



## **Avaya Solution & Interoperability Test Lab**

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### **Application Notes for configuring Ascom i62 Wireless Handsets with Avaya IP Office 11.0 - Issue 1.0**

#### **Abstract**

These Application Notes describe a solution for supporting wireless interoperability between Ascom i62 Wireless Handsets with Avaya IP Office release 11.0.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

# 1. Introduction

These Application Notes describe the configuration steps for provisioning Ascom i62 Wireless Handsets to interoperate with Avaya IP Office. Ascom i62 Voice Over Wireless (VoWiFi) Handsets are configured on the Avaya IP Office as SIP users, therefore enabling them to make/receive internal and PSTN/external calls and have full voicemail and other telephony facilities available on Avaya IP Office. The Wireless communication is made using a Wireless Router connected to the same LAN as the Avaya IP Office.

The Avaya IP Office consists of an IP Office Server Edition running on a virtual platform as the primary server with an IP Office IP500 V2 running as the secondary expansion cabinet. Both systems are linked by IP Office Line IP trunks that can enable voice networking across these trunks to form a multi-site network. Each system in the solution automatically learns each other's extension numbers and user names. This allows calls between systems and support for a range of internal call features.

Ascom i62 a VoWiFi handset that is easy to carry, robust and drop resistant. It is designed to utilize open standards for communication i.e., IEEE 802.11a/b/g/n for wireless transmissions and SIP/H.323 for VoIP telephony. Ascom i62 also supports 802.11i, 802.11x, 802.11e ensuring a high security without compromising speech quality or network performance. Ascom i62 is available in a number of license dependent functionality models – from a robust handset for telephony only (Talker) to one that also supports with professional messaging (Messenger) and to an advanced model that includes personal alarm capabilities (Protector).

## 2. General Test Approach and Test Results

The general test approach was to configure the Ascom i62 VoWiFi Handsets (i62 handsets) to communicate with IP Office as implemented on a customer's premises. The interoperability compliance testing evaluates the ability of the i62 handsets to make and receive calls to and from Avaya H.323, SIP, Digital desk phones and simulated PSTN endpoints. The integrated IP Office Voicemail was used to allow users leave voicemail messages and to demonstrate Message Waiting Indication and DTMF on the i62 handsets. See **Figure 1** for a network diagram. The interoperability compliance test included both feature functionality and serviceability tests.

**Note:** Ascom i62 handsets were registered to both the Primary and Secondary servers but not simultaneously, i.e., two handsets were registered to the Server Edition primary server and two were registered to the IP 500 V2 expansion.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

Avaya's formal testing and Declaration of Conformity is provided only on the headsets/handsets that carry the Avaya brand or logo. Avaya may conduct testing of non-Avaya headset/handset to determine interoperability with Avaya phones. However, Avaya does not conduct the testing of non-Avaya headsets/handsets for: Acoustic Pressure, Safety, Hearing Aid Compliance, EMC regulations, or any other tests to ensure conformity with safety, audio quality, long-term reliability or any regulation requirements. As a result, Avaya makes no representations whether a particular non-Avaya headset will work with Avaya's telephones or with a different generation of the same Avaya telephone.

Since there is no industry standard for handset interfaces, different manufacturers utilize different handset/headset interfaces with their telephones. Therefore, any claim made by a headset vendor that its product is compatible with Avaya telephones does not equate to a guarantee that the headset will provide adequate safety protection or audio quality.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and Ascom i62 handsets did not include use of any specific encryption features as requested by Ascom.

**Note:** Compliance testing was carried out using TCP as the transport for signaling, a selection of basic calls and transfer calls were carried out using UDP.

## 2.1. Interoperability Compliance Testing

Tests were performed to ensure full interoperability between the i62 handsets and IP Office. The tests were all functional in nature and performance testing was not included. The testing included:

- Registration/Invalid Registration
- Basic Calls, local and PSTN
- Hold and Retrieve
- Attended and Unattended Transfer
- Three Party Conference
- Call Forwarding Unconditional, No Reply and Busy (Local and PBX)
- Call Waiting
- Call Park/Pickup

- Do Not Disturb
- Calling Line Name/Identification
- Codec Support
- DTMF Support
- Message Waiting Indication
- Mobile Twinning
- Hunt Groups
- Serviceability Testing

## 2.2. Test Results

All test cases were carried out with positive results. There were some observations and some issues noted as follows.

- SIP Expires timer on Ascom i62 recommended setting at 180 seconds. This is hard coded in IP Office and cannot be changed.
- For Call Waiting functionality to work on Ascom i62, ensure that the **Call Waiting On** box seen under the Telephony tab of User is checked.
- It is recommended to use Do Not Disturb using short codes to activate this feature on the IP Office.
- Registering with Invalid Credentials on IP Office causes the device to be “blacklisted”. A restart of the IP Office resolves the problem as a workaround. There is no issue with registration with correct credentials. Avaya are investigating the issue.
- Issue when Digital set makes a transfer between two i62 sets registered to the Server Edition, there is no RTP after the Blind transfer is complete. No issue on Supervised Transfer for the same scenario. Avaya are investigating the issue.

## 2.3. Support

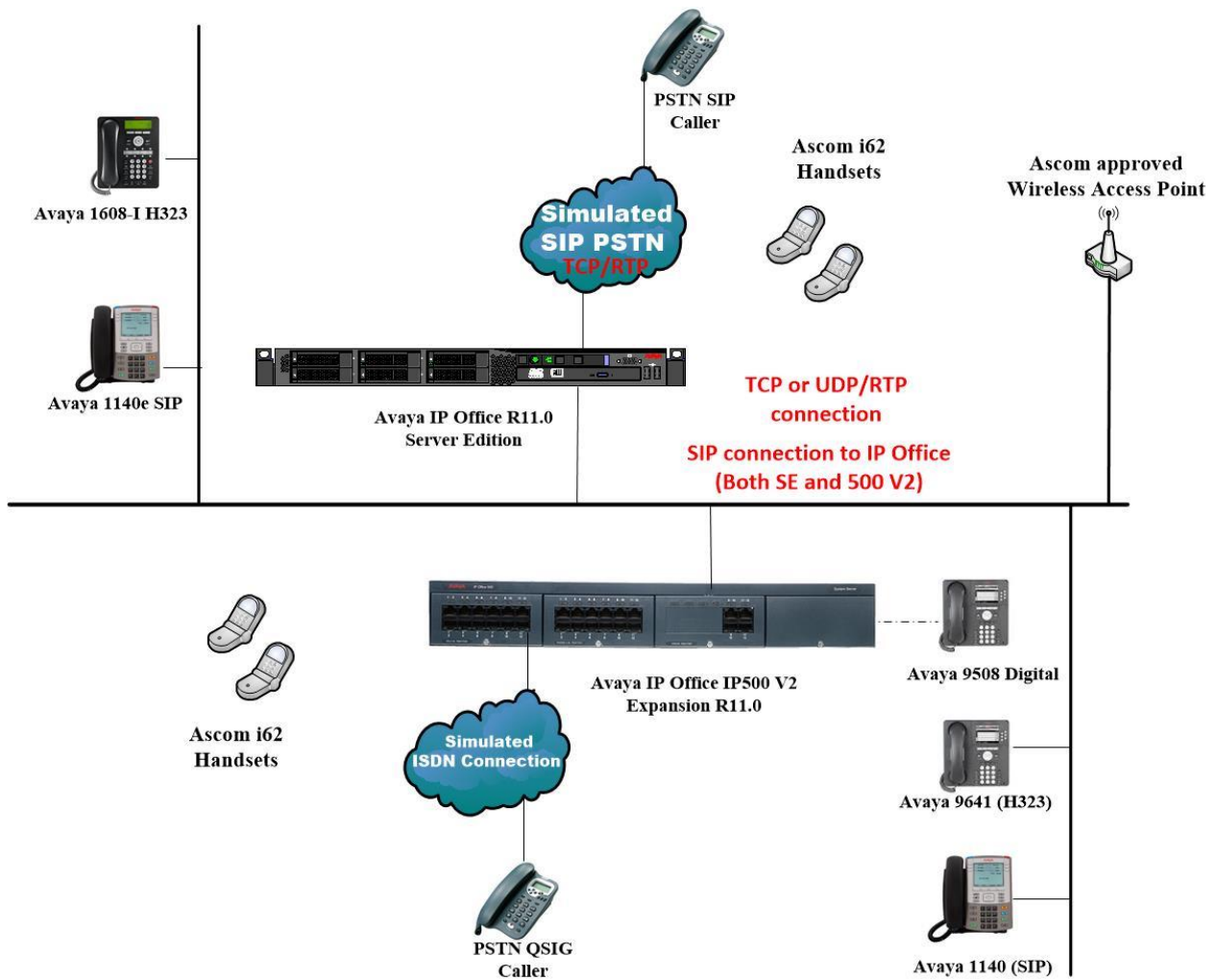
Technical support from Ascom can be obtained through the following:

Phone: +46 31 559450

E-mail: [support@ascom.com](mailto:support@ascom.com)

### 3. Reference Configuration

**Figure 1** illustrates the network topology used during compliance testing. The Avaya solution consists of an IP Office which the i62 handsets were configured as SIP users. The Avaya IP Office consists of an IP Office Server Edition running on a virtual platform as the primary server with an IP Office IP500 V2 running as the secondary expansion server. Digital, H323 and SIP phones were configured on the IP Office. QSIG and SIP trunks were configured to simulate connections to the PSTN. An Ascom approved Wireless Router was connected to the network to enable the i62 handsets connect. IP Office Manager is used to manage IP Office configuration.



**Figure 1: Avaya IP Office and Ascom reference configuration**

## 4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

<b>Equipment/Software</b>	<b>Release/Version</b>
Avaya IP Office Server Edition running on a Virtual Platform	11.0.0.1.0 Build 8
Avaya IP Office 500 V2	11.0.0.1.0 Build 8
Avaya IP Office Manager running on a Windows 7 PC	11.0.0.1.0 Build 8
Avaya 1608-I H323 Deskphone	1608UA1_350B.bin
Avaya 9641 H323 Deskphone	R6.6115
Avaya 1140e SIP Deskphone	R04.04.28.00
Avaya 9508 Digital Deskphone	V0.6
Ascom Win PDM	3.11.1
Ascom i62 Wireless Handsets	V6.1.0
Ascom approved Wireless Access Point(s)	Ascom approved software version

## 5. Avaya IP Office Configuration

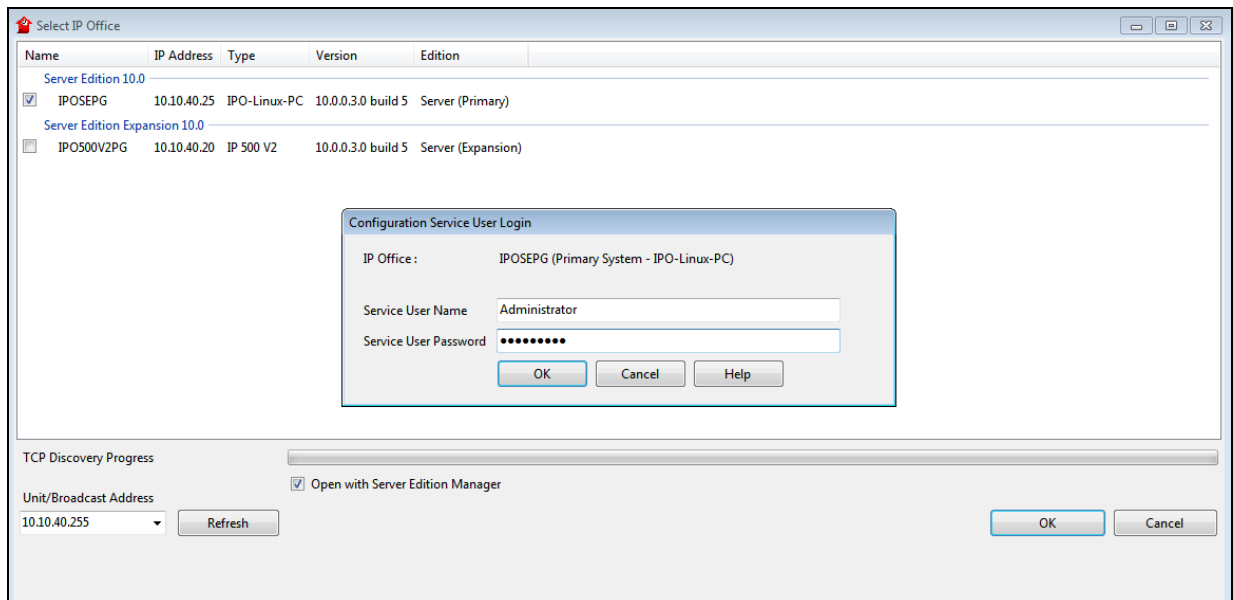
The document assumes that Avaya IP Office Server Edition has been installed and configured to work with an IP500 V2 expansion. This section describes the details on how to configure both the IP Office Server Edition (Primary) and IP Office IP500 V2 (Expansion) to work with Ascom i62 handsets. Configuration and verification operations on the Avaya IP Office illustrated in this section were all performed using Avaya IP Office Manager. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 9**. The configuration operations described in this section can be summarized as follows:

- Launch Avaya IP Office Manager (Administration)
- Display LAN Properties
- Create a new User
- Check Extension Properties
- Verify the Voicemail Collect Short Code
- Save Configuration

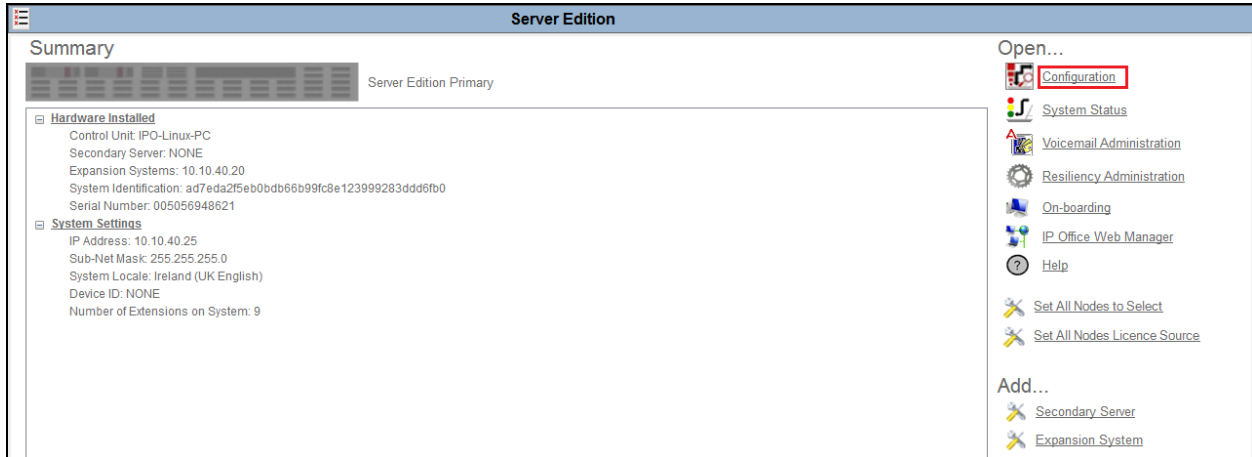
**Note:** Only the unique prompts are shown in the screen captures below, all other inputs can be left at default.

### 5.1. Launch Avaya IP Office Manager (Administration)

From the IP Office Manager PC, click **Start** → **Programs** → **IP Office** → **Manager** to launch the Manager application (not shown). Select the required Server Edition as shown below and enter the appropriate credentials. Click on the **OK** button.

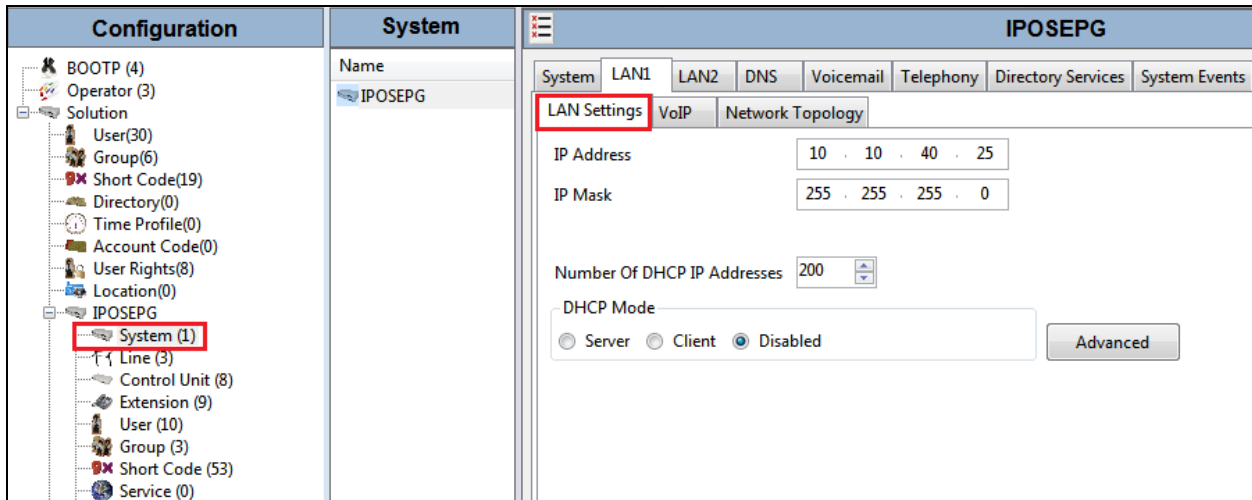


Click on **Configuration** at the top right of the page, as shown, to receive the IP Office configuration.



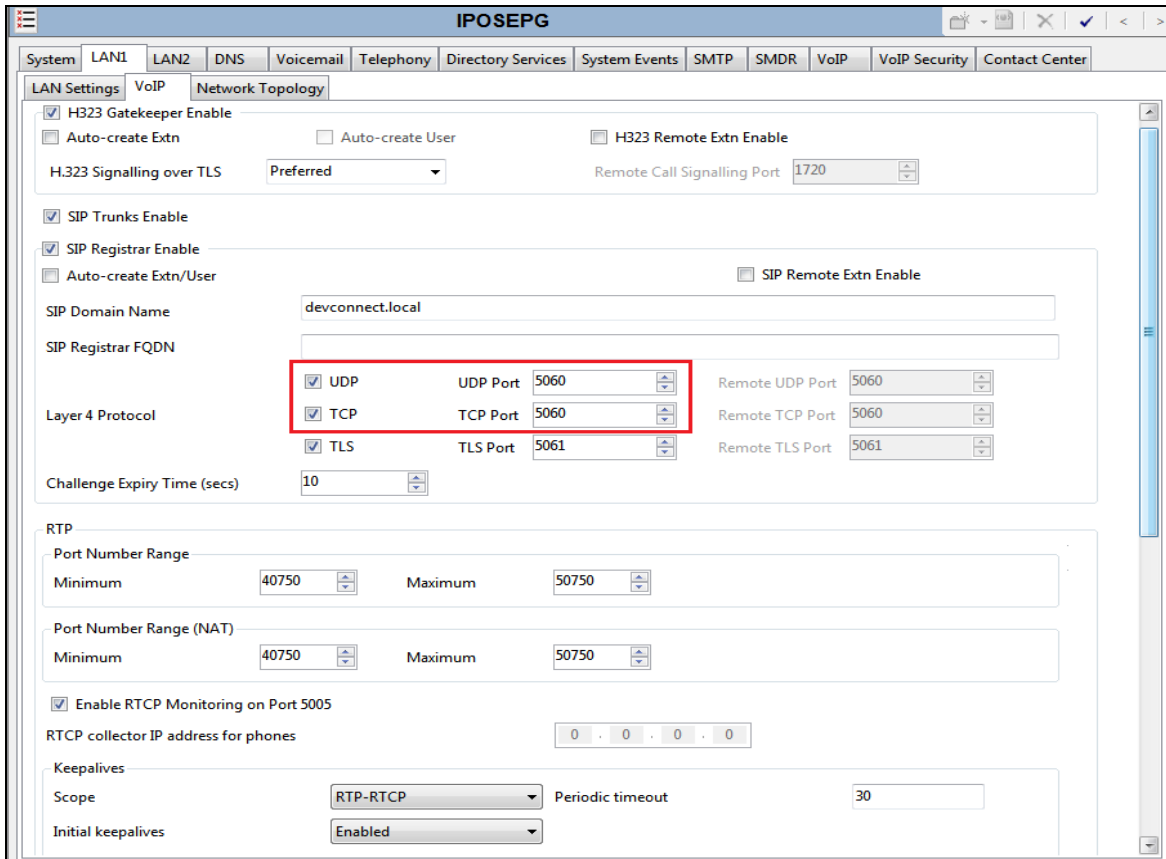
## 5.2. Display LAN Properties

From the left window navigate to **System (1)** as shown and in the main window click on the **LAN1** tab and within that tab select the **LAN Settings** tab. The **IP Address** of the IP Office is shown, and this will be required for setup in **Section 6.1**.

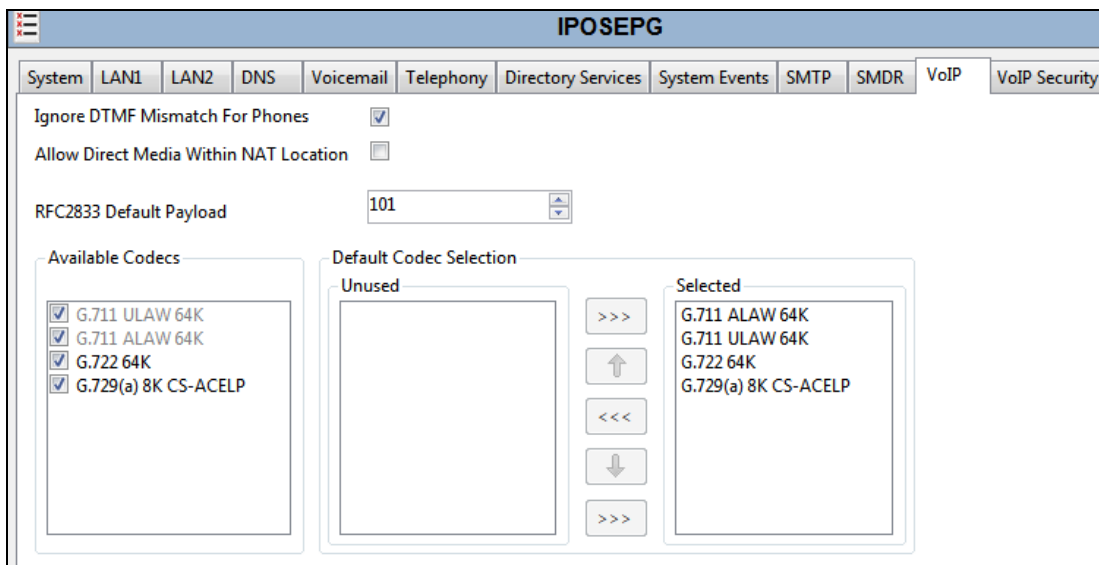




Within the **LAN1** tab, click on the **VoIP** tab. Ensure that **TCP** and **UDP** boxes are checked and that port **5060** is being used. During compliance testing **RTP-RTCP Keepalives** were set to **30** secs.

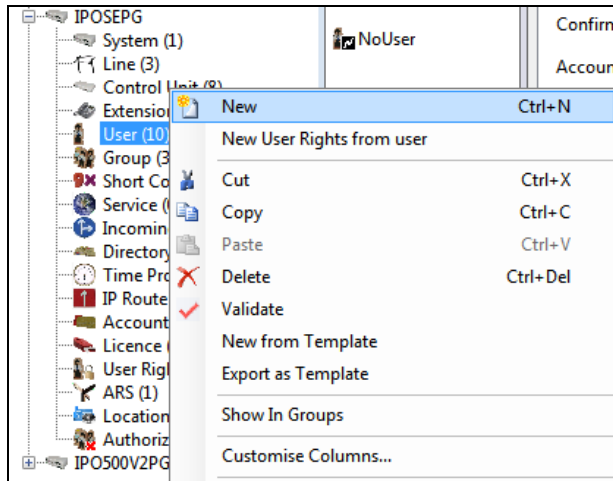


The Codec and DTMF settings can be changed under the **VoIP** tab as shown below.



### 5.3. Create a new User

From the left window, right click on **User** and select **New**.



In the **User** tab add a **Name** and **Password** along with the **Extension**.

A screenshot of a web application interface for configuring a user. The title bar shows '5180: 5180'. The 'User' tab is active, with other tabs like Voicemail, DND, ShortCodes, Source Numbers, Telephony, Forwarding, Dial In, Voice Recording, Button Programming, Menu Programming, and Mobility. The form contains the following fields:

- Name: 5180
- Password: masked with dots
- Confirm Password: masked with dots
- Unique Identity: empty
- Audio Conference PIN: empty
- Confirm Audio Conference PIN: empty
- Account Status: Enabled (dropdown)
- Full Name: MYCO SE 5180
- Extension: 5180
- Email Address: empty
- Locale: empty (dropdown)
- Priority: 5 (dropdown)
- System Phone Rights: None (dropdown)
- Profile: Basic User (dropdown)

Below the profile dropdown, there are several checkboxes:

- Receptionist
- Enable Softphone
- Enable one-X Portal Services
- Enable one-X TeleCommuter
- Enable Remote Worker
- Enable Communicator
- Enable Mobile VoIP Client
- Send Mobility Email
- Web Collaboration

Under the **Voicemail** tab, **Voicemail On** can be selected in order to provide voicemail to this user/extension.

The screenshot shows the configuration page for extension 5180: 5180. The 'Voicemail' tab is selected. The page contains the following settings:

- Voicemail Code:** Four dots (••••)
- Confirm Voicemail Code:** Four dots (••••)
- Voicemail Email:** Empty text field
- Voicemail Email Options:** Radio buttons for Off (selected), Copy, Forward, and Alert.
- DTMF Breakout:** Three dropdown menus, all set to 'System Default ()':
  - Reception / Breakout (DTMF 0)
  - Breakout (DTMF 2)
  - Breakout (DTMF 3)
- Checkboxes on the right:**
  - Voicemail On
  - Voicemail Help
  - Voicemail Ringback
  - Voicemail Email Reading
  - UMS Web Services
  - Enable GMAIL API

Under the **Telephony** tab and **Call Settings** tab, **Call Waiting On** can be turned on/off depending on what is required by the user.

The screenshot shows the configuration page for extension 5180: 5180\*. The 'Telephony' tab is selected, and the 'Call Settings' sub-tab is active. The page contains the following settings:

- Outside Call Sequence:** Default Ring
- Inside Call Sequence:** Default Ring
- Ringback Sequence:** Default Ring
- No Answer Time (secs):** System Default (15)
- Wrap-up Time (secs):** 2
- Transfer Return Time (secs):** Off
- Call Cost Mark-Up:** 100
- Advertise Callee State To Internal Callers:** System Default (Off)
- Checkboxes on the right:**
  - Call Waiting On
  - Answer Call Waiting On Hold
  - Busy On Held
  - Offhook Station

Under **Supervisor Settings** tab, enter the password again for the **Login Code**.

The screenshot shows the 'Supervisor Settings' tab for user 5180: 5180\*. The 'Login Code' and 'Confirm Login Code' fields are both filled with four dots. The 'Login Idle Period (secs)' field is empty. The 'Monitor Group' and 'Coverage Group' dropdowns are set to '<None>'. The 'Status on No-Answer' dropdown is set to 'Logged On (No change)'. The 'Privacy Override Group' dropdown is set to '<None>'. The 'Reset Longest Idle Time' section has 'All Calls' selected. On the right side, the 'Force Login' checkbox is checked, while all other checkboxes are unchecked.

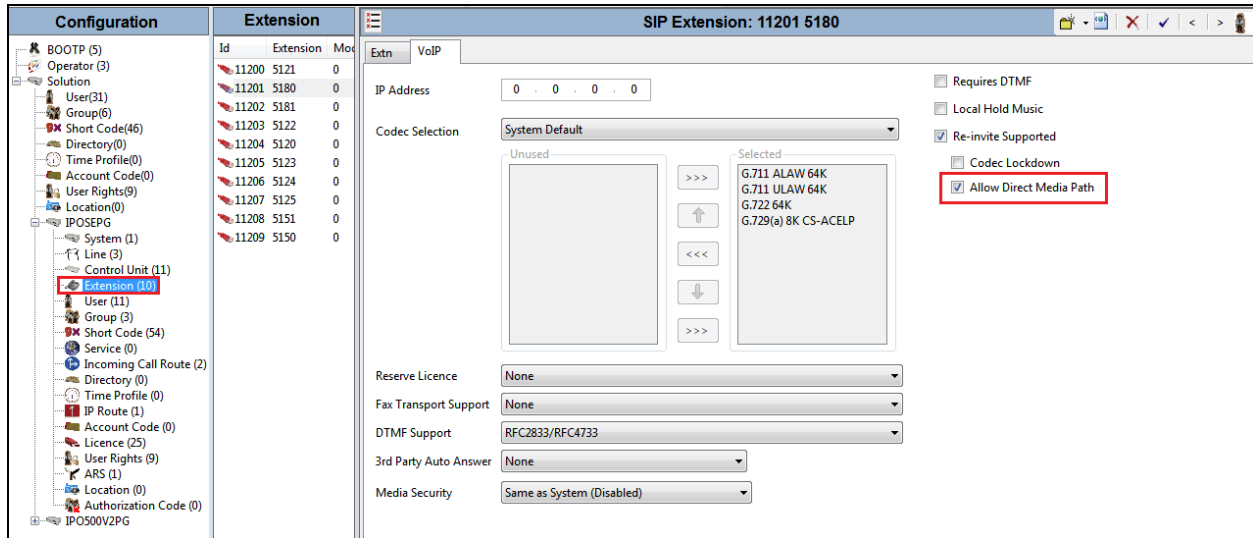
Once **OK** is clicked at the bottom of the screen a new window should appear asking to create a new extension. Select **SIP Extension** as is shown below.

**Note:** If the system is not setup to auto-create extensions then a new extension can be added by right-clicking on Extension on the left window and selecting **New**, (not shown).

The screenshot shows the same 'Supervisor Settings' tab, but with a dialog box titled 'Avaya IP Office Manager' overlaid. The dialog box asks 'Would you like a new VoIP extension created with this number?' and has three radio button options: 'None', 'H323 Extension', and 'SIP Extension'. The 'SIP Extension' option is selected. An 'OK' button is at the bottom of the dialog. In the background, the 'Force Login' checkbox is checked. At the bottom of the main window, the 'OK' button is highlighted with a red box.

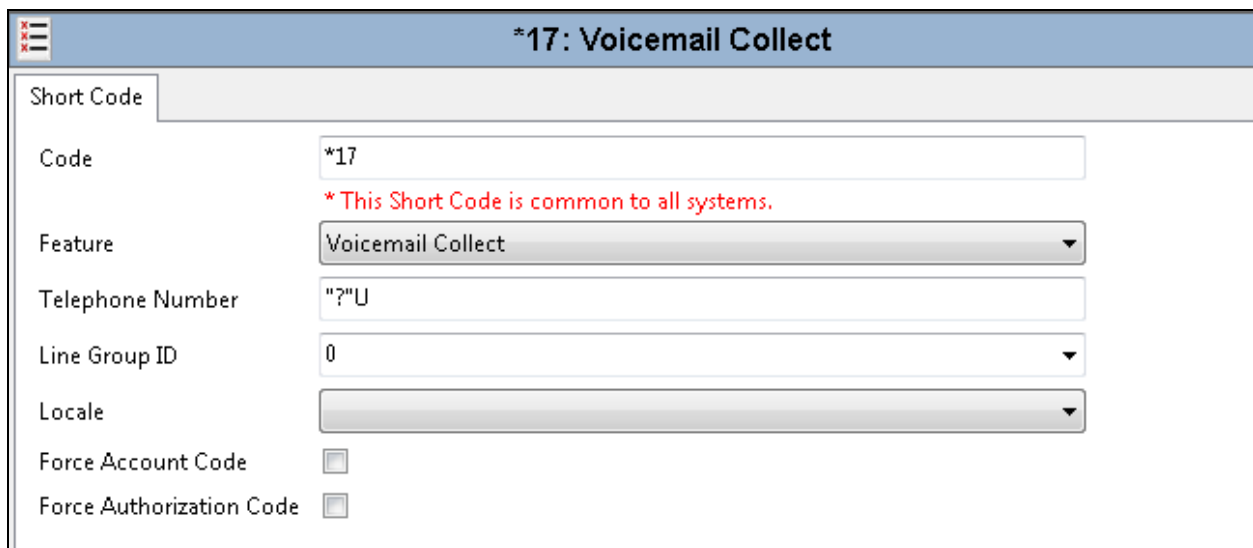
## 5.4. Check Extension Properties

Direct Media Path can be set on/off in the extension properties. This will allow RTP to be sent directly between devices. Once the SIP extension has been successfully created in **Section 5.3**, open the extension configuration to check to see if Allow Direct Signalling is selected. Select **Extension** in the left window and select the required extension number. In the main window under **VoIP** tab, **Allow Direct Media Path** can be checked or unchecked as shown below. Other settings such as **DTMF Support** and **Codec Selection** are possible to change here as well again if required by Ascom.



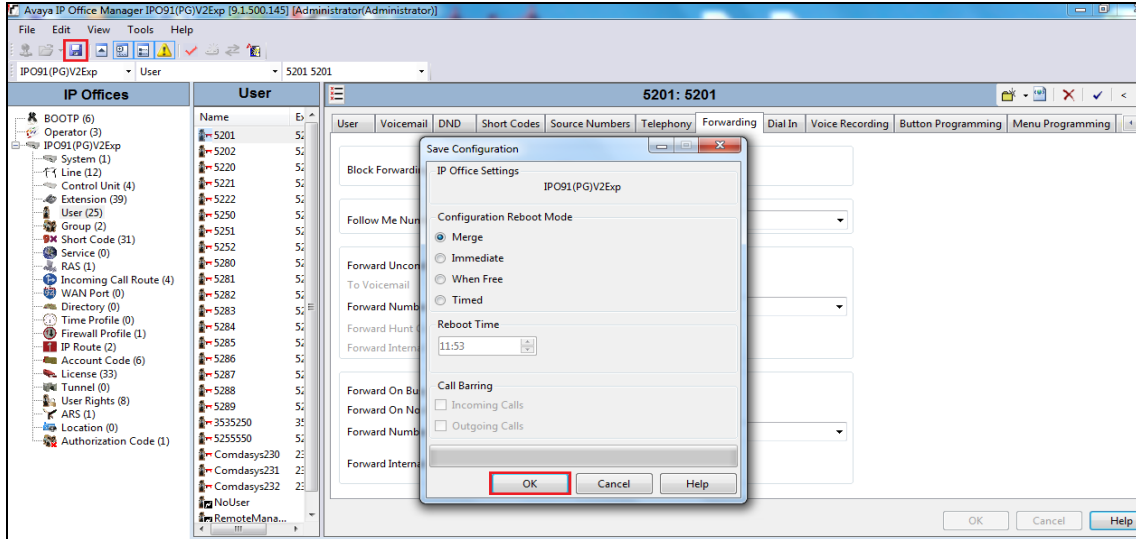
## 5.5. Verify the Voicemail Collect Short Code

As part of the Ascom IP-DECT Base Station configuration the Voicemail access number is required. During compliance testing this **Feature** was set to **Voicemail Collect**, and the **Code** was **\*17** also the **Telephone Number** was **"?"U**.



## 5.6. Save Configuration

Once all the configurations have been made it must be saved to IP Office. Click on the **Save** icon at the top of the screen and the following window appears. Click on **OK** to commit the changes to memory.



## 6. Configure Ascom i62 VoWiFi

This section describes how to access and configure the Ascom i62 via the Ascom WinPDM. It is implied that the Wifi network has been configured and operational and the Ascom WinPDM is installed and is fully working.

The Ascom WinPDM screen is shown below. Devices with numbers **5180,5181,5280** and **5281** are discovered. Double click on any number such as **5180**.

The screenshot shows the Avaya IPOv11 - Ascom WinPDM application window. The 'Numbers' tab is selected, displaying a table of discovered devices. The table has columns for Description, Number, Device type, Parameter, Device ID, Online, and Status. Four devices are listed: 5180, 5181, 5280, and 5281, all of type 'i62 Talker' and status 'Synchronized'. The device with number 5180 is marked as 'Online' with a checkmark.

Description	Number	Device type	Parameter ...	Device ID	Online	Status
i62 Talker	5180	i62 Talker	14.351	00013E13120A	✓	Synchronized
	5181	i62 Talker	14.351	00013E11B405		Synchronized
	5280	i62 Talker	14.351	00013E13123A		Synchronized
	5281	i62 Talker	14.351	00013E11B4ED		Synchronized

In the **Edit parameters** window navigate to **Device → In call functional → Message centre** from the configuration tree and enter the following:

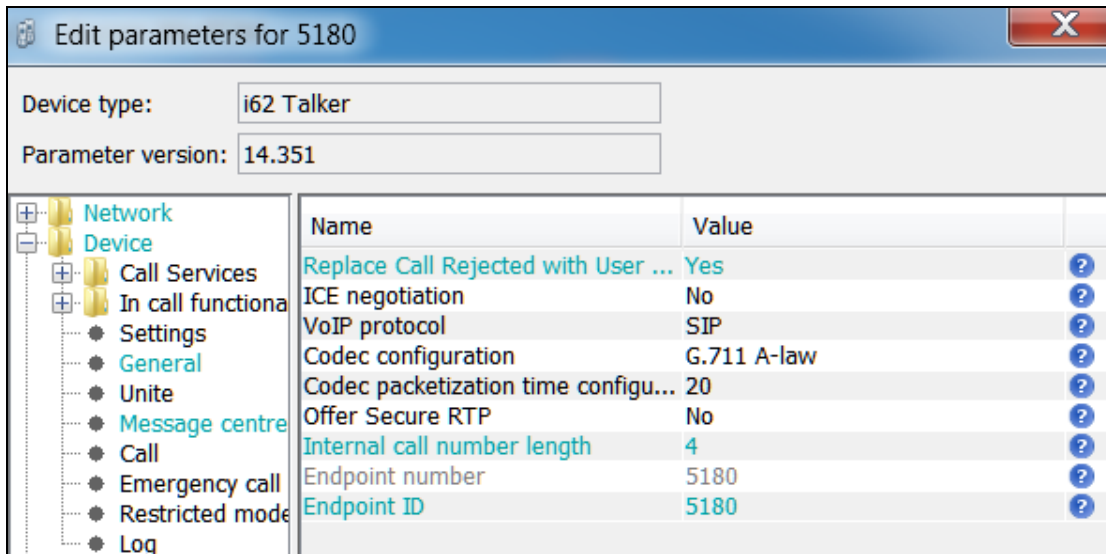
- **Message Centre number** Enter the number of the handset (i.e. **5180**)
- **Voice mail number** Enter the Short code as shown in **Section 5.5**

The screenshot shows the 'Edit parameters for 5180' window. The 'Device type' is 'i62 Talker' and the 'Parameter version' is '14.351'. A configuration tree on the left shows the 'Message centre' option selected. The main area displays a table of parameters for the Message Centre.

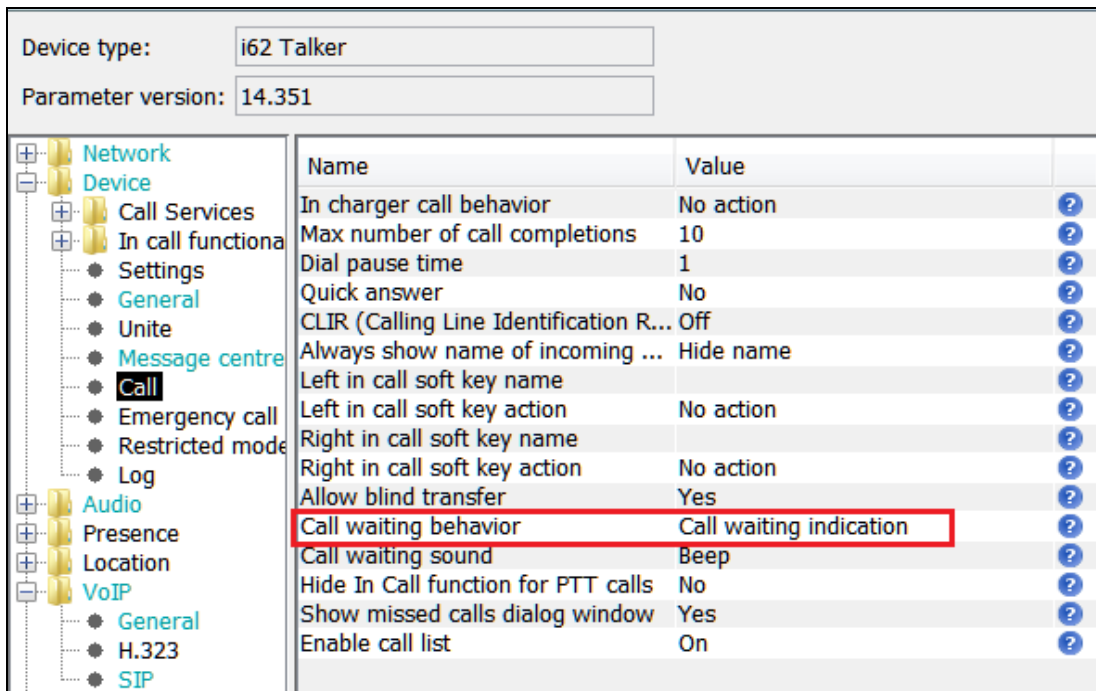
Name	Value
Message Centre number	5180
Voice mail number	*17
Voice mail call clears MWI	No

Select **VoIP** followed by **General** from the Configuration Tree. When the new window opens enter the following:

- **Replace Call Rejected with User Busy** Enter **Yes**
- **Internal call number length** Enter **4** (the length of the i62 handset extension)
- **Endpoint ID** Should be the same as the **Endpoint number** which is the extension number of the device



Navigate to **Device** → **Call**. To turn on 'call waiting', ensure that **Call waiting indication** is selected for **Call waiting behaviour**.





When the new window opens enter the following:

- **SIP Transport** This can be set to **TCP** or **UDP** depending on the requirement
- **Primary SIP proxy** Enter the IP address of the IP Office
- **SIP proxy password** Enter the **Login Code** as configured for the i62 Handset in **Section 5.4**

Click on the **OK** Button to save (at the bottom of the screen not shown here).

Device type:

Parameter version:

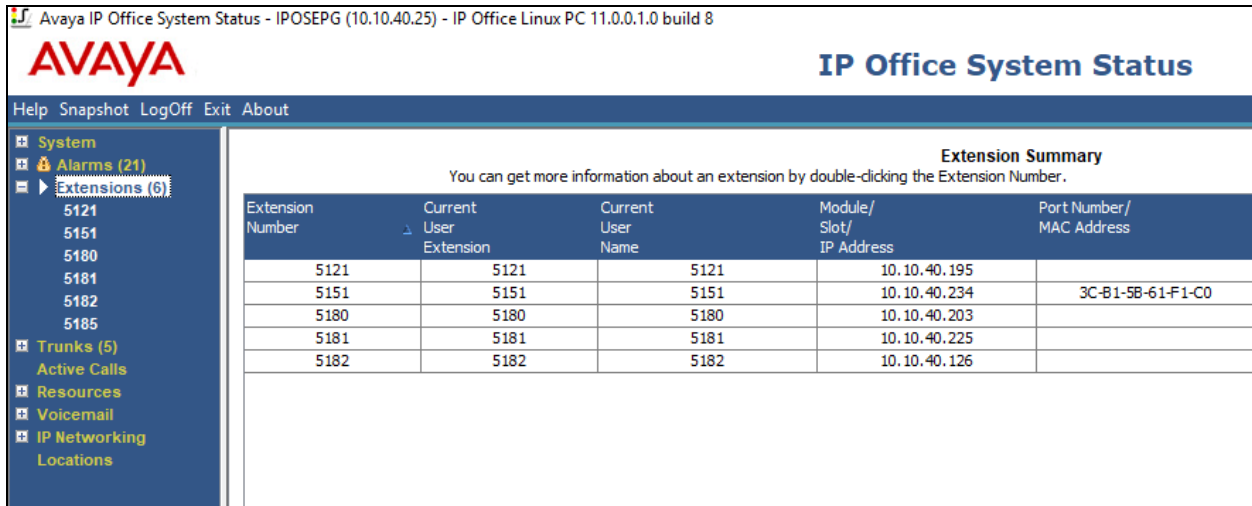
	Name	Value	
+	Network		
+	Device		
+	Audio		
+	Presence		
+	Location		
+	VoIP		
•	General		
•	H.323		
•	<b>SIP</b>		
+	Customization		
+	Headset		
+	User Profiles		
+	Shortcuts		
	SIP Transport	TCP	?
	Outbound proxy mode	No	?
	Primary SIP proxy	10.10.40.25	?
	Secondary SIP proxy	0.0.0.0	?
	Listening port	5060	?
	SIP proxy ID		?
	SIP proxy password	*****	?
	Send DTMF using RFC 2833 or S...	RFC2833	?
	Hold type	Inactive	?
	Registration identity	Endpoint number	?
	Authentication identity	Endpoint number	?
	Call forward locally	No	?
	MOH locally	Yes	?
	Hold on Transfer	No	?
	Direct signaling	No	?
	SIP Register Expiration	180	?
	SIP Message behavior	Ignore	?

## 7. Verification Steps

This section provides the tests that can be performed to verify correct configuration of IP Office and Ascom solution.

### 7.1. Verify the Ascom i62 VoWiFi handset status

Using IP Office System Status program, click on **Extensions** and verify that the Ascom i62 handsets are registered. The screen shot below shows that the i62 handset **5180, 5181** and **5182** are registered.



The screenshot displays the Avaya IP Office System Status application interface. The title bar indicates the system is running on IP Office Linux PC 11.0.0.1.0 build 8. The main window features a navigation menu on the left with options like System, Alarms (21), Extensions (6), Trunks (5), Active Calls, Resources, Voicemail, IP Networking, and Locations. The 'Extensions (6)' menu item is selected, leading to the 'Extension Summary' table. A message above the table states: 'You can get more information about an extension by double-clicking the Extension Number.' The table lists six extensions with their respective details.

Extension Number	Current User Extension	Current User Name	Module/ Slot/ IP Address	Port Number/ MAC Address
5121	5121	5121	10.10.40.195	
5151	5151	5151	10.10.40.234	3C-B1-5B-61-F1-C0
5180	5180	5180	10.10.40.203	
5181	5181	5181	10.10.40.225	
5182	5182	5182	10.10.40.126	

### 7.2. Verify Calls can be made

Made some inbound and out bound calls using i62 handsets, including a call to voicemail and verify voice quality is clear.

## 8. Conclusion

A full and comprehensive set of feature and functional test cases were performed during compliance testing. Ascom i62 Wireless handsets are considered compliant with Avaya IP Office 11.0. All observations and issues are outlined in **Section 2.2**.

## 9. Additional References

These documents form part of the Avaya official technical reference documentation suite. Further information may be had from <http://support.avaya.com> or from your Avaya representative.

[1] *Avaya IP Office Manager 11.0*, Release 11.0 Issue 17a August 2018

Product Documentation for Ascom Products can be obtained from Ascom or may be requested at <https://www.ascom-ws.com/AscomPartnerWeb/Templates/WebLogin.aspx> (login required).

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