



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Ascom Wireless IP-DECT SIP Solution with Avaya IP Office 9.0 in a Converged Voice over IP and Data Network - Issue 1.0

Abstract

These Application Notes describe a solution for supporting wireless interoperability between Ascom Wireless IP-DECT with Avaya IP Office release 9.0.

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's IP-DECT solution to interoperate with Avaya IP Office. Ascom's DECT handsets are configured on the IP Avaya 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 Ascom IP DECT Access points connected to the same LAN as the Avaya IP Office.

The Ascom IP-DECT system is a modular solution for large and small deployments with full handover capabilities within one PBX. The Ascom IP-DECT Access points works as a conduit between the Avaya IP Office and the Ascom IP-DECT wireless handsets. After the Ascom IP-DECT wireless handsets register with the Ascom IP-DECT Access points, the Access points registers the handsets to Avaya IP Office.

2. General Test Approach and Test Results

The general test approach was to configure the Ascom IP DECT handsets to communicate with Avaya IP Office (IP Office) as implemented on a customer's premises. The interoperability compliance testing evaluates the ability of the Ascom IP DECT Handsets (DECT Handsets) to make and receive calls to and from Avaya H.323, SIP, Digital desk phones and 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 DECT Handsets. See **Figure 1** for a network diagram. The interoperability compliance test included both feature functionality and serviceability tests.

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.

2.1. Interoperability Compliance Testing

The testing included:

- Basic Calls, local and PSTN
- Hold and Retrieve
- Attended and Blind Transfer
- Call Forwarding Unconditional, No Reply and Busy
- Call Waiting
- Call Park/Pickup
- Do Not Disturb
- Calling Line Name/Identification
- Codec Support
- DTMF Support
- Message Waiting Indication
- Handover to backup Access points after Master Access point failure

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 headsets/handsets to determine interoperability with Avaya telephones. 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, scalability or any regulation requirements. As a result, Avaya makes no representation 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.

2.2. Test Results

Tests were performed to insure full interoperability between Ascom IP-DECT Solution and IP Office. The tests were all functional in nature and performance testing was not included. All the test cases passed successfully.

2.3. Support

Technical support from Ascom can be obtained through the following:

Phone: +46 31 559450

E-mail: support@sacom.se

3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. The Avaya solution consists of an IP Office which the DECT Handsets were configured as SIP Users. The Ascom device Manager was used to configure the IP-DECT Handsets. Digital, H323 and Soft phones were configured on the IP Office. QSIG and SIP trunks were configured to connect to the PSTN. The Ascom Master Access point was connected to the IP Network which the IP-DECT Handsets register to. The Roaming Access point allows radio communication between the IP-DECT Handsets which in turn communicates with the IP Office.

Note: A USB DP1 Desktop Programmer cradle connected to the Ascom Device Manager is used to configure the IP-DECT Handsets.

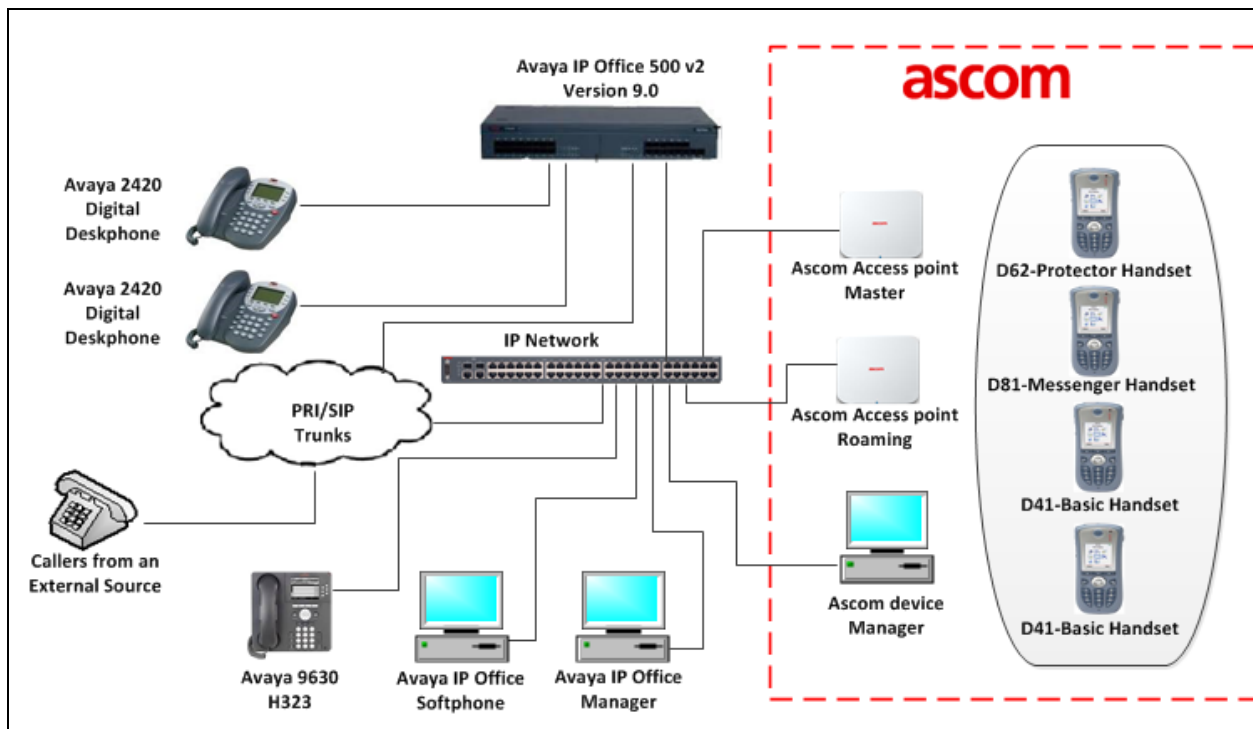


Figure 1: Avaya IP Office and Ascom Reference Configuration

4. Equipment and Software Validated

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

Avaya Equipment	Software / Firmware Version
Avaya IP Office 500v2	9.0 Build 829
Avaya IP Office Manager	9.0 Build 829
Avaya 9630 IP Telephone	H323 3.2.0.S
Avaya 2420 Digital Telephones	--
Avaya IP Office softphone	3.2.3.49
Ascom Equipment	Software / Firmware Version
Ascom IP-DECT Access points	Version 7.0.1
Ascom IP-DECT Handsets	
D62-Protector	4.1.6
D81- Messenger	4.1.6
D41- Basic	4.1.6

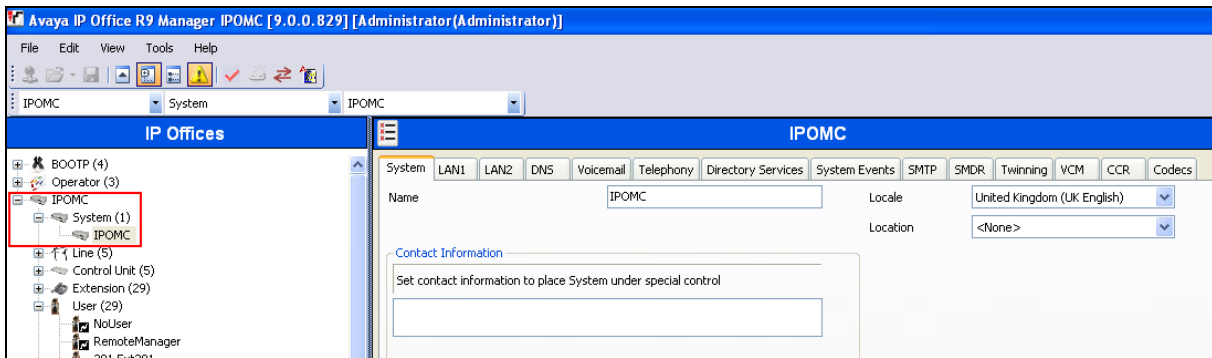
5. Avaya IP Office Configuration

Configuration and verification operations on the Avaya IP Office illustrated in this section were all performed using Avaya IP Office Manager. The information provided in this section describes the configuration of the Avaya IP Office for this solution. It is implied a working system is already in place. 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
- LAN1 Configuration
- VoIP Configuration
- Create a SIP Extension for the Ascom DECT Handset
- Create a User for the Ascom DECT Handset
- Verify the Voicemail Collect Short Code
- Save Configuration

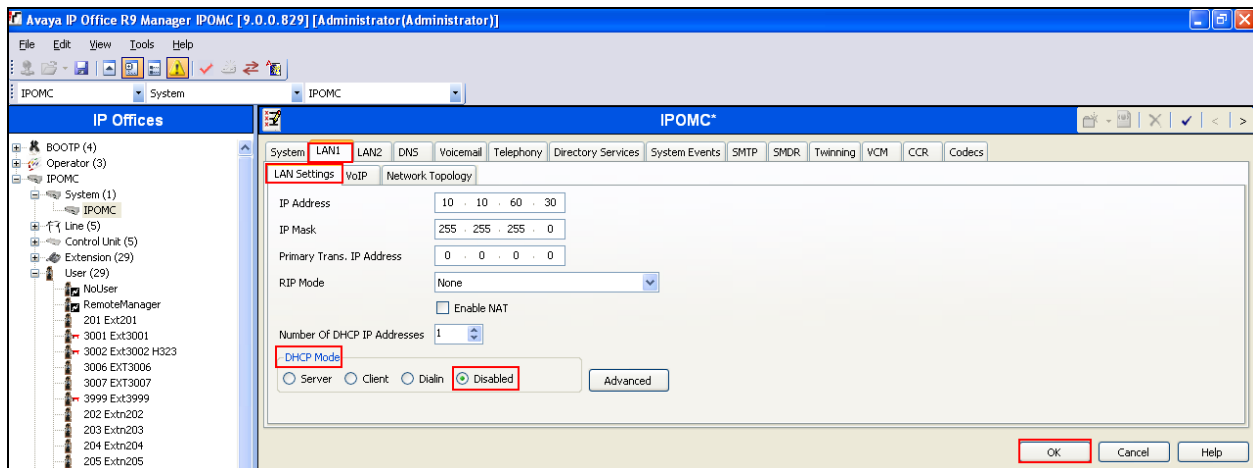
5.1. Launch Avaya IP Office Manager

From the Avaya IP Office Manager PC, go to **Start→Programs→IP Office→Manager** to launch the Manager application. Log in to Avaya IP Office using the appropriate credentials to receive its configuration (Not shown). In the IP Offices window expand the Configuration Tree and double-click **System**. During compliance testing the System was called IPOMC.



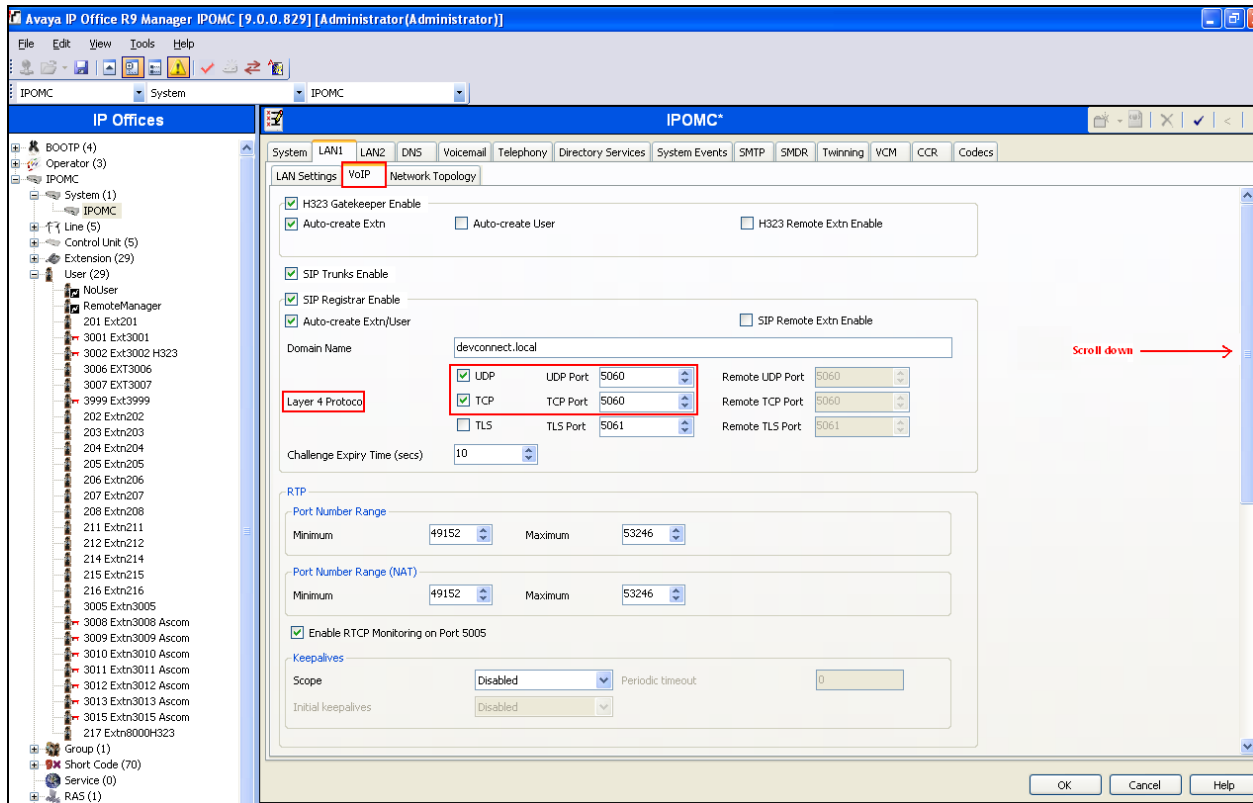
5.2. LAN1 configuration

For the Ascom IP DECT handsets to communicate with the IP Office) **DHCP MODE** must be disabled. To disable DHCP, select the **LAN1** tab followed by the **LAN Settings** tab and click on the **Disabled** radio button in the **DHCP Mode** section. Click the **OK** button to save.

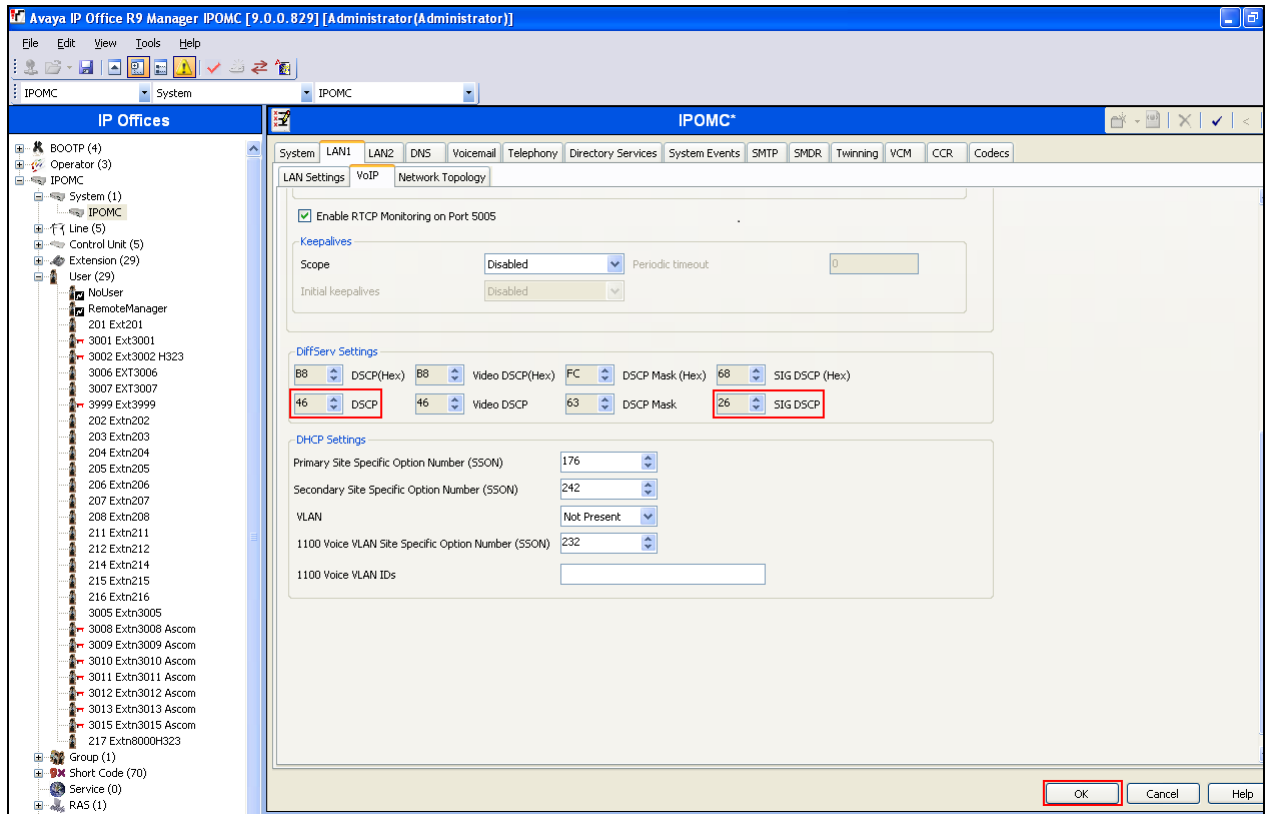


5.3. VoIP Configuration

Select the **VoIP** tab and in the **Layer 4 Protocol** section check the **UDP** and **TCP** Check boxes and select **5060** from both dropdown boxes. Using the scroll bar on the right hand side scroll down to the **DiffServ Settings** section.

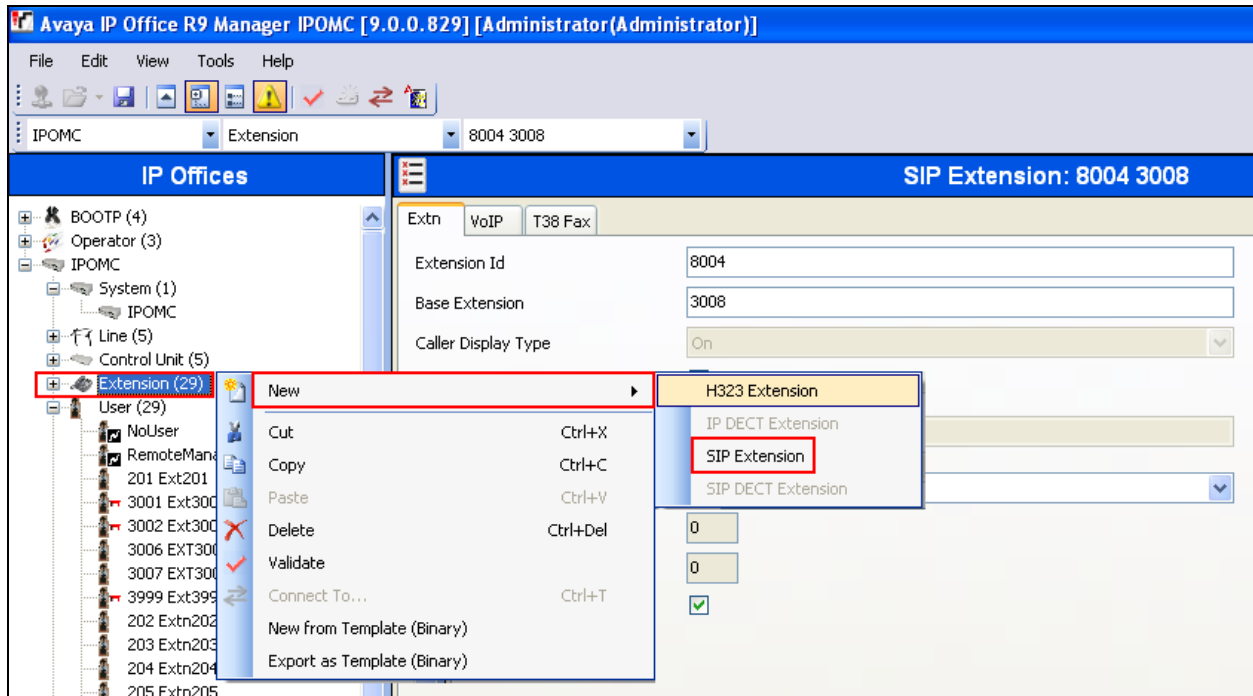


At the **DiffServ Settings** section select **46** from the **DSCP** drop down box and **26** from the **SIG DSCP** dropdown box. Click the **OK** button to save.

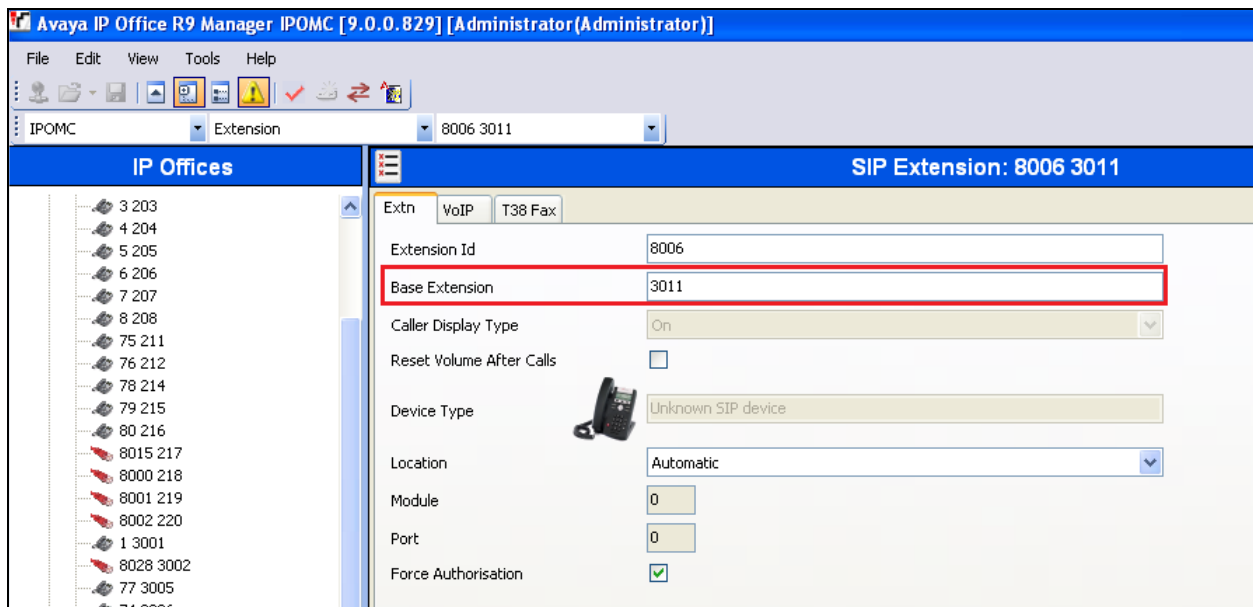


5.4. Create a SIP Extension for the Ascom DECT Handset

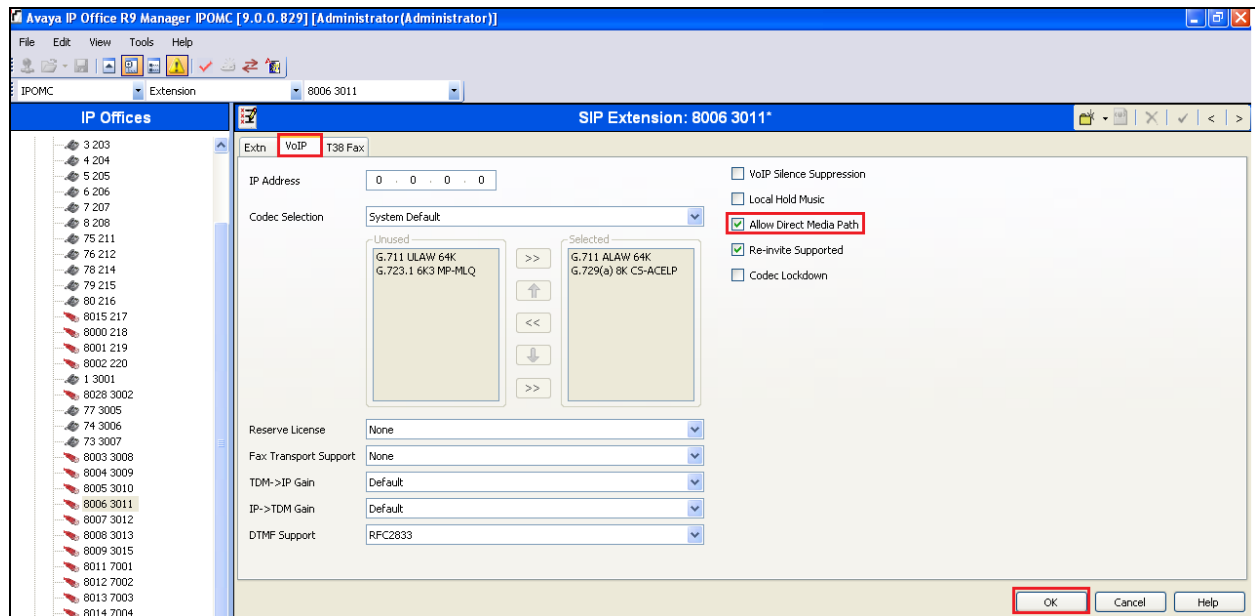
The DECT Handsets are configured as SIP Extensions on the IP Office. From the Configuration Tree click on **Extension** then right click and select **New** followed by **SIP Extension**. The example below shows an extension 3011; repeat these steps for each DECT Handset extension.



When the new window opens enter the **Base Extension**. The Extension ID will be automatically filled in.

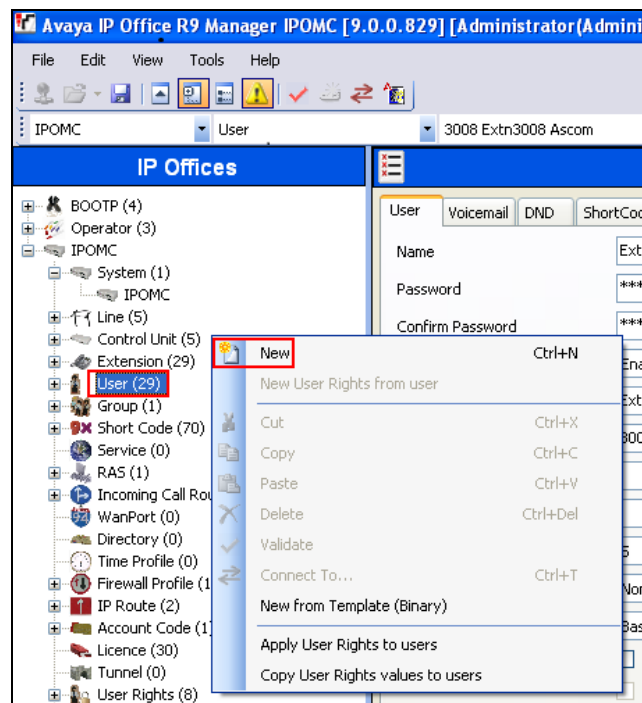


Click on the **VoIP** tab, and when the **VoIP** tab opens click the **Allow Direct Media Path** check box. Click the **OK** button to save.



5.5. Create a User for the Ascom DECT Handset

A user must be configured for Ascom DECT Handset Extension. From the Configuration Tree click on **User** then right click and select **New**. The example below shows the extension **3011**; repeat these steps for each DECT Handset extension.



When the **User** window opens, select the **User** tab and enter the follow:

- **Name** Enter an name for this user, i.e. **Extn3011 Ascom**
- **Password** Enter the Password
- **Confirm** Confirm the Password
- **Extension** Enter the Extension which was created previously, i.e. **6.1**

Avaya IP Office R9 Manager IPOMC [9.0.0.829] [Administrator/Administrator]

IPOMC User 3011 Extn3011 Ascom

Extn3011 Ascom: 3011

User Voicemail DND ShortCodes Source Numbers Telephony Forwarding Dial In Voice Recording Button Programming Menu Programming Mobility Group Membership Announcements

Name: Extn3011 Ascom
Password: ****
Confirm Password: ****
Account Status: Enabled
Full Name: Extn3011 Ascom DECT
Extension: 3011
Email Address:
Locale:
Priority: 5
System Phone Rights: None
Profile: Basic User
☐ Receptionist
☐ Enable Softphone
☐ Enable one-X Portal Services
☐ Enable one-X TeleCommuter
☐ Enable Remote Worker

OK Cancel Help

Click on the **Voicemail** tab, and check the **Voicemail On** check box and enter the **Voicemail Code** that will be used to access the user's mail box, and **Confirm the voicemail code**.

Avaya IP Office R9 Manager IPOMC [9.0.0.829] [Administrator/Administrator]

IPOMC User 3011 Extn3011 Ascom

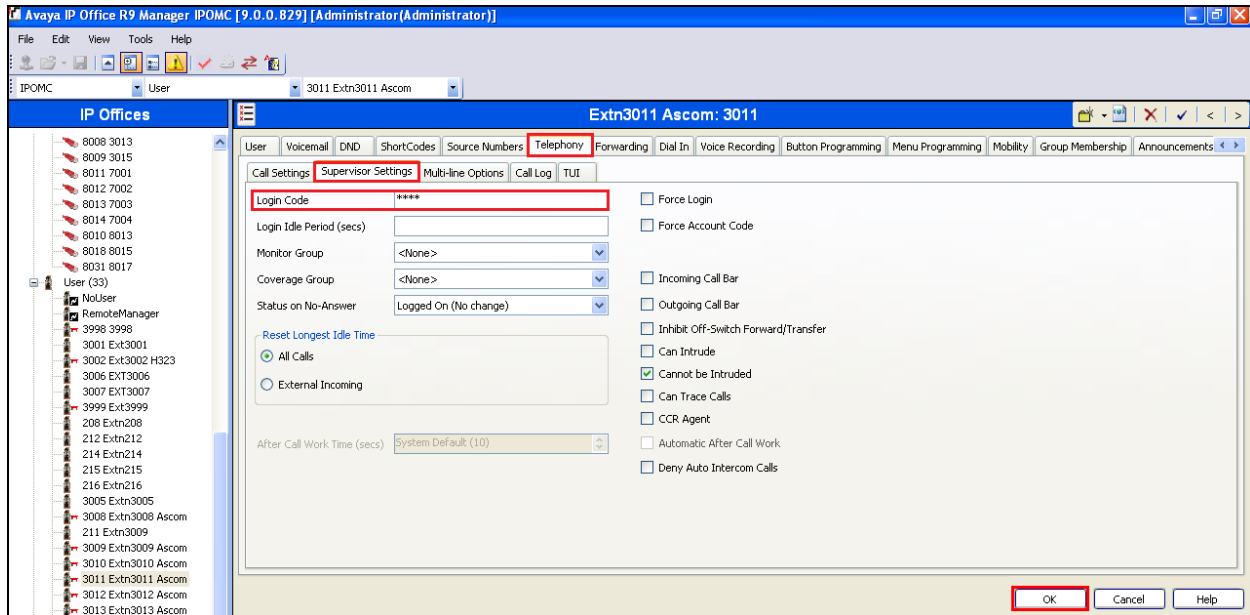
Extn3011 Ascom: 3011

User Voicemail DND ShortCodes Source Numbers Telephony Forwarding Dial In Voice Recording

Voicemail Code: ****
Confirm Voicemail Code: ****
Voicemail Email:
☒ Voicemail On
☐ Voicemail Help
☐ Voicemail Ringback
☐ Voicemail Email Reading
☐ UMS Web Services

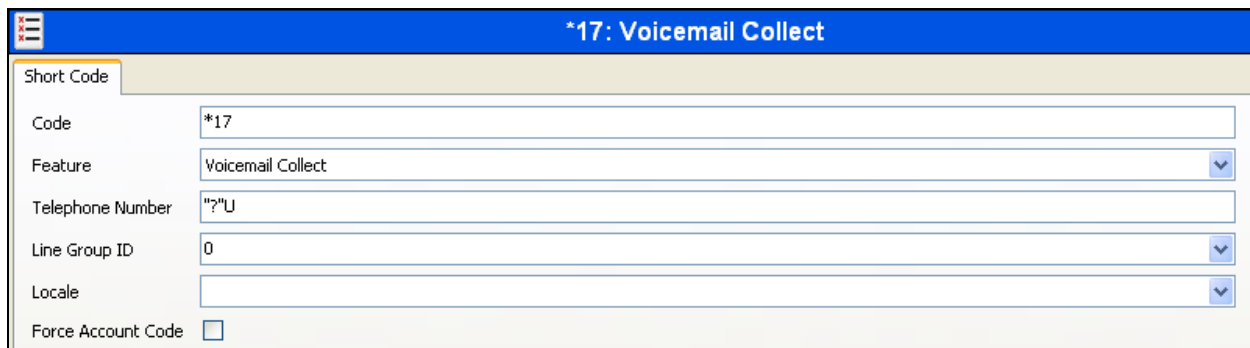
Click on **Telephony** tab followed by the **Supervisor Settings** tab and enter a Login Code in the **Login Code** box. Click the **OK** button to save.

Note: The Login Code is used by the Ascom DECT Handset to log in to the IP Office in **Section 6**. Ensure all DECT Handset Users use the same **Login Code**.



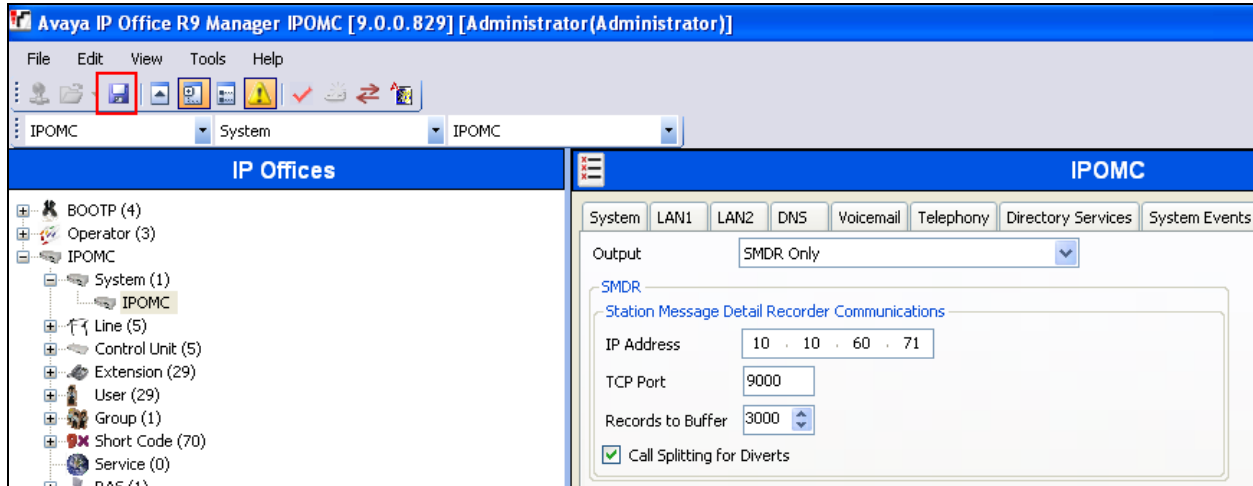
5.6. Verify the Voicemail Collect Short Code

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**.

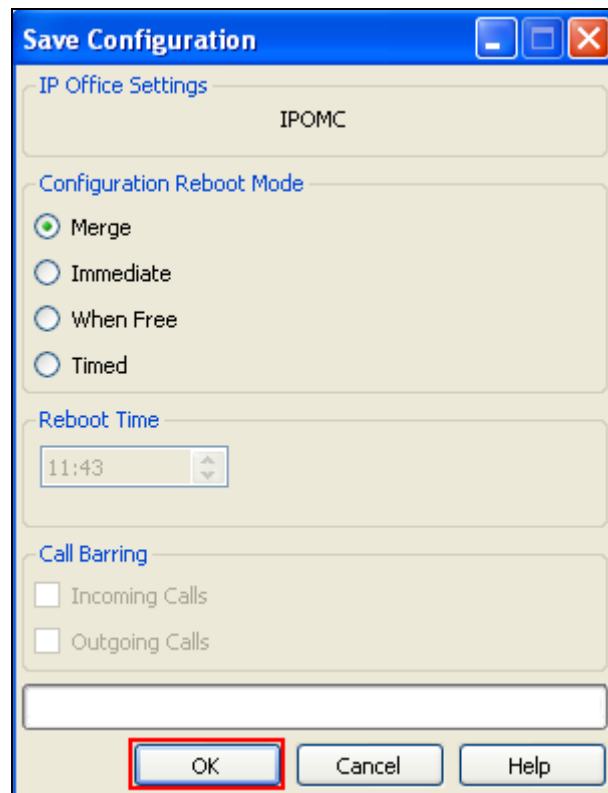


5.7. Save Configuration

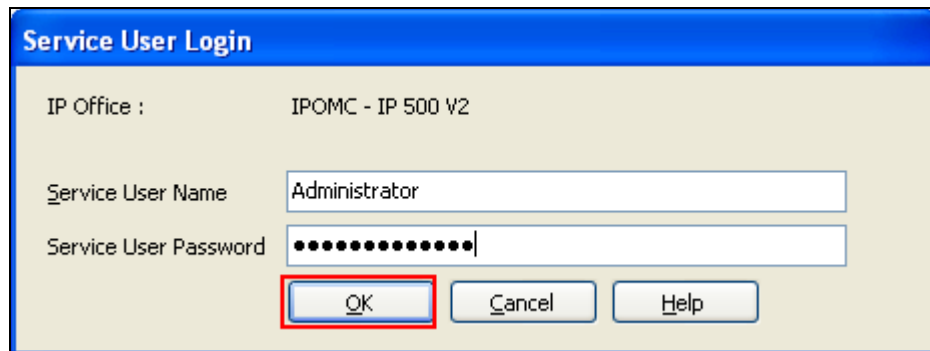
Once all the configurations have been made it must be sent to the IP Office. Click on the **Save** Icon as shown below.



Once the **Save Configuration** Window opens, click the **OK** button.



When the **Service User Login** Window opens enter the appropriate credentials and click the **OK** button.



The image shows a 'Service User Login' dialog box with a blue title bar. Inside, the 'IP Office' is set to 'IPOMC - IP 500 V2'. The 'Service User Name' field contains 'Administrator'. The 'Service User Password' field is filled with 12 dots. At the bottom, there are three buttons: 'OK' (highlighted with a red rectangle), 'Cancel', and 'Help'.

IP Office :	IPOMC - IP 500 V2
Service User Name	Administrator
Service User Password	••••••••••••••
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>	

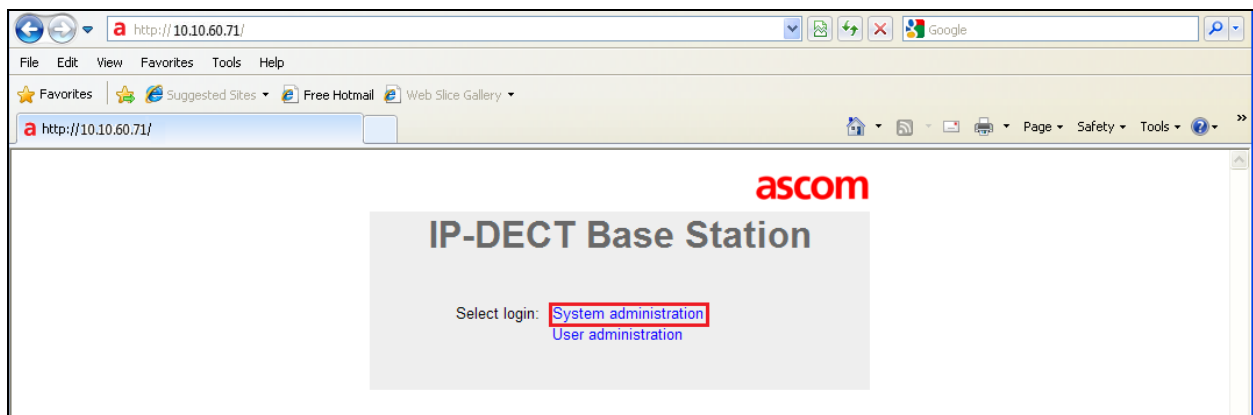
6. Configure Ascom DECT

This section describes how to access and configure the Ascom DECT solution. The Ascom wireless IP-DECT Base Stations can be configured in a Master/Standby Master scenario to provide redundancy or to extend the radius of coverage (roaming). The following configuration steps detail the configuration process used to configure an Ascom wireless IP-DECT Base Station in Master mode only.

Roaming between multiple Ascom Wireless IP-DECT Base Stations as shown in **Figure 1** was tested but the configuration setup will not be shown in this document. Refer to the Ascom document in **Section 9** for information on how to configure roaming.

6.1. Configure the IP-DECT Base Station

To configure the IP-DECT Base Station, access a web browser and enter the IP address of the Base Station as the URL. The user will be presented with the screen shown below. Click the **System administration** link and enter the appropriate credentials to access the Ascom wireless IP-DECT Base Station and then click OK (not shown).



6.1.1. General Configuration of IP-DECT Base Station

When the new window opens navigate to **General** and select the **Admin** tab and enter the following:

- **Device Name** Enter a descriptive name that identifies this Ascom wireless IP-DECT Base Station (i.e. Avaya-1)
- **User Name** Enter the **User Name** (the default User name was used)
- **Password** Enter the **Password** (the default Password was used)
- **Confirm Password** confirm the password

Click the **OK** button to continue.

The screenshot displays the 'IP-DECT Base Station' configuration window with the 'ascom' logo in the top right. The left sidebar contains a 'Configuration' menu with 'General' highlighted. The top navigation bar includes tabs for 'Info', 'Admin' (which is selected and highlighted with a red box), 'Update', 'NTP', 'Logging', 'HTTP', 'HTTP Client', 'SNMP', 'Kerberos', 'Certificates', and 'License'. The 'Admin' tab contains an 'Admin' section with a red border around its fields: 'Device Name' (containing 'Avaya-1'), 'User Name' (containing 'admin'), 'Password' (masked with dots), and 'Confirm Password' (masked with dots). Below this is a 'Delegated Authentication' section with a 'Join realm' link. At the bottom is an 'Authentication Servers' table with columns for 'Realm/Domain', 'Address', 'Port', 'Secondary Address', 'Secondary Port', and 'Delete'. An 'OK' button is located at the bottom left of the main configuration area.

Realm/Domain	Address	Port	Secondary Address	Secondary Port	Delete
					<input type="checkbox"/>

6.1.2. Configure LAN DHCP

Navigate to **LAN** and select the **DHCP** tab. Select **Disabled** from the **Mode** dropdown box. Click on the red text **reset required** to reset the IP-DECT Base Station. After the reset is completed log back on to the IP-DECT Base Station to complete the configuration.

The screenshot displays the 'IP-DECT Base Station' configuration web interface. The 'ascom' logo is in the top right corner. A left-hand navigation menu lists various configuration sections: Configuration, General, LAN (highlighted with a red box), IP, LDAP, DECT, VoIP, UNITE, Central Phonebook, Administration, Users, Device Overview, DECT Sync, Traffic, Gateway, Backup, Update, Diagnostics, and Reset. The top navigation bar includes tabs for DHCP (highlighted with a red box), IP, VLAN, Link, 802.1X, and Statistics. The main content area shows the 'Mode' dropdown menu set to 'disabled' (also highlighted with a red box), with the text 'Currently - disabled' next to it. Below the dropdown are 'OK' and 'Cancel' buttons. A red text message 'reset required' is displayed below the configuration area.

6.1.3. Configure LAN IP

Navigate to **LAN** and select the **IP** tab and enter the following:

- **IP address** Enter the IP address to be assigned to the IP-DECT Station
- **Network Mask** Enter the Network Mask to be assigned to the IP-DECT Station
- **Default Gateway** Enter the Default Gateway IP Address

Click on the **OK** Button to save.

Note: No DNS Server was used during Compliance Testing.

The screenshot displays the 'IP-DECT Base Station' configuration interface. The left sidebar shows a 'Configuration' menu with 'LAN' selected. The main area has tabs for 'DHCP', 'IP', 'VLAN', 'Link', '802.1X', and 'Statistics', with 'IP' being the active tab. The 'Active Settings' section contains the following fields:

Field	Value	Active Settings
IP Address	10.10.60.71	10.10.60.71
Network Mask	255.255.255.0	255.255.255.0
Default Gateway	10.10.60.1	10.10.60.1
DNS Server		
Alt. DNS Server		
Check ARP	<input type="checkbox"/>	

At the bottom of the configuration area, there are 'OK' and 'Cancel' buttons. The 'OK' button is highlighted with a red box.

6.1.4. Reset IP-DECT Base Station

Click **Reset** followed by the **OK** button to initiate the system reset. Many of the other changes made to the system during the configuration process require a reset. Repeat this process whenever a reset is required.

The screenshot displays the 'IP-DECT Base Station' configuration web interface. The top header includes the 'ascom' logo. Below the header, there are tabs for 'Idle-Reset', 'Reset', 'TFTP', and 'Boot'. The left sidebar contains a 'Configuration' menu with various options: General, LAN, IP, LDAP, DECT, VoIP, UNITE, Central Phonebook, Administration, Users, Device Overview, DECT Sync, Traffic, Gateway, Backup, Update, Diagnostics, and 'Reset' (which is highlighted with a red box). The main content area shows a warning message: 'Reset only if the system is idle (no active calls, etc.)'. Below this message is an 'OK' button, also highlighted with a red box.

6.1.5. Configure LDAP

After the Ascom IP-DECT Base Station (**Avaya-1**) has rebooted, navigate to **LDAP** and select the **Server** tab. The **ldap-guest** account is a default system account. Configure another **User** using **Avaya-1** as previously configured. Enter the Password for **Avaya-1** as previously configured. Check the **Write Access** check box. Click the **OK** button to continue. LDAP replication is configured in order to copy user information to a Standby Master (please refer to Ascom documentation).

The screenshot shows the 'IP-DECT Base Station' configuration window with the 'ascom' logo in the top right. The 'Configuration' tab is active, and the 'Server' sub-tab is selected. The left sidebar lists various configuration categories: General, LAN, IP, LDAP (highlighted), DECT, VoIP, UNITE, Central Phonebook, Administration, Users, Device Overview, DECT Sync, Traffic, Gateway, Backup, Update, Diagnostics, and Reset. The main area displays a table for LDAP users:

User	Password	Write Access
ldap-guest	•••••	<input type="checkbox"/>
Avaya-1	••••••••	<input checked="" type="checkbox"/>
		<input type="checkbox"/>

At the bottom of the table are 'OK' and 'Cancel' buttons. The 'OK' button is highlighted with a red box.

6.1.6. Configure DECT

Navigate to the **DECT** and click on the **Master** and enter the following:

- **Mode** Select Active from the dropdown box
- Check the **Enable PARI Function** check box
- **Protocol** Select **TSIP** from the dropdown box
- **Proxy** Enter the IP address of the IP Office
- Check the **Enbloc Dialing** check box
- Check the **Allow DTMF through RTP** check box.

Click the **OK** button to continue (not shown).

The screenshot displays the 'IP-DECT Base Station' configuration window with the 'ascom' logo in the top right. The 'Master' tab is selected in the top navigation bar. On the left, a sidebar menu lists various configuration categories, with 'DECT' highlighted. The main configuration area is divided into sections: 'Multi-Master' and 'IP-PBX'. In the 'Multi-Master' section, 'Mode' is set to 'Active', 'Master ID' is '0', 'Enable PARI Function' is checked, and 'Region Code' is empty. The 'IP-PBX' section contains fields for 'Protocol' (set to 'TSIP'), 'Proxy' (set to '10.10.60.30'), 'Alt. Proxy', 'Domain', 'Max. Internal Number Length' (set to '4'), 'International CPN Prefix', 'Enbloc Dialing' (checked), 'Enable Enbloc Send-Key', 'Send Inband DTMF', 'Allow DTMF Through RTP' (checked), 'Short Disconnect Tone', and 'Configured With Local GK'. Below these is the 'SIP Interoperability Settings' section, which includes 'Registration Time-To-Live' (empty), 'Hold Signalling' (set to 'inactive'), 'Hold Before Transfer', 'Accept Inbound Calls Not Routed Via Home Proxy', 'Register With Number' (checked), and 'KPML support'. At the bottom, the 'Registration For Anonymous Devices' section shows 'Registration Name / Number' as an empty field.

6.1.6.1 Configure DECT System

Click on the **System** tab and enter the following:

- **System Name** Enter the System Name as previously configured
- **Password** Enter the Password as previously configured
- **Confirm Password** Confirm the Password
- **Subscriptions** Select **With System AC** from the dropdown box
- **Authentication Code** Enter the DECT handset Login code as configured in **Section 5.5**. (During Compliance testing **1234** was used)
- **Tones** Select the location where the IP-DECT system is located
- **Default Language** Select the required Language from the dropdown box
- **Frequency** Select the required Frequency from the dropdown box
- **Enabled** Select the number of Carriers required
- Check **Local R-Key Handling** box
- **Coder** Select the required Coder from the **Coder** dropdown box

Click the **OK** button to continue.

The screenshot shows the 'IP-DECT Base Station' configuration window with the 'System' tab selected. The left sidebar contains a 'Configuration' menu with options: General, LAN, IP, LDAP, DECT, VoIP, Unite, Services, Administration, Users, Device Overview, DECT Sync, Traffic, Gateway, Backup, Update, Diagnostics, and Reset. The 'System' tab is highlighted in the top navigation bar. The main configuration area is enclosed in a red border and contains the following fields:

- System Name: Avaya-1
- Password: [Redacted]
- Confirm Password: [Redacted]
- Subscriptions: With System AC (dropdown)
- Authentication Code: 1234
- Tones: IRELAND (dropdown)
- Default Language: English (dropdown)
- Frequency: Europe (dropdown)
- Enabled Carriers: 0 1 2 3 4 5 6 7 8 9 (checkboxes, all checked)
- Local R-Key Handling: [checked]
- No Transfer on Hangup: [unchecked]
- No On-Hold Display: [unchecked]
- Display Original Called: [unchecked]
- Early Encryption: [unchecked]
- Coder: G711A (dropdown)
- Frame (ms): 20
- Exclusive: [unchecked]
- SC: [unchecked]
- Secure RTP: [dropdown]

At the bottom of the configuration area are 'OK' and 'Cancel' buttons, both highlighted with red boxes.

6.1.6.2 Configure Suppl.Serv

Click on the **Suppl.Serv** tab and enter the following:

- Check the **Enable Supplementary Services** check box

During compliance testing, the IP Office handled most of the features listed, so the following functions were disabled:

- **Call Forwarding Unconditional, Call Forwarding Busy, Call Forwarding No Reply, Do not Disturb, Call waiting, Call Completion, Call Park, Interception, Call Service URI, Call Service URI (Argument), Logout User and Clear Local Settings**
- **MWI Mode** Select **User dependent interrogate number** from the dropdown box
- **MWI Notify Number** Enter ***17** as configured in Section 5.6

Click the **OK** button to continue.

The screenshot shows the 'IP-DECT Base Station' configuration window with the 'ascom' logo in the top right. The 'Suppl. Serv.' tab is selected and highlighted with a red box. In the left sidebar, the 'Services' section is expanded. The main area contains a table for configuring supplementary services. The 'Enable Supplementary Services' checkbox is checked and highlighted with a red box. The table has three columns: 'Activate', 'Deactivate', and 'Disable'. The 'Disable' column contains checkmarks for all listed services. At the bottom, the 'MWI Mode' is set to 'User dependent interrogate number' and the 'MWI Notify Number' is set to '*17'. The 'OK' button is highlighted with a red box.

	Activate	Deactivate	Disable
Call Forwarding Unconditional	-	-	<input checked="" type="checkbox"/>
Call Forwarding Busy	-	-	<input checked="" type="checkbox"/>
Call Forwarding No Reply	-	-	<input checked="" type="checkbox"/>
Do Not Disturb	-	-	<input checked="" type="checkbox"/>
Call Waiting	-	-	<input checked="" type="checkbox"/>
Call Completion	-	-	<input checked="" type="checkbox"/>
Call Park	-	-	<input checked="" type="checkbox"/>
Interception	-	-	<input checked="" type="checkbox"/>
Call Service URI	-	-	<input checked="" type="checkbox"/>
Call Service URI (Argument)	-	-	<input checked="" type="checkbox"/>
Logout User	-	-	<input checked="" type="checkbox"/>
Clear Local Setting			<input checked="" type="checkbox"/>
MWI Mode	User dependent interrogate number		
MWI Notify Number	*17		
Local Clear of MWI			
External Idle Display			<input type="checkbox"/>

6.1.6.3 Configure PARI

Click on the **PARI** tab and enter the PARI in the System ID Field. The PARI is a user-defined system value. Enter any number from 1-292 (e.g. 25). Click the **OK** button to continue.

The screenshot shows the 'IP-DECT Base Station' configuration window with the 'ascom' logo in the top right. The 'Configuration' menu on the left lists 'General', 'LAN', 'IP', 'LDAP', 'DECT', and 'VoIP'. The top navigation bar includes tabs for 'System', 'Suppl. Serv.', 'Master', 'Mobility Master', 'Radio', 'Radio config', 'PARI', 'SARI', and 'Air Sync'. The 'PARI' tab is selected and highlighted with a red box. In the main area, the 'System ID' field contains the value '25' and is also highlighted with a red box. Below the field are 'OK' and 'Cancel' buttons, with the 'OK' button highlighted by a red box.

6.1.6.4 Configure SARI

Click on the **SARI** tab. The **SARI** is an Ascom provided activation code which is needed for the system to function. Contact Ascom to obtain a **SARI**. Enter the **SARI** value (note the actual value has been hidden on the screen shown below for security reasons). Click the **OK** button to continue.

The screenshot shows the 'IP-DECT Base Station' configuration window with the 'ascom' logo in the top right. The 'Configuration' menu on the left lists 'General', 'LAN', 'IP', 'LDAP', 'DECT', 'VoIP', 'UNITE', 'Central Phonebook', 'Administration', 'Users', 'Device Overview', 'DECT Sync', 'Traffic', 'Gateway', 'Backup', 'Update', 'Diagnostics', and 'Reset'. The top navigation bar includes tabs for 'System', 'Suppl. Serv.', 'Master', 'Mobility Master', 'Radio', 'Radio config', 'PARI', 'SARI', and 'Air Sync'. The 'SARI' tab is selected and highlighted with a red box. In the main area, the 'SARI' field is highlighted with a red box and contains a masked value represented by asterisks. Below the field are 'OK' and 'Cancel' buttons, with the 'OK' button highlighted by a red box.

6.1.6.5 Configure Air Sync

Click on the **Air Sync** tab and select **Master** from the **Sync Mode** dropdown box. Click the **Resynchronize on command** radio button. Click the **OK** button to continue.

The screenshot shows the 'IP-DECT Base Station' configuration window with the 'Air Sync' tab selected. The left sidebar lists various configuration categories: Configuration, General, LAN, IP, LDAP, DECT, VoIP, UNITE, Central Phonebook, Administration, Users, Device Overview, and DECT Sync. The main area contains the following fields and options:

- Sync Mode:** A dropdown menu set to 'Master'.
- Reference RFPI:** An empty text input field.
- Alternative reference RFPI:** An empty text input field.
- Sync Region:** An empty text input field.
- Action at reference sync failure:** Three radio buttons. The first, 'Resynchronize on command', is selected and highlighted with a red box. The other two are 'Resynchronize every day at 00:00' and 'Resynchronize every Sunday at 00:00'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom left, with the 'OK' button highlighted by a red box.

6.1.7. Create Users

Navigate to the **Users** and click on the **Users** tab. The **Park** value is displayed. This value is needed when programming Ascom wireless DECT handsets. Note, the **PARK** information is derived from the SARI and should be obtained from an Ascom associate (Note the actual **PARK** and **PARK 3rd party** values have been hidden on the screen shown below for security reasons). Click the **new** link to provision a new user account.

The screenshot shows the 'IP-DECT Base Station' configuration window with the 'Users' tab selected. The left sidebar is the same as in the previous screenshot, but the 'Users' tab is now highlighted. The main area displays the following information:

- PARK:** A masked value represented by a series of asterisks.
- PARK 3rd party:** Another masked value represented by a series of asterisks.
- Master Id:** The value '0'.
- Buttons:** 'show', 'new', 'import', and 'export' buttons. The 'new' button is highlighted with a red box.

When the **User type** page is presented click on the **User** radio button and enter the following:

- **Long Name** Enter any descriptive name that identifies this user (i.e. DECT 3011)
- **Display Name** Enter a display name which will be displayed on the DECT Handset screen (i.e. DECT 3011)
- **Name** Enter the extension assigned to this user
- **Number** Enter the extension assigned to this user
- **Password** Enter the Password (Note, the password is the **Login Code** configured in **Section 5.5**)
- **Confirm Password** Confirm Password
- **Auth. Code** Enter the **Auth. Code** (Note the Auth. Code is used only if **Subscriptions** in **Section 6.1.6.1** is set to **With System AC**)

Once all the user information has been configured click the **OK** button. Repeat this process for each user being added to the system.

The screenshot shows a 'User type' configuration window. At the top, there are two radio buttons: 'User' (selected) and 'User Administrator'. Below this, there are several input fields. The fields 'Long Name', 'Display Name', 'Name', and 'Number' are grouped together and highlighted with a red box. The 'Auth. Name' field is empty and has '(SIP only)' next to it. The 'Password' and 'Confirm Password' fields are highlighted with a red box and contain masked characters (dots). The 'Auth. Code' field is highlighted with a red box and contains the value '1234'. At the bottom, there are three buttons: 'OK', 'Apply', and 'Cancel'. The 'OK' button is highlighted with a red box.

Repeat **Section 6.1.4** to **Reset IP-DECT Base Station**.

6.2. Configure Ascom IP DECT Handsets

Refer to the Ascom documentation **Section 9** to obtain information on the procedures for subscribing and registering the Ascom wireless DECT Handsets to the Ascom wireless IP-DECT Base Station.

7. Verification Steps

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

7.1. Ascom wireless DECT Handset Registration Verification

From a web browser, open a connection to the Ascom wireless IP-DECT Master Base Station (see **Section 6.1**). Navigate to the **Users** and click on the **Users** tab followed by the **show** link. A **Registration** state of “Unsubscribed” (Not Shown) indicates an Ascom wireless DECT Handset has not registered to the Ascom wireless IP-DECT Base Station. A **Registration** state of “Subscribed” indicates that an Ascom wireless DECT Handset has connected to the Ascom wireless IP-DECT Base Station and requested the use of that particular extension. A **Registration** state that displays the IP Address of the IP Office indicates the extension has successfully registered to both the Ascom wireless IP-DECT Base Station and IP Office. The screen shot shows 4 DECT Handsets registered to both the Ascom wireless IP-DECT Base Station and IP Office.

The screenshot shows the IP-DECT Base Station web interface. The 'Users' tab is selected, and the 'show' link is highlighted. The interface displays a list of registered DECT handsets with the following data:

Long Name	Name	No	Fty	Display	IPEI / IPDI	AC	Prod	SW	EE	Registration
DECT 3011		3011	+	DECT 3011	002020859180		d81-Messenger	4.1.6		10.10.60.30
DECT 3012		3012	+	DECT 3012	036470762236		d41-Basic	4.1.6		10.10.60.30
DECT 3013		3013	+	DECT 3013	002020859178		d81-Messenger	4.1.6		10.10.60.30
DECT 3015		3015	+	DECT 3015	036470363653		d62-Protector	4.1.6		10.10.60.30

Users: 4, Registrations: 4

8. Conclusion

A full and comprehensive set of feature and functional test cases were performed during Compliance testing. Ascom Wireless IP-DECT SIP Solution is considered compliant with Avaya IP Office 9.0. All test cases have passed and met the objectives 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 9.0, Document 15-601011, Issue 9.01, September 2013

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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