

iPECS

ACT-50

USER GUIDE



ACT-50

IP Audio Conference System

User Guide

This document provides information about ACT-50 IP audio conference system.

* ACT-50 needs SIP server for proper operation.



Regulatory and Compliance statements

This section provides required regulator, safety and disclaimer statements.

1. Radio Frequency Emissions:

FCC Compliance statement:

This device complies with Part 15 rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a different circuit from that to which the receiver is connected

If problems persist, consult the dealer or an experienced radio/TV technician for help.

European Union Declarations of Conformity:

LG-Ericsson Co., Ltd. declares that the equipment specified in this document, which bears the "CE" mark, conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (R&TTE 1999/5/EC) including,

Electromagnetic Compatibility Directive (2004/108/EC) and

Low Voltage Directive (2006/95/EC)

Copies of these Declarations of Conformity (DoCs) can be obtained by contacting your local sales representative.

The product fulfills the essential requirements of the harmonized standards shown above.

This product also complies with the following standards:

- EN 55022 Class A
- AS/NZ CISPR 22 Class A
- EN 55024
- EN 61000-3-2
- EN 61000-3-3

2. Product Safety Instructions

This product complies with and conforms to the following international Product Safety standards as applicable:

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Safety of Information Technology Equipment, IEC 60950-1, including
Relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE)

3. E-911 and use of the ACT-50 with Multi-Line Telephone Systems: Please note the use and operation of this device as part of a multi-line telephone system (MLTS) may be subject to state and/or federal E-911 MLTS laws that require the MLTS to provide a caller's telephone number, extension, and physical location to applicable state and/or local emergency services when a caller initiates a 911 call. This device does not provide a caller's telephone number, extension, or physical location information to emergency services when a caller dials 911, and compliance with state and/or federal E-911 MLTS laws is the sole responsibility of the purchaser of this device.
4. Privacy: ACT-50 implements several security and encryption technologies however, privacy of communications may not be ensured when using this device.
5. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

FCC INFORMATION (for US customers)

This equipment complies with Part 68 of the FCC rules and the requirement adopted by the ACTA. On the back of the main body of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.

Use the RJ-11C modular cable to connect this unit and telephone network.

Connect to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this product does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

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The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If the ACT-50 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

If trouble is experienced with the ACT-50, for repair or warranty information, please contact LG-Ericsson USA, Inc.

Responsible Party: LG-Ericsson USA, Inc.

Address: 20 Mason, Irvine, CA92618, USA

Telephone: 877-828-2673

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Ringer Equivalence Number (REN)

The Ringer Equivalence Number (REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

The specifications and information regarding the products in this manual are subject to change without notice. All statements, information, and recommendations in this manual are believed to be accurate but are presented without warranty of any kind, expressed or implied. Users must take full responsibility for their application of any products.

The software license and limited warranty for the accompanying product are set forth in the information packet that shipped with the product and are incorporated herein by this reference. If you are unable to locate the software license or limited warranty, contact your LG-Ericsson representative for a copy.

Notwithstanding any other warranty herein, all document files and software of these suppliers are provided "as is" with all faults. LG-Ericsson and the related suppliers disclaim all warranties, expressed or implied, including, without limitation, those of merchantability, fitness for a particular purpose and non-infringement or arising from a course of dealing, usage, or trade practice.

In no event shall LG-Ericsson or its suppliers be liable for any indirect, special, consequential, or incidental damages, including, without limitation, lost profits or loss or damage to data arising out of the use or inability to use this manual, even if LG-Ericsson or its suppliers have been advised of the possibility of such damages.

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ACT-50 User Guide

Revision History

Revision	DATE OF ISSUE	REMARKS
1.00	2010-02-22	Initial Release
2.00	2010-07-01	Company logo update
2.01	2010-07-23	Image update
2.02	2010-07-26	Added static IP address restriction
2.03	2010-07-29	Updated "Regulatory and Compliance statements"
2.04	2010-08-12	Font and layout changed
2.05	2010-08-20	Several usage examples added
2.06	2010-08-27	Size changed (A4→B5)
2.07	2010-10-18	FCC notice information added
2.08	2010-10-29	Analog connection notes added
2.09	2010-11-08	DTMF notes added

Important Safety Instructions

When using this product, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following;

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water, for example, near a bathtub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
5. Do not place this product on an unstable stand, or table. The product may fall, causing serious damage to the product.
6. This product should be operated only from the type of power source indicated on the product label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.
7. Do not allow anything to rest on the power cord. Do not locate this product where the cord might be damaged by people walking on it.
8. Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.
9. Never spill liquid of any kind on the product.
10. To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified person when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risk. Incorrect reassemble can cause electric shock when the appliance is subsequently used.
11. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power supply cord or plug is damaged.
 - b. If liquid has been spilled into the product.
 - c. If the product has been exposed to rain or water.
 - d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - e. If the product has been dropped or damaged.
 - f. If the product exhibits a distinct change in performance.
12. Avoid using your device during an electrical storm. There may be a remote risk of electric shock from lightning.

13. Do not use your device to report a gas leak in vicinity of the leak.
14. Severe damage to your device will occur if this set is plugged into an ISDN connection.
15. Consult your system administrator to ensure that you are plugging your set into a 10/100 BaseT Ethernet jack.

Precaution

- Keep this product away from heating appliances and electrical noise generating device such as fluorescent lamps, motors and television. These noise sources can interfere with the performance.
- This product should be kept free of dust, moisture, high temperature (more than 40°C) and vibration, and should not be exposed to direct sunlight.
- Never attempt to insert wires, pins, etc. into the product. If the product does not operate properly, it should be repaired by an authorized service center.
- Do not use benzene, thinner, or the like, or any abrasive powder to clean the product. Wipe it with a soft cloth.

Disposal of your old appliance

1. When the crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

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1. Introducing LG-Ericsson ACT-50

1.1 Overview

ACT-50 is a powerful communications tool for enterprises with LG-Ericsson iPECS series (IP enabled communication systems). ACT-50 employs arrayed microphones with high voice capturing capability and speakers with high voice reproduction capability. In addition, it also incorporates a high-performance adaptive echo canceller to eliminate interruptions of sound or drop in the voice level when multiple talkers speak simultaneously. These features make your voice conference “easy to talk” and “easy to hear”.

- Wideband voice codec technology delivers high fidelity audio from full duplex speakerphone.
- Spot audio pickup function for better clarity.
- Microphone auto tracking function for noisy environment.
- Audio ports for use with softphone on PC.

1.2 Device layout

ACT-50 uses LCD screen and navigation keypad to select contacts and configure settings, and a standard keypad for entering device numbers. Figure 1 below describes the key elements of ACT-50.

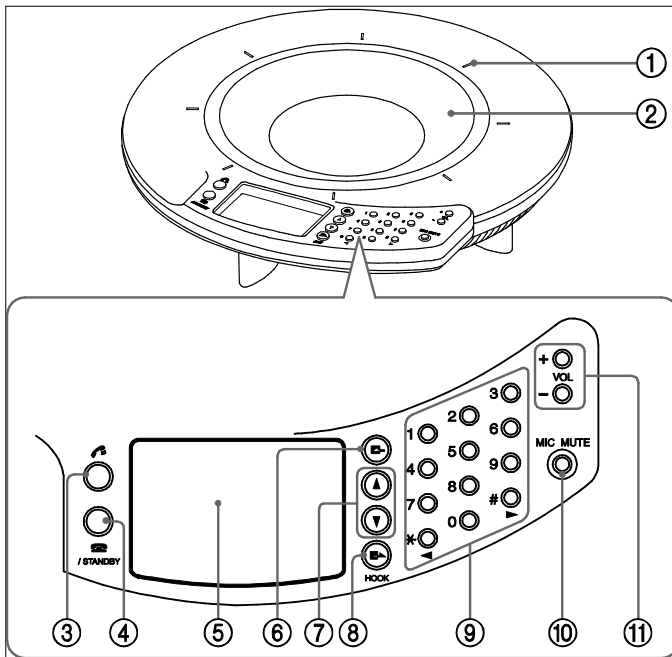


Figure 1: Key elements of ACT-50

- (1) **Microphone indicators:** Blue LED lights to indicate the audio pick up directions.
- (2) **Arrayed microphones:** 16 microphones on the top panel capture the voices of users.
- (3) **Connect key:** Press the key when placing a call to the designated destination or receiving an incoming call.
- (4) **Disconnect key/STANDBY key:**
 - Press the key to end a call. Pressing the key when there is an incoming call rejects the call.
 - Press for more than 5 seconds to set the system to the standby mode. Outgoing/in-coming call is disabled. (Press any key of the system to exit the standby mode. System will reboot to normal mode.)
- (5) **Display:** The LCD shows current status.

(6) **Cancel key:** Press the key to cancel a setting without saving it or to return to the previous page.

(7) **Up/Down keys:** Press either key to select a setting item or move the cursor up or down.

(8) **Enter key/HOOK key:** Press the key to enter a setting.

(9) **Numeric keys:** Press the keys to enter the numbers of the call destination or IP address.

(10) **MIC MUTE key:** Press the key to temporarily disable (mute) the microphones of this unit. The key lights in orange color when muted. Pressing the key when the microphones are muted releases the mute and turns the LED off.

(11) **VOL +/- key:** Press either key to adjust the speaker volume. Holding either key increases or decreases the volume continuously. (Due to echo cancelling operation, effective loudness may increase only marginally above volume level 10 for certain ambient conditions.)

2. Getting your ACT-50 up and running

2.1 What's in the box

The ACT-50 product package contains the following items:

- ACT-50
- RJ-45 Ethernet cable
- User Guide
- AC/DC power adaptor

* **WARNING:** Use only with LG-Ericsson-approved limited power source 12 VDC, 3 A (PJP-PS02).

2.2 AC/DC power adaptor

ACT-50 ships with an AC/DC power adaptor. Please check if the plug shape of AC power cord is correct for your region.

Power Cord Order Part Number	Model Number	Applicable Region
TKTN9015503	ACT-50-PWC STG	Europe
TKTN9015602	ACT-50-PWC USA	USA
TKTN9015702	ACT-50-PWC CHN	China
TKTN9015802	ACT-50-PWC GBR	United Kingdom
TKTN9015902	ACT-50-PWC AUS	Australia

2.3 Set-up

Before connecting your new device, take a moment to consider safety and reliability. Use common sense when locating, connecting and using your ACT-50.

- Locate the device on a dry level surface. Keep the device away from the edges of the surface to avoid the device falling off the edge.
- Locate cables to avoid damage. For example, do not locate under rugs or carpet. Also, do not locate cables between the desktop and walls where they may be crushed, damaging the insulation.
- Check the cables regularly and, if damage is discovered, disconnect the device. Contact your local representative for a replacement.
- Should liquid spill on the device, disconnect the unit from power and the network.
- Do not use during lightning storms. Lightning presents a rare but potential lethal shock hazard.
- Clean ACT-50 with a soft dry cloth; do not use liquid cleaners or sprays.
- Only attach peripherals specified by LG-Ericsson.
- Always use caution when connecting to AC power. Use only with approved AC/DC adaptor for the unit.

2.4 Connections to ACT-50

ACT-50 incorporates several standard connectors to interface to your LAN, power, and peripherals.

To install ACT-50:

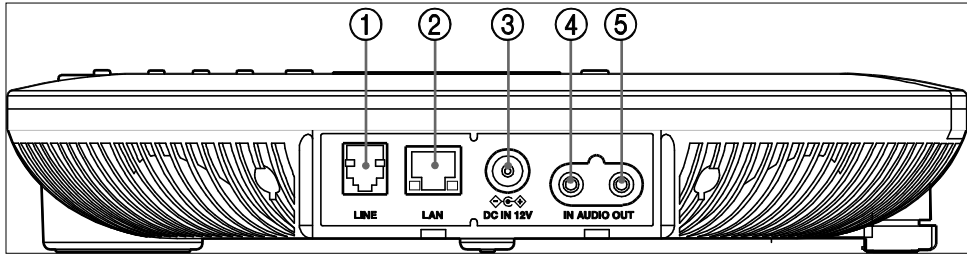


Figure 2: ACT-50 rear view

- Connect the Ethernet cable to RJ-45 connector ② and your Ethernet switch.
- Connect the AC/DC power adaptor to DC input connector ③ and a standard AC power outlet.

Optional connections and their intended uses are:

- RJ-11 connector ① (Connection to a KTS/PBX analog phone line for analog phone call when IP network is down)
- TRS 3.5 mm stereo connector ④⑤ (Connection to audio port on a PC; This allows ACT-50 to work as speaker phone for softphone.)

*** Connect 3.5 mm stereo audio cable to AUDIO IN ④ and PC headset port.

*** Connect 3.5 mm stereo audio cable to AUDIO OUT ⑤ and PC MIC port.

2.5 Initial power up and settings

The first time you power up ACT-50, you will need to do the following:

- Setup IP address
- Setup SIP server
- Setup voice codec
- Set room parameter
- Set MIC parameter
- Set speaker parameter

2.5.1 Set up IP address

You must set up IP address after the initial power up.

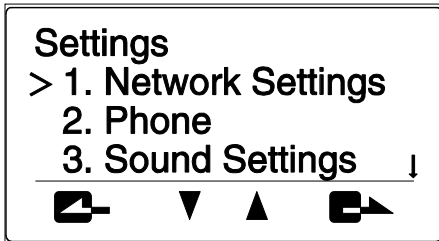
- Press “Cancel” key until following screen appears:



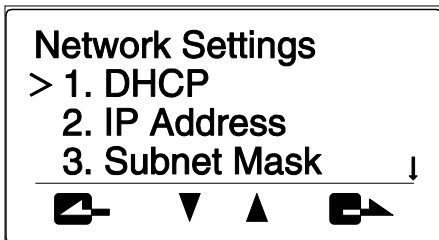
- Press “Down” key → following menu appears:



- Press “Down” / “Up” key to select “1. Settings” menu and press “Enter” key → following menu appears:

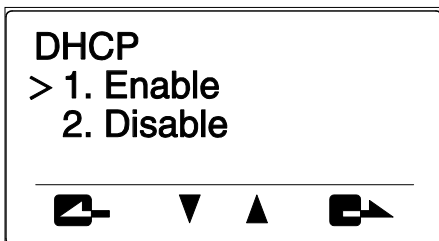


- Press “Down” / “Up” key to select “1. Network Settings” menu and press “Enter” key → following menu appears:

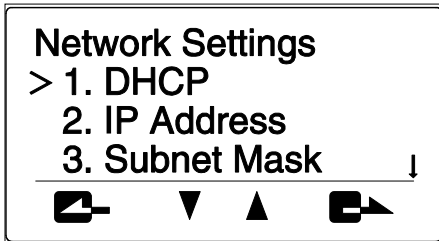


DHCP case

- Press “Down” / “Up” key to select “1. DHCP” menu and press “Enter” key → following menu appears:

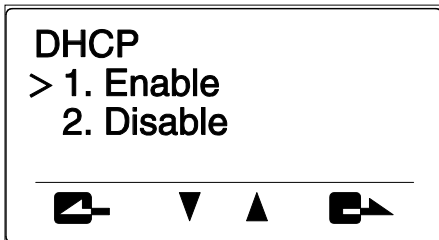


- Press “Down” / “Up” key to select “1. Enable” menu and press “Enter” key → following menu appears:

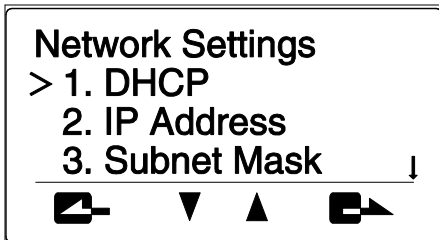


Static IP case

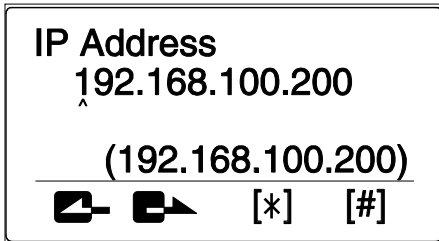
- Press “Down” / “Up” key to select “1. DHCP” menu and press “Enter” key → following menu appears:



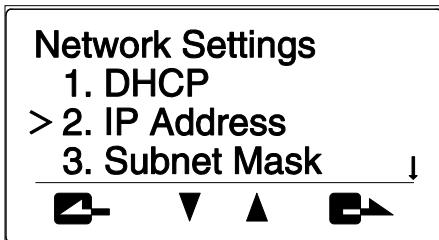
- Press “Down” / “Up” key to select “2. Disable” menu and press “Enter” key → following menu appears:



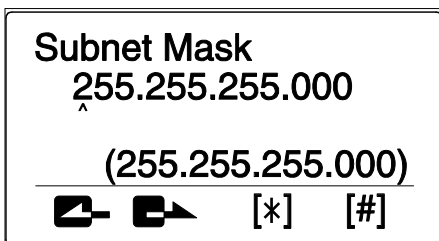
- Press “Down” / “Up” key to select “2. IP Address” menu and press “Enter” key → following menu appears:



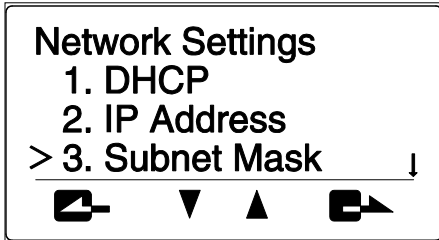
- Press numeric keys to enter IP address and press “Enter” key (Numbers 1~99 needs to be entered as 001~099 and period ‘.’ is auto-inserted.) → following menu appears:



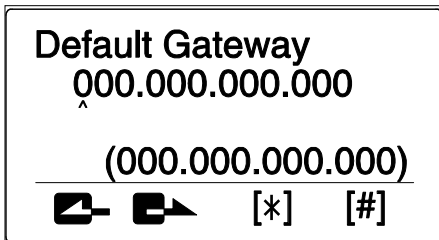
- Press “Down” / “Up” key to select “3. Subnet Mask” menu and press “Enter” key → following menu appears:



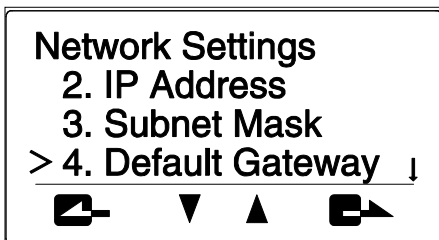
- Press numeric keys to enter subnet mask and press “Enter” key (Numbers 1~99 needs to be entered as 001~099 and period ‘.’ is auto-inserted.) → following menu appears:



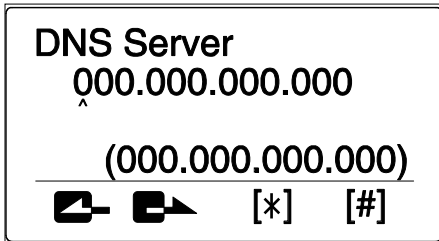
- Press “Down” / “Up” key to select “4. Default Gateway” menu and press “Enter” key → following menu appears:



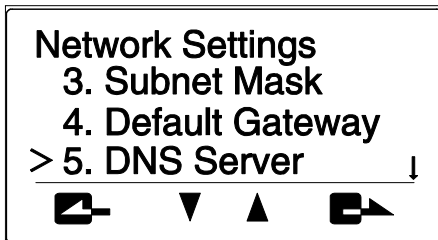
- Press numeric keys to enter default gateway and press “Enter” key (Numbers 1~99 needs to be entered as 001~099 and period ‘.’ is auto-inserted.) → following menu appears:



- Press “Down” / “Up” key to select “5. DNS Server” menu and press “Enter” key → following menu appears:



- Press numeric keys to enter DNS server and press “Enter” key (Numbers 1~99 needs to be entered as 001~099 and period ‘.’ is auto-inserted.) → following menu appears:



[Note] The IP address of ACT-50 must avoid the “system IP address range” of iPECS LIK system. Please ask network administrator for proper IP address.

2.5.2 Setup SIP server

After setting up IP address, use Web GUI to enter SIP parameters. To use SIP server you must enter the following:

- Username
- Password
- SIP server address

This information is available from your SIP server administrator.

Use any Web browser and enter ACT-50's IP address in following format: <http://xxx.xxx.xxx.xxx> → Click "Login" button and following screen appears:



ACT-50		Logout
Serial No. / MAC Address	NP4006542 / 00:A0:DE:46:1D:4B	
IP Address / Subnet Mask	150.150.138. 34 / 255.255.255. 0	
Default Gateway / DNS Server	150.150.138.254 / 0. 0. 0. 0	
Program Version	3.00 2010.07.28 14:11:03	
Address Book		
View/Edit Address Book		
Network Settings		
DHCP	Disable	
IP Address	150.150.138. 34	
Subnet Mask	255.255.255. 0	
Default Gateway	150.150.138.254	
DNS Server	0. 0. 0. 0	
SIP Server	Enable	
SIP Server Name	192.168.250.100	
SIP Address	sip:1328@192.168.250.100	
SIP Unit ID	1328	
Silence Suppression	Disable	
QoS		
Telephone Settings		
Area Code	Korea	
Dial Type	PB	
Hooking Time	0.5sec	
Prefix		
Line Mode	Mode 1	
Echo Suppressor	Enable	
Sound Settings		

Click the "SIP server" link → following screen appears:

[Setting Home](#) > SIP

SIP

SIP Server: Disable
 Enable

SIP Server Name:

SIP Server Password:

SIP Address: sip: @

SIP Unit ID:

Regist Expiration(60-65535): sec

Session Expiration(90-65535): sec

Example)

*** SIP server IP address = 123.123.123.123

*** Username = SIP account name = SIP account password = 1001

*** Register timer = 600 sec

*** Session timer = 1800 sec

- Click SIP Server “Enable” radio button to activate SIP mode.
- Type SIP server IP address or SIP server name in “SIP Server Name” line.
- Type SIP server IP address or SIP server name in 2nd field of “SIP Address” line.
- Type username or SIP account name in “SIP Unit ID” line and 1st field of “SIP Address” line.
- Type SIP account password in “SIP Server Password” line.
- Set register timer in “Regist Expiration” line. (Use “600” if private IP address is used.)
- Set session timer in “Session Expiration” line. (Use default “1800” value.)
- Finally, click “Submit” button.

[Note] Only “in-band” is supported for DTMF. Please check the destination device supports “in-band DTMF” (iPECS voice mailbox is not accessible with ACT-50.)

2.5.3 Setup voice codec

After completing SIP server setup, voice codec should be selected.

You can connect ACT-50 to other IP telephony terminals that use G.711/G.729/G.722 voice codec.

To choose voice codec in your ACT-50, do the following:

- Click the “CODEC” link in the home page.

Telephone Settings	
Area Code	Korea
Dial Type	PB
Hooking Time	0.5sec
Prefix	
Line Mode	Mode 1
Echo Suppressor	Enable
Sound Settings	
Microphone Mode	Zone
Speaker Mode	Multi
Room Size	Small
External Input/Output	Audio
CODEC	G.722-64
Natural Voice Enhancer	Disable
General Settings	
Backlight OFF Time	Disable
Language	English
Time	
Dialing Timeout	3sec
Save/Load Config	
Save Config	
Load Config	
Administration	
Syslog Setting	
Call History	
Set Password	
Firmware Update	
Restore Factory Settings	

- Click the appropriate radio button for given voice codec list. Choose the smallest “RTP Segment Size” if network bandwidth is big enough.

The screenshot shows a web browser window with the URL [Setting Home](#) > CODEC. The page title is "CODEC". It features three radio buttons for selecting a voice codec: G.722-64 (selected), G.711, and G.729. To the right of each radio button is a dropdown menu for "RTP Segment Size", all of which are currently set to "20msec". Below the radio buttons are "Submit" and "Reset" buttons. A message below the buttons reads: "Cannot change the setting while on the phone. Please retry after the phone." Below this message is a box titled "Database Status" which contains the text "Ready To Update" in green.

- Click “Submit” button.

2.5.4 Setting your room parameter

If “echo” occurs with ACT-50, then one must change the “Room size” parameter.

To select the right “Room size”, do the following:

- Click the “Room size” link in the home page.
- Select “Medium” and click submit.
- If the “echo” continues then select “Small” and click submit.

*** The “echo” is caused by audio reflection near to the device. Please remove any obstacles around ACT-50.

The screenshot shows a web browser window with the URL [Setting Home](#) > Room Size. The page title is "Room Size". It features three radio buttons for selecting a room size: Large, Medium (selected), and Small. Below the radio buttons are "Submit" and "Reset" buttons.

2.5.5 Set MIC parameter

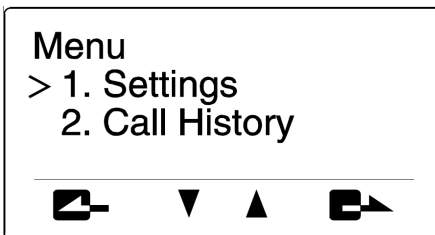
If “voice clipping” occurs with ACT-50, then one must change the “MIC gain” parameter.

To select the right “MIC gain”, do the following:

- Press “Cancel” key until following screen appears:



- Press “Down” key → following menu appears:



- Press “Down” / “Up” key to select “1. Settings” menu and press “Enter” key → following menu appears:



- Press “Down” / “Up” key to select “3. Sound Settings” menu and press “Enter” key.

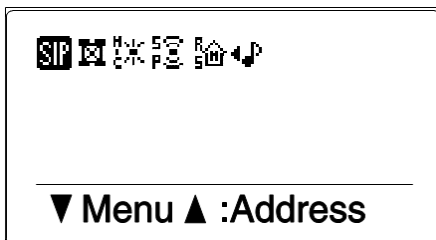
- Press “Down” / “Up” key to select “6. Volume Fine Adj” menu and press “Enter” key.
- Press “Down” / “Up” key to select “1. Microphone” menu and press “Enter” key.
- Press “Up” key to increase MIC gain and press “Enter” key. (Try 3 dB increments for each adjustment. Excessive increments result in voice echo on the other side.)

2.5.6 Set speaker parameter

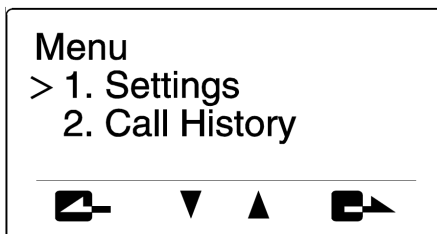
The default speaker mode is “Multi”, where four speakers with different outputs create a virtual sound source at opposite side of LCD screen to provide impression of virtual presence. To disable this feature, set the speaker mode to “Mono”.

To select “Mono” mode, do the following:

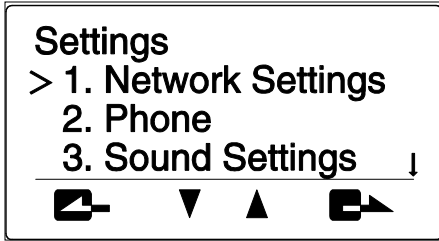
- Press “Cancel” key until following screen appears:



- Press “Down” key → following menu appears:



- Press “Down” / “Up” key to select “1. Settings” menu and press “Enter” key → following menu appears:



- Press “Down” / “Up” key to select “3. Sound Settings” menu and press “Enter” key.
- Press “Down” / “Up” key to select “2. Speaker Mode” menu and press “Enter” key.
- Press “Down” / “Up” key to select “1. Mono” menu and press “Enter” key.

3. Using your ACT-50

3.1 Understanding the LCD screen

Before you begin use of your ACT-50, take a moment to familiarize yourself with the overall screen layout. As shown in the Figure 3, the screen is divided into three (3) major sections:

- Info bar – The Info bar at the top of the screen displays major configuration parameter settings.
- Main Window – The Main Window displays the menus or status.
- Control bar – The Control bar at the bottom of the screen displays context sensitive controls for the ACT-50.

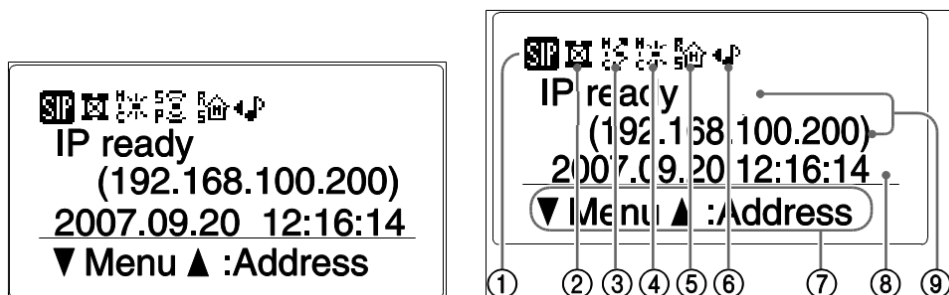




Figure 3: ACT-50 screen layout




(1) **Communication mode indicator:** Indicates the communication mode used in the communication through the IP network.

-  : Call using a SIP server {Basic mode}
-  : Call using analog telephone port (LINE port) when IP network is down {Emergency mode}



(2) **Connection mode indicator:** Indicates the connection mode used in connecting other systems for communication through the IP network.

-  : Mesh mode {Basic mode}




(3) **Microphone mode indicator:** Indicates the voice output mode used in communication.

- : Zone mode {Basic mode}
- : Spot mode {Recommended for 1~2 users}
- : Tracking mode {Recommended for noisy environment}




(4) **Speaker mode indicator:** Indicates the speaker output mode used in communication.

- : Voice output in monaural mode. {Optional mode}
- : Voice output in multi mode. {Basic mode}

(5) **Room size indicator:** Indicates the room size setting.

- : Large setting
- : Medium setting
- : Small setting

(6) **External input/output indicator:** Indicates the external input/output setup.

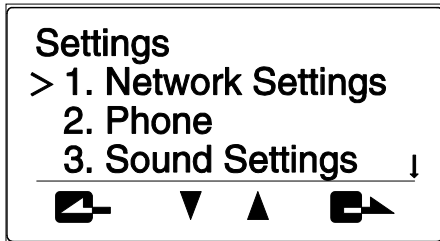
- **(No indication):** External input/output is not set.
- : External audio equipment can be connected to this unit.
- : Interlocked connection of multiple devices with this device as a master unit.
- : Interlocked connection of multiple devices with this device as a slave unit.

(7) **Operation guide:** Displays the names of the currently available operations and their keys.

(8) **Present time display:** Displays the present date and time.

(9) **IP address:** Displays the IP address of this unit.

- Press “Down” / “Up” key to select “1. Settings” menu and press “Enter” key
→ following menu appears:



- Press “Down” / “Up” key to select “2. Phone” menu and press “Enter” key.
- Press “Down” / “Up” key to select “4. Prefix” menu and press “Enter” key.

*** Prefix for address book call can be changed by following steps:

- Use a Web browser to open the Web GUI home page.

The screenshot shows the IPECS web interface. At the top, the logo 'IPECS' is displayed. Below it, the text 'ACT-50' is shown next to a 'Logout' button. The main content area is a table with system information and configuration options.

Serial No. / MAC Address	NP4006542 / 00:A0:DE:46:1D:4B
IP Address / Subnet Mask	150.150.138. 34 / 255.255.255. 0
Default Gateway / DNS Server	150.150.138.254 / 0. 0. 0. 0
Program Version	3.00 2010.07.28 14:11:03
Address Book	
View/Edit Address Book	
Network Settings	
DHCP	Disable
IP Address	150.150.138. 34
Subnet Mask	255.255.255. 0
Default Gateway	150.150.138.254
DNS Server	0. 0. 0. 0
SIP Server	Enable
SIP Server Name	192.168.250.100
SIP Address	sip:1328@192.168.250.100
SIP Unit ID	1328
Silence Suppression	Disable
QoS	
Telephone Settings	
Area Code	Korea
Dial Type	PB
Hooking Time	0.5sec
Prefix	
Line Mode	Mode 1
Echo Suppressor	Enable

- Click “Prefix” link under “Telephone Settings” section.

- Modify the prefix number in “Address Book” field.

Note:

- The following strings cannot be set as a prefix:
“1”, “11”, “110”, “118”, “119”, “110x”, “118x”, “119x”,
“x#1”, “x#11”. (x is any number from 0 to 9.)

3.3 Answering a call

Press “Connect” key to answer the call and press “Disconnect” key to hang-up the call.

3.4 Address book

You can save up to 16 names/SIP-phone numbers and 34 names/analog-phone numbers in internal address book for quick dial.

To edit the address book, do the following steps:

- Use a Web browser to open the Web GUI home page.
- Click “View/Edit Address Book” link under “Address Book” section.
- Click “Edit” button to type in new addresses.
- Select address type and type in name and appropriate phone numbers.
- Click “Del” button to remove existing addresses.

[Setting Home](#) > Address Book

Address Book

	NAME	Address		
1	SIP Address	1159	<input type="button" value="edit"/>	<input type="button" value="del"/>
2	SIP Address	1161	<input type="button" value="edit"/>	<input type="button" value="del"/>
3	SIP Address	1160	<input type="button" value="edit"/>	<input type="button" value="del"/>
4			<input type="button" value="edit"/>	<input type="button" value="del"/>
5			<input type="button" value="edit"/>	<input type="button" value="del"/>
6			<input type="button" value="edit"/>	<input type="button" value="del"/>
7			<input type="button" value="edit"/>	<input type="button" value="del"/>

[Note] Phone numbers with external line access prefix are not supported.

3.5 Call history

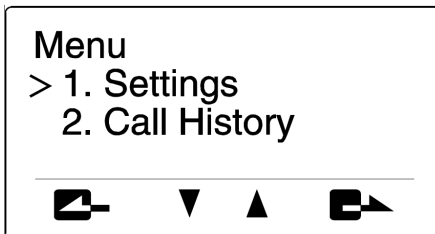
A log of your calls (missed, received, and placed) is available in the ACT-50. Using ACT-50, you may view and return calls from the call history menu. ACT-50 stores a maximum of 50 records in the log. You can also view the call logs from your desktop PC using Web browser.

*** Call history can be accessed by following steps:

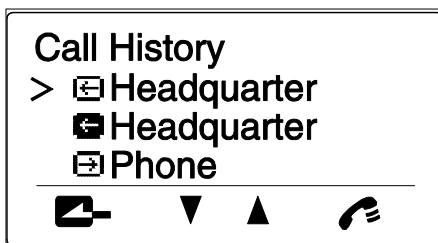
- Press "Cancel" key until following screen appears:



- Press "Down" key → following menu appears:



- Press "Down" / "Up" key to select "2. Call History" menu and press "Enter" key → following menu appears:



*** ☐ : Placed call / ☑ : Missed call / ☐ : Received call


3.6 Settings

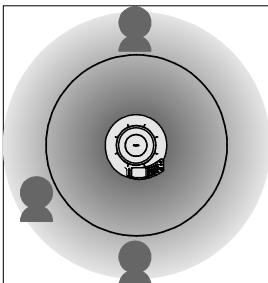
ACT-50 allows you to configure settings for various parameters. User can change the following selections:


- Microphone mode
- Ring volume
- Date and Time, Location/Time Zone, SNTP time server
- Web GUI Password
- Syslog server
- QoS setup

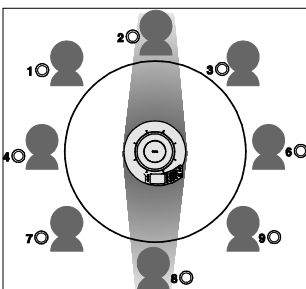
3.6.1 Microphone mode

ACT-50 provides 3 microphone modes for various environments.

- : Zone mode is used for quiet environments and picks up audio from all directions. {Basic mode}




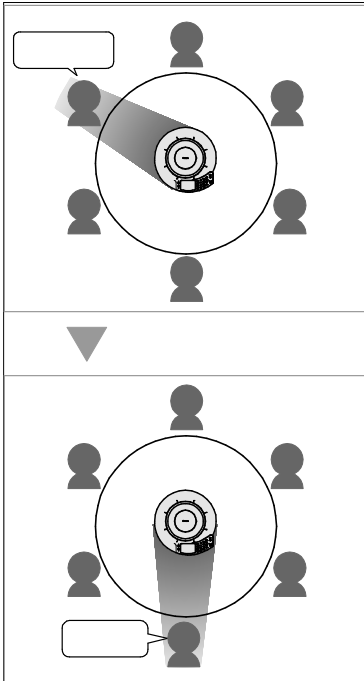
- : Spot mode is used when the number of talkers is limited to one or two, or when there is equipment that produces noise such as a projector nearby. ACT-50 fixes the audio pick up area to the front of the microphone by narrowing the directivity. {Recommended for 1~2 users}



To specify the audio pick up area, use the numeric keys in the “Microphone Mode” menu. When a key is pressed, the areas in the direction of the pressed key and the opposite direction is enabled or disabled. The left illustration shows the areas enabled by pressing “2” button.

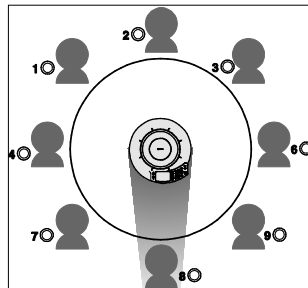
Microphone indicators (blue LEDs) turn on to show the direction where audio can be picked up.

-  Tracking mode automatically tracks and focuses on the audio of the talker. The audio can be picked up with narrow directivity so that other noises can be reduced. This mode is suitable to pick up the audio clearly in a noisy environment. The voice of only one talker can be captured at a time.



In the “Microphone Mode” menu, press a numeric key to specify the area in which tracking is disabled.

Every numeric key enables or disables the tracking in the direction corresponding to the key as shown in the following illustration. You can select multiple areas at the same time. Pressing “5” button enables microphone tracking in all directions.



All microphone indicators (blue LEDs) turn on for the direction which audio can be picked up.

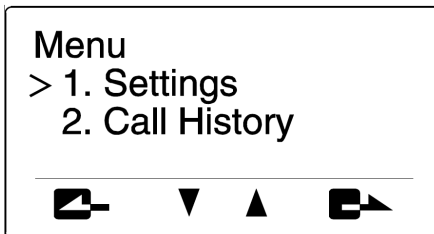
3.6.2 Ring volume

To set ring volume levels:

- Press “Cancel” key until following screen appears:



- Press “Down” key → following menu appears:



- Press “Down” / “Up” key to select “1. Settings” menu and press “Enter” key.
- Press “Down” / “Up” key to select “4. General Settings” menu and press “Enter” key.
- Press “Down” / “Up” key to select “1. Ring Volume” menu and press “Enter” key.
- Press “Vol+” / “Vol-” key to adjust ring volume and press “Enter” key.

3.6.3 Date and time

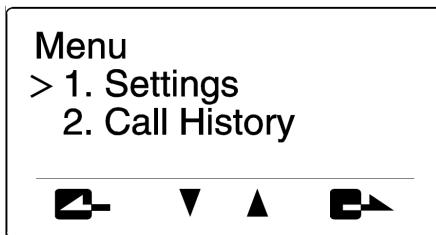
You can set date and time manually or use Internet time server for automatic configuration.

To configure time manually, do the following:

- Press “Cancel” key until following screen appears:



- Press “Down” key → following menu appears:



- Press “Down” / “Up” key to select “1. Settings” menu and press “Enter” key.
- Press “Down” / “Up” key to select “4. General Settings” menu and press “Enter” key.
- Press “Down” / “Up” key to select “6. Time” menu and press “Enter” key.
- Press numeric keys to enter date/time and press “Enter” key. (Numbers 1~9 needs to be entered as 01~09 and period '.' is auto-inserted.)

3.6.4 Set location/time zone & SNTP time server

To use Internet time server for automatic configuration, do the following:

- Use a Web browser to open the Web GUI home page.
- Click "Time" link under "General Settings" section.
- Type in available SNTP server address. Ex) 0.asia.pool.ntp.org
- Select "Synchronization Interval".
- Select "Time Zone". {Please refer to section 8 for time zone table}
- Click "Daylight Saving Time" button if needed.
- Click "Submit".

3.6.5 Changing Web GUI password

To change the Web GUI password, do the following:

- Use a Web browser to open the Web GUI home page.
- Click "Set Password" link under "Administration" section.
- Type in "Current Password".
- Type in "New Password" twice.
- Click "Submit".

*** The master password for emergency is the serial number with the second letter omitted.

Example) serial number = "NP4012345" → master password = "N4012345"

3.6.6 Set Syslog server

To set up the Syslog server for device monitoring, do the following:

- Use a Web browser to open the Web GUI home page.
- Click "Syslog Config" link under "Administration" section.
- Select required modes.
- Enable/disable network output.
- Type in Syslog Host Address.
- Click "Submit".

3.6.7 Set QoS parameters

To set up the QoS parameters, do the following:

- Use a Web browser to open the Web GUI home page.
- Click “QoS” link under “Network settings” section.
- Enable/disable ToS/CoS.
- Select required ToS/CoS value.
- Type in required VLAN-ID.
- Click “Submit”.

[Note] Before setting VLAN-ID, current configuration must be saved to ACT-50 for the case when configuration restore is needed.

To save the current configuration, do the following:

- Use a Web browser to open the Web GUI home page.
- Click “Save Config” link under “Save/Load Config” section.
- Select “Config2” or second “No Data”.
- Click “Save”.

*** “Config1” or first “No Data” is reserved for analog phone mode configuration.

To load the saved configuration, do the following:

In the LCD menu, select “Menu” → “1. Settings” → “5. Save/Load Config” → “2. Load Config” → “1. Config2” → “1. Yes” → Device reboots automatically.

[Note] Increased network delay and voice volume can degrade echo cancelling and voice quality. It is recommended that proper QoS value be used.

3.7 Connecting multiple units for wide area coverage

You can connect multiple ACT-50 units in daisy chain configuration to provide wider area coverage.

Using 3.5 mm stereo mini-plug cables, connect the AUDIO OUT terminal of each ACT-50 system to the AUDIO IN terminal of another ACT-50 system

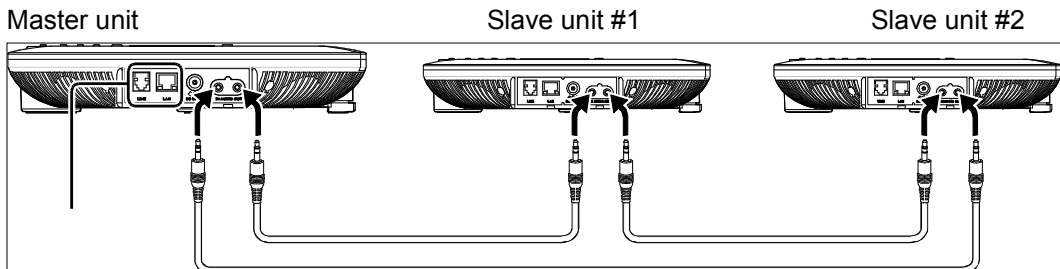


Figure 4: ACT-50 daisy chaining

- In an interlocked connection of the ACT-50 systems, allow a distance of at least 2 meters between them.
- Set the “Room Size” to “Small” for an interlocked connection.
- If echo is produced, install the ACT-50 systems at larger distances or decrease their volumes.
- Do not set the volume of the ACT-50 systems connected as the master or slave units to 0. Otherwise, echo may be produced.

Setup of the Master unit:

In the Web menu, click “External Input/Output” link under “Sound Settings” section and select “Connection (Master)”.

In the LCD menu, select “Menu” → “1. Settings” → “3. Sound Settings” → “4. External I/O” → “3. Connection(mstr)”.

Setup of the Slave units:

In the Web menu, click “External Input/Output” link under “Sound Settings” section and select “Connection (Slave)”.

In the LCD menu, select “Menu” → “1. Settings” → “3. Sound Settings” → “4. External I/O” → “4. Connection(slv)”.

3.8 Set up “Telephone Settings”

If the analog telephone port is used for making voice calls when IP network is down, then several analog settings must be configured.

3.8.1 Set Area Code (Country Code)

To set up the area code (country code), do the following:

- Use a Web browser to open the Web GUI home page.
- Click “Area Code” link under “Telephone Settings” section.
- Select appropriate region.
- Click “Submit”.

* When area code is changed, all telephone settings will be initialized.

3.8.2 Set Dial Type

To set up the dial type, do the following:

- Use a Web browser to open the Web GUI home page.
- Click “Dial Type” link under “Telephone Settings” section.
- Select appropriate signaling mode. (BP = DTMF: this is default mode)
- Click “Submit”.

3.8.3 Set Hooking Time

To set up the hooking time, do the following:

- Use a Web browser to open the Web GUI home page.
- Click “Hooking Time” link under “Telephone Settings” section.
- Select appropriate hooking time.
- Click “Submit”.

3.8.4 Set Line Mode (Used for Japan/China region only)

To set up the line mode, do the following:

- Use a Web browser to open the Web GUI home page.
- Click “Line Mode” link under “Telephone Settings” section.
- Select appropriate line mode.
- Click “Submit”.

*** If one mode does not work, please try the other modes.

3.8.5 Save analog phone mode configuration

To use analog phone mode without Web GUI, analog phone mode configuration must be saved to ACT-50.

To save the analog phone mode, do the following:

- Use a Web browser to open the Web GUI home page.
- Click "SIP Server" link under "Network Settings" section.
- Select "Disable" for SIP Server menu.
- Click "Submit".
- Click "Save Config" link under "Save/Load Config" section.
- Select "Config1" or first "No Data".
- Click "Save".

*** Using "Config1" or first "No Data" is more convenient when loading analog phone mode configuration.

3.8.6 Load analog phone configuration

To use analog phone mode without Web GUI, analog phone mode configuration must be load from ACT-50.

To load the analog phone mode, do the following:

In the LCD menu, select "Menu" → "1. Settings" → "5. Save/Load Config" → "2. Load Config" → "1. Config1" → "1. Yes" → Device reboots automatically.

*** It is assumed that "Config1" was used for saving analog phone mode configuration.

[Notes for using analog phone mode]

- The volume at the other party decreases compared to SIP mode, so the other party may increase speaker volume.
- Please use analog phone mode only when IP network is down.
- Please use volume level 1~10 in analog phone mode.
- Since the echo cancelling performance of analog phone mode is lower than the echo cancelling performance of SIP mode, voice quality may degrade in analog phone mode.
- Dial tone in analog phone mode is generated by four speakers in round-robin style for distinguishing analog phone mode. To disable this feature, set speaker mode to "Mono".

4. Factory reset

To reset F/W of ACT-50, do the following:

- Use a Web browser to open the Web GUI home page.
- Click “Restore Factory Setting” link under “Administration” section.
- Click “Restore Factory Setting” or “Restore Factory Settings without deleting an address book”. The setups of the system are reset, and this unit restarts automatically.

*** In the LCD menu, select “Menu” → “1. Settings” → “5. Restore Settings” → “1. Yes” or “2. Not Del AddrBook”.

5. F/W upgrade

To upgrade F/W of ACT-50, you need to download the latest firmware to your PC, and then install it using TFTP.

Step1: Confirm the current version number

Check the “Program Version” on the top of the Web menu.

Step2: Get the latest firmware

Contact local LG-Ericsson dealer for the latest firmware.

Step 3: Install the firmware to the unit

Follow the procedure below to install the firmware to the unit.

(1) Press “Cancel” repeatedly until the initial display appears.

(2) Start “Command Prompt” in the Windows PC that can access the Web menu of this unit.

When using Windows XP, select the “Start” menu → “All Program” → “Accessories” → “Command Prompt”.

(3) Enter and run the following command.

```
> tftp -i [IP address of this unit] put [file name of the firmware]
```

Example:

```
> tftp -i 192.168.100.200 act_50_300.bin
```

*** Set the directory containing the firmware as the current directory before executing the above command.

(4) When the system shows the revision upgrading confirmation message, press “Connect” key. The revision upgrading operation will start.

*** To cancel the firmware update, press “Disconnect” key.

*** MIC MUTE (orange LED) on the top panel of this unit flashes during the firmware update process. Do not turn this unit off while MIC MUTE (orange LED) is flashing.

(5) When the firmware update is complete this unit restarts automatically. Check the version number in the “Program Version” on the top of the Web menu to confirm that the new firmware has been installed properly.

Notes:

Once the firmware update is started, do not perform any other operation until the update operation is completed and this unit is restarted. If the update operation is interrupted, this unit may become unusable, in which case you need to return this unit to the factory for repairs.

When the firmware update is completed, this unit is restarted automatically. All of the ongoing calls are disconnected at this time.

Do not unplug the LAN cable during the firmware update. Otherwise, this unit could become unusable, in which case you need to return this unit to the factory for repairs.

*** Firmware update through LCD menu (“Menu” → “1. Settings” → “7. Firmware Update”) will be supported in future release.

6. Troubleshooting problems

Please follow the suggested procedures for troubleshooting stated problems in boldface.

The microphone indicators do not light up.

- This unit is not turned on. Check that the AC adapter and power cable are connected properly.
- The power cable is not connected to the AC outlet. Check that the power cable is connected to the AC outlet properly.
- The main or branch circuit breaker is shut off. If the circuit breaker is tripped to “OFF”, set it to “ON”. If the circuit breaker is “ON”, set it to “OFF” then “ON” again.
- There is a power failure. Wait until the power supply is restored.
- Power is not supplied to the AC outlet. If another electrical appliance also cannot be turned on, have the power outlet or power wiring serviced. If another electrical appliance can be turned on, have this unit serviced.
- The microphones are muted (the MIC MUTE LED lights up). Press MIC MUTE so that the MIC MUTE LED is turned off.

The Web menu cannot be opened.

- The network setting of the PC is inappropriate (when other PCs and network printers in the LAN are also unusable). Set the LAN board and LAN card again and reboot the PC. Or reset the IP address of the PC.
- An inappropriate LAN cable is used for the connection between this unit and the network. Use an optimum LAN cable (straight or cross cable). Use a LAN cable of Category 5 or higher.
- This unit is malfunctioning. Reset this unit to restore the factory settings, and then perform desired settings.
- An inappropriate URL is specified. When using this unit for the first time or after restoring the factory settings, access “http://(IP address shown in the initial display of this unit)”.
- The Web browser of the PC is set to use a proxy server. The Web menu cannot be opened when the proxy setting is inappropriate. When using Internet Explorer for Windows, open the “Tool” menu, select “Internet Options” → “Connection” tab → “Set LAN”, and clear the “Use proxy user” check box.
- A network fault occurred, or the communication is blocked by a firewall. Consult your network administrator to have the network status checked.

The password for the Web menu is entered but it cannot be opened.

- The password is incorrect (when a password error is displayed). The password is case-sensitive. Be sure to enter alphanumeric characters correctly by distinguishing the uppercase and lowercase letters.

The settings are returned to the previous settings.

- You did not click “Submit” or “Register” to confirm the settings. After configuring the Web menu settings, be sure to click “Submit” or “Register” to confirm the changed settings. If the window is closed without confirmation, the settings you made are not saved.

A call cannot be originated.

- An inappropriate IP address is entered. Check the IP address of the other unit and enter the correct IP address.
- The IP address of the other unit has been changed. Check the IP address of the other unit and enter the correct IP address.
- The communication is blocked by a firewall. Call by designating the IP address cannot cross a firewall. If you want to change the calling method to SIP, consult your system administrator.
- A network fault occurred. Wait until the fault is released. Consult your system administrator.
- The connection mode settings of this unit and the other unit are different. A unit in the mesh connection mode cannot communicate with a unit in a cascade connection mode. Set the two units to the same connection mode.
- The IP/SIP settings of this unit and the other unit are different. A unit using the SIP address cannot communicate with a unit using the IP address. Enable the SIP server operation as required so that both units use the same type of address.
- The SIP address in the address book is incorrect. Register the correct SIP address.
- The SIP server is not running. Consult your system administrator.
- The SIP address of the other unit is not registered in the SIP server. Consult your system administrator.
- The Dial Type setup of this system differs from the actual type of the telephone line. Check the telephone line type and set the Dial Type setup of this system accordingly.
- This unit is connected to an incompatible telephone circuit (digital circuit, etc.). Consult the manager of your telephone circuit

A call cannot be received.

- An incorrect IP address is entered on the other unit. Enter the correct IP address on the other unit.
- The communication is blocked by a firewall. Call by designating the IP address cannot cross a firewall. If you want to change the calling method to SIP, consult your system administrator.

- A network fault occurred. Wait until the fault is released. Consult your system administrator.
- The connection mode settings of this unit and the other unit are different. A unit in the mesh connection mode cannot communicate with a unit in a cascade connection mode. Set the two units to the same connection mode.
- The IP/SIP settings of this unit and the other unit are different. A unit using the SIP address cannot communicate with a unit using the IP address. Enable the SIP server operation as required so that both units use the same type of address.
- The SIP server is not running. Consult your system administrator.
- This unit is connected to an incompatible telephone circuit (digital circuit, etc.). Consult the manager of your telephone circuit.

The audio from the other unit cannot be heard.

- The microphones are muted on the other unit. Cancel mute on the other unit.

The audio is interrupted.

- The required bandwidth is not reserved. Check that the bandwidth required for communication is reserved.
- A network fault occurred. Wait until the fault is released. Consult your system administrator.
- The LAN cable is not connected properly. Check that the LAN cable is connected firmly.
- The modular cable is unplugged or connected unstably. Connect the modular cable firmly.

The audio output is delayed.

- The required bandwidth is not reserved. Check that the bandwidth required for communication is reserved.

This unit generates feedback noises.

- This unit is located against a wall. Locate this unit at a certain distance from a wall.
- An object is placed near this unit. Avoid placing an object in front of the microphones.
- This unit is used in a room with high reverberation. Place objects with high sound absorbance in the room by avoiding the positions in front of the microphones. Avoid talking with a loud voice to reduce reverberations. Change the Room Size setup.

I forgot the password.

- Reset this unit to restore the factory settings.
- *** The master password for emergency is the serial number with the second letter being omitted.
Example) serial number = "NP4012345" → master password = "N4012345"

The clock setting has been cleared.

- The built-in battery for clock information is dead. Consult nearest authorized LG-Ericsson dealer or service center.

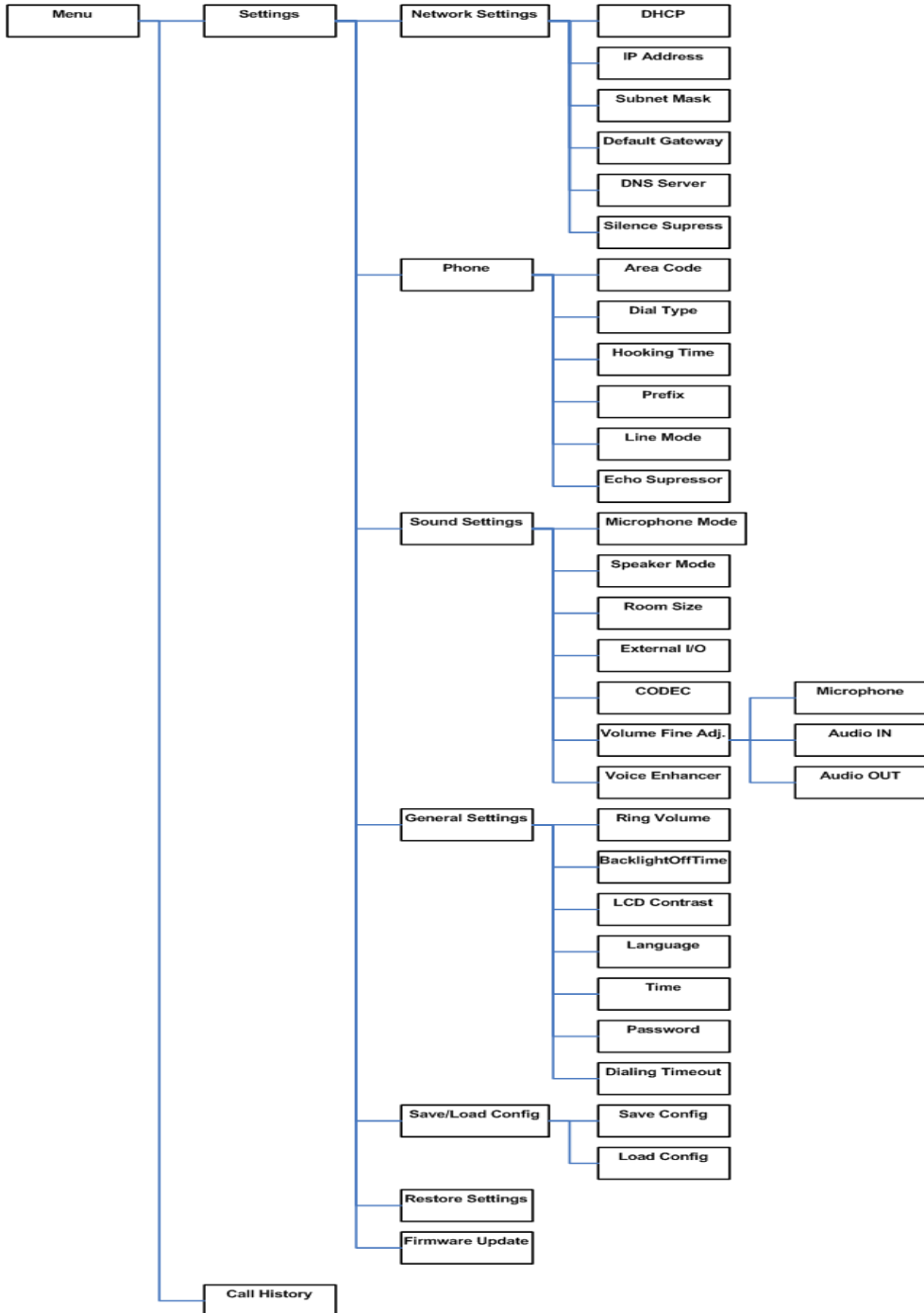
7. ACT-50 product specification

Item	Specification
IP network interface	IEEE 802.1 10/100 Base-T Fast Ethernet, RJ-45
Phone line Interface	RJ-11
PC audio interface	Stereo analog input/output, 3.5 mm mini jacks
Indicators	Mute LED Speakerphone LED Headset LED Presence LED
VoIP protocol	Session Initiation Protocol (SIP)
Audio processing	Codec: G.722, G.729, G.711 Voice Activity Detection (VAD) Comfort Noise Generation (CNG)
User Interface elements	monochrome LCD Navigation keys Functional buttons <ul style="list-style-type: none"> • Mute • Connect/Disconnect • Volume Control Numeric 12-button dial pad Microphone Speaker
Physical Size (W x H x D)	283 mm x 53.6 mm x 297.5 mm
Weight	1.4 kg approx.
Power	External AC/DC adaptor: Input 100~240VAC, 1.2 A (Max.), 50/60 Hz Output 12VDC, 3.0 A (Max.) 8W Avg.
Operation Temperature	0~40 (°C) , 32~104 (°F)
Storage Temperature	-20 ~ 60 (°C) , -68~140 (°F)
Operation Humidity	20-85% RH (non-condensing)

8. Time zone table

Country	Country
UCT-12:00 Int.Date Line, West	UCT+01:00 Oslo, Norway
UCT-11:00 Midway/Samoa	UCT+01:00 Paris, France
UCT-10:00 Hawaii	UCT+01:00 Rome, Italy
UCT-09:00 Alaska	UCT+01:00 Stocholm, Sweden
UCT-08:00 Los Angeles, Californnia	UCT+01:00 Vienna, Austria
UCT-08:00 Pacific Standard	UCT+02:00 Athens, Greece
UCT-07:00 Mountain Standard	UCT+02:00 Harare, Zimbabwe
UCT-06:00 Central Standard	UCT+02:00 Helsinki, Finland
UCT-06:00 Mexico City, Mexico	UCT+02:00 Istanbul, Turkey
UCT-06:00 Saskatc., Canada	UCT+02:00 Jerusalem, Israel
UCT-05:00 Bogota, Colombia	UCT+03:00 Kuwait
UCT-05:00 Eastern Standard	UCT+03:00 Moscow, Russia
UCT-05:00 Lima, Peru	UCT+03:00 Nairobi, Kenya
UCT-05:00 New York, NY	UCT+03:00 Riyadh, Saudi Arabia
UCT-04:00 Atlantic Standard	UCT+03:30 Tehran, Iran
UCT-04:00 Caracas, Venezuela	UCT+04:00 Abu Dhabi, UAE
UCT-04:00 La Paz, Bolivia	UCT+04:00 Tblisi, Georgia
UCT-03:30 New Foundland	UCT+04:30 Kabul, Afghanistan
UCT-03:00 Brasilia, Brazil	UCT+05:00 Islamabad, Pakistan
UCT-03:00 Buenos Aires, Argentina	UCT+05:30 New Delhi, India
UCT-03:00 Georgetown, Guyana	UCT+06:00 Dhaka, Bangladesh
UCT-02:00 Nuuk, Greenland	UCT+06:30 Yangon, Myanmar
UCT-01:00 Azores, Portugal	UCT+07:00 Bangkok, Thailand
UCT-01:00 Cape Verde	UCT+07:00 Jakarta, Indonesia
UCT 00:00 Casablanca, Morocco	UCT+08:00 Beijing, China
UCT 00:00 Lisbon, Portugal	UCT+09:00 Seoul, Korea
UCT 00:00 London, England	UCT+09:00 Tokyo, Japan
UCT+01:00 Amsterdam, Nertherlands	UCT+09:30 Darwin, Australia
UCT+01:00 Berlin, Germany	UCT+10:00 Guam Standard
UCT+01:00 Bern, Switzerland	UCT+11:00 Solomon Islands
UCT+01:00 Brussels, Belgium	UCT+12:00 Marshall Islands
UCT+01:00 Central European	UCT+12:00 Auckland, Wellington
UCT+01:00 Copenhagen, Denmark	UCT+13:00 Nuku'Alofa
UCT+01:00 Madrid, Spain	

9. LCD menu tree





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