FURUNO

OPERATOR'S MANUAL

INMARSAT
FLEETBROADBAND

Model **FELCOM251**
FELCOM501

FURUNO ELECTRIC CO., LTD.

www.furuno.com

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(YOTA) FELCOM251/501

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IMPORTANT NOTICES

General

- This manual has been authored with simplified grammar, to meet the needs of international users.
- The operator of this equipment must read and follow the instructions in this manual. Wrong operation or maintenance can void the warranty or cause injury.
- Do not copy any part of this manual without written permission from FURUNO.
- If this manual is lost or worn, contact your dealer about replacement.
- The contents of this manual and the equipment specifications can change without notice.
- The example screens (or illustrations) shown in this manual can be different from the screens you see on your display. The screens you see depend on your system configuration and equipment settings.
- Save this manual for future reference.
- Any modification of the equipment (including software) by persons not authorized by FURUNO will void the warranty.
- The following concern acts as our importer in Europe, as defined in DECISION No 768/2008/EC.
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  - Address: Siriusstraat 86, 5015 BT, Tilburg, The Netherlands
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How to discard this product

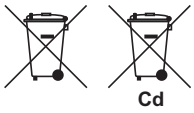
Discard this product according to local regulations for the disposal of industrial waste. For disposal in the USA, see the homepage of the Electronics Industries Alliance (http://www.eiae.org/) for the correct method of disposal.

How to discard a used battery

Some FURUNO products have a battery(ies). To see if your product has a battery, see the chapter on Maintenance. Follow the instructions below if a battery is used. Tape the + and - terminals of battery before disposal to prevent fire, heat generation caused by short circuit.

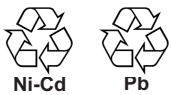
In the European Union

The crossed-out trash can symbol indicates that all types of batteries must not be discarded in standard trash, or at a trash site. Take the used batteries to a battery collection site according to your national legislation and the Batteries Directive 2006/66/EU.



In the USA

The Mobius loop symbol (three chasing arrows) indicates that Ni-Cd and lead-acid rechargeable batteries must be recycled. Take the used batteries to a battery collection site according to local laws.



In the other countries

There are no international standards for the battery recycle symbol. The number of symbols can increase when the other countries make their own recycle symbols in the future.

⚠ SAFETY INSTRUCTIONS

Read these safety instructions before you operate the equipment.

⚠ WARNING	Indicates a condition that can cause death or serious injury if not avoided.
⚠ CAUTION	Indicates a condition that can cause minor or moderate injury if not avoided.

⚠ Warning, Caution ⃠ Prohibitive Action ❗ Mandatory Action

⚠ WARNING

Do not open the equipment.

This equipment uses high voltage that can cause electrical shock.
Only qualified persons can work inside the equipment.

Turn off power at switchboard if the something is dropped inside the equipment.

Fire or electrical shock can result if the power remains on.

Turn off power at switchboard if the equipment is emitting smoke or fire.

Fire or electrical shock can result if the power remains on.

Turn off power at switchboard immediately if you feel the equipment is not working properly.

Fire or electrical shock can result if the power remains on.

⚠ WARNING

Do not dissasemble or modify the equipment.

Fire, electrical shock or bodily injury can result.

Do not operate the equipment with wet hands.

Fire or electrical shock can result.

Keep the equipment away from rain, water and water splash.

Fire or electrical shock can result if water gets into the equipment.

Use the correct fuse.

Use of a wrong fuse can cause fire.

Do not place liquid-filled containers on the top of the equipment.

For or electrical shock can result

⚠ WARNING

Do not approach the radome closer than 2.0 m (FELCOM 501) or 1.0 m (FELCOM 251) when it is transmitting.

The radome emits radio waves which can be harmful to the human body, particularly the eyes.

Radiation Level	FELCOM501 distance	FELCOM251 distance
100W/m^2	0.4 m	0.2 m
10W/m^2	2.0 m	1.0 m

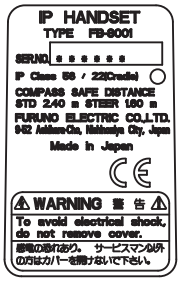
⚠ CAUTION

The glass of an LCD panel breaks easily. Handle the LCD carefully.

Injury can result if the glass breaks.

Warning Label

Warning label is attached to the equipment. Do not remove the label. If the label is lost or damaged, contact a FURUNO dealer about replacement.



Name: Name Plate
Type: 16-025-3525-0
Code No.: 100-422-940-10

505 Emergency Call

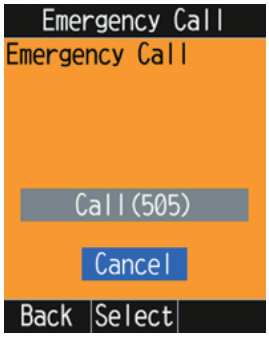
In the event of an emergency, do the following to make an emergency call:

Note: 505 emergency calling is an INMARSAT service and is not GMDSS compliant.

1. At the main screen, press the key.
   The [Call] screen appears.
2. Press the key to open the sub-menu.
3. Press ▲ or ▼ to select the [Rescue Call] menu, then press the **Enter** key.



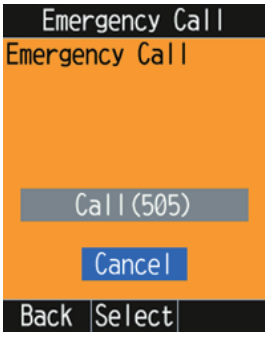
Safety Voice handset screen



Other handset screen

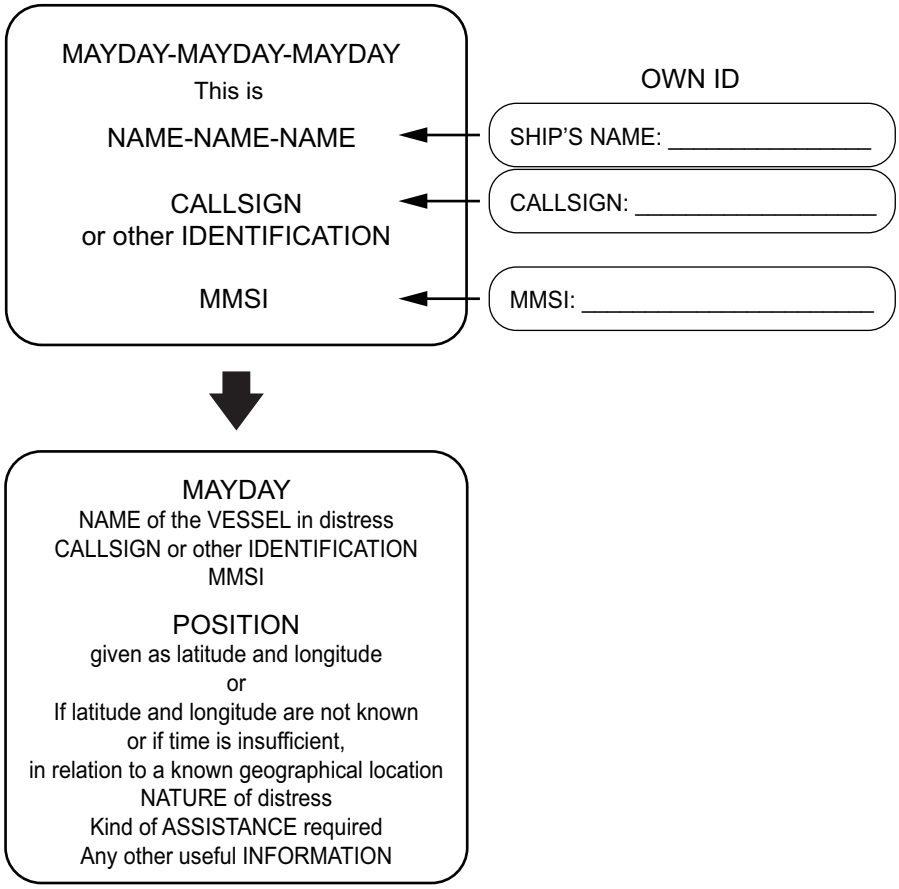
If your IP Handset is not a Safety Voice Handset, go to step 5. The Safety Voice Handset has the icon in its status bar.

4. Press ▼ to select the [Emergency Call] menu, then press the **Enter** key.



5. Press ▲ to select the [Call (505)] the menu, then press the **Enter** key.
   You will be automatically connected to the closest RCC.

6. When the RCC responds, follow the below procedure, speaking clearly and slowly.



The responding RCC will take the appropriate action.

32/38/39 Urgency Call

The following short codes are available for urgency calls:

- 32: Urgency Medical Advice
- 38: Urgency Medical Assistance
- 39: Urgency Maritime Assistance

Note 1: 32/38/39 urgency calling is an INMARSAT service and is not GMDSS compliant.

Note 2: 32/38/39 urgency calling requires a safety voice contract with your service provider and also requires connection to the Alarm Panel (available as an optional extra).

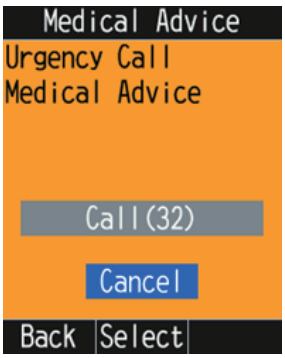
Note 3: You can only make the urgency call from the Safety Voice Handset. The Safety Voice Handset has the icon in its status bar.

In the event of an urgency, do the following to make an urgency call:

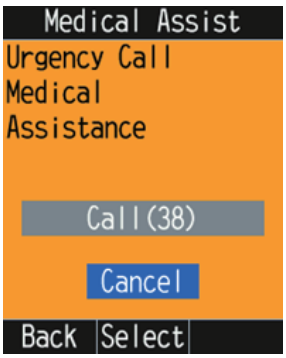
1. At the main screen, press the key.
   The [Call] screen appears.
2. Press the key to open the sub-menu.
3. Press ▲ or ▼ to select the [Rescue Call] menu, then press the **Enter** key.
   If your IP Handset is not a Safety Voice Handset, the following menu is not displayed. The Safety Voice Handset has the icon in its status bar.



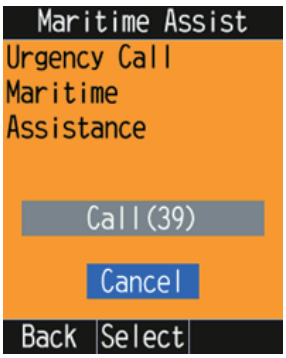
4. Press ▲ or ▼ to select [Medical Advice], [Medical Assist], or [Maritime Assist] menu, then press the **Enter** key.



For [Medical Advice]



For [Medical Assist]



For [Maritime Assist]

5. Press ▲ to select the [Call (32)], [Call (32)], or [Call (39)] menu.
6. When the call is answered, speak clearly and slowly to provide the requested information.

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FOREWORD

A Word to the Owner of the FURUNO FELCOM251/501

Congratulations on your choice of the FURUNO FELCOM251/501 Inmarsat Fleetbroadband Ship Earth Station. We are confident you will see why the FURUNO name has become synonymous with quality and reliability.

Since 1948, FURUNO Electric Company has enjoyed an enviable reputation for quality marine electronics equipment. This dedication to excellence is furthered by our extensive global network of agents and dealers.

This equipment is designed and constructed to meet the rigorous demands of the marine environment. However, no machine can perform its intended function unless operated and maintained properly. Please carefully read and follow the recommended procedures for operation and maintenance.

We would appreciate hearing from you, the end-user, about whether we are achieving our purposes. Thank you for considering and purchasing FURUNO equipment.

Features

The FELCOM251/501 consists of an antenna unit, communication unit, and a IP Handset. The FELCOM251/501 provides telephone, facsimile and data services.

The main features of the FELCOM251/501 are:

- Conforms to the following standards: IEC 60945 Ed.4.0, IEC 60950-1 Ed.2.0, IEC 62311 Ed.1.0, IEC 62368-1 Ed.2.0
- SIM card based billing
- Voice communication: 4 kbps AMBE+2 or 3.1kHz Audio
- Facsimile: 3.1 kHz Audio
- 64kbps ISDN UDI transmission (FELCOM501 only)
- Packet Communication

Packet	FELCOM251	FELCOM501
Standard IP (best effort)	Max. 284 kbps	Max. 432 kbps
Streaming IP	8 kbps, 16 kbps, 32 kbps, 64 kbps, 128 kbps	8 kbps, 16 kbps, 32 kbps, 64 kbps, 128 kbps, 256 kbps

- Simultaneous voice and data transmission
- SMS with a maximum size of 1120 characters per message available with the Short Message Service
- Data packet billing-based internet connection
- Compatible with Multi Voice, Alternative MS-ISDN, FX (Fleet Xpress) and Safety Voice services.

Note: ISDN UDI data streaming and IP packet communication can incur high costs depending on communication time. Note that unexpectedly high costs could occur.

Software Information

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This product uses the software module that was developed by the Independent JPEG Group.

Program No.

- 1650265-01.**
  ** denotes minor modifications.

Unavailable IP addresses

The following IP address ranges are used by the system internally and should not be used when configuring a network which includes this system.

- 192.168.1.0 to 192.168.13.0
- 192.168.50.1 to 192.168.93.1
- 192.168.61.1 to 192.168.61.44

CE declaration

With regards to CE declarations, please refer to our website (www.furuno.com) for further information about RoHS conformity declarations.

Disclosure of Information about China RoHS

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ppp-custom

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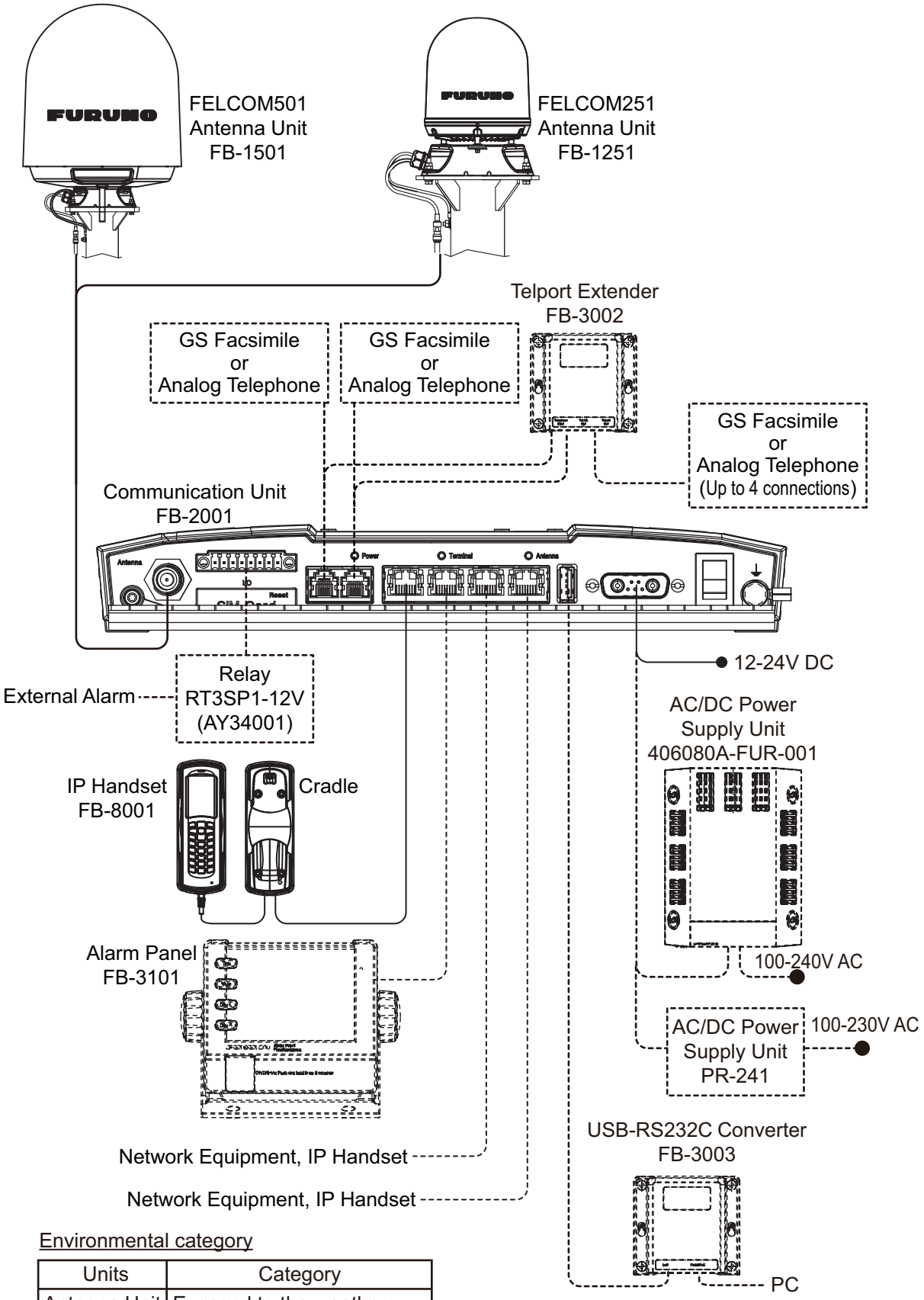
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SYSTEM CONFIGURATION



Environmental category

Units	Category
Antenna Unit	Exposed to the weather
Other Units	Protected from the weather

Caution when connecting shipboard network to FELCOM251/501

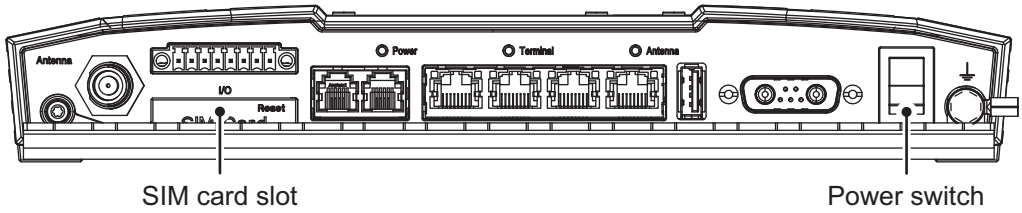
If the FELCOM251/501 is connected to a shipboard network that has a data monitoring system or the like, the FELCOM251/501 can become unstable when the equipment in the network transmits large volumes of broadcast packets. If this type of shipboard network is connected to the FELCOM251/501, consultation with the network system manager is necessary to provide measures to ensure the FELCOM251/501 operates stably.

An example of a system that transmits and receives large volumes of broadcast data is a data monitoring system which has equipment that transfers large data (images, etc.) in short intervals. One remedy is to connect a router (that is capable of handling large volumes of data) between the shipboard network and the FELCOM251/501.

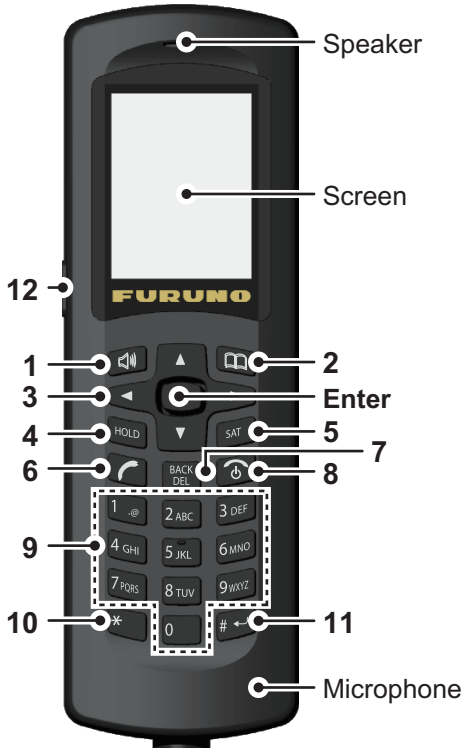
1. BASIC OPERATION

1.1 Communication Unit and IP Handset Overview

1.1.1 Communication Unit



1.1.2 IP Handset



No.	Key	Function
1		• Opens the [Volume] screen. • Softkey (Lower left menu item button)
2		• Opens the [Contacts] list/call history. • Softkey (Lower right menu item button)
3	▲	• Moves the cursor up. • Increases the volume. • On main screen: increase the brilliance. **Note:** On screens other than the main screen, hold the **0** key and press ▲ to increase the brilliance.

No.	Key	Function
3	▼	• Moves the cursor down. • Decreases the volume. • On main screen: decrease the brilliance. **Note:** On screens other than the main screen, hold the **0** key and press ▼ to decrease the brilliance.
	◀	Moves the cursor left.
	▶	Moves the cursor right
	Enter 	• Confirms the selected item. • Confirms the input settings. • Softkey (Lower center menu item button)
4		Places the current call on hold.
5		Moves to the [SAT Selection] screen.
6		• Moves to the [Call] screen. • Calls to the input number. • Answers an incoming call.
7		• Returns to the previous screen. • Erases a number or letter.
8		• Moves to the main screen. • Hangs up phone. • Cancels outgoing call. • Press the key more than three seconds to restart IP Handset.
9	1. @	Enters phone number and text.
	2ABC	
	3DEF	
	4GHI	
	5JKL	
	6MNO	
	7PORS	
	8TUV	
	9WXYZ	
	0	
10	*	• Single press: Enters * symbol. • Double press: Enters + symbol.
11	#	• Enters symbol (#). • Inputs line feed code.
12	SLEEP	Press the key more than one second to turn off a LCD backlight.

1.2 SIM Card

Note: The FELCOM251/501 uses only Inmarsat Fleetbroadband compatible SIM cards.

Individual user information is stored on the SIM card. The system reads information when the SIM card is inserted. The user registration number is saved on the SIM card, and it is possible to transmit with different SIM cards from one terminal. In this case, the transmission fees are charged to the person registered to the SIM Card.

There are 4 registration codes on the SIM card, [PIN1], [PUK1], [PIN2], [PUK2]. This unit does not use the code [PIN2] and [PUK2]. Be sure to carefully write down the [PIN1] and [PUK1] code numbers and do not lose or forget them.

PIN code

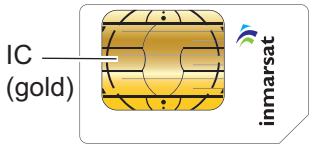
To prevent unauthorized use by a third party, there is a 4-8 digit PIN (Personal Identification Number) code. When the unit is turned on, the user will be prompted to enter the PIN code if required. Enter the [PIN1] code. If the wrong code is entered 3 times, the system will lock and the Communication Unit cannot be used.

PUK code

If the system locks, use the 8-digit PUK (PIN Unblocked Key) code to unlock the system. Use the code [PUK1]. If the wrong PUK code is entered 10 times, the SIM card will cease operating. If this happens, contact the retailer of the SIM card.

Handling the SIM card

- Ensure the power is off before inserting/removing the SIM card.
- Do not touch the IC part of the SIM card.



- Always remove the SIM card by hand.

1.3 Power On/Off

How to turn on

The **POWER** switch on the front panel of the Communication Unit switches the following units on/off:

- IP Handset
- Communication Unit
- Antenna Unit
- Alarm Panel (option)

1. By hand, peel the card slot cover from the right end on the front of the Communication Unit to show the SIM card port.
   If the SIM card is already inserted in the SIM card port, go to step 5.

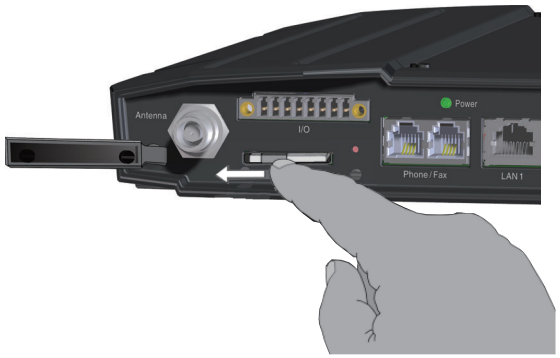


2. Insert the SIM card IC face down into the card port.



   To eject the SIM card, push it in with your finger.

3. Slide the lock in front of the SIM card.



4. Replace the card slot cover peeled at step 1.

5. Turn on the power switch on the Communication Unit.
   IP Handsets connected to the Communication Unit can take up to 40 seconds to power up and show the start-up screen.



   Wait approximately three minutes for the main screen to display.

   When the main screen Shows the icons and in green on the status bar, communication is possible.



Main screen

Note 1: Usually, a few minutes is required for the above screen to display. If there are obstacles or interference in the path of the satellite, more time may be required.

Note 2: You may be asked for PIN code depending on SIM card settings. If password is required, go to step 6.

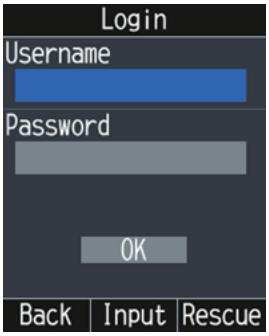
Note 3: You can call the 505 emergency or 32/38/39 urgency number with no PIN code. Press the key to select [Rescue]. See section 2.4 how to use the rescue call.



6. Press the **0** to **9** key to input the 4- to 8-digit PIN code.
7. Press ▲ or ▼ to select [OK], then press the **Enter** key.
   If the PIN code is input correctly, the main screen appears on the IP Handset. If input wrong, the message "Invalid PIN" appears.

If the PIN code is locked

If the wrong PIN code is input three times, the current PIN number becomes locked and the following screen appears.



Do the procedure below to unlock the PIN code.

1. Press ▲ to select the [Username] field, then press the **Enter** key.
2. Input "Admin" (without the quotation marks), then press the **Enter** key.
   For how to input the user name, see section 1.5.2.
3. Press ▼ to select the [Password] field.
4. Input the password (default: Fb1234567890), then press the **Enter** key.
   For how to input the password, see section 1.5.2.
5. Press ▼ to select [OK], then press the **Enter** key.
   The [Input PUK] screen appears.



6. Press the **0** to **9** key to input the 8-digit PUK code.
7. Press ▲ or ▼ to select the [Input new PIN] field.
8. Press the **0** to **9** key to input the new 4- to 8-digit PIN code.
9. Press ▲ or ▼ to select [OK], then press the **Enter** key.
   If the PUK code is input correctly, the main screen appears on the IP Handset. If input wrong, the message "Invalid PUK" appears.

If the wrong PUK code is input ten times, the current PUK number becomes locked and the following screen appears.



IP Handset and Web interface operational ability

The following operations are possible using the IP Handset and Web interface:

Item	IP Handset	Web interface
Phone	Yes	No
Contacts	Yes	Yes
SMS (Short Message Service)	No	Yes
Internet	No	Yes
IP Handset settings	Yes	No
Communication Unit settings	No	Yes

1.4 Screen Layout

IP Handset Screen



Status bar
Time
Date (UTC or local)
Ship latitude
Ship longitude
Satellite in use
Voice status*1
Data status*2

*1: Processing
Ready
Voice (Voice line in use)
Fax (Fax in use)
ISDN (ISDN in use)

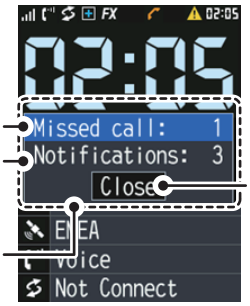
*2: Not connected
Connected
Processing
No permission
(Data transmission not permitted)

Status bar indications

Icon	Definition
	Shows the strength of the reception signal with up to four bars. Four bars indicates a strong signal. If there is no signal bar, communication is not possible.
	Green: Voice is ready. White: Voice is not ready.
	Green: Data transmission is ready. (Requires data connection.) White: Data transmission is not ready.
	Appears when this handset is assigned as a Safety Voice handset.
	FX mode: Shows when FX mode is active. See "Important Notices" at the start of this manual for more details.
	Missed call: Appears when incoming call is missed.
	New Message: Shows when a new SMS message arrives.
	Shows when there is an unacknowledged event. The buzzer sounds when this icon appears.
	Shows the current UTC or local time.

Notification pop-up window

The pop-up window appears when an call is missed, or when an unread event exists.
?The number of missed calls/unread events appears with each indication.



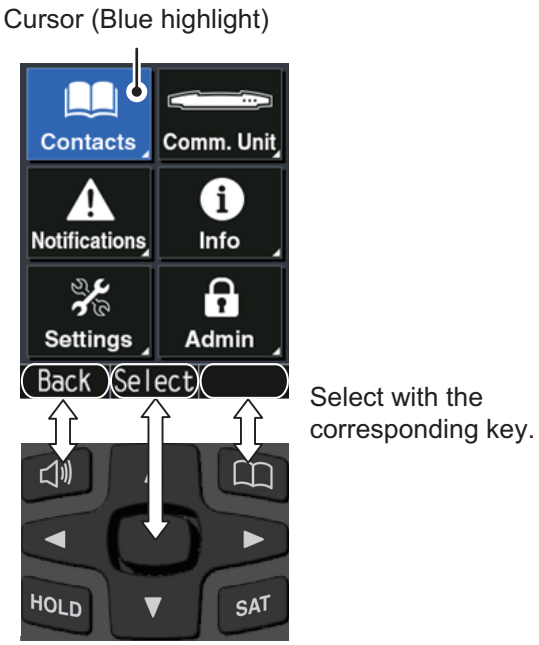
Missed calls (unchecked)
Unread events
Notification pop-up window
Press ▼ to select [Close], and press the **Enter** key to close the pop-up window.

Once closed, this window does not appear again until a new missed call or event occurs.

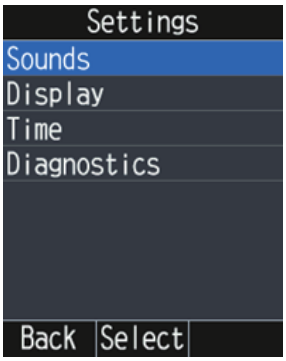
1.5 Basic Operation of the IP Handset

1.5.1 Menu operations overview

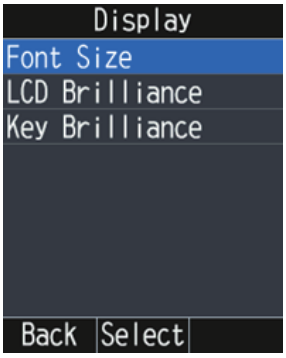
1. At the main screen, press the **Enter** key to open the main menu.
   The IP Handset main menu has six items: [Contents], [Comm. Unit], [Notifications], [Info], [Settings], and [Admin].



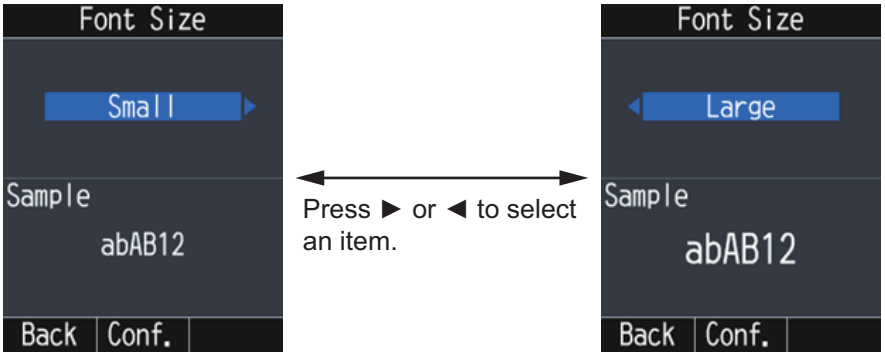
2. Press ◀, ▲, ▶ or ▼ to select a menu item.
   The selected item is highlighted in blue.
3. Press the **Enter** key to choose [Select].
   The corresponding menu appears for the selected item. For example, if you select [Settings] at step 2, the following menu appears.



4. In the selected menu, press ▲ or ▼ to choose a menu item, then press the **Enter** key to open the item.
   As an example, the [Display] menu is shown below.



5. In the selected menu, press ▲ or ▼ to choose a menu item, then press the **Enter** key to open the item.
   The item screen appears. As an example, the [Font Size] screen is shown below.



   Items indicated with a ► or ◄ to either side have additional options available.

6. Press ► or ◄ to select the appropriate option, then press the **Enter** key.

7. Press  to go back to the main screen.

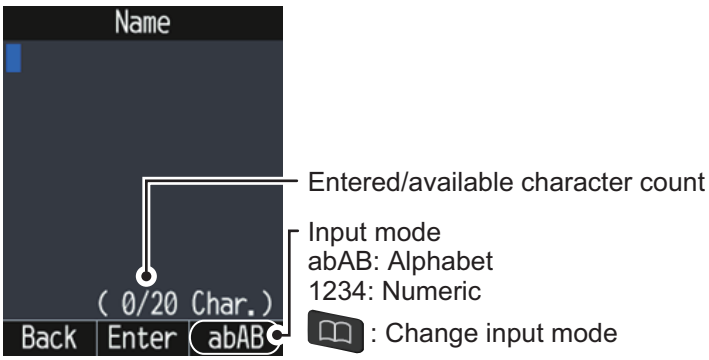
1.5.2 How to input characters

Input alphabet and numeric characters using the keys on the IP Handset. Press the key once to input a number, or press repeatedly to cycle through alphabet characters.

Key	Alphanumeric character (abAB mode)	Character (1234 mode)
1	. @ - _ / :	1
2	a b c A B C	2
3	d e f D E F	3
4	g h i G H I	4
5	j k l J K L	5
6	m n o M N O	6
7	p q r s P Q R S	7
8	t u v T U V	8
9	w x y z W X Y Z	9
0	(space) ? ! ” # $ % & ’ ( ) * + ,(comma) - .(period) / : ; < = > ? @ [\ ] ^ _ ` { | } ~	0
*	~ ? ,(comma) ’ !	Single press: * Double press: +
#	If the cursor is on a character, press to move the cursor right.	.(period)

Example of text input

For example, to input "furuno" at the text input screen, do the following:



1. With [abAB] selected in the lower right of the screen, press the **3** key three times.
2. Press the **8** key two times.

   Note: Press the BACK DEL key to delete the character.
3. Press the **7** key three times.
4. Press the **8** key two times.
5. Press the **6** key two times.
6. Press the ▶ key to move the cursor right one space.
   Use this method to move the cursor when you want to use the same key for a different character.
7. Press the **6** key three times.

1.5.3 How to edit text

Edit text at the text input screen.

1. At the text input screen, put the cursor on the text to correct.
2. Press BACK DEL. One character erases.

   Note: To erase all characters to the right of the cursor, press and hold the BACK DEL key.
3. Input the correct character(s).

1.6 Password

See the following table for information on passwords:

Item	Username	Default Password	Use	Password Update
IP Handset	Admin	Administrator password* (Fb1234567890)	When logging in as an administrator.	See section 6.10.
Web interface	Log	Log password (Lg1234567890)	When opening [Log] on the menu bar.	
	Admin	Administrator password* (Fb1234567890)	When logging in as an administrator.	
	Not required.	SMS password (Sms251501)	When opening [SMS] on the menu bar.	
	User defined.	PPPoE password	When connecting to the internet by PPPoE.	See step 6 in section 6.8.2.

*: The default administrator password is the same for both the Web Interface and all connected handsets.
If the password is changed (see section 6.10) and a handset is not connected to the Communication Unit, that handset retains the old password.
When the handset is connected to the Communication Unit, the handset password is automatically updated.

2. IP HANDSET OPERATIONS

Note: This equipment uses SIP/RTP for data transfer and calls. These protocols are not encrypted and may be intercepted in an unsecured environment. Ensure that the network used for connection is secure and monitored in order to prevent interception of important data/information.

2.1 IP Handset

You can call someone on land or ship-to-ship from the IP Handset.

2.1.1 How to place a call

There are three methods to place a call:

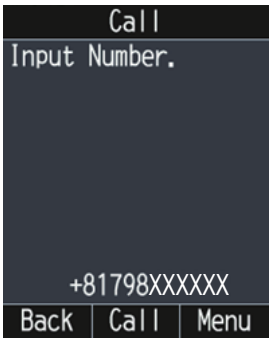
1) Input a number (or speed dial number) of a party to call.
2) Select a number from the [History] screen.
3) Select a number from the [Contacts] list.

To call an external number, follow the procedure below when the main screen shows the  icon in green color on the status bar.

How to input a number

To input a number from the IP Handset, do the following:

1. Remove the IP Handset from the cradle, and input a number (maximum 28 numbers) from the main screen.



Destination	Description
Land	[00] or [+], country code, destination number
Ship-to-ship (Inmarsat terminal)	[00] or [+], [870] (ocean area code), Inmarsat Fleet-broadband number
Internal call	4 digit inter-line number
Speed dial	[0], speed dial number (2 to 3 digits) EG: To call speed dial number "123", dial [0123]

Note 1: To erase a number that is input wrong, press the BACK DEL key.

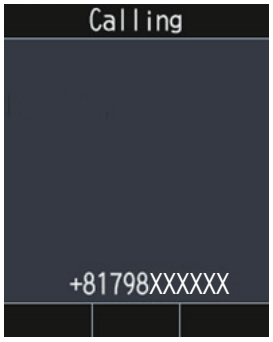
Note 2: There are two voice services, "4kbps AMBE+2" and "3.1kHz Audio". Referring to the following table, select the service to use by entering [1][*] or [2][*] be-

fore the phone number. You can also preset the prefix (see section 2.6). If no prefix is input, the call is place based on the setting for [Outgoing Service] on the [Phone List] screen (see section 6.2).
Depending on SIM card contract, "3.1kHz Audio" cannot be used. Contact the company which issues your SIM card for details.

Service	Charge	Selection Method	Display on main screen
4kbps AMBE+2 (Standard quality)	Low cost	[1][*] + subscriber number	Voice
3.1kHz Audio (High quality)	High cost	[2][*] + subscriber number	Fax

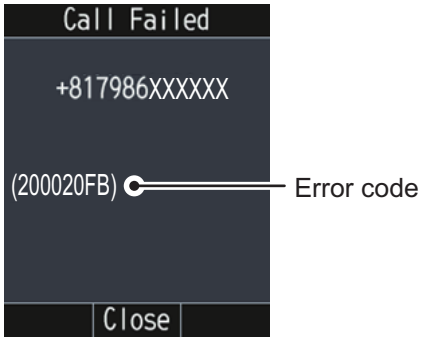
Note 3: You can use the shortcut “0*” to redial the last used number.

2. Press , the **#** key or the **Enter** key to place a call.
The following screen appears.

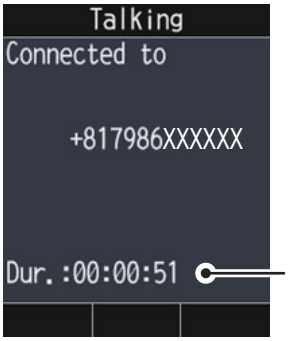


Note 1: If a number is input and there is no operation of any key for several seconds, the call is automatically placed.

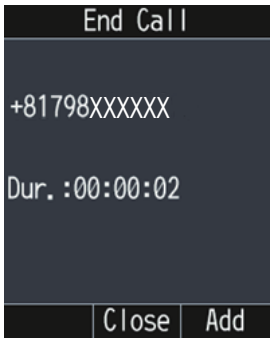
Note 2: If the connection fails, the following screen appears.



3. Complete the conversation.
   During the conversation, the duration of the communication time is counted and displayed on screen in seconds.



4. Press the key or replace the IP Handset in the cradle to end the call.
   The following screen appears.



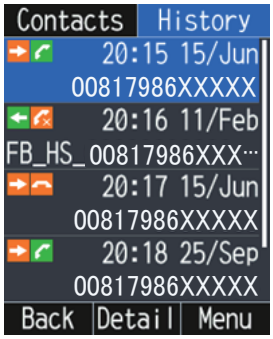
5. Press the key to go back to the main screen.

Note: To place a phone call from land to the FELCOM251/FELCOM501, dial the identification code of the phone carrier, [870] (ocean area code) then the Inmarsat number.

How to call from the [History] screen

A number can be dialed directly from the [History] screen. For more information about the [History] screen, see section 2.3.

1. At the main screen, press the key.
2. Press ▶ to open the [History] screen.
   The top in the list is the most recent number.
   The caller's name appears in the [History] screen if it is registered in the [Contacts] list. "No caller ID" appears if the number is hidden.



: Received
: Called
: Communication successful
: Communication failed
: Missed*

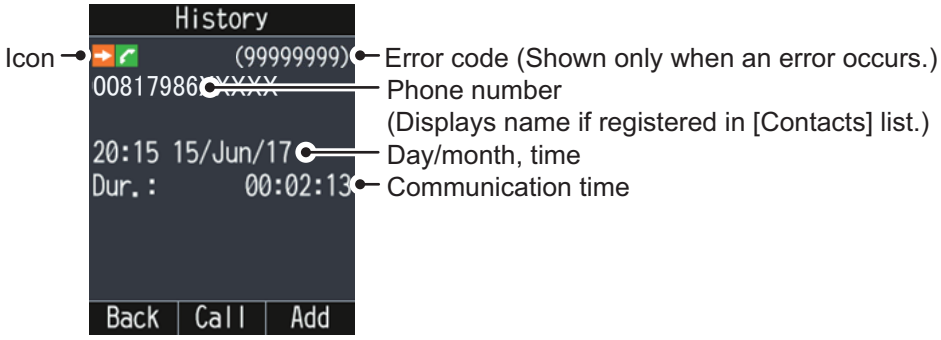
*: Calls received from an external number and which are not answered from any handset are considered "missed" calls.

Note: When there are no numbers registered in the [History] screen, "No list." appears.

3. Press ▼ or ▲ to select a number.
4. Press the key to open the sub-menu, or press the key.

   If you press the key, go to step 6.

   Note: Press the **Enter** key to display the complete information for the selected number. The incoming/outgoing call time log, etc. display.



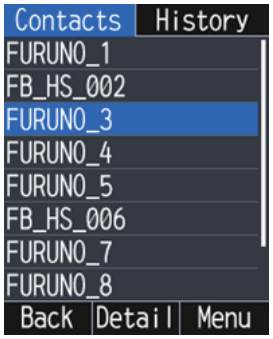
   Press the key to return to the [History] screen. If you call the number, press the **Enter** key, then go to step 6.

5. Select [Call].
6. Press the key to place a call.
7. Complete the conversation.
8. Press the key or replace the IP Handset in the cradle to end the call.
9. Press the key to go back to the main screen.

How to call from the [Contacts] list

A number can be dialed directly from the [Contacts] list. For more information about the [Contacts] list, see section 2.2 for IP Handset, or section 5.5 for Communication Unit.

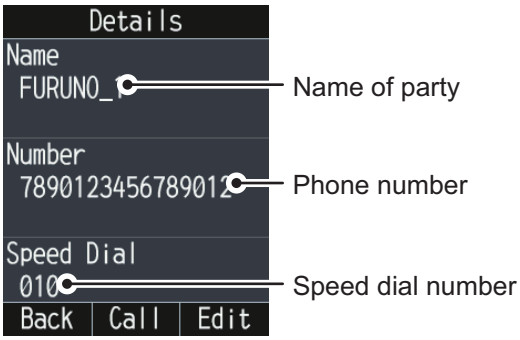
1. At the main screen, press the key to open the [Contacts] list.



   Note: If no numbers are stored in the [Contacts] list, "No List." appears.

2. Press ▲ or ▼ to select a contact.

3. Press the key.
   Note: Press the **Enter** key to display the complete information of the selected contact.



   Press the key to return to the [Contacts] list. If you call the contact, press the **Enter** key, then go to step 4.

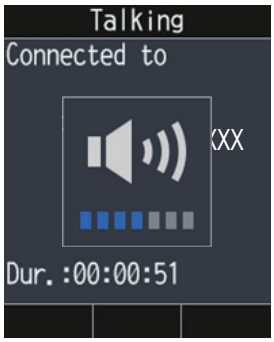
4. Press the key to place a call.
5. Complete the conversation.
6. Press the key or replace the IP Handset in the cradle to end the call.
7. Press the key to go back to the main screen.

2.1.2 Operation during communication

How to adjust the volume

Adjust the volume of the conversation as follows:

1. During a conversation, press ▲ or ▼ to display the volume pop-up window.

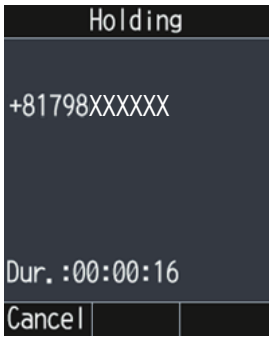


2. Press ▲ to increase the volume, or ▼ to decrease the volume.
   If no key is operated, the volume window automatically closes.

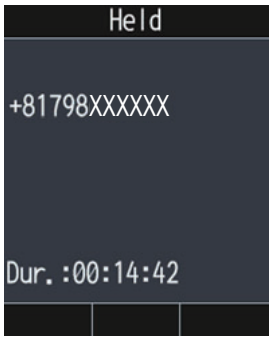
How to put a call on hold

It is possible to put a call on hold during the conversation.

1. During a conversation, press the HOLD key.



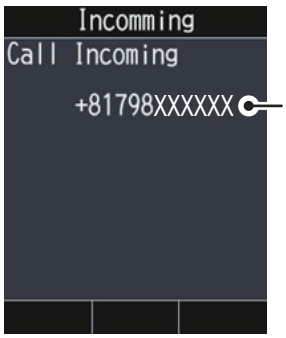
If the other party puts a call on hold during an internal call, the title of the screen Shows "Held" show as below.



2. Press the HOLD or key to take the call off hold and return to the conversation.
Note: If you are using an analog handset, press the [Hook] button → [2] → [#] to put a call on hold.

2.1.3 How to answer a call

1. When the IP Handset rings, release the IP Handset from the cradle. If the handset is not cradled when the call is received, press the key.
   If the call is from one of the subscribers described below, the name of the caller appears.
   - If the caller is saved in [Contacts] list, the registered name appears.
   - If a nickname is set for a IP Handset, the nickname of the internal phone appears. See section 3.6.2.
   - Rescue call: "Distress" appears.



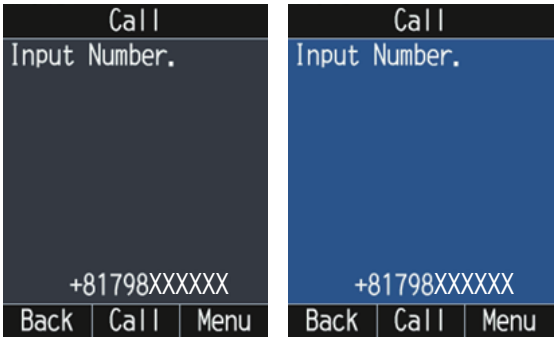
2. Talk to caller.
3. When conversation is finished, press the key or replace the IP Handset in the cradle to end the call
4. Press the key to go back to the main screen.

Note: If an incoming called is not answered, a notification pop-up window appears on the main screen. Further the missed call icon appears on the status bar. Calls received from an external number and which are not answered from any handset are considered missed calls and also show the appropriate icon.

2.1.4 Hands-free function

The hands-free function lets you make or answer calls, without holding the handset. This leave your hands free to do other important tasks, like steering your vessel.

To activate the hands-free function, press the key with the IP Handset on the cradle when you make or answer a call. The color of the screen changes to blue, as shown below, while hands-free is in use.



Handsfree OFF Handsfree ON

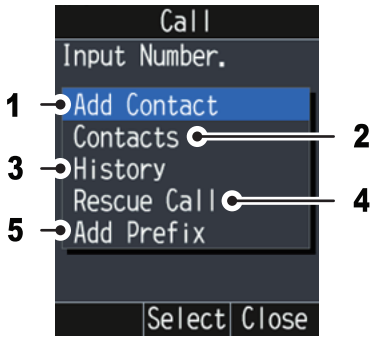
To deactivate the hands-free function, release the IP Handset from the cradle.

Press the key to end the call.

The screenshots in this manual are taken with the hands-free function inactive.

2.1.5 How to operate the [Call] screen sub-menu

1. At the main screen, press the key.
2. Press the key to open the sub-menu.



No.	Meaning
1	Add the input number in the [Contacts] list. See section 2.2.1. This menu appears in gray when the memory capacity is reached (200 contacts).
2	Select a contact to call from the [Contacts] list. See "How to call from the [Contacts] list" on page 2-4. This menu appears in gray if no numbers are stored in the [Contacts] list.
3	Select a number to call from the [History] screen. See "How to call from the [History] screen" on page 2-3.
4	Make a rescue call. See section 2.4.
5	You can select a voice quality and/or a caller code for this call. See section 2.6.

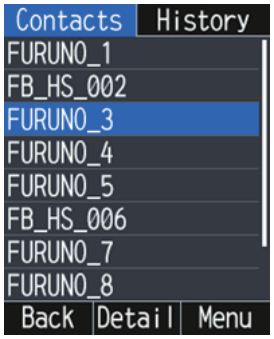
2.2 [Contacts] List

Frequently called numbers can be saved in the [Contacts] list for easy access when phoning. The contacts are saved in the Communication Unit. The [Contacts] list can store 200 contacts.

2.2.1 How to add a contact

Add a contact (name, phone number, and speed dial) to the [Contacts] list as follows:

1. At the main screen, press the key to open the [Contacts] list.
   You can also open the [Contacts] list to press the **Enter** key at the main screen, then select [Contacts].

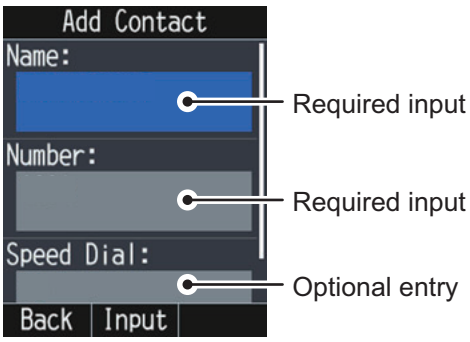


   Note: When there are no contacts registered in the list, "No List." appears.

2. Press the key to open the sub-menu.



3. Press ▲ to select the [Add] menu, then press the **Enter** key.



   Press ▲ or ▼ to scroll through the screen.

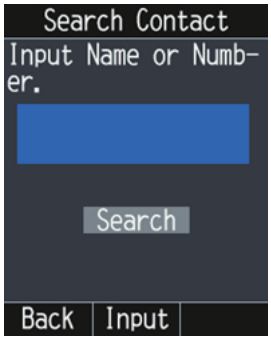
4. Press ▲ to select the [Name] field, then press the **Enter** key.

5. Input a name of a party, then press the **Enter** key.
   You can use a maximum of 20 characters. For how to input the name, see section 1.5.2.
6. Press ▲ or ▼ to select the [Number] field, then press the **Enter** key.
7. Input a phone number, then press the **Enter** key.
   You can use a maximum of 28 numbers. The available characters are numerics, *, +, and . (period). For how to input the number, see section 1.5.2.
8. Press ▲ or ▼ to select the [Speed Dial] field, then press the **Enter** key.
9. Input a speed dial number* if required, then press the **Enter** key.
   Speed dial numbers can range from 10 to 200.
   For how to input the number, see section 1.5.2.
   *: Once registered, speed dial numbers allow you to dial a number using an abbreviated number. This feature is handy when assigned to regularly used numbers.
10. Press ▼ to select [Add], then press the **Enter** key.
    The message "Wait response..." and "Applied." appear, then the contact is saved in the Communication Unit.
11. Press the key to go back to the main screen.

2.2.2 How to search for a contact

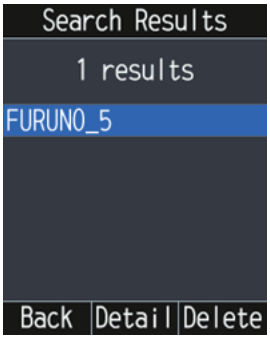
This section explains how to search for a contact from the [Contacts] list.

1. Press the key to open the [Contacts] list.
2. Press the key to open the sub-menu.
3. Press ▲ or ▼ to select the [Search] menu, then press the **Enter** key.



4. With the [Input Name or Number.] field selected, press the **Enter** key.
5. Input a part of a name (or phone number), then press the **Enter** key.

6. Press ▼ to select [Search], press the **Enter** key to perform the search.
   The results of the search appear on the [Search Results] screen. If the contact cannot be found, the message "Not found." appears.



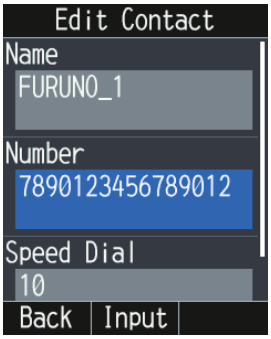
   Note: If the search is performed with nothing input in the field at step 5, all the contacts appears in alphanumeric order.

7. Do one of the following depending on your objective:
   - **Place a phone call:**
     a) Press ▲ or ▼ to select a contact to call.
     b) Press the key to open the [Call] screen.
     c) Press the **Enter** key or the key.
   - **Edit contact:**
     a) Press ▲ or ▼ to select a contact to edit.
     b) Press the **Enter** key to open the [Details] screen.
     c) Press the key.
     Start from step 5 at section 2.2.3.
   - **Delete contact:**
     a) Press ▲ or ▼ to select a contact to delete.
     b) Press the key to delete the contact.
     c) Press ▲ to select [OK], press the **Enter** key.
     To cancel the deletion, press ▼ to select [Cancel], then press the **Enter** key.

2.2.3 How to edit a contact

You can edit a contact registered in the [Contacts] list.

1. At the main screen, press the key to open the [Contacts] list.
2. Press ▲ or ▼ to select a contact to edit.
3. Press the key to open the sub-menu.
4. Press ▲ or ▼ to select [Edit], then press the **Enter** key.



   Press ▲ or ▼ to scroll through the screen.
5. Edit the name, phone number, and speed dial number (see section 2.2.1).
6. Press ▼ to select [Save], then press the **Enter** key.
   The message "Wait response..." and "Applied." appear, then the contact is saved in the Communication Unit.
7. Press the key to go back to the main screen.

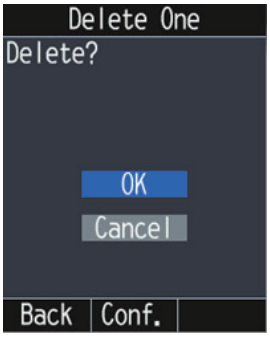
2.2.4 How to delete a contact

This section explains how to delete a contact registered in the [Contacts] list as follows:.

- How to delete an individual contact
- How to delete all the contacts

How to delete an individual contact

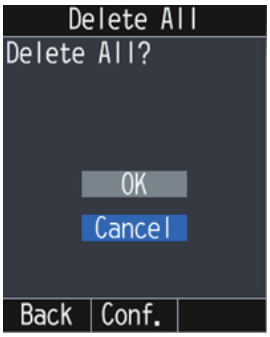
1. At the main screen, press the key to open the [Contacts] list.
2. Press ▲ or ▼ to select a contact to delete.
3. Press the key to open the sub-menu.
4. Press ▲ or ▼ to select [Delete], then press the **Enter** key.



5. Press ▲ to select [OK], then press the **Enter** key.
   The message "Wait response..." and "Applied." appear, then the contact selected at step 2 is deleted.
   To cancel the deletion, press ▼ to select [Cancel], then press the **Enter** key.
6. Press the key to go back to the main screen.

How to delete all the contacts

1. At the main screen, press the key to open the [Contacts] list.
2. Press the key to open the sub-menu.
3. Press ▲ or ▼ to select [Delete All], then press the **Enter** key.

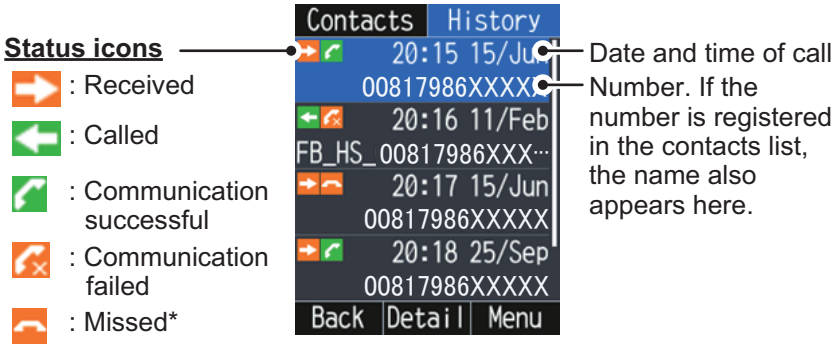


4. Press ▲ to select [OK], then press the **Enter** key.
   The message "Wait response..." and "Applied." appear, then all the contacts in the [Contacts] list are deleted.
   To cancel the deletion, press ▼ to select [Cancel], then press the **Enter** key.
5. Press the key to go back to the main screen.

2.3 [History] Screen

Up to 20 calls can be stored in the IP Handset. When the 21st call occurs, the oldest logged call is deleted from the list.

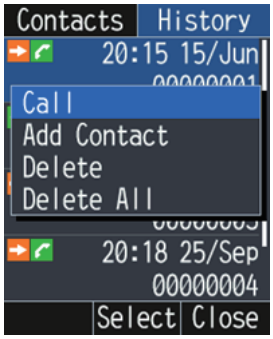
To access the [History] screen, press the key followed by ▶.



*: Calls received from an external number and which are not answered from any handset are considered “missed” calls.

2.3.1 How to add a contact from the [History] screen

1. At the main screen, press the key.
2. Press ▶ to open the [History] screen.
3. Press ▲ or ▼ to select a history to add.
4. Press the key to open the sub-menu.
5. Press ▲ or ▼ to select [Add Contact], then press the **Enter** key.
   Note: This menu appears in gray and is unavailable in the following cases:
   - The memory capacity is reached (200 contacts).
   - A "No caller ID" number’s history is selected.



6. Press ▲ to select the [Name] field, then press the **Enter** key.
7. Input a name of a party, then press the **Enter** key.
   You can use a maximum of 20 characters. For how to input the name, see subsection 1.5.2.
8. Press ▲ or ▼ to select the [Speed Dial] field, then press the **Enter** key.
9. Input a speed dial number* if required, then press the **Enter** key.
   Short dial numbers can range from 10 to 200.
   For how to input the number, see subsection 1.5.2.
   *: Once registered, speed dial numbers allow you to dial a number using an abbreviated number. This feature is handy when assigned to regularly used numbers.
10. Press ▼ to select [Add], then press the **Enter** key.
    When the contact is saved in the [Contacts] list, the message "Wait response...", followed by "Applied." appears.
11. Press the key to go back to the main screen.

2.3.2 How to delete a history

This section explains how to delete a history stored in the IP Handset as follows:

- How to delete an individual history
- How to delete all the histories

How to delete an individual history

1. At the main screen, press the  key.
2. Press ▶ to open the [History] screen.
3. Press ▲ or ▼ to select a history to delete.
4. Press the  key to open the sub-menu.
5. Press ▲ or ▼ to select [Delete], then press the **Enter** key.
6. Press ▲ to select [OK], then press the **Enter** key.
   When the selected history is deleted, the message "Processing..." appears, followed by "Applied.".
   To cancel the deletion, press the ▼ key to select [Cancel], then press the **Enter** key.
7. Press the  key to go back to the main screen.

How to delete all the contact histories

1. At the main screen, press the  key.
2. Press ▶ to open the [History] screen.
3. Press the  key to open the sub-menu.
4. Press ▲ or ▼ to select [Delete All], then press the **Enter** key.
5. Press ▲ to select [OK], then press the **Enter** key.
   When all the histories are deleted, the message "Processing..." appears, followed by "Applied.".
   To cancel the deletion, press ▼ to select [Cancel], then press the **Enter** key.
6. Press the  key to go back to the main screen.

2.4 Rescue Call

There are two kinds of rescue calls as follows.

- Emergency call (505)
- Urgency call (32/38/39)

Note: Emergency calling and urgency calling are an INMARSAT service and is not GMDSS compliant.

2.4.1 Emergency call (505)

There are two methods to place the emergency call:

- Input the number to call.
- Select [Call (505)] at the [Emergency Call] screen.

Calls made to [Call (505)] are automatically placed to the closest RCC.

Once connected to the RCC, speak slowly and clearly, providing the following information:

- **Who you are**: Vessel name, telephone number and call sign.
- **Where you are**: Your position in latitude and longitude or a bearing and distance from a known geographical point.
- **What is wrong**: Nature of emergency or difficulty.
- Type of assistance required.
- Number of persons on board.

How to input the number

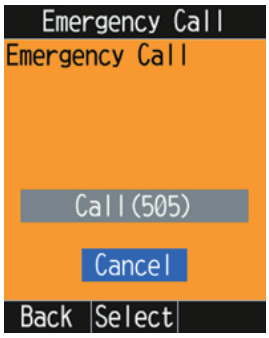
1. Remove the IP Handset from the cradle, and enter the number from the main screen.
2. Press the  key or press the **Enter** key to send the call.

How to call from the [Emergency Call] screen

1. At the main screen, press the key.
   The [Call] screen appears.
2. Press the key to open the sub-menu.
3. Press ▲ or ▼ to select the [Rescue Call] menu, then press the **Enter** key.



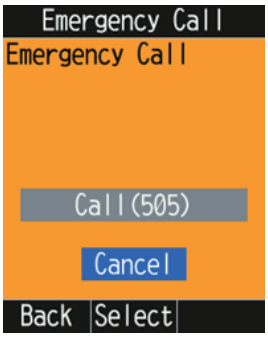
Safety Voice handset screen



Other handset screen

If your IP Handset is not a Safety Voice Handset, go to step 5. The Safety Voice Handset has the icon in its status bar.

4. Press ▼ to select the [Emergency Call] menu, then press the **Enter** key.



5. Press ▲ to select the [Call (505)] the menu, then press the **Enter** key.

2.4.2 Urgency call (32/38/39)

The following short codes are available for urgency calls:

- 32: Urgency Medical Advice
- 38: Urgency Medical Assistance
- 39: Urgency Maritime Assistance

Note 1: 32/38/39 urgency calling requires a safety voice contract with your service provider and also requires connection to the Alarm Panel (available as an optional extra).

Note 2: You can only make the urgency call from the Safety Voice. The Safety Voice Handset has the icon in its status bar.

There are two methods to place the emergency call:

- Input a number to call.
- Call at the call [Rescue Call] menu.

When your call is answered, proceed with the normal procedure for urgency calls and provide the information needed to assist you.

How to input a number

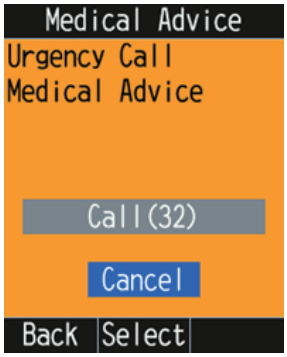
1. Remove the IP Handset from the cradle, and enter the number from the main screen:
2. Press the key or press the **Enter** key to send the call.

How to call from the [Emergency Call] menu

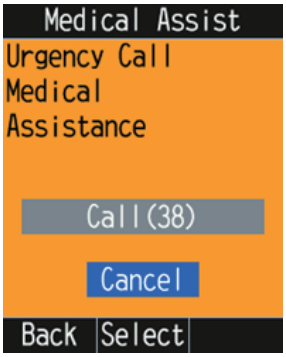
1. At the main screen, press the key.
   The [Call] screen appears.
2. Press the key to open the sub-menu.
3. Press ▲ or ▼ to select the [Rescue Call] menu, then press the **Enter** key.
   If your IP Handset is not a Safety Voice Handset, the following menu is not displayed. The Safety Voice Handset has the icon in its status bar.



4. Press ▲ or ▼ to select [Medical Advice], [Medical Assist], or [Maritime Assist] menu, then press the **Enter** key.



For [Medical Advice]



For [Medical Assist]



For [Maritime Assist]

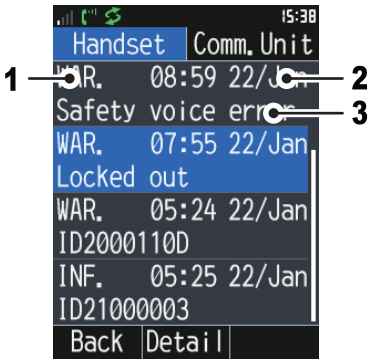
5. Press ▲ to select the [Call (32)], [Call (32)], or [Call (39)] menu.

2.5 Notification Log

You can display the events occurred in the system. A maximum of 50 events can be stored. When the notification log becomes full, the oldest entry is erased to make room for the newest event.

To view the event log, do the following:

1. At the main screen, press the **Enter** key to open the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Notifications] menu, then press the **Enter** key. The event log screen appears.



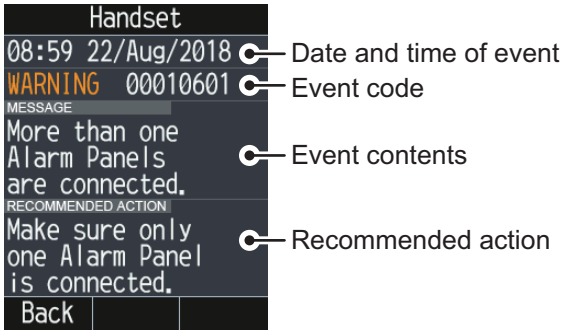
The top in the log is the highest event level. The events at the same level are listed from oldest to newest.

No.	Meaning
1	Event level (listed in order of level from highest to lowest as follows): ERR. (ERROR): Possibility of equipment failure. WAR. (WARNING): Possibility that part or all functions cannot be used due to abnormality including external environment. INF. (INFORMATION): Informative message. No action required.
2	Date and time of occurrence
3	Event content

Press ◀ or ▶ to switch the event log between [Handset] and [Comm. Unit].
Press ▲ or ▼ to scroll through the screen to check all the information.

Note: When there are no events, "No Message." appears.

3. Select an event to view the complete information.



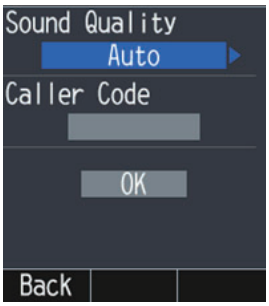
Press the key or BACK DEL key to return to the event log screen.

4. Press the key to close the event log screen.

2.6 Prefix Settings

You can set the sound quality and the caller code for each outgoing call.

1. At the [Call] screen, press the key.
2. Press ▼ to select [Add Prefix], then press the **Enter** key.



3. With the [Sound Quality] field highlighted, press ◀ or ▶ to select the desired quality.
   - [Auto]: Automatically changes the voice service.
   - [Standard]: Uses the standard 4kbps AMBE+2 service.
   - [High]: Uses the 3.1kHz service.

   Note: If you select [High], the communication costs will be expensive.

4. Press ▲ or ▼ to select the [Access Code] field.
   If [Caller Code] is set to [No Request], this field appears is in gray. See "How to set the request of the caller code" on page 3-18.
5. Press the **0** to **9** key to input the caller code (access code).
   The caller code can range from 10000 to 99999.
6. Press ▲ or ▼ to select the [OK], then press the **Enter** key.

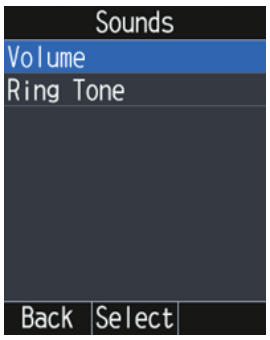
3. SETTINGS FOR IP HANDSET

This chapter describes the menus [Sounds], [Display], [Time], [Comm. Unit], [Info], and [Admin].

3.1 Sound Settings

You can set the volume and ring tone.

1. At the main screen, press the **Enter** key to open the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Settings] menu.
3. With [Sounds] highlighted, press the **Enter** key.
   The [Sounds] menu appears.

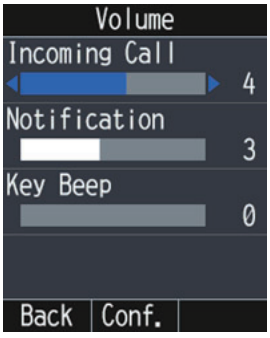


Note: You can also press  to open the [Sounds] menu.

3.1.1 How to change the volume

You can set the volume for incoming call, notification, and key beep.

1. In the [Sounds] menu, press ▲ to select the [Volume] menu, then press the **Enter** key.
   The [Volume] screen appears.

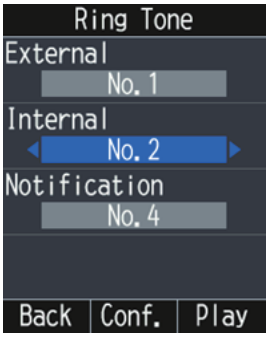


2. Press ▲ or ▼ to select the [Incoming Call], [Notification], or [Key Beep] field.
3. Press ◀ or ▶ to adjust the volume level (0 to 7).
   Set to 0 for no sound.
4. Press the **Enter** key to confirm the settings.
   The message "Applied." appears.
5. Press the  key to go back to the main screen.

3.1.2 How to change the ring tone

You can set the ring tone for external/internal incoming call, and notification.

1. In the [Sounds] menu, press ▼ to select the [Ring Tome] menu, then press the **Enter** key.
   The [Ring Tone] screen appears.

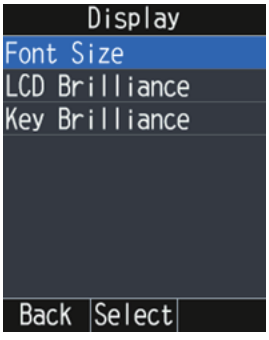


2. Press ▲ or ▼ to select the [External], [Internal], or [Notification] field.
3. Press ◀ or ▶ to select the ring tone (No.1 to 4).
   Press the key to play the ring tone at the selected field. Press the key to stop.
4. Press the **Enter** key to confirm the settings.
   The message "Applied." appears.
5. Press the key to go back to the main screen.

3.2 Display Settings

You can change the font size, LCD backlight, and key backlight.

1. At the main screen, press the **Enter** key to display the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Settings] menu, then press the **Enter** key.
3. Press ▲ or ▼ to select the [Display] menu, then press the **Enter** key.
   The [Display] menu appears.

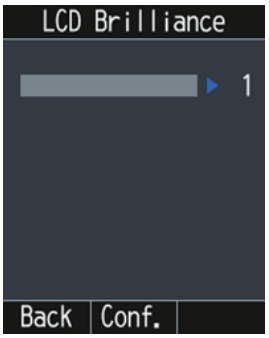


3.2.1 How to change the font size

1. In the [Display] menu, press ▲ to select the [Font Size] menu, then press the **Enter** key.
   The [Font Size] screen appears.
2. Press ◀ or ▶ to select the font size ([Small] or [Large]), then press the **Enter** key.
   The font size is shown in the [Sample] area.
3. Press the **Enter** key to confirm the settings.
   The message "Applied." appears.
4. Press the key to go back to the main screen.

3.2.2 How to change LCD brightness

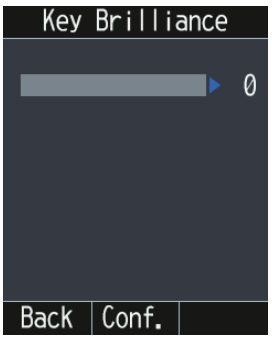
1. In the [Display] menu, press ▲ or ▼ to select the [LCD Brilliance] menu, then press the **Enter** key.
   The [LCD Brilliance] screen appears.



2. Press ◀ or ▶ to adjust the LCD brilliance level (1 to 10), then press the **Enter** key.
3. Press the **Enter** key to confirm the settings.
   The message "Applied." appears.
4. Press the key to go back to the main screen.

3.2.3 How to change the key brilliance

1. In the [Display] menu, press ▼ to select the [Key Brilliance] menu, then press the **Enter** key.
   The [Key Brilliance] screen appears.

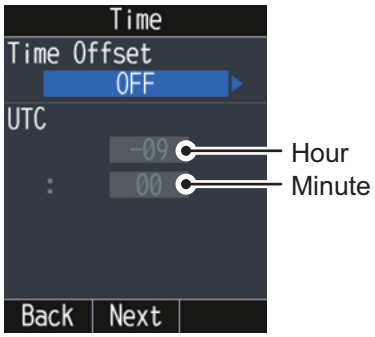


2. Press ◀ or ▶ to adjust the key brilliance level (0 to 3), then press the **Enter** key.
3. Press the **Enter** key to confirm the settings.
   The message "Applied." appears.
4. Press the key to go back to the main screen.

3.3 Time Zone Settings

You can display the time and date in UTC format or as local time.

1. At the main screen, press the **Enter** key to display the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Settings] menu, then press the **Enter** key.
3. Press ▲ or ▼ to select the [Time] menu, then press the **Enter** key.
   The [Time] screen appears.



3.3.1 How to use UTC format

To use UTC format for the date and time, do the following:

1. In the [Time] screen, press ▲ or ▼ to select the [Time Offset] field.
2. Press ◀ to select [OFF].
3. Press the **Enter** key to confirm the setting.
   The [DST] screen appears.



4. Press ◀ or ▶ to select [OFF], then press the **Enter** key.
5. Press the **Enter** key to confirm the settings.
   The message "Applied." appears.
6. Press the key to go back to the main screen.

3.3.2 How to use local time

To use local time, do the following:

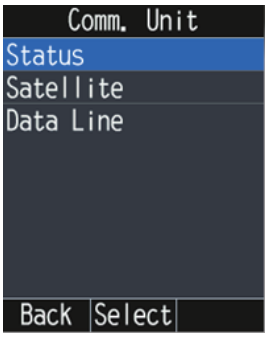
1. In the [Time] screen, press ▲ or ▼ to select the [Time Offset] field.
2. Press ▶ to select [ON].
3. Press ▲ or ▼ to select the [UTC] field for hour.
4. Press ◀ or ▶ to set the time difference for hour (-12 to +13).
5. Press ▲ or ▼ to select the [UTC] field for minute.
6. Press ◀ or ▶ to set the time difference for minute (00, 15, 30, 45).
7. Press the **Enter** key do display the [DST] screen.
8. Press ◀ or ▶ to select [OFF] or [ON], then press the **Enter** key.
   When you select [ON], the time advances one hour.
9. Press the **Enter** key to confirm the settings.
   The message "Applied." appears.
10. Press the  key to go back to the main screen.

3.4 Operations for Communication Unit

This section explains the following contents:

- How to display the [Status] screen
- How to search for a satellite
- How to connect/disconnect the data line

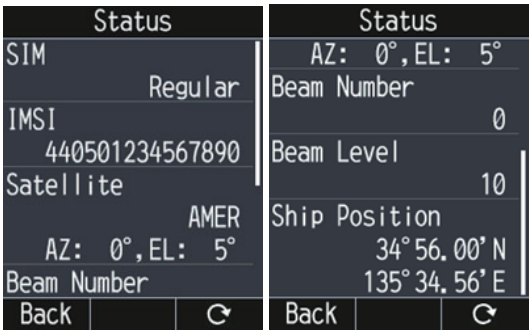
1. At the main screen, press the **Enter** key to open the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Comm. Unit] menu, then press the **Enter** key.
   The [Comm. Unit] menu appears.



3.4.1 How to display the [Status] screen

You can display the six status; SIM, IMSI, satellite, beam number, beam level, and ship position.

1. In the [Comm. Unit] menu, press ▲ to select the [Status] menu, then press the **Enter** key.
   The [Status] screen appears.



   Press ▲ or ▼ to scroll through the status. Press the key to update the status.

Item	Description
SIM	Shows SIM status in use, regular or maintenance.
IMSI	Shows 15-digit IMSI for SIM.
Satellite	Shows a name, azimuth, and elevation for satellite in use,
Beam Number	Shows received beam number for satellite in use.
Beam Level	Shows received beam level for satellite in use.
Ship Position	Shows longitude and latitude for own ship.

2. Press the key to go back to the main screen.

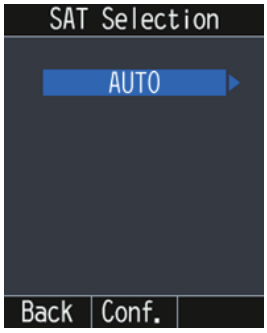
3.4.2 How to search for a satellite

Note: Satellite settings are saved inside the Communication Unit. You can also access these settings from the Web interface (see section 5.7).

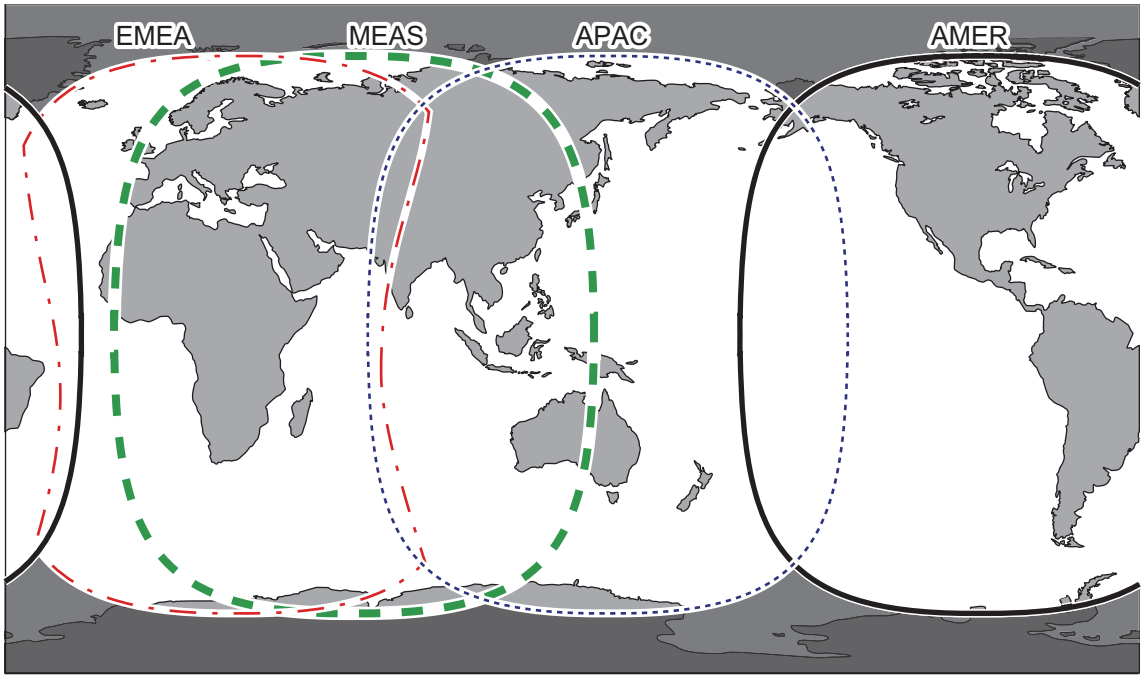
You can set to automatically or manually search and track satellites.

1. In the [Comm. Unit] menu, press ▲ or ▼ to select the [Satellite] menu, then press the **Enter** key.
   The [SAT Selection] screen appears.

   Note: You can also press SAT to open the [SAT Selection] screen.



2. Press ◀ or ▶ to select [AUTO], [APAC], [EMEA], [AMER], or [MEAS].
   AUTO: Automatically select a satellite based on own ship position.
   APAC/EMEA/AMER/MEAS: Select the fleet broadband service area to use. See the following map for each service area.



Name: APAC
Name: EMEA
Name: AMER
Name: MEAS

Note: This map is supplied as a reference only and is in not a guarantee of service in any of the indicated areas.

3. Press the **Enter** key to confirm the setting.
   The message "Wait response..." appears, followed by "Request completed. Check the status." when the process is complete.

4. Press the key to go back to the main screen.

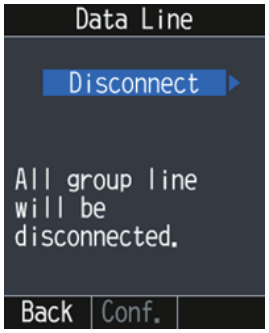
3.4.3 How to connect/disconnect the data line

You can connect or disconnect a data line of a WAN group to which IP Handset belongs. You can check with the Web interface to which group your IP Handset belongs.

Note 1: When Fleet Xpress mode is active, this menu is not available.

Note 2: Data communication is not available from the IP handset.

1. In the [Comm. Unit] menu, press ▼ to select the [Data Line] menu, then press the **Enter** key.
   The [Data Line] screen appears.



2. Press ◀ or ▶ to select [Disconnect] or [Connect] as appropriate, then press the **Enter** key.
   [Connect]: Enable data communication for the network equipment connected to the same WAN group as this IP Handset.
   [Disconnect]: Disable data communication for the network equipment.

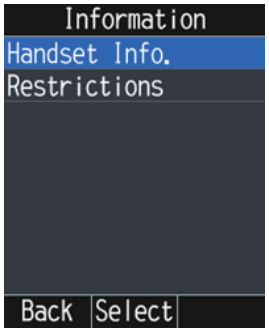
3. Press the key to go back to the main screen.

Note: In some cases, it can take a few minutes to establish a data line connection.

3.5 IP Handset Information

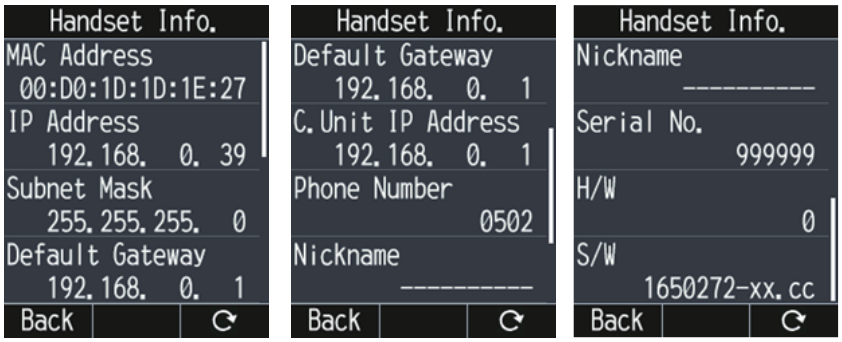
You can check the system information and call restrictions for each IP Handset.

1. At the main screen, press the **Enter** key to open the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Info] menu, then press the **Enter** key.
   The [Information] menu appears.



3.5.1 How to display the system information

1. In the [Information] menu, press ▲ to select the [IP Handset Info] menu, then press the **Enter** key.
   The [IP Handset Info.] screen appears.



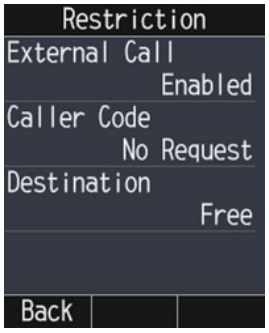
   Press ▲ or ▼ to scroll through the information. Press the key to update the status.

Item	Description
MAC Address	MAC address for IP Handset
IP Address	IP address for IP Handset
Subnet Mask	Subnet mask for IP Handset
Default Gateway	Default gateway for IP Handset
C. Unit IP Address	IP address for Communication Unit
Phone Number	Extension number for IP Handset
Nickname	Nickname for IP Handset
Serial No.	Serial number for IP Handset
H/W	Revision number on board in IP Handset
S/W	Primary software number (package version) for IP Handset

2. Press the key to go back to the main screen.

3.5.2 How to display the call restrictions

1. In the [Information] menu, press ▼ to select the [Restrictions] menu, then press the **Enter** key.
   The [Restriction] screen appears.



item	Description
External Call	Shows the setting to permit or prohibit the outside line ([Enabled] or [Disabled]). See "How to permit/prohibit the outside line" on page 3-17 how to set the call restrictions.
Caller Code	Shows the setting to request the caller code ([No Request] or [Request]) See "How to set the request of the caller code" on page 3-18.
Destination	Shows the setting for the outside call filter ([Free] or [Restrict]). See "How to set the outside call filter" on page 3-19.

2. Press the key to go back to the main screen.

3.6 Administrator Settings

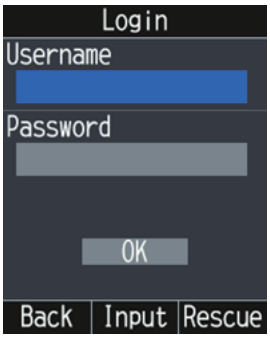
This section covers how to access the advanced settings for the IP Handset. User must login as **Administrator** to access these functions.

Note: Communication may not be possible if setting are wrong. Settings should be performed by an experienced administrator. Also, be sure to log out after performing the settings. You automatically log out if you exit the [Admin Settings] menu.

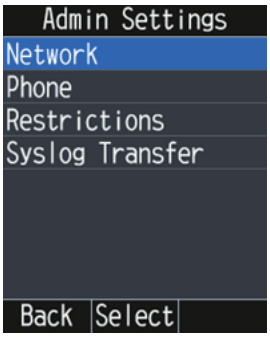
How to login the administrator settings

Do as follows to login as administrator.

1. At the main screen, press the **Enter** key to open the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Admin] menu, then press the **Enter** key.
   The following screen appears.



3. Press ▲ to select the [Username] field, then press the **Enter** key.
4. Input “Admin” (without quotation marks), then press the **Enter** key.
   For how to input the user name, see section 1.5.2.
5. Press ▲ or ▼ to select the [Password] field.
6. Input the password (default: Fb1234567890), then press the **Enter** key.
   For how to input the password, see section 1.5.2.
7. Press ▼ to select [OK], then press the **Enter** key.
   The [Admin Settings] menu appears.

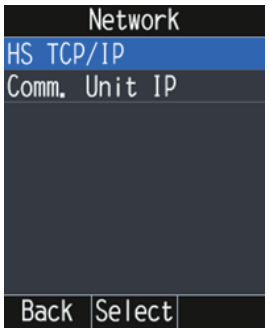


3.6.1 Network settings

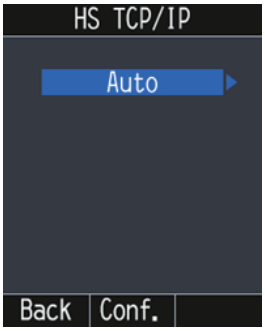
You can make the network settings for the IP Handset and the Communication Unit.

For IP Handset

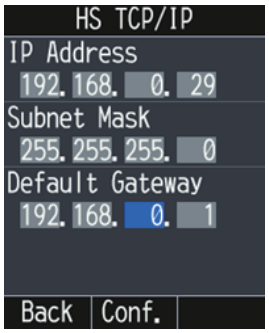
1. In the [Admin Settings] menu, press ▲ to select the [Network] menu, then press the **Enter** key.
   The [Network] menu appears.



2. Press ▲ to select the [HS TCP/IP] menu, then press the **Enter** key.
   The [HS TCP/IP] screen appears.

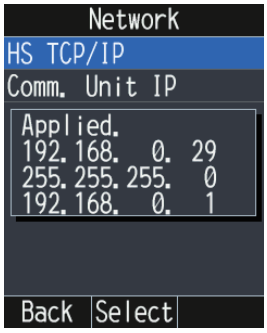


3. Press ◀ or ▶ to select [Auto] or [Manual], then press the **Enter** key.
   - [Auto]: the system automatically assigns an IP address to the handset. If you select [Auto], the Communication Unit must also have DHCP enabled (see section 6.6.1). Go to step 16.
   - [Manual]: allows you to manually set the IP address for the handset. Continue to the next step in this procedure.



4. With the IP Address field selected, press ◀ or ▶ to select a cell to input the IP address.
5. Press the **0** to **9** key to input a part of the IP address in the cell.
6. Repeat steps 5 and 6 to input the IP address in the cells.
7. Press ▲ or ▼ to select the [Subnet Mask] field.

8. Press ◀ or ▶ to select a cell to input the subnet mask.
9. Press the **0** to **9** key to input a part of the subnet mask in the cell.
10. Repeat steps 9 and 10 to input the subnet mask in the cells.
11. Press ▼ to select the [Default Gateway] field.
12. Press ◀ or ▶ to select a cell to input the default gateway.
13. Press the **0** to **9** key to input a part of the default gateway in the cell.
14. Repeat steps 13 and 14 to input the default gateway in the cells.
15. Press the **Enter** key to confirm the settings.
    The following screen appears.



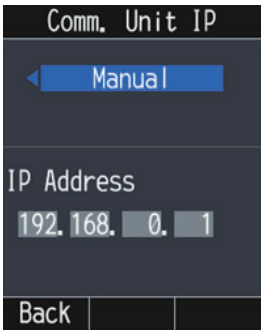
If the input value is incorrect, the message "Invalid value(s)." appears. The color of the incorrect value changes to red.

16. Press the  key to go back to the main screen.

Connecting to the Communication Unit

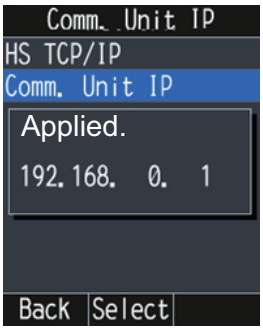
To connect the handset with the communication unit, do the following:

1. In the [Admin Settings] menu, press ▲ to select the [Network] menu, then press the **Enter** key.
2. Press ▼ to select the [Comm. Unit IP] menu, then press the **Enter** key.
   The [Comm. Unit IP] screen appears.



3. Press ◀ or ▶ to select [Auto] or [Manual].
   For [Auto], go to step 9. For [Manual], go to step 4.
4. Press ▲ or ▼ to select the [IP Address] field.
5. Press ◀ or ▶ to select a cell to input the IP address. This address must match the Communication Unit's IP address.
6. Press the **0** to **9** key to input a part of the IP address in the cell.
7. Repeat steps 5 and 6 to input the IP address in the cells.

8. Press the **Enter** key to confirm the setting.
   The following screen appears.



9. Press the key to go back to the main screen.

3.6.2 How to set the phone functions for the IP Handset

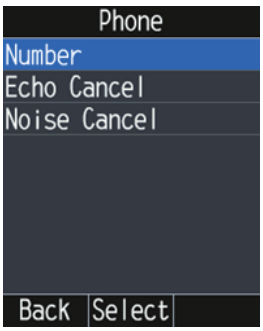
This section explains the following contents:

- How to set the extension number and nickname
- How to set the echo cancellation
- How to set the noise cancellation

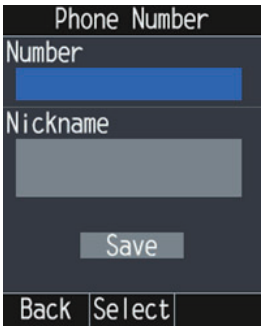
How to set the extension number and nickname

Note: The IP Handset's extension number setting is also saved in the Communication Unit. Connect the IP handset to the Communication Unit before changing any settings. If you move the handset to a different Communication Unit, repeat the settings procedure.

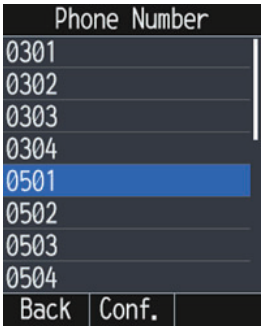
1. In the [Admin Settings] menu, press ▲ or ▼ to select the [Phone] menu, then press the **Enter** key.
   The [Phone] menu appears.



2. With [Number] selected, press the **Enter** key.
   The [Phone Number] screen appears.



3. Press ▲ to select the [Number] field, then press the **Enter** key.
   The list of the extension numbers available appears.



4. Press ▲ or ▼ to select the extension number, then press the **Enter** key.
5. Press ▲ or ▼ to select the [Nickname] field, then press the **Enter** key.
6. Input a nickname, then press the **Enter** key.
   You can use a maximum of 20 characters. For how to input the nickname, see section 1.5.2.
7. Press ▼ to select [Save], then press the **Enter** key.
   The message "Wait response..." appears, followed by "Request completed. Check the status." when the process is complete.
8. Press the  key to go back to the main screen.

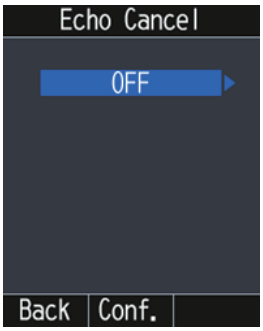
How to set the echo cancellation

Turn the echo cancellation on to suppress the echo of your own voice. If the echo cancellation is off, you may hear the delayed echo of your own voice in the IP Handset.

Do the following to turn echo cancellation on or off:

1. In the [Admin Settings] menu, press ▲ or ▼ to select the [Phone] menu, then press the **Enter** key.

2. Press ▲ or ▼ to select the [Echo Cancel] menu, then press the **Enter** key.



3. Press ◀ or ▶ to select [OFF] or [ON], then press the **Enter** key.
4. Press the key to go back to the main screen.

How to set the noise cancel

Turn the noise cancel on to reduce unwanted ambient sounds.

Do the following to turn echo cancel on or off:

1. In the [Admin Settings] menu, press ▲ or ▼ to select the [Phone] menu, then press the **Enter** key.
2. Press ▼ to select the [Noise Cancel] menu, then press the **Enter** key.



3. Press ◀ or ▶ to select [OFF] or [ON], then press the **Enter** key.
4. Press the key to go back to the main screen.

3.6.3 How to set the call restrictions

This section explains the following contents:

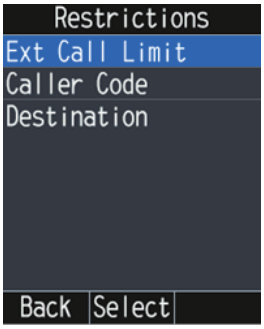
- How to permit/prohibit the outside line
- How to set the request of the caller code
- How to set the outside call filter

Note: Call restriction settings are saved inside the Communication Unit and can also be accessed/changed from the Web interface (see section 6.2).

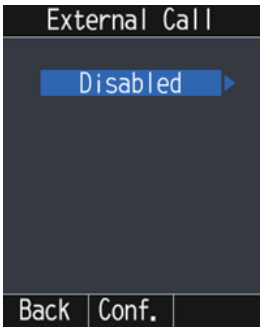
How to permit/prohibit the outside line

You can permit or prohibit the outside line.

1. In the [Admin Settings] menu, press ▲ or ▼ to select the [Restrictions] menu, then press the **Enter** key.
   The [Restrictions] menu appears.



2. With [Ext Call Limit] selected, press the **Enter** key.



3. Press ◀ or ▶ to select [Enabled] or [Disabled], then press the **Enter** key.
   - Enabled: Permits external calls.
   - Disabled: Prohibits external calls.

   The message "Wait response..." appears, followed by "Request completed. Check the status." when the process is complete.

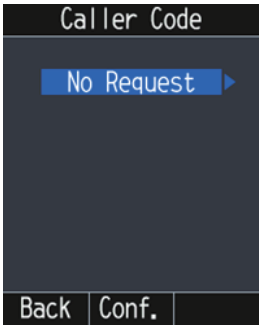
4. Press the key to go back to the main screen.

How to set the request of the caller code

If the caller code has been requested, the user is always prompted for a 5 digit caller code when making the outside calling. See section 6.3 how to set the caller code.

Note: [Destination] must be [Free] to use this function.

1. In the [Admin Settings] menu, press ▲ or ▼ to select the [Restrictions] menu, then press the **Enter** key.
2. Press ▲ or ▼ to select the [Caller Code] menu, then press the **Enter** key.



3. Press ◀ or ▶ to select [No Request] or [Request], then press the **Enter** key. The message "Wait response..." appears, followed by "Request completed. Check the status." when the process is complete.

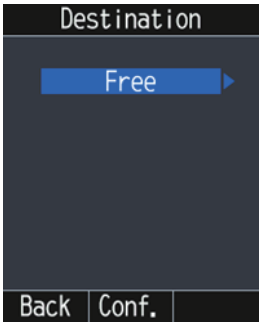
4. Press the key to go back to the main screen.

How to set the outside call filter

If the filter has been activated, the user is restricted to call the destination only set in the Web interface. See section 6.2 how to set the outside call filter.

Note: [Caller Code] must be [No Request] to use this function.

1. In the [Admin Settings] menu, press ▲ or ▼ to select the [Restrictions] menu, then press the **Enter** key.
2. Press ▲ or ▼ to select the [Destination] menu, then press the **Enter** key.



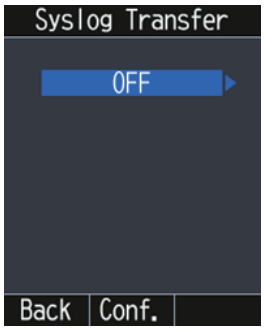
3. Press ◀ or ▶ to select [Free] or [Restrict], then press the **Enter** key.
   - [Free]: Deactivates the outside call filter.
   - [Restrict]: Activates the outside call filter.

   The message "Wait response..." appears, followed by "Request completed. Check the status." when the process is complete.
4. Press the  key to go back to the main screen.

3.6.4 How to transfer the syslog to a PC

You can transfer the syslog to a PC installing the syslog application.

1. In the [Admin Settings] menu, press ▼ to select the [Syslog Transfer] menu, then press the **Enter** key.



2. Press ◀ or ▶ to select [OFF] or [ON], then press the **Enter** key.
   For [OFF], go back to the [Admin Settings] menu. For [ON], go to step 3.



3. Press ◀ or ▶ to select [Warning], [Notice], or [Info].
   - [Warning]: Syslog entries with a level of "Warning" or higher are transferred.
   - [Notice]: Syslog entries with a level of "Notice" or higher are transferred.
   - [Info]: Syslog entries with a level of "Info" or higher are transferred.
4. Press the **Enter** key to display the [Syslog IP] screen.



5. Press ◀ or ▶ to select a cell to input the IP address.
6. Press the **0** to **9** key to input a part of the IP address of the PC in the cell.
7. Repeat steps 5 and 6 to input the IP address in the cells.
8. Press the **Enter** key to confirm the setting.
   The message "Applied." appears.
9. Press the  key to go back to the main screen.

4. OPTIONAL DEVICES

4.1 Fax (FAX-2840)

The optional FAX unit can send and receive faxes using 3.1kHz audio service from land or ship-to-ship.

Note: Depending on SIM card type, 3.1kHz audio service may not be available. Check with the company that issued your SIM card.

How to dial

To Land

Enter 2*00, the Country Code, the fax number, followed by **#** and **Start** to send a fax.

Ship-to-ship

Enter 2*00, 870 (ocean area code), followed by the Inmarsat number, **#** and **Start** to send a fax.

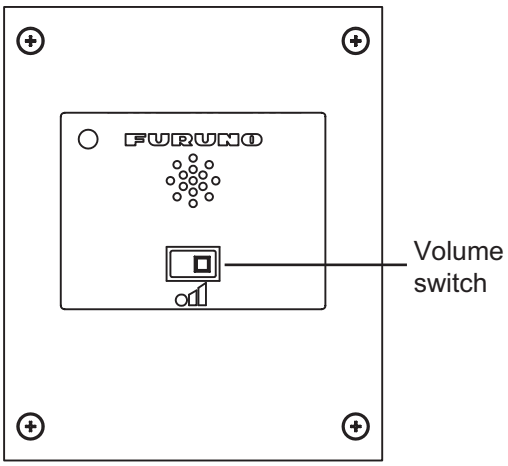
Note 1: When sending a FAX, the number that is printed on the sent fax sheet is the telephone number of your unit, not the FAX number. When replying to a FAX, be sure to ask the sender for their FAX number.

Note 2: When you send a fax from FELCOM251/501 to FELCOM30/50/70, always use a 3.1 Khz audio service number.

4.2 Incoming bell (FB-3001)

The incoming bell sounds a buzzer when a telephone call or fax is received. Move the switch to select one of the three following volume settings for the bell:

- Left: Mute
- Center: Low volume
- Right: High volume



Incoming bell (FB-3001)

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5. WEB INTERFACE

The Web interface makes a connection to Internet, adjusts the Communication Unit settings, creates SMS messages, and creates/edits the contacts list. Connect the Communication Unit to a PC to use the Web interface. The Communication Unit works with the following Web browsers:

- Internet Explorer® version 11.x
- Microsoft Edge®

Set your browser before using the Web interface as follows:

- JavaScript: ON
- Cookie: ON
- Proxy settings: None, or assign the Communication Unit with the IP Address for an unused proxy server.
- Security level: Medium
- DOM storage (Web storage): ON

5.1 How to Open/Close the Web Interface

This section explains how to open the Web interface, log in, display the main screen, and close the Web interface.

1. Make sure the SIM card is inserted. Turn the Communication Unit on.
   Note: The Web interface can be opened without a SIM card inserted.
2. Connect a LAN cable between the LAN ports on the Communication Unit and the PC.
3. Switch the PC power on.
4. After the PC startup procedure is complete, open the Web browser.
5. Select the browser's address bar, enter one of the following, then press **Enter** key.
   - http://192.168.0.1/
     This is the factory default IP address. If the IP address was not changed at installation, use this method.
   - http://furuno.fb.ut
     This access method requires the PC-side DNS to be set as the Communication Unit's IP address.

   Note: You can add the Web interface to "Favorites" or "Bookmarks" for easy access.

6. **If your SIM card requires a PIN code**, the PIN input window shown below appears.
For SIM cards with no PIN code requirement, the top page of the Web interface appears. Skip to step 7.

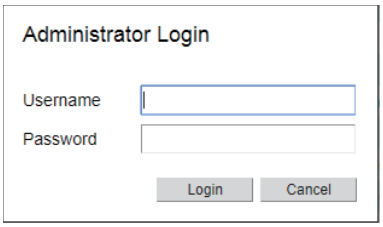


How to input the PIN code

1) Input the PIN code (4 to 8 digits) in the [PIN code] field.
2) Click the [OK] button.
If the PIN code is correct, the top page of the Web interface appears. Skip to step 7.
If the PIN code is wrong, the message "Invalid PIN" appears.

If the PIN code is locked

If the wrong PIN code is input three times, the current PIN number becomes locked and the following pop-up window appears.



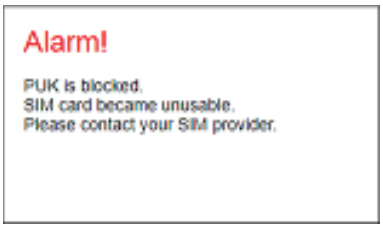
Follow the procedure below to unlock the PIN code.

1) Input “Admin” (without quotation marks) in the [Username] field.
2) Input the password (default: Fb1234567890) in the [Password] field.
3) Click the [OK] button.
The following pop-up window appears.

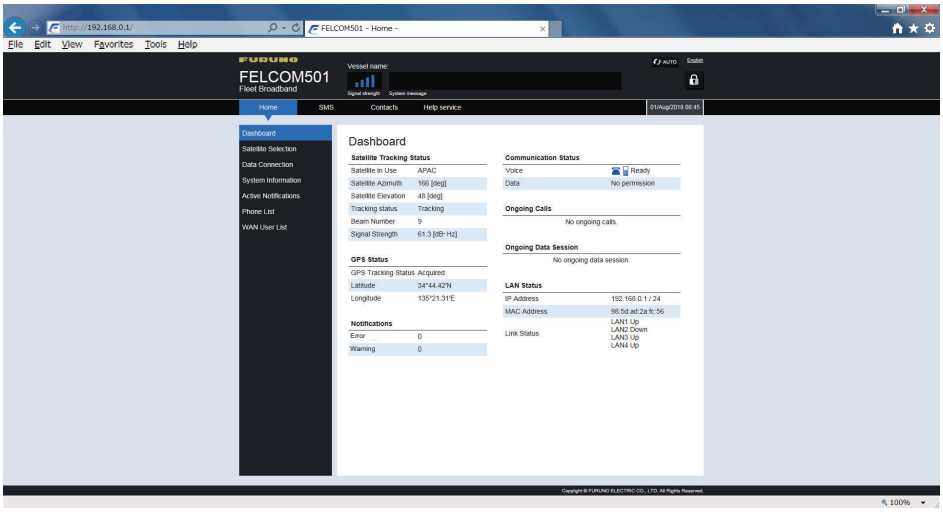


4) Input the PUK code (8 digits) in the [PUK code] field.
5) Input the new PIN code (4 to 8 digits) in the [New PIN code] field.
6) Click the [OK] button.
If the PUK code is correct, the top page of the Web interface appears. Skip to step 7.
If the PUK code is wrong, the message "Invalid PUK" appears.

If the wrong PUK code is input ten times, the current PUK number becomes locked and the following pop-up window appears.



7. The top page of the Web interface is [Dashboard], located in the [Home] menu.



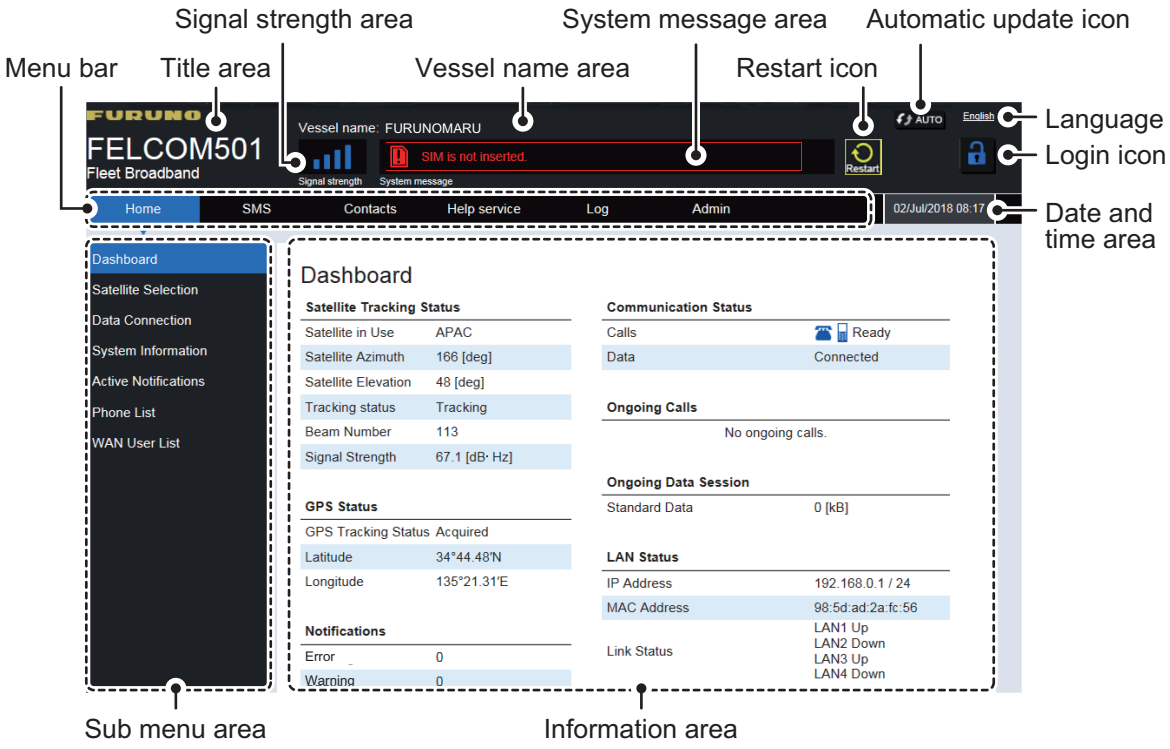
For how to use the Web interface, see section 5.2.

8. To close the Web interface, click the [×] (Close) button at the upper right corner of the window.

5.2 How to Use the Web Interface

5.2.1 Top page overview

The top page of the Web interface is divided into several areas. Most of the screenshots in this manual are taken from the FELCOM501. Screens may be slightly different on the FELCOM251 due to differences in data communications service.



Title area

The title area shows the equipment name.

Signal strength area

The signal strength area shows the strength of the reception signal with up to four bars. Four bars indicates a strong signal. If there is no signal bar, signal strength is too low for normal communication.

Vessel name area

The vessel name area shows the vessel name registered in section 7.6.

System message area

System errors and other events appear in the system message area. The messages are listed in order from highest to lowest level of priority as follows:

Priority	Icon	Description
SIM error		SIM is not available.
Error		There is a problem which may affect equipment startup and operation.
Warning		Possibility of equipment failure.

Restart icon

The restart icon 

appears when a setting change requires the restart of the FELCOM251 or FELCOM501.

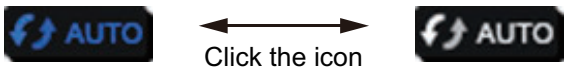
Click the restart icon. The message "The system will restart. Are you sure?" appears. Click [OK] to restart the system. The message "Completed. Wait a moment for the restart." appears. Click the [Close] button then wait for the restart to complete.

Automatic update icon

Click the automatic update icon to activate/deactivate the automatic update function. The refresh rate (update cycle) for each item is listed in the following table.

Item	Refresh rate
Signal strength indication	Every 10 seconds
System message area	
System time/date	
Status monitor indications (see section 5.3)	Every 5 seconds
Data connection screen (see section 5.4.1)	

The icon appears in blue color when the function is active, white when inactive.



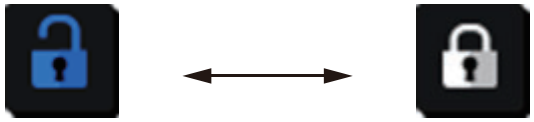
Active (Blue) — Click the icon to switch — Inactive (White)

Language

Displayed as "English".

Login icon

Click the login icon to log in or out as a Log user or Administrator. The color of the icon is blue when logged in; white when logged out. See section 6.1.



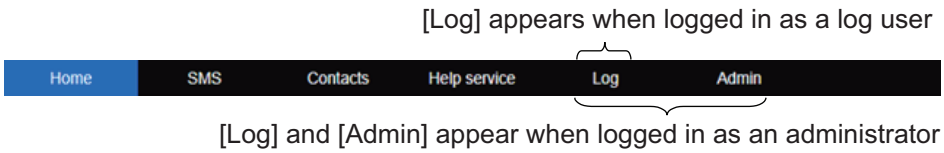
Logged in (Blue) — Logged out (White)

Date and time area

The date and time area shows the date and time.

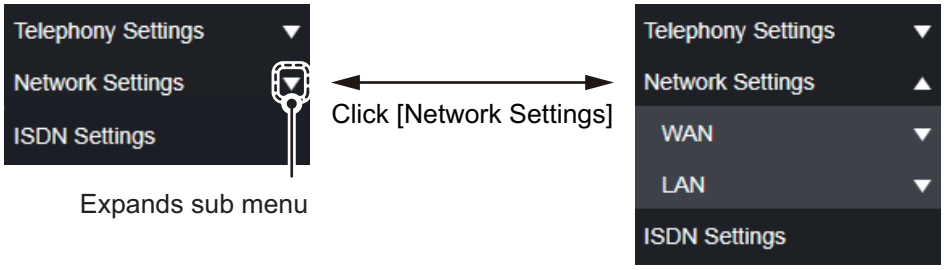
Menu bar

The menu bar contents change depending on your login level (Log user, Administrator or standard user). Click a menu item with the mouse pointer to view the contents in the sub menu or information area.



Sub menu area

In the menu bar, click [HOME], [SMS], [Contacts], [Help service], [Log] (displayed when logged in as a Log user or Administrator), or [Admin] (displayed only when logged in as an Administrator) to display respective menu in the sub menu area. Click an item in the sub menu to display its contents in the Information area. Click ▼ to expand the sub menu for more contents items. Click ▲ to collapse the expanded sub menu.



Information area

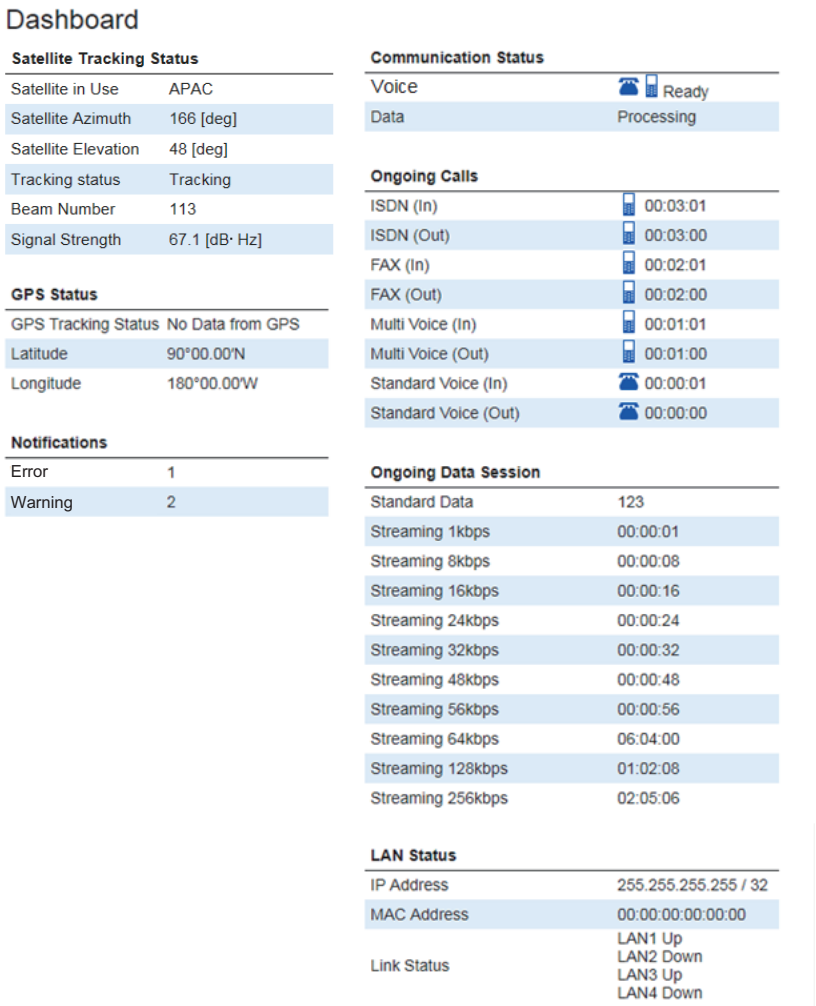
The information area shows current settings, options and other information.

5.3 Dashboard

The dashboard is the default start-up menu for the Web Interface and shows satellite tracking status, GPS status, notifications, communication status, ongoing calls, ongoing data session, and LAN status. All information is refreshed every five seconds when the automatic update function is active.

If the dashboard is not displayed, do the following:

1. Click [Home] in the menu bar.
2. Click [Dashboard] in the sub menu to show the [Dashboard] menu.



See the following table for descriptions of the dashboard items:

Item	Description
Satellite tracking status	
Satellite in Use	Shows the name of the satellite that is currently in use.
Satellite Azimuth	Shows satellite bearing, with North as the reference.
Satellite Elevation	Shows satellite elevation angle.
Tracking Status	Shows the satellite tracking status: • Searching: Searching for a satellite • Checking: Antenna fine tuning • Tracking: Tracking a satellite • Blocking: Satellite signal is blocked • Idle: Preparing

Item	Description
Beam Number	Shows satellite beam number currently in use.
Signal strength	Shows signal reception level detected at the Communication Unit.
GPS Status	
GPS Tracking Status	Shows the GPS tracking status: • Acquiring • Acquired • Stored (Temporally using the GPS data previously stored in the Communication Unit when GPS signal is lost.)
Latitude	Shows ship latitude. While waiting for a GPS fix, [--°--'--"] appears.
Longitude	Shows ship longitude. While waiting for a GPS fix, [--°--'--"] appears.
Notifications	
Error	Shows the number of active errors.
Warning	Shows the number of active warnings.
Communication Status	
Voice	Shows voice communication status: • Ready • Busy • Processing The icon and/or appears to the left side of "Ready". The icon and/or appears to the left side of "Busy". The icon indicates an analog phone.The icon indicates an IP phone including IP Handset.
Data	Shows data communication status: • Not connected • Connected • Processing • No permission (Data transmission not permitted)
Ongoing Calls	
• Standard Voice • Multi Voice • FAX • ISDN • Safety Voice	Shows the following type of calls service, out/in (outgoing/incoming), and duration for each voice line. The icon or Shows to the left side of the duration. **Note:** If there is no ongoing calls, "No Call" appears in this field.
Ongoing Data Sessions	
• Standard Data • 8 kbps Streaming • 16 kbps Streaming • 32 kbps Streaming • 64 kbps Streaming • 128 kbps Streaming • 256 kbps Streaming* *: FELCOM501 only	Shows the following type of data communication service and duration for each data line. • Standard Data: Data transferred over a Standard IP connection. • 8 to 256 kbps: Data transferred over a Streaming IP connection. **Note:** If there is no ongoing data session, "No Data Session" appears in this field.
LAN Status	
IP Address	Shows the IP address and subnet mask for the Communication Unit.
MAC Address	Shows the MAC address for the Communication Unit.
Link Status	Shows the link status (up/down) for each LAN port.

5.4 Data Connection

There are two types of IP packet communication services:

Service	Description	Connection speed	Payment method	Use
Standard IP (Best effort packet)	Speed of the communication service is not guaranteed. Since the bandwidth is shared by many vessels, communication speed varies depending on the number of vessels that communicate at the same time.	• Max. 284 kbps (FELCOM 251) • Max. 432 kbps (FELCOM501)	Fee based on amount of data	• E-mail • Internet / Intranet • Update ship voyage information • Database search • Electronic trade • Web browsing
Streaming IP	Provider guarantees connection speed.	Can select 8, 16, 32, 64, 128, 256 kbps (256 kbps FELCOM501 only).	Fee based on connection time	• Video conferences or moving picture delivery* • Transmit photographic data* • Streaming video*

*: The streaming IP packet communication method provides a guaranteed bandwidth. Use this option for applications which require a specific bandwidth.

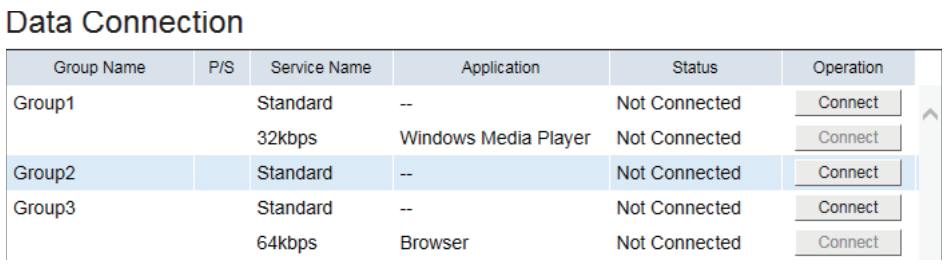
Note: The cost of streaming IP packet communication may be unexpectedly high, so please use with caution.

5.4.1 How to connect to the internet

Follow the procedure shown below to connect to the internet via "Router mode" and "Bridge". If you connect to the internet via PPPoE, see section 6.8.2.

Note: You cannot connect to the internet if the dashboard Shows [No permission] in the [Communication Status] field.

1. Click [Home] in the menu bar.
2. Click [Data Connection] in the sub menu.
   The menu appears; the contents are similar to the below example.

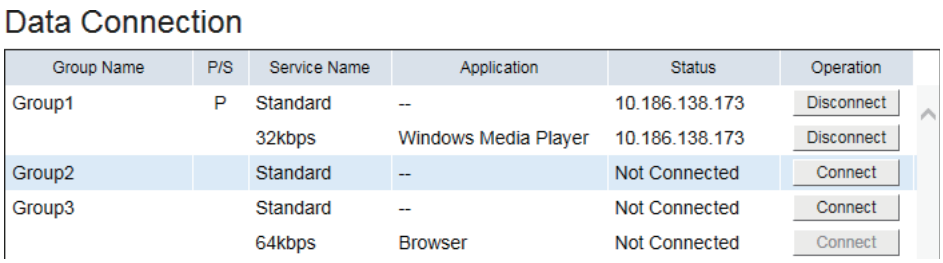


This screen shows the groups available for connection, along with their connection status. See section 6.8 for how to create the connection list. If you are logged in as an administrator, the all groups, regardless of availability, are shown on this screen.

The groups for "PPPoE" and "AT Command" appear only when their data connection are activated.

Item	Description
Group Name	Shows the WAN group name.
P/S	Shows "P" when the primary data connection for each group is activated.
Service Name	Shows the following type of data communication service. • Standard data • 8 kbps Streaming, 16 kbps Streaming, 32 kbps Streaming, 64 kbps Streaming, 128 kbps Streaming, or 256 kbps Streaming* *: FELCOM501 only
Application	Shows the application available for the data connection. "--" appears in the [Application] field for primary connections. For secondary connections via "AT Command", "External" appears.
Status	Shows the connection status. The IP address (if connected), or "Not Connected" is shown.
Operation	• [Connect] button: Activate the connection. • [Disconnect] button: Deactivate the connection. **Note:** Disconnecting a primary data connection (indicated with a "P" in the [P/S] column) disconnects all data connections in the same group.

3. Click the [Connect] button of the data connection to use.
   When connecting, the message "Please wait a moment." appears. When connected, the message "The data connection is activated." appears.
   Note: If the connection fails, the message "Failed to activate the data connection." appears.
4. Click the [Close] button to close the message.
   The [Status] field Shows an IP address and the label on the button in the [Operation] field changes to "Disconnect".
5. To use multiple data connections, repeat steps 3 to 4.
   Note: It is not possible to use the same application that is already in the same group.
   When connected to the internet, the connection list appears as shown:



Example: Standard IP packet, 32 kbps streaming IP packet communications

- The primary data connection for each group has a "P" mark, and "---" appears in the [Application] field. In the above connection list, Standard IP Packet Data Connection Service is connected first.
- In the [Status] field, "Not connected" changes to indicate the IP address.
- The display in the [Operation] field changes from "Connect" to "Disconnect".

6. Open the desired application and begin data communication.
   For services marked as "P", you can use any application, regardless of the setting selected at section 6.8.1. After the first service selection, only the packets of the selected application are automatically sorted. Packets from other applications automatically use the service assigned with a "P".

For example, in the connection list shown in the previous example figure, Windows Media® Player uses the 32 kbps streaming IP packet communication service and all other applications use the standard IP packet communication service.

5.4.2 How to disconnect from the internet

Do the following to disconnect from the internet:

1. Click [Home] in the menu bar.
2. Click [Data Connection] in the sub menu.
   The [Data Connection] display appears.
3. Click [Disconnect] for the services to disconnect.
   Note 1: If you disconnect a service marked with a P mark, all other connected services will disconnect.
   Note 2: If the disconnection fails, "Failed to deactivate the data connection." appears.
4. Click the [OK] button to close the message.
   The message "The data connection is deactivated" appears.
5. Click the [Close] button to close the message.
   The [Status] field Shows "Not Connected", the [Operation] button Shows "Connect".

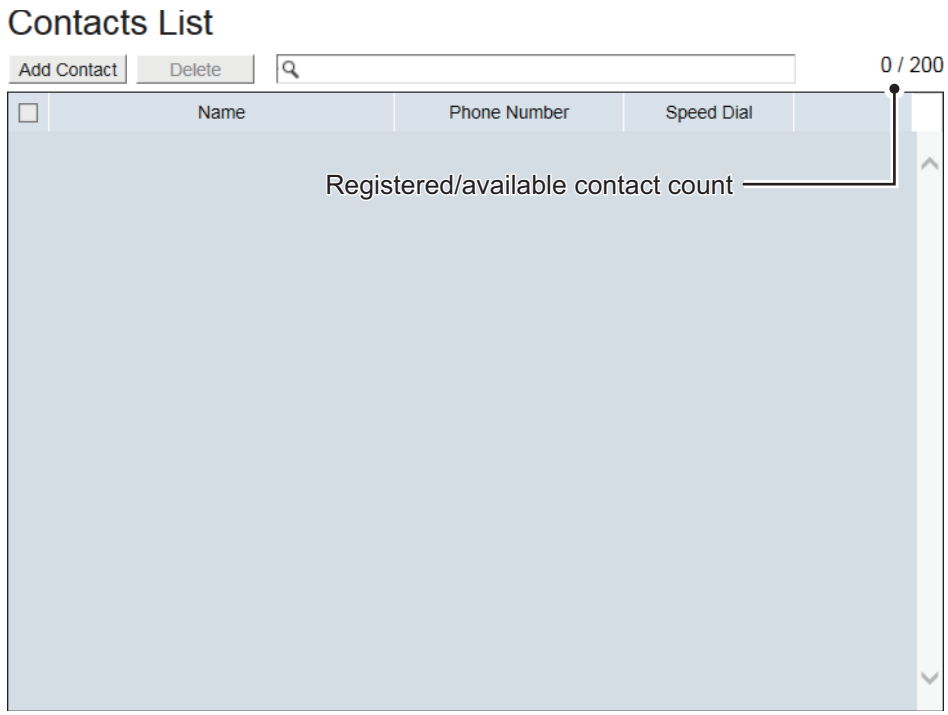
5.5 Contacts List

Like the IP Handset, you can add, edit and delete contacts from the Web interface. Use the Web interface to save contacts to the Communication Unit. 200 contacts can be stored in the Communication Unit. The contacts are shared between the Communication Unit and IP Handset.

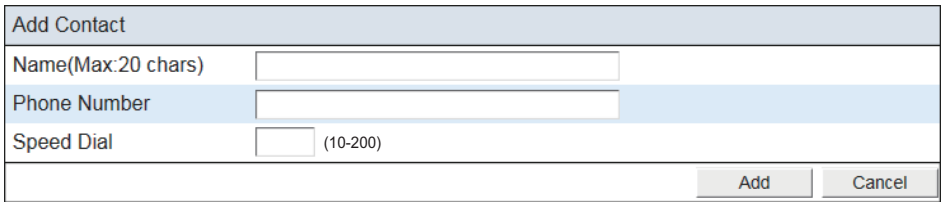
5.5.1 How to add a contact

Add a contact (contact name, phone number, and speed dial number) to the contacts list as follows:

1. Click [Contacts] in the menu bar to show the [Contacts List] menu.



2. Click the [Add Contact] button.
   The following pop-pup window appears.

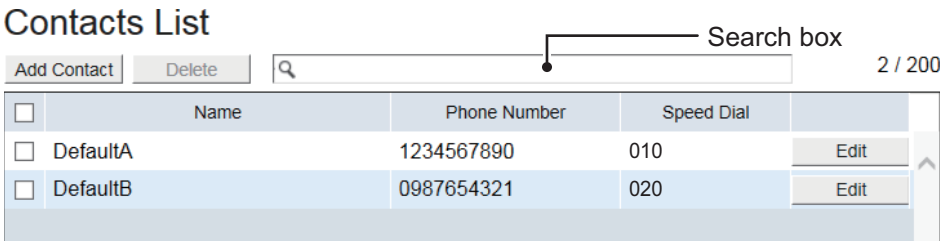


3. Input a name of a party in the [Name] field.
   You can use a maximum of 20 characters. You may use alphanumeric characters, "_", and "-".
4. Input a phone number in the [Phone Number] field.
   You can use a maximum of 32 characters. The available characters are numeric, "#", "*", and "+".
5. Input a speed dial number if required in the [Speed Dial] field.
6. Click the [Add] button.
   The message "Applied." appears.
7. Click the [Close] button. The contact details appear in the [Contact List].

5.5.2 How to search for a contact

This section explains how to search for a contact from the contacts list.

1. Click [Contacts] in the menu bar.



2. Input a part of a contact name, phone number, or speed dial number in the search box.
   Once a word or number is input, the search automatically begins.
   Contacts that match the input search criteria appear in the contacts list.

5.5.3 How to edit contacts

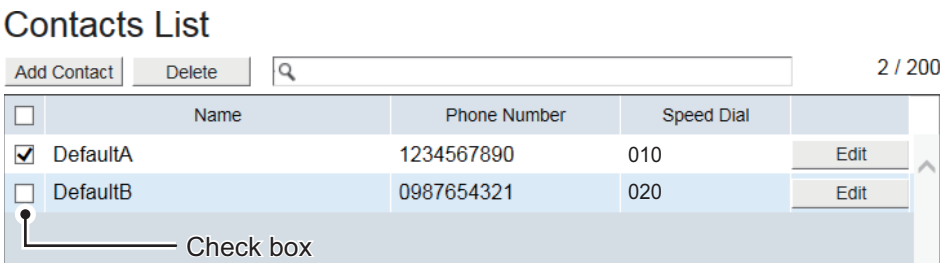
You can edit a contact registered in the contacts list.

1. Click [Contacts] in the menu bar.
2. Select a contact to edit, and click the [Edit] button on the right side of the contact.
3. Edit the name, phone number, and/or speed dial number of the contact.
4. When finished, click the [Save] button.
   The message "Applied." appears.
5. Click the [Close] button.

5.5.4 How to delete a contact

This section explains how to delete an individual, multiple, or all contacts as follows:

1. Click [Contacts] in the menu bar.
2. Put a [✓] in the check box on the left side of the contact to delete.
   To select all contacts, put a [✓] in the check box beside the [Name] title.



3. Click the [Delete] button.
   The confirmation message "Delete the selected item(s). Are you sure?" appears.
4. Click the [OK] button.
   The message "Applied." appears.
5. Click the [Close] button.

5.5.5 How to import/export the contacts data

You can import or export the contacts data.

How to export a contact data file

Export a contact data file from the Communication Unit to a PC.

1. Click [Contacts] in the menu bar.
2. Click [Import / Export Contacts].
3. Click the [Export] button.
   The [Save] dialog box appears.
4. Select the location where you want to save the data file.
5. Input the file name, then click [Save].
   The contact data is saved in zip format.
   Note: Do not unzip the archives. Unzipped files cannot be imported.

How to import a contact data file

Import a contact data file saved in a PC to the Communication Unit.

1. Click [Contacts] in the menu bar.
2. Click [Import / Export Contacts] to show the [Import / Export Contacts] menu.



3. Click the [Import] button.
   The message "Overwrite the contacts list. Are you sure?" appears.
4. Click [OK] button.
   The [Open] dialog box appears.
5. Select the zip file of the contact data to import, then click [Open].
   The message "Applied." appears.
6. Click [Close] button.

5.6 SMS (Short Message Service)

You can create SMS messages from the Web interface. Messages are limited to 1120 characters.

Depending on the setting at Encode, the message may be split into segments. For GSM, messages over 160 characters; for Unicode, messages over 70 characters are split.

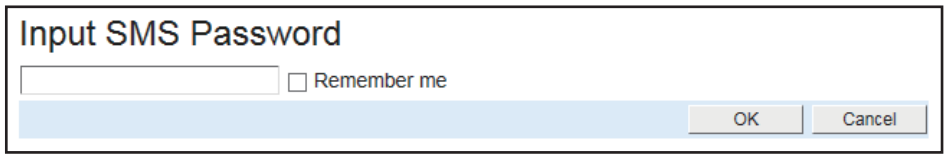
However, special characters (such as emojis) are not allowed.

Note: Depending on the cellular phone service provider, it is not always possible to send or receive messages from Inmarsat terminals. Ask your cellular phone provider for information.

5.6.1 How to input the SMS password

Input the password to access the [SMS] menu.

1. Click [SMS] in the menu bar to show the [Input SMS Password] menu.



2. Input the SMS password.
   The numerals input are shown with black circles (●).
3. Put a [✓] in the box at the left side of [Remember me] (click the box to add [✓]) to disable password input on future login.
4. Click the [OK] button.
   If the password is correct, the SMS top screen appears.

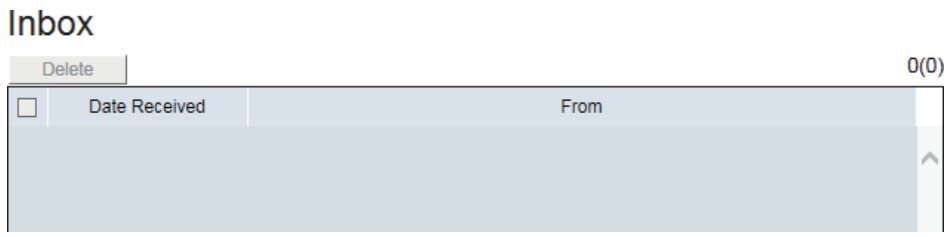
Note 1: If the password is input incorrectly, the message “Login failed.” appears. Click [Close] to close the message and input the correct password.

Note 2: From hereafter, the procedures omit password input.

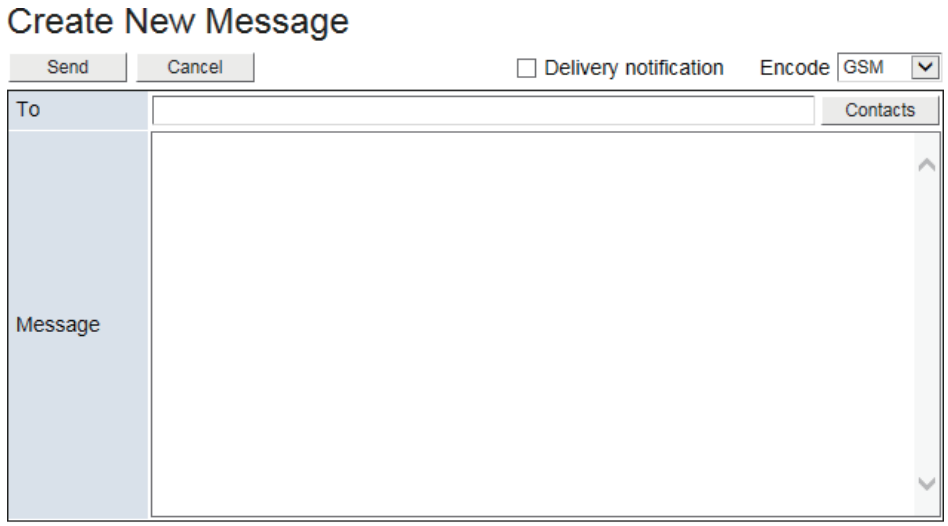
5.6.2 How to send an SMS message

You can send an SMS message to the terminal enabled SMS.

1. Click [SMS] in the menu bar. to show the [Inbox] (SMS top screen) menu.

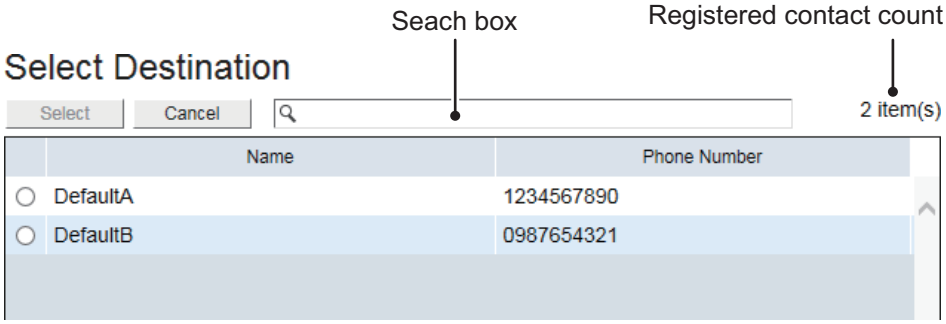


2. Click [Create New Message] in the sub menu to show the [Create New Message] menu.



For [GSM] in the [Encode] box

3. Use one of the following two methods to select recipient:
   Input a phone number: Input a phone number of a recipient in the [To] field. You can use a maximum of 32 characters. The available characters are numeric, "#", "*", and "+".
   To get a recipient from contacts list, do the following:
   a) Click the [Contacts] button on the right side of the [To] field.
   The following display appears.



   b) Put a [●] in the radio button on the left side of the contact (click the button to add [●]) to select.
   You can look for the contact with the search box. Input a part of a contact name or phone number in the search box.
   Once a word or number is input, the search automatically begins.
   Contacts that match the input search criteria appear in the list.

c) Click the [Select] button to confirm the selection.
Click the [Cancel] button go back to the previous display without selecting.

4. At [Delivery Notification], check, or uncheck the box as required.
   - **Checked**: receive a notification when the message is successfully delivered.
   - **Unchecked**: no notification is received when the message is delivered.

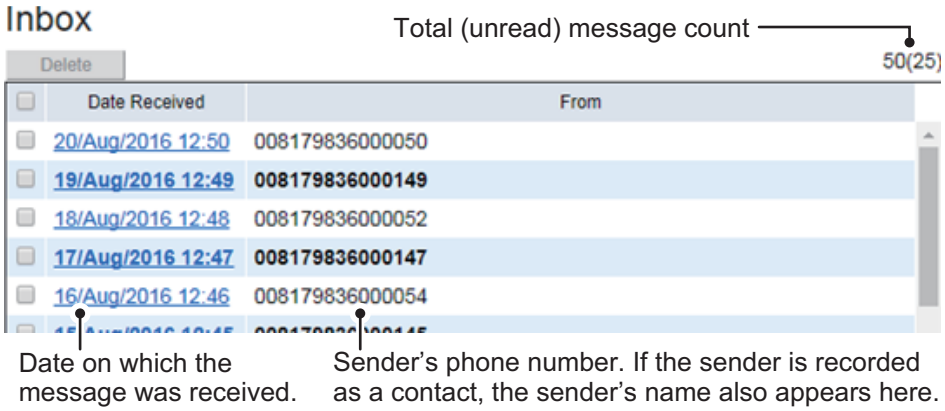
   Note: You can preset the [Delivery Notification] box depending on which option you use most frequently. See "How to set up delivery notifications" on page 5-22.

5. Click the [Encode] box, then select [GSM] or [Unicode] as required.
   [GSM]: Standard alphanumeric input only.
   [Unicode]: Use Unicode characters (Japanese/Chinese script, etc).
6. Write a message in the [Message] field.
7. Click the [Send] button to send the message.
   When send is completed, "SMS has sent." appears.
   Click the [Cancel] button to delete the contents in both the [To] and [Message] field.
   Note: If the message could not be sent, "Failed to send SMS. Try again." appears. The message is saved to the unsent box. Click [OK] to return to the SMS top screen.
8. Click the [Close] button.

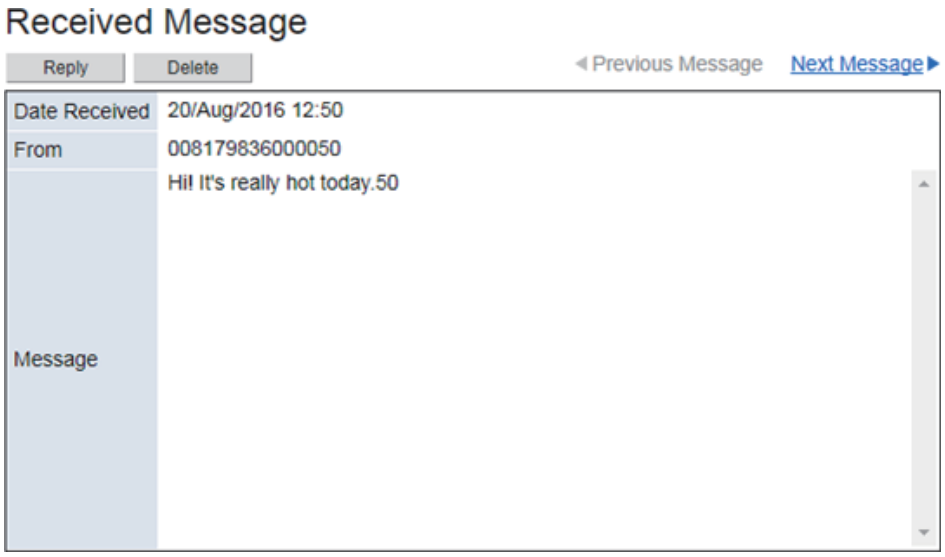
5.6.3 How to review a received message

Received messages are saved to the Inbox.

1. Click [SMS] in the menu bar to show the SMS top screen (Inbox).
   Unread messages appear in bold type.



2. Click the received date and time with the mouse.
   Detailed information about the message appears.



See the following table for operation information:

Operation	Procedure
Reply to sender	1) Click the [Reply] button. The [Create New Message] menu opens with the sender name in the [To] field. If you include the original message below the new message, activate the [Include message in reply] setting to see "How the show the original message in replies" on page 5-22. 2) Put a [✓] in the box at the left side of [Delivery notification], if necessary. 3) Click the [Encode] box, then select [GSM] or [Unicode]. 4) Write a message in the [Message] field. 5) Click the [Send] button to send the message. 6) Click the [Close] button.

Operation	Procedure
Delete the message.	1) Click the [Delete] button. 2) Click the [OK] button. 3) Click [Close] to close the message.
View the previous message when there are multiple messages.	Click [◀ Previous Message].
View the next message when there are multiple messages.	Click [Next Message ▶].

5.6.4 Message boxes

There are three message boxes: [Inbox], [Outbox], and [Unsent]. When the amount of messages is more than the maximum, the oldest message (across all boxes) is automatically erased from all boxes.

Box	Message type	Maximum Amount
[Inbox]	Received messages	All boxes: 200 messages total
[Outbox]	Sent messages	
[Unsent]	Unsent messages	

How to delete messages

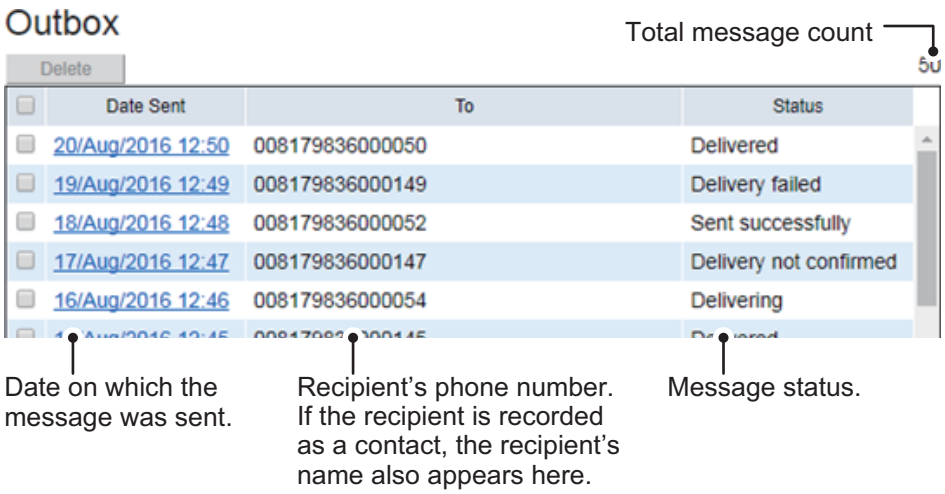
Send a single message, multiple messages or all messages to delete.

1. Click [SMS] in the menu bar.
2. Click the box to erase a message from: [Inbox], [Outbox], or [Unsent].
3. Put a [✓] in the box on the left side of a message (click the box to add [✓]) to delete.
   To select all messages, put a [✓] in the box beside the [Date Received], [Date Sent], or [Date Created] title.
4. Click the [Delete] button.
   The confirmation message "Delete the selected item(s). Are you sure?" appears.
5. Click the [OK] button.
   The message "Applied." appears.
6. Click [Close] to close the menu.

5.6.5 How to use a message in the outbox

You can edit and resend an already sent message from the outbox.

1. Click [SMS] in the menu bar.
2. Click [Outbox] in the sub menu to show the [Outbox] menu.



3. Click the sent date and time to select the message to edit and resend. Detailed information about the message appears.



See the following table for operation information:

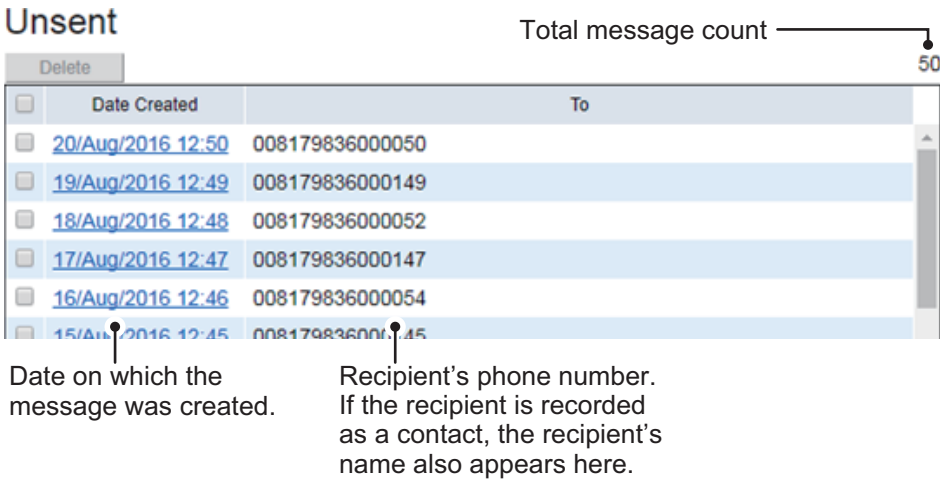
Operation	Procedure
Edit the message and send to a recipient.	1) Click the [Copy & edit] button. The [Create New Message] menu opens with the original recipient message in the [Message] field. 2) Edit the phone number in the [To] field, or click [Contacts] to change the recipient. 3) Put a [✓] in the box at the left side of [Delivery notification], if necessary. 4) Click the [Encode] box, then select [GSM] or [Unicode]. 5) Edit the message in the [Message] field. 6) Click the [Send] button to send the message. 7) Click the [Close] button.

Operation	Procedure
Delete the message.	1) Click the [Delete] button. 2) Click the [OK] button. 3) Click [Close] to close the message.
View the previous message when there are multiple messages.	Click [◀ Previous Message].
View the next message when there are multiple messages.	Click [Next Message ▶].

5.6.6 How to send a message in the unsent box

The unsent messages are saved in the unsent box. You can send the message later.

1. Click [SMS] in the menu bar.
2. Click [Unsent] in the sub menu to show the [Unsent] menu.



3. Click the date the message was created to select the message to send. Detailed information about the message appears.



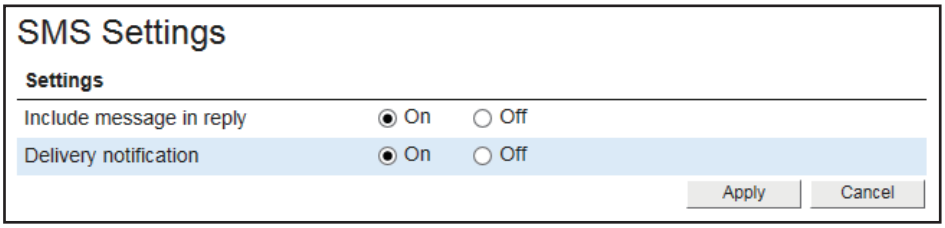
See the following table for operation information.

Operation	Procedure
Send the message	1) Click the [Send] button. 2) Click the [OK] button.
Delete the message.	1) Click the [Delete] button. 2) Click the [OK] button. 3) Click [Close] to close the message.
View the previous message when there are multiple messag-es.	Click [◀ Previous Message].
View the next mes-sage when there are multiple messages.	Click [Next Message ▶].

5.6.7 How the show the original message in replies

When replying to an SMS message, you can select whether the original message is included below the new message, or not.

1. Click [SMS] in the menu bar.
2. Click [SMS Settings] in the sub menu to show the [SMS Settings] menu.



3. At [Include message in reply], click [On] to include the original message or [Off] to send only the new message.
4. Click the [Apply] button.
   The message "Applied." appears.
5. Click the [Close] button.

5.6.8 How to set up delivery notifications

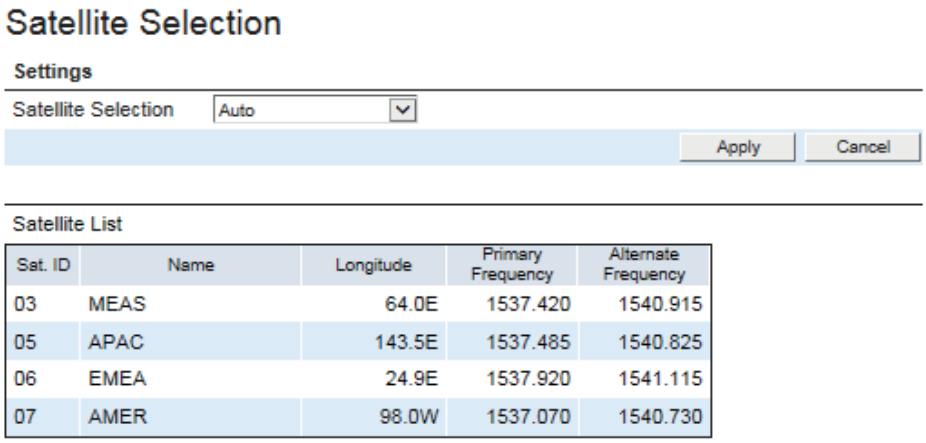
Set the default on or off for the delivery notification available in the [Create New Mes-sage] menu.

1. Click [SMS] in the menu bar.
2. Click [SMS Settings] in the sub menu.
3. At [Delivery notification], click [On] to receive a notification when the message is received, or [Off] to receive no notification.
4. Click the [Apply] button.
   The message "Applied." appears.
5. Click the [Close] button.

5.7 Satellite Search

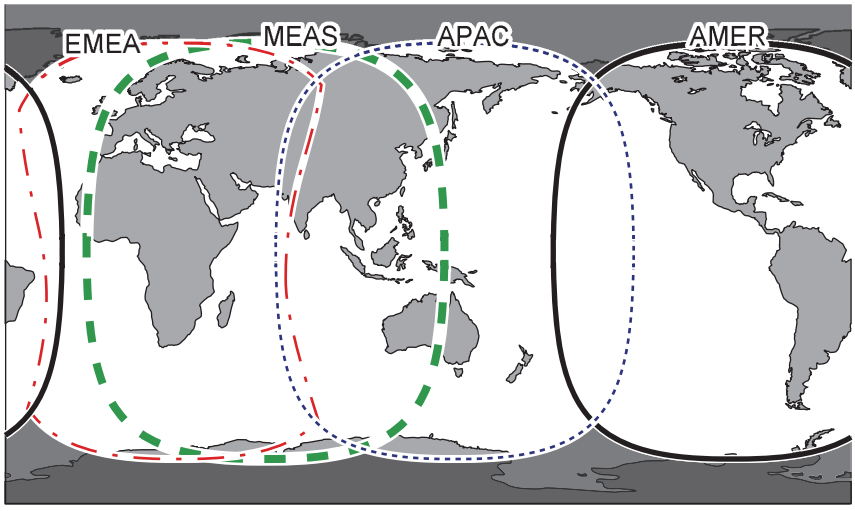
You can set to automatically or manually search and track satellites.

1. Click [Home] in the menu bar.
2. Click [Satellite Selection] to show the [Satellite Selection] menu.



Item	Description
Sat. ID	Satellite ID
Name	Satellite name
Longitude	Satellite position (longitude).
Primary Frequency	Primary global satellite channel frequency.
Alternate Frequency	Alternate global satellite channel frequency

3. Select [AUTO], [APAC], [EMEA], [AMER], or [MEAS] at the [Satellite Selection] item in the [Settings] field.
   AUTO: Automatically select a satellite based on own ship position.
   APAC/EMEA/AMER/MEAS: Select the fleet broadband service area to use. See the following map for each service area.



Name: APAC
Name: EMEA
Name: AMER
Name: MEAS

Note: This map is supplied as a reference only and is in not a guarantee of service in any of the indicated areas.

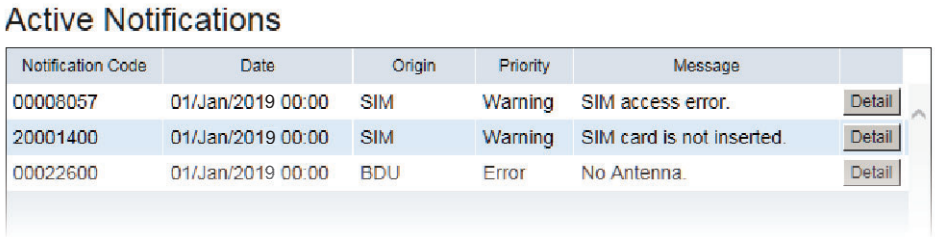
4. Click the [Apply] button.
   The message "Applied." appears.

5. Click the [Close] button.

5.8 Active Notifications

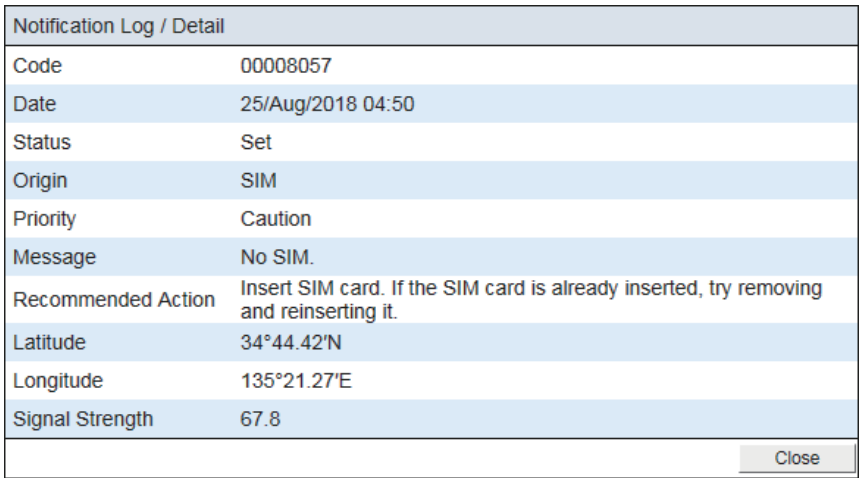
You can view the information for the active notifications.

1. Click [Home] in the menu bar.
2. Click [Active Notifications] to show the [Active Notifications] menu.



Item	Description
Notification Code	Shows the notification code.
Date	Date and time of occurrence
Origin	Location of a notification cause as follows: • ADU (Antenna Unit excluding GPS core) • BDU (Communication Unit) • ADU/BDU (Antenna Unit and Communication Unit) • GPS (GPS core) • SIM (SIM card) • Alarm Panel • HS (Handset)
Priority	Notification level (listed in order of level from highest to lowest as follows): **Error**: Possibility of equipment failure. **Warning**: Possibility that part or all functions cannot be used due to abnormality including external environment.
Message	Notification content

3. Click the [Detail] button to view the notification's detailed information.



The following information appears in addition to the items shown in the list:

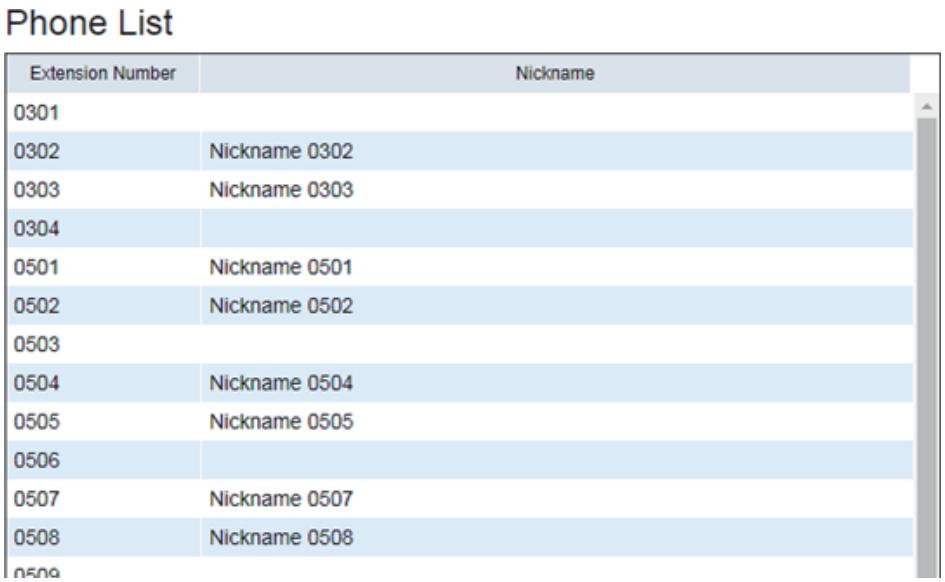
Item	Description
Recommended Action	Shows a method for addressing the event. For events which cannot be addressed, or have no rectification method, this items appears as "- -".

Item	Description
Latitude	Shows the coordinates at the time of the event.
Longitude	
Signal Strength	Shows the signal strength at the time of the event.

5.9 Phone List

The phone list shows the extension number and nickname assigned for each handset.

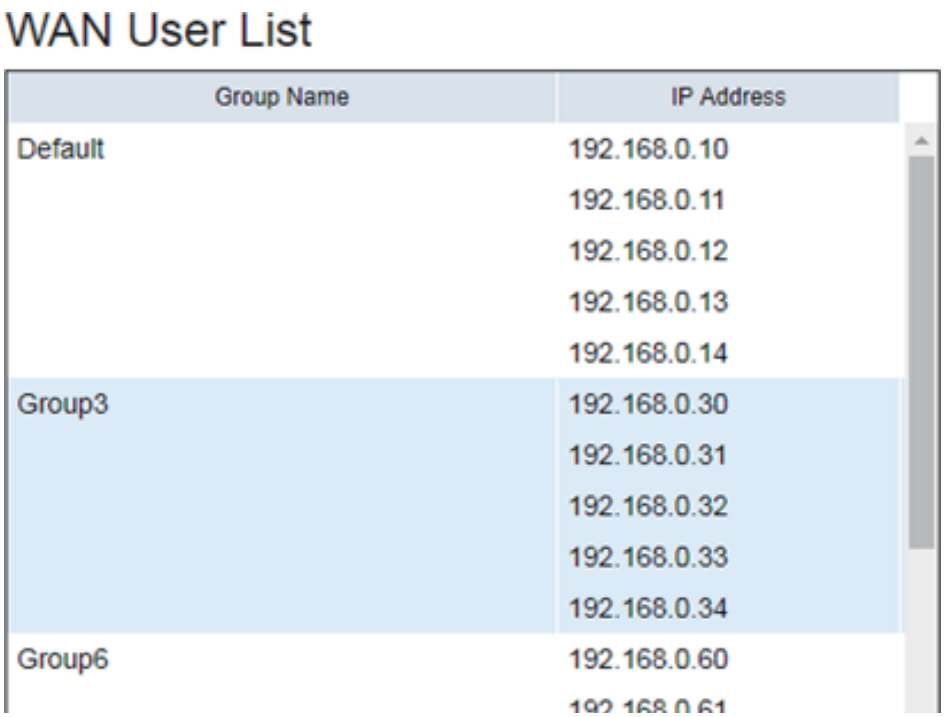
1. Click [Home] in the menu bar.
2. Click [Phone List] to show the [Phone List] menu.



5.10 WAN User List

You can view the information for the WAN user list. To change WAN group settings, see section 6.8.

1. Click [Home] in the menu bar.
2. Click [WAN User List] to show the [WAN User List] menu.
   The [IP Address] section of the list Shows the IP addresses assigned to each WAN group.



5.11 Log Shows

You can display five logs: notification log, voice call log, data connection log, registration log, and remote access log. When the storage capacity of a log is reached, the oldest entries are erased in order.

Log	Capacity for entries	No. of entries displayable
Notification	1000 for each log	100 entries for each log
Voice Call		
Data Connection		
Registration		
Remote Access		

Note 1: The voice and data communication values shown on the terminal display and within terminal logs are for indicative purposes only. These values should not be utilized for billing or billing comparison purposes.

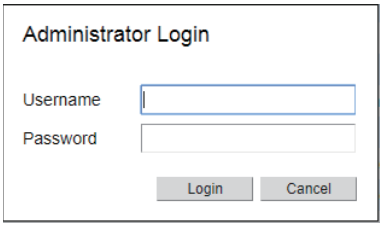
Note 2: The latest 100 entries for any log are shown. To view all the entries of a log, save the log to a CSV file. A log stores up to 1000 entries.

An event log can be forwarded to a PC that has the syslog application installed (see section 6.11).

5.11.1 How to login as a log user

To login as a log user, use the following procedure.

1. Click the [Login] icon.
   The following pop-up menu appears.

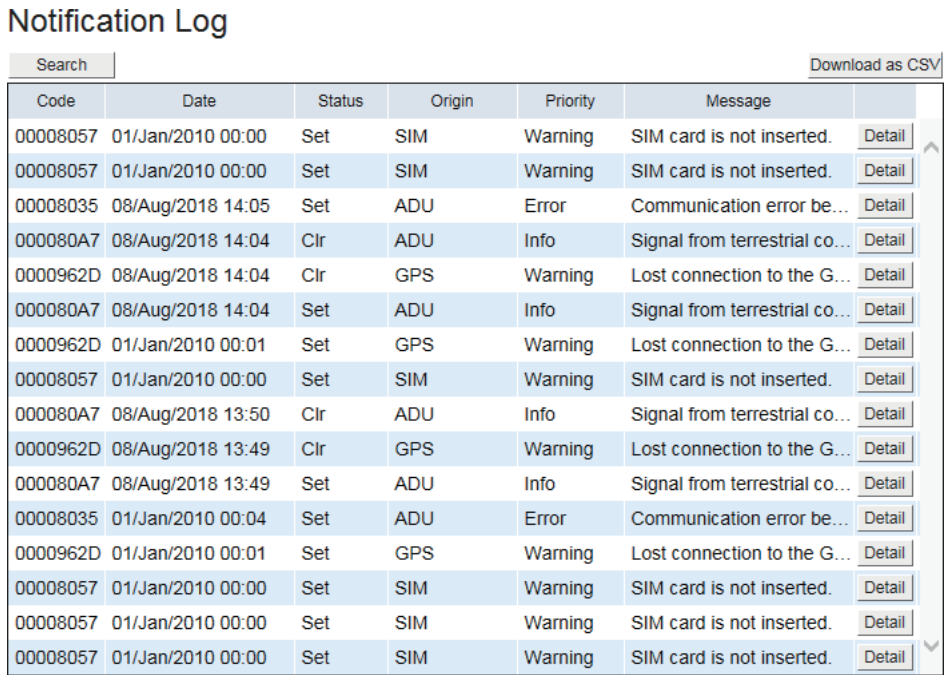


2. Input "Log" in the [Username] box and "Lg1234567890" in the [Password] box.
   "Lg1234567890" is the default password. To change the password, see x.x.x.
3. Click the [Login] button.
   The [Log] menu appears in the menu bar.
4. To log out, click the [Login] icon.
   The [Log] menu disappears from the menu bar.
   Note 1: You can also logout automatically by closing your Web browser.
   Note 2: This login procedure is abbreviated in the following sections.

5.11.2 How to view the notification log

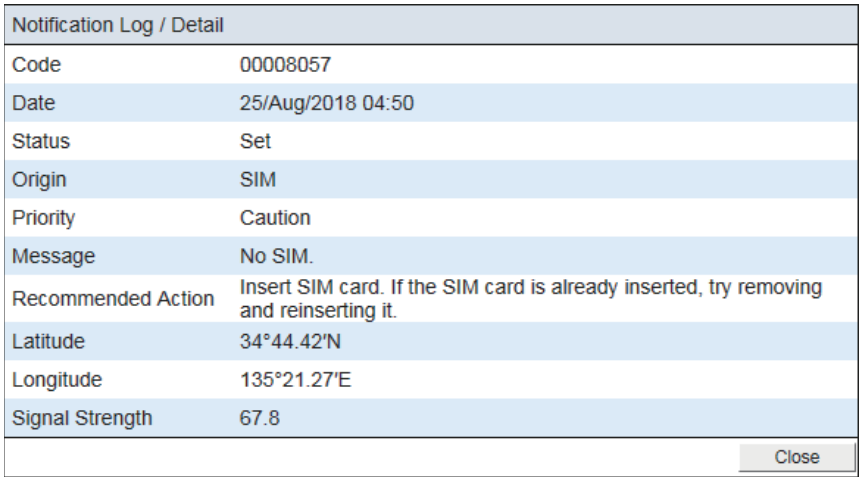
To view the notification log do the following:

1. Click [Log] in the menu bar.
2. Click [Notification Log] in the sub menu to show the [Notification Log] menu.



Item	Description
Code	Notification code
Date	Date and time of event log entry was created.
Status	• Set: Indicates when the event was logged. • Clr (Clear): Indicates when the event was cleared.
Origin	Location of a notification cause as follows: • ADU (Antenna Unit excluding GPS core) • BDU (Communication Unit) • ADU/BDU (Antenna Unit and Communication Unit.) • GPS (GPS core) • SIM (SIM card) • Alarm Panel • HS (Handset)
Priority	Notification level (listed in order of level from highest to lowest as follows): Error: Possibility of equipment failure. Warning: Possibility that part or all functions cannot be used due to abnormality including external environment. Info. (Information): Informative message. No action required.
Message	Notification content

3. Click the [Detail] button to view the notification log's detailed information.



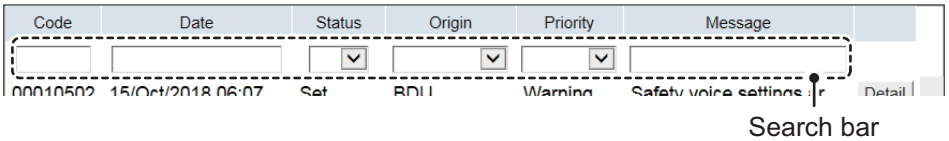
The following information appears in addition to the items shown in the list:

Item	Description
Recommended Action	Shows the recommended action for the event. For events which cannot be addressed, or have no rectification method, this appears as "- -".
Latitude	Shows the coordinates at the time of the event.
Longitude	
Signal Strength	Shows the signal strength at the time of the event.

Click the [Close] button to close the pop-up window.

How to search for a notification

1. Click the [Search] button.
   The search bar appears.



Search bar

To hide the search bar, click the [Search] button again.

2. Search the notification with one or multiple of the following methods:
   - Input part of the code, or the full code in the [Code] field.
   - Input part of the date, or the full date in the [Date] field.
   - Select [Set] or [Cir.], as appropriate, at the [Status] field.
   - Select the appropriate notification origin from the [Origin] field.
   - Select the appropriate notification level from the [Priority] field.
   - Input part, or all, of the message in the [Message] field.

   Once information is input or selected, the search automatically begins. Notifications that match the search criteria appear in the notification log.

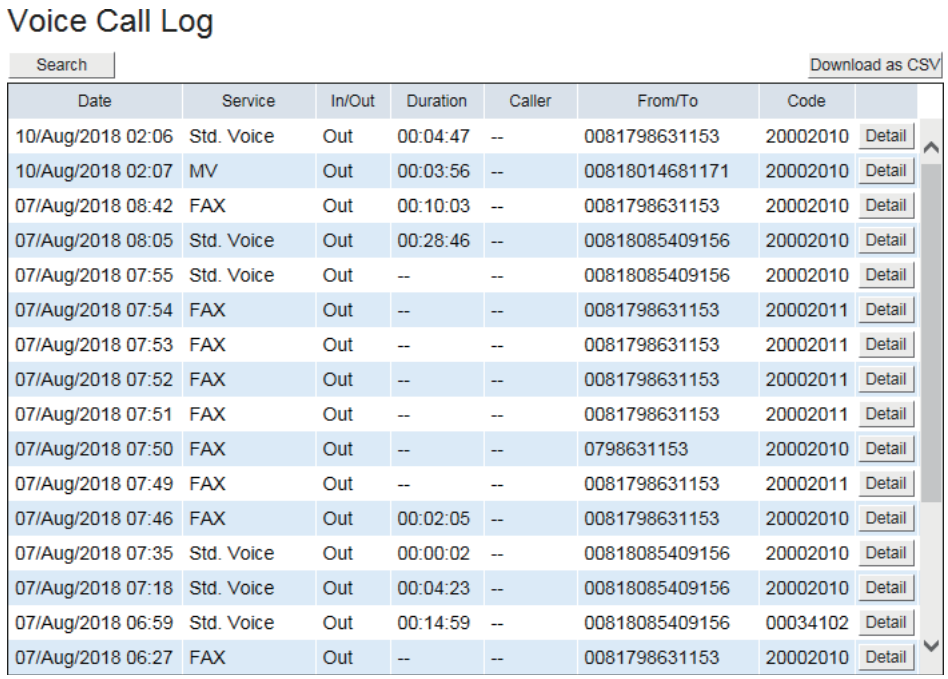
How to save the notification log to a CSV file

1. Click the [Download] as CSV button.
   The [Save] dialog box appears.
2. Input the file name, then click [Save].

5.11.3 How to view the voice call log

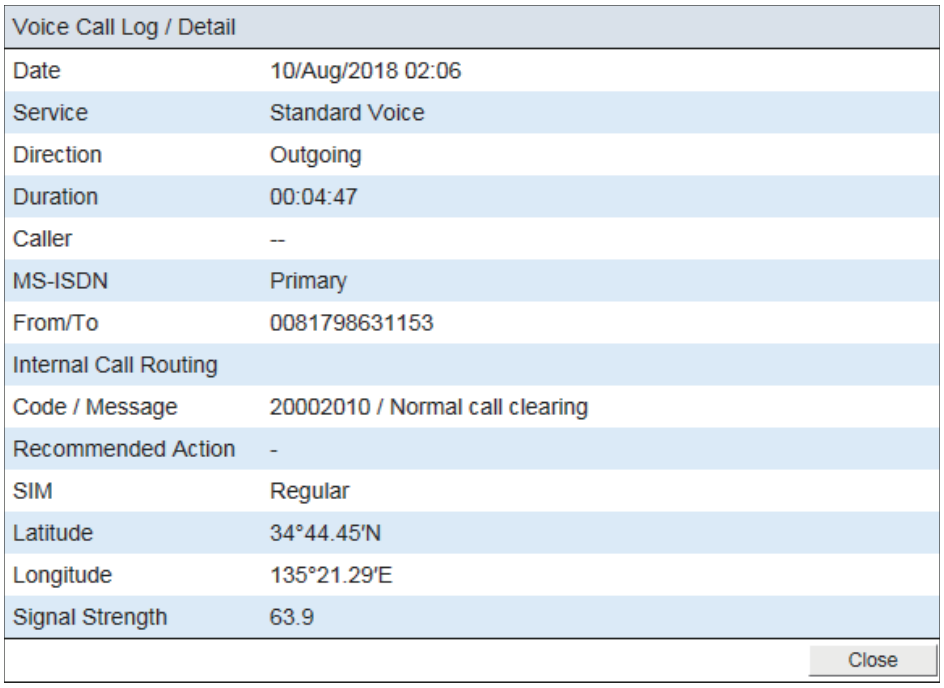
Do the following to view the voice call log:

1. Click [Log] in the menu bar.
2. Click the [Voice Call Log] sub menu to show the [Voice Call Log] menu.



Item	Description
Date	Communication start date and time
Service	Communication the following service type: • Std. Voice (Standard Voice) • MV (Multi Voice) • FAX • ISND • SV (Safety Voice)
In/Out	Incoming / outgoing communication
Duration	Communication time (hour:minute:second) When there is no communication, "- -" appears.
Caller	Sender of caller code (access code) When the caller code is not required, "- -" appears.
From/To	Phone number which the call is made to When the caller is unknown, "No caller ID" appears.
Code	Notification code When there is no notification, "- -" appears.

3. Click the [Detail] button to view the voice call log's detailed information. The following pop-up window appears.

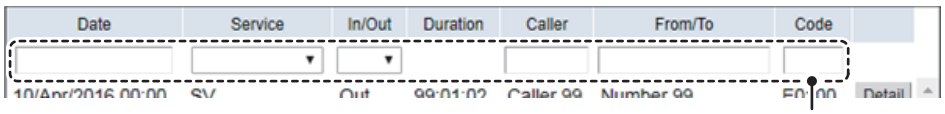


Item	Description
Direction	Shows "Outgoing" or "Incoming".
MS-ISDN	Number of the alternative MS-ISDN for incoming or outgoing call. "Primary" appears in primary MS-ISDN.
Internet Call Routing	Forwarded address with Internal call routing (ICR, see section 6.5.2). • Extension number (four-digits): Succeeded forwarding. • Extension number + X: Failed forwarding then disrupted on shore.
Code / Message	Notification code and its content When there is no notification, "- -" appears.
Recommended Action	Shows how to deal with occurrence events. When there is no action required, "- -" appears.
SIM	SIM in use during a communication "Regular" appears for the first SIM. "Maintenance" appears for the second SIM.
Latitude	Latitude at the time a communication ended
Longitude	Longitude at the time a communication ended
Signal Strength	Signal reception level at the time a communication ended

Click the [Close] button to close the pop-up window.

How to search for an voice call log

1. Click the [Search] button.
   The search bar appears.



Search bar

   To hide the search bar, click the [Search] button again.

2. Search the voice call log with one or multiple of the following methods:
   - Input part of the date, or the full date in the [Date] field.
   - Select the appropriate service from the [Service] field.
   - Select [In] or [Out], as appropriate, at the [In/Out] field.
   - Input part, or all, of the caller name in the [Caller] field.
   - Input part, or all, of the phone number in the [From/To] field.
   - Input part of the code, or the full code in the [Code] field.

   Once information is input or selected, the search automatically begins.
   Voice call logs that match the search criteria appear in the voice call log.

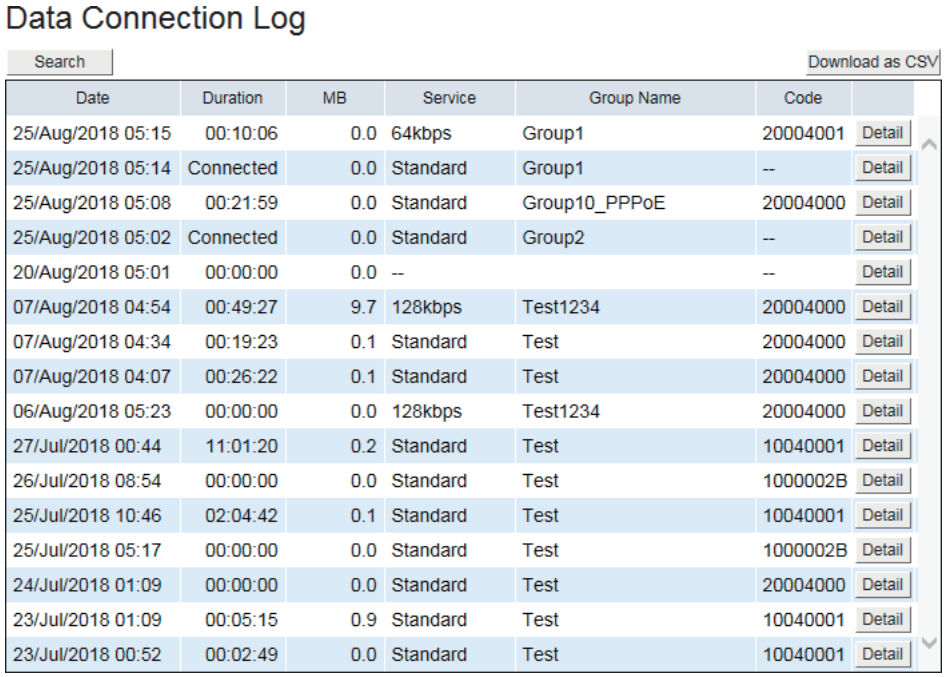
How to save the voice call log to a CSV file

1. Click the [Download] as CSV button.
   The [Save] dialog box appears.
2. Input the file name, then click [Save].

5.11.4 How to view the data connection log

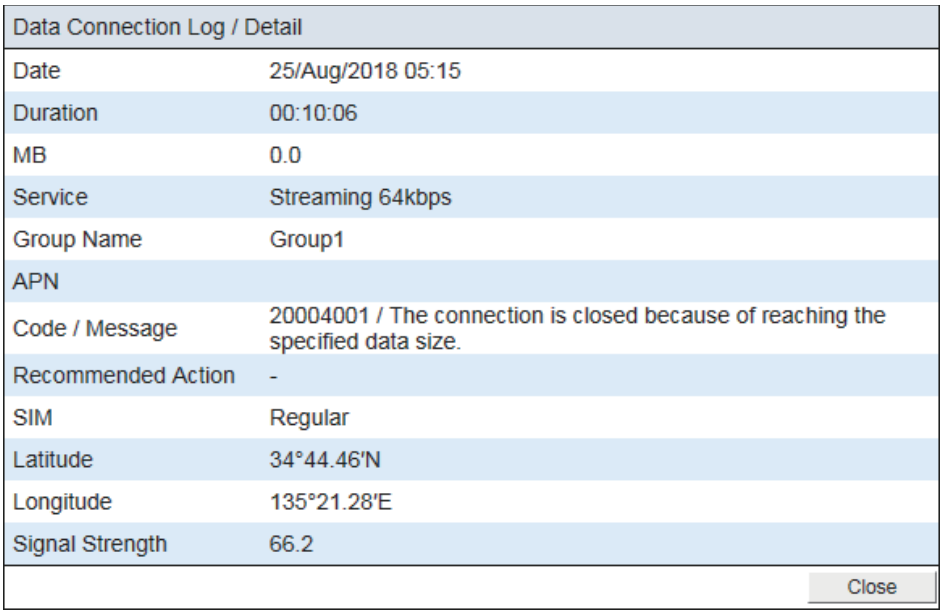
To view the data connection log do the following:

1. Click [Log] in the menu bar.
2. Click the [Data Connection Log] sub menu to show the [Data Connection Log] menu.



Item	Description
Date	Communication start date and time
Duration	Communication time (hour:minute:second) When currently connected, "Connected" appears.
MB	Total amount of data during connection
Service	Communication the following service type: • All • Standard • 8 kbps, 16 kbps, 32 kbps, 64 kbps, 128 kbps, or 256 kbps* *: FELCOM501 only
Group Name	Group name When the "AT Command" function is available, "AT" appears after the group name.
Code	Notification code When there is no notification, "- -" appears.

3. Click the [Detail] button to view the data connection log's detailed information. The following pop-up window appears.

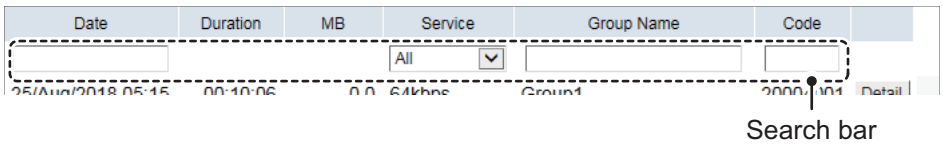


Item	Description
APN	Access point name When you use a access point name for SIM, "(SIM)" appears before the access point name
Code / Message	Notification code and its content When there is no notification, "- -" appears.
Recommended Action	Shows how to deal with occurrence events. When there is no action required, "- -" appears.
SIM	SIM in use during a communication "Regular" appears for the first SIM. "Maintenance" appears for the second SIM.
Latitude	Latitude at the time a communication ended
Longitude	Longitude at the time a communication ended
Signal Strength	Signal reception level at the time a communication ended

Click the [Close] button to close the pop-up window.

How to search for an data connection log

1. Click the [Search] button.
   The search bar appears.



   To hide the search bar, click the [Search] button again.
2. Search the data connection log with one or multiple of the following methods:
   - Input part of the date, or the full date in the [Date] field.
   - Select the appropriate service from the [Service] field.
   - Input part, or all, of the group name in the [Group Name] field.
   - Input part of the code, or the full code in the [Code] field.

   Once information is input or selected, the search automatically begins.
   Data connection logs that match the search criteria appear in the data connection log.

How to save the data connection log to a CSV file

1. Click the [Download] as CSV button.
   The [Save] dialog box appears.
2. Input the file name, then click [Save].

5.11.5 How to view the registration log

The registration log shows a list of all Inmarsat network registrations. To view the Registration log, do the following:

1. Click [Log] in the menu bar.
2. Click the [Registration Log] in the sub menu to show the [Registration Log] menu.

Registration Log

Download as CSV

Date	CS / PS/MV Status	Latitude	Longitude	Signal Strength
25/Aug/2018 05:02	Success Success	34°44.43'N	135°21.29'E	60.0
25/Aug/2018 05:02	Success Failure	34°44.43'N	135°21.29'E	60.0
01/Jan/2010 00:00	Failure Failure	00°00.00'N	000°00.00'E	0.0
01/Jan/2010 00:00	Failure Failure	00°00.00'N	000°00.00'E	0.0
25/Aug/2018 04:50	Failure Failure	34°44.42'N	135°21.27'E	67.8
25/Aug/2018 04:50	Failure Success	34°44.42'N	135°21.27'E	67.8
21/Aug/2018 19:11	Success Success	34°44.45'N	135°21.29'E	62.1
21/Aug/2018 19:10	Success Failure	34°44.45'N	135°21.29'E	62.1
01/Jan/2010 00:00	Failure Failure	00°00.00'N	000°00.00'E	0.0
21/Aug/2018 19:05	Failure Failure	34°44.37'N	135°21.29'E	0.0
21/Aug/2018 19:05	Failure Success	34°44.37'N	135°21.29'E	0.0
20/Aug/2018 05:01	Success Success	34°44.37'N	135°21.29'E	60.6
20/Aug/2018 05:01	Success Failure	34°44.37'N	135°21.29'E	60.6
20/Aug/2018 05:00	Failure Failure	34°44.37'N	135°21.29'E	66.7
20/Aug/2018 05:00	Failure Success	34°44.37'N	135°21.29'E	66.7

Item	Description
Date	Registration date and time
CS / PS / MV Status	Registration status. Shows "Success" or "Failure" for CS (Circuit Switch), PS (Packet Switch), or MV (Multi Voice).
Latitude	Latitude at the time of registration
Longitude	Longitude at the time of registration
Signal Strength	Signal reception level at the time of registration

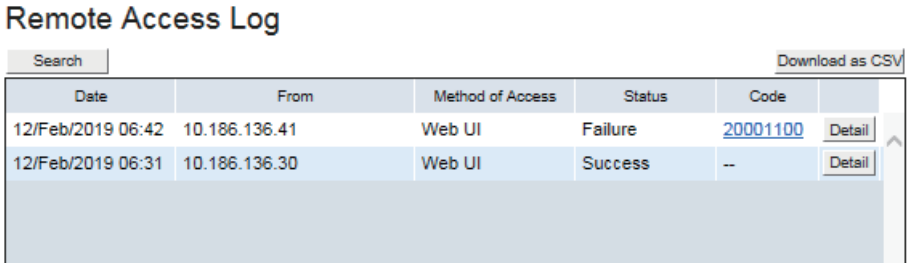
How to save the registration log to a CSV file

1) Click the [Download] as CSV button.
   The [Save] dialog box appears.
2) Input the file name, then click [Save].

5.11.6 How to view the remote access log

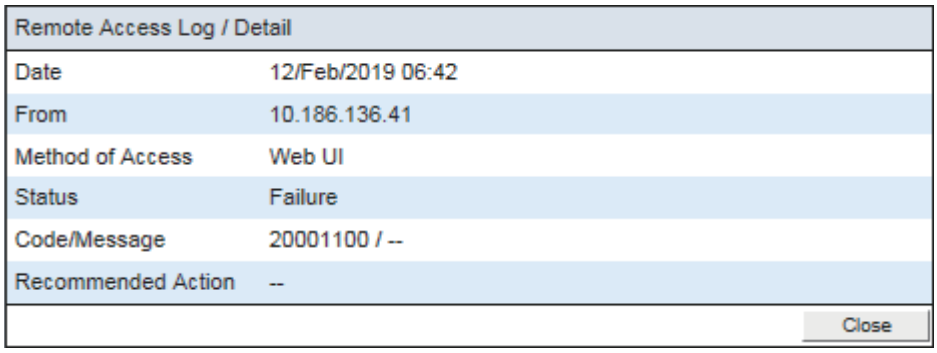
To view the remote access log do the following:

1. Click [Log] in the menu bar.
2. Click the [Remote Access Log] sub menu to show the [Remote Access Log] menu.



Item	Description
Date	Remote access start date and time
From	Source IP address for remote access
Method of Access	Shows "Web UI".
Status	Displays [Success], [Failure], or [Access denied] as the result of the remote access.
Code	Notification code When there is no notification, "- -" appears.

3. Click the [Detail] button to view the remote access log's detailed information. The following pop-up window appears.

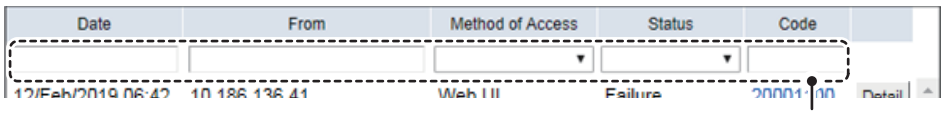


Item	Description
Code / Message	Notification code and its content When there is no notification, "- -" appears.
Recommended Action	Shows how to deal with occurrence events. When there is no action required, "- -" appears.

4. Click the [Close] button to close the pop-up window.

How to search for an remote access log

1. Click the [Search] button.
   The search bar appears.



   To hide the search bar, click the [Search] button again.
2. Search the data connection log with one or multiple of the following methods:
   - Input part of the date, or the full date in the [Date] field.
   - Input part, or all, of the source IP address or phone number in the [From] field.
   - Select the appropriate method from the [Method of Access] field.
   - Select [Success], [Failure], or [Access denied], as appropriate, at the [Status] field.
   - Input part of the code, or the full code in the [Code] field.

   Once information is input or selected, the search automatically begins.
   Remote access logs that match the search criteria appear in the data connection log.

How to save the remote access log to a CSV file

1. Click the [Download] as CSV button.
   The [Save] dialog box appears.
2. Input the file name, then click [Save].

6. SETTINGS ON WEB INTERFACE

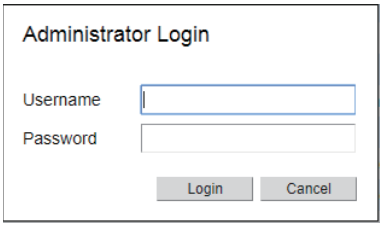
This chapter covers how to access Communication Unit settings, and connection information. User must login as **Administrator** to access these functions.

Note: Communication may not be possible if the settings are incorrect. Settings should be performed by an experienced administrator. Also, be sure to log out after changing any settings. See section 6.1.

6.1 Administrator Login

Do as follows to login as an administrator.

1. Click the administrator login/logout icon.



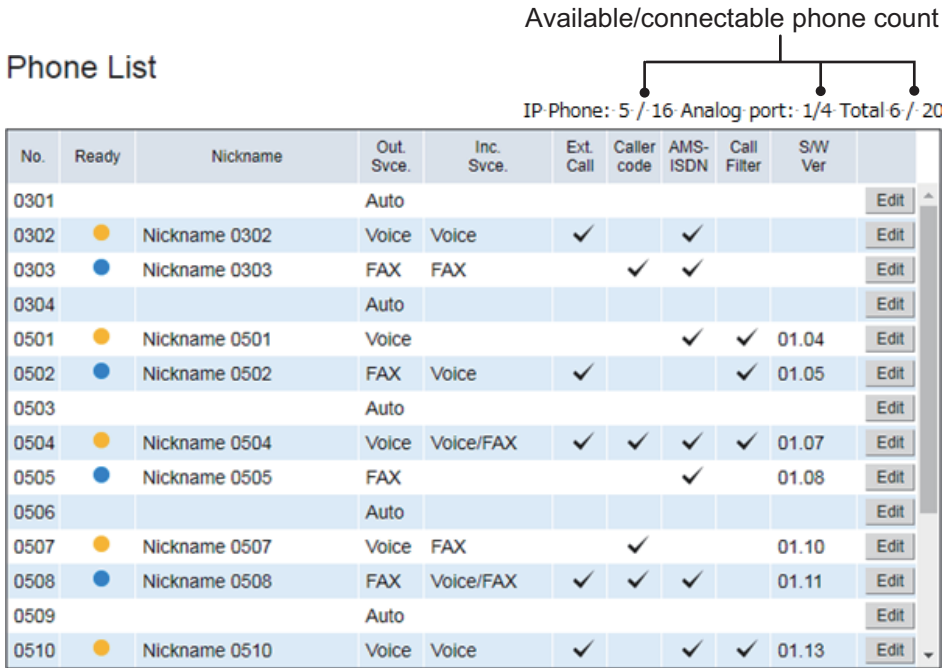
2. Input "Admin" in the [Username] field and "Fb1234567890" in the [Password] field. The factory-set administrator password is "Fb1234567890". To change the password, see section 6.10. The user name cannot be changed.
   Note: If you forgot the administrator password, contact your dealer.
3. Click the [Login] button.
   [Log] and [Admin] appear in the menu bar. The color of the Login icon changes to blue.
4. To logout after completing all settings, click the login icon.
   [Log] and [Admin] disappear from the menu bar. The color of the icon changes to white.

Note 1: The system automatically logs you out if there is no interaction in the Web interface, or if the Communication Unit is restarted.

6.2 Editing Information for Extension Numbers

You can edit the information for extension numbers.

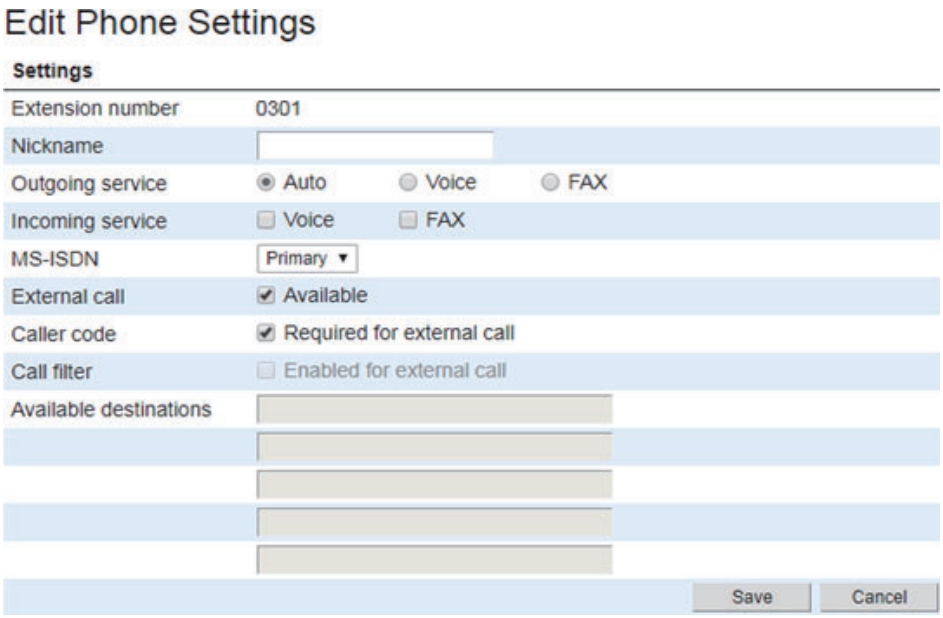
1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Telephony Settings].
4. Click [Phone List] to show the [Phone List] menu.



Item	Description
No.	Extension number You can select the extension number via the IP Handset only. See section 3.6.2. The extension number assigned to each of the analog ports on the Communication Unit is as follows: • Analog port 1: 0301 • Analog port 2: 0302 • Analog port 3*: 0303 • Analog port 4*: 0304 *: ports 3 & 4 require connection with the Telport Extender FB-3002 (available as an optional extra).
Ready	(Blue icon): The extension number is registered and handset can be used for communication. (Yellow icon): The extension number is registered, but the handset is not connected. Blank: The extension number is available. Analog handsets always show the blue icon .
Nickname	Shows the nickname. If no nickname is registered, the column is blank.
Out. Svce.	Shows the outgoing service "Voice", "FAX", or "Auto".
Inc. Svce.	Shows the incoming service "Voice" or "FAX".
Ext. Call	Shows "✓" for the phone is allowed for outside incoming and outgoing calls.
Caller Code	Shows "✓" for the phone which the caller code is requested.

Item	Description
AMS-ISDN	Shows "✓" for the phone is related to alternative MS-ISDN.
Call Filter	Shows "✓" for the phone which destination is restricted.
S/W Ver	Software for the IP Handset

5. Click the [Edit] button at the right side of the extension to edit.



6. Edit the nickname for the extension number in the [Nickname] field.
   A maximum of 20 characters can be used.
   Note: When using the Web interface, you can only edit the nickname for analog phones. To set the nickname for IP handsets, see section 3.6.2.
7. Select the outgoing service from [Auto], [Voice], or [FAX] in the [Outgoing service] field.
   For [Auto], the voice service and fax service switches automatically.
8. Select [Voice] and/or [FAX] in the [Incoming service] field to receive a call from an outside line with this phone.
   This phone rings when receiving the selected service.
   To set the incoming service on, put a [✓] in the box on the left side of [Voice] and/or [FAX] (click the boxes to add [✓]), as required.
   To set the incoming service off, uncheck the [✓] in the box (click the box to delete [✓]).
   Note: If you have subscribed for MS-ISDN, be sure to check the [Voice] box.
9. At the [MS-ISDN] field, select whether to use the Primary number or an alternative MS-ISDN.
   Select [Primary] if your contract does not have alternative MS-ISDN functionality.
   If your contract has alternative MS-ISDN functionality, the numbers registered at section 6.4 appear in the list.
   The number selected here is used for called ID when making a call; further, this number can also be connected (dialed) to from an outside line.
10. Permit or prohibit external calls in the [External call] field.
    To permit external calls, put a [✓] in the box on the left side of [Available] (click the box to add [✓]).
    To prohibit external calls, uncheck the [✓] in the box (click the box to delete [✓]).

11. Set whether to request the caller code in the [Caller code] field.
    To request the caller code, put a [✓] in the box on the left side of [Required for external call] (click the box to add [✓]).
    If you do not request the caller code, uncheck the [✓] in the box (click the box to delete [✓]).
    If the caller code has been requested, the user is always prompted for a 5 digit caller code when making an external call. See section 6.3 how to set the caller code.
    Note: The caller code cannot be requested in the following cases:
    - When external calls are prohibited at step 10.
    - When the call filter is enabled at step 12.

12. Set the external call filter in the [Call filter] field.
    To activate the caller filter, put a [✓] in the box on the left side of [Enabled for external call] (click the box to add [✓]).
    To deactivate the caller filter, uncheck the [✓] in the box (click the box to delete [✓]).
    If the filter has been activated, the user can only call the destination(s) only set in the [Available destinations] field.
    See the table below for example restrictions. A maximum of five restrictions (each with up to 20 characters) can be set.

Usage	Input Example	Remarks
Register telephone number of shore office.	+81798631131#	External calls to other than the phone number registered here are not permitted.
Register only country number (Japan for example).	+61	Only permit calls to Australia.
Register the number exclusive use of pre-paid card.	66#	External calls other than those made with a pre-paid card are not permitted.

    Note: The outside call filter cannot be set in the following cases:
    - When the external call is prohibited at step 10.
    - When the caller code is requested at step 11.

13. Click the [Save] button.
    The message "Applied." appears.
14. Click the [Close] button to close the message.

6.3 Caller Code Settings

When making an outside call from a terminal of which a box of a caller code is checked, input of “caller code” and “*” before the phone number of the party to call is required. For example, if your caller code is [10000], the number you dial would look similar to "10000*0081798652111".

6.3.1 How to register caller code

Register the caller code as follows:

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Telephony Settings].
4. Click [Caller Code] to show the [Caller Code] menu.

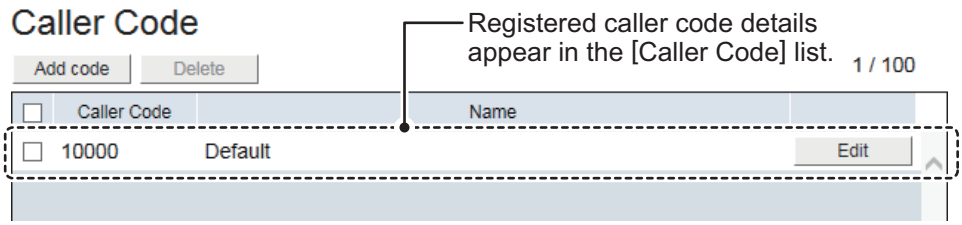


5. Click the [Add code] button.
   The button appears in gray when the memory capacity is reached (100 caller codes).



6. Input the caller code in the [Caller code] field.
   The caller code can range from 10000 to 99999.
7. Input a caller name in the [Name] field.
   Only alphabet characters, “_” and “-” can be input. A maximum of 20 characters can be used.
   The caller name input in this field appears in the [Caller] box of the [Voice Call Log] menu.

8. Click the [Add] button.
   The message "Applied." appears.
   Note: An error message appears in the following cases.
   - When the caller code input in step 6 is already registered, the message "The code is already used." appears.
   - When the caller name input in step 7 is already registered, the message "The name is already used." appears.
9. Click the [Close] button to close the message. The registered caller code appears in the [Caller Code] list.



6.3.2 How to edit caller code

To edit the registered access code or caller name, do the following.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Telephony Settings], then [Caller Code].
3. Click the [Edit] button on the right side of the caller code to be edited.
4. Edit the caller code and/or caller name.
5. Click the [Save] button.
   The message "Applied." appears.
6. Click the [Close] button to close the message.

6.3.3 How to delete caller code

Delete a single caller code, multiple, or all caller codes.

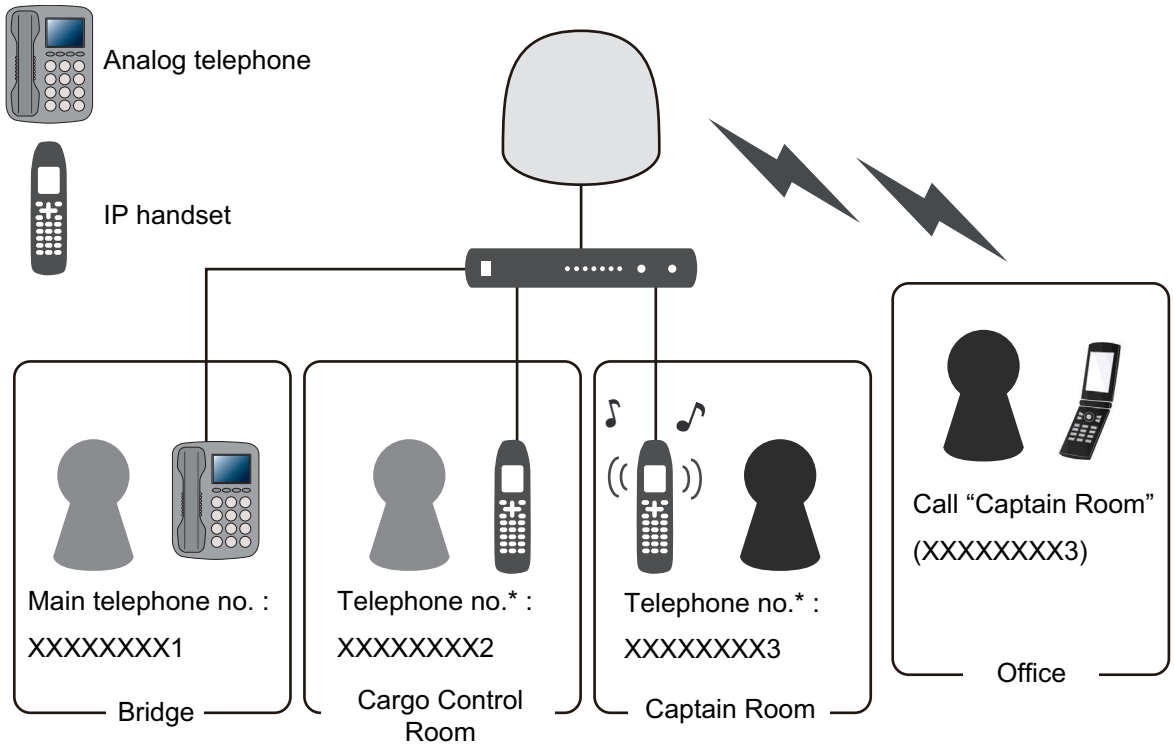
1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Telephony Settings], then [Caller Code].
3. Put a [✓] in the box on the left side of the caller code (click the box to add [✓]) to delete.
   To select all caller codes, put a [✓] in the box beside the [Caller Code] title.
4. Click the [Delete] button.
   The message "Delete the selected item(s). Are you sure?" appears.
5. Click the [OK] button.
   The message "Applied." appears.
6. Click the [Close] button to close the message.

6.4 Alternative MS-ISDN Settings

The alternative MS-ISDN (Mobile Subscriber ISDN Number) function offers multiple telephone numbers with single FBB terminal for Inmarsat. The alternative MS-ISDN service is available with a contract for the service by your service provider.

Note: The alternative MS-ISDN allows the user to assign maximum eight telephone numbers (alternative MS-ISDN) to a specific terminal in addition to the main telephone number.

In the example below the alternative MS-ISDN allows the user to assign a dedicated telephone number to the "Captain Room" which is different from the main telephone number. A person in "Captain Room" on the vessel is able to receive the call independently from "Office" on land.



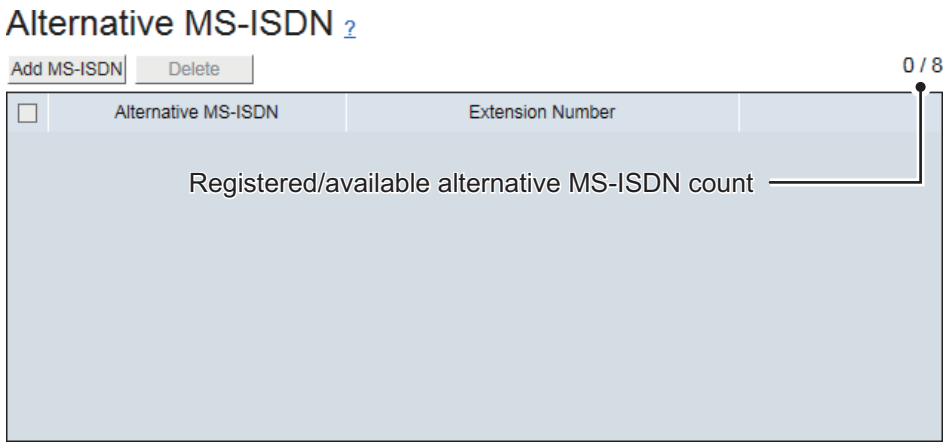
*: Telephone no. assigned with alternative MS-ISDN function

6.4.1 How to register the alternative MS-ISDN

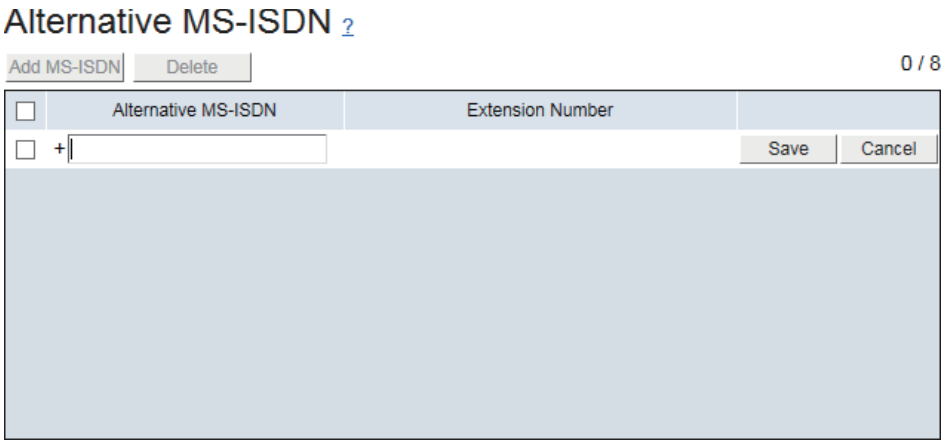
Register the alternative MS-ISDN as follows:

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Telephony Settings].

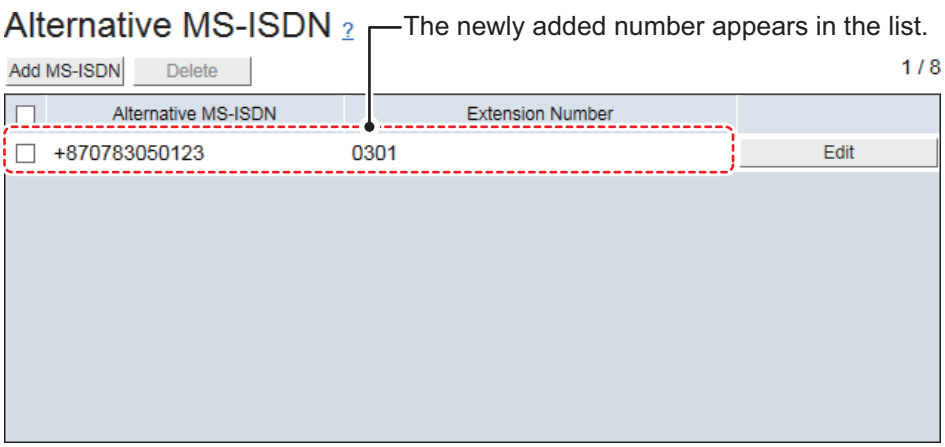
4. Click [Alternative MS-ISDN] to show the [Alternative MS-ISDN] menu.



5. Click the [Add MS-ISDN] button.



6. Input an alternative MS-ISDN which is provided by your service provider in the [Alternative MS-ISDN] field (maximum 12 characters).
7. Click the [Save] button.
   The message "Applied." appears.
   Note: If the alternative MS-ISDN input at step 6 already exists, the message "The MS-ISDN number is already used." appears.
8. Click the [Close] button to close the message.
   The registered MS-ISDN and the extension number associated MS-ISDN appears in the [Alternative MS-ISDN] menu.
9. To associate the registered MS-ISDN with an extension number, go to step 9 in section 6.2.



6.4.2 How to edit the alternative MS-ISDN

Edit the alternative MS-ISDN as follows:

Note: When you change (or delete) the settings of the associated extensions, the extension shown on the [Alternative MS-ISDN] menu is changed (or deleted) accordingly.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Telephony Settings], then [Alternative MS-ISDN].
3. Click the [Edit] button on the right side of the alternative MS-ISDN to be edited.
4. Edit the alternative MS-ISDN.
5. Click the [Save] button.
   The message "Applied." appears.
6. Click the [Close] button to close the message.

6.4.3 How to delete the alternative MS-ISDN

Delete a single the alternative MS-ISDN, multiple, or all the alternative MS-ISDNs.

Note: When you change (or delete) the settings of the associated extensions, the extension shown on the [Alternative MS-ISDN] menu is changed (or deleted) accordingly.

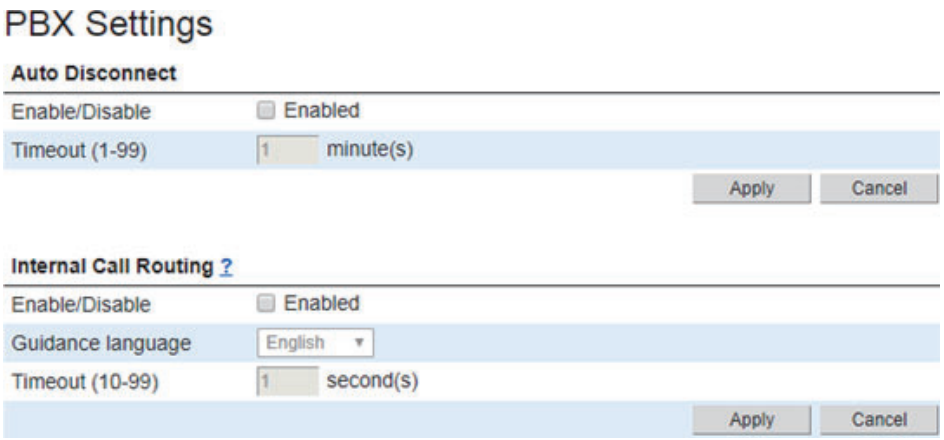
1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Telephony Settings], then [Alternative MS-ISDN].
3. Put a [✓] in the box on the left side of the alternative MS-ISDN (click the box to add [✓]) to delete.
   To select all alternative MS-ISDNs, put a [✓] in the box beside the [Alternative MS-ISDN] title.
4. Click the [Delete] button.
   The message "Delete the selected item(s). Are you sure?" appears.
5. Click the [OK] button.
   The message "Applied." appears.
6. Click the [Close] button to close the message.

6.5 PBX Settings

6.5.1 How to set the automatic timeout function

The automatic timeout function automatically disconnects a voice call (with the exception of emergency call type 505, urgency call 32/38/39, Inmarsat special numbers, extension numbers and Distress calls) when the receiver is left off the hook for the specified number of period of time. This feature is useful for preventing unwanted charges because the phone is left off the hook.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Telephony Settings].
4. Click [PBX Settings] to show the [PBX Settings] menu.



5. To enable the timeout function, put a [✓] in the box on the left side of [Enabled] (click the box to add [✓]).
   To disable the function, uncheck the [✓] in the box (click the box to delete [✓]).
6. Input the timeout (1 to 99 minutes) in the [Timeout] field.
   Communications which exceed this time are automatically disconnected.
7. Click the [Apply] button.
   The message "Applied." appears.
8. Click the [Close] button to close the message.

6.5.2 How to set internal call routing

When a voice call is received for an internal extension number, the call can be transferred to the internal phone automatically. Follow the procedures to set up the internal call routing.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Telephony Settings].
4. Click [PBX Settings] to show the [PBX Settings] menu.
5. To enable the internal call routing function, put a [✓] in the box on the left side of [Enabled] (click the box to add [✓]).
   To disable the feature, uncheck the [✓] in the box (click the box to delete [✓]). A call is routed according to the setting in section 6.2.

6. Select a guidance language: Shows "English" or "Japanese".
7. Set a timeout time between 10 seconds to 99 seconds.
8. Click the [Apply] button to activate the internal call routing.
   The message "Applied." appears.
9. Click the [Close] button to close the message.

When a voice call is received, the FELCOM251/501 plays guidance to the calling party. Then, the calling party inputs an extension number. The call is then transferred to that number.

▶ Operation at calling side in the automatic transfer function

1) Call this vessel (AMBE+2).
   You are requested to dial extension number.
2) Dial extension number (4 digits).
   The extension number is called.
3) When the party answers, pick up the receiver.
4) Hang up the receiver after completing the call.

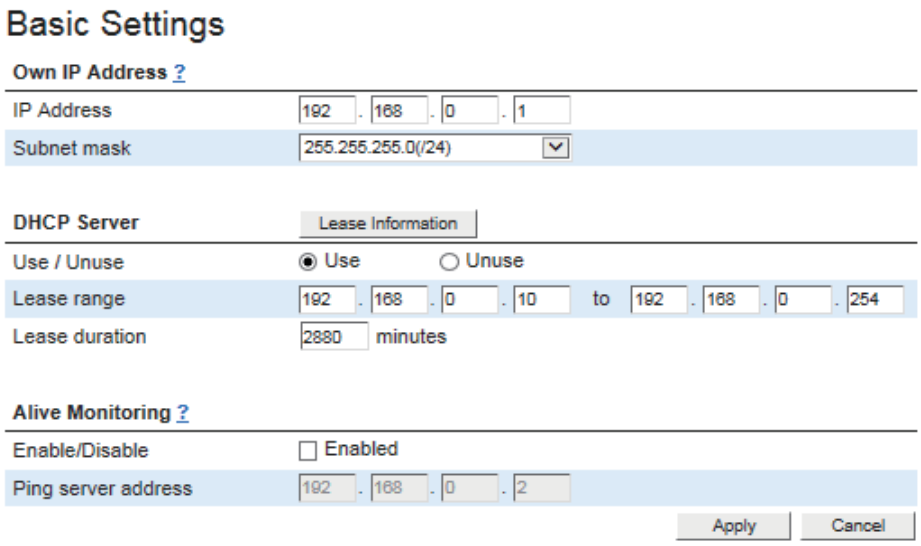
6.6 LAN Settings

The LAN Settings must be performed by **the network manager**.

Note: After making any changes to network settings, conduct a ping test for the network address and broadcast address and check that there is no packet amplification.

6.6.1 How to set up the network

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Network Settings].
4. Click [LAN].
5. Click [Basic Settings] to show the [Basic Settings] menu.



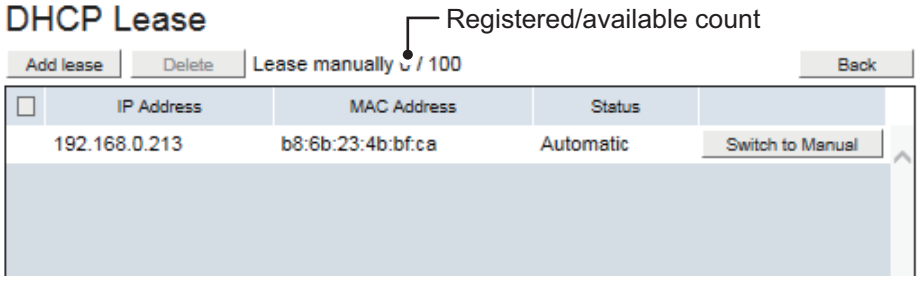
6. Referring to the table below, set up the network.

Item	Description
Own IP Address	
IP Address	Input the LAN IP Address (IPv4 Address).
Subnet mask	Select the LAN subnet mask.
DHCP Server	
Lease information button	Go to the DCHP lease information screen.
Use / Unuse	Use: Use DHCP server in the Communication Unit. Unuse: Do not use DHCP server.
Lease range	Input the assigned start IP address (IPv4 address). Input the assigned end IP address (IPv4 address).
Lease duration	Input the lease duration (1 to 9999).
Alive monitoring	
Enable/Disable	Enables or disables the live connection monitoring function. To enable the function, check ([✓]) the box at [Enabled]. When enabled, an ICMP request sent from a device connected to the Communication Unit will receive a reply if internet connection is available.
Ping server address	Input the ping server address for ICMP requests (IPv4 address).

7. Click the [Apply] button.
   The message "Restart the system to apply the changes." appears.
8. Click the [OK] button.
   The message "Restart the system to apply the changes." appears.
9. Click the [Close] button to close the message.
   Restart the equipment to apply the settings.

6.6.2 How to set up the DHCP lease

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [LAN], then [Basic Settings].
3. Click the [Lease Information] button.



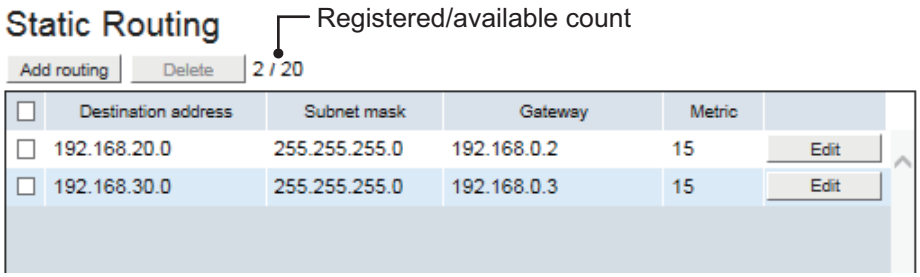
4. Referring to the table below, set up the DHCP lease.

Item	Description
Delete button	Put a [✓] in the box on the left side of the item to delete. To select all items, put a [✓] in the box beside the [IP Address] title.
Add lease button	Input the new lease information. 1) Click the [Add lease] button. 2) Input the manually assigned IP address (IPv4 address). 3) Input the MAC address of device to be registered. 4) Click the [Add] button. To cancel all changes and close the window, click the [Cancel] button. 5) Click the [Close] button to close the window.
Back button	Return to the [Basic Settings] menu.
IP address	Shows the assigned IP address.
MAC address	Shows the MAC address of the network device for the assigned IP address.
Status	Automatic: Automatic assignment Manual: Manual assignment
Switch to Manual button	Change from automatically assigned to manually assigned. The maximum of 100 is for manual assignment.
Edit button	Change the lease information (Appears in manual assignment only). 1) Click the [Edit] button. 2) Change the manually assigned IP address (IPv4 address). 3) Change the MAC address of device to be registered. 4) Click the [Save] button. To cancel all changes and close the window, click the [Cancel] button. 5) Click the [Close] button to close the window.

6.6.3 How to set up the static routing

Static routing allows to forward packets via a local router which is connected to the Communication Unit. To setup static routing, do the following:

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Network Settings].
4. Click [LAN].
5. Click [Static Routing] to show the [Static Routing] menu.



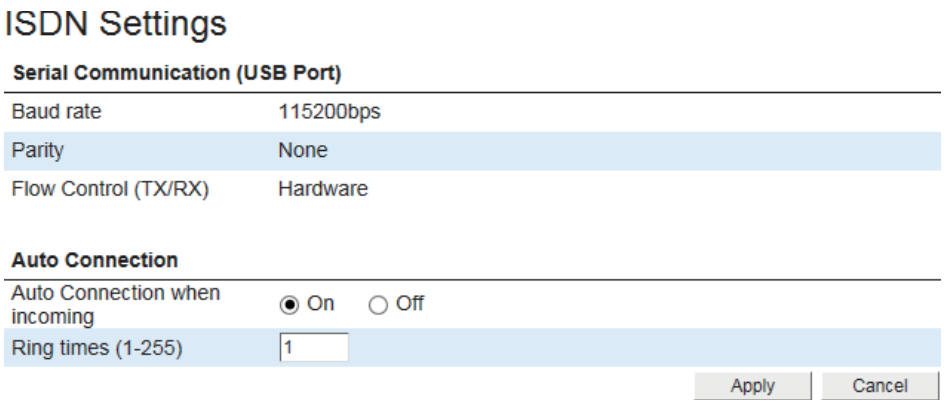
6. Referring to the table below, set up the static routing.

Item	Description
Delete button	Put a [✓] in the box on the left side of the item to delete. To select all items, put a [✓] in the box beside the [Destination address] title.
Add routing button	Input the new static routing information. A maximum of 20 can be registered. 1) Click the [Add routing] button. 2) Input the destination IP address (IPv4). 3) Select the LAN-side subnet mask. 255.255.255.255 is for host routing. 4) Input the default gateway (IPv4). 5) Input the metric (numeric input: 01 to 15). 6) Click the [Add] button. To cancel all changes and close the window, click the [Cancel] button. 7) Click the [Close] button to close the window.
Destination address	Shows the destination address.
Subnet mask	Shows the subnet mask.
Gateway	Shows the gateway.
Metric	Shows the metric information.
Edit button	Change the routing information. 1) Click the [Edit] button. 2) Change the destination IP address (IPv4). 3) Select the LAN-side subnet mask. 255.255.255.255 is for host routing. 4) Change the default gateway (IPv4). 5) Change the metric (numeric input: 01 to 15). 6) Click the [Save] button. To cancel all changes and close the window, click the [Cancel] button. 7) Click the [Close] button to close the window.

6.7 ISDN Settings

Set for the equipment that is connected to the USB port via "USB-RS232C Converter".

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [ISDN Settings] to show the [ISDN Settings] menu.



4. Referring to the table below, set up the ISDN service.

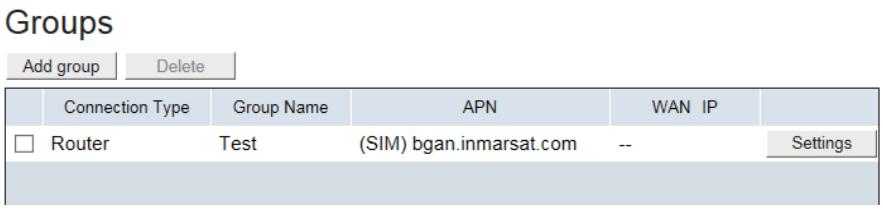
Item	Description
Serial Communication	
Baud rate	Shows the preset baud rate. The setting cannot be changed.
Parity	Shows "None". The setting cannot be changed.
Flow Control	Shows "Hardware". The setting cannot be changed.
Auto Connection	
Auto connection when incoming	Turn the setting on to connect ISDN automatically when receiving an incoming call, then the data communication starts via the USB port.
Ring times	Set the ring tone number when receiving the ISDN call until automatic connection. This menu appears in grey when turning the [Auto connection when incoming] menu off.

5. Click the [Apply] button.
   The message "Applied." appears.
6. Click the [Close] button to close the message.

6.8 WAN Settings

The FELCOM251/501 provides multiple WAN groups which have independent data connection with different filtering policy for the connected equipment. So you can make your own groups, like a group for business use and a group for private use. The network administrator is responsible for the group/network design.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Network Settings].
4. Click [WAN].
5. Click [Groups] to show the [Groups] menu.

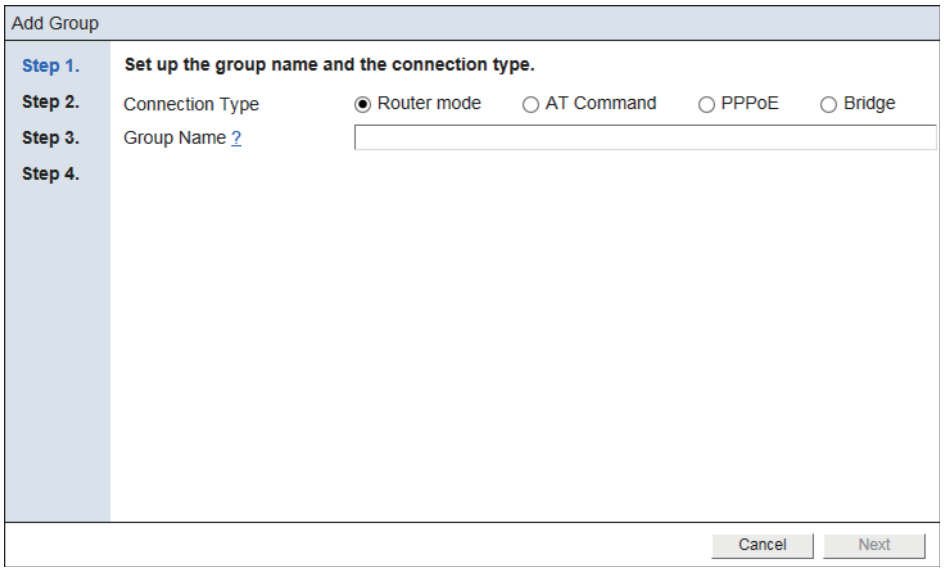


Item	Description
Delete button	Delete the item having a checkmark [✓]. Put a [✓] in the box on the left side of the item to delete. It is not possible to delete the groups that have an active data connection.
Add group button	Create a new WAN group. Up to ten groups can be created. The creation pop-up window appears.
Connection Type	Shows "Router", "AT Command", "PPPoE", or "Bridge".
Group Name	Shows the registered group name.
APN	Display Access Point Name. (If an Access Point registered in the SIM card is used: "(SIM) Access Point Name" appears.)
WAN IP	• Data connection in use: WAN IP address appears. • Not connected: "--" appears.
Settings button	Shows the group setting screen. You can check or edit the registered contents in each group.

6.8.1 How to register/edit WAN group as “Router mode”

Router mode is the more common of the connection types, allowing data transfer and automatic connection at startup. You can also manually connect from the WEB interface, as well as from a handset.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click [Add group].
   The following pop-up window appears.

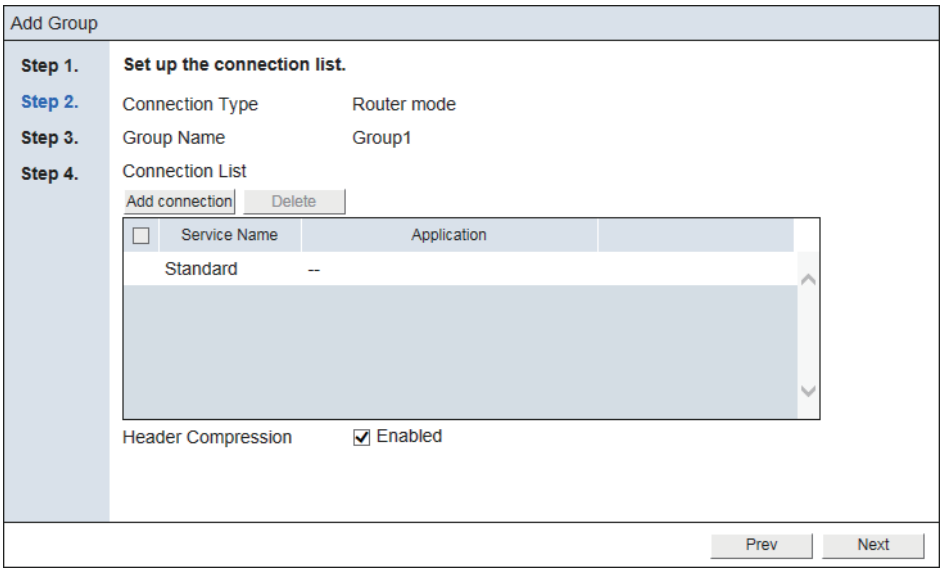


   To edit a WAN group, click the [Settings] button for the WAN group to edit. Edit the settings referring to this step and later.

4. Referring to the following table, set up the connection type and the group name.

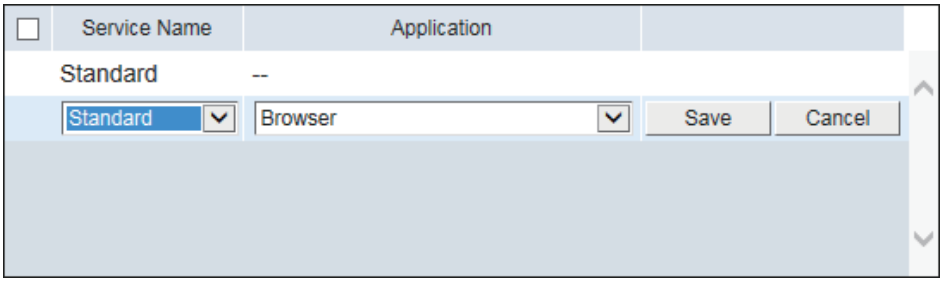
Item	Description
Connection Type	Select "Router mode".
Group name	Input the group name.
Next button	Go to the next step.
Cancel button	Close the pop-up window.

5. Click the [Next] button.



Item	Description
Connection Type	Shows "Router mode".
Group Name	Shows the registered group name.
Connection List	
Add connection button	Create a new connection. Up to ten connections can be created.
Delete button	Delete the item having a checkmark [✓]. Put a [✓] in the box on the left side of the item to delete. It is not possible to delete the groups in the following cases: • "Standard" appears at the top of the connection list. • While a data connection is active.
Service Name	Shows the following type of data communication service: • Standard data • 8 kbps Streaming, 16 kbps Streaming, 32 kbps Streaming, 64 kbps Streaming, 128 kbps Streaming, or 256 kbps Streaming* *: FELCOM501 only
Application	Shows the application available for the data connection. "--" appears in the [Application] field for primary connections.
Header Compression	Put a [✓] in the box to activate the header compression. Compresses the IP header in a packet before the packet is sent.
Prev button	Return to the previous step while keeping the setting information.
Next button	Go to the next step.

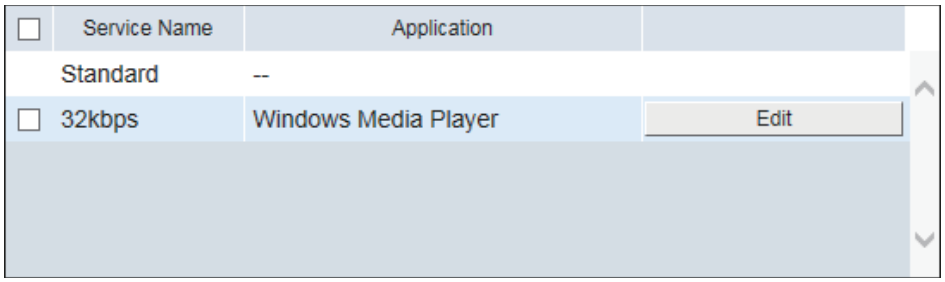
6. Click the [Add connection] button.



7. Referring to the following table, set up the connection.

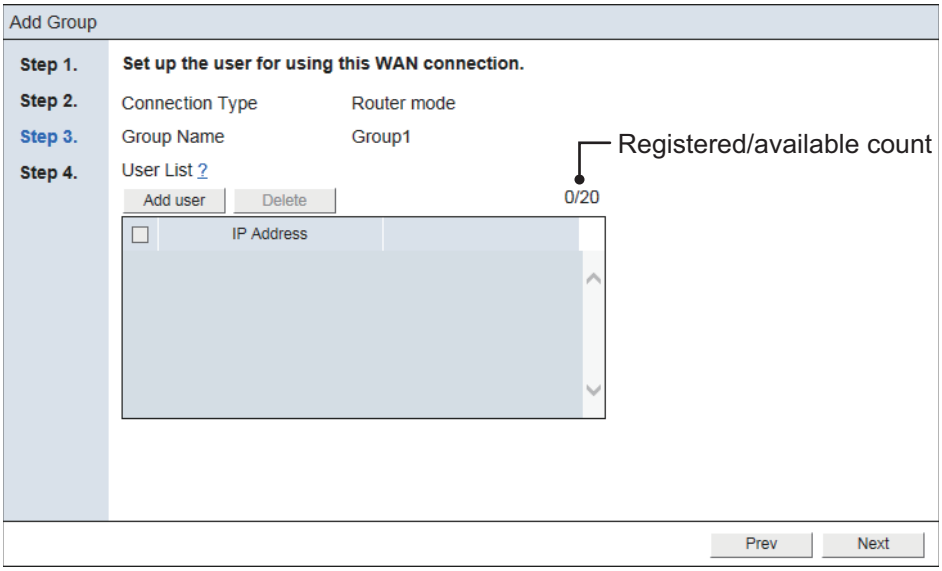
Item	Description
Service Name	Select the data communication service to use. • Standard data • 8 kbps Streaming, 16 kbps Streaming, 32 kbps Streaming, 64 kbps Streaming, 128 kbps Streaming, or 256 kbps Streaming* *: FELCOM501 only
Application	Select the application to use from "Browser", "Windows Media Player", "Real Player/Quick Time", "FTP".
Save button	Save the setting information.
Cancel button	Cancel the setting information.

When clicking the [Save] button, the connection is added to the connection list as follows:



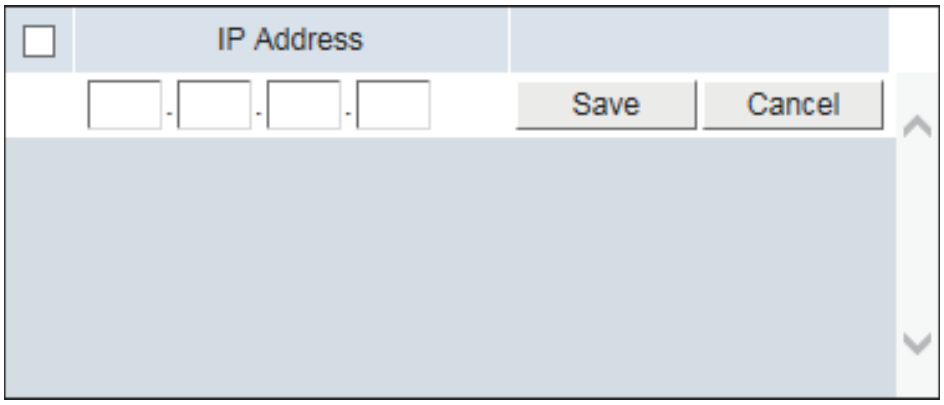
To edit the created connection, Click the [Edit] button.
Edit the connection, referring to the table at this step.

8. Click the [Next] button.



Item	Description
User List	
Add user button	Create a new user. Up to 20 users can be created.
Delete button	Delete the item having a checkmark [✓]. Put a [✓] in the box on the left side of the item to delete.
IP Address	Shows the IP address of the registered user.
Prev button	Return to the previous step while keeping the setting information.
Next button	Go to the next step.

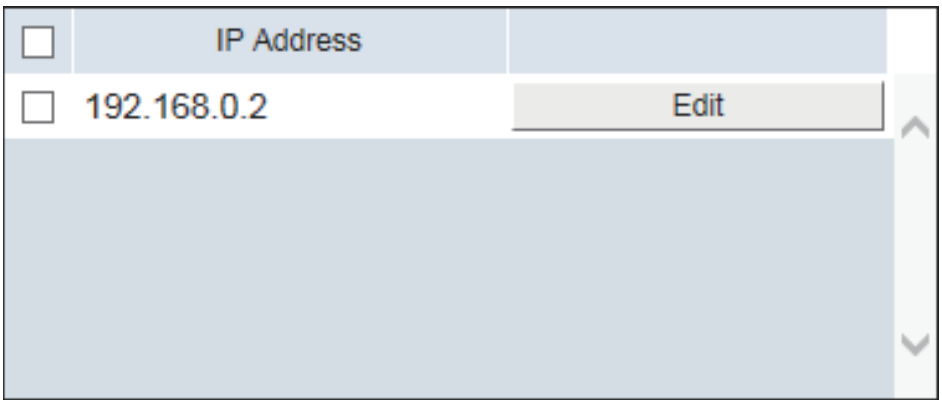
9. Click [Add user] button.



10. Referring to the following table, set up the user for using the WAN connection. Input the IP address of the network equipment to enable data communication. If an IP address of an IP Handset is not registered as "User" here, "No permission" appears on the main screen of the IP Handset. If an IP address of a PC is not registered as "User" here, "No permission" appears on the [Dashboard] screen of theWeb interface.

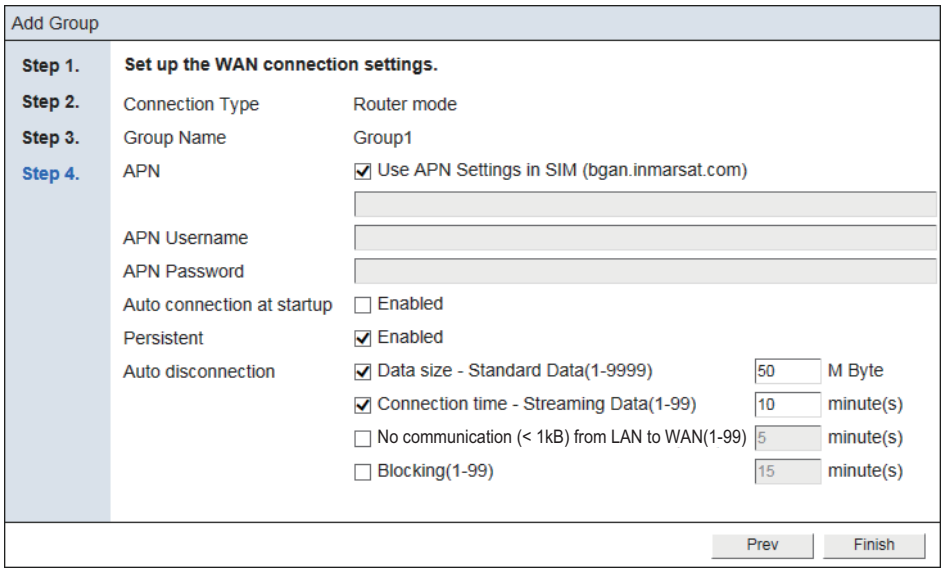
Item	Description
User	Input, or change IP address. The assigned IP address must be different from that of the Communication Unit. Further, the addresses 127.0.0.1 and 255.255.255.255 cannot be used. **Note:** The same IP address cannot be registered to the different groups. “192.161.0.*” and “192.168.0.10” can be registered. (* indicates a wild-card). If you registered two groups this way, the group having the narrowest range (192.168.0.10) has priority.
Save button	Save the setting information.
Cancel button	Cancel the setting information.

When clicking the [Save] button, the user is added to the user list as follows:



To edit the created user, Click the [Edit] button.
Edit the user, referring to the table at this step.

11. Click the [Next] button.



12. Referring to the table below, set up the WAN connection settings.

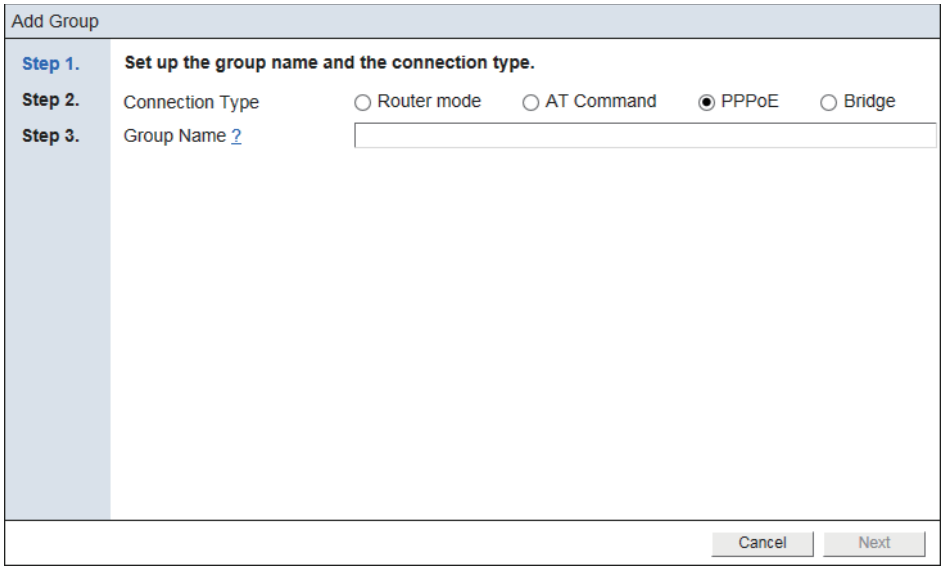
Item	Description
Connection Type	Shows the registered connection type.
Group Name	Shows the registered group name.
APN	Put a [✓] in the box to use Access Point Name in the SIM card. Use ASC II characters (other than “, ’) for the names of connection destinations (maximum 100 characters).
APN Username	Input the username specified by provider (maximum 50 characters). Ok to leave blank.
APN Password	Input the password specified by provider (maximum 50 characters). Ok to leave blank.
Auto connection at startup	Put a [✓] in the box to connect the topmost item on the connection list (Standard) when power is turned on.
Persistent	Put a [✓] in the box to activate automatic reconnection when the data connection is unintentionally disconnected from the network. **Note:** This function will not be activated when the data connection is manually disconnected (for example, the power is turned off) or disconnected by the auto disconnection function below.
Auto disconnection	Put a [✓] in the box(es) for the following disconnect condition(s) to automatically disconnect the group’s line as necessary. • [Data size - Standard Data]: Data size limit for the standard data. If the data size exceeds this setting, connection is severed. • [Connection time - Streaming Data]: Connection time limit for streaming data. If the streaming time exceeds this setting, connection is severed. • [No communication (< 1kB) from LAN to WAN]: Set the time for disconnection. If there is less than one kilobyte of data transferred during this time, the connection is severed. • [Blocking]: When communication to a satellite is blocked for longer than the time set here, the connection is severed.
Prev button	Return to the previous step while keeping the setting information.
Finish button	Register the setting information, then go to the [Group] menu.

13. Click the [Finish] button.
    The message "The group registration was successful. Set the firewall, IP filter and DNS filter as necessary." appears.
14. Click the [Close] button to close the message.
    To set up the "Firewall", "DNS Filter", "IP Filter", "DMZ", and "VPN" settings, see the relevant sections.
    - Firewall: section 6.8.5
    - DNS Filter: section 6.8.6
    - IP Filter: section 6.8.7
    - DMZ: section 6.8.8
    - VPN: section 6.8.9

6.8.2 How to register/edit WAN group as "PPPoE"

The FELCOM251/501 can connect (dial-up connection) to the internet via PPPoE. With the Web interface and PC set up for PPPoE, the dial-up application directly controls connection and disconnection of the data line. (It is not necessary to boot the Web interface to connect to the internet.) The PPPoE settings must be done by **the network administrator**.

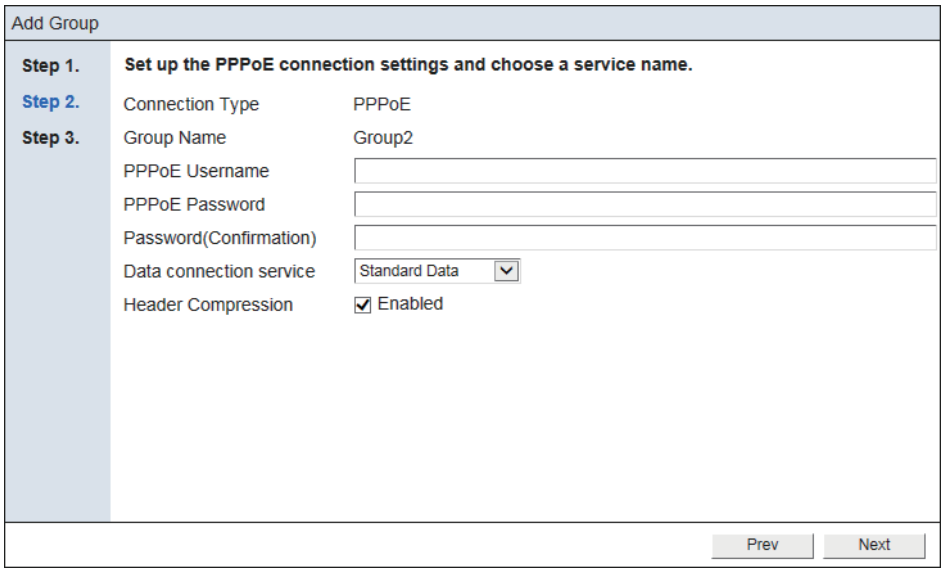
1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click [Add group].
   The following pop-up window appears.



   To edit a WAN group, click the [Settings] button for the WAN group to edit. Edit the settings referring to this step and later.
4. Referring to the following table, set up the connection type and the group name.

Item	Description
Connection Type	Select "PPPoE".
Group name	Input the group name.
Next button	Go to the next step.
Cancel button	Close the pop-up window.

5. Click the [Next] button.



6. Referring to the following table, set up the PPPoE connection settings and choose a service name.

Item	Description
Connection Type	Shows "PPPoE".
Group Name	Shows the registered group name.
Connection List	
PPPoE Username	Input the user name*1 for PPPoE. Use ASCII characters other than space, ", ¥. Maximum of 15 characters.
PPPoE Password*3	Input the password*1 for PPPoE. Use ASCII characters other than space, ", ¥. The password must contain upper and lower-case alphanumeric characters with a minumim of 8 characters and a maximum of 15 characters.
Password(Confirmation)*3	Re-Input the password entered at PPoE Password.
Data connection service	Select the service from "Standard Data", "Streaming 8kbps", "Streaming 16kbps", "Streaming 32kbps", "Streaming 64kbps", "Streaming 128kbps", "Streaming 256kbps"*2.
Header Compression	Put a [✓] in the box to activate the header compression. Compress the header area of the communication protocol, and reduce the communication volume.
Prev button	Return to the previous step while keeping the setting information.
Next button	Go to the next step.

*1: Memorize the Username and Password set here, as they are required to connect to the internet via PPPoE.

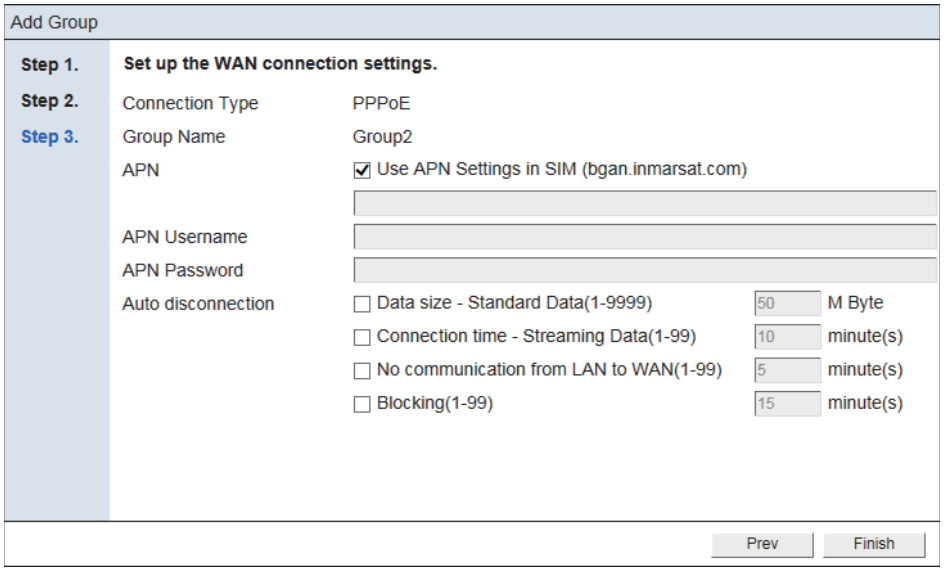
*2: FELCOM501 only.

*3: The message "Invalid value(s)" appears under the following circumstance, after the [Next] button is clicked.

- Invalid characters using in the user name or password.
- Number of characters used for the user name or password is more than the maximum, or less than the minimum.
- The combination of characters does not meet the requirement.

- Password and confirmation do not match.

7. Click the [Next] button.



8. Referring to the table below, set up the WAN connection settings.

Item	Description
Connection Type	Shows "PPPoE".
Group Name	Shows the registered group name.
APN	Put a [✓] in the box to use Access Point Name in the SIM card. Use ASC II characters (other than “, ’) for the names of connection destinations (maximum 100 characters).
APN Username	Input the user name specified by provider (maximum 50 characters). Ok to leave blank.
APN Password	Input the password specified by provider (maximum 50 characters). Ok to leave blank.
Auto disconnection	Put a [✓] in the box(es) for the following disconnect condition(s) to automatically disconnect the group’s line as necessary. • Data size - Standard Data: Input the automatic disconnect data size of the standard data. • Connection time - Streaming Data: Input the connection time of the streaming data. • No communication from LAN to WAN: Input the waiting time when there is no transmission data. • Blocking: Input the limit time that cannot communicate with the satellite.
Prev button	Return to the previous step while keeping the setting information.
Finish button	Register the setting information, then go to the [Group] menu.

9. Click the [Finish] button.
   The message "The group registration was successful. Set the firewall, IP filter and DNS filter as necessary." appears.
10. Click the [Close] button to close the message.

To set up the "Firewall", "DNS Filter" and "IP Filter"settings, see the relevant sections.

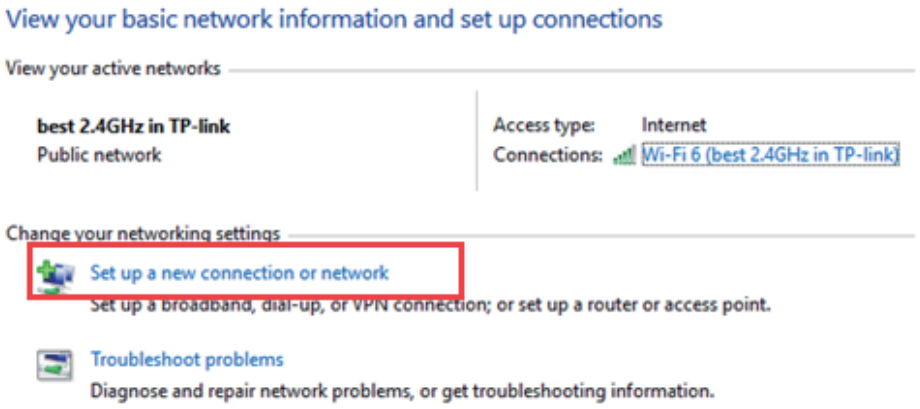
- Firewall: section 6.8.5
- DNS Filter: section 6.8.6
- IP Filter: section 6.8.7

PC settings

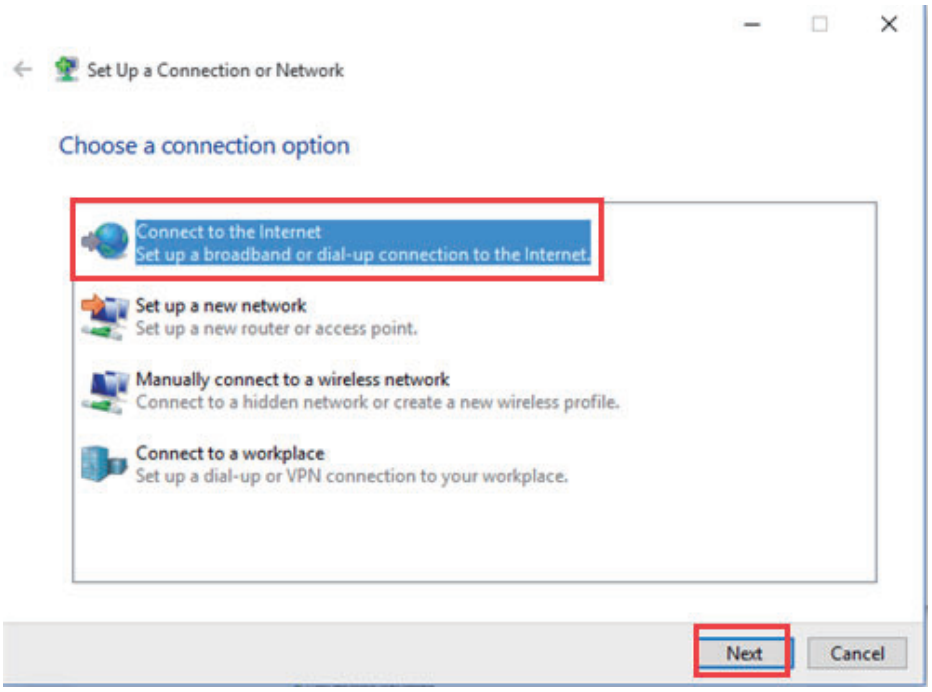
Note: The following procedure uses Windows® 10 for screenshots. If your PC is using a different Windows® version, see your Windows® manual for the correct method to access the network settings.

First set the PPPoE information on the Web interface, then set it on the PC.

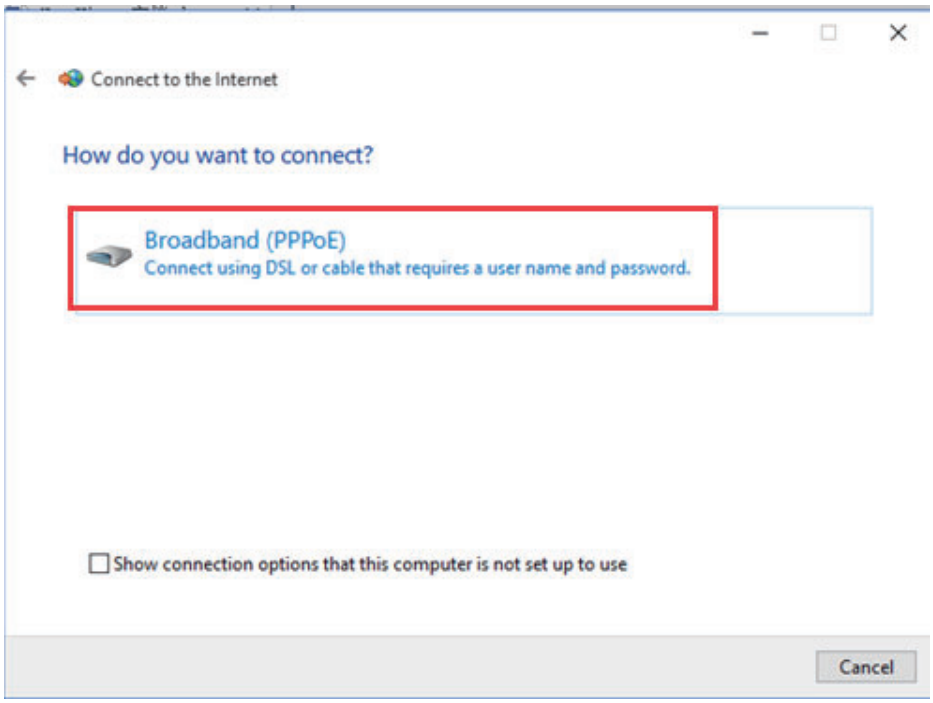
1. Access the [Control Panel] on your PC.
2. Click [View network status and tasks] in the [Network and Internet] field.



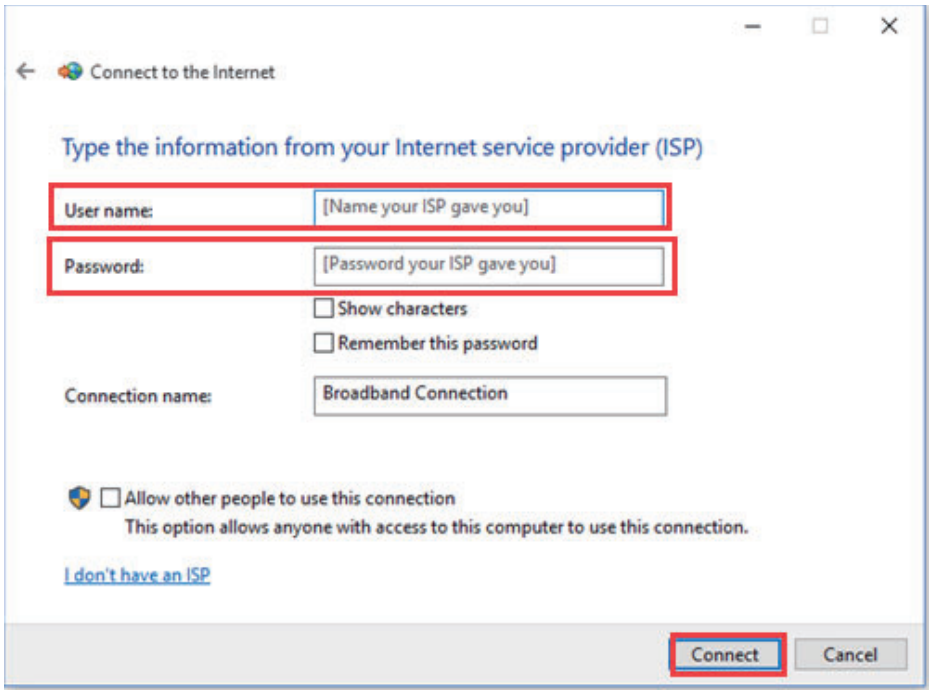
3. Click [Set up a new connection or network].



4. Select [Connect to the Internet], then click the [Next] button.

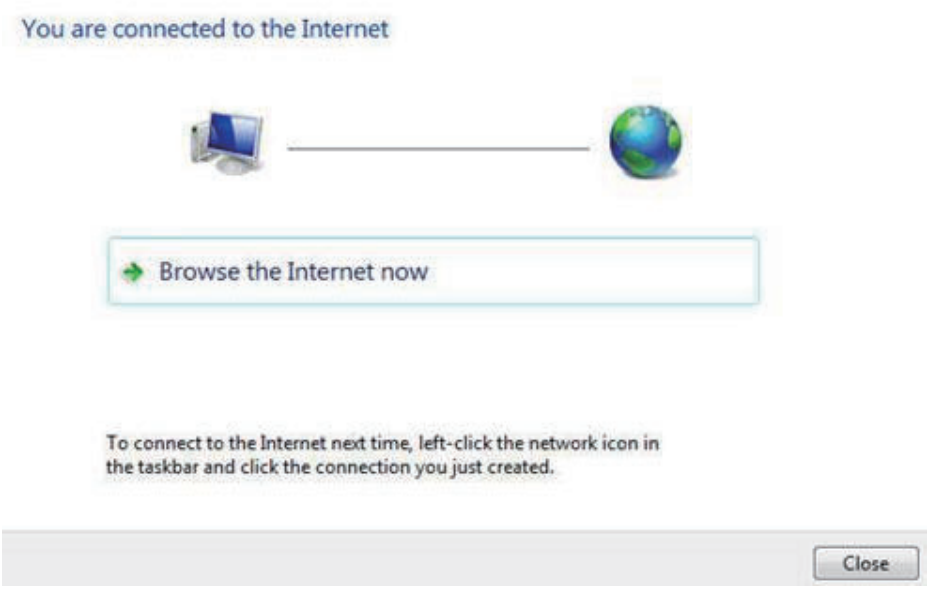


5. Click [Broadband (PPPoE].



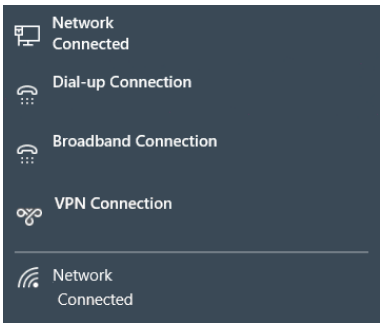
6. Input the [Username] and [Password] according to the PPPoE settings (see step 6 in section 6.8.2).
7. You may rename the connection using the [Connection name] field. Renaming the connection is optional.

8. Click the [Connect] button.
   The system will now attempt to connect to the internet. On successful connection, a window similar to the one shown below appears.
   Note: If DNS is blocked by the DNS filter of the FELCOM251/501, the connection test will be failed.



9. Click the [Close] button.

10. In the bottom right-hand corner of the desktop, click the network icon .
    A list of available networks appears. Confirm that your PPPoE network connection is available in the list.

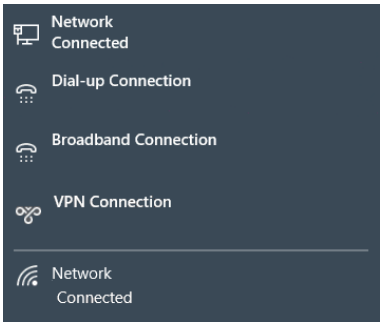


How to connect to the internet via PPPoE

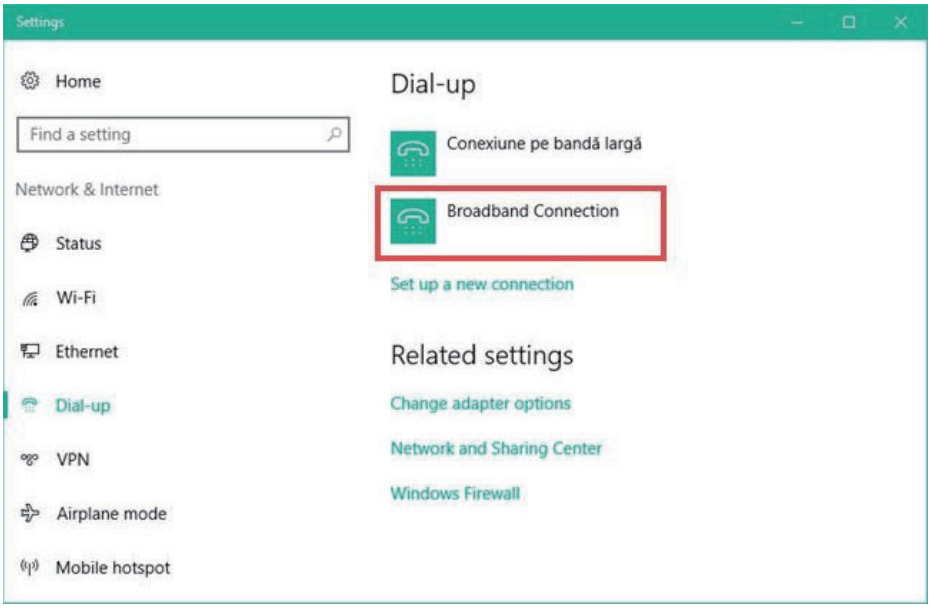
Note: The following procedure uses Windows® 10 for screenshots. If your PC is using a different Windows® version, see your Windows® manual for the correct method to access the network settings.

Connect to the internet with a dial-up application.

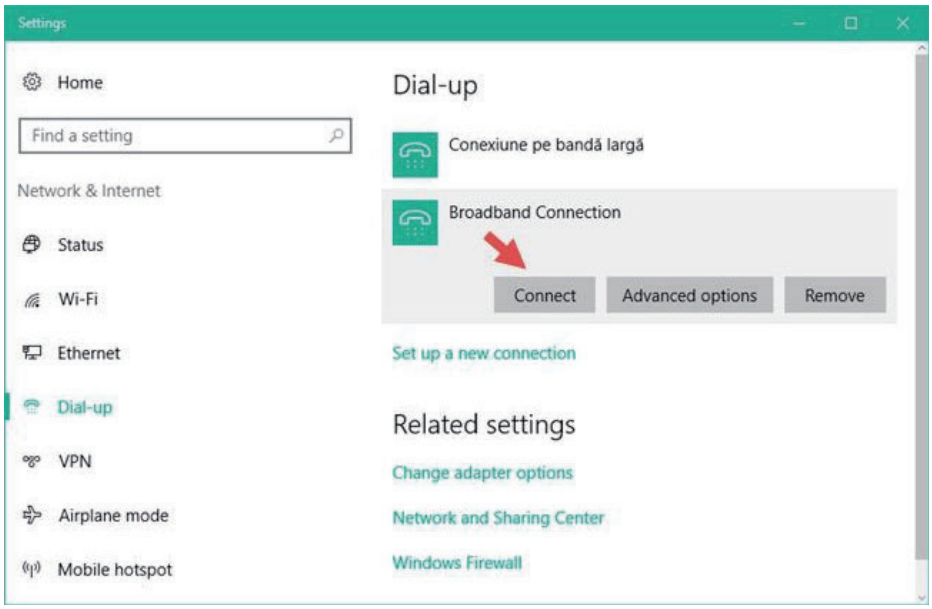
1. In the bottom right-hand corner of the desktop, click the network icon .
   A list of available networks appears.



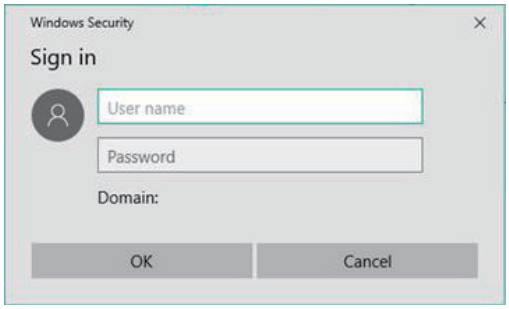
2. Click the appropriate PPPoE network connection.
   If you didn't change its default name, the connection should be called "Broadband-Connection".
   A window similar to the one shown below appears.



3. Click the appropriate PPPoE network connection.



4. Click the [Connect] button.

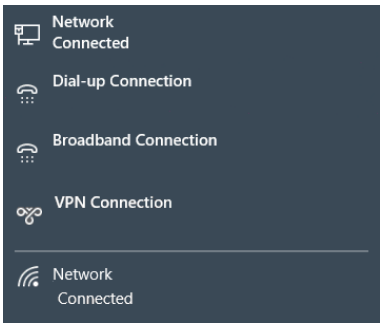


5. Input the PPPoE user name and password, then click the [OK] button.
   Your computer should now be connected to the internet.

How to disconnect from a PPPoE connection

To disconnect from a PPPoE connection, do the following:

1. In the bottom right-hand corner of the desktop, click the network icon .



2. Click the appropriate PPPoE connection. If the connection name was not changed when you registered it, it will appear as "Broadband Connection". Further, if you are currently connected, the indication "Connected" appears below the connection name.
3. Click the network name again, then click "Disconnect". The PPPoE connection is severed when the "Connected" indication disappears.

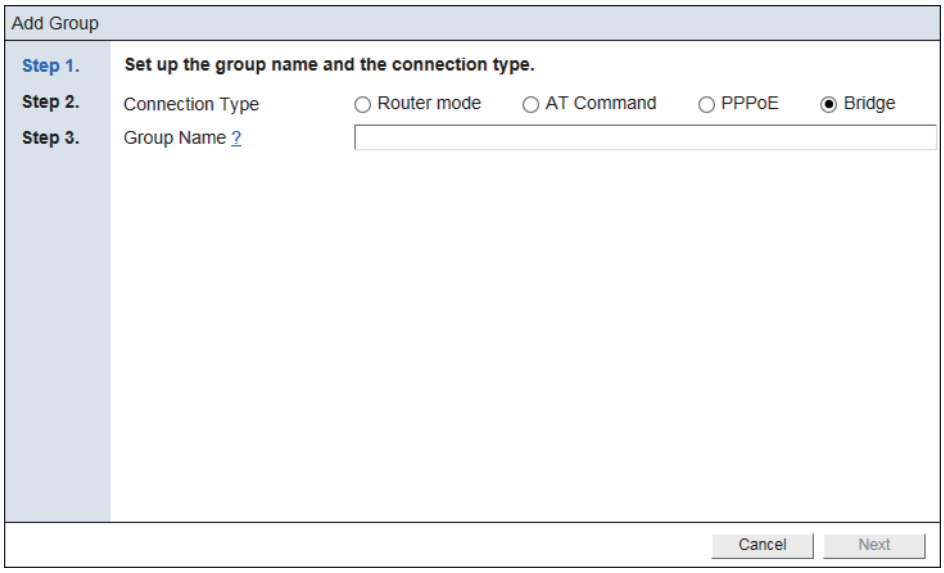
6.8.3 How to register/edit WAN group as "Bridge"

The "Bridge" mode assigns the WAN IP address provided by Inmarsat to a device connected to the specified LAN port on the Communication Unit. The Communication Unit cannot set the NAT, Firewall, IP filter, or DNS filter.

Note 1: Set Firewall and traffic limitation at the user's network device.

Note 2: The Bridge mode settings must be done by **the network administrator**.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click [Add group].
   The following pop-up window appears.

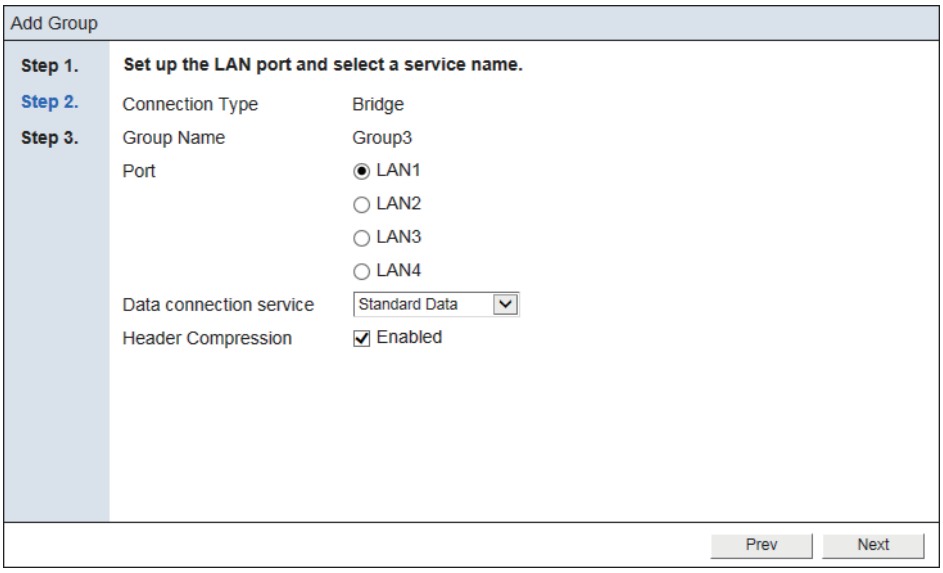


   To edit a WAN group, click the [Settings] button for the WAN group to edit. Edit the settings referring to this step and later.

4. Referring to the following table, set up the connection type and the group name.

Item	Description
Connection Type	Select "Bridge mode".
Group name	Input the group name.
Next button	Go to the next step.
Cancel button	Close the pop-up window.

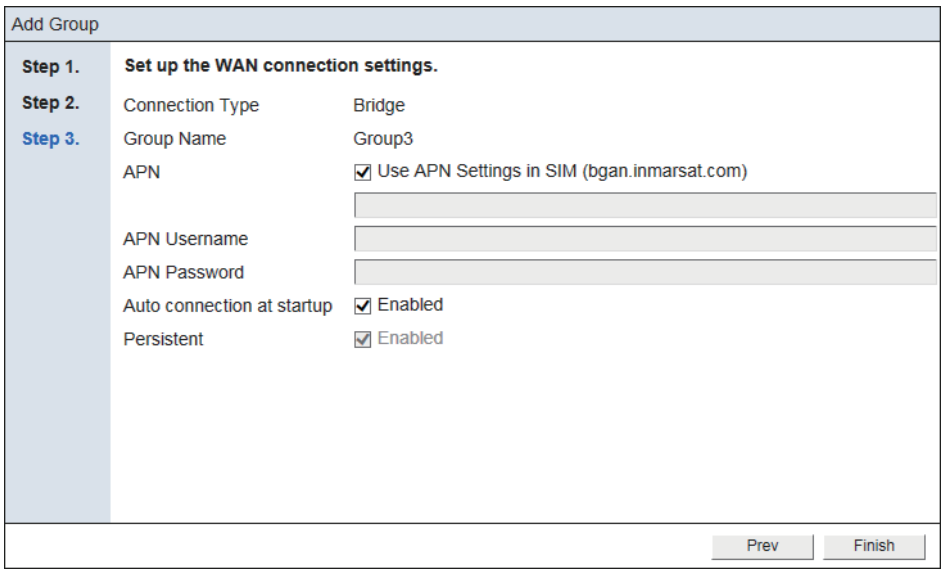
5. Click the [Next] button.



6. Referring to the following table, set up the LAN port and select a service name.

Item	Description
Connection Type	Shows the registered connection type.
Group Name	Shows the registered group name.
Port	Select LAN port from [LAN1], [LAN2], [LAN3], and [LAN4]. LAN port in use appears in gray.
Data connection service	Select the service to use from "Standard Data", "Streaming 8kbps", "Streaming 16kbps", "Streaming 32kbps", "Streaming 64kbps", "Streaming 128kbps", "Streaming 256kbps"*. *: FELCOM501 only
Header Compression	Put a [✓] in the box to activate the header compression. Compress the header area of the communication protocol, and reduce the communication volume.
Prev button	Return to the previous step while keeping the setting information.
Next button	Go to the next step.

7. Click the [Next] button.



8. Referring to the table below, set up the WAN connection settings.

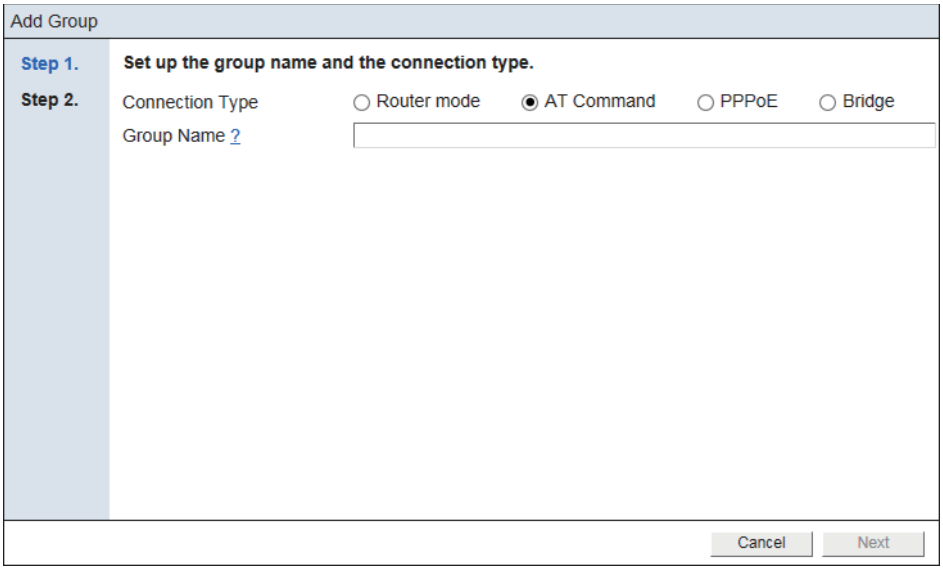
Item	Description
Connection Type	Shows the registered connection type.
Group Name	Shows the registered group name.
APN	Put a [✓] in the box to use Access Point Name in the SIM card. Use ASC II characters (other than “, ’) for the names of connection destinations (maximum 100 characters).
APN Username	Input the user name specified by provider (maximum 50 characters). Ok to leave blank.
APN Password	Input the password specified by provider (maximum 50 characters). Ok to leave blank.
Auto connection at startup	Put a [✓] in the box to enable the data connection service selected at step 6 when power is turned on.
Persistent	Put a [✓] in the box to activate automatic reconnection when a request from the network is received. **Note:** This function will not be activated when the data connection is disconnected manually, for example, the power is turned off,
Prev button	Return to the previous step while keeping the setting information.
Finish button	Register the setting information, then go to the [Group] menu.

9. Click the [Finish] button.
   The message "Restart the system to apply the changes." appears.
10. Click the [OK] button.
    The message "Restart the system to apply the changes." appears.
11. Click the [Close] button to close the message.
    The equipment restarts to apply the settings.

6.8.4 How to register/edit WAN group as "AT Command"

With "AT Command", you can set, connect, or disconnect the data line by the command sent from the device connected to the FELCOM 251/501.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click [Add group].
   The following pop-up window appears.

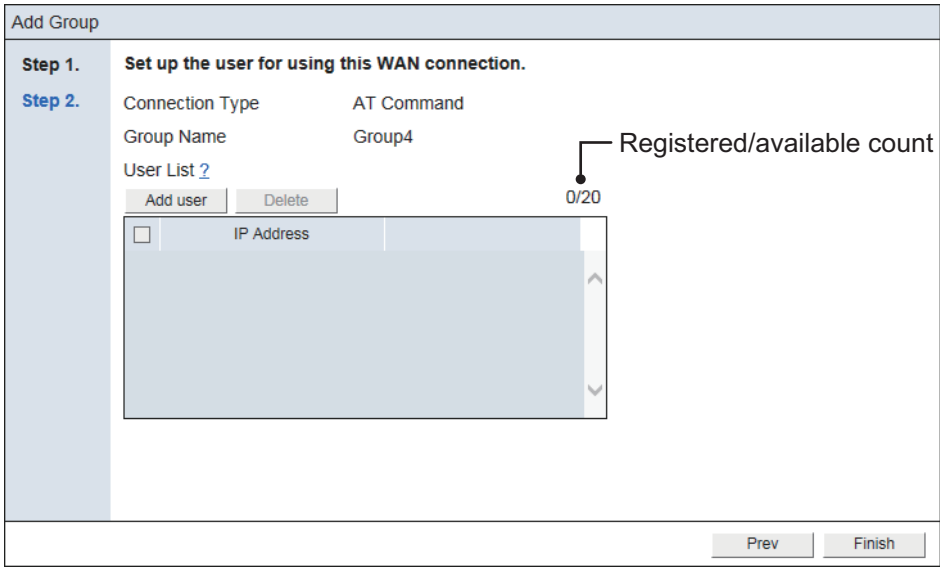


To edit a WAN group, click the [Settings] button for the WAN group to edit. Edit the settings referring to this step and later.

4. Referring to the following table, set up the connection type and the group name.

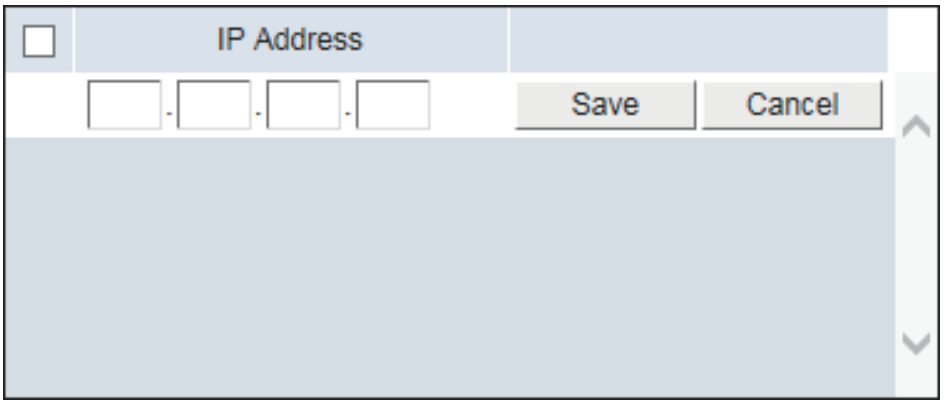
Item	Description
Connection Type	Select "AT Command".
Group name	Input the group name.
Next button	Go to the next step.
Cancel button	Close the pop-up window.

5. Click the [Next] button.



Item	Description
Connection Type	Shows the registered connection type.
Group Name	Shows the registered group name.
User List	
Add user button	Create a new user. Up to 20 users can be created.
Delete button	Delete the item having a checkmark [✓]. Put a [✓] in the box on the left side of the item to delete.
IP Address	Shows the IP address of the registered user.
Prev button	Return to the previous step while keeping the setting information.
Finish button	Register the setting information, then go to the [Group] menu.

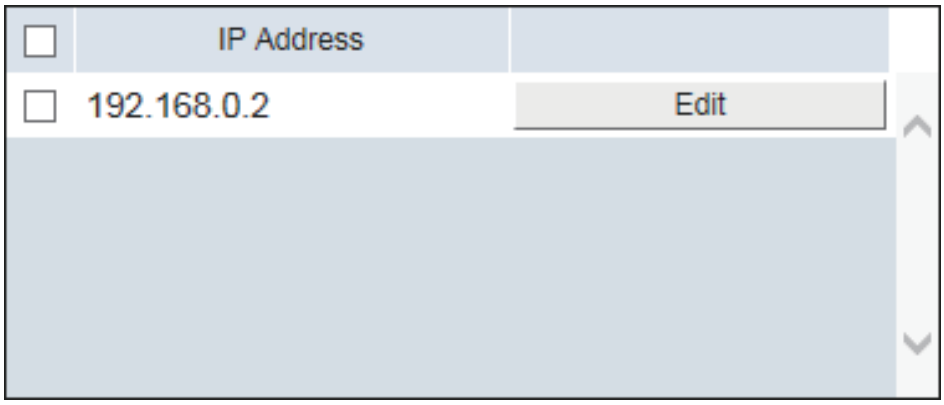
6. Click [Add user] button.



7. Referring to the following table, set up the user for using the WAN connection. Input the IP address of the network equipment to enable data communication. If an IP address of an IP Handset is not registered as "User" here, "No permission" appears on the main screen of the IP Handset. If an IP address of a PC is not registered as "User" here, "No permission" appears on the [Dashboard] screen of theWeb interface.

Item	Description
User	Input, or change IP address. It must be different from IP address of Communication Unit, 127.0.0.1 and 255.255.255.255. **Note:** The same IP address cannot be registered to the different groups. “192.168.0.*” and “192.168.0.10” can be registered. * is a wildcard. If you registered two groups this way, the group having the narrowest range (192.168.0.10) has priority.
Save button	Save the setting information.
Cancel button	Cancel the setting information.

When clicking the [Save] button, the user is added to the user list as follows:



To edit the created user, Click the [Edit] button.
Edit the user, referring to the table at this step.

8. Click the [Finish] button.
   The message "The group registration was successful. Set the firewall, IP filter and DNS filter as necessary." appears.
9. Click the [Close] button to close the message.
   To set up the "Firewall", "DNS Filter", "IP Filter", "DMZ", and "VPN" settings, see the relevant sections.
   - Firewall: section 6.8.5
   - DNS Filter: section 6.8.6
   - IP Filter: section 6.8.7
   - DMZ: section 6.8.8
   - VPN: section 6.8.9

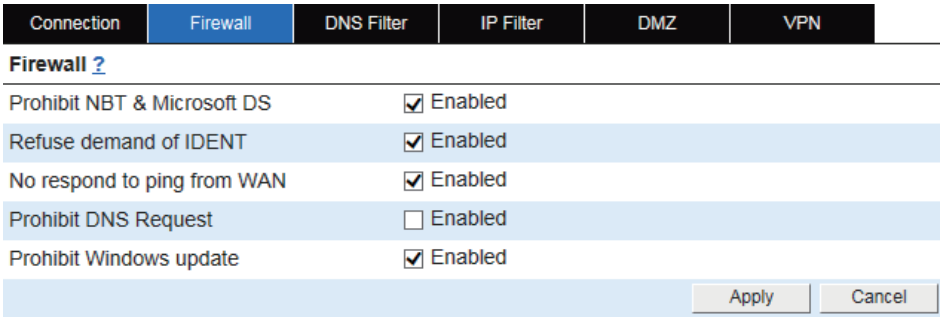
6.8.5 How to set the firewall

A firewall helps to prevent unwanted or unauthorized access from other networks.

You can setup a firewall with the following procedure.

Note: To setup a firewall, [Group Type] must be set to other than [Bridge].

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click the [Settings] button for the group whose firewall you want to setup. The information displayed in [Settings] depends on the [Group Type].
4. Click [Firewall].
   Use this setting to block unwanted communications.



5. Referring to the following table, set up the firewall according to your application and system.

Item	Description
Prohibit of NBT & Microsoft DS	Put a [✓] in the box to prohibit NBT and Microsoft DS. The default setting is "checked".
Refuse demand of IDENT	Put a [✓] in the box to refuse demand of IDENT. The default setting is "checked".
No respond to ping from WAN	Put a [✓] in the box to prohibit response to ping from WAN. The default setting is "checked".
Prohibit DNS Request	Put a [✓] in the box to prohibit request to DNS. The default setting is "unchecked".
Prohibit Windows update	Put a [✓] in the box to prohibit Windows® Update. The default setting is "checked". **Note 1:** This item appears in gray when the [Prohibit DNS Request] setting is activated. **Note 2:** Make sure that the setting of the DNS server of the PC is the same IP address as the Communication Unit. **Note 3:** Even if this item is set to valid, there is a possibility that Windows® Update cannot be prohibited if the connection destination of Windows® Update is changed in the future.
Apply button	Apply the settings.
Cancel button	Restore the previous settings.

6. Click the [Apply] button.
   The message "Applied." appears.
7. Click the [Close] button to close the message.

6.8.6 How to set the DNS filter

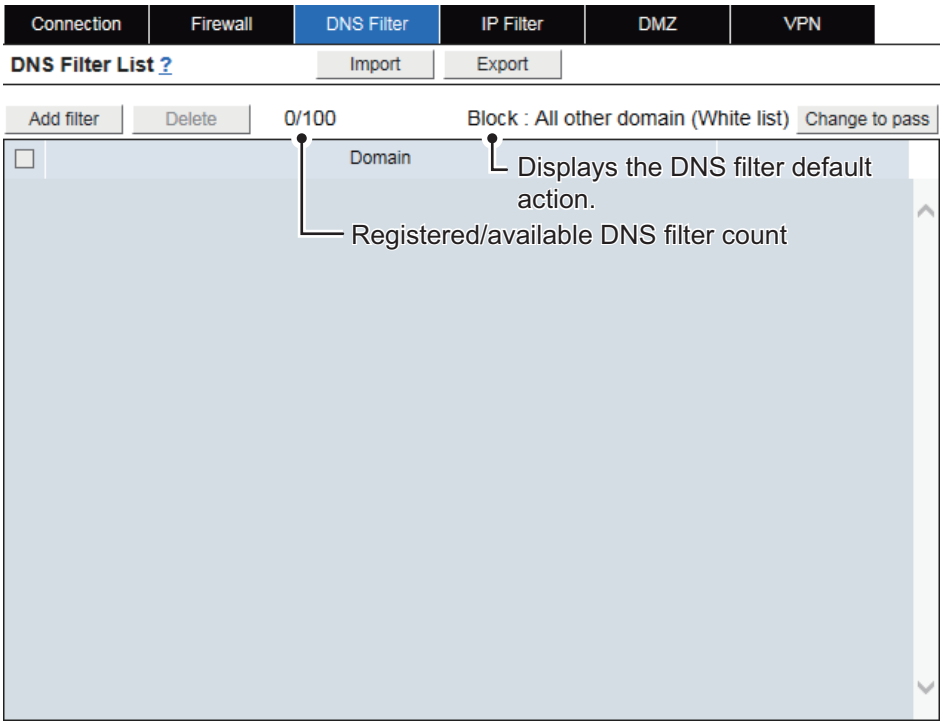
A DNS filter helps you to prevent access to certain domains. Although a domain is blocked with the DNS filter, IP-based communication is still available. To block specific IP communication, use the IP filter (see section 6.8.7).

Note 1: To setup a DNS filter, [Group Type] must be set to other than [Bridge].

Note 2: To prevent unnecessary data communication, a new WAN group has all domains automatically filtered at creation. Adjust the filter settings as required.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click the [Settings] button for the group whose DNS filter you want to setup.

4. Click [DNS Filter].



5. Referring to the following table, set up the DNS filter according to your application and system.

Item	Description
Add filter button	Create a new DNS filter. Up to 100 filters can be created.
Delete button	Delete items with check-marks [✓]. Put a [✓] in the box on the left side of the item to delete. To select all DNS filters, put a [✓] in the box beside the [Domain] title.
Change to pass button or Change to block button	Toggles the DNS filter default action. • [Block: All other domain (White list)]: Blocks access to all domains other than the ones listed. • [Pass: All other domain (Black list)]: Allows access to all domains other than the ones listed.
Domain	Shows the allowed/blocked domain(s).
Import button	Import the DNS filter settings. 1) Click the [Import] button. The message "Overwrite the DNS filter list in this group. Are you sure?" appears. 2) Click the [OK] button. The [Open] dialog box appears. 3) Select the zip file of the DNS filter settings to import, then click the [Open] button. The message "Input a password for the import file if necessary" appears. 4) If a password was set when the filter settings were exported, input the password. 5) Click the [OK] button. 6) Input the administrator password. 7) Click the [OK] button. 8) Click the [Close] button.

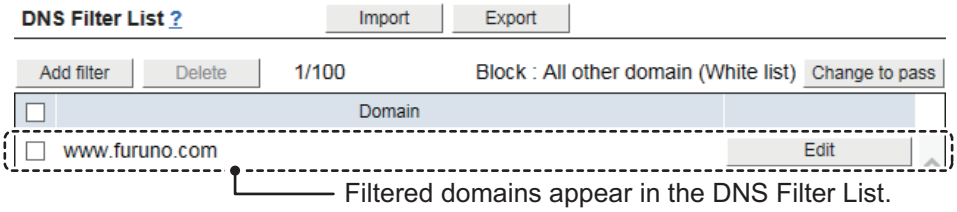
Item	Description
Export button	Export the DNS filter settings. 1) Click the [Export] button. The message "Input a password for the export file if necessary." appears. 2) Input a password as necessary. This password will be requested when the settings are imported. 3) Click the [OK] button. The [Save] dialog box appears. 4) Click the [Save] button. The DNS filter data is saved in zip format. **Note:** Do not unzip the archives. Unzipped files cannot be imported.

6. Click the [Add filter] button.



7. Input, or change the domain name to block or pass.
Although access to a domain is blocked using this filter, the site may still be accessed by directly entering the IP address.

8. Click the [Save] button.
The message "Applied." appears.



9. Click the [Close] button to close the message.

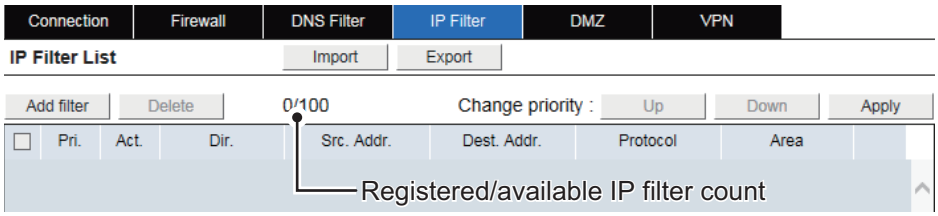
6.8.7 How to set the IP filter

An IP filter helps to regulate access to/from specified IP addresses.

Note: To setup an IP filter, [Group Type] must be set to other than [Bridge].

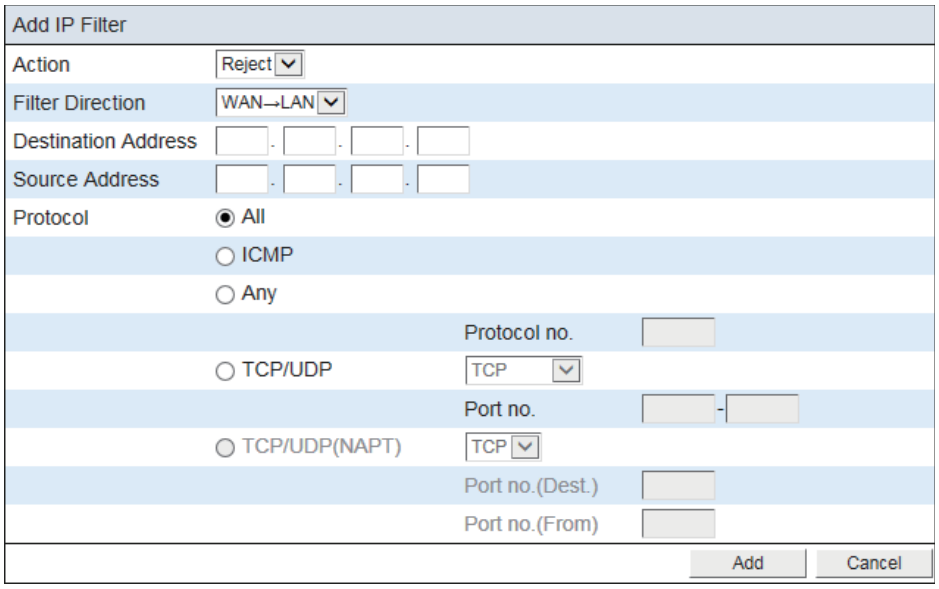
You can setup the IP filter with the following procedure.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click the [Settings] button for the group whose IP filter you want to setup.
4. Click [IP Filter].



Item	Description
Add filter button	Create a new IP filter Up to 100 filters can be created. The creation pop-up window appears.
Delete button	Delete items with check-marks [✓]. Put a [✓] in the box on the left side of the item to delete. To select all IP filters, put a [✓] in the box beside the [Pri.] title.
Pri.	Shows the priority. The smaller the number the higher the priority.
Action	Shows the IP filter action.
Dir	Shows direction in which the IP filter is applied.
Src. Addr.	Shows the source address. If not set, "Anywhere" appears.
Dest. Addr.	Shows the destination address. If not set, "Anywhere" appears.
Protocol	Shows the IP filter protocol.
Area	• If [Protocol] is [Any], Shows the protocol number. • If [Protocol] is [TCP/UDP]: Shows the port range. • If [Protocol] is [TCP], [UDP]: Shows the port range or port numbers for [Dest. Addr.] and [Src. Addr.].
Import button	Import the IP filter settings. 1) Click the [Import] button. The message "Overwrite the IP filter list in this group. Are you sure?" appears. 2) Click the [OK] button. The [Open] dialog box appears. 3) Select the zip file of the IP filter settings to import, then click the [Open] button. The message "Input a password for the import file if necessary" appears. 4) If a password was set when the filter settings were exported, input the password. 5) Click the [OK] button. 6) Input the administrator password. 7) Click the [OK] button. 8) Click the [Close] button.
Export button	Export the IP filter settings. 1) Click the [Export] button. The message "Input a password for the export file if necessary." appears. 2) Input a password as necessary. This password will be requested when the settings are imported. 3) Click the [OK] button. The [Save] dialog box appears. 4) Click the [Save] button. The DNS filter data is saved in zip format. **Note:** Do not unzip the archives. Unzipped files cannot be imported.
Change priority	
Up button	Raise the priority for the [✓] of the item. The button appears in gray when there is no check, or multiple checks.
Down button	Lower the priority for the [✓] of the item. The button appears in gray when there is no check, or multiple checks.
Apply button	Apply the priority change.

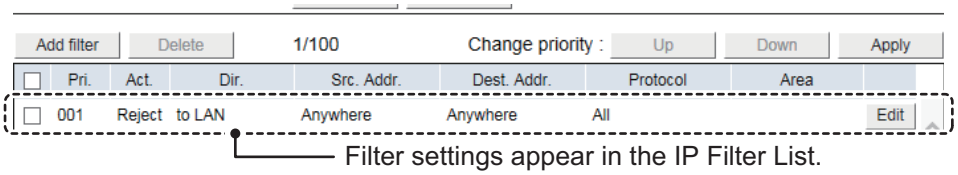
5. Click [Add filter] button.
   The following pop-up window appears.



6. Referring to the following table, set up the IP filter according to your application and system.

Item	Description
Action	Select the IP filter action from "Pass", "Drop", or "Reject". Select "Pass" to set "TCP/UDP(NAPT)" at [Protocol].
Filter Direction	Select the IP filter direction from "WAN→LAN" or "LAN→WAN". Select [WAN→LAN] to set [TCP/UDP(NAPT)] at [Protocol].
Destination Address	Input, or change the destination address (IPv4 address).
Source Address	Input, or change the source address (IPv4 address).
Protocol	Select the IP filter protocol from "All", "ICMP", "Any", "TCP/UDP", or "TCP/UDP(NAPT)". • If [Protocol] is [Any] only, input the protocol number (1-255). • If [Protocol] is [TCP/UDP] only, select "TCP", "UDP", or "TCP/UDP" from the pull-down menu. then input the port number (range: 1-65535). • If [Protocol] is [TCP/UDP(NAPT)] only, select "TCP" or "UDP", then input the port numbers for "Dest." and "From" (range: 1-65535).
Add button	Register the setting information, then close the pop-up window.
Cancel button	Cancel the setting information, then close the pop-up window.

7. Click the [Add] button.
   The message "Applied." appears and the settings appear in the [IP Filter List].



8. Click the [Close] button to close the message.

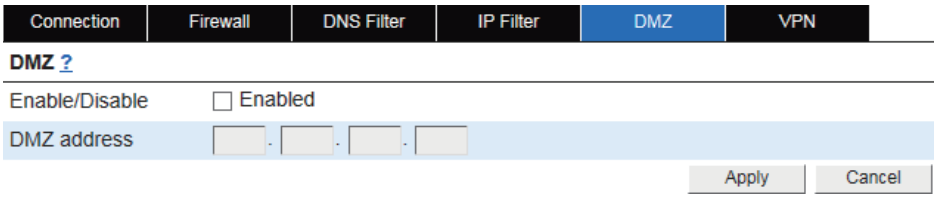
6.8.8 How to setup a DMZ

A network DMZ (demilitarized zone) helps to provide a “buffer” of security between your network (LAN, etc) and the internet.

Note: To setup a DMZ, [Group Type] must be set to other than [Bridge] or [PPoE].

You can setup a DMZ for your network with the following procedure.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click the [Settings] button for the group whose IP filter you want to setup.
4. Click [DMZ].



5. Referring to the following table, set up DMZ according to your system.

Item	Description
Enable/Disable	Put a [✓] in the box to use DMZ. The default setting is "unchecked".
DMZ address	Input the DMZ address (IPv4 address).
Apply button	Apply the settings.
Cancel button	Restore the previous settings

6. Click the [Apply] button.
   The message "Applied." appears.
7. Click the [Close] button to close the message.

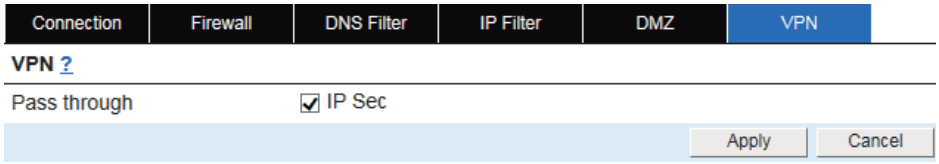
6.8.9 How to setup a VPN pass-through

A VPN pass-through lets you connect to outside VPNs (Virtual Private Network) using IPSec.

Note: To setup a VPN pass-through, [Group Type] must be set to other than [Bridge] or [PPoE].

You can setup a VPN pass-through for your network with the following procedure.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Groups].
3. Click the [Settings] button for the group whose IP filter you want to setup.
4. Click [VPN].



5. Referring to the following table, set up VPN according to your system.

Item	Description
Pass through	Put a [✓] in the box to activate pass-through for IPSec VPNs. The default setting is "unchecked".
Apply button	Apply the setting.
Cancel button	Restore the previous setting.

6. Click the [Apply] button.
   The message "Applied." appears.
7. Click the [Close] button to close the message.

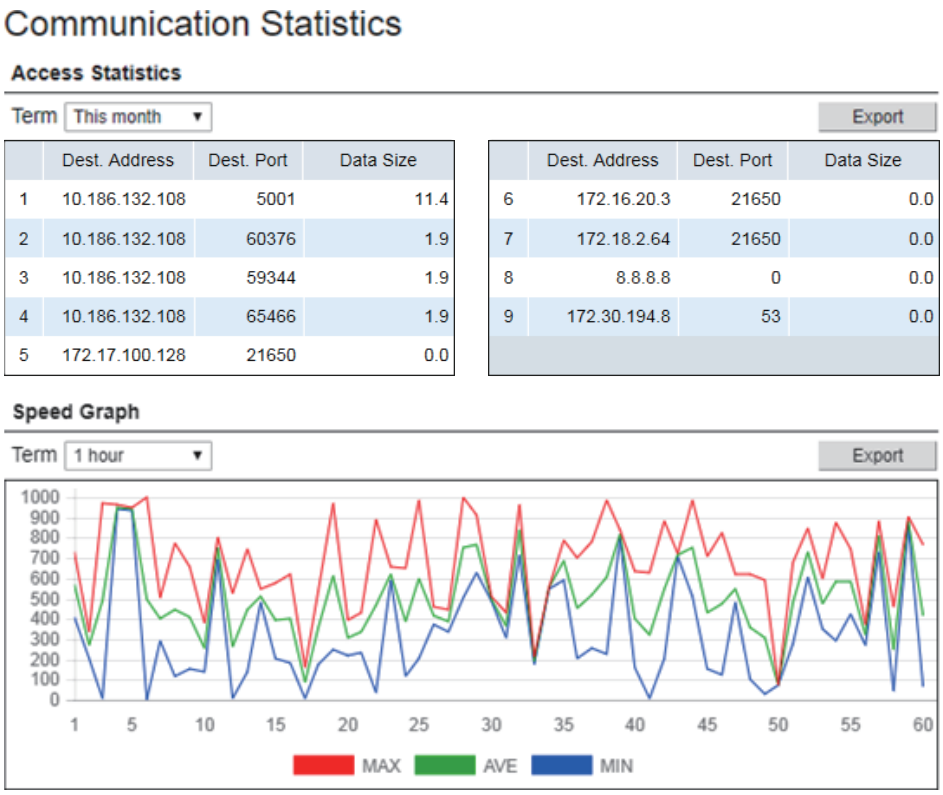
6.8.10 Communication Statistics

You can view the total packet traffic volume according to the destination IP address in the top 10 in the [Access Statistics] area.

Also, you can view the communication speed on a graph in the [Speed Graph] area. The vertical axis of the graph is the speed, and the horizontal axis is the period.

Note: The statistic values supplied on-screen are for reference only and may differ from the actual packet size and data speed.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin], [Network Settings], [WAN], then [Statistics].



Item	Description
Access Statistics	
Term	Select the term you want to view the statistics for.
Export	Export the access statistics.
Dest. Address	Destination address.
Dest. Port	Destination port number
Data Size	Total packet traffic volume
Speed Graph	
Term	Select the term from you want to view the speed graph for.
Export	Export the speed graph data.

How to export a access statistics/speed graph data file

Export a access statistics/speed graph data from the Communication Unit to a PC.

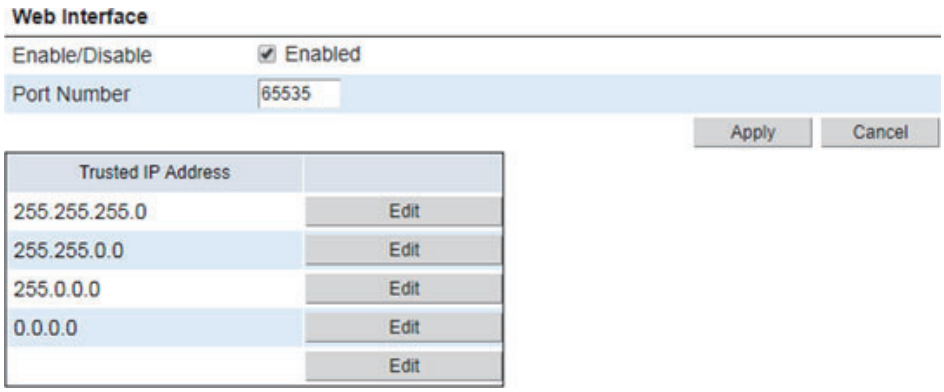
1. Click the [Export] button.
   The [Save] dialog box appears.
2. Input the file name, then click [Save].
   The access statistics/speed graph data is saved in zip format.

6.9 Remote Control

The Remote access lets you access the Web interface of FELCOM251/501 via internet.

Note: The Remote access settings must be done by **the network administrator**.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Remote Control Settings].
4. Click [Access Control].

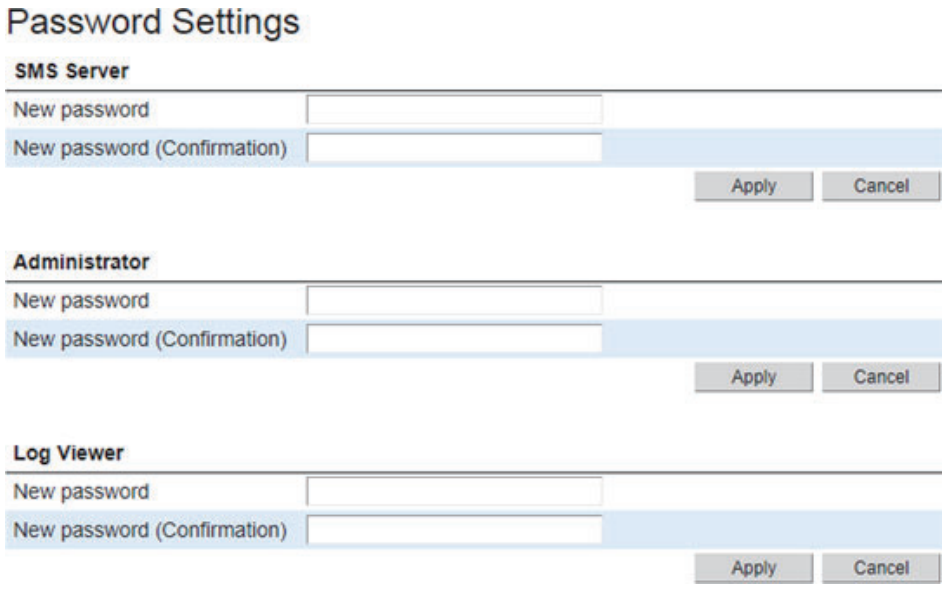


5. Click the box on the left side of [Enabled] to add/remove the check mark ([✓]).
   To enable remote access, add the check mark. To disable remote access, remove the check mark.
6. Input the port number in [Port number] (1-65535).
   Set the port number, then access http://<WAN IP address>:<Port number>.
   Note: It is recommended to assign a port which is not regularly used.
7. Click the [Edit] button, then set the trusted IP address as appropriate.
   Note: If no IP address is input, all IP addresses can access the Web interface of FELCOM251/501. It is recommended to assign at least one trusted IP address.
8. Click the [Save] button.
   The message "Applied." appears.
9. Click the [Apply] button.
   The message "Applied." appears.
10. Click the [Close] button to close the message.

6.10 How to Change the Password

Do the following procedure to change the SMS password, Administrator password, and log password. Memorize each password. If a password is forgotten, contact your dealer.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Password Settings] to show the [Password Settings] menu.

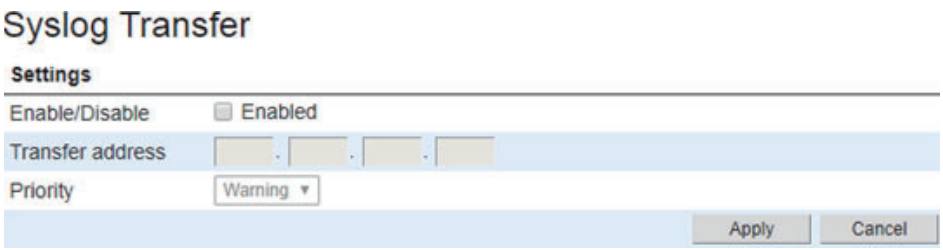


4. Input the new password in the [New password] field.
   Solid black circles appears as characters. The number of characters is limited as 8 to 16 characters.
5. Input the new password again in the [New password(Confirmation)] field.
6. Click the [Apply] button.
   The message "Applied." appears.
   Note: The message "Invalid value(s)." appears when the password input in the [New password] field does not match that input in the [New password(Confirmation)] fields.
7. Click the [Close] button to close the message.

6.11 How to Transfer the Event Log to a PC

You can transfer the Event Log to a PC with the Syslog application installed.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Analysis Tool].
4. Click [Syslog Transfer] to show the [Syslog Transfer] menu.



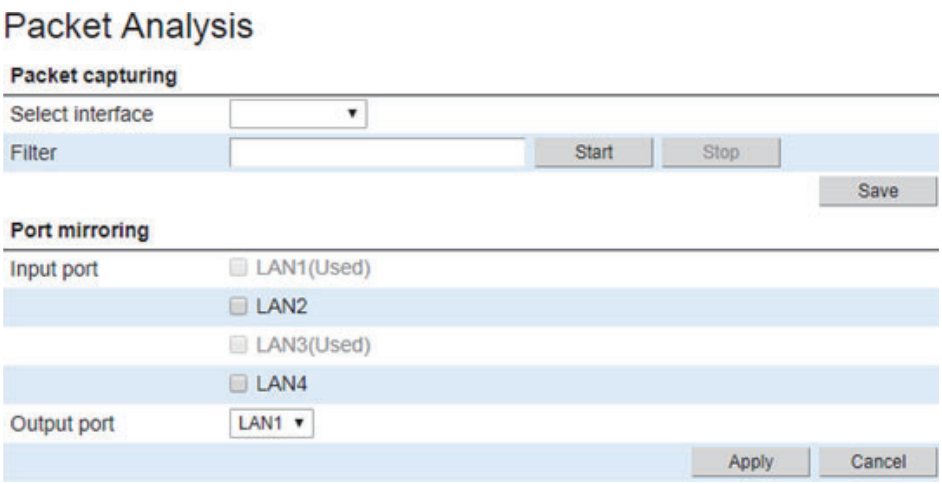
5. Put a [✓] in the box on the left side of [Enabled] (click the box to add [✓]) to activate this function.
   To deactivate this function, uncheck the [✓] in the box (click the box to delete [✓]).
6. Input the IP address of the PC in the [Transfer address] field.
7. Select priority of the events you want to transfer from the [Priority] field.
8. Click the [Apply] button.
   The message "Applied." appears.
9. Click the [Close] button to close the message.

6.12 Packet Analysis

6.12.1 Packet capturing

"Packet capturing" is a function to save packets that pass (send and receive) the selected network interface.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Analysis Tool].
4. Click [Packet Analysis].



5. Select the interface to be captured in the [Select interface] field.
6. Input the filter for packet in the [Filter] field.
7. Click the [Start] button to capture the interface.
8. Click the [Stop] button to finish capturing the interface.
9. Click the [Save] button.
10. Enter a file name and select the save destination, then click the [Save] button. Packets captured between step 7 and step 8 (or up to 1000 packets, whichever occurred first) are saved.

6.12.2 Port mirroring

"Port mirroring" is a function to output (copy) the packet that passes (send and receive) the LAN port set in the [Input port] field to the LAN port set in the [Output port] field.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Analysis Tool].
4. Click [Packet Analysis].
5. Put a [✓] in the box of the LAN port to monitor in the [Input port] field.
6. Select the LAN port for port mirroring in the [Output port] field.
7. Click the [Apply] button.
   The message "Applied." appears.
8. Click the [Close] button to close the message.

6.13 How to Import/Export Settings Data

You can save (export) the Web interface settings and data, as a backup file, to a PC. The backup file can also be applied to the Web interface.

6.13.1 How to export settings

To export Web interface settings data to a PC, do the following:

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Backup Settings].
4. Click [Import/Export] to show the [Import/Export] menu.



5. Click the [Export] button.
   The message "Input a password for the export file if necessary." appears.
6. Input a password as necessary. This password will be requested when the settings are imported.
7. Click the [OK] button.
   The [Save] dialog box appears.
8. Enter a file name and select the save destination, then click the [Save] button.
   The settings data is saved in zip format.
   Note: Do not unzip the archives. Unzipped files cannot be imported.

6.13.2 How to import settings

To import settings data saved in a PC do the following procedure. Current settings will be overwritten with the imported data.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Backup Settings].
4. Click [Import/Export] to show the [Import/Export] menu.
5. Click the [Import] button.
   The message "The Communication Unit will restart after file import. Are you sure?" appears.
6. Click [OK] button.
   The [Open] dialog box appears.
7. Select the zip file of the settings data to import, then click the [Open] button.
   The message "Input a password for the import file if necessary" appears.
8. If a password was set when the settings were exported, input the password.
9. Click the [OK] button.
10. Input the administrator password.

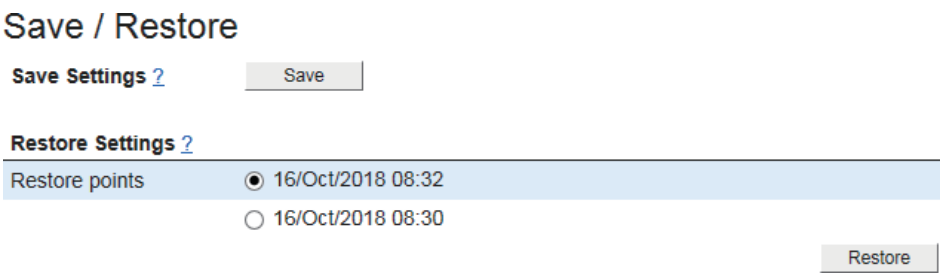
11. Click the [OK] button.
    When the import is complete, the message "Completed. Please wait a moment for restarting." appears and the Communication Unit restarts. After the restart is complete, the main screen appears.

6.14 How to Backup and Restore Settings

6.14.1 How to backup settings

You can backup the settings data file in the Communication Unit.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Backup Settings].
4. Click [Save/Restore] to show the [Save/Restore] menu.



5. Click the [Save] button in the [Save Settings] field.
   The message "Applied." appears.
6. Click the [Close] button.

6.14.2 How to restore settings

You can restore the backed up settings for the Communication Unit. The current are overwritten with the backup settings.

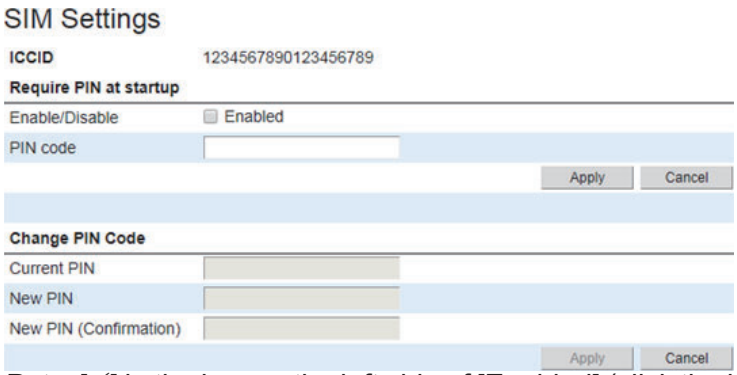
1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Backup Settings].
4. Click [Save/Restore] to show the [Save/Restore] menu.
5. Put a [●] in the radio button on the left side of the settings (click the button to add [●]) to select.
6. Click the [Restore] button in the [Restore Settings] field.
   The message "The Communication unit will restart after settings are restored. Are you sure?" appears.
7. Click the [OK] button.
8. Input a password.
9. Click the [OK] button.
   The message "Completed. Wait a moment for the restart." appears.The system restarts. After the restart is complete, the main screen appears.

6.15 SIM Card Settings

6.15.1 How to set up the PIN code requirement for SIM card

Depending on SIM card settings, it is necessary to input a PIN code when power is turned on. It is possible to update the SIM card settings.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [SIM Settings] to show the [SIM Settings] menu.



4. Put a [✓] in the box on the left side of [Enabled] (click the box to add [✓]) to require a PIN code hereafter when the power is turned on.
   To deactivate this function, uncheck the [✓] in the box (click the box to delete [✓]).
5. Input the PIN code in the [PIN code] field.
   The characters are displayed as black circles (●).
6. Click the [Apply] button.
   The message "Applied." appears.
7. Click the [Close] button to close the message.

6.15.2 How to change the PIN code

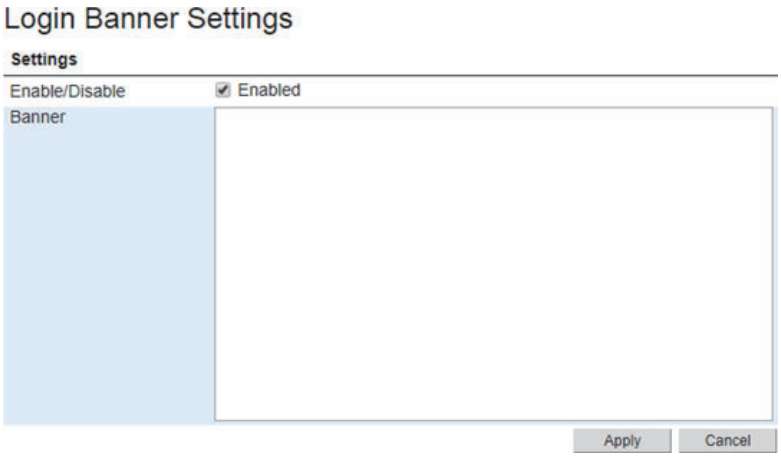
If [PIN code] is enabled, you can change the PIN code. Be sure to memorize the PIN code and do not forget it.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [SIM Settings] to show the [SIM Settings] menu.
4. Input the current PIN code in the [Current PIN] field.
5. Input the new PIN code in the [New PIN] field.
   The PIN code must be between 4 to 8 characters.
6. Input the new PIN code again in the [New PIN (Confirmation)] field.
7. Click the [Apply] button.
   The message "Applied." appears.
   Note: The message "Invalid PIN" appears in the following circumstances.
   - The PIN number entered at step 4 is incorrect, or no PIN number is entered.
   - The PIN numbers entered at steps 5 and/or 6 do not match, or no PIN number is entered.
8. Click the [Close] button to close the message.

6.16 Login Banner Settings

The login banner message can be set to appear before the login screen in the IP Handset and Web interface. This feature is handy for sharing important information with crew, etc. as the message appears before they can login.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Login Banner Settings] to show the [Login Banner Settings] menu.



4. Put a [✓] in the box on the left side of [Enabled] (click the box to add [✓]) to activate this function.
   To deactivate this function, uncheck the [✓] in the box (click the box to delete [✓]).
5. Write a message in the [Banner] field.
   This menu appears in gray when the [Enable/Disable] menu is deactivated.
6. Click the [Apply] button.
   The message "Applied." appears.
7. Click the [Close] button to close the message.

6.17 Discrete I/O Settings

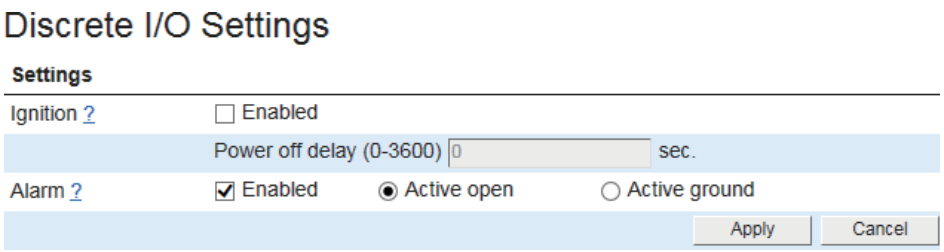
The I/O interface on the Communication Unit has two configurable I/O pins. You can set up the function of each pin in the Web interface.

6.17.1 How to enable the ignition function

The ignition function can be used to turn on/off the Communication Unit by means of an external signal. The external signal that triggers the ignition function is positive DC voltage, however the switch at the back of the Communication Unit must be turned on. The ignition function uses pin 8.

Note: When this function is enabled, the system cannot be turned on unless an ignition signal is received.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Discrete I/O Settings] to show the [Discrete I/O Settings] menu.



4. Put a [✓] in the box on the left side of [Enabled] (click the box to add [✓]) in the [Ignition] field to activate ignition function.
   To deactivate this function, uncheck the [✓] in the box (click the box to delete [✓]).
5. Input the delay time in the [Power off delay] field if you are using the ignition function and you want the Communication Unit to stay on for a few minutes after the Ignition is switched off.
   This menu appears in gray when the [Ignition] menu is deactivated.
6. Click the [Apply] button.
   The message "Applied." appears.
7. Click the [Close] button to close the message.

6.17.2 How to setup the warning/error output

Pin 2 acts as a built-in switch in the Communication Unit. Pin 2 can be used to provide an external signal that indicates active warning/error condition(s). You can configure pin 2 to be active ground or active open.

1. Referring to section 6.1, login as an Administrator.
2. Click [Admin] in the menu bar.
3. Click [Discrete I/O Settings] to show the [Discrete I/O Settings] menu.
4. Put a [✓] in the box on the left side of [Enabled] (click the box to add [✓]) in the [Alarm] field to activate alarm function.
   To deactivate this function, uncheck the [✓] in the box (click the box to delete [✓]).
5. Select from [Active open] or [Active ground] in the [Alarm] field.
   [Active open]: The internal switch at pin 2 is normally open (no connection to ground). When an alarm occurs, the switch is closed (connected to ground). Theswitch is opened again when all warnings/errors are cleared.
   [Active ground]: The internal switch at pin 2 is normally closed (pin 2 is connected to ground). When an alarm occurs, the switch opens (no connection to ground). The switch is closed again when all warnings/errors are cleared.
6. Click the [Apply] button.
   The message "Applied." appears.
7. Click the [Close] button to close the message.

7. MAINTENANCE AND TROUBLE-SHOOTING

This chapter describes maintenance and troubleshooting procedures to keep the equipment in good condition and restore normal operation in case of trouble.

⚠ WARNING



ELECTRICAL SHOCK HAZARD
Do not open the equipment.

This equipment uses high voltage that can cause electrical shock.
0nly qualified persons can work inside the equipment.

NOTICE

Do not apply paint, anti-corrosive sealant or contact spray to plastic parts or equipment coating.

Those items contain products that can damage plastic parts and equipment coating.

7.1 Preventive Maintenance

Check point	Action	Remedy
Cable (Connector)	Check that all cables are connected tightly and free of corrosion.	If necessary, connect loosened cables, etc. If a cable is damaged, replace immediately.
Ground terminal	Check that the ground wire connected to the terminal is tightly fastened and the terminal is free of dust, dirt and rust.	Remove dust and dirt from the terminal. Tighten the wire if it has loosened.
Communication Unit IP Handset	Check that there is no dust or dirt on the unit.	Clean the unit with a soft, dry cloth. If the unit is very dirty, clean with water-diluted mild detergent and soft cloth. Wipe unit with clean cloth after on a wet cloth then with a dry cloth. Do not use alcohol or paint thinners, as they can remove writing and marks on the panel.
IP Handset LCD screen	Check the screen for dust and dirt, and that there are no cracks on the screen.	Wipe the LCD carefully to prevent scratching, using tissue paper and an LCD cleaner. To remove dirt or salt deposits, use an LCD cleaner, wiping slowly with tissue paper so as to dissolve the dirt or salt. Change paper frequently so the salt or dirt will not scratch the LCD. Do not use solvents such as thinner, acetone or benzene for cleaning.

7.2 How to Replace the Fuse

The optional AC/DC Power Supply Unit has fuses to protect the unit from overvoltage (over-current) and internal faults. If the unit cannot be turned on, check if the fuse is blown. If a fuse is blown, determine the cause before replacing the fuse.

⚠ WARNING

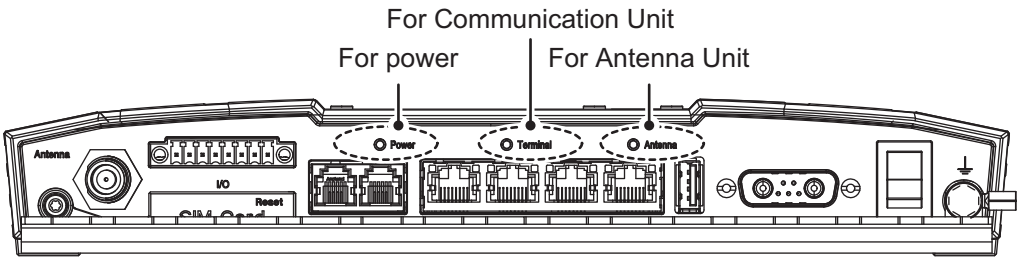
Use the proper fuse.

Use of a wrong fuse can damage the equipment or cause fire.

Fuses

Type	Part No.	Remarks
S-33-204900-063	001-593-130	6.3A, For AC power supply only, glass tube.
S-33-205376-020	001-593-140	20A, Battery power supply only, blade.

7.3 Communication Unit LED Lamps



The Communication Unit LED lamps indicate the status of the Communication Unit and Antenna Unit. See the following table:

Communication Unit LED lamp status and behavior

Status	Power LED	Terminal LED	Antenna LED
Soon after power on	On/Green	Off	Off
Start-up (first half)	On/Green	Flashes fast (approx. 0.3 secs, Green)	Off
Start-up (last half)	On/Green	Flashes fast (approx. 0.3 secs, Green)	Flashes fast (approx. 0.3 secs, Green)
Searching for satellite	On/Green	Flashes slowly (approx. 2 secs, Green)	Flashes slowly (approx. 2 secs, Green)
Tracking satellite	On/Green	Flashes slowly (approx. 2 secs, Green)	On/Green
Registering to satellite	On/Green	Flashes slowly (approx. 2 secs, Green)	On/Green
Ready to use	On/Green	On/Green	On/Green
Shutting down process	On/Green	Flashes fast (approx. 0.3 secs, Yellow)	Off
Error	On/Green	Flashes slowly (approx. 2 secs, Yellow)	Flashes slowly (approx. 2 secs, Yellow)

Status	Power LED	Terminal LED	Antenna LED
Warning	On/Green	On/Yellow	On/Yellow
Updating software	On/Green	Flashes slowly (approx. 2 secs, Blue)	Flashes slowly (approx. 2 secs, Blue)

7.4 Troubleshooting

If you think the equipment is not operating normally, do the checks in the table below to find the possible causes. If repair of the equipment is necessary report the result of the troubleshooting to the qualified technician. If you are asked the IMEI (International Mobile Equipment Identify) number, do the following to find it.

- IP Handset: At the [Call] screen, press [*], [#], [0], [6], [#].
- Web interface: On the menu bar, click [Home], [System Information].

Note: In the following table, remedies which list the [Admin] menu require administrator level login.

Troubleshooting

Symptom	Remedy
No power (Power lamp on Communication Unit does not illuminate).	• Check if the power connector has loosened. • Check if the power cable is rusted or damaged. • Check if the voltage of the ship battery is within range (12 - 24 VDC (-10% +30%)).
Nothing Shows on IP Handset screen.	• Check if the IP Handset cable is properly connected to the Communication Unit. • Check the brightness level of screen is not too dark
The IP Handset keys do not respond.	Push and hold the  key for three seconds to restart the IP Handset. Also reconnect the LAN cable at both ends. If the problem is not resolved, contact your dealer.
After turning the power on, or after changing satellites, re-establishing a connection takes time.	Depending on the location of available satellites and the ship's installation (configuration), establishing a connection can take some time. If no connection is established after a while, try the following remedies, in order, from top to bottom: • Check if the antenna cable is properly connected. • Check that the SIM card is correctly inserted. • Check if the ship position data is correct ("--.--.--" does not appear.). • Check that there are no objects blocking the signal between antenna and satellite. • In the Web interface, click [Home] → [Satellite Selection] to do a manual satellite search. • Restart the system. • Check that the satellite network is available; if available, consult your SIM provider.

Symptom	Remedy
Cannot make external call.	• Check telephone number. Land subscriber: [00], country code, tel. no. Ship subscriber: [00], [870], (ocean area code), Inmarsat no. • Check if the IP Handset cable is properly connected to the Communication Unit. • Check if the IP Handset screen shows the green  icon on the status bar. • Wait a while, and retry. • In the Web interface, click [Admin] → [Telephony Settings] → [Phone List] to confirm that "✓" appears in the [Ext. Call] field. • Check if the [Caller code] and [Call Filter] field for the IP Handset (or phone) of [Admin] → [Telephony Settings] → [Phone List] does not have "✓".
Cannot make internal call.	• Check that the IP Handset and/or analog phone cables are properly connected to the Communication Unit. • Access the Web interface, and click [Admin] → [Telephony Settings] → [Phone List] to confirm the [Ready] field for the IP Handset appears the blue icon .
Cannot use the internet.	• Access the Web interface from the PC you want to use for internet acess and check that the Dashboard shows "Connected" in the [Data] field. • Check internet connection settings on the PC. • Check the TCP/IP settings for the PC are correct. • Access the Web interface, and click [Home] → [WAN User List] to confirm that the PC (IP address) using the Internet is registered in the WAN group. • Access the Web interface, and click [Admin] → [Network Settings] → [WAN] → [Groups] to confirm that "Firewall", "DNS Filter", and "IP Filter" are set correctly.
The printing of the fax is wavy.	Put anti-vibration material under the fax to reduce the vibration.
Takes lot of time to communicate with fax.	Activate the safety communication mode on FAX-2840, referring to the operator's manual of the fax.

Troubleshooting report

The troubleshooting report contains the following information. When contacting your dealer for support, please enclose this file.

- All settings data
- All logs data
- Program version

1. Open the Web interface.
2. Click [Help service].
3. Click [Troubleshooting Report] to show the [Troubleshooting Report] menu.



4. Click the [Generate Report] button.
   It normally takes about one minute, sometimes longer, to generate the report.
5. Save the file on your PC.
   The file is saved in zip format.
   Note: Do not unzip the archives.

7.5 Diagnostics

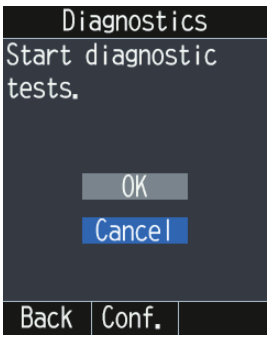
Your FELCOM251/ FELCOM501 contains the diagnostics that check the IP Handset, Communication Unit, and Antenna Unit. The tests are for use by qualified technicians, but you can do the tests to help the qualified technician in troubleshooting.

7.5.1 IP Handset test

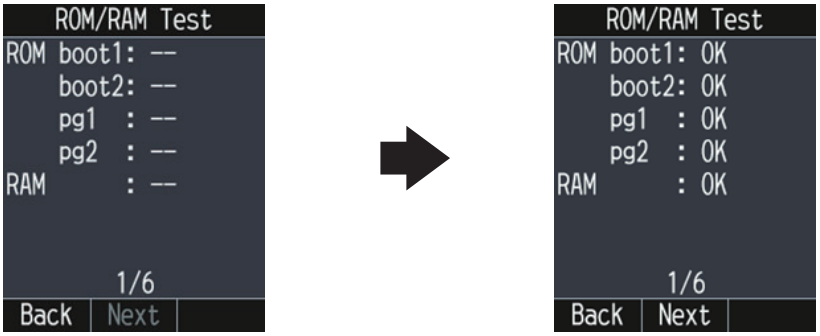
This test checks the ROM/RAM, LCD, key, hook, temperature sensor, and sound for the IP Handset.

To go back to the main screen during each test excluding the key test, press the key.

1. At the main screen, press the **Enter** key to open the main menu.
2. Press ◀, ▲, ▶ or ▼ to select the [Settings] menu.
3. Press ▼ to select the [Diagnostics] menu.
   The [Diagnostics] screen appears.



4. Press ▲ to select [OK].
   The ROM/RAM test starts.



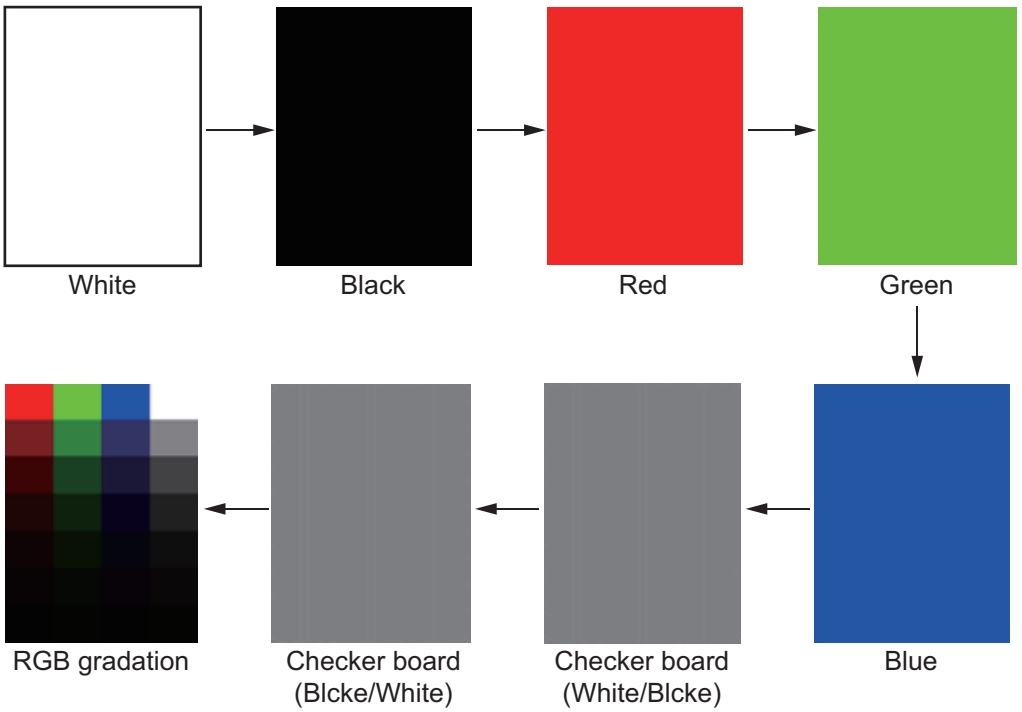
Test in progress　　Test results

"– –" means that the test is processing.
The results appear as "OK" for normal status, "NG" for abnormal status.

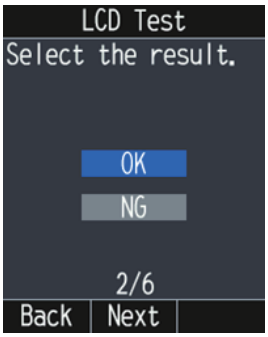
5. Press the **Enter** key to go to the LCD test.



6. Press the **Enter** key to start the LCD test.
   Each press of the **Enter** key changes the LCD pattern in the sequence shown below.



When pressing the **Enter** key on the "RGB gradation" screen, the screen changes as shown below.



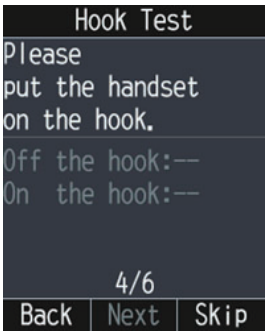
7. Press ▲ or ▼ to select [OK] or [NG], then press the **Enter** key. The [Key Test] screen appears.



8. Press the **Enter** key to start the key test.
9. Press each key. The related on-screen location fills in blue if the key operating normally. If the key is pressed again it changes color in the following pattern: white → blue → white...

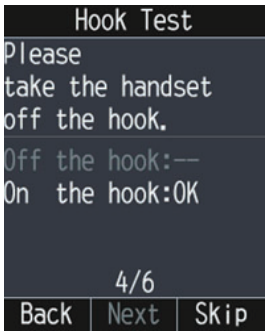


10. To go to the hook test, press the **Enter** key three times.
    If all keys are not tested at this time, the test result for the keys is shown as "NG".



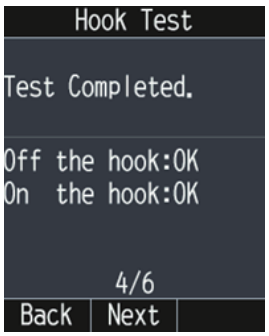
11. Put the IP Handset on the hook, then confirm that the "On the hook" indication appears in white text.

    To skip the hook test, press the 📖 key. Note that the result of the hook test is "NG".

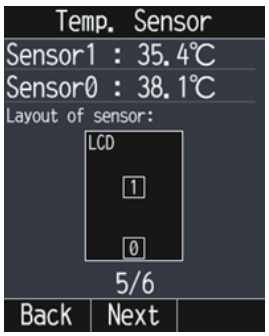


12. Put the IP Handset off the hook, then confirm that the "Off the hook" indication appears in white text.

    To skip the hook test, press the 📖 key. Note that the result of the hook test is "NG".



13. Press the **Enter** key to go to the temperature sensor test.
    The temperature sensor test checks the two temperature sensors in the IP Handset.
    The temperature data on the screen is updated in every ten seconds.



14. Press the **Enter** key to go to the sound test.
    The sound test checks the receiver, speaker, and microphone in the IP Handset.



15. Press the **Enter** key to check the sounds for the receiver. The receiver starts to sound. The icon ▶ at the right of the "Receiver" item appears while playing the sounds.The receiver sounds until the **Enter** key is pressed.
16. Press the **Enter** key to stop the sounds and go to the speaker test.



17. Press the **Enter** key to check the sounds for the speaker. The speaker starts to sound. The icon ▶ at the right of the "Speaker" item appears while playing the sounds.The speaker sounds until the **Enter** key is pressed.
18. Press the **Enter** key to stop the sounds and go to the front microphone test.

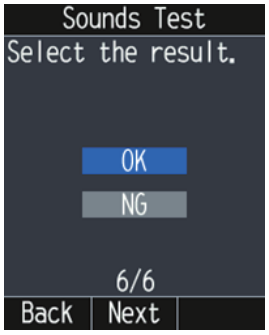


19. Press the **Enter** key to record through the front microphone. Speak into the microphone for five seconds. The indication "Now Recording." appears during this time.

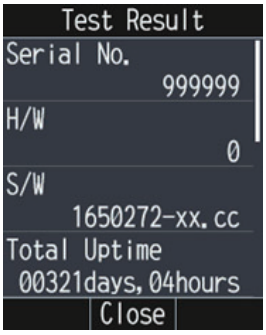
20. Press the **Enter** key to play back the recording. The icon to the right of the "Mic (Front)" item appear in the recording is played back. When the play back is complete, the next text is automatically started.

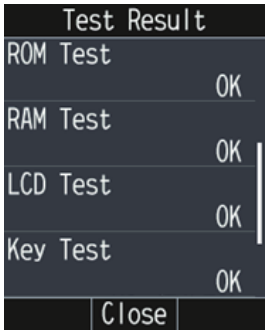


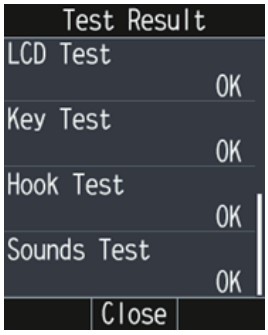
21. Referring to steps 19 and 20, test the back microphone. When the back microphone test is completed the following screen appears.



22. Press ▲ or ▼ to select [OK] or [NG], then press the **Enter** key. The [Test Result] screen appears.





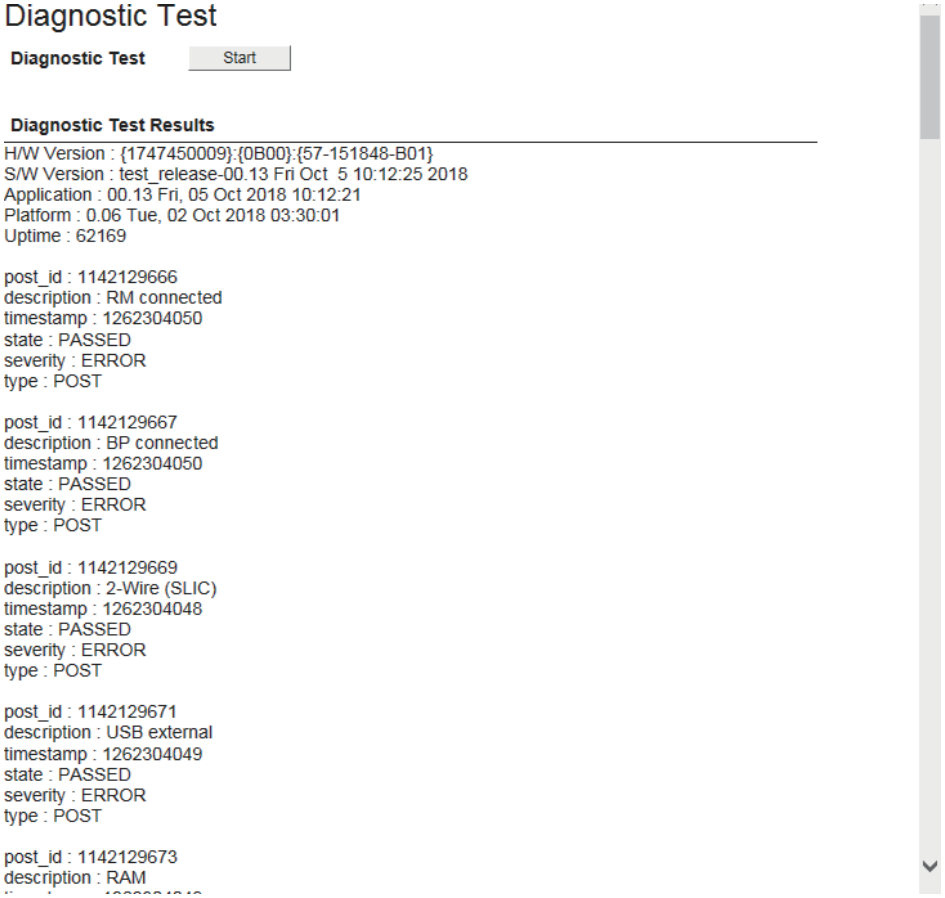


23. Confirm that all items shows "OK", then press the key to go back to the main screen.
If "NG" is shown for any item, do the test(s) again. If the result still shows "NG", consult your dealer.

7.5.2 Communication Unit and Antenna Unit test

The Communication Unit and Antenna Unit can be tested with the Web interface. Conduct this test when you feel there is a problem with the system, such as being unable to send/receive data.

1. Open the Web interface.
2. Click [Help service].
3. Click [Diagnostics Test] to show the [Diagnostics Test] menu.
4. Click the [Start] button to start the diagnostics test.
   The test takes approximately five minutes to complete.

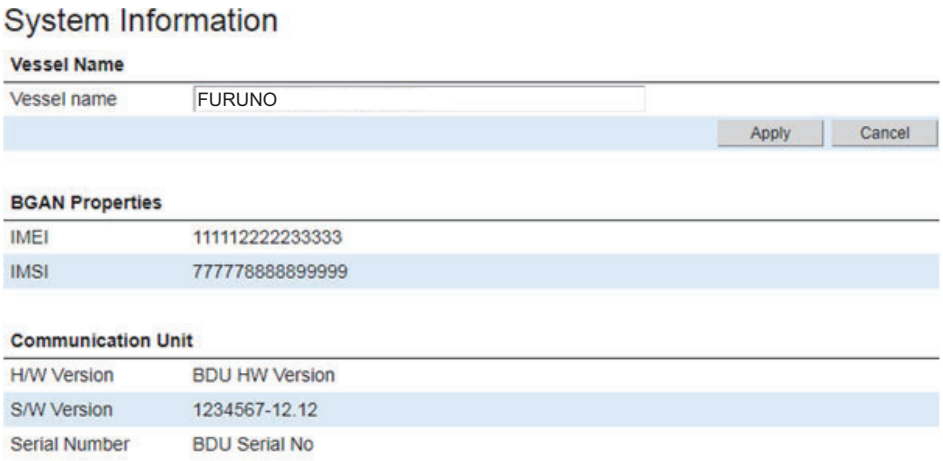


Note: Do not navigate to another screen in the Web interface, or reset the power during the diagnostics test.

7.6 System Information

To view the system information do the following:

1. Open the Web interface.
2. Click [Home].
3. Click [System Information] to show the [System Information] menu.

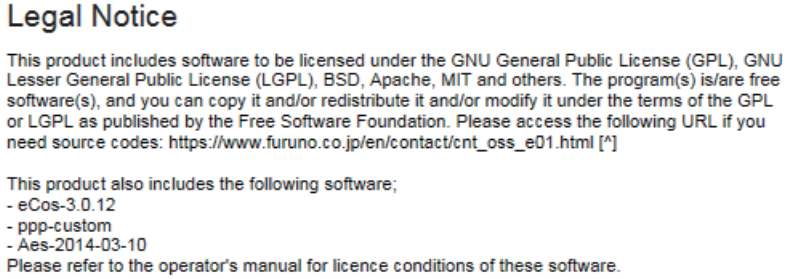


Item	Description
Vessel name	Shows your vessel name. If you are logged is as an administrator, you can edit the name. To save an edited name, click the [Apply] button after you finish editing the name.
IMEI	IMEI for Communication Unit
IMSI	IMSI for SIM **Note:** If the SIM is not inserted, the column is blank.
H/W Version	Hardware version for Communication Unit
S/W Version	Software version for Communication Unit
Serial Number	Serial number for Communication Unit

7.7 Legal Notice

To view the legal notice do the following:

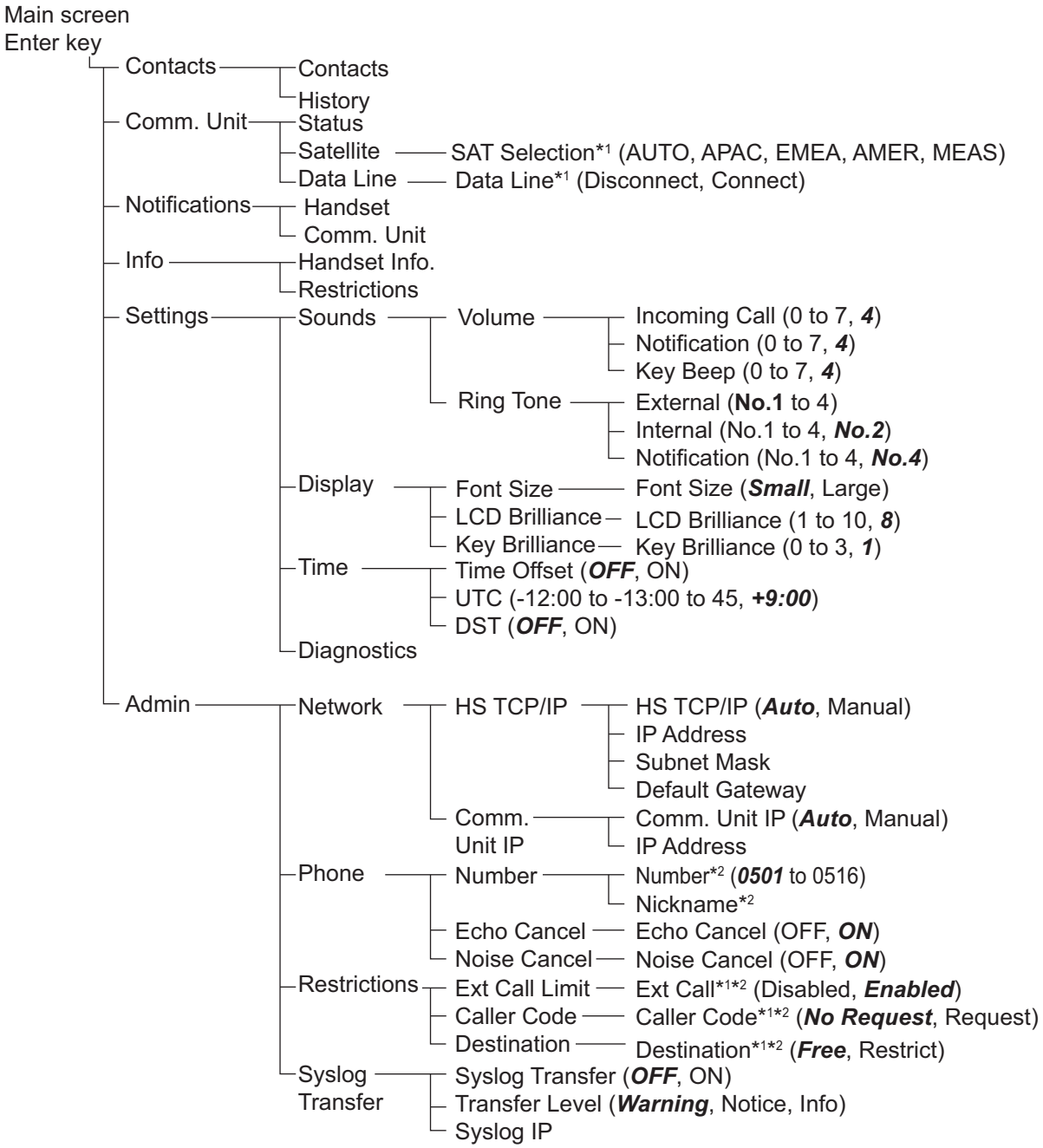
1. Open the Web interface.
2. Click [Help service].
3. Click [Legal Notice] to show the [Legal Notice] menu.



APPENDIX 1 MENU TREE

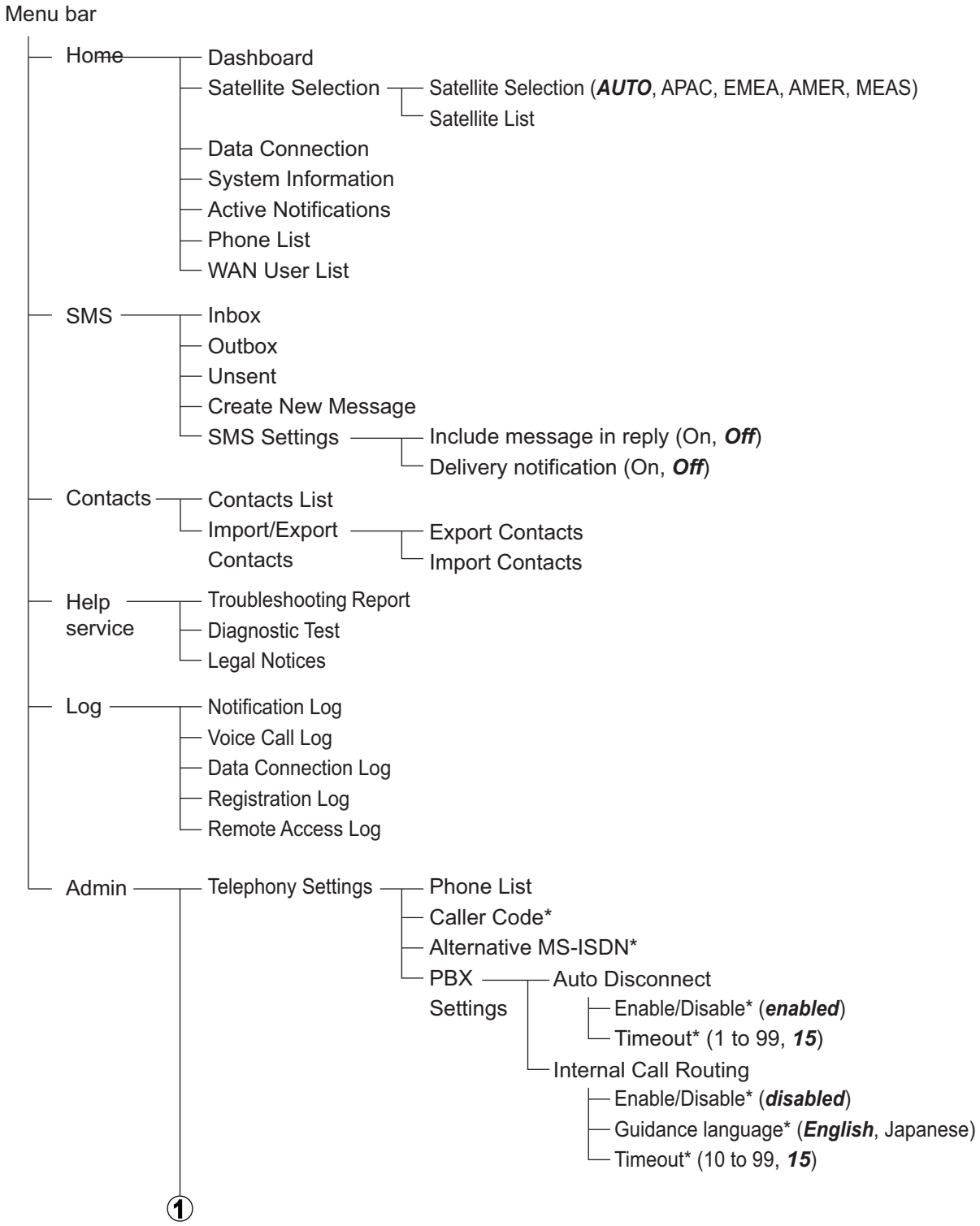
Default settings are presented in ***bold italic*** text.

IP Handset menu tree

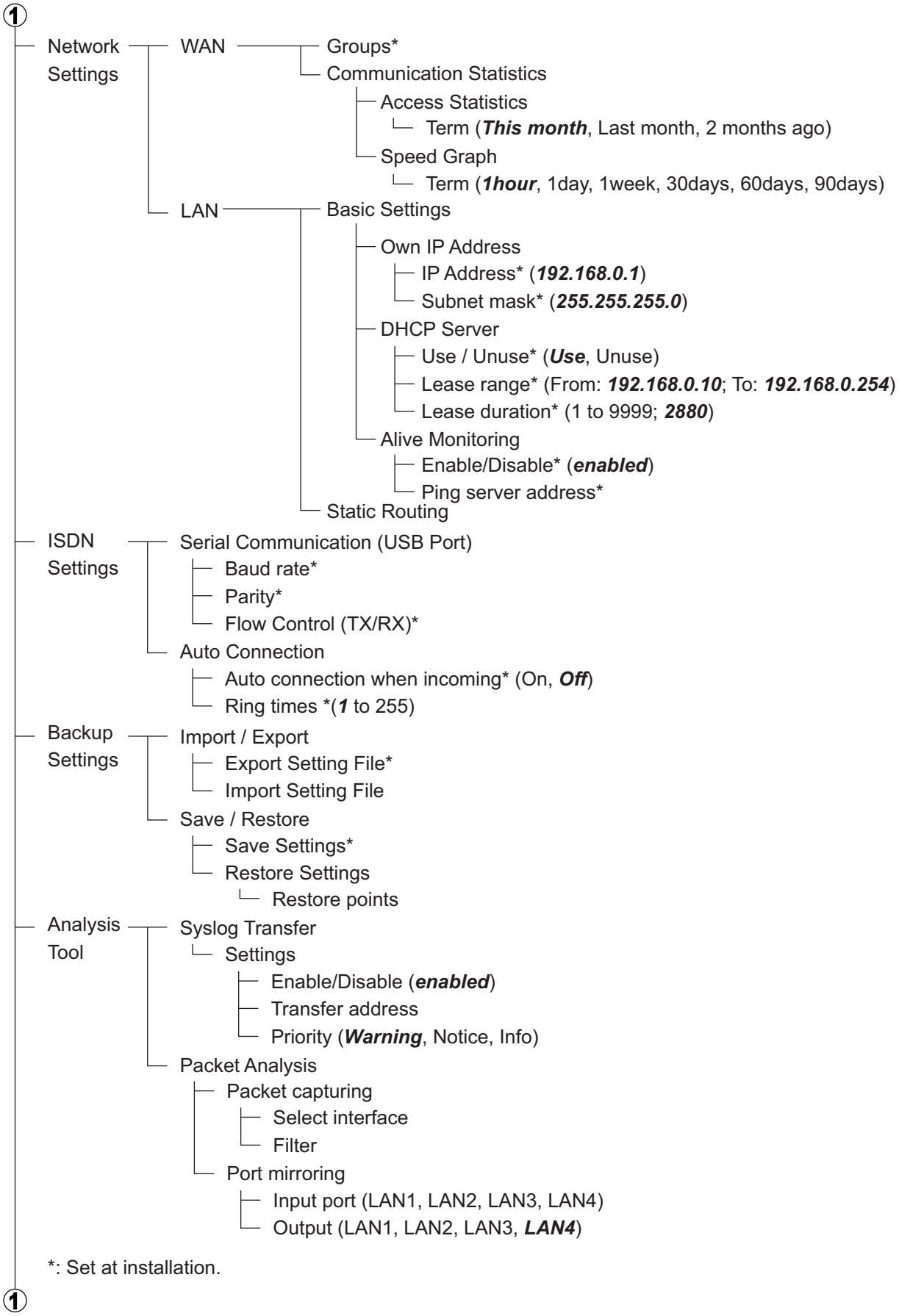


*1: Based on Communication Unit/Web interface setting.
*2: Set at installation.

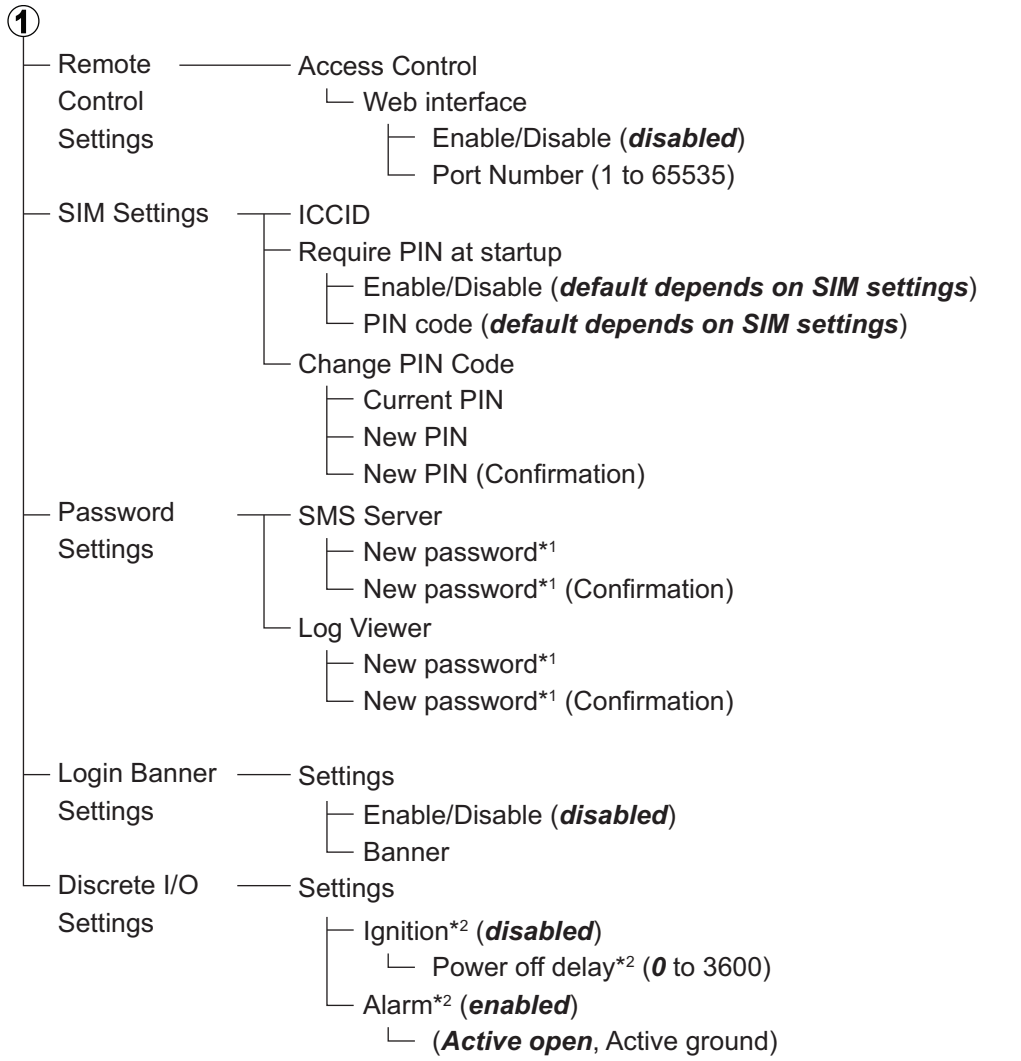
Web interface menu tree



*: Set at installation.



*: Set at installation.



*1: Requires a combination of upper-case letters, lower-case letters and numerals. Must be at least 8 characters in length with a maximum of 15 characters.

*2: Set at installation.

APPENDIX 2 LIST OF TERMS AND ABBREVIATIONS

Term	Meaning
AC	Alternating Current
AMBE	Advanced Multi-Band Excitation. A proprietary speech coding standard developed by Digital Voice Systems Inc.
APN	Access Point Name. Destination name for packet communication.
CE	Conformite Europeenne, This term signifies that a CE certified product conforms to European health, environmental, and safety regulations. In short, it makes the product legal to be sold in the European Union.
CS	Circuit Switching. A communication type that confirms that a connection has been made before enabling communication when using an analog handset or IP handset to make a call, or using ISDN for data communication.
CSV	Comma Separated Value. Method of digital storage of data structured in a table of lists form, where each associated item (member) in a group in association with others is also separated by the commas of its set.
DC	Direct Current
DHCP	Dynamic Host Configuration Protocol. A network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
DHCP Lease	Specific IP address assigned to a DHCP client by the DHCP Server. Usually set by Administrator.
DMZ	DeMilitarized Zone. A physical or logical subnetwork that contains an organization's external services from a larger, untrusted network, usually the Internet.
DNS	Domain Name Service. The mechanism by which an IP address is assigned a name by the host.
DOM storage	Document Object Model storage. DOM storage provides web application software methods and protocols used for storing data in a web browser.
FTP	File Transfer Protocol. Protocol used to send files on a TCP/IP network, internet, or intranet.
FX	Fleet Xpress. The FX service allows the use of GX (Global Xpress) and FBB (Fleet Broadband) services provided by Inmarsat. FX also facilitates automatic switching between GX and FBB.
Gateway	Equipment or software used to relay network connections. The “doorway” of the network.
GPS	Global Positioning System. A system of satellites, computers, and receivers that is able to determine the latitude and longitude of a receiver on Earth by calculating the time difference for signals from different satellites to reach the receiver.
ICCID	Integrated Circuit Card ID. The unique serial number, international number of the mobile user (IMSI), security authentication and ciphering information, temporary information related to the local network, a list of the services the user has access to and two passwords (PIN for usual use and PUK for unlocking).
ICMP	Internet Control Message Protocol. Protocol used to send error and warning messages. Allows networks and connected computers to mutually exchange status information.
IDENT	Identification Protocol. Protocol that sends information about the client to the server.
IEC	International Electrotechnical Commission is an international standards organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

Term	Meaning
IMEI	International Mobile Equipment Identifier. A 15-digit number which indicates the model number, manufacturer, producer, and serial number of cell phones and data cards.
IMSI	International Mobile Subscriber Identity. Specific number assigned to individual SIM cards. Enables telephone communication.
I/O	Input/Output
IP	International Protection Rating, sometimes also interpreted as Ingress Protection Rating, consists of the letters IP followed by two digits and an optional letter. It classifies the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact, and water in electrical enclosures.
	Internet Protocol. Rules that determine the format of data sent over the Internet or other network.
IP filter	Software that can be configured to easily deny or allow access to a specific port or address.
IPSec	Internet Protocol Security. A protocol suite for securing Internet Protocol (IP) communications by authenticating and encrypting each IP packet of a data stream.
ISDN	Integrated Service Digital Network. A digital communications network that handles data integration for phones and faxes.
kbps	kilobits per second
LAN	Local Area Network. Cable, Fibre-optic, etc. network that allows computers in the same geographical area to connect to each other and to other devices such as printers, servers, etc.
LaunchPad	BGAN application software to control devices in the system. CD-ROM supplied by Inmarsat.
LED	Light Emitting Diode
MAC address	Media Access Control address. Unique number that identifies each computer on the network. Consists of 6 by 16 decimals.
MB	Mega Bytes
Metric	The criteria used by the router to select the optimal route.
Microsoft DS	Microsoft Directory Services
MS-ISDN	Mobile Subscriber ISDN Number.
MV	Multi Voice
NAPT	Network Address Port Translation. NAPT is a technique in which port numbers and private Internet Protocol (IP) addresses are mapped from multiple internal hosts to one public IP address.
NAT	Network Address Translation. An Internet standard that enables a local-area network to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. A NAT module makes all necessary address translations.
NBT	NetBIOS over TCP/IP. A networking protocol that allows legacy computer applications relying on the NetBIOS API to be used on modern TCP/IP networks.
PBX	Private Branch eXchange. A telephone exchange that serves a particular business or office, as opposed to one that a common carrier or telephone company operates for many businesses or for the general public.
PC	Personal Computer
PIN	Personal Identification Number. The SIM card identification number.
ping	Confirms if computers and networks are connected.
PPPoE	Point-to-Point protocol over Ethernet. A protocol for using the PPP function via Ethernet.
Proxy server	A server that acts as a go-between for requests from clients seeking resources from other servers.

Term	Meaning
PS	Packet Switching. A method of communication that separates data into small units (packets) and sends them individually.
PUK	PIN Unblocked Key. If the PIN is entered incorrectly 3 times the SIM card is blocked. Use the PUK code to unblock the SIM.
RF	Radio Frequency. Electromagnetic wave frequencies between about 3 kilohertz and about 300 gigahertz including the frequencies used for communications signals (radio, television, cell-phone and satellite transmissions) or radar signals.
RX	Receive
SIM	Subscriber Identity Module. An IC card that stores the registered users subscriber number, phone number and information. When inserted into a terminal, the terminal operates on this information.
SMS	Short Message Service. A method of sending short messages over mobile devices.
Streaming	A method transmitting audio, visual and multimedia where the data is transmitted and played back simultaneously.
TCP	Transmission Control Protocol. One of the core protocols of the Internet protocol suite. TCP provides reliable, in-order delivery of a stream of bytes, making it suitable for applications like file transfer and e-mail.
TCP/IP	Transmission Control Protocol/Internet Protocol. TCP/IP is a suite of communication protocols used to interconnect network devices on the internet.
TX	Transmit
UDI	Unrestricted Digital Information. ISDN terminology for the transmission capacity of data, video conferences, and G4 fax machines.
UDP	User Datagram Protocol. UDP is an alternative communications protocol to Transmission Control Protocol (TCP) used primarily for establishing low-latency and loss-tolerating connections between applications on the internet.
URL	Uniform Resource Locator. Specifies where an identified resource is available and the mechanism for retrieving it. In popular language, a URL is also referred to as a Web address.
UTC	Coordinated Universal Time. The International Atomic Time (TAI) with leap seconds added at irregular intervals to compensate for the Earth's slowing rotation. Leap seconds are used to allow UTC to closely track UT1, which is mean solar time at the Royal Observatory, Greenwich.
VPN	Virtual Private Network. A computer network in which some of the links between nodes are carried by open connections or virtual circuits in some larger networks (such as the Internet), as opposed to running across a single private network.
WAN	Wide Area Network. Using a telephone line or dedicated line two connect two or more computers in a geographically different location.

APPENDIX 3 NOTIFICATION MESSAGES

SIM errors/events appear in the IP Handset and in the Web interface of the Communication Unit. The list below shows the notification messages that may appear.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x1000	Info	Low temperature. No performance degradation.	-	The Communication Unit temperature is low. Performance is not affected.
0x1010	Warning	The Communication Unit temperature is too low.	The Comm. Unit temperature is too low.	The Communication Unit temperature is too low. Move the unit to a warmer location. For information on ambient temperature limits, see the specifications page.
0x1020	Warning	Caution! Ambient temperature is too low.	Caution! Ambient temp. is too low.	The Communication Unit temperature is too low. Move the unit to a warmer location. For information on ambient temperature limits, see the specifications page.
0x1100	Info	High temperature. No performance degradation.	-	The Communication Unit temperature is high. Performance is not affected.
0x1110	Warning	Caution! Communication Unit temperature extremely high.	Caution! Comm. Unit temp. extremely high.	The Communication Unit temperature is extremely high. Move the unit to a cooler location. For information on ambient temperature limits, see the specifications page. If the problem persists, contact your dealer.
0x1120	Warning	Caution! Ambient temperature is too high.	Caution! Ambient temp. is too high.	The Communication Unit temperature is too high. Move the unit to a cooler location. For information on ambient temperature limits, see the specifications page.
0x1400	Warning	No satellite signal.	-	The FELCOM system no longer receives a signal from the satellite. Make sure the antenna has a clear line of sight to the satellite(s).
0x1600	Warning	Rescue calls only.	Rescue calls only.	The SIM card is not accepted by the network. Only emergency calls are allowed. Wait for network registration to complete. If the problem persists, contact your SIM provider.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x1700	Warning	Registration for voice service failed.	Registration for voice service failed.	Registration for voice service failed. If the problem persists, contact your SIM provider.
0x1800	Warning	Registration for data service failed.	Registration for data service failed.	Registration for data service failed. If the problem persists, contact your SIM provider.
0x2000	Info	Weak satellite signal.	-	The signal from the satellite is weak. Make sure the antenna has a clear line of sight to the satellite(s). Also, confirm that the selected satellite is correct.
0x2900	Warning	Found network is not a valid BGAN network.	Found network is not a valid BGAN network.	Found network is not a valid BGAN network. Restart the Communication Unit. If the problem persists, contact your dealer.
0x3900	Warning	DSP in Communication Unit has detected error(s).	DSP has detected some error(s).	DSP in Communication Unit has detected error(s).This can be caused by H/W error or interference. If there is no interference and the problem persists, contact your dealer.
0x4000	Info	DSP in Communication Unit has detected a suspicious condition.	-	DSP in Communication Unit has detected a suspicious condition. If any communication error happens and persists, contact your dealer.
0x8009	Warning	Antenna unit is turned off because input voltage to Communication Unit is too low.	Antenna unit is off because of low input voltage.	Antenna Unit is turned off because input voltage to Communication Unit is too low. Ensure a stable power supply to the Communication Unit.
0x802F	Error	Antenna start up failed.	Antenna start-up failed.	Antenna start up failed because the software failed to load. Restart the Communication Unit. If the problem persists, contact your dealer.
0x8030	Error	Antenna start up failed.	Antenna start-up failed.	Antenna start up failed because the system cannot activate the main application mode. Restart the Communication Unit. If the problem persists, contact your dealer.
0x8031	Error	Antenna start up failed.	Antenna start-up failed.	Antenna start up failed because the system cannot activate the normal operation mode. Restart the Communication Unit. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x8035	Error	Communication error between Antenna and Communication Unit.	Communication error between Antenna and Comm. Unit.	Communication error between Antenna and Communication Unit. Restart the Communication Unit. If the problem persists, contact your dealer.
0x8045	Warning	Antenna start up failed due to low temperature.	Antenna start-up failed due to low temperature.	If the ambient temperature is outside the specified limits, the Antenna may not start properly. For information on ambient temperature limits, see the specifications page.
0x8049	Warning	Data transfer speed reduced due to high temperature.	Data speed reduced due to high temperature.	Data transfer speed is reduced because the Communication Unit temperature is too high. Move the unit to a cooler location.
0x804C	Warning	The selected satellite is not available at the current position.	The satellite is not visible from here.	The terminal is set up to use a satellite that is not visible at the current position. Select “Auto” to find a satellite automatically, or select a satellite available at the current position.
0x8054	Warning	Transmission aborted due to extreme temperature.	Transmission aborted due to extreme temperature.	Transmission is aborted because the ambient temperature around the Antenna is extremely high or low. The system must operate within the allowed temperature range to work properly. For information on ambient temperature limits, see the specifications page.
0x8056	SIM (Warning)	Incorrect SIM card inserted.	Incorrect SIM card inserted.	The type of SIM card inserted in the terminal is not correct for your terminal. Make sure that the correct type of SIM card is inserted.
0x8057	SIM (Warning)	SIM access error.	SIM access error.	SIM access error. Try removing and reinserting the SIM card. if the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x8059	Warning	Can't fix on the satellite because: - satellite is not in field of view or; - obstruction is present or; - antenna HW has malfunctioned or; - excessive vibrations at antenna.	Unable to fix on satellite.	Can't fix on the satellite because: • satellite is under horizon or; • Antenna blockage or; • Antenna HW is malfunction; • Too high vibration. Make sure Antenna is not blocked and vibrations are within the specified limit. Then restart the Communication Unit. If the problem persists, contact your dealer.
0x8098	Warning	Excessive DC power loss between BDU and HPA.	Excessive DC power loss between BDU and HPA.	DC power loss between the Communication Unit and HPA is excessive. Make sure Antenna cable connector has no corrosion. Make sure all Antenna cable connectors are screwed tight together.
0x8099	Error	BP in Communication Unit has detected some errors.	BP has detected some errors.	BP in Communication Unit has detected some errors. If too many errors detected, contact your dealer.
0x80A7	Info	Signal from terrestrial communication systems detected and rejected.	-	Signal from terrestrial communication systems detected and rejected.
0x9112	Warning	The Antenna temperature is too high.	The Antenna temperature is too high.	The Antenna temperature is too high. Turn the system off until the Antenna temperature cools down.
0x9113	Warning	Antenna input voltage is out of range.	Antenna input voltage is out of range.	Antenna input voltage is out of range. Check input voltage to the Communication Unit is within 10 – 32 V DC. Make sure the antenna cables are screwed together firmly.
0x9114	Warning	Communication error between Communication Unit and ACM in Antenna.	Communication error between Comm. Unit and ACM in Antenna.	Communication error between Communication Unit and ACM in Antenna. Check the Antenna cable connection.
0x911E	Warning	IMU in Antenna error.	IMU in Antenna error.	IMU in Antenna error. Restart the Communication Unit. If the problem persists, contact your dealer.
0x911F	Warning	Lost connection to the GPS receiver.	Lost connection to the GPS receiver.	Communication with the GPS receiver in the Antenna is lost. Restart the Communication Unit. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x9120	Warning	Satellite tracking might not be sufficient due to excessive ship motion.	Satellite tracking might not be sufficient.	Satellite tracking precision is not sufficient due to excessive ship motion. The system must operate within the specified ship motion. See the specifications page.
0x9121	Warning	Antenna software has internal errors.	Antenna software has internal errors.	Antenna software has internal errors. Restart the Communication Unit. If the problem persists, contact your dealer.
0x9122 0x9123 0x9124	Warning	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient. Restart the Communication Unit. If the problem persists, contact your dealer.
0x9125	Warning	The zero point sensor in the Antenna is not on the zero point as it should be.	The zero point sensor in the Antenna is not on the zero point.	The zero point sensor in the Antenna is not on the zero point as it should be. Restart the Communication Unit. If the problem persists, contact your dealer.
0x9126	Warning	MDM voltage in the Antenna is out of range.	MDM voltage in the Antenna is out of range.	MDM voltage in the Antenna is out of range. If the problem persists, contact your dealer.
0x9127	Warning	Antenna software has internal errors.	Antenna software has internal errors.	Antenna software has internal errors. Restart the Communication Unit. If the problem persists, contact your dealer.
0x9128 0x9129	Warning	GPS module error.	GPS module error.	GPS module error. If the problem persists, contact your dealer.
0x912A	Warning	The motors in the Antenna have stopped due to extreme temperature.	The motors in the Antenna have stopped due to extreme temp.	The motors in the Antenna have stopped because the temperature is excessively high or low. When the temperature is within operating limits, the motors automatically restart. For information on ambient temperature limits, see the specifications page.
0x921E	Warning	HPA voltage in the Antenna is out of range.	HPA voltage in the Antenna is out of range.	HPA voltage in the Antenna is out of range. Check input voltage to the Communication Unit is within 10 – 32 V DC. Make sure the antenna cables are screwed together firmly.
0x9221	Warning	Gain settings error in HPA.	Gain settings error in HPA.	Gain settings error in HPA. Restart the Communication Unit. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x9223	Warning	Unexpected HPA voltage in the Antenna is detected.	Unexpected HPA voltage in the Antenna is detected.	Unexpected HPA voltage in the Antenna is detected. Restart the Communication Unit. If the problem persists, contact your dealer.
0x9628	Warning	The Antenna temperature is too high.	The Antenna temperature is too high.	The Antenna temperature is too high. Turn the system off until the Antenna temperature cools down.
0x9629	Warning	ACM voltage in the Antenna is out of range.	ACM voltage in the Antenna is out of range.	ACM voltage in the Antenna is out of range. Check input voltage to the Communication Unit is within 10 – 32 V DC. Make sure the antenna cables are screwed together firmly.
0x962A	Warning	Communication error between Communication Unit and ACM in Antenna.	Communication error between Comm. Unit and ACM in Antenna.	Communication error between Communication Unit and ACM in Antenna. Check the Antenna cable connection.
0x962B	Warning	MSU in Antenna error.	MSU in Antenna error.	MSU in Antenna error. Restart the Communication Unit. If the problem persists, contact your dealer.
0x962C	Warning	Communication error between Communication Unit and ATR in Antenna.	Communication error between Comm. Unit and ATR in Antenna.	Communication error between Communication Unit and ATR in Antenna. Restart the Communication Unit. If the problem persists, contact your dealer.
0x962D	Warning	Lost connection to the GPS receiver or GPS fixed lost.	Lost connection to the GPS receiver or GPS fixed lost.	Lost connection to the GPS receiver or GPS fixed lost. Restart the Communication Unit. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x962F	Warning	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient. Restart the Communication Unit. If the problem persists, contact your dealer.
0x9630	Warning	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient.	
0x9631	Warning	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient.	
0x9632	Warning	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient.	
0x9633	Warning	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient.	
0x9634	Warning	Satellite tracking precision is not sufficient.	Satellite tracking precision is not sufficient.	
0x9635	Warning	ATM PLL is not locked.	ATM PLL is not locked.	ATM PLL is not locked. Restart the Communication Unit. If the problem persists, contact your dealer.
0x9636	Warning	The motors in the Antenna have stopped due to extreme temperature.	The motors in the Antenna have stopped due to extreme temp.	The motors in the Antenna have stopped because the temperature is excessively high or low. When the temperature is within operating limits, the motors automatically restart. For information on ambient temperature limits, see the specifications page.
0x10204	Warning	Data transfer speed reduced due to high temperature and all streaming connections closed.	Data communication is limited due to high temp.	Data transfer speed is reduced due to high temperature and all streaming connections closed. Move the Communication Unit to a cooler place.
0x10205	Warning	All data connections are closed due to high temperature.	Data communication is not available due to high temp.	All data connections are closed due to high temperature. Move the Communication Unit to a cooler place.
0x10206	Error	The Communication Unit will restart due to critically high temperatures.	The Comm. Unit will restart due to high temp.	The Communication Unit will restart due to critically high temperatures. Move the Communication Unit to a cooler location. For information on ambient temperature limits, see the specifications page. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x10208	Warning	All PoE ports except port 1 are shut down due to high temperature.	PoE disabled on LAN2,3,4 due to high temp.	The temperature in the Communication Unit is too high. All PoE ports except port 1 are shutdown to reduce the temperature. Move the Communication Unit to a cooler location, or avoid using the PoE on LAN2 to LAN4.
0x10300	Warning	Updating software.	Updating software.	System software update in progress. Wait for the completion of update.
0x10302	Warning	Preparing the software update.	Preparing the software update.	The system is preparing the software update. Wait for the completion of update.
0x10303	Warning	Unable to open the file for software update.	-	The system cannot find the update file. Confirm that the update file is saved correctly.
0x10305	Warning	Unable to downgrade the software.	-	Software downgrade is not allowed. Use the update file for newer software version.
0x10306	Warning	The file for software update does not support this product.	-	The file for software update does not support this product. Use an appropriate file.
0x10307	Warning	The file for software update is corrupted.	-	The file for software update is corrupted. Get the file again from an original source.
0x10308	Warning	Software update is failed.	-	Software update failed. Retry the software update.
0x10309	Warning	The software has been rolled back to the previous version due to the validation failed.	-	The software has been rolled back to the previous version because the validation failed. Retry the software update.
0x1030A	Error			
0x1030B				
0x1030C	Warning	The software update is already running.	-	Other software update program is running. Retry the software update after the current update program is completed.
0x1030D	Warning	The software trying to be installed is the same as the current running software.	-	The software trying to be installed is the same as the current running software. Use the update file for the latest version.
0x10341	Warning	LAN port(s) is/are running as Half Duplex mode.	-	LAN port(s) is/are running as Half Duplex mode. Half Duplex mode is not guaranteed to work correctly. Configure the device(s) connected to the Communication Unit with Full Duplex mode.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x10400	Warning	Short circuit detected on USB port.	Short circuit detected on USB port.	Short circuit detected on USB port. Restart the Communication Unit. Also check the connected device. If the problem persists, contact your dealer.
0x10500	Warning	Distress registration has failed, either eMLPP registration has not succeeded, Call Waiting could not be enabled or it has taken more than 5 minutes.	Safety Voice registration failed.	Distress registration has failed, either eMLPP registration has not succeeded, Call Waiting could not be enabled or it has taken more than 5 minutes. Contact your SIM provider and verify eMLPP is enabled on the SIM card and that Call Waiting service is commissioned.
0x10501	Warning	Safety voice handset is not connected.	Safety voice handset is not connected.	Safety Voice Handset is not connected. Check if Safety Voice Handset is connected correctly to the LAN (PoE) interface. If it is connected correctly, please contact your dealer.
0x10502 0x10503	Warning	Safety voice settings are changed.	Safety voice settings are changed.	Safety voice settings are changed. Restart the Communication Unit to enable the service.
0x10600	Warning	Alarm Panel is not connected.	Alarm Panel is not connected.	Alarm Panel is not connected. Check if Alarm Panel is connected correctly to the LAN (PoE) interface. If it is connected correctly, please contact your dealer.
0x10601	Warning	Multiple Alarm Panels are connected.	Multiple Alarm Panels are connected.	More than one Alarm Panels are connected. Make sure only one Alarm Panel is connected. If the problem persists, contact your dealer.
0x10602	Warning	Distress button error.	Distress button error.	Distress button error. Restart the Communication Unit and Alarm Panel. If the problem persists, contact your dealer.
0x10800	Warning	Failed to enable/ verify Call Waiting for Multi voice.	Failed to enable or verify Call Waiting for Multi voice.	Failed to enable/verify Call Waiting for Multi voice. Contact your SIM card provider to verify the supplementary service is enabled.
0x10801	Warning	Failed to enable/ verify Call Forwarding for Multi voice.	Failed to enable or verify Call Forwarding for Multi voice.	Failed to enable/verify Call Forwarding for Multi voice. Contact your SIM card provider to verify the supplementary service is enabled.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x11005	Info	PoE device which was previously connected has been disconnected.	-	PoE device which was previously connected has been disconnected.
0x11006	Error	PoE will be disabled due to over/under voltage.	PoE will be disabled due to over/under voltage.	PoE will be disabled due to over/under voltage. Restart the Communication Unit. If the problem persists, contact your dealer.
0x11007	Error	All PoE ports are shut down due to high temperature.	All PoE ports are shut down due to high temperature.	All PoE ports are shut down due to high temperature. Restart the Communication Unit. If the problem persists, contact your dealer.
0x11008	Error	PoE overload is detected.	PoE overload detected.	PoE overload is detected. Disconnect the PoE equipment from LAN ports and restart the Communication Unit. If the problem persists, contact your dealer.
0x1100C	Warning	Unable to feed PoE power due to power limit.	Unable to feed PoE power due to power limit.	Unable to feed PoE power due to power limit. Disconnect the PoE equipment from LAN ports and restart the Communication Unit.
0x1100E	Warning	PoE disabled on LAN port(s) due to power limit.	PoE power limit.	PoE disabled on LAN port(s) due to power limit. Disconnect some PoE equipment from LAN ports.
0x22600	Error	No Antenna.	No Antenna.	No Antenna. Make sure the connection between Antenna and Communication Unit.
0x25800	Error	Diagnostic test for Antenna detected an error (HPA).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (HPA). Restart the Communication Unit. If the problem persists, contact your dealer.
0x2580A	Error	Diagnostic test for Antenna detected an error (HPA calibration).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (HPA calibration). Restart the Communication Unit. If the problem persists, contact your dealer.
0x2580C	Error	Diagnostic test for Antenna detected an error (Antenna module).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (Antenna module). Restart the Communication Unit. If the problem persists, contact your dealer.
0x2580D	Error	Diagnostic test for Antenna detected an error (No GPS module).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (No GPS module). Restart the Communication Unit. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x2580E	Error	Diagnostic test for Antenna detected an error (HPA).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (HPA). Restart the Communication Unit. If the problem persists, contact your dealer.
0x25A00	Error	Diagnostic test for Antenna detected an error (ACM/ ATM).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (ACM/ATM). Restart the Communication Unit. If the problem persists, contact your dealer.
0x25A0A	Error	Diagnostic test for Antenna detected an error (ACM calibration).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (ACM calibration). Restart the Communication Unit. If the problem persists, contact your dealer.
0x25A0B	Error	Diagnostic test for Antenna detected an error (Tx gain).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (Tx gain). Restart the Communication Unit. If the problem persists, contact your dealer.
0x25A0C	Error	Diagnostic test for Antenna detected an error (Tx gain).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (Tx gain). Restart the Communication Unit. If the problem persists, contact your dealer.
0x25A0E	Error	Diagnostic test for Antenna detected an error (Sensor module).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (Sensor module). Restart the Communication Unit. If the problem persists, contact your dealer.
0x25A10	Error	Diagnostic test for Antenna detected an error (GPS alive).	Diagnostic test for Antenna detected an error.	Diagnostic test for Antenna detects error (GPS alive). Restart the Communication Unit. If the problem persists, contact your dealer.
0x2BC00	Error	Diagnostic test for Communication Unit detected an error (BP start up).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (BP start up). Restart the Communication Unit. If the problem persists, contact your dealer.
0x2C200	Error	Excessive cable loss detected.	Excessive cable loss detected.	Cable loss determined is too big. Check Antenna cable. If the problem persists, contact your dealer.
0x2C300	Error	Configuration for Tx output level is invalid.	Configuration for Tx output level is invalid.	Configuration for Tx output level is invalid. Restart the Communication Unit. If the problem persists, contact your dealer.
0x2C400	Error	Cable calibration for Antenna power failed.	Cable calibration for Antenna power failed.	Cable calibration for Antenna power is failed. Check Antenna cable.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x2C500	SIM (Warning)	SIM access error.	SIM access error.	SIM access error. Try removing and reinserting the SIM. Contact your distributor if the problem persists.
0x32000	Error	Diagnostic test for Communication Unit detected an error (RM CPU).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM CPU). Restart the Communication Unit. If the problem persists, contact your dealer.
0x32064	Error	Diagnostic test for Communication Unit detected an error (RM CPU/Initial Connectivity).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM CPU/Initial Connectivity). Restart the Communication Unit. If the problem persists, contact your dealer.
0x32100	Error	Diagnostic test for Communication Unit detected an error (RM DSP).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP). Restart the Communication Unit. If the problem persists, contact your dealer.
0x32164	Error	Diagnostic test for Communication Unit detected an error (RM DSP/ McASP IF).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP/McASP IF). Restart the Communication Unit. If the problem persists, contact your dealer.
0x32165	Error	Diagnostic test for Communication Unit detected an error (RM DSP/ADC).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP/ADC). Restart the Communication Unit. If the problem persists, contact your dealer.
0x32166	Error	Diagnostic test for Communication Unit detected an error (RM DSP/DAC).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP/DAC). Restart the Communication Unit. If the problem persists, contact your dealer.
0x32167	Error	Diagnostic test for Communication Unit detected an error (RM DSP/Rx PLL).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP/Rx PLL). Restart the Communication Unit. If the problem persists, contact your dealer.
0x32168	Error	Diagnostic test for Communication Unit detected an error (RM DSP/Tx PLL).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP/Tx PLL). Restart the Communication Unit. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x32169	Error	Diagnostic test for Communication Unit detected an error (RM DSP/FPGA I/F).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP/FPGA I/F). Restart the Communication Unit. If the problem persists, contact your dealer.
0x3216A	Error	Diagnostic test for Communication Unit detected an error (RM DSP/FPGA DDR RAM I/F).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM DSP/FPGA DDR RAM I/F). Restart the Communication Unit. If the problem persists, contact your dealer.
0x38402	Error	Diagnostic test for Communication Unit detected an error (RM communication).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RM communication). Restart the Communication Unit. If the problem persists, contact your dealer.
0x38403	Error	Diagnostic test for Communication Unit detected an error (BP communication).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (BP communication). Restart the Communication Unit. If the problem persists, contact your dealer.
0x38405	Error	Diagnostic test for Communication Unit detected an error (SLIC).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (SLIC). Restart the Communication Unit. If the problem persists, contact your dealer.
0x38407	Error	Diagnostic test for Communication Unit detected an error (USB).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (USB). Restart the Communication Unit. If the problem persists, contact your dealer.
0x38409	Error	Diagnostic test for Communication Unit detected an error (RAM).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (RAM). Restart the Communication Unit. If the problem persists, contact your dealer.
0x3840A	Error	Diagnostic test for Communication Unit detected an error (Flash ROM).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (Flash ROM). Restart the Communication Unit. If the problem persists, contact your dealer.
0x3840B	Error	Diagnostic test for Communication Unit detected an error (FPGA).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (FPGA). Restart the Communication Unit. If the problem persists, contact your dealer.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x3840C	Error	Diagnostic test for Communication Unit detected an error (Temperature sensor).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (Temperature sensor). Restart the Communication Unit. If the problem persists, contact your dealer.
0x3840F	Error	Diagnostic test for Communication Unit detected an error (GPIO).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (GPIO). Restart the Communication Unit. If the problem persists, contact your dealer.
0x38410	Error	Diagnostic test for Communication Unit detected an error (Ethernet switch).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (Ethernet switch). Restart the Communication Unit. If the problem persists, contact your dealer.
0xB5400	Warning	Diagnostic test for Communication Unit detected an error (LED).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (LED). Restart the Communication Unit. If the problem persists, contact your dealer.
0xB5402	Error	Diagnostic test for Communication Unit detected an error (PoE).	Diagnostic test for Comm. Unit detected an error.	Diagnostic test for Communication Unit detects error (PoE). Restart the Communication Unit. If the problem persists, contact your dealer.
0x20000019	Warning	-	No phone number available.	No phone number available. You need to release one of the used numbers.
0x20000105	Warning	Login failed too many times. System has been locked.	Login failed and locked.	Login failed too many times. System has been locked.
0x20000106	Warning	System is locked out.	It has been locked out.	
0x20000107	Warning	-	The telephone number cannot be used.	The phone number cannot be used because the telephone number might be used for an another phone. Configure the number again or select another number.
0x20001109	Warning	-	No Communication Unit found.	The Communication Unit is not found. Check the network configuration and connection.
0x2000110A	Info	Unable to lease IP address.	-	Maximum number of IP addresses have been leased. Check the network configuration where FELCOM system is connected to. Also check the DHCP configuration on Web interface of the Communication Unit.

Code	Priority	Notification Message		Explanation/Remedy
		BDU Web UI	Handset	
0x2000110D	Warning	-	Handset start-up failed.	Handset start-up failed. Restart the Handset.
0x2000110E	Warning	-	Handset POST failed.	The Handset error is detected during POST (Power-On Self-Test). Restart the Handset.
0x20001111	Warning	-	Phone number Configuration is failed.	Phone number configuration is failed. Retry the settings.
0x20001113	Warning	-	Internal error. (MAC address)	Internal error (MAC address). Contact your dealer.
0x20001200	Warning	Failed to get into Test mode.	Failed to get into Test mode.	Failed to get into Test mode. Do not press the [FB Distress] button on the Alarm Panel.
0x20001400	SIM (Warning)	SIM card is not inserted.	SIM is not inserted.	No SIM card is detected in the SIM slot. Insert the SIM card. If the SIM card is already inserted, remove and insert it again.
0x20004100 to 0x2000411F	Warning	Automatic data connection failed.	Auto data connection failed.	Auto data connection failed. Try to connect manually.
0x20004120 to 0x2000413F	Warning	Automatic data disconnection failed.	Auto data disconnection failed.	Auto data disconnection failed. Try to disconnect manually.
0x21000000	Info	Power on (v××.××)	-	The system is turned on. The number in the bracket indicates the software version number.
0x21000001	Info	Restarted.	-	The system is restarted.
0x21000002	Info	Tracking status: Searching	-	The system is searching for a satellite.
0x21000003	Info	SSH login.	SSH login.	The SSH login is performed.
0x21000004	Info	Power off.	-	The system is turned off.
0x2F0000FE	Warning	Configuration failed.	Configuration failed.	Configuration failed. Restart the Communication Unit and try again.

SPECIFICATIONS OF INMARSAT FLEETBROADBAND FELCOM251/501

1 ANTENNA UNIT

1.1	Antenna type	
	FB-1251	BGAN class 9, maritime mechanical tracking
	FB-1501	BGAN class 8, maritime mechanical tracking
1.2	Transmit frequency	1626.5 to 1660.5 MHz and 1668.0 to 1675.0 MHz
1.3	Receiving frequency	1518.0 to 1559.0 MHz
1.4	Channel interval	1.25 kHz
1.5	Antenna gain	
	FB-1251	11.0 dBi or more
	FB-1501	17.8 dBi or more
1.6	G/T	
	FB-1251	Better than -15.5 dB/K
	FB-1501	Better than -7 dB/K
1.7	EIRP	
	FB-1251	16.1 dBW
	FB-1501	23 dBW
1.8	Stabilization	
	FB-1251	Two-axis control
	FB-1501	Three-axis control
1.9	Positioning	Az: 0° to 360°, El: 5° to 90°

2 COMMUNICATION UNIT

2.1	Communication services	
	Voice	4 kbps, AMBE+2 or ISDN 3.1 kHz audio
	Data	
	FELCOM251	Max. 284 kbps (Rx/Tx) (standard IP, best effort)
		8/16/32/64/128 kbps (streaming IP, bandwidth assurance)
	FELCOM501	Max. 432 kbps (Rx/Tx) (standard IP, best effort)
		8/16/32/64/128/256 kbps (streaming IP, bandwidth assurance)
		64 kbps (ISDN UDI)
	Short message service	Up to 1120 characters
	Facsimile	Group 3 facsimile via 3.1 kHz audio
2.2	Modulation	QPSK, 16QAM

3 HANDSET

3.1	Screen	2.2-inch color LCD, 240 x 320 (QVGA)
3.2	Brilliance	250 cd/m^2
3.3	Contrast	10 steps
3.4	Audio speaker	67 dB at 1 m distance

4 INTERFACE

4.1	LAN	4 ports, Ethernet 100Base-TX, RJ45 (PoE)

4.2	Analog telephone/telefax	2 ports, optional adapter extends up to 4 ports
4.3	USB	1 port, USB2.0, optional adapter converts to RS-232C
4.4	Output alarm	1 port, contact closure (normal close) w/ external relay
4.5	SIM card	1 slot

5 POWER SUPPLY

5.1	Antenna unit	
	FB-1251	22.7 VDC: 1.7 A max., supplied from communication unit
	FB-1501	28 VDC: 2 A max., supplied from communication unit
5.2	Communication unit	12/24 VDC: 14/5.5 A
5.3	Handset	48 VDC (PoE, supplied from communication unit)
5.4	Alarm panel (option)	48 VDC (PoE, supplied from communication unit)
5.5	AC/DC power supply unit	100-240 VDC, 1 phase, 50-60 Hz

6 ENVIRONMENTAL CONDITIONS

6.1	Ambient temperature	
	Antenna unit	-25°C to +55°C (storage: -40°C to +85°C)
	Communication unit	-25°C to +55°C
	Alarm panel	-15°C to +55°C
	AC/DC power supply unit	-15°C to +55°C (storage: -40°C to +80°C)
	Handset/ Incoming bell	-25°C to +55°C
6.2	Relative humidity	
	Antenna unit	100%, condensing
	Others	95% at +40°C
6.3	Degree of protection	
	Antenna unit	IPX6
	Communication unit	IP31
	Alarm panel	IP30
	AC/DC power supply unit	IP30
	Handset	IP56 (cradle: IP22)
	Incoming bell	IP20 (IP22: option)
6.4	Vibration	IEC 60945 Ed.4, Inmarsat SDM

7 UNIT COLOR

7.1	Antenna unit	NCS S1000-N
7.2	Communication unit	N2.5
7.3	Handset	N2.5
7.4	Alarm panel	RAL7021
7.5	Incoming bell	N2.5

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Declaration of Conformity
[FELCOM251/FELCOM501]

Bulgarian (BG)	С настоящото Furuno Electric Co., Ltd. декларира, че гореспоменат тип радиосъоръжение е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес:
Spanish (ES)	Por la presente, Furuno Electric Co., Ltd. declara que el tipo de equipo radioeléctrico arriba mencionado es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente:
Czech (CS)	Tímto Furuno Electric Co., Ltd. prohlašuje, že výše zmíněné typ rádiového zařízení je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese:
Danish (DA)	Hermed erklærer Furuno Electric Co., Ltd., at ovennævnte radioudstyr er i overensstemmelse med direktiv 2014/53/EU. EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse:
German (DE)	Hiermit erklärt die Furuno Electric Co., Ltd., dass der oben genannte Funkanlagentyp der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar:
Estonian (ET)	Käesolevaga deklareerib Furuno Electric Co., Ltd., et ülalmainitud raadioseadme tüüp vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil:
Greek (EL)	Με την παρούσα η Furuno Electric Co., Ltd., δηλώνει ότι ο προαναφερθέντας ραδιοεξοπλισμός πληροί την οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο:
English (EN)	Hereby, Furuno Electric Co., Ltd. declares that the above-mentioned radio equipment type is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:
French (FR)	Le soussigné, Furuno Electric Co., Ltd., déclare que l'équipement radioélectrique du type mentionné ci-dessus est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante:
Croatian (HR)	Furuno Electric Co., Ltd. ovime izjavljuje da je gore rečeno radijska oprema tipa u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi:
Italian (IT)	Il fabbricante, Furuno Electric Co., Ltd., dichiara che il tipo di apparecchiatura radio menzionato sopra è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet:
Latvian (LV)	Ar šo Furuno Electric Co., Ltd. deklarē, ka augstāk minēts radioiekārta atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē:

Lithuanian (LT)	Aš, Furuno Electric Co., Ltd., patvirtinu, kad pirmiau minėta radijo įrenginių tipas atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu:
Hungarian (HU)	Furuno Electric Co., Ltd. igazolja, hogy fent említett típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen:
Maltese (MT)	B'dan, Furuno Electric Co., Ltd., niddikjara li msemmija hawn fuq-tip ta' tagħmir tar-radju huwa konformi mad-Direttiva 2014/53/UE. It-test kollu tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej:
Dutch (NL)	Hierbij verklaar ik, Furuno Electric Co., Ltd., dat het hierboven genoemde type radioapparatuur conform is met Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres:
Polish (PL)	Furuno Electric Co., Ltd. niniejszym oświadcza, że wyżej wymieniony typ urządzenia radiowego jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym:
Portuguese (PT)	O(a) abaixo assinado(a) Furuno Electric Co., Ltd. declara que o mencionado acima tipo de equipamento de rádio está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet:
Romanian (RO)	Prin prezenta, Furuno Electric Co., Ltd. declară că menționat mai sus tipul de echipamente radio este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet:
Slovak (SK)	Furuno Electric Co., Ltd. týmto vyhlasuje, že vyššie spomínané rádiové zariadenie typu je v súlade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese:
Slovenian (SL)	Furuno Electric Co., Ltd. potrjuje, da je zgoraj omenjeno tip radijske opreme skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu:
Finnish (FI)	Furuno Electric Co., Ltd. vakuuttaa, että yllä mainittu radiolaitetyyppi on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa:
Swedish (SV)	Härmed försäkrar Furuno Electric Co., Ltd. att ovan nämnda typ av radioutrustning överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress:

Online Resource

http://www.furuno.com/en/support/red_doc