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INTEROPERABILITY REPORT

Ascom IPDECT

Innovaphone IP302, IP6000, IP810 and IP6010, firmware version 12r1

IP-PBX Integration (H323)

Ascom IPDECT, Software version 9.0.6

Ascom, Gothenburg

September 2016



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INTRODUCTION

This interoperability report describes test results and optimal configuration of Ascom IPDECT towards the Innovaphone IP-PBXs. The document should be used in conjunction with configuration guide(s) from Innovaphone and Ascom.

About Ascom

Ascom Wireless Solutions (www.ascom.com/ws) is a leading provider of on-site wireless communications for key segments such as hospitals, manufacturing industries, retail and hotels. More than 75,000 systems are installed at major companies all over the world. The company offers a broad range of voice and professional messaging solutions, creating value for customers by supporting and optimizing their Mission-Critical processes. The solutions are based on VoWiFi, IP-DECT, DECT, Nurse Call and paging technologies, smartly integrated into existing enterprise systems. The company has subsidiaries in 19 countries and 1,600 employees worldwide. Founded in the 1950s and based in Gothenburg, Sweden, Ascom Wireless Solutions is part of the Ascom Group, listed on the Swiss Stock Exchange.

Innovaphone

Innovaphone develops pure IP telephone systems under the name of “innovaphone PBX“, uniting security and high availability with the flexibility and scalability of IP. The innovaphone PBX hardware comprises gateways and a series of IP telephones which are developed entirely in Germany and manufactured to a large extent in Europe. The entire product range is based on the unified hardware and software platform which is the core of the innovaphone product philosophy. The number of activated licenses can be determined as required which renders the solution suitable for companies of any size: from small companies over medium size companies with several branch offices to large enterprises. The innovaphone IP telephone systems are available exclusively through authorized distributors and resellers.

Innovaphone has been playing a decisive role in the development of IP telephony ever since the company was founded in 1997. Head office is located in Sindelfingen, South Germany. For further information, see the following URL: <http://www.innovaphone.com/>

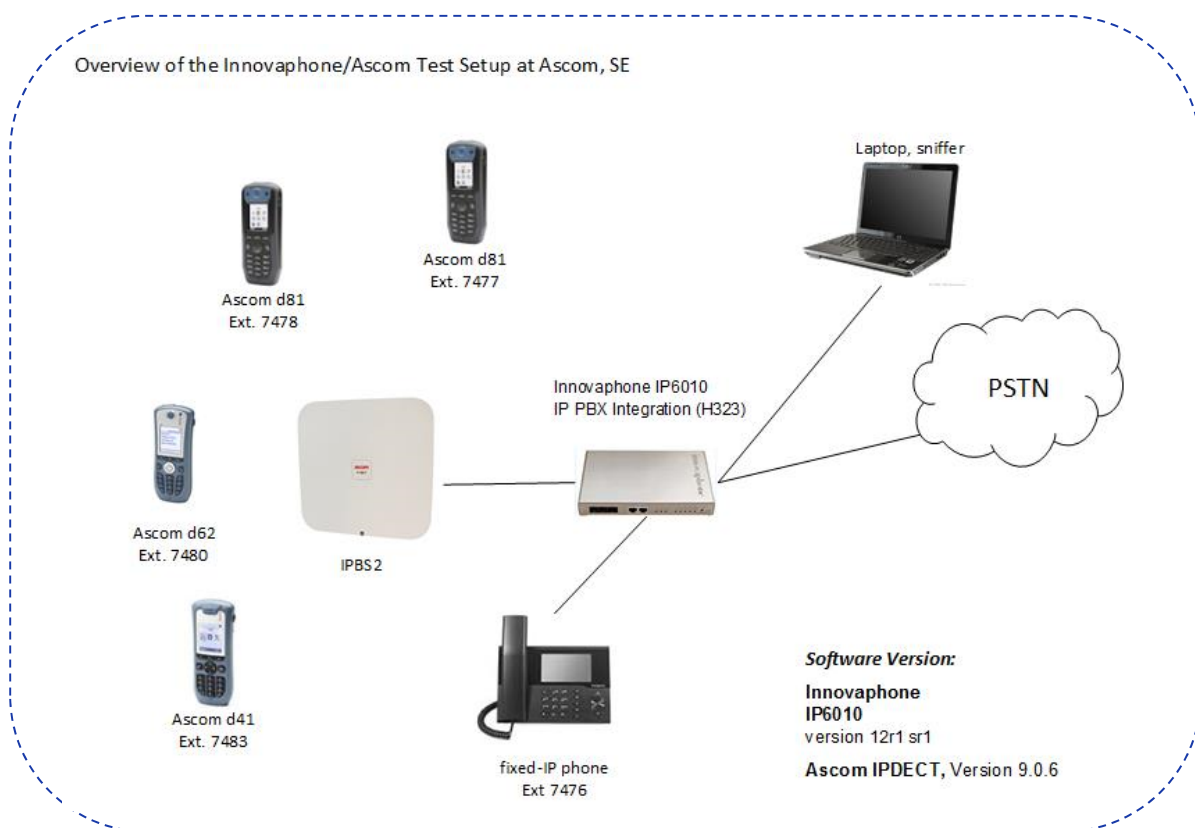
SITE INFORMATION

Test Site: Ascom HQ
Gothenburg
Sweden

Participant(s):

Johan Andrén (Ascom HQ, SE)

Test Topology



SUMMARY

Test overview

Test cases in nearly all areas with regard to Ascom IPDECT and Innovaphone IP-PBX passed successfully. Overall, the conclusion has to be that the H.323 integration of Ascom IPDECT with IP6010 is very good.

Queries about licensing should be directed to Innovaphone.
Please also see “

APPENDIX A: TEST CONFIGURATIONS” for further details.

High Level Functionality	Result v.11 r2
Basic Call	OK
DTMF	OK*
Hold, Retrieve, Enquiry and Brokering	OK
Attended Transfer	OK
Blind-transfer	OK
Semi-attended Transfer	OK
Call Forward Unconditional	OK
Call Forward No Reply	OK
Call Forward Busy	OK
Call Waiting	OK
Message Waiting Indication	OK
Group call	OK**
Do Not Disturb	OK
Calling Line/Name Identification	OK
Connected Line/Name Identification	OK

*Some Issues with Inband DTMF, See Known issues for details.

**Minor issue with group call, See Known issues for details.

General conclusions

Ascom interoperability verification produced good results towards Innovaphone IP6010 version 12r1 with a few exceptions, refer to “*Known Issue(s)*” section on page 6.

Ascom IPDECT handsets were configured to register at the IP-PBX using endpoint numbers. The codec of choice for these tests was G.711A/20ms, while DTMF signaling was transmitted according RFC 2833. Parameter settings are elaborated upon in the “TEST RESULTS” section on page 6 for each platform respectively.

TEST RESULTS

Innovaphone IP-PBX Integration – Ascom IPDECT

- Innovaphone IP-PBX version 12r1sr1
- Ascom IPDECT, 9.0.6

Signaling Protocol:

- H.323

Innovaphone IP6010 (results also valid for IP302, IP810 and IP6000):

- Settings are based on "Ascom VoIP Gateway: Installation and Operation Manual" (TD 92326GB), pp. 62-100

Ascom IPDECT:

- Endpoint ID" and "Endpoint Number" corresponds to name and number in the user object
- Default H323 settings

Known Issue(s)

- No timeout when IPDECT calls another IPDECT that does not answer both during basic call and call waiting active. This is a PBX issue and per design.
- Inband DTMF doesn't work. Recommend to use DTMF according to RFC2833 instead. Handled in Ascom ticket IPDECT-2326.
- When you call a group call internally you will see the name on the answering extension. Handled by ticket IPDECT-2467

Test Areas

Basic Call, DTMF:

- Inband DTMF doesn't work, Recommend to use DTMF according to RFC2833
See known issue's for more information.

Basic Call, Portable Unavailable:

- Good results overall

Basic Call, Stability:

- Good results overall

Three-party Services:

- Good results overall

Call Diversion:

- Good results overall

Telephony Feature

- Good results overall, except there are no timeout when one IPDECT handset calls another IPDECT handset that doesn't answer. See know issue's for more information.

Detailed test records

Ascom IPDECT with Innovaphone v.12r1

Pass	87
Fail	5
NOT TESTED	6
See Comments	6
Total	104

Miscellaneous

Please refer to IP Telephony Services (IP-DECT/VoWiFi) available on the Ascom Extranet for detailed Information regarding each test case.

See URL (requires login):

<https://www.ascom-ws.com/AscomPartnerWeb/en/startpage/Sales-tools/Interoperability>

APPENDIX A: TEST CONFIGURATIONS

Innovaphone IP6010, 12r1

Please find the screen shots reflecting the management interface and some aspects of setting up the PBX application on the IP6010.

General -> info

10.30.32.76: innovaphone IP6010

General Interfaces IP4 IP6 Services PBX Gateway Linux Maintenance

Info Admin Sysclient Compact-Flash License Kerberos Certificates

Version	12r1 sr1 IP6010[12.0875], Bootcode[120875], Hardware[600]
SerialNo	009033290133 (e0)
DRAM	512 MB
FLASH	32 MB
Coder	60 Channels of G.711,G.729,G.723
Conference	60 Channels
Fax	10 Channels
HDLC	2 Channels
Sync	PRI1-L1
Power Source	ETH0
Power Off Loop	Disabled
Temperature	51.0° Celsius
SNTP Server	172.20.8.145
Time	02.09.2016 15:29
Uptime	0d 23h 39m 22s

IP->Settings: DSCP markings used for signaling and RTP

10.30.32.76: innovaphone IP6010

General Interfaces IP4 IP6 Services PBX Gateway Linux Maintenance

General ETH0 ETH1 PPP NAT

Settings Routing ARP STUN

TOS Priority - RTP Data 0xb8

TOS Priority - Signaling 0x88

First UDP-RTP Port Number of Ports First/Last 16384 / 32767

First UDP-NAT Port Number of Ports First/Last 0 / 0

- Local Networks -

Address	Mask
<input type="text"/>	<input type="text"/>

- Private Networks -

Address	Mask
<input type="text"/>	<input type="text"/>

OK Cancel

PBX->General: General Settings

10.30.32.76: innovaphone IP6010

[General](#)
[Interfaces](#)
[IP4](#)
[IP6](#)
[Services](#)
[PBX](#)
[Gateway](#)
[Linux](#)
[Maintenance](#)

[Config](#)
[Objects](#)
[Registrations](#)
[Calls](#)
[SOAP](#)
[myPBX](#)
[Dyn-PBXs](#)

- General
- Security
- Filter
- myPBX
- Import
- Export

PBX Mode

System Name Use as Domain

PBX Name DNS

Unknown Registrations - With PBX Pwd only

Reverse Proxy Addresses Assume TLS

Music On Hold URL

External Music On Hold

Response Timeout

Dial Complete Timeout

No of Regs w/o Pwd.

Recall Timeout

Max Call Duration (h)

Max WebRTC calls - Usage: 0 (max 0)

Group Default Visibility Online Status Presence On the phone Presence note Calls Calls with Number

Presence with Alert

Enable External Transfer

No CLIR on internal calls

Media Relay - No Media Relay if Addresses are identical or private

Generate CDRs

Route Root-Node External Calls to For calls from local PBX only

Route PBX-Node External Calls to

Route Internal Calls to

Escape Dialtone from

Prefix for Intl/Ntl/Subscriber

Tones

Log Calls

Licenses

Name	Count	Usage	Local	Slaves
Port12	30	4	4	0
Voicemail12	30	0	0	0
Registrations.Ascom12 41248	9	9	9	0

PBX->Objects: PBX objects added to PBX application

10.30.32.76: innovaphone IP6010

General Interfaces IP4 IP6 Services **PBX** Gateway Linux Maintenance

Config **Objects** Registrations Calls SOAP myPBX Dyn-PBXs

User new

show

- Intop

Long Name	Name «	No « HW-ID «	Node « PBX «	Filter «	Groups «	CI
conf serverA	conf serverA	8888	root	Intop	+	+
Tel 7484	Tel 7484	7484 7484	root	Intop	+	+
d41 7483	7483	7483 7483	root	Intop	FE	+
i82 7482	7482	7482 7482	root	Intop	FE	+
i82 7481	7481	7481 7481	root	Intop	FE	+
d62 7480	7480	7480 7480	root	Intop	FE	+
7479	7479	7479 7479	root	Intop	FE*	+
d81 7478	7478	7478 7478	root	Intop	FE	+
d81 7477	7477	7477 7477	root	Intop	+	+
Fixed 7476	Fixed 7476	7476 7476	root	Intop	+	+
7475	7475	7475 7475	root	Intop	+	+
i82 7474	7474	7474 7474	root	Intop	+	+
Myco 7473	7473	7473 7473	root	Intop	+	+
Myco 7472	7472	7472 7472	root	Intop	+	+
Myco 7471	7471	7471 7471	root	Intop	+	+
Myco 7470	7470	7470 7470	root	Intop	+	+
UC	UC	5555 5555	root	Intop	+	+
Voicemail	Voicemail	4298	root	Intop	+	+
2500	2500	2500 2500	root	Intop	+	+
feature codes#unset_presence		041	root	Intop		
feature codes#set_presence		040	root	Intop		
feature codes#cfb_activate		*87*	root	Intop		
feature codes#announce		*82*	root	Intop		
feature codes#cfnr_activate		*81*	root	Intop		
feature codes#call_completion		*37*	root	Intop		
*333	*333	*333	root	Intop	+	+
feature codes#join_all_groups		*32#	root	Intop		
feature codes#join_group		*31*	root	Intop		
feature codes#cfu_activate		*21*	root	Intop		
feature codes#park_to		*17	root	Intop		
feature codes#park		*16	root	Intop		
feature codes#pickup_directed		*0*	root	Intop		
feature codes#pickup_group		*0#	root	Intop		
feature codes#cfb_deactivate		#87#	root	Intop		
feature codes#cfnr_deactivate		#81#	root	Intop		
feature codes#cancel_cc		#37*	root	Intop		
feature codes#leave_all_groups		#32#	root	Intop		
feature codes#leave_group		#31*	root	Intop		
feature codes#cfu_deactivate		#21#	root	Intop		
feature codes#unpark_from		#17	root	Intop		
feature codes#unpark		#16	root	Intop		
BC conf	innoconf	innoconf	root	Intop	CB*	+
conf voicemail B	conf voicemail B		root	Intop	CB	+
DECT			root	Intop	+	+
EXTERN	EXTERN	EXTERN	root	Intop	+	+
feature codes			root	Intop	+	+

PBX->Objects: Adding a new user object

Edit User - Internet Explorer
http://10.30.32.76/PBX0/ADMIN/mod_cmd_login.xml?cmd=show&user-guid=2b0ee09074dc5501

General User License DECT

Type: User

Description: d81 7477 Hide from LDAP

Long Name: d81 7477 Display Name: DS A7

Name: 7477 Number: 7477 Critical

E-Mail: 7477@;

Password: retype Password:

Node: root Local

PBX: Intop

Send Number: URL:

Group Indications:

Config Template:

- Devices -

Hardware Id	Name	PBX Pwd	No IP Filter	TLS only	No Mobility	Config VOIP
7477		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel Apply Delete Help

PBX->Objects: Adding a gateway object (“EXTERN”)

Gateway->GK: Binding an interface to the gateway object (“EXTERN”)

10.30.32.76: innovaphone IP6010

General Interfaces IP4 IP6 Services PBX **Gateway** Linux Maintenance

General Interfaces SIP **GK** Routes CDR0 CDR1 Calls

Interface	CGPN-In	CDPN-In	CGPN-Out	CDPN-Out	Alias	Registration Product
GW1 to 166	+					10.30.32.166
GW2	+					
GW3	+					
GW4	+					
GW5	+					
GW6	+					
GW7	+					
GW8	+					
GW9	+					
GW10	EXTERN	+			EXTERN → 127.0.0.1	
GW11	+					
GW12	+					
GW13	+					
GW14	+					
GW15	+					
GW16	+					

Gateway->GK: Registering the gateway using H323

GW10 EXTERN - Internet Explorer
 http://10.30.32.76/RELAY0/mod_cmd.xml?cmd=xml-ifs&id=GW10&xsl=relay_edit_voip.xsl

Name:
 Disable:
 Protocol:
 Mode:
 Address:
 Address: (alternate)
 Gatekeeper Identifier:
 Local Signaling Port:

Authorization
 Password: Retype:

Alias List

Name	Number
<input type="text" value="EXTERN"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Media Properties

General Coder Preference: Framesize [ms]: Silence Compression: Exclusive:
 Local Network Coder: Framesize [ms]: Silence Compression:
 Enable T.38: Audio FAX support: No DTMF Detection: Enable PCM: Media-Relay: Video: No ICE:
 SRTP Cipher: SRTP Key Exchange:

Record to (URL):

H.323 Interop Tweaks

No Faststart: No H.245 Tunneling:
 Suppress HLC: Suppress FTY: Suppress Subaddr:

OK Cancel Apply Delete Help

PBX->Registrations: Overview of PBX registrations

10.30.32.76: innovaphone IP6010

General Interfaces IP4 IP6 Services **PBX** Gateway Linux Maintenance

Config Objects **Registrations** Calls SOAP myPBX Dyn-PBXs

Address	Long Name	Name	No	Device	Product	Firmware	Video Collab	Uptime
10.30.34.56	H323	7475	7475	7475 7475	Ascom i62	Ascom i62 5.5.5 (2016-06-13) release		0d 23h 30m 35s
10.30.32.181	H323	d41 7483	7483	7483 7483	Ascom IP-DECT Base Station: Intop	[9.0.6/9.0.6/!PBS2-A3/!B1]		0d 23h 33m 39s
10.30.32.181	H323	d62 7480	7480	7480 7480	Ascom IP-DECT Base Station: Intop	[9.0.6/9.0.6/!PBS2-A3/!B1]		0d 23h 33m 41s
10.30.34.10	H323	d81 7477	7477	7477 7477	innovaphone IP232	12r1 sr1 [12.0875/120875/1301]		0d 5h 58m 4s
10.30.32.181	H323	d81 7477	7477	7477 7477	Ascom IP-DECT Base Station: Intop	[9.0.6/9.0.6/!PBS2-A3/!B1]		0d 23h 33m 39s
10.30.32.181	H323	d81 7478	7478	7478 7478	Ascom IP-DECT Base Station: Intop	[9.0.6/9.0.6/!PBS2-A3/!B1]		0d 23h 33m 39s
127.0.0.1	H323	EXTERN	EXTERN	EXTERN	innovaphone IP6010	12r1 sr1 [12.0875/120875/600]		0d 23h 33m 42s
10.30.34.10	SIP	Fixed 7476	Fixed 7476	7476 7476	innovaphone IP232	12r1 sr1 [12.0875/120875/1301]		0d 23h 33m 38s
10.30.34.42	SIP	Myco 7470	7470	7470 7470	Ascom Myco 5.5.0	SIP Version 1.5.gd38958d3 [12.0489]		0d 23h 33m 41s
10.30.34.44	SIP	Myco 7471	7471	7471 7471	Ascom Myco 5.5.0	SIP Version 1.5.gd38958d3 [12.0489]		0d 23h 33m 38s
10.30.34.38	SIP	Myco 7472	7472	7472 7472	Ascom Myco 5.5.0	SIP Version 1.5.gd38958d3 [12.0489]		0d 23h 33m 41s
10.30.34.18	SIP	Myco 7473	7473	7473 7473	Ascom Myco 5.5.0	SIP Version 1.5.gd38958d3 [12.0489]		0d 23h 33m 41s
10.30.32.213	H323	Tel 7484	Tel 7484	7484 7484	innovaphone IP29	12r1 sr1 [12.0875/120875/300]		0d 23h 33m 38s

Gateway->Routes: Routing of incoming and outgoing calls

10.30.32.76: innovaphone IP6010

General Interfaces IP4 IP6 Services PBX Gateway Linux Maintenance

General Interfaces SIP GK Routes CDR0 CDR1 Calls

From	To	Counter	CGPN Maps
GW10:EXTERN	0 → PRI1:Tele2	→	
PRI1:Tele2	→ GW10:EXTERN	→	0

PBX->Registrations: Calling and called party number formats for incoming and outgoing calls

10.30.32.76: innovaphone IP6010

General Interfaces IP4 IP6 Services PBX Gateway Linux Maintenance

General Interfaces SIP GK Routes CDR0 CDR1 Calls

Interface	CGPN-In	CDPN-In	CGPN-Out	CDPN-Out	State	Alias	Registration
PRI1	Tele2	n→0	7471→7471		Up		
		i→00	7472→7472				
			7473→7473				
			7474→7474				
			7475→7475				
			7476→7476				
			7477→7477				
			7478→7478				
			7479→7479				
			7470→7470				
PRI2							+
PRI3							+
PRI4							+
TEST							
TONE							
HTTP							
ECHO							
FAX							+
CONF							+

Please refer to Innovaphone's documentation for further details about Innovaphone IP-PBX configuration and licensing.

Ascom IPDECT configuration

Ascom IPDECT H.323 settings

IP-DECT Base Station

Configuration

System

Suppl. Serv.

Master

Crypto Master

Mobility Master

Radio

Radio config

PARI

SARI

Air Sync

General

LAN

IP

LDAP

DECT

VoIP

Unite

Services

Administration

Users

Device Overview

DECT Sync

Traffic

Gateway

Backup

Update

Diagnostics

Reset

Mode Active

Multi-Master

Master ID

Enable PARI Function

Region Code

IP-PBX

Protocol H.323

Gatekeeper IP Address

Alt. Gatekeeper IP Address

Gatekeeper ID

Max. Internal Number Length

Registration with system password

Redirection with GK ID

Enbloc Dialing

Enable Enbloc Send-Key

Send Inband DTMF

Allow DTMF Through RTP

Short Disconnect Tone

Treat rejected calls as Busy

Configured With Local GK

Registration For Anonymous Devices

Registration Name / Number /

Deactivate Master If No Connection

Conferencing Unit

Conferencing Unit Number

Mobility Master

Name

Password

IP Address

Alt. IP Address

Status

Codec settings

IP-DECT Base Station

Configuration
System
Suppl. Serv.
Master
Crypto Master
Mobility Master
Radio
Radio con

General

LAN

IP

LDAP

DECT

VoIP

Unite

Services

Administration

Users

Device Overview

DECT Sync

Traffic

Gateway

Backup

Update

Diagnostics

Reset

System Name

Password

Confirm Password

Subscriptions ▼

Authentication Code

Tones ▼

Default Language ▼

Frequency ▼

Enabled Carriers

9	8	7	6	5	4	3	2	1	0
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Local R-Key Handling

No Transfer on Hangup

No On-Hold Display

Display Original Called

Early Encryption

Disable ICE

Coder ▼ Frame (ms) Exclusive SC

Secure RTP Key Exchange ▼

Supplementary Services Activated

IP-DECT Base Station

Configuration
System
Suppl. Serv.
Master
Crypto Master
Mobility Master
Radio
Radio conf

General

LAN

IP

LDAP

DECT

VoIP

Unite

Services

Administration

Users

Device Overview

DECT Sync

Traffic

Gateway

Backup

Update

Diagnostics

Reset

Enable Supplementary Services

	Activate	Deactivate	Disable
Call Forwarding Unconditional	<input type="text" value="*21*\$#"/>	<input type="text" value="#21#"/>	<input type="checkbox"/>
Call Forwarding Busy	<input type="text" value="*67*\$#"/>	<input type="text" value="#67#"/>	<input type="checkbox"/>
Call Forwarding No Reply	<input type="text" value="*61*\$#"/>	<input type="text" value="#61#"/>	<input type="checkbox"/>
Do Not Disturb	<input type="text" value="*42#"/>	<input type="text" value="#42#"/>	<input type="checkbox"/>
Call Waiting	<input type="text" value="*43#"/>	<input type="text" value="#43#"/>	<input type="checkbox"/>
Call Completion	<input type="text" value="5"/>	<input type="text" value="#37#"/>	<input type="checkbox"/>
Call Park	<input type="text" value="*16\$(1)"/>	<input type="text" value="#16\$(1)"/>	<input type="checkbox"/>
Interception	<input type="text" value="*23*\$#"/>	<input type="text" value="#23#"/>	<input type="checkbox"/>
Call Service URI	<input type="text" value="*5\$(1)"/>		<input type="checkbox"/>
Call Service URI (Argument)	<input type="text" value="*7\$(1)\$#"/>		<input type="checkbox"/>
Soft key	<input type="text" value="*80\$(1)"/>		<input type="checkbox"/>
Logout User	<input type="text" value="#11*\$#"/>		<input type="checkbox"/>
Clear Local Setting	<input type="text" value="*00#"/>		<input type="checkbox"/>
MWI Mode	<input type="text" value="Fixed interrogate and fixed notify number"/>		
MWI Interrogate Number	<input type="text" value="4298"/>		
MWI Notify Number	<input type="text"/>		
Local Clear of MWI	<input type="text" value="."/>		
External Idle Display			<input type="checkbox"/>

User Configuration

IP-DECT Base Station

Configuration

- General
- LAN
- IP
- LDAP
- DECT
- VoIP
- Unite
- Services
- Administration
- Users**
- Device Overview
- DECT Sync
- Traffic
- Gateway
- Backup
- Update
- Diagnostics
- Reset

Users

PARK	3110024340210*	
PARK		
3rd party	2110024453	
Master Id	0	
		<input type="text"/> show new import export

User Administrator

[Long Name](#)

User Administrator

Users

[Long Name](#)

[DECT 7477](#)

[DECT 7478](#)

[DECT 7480](#)

[DECT 7483](#)

Users: 4, Registered

Edit User - Internet Explorer

https://10.30.32.181/GW-DECT/mod_cmd_login.xml?cmd=shc

User type

User

User Administrator

Long Name

Display Name

Name

Number

Auth. Name (SIP only)

Password

Confirm Password

IPEI / IPDI

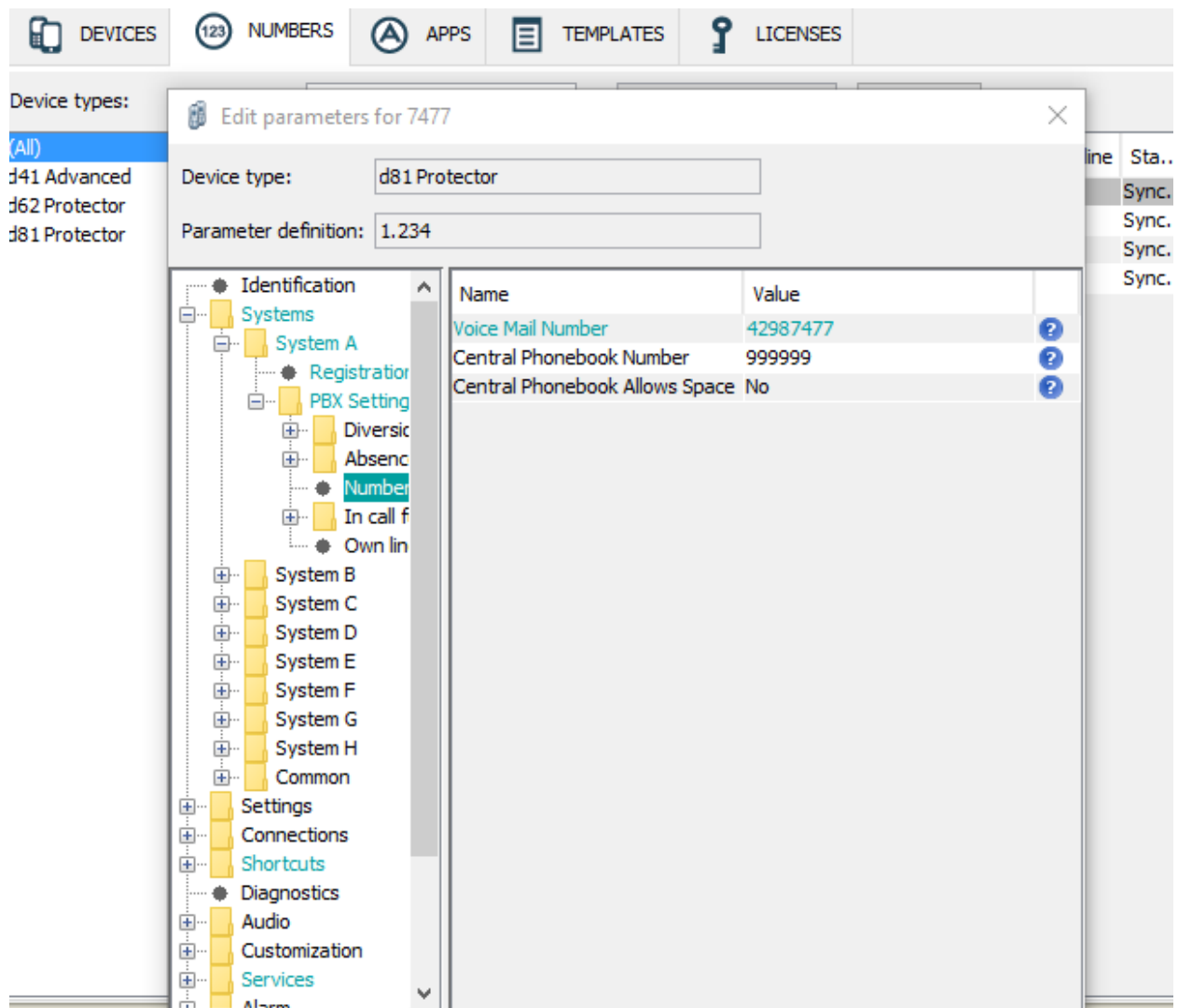
Idle Display

Auth. Code

Feature Status

Call Waiting On CFB !

Handset MWI Configuration



DOCUMENT HISTORY

Rev	Date	Author	Description
PA1	2016-08-29	SEJAn	Draft version
PA2	2016-08-29	SEJAn	Small fixes
RA1	2016-09-13	SEJAn	Final version