Panasonic

Feature Manual

Video Intercom System — Control Box

Model No. VL-VN1700

Thank you for purchasing this Panasonic product.
Please read this manual carefully before using this product and save this manual for future use.
In particular, be sure to read "1.1.1 For Your Safety, page 10" before using this product.

PNMPR Software File Version 001.00000 or later

Manuals and supporting information are provided on the Panasonic Web site at:
http://panasonic.net/pcc/support/intercom/vn1900

Introduction

About this Feature Manual

This Feature Manual is designed to serve as an overall feature reference for the Panasonic Video Intercom System Control Box.
This manual explains what the Control Box can do, and how to obtain the most out of its many features and facilities.

The Structure of this Manual

This manual contains the following sections:

Section 1, For Your Safety
Provides details about safety precautions for preventing personal injury and/or damage to property.

Section 2, Call Handling Features
Provides details about the call handling features.

Section 3, Unified Messaging System
Provides details about the features of the Unified Messaging system.

Section 4, System Configuration and Administration Features
Provides details about the system configuration and administration features.

Section 5, Appendix
Provides tables listing capacity of system resources.

Functional Limitation

Depending on the Control Box's software version, some features may not function. For details about which versions support these features, consult your dealer.

References Found in the Feature Manual

Installation Manual References
The required installation instruction titles described in the *Installation Manual* are noted for your reference.

PC Programming Manual References
The PC Programming titles and parameters described in the *PC Programming Manual* are noted for your reference.

Feature Manual References
The related feature titles described in this *Feature Manual* are noted for your reference.

Operating Manual References
The operation required to implement the feature described in the *Operating Manual* is noted for your reference.

Abbreviations
There are many abbreviations used in this manual (e.g., "SIP", for Session Initiation Protocol). Please refer to the list in the next section for the meaning of each abbreviation.

About the other manuals

Along with this Feature Manual, the following manuals are available to help you install, and use the Control Box:

Installation Manual
Provides instructions for installing the hardware and maintenance of the Control Box.

PC Programming Manual
Provides step-by-step instructions for performing system programming using a PC.

Operating Manual

Provides operating instructions for end users using SIP phones.

Other Information

Trademarks

- All trademarks identified herein are the property of their respective owners.

Note

- The contents of this manual apply to a certain software version, as indicated on the cover of this manual. To confirm the software version, refer to "How do I confirm the software version of the Control Box?" in 2.3 Frequently Asked Questions (FAQ) of the PC Programming Manual.
- Some optional hardware, software, and features are not available in some countries/areas, or for some models. Please consult your certified Panasonic dealer for more information.
- Product specifications are subject to change without notice.
- In this manual, the suffix of each model number (e.g., VL-VN1700**BX**) is omitted unless necessary.

List of Abbreviations

C

COS
Class of Service

D

DHCP
Dynamic Host Configuration Protocol

DND
Do Not Disturb

F

FWD
Call Forwarding

I

ICD
Incoming Call Distribution

ICMP
Internet Control Message Protocol

L

LED
Light Emitting Diode

N

NTP
Network Time Protocol

P

P2P
Peer-to-Peer

PIN
Personal Identification Number

PING
Packet Internet Groper

S

SIP
Session Initiation Protocol

SMDR
Station Message Detail Recording

U

UM
Unified Messaging

V

VoIP
Voice over Internet Protocol

Table of Contents

Section 1

For Your Safety

1.1 For Your Safety

1.1.1 For Your Safety

Description

To prevent personal injury and/or damage to property, be sure to observe the following safety precautions.

The following symbols classify and describe the level of hazard and injury caused when this unit is operated or handled improperly.

⚠ CAUTION	This notice means that misuse could result in injury or damage to property.

The following types of symbols are used to classify and describe the type of instructions to be observed.

This symbol is used to alert users to a specific operating procedure that must be followed in order to operate the unit safely.

⚠ CAUTION

- To the Administrator regarding account passwords
  1. To avoid unauthorised access and possible abuse of the Control Box, keep the passwords secret, and be aware of the importance of the passwords, and the possible dangers if they become known to others.
  2. The Control Box has no passwords set initially. For security, select a secure password as soon as the Control Box is installed at the site.
  3. Change the passwords periodically.
  4. It is strongly recommended that passwords of 10 numbers or characters be used for maximum protection against unauthorised access.

Section 2

Call Handling Features

2.1 Incoming Call Features

2.1.1 Internal Call Features

Description

The following types of internal calls are available:

Feature	Description & Reference
Intercom Call	A call from one extension to another. → 2.4.1 Intercom Call

[Available Destinations]

Destination	Availability
Wired Extension	✓
Incoming Call Distribution Group	✓
UM Group	✓

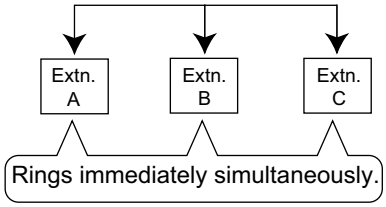
2.2 Receiving Group Features

2.2.1 Incoming Call Distribution Group

Description

An incoming call distribution group is a group of extensions programmed through system programming.

An incoming call distribution group receives calls directed to the group. Each incoming call distribution group is assigned a floating extension number.
Incoming calls directed to an incoming call distribution group are distributed to all the member extensions in the group simultaneously.



Conditions

- One extension can belong to multiple incoming call distribution groups.
- If a second call arrives while a call is ringing, the second call will be put in a queue. After the first call is answered, the second call will ring at the other extensions in the ICD group.

PC Programming Manual References

11.1.1 Control Box Configuration—[3-5-1] Group—Incoming Call Distribution Group—Group Settings
11.1.1.1 Control Box Configuration—[3-5-1] Group—Incoming Call Distribution Group—Group Settings—Member List

Feature Manual References

4.4.6 Floating Extension
5.1 Capacity of System Resources

2.3 Call Forwarding (FWD)/Do Not Disturb (DND) Features

2.3.1 Call Forwarding (FWD)

Description

Extensions can forward their calls to preset destinations. There are several different types of forwarding, and the circumstances under which the calls are forwarded for each type differ as follows:

Type	Circumstance
All Calls	Any time
Busy	When the extension user's line is busy.
No Answer	When the extension user does not answer within a preprogrammed time.
Busy/No Answer	When the extension user's line is busy or the user does not answer within a preprogrammed time.

[Available Destinations]

Destination	Availability
Wired Extension	✓
Incoming Call Distribution Group	✓
UM Group	✓

Conditions

[General]

- **Message Waiting**
  While calls are forwarded, Message Waiting information is not forwarded. Message Waiting information is indicated at the originally called extension. (→ 3.2.1.5 Message Waiting Notification—Lamp)

[No Answer and Busy/No Answer]

- **No Answer Time**
  The number of seconds before a call is forwarded is programmable for each extension.

PC Programming Manual References

8.1.1 Users—User Container—Add User/Edit User—Telephony Feature
17.1.2 My Portal—Telephony

Operating Manual References

1.4.1 Forwarding Calls

2.3.2 Do Not Disturb (DND)

Description

Incoming calls to an extension where DND is enabled will be rejected.

PC Programming Manual References

8.1.1 Users—User Container—Add User/Edit User—Telephony Feature
17.1.2 My Portal—Telephony

Operating Manual References

3.1.1 User Programming

2.4 Making Call Features

2.4.1 Intercom Call

Description

An extension user can call another extension user.

Conditions

- **Extension Number/Name Assignment**
  Extension numbers and names are assigned to all extensions.

PC Programming Manual References

8.1.1 Users—User Container—Add User/Edit User
→ Extension Number
→ Display Name

Operating Manual References

1.2 Making Calls

2.5 Transferring Features

2.5.1 Call Transfer

Description

An extension user can transfer a call to another extension.

[Available destination]

Destination	Availability
Wired Extension	✓
Incoming Call Distribution Group	✓
UM Group	✓

2.6 Administrative Information Features

2.6.1 Record Log Features

2.6.1.1 Station Message Detail Recording (SMDR)

Description

Automatically records detailed information for each extension.

1. **SMDR Output Port**
   The following output methods can be selected through system programming:
   → 12.1 Control Box Configuration—[11-1] Maintenance—Main—SMDR—SMDR Format—Port

Output Method	Description
Telnet compatible terminal emulator	SMDR information is sent to a Telnet compatible terminal emulator via LAN.

2. **SMDR Output Data**
   The following data will be recorded and sent to the SMDR output port:

   a. Intercom call information (outgoing)

   b. Control Box error log

   Memory for SMDR: A specified number of call records can be stored in the Control Box. If more calls are originated or received, the oldest record is overwritten by the newest one.

3. **SMDR Format Type and Contents**
   The following is an example of the output format.

```
Date    Time     Ext      Dial Number
(8 digits) (7)   (5)      (25)
-------------------------------------------------------------------------------
01/09/17 05:29PM 1126     EXT1460
01/09/17 06:23PM 1812     EXT1234
01/09/17 06:36PM 1460     EXT1253
01/09/17 06:42PM 1253     EXT1741
01/09/17 07:17PM 1253     EXT1812
   :        :        :        :
  (1)      (2)      (3)      (4)
```

[Explanation]
The following table explains the SMDR contents which are based on the numbers in the previous pattern examples. For the programmable items, refer to the following [Programmable Items].

Number in the Pattern	Item	Description
(1)	**Date**	Shows the date of the call.
(2)	**Time**	Shows the end time of a call as Hour/Minute/AM or PM.
(3)	**Ext (Extension)**	Shows the extension number of a user container or optional device, floating extension number, etc., which was engaged in the call.
(4)	**Dial Number**	**[Outgoing Intercom Call]** Shows "EXT" followed by the dialled extension number.

[Programmable Items]

Item	Description
Outgoing intercom call	Controls whether the outgoing intercom calls are recorded. → 12.1 Control Box Configuration—[11-1] Maintenance—Main —SMDR—Print Information—Intercom Call
Date order	The date order is changeable: month/day/year, day/month/year, year/month/day, year/day/month. → 12.1 Control Box Configuration—[11-1] Maintenance—Main —SMDR—SMDR Format—Date Format
Time format	Controls whether time is displayed in 12-hour or 24-hour format. → 12.1 Control Box Configuration—[11-1] Maintenance—Main —SMDR—SMDR Format—Time Format (12H / 24H)

Conditions

[General]

- SMDR data is not deleted even if the Control Box is reset.
- SMDR data from a user is not deleted even if the user is deleted.
  If the user is deleted while some SMDR data has not been output, the SMDR data may be output as SMDR data for a new user added later.
- If the Control Box is reset during a conversation, the call will not be recorded on SMDR.

[Output to a Telnet compatible Terminal Emulator]

- In order to activate a connection to a terminal emulator, the IP address of the mother board, port number, user ID ("SMDR"), and password must be entered.
- If a terminal emulator user incorrectly enters the user ID or password 3 times consecutively, an alarm will be sent and connection will not be possible for 10 minutes.
- Through system programming, it is possible to assign the Control Box port number and password.
- The terminal emulator application must be running constantly. If the application is terminated, call records that occur after the termination will be recorded in the Control Box's memory. However, if the number of call records exceeds the Control Box's capacity, older records will be deleted. Also, when the application restarts or is reconnected, duplicated call records may be output.

[Using SMDR with applications]
SMDR data can also be monitored by applications. For more information, see your application's documentation.

PC Programming Manual References

12.1 Control Box Configuration—[11-1] Maintenance—Main

Feature Manual References

5.1 Capacity of System Resources

2.6.1.2 Syslog Record Management

Description

By connecting the Control Box to a Syslog server over a LAN, it is possible to output local alarm information (major alarms/minor alarms) to an external PC.

Conditions

- To be able to use this feature, through system programming, it is required to enable this feature and register the IP address of the Syslog server.

PC Programming Manual References

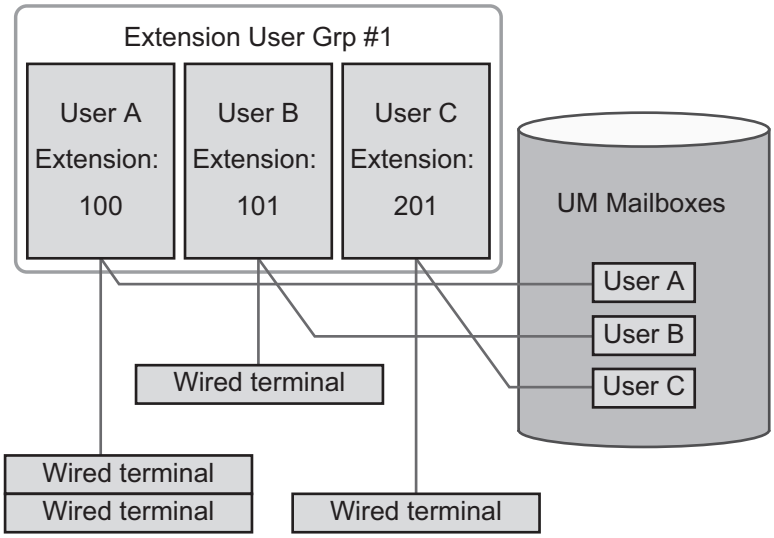
7.2.2 Utility—Log—Syslog
16.3.1 Network Service—[3-2] Client Feature—Syslog

2.7 User Container

Description

With User Containers, you can easily configure and maintain users by associating devices with each user.
All devices controlled by the Control Box must be associated with a User Container.

The integration configuration of the User Container is shown below.



User Container Concept

Example of the figure

- User A, B, and C are assigned to User Group #1,
  the main device of User A is assigned to the device with extension number 100.
  User B is assigned to Extension 101 and User C is assigned to extension 201 in the main device.
- In addition, user A has an additional device (sub device) registered in the User Container.

2.7.1 User Container

2.7.1.1 User Container Configuration

Description

The User Container is a "container" for linking the user to the usable devices.
You can easily monitor the users and devices by using this container.
All wired extensions integrated in the Control Box must be integrated into one of the User Containers.

1. **Amount of Users and Device Resources**
   The Control Box supports a maximum of 2000 User Containers. 1 User Container is reserved for the Administrator. The remaining 1999 User Containers are for general users.
   Up to 2 devices can be registered to each User Container. However, the maximum number of devices that can be registered is limited to 2000. Therefore, the actual number of User Containers that can be created may be less than 2000. In the example below, a main and sub device are registered to User Containers 1 and 3, so the maximum number of User Containers cannot be created.

Device Type	User Container Number					Limitations
	1	2	3	…	1,999	
Main	Registered	Registered	Registered	…	Unregistered	The total number of main and sub devices must be 2000 or less.
Sub	Registered	Unregistered	Registered	…	Unregistered	
UM mailbox	Registered	Registered	Registered	…	Unregistered	None.

Conditions

- A User Container contains a main device, a Unified Messaging mailbox, and an optional sub device.
- The user can use service features on any device by using the extension number of the main device as a representative number.
  This representative number is referred to as the main extension number.

PC Programming Manual References

8.1 Users—User Container

Operating Manual References

1.6 User Device Management

2.7.1.2 Editing User Settings

Description

Extension users can sign in to My Portal and change various settings related to their User Container.

Conditions

- Settings regarding the relation between the user and the devices cannot be configured.

PC Programming Manual References

17 My Portal

Operating Manual References

1.6 User Device Management

2.7.2 Call Control Feature

2.7.2.1 Main Device/Device Common

Description

By calling the user's main device, it is possible to send an incoming call signal to the main device and sub device registered in the User Container at the same time.
It is also possible to send an incoming call signal to a sub device at a predetermined time delay from the time of an incoming call to the main device depending on the user settings.

Conditions

- When one of the devices registered to the user answers a call incoming on multiple devices, the incoming signal on the other devices will be stopped and only the device that answered the call will be able to speak with the other party.

PC Programming Manual References

8.1.1 Users—User Container—Add User/Edit User

2.7.2.2 Sub Device

Description

1. Outbound call
   - Operations performed from a sub device are treated as if performed from the main device.
2. Inbound call
   [Parallel ringing]
   - Calls to the user also arrive on the sub device.
   - It is possible to send an incoming call signal to a sub device at a predetermined time delay from the time of an incoming call to the main device.
   - When the incoming call to the main device is stopped by the receiver modification feature, the incoming call to the sub device will also be stopped.
3. Call
   [Setting data between devices]
   - Sub devices operate based on the COS of the main device and/or the settings of each terminal.

Conditions

- The settings of the main device are obeyed when receiving a call when already on a call. At this time the incoming call is only displayed on the main device, however, by disconnecting the incoming call, the call will be displayed on all the devices as configured in the delay settings. However, the call will immediately arrive on the terminal on a call without applying the delay settings.

PC Programming Manual References

8.1.1 Users—User Container—Add User/Edit User

2.7.2.3 UM (Mailbox)

Description

- By assigning a main extension when adding a user, a UM mailbox with the same the extension as the user number will be created automatically, and it will automatically be associated with the user.
- The mailbox cannot be generated from the UM settings (Mailbox settings menu). The mailbox can only be generated as an effect of a user being generated.

Manager Mailbox	The mailbox for the system manager will be automatically created during initial start-up.

- When a new message has been recorded in a user's mailbox, a new message indication is sent to all the user's devices.

Conditions

- The below listed information is automatically reflected to the mailbox registered to the user by the settings configured in the User Container.
  If you change the settings in the User Container, the settings of the mailbox will also be updated accordingly.
  On the other hand, the settings of the mailbox registered to the user cannot be adjusted in the settings menu of that mailbox.
  - First Name, Last Name
  - Voice Mail Notification, Email address
  - COS

Feature Manual References

3.1 Unified Messaging System Administration

Section 3

Unified Messaging System

3.1 Unified Messaging System Administration

3.1.1 Unified Messaging System Overview

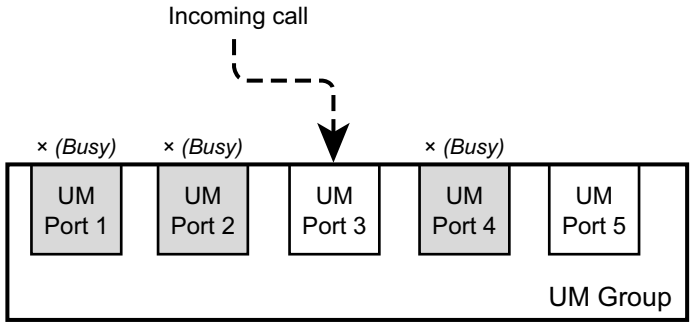
Description

The Control Box has a built-in messaging system that provides voice mail services to its subscribers.

Users
The user owns his/her own mailbox.
The following types of users exist in the Unified Messaging system:

- Subscriber (maximum 1999)
  A subscriber is an extension user who has a mailbox assigned to his extension. When subscribers log in to their mailbox, they can listen to and respond to messages left by other subscribers.
- System Manager (maximum 1)
  The system manager can send broadcast messages.

UM Ports and the UM Group
A port acts as a pathway into the Unified Messaging system, so when a call is directed to the Unified Messaging system, it requires one available UM port. The total number of available ports is 128.
The UM ports belong to the Control Box's UM group. This group has a floating extension number, which can be the destination for incoming calls, redirected calls, transferred calls, etc. When incoming calls are received at the floating extension number of the UM group, calls will hunt starting at the lowest UM port number.



Conditions

- As the Unified Messaging system is part of the same system as the Control Box, the Unified Messaging system's data coordinates with the Control Box settings.
- Each port is assigned an extension number.
  → 9.5 Control Box Configuration—[1-1] Configuration—Slot—UM Property—UM Port Property—Main—Extension Number
- When hunting for an available UM port, the Control Box ignores any FWD or DND settings (→ 2.3 Call Forwarding (FWD)/Do Not Disturb (DND) Features) applied to the ports.
  It is possible to call a port in a UM group directly. If a call is routed directly to a port in the group, it is possible to apply certain features (e.g., FWD) to that port.
- **DSP Resource Usage**
  Connecting to the Unified Messaging system requires a certain number of DSP resources. If all DSP resources are in use, this operation cannot be performed. (→ 4.4.2 DSP Resource Usage)

PC Programming Manual References

9.5 Control Box Configuration—[1-1] Configuration—Slot—UM Property—UM Port Property

11.2 Control Box Configuration—[3-7] Group—UM Group

Operating Manual References

1.5 Using the Unified Messaging Features

3.1.2 System Administration

Description

System administration (programming, diagnosis, system prompt administration, etc.) can be performed by the System Administrator using Web Maintenance Console. For more information, refer to the PC Programming Manual.

3.1.2.1 System Security

Description

Protects the Unified Messaging system from unauthorised programming and/or use. By default, the System Manager can access the system from his or her telephone because the relevant settings are enabled and a password is set.

PC Programming Manual References

15.1 UM Configuration—[7] System Security

3.2 System and Subscriber Features

3.2.1 System Features

Description

System management can be performed by the system manager using an extension telephone, or by the System Administrator using Web Maintenance Console.

3.2.1.1 Broadcasting Messages

Description

Allows the System Manager to deliver the same message to the mailboxes of all subscribers simultaneously.

Conditions

- This feature is only available for the System Manager.

Operating Manual References

Manager Operation

2.1.1 System Manager Features—Broadcasting Messages

3.2.1.2 Class of Service (COS)

Description

Each User Container is assigned a Class of Service (COS) that determines the set of services that are available to its subscriber. 514 COS classes are supported by the system.
User Containers can be assigned to their own or to the same COS as needed. COS number 514 is assigned to the System Manager. COS number 514 cannot be assigned to any other User Container.

Conditions

- The System Administrator (using a PC) can change COS assignments.
- COS 513 is reserved.

PC Programming Manual References

8.2 Users—Advanced Extension Settings—COS
14 UM Configuration—[2] Class of Service

3.2.1.3 Hospitality Mode

Description

Allows a subscriber to access certain subscriber services in a dedicated, 'hospitality' mode. Subscribers in hospitality mode can only listen to messages.

PC Programming Manual References

14.1 UM Configuration—[2] Class of Service—Hospitality Mode

3.2.1.4 Message Waiting Notification—E-mail Device

Description

Enables subscribers to be notified by e-mail when they have new messages. The notification will contain the message sender's information, the date and time of the message, the length of the message, and the number of messages (new/old). The voice message will also be attached to the e-mail notification.

Note

To receive notifications about missed calls, extension users should specify e-mail addresses in their user settings. (→ 4.3.1 E-mail Notification for Extension Users)

Conditions

- Depending on the settings of the sender and recipient, voice messages may not be sent or received properly.

PC Programming Manual References

8.1.1 Users—User Container—Add User/Edit User—Contact
14.1 UM Configuration—[2] Class of Service—General—E-mail Option
17.1.1 My Portal—Home
→ Email Address (Email 1–3)
→ Use for voice mail notification (Email 1–3)

Feature Manual References

4.3.1 E-mail Notification for Extension Users

Operating Manual References

Subscriber Operation

3.1.1 User Programming—Editing Settings in My Portal

3.2.1.5 Message Waiting Notification—Lamp

Description

Automatically lights the message waiting lamp on the subscriber’s telephone when subscribers have new messages.

3.2.1.6 System Prompts

Description

Are announcements that instruct a caller. The System Administrator can select which language is used for the prompts.

PC Programming Manual References

14.1 UM Configuration—[2] Class of Service—Prompt Mode

3.2.2 Subscriber Features

Description

Users who are assigned a mailbox in the Unified Messaging system are called subscribers.

3.2.2.1 Automatic Login

Description

Allows subscribers and managers to log in to their mailbox directly without entering the mailbox number. A subscriber/manager can log in to his or her mailbox directly by:

- dialling a Unified Messaging extension number directly from his or her extension.

3.2.2.2 Autoplay New Message

Description

It is possible to play new messages automatically when a subscriber logs into his or her mailbox. There is no need to press [1] to receive the new messages.

Conditions

- If there is more than one new message in the mailbox, it can be set whether or not messages will be played continuously without system prompts.

PC Programming Manual References

14.1 UM Configuration—[2] Class of Service—Mailbox
→ Autoplay New Message
→ Play New Messages Sequentially

3.2.2.3 Forwarding to a Mailbox

Description

A subscriber can set calls to be forwarded to the floating extension number of the UM group. In this case, the call is forwarded directly to the extension's mailbox. Therefore the caller can leave a message without knowing the mailbox number.

Feature Manual References

2.3.1 Call Forwarding (FWD)

3.2.2.4 Mailbox

Description

Is a place where all messages left for a subscriber are stored.

PC Programming Manual References

13 UM Configuration—[1] Mailbox Settings

Operating Manual References

Subscriber Operation

1.5.2 Logging in to and Configuring Your Mailbox

3.2.2.5 Mailbox Capacity Warning

Description

Allows the Unified Messaging system to alert subscribers when recording time for their mailboxes is running low. The warning announcement will be heard at the beginning of Subscriber's Service.

3.2.2.6 Web Programming

Description

Subscribers can access and change various settings via My Portal.

- **Mailbox settings**
  Subscribers can configure settings such as the name associated with their mailbox and notification parameters.

Conditions

- Subscribers must have a user ID and password to log in to My Portal.

PC Programming Manual References

17 My Portal

Feature Manual References

4.4.1 PC Programming

Operating Manual References

3.1 System Programming Using My Portal

Section 4

System Configuration and Administration Features

4.1 System Configuration—System

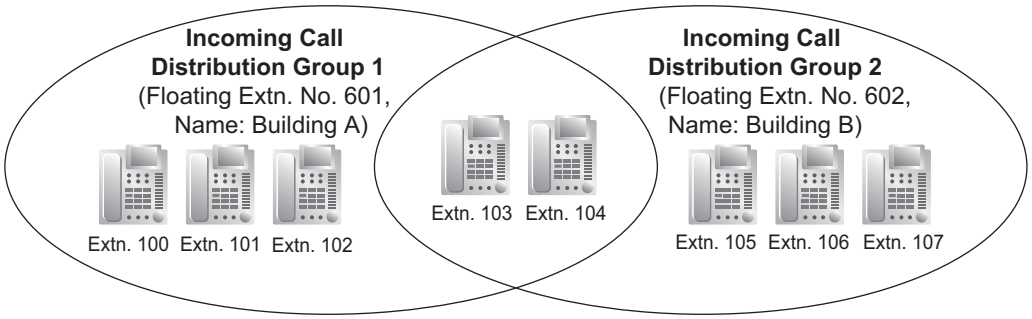
4.1.1 Group

Description

The Control Box supports various types of groups.

1. **Incoming Call Distribution Group**
   An incoming call distribution group is a group of extensions which receives incoming calls directed to the group. Each incoming call distribution group has a floating extension number and name. One extension can belong to multiple groups.
   → 11.1.1 Control Box Configuration—[3-5-1] Group—Incoming Call Distribution Group—Group Settings
   → 11.1.1.1 Control Box Configuration—[3-5-1] Group—Incoming Call Distribution Group—Group Settings—Member List
   (→ 2.2.1 Incoming Call Distribution Group)

   [Example]



2. **UM Group**
   A UM group is the collection of all Unified Messaging ports.
   (→ 3.1.1 Unified Messaging System Overview)
   → 11.2.1 Control Box Configuration—[3-7-2] Group—UM Group—Unit Settings

PC Programming Manual References

11 Control Box Configuration—[3] Group

Feature Manual References

4.4.6 Floating Extension
5.1 Capacity of System Resources

4.2 System Configuration—Extensions

4.2.1 SIP (Session Initiation Protocol) Extension

Description

The Control Box supports the connection of SIP telephones. SIP extensions make and receive calls using Internet Protocol (IP).

SIP Video Phone
Video phone calls can be established between SIP extensions with video phone capabilities.

Conditions

[General]

- The Control Box supports SIP devices that use RFC 3261, 3264, 3310, 2327, or 4028.
- Before a SIP extension can be used, the IP address of the main unit, password, and extension number must be assigned on both the SIP extension and the Control Box.
  For details on how to register, refer to the Installation Manual.
- When registering the SIP extension, the user ID must be the extension number of the SIP extension.
- **DSP Resource Usage**
  Making a call from a SIP extension requires a certain number of DSP resources, depending on the codec used. If all DSP resources are in use, this operation cannot be performed.

Installation Manual References

4.6 Registering IP Telephones

PC Programming Manual References

9.7 Control Box Configuration—[1-1] Configuration—Slot—V-SIPEXT128—Port Property

4.2.2 Peer-to-Peer (P2P) Connection

Description

The Control Box automatically establishes peer-to-peer communication between extensions. With peer-to-peer calls, the call is routed directly from one SIP extension to another without going through the DSP card, which means that P2P calls are established without using the Control Box's resources.

Conditions

- Three codecs are used for peer-to-peer calls: G.722, G.711, and G.729A. The speech quality of the codecs varies as follows: (High) G.722, G.711, G.729A (Low).
  When the preferred codec of each party differs, the call will be established using the lower codec. For example, if the caller prefers G.711 while the called party prefers G.729A, the call will be established using G.729A.
- The priority of the codec that will be used can be specified via the telephone itself.
- For non-peer-to-peer calls via the DSP card, calls cannot be made or received when all of the card’s resources are being used.
- The Control Box supports H.263/H.264 codecs for P2P video communication.

4.3 E-mail Notification Features

4.3.1 E-mail Notification for Extension Users

Description

An e-mail can be sent to extension users, notifying them of events such as when they receive a new voice message. Notifications can be sent for the following events:

- New UM voice message
- Missed call
- Sensor Notification/Emergency Notification
- User password expiration notification

Conditions

- To send e-mail notifications, the SMTP server settings must be configured.
- Up to 3 e-mail addresses can be registered for each extension user.
- The maximum file size of the e-mail attachment is 30 MB. Files that exceed this size cannot be sent as an attachment.

PC Programming Manual References

8.1.1 Users—User Container—Add User/Edit User
16.2.4 Network Service—[2-7] Server Feature—SMTP
17.1.1 My Portal—Home
→ Email Address (Email 1–3)
→ Use for missed call notification (Email 1–3)
→ Use for voice mail notification (Email 1–3)

Feature Manual References

3.2.1.4 Message Waiting Notification—E-mail Device

Operating Manual References

3.1.1 User Programming—Editing Settings in My Portal

4.3.2 E-mail Notification of System-level Events

Description

An e-mail can be sent to administrators or other specified e-mail addresses when certain system-level events occur. Notifications can be sent for the following events:

Event	Details
System alarm	An e-mail is sent to users registered as an administrator, and to up to two additional e-mail addresses. Reported alarm information includes the following • Error message which is detected by the Control Box
Software update	Notifications can be sent for the following types of software update events: **1.** A software update has been successfully installed.

Conditions

- To send e-mail notifications, the SMTP server settings must be configured.

PC Programming Manual References

5.1 System Control—Program Update
7.3 Utility—Email Notification
16.2.4 Network Service—[2-7] Server Feature—SMTP

Feature Manual References

4.4.7 Software Upgrading

4.4 System Data Control

4.4.1 PC Programming

Description

There are 2 levels of authorisation for programming the Control Box, where each level controls which settings the programming is allowed to access and change.

Level	Description
Administrator	For System Administrators
User	For end users User-level accounts can log in to My Portal.

Conditions

- Each account is assigned a password that is required to log in.

CAUTION

To the Administrator regarding account passwords

1. To avoid unauthorised access and possible abuse of the Control Box, keep the passwords secret, and be aware of the importance of the passwords, and the possible dangers if they become known to others.
2. The Control Box has no passwords set initially. For security, select a secure password as soon as the Control Box is installed at the site.
3. Change the passwords periodically.
4. It is strongly recommended that passwords of 10 numbers or characters be used for maximum protection against unauthorised access.

Installation Manual References

4.3 Starting Web Maintenance Console

PC Programming Manual References

2.1.1 Web Maintenance Console Accounts
8 Users
17 My Portal

Operating Manual References

3.1 System Programming Using My Portal

4.4.2 DSP Resource Usage

Description

To digitally process audio signals, such as a telephone call, the Control Box must use a certain number of DSP (Digital Signal Processing) resources. DSP resources are provided by the DSP card installed in the Control Box. Since there are a limited number of DSP resources, no further operations (e.g., telephone calls) can be performed if all resources are being used.
The following list shows some of the basic operations that require DSP resources.

- SIP extension call

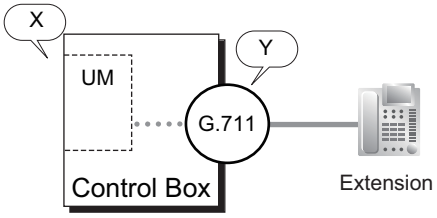
- Accessing the Unified Messaging system (including recording calls)

For SIP extension calls, the number of required resources differs depending on the codec (G.711 or G.729) used.

Examples of DSP resource usage

Fundamentally, the number of resources required for a given situation is the sum of the resources required for each individual operation. The following examples illustrate DSP resource usage in various situations.

[Unified Messaging access]



Playing back messages from or recording messages to the Unified Messaging (UM in the figure above) system requires DSP resources, X in this example, in addition to the resources required for the G.711 codec (Y). The total cost is X + Y.

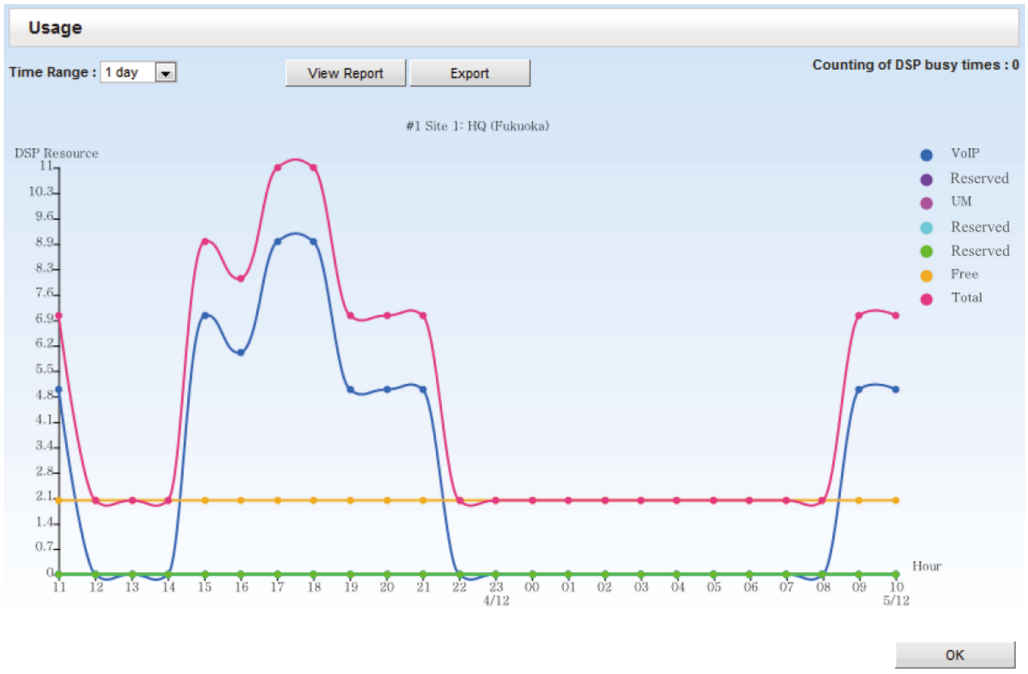
DSP usage graph

The Control Box keeps a record of the maximum DSP usage per hour for each of the following features/ services. A graph can then be displayed in Web Maintenance Console showing trends in DSP usage over time, as well as the number of calls and operations that could not be performed due to lack of resources.

- VoIP (SIP extension usage)
- Unified Messaging

The graph also shows the amount of free resources and the total resource use.

[Example]



Conditions

[DSP usage graph]

- The most recent 30 days of DSP usage is recorded.
- The scale of the graph can be set to 1-hour, 4-hour, or 24-hour intervals.
- The maximum value of the vertical axis is the maximum recorded DSP usage value, and not the available DSP resource capacity.
- To view the number of times DSP resources are measured as busy, see **Counting of DSP busy times**.
- The state of DSP resource usage can be outputted as a CSV file by clicking **Export**.

PC Programming Manual References

9.2 Control Box Configuration—[1-1] Configuration—Slot—System Property—Main—DSP CODEC G.711 only (SIP extension)
9.8 Control Box Configuration—[1-5] Configuration—DSP Resource

Feature Manual References

3.2 System and Subscriber Features
4.2.1 SIP (Session Initiation Protocol) Extension

4.4.3 Automatic Time Adjustment

Description

It is possible to adjust the Control Box's clock automatically in the following two ways:

a. **Summer Time (Daylight Saving Time) Setting:**
The start and end dates of the summer time can be programmed. The clock will be adjusted (one hour forward or backward) at 2:00 AM of the programmed date, if enabled through system programming. It means 2:00 AM will become 3:00 AM on the start date of the summer time, and 2:00 AM will become 1:00 AM on the end date.

b. **Time Information through Network Time Protocol (NTP):**
By connecting the Control Box to an NTP server, it is possible to receive and update the time setting. The clock will be adjusted every day at 3:05 AM, if enabled through system programming.

Conditions

- SMDR will record the call information using the Control Box clock so that the recording time will be overlapped at the end of summer time.

PC Programming Manual References

10.1.1 Control Box Configuration—[2-1-1] System—Date & Time—Date & Time Setting
10.1.2 Control Box Configuration—[2-1-2] System—Date & Time—SNTP / Daylight Saving—Automatic Time Adjustment—Automatic Time Correction on Stand-alone mode
10.1.2.1 Control Box Configuration—[2-1-2] System—Date & Time—SNTP / Daylight Saving—Daylight Saving

Feature Manual References

2.6.1.1 Station Message Detail Recording (SMDR)

4.4.4 Dynamic Host Configuration Protocol (DHCP) Server

Description

The Control Box has a built-in DHCP server. When the DHCP server is enabled, the Control Box will automatically assign IP addresses to other devices on the network, such as extension telephones.

Using a DHCP server simplifies network management by removing the need to assign IP addresses to devices manually.

Conditions

- The DHCP Server feature cannot be used if the Control Box's IP address assignment mode is set to DHCP.
- If the Control Box's DHCP server is enabled, make sure that no other DHCP servers are running on the same network. Having more than one DHCP server on a network can result in network errors.
- For the following settings, the Control Box delivers the settings of its LAN port to devices: subnet mask, default gateway address, and DNS server addresses.

PC Programming Manual References

16.2.1 Network Service—[2-1] Server Feature—DHCP(LAN)

4.4.5 Flexible Numbering

Description

To dial another extension user or to access Control Box features, the access numbers (extension numbers or feature numbers) are required.

[Flexible Numbering Table]

- Extension Numbers

Feature	Default
Extension Numbering Scheme 1–127—Leading Number	None
Extension Numbering Scheme 128—Leading Number	970

- Feature Numbers (cannot be changed)

Feature	Default
FWD/DND set/cancel—Internal	✳ 712
FWD/DND No Answer Timer set	✳ 713

PC Programming Manual References

10.2.1 Control Box Configuration—[2-6-1] System—Numbering Plan—Main

Feature Manual References

5.1 Capacity of System Resources

Operating Manual References

4.2.1 Feature Number Table

4.4.6 Floating Extension

Description

Virtual extension numbers can be assigned to resources to make them appear as extensions. This feature is also known as Floating Station.
These numbers are defined as floating extension numbers and can be assigned as a destination of incoming calls etc.

Resource		Description	Default
Group	**Incoming Call Distribution Group**	Used to call an incoming call distribution group. (→ 2.2.1 Incoming Call Distribution Group)	None
	UM Group	Used to call a UM group.	97001

Conditions

- It is possible to give names to floating extension numbers.

PC Programming Manual References

10.2.1 Control Box Configuration—[2-6-1] System—Numbering Plan—Main—Extension
11.1.1 Control Box Configuration—[3-5-1] Group—Incoming Call Distribution Group—Group Settings—Main
→ Floating Extension Number
→ Group Name
11.2.1 Control Box Configuration—[3-7-2] Group—UM Group—Unit Settings—Floating Extension No.

Feature Manual References

3.1.1 Unified Messaging System Overview
4.4.1 PC Programming

4.4.7 Software Upgrading

Description

The main software of the Control Box can be updated. The update files can be uploaded to the Control Box from Web Maintenance Console.
The following software can be updated:

Data Type	Description
Main software data	Operating system data area on the Control Box's mother board.

Conditions

- The software version of the mother board can be confirmed through system programming.

PC Programming Manual References

5.1 System Control—Program Update

4.5 Fault Recovery/Diagnostics

4.5.1 Power Failure Restart

Description

When turning the electricity back on, the Control Box restarts the stored data automatically and will record the event (System Restart) in the error log.

Conditions

- In the event of a power failure, the Control Box's memory is protected by a factory-provided lithium battery.

4.5.2 Dynamic Host Configuration Protocol (DHCP) Assignment

Description

It is possible to assign the Control Box as a Dynamic Host Configuration Protocol (DHCP) client, allowing IP addresses to be received from a DHCP server over a LAN.

Conditions

- It is possible to enable this feature through system programming.

Notice

It is important to set your DHCP server to not change the IP addresses of the mother board and DSP card after IP devices have been registered to the Control Box. Those devices will not operate properly if these IP addresses are changed.

PC Programming Manual References

16.1 Network Service—[1] IP Address/Ports—Basic Settings
→ LAN Setting—Obtain an IP address automatically/Use the following IP address
→ LAN Setting—IP Address
→ DSP IP Setting—Obtain DSP IP address automatically/Use the following DSP IP address

4.5.3 PING Confirmation

Description

It is possible to confirm the connection of IP telephones, routers, and hubs within or outside the private network using PING. The Control Box will send an Internet Control Message Protocol (ICMP) echo request through the PC programming terminal and receive an ICMP message confirming connection.

Conditions

- The Control Box performs PING as follows:
  - Test packet length: 56 bytes
  - Ping attempts: 5
  - Time out length: 1 second
  - Ping interval time: 1 second

PC Programming Manual References

7.1.1 Utility—Diagnosis—Ping

4.5.4 System Monitoring

Description

The Control Box monitors the status of the system and records this information. This status information can be acquired in the following ways:

- Web Maintenance Console interface
  The monitoring status of the target items is displayed in Web Maintenance Console.
- Alarm Notification
  If the target item is in a congested state, it is recorded in the Syslog, alarm notification will be performed. (→ 2.6.1.2 Syslog Record Management)

Below the possible acquisition of items per acquisition method is shown.

Item	Web-MC Display	Alarm Notification
CPU Usage (%)	✓	✓
Control Box Internal Memory Free Block Usage (%)		✓
Memory Usage (%)	✓	✓
Storage Usage (%)	✓	✓
Internal Storage Lifespan		✓

[Integrated Terminal Monitoring]
The operational status of terminals (IP telephones) connected to the system can also be monitored by the Control Box. IP telephones and DSP resources can be monitored. The monitor method accumulates the results of the keep-alive every hour. The success rate is displayed 24/7 in Web Maintenance Console.

PC Programming Manual References

9.2 Control Box Configuration—[1-1] Configuration—Slot—System Property—System Status

Section 5
Appendix

5.1 Capacity of System Resources

System

Item	Capacity
COS	512
Extension number	1 – 5 digits
SMDR Call Storage	160,000 calls

Groups

Item	Capacity
User Group	512
Incoming Call Distribution Group	256 (128 extensions/group)

Unified Messaging

Item	Capacity
Number of Users (Number of general mailboxes)	1,999
Class of Service	514
UM Channel	128
UM recording time	200 hours
Message length	1–60 min
UM System Manager	1
Maximum Messages (per mailbox)	9,000

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