

# Interoperability Report

Ascom i62

Innovaphone IP-PBX

IP302, IP810, IP6000 and IP6010

Firmware version 12r1 (also 12r2)

Ascom i62 v. 5.5.5 (also v. 6.1.0)

Gothenburg, Sweden

Aug 2016,  
updated March 2019

**ascom**

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## INTRODUCTION

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This interoperability report describes test results and optimal configuration of Ascom i62 towards the Innovaphone IP-PBXs. The document should be used in conjunction with configuration guide(s) from Innovaphone and Ascom.

### Ascom

Ascom is a global solutions provider focused on healthcare ICT and mobile workflow solutions. The vision of Ascom is to close digital information gaps allowing for the best possible decisions – anytime and anywhere. Ascom’s mission is to provide mission-critical, real-time solutions for highly mobile, ad hoc, and time-sensitive environments. Ascom uses its unique product and solutions portfolio and software architecture capabilities to devise integration and mobilization solutions that provide truly smooth, complete and efficient workflows for healthcare as well as for industry, security and retail sectors.

Ascom is headquartered in Baar (Switzerland), has subsidiaries in 15 countries and employs around 1,300 people worldwide. Ascom registered shares (ASCN) are listed on the SIX Swiss Exchange in Zurich.

### 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

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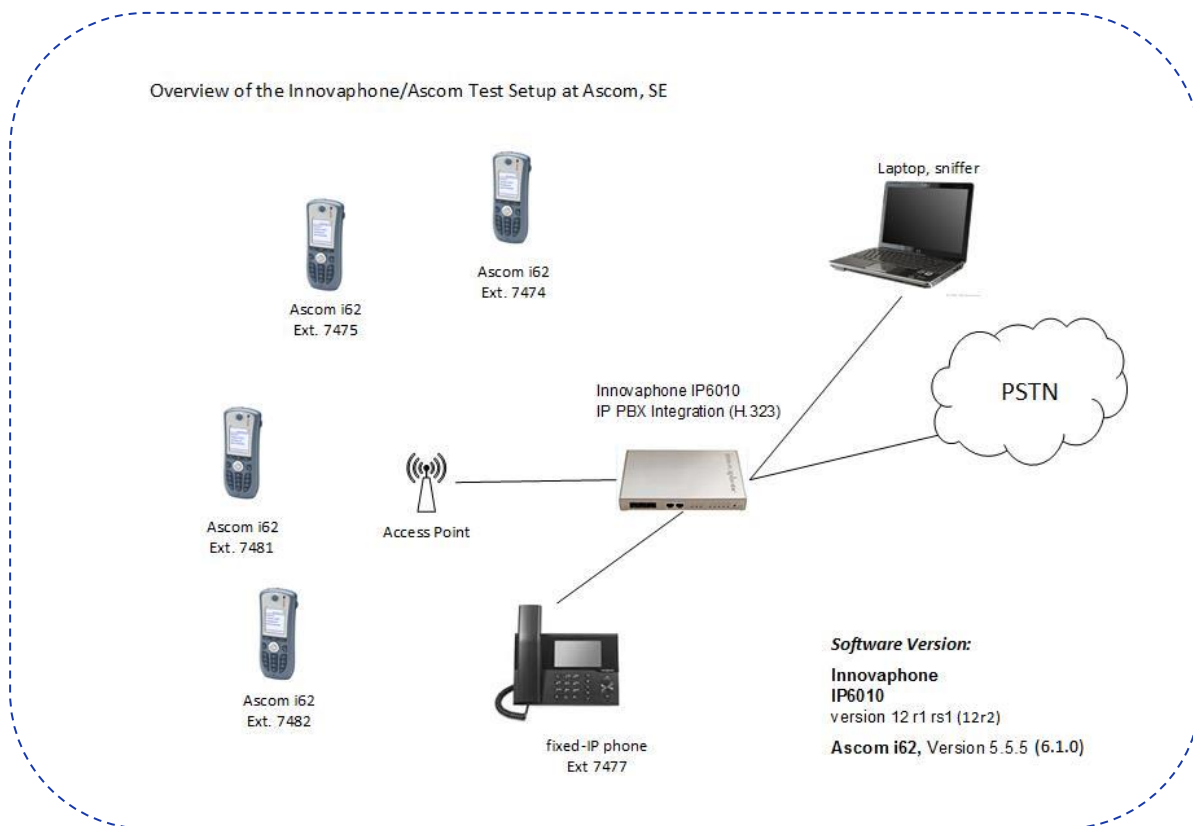
Test Site: Ascom HQ  
Gothenburg  
Sweden

Participant(s):

Johan Andrén (Ascom HQ, SE)

Regression testing done by R&D on April 17<sup>th</sup>, 2018.

## Test Topology



## SUMMARY

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### Test overview

Test cases in nearly all areas with regard to Ascom i62 and Innovaphone IP-PBX passed successfully. Overall, the conclusion has to be that the H.323 integration of Ascom i62 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	Results
Basic Call	OK
DTMF	OK
Hold, Retrieve, Enquiry and Brokering	OK
Attended Transfer	OK
Blind-transfer	OK
Semi-attended Transfer	Not Supported
Call Forward Unconditional	OK*
Call Forward No Reply	OK*
Call Forward Busy	OK*
Call Waiting	OK
Message Waiting Indication	OK
Do Not Disturb	OK
Calling Line/Name Identification	OK
Connected Line/Name Identification	OK

\*When you use feature access codes you will get the message Call failed in the display even if the feature access code works well (fixed in v. 6.1.0).

### 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.

This report also applies to Ascom i62 version 6.1.0. Regression testing of that version towards Innovaphone version 12r2 was carried out by R&D on April 17<sup>th</sup>, 2018, with similar results.

Ascom i62 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.

## TEST RESULTS

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### Innovaphone IP-PBX Integration – Ascom i62

- Innovaphone IP-PBX version 12r1sr1 (regression test: 12r2)
- Ascom i62, 5.5.5 (regression test: 6.1.0)

Signaling Protocol:

- H.323

Innovaphone IP6010 (results also valid for 302, IP810 and IP6000):

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

Ascom i62:

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

### Known Issue(s)

- Message "Call Failed" are shown in the display when using FAC (feature access codes) even if the function works fine. For example \*21\*number# for CFU will work but show Call failed in the display during activation/deactivation. Handled in Jira WX-4043
  - Fixed in Ascom i62 software v. 6.1.0: "Done" shown on display.
- No timeout when i62 calls another i62 that does not answer both during basic call and call waiting active. This is a PBX issue and per design.
  - Same behavior with Ascom i62 software v. 6.1.0.
- Possible to divert call to "diverter", calling party hears busy. Considered as a minor issue and filed into the backlog.
  - Same behavior with Ascom i62 software v. 6.1.0.

## Test Areas

Basic Call, DTMF:

- Good results overall

Basic Call, Portable Unavailable:

- Good results overall

Basic Call, Stability:

- Good results overall

Three-party Services:

- Good results overall

Call Diversion:

- Good results overall, except call failed message when using FAC (fixed in v. 6.1.0) and you can divert to diverter see known issue's for more information

Telephony Feature

- Good results overall, except there are no timeout when one i62 calls another i62 that doesn't answer. See know issue's for more information.

## Detailed test records

### Ascom i62 v.5.5.5 with Innovaphone v.12r1

Pass	75
Fail	0
Not Tested	16
Not Supported	2
See Comments	11
Total	104

### Ascom i62 v.6.1.0 with Innovaphone v.12r2

Pass	23
Fail	0
Not Tested	79
Not Supported	0
See Comments	2
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

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### Innovaphone IP6010, 12r1 (also 12r2)

Please find the screen shots reflecting the management interface and some aspects of setting up the PBX application on the IP6000.

General -> info



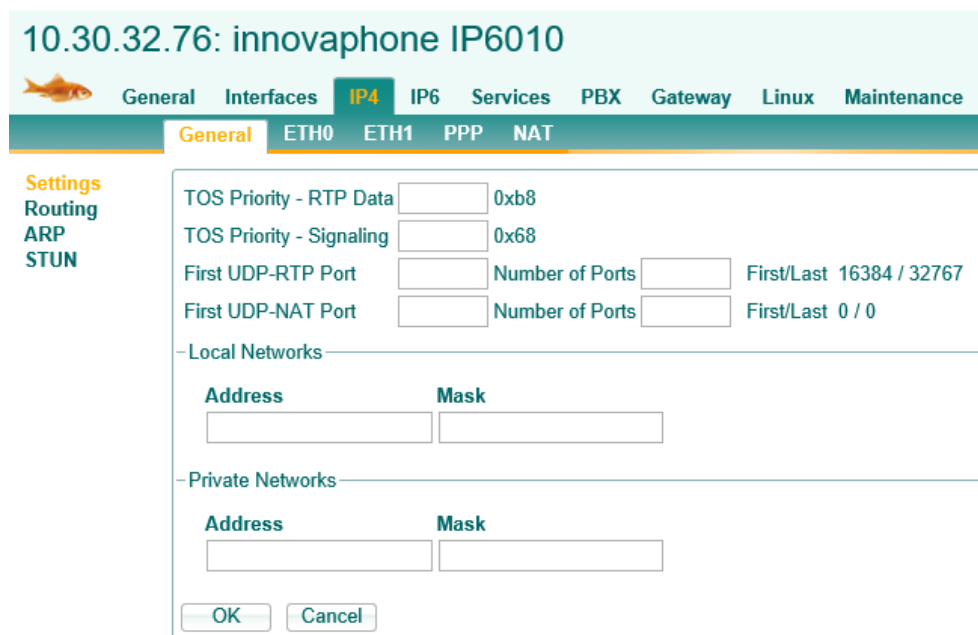
10.30.32.76: innovaphone IP6010

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	49.5° Celsius
Sntp Server	172.20.8.145
Time	29.08.2016 14:02
Uptime	2d 23h 35m 10s

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  0x68

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 **Master** ▼

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	3	3	0
Voicemail12	30	0	0	0
Registrations.Ascm12	41248	5	5	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 «	CF* «	Fork «	Config «
Voicemail	Voicemail	4298	root	Intop		+	+		
UC	UC	5555 5555	root	Intop		+	+		
BC conf	innocnf	innocnf	root	Intop	CB*	+	+		
EXTERN	EXTERN	EXTERN	root	Intop		+	+		
conf voicemail B	conf voicemail B		root	Intop	CB		+		
conf serverA	conf serverA	8888	root	Intop		+	+		
DECT 8500	8500	8500 8500	root	Intop		+	+	+	
d41 7483	7483	7483 7483	root	Intop		+	+	+	
i82 7482	7482	7482 7482	root	Intop	FE		+	+	
i82 7481	7481	7481 7481	root	Intop	FE		+	+	
d82 7480	7480	7480 7480	root	Intop		+	+	+	
7479	7479	7479 7479	root	Intop	FE*		+	+	
d81 7478	7478	7478 7478	root	Intop		+	+	+	
d81 7477	7477	7477 7477	root	Intop	FE		+	+	
Tel1 7476	7476	7476 7476	root	Intop		+	+	+	
7475	7475	7475 7475	root	Intop	FE		+	+	
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		+	+	+	
TEL1 4000	4000	4000 TEL1	root	Intop		+	+	+	
*333	*333	*333	root	Intop		+	+		
DECT			root	Intop		+	+	+	
feature codes			root	Intop		+	+		
feature codes#announce		*82*	root	Intop					
feature codes#call_completion		*37*	root	Intop					
feature codes#cancel_cc		#37*	root	Intop					
feature codes#cfb_activate		*87*	root	Intop					
feature codes#cfb_deactivate		#87#	root	Intop					
feature codes#cfnr_activate		*81*	root	Intop					
feature codes#cfnr_deactivate		#81#	root	Intop					
feature codes#cfu_activate		*21*	root	Intop					
feature codes#cfu_deactivate		#21#	root	Intop					
feature codes#join_all_groups		*32#	root	Intop					
feature codes#join_group		*31*	root	Intop					
feature codes#leave_all_groups		#32#	root	Intop					
feature codes#leave_group		#31*	root	Intop					
feature codes#park		*16	root	Intop					
feature codes#park_to		*17	root	Intop					
feature codes#pickup_directed		*0*	root	Intop					
feature codes#pickup_group		*0#	root	Intop					
feature codes#set_presence		040	root	Intop					
feature codes#unpark		#16	root	Intop					
feature codes#unpark_from		#17	root	Intop					
feature codes#unset_presence		041	root	Intop					

PBX->Objects: Adding a new user object

10.30.32.76/PBX0/ADMIN/mod\_cmd\_login.xml?cmd=show&user-guid=dc3ad14c58dc55011df6

General User License DECT

Type: User

Description: i62 7474  Hide from LDAP

Long Name: i62 7474 Display Name: WH A4

Name: 7474 Number: 7474  Critical

E-Mail: 7474;

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
7474		<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"/>	<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”)**

The screenshot shows a web browser window titled "Gateway - Internet Explorer" with the URL [http://10.30.32.76/PBX0/ADMIN/mod\\_cmd\\_login.xml?cmd=show&user-guid=b4388902cedd550195f80090331e1c3b&loc=\\*%&filter=](http://10.30.32.76/PBX0/ADMIN/mod_cmd_login.xml?cmd=show&user-guid=b4388902cedd550195f80090331e1c3b&loc=*%&filter=). The page is titled "Gateway" and contains the following configuration fields:

- Type: Gateway (dropdown)
- Description: [Empty] Hide from LDAP
- Long Name: EXTERN Display Name: [Empty]
- Name: EXTERN Number: [Empty] Critical
- E-Mail: EXTERN [Empty]
- Password: [Empty] retype Password: [Empty]
- Node: root Local
- PBX: Intop Reject ext. Calls
- Max Calls: [Empty] Response Timeout: [Empty]
- Hide Connected Endpoint
- UC
- Reporting
- Voicemail

Below the main form is a table for devices:

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

Buttons at the bottom: OK, Cancel, Apply, Delete, Help.

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

The screenshot shows the web interface for "10.30.32.76: innovaphone IP6010". The navigation menu includes: General, Interfaces, IP4, IP6, Services, PBX, Gateway (selected), Linux, Maintenance. The sub-menu includes: General, Interfaces, SIP, GK (selected), Routes, CDR0, CDR1, Calls.

Interface	CGPN-In	CDPN-In	CGPN-Out	CDPN-Out	Alias	Registration Product
GW1 to 168	+					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.xml

Name: EXTERN  
 Disable:   
 Protocol: H.323  
 Mode: Register as Gateway  
 Address: 127.0.0.1  
 Address: (alternate)  
 Gatekeeper Identifier:  
 STUN Server:  
 Local Signaling Port:

Authorization  
 Password: Retype:

Alias List  

Name	Number
EXTERN	

Media Properties  
 General Coder Preference: G711A Framesize [ms]: 20 Silence Compression: Exclusive  
 Local Network Coder: G711A Framesize [ms]: 20 Silence Compression:  
 Enable T.38: Audio FAX support: No DTMF Detection: Enable PCM: Media-Relay: Video:  
 SRTP Cipher: AES128/80 SRTP Key Exchange: SDES-DTLS  
 Record to (URL):

H.323 Interop Tweaks  
 No Faststart: No H.245 Tunneling:  
 Suppress HLC: Suppress FTY: Suppress Subaddr:

Buttons: 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
10.30.34.55	H323i62	7474	7474	7474	Ascom i62	Ascom i62 5.5.5 (2016-08-13) release		2d 22h 40m 40s
10.30.34.56	H323	7475	7475	7475	Ascom i62	Ascom i62 5.5.5 (2016-08-13) release		2d 23h 40m 15s
10.30.32.213	H323Tel1	7476	7476	7476	innovaphone IP29	12r1 dvl [12.0495/120495/300]		2d 23h 40m 22s
10.30.34.10	SIP	d81 7477	7477	7477	innovaphone IP232	12r1 sr1 [12.0875/120875/1301]		0d 1h 39m 16s
10.30.34.52	H323i62	7481	7481	7481	Ascom i62	Ascom i62 5.5.5 (2016-08-13) release		2d 23h 40m 15s
10.30.34.19	H323i62	7482	7482	7482	Ascom i62	Ascom i62 5.5.5 (2016-08-13) release		2d 23h 40m 14s
10.30.32.181	SIP	d41 7483	7483	7483	Ascom IP-DECT Base Station	[9.0.6/9.0.6/IPBS2-A3/1B1]		2d 23h 40m 25s
127.0.0.1	H323	EXTERN	EXTERN	EXTERN	innovaphone IP6010	12r1 sr1 [12.0875/120875/600]		2d 23h 40m 28s

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	PRI1:Tele2	0		
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							+

Note: Screenshots from Innovaphone IP6010 version r12r1, no changes to configuration in version r12r2.

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

## Ascom i62 configuration

### Ascom i62 WiFi network settings

The screenshot shows a configuration window titled "Edit parameters for 7474". At the top, "Device type" is set to "i62 Talker" and "Parameter definition" is "14.332". A tree view on the left shows the configuration hierarchy: Network (General, Network A, Network B, Network C, Network D), Device, Audio, Presence, Location, VoIP, Customization, Headset, User Profiles, and Shortcuts. The "Network A" section is expanded, showing a list of parameters and their values.

Name	Value	?
Network name	IntopJA	?
DHCP mode	On	?
802.11 protocol	802.11a/n	?
SSID	IntopJA	?
Security mode	WPA-PSK & WPA2-PSK	?
WPA-PSK passphrase	*****	?
Voice power save mode	U-APSD	?
802.11a/n channels	All	?
Advanced: 802.11 channels		?
World mode regulatory domain	World mode (802.11d)	?
Transmission power	Automatic	?
IP DSCP for voice	0x2E (46) - Expedited Forward...	?
IP DSCP for signaling	0x1A (26) - Assured Forwardi...	?
TSPEC Call Admission Control	Off	?
Transmit gratuitous ARP	No	?
Deauthenticate on roam	No	?
Roaming methodology	802.11 roaming	?
Maximum transfer unit	1400	?
Aruba 800 controller compability	No	?
Check IP connectivity after ro...	No	?

At the bottom of the window are "OK" and "Cancel" buttons.



## VoIP parameter settings

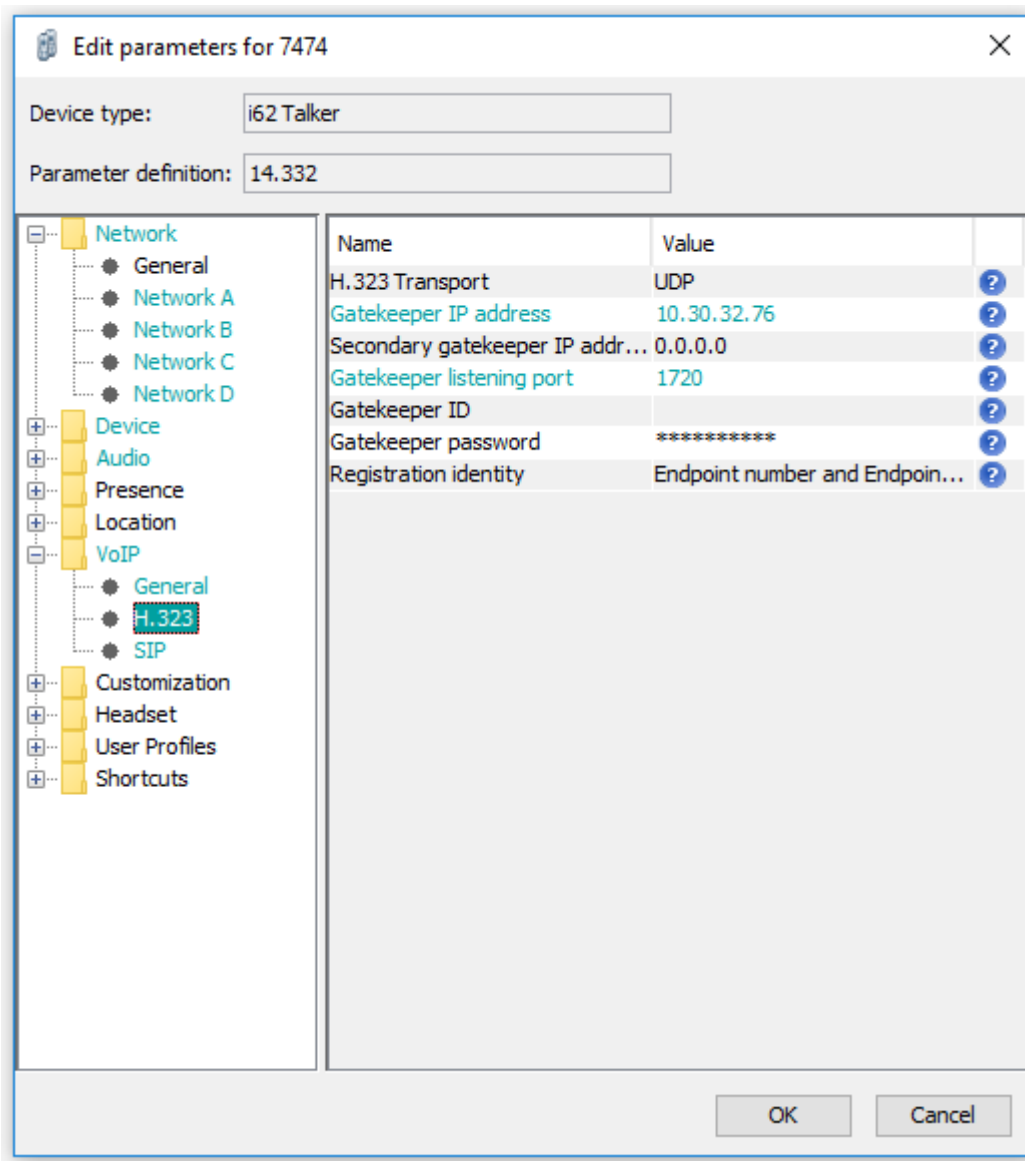
Device type:

Parameter definition:

Name	Value	
Replace Call Rejected with Us...	No	?
STUN server address	0.0.0.0	?
VoIP protocol	H.323	?
Codec configuration	G.711 A-law	?
Codec packetization time confi...	20	?
Offer Secure RTP	No	?
Internal call number length	4	?
Endpoint number	7474	?
Endpoint ID	7474	?

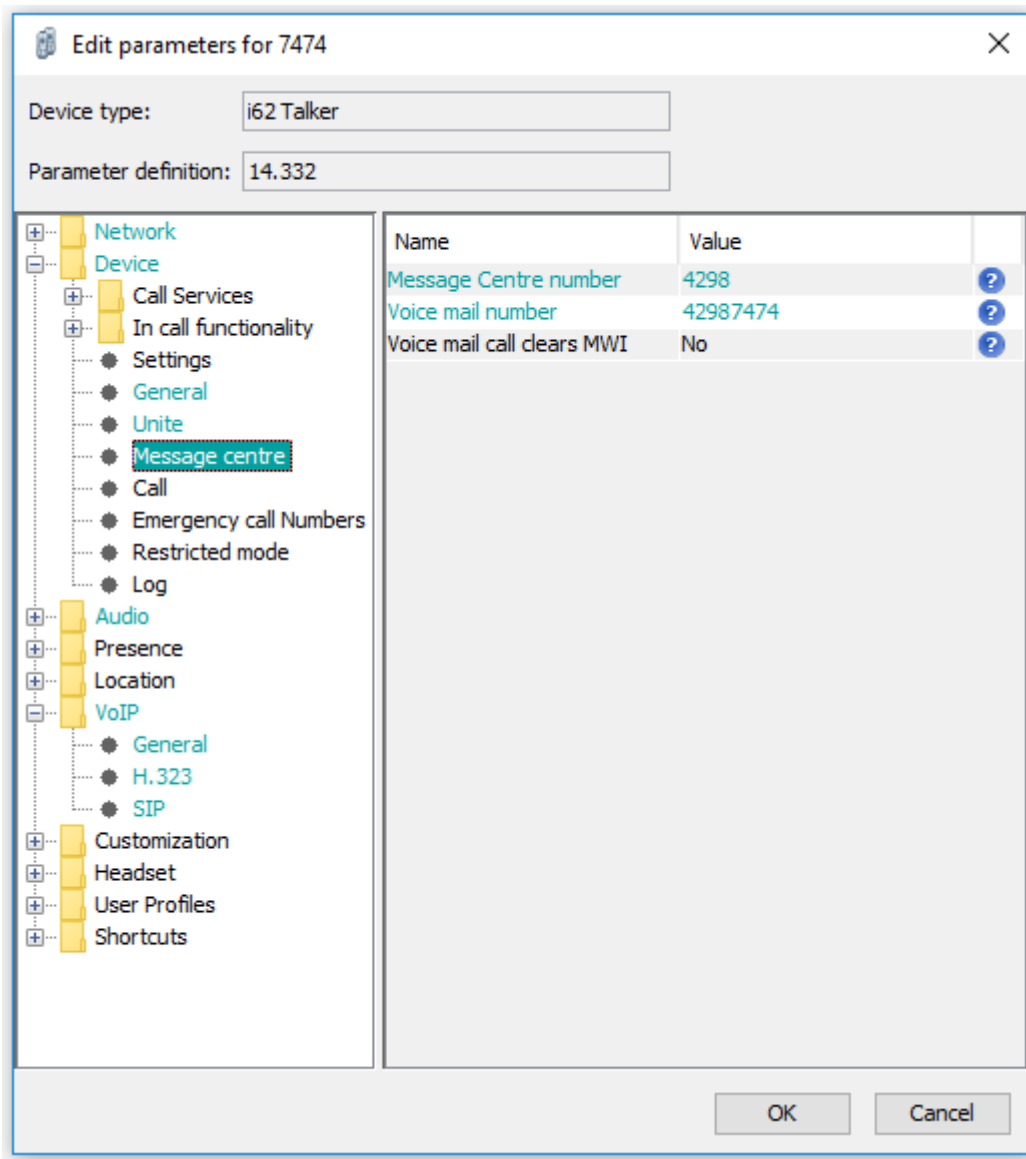
OK Cancel

## H.323 settings



- H.323 Transport UDP are used for the RAS signaling. For the call control signaling TCP are used as long as TLS aren't configured.

## Message Waiting Indication settings



Note: Screenshots from Ascom i62 version 5.5.5, no changes to configuration in version 6.1.0.

## DOCUMENT HISTORY

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Rev	Date	Author	Description
PA1	2016-08-17	SEJAn	Draft version
R1	2016-06-29	SEJAN	Final version
PB1	2019-03-15	SEMWW	Draft version, added regression test i62 v6.1.0
PB2	2019-03-19	SEMWW	Draft version, minor adjustments
R2	2019-03-20	SEMWW	Final version