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KX-HTS Step by Step Guide
SIP Phone Registration (WAN)

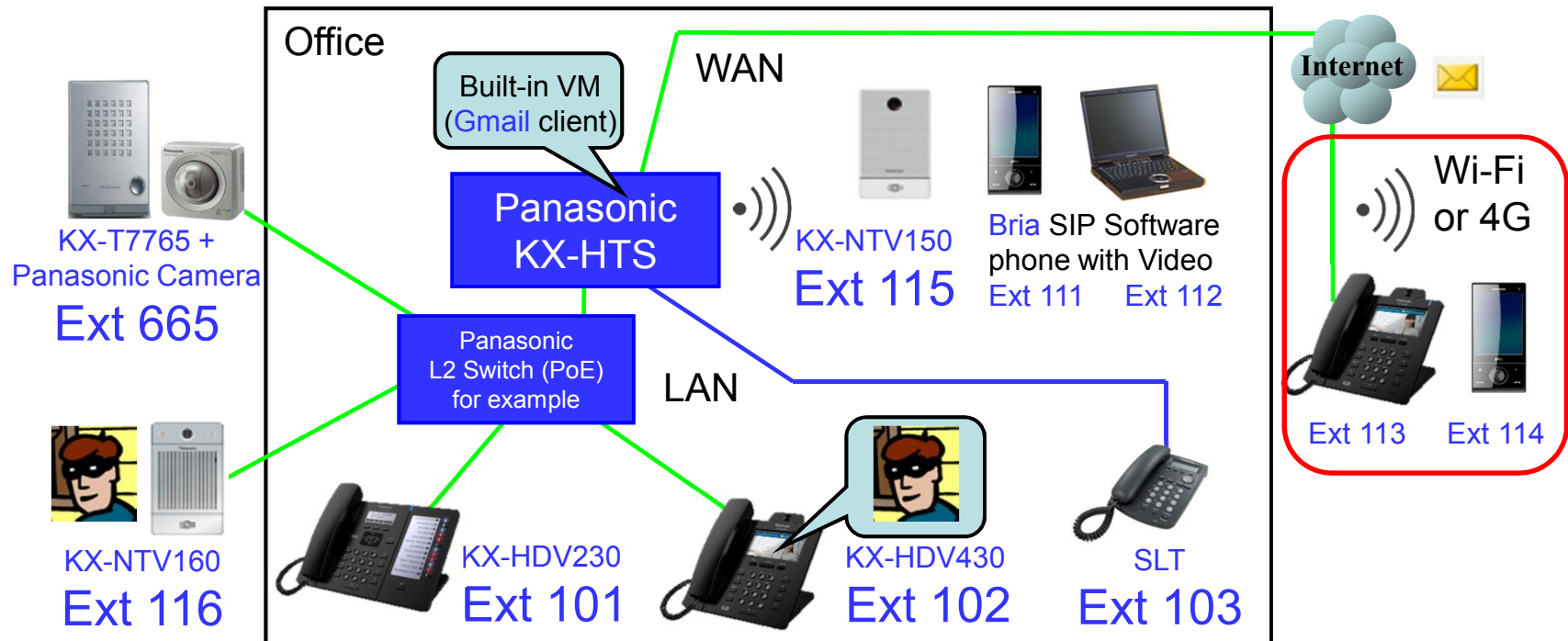
August 8, 2016

Panasonic System Networks
PBX SE team

Specifications are subject to change without notice.

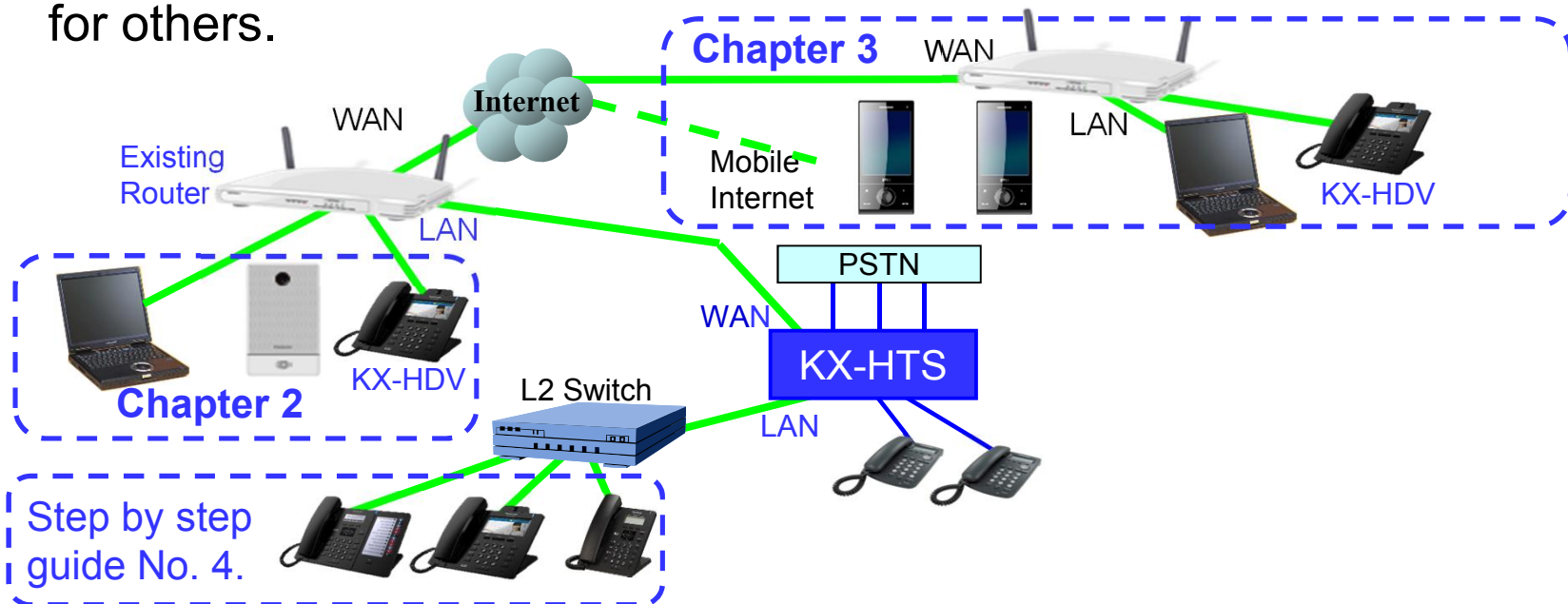
1. Overview for Demo

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



3. Diagram with 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.



4. Table of Contents

Chapter	Contents	Bria Media5	KX-HDV	KX-NTV
1	Internet directly	Yes	Yes (*)	No
2	LAN of Existing Router	Yes	Yes	Yes
3	Internet through Existing Router	Yes	Yes (*)	No

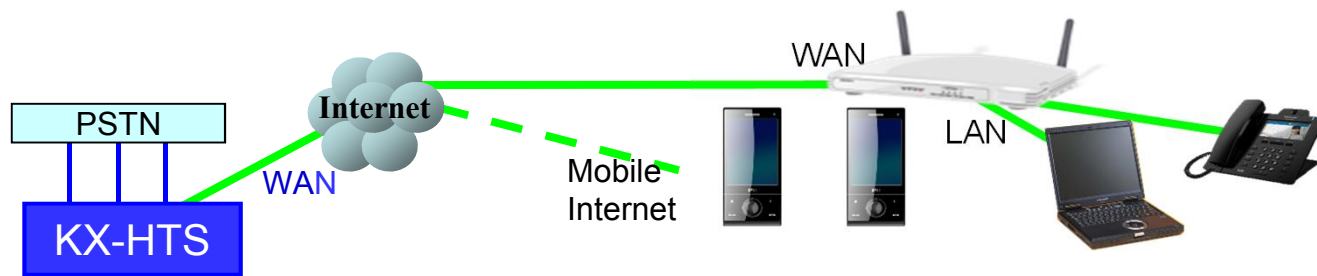
Media5pone is used as example for chapter 1.

KX-HDV430 is used for chapter 2.

(*) Video call is supported by KX-HDV430 new software for KX-HTS version 1.5.

Chapter 1

WAN : Internet



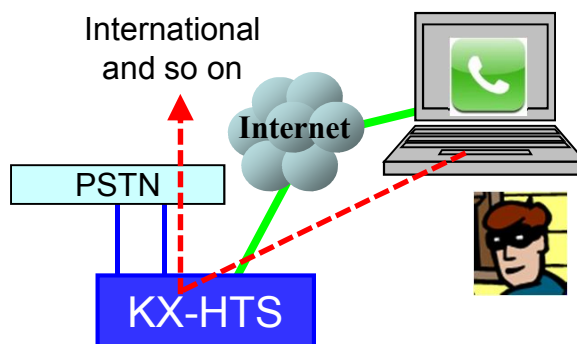
10. Important Notice

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.



11. Assign SIP Account for Remote.

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

12. Assign SIP Domain Name.

Domain name has to be assigned.

Domain name is used for SIP registration for [stronger security](#).

Character (A-Z a-z) should not be used because some SIP phone does not support character as SIP domain name.

IP address format such as 123.45.67.89 is recommended. Any “IP address” can be assigned as SIP domain name, regardless of IP address of KX-HTS.

192.168.xx.xx is not recommended because 192.168.xx.xx is famous for hacker.

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

It was usually 192.168.0.101.

This document uses “123.45.67.89” as example of SIP domain name. But “123.45.67.89” is not recommended because this document is released to internet.



The screenshot shows a configuration page titled "SIP Extension Property". The breadcrumb path is "PBX Configuration > 2.Extension > 7.SIP Extension Property". A red box highlights the "Domain for SIP Extension" field, which contains the value "123.45.67.89". To the right of the field is a character set indicator: "[0-9 a-z A-Z - .]".

13. Confirm SIP Port Number.

HTS Web Maintenance Console
000.00312

PBX Configuration

- 1. System
- 2. Extension
 - 1. Port
 - 2. Phone
 - 3. Flexible Buttons
 - 4. Extension Group
 - 5. Doorphone
 - 6. Analogue SLT Property
 - 7. SIP Extension Property
- 3. Trunk
- 4. TRS/ARS
- 5. System Speed Dialling
- 6. Conference
- 7. Voice Mail

Network Configuration

Maintenance

SIP Extension Property

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

Domain for SIP Extension: 123.45.67.89 [0-9 a-z A-Z - .]

IP Address of SIP Extension in existing router

IP Address: 0 . 0 . 0 . 0

Subnet Mask: 0 . 0 . 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: NE

PCM Side - Echo Canceller NLP: On

PCM Side - Echo Canceller Window Size: 6 (ms)

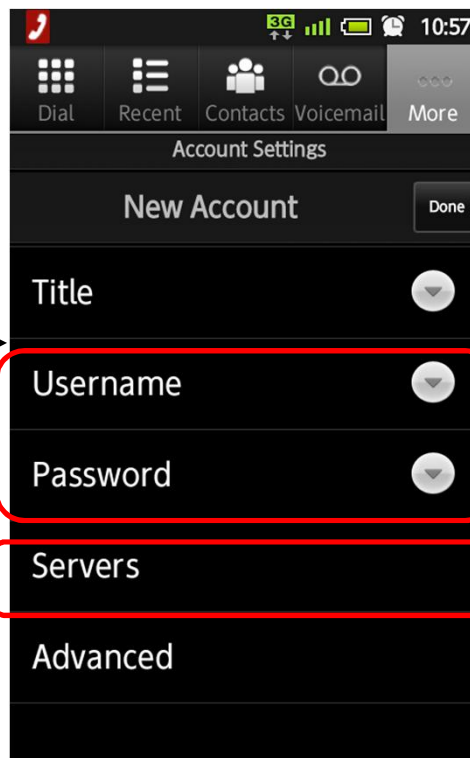
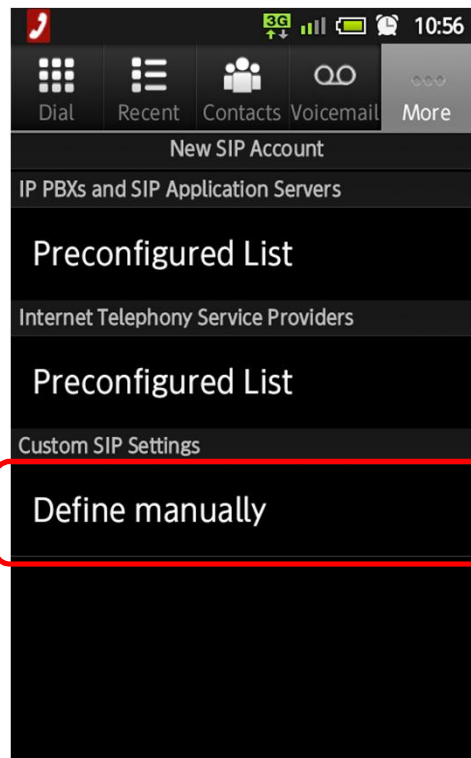
SIP Extension & SIP Trunk Common

Voice (RTP) UDP Port No. (Server): 12000 (1024 - 65235)

SIP Port Number: 5060 (1024 - 65535)

SIP QoS-DSCP: CS7 (56)

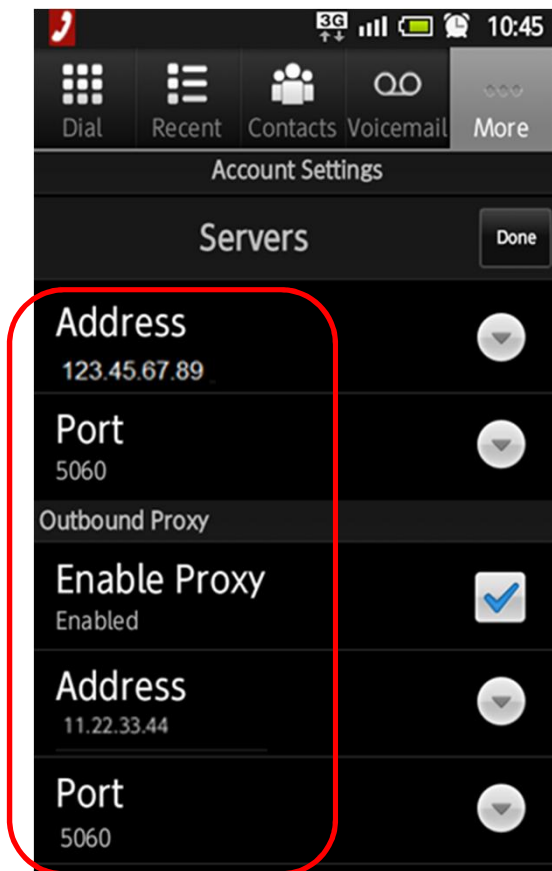
14. SIP Phone : Registration 1/3



KX-HTS
192.168.0.101 : 5060
Domain : 123.45.67.89
113 : phone-013 : ****
114 : phone 014 : ****

See next page.

15. SIP Phone : Registration 2/3



Proxy has to enabled.

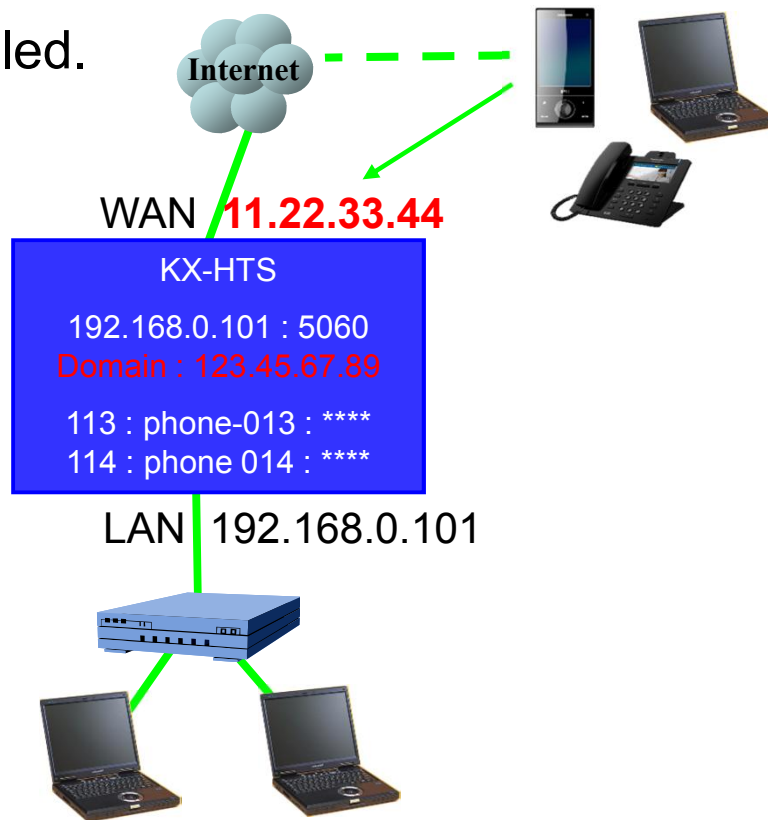
123.45.67.89

5060

Enable

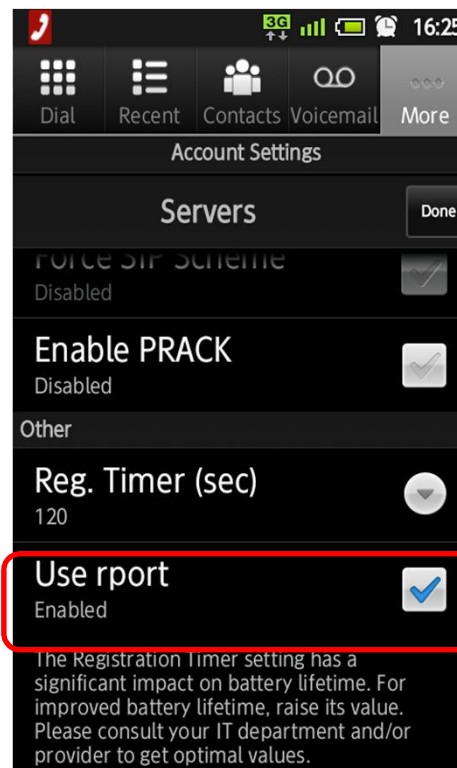
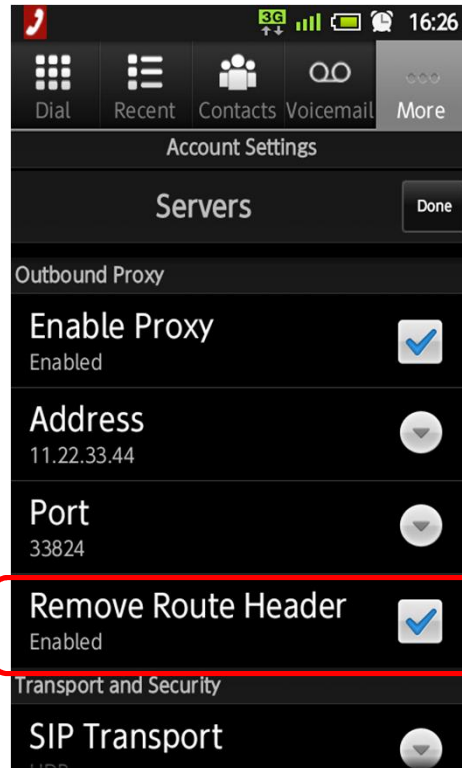
11.22.33.44

5060



IP address in above explanation is example.

16. SIP Phone : Registration 3/3

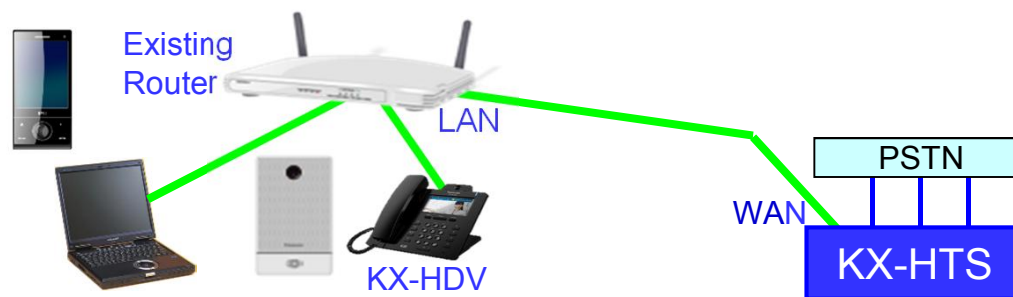


Remove Router Header has to be enabled.

Use rport has to be enabled.

Chapter 2

WAN : LAN of Existing Router



21. Assign “Local” for the SIP extension.

“Local” has to be selected as location. (Not Remote)
SIP domain name is required for stronger security.

SIP Extension	
SIP Registration Status	Not yet
SIP User Name	<input type="text" value="phone-002"/> [0-9 a-z A-Z - .]
Registration Password	<input type="password"/> <input type="button" value="Edit"/>
Current IP Address	
Current MAC Address	
Phone Location	<input checked="" type="radio"/> Local <input type="radio"/> Remote <input type="radio"/> Remote(G.729)

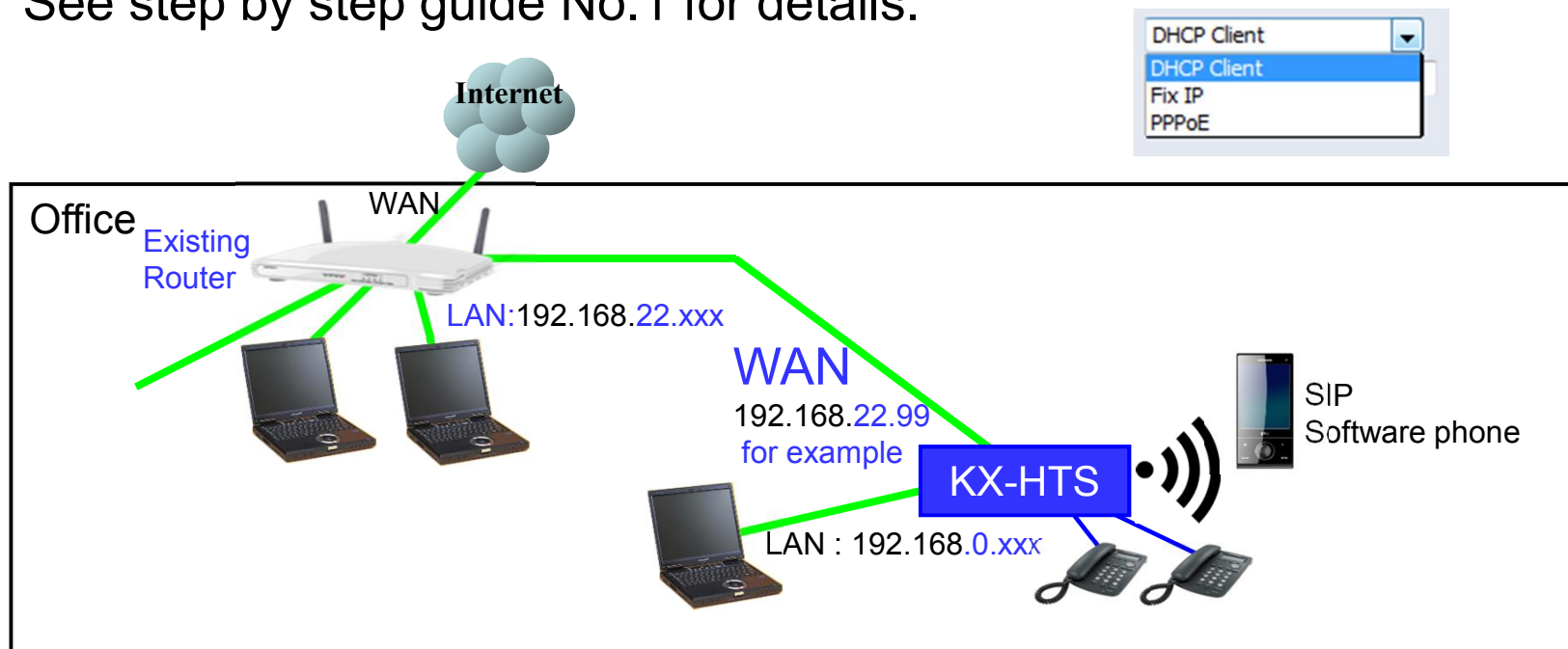
SIP Extension Property

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

Domain for SIP Extension	<input type="text" value="123.45.67.89"/> [0-9 a-z A-Z - .]
--------------------------	---

22. Connect KX-HTS to LAN of Existing Router.

WAN port of KX-HTS has to be connected to LAN of existing router as DHCP client or using fixed IP address.
See step by step guide No.1 for details.



23. Connect KX-HDV to LAN of Existing Router.

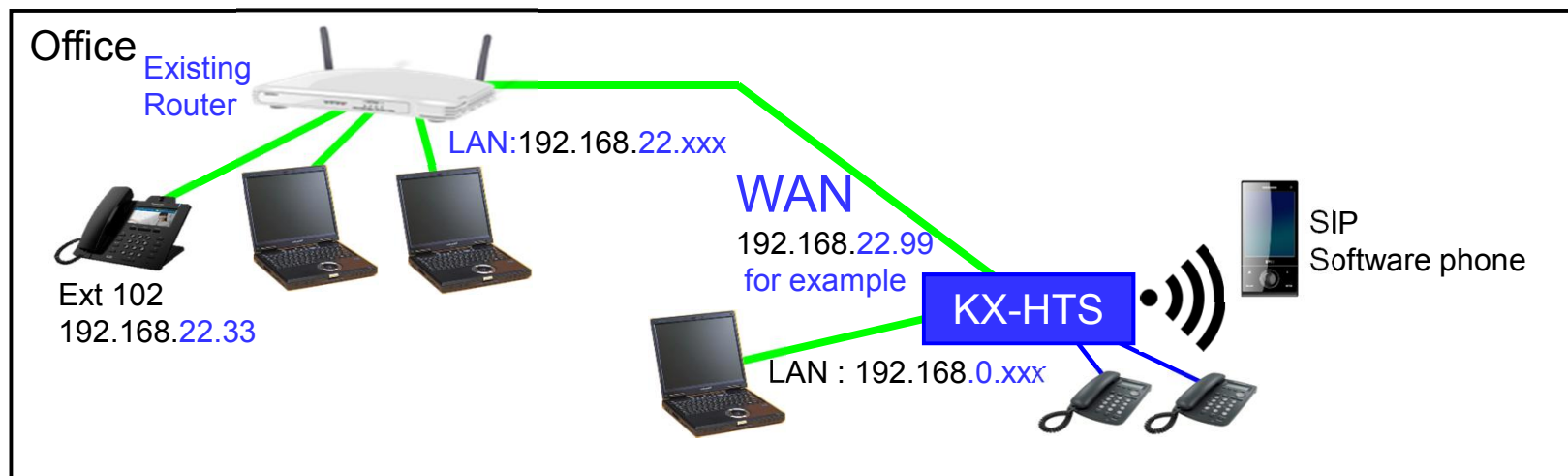
IP address of KX-HDV is assigned automatically, if existing network supports DHCP server.

IP address of KX-HDV can be confirmed by KX-HDV.

System setting => Status => IPv4 Settings


IP address of KX-HDV can be programmed if network does not support DHCP.

System setting => Network Settings => IPv4 Settings



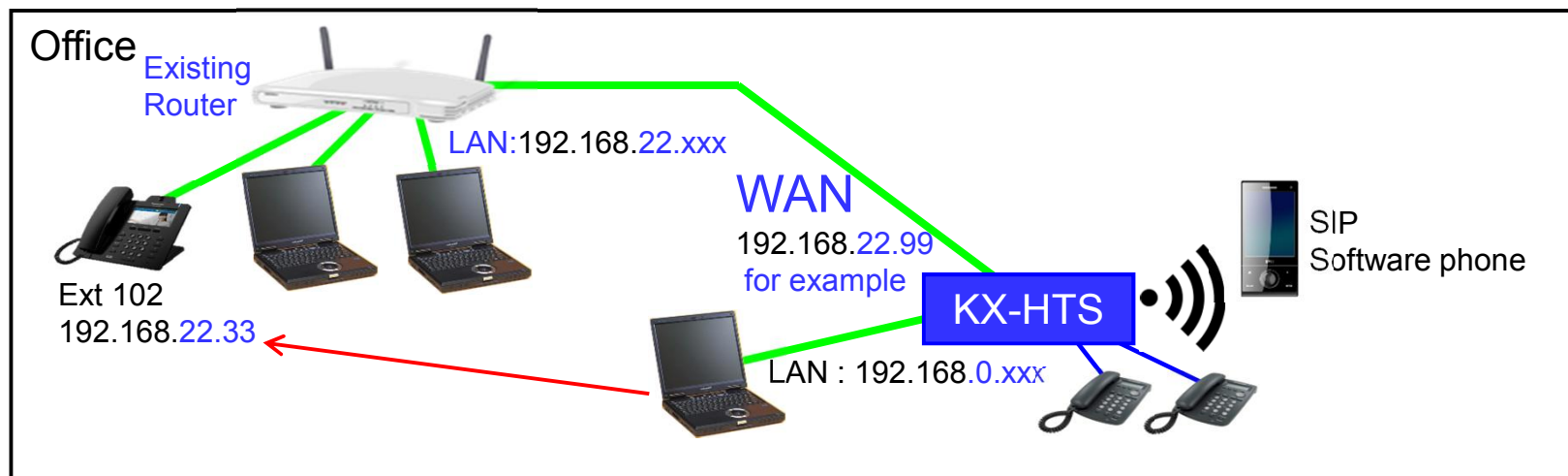
24. Log-in to KX-HDV for Web Programming.

KX-HDV has to be enabled for web access before log-in from PC.
System setting => # 5 3 4 => Embedded Web On

 192.168.22.33

ID : admin

Password : adminpass



25. Assign SIP settings.

Panasonic
KX-HDV430

Status | Network | System | **VoIP** | Telephone | Maintenance

SIP Settings [Line 1]

Web Port Close

VoIP

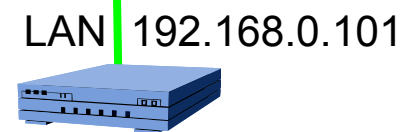
- SIP Settings
 - Line 1
 - Line 2
 - Line 3
 - Line 4
 - Line 5
 - Line 6
 - Line 7
 - Line 8
 - Line 9
 - Line 10
 - Line 11
 - Line 12
 - Line 13
 - Line 14

Basic	
Phone Number	102
Registrar Server Address	192.168.0.101
Registrar Server Port	5060 [1-65535]
Proxy Server Address	192.168.0.101
Proxy Server Port	5060 [1-65535]
Presence Server Address	192.168.0.101
Presence Server Port	5060 [1-65535]
Outbound Proxy Server Address	192.168.22.99
Outbound Proxy Server Port	5060 [1-65535]
Service Domain	123.45.67.89
Authentication ID	phone-002
Authentication Password

Advanced	
SIP Packet QoS (DSCP)	56 [0-63]



KX-HTS
192.168.0.101 : 5060
Domain : 123.45.67.89
113 : phone-013 : ****
114 : phone 014 : ****



26. Reference

Only SIP phone with IP address 192.168.x.x can be registered, if following is programmed for example.



5 IP

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 123.45.67.89 [0-9 a-z A-Z - .]

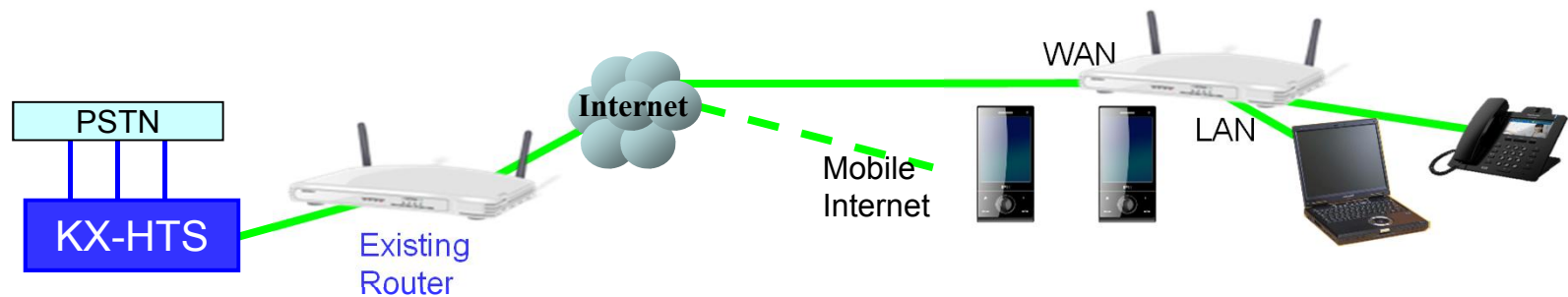
IP Address of SIP Extension in existing router

IP Address 192 . 168 . 0 . 0

Subnet Mask 255 . 255 . 0 . 0

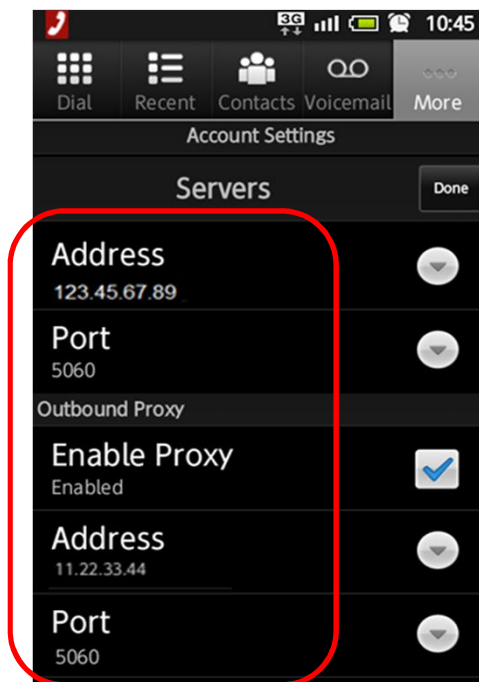
Chapter 3

Internet through Existing Router



31. Point of Programming

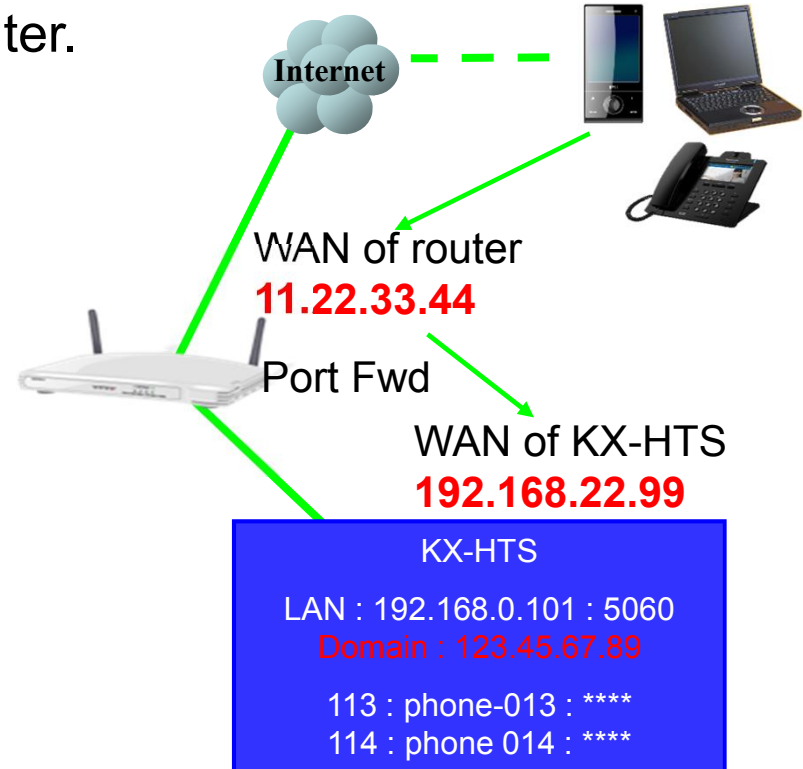
Notice and point of programming are same as chapter 1.
Port Fwd is required by existing router.



123.45.67.89
5060

Enable

11.22.33.44
5060



IP address in above explanation is example.

32. Assign Port Fwd to Existing Router.

Range of port number (WAN)	Destination
5060 (SIP)	192.168.22.99
12000-12007(UDP)	192.168.22.99

SIP ALG has to be disabled.

<Reference : Default port of KX-HTS>

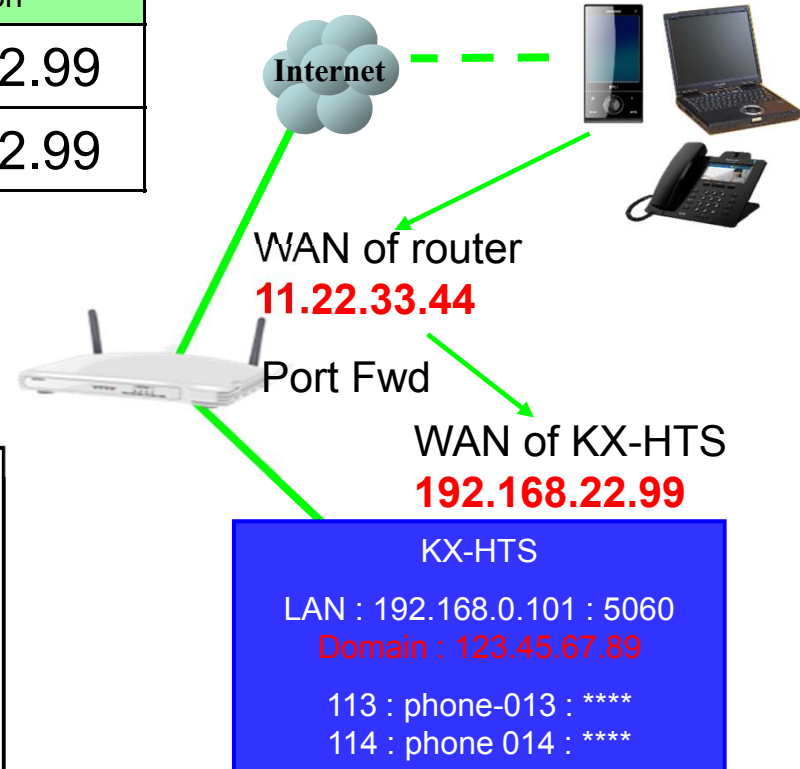
SIP Extension Property

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

SIP Extension & SIP Trunk Common

Voice (RTP) UDP Port No. (Server)

SIP Port Number



Thank you !

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Revision

Date	No.	Change
June 30, 2015	All	First draft
July 23, 2015	All	2nd draft
June 15, 2016	All	3rd draft
August 8, 2016	All	Step by step guide was divided for remote SIP phone. First official release