

<https://namlong.vn> Hotline: 092 888 2345

KX-HTS Step by Step Guide
SIP Phone Registration

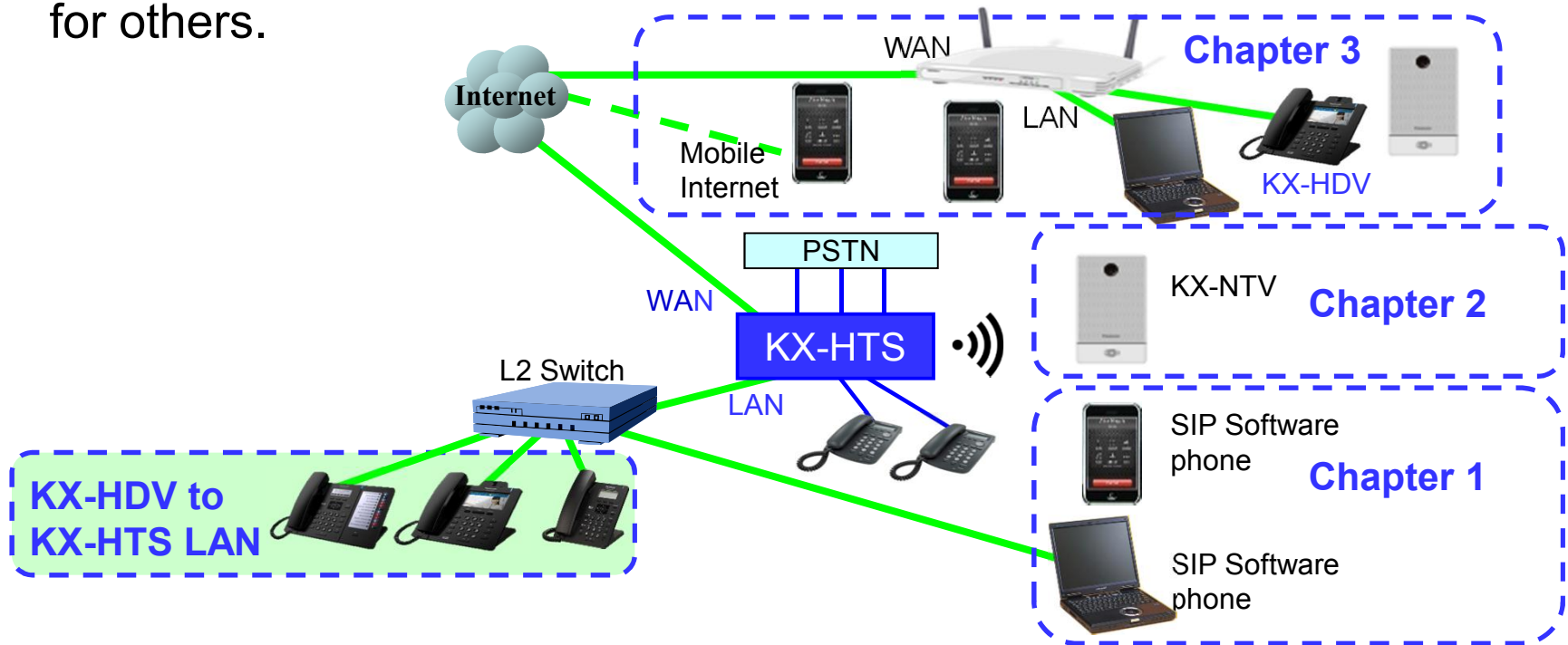
June 15, 2016

Panasonic System Networks
PBX SE team

Specifications are subject to change without notice.

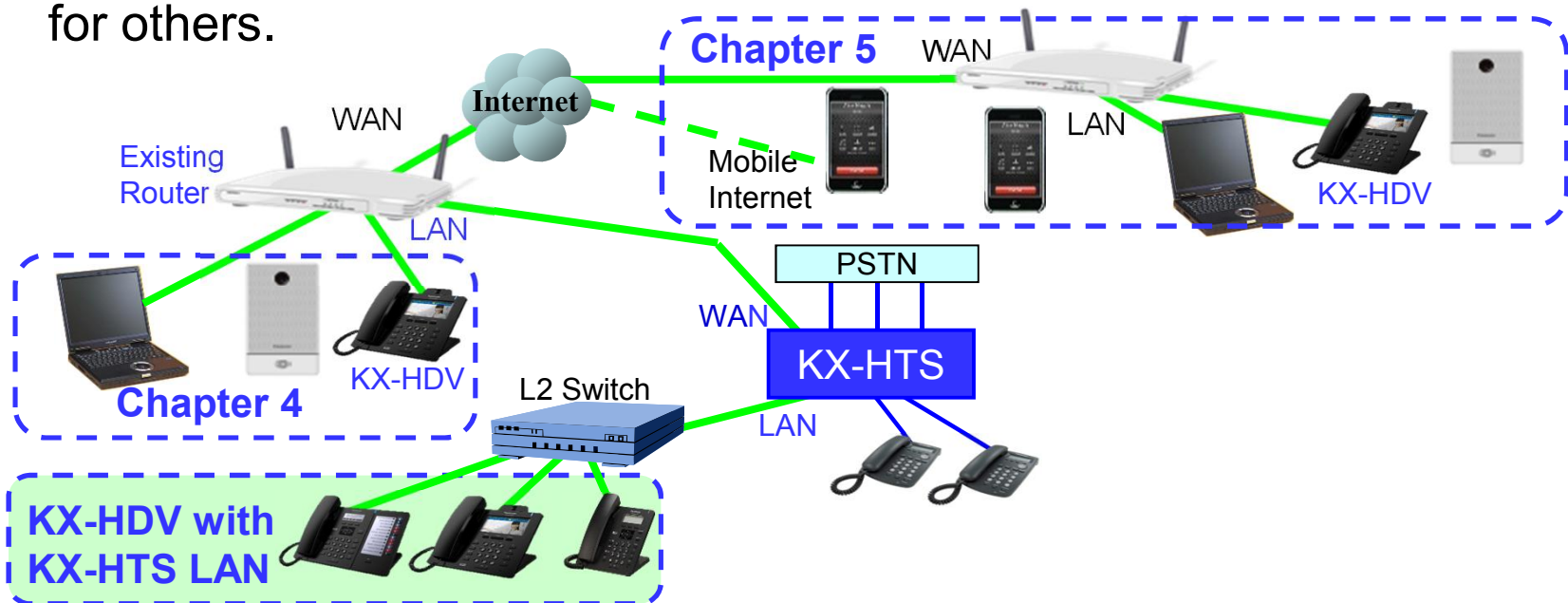
1. Overview

When KX-HDV is connected to LAN of KX-HTS, it is registered by MAC address automatically. But SIP phone registration is required for others.



2. Overview – Existing Router

When KX-HDV is connected to LAN of KX-HTS, it is registered by MAC address automatically. But SIP phone registration is required for others.



3. Manual for KX-HDV

Manual for KX-HDV is available on the following Panasonic web site:

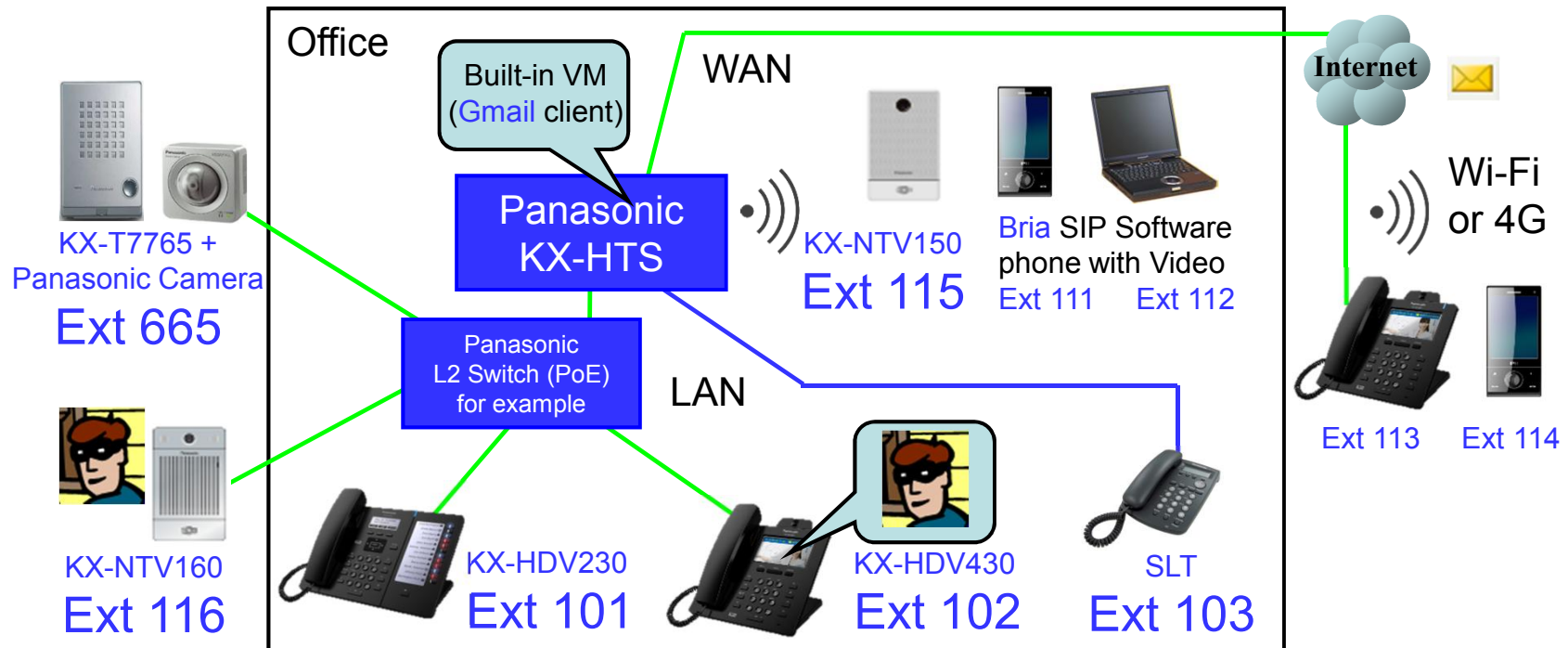
<http://panasonic.net/pcc/support/sipphone/download/HDV1/index.html>

It is required to program KX-HDV using web for chapter 3, 4 and 5.



4. Overview for Demo

PBX, phone and security camera can be provided by **Panasonic**.
Other major PBX maker do not have security camera.



5. Table of Contents

Chapter	Contents
1	LAN : Software phone
2	LAN : KX-NTV
3	WAN : Internet directly
4	WAN : LAN of Existing Router
5	WAN : Internet through Existing Router

Media5phone for smart-phone is used to explain registration now.
But it will be replaced to Bria.

Chapter 1

LAN : Software Phone



11. Click Port to change to SIP.

Click port 111 for example.

The screenshot displays the HTS Web Maintenance Console interface. The main header shows 'HTS Web Maintenance Console' with the version '000.00211'. On the left, a 'PBX Configuration' sidebar lists various settings: 1. System, 2. Extension (selected), 1. Port, 2. Phone, 3. Flexible Buttons, 4. Extension Group, 5. Doorphone, 6. Analog SLT Property, 7. SIP Extension Property, and 3. Trunk. The main content area, titled 'PBX Configuration', shows three rows of extension buttons. The first row contains extensions 119-102 (ports 17-24), with 101 and 102 highlighted in cyan. The second row contains extensions 111-118 (ports 9-16), with 111 highlighted in red. The third row contains extensions 103-110 (ports 1-8). To the right of these rows are 'Doorphone' (1, 2), 'Trunk' (5, 6, 7, 8), and another 'Trunk' (1, 2, 3, 4) section.

12. Change the port to SIP.

HTS Web Maintenance Console
000.00211

PBX Configuration

- 1. System
- 2. Extension
 - 1. Port
 - 2. Phone
 - 3. Flexible Buttons
 - 4. Extension Group
 - 5. Doorphone
 - 6. Analog SLT Property
 - 7. SIP Extension Property
- 3. Trunk
- 4. TRS/ARS

Port
PBX Configuration > 2.Extension > 1.Port

Extension Number: 111 [0-9]

Extension Name:

Attribution: Analog SLT9

FAX Connection: No Disable

Manager: Enable

TRS Level (COS)

13. Assign SIP Password.

Confirm User Name and Location also. Click [Apply].

The screenshot shows the configuration interface for an SIP Extension. The interface is divided into two main sections: "Analog Extension" and "SIP Extension".

Analog Extension:

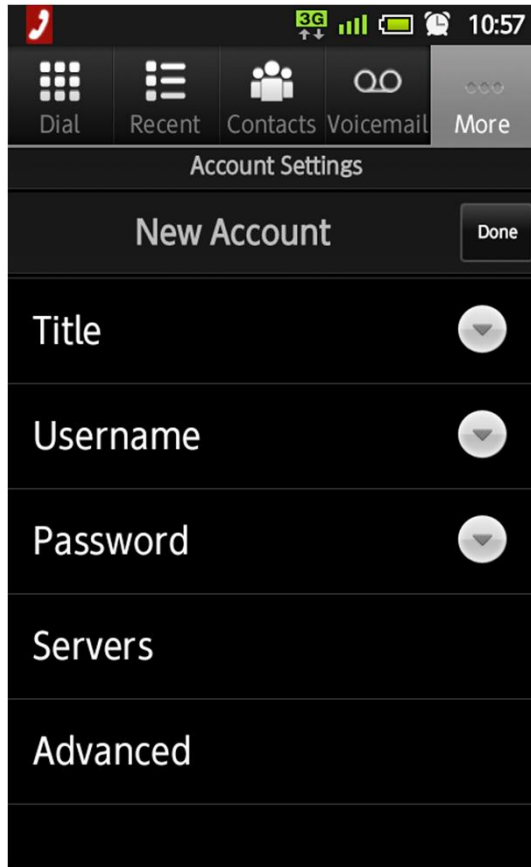
- Caller ID Signal Send: Enable Disable

SIP Extension:

- SIP Registration Status: Not yet
- SIP User Name: phone-011 [0-9 a-z A-Z .]
- Registration Password: [Redacted] [Edit]
- Current IP Address: [Redacted]
- Current MAC Address: [Redacted]
- Phone Location: Local Remote Remote(G.729)
- Apply: [Apply] [Cancel]

At the bottom of the interface, there is a row of extension buttons labeled "Extension" with values 111, 112, 113, 114, 115, 116, 117, and 118. The button for extension 111 is highlighted in blue.

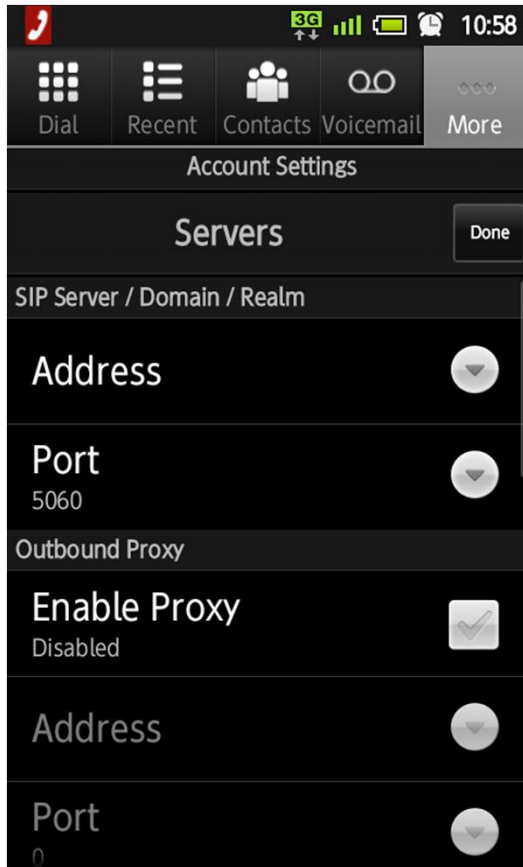
14. SIP Phone : Username and Password



Assign Username and Password to SIP phone as previous page .

SIP User Name [0-9 a-z A-Z - .]
Registration Password

15. SIP Phone : PBX IP address and Port



Default port number of KX-HTS is 33824.
(Not 5060)

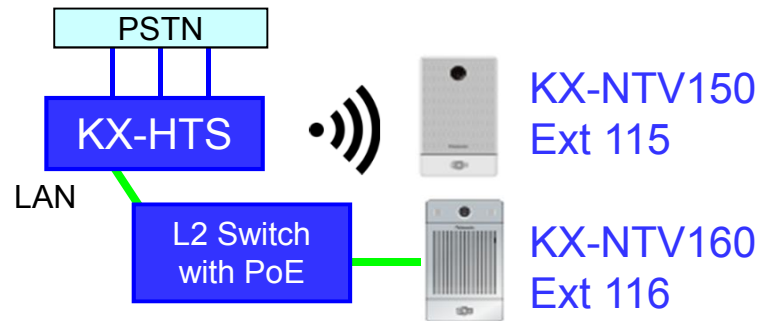
192.168.0.101
33824

The screenshot shows the 'HTS Web Maintenance Console' interface. The console displays the following information:

- HTS Web Maintenance Console 000.00211
- PBX Configuration
- 1.System
- SIP Extension Property
- PBX Configuration > 2.Extension > 7.SIP Extension Property
- SIP Extension & SIP Trunk Common
- Voice (RTP) UDP Port No. (Server): 12000 (1024 - 65235)
- SIP Port Number: 33824 (1024 - 65535)

Chapter 2

LAN : KX-NTV



20. Assign SIP Username for KX-NTV150/160.

Username has to be 4 digits **number** because KX-NTV does not support alphabet for Username, and KX-HTS needs 4 or more digits for Username.

Assign **1150** for **extension 115** for example.

Assign **1160** for **extension 116** for example

The screenshot shows a configuration interface with two sections. The first section, 'SIP User Name', has a text input field containing 'phone-015' which is circled in red. A red arrow points from this field to the text '1150'. Below it is a 'Registration Password' field and an 'Edit' button. The second section, 'SIP Extension & SIP Trunk Common', contains two input fields. The first is 'Voice (RTP) UDP Port No. (Server)' with the value '12000' and a range '(1024 - 65235)'. The second is 'SIP Port Number' with the value '33824' and a range '(1024 - 65535)'. The 'SIP Port Number' field is circled in red, and a red arrow points from it to the text '5060 has to be used if KX-NTV is sample.'

21. Connect KX-NTV.

Connect KX-NTV160 to PoE L2-Switch.

- Wait until yellow LED starts flashing.
- LED : Red (15s) -> Off (10s)-> Red (20s) -> Yellow Flash
- IP address of KX-NTV is assigned automatically by DHCP server function of KX-HTS.

Register Wi-Fi of KX-NTV150 to KX-HTS.

< Notice >

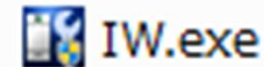
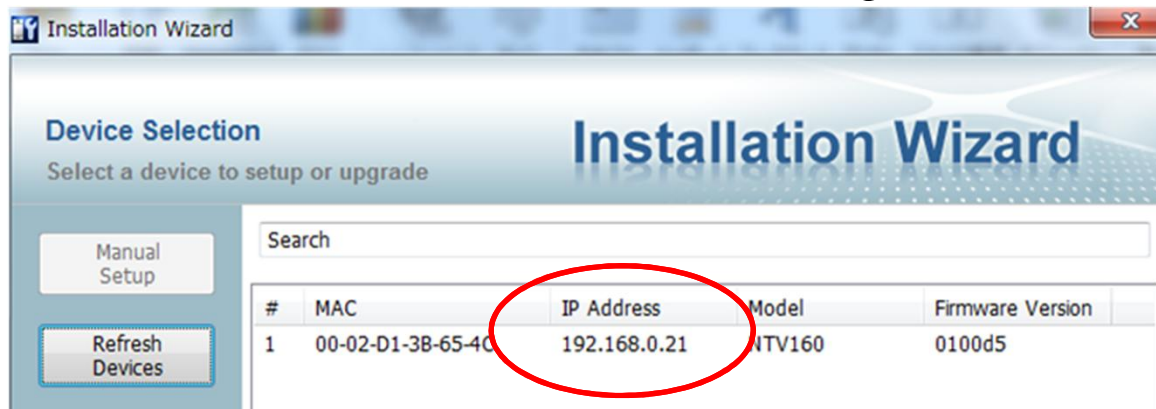
Software of KX-NTV150/160 has to be upgraded to connect to KX-HTS. KX-NTV can connect to KX-NS/NSX only before version up.

If KX-NTV has been already registered to other PBX, it is required to initialize. Keep pressing reset button for 30s.



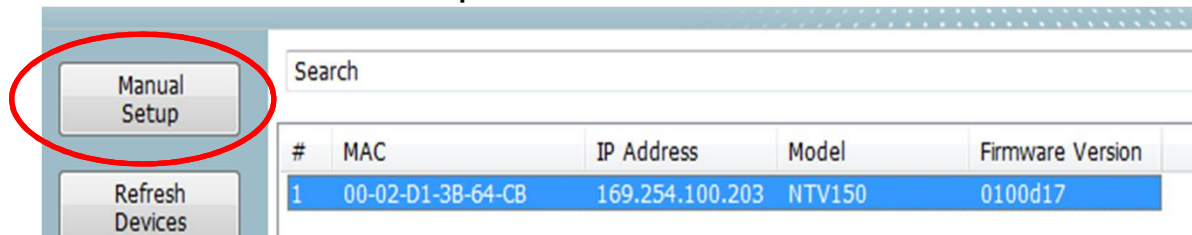
22. Search IP address of KX-NTV.

IP address of KX-NTV is advised using IW.exe.



Installation Wizard tool is provided by Panasonic.

If network does not support DHCP, use "Manual Setup" to assign IP address of KX-NTV. Password = adminpass



23. Log-in to KX-NTV.

Log-in to KX-NTV. ID = admin / Password = adminpass

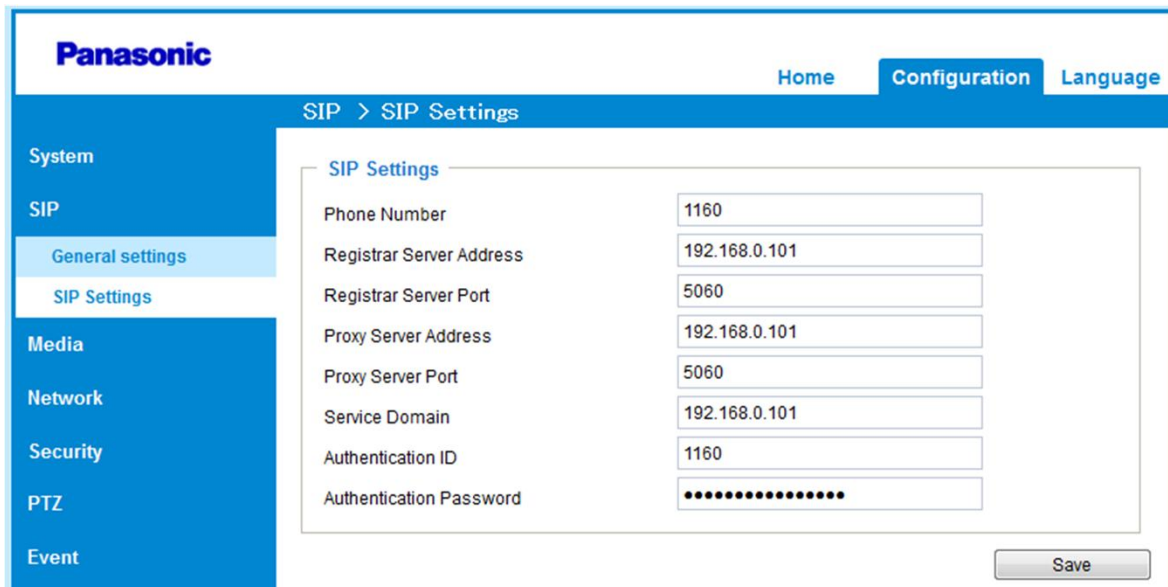
 <http://192.168.0.21>

If web browser is [Internet Explorer](#), add-in module is installed automatically as camera viewer.



24. Assign SIP parameter of KX-NTV.

KX-NTV cannot use character for SIP ID (User name).
KX-NTV sample software did not work for 33824. Use 5060.



The screenshot shows the Panasonic web interface for SIP Settings. The left sidebar contains a navigation menu with categories: System, SIP, Media, Network, Security, PTZ, and Event. Under the SIP category, 'SIP Settings' is selected. The main content area displays the following configuration fields:

SIP Settings	
Phone Number	1160
Registrar Server Address	192.168.0.101
Registrar Server Port	5060
Proxy Server Address	192.168.0.101
Proxy Server Port	5060
Service Domain	192.168.0.101
Authentication ID	1160
Authentication Password	••••••••••

A 'Save' button is located at the bottom right of the configuration area.



LED becomes green
after registration.

1150 is for NTV150.1160 is for NTV160.

25. Assign Destination of Call Button.

Panasonic Home Configuration Language

SIP > General settings

System

SIP

General settings

SIP Settings

Media

Call button outgoing number

Basic mode

Outgoing number

Advanced mode

General settings



KX-NTV160
Ext 116



KX-HDV430
Ext 102

26. Adjust General Settings.

<KX-NTV150>

SIP > General settings

Call button outgoing number

Basic mode

Outgoing number

Advanced mode

General settings

Call ring duration second

Call duration second

Video monitor before answer

Ringback tone after finish video monitor

Indication of call status when receiving call

<KX-NTV160>

SIP > General settings

Call button outgoing number

Basic mode

Outgoing number

Advanced mode

General settings

Call ring duration second

Call duration second

Video monitor before answer

Ringback tone after finish video monitor

Indication of call status when receiving call

Call duration : Default is 30s. This is too long for demo.
KX-HDV can call KX-NTV150 without tone for demo.

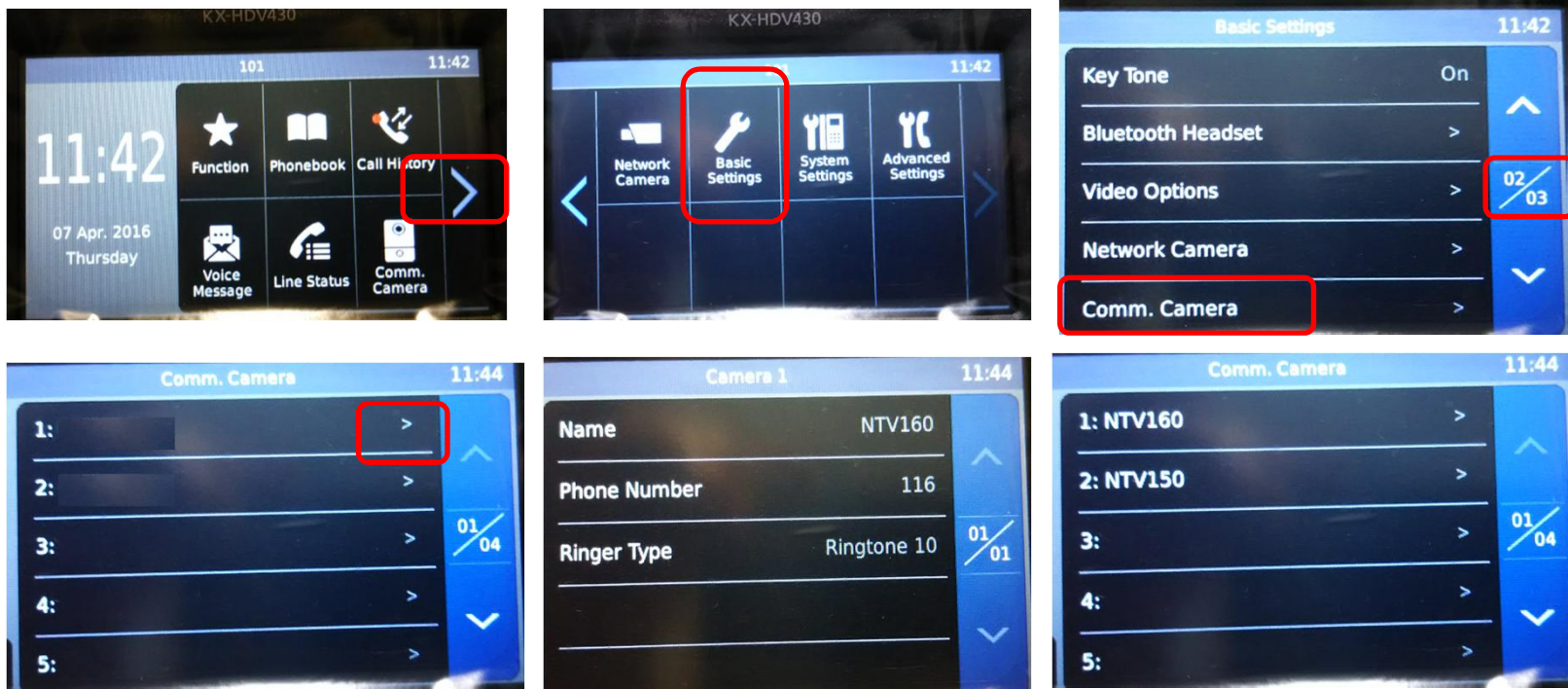
27. Adjust Video for KX-HDV display.

The screenshot shows the Panasonic configuration interface. The top navigation bar includes 'Home', 'Configuration', and 'Language'. The left sidebar lists various settings categories: System, SIP, Media, Network, Security, PTZ, Event, Applications, and Recording. The 'Media' section is expanded, showing 'Image', 'Video', and 'Audio'. The 'Video' sub-section is selected, displaying 'Media > Video' and a 'Stream' tab. Under the 'Stream' tab, there are two expandable sections: 'Video settings for stream 1 (RTSP)' and 'Video settings for stream 2 (SIP)'. The 'Video settings for stream 2 (SIP)' section is expanded and highlighted with a red box. It shows a sub-section for '11.204' with the following settings: 'Frame size' set to '1280x720' (highlighted with a red box), 'Maximum frame rate' set to '15 fps', 'Intra frame period' set to '1 S', 'Video quality' set to 'Constant bit rate' (selected with a radio button), 'Target bit rate' set to '1 Mbps', and 'Policy' set to 'Frame rate priority'. A 'Fixed quality' option is also present but not selected. A 'Save' button is located at the bottom right of the configuration area.

28. Assign KX-NTV as Camera.

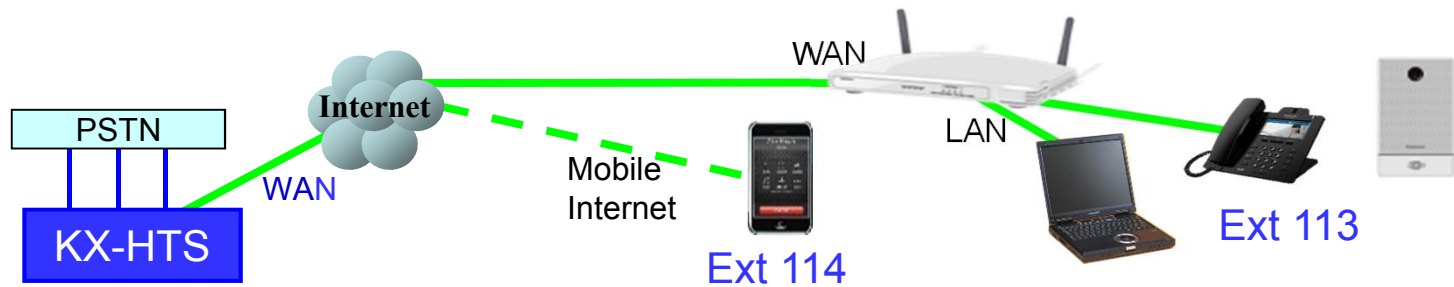
KX-HDV430
Programming

Video from KX-NTV is displayed automatically without pressing “Video call” button by this programming.



Chapter 3

WAN : Internet



31. Web-MC : Extension

SIP has to be selected as **attribution** of extension port.
SIP Username is assigned automatically and it can be modified manually. SIP Password is assigned manually.
“Remote” has to be assigned if the extension is connected through internet.

SIP Extension	
SIP Registration Status	Not yet
SIP User Name	phone-014 [0-9 a-z A-Z - .]
Registration Password	<input type="button" value="Edit"/>
Current IP Address	
Current MAC Address	
Phone Location	<input type="radio"/> Local <input checked="" type="radio"/> Remote <input type="radio"/> Remote(G.729)
Alive Check	<input checked="" type="radio"/> Enable <input type="radio"/> Disable

32. Web-MC : Domain Name

Domain name has to be assigned.
Domain name is used for registration.

This document uses “hogedomain” as example of Domain name.
But “hogedomain” is not recommended because this document is released to internet.



The screenshot shows a web interface for configuring SIP Extension Properties. The title is "SIP Extension Property" in red. Below the title is a breadcrumb trail: "PBX Configuration > 2.Extension > 7.SIP Extension Property". The main content area has a label "Domain for SIP Extension" on the left and a text input field on the right. The input field contains the text "hogedomain" and has a placeholder or hint "[0-9 a-z A-Z - .]" to its right.

Domain name of KX-TDE/NS PBX was IP address of PBX LAN.
It was usually 192.168.0.101.

33. Web-MC : SIP Port

Default of SIP port is “33824”.

Change “33824” to other 3xxxx number except 350xx.

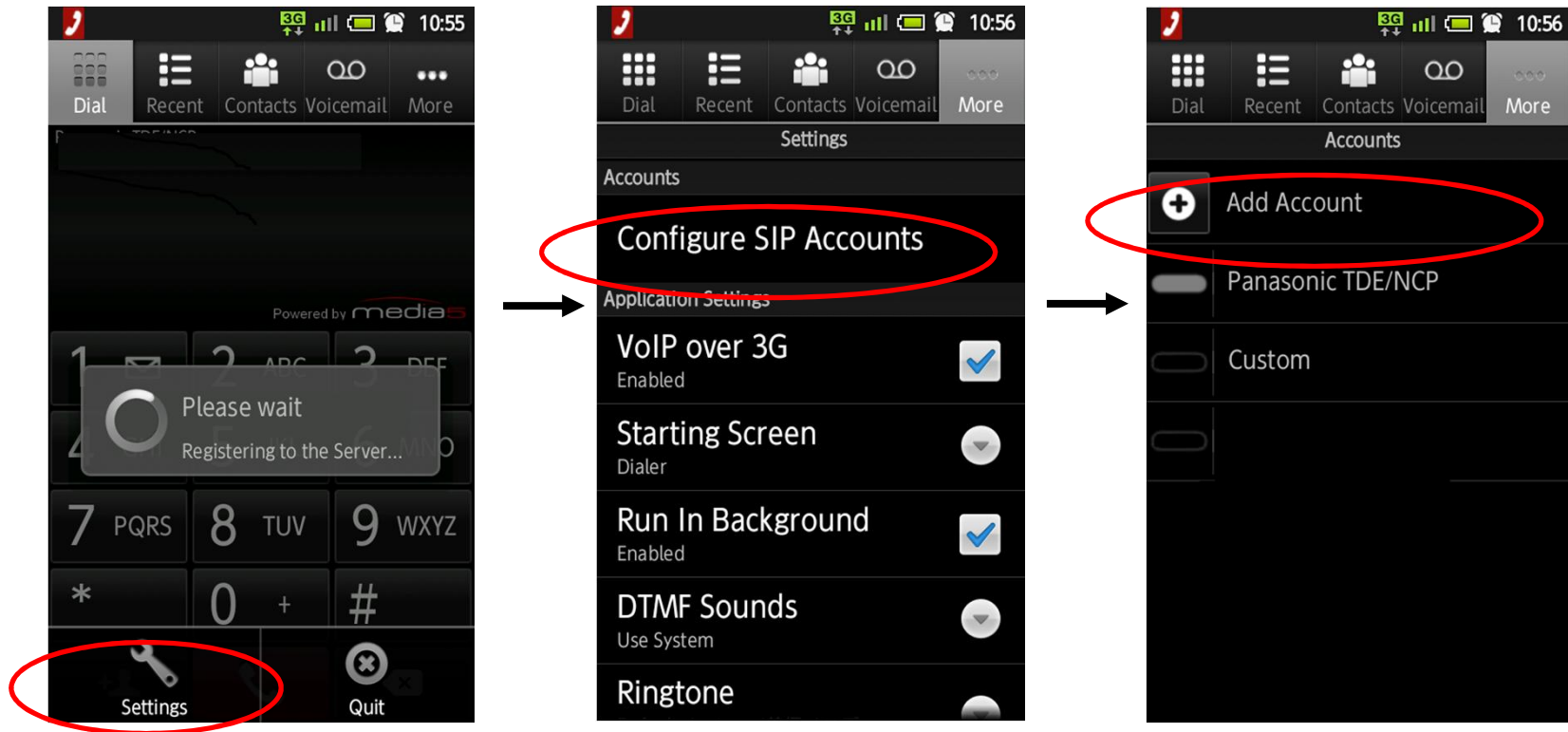
The screenshot shows the HTS Web Maintenance Console interface. The main content area is titled "SIP Extension Property" and contains several configuration sections:

- Domain for SIP Extension:** A text input field with a placeholder "[0-9 a-z A-Z - .]".
- IP Address of SIP Extension in existing router:**
 - IP Address: 192 . 168 . 0 . 101
 - Subnet Mask: 255 . 255 . 0 . 0
- DSP:**
 - IP Side - Gain1 (Network to PBX): +0 (dB)
 - IP Side - Gain2 (PBX to Network): +0 (dB)
 - PCM Side - Gain1 (PBX to Network): +0 (dB)
 - PCM Side - Gain2 (Network to PBX): +0 (dB)
 - PCM Side - Echo Canceller Type: NFE
 - PCM Side - Echo Canceller NLP: On
 - PCM Side - Echo Canceller Window Size: 16 (ms)
- SIP Extension & SIP Trunk Common:**
 - Voice (RTP) UDP Port No. (Server): 12000 (1024 - 65235)
 - SIP Port Number: 33824 (1024 - 65535)** (highlighted in a red box)

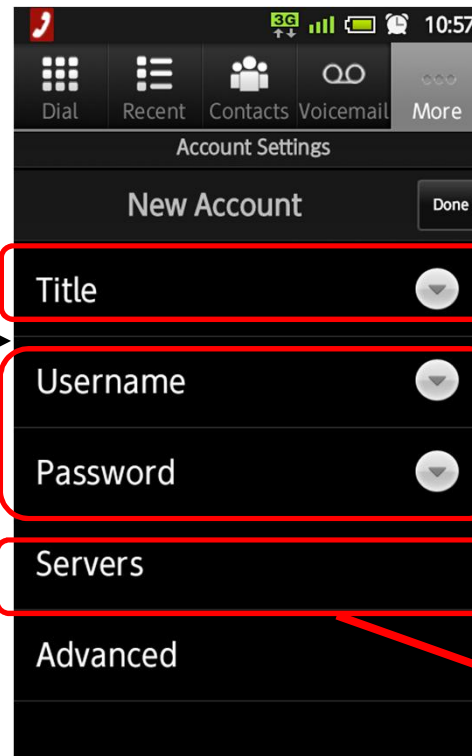
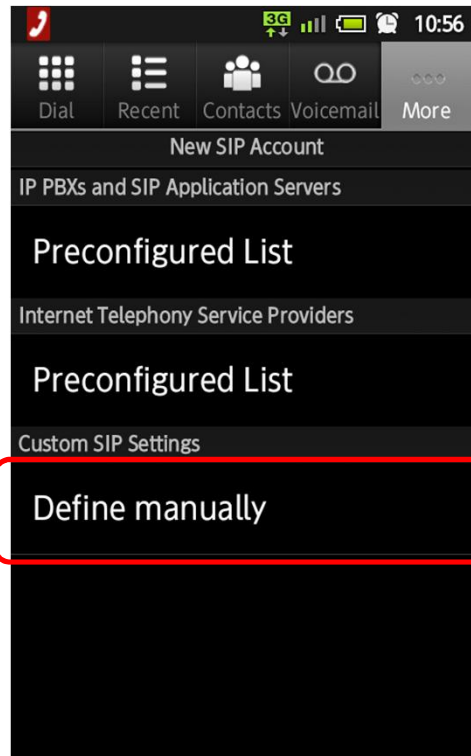
This document uses “33824” as example of SIP port. But “33824” is not recommended because this document is released to internet.

This port number is common for both SIP extension and SIP trunk. 5060 has to be programmed for some SIP carrier.

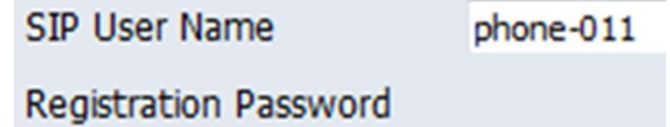
34. SIP Phone : Registration 1/4



35. SIP Phone : Registration 2/4

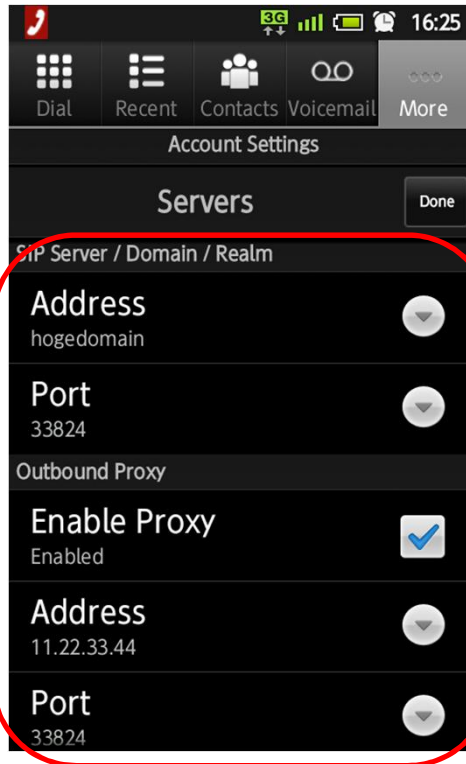


Reference
"KX-HTS Ext 114"
for example



See next page.

36. SIP Phone : Registration 3/4

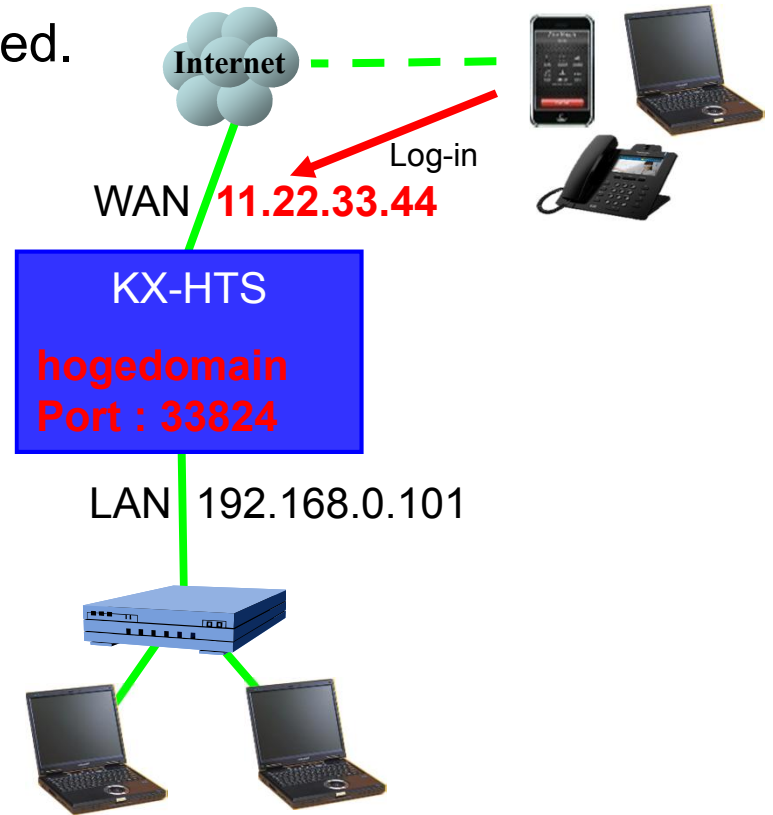


Proxy has to enabled.

hogedomain
33824

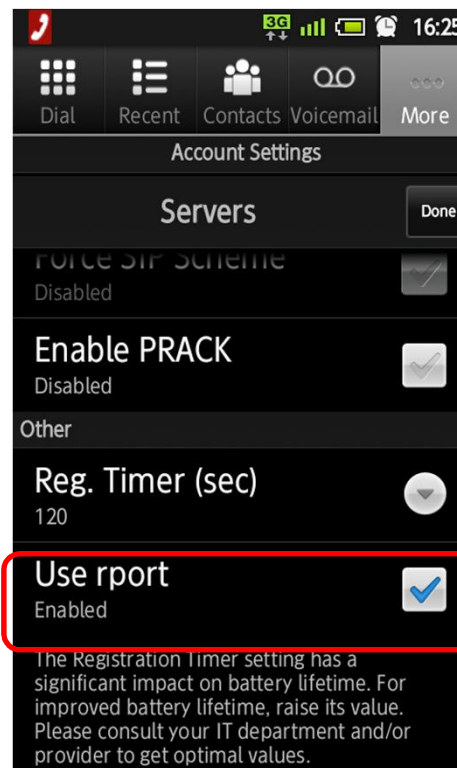
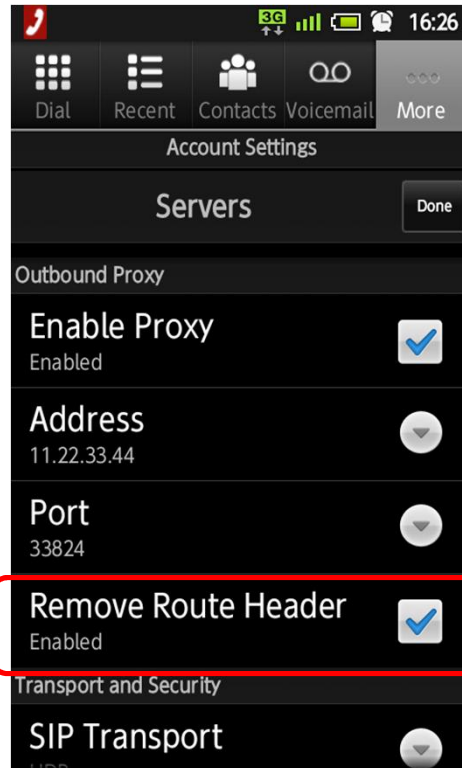
Enable

11.22.33.44
33824



IP address in above explanation is example.

37. SIP Phone : Registration 4/4



Remove Router Header has to be enabled.

Use rport has to be enabled.

38. Important Notice

Do not use easy Username and SIP password such as “1234abc” to prevent from unexpected access by hacker.

Do not use easy Domain name.

Program enough TRS level (Toll Restriction) for SIP extension in internet. **International calling should be restricted** basically.

TRS override by speed dial is useful to contact customers in other countries.

Do not use 50xx such as 5070 and x50xx such as 35060 for SIP port number basically.

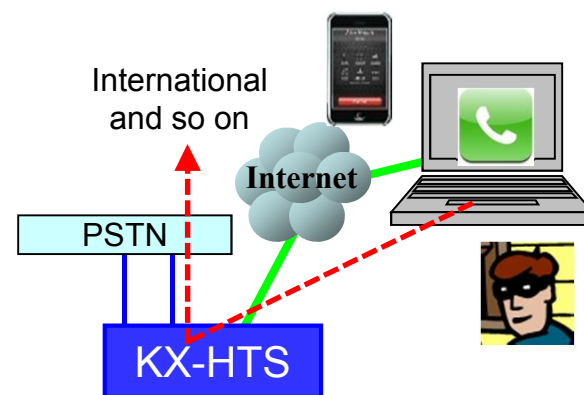
SIP port is common for SIP Trunk and SIP extension.

“5060” has to be programmed for some SIP carrier.

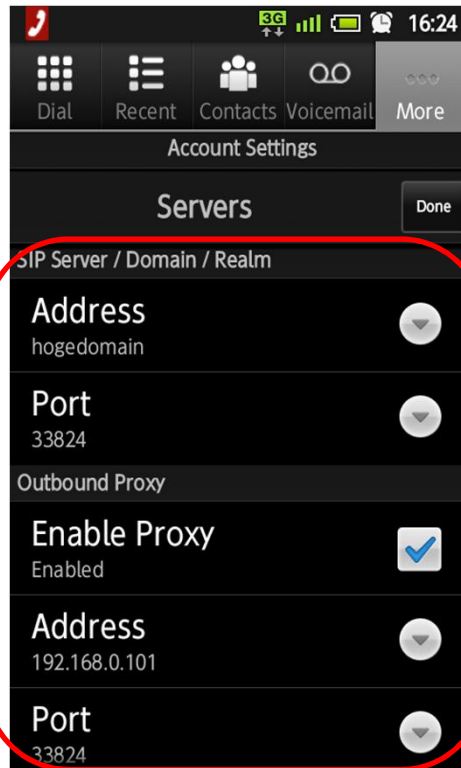
Even if 5060 is used for SIP port, security for KX-HTS

is stronger than KX-NS remote SIP feature (MRG)

because Username and Domain name are programmable.



29. Conditions



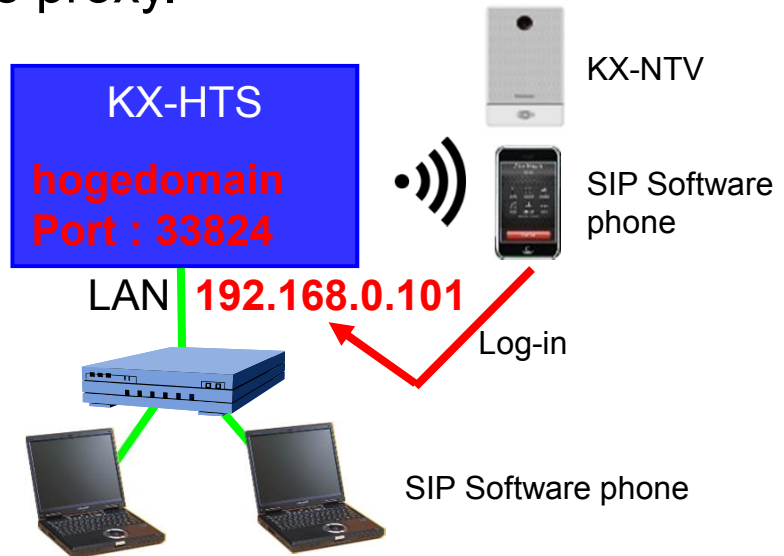
When domain name is assigned, Software phone and KX-NTV on LAN (Chapter 1 &2) also has to use proxy.

hogedomain
33824

Enable

192.168.0.101
33824

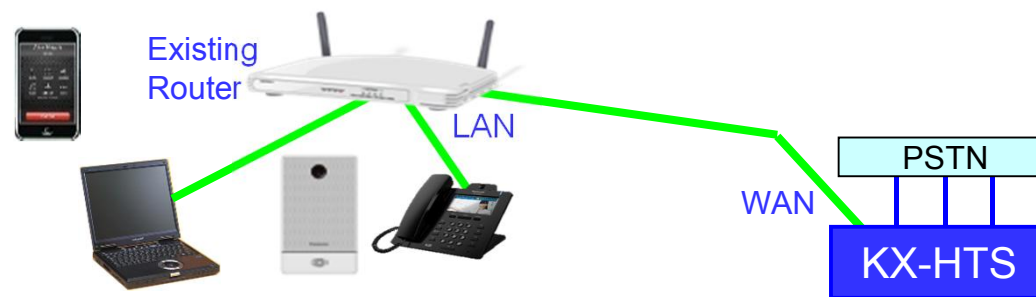
KX-HTS
hogedomain
Port : 33824



“rport” is not required for this case. But it is OK to enable “rport”.

Chapter 4

WAN : LAN of Existing Router



41. Web-MC

Following is required by Easy-set-up or full programming mode.

Easy Setup Wizard



IP Address of SIP Extension in existing router

IP Address 192 . 168 . X . X (X:Wildcard)

This has to be programmed when WAN port of KX-HTS and SIP extensions are connected with the existing router.

SIP Extension Property

PBX Configuration > 2.Extension > 7.SIP Extension Property

Domain for SIP Extension [0-9

IP Address of SIP Extension in existing router

IP Address 192 . 168 . 0 . 0

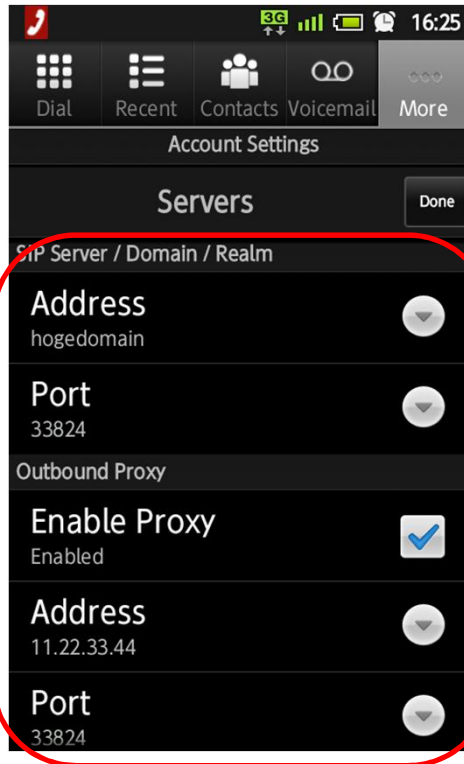
Subnet Mask 255 . 255 . 255 . 0

42. Web-MC

“Local” has to be selected as location. (Not Remote)
Other programming is same as chapter 3.

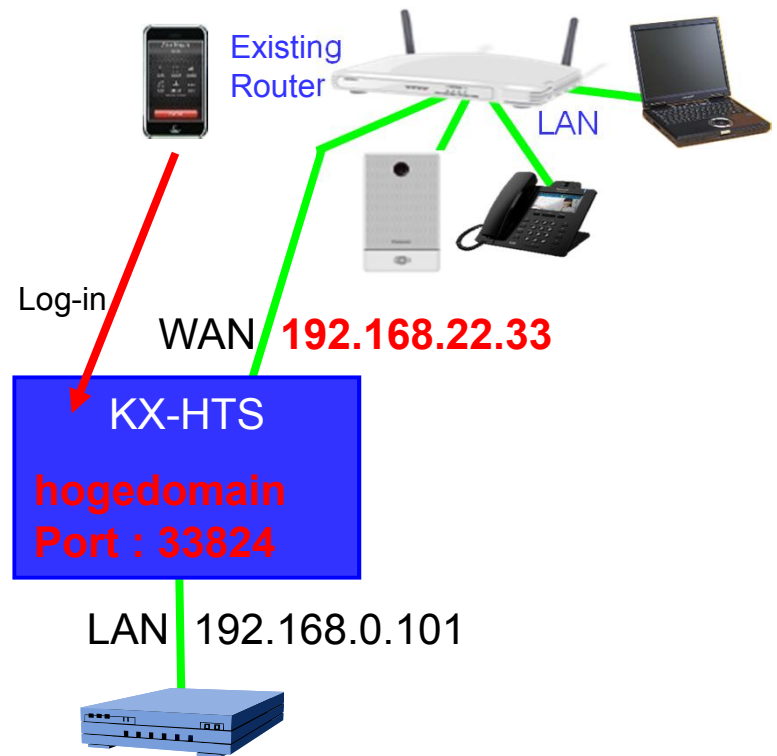
Ext	Attribution	Location	Username	Password
118	SIP	Remote	2hf74hg83f	tnf94jgy
119	SIP	Local	r63h3b466h	tt4njg94nf
120	Analog SLT			

43. SIP Phone : Registration



Setting is same as chapter 1.

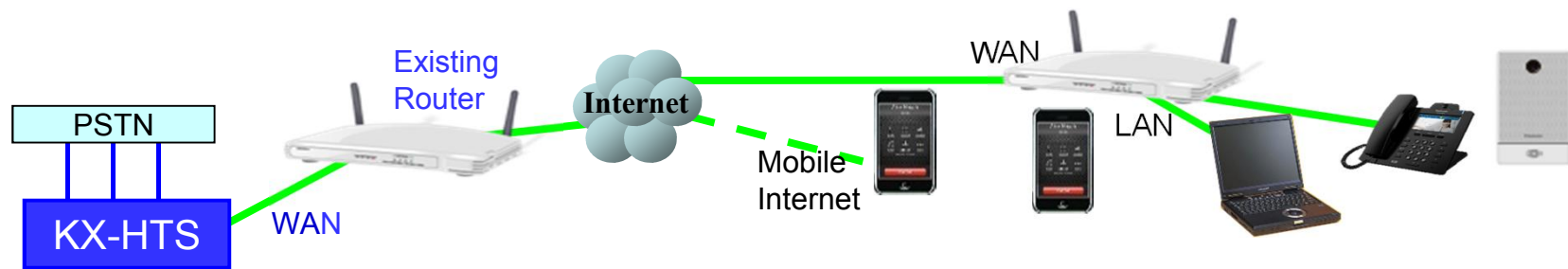
hogedomain
33824
Enable
192.168.22.33
33824



IP address in above explanation is example.

Chapter 5

Internet through Existing Router



51. Conditions

Port Fwd is required for existing router.

Programming of KX-HTS is basically same as chapter 1.

More conditions are pending.

<https://namlong.vn> Hotline: 092 888 2345

Thank you !

Revision

Date	No.	Change
June 30, 2015	All	First draft
July 23, 2015	All	2nd draft
June 15, 2016	All	3rd draft