_1, SIP_ADD_DIVERSION_2, ..., SIP_ADD_DIVERSION_6
<b>Value Format</b>	Integer
<b>Description</b>	Specifies whether to add Diversion header information.
<b>Value Range</b>	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
<b>Default Value</b>	1

## SIP\_RESPONSE\_CODE\_DND

---

<b>Value Format</b>	Integer
<b>Description</b>	Selects the response code when a call is received in Do Not Disturb mode.
<b>Value Range</b>	400–699
<b>Default Value</b>	403

## SIP\_RESPONSE\_CODE\_CALL\_REJECT

---

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

---

## **Section 6**

# ***Useful Telephone Functions***

*This section explains some of the main telephone features.*

## 6.1 Registering One-touch Buttons and BLF Buttons

You can register One-touch buttons and BLF (extension status display) buttons by setting the configuration file as shown below (→ see **5.6.4 Flexible Button Settings**).

For more details about flexible buttons, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

Registering a One-touch button:

- Set "FLEX\_BUTTON\_FACILITY\_ACTx" to "X\_PANASONIC\_IPTTEL\_ONETOUCH".
- Specify a 1–32 digit number in "FLEX\_BUTTON\_FACILITY\_ARGx".

Registering a BLF button:

- Set "FLEX\_BUTTON\_FACILITY\_ACTx" to "X\_PANASONIC\_IPTTEL\_CONTACT".
- Specify a 1–32 digit number in "FLEX\_BUTTON\_FACILITY\_ARGx".

## 6.2 Setting the Feature Number to Access Voice Mail

You can set the feature number to access voice mail by setting the configuration file as shown below.

- Specify the telephone number to access the voice mail server in "VM\_NUMBER\_n" (→ see **5.8.1 Call Control Settings**).

## 6.3 Registering Flexible Buttons

You can assign certain features to flexible buttons by specifying the flexible button configuration file parameters.

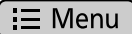
- For details about flexible button configuration file parameters, see **5.6.4 Flexible Button Settings**.

## 6.4 Customizing the Phone

You can set the wallpaper of the Home screen, the wallpaper of the Phone screen, and the logo of the Phone screen via configuration file programming, using the following settings.

- WALLPAPER\_URI\_HOME (→ see Page 174)
- WALLPAPER\_URI\_PHONE (→ see Page 174)
- LOGO\_URI\_PHONE (→ see Page 175)

Also, you can set whether the user can change the wallpaper of the Home screen and the wallpaper of the Phone screen via phone user interface programming.

1. Press  on the Home screen, and then tap **[Settings]**.
2. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
3. Tap **[Customize]**.
4. Specify **[Specify through configuration file]**, **[Forbid change of the home screen wallpaper]**, or **[Forbid change of the phone screen wallpaper]**.

### Note

- When a value has been specified (anything other than an empty string) for "WALLPAPER\_URI\_HOME" or "WALLPAPER\_URI\_PHONE" through configuration file programming, and **[Specify through configuration file]** is selected, users cannot change the wallpaper of that screen.

- If [**Specify through configuration file**] is selected, [**Forbid change of the home screen wallpaper**] and [**Forbid change of the phone screen wallpaper**] will be grayed out.
- For details about the administrator password, see **3.1.2 Phone User Interface Administrator Menu**.

## 6.5 Adding Applications

You can install third-party applications and manage (display application information, uninstall, etc.) them on the phone. Applications must be installed via the SD card.

### IMPORTANT

- Sufficiently check the source and operations of all applications before installing. You may not be able to install or operate some applications, depending on the application. Also, be aware that applications may contain viruses or may be able to access location data or personal data etc. stored on the unit. This data may then be leaked onto the Internet and used improperly.
- Panasonic cannot accept any responsibility if an installed application causes performance problems or losses of any kind to the user or a third party.

### Prepare an application

You can install applications from the unit's Web browser or an SD card. When using an SD card, follow the procedure below before installing.

#### Notice

- Format the SD card before use. For details about formatting, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).
1. Prepare an SD card.  
For details about supported SD cards, refer to the Panasonic Web site (→ see **Introduction**).
  2. Save the application data in the root directory of the SD card.

### To install the application

1. Press **[Menu]** on the Home screen, and then tap **[Settings]**.
2. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
3. Tap **[Applications]**.
4. Tap **[Install applications]**.
5. Select the installation method from **[SD card]** or **[Browser]**.
6. Select the application to install.
7. Tap **[Install]**.
8. Tap **[OK]**.

#### Note

- For details about the administrator password, see **3.1.2 Phone User Interface Administrator Menu**.

### To manage the application

1. Press **[Menu]** on the Home screen, and then tap **[Settings]**.
2. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
3. Tap **[Applications]**.
4. Tap **[Manage applications]**.
5. Select the application.
6. Select the operation and tap **[OK]**.

**Note**

- For details about the administrator password, see **3.1.2 Phone User Interface Administrator Menu**.

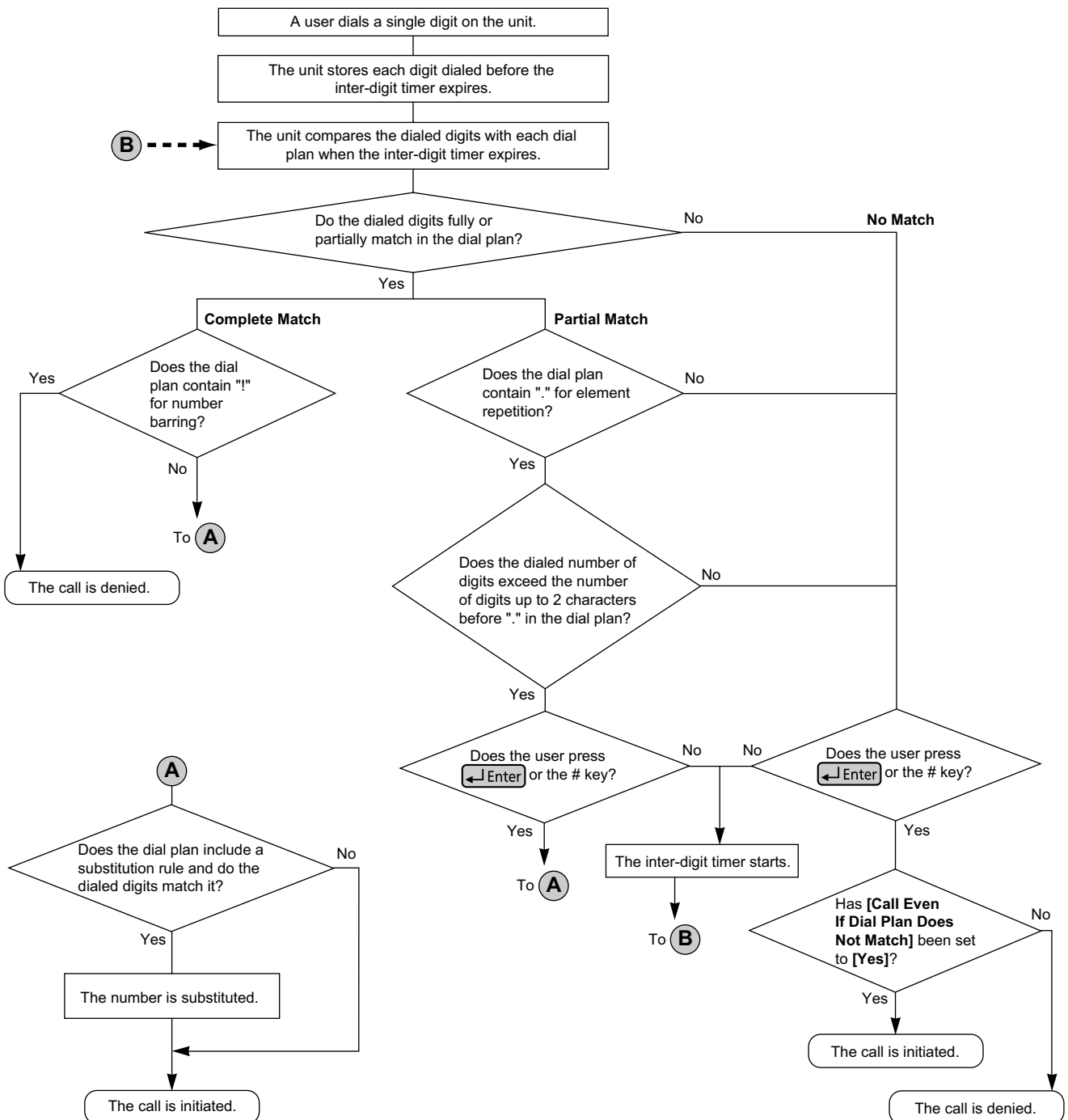
## 6.6 Dial Plan

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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 **4.7.2.2 Dial Plan**) or by configuration file programming (→ see **5.8.1 Call Control Settings**).

**[Dial Plan Flowchart]**

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



## 6.6.1 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 6]]**.
2. In **[Dial Plan]**, enter the desired dial format.  
The dial plan settings can be configured for each line separately.

## Section 6 Useful Telephone Functions

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 **5.8.1 Call Control Settings**.

## Available Values for the Dial Plan Field

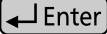
The following table explains which characters you can use in the dial format, and what the characters mean.

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, *, #, +	<b>Example: "123"</b> If the dialed phone number is "123", the call is made immediately.
Wildcard	X, x	<b>Example: "12xxxxx"</b> If the dialed phone number is "12" followed by any 5-digit number, the call is made immediately.
Range	[ ]	<b>Example: "[123]"</b> If the dialed phone number is either one of "1", "2", or "3", the call is made immediately.
Subrange	-	<b>Example: "[1-5]"</b> If the dialed phone number is "1", "2", "3", "4", or "5", the call is made immediately. <ul style="list-style-type: none"> <li>• A subrange is only valid for single-digit numbers. For example, "[4-9]" is valid, but "[12-21]" is invalid.</li> </ul>
Repeat	.	<b>Example: "1."</b> 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)>	<b>Example: "&lt;101:9999&gt;"</b> If the dialed phone number is "101", "101" is replaced by "9999", and then the call is made immediately.
Timer	S, s (second)	<b>Example: "1x.S2"</b> If the dialed phone number begins with "1", the call is made after a lapse of 2 seconds. <ul style="list-style-type: none"> <li>• The number (0–9) followed by "S" or "s" shows the duration in seconds until the call is made.</li> </ul>



Element	Available Value	Description
Macro Timer	T, t	<b>Example: "1x.T"</b> If the dialed phone number begins with "1", the call is made after a lapse of "T" seconds. <ul style="list-style-type: none"> <li>The value of "T" or "t" can be configured through the Web user interface (→ see [Timer for Dial Plan] in 4.7.1.1 Call Control).</li> </ul>
Reject	!	<b>Example: "123xxx!"</b> If the dialed phone number is "123" followed by 3 digits, the call is not made.
Alternation		<b>Example: "1xxxx 2xxx"</b> 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 500 characters in [Dial Plan].
- You can assign up to 40 dial plans separated by "|" in [Dial Plan].
- You can assign up to 32 digits per dial plan 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 4.7.1.1 Call Control in the Web user interface or "INTDIGIT\_TIM" in 5.6.1 Call Control Settings in the configuration file).
  - The user presses  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]xxxxxxxx"

**Complete Match:**

Example: "[2346789]11|01[2-9]x.[2-9]xxxxxxxx"

- 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]xxxxxxxx"

- 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]xxxxxxxx"

- 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]xxxxxxxx"

- 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.

## Section 6 Useful Telephone Functions

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- 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]xxxxxxxx"

- 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]xxxxxxxx"

- If the dialed phone number is "0011", "1011" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[Yes]**, the call is made after the inter-digit timer expires.
- If the dialed phone number is "0011", "1011" and so on when **[Call Even If Dial Plan Does Not Match]** is set to **[No]**, the call is denied.

---

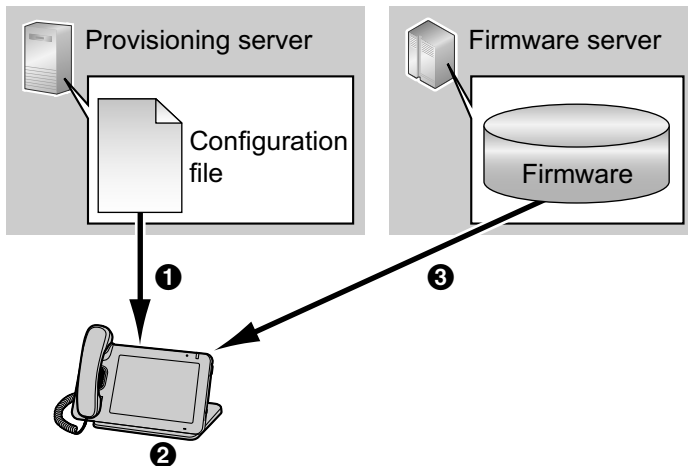
# **Section 7**

## ***Firmware Update***

*This section explains how to update the firmware of the unit.*

## 7.1 General Information on 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.



- ❶ Download configuration file
- ❷ Check for update by comparing the unit's firmware version with the downloaded configuration file's version
- ❸ Firmware download and update

### Note

- No special server is necessary for the firmware update. You can use an HTTP or FTP server as the firmware server by simply setting its URL.
- You cannot use a TFTP server as the firmware server.

## 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 **5.4.4 Firmware Update Settings**) or Web user interface programming (→ see **4.8.1 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`".

### 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/UT670\_01.050.bin", and perform the update operation if the currently used firmware version is older than 01.050.

Example

```
FIRM_UPGRADE_ENABLE="Y"
```

```
FIRM_VERSION="01.050"
```

```
FIRM_FILE_PATH="http://firm.example.com/firm/UT670_01.050.bin"
```

## 7.3 Executing Firmware Update

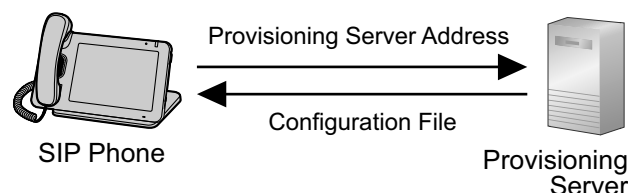
After configuring the firmware update settings in the configuration file, the firmware will be updated when the configuration file is downloaded. The firmware update procedure is detailed below.

### The firmware update process

#### Step 1

The unit downloads a configuration file from the provisioning server.

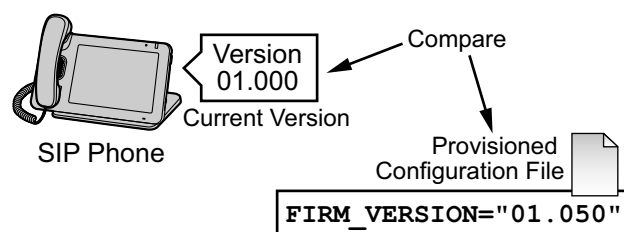
- For details about setting the timing of when configuration files are downloaded, see [2.4.3.4 Downloading Configuration Files](#).



#### Step 2

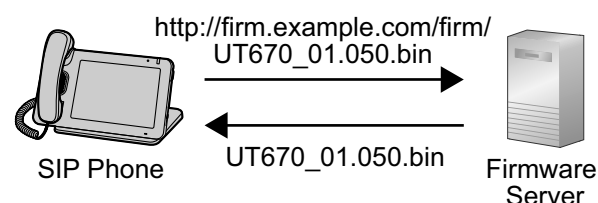
The unit compares the version number of the firmware in the configuration file to the unit's current firmware version.

(In this example, the unit is using version 01.000 and the configuration file specifies version 01.050.)



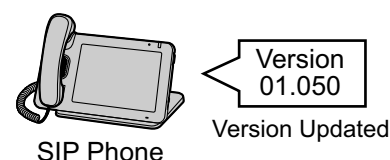
#### Step 3

When a newer firmware version is specified in the configuration file, the unit is restarted. Then, the unit will download the firmware from the address specified under "FIRM\_FILE\_PATH" in the configuration file.



#### Step 4

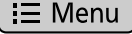
Once the newer firmware is downloaded, it is applied to the unit and the unit automatically restarts.



## 7.4 Firmware Update Using the SD Card

---

When a firmware update is provided by the manufacturer, you can update manually via the unit.

1. Download the latest firmware from the Panasonic Web site (→ see **Introduction**).
2. Save the downloaded firmware in the root directory of the SD card.
3. Insert the SD card into the unit.
4. Press  **Menu** on the Home screen, and then tap **[Settings]**.
5. Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
6. Tap **[Update Firmware]**.
7. Select the downloaded firmware.
8. Tap **[Update]**.

### **Notice**

- Unmount the SD card before removing it from the unit. For details about unmounting the SD card, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).

### **Note**

- When the update is complete, the unit will automatically restart.
- The update procedure may change. The latest update procedure is provided on the Panasonic Web site (→ see **Introduction**).
- For details about the administrator password, see **3.1.2 Phone User Interface Administrator Menu**.

---

## **Section 8**

# ***Backup and Restore***

*This section explains how to back up data from and restore data to the unit.*

## 8.1 Backup and Restore

You can back up user data (including Web programming settings) to an SD card, or restore data from the SD card.

Only the built-in applications are stored on the SD card. Third-party applications cannot be backed up.

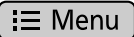
The data is saved onto the SD card as follows:

Folder name	/sdcard/kx-ut670
Backup data file name	YYYYMMDDHHMM(UTC)_backup.dat  <b>Note</b> <ul style="list-style-type: none"> <li>The time stamp of the backup data file will be in UTC, regardless of the time zone setting.</li> </ul>
Backup information file name	bkinfo.dat

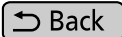
### Notice

- It is the user's responsibility to ensure that the backup data saved on the SD card is kept secure.

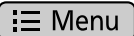
### To Back Up Data to an SD Card

- Press  **Menu** on the Home screen, and then tap **[Settings]**.
- Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
- Tap **[Backup and Restore]**.
- Tap **[Backup data to SD card]**.
- On the backup confirmation window, tap **[OK]**.
- Enter the new password for backup, and enter it again for confirmation.
- When the completed message is displayed, tap **[OK]**.

### Note

- Backup can be performed only when the unit is idle. Also, the unit cannot receive calls during the backup.
- Only 1 backup file can be stored on the SD card. If the SD card contains a backup file, the existing file is overwritten.
- The password must consist of 8 or more ASCII characters (case-sensitive) (→ see **Entering Characters** in 4.2.4 **Accessing the Web User Interface**). Backup can also be performed without requiring a password.
- If you press  **Back** during the backup, the backup will be canceled.

### To Restore Data from the SD Card

- Press  **Menu** on the Home screen, and then tap **[Settings]**.
- Tap **[Administration]**, enter the administrator password, and then tap **[OK]**.
- Tap **[Backup and Restore]**.
- Tap **[Restore data from SD card]**.
- Enter the password that was set when the data was stored.
- On the restore confirmation window, tap **[OK]**.



**Note**

- After the restoring is completed, the unit will restart automatically.
- You cannot operate the unit during the restore.
- If the unit's firmware version changes between backup and restore, the data cannot be restored.
- If restoring fails, the unit enters recovery mode. After recovery, the unit will restart automatically.



---

## **Section 9**

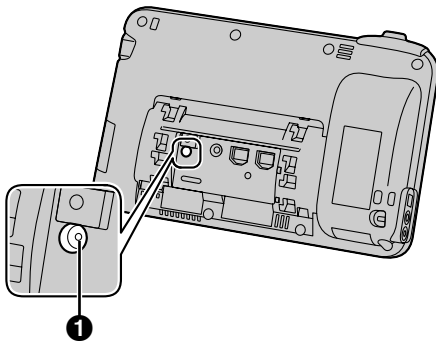
# ***Resetting the Unit***

*This section explains how to reset the unit.*

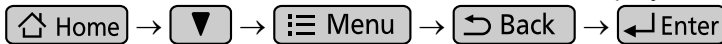
## 9.1 Resetting to Factory Default and Clearing Data/Settings



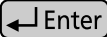
When you reset the unit, all settings are returned their factory default status and all data is erased. You can reset the unit in the following 2 ways.

- **Clear data and settings**  
All unit settings and the settings and registered data of applications are erased. However, applications are not erased.
  - **Reset to factory default**  
All data is erased. Applications, apart from pre-installed applications, are also erased.
1. After starting the unit, press and hold the RESET button (❶) with a pointy object until the screen is cleared.



2. After the unit is restarted and **\*\*Reset Menu\*\*** is displayed, tap the key sheet in the following order:



3. Tap  or  to select the resetting type, and then tap .

### Note

- For details about the key sheet, refer to the Operating Instructions on the Panasonic Web site (→ see **Introduction**).
- Data stored on the SD card is not erased.
- If you tap **[Cancel]**, the unit will start-up and the Home screen is displayed.
- When the reset is complete, the unit will automatically restart.

## 9.2 Resetting the Settings Made through the Web User Interface (Reset Web Settings)

Performing Reset Web Settings from the Web user interface (→ see **4.8.3 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.



---

# **Section 10**

## ***Troubleshooting***

*This section provides information about troubleshooting.*

## 10.1 Troubleshooting

If a problem occurs, refer to this section. Before inspection, confirm that the unit is corrected properly and that power is being supplied through the Ethernet cable. If using an AC adaptor, confirm that power is being supplied through the connected outlet.

If the problem persists, disconnect the plug or Ethernet cable from the unit, then connect it again.

### General Use

Problem	Cause/Solution
I cannot hear a dial tone.	<ul style="list-style-type: none"> <li>• Confirm that the Ethernet cable is properly connected. For details, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>• Network settings may not be correct.</li> <li>• 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.</li> <li>• If you cannot access Internet Web pages using your PC, check to see if your phone system is having connection issues in your area.</li> <li>• Check the VoIP status in <b>[Phone status]</b> on the unit's notification screen, or tap <b>[Settings]</b> → <b>[About phone]</b> → <b>[Status]</b> and confirm that each line is registered properly. For details, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>• Check that the SIP server address, URLs of the configuration files, encryption key, and other required settings are correct.</li> <li>• For details about the settings, consult your network administrator or phone system dealer.</li> </ul>
An error message is displayed.	<ul style="list-style-type: none"> <li>• Check the unit's settings according to the error message.</li> </ul>
Edited data is not saved.	<ul style="list-style-type: none"> <li>• If you open another screen while editing data, the data may not be saved. For details, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> </ul>
The Phone screen is not displayed after starting up the unit.	<ul style="list-style-type: none"> <li>• Web user interface settings or configuration file settings may not be correct. Reset the unit to initialize the settings (→ see <b>9.1 Resetting to Factory Default and Clearing Data/Settings</b>), and then reconfigure the unit correctly.</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If settings were not initialized after performing this procedure, consult your phone system dealer.</li> </ul>



## Making/Answering Calls, Intercom

Problem	Cause/Solution
The unit does not ring.	<ul style="list-style-type: none"> <li>• The ringer volume is turned off. Adjust the ringer volume. For details about the operations, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>• Check the VoIP status in <b>[Phone status]</b> on the unit's notification screen, or tap <b>[Settings]</b> → <b>[About phone]</b> → <b>[Status]</b> and confirm that each line is registered properly. For details, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>• Check that the SIP server address, URLs of the configuration files, encryption key, and other required settings are correct.</li> <li>• Check the firewall and port forwarding settings on the router (→ see <b>1.1.4 Other Network Settings</b>).</li> <li>• Check <b>[Call Control]</b> for each line in the <b>[Telephone]</b> tab in the Web user interface. <ul style="list-style-type: none"> <li>– If <b>[Do Not Disturb]</b> is set to <b>[Yes]</b>, the unit does not receive calls (→ see <b>4.7.2.3 Call Features</b>).</li> <li>– If <b>[Unconditional (Enable Call Forward)]</b> is set to <b>[Yes]</b>, the unit does not receive calls (→ see <b>4.7.2.4 Call Forward</b>).</li> <li>– If <b>[Block Anonymous Call]</b> is set to <b>[Yes]</b>, the unit does not receive anonymous calls (→ see <b>4.7.2.3 Call Features</b>).</li> </ul> </li> <li>• Check that <b>[Do Not Disturb]</b>, <b>[Enable Call Forward]</b>, and <b>[Block Anonymous Call]</b> are not controlled by your phone system.</li> <li>• For details about settings, consult your network administrator or phone system dealer.</li> </ul>
I cannot make a call.	<ul style="list-style-type: none"> <li>• Check the VoIP status in <b>[Phone status]</b> on the unit's notification screen, or tap <b>[Settings]</b> → <b>[About phone]</b> → <b>[Status]</b> and confirm that each line is registered properly. For details, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>• Check that the SIP server address, URLs of the configuration files, encryption key, and other required settings are correct.</li> <li>• Check the firewall and port forwarding settings on the router (→ see <b>1.1.4 Other Network Settings</b>).</li> <li>• For details about settings, consult your network administrator or phone system dealer.</li> </ul>


### 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.	<ul style="list-style-type: none"> <li>Reset the password from the unit. The passwords for both Administrator and User will be reset (→ see <b>3.1.1.2 Reset Web ID/Password</b>). For security reasons, it is recommended that the passwords are set again immediately (→ see <b>4.5.2 Administrator Password</b> or <b>4.5.3 Change User Password</b>).</li> </ul>

### Time

Problem	Cause/Solution
The time is not correct.	<ul style="list-style-type: none"> <li>Adjust the date and time of the unit. For details about the operations, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>Automatic time adjustment can be enabled by configuring the NTP synchronization and time zone settings in the unit's <b>[Settings]</b> menu. For details, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> <li>If the time is still incorrect even after setting NTP synchronization, check the firewall and port forwarding settings on the router (→ see <b>1.1.4 Other Network Settings</b>).</li> </ul>

### SD Cards

Problem	Cause/Solution
Thumbnails of images on the SD card are not displayed, or different images are displayed.	<ul style="list-style-type: none"> <li>The SD card was not unmounted before it was removed from the unit. Unmount the SD card before removing it. Additionally, follow the procedure below to display the correct thumbnail images: <ol style="list-style-type: none"> <li>Press  <b>Menu</b> on the Home screen, and then tap <b>[Settings]</b>.</li> <li>Tap <b>[SD card &amp; phone storage]</b>.</li> <li>Tap <b>[Clear cache]</b>.</li> <li>Tap <b>[Clear and reboot]</b>. After the unit has rebooted the correct thumbnail images will be displayed.</li> </ol> </li> </ul>

### USB Devices

Problem	Cause/Solution
Some keys on the USB keyboard do not work.	<ul style="list-style-type: none"> <li>Check which keys can be used on the unit. For details, refer to the Operating Instructions on the Panasonic Web site (→ see <b>Introduction</b>).</li> </ul>

### Firmware Update

Problem	Cause/Solution
Firmware update using the SD card does not work.	<ul style="list-style-type: none"> <li>Confirm that the firmware is saved in the root directory of the SD card.</li> <li>Firmware cannot be updated while on a call. End the current call.</li> </ul>

### Applications

Problem	Cause/Solution
I cannot install applications.	<ul style="list-style-type: none"> <li>Confirm that the application you are installing is saved in the root directory of the SD card (→ see <b>6.5 Adding Applications</b>).</li> <li>Confirm that the file extension of the application you are installing is ".apk".</li> </ul>

### Configuration File

Problem	Cause/Solution
I cannot set the configuration file.	<ul style="list-style-type: none"> <li>When importing the configuration file using an SD card, confirm that the configuration file is saved in the root directory of the SD card (→ see <b>2.4.5 Loading Settings Using the SD card</b>).</li> <li>The configuration file cannot be imported from the SD card while on a call. End the current call.</li> <li>Confirm that the file extension of the configuration file is ".cfg".</li> <li>Confirm that the configuration file is configured correctly (→ see <b>5.2.1 Configuration File Specifications for Plain Text Provisioning</b>).</li> </ul>

## Checking the Status of the Unit

You can check the status of the unit by using Web user interface programming (→ see **4.3.2 Network Status** and **4.3.3 VoIP Status**) or by looking at system logs (→ see **5.4.3 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 system logs to the syslog server

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.



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## **Section 11**

# **Open Source Software**


*Parts of this product use Open Source Software. Relevant conditions apply to this software. Panasonic cannot accept inquiries regarding the content of the following copyright and license information.*

## 11.1 License Information

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You can check the license information of open source software on the unit's screen.

### To check the license information

1. Press  **Menu** on the Home screen, and then tap **[Settings]**.
2. Tap **[About phone]** and then select **[Legal information]**.
3. Tap **[Open source licenses]**.

---

# ***Section 12***

## ***Appendix***

## 12.1 Revision History

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### 12.1.1 Software File Version 01.030

#### New Contents

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- 2.4.1 Configuration File Programming Methods (Page 25)
- 2.4.4 XML Provisioning (Page 32)
- 4.6.4.1 Quality of Service (QoS)—RTCP Packet QoS (DSCP) (Page 100)
- 4.6.4.4 DTMF—DTMF Relay (Page 102)
- 4.7.1.1 Call Control—Conference Server URI (Page 106)
- 4.7.2.1 Call Control
  - Enable Shared Call (Page 110)
  - Synchronize Do Not Disturb and Call Forward (Page 110)
- 5.6.1 Call Control Settings
  - CONFERENCE\_SERVER\_URI (Page 160)
  - DDI\_ICD\_GROUP\_DISPLAY (Page 165)
- 5.6.3 Telephone Settings
  - WALLPAPER\_URI\_HOME (Page 174)
  - WALLPAPER\_URI\_PHONE (Page 174)
  - LOGO\_URI\_PHONE (Page 175)
- 5.7.2 RTP Settings—DSCP\_RTCP\_n (Page 178)
- 5.7.3 Miscellaneous VoIP Settings—DTMF\_RELAY\_n (Page 183)
- 5.8.1 Call Control Settings
  - SHARED\_CALL\_ENABLE\_n (Page 186)
  - FWD\_DND\_SYNCHRO\_ENABLE\_n (Page 186)
  - VOICE\_MESSAGE\_AVAILABLE (Page 188)
- 5.8.2 SIP Settings—USE\_DEL\_REG\_CLOSE\_n (Page 200)
- 6.4 Customizing the Phone (Page 212)
- Section 8 Backup and Restore (Page 223)

#### Changed Contents

---

- 3.1.1 Direct Commands (Page 48)
- 3.1.2 Phone User Interface Administrator Menu (Page 49)



- 5.2.1 Configuration File Specifications for Plain Text Provisioning (Page 135)
- 5.4.2 System Time Settings—TIME\_ZONE\_COUNTRY (Page 141)
- 10.1 Troubleshooting—SD Cards (Page 234)

## 12.1.2 Software File Version 01.070

### New Contents

---

- 4.4.2.2 LLDP Settings
  - LLDP (Page 74)
  - LLDP-MED Interval timer (Page 74)
  - PC (VLAN ID) (Page 75)
  - PC (Priority) (Page 75)

### Changed Contents

---

- 1.1.3 Basic Network Setup (Page 16)
- 2.4.4.2 XML Element/Attribute Configuration Parameter Table
  - X\_P\_IPTEL\_LLDP (Page 41)
- 4.1 Web User Interface Setting List
  - LLDP (Page 74)
- 4.4.2 Ethernet Port Settings (Page 73)
- 5.1 Configuration File Parameter List
  - Network Settings (Page 129)
- 5.5.1 Ethernet Port Settings
  - LLDP\_ENABLE (Page 151)
  - LLDP\_INTERVAL (Page 152)
  - LLDP\_VLAN\_ID\_PC (Page 152)
  - LLDP\_VLAN\_PRI\_PC (Page 152)



---

# ***Index***

## Numerics

1–30 108

## A

Access Level 52, 62  
 Access Levels (IDs and Passwords) 61, 62  
 Accessing the Web User Interface 63  
 ADD\_EXPIRES\_HEADER\_n 209  
 ADD\_TRANSPORT\_UDP\_n 208  
 ADD\_USER\_PHONE\_n 203  
 Adding Applications 213  
 ADMIN\_ID 140  
 ADMIN\_PASS 140  
 Administrator Password 83  
 Applications, Adding 213  
 Authentication ID 78, 92  
 Authentication Password 78, 92  
 AUTO\_ANS\_RING\_TIM 163  
 AUTO\_CALL\_HOLD 163  
 Available Values for the Dial Plan Field 216

## B

Backup and Restore 224  
 Basic Network Settings 16, 69  
 Basic Network Setup 16  
 Before Accessing the Web User Interface 61  
 BLF Buttons 212  
 Block Anonymous Call 112  
 Block Caller ID 112  
 Busy (Enable Call Forward) 114  
 Busy (Phone Number) 115  
 Busy Tone 118  
 BUSY\_TONE\_FRQ 168  
 BUSY\_TONE\_GAIN 168  
 BUSY\_TONE\_TIMING 168

## C

Call Control 105, 109  
 Call Control [Line 1]–[Line 6] 109  
 Call Control Settings 129, 132, 159, 184, 216  
 Call Even If Dial Plan Does Not Match 111  
 Call Features 112  
 Call Forward 113, 114, 115  
 Call Hold 103, 183  
 Call Rejection Phone Numbers 108  
 Cancel Button 65  
 CFG\_CYCLIC 149  
 CFG\_CYCLIC\_INTVL 150  
 CFG\_FILE\_KEY\_LENGTH 149  
 CFG\_FILE\_KEY1 148  
 CFG\_FILE\_KEY2 149  
 CFG\_FILE\_KEY3 149  
 CFG\_MASTER\_FILE\_PATH 147  
 CFG\_PRODUCT\_FILE\_PATH 146  
 CFG\_RESYNC\_FROM\_SIP 151  
 CFG\_RESYNC\_TIME 150  
 CFG\_ROOT\_CERTIFICATE\_PATH 156  
 CFG\_RTRY\_INTVL 150  
 CFG\_STANDARD\_FILE\_PATH 145  
 Change Administrator Password 84

Change User Password 85  
 Channel 1–25 82  
 Characters Available for String Values 137  
 Checking the Status of the Unit 235  
 CODEC Preferences 103  
 Codec Settings 132, 176  
 Codec Settings, Examples 138  
 CODEC\_ENABLEx\_n 177  
 CODEC\_G711\_REQ 176  
 CODEC\_G729\_PARAM 177  
 CODEC\_PRIORITYx\_n 177  
 Conference Server URI 106  
 CONFERENCE\_SERVER\_URI 160  
 Configuration File 27  
 Configuration File Examples 137  
 Configuration File Parameter List 128  
 Configuration File Parameters 136  
 Configuration File Programming 24, 127  
 Configuration File Programming Methods 25  
 Configuration File Specifications for Plain Text Provisioning 135  
 Configuration Files 135  
 Confirm New Password 84, 86  
 Connection Mode 67, 70  
 Controls on the Window 64  
 Country Calling Code 107  
 COUNTRY\_CALLING\_CODE 161  
 Current Password 84, 85  
 CUSTOM\_WEB\_PAGE 159  
 Customizing the Phone 212  
 CW\_ENABLE\_n 187  
 CW\_TONE1\_FRQ 171  
 CW\_TONE1\_GAIN 171  
 CW\_TONE1\_TIMING 171  
 Cyclic Auto Resync 124

## D

DATA\_LINE\_MODE 162  
 Date and Time Settings 18  
 DDI\_ICD\_GROUP\_DISPLAY 165  
 Default Gateway 68, 72  
 Default Line for Outgoing 107  
 DEFAULT\_LANGUAGE 173  
 DEFAULT\_LINE\_SELECT 161  
 Detection Interval 80  
 Detection Method 79  
 DHCP Server 25, 145  
 DHCP Settings 70  
 Dial Plan 111, 214, 215  
 Dial Plan (max 500 columns) 111  
 Dial Plan Example 217  
 Dial Plan Settings 215  
 Dial Tone 117  
 DIAL\_PLAN\_n 185  
 DIAL\_PLAN\_NOT\_MATCH\_ENABLE\_n 185  
 DIAL\_TONE1\_FRQ 166  
 DIAL\_TONE1\_GAIN 166  
 DIAL\_TONE1\_TIMING 166  
 DIAL\_TONE2\_FRQ 166  
 DIAL\_TONE2\_GAIN 167  
 DIAL\_TONE2\_TIMING 167  
 DIAL\_TONE4\_FRQ 167

DIAL\_TONE4\_GAIN 167  
 DIAL\_TONE4\_TIMING 167  
 Direct Commands 48  
 Directed Call Pickup 108  
 DISCONNECTION\_MODE 164  
 Display Name 109  
 DISPLAY\_DATE\_PATTERN 173  
 DISPLAY\_NAME\_n 184  
 DISPLAY\_NAME\_REPLACE 172  
 DISPLAY\_TIME\_PATTERN 173  
 DNS 92  
 DNS Server 71  
 DNS1 68, 72  
 DNS2 68, 72  
 Do Not Disturb 113, 114, 115  
 Domain Name Server 71  
 Downloading a Configuration File via the Web User Interface 28  
 DSCP\_RTCP\_n 178  
 DSCP\_RTP\_n 178  
 DSCP\_SIP\_n 193  
 DTMF 102  
 DTMF Relay 102  
 DTMF Type 102  
 DTMF\_INTDIGIT\_TIM 184  
 DTMF\_RELAY\_n 183  
 DTMF\_SIGNAL\_LEN 184

**E**

Editing XML Configuration Files on your PC 45  
 Enable DNS SRV lookup 92  
 Enable Firmware Update 121  
 Enable Global IP Address Usage per Line 81  
 Enable Provisioning 123  
 Enable Proxy 78  
 Enable Shared Call 110  
 Enable SSAF (SIP Source Address Filter) 97  
 Enable VLAN 75  
 Encryption 32  
 Encryption Key 32, 148, 149  
 Entering Characters 65  
 Ethernet Link Status (LAN Port) 67  
 Ethernet Link Status (PC Port) 67  
 Ethernet Port Settings 73, 129, 151  
 Ethernet Settings 17  
 External RTP Port 82

**F**

Factory Defaults 16, 48  
 Feature Number for Voice Mail Access 212  
 Firewall and Router Setup 18  
 FIRM\_FILE\_PATH 144  
 FIRM\_UPGRADE\_ENABLE 143  
 FIRM\_VERSION 143  
 Firmware File URL 122  
 Firmware Maintenance 121  
 Firmware Update 121, 143, 220  
 Firmware Update Settings 128, 143, 220  
 Firmware Update Using the SD Card 222  
 Firmware Update, Executing 221  
 Firmware Version 66

FIRSTDIGIT\_TIM 160  
 Flash Hook Event 108  
 Flash/Recall Button 107  
 FLASH\_RECALL\_TERMINATE 187  
 FLASHHOOK\_CONTENT\_TYPE 188  
 FLEX\_BUTTON\_FACILITY\_ACTx 175  
 FLEX\_BUTTON\_FACILITY\_ARGx 175  
 FLEX\_BUTTON\_LABELx 176  
 Flexible Button Settings 131, 175  
 Flexible Buttons 212  
 FWD\_DND\_SYNCHRO\_ENABLE\_n 186

**G**

G722 (Enable) 103  
 G722 (Priority) 103  
 G729A (Enable) 104  
 G729A (Priority) 104  
 Global Address Detection 20, 79  
 Global IP Address 81

**H**

Header Value for Resync Event 124  
 HOLD\_ALARM\_FRQ 170  
 HOLD\_ALARM\_GAIN 170  
 HOLD\_ALARM\_TIMING 170  
 HOLD\_PACKAGE 162  
 HOLD\_RECALL\_TIM 163  
 HOLD\_TONE\_FRQ 171  
 HOLD\_TONE\_GAIN 171  
 HOLD\_TONE\_TIMING 172  
 Host Name 70  
 HTTP Authentication 78  
 HTTP Client Settings 77  
 HTTP Settings 129, 154  
 HTTP User Agent 77  
 HTTP Version 77  
 HTTP\_SSL\_VERIFY 156  
 HTTP\_USER\_AGENT 155  
 HTTP\_VER 155  
 HTTPD\_PORTOPEN\_AUTO 154

**I**

Incorrect Example 139  
 Initial Delay 102  
 INTDIGIT\_TIM 160  
 Inter-digit Timeout 106  
 International Call Prefix 106  
 INTERNATIONAL\_ACCESS\_CODE 161  
 IP Address 67  
 IP Phone (Priority) 76  
 IP Phone (VLAN ID) 75

**J**

Jitter Buffer 101

**K**

Keep Alive Interval 96  
 KEY\_PAD\_TONE 165

**L**

LAN Port 73  
Language 83  
Language Selection 16, 22, 61, 82  
Language Selection for the Unit 16  
Line 1–Line 6 81  
Line No. 69  
Line Settings 132, 184  
LINE\_ENABLE\_n 189  
Link Speed/Duplex Mode 73  
LLDP 74  
LLDP Settings 74  
LLDP\_ENABLE 151  
LLDP\_INTERVAL 152  
LLDP\_VLAN\_ID\_PC 152  
LLDP\_VLAN\_PRI\_PC 152  
LLDP-MED Interval timer 74  
Loading Settings Using the SD card 45  
Login Account Settings 128, 140  
LOGO\_URI\_PHONE 175

**M**

MAC Address 67  
MACRODIGIT\_TIM 160  
Maintenance 60  
Maintenance Tab 60, 121  
Master Configuration File 28, 124, 147  
Master File URL 124  
MAX\_DELAY\_n 179  
Maximum Delay 101  
Maximum RTP Port Number 99  
MIN\_DELAY\_n 179  
Minimum Delay 101  
Minimum RTP Port Number 98  
Miscellaneous Network Settings 129, 158  
Miscellaneous VoIP Settings 132, 182  
Model 66

**N**

NAPT 80  
NAT 19, 80, 96, 201  
NAT Identity 96  
NAT Traversal 19, 81  
National Access Code 107  
NATIONAL\_ACCESS\_CODE 161  
Network 53  
Network Settings 16, 129, 151  
Network Status 66, 67, 235  
Network Tab 53, 69  
New Password 84, 85  
No Answer (Enable Call Forward) 115  
No Answer (Phone Number) 116  
No Answer (Ring Count) 116  
NOM\_DELAY\_n 180  
NOTES 2  
NTP Server Settings 18  
NTP\_ADDR 157  
NUM\_PLAN\_PICKUP\_DIRECT 162  
Number Matching Lower Digit 120  
Number Matching Upper Digit 121  
NUMBER\_MATCHING\_LOWER\_DIGIT 172

NUMBER\_MATCHING\_UPPER\_DIGIT 172  
NW\_SETTING\_ENABLE 158

**O**

One-touch Buttons 212  
ONHOOK\_TRANSFER\_ENABLE 164  
Opening/Closing the Web Port 62  
OPTION66\_ENABLE 144  
OS Version 66  
Other Network Settings 18  
OUTBANDDTMF\_n 182  
Outbound Proxy Server 91  
Outbound Proxy Server Address 91  
Outbound Proxy Server Port 91  
Overview of Programming 22

**P**

PC (Priority) 75, 76  
PC (VLAN ID) 75, 76  
PC Port 74  
PCMA (Enable) 104  
PCMA (Priority) 104  
PCMU (Enable) 104  
PCMU (Priority) 105  
Phone Number 69, 89  
Phone User Interface Administrator Menu 49  
Phone User Interface Programming 22, 48  
PHONE\_NUMBER\_n 189  
Port Close Timer 87  
Port Forwarding 19  
PORT\_PUNCH\_INTVL\_n 201  
POUND\_KEY\_DELIMITER\_ENABLE 174  
Pre-provisioning 25  
Presence Server Address 90  
Presence Server Port 90  
Primary DNS Server 68, 71, 72  
Priority of Setting Methods 46  
Product Configuration File 28, 123, 146  
Product File URL 123  
PROFILE\_ENABLEn 190  
PROVISION\_ENABLE 145  
Provisioning 27  
Provisioning Maintenance 28, 122, 123  
Provisioning Server 27, 31  
Provisioning Settings 28, 128, 144  
Proxy Server Address 79, 90  
Proxy Server Port 79, 90  
Proxy Server Settings 78

**Q**

Quality of Service (QoS) 95, 100

**R**

Recommended Environment 61  
REDIALKEY\_CALLLOG\_ENABLE 164  
Refresh Button 65, 67, 68  
REG\_EXPIRE\_TIME\_n 192  
REG\_INTERVAL\_RATE\_n 193  
REG\_RTX\_INTVL\_n 203  
Registering Flexible Buttons 212

- Registering One-touch Buttons and BLF Buttons 212
  - Registrar Server Address 89
  - Registrar Server Port 89
  - Related Documentation 2
  - Reliability of Provisional Responses 96, 198
  - Reorder Tone 120
  - REORDER\_TONE\_FRQ 169
  - REORDER\_TONE\_GAIN 169
  - REORDER\_TONE\_TIMING 169
  - Reset 228
  - Reset to Defaults 125
  - Reset Web ID/Password 48, 63
  - Reset Web Settings 228
  - Reset Web Settings Button 125
  - Resource List URI 111
  - RESOURCELIST\_URI\_n 187
  - Restart 125
  - Restart Button 125
  - Result Messages 126
  - Resync Interval 124
  - RFC2543\_HOLD\_ENABLE\_n 183
  - RINGBACK\_TONE\_FRQ 169
  - RINGBACK\_TONE\_GAIN 170
  - RINGBACK\_TONE\_TIMING 170
  - Ringing Tone 118
  - RINGING\_OFF\_SETTING\_ENABLE 163
  - Root Certificate 156
  - Router Setup 20
  - RTCP Enable 101
  - RTCP Interval 101
  - RTCP Packet QoS (DSCP) 100
  - RTCP\_ENABLE\_n 181
  - RTCP\_INTVL\_n 179
  - RTCP\_SEND\_BY\_SDP\_n 182
  - RTP (Real-time Transport Protocol) Setup 20
  - RTP Packet QoS (DSCP) 100
  - RTP Packet Time 98
  - RTP Settings 20, 98, 132, 178
  - RTP\_CLOSE\_ENABLE\_n 182
  - RTP\_PORT\_MAX 180
  - RTP\_PORT\_MIN 180
  - RTP\_PTIME 181
- S**
- Save Button 65, 126
  - SDP\_USER\_ID\_n 204
  - Secondary DNS Server 68, 71, 72
  - Security 97
  - Send SUBSCRIBE to Voice Mail Server 105
  - Service Domain 91
  - Setting Priority 46
  - SHARED\_CALL\_ENABLE\_n 186
  - SIP Authentication 92
  - SIP extensions 96
  - SIP Packet QoS (DSCP) 95
  - SIP Server 89
  - SIP Service Domain 91
  - SIP Setting 88
  - SIP Settings 19, 87, 88, 133, 188
  - SIP Settings [Line 1]–[Line 6] 88
  - SIP Setup 19
  - SIP Source Address Filter (SSAF) 97, 206
  - SIP Source Port 91
  - SIP URI 89
  - SIP User Agent 88
  - SIP\_100REL\_ENABLE\_n 198
  - SIP\_18X\_RTX\_INTVL\_n 199
  - SIP\_2NDPROXY\_ADDR\_n 194
  - SIP\_2NDPROXY\_PORT\_n 194
  - SIP\_2NDPRSN\_C\_ADDR\_n 200
  - SIP\_2NDPRSN\_C\_PORT\_n 200
  - SIP\_2NDRGSTR\_ADDR\_n 194
  - SIP\_2NDRGSTR\_PORT\_n 195
  - SIP\_ADD\_DIVERSION\_n 209
  - SIP\_ADD\_RPORT\_n 201
  - SIP\_ANM\_DISPNAME\_n 205
  - SIP\_ANM\_HOSTNAME\_n 206
  - SIP\_ANM\_USERNAME\_n 205
  - SIP\_AUTHID\_n 190
  - SIP\_CONTACT\_ON\_ACK\_n 207
  - SIP\_DETECT\_SSAF\_n 206
  - SIP\_DNSSRV\_ENA\_n 197
  - SIP\_FOVR\_MAX\_n 196
  - SIP\_FOVR\_NORSP\_n 196
  - SIP\_HOLD\_HOLDRECEIVE\_n 209
  - SIP\_INVITE\_EXPIRE\_n 198
  - SIP\_OUTPROXY\_ADDR\_n 204
  - SIP\_OUTPROXY\_PORT\_n 205
  - SIP\_P\_PREFERRED\_ID\_n 203
  - SIP\_PASS\_n 190
  - SIP\_PRIVACY\_n 203
  - SIP\_PRSN\_C\_ADDR\_n 199
  - SIP\_PRSN\_C\_PORT\_n 199
  - SIP\_PRXY\_ADDR\_n 191
  - SIP\_PRXY\_PORT\_n 191
  - SIP\_RCV\_DET\_HEADER\_n 206
  - SIP\_REFRESHER\_n 197
  - SIP\_REQUIRE\_PORT\_n 201
  - SIP\_RESPONSE\_CODE\_CALL\_REJECT 210
  - SIP\_RESPONSE\_CODE\_DND 210
  - SIP\_RGSTR\_ADDR\_n 191
  - SIP\_RGSTR\_PORT\_n 192
  - SIP\_SESSION\_METHOD\_n 193
  - SIP\_SESSION\_TIME\_n 193
  - SIP\_SRC\_PORT\_n 191
  - SIP\_SUBS\_EXPIRE\_n 202
  - SIP\_SVCDOMAIN\_n 192
  - SIP\_TCP\_SRV\_PREFIX\_n 198
  - SIP\_TIMER\_B\_n 207
  - SIP\_TIMER\_D\_n 207
  - SIP\_TIMER\_F\_n 208
  - SIP\_TIMER\_H\_n 208
  - SIP\_TIMER\_J\_n 208
  - SIP\_TIMER\_T1\_n 195
  - SIP\_TIMER\_T2\_n 195
  - SIP\_TIMER\_T4\_n 196
  - SIP\_TRANSPORT\_n 205
  - SIP\_UDP\_SRV\_PREFIX\_n 197
  - SIP\_URI\_n 189
  - SIP\_USER\_AGENT 188
  - Source Port 91
  - SRV lookup Prefix for TCP 93
  - SRV lookup Prefix for UDP 93
  - SSAF → SIP Source Address Filter 97, 206
  - Standard Configuration File 28, 123, 145

## Index

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Standard File URL 123  
Static IP Address 71  
Static NAPT Settings 80  
Static Settings 71  
Statistical Information 101  
Status 52  
Status Tab 52, 66  
STUN Server 80, 157  
STUN Server Address 80  
STUN Server Port 80  
STUN Settings 129, 157  
STUN\_2NDSERV\_ADDR 158  
STUN\_2NDSERV\_PORT 158  
STUN\_SERV\_ADDR 157  
STUN\_SERV\_PORT 158  
Stutter Tone 119  
SUB\_INTERVAL\_RATE\_n 204  
SUB\_RTX\_INTVL\_n 202  
Subnet Mask 67, 72  
Supports 100rel (RFC 3262) 96  
Supports RFC 2543 (c=0.0.0.0) 103  
Supports Rport (RFC 3581) 97  
Supports Session Timer (RFC 4028) 96  
Synchronize Do Not Disturb and Call Forward 110  
Syslog Settings 128, 143, 235  
SYSLOG\_ADDR 143  
SYSLOG\_PORT 143  
System 54  
System Settings 128, 140  
System Tab 54, 82  
System Time Settings 128, 141

## T

T1 Timer 94  
T2 Timer 94  
TALK\_PACKAGE 162  
Telephone 58  
Telephone Settings 120, 129, 131, 159, 172  
Telephone Tab 58, 105  
Telephone-event Payload Type 99  
TELEVENT\_PAYLOAD 183  
Terminal Number Settings 48  
TFTP Server 25, 145  
Time Adjust Settings 129, 157  
TIME\_QUERY\_INTVL 157  
TIME\_SYNC\_INTVL 157  
TIME\_ZONE\_COUNTRY 141  
Timer B 94  
Timer D 95  
Timer F 95  
Timer for Dial Plan 106  
Timer H 95  
Timer J 95  
Timer Settings 94  
Timing of Downloading 29  
Tone Frequencies 117, 118, 119, 120  
Tone Settings 117, 130, 166  
Tone Timings 117, 118, 119, 120  
TONE\_LEN\_DISCONNECT\_HANDSET 164  
TONE\_LEN\_DISCONNECT\_HANDSFREE 165  
Trademarks 2  
Transferring Encrypted Configuration Files 32

Transport Protocol 93  
Transport Protocol for SIP 93  
Troubleshooting 231

## U

Unconditional (Enable Call Forward) 113  
Unconditional (Phone Number) 114  
USE\_DEL\_REG\_CLOSE\_n 200  
USE\_DEL\_REG\_OPEN\_n 200  
USER\_ID 140  
USER\_PASS 140  
Using 3 Types of Configuration Files 28

## V

Version Information 66  
VLAN Settings 75  
VLAN\_ENABLE 152  
VLAN\_ID\_IP\_PHONE 153  
VLAN\_ID\_PC 154  
VLAN\_PRI\_IP\_PHONE 153  
VLAN\_PRI\_PC 154  
VM\_NUMBER\_n 184  
VM\_SUBSCRIBE\_ENABLE 159  
Voice Mail Access Number 109  
Voice Mail Access, Feature Number 212  
VOICE\_MESSAGE\_AVAILABLE 188  
VoIP 55  
VoIP Settings 98, 100, 132, 176  
VoIP Settings [Line 1]–[Line 6] 100  
VoIP Status 68, 69, 235  
VoIP Tab 55, 87

## W

WALLPAPER\_URI\_HOME 174  
WALLPAPER\_URI\_PHONE 174  
Web Language 61, 82, 83  
Web Port 62, 64, 86, 87  
Web Port Close Button 62, 64  
Web Server Port 86  
Web Server Settings 86  
Web User Interface Programming 23, 51  
Web User Interface Setting List 52  
Web User Interface Window 64

## X

XML Element/Attribute Configuration Parameter Table 35  
XML Provisioning 32  
XML Structure 33





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**PNQX3531WA** DD1011MH3072