



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

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# **Application Notes for Configuring the Hitachi Cable WirelessIP-5000-A SIP Telephone with Avaya Quick Edition - Issue 1.1**

### **Abstract**

These Application Notes detail the steps for configuring connectivity to enable interoperability between the Hitachi Cable WirelessIP-5000-A SIP Telephone with Avaya Quick Edition and Avaya Quick Edition G11 PSTN Gateway. Information in these Application Notes has been obtained through *DeveloperConnection* compliance testing and additional technical discussions. Testing was conducted via the *DeveloperConnection* Program at the Avaya Solution and Interoperability Test Lab.

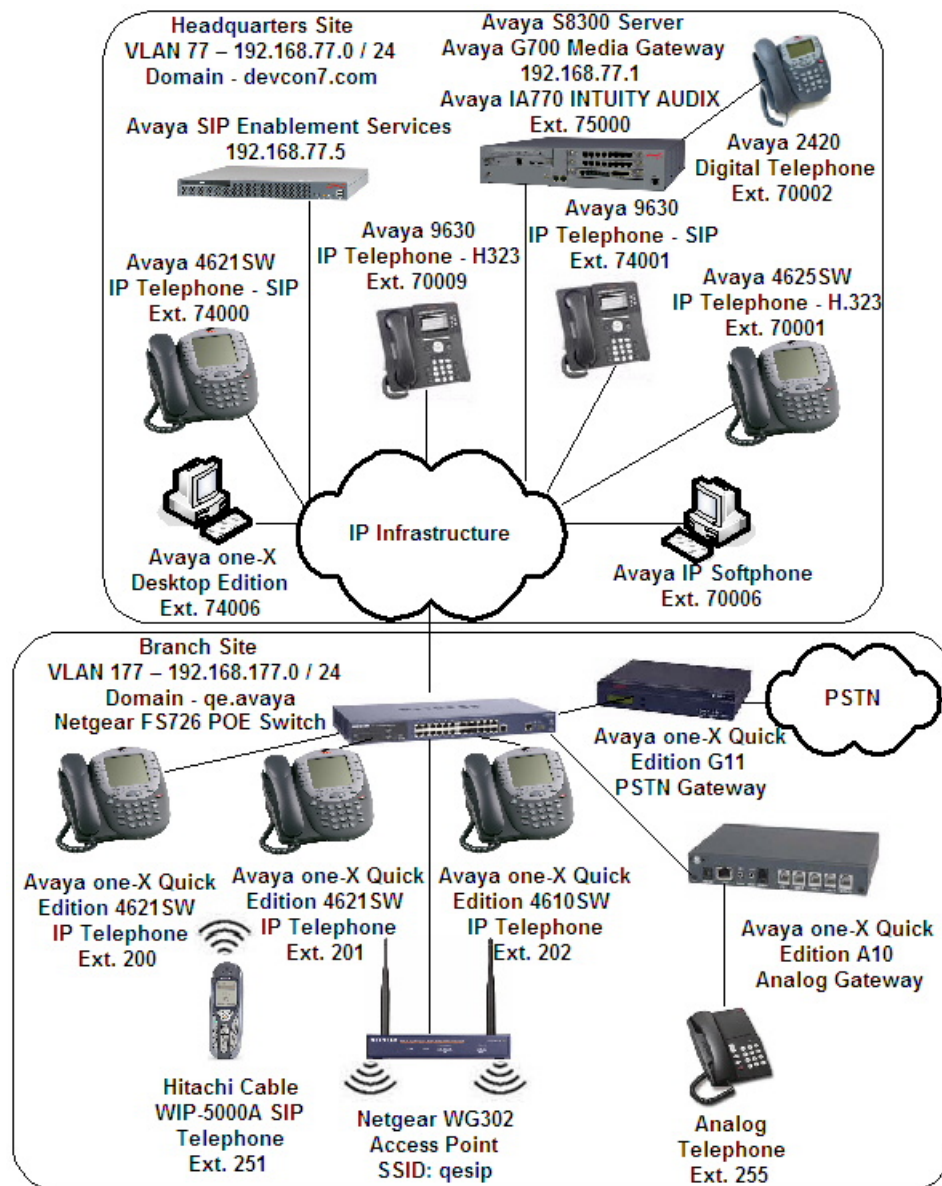
# 1. Introduction

As IP Telephony continues to evolve and new products are brought to market, providing interoperability between both new and existing hardware becomes extremely important. Avaya Quick Edition extends SIP features to third-party SIP endpoints like the Hitachi Cable Wireless-IP-5000-A SIP Telephone.

These Application Notes detail the configuration process that enables interoperability between Hitachi Cable WirelessIP-5000-A SIP Telephones and an Avaya Quick Edition system.

## 1.1. Network Diagram

The network diagram in **Figure 1** illustrates the testing environment used for compliance testing. The network consists of two separate sites routed together over an IP network. The first site, the headquarters site, consists of Avaya Communication Manager, Avaya SIP Enablement Services, wired IP telephones, software based IP telephones and one digital telephone. The second site, the branch site, is comprised of an Avaya Quick Edition network. The Avaya Quick Edition network consists of three Avaya Quick Edition telephones, an Avaya Quick Edition G11 PSTN Gateway, an Avaya Quick Edition A10 Analog Gateway and an analog telephone. Two additional network infrastructure devices are present in the network: one Netgear FS726TP Smart Switch with POE and one Netgear Prosafe Wireless Access Point WG302v2. The Netgear FS726TP Smart Switch with POE provides Ethernet connectivity and Power over Ethernet to wired telephony devices. The Netgear Prosafe Wireless Access Point WG302v2 provides the wireless network for the Hitachi Cable WirelessIP-5000-A SIP Telephone. Two computers are also present in the network, each running a software-based IP telephony application.



**Figure 1: Sample Network Diagram**

## 2. Equipment and Software Validated

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

Equipment	Software
Avaya S8300 Server	Avaya Communication Manager 4.0 (R014x.00.0.730.5) Avaya IA 770 INTUITY AUDIX 4.0-11.0
Avaya G700 Media Gateway <ul style="list-style-type: none"><li>MM711 Analog Media Module</li><li>MM712 DCP Media Module</li></ul>	26.31.0 HW04 / FW87 HW05 / FW08
Avaya SIP Enablement Services	4.0 (SES-4.0.0.0-033.6)
Avaya 2420 Digital Telephone	N/A
Avaya 4621SW IP Telephone (SIP)	2.2.2
Avaya 4625SW IP Telephone (H.323)	2.8
Avaya 9630 IP Telephone (SIP)	1.0
Avaya 9630 IP Telephone (H.323)	1.5
Avaya IP Softphone	6.0.0.54
Avaya Desktop Edition	R2.1 SP1
Avaya Quick Edition	Version : 3.1.1 Firmware : 7.1.20
Avaya Quick Edition G11 PSTN Gateway	7.1.20
Avaya Quick Edition A10 Analog Gateway	3.21.0
Hitachi Cable WirelessIP-5000-A SIP Telephone	2.5.1
Netgear FS726TP Smart Switch with POE	Version : 2.001.002 Firmware : 1.0.2_23
Netgear Prosafe Wireless Access Point WG302v2	Firmware : 5.1.19

## 3. Avaya Communication Manager Configuration

All of the telephones configured in the sample network within the headquarters site in **Figure 1** were administered as stations in Avaya Communication Manager. SIP stations were administered as Off-PBX stations in Avaya Communication Manager. For information on how to administer these types of stations refer to **Section 13 [1]**.

### 3.1. SIP Trunk Configuration Modification to Support Avaya Quick Edition

Avaya Quick Edition leverages a trunk built between Avaya Communication Manager and Avaya SIP Enablement Services. As recommended in the administration guide (refer to **Section 13 [4]**), shuffling must be disabled on this trunk. For this configuration, a separate trunk was not created. Instead, shuffling was disabled on the existing trunk between Avaya Communication Manager and Avaya SIP Enablement Services. This was done to minimize the changes to the existing configuration between Avaya Communication Manager and Avaya SIP Enablement Services.

Step	Description
1.	<p>Avaya Quick Edition requires the SIP trunk between Avaya Communication Manager and Avaya SIP Enablement Services to be configured such that <b>Direct IP-IP Audio Connections</b> is set to “n” (refer to <b>Section 13 [4]</b>). In the sample configuration, both the trunk and signal groups shared the same numerical identifier value of “1”. From the System Administration Terminal (SAT) interface on Avaya Communication Manger use the “<b>change signaling-group 1</b>” command and set <b>Direct IP-IP Audio Connections</b> to “n”. For complete information on configuring a SIP trunk between Avaya Communication Manager and Avaya SIP Enablement Services refer to <b>Section 13 [1,2]</b>.</p> <div> <div>change signaling-group 1</div> <div>Page 1 of 1</div> <div> <div>SIGNALING GROUP</div> <div> Group Number: 1 Group Type: sip Transport Method: tls </div> <div> Near-end Node Name: procr Near-end Listen Port: 5061 Far-end Node Name: SES-Serv Far-end Listen Port: 5061 Far-end Network Region: 1 Far-end Domain: devcon7.com </div> <div> DTMF over IP: rtp-payload Direct IP-IP Audio Connections? n IP Audio Hairpinning? n </div> <div> Enable Layer 3 Test? n Session Establishment Timer(min): 120 </div> </div> </div>

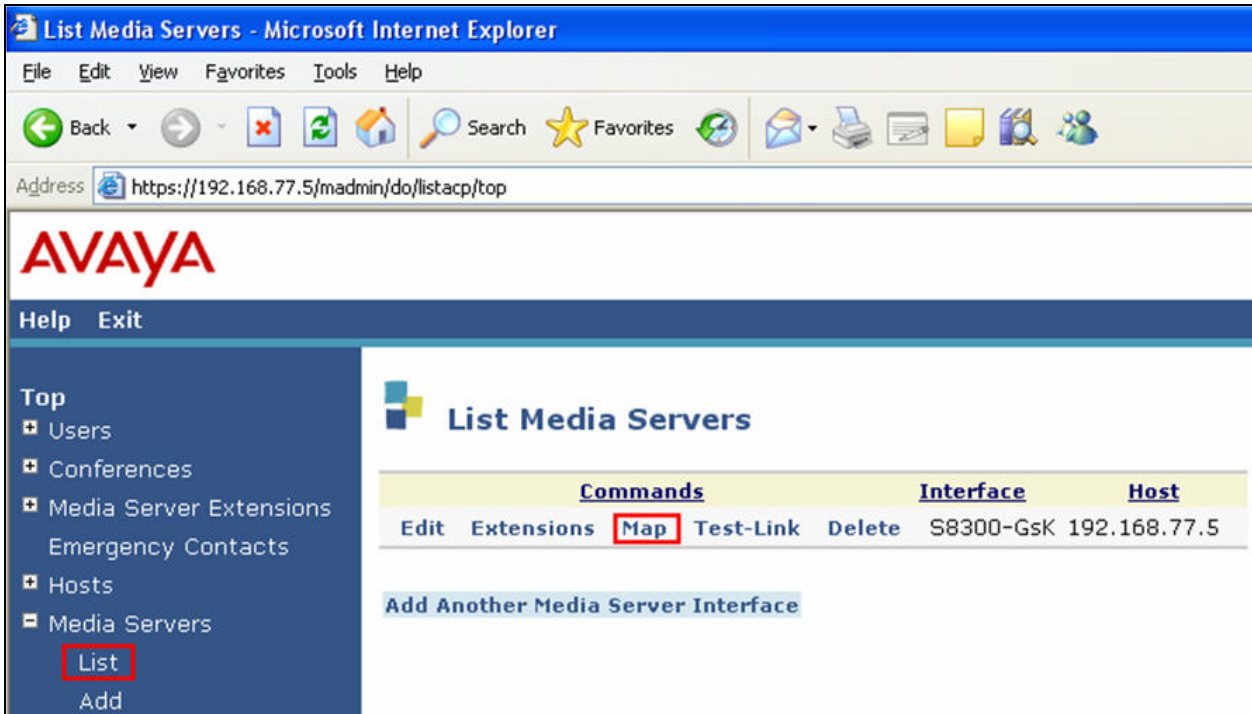
Step	Description																																																																																										
2.	<p>In the sample configuration the headquarters site was configured to be capable of dialing the branch site by dialing 33XXX (where XXX would be actual extension assigned to the station within the branch site). For example, a station within the branch site with an extension of 200 would be accessible by dialing 33200 from the headquarters. Auto Alternate Routing (AAR) was used within the headquarters site to route the digits in order to accommodate the dial plan. From the SAT interface on Avaya Communication Manager use the “<b>change dialplan analysis</b>” command and enter the values highlighted below and submit the change.</p> <div><div>change dialplan analysis</div><div>Page1 of12</div><div>DIAL PLAN ANALYSIS TABLE</div><div>Percent Full:3</div><table><tr><th>Dialed String</th><th>Total Length</th><th>Call Type</th><th>Dialed String</th><th>Total Length</th><th>Call Type</th><th>Dialed String</th><th>Total Length</th><th>Call Type</th></tr><tr><td>1</td><td>3</td><td>dac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>5</td><td>aar</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>5</td><td>aar</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td>5</td><td>ext</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>75000</td><td>5</td><td>ext</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>1</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td>1</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>*</td><td>3</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>#</td><td>3</td><td>fac</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div>	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	1	3	dac							3	5	aar							5	5	aar							7	5	ext							75000	5	ext							8	1	fac							9	1	fac							*	3	fac							#	3	fac						
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3.	<p>From the SAT interface use the use the “<b>change feature-access-codes</b>” command and enter the values displayed below and submit the change.</p> <div><div>change feature-access-codes</div><div>Page1 of7</div><div>FEATURE ACCESS CODE (FAC)</div><div>Abbreviated Dialing List1 Access Code:</div><div>Abbreviated Dialing List2 Access Code:</div><div>Abbreviated Dialing List3 Access Code:</div><div>Abbreviated Dial - Prgm Group List Access Code:</div><div>Announcement Access Code:</div><div>Answer Back Access Code:</div><div>Attendant Access Code:</div><div>Auto Alternate Routing (AAR) Access Code: 8</div><div>Auto Route Selection (ARS) - Access Code 1: 9</div><div>Access Code 2:</div><div>Automatic Callback Activation:</div><div>Deactivation:</div><div>Call Forwarding Activation Busy/DA: All:</div><div>Deactivation:</div><div>Call Forwarding Enhanced Status: Act:</div><div>Deactivation:</div><div>Call Park Access Code:</div><div>Call Pickup Access Code:</div><div>CAS Remote Hold/Answer Hold-Unhold Access Code:</div><div>CDR Account Code Access Code:</div><div>Change COR Access Code:</div><div>Change Coverage Access Code:</div><div>Contact Closure Open Code:</div><div>Close Code:</div></div>																																																																																										

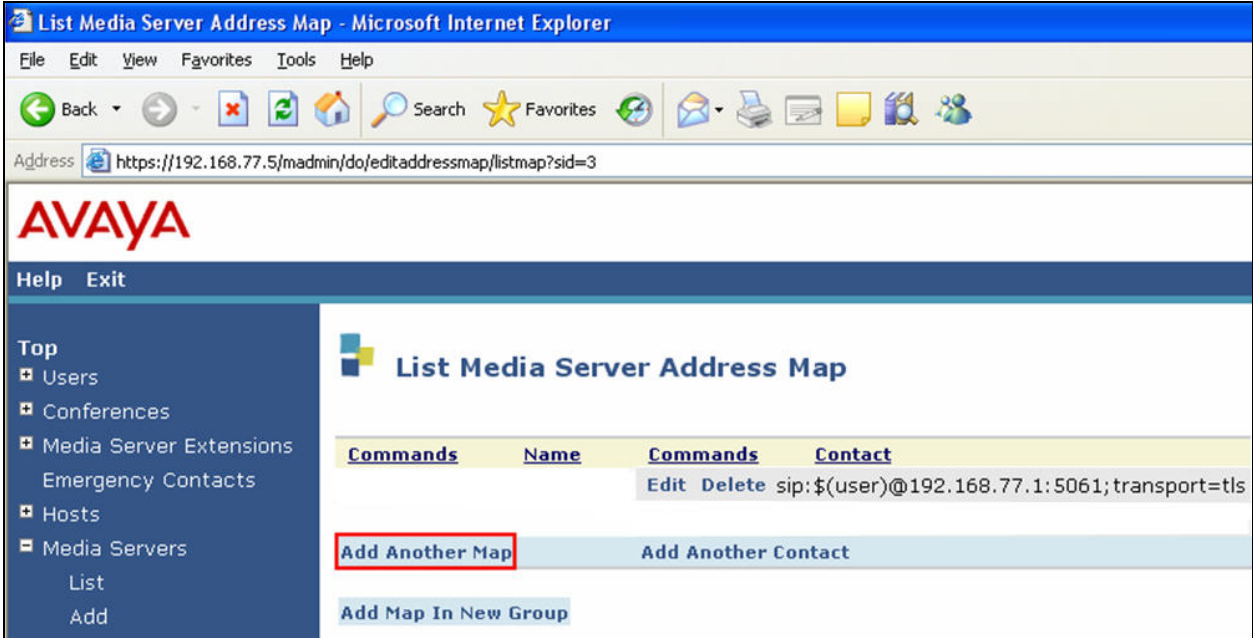
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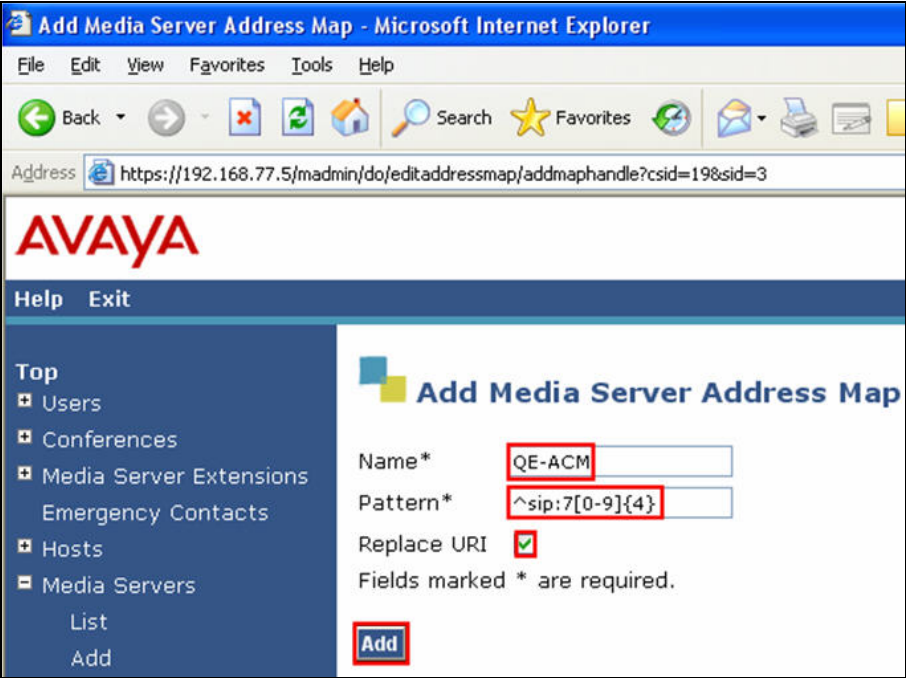
## 4. Avaya SIP Enablement Services Configuration

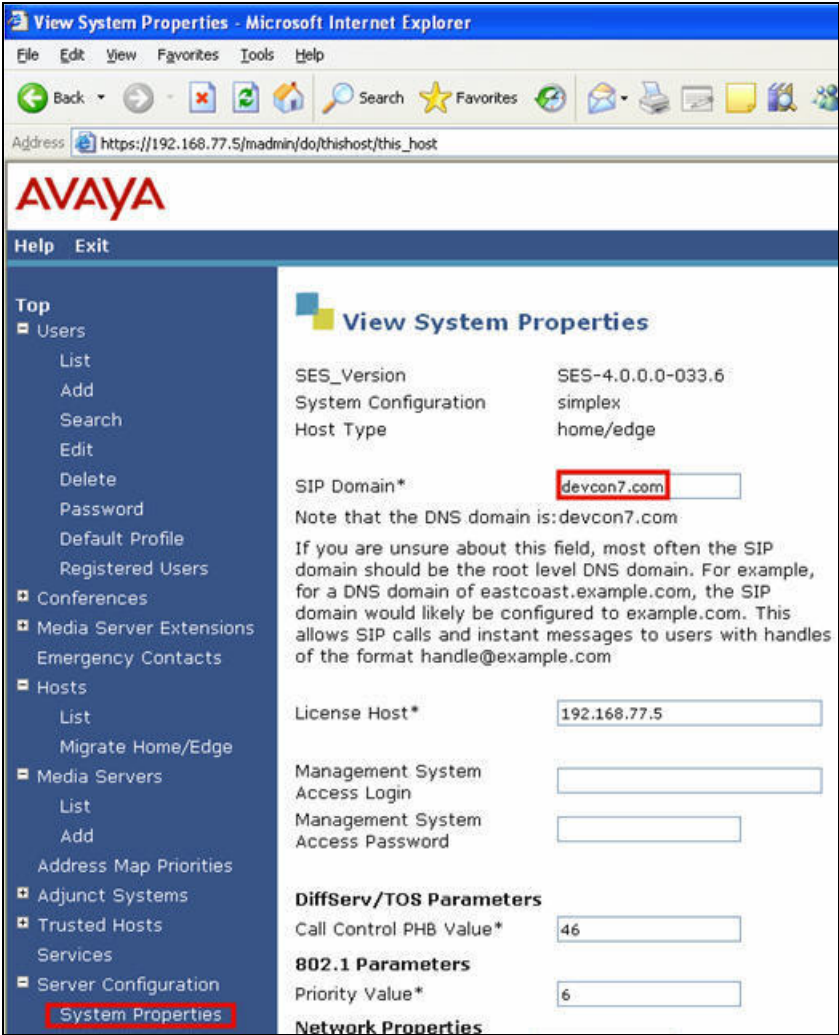
SIP stations within the headquarters site in **Figure 1** were configured as Users and Media Server Extensions within Avaya SIP Enablement Services. For information on how to administer these types of stations refer to **Section 13 [2]**. Extensions within the branch site that are accessible to the headquarters site are administered as Users within Avaya SIP Enablement Services, but not Media Server Extensions.

In order to support an Avaya Quick Edition integration one modification needs to be made to the existing connection between Avaya SIP Enablement Services and Avaya Communication Manager. A Media Server Address Map needs to be created such that local station (stations that belong to the headquarters site) calls are routed properly.

Step	Description
1.	<p>Use any web browser and access the <b>Administration Web Interface</b> on Avaya SIP Enablement Services. For information on how to navigate to the <b>Administration Web Interface</b> refer to <b>Section 13 [2]</b>. Navigate to the <b>List Media Servers</b> web page by clicking <b>List</b> under <b>Media Servers</b> found within the blue background navigation panel on the left side of the web page. Click <b>Map</b>.</p> 

Step	Description
2.	<p>From the <b>List Media Server Address Map</b> web page, click <b>Add Another Map</b>.</p>  <p>The screenshot shows the Avaya List Media Server Address Map web page. The browser is Microsoft Internet Explorer. The address bar displays the URL: https://192.168.77.5/madmin/do/editaddressmap/listmap?sid=3. The page has a blue header with the Avaya logo and a navigation menu on the left. The main content area is titled 'List Media Server Address Map' and contains a table with columns 'Commands', 'Name', 'Commands', and 'Contact'. A button labeled 'Add Another Map' is highlighted with a red rectangle.</p>

Step	Description
3.	<p>From the <b>Add Media Server Address Map</b> web page, enter the information displayed below and then click <b>Add</b>. <b>Name</b> can be any descriptive name that identifies this particular Address Map. <b>Pattern</b> requires the user to understand and configure a SIP regular expression. In the sample network the headquarters site extensions are 5 digits in length and all begin with the number 7. Therefore, the pattern to be created needs to match a string beginning with the number 7 for a total length of 5. To accomplish this, the string “^sip:7[0-9]{4}” was used.</p> 

Step	Description
4.	<p>In order to complete the Avaya Quick Edition integration the user will need to know the SIP Domain of the Avaya SIP Enablement Services. To obtain this information, navigate to the <b>System Properties</b> web page by clicking <b>System Properties</b> under <b>Server Configuration</b> found within the blue background navigation panel on the left side of the web page. Make note of the <b>SIP Domain</b>.</p> 

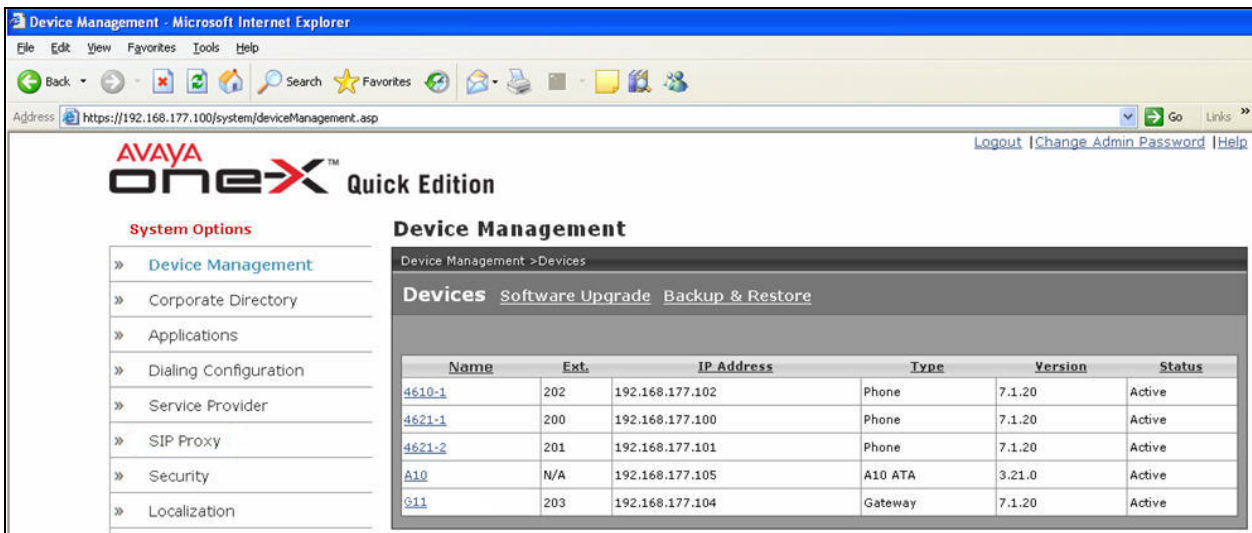
## 5. Avaya IA 770 INTUITY AUDIX Configuration

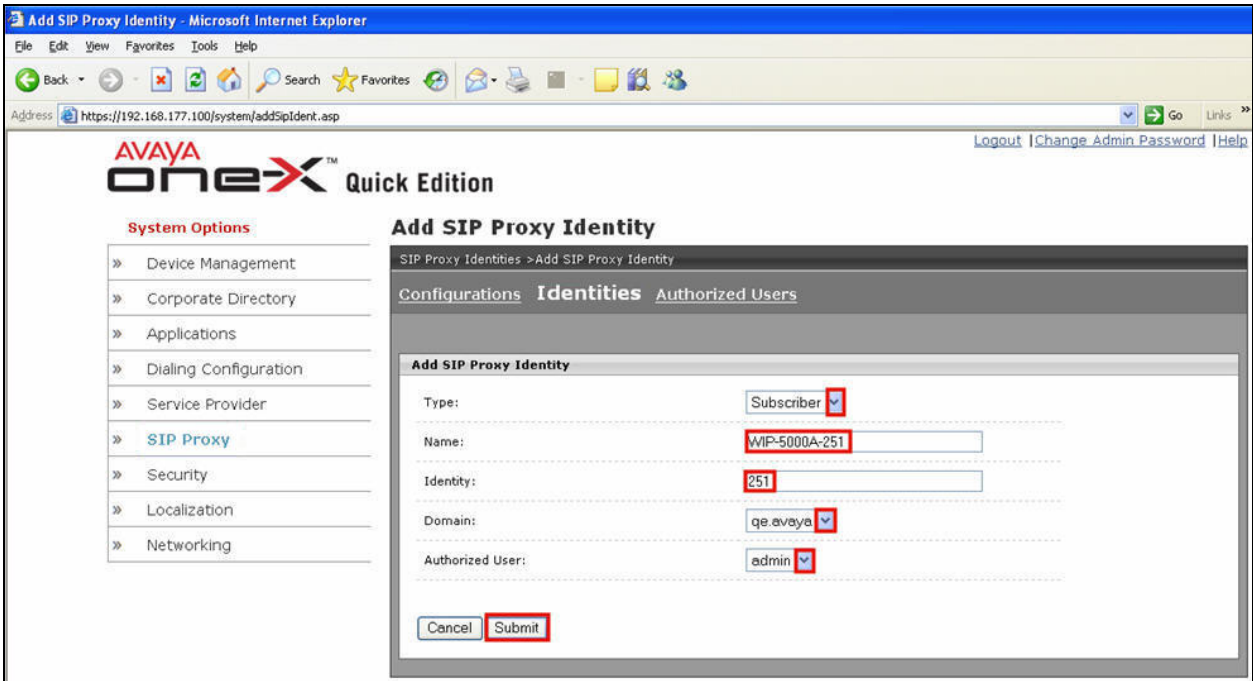
Voicemail services within the headquarters site were provided by Avaya IA 770 (IA770) INTUITY AUDIX. For information on how to administer Avaya IA770 refer to **Section 13 [3]**. Avaya IA770 was used within the headquarters site to verify a user within the branch site was capable of dialing over the SIP trunk between the two sites and have DTMF tones be properly interpreted.

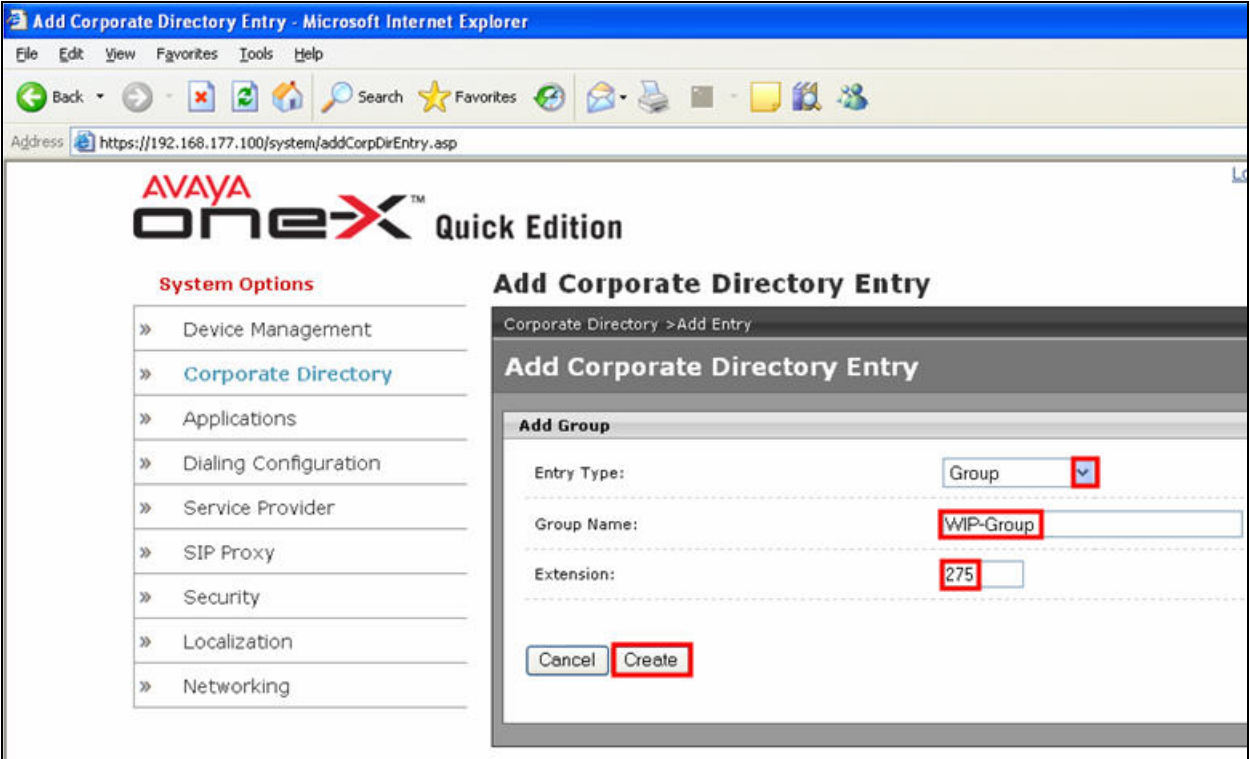
## 6. Avaya Quick Edition Configuration

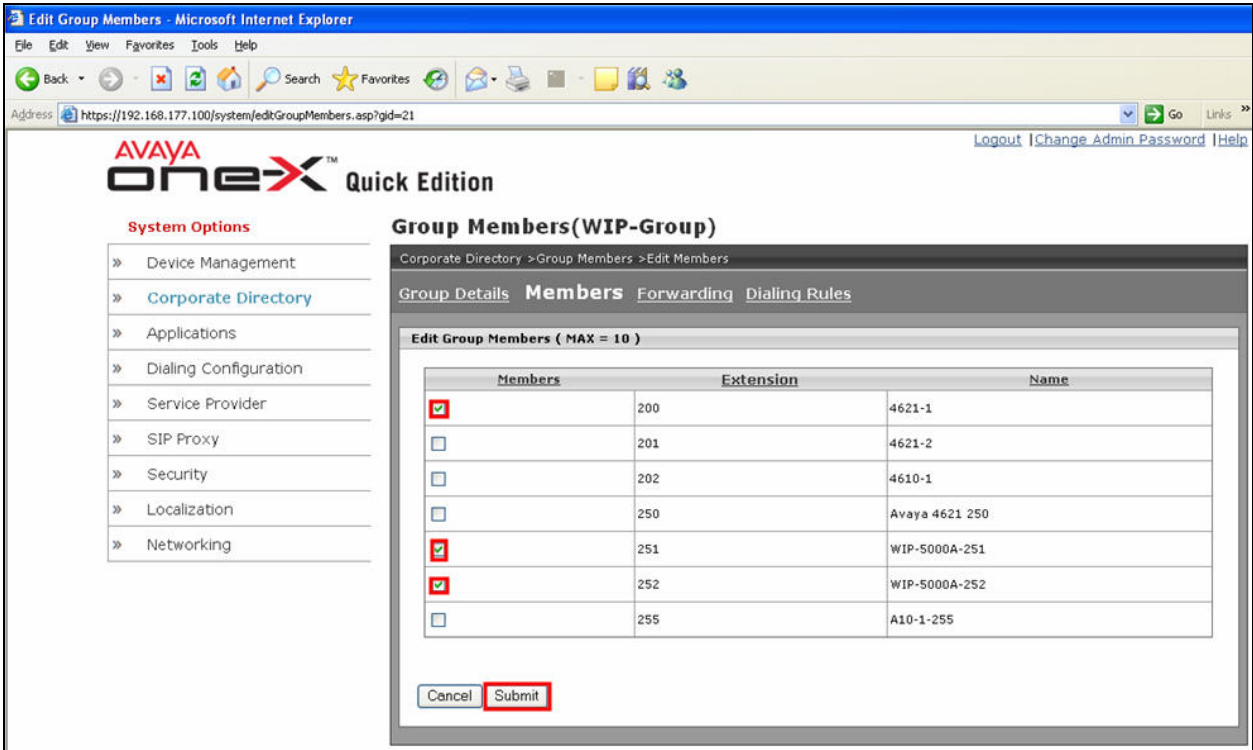
The initial configuration for an Avaya Quick Edition network is performed by directly interacting with the keypad present on the Avaya Quick Edition telephone. For information on how to perform an initial configuration for an Avaya Quick Edition network and the process for installing both the Avaya G11 PSTN and A10 Analog gateways, refer to **Section 13 [4]**.

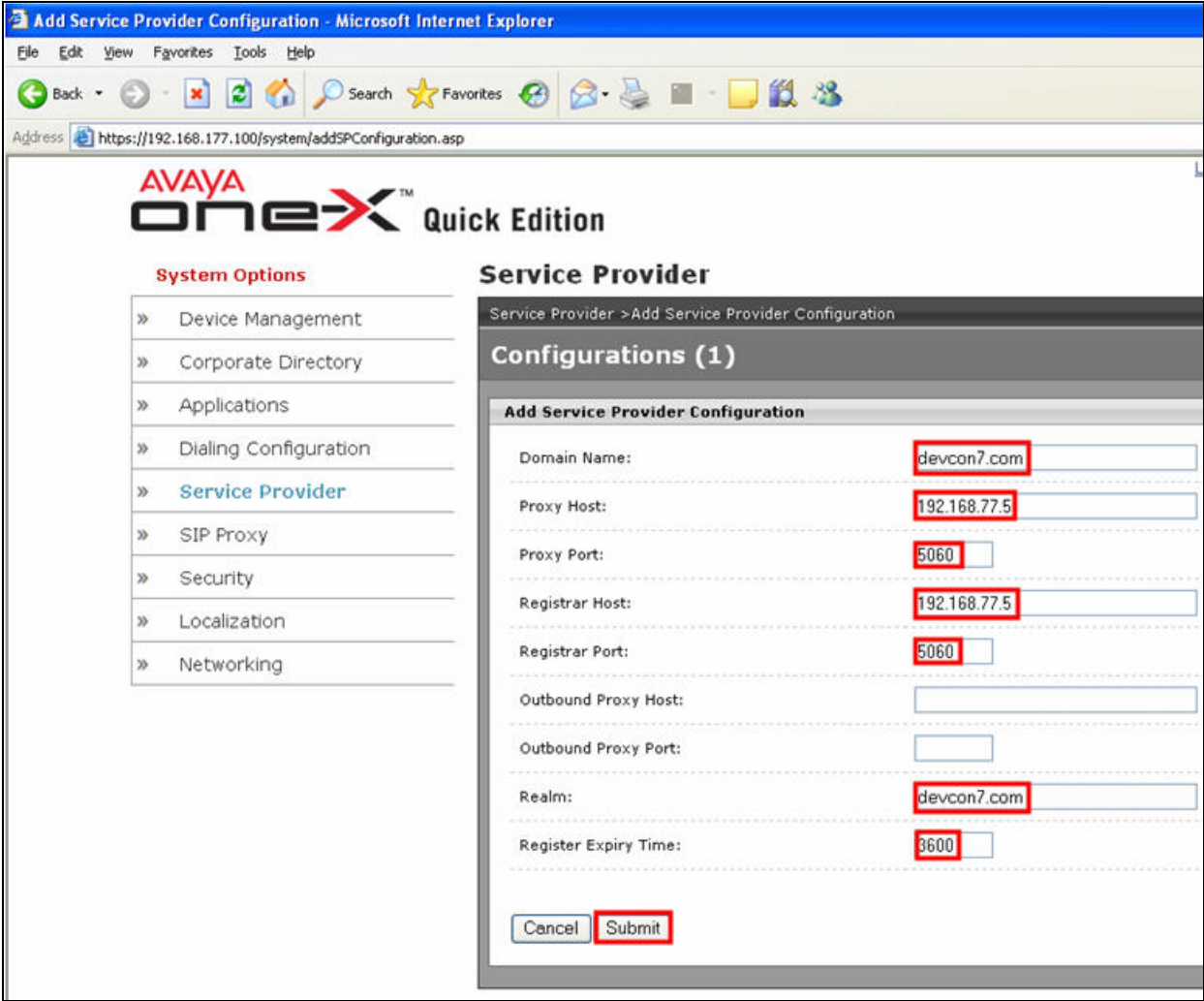
In order to integrate non-Avaya Quick Edition SIP endpoints to the Avaya Quick Edition network the user must create a local SIP Identity within the Avaya Quick Edition network, an Avaya Quick Edition group, and then assign this SIP Identity to the newly created Avaya Quick Edition group. Each non-Avaya Quick Edition SIP endpoint must be in an Avaya Quick Edition group that has at least one Avaya Quick Edition telephone. This configuration only allows for the non-Avaya Quick Edition SIP endpoint to be reachable within the Avaya Quick Edition network. Two additional configurations are required in order to make the branch site non-Avaya Quick Edition SIP endpoint accessible within the headquarters. Those configurations are creating a SIP Identity for the branch site non-Avaya Quick Edition SIP endpoint over the Service Provider Trunk and then assigning that SIP Identity to the branch site non-Avaya Quick Edition SIP endpoint. Each Service Provider SIP Identity must be configured as a User on the headquarters Avaya SIP Enablement Services, but not as a Media Server Extension.

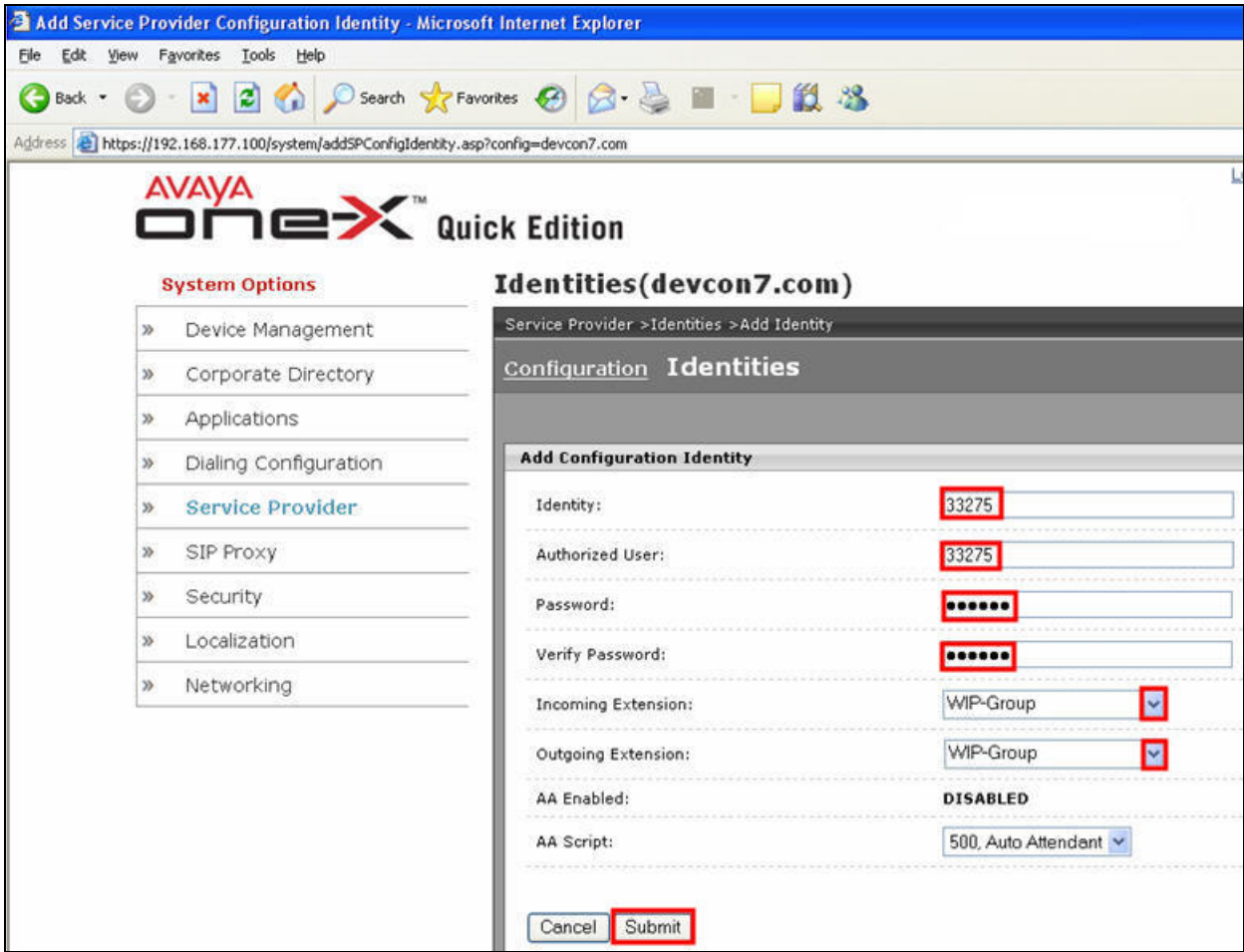
Step	Description																																				
1.	<p>Once the initial configuration has been performed, access the Avaya Quick Edition web configuration utility by using any web browser to open a secure connection to any of the IP addresses assigned to any Avaya Quick Edition telephone. In the sample network, one of the Avaya Quick Edition telephones had an IP address of 192.168.177.100 and the URL used to access the configuration utility was <a href="https://192.168.177.100">https://192.168.177.100</a>. A login is required in order to access the <b>System Options</b>, refer to <b>Section 13 [4]</b> for appropriate credential information.</p> <p>Once logged in, the <b>Device Management</b> web page is displayed. This page lists all of the Avaya Quick Edition devices that have been found on the network. This page can be used to quickly gauge the number and types of Avaya Quick Edition devices present within the network.</p>  <table><tr><th>Name</th><th>Ext.</th><th>IP Address</th><th>Type</th><th>Version</th><th>Status</th></tr><tr><td><a href="#">4610-1</a></td><td>202</td><td>192.168.177.102</td><td>Phone</td><td>7.1.20</td><td>Active</td></tr><tr><td><a href="#">4621-1</a></td><td>200</td><td>192.168.177.100</td><td>Phone</td><td>7.1.20</td><td>Active</td></tr><tr><td><a href="#">4621-2</a></td><td>201</td><td>192.168.177.101</td><td>Phone</td><td>7.1.20</td><td>Active</td></tr><tr><td><a href="#">A10</a></td><td>N/A</td><td>192.168.177.105</td><td>A10 ATA</td><td>3.21.0</td><td>Active</td></tr><tr><td><a href="#">G11</a></td><td>203</td><td>192.168.177.104</td><td>Gateway</td><td>7.1.20</td><td>Active</td></tr></table>	Name	Ext.	IP Address	Type	Version	Status	<a href="#">4610-1</a>	202	192.168.177.102	Phone	7.1.20	Active	<a href="#">4621-1</a>	200	192.168.177.100	Phone	7.1.20	Active	<a href="#">4621-2</a>	201	192.168.177.101	Phone	7.1.20	Active	<a href="#">A10</a>	N/A	192.168.177.105	A10 ATA	3.21.0	Active	<a href="#">G11</a>	203	192.168.177.104	Gateway	7.1.20	Active
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<a href="#">4610-1</a>	202	192.168.177.102	Phone	7.1.20	Active																																
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<a href="#">4621-2</a>	201	192.168.177.101	Phone	7.1.20	Active																																
<a href="#">A10</a>	N/A	192.168.177.105	A10 ATA	3.21.0	Active																																
<a href="#">G11</a>	203	192.168.177.104	Gateway	7.1.20	Active																																

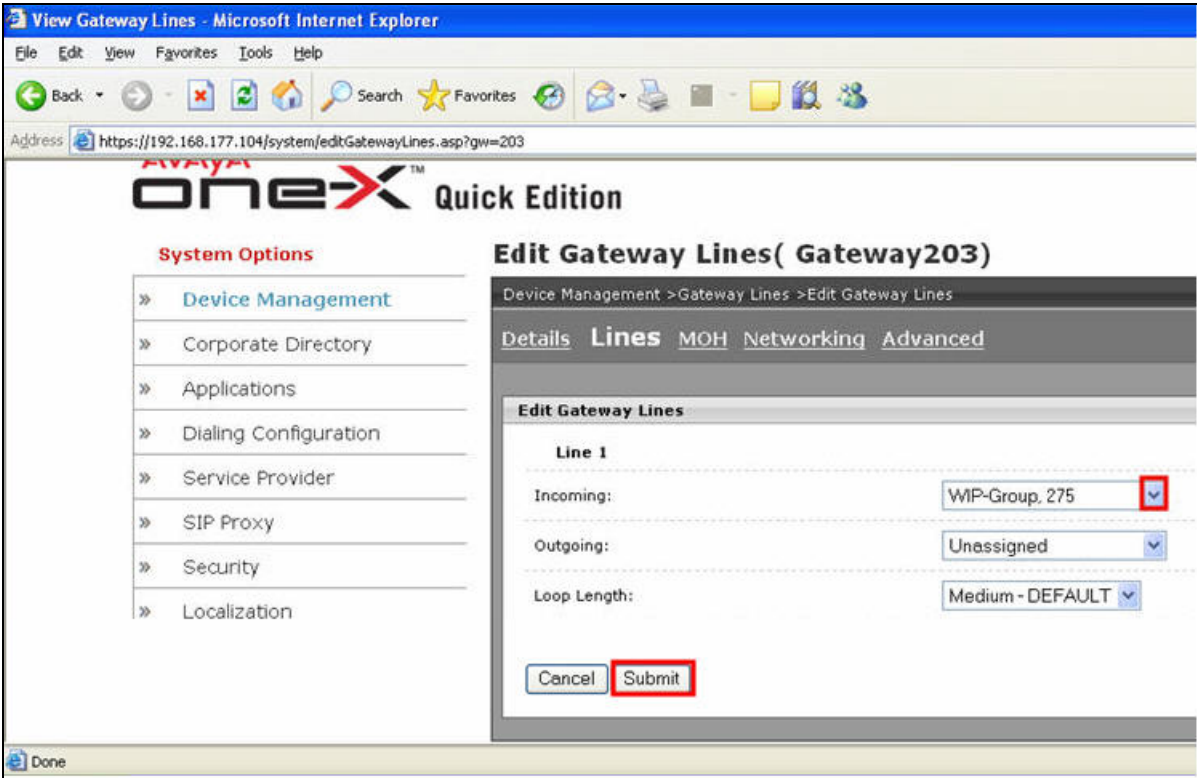
Step	Description
2.	<p>Navigate to the <b>Add SIP Proxy Identity</b> web page by clicking <b>SIP Proxy→ Identities→Add</b>. Enter the information displayed below and click <b>Submit</b>. Using the drop-down list, set <b>Type</b> to “Subscriber”, set <b>Domain</b> to “qe.avaya” and set <b>Authorized User</b> to “admin”. <b>Name</b> can be any descriptive text that identifies this particular extension. <b>Identity</b> is the extension that will be associated to this <b>SIP Proxy Identity</b>. Repeat this process for each <b>SIP Proxy Identity</b> modifying the <b>Name</b> and <b>Identity</b> fields as appropriate.</p>  <p>The screenshot shows a Microsoft Internet Explorer browser window displaying the Avaya One-X Quick Edition web interface. The address bar shows the URL: https://192.168.177.100/system/addSipIdent.asp. The page title is "Add SIP Proxy Identity - Microsoft Internet Explorer". The interface includes a navigation menu on the left with "System Options" and "SIP Proxy" highlighted. The main content area is titled "Add SIP Proxy Identity" and contains a form with the following fields: Type (Subscriber), Name (WIP-5000A-251), Identity (251), Domain (qe.avaya), and Authorized User (admin). The "Submit" button is highlighted with a red box.</p>

Step	Description
3.	<p>Navigate to the <b>Add Corporate Directory Entry</b> web page by clicking <b>Corporate Directory→Add Entry</b>. Enter the information displayed below and then click <b>Create</b>. Using the drop-down list set <b>Entry Type</b> to “Group”. <b>Group Name</b> can be any descriptive name that identifies the group. <b>Extension</b> is the numeric identifier that will be used to place calls to the group. Repeat this process for each group being created.</p>  <p>The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying <code>https://192.168.177.100/system/addCorpDirEntry.asp</code>. The page title is "Add Corporate Directory Entry - Microsoft Internet Explorer". The main content area features the Avaya One-X Quick Edition logo and a sidebar with "System Options" including Device Management, Corporate Directory, Applications, Dialing Configuration, Service Provider, SIP Proxy, Security, Localization, and Networking. The "Corporate Directory" option is selected. The main form is titled "Add Corporate Directory Entry" and contains the following fields:</p> <ul style="list-style-type: none"> <li><b>Entry Type:</b> A dropdown menu set to "Group".</li> <li><b>Group Name:</b> A text box containing "WIP-Group".</li> <li><b>Extension:</b> A text box containing "275".</li> </ul> <p>At the bottom of the form are two buttons: "Cancel" and "Create".</p>

Step	Description
4.	<p>Navigate to the <b>Edit Group Members</b> web page by clicking <b>Corporate Directory</b>→<b>Group Extension Number</b>→<b>Members</b>→<b>Change Details</b>. <b>Group Extension Number</b> will actually be a numerical value, obtained from the <b>Extension</b> configured in <b>Step 3</b>. Each non-Avaya Quick Edition SIP endpoint must be part of a group with at least one Avaya Quick Edition telephone. In the sample configuration the Hitachi Cable WirelessIP-5000-A SIP Telephones were registered using extension numbers 251 and 252. The Avaya Quick Edition telephones were assigned extension numbers 200 through 203. Check the appropriate check boxes that allow both Hitachi Cable WirelessIP-5000-A SIP Telephones and one Avaya Quick Edition telephone to be part of this group. Repeat this process to edit group membership for additional groups.</p>  <p>Note: The configuration up until this point only allows the non-Avaya Quick Edition SIP endpoint to be accessible within the Avaya Quick Edition network.</p>

Step	Description
5.	<p>Navigate to the <b>Add Service Provider Configuration</b> web page by clicking <b>Service Provider</b> → <b>Add Configuration</b>. Enter the information displayed below and then click <b>Submit</b>. <b>Domain Name</b> and <b>Realm</b> are the <b>SIP Domain</b> from <b>Section 4 Step 4</b>. <b>Proxy Host</b> and <b>Registrar Host</b> are the IP address of the headquarters Avaya SIP Enablement Services. <b>Proxy Port</b> and <b>Registrar Port</b> are both set to “5060”, the well known SIP port. <b>Register Expiry Time</b> is set to “3600” or one hour.</p> 

Step	Description
6.	<p>Navigate to the <b>Add Service Provider Configuration Identity</b> web page by clicking <b>Service Provider→Domain Name→Identities→Add Identity</b>. Enter the values displayed below and click <b>Submit</b>. Recall from <b>Step 3</b> that the <b>Extension</b> assigned to the “WIP-Group” was “275” and per the numbering schema detailed in <b>Section 3.1 Step 1</b>, the <b>Identity</b> for this group would be “33275” and that is the value entered for both <b>Identity</b> and <b>Authorized User</b>. <b>Password</b> and <b>Verify Password</b> must match both one another and the one configured on the headquarters Avaya SIP Enablement Services user. Using the drop-down list, set both <b>Incoming Extension</b> and <b>Outgoing Extension</b> to “WIP-Group”. This links the Service Provider SIP Identity to the Avaya Quick Edition SIP Proxy Identity and to the Avaya Quick Edition Group. Repeat this process for each linkage.</p>  <p>The screenshot shows the 'Add Service Provider Configuration Identity' web page in Microsoft Internet Explorer. The page title is 'Add Service Provider Configuration Identity - Microsoft Internet Explorer'. The address bar shows 'https://192.168.177.100/system/addSPConfigIdentity.asp?config=devcon7.com'. The page content includes the Avaya one-X Quick Edition logo and a sidebar with 'System Options' such as Device Management, Corporate Directory, Applications, Dialing Configuration, Service Provider (highlighted), SIP Proxy, Security, Localization, and Networking. The main content area is titled 'Identities(devcon7.com)' and contains a 'Configuration Identities' section. The 'Add Configuration Identity' form has the following fields: Identity (33275), Authorized User (33275), Password (*****), Verify Password (*****), Incoming Extension (WIP-Group), Outgoing Extension (WIP-Group), AA Enabled (DISABLED), and AA Script (500, Auto Attendant). The Submit button is highlighted.</p>

Step	Description
7.	<p>Navigate to the <b>View Gateway Lines</b> web page by clicking <b>Device Manager→G11</b>. In the sample network an analog PSTN connection was connected to the first line of the Avaya Quick Edition G11 PSTN Gateway. Using the drop-down list set <b>Incoming</b> to “WIP-Group,275” and then click <b>Submit</b>. This configures the Avaya Quick Edition G11 PSTN Gateway to ring “WIP-Group” when the analog PSTN number is dialed.</p> 

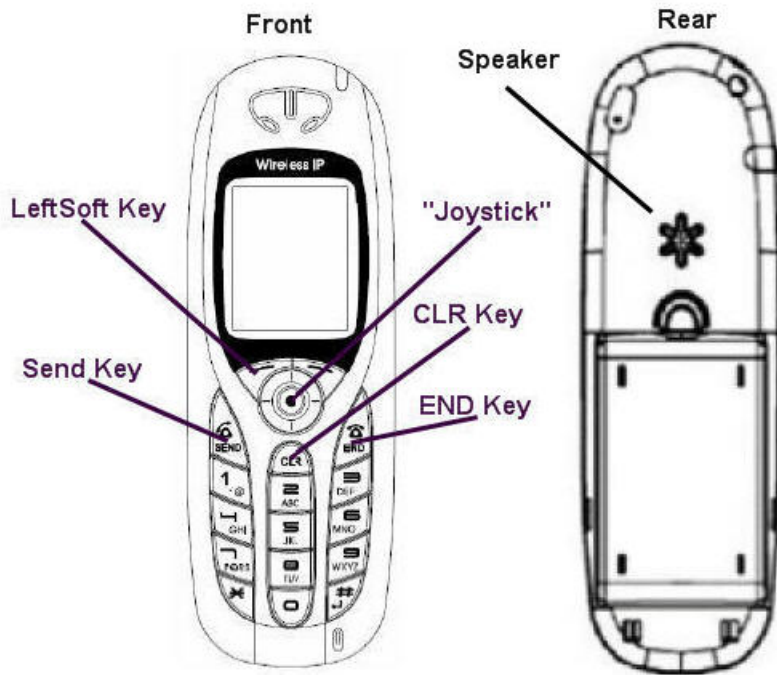
## 7. Netgear Prosafe Wireless Access Point WG302v2 Configuration


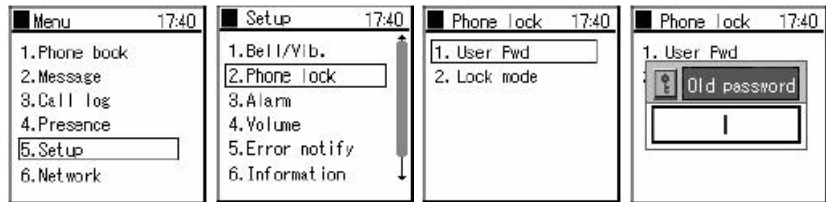

The NETGEAR Prosafe Wireless Access Point WG302v2 was used to provide the wireless network used to integrate the Hitachi Cable WirelessIP-5000-A SIP Telephone with the Avaya Quick Edition Network. For information on how to setup a NETGEAR Prosafe Wireless Access Point WG302v2 refer to **Section 13 [5]**.



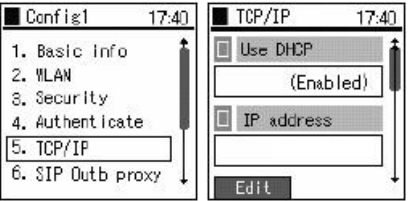

## 8. Hitachi Cable WirelessIP-5000-A SIP Telephone Configuration

### 8.1. Administering the Initial Configuration of the Hitachi Cable WirelessIP-5000-A SIP Telephone

In order to connect the Hitachi Cable WirelessIP-5000-A SIP Telephone to a wireless network the user must first configure the telephone to create the initial WiFi binding. The user can either use the buttons on the face of the telephone or a USB cable connection to a computer with a specific software application. Once the Hitachi Cable WirelessIP-5000-A Telephone has a WiFi binding with an IP address, the user can complete the configuration process using the web server built into the telephone. There are some vendor specific configuration dependencies in the configuration file, consult with Hitachi support for specific inquiries.

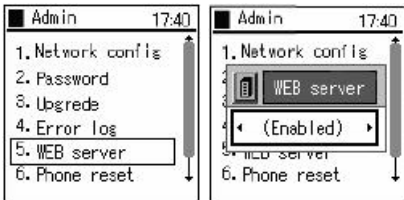
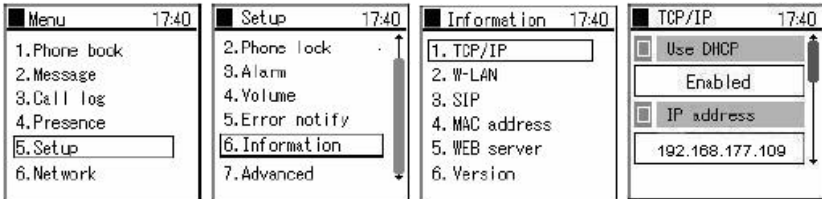
Step	Description
1.	<p>A picture of the Hitachi Cable WirelessIP-5000-A SIP Telephone is shown below. The buttons used for configuring the telephone are referenced.</p> <div><p>The diagram illustrates the front and rear views of the Hitachi Cable WirelessIP-5000-A SIP Telephone. The front view shows the 'Wireless IP' display at the top, followed by a 'Joystick' (a circular navigation pad), and a numeric keypad below. Labels with leader lines point to the 'LeftSoft Key' (a small button to the left of the joystick), the 'CLR Key' (a button above the numeric keypad), the 'Send Key' (a button to the left of the numeric keypad), and the 'END Key' (a button to the right of the numeric keypad). The rear view shows the 'Speaker' at the top and the battery compartment below.</p></div> <p><b>Note:</b> For the complete description of each button and each button's functionality refer to the Hitachi Cable documentation found in <b>Section 13 [6] and [7]</b>. To power on the Hitachi Cable WirelessIP-5000-A SIP Telephone press and hold the “<b>END Key</b>” until the phone powers up.</p>

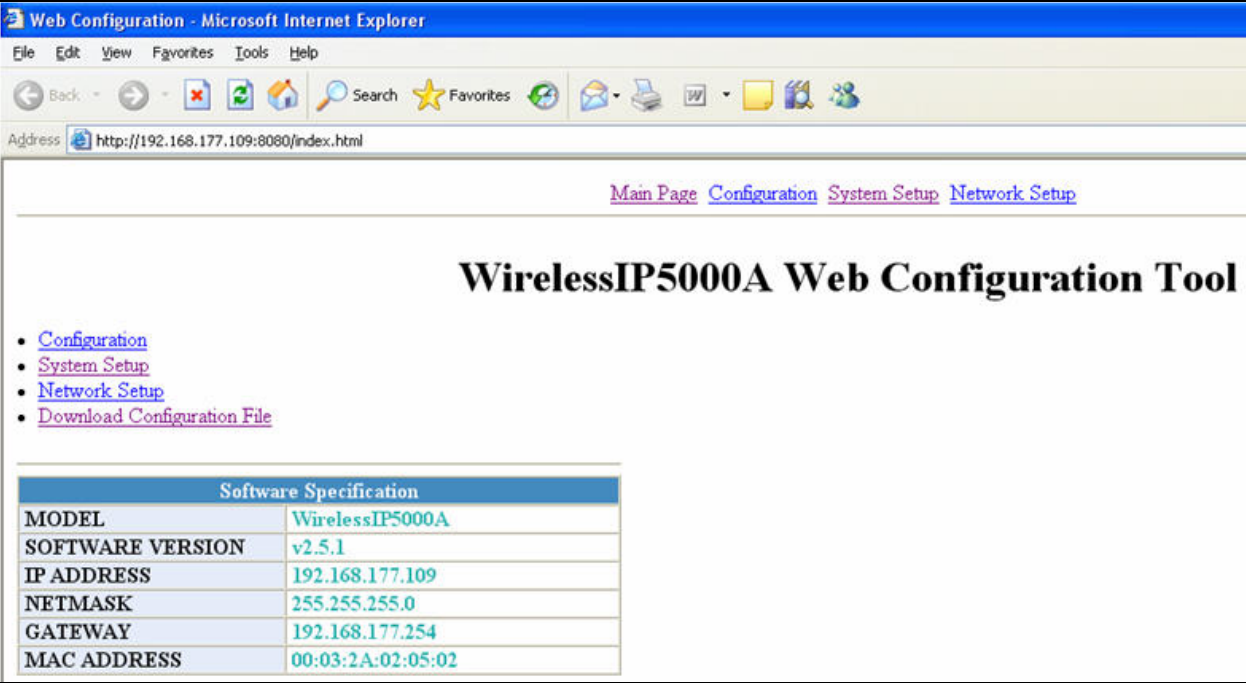
Step	Description
2.	<p data-bbox="280 237 1274 273">Once the phone has powered up, press the <b>“LeftSoft Key”</b> to enter the menu.</p> <div data-bbox="280 300 483 504">  </div> <p data-bbox="280 541 1498 688">From the <b>Menu</b> screen, use the key sequence <b>“5”, “2”, “1”</b> (<b>Setup→Phone lock→User Pwd</b>) in order to obtain access to the <b>Admin</b> menu. Enter the correct password for accessing the <b>Admin</b> menu and press the <b>“Joystick”</b> in. A password is required to access this menu, for additional information refer to <b>Section 13 [6]</b>.</p> <div data-bbox="280 720 1101 919">  </div> <p data-bbox="280 961 919 997">The user is now presented with the <b>Admin</b> menu.</p> <div data-bbox="280 1024 483 1228">  </div>

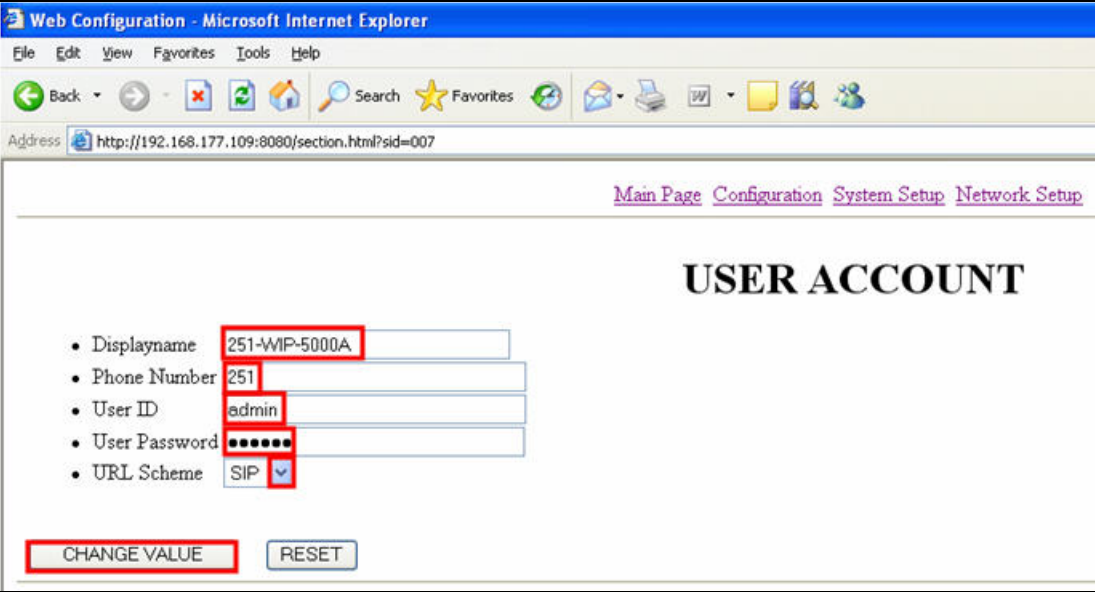
Step	Description
3.	<p>From the <b>Admin</b> menu, press “1” to select “<b>Network config</b>”.</p>  <p>From the <b>Network config</b> menu use the key sequence “1”, “1”, “2” (<b>Network config</b>→<b>Config1</b>→<b>WLAN</b>) to access the <b>WLAN</b> menu. Press the “<b>LeftSoft Key</b>” to select <b>Edit</b>. Use the keypad to enter the <b>SSID</b>, which must match the SSID configured on the wireless network.</p> 
4.	<p>From the <b>Config1</b> menu press “5” to configure the TCP/IP parameters for the Hitachi Cable WirelessIP-5000-A SIP Telephone. If DHCP is not enabled press the “<b>LeftSoft Key</b>” and select <b>Edit</b> then using the “<b>JoyStick</b>” toggle left/right to enable DHCP.</p> 
5.	<p>From the <b>Config1</b> menu, press “3” to administer the <b>Security</b> configuration. Press the “<b>LeftSoft Key</b>” and select <b>Edit</b> to modify the security mode. Using the “<b>Joystick</b>” press left/right until the “<b>WPA2-PSK</b>” option is selected. Using the key pad specify the pass phrase assigned to the SSID. Press the “<b>Joystick</b>” in to complete the Security configuration.</p> 

## 8.2. Administering Additional Configuration Information on Hitachi Cable WirelessIP-5000-A SIP Telephone

This section details other configurations necessary for interoperability between the Hitachi Cable WirelessIP-5000-A SIP Telephones with an Avaya Quick Edition system. The following settings are configured by using the web server built-in to the Hitachi Cable WirelessIP-5000-A SIP Telephone and require a web browser. Only modifications made to default values are shown.

Step	Description
1.	<p>In order to verify the web server is running on the Hitachi Cable WirelessIP-5000-A SIP Telephone use the <b>Admin</b> menu. From the <b>Admin</b> menu, press “5” to check the status of the web server. Should the web server be disabled, use the “JoyStick” and toggle left/right and select <b>Enabled</b>. Press the “JoyStick” inward.</p>  <p>To obtain the IP address assigned via DHCP to the Hitachi Cable WirelessIP-5000-A SIP Telephone use the key sequence “5”, “6”, “1” (<b>Setup</b>→<b>Information</b>→<b>TCP/IP</b>) from the <b>Menu</b> menu.</p> 

Step	Description														
2.	<p>From a web browser running on a PC with network connectivity to the Hitachi Cable WirelessIP-5000-A SIP Telephone, administer the telephone as follows. Place the IP address of the telephone into the URL address field specifying the port 8080. The web server inside the Hitachi Cable WirelessIP-5000-A SIP Telephone operates at port 8080. The URL string to access the web server of a telephone (which has an IP address of 192.168.177.109) is <a href="http://192.168.77.109:8080">http://192.168.77.109:8080</a>. The user will be required to supply a username and password to access the web interface, consult the Hitachi Cable documentation for the appropriate credentials, see <b>Section 13 [6]</b>.</p>  <table border="1"> <thead> <tr> <th colspan="2">Software Specification</th></tr> </thead> <tbody> <tr> <td>MODEL</td><td>WirelessIP5000A</td></tr> <tr> <td>SOFTWARE VERSION</td><td>v2.5.1</td></tr> <tr> <td>IP ADDRESS</td><td>192.168.177.109</td></tr> <tr> <td>NETMASK</td><td>255.255.255.0</td></tr> <tr> <td>GATEWAY</td><td>192.168.177.254</td></tr> <tr> <td>MAC ADDRESS</td><td>00:03:2A:02:05:02</td></tr> </tbody> </table>	Software Specification		MODEL	WirelessIP5000A	SOFTWARE VERSION	v2.5.1	IP ADDRESS	192.168.177.109	NETMASK	255.255.255.0	GATEWAY	192.168.177.254	MAC ADDRESS	00:03:2A:02:05:02
Software Specification															
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SOFTWARE VERSION	v2.5.1														
IP ADDRESS	192.168.177.109														
NETMASK	255.255.255.0														
GATEWAY	192.168.177.254														
MAC ADDRESS	00:03:2A:02:05:02														

Step	Description
3.	<p>Navigate to the <b>USER ACCOUNT</b> web page by clicking <b>Network Setup</b> and then clicking <b>USER ACCOUNT</b>. Enter the information displayed below and click <b>CHANGE VALUE</b>. <b>Displayname</b> is any descriptive text and this text will be displayed on the front LCD of the Hitachi Cable WirelessIP-5000-A SIP Telephone. <b>Phone Number</b> is the <b>SIP Proxy Identity</b> value configured from <b>Section 6 Step 2</b>. <b>User ID</b> is the <b>Authorized User</b> value configured from <b>Section 6 Step 2</b>. <b>User Password</b> is the password assigned to the <b>Authorized User</b> on the Avaya Quick Edition system. Use the drop-down list for <b>URL Scheme</b> to select "SIP".</p> 

Step	Description
4.	<p>Navigate to the <b>SERVER SETTINGS</b> web page by clicking <b>Network Setup</b> and then clicking <b>SERVER SETTINGS</b>. Enter the information displayed below and click <b>CHANGE VALUE</b>. See <b>Section 6 Step 1</b> for the IP address assignments for the Avaya Quick Edition telephones. <b>1st Proxy</b> and <b>1st Registrar</b> are the IP address assigned to any of the Avaya Quick Edition telephones. <b>Domain Realm</b> is the domain assigned to the Avaya Quick Edition system, see <b>Section 6 Step 2</b>. <b>Register Expire</b> was set to “3600”.</p>

Web Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

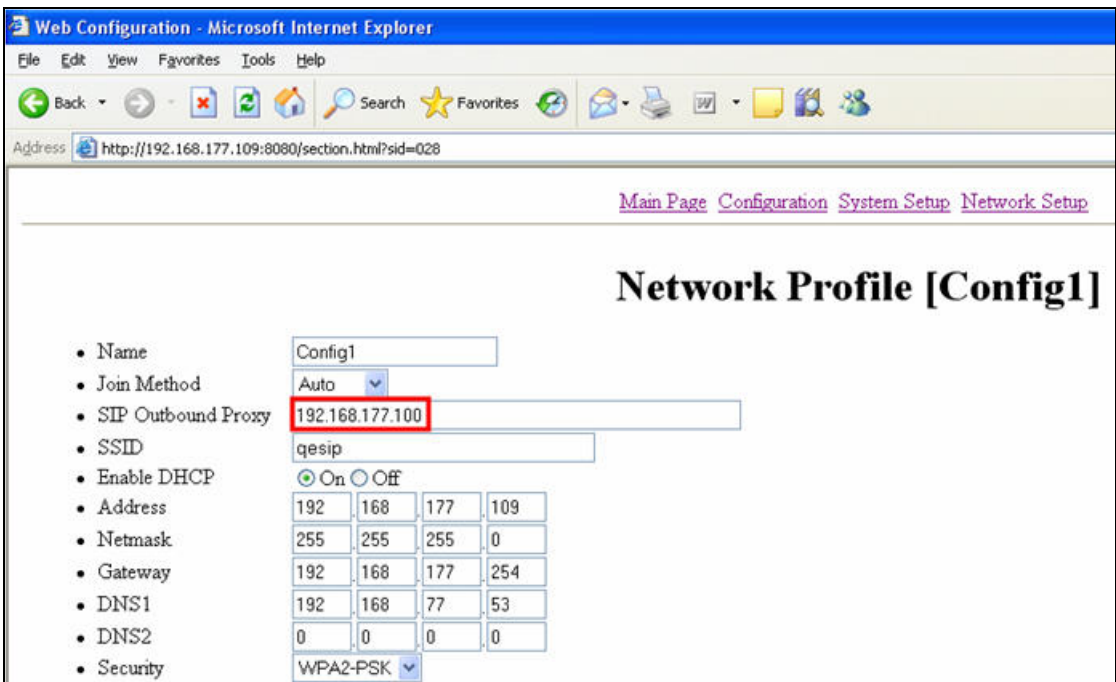
Back Forward Stop Reload Home Search Favorites

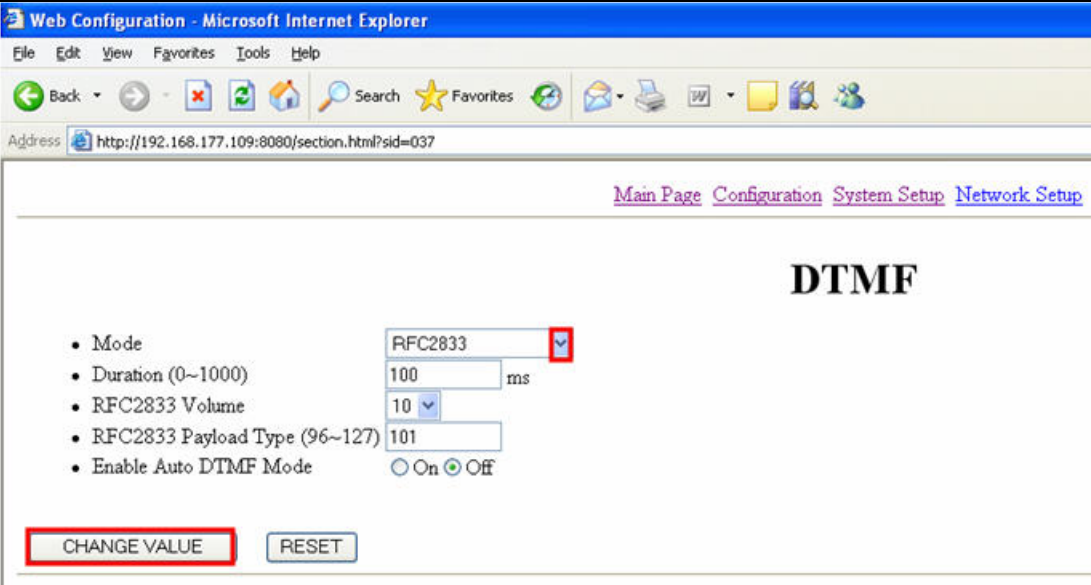
Address <http://192.168.177.109:8080/section.html?sid=008>

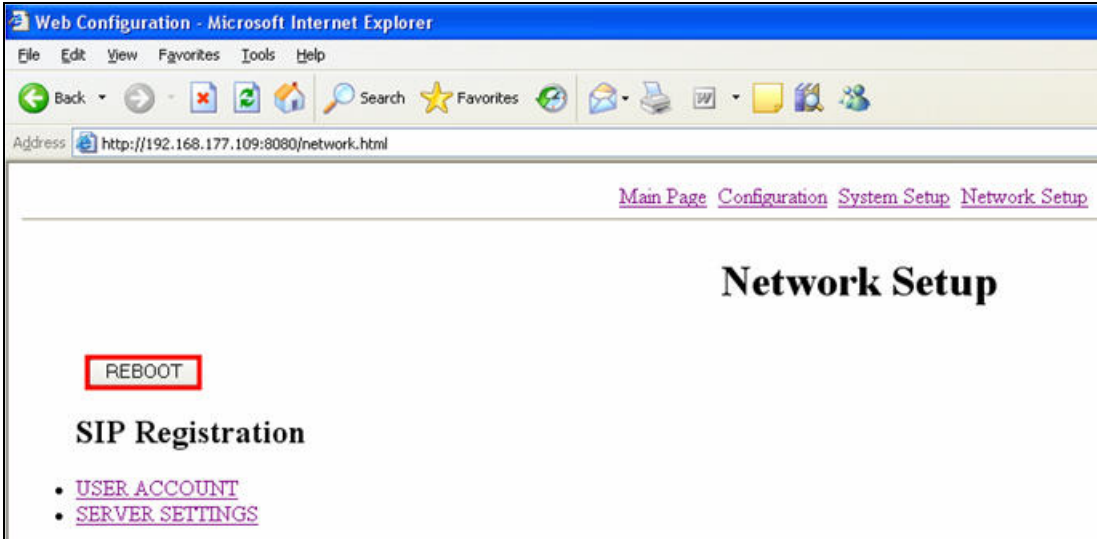
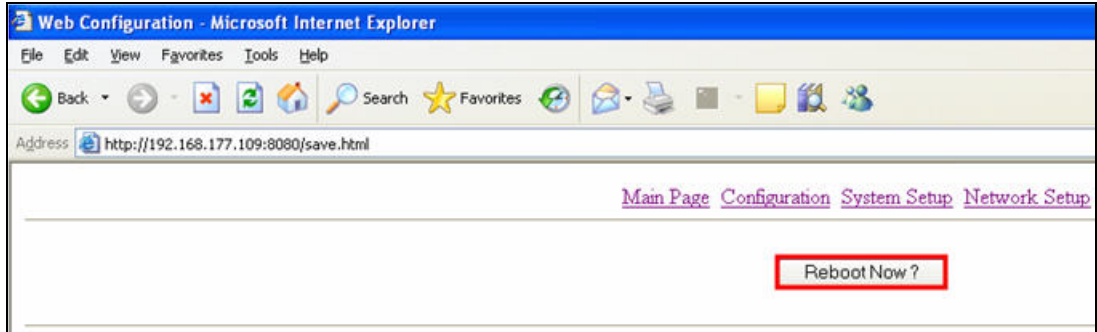
[Main Page](#) [Configuration](#) [System Setup](#) [Network Setup](#)

## SERVER SETTINGS

- 1st Proxy
- 1st Registrar
- 2nd Proxy
- 2nd Registrar
- Domain Realm
- Register Expire (60~86400)  s
- Register Retry Backoff Interval  s (CSV Format)

Step	Description
5.	<p>Navigate to the <b>Network Profile [Config1]</b> web page by clicking <b>Network Setup</b> and then clicking <b>Config1</b>. Enter the information displayed below and then click <b>CHANGE VALUE</b> (not shown, scroll down to the bottom of the web page). <b>SIP Outbound Proxy</b> is the IP address of any of the Avaya Quick Edition telephones.</p>  <p>The screenshot shows a web browser window titled "Web Configuration - Microsoft Internet Explorer". The address bar displays "http://192.168.177.109:8080/section.html?sid=028". The page content includes navigation links: "Main Page", "Configuration", "System Setup", and "Network Setup". The main heading is "Network Profile [Config1]". Below this, there is a list of configuration items:</p> <ul style="list-style-type: none"> <li>Name: Config1</li> <li>Join Method: Auto</li> <li>SIP Outbound Proxy: 192.168.177.100 (highlighted with a red box)</li> <li>SSID: gesip</li> <li>Enable DHCP: On (radio button selected)</li> <li>Address: 192.168.177.109</li> <li>Netmask: 255.255.255.0</li> <li>Gateway: 192.168.177.254</li> <li>DNS1: 192.168.77.53</li> <li>DNS2: 0.0.0.0</li> <li>Security: WPA2-PSK</li> </ul>

Step	Description
6.	<p>Navigate to the <b>DTMF</b> web page by clicking <b>System Setup</b> and then clicking <b>DTMF</b>. Use the drop-down list for <b>Mode</b> and select “RFC2833” and then click <b>CHANGE VALUE</b>. The remaining values are using default settings.</p> 

Step	Description
7.	<p>Return to the <b>Network Setup</b> web page and click <b>REBOOT</b> and then click <b>Reboot Now ?</b>. In order for the new configuration to take effect the phone needs to be rebooted.</p>  

## 9. Interoperability Compliance Testing

The interoperability compliance testing focused on verifying the capability of the Hitachi Cable WirelessIP-5000-A SIP Telephone to register with an Avaya Quick Edition system. Basic calling features were exercised and verified to operate correctly.

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.

## **9.1. General Test Approach**

The general test approach was to register the Hitachi Cable WirelessIP-5000-A SIP Telephone with an Avaya Quick Edition system. Calls were made between telephones and specific calling features were exercised.

## **9.2. Test Results**

The Hitachi Cable WirelessIP-5000-A SIP Telephone passed all test cases. The Hitachi Cable WirelessIP-5000-A SIP Telephone was verified to be capable of registering with an Avaya Quick Edition system. The Hitachi Cable WirelessIP-5000-A SIP Telephone was verified to be capable of placing and receiving calls to Avaya Quick Edition telephones. Basic calling features such as transfer and hold/return from hold were tested and verified to operate properly. The Hitachi Cable WirelessIP-5000-A SIP Telephone was verified to be capable of dialing into the Avaya Quick Edition Auto-Attendant and successfully navigating the tree of options, including using the Auto-Attendant to audibly report directory information and dialing using the Auto-Attendant. The Hitachi Cable WirelessIP-5000-A SIP Telephone was verified to be capable of the following:

- SIP registration with Avaya Quick Edition.
- Placing and receiving calls to/from Avaya Quick Edition telephones.
- Accessing, playing and deleting voicemails on Avaya Quick Edition.
- Navigating the Avaya Quick Edition Auto-Attendant and placing calls using the Auto Attendant.
- Placing and receiving calls across the Service Provider SIP trunk.
- Successful transmission of DTMF tones across the Service Provider SIP trunk.
- Placing and receiving calls to/from the PSTN via an Avaya Quick Edition G11 PSTN Gateway.
- Placing and receiving calls to/from an analog telephone connected to an Avaya Quick Edition A10 Analog Gateway.

## 10. Verification Steps

- Place calls out of and to the Hitachi Cable WirelessIP-5000-A SIP Telephone and exercise basic calling features.
- Verify the **USER ACCOUNT** and **SERVER ACCOUNT** configurations on the Hitachi Cable WirelessIP-5000-A SIP Telephone, see **Section 8.2 Steps 3 and 4**.
- Verify the Avaya Quick Edition SIP Proxy Identity configuration, see **Section 6 Step 2**.
- Verify the Hitachi Cable WirelessIP-5000-A SIP Telephone has been rebooted after changes have been made.

## 11. Support

For technical support on the Hitachi Cable WirelessIP-5000-A SIP Telephone use the information below.

- **Phone:** 1-914-993-0990
- **Email:** Hitachi Cable America, NY - [info@hitachi-cable.com](mailto:info@hitachi-cable.com)
- **Web :** <http://www.wirelessip5000.com/eng/index.html>

## 12. Conclusion

These Application Notes detail the configuration process that enables the Hitachi Cable WirelessIP-5000-A SIP Telephone to register and interoperate with an Avaya Quick Edition system. These Application Notes also detail the configuration process that enables communication between an Avaya Quick Edition system with an Avaya Communication Manager and Avaya SIP Enablement Services.

## 13. Additional References

- The documents referenced below were used for additional support and configuration information. The Avaya documentation was obtained from <http://support.avaya.com>. The NETGEAR documentation was obtained from <http://www.netgear.com>. The Hitachi Cable documentation was obtained from <http://www.wirelessip5000.com>. Access to the NETGEAR and Hitachi Cable documentation may require a support account.
- [1] *Administrator Guide for Avaya Communication Manager*, February 2007, Issue 3.1, Document Number 03-300509
  - [2] *Installing and Administering SIP Enablement Services*, May 2007, Issue 4.0, Document Number 03-600768
  - [3] *Avaya IA 770 INTUITY AUDIX Messaging Application Release 4.0 Administering Media Servers to Work with IA 770*, March 2007
  - [4] *Avaya one-X Quick Edition Release 3.1.0 System Administration Guide*, May 2007, Issue 2, Document Number 16-601412
  - [5] *NETGEAR ProSafe Dual Band Wireless Access Point WAG302v2 Reference Manual*, May 2006, Version 1.0, Document Number 202-10182-01
  - [6] *WirelessIP5000E-A Administrator Manual*, Document Number TD61-2896E

[7] *WirelessIP5000E-A User's Manual*, Document Number TD61-2894E

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