IP Office 5.0

IP Office DECT R4

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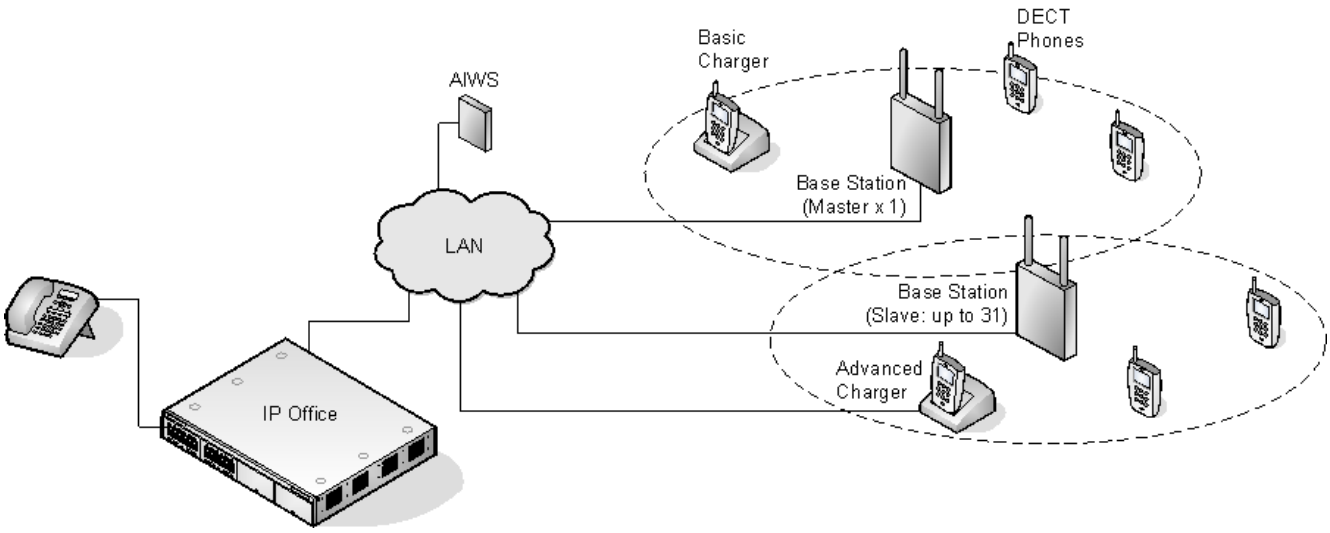
Chapter 1.
DECT R4

1. DECT R4

Avaya DECT R4 is an DECT system where multiple base stations are connected using an IP LAN. For IP Office, DECT R4 is supported with IP Office Release 5.0+.



- **IP DECT Base Station (IPBS)**
  Up to 32 are supported. During installation one is configured as the master base station, to which the other base stations synchronize as slave base stations. Each base station can host up to 8 simultaneous phone conversations in its coverage area.
- **Phones**
  Up to 120 DECT phones are supported.
  - **3720**
  - **3725**
  - Other DECT phones are supported using the DECT GAP and DECT CAP standards.
- **Chargers**
  A number of different chargers exist for the 3720/3725 phones.
  - **Basic Charger**
    This is a simple single-phone charger for charging only.
  - **Advanced Charger**
    This single-phone charger has USB and LAN sockets. These allow the phone docked with the charger to be accessed using the Device Manager application (browser access via the AIWS unit and charger LAN port or WinPDM application via the USB port).
  - **Rack Charger**
    This is an 6 phone advanced charger.
- **IP Office**
  For IP Office systems, DECT R4 is supported on systems running IP Office 5.0+ software.
- **Avaya In-Building Wireless Server (AIWS)**
  This unit provides directory integration between the IP Office and the DECT R4 system. It also includes an integrated application for managing the phones and chargers.
- **Configuration Tools**
  The tools and applications for DECT R4 are included as part of the IP Office Manager application installation.

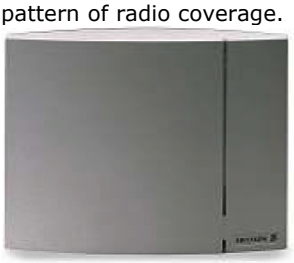
1.1 Base Stations

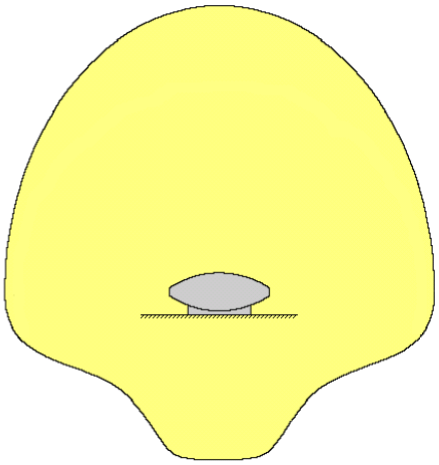
The DECT R4 product supports two base station variants; the BS330 and BS340. They are identical except in aerial connection and therefore radio coverage. Each can support up to 8 simultaneous calls. During installation one of the base stations is configured as the master base station for the DECT R4 system.

Each base station includes a detachable bracket for use in wall mounting of the base station. Each base station requires a LAN access point and is supplied with a 1.2 metre (4 foot) LAN cable.

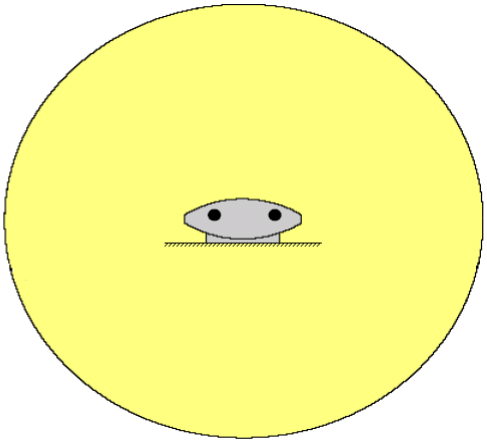
Each base station can be powered using IEEE 802.3af power over ethernet (PoE 7W Class 2). Alternatively the base station also requires a main power supply outlet socket within 8 metres (26 feet) cable distance and power supply unit.

- **BS330**
  The BS330 has 2 integral internal aerials which cannot be adjusted. The aerials produce a slightly directional pattern of radio coverage.





- **BS340**
  The BS340 has 2 external aerials. These aerials produce a even pattern of radio coverage. The aerials can be disconnected and replaced by a various other types of aerials 10 if different radio coverage patterns and range is required. This type of base station in not supported in North America.



The base stations include a detachable bracket for use for wall mounting or column mounting of the base station. This also allows the base stations to be removed for maintenance.

Feature		Details
DECT Frequencies	**Brazil**	1910-1920 MHz frequencies.
	Latin America	1910-1930 MHz frequencies.
	North America	1920-1930 MHz frequencies.
	Rest of World	1880-1900 MHz frequencies.
Physical	**Dimensions (L × W × D)**	165 × 200 × 56 mm (including mounting bracket)
	Weight	450g
	Material	ABS moulded plastic
	Colour	Beige
	External connectors	2 × RJ45, 1 x RJ12
Power	**Input**	Power over Ethernet IEEE 802.3af or local power supply
	Operating voltage	21 to 56 V dc.
	Power consumption	Typical 4W, maximum 5W.
	Power over Ethernet	PoE Class 2 (7W).
Network	**Ethernet:**	10/100baseT
	Voice over IP	
	Voice over IP	H.323 XMobile incl. H.450
	Voice Encoding	G.711 A-law / -law (64kbps) G.723.1 (5.3 kbps) G.729A and AB (16 kbps)
Radio	**RF output power EU**	Between 23 dBm and 28 dBm (with internal antenna) Between 20 dBm and 25 dBm (with external antenna)
	RF output power US	Between 17 dBm and 21,6 dBm (with internal antenna)
Environmental	**Operating temperature**	-10°C to +55°C
	Storage temperature	-40°C to +70°C
	Relative operating humidity	15 to 90%, non condensing
	Relative storage humidity	5 to 95%, non condensing
	Immunity to electromagnetic fields	3V/m (EN61000-4-3)
	Immunity to ESD	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)

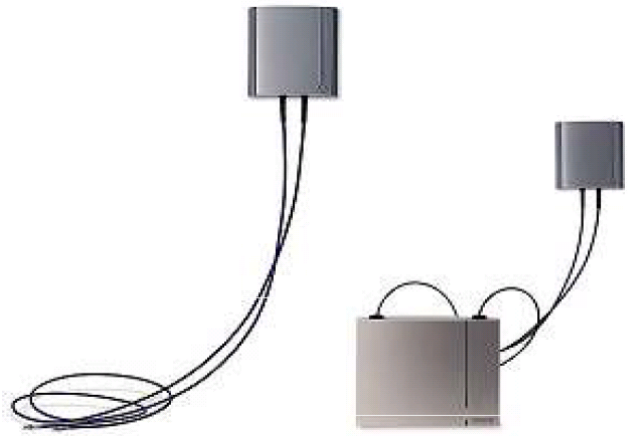
1.2 Aerials

The following different types of aerial can be used to replace the aerials on a BS340 base station. These aerials have aerial leads to allow for optimal positioning.

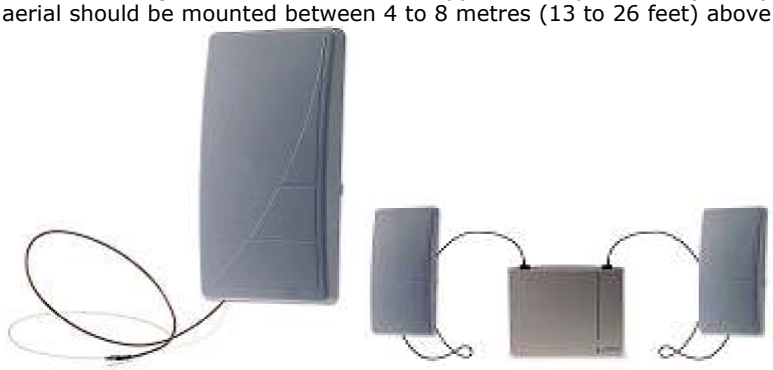
Note that this type of base station and therefore optional aerials are not supported in North America.

- **Omni-Directional Single Aerial**
  A pair of these aerials can be used to approximately double the base station radio coverage, ie. up to 600 metres (2000 feet) omni-directional coverage.

- **Directional Dual Aerial**
  This aerial gives directional coverage up to 750 metres (2500 feet). Only one aerial unit is required for connection to the base station.



- **Directional Single Antenna**
  A pair of these aerials can be used to give directional coverage up to 1000 metres (3300 feet). They must be mounted facing the same direction and approximately 1 metre (3 feet) apart. To achieve maximum coverage, the aerial should be mounted between 4 to 8 metres (13 to 26 feet) above area being covered.



1.3 AIWS

The AIWS 102 is used to provide directory integration between the IP Office telephone system and the DECT R4 system. It also runs integrated applications that can be used to manage the settings on DECT phones and upload software to those phones.

The unit is managed via web browser and requires a fixed IP address.

Wall mountable.

Dimensions: 275 x 130 x 60 mm, 550g.

Supplied with power supply unit and power cords.

1.4 Phones

The 3720 and 3725 DECT phones are specifically designed for use with the DECT R4 system.

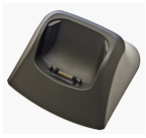
Phone		Avaya 3720	Avaya 3725
Picture			

Features		• High quality voice DECT phone, GAP/CAP compliant
		• Easy access to PBX services
		• Voice Mail
		• Manual and automatic keypad lock
		• Local and central phone book
		• Call list with the 25 last calls
		• Vibrator
		• Loudspeaker/hands free
		• Central Management and software download
		• Headset socket
		• 5 languages
			• As per 3725 plus:
			• SMS
			  • Message acknowledgement
			  • Message length up to 160 characters
			  • Storage capacity: 30 received/sent messages
			• Colour display
			• Site Survey tool
			• Cleanable, IP 44
			• Option: Bluetooth
			• 19 languages

Physical	**Dimension**	133 x 53 x 24mm	134 x 53 x 26mm
	Weight	115g	130g
Battery	**Type**	600 mAh, Li-Ion 3.7V	930 mAh, Li-Pol 3.7V
	Speech Time	> 16h	> 20h (13h with Bluetooth option)
	Stand-by Time	> 180h	> 240h (120h with Bluetooth option)

1.5 Chargers

A number of different chargers exist for the 3720/3725 phones.

- **Basic Charger**
  
  This is a simple single-phone charger for charging only.
- **Advanced Charger**
  
  This single-phone charger has USB and LAN sockets. These allow the phone docked with the charger to be accessed using the Device Manager application (browser access via the AIWS unit and charger LAN port or WinPDM application via the USB port).
- **Rack Charger**
  
  This is an 6 phone advanced charger.
- **Battery Charger**
  
  Allows the charging of up to 6 batteries separate from the phones.

Chapter 2.
Site Survey and Planning

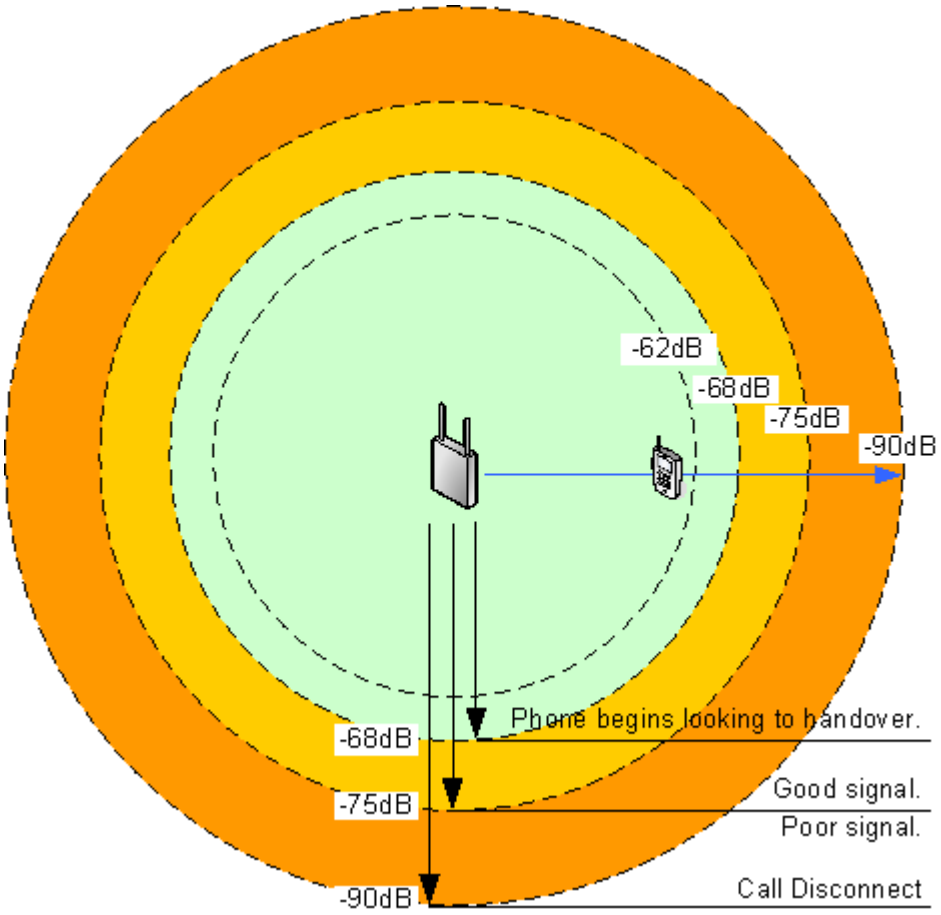
2. Site Survey and Planning

We cannot give precise recommendations for a site survey as every site will vary. However a site survey is a prerequisite to installation in all cases. The correct and effective placement of base stations will prevent problems and maximize coverage. Most issues with any DECT system will arise from the number and positioning of the base stations.

The basic aim is to ensure:

- Base station coverage in all areas of expected DECT phone usage.
- Sufficient number of base stations covering each area for the number of expected simultaneous users (up to 8 per base station) in that area.
- Sufficient overlap between areas of base station coverage to allow for call handover 18 when DECT phone users are moving.
- Where possible synchronization 18 of each base station with more than one other base station.

The diagram below indicates the basic measures for coverage between a base station and a DECT phone.



Signal Strength	Description
-40dB	Strong signal typically seen when a phone is close to the base station.
-62dB	Minimum signal strength for a phone to handover to the base station.
-68dB	Signal strength below which the phone will begin looking for a base station to which it can handover.
-75dB	At this signal strength the increase error rate will become apparent in the speech.
-90dB	At this signal strength call are like to disconnect.

2.1 Factors to Consider

Given ideal open field conditions, the range between a phone and a standard base station can be up to 600 metres (2000 feet). However where obstacles absorb signal strength and reflected signals giving increased error rates, the range is more realistically between 30 metres (100 feet) indoors and 300 metres (1000 feet) outdoors.

In practice, no rules or guarantees can be given for base station coverage. Coverage is affected by too many factors that are unique to each site. The following is a guide to those factors that can affect coverage which you should consider and look for during any site survey.

- **Obvious causes of signals problems**
  - Metal surfaces.
  - Concrete thickness greater than 1 metre (3 feet).

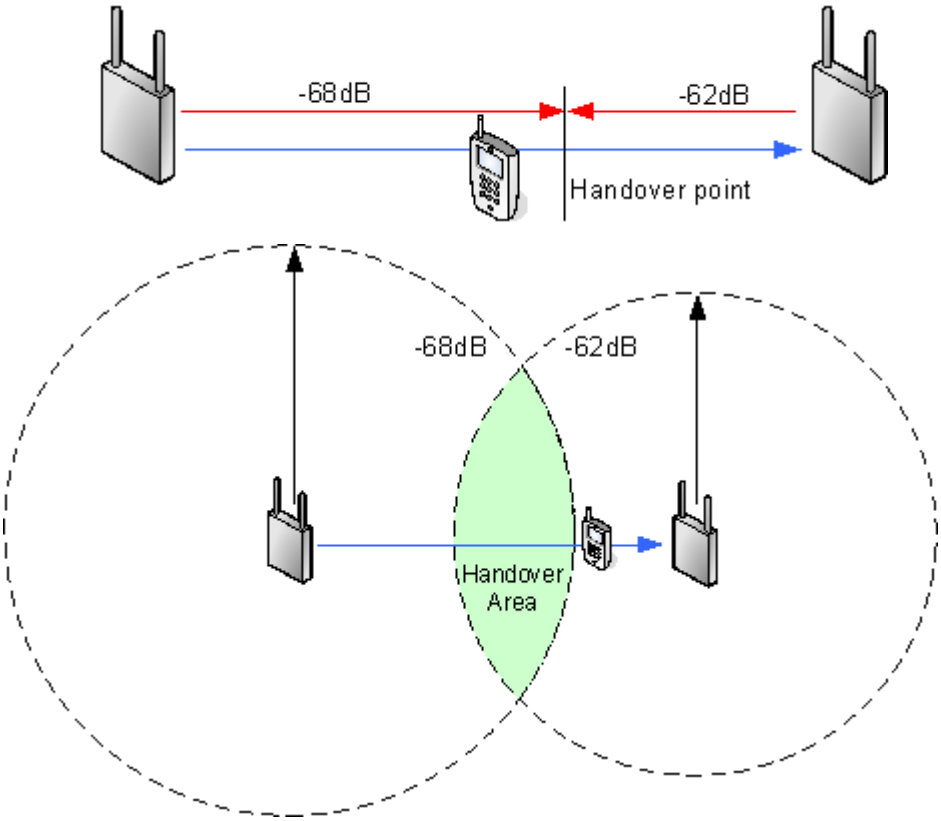
- **Also beware of**
  - **Windows with Reflective Film or Specialized Glass.**
    These produce increased signal reflection and reduced signal pass-through.
  - **Wire Meshes and Grills with Apertures of Less than 4cm (1.5 inches).**
    These block signals as effectively as continuous metal sheet.
  - **Fire Doors**
    These block the signals. In multi-occupancy building such as hotels the high number of fire-doors may be a problem.
  - **Stair Wells**
    In modern office buildings, stair wells frequently combine concrete building supports, fire doors and the intervening floor material, making them a special problem.
  - **Screened Rooms**
    Typically found in offices involved with TV, video and radio production, but also possible in computer centers.
  - **Empty Sites**
    Do not perform a survey on a site that is not yet occupied. The survey results will differ from those of the same site once occupied by the customer business.

- **Be Aware of**
  - **Signal Direction**
    The signal from a base station does not propagate evenly in all directions. The signal typically propagates strongest in the horizontal plane. However the ability for a base station to serve callers located on floors above or below it should not be ignored. This may allow coverage to be extended to areas not frequently used and so not meriting a dedicated local base station.
  - **Other Radio Signals**
    The ability to receive normal broadcast radio signals in an area is not an indication that DECT signalling will be received.
  - **Rack Chargers**
    A rack charger (6 phones) immediately creates an area where a single base station (8 calls) would be near maximum capacity. Look to provide overlapping base station support to areas where rack chargers will be located.

2.2 Handover

Once a phone is connected on a call through a particular base station, it will normally maintain connection with that base station even if the phone moves into an area with a stronger signal from another base station.

However, when the signal to the phone drops below -68dB, the phone will begin looking for another base station with a better signal to which it can handover (this is often referred to as "roaming"). If the other base station signal is -62dB or higher, the phone will handover to that base station if it has free capacity.



2.3 Base Station Synchronization

Base stations in the DECT R4 system need to be synchronized with each other. This can be done with a signal as low as -90dB between base stations.

One base station is assigned as the 'air synch master', typically the master base station. Each other base station can synch directly with it or indirectly via a synchronization chain. However, it is preferable that the number of synchronization 'hops' between any particular base station and its air synch master base station is kept as low as possible. To help achieve this it is recommended that the air synch master is placed centrally within the set of base stations.

Where possible, each base station should be placed in synchronization range of more than one base station. That allows the base stations to maintain synchronization should one base station fail or be switched off for maintenance. The process of synchronizing by the shortest route to the air synch master when in synchronization range of multiple base stations is automatic.

Advanced Scenario: Separated Locations

In most scenarios, the master base station is used as the air synch master for all the other base stations and that is the scenario documented in this manual. However, in scenarios where you have base stations in separate locations that are not within synchronization range of each other, it is permissible to assign separate air synch masters in each location. However there must be absolutely no overlap (<-90dB) between the separate groups of base stations. Any overlap will cause frequent lose of synchronization.

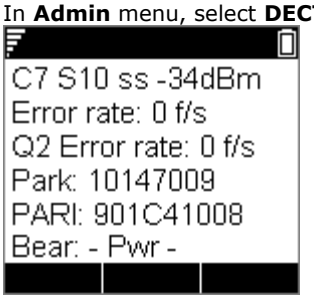
2.4 Performing a Survey

- While performing a survey you will require the following information:
  - **Building Layout**
    Accurate building plans are an essential aid to both the site survey and also for later fault analysis. Ensure that you have an accurate plan of the customer premises, including the locations of mains power outlets and network connection points.
  - **The area of coverage required?**
    Which areas within the plans the customer expects to be covered. Do they expect coverage outside the building and or in buildings separate from the main building.
  - **The number of simultaneous users within different areas?**
    Each base station can support up to 8 simultaneous calls.
- Perform the survey during normal business hours. The movement of large items of machinery, such as lifts, will then be observable during the survey.
- Ensure that you have read this documentation and understand the requirement of both phone handover 18 and base station synchronization 18.
- As the survey takes place, note whether additional network connection points will be required and or mains power outlets. Consider the use of Power over Ethernet, if possible in order to simplify base station installation.

3725 Site Survey Mode

The following method is used to put a subscribed 3725 into site survey mode.

1. Go to the menu **Call Time**.
2. Activate the **Admin** menu by pressing ▶ * ◀ ◀ * ◀.
3. In **Admin** menu, select **DECT Info**. The phone will display information about the base station.



- **C7 S10**
  This is the DECT signal carrier and slot.
- **ss**
  This is the signal strength. This is the main value that should be recorded and accessed as you perform the survey.
- **Error rate / Q2 Error rate**
  These are the error (corrupted) frames per second on the signals from and to the base station.
- **Park:**
  The PARK (SARI) of the DECT system.
- **PARI**
  The PARI of the DECT system.
- **Bear:**
  The current power output of the phone.
  - ***Pwr*** = on hook
  - ***LU*** = off hook, Low power
  - ***US*** = off hook, Normal power
  - ***EU*** = off hook, High power

Chapter 3. Installation

3. Installation

General Installation Requirements

Information

- ☐ Service user name and password for IP Office configuration access.
- ☐ IP Office IP address.

Parts Required

- ☐ IP Office 5.0 software DVD or image of the IP Office 5.0 software.

Tools Required

- ☐ Programming PC with IP Office Manager application installed.
  You must have rights on this PC to change its IP address settings.

Base Station Installation Requirements

Parts Required

- ☐ Base station
  Includes:
  - ☐ Base station.
  - ☐ Two 3.5mm screws and two 6mm wall plugs suitable for wall mounting onto a solid wall (brick or similar).
  - ☐ 1.2 metre (4 foot) LAN cable.
    If this is replaced with a longer cable the replacement should be a CAT5 Ethernet LAN cable.
- If using Power over Ethernet:
  - ☐ The base station supports Power over Ethernet, IEEE 802.3af, class 2.
- If not using Power over Ethernet:
  - ☐ Base station power supply unit.
    Required if not using Power over Ethernet to power the base station. Note that the base station power supply units include an 8 metre (26 feet) cable from the PSU to the base station. Check that you have the correct type of power supply unit for the locale.
    - ☐ BSX-0013: Europe (except United Kingdom).
    - ☐ BSX-0014: United Kingdom.
    - ☐ BSX-0015: USA/Canada..
    - ☐ BSX-0016: Australia.
  - ☐ Mains power outlet socket.
- ☐ LAN Socket.

Information

- ☐ DECT R4 SARI.
- ☐ Base Station IP Addresses.
- ☐ Detailed plans from the site survey indicating the intended base station locations, LAN sockets and if necessary power supply outlets.

Tools

- ☐ Programming PC with DECT R4 software 25.
- ☐ Web browser.
- ☐ Drill and drill bits suitable for the selected wall mounting position of the AIWS.
- ☐ Screwdrivers for use with the screws selected for AIWS wall mounting.

Phone Subscription Requirements

Information

- ☐ Service user name and password for IP Office configuration.
- ☐ Master base station IP address.
- ☐ User name and password for master base station configuration.
- ☐ User names and extension numbers for the DECT phones.

Tools

- ☐ IP Office Manager.
- ☐ Web browser.

AIWS Installation Requirements

Parts Required

- ☐ AIWS Unit which includes:
  - ☐ AIWS Unit
  - ☐ AIWS Power Supply unit and selection of IEC60320 C7 power leads (CEE7/16 (Europlug), BS1363, NEMA1-15 and AS/NZS 3112).
  - ☐ 1.2 metre (4 foot) LAN cable.
    If this is replaced with a longer cable the replacement should be a CAT5 Ethernet LAN cable.
  - ☐ AIWS License sheet.
- ☐ 3 x 3.5mm Screws and suitable wall plugs for the wall mounting of the AIWS.
- ☐ LAN Socket
- ☐ Mains power outlet socket.

Information

- ☐ IP Address for the AIWS
- ☐ Other standard network settings (Default Gateway, DNS, WINS)
- ☐ AIWS License Key (this should have been supplied with the AIWS)
- ☐ IP Address of the DECT Master base station.
- ☐ IP Address of the IP Office
- ☐ Preferred time settings (date format, time format)
- ☐ Wall mounting location selected for the AIWS
- ☐ Access information (name and password) for configuring the base stations.

Tools

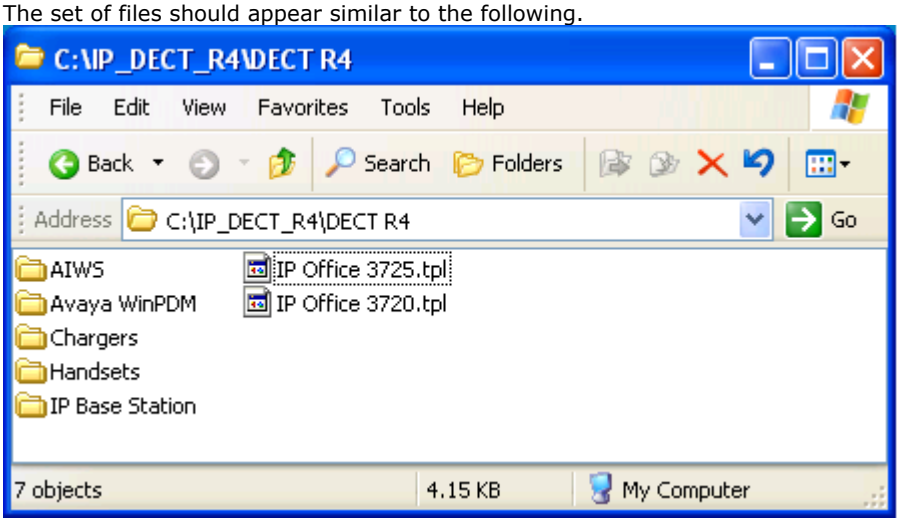
- ☐ Programming PC with DECT R4 software 25.
- ☐ Web browser.
- ☐ Pliers and sharp knife for removal of plastic cable cut-outs from AIWS case.
- ☐ Drill and drill bits suitable for the selected wall mounting position of the AIWS.
- ☐ Screwdrivers for use with the screws selected for AIWS wall mounting.

3.1 Software

Before beginning installation, you need to unpack the DECT R4 software for IP Office operation onto your programming PC.

DECT R4 is supported on a range of Avaya systems. However, for IP Office operation, only firmware specifically documented as having been tested and supported with IP Office should be used. Details of supported firmware will be included in IP Office Technical Bulletins and Technical Tips.

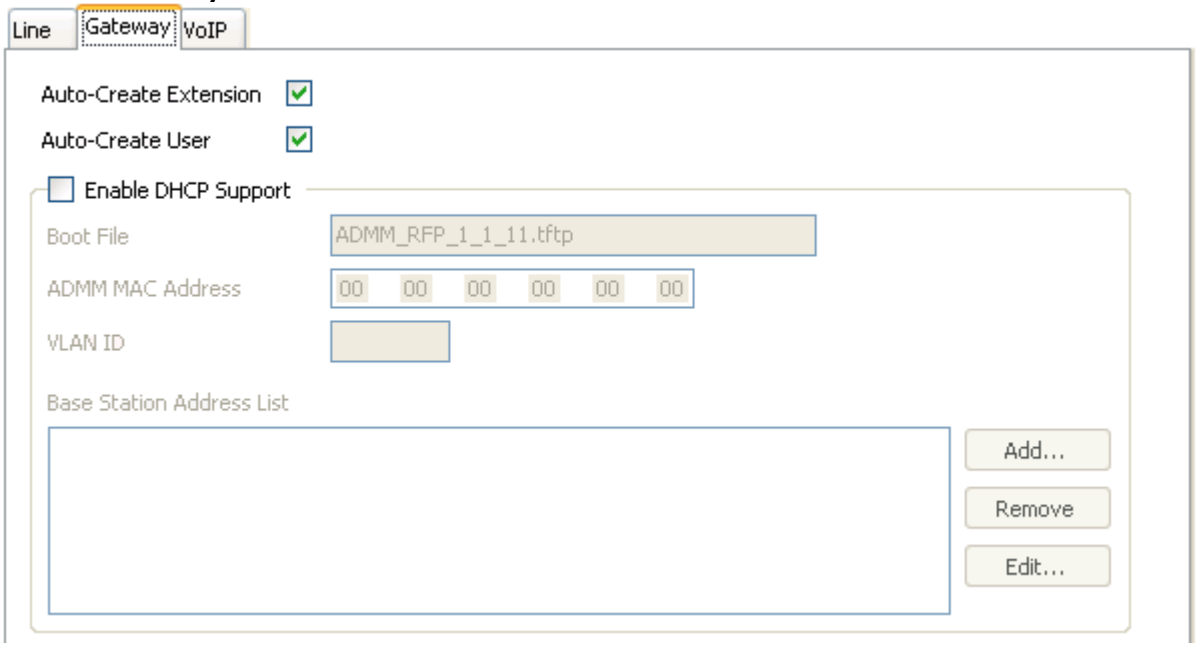
1. On the programming PC, create a folder with a name indicating its purpose, for example c:\IP_DECT_R4.
2. Within the IP Office Administrator Application software set, locate the folder IPDECT.
3. The folder contains a file DECT R4.zip. This is the file containing software for DECT R4. The file IPDECT.zip contains software for the previously supported IP DECT and not for DECT R4.
4. Copy the DECT R4.zip file to the folder created on the programming PC.
5. Using WinZip or a similar tool, extract the contents of the zip file into the folder, maintaining the directory structure of the zip files.
6. The set of files should appear similar to the following.



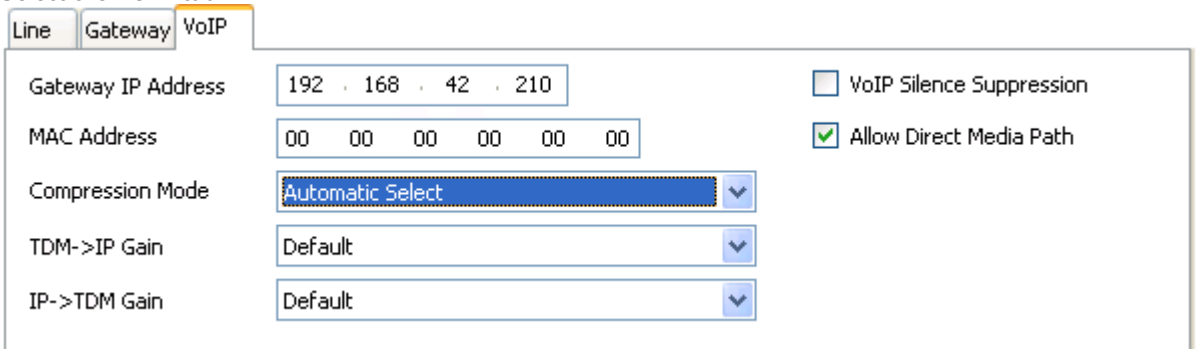
3.2 Create an IP DECT Line

At this stage we will create an IP DECT line for traffic between the IP Office and the DECT R4 system. The line is configured with the IP address of the master base station. The IP Office configuration only requires and allows a single IP DECT line.

1. **Note:** This process requires the IP Office system to be rebooted. That will stop all existing calls.
2. Start IP Office Manager and receive the configuration from the IP Office system.
3. In the left-hand navigation pane, click on **Line** icon.
4. In the right-hand details pane, click on the icon and select **IP DECT Line**.
5. Select the **Gateway** tab.



6. Check that the **Auto-Create Extension** and **Auto-Create User** check boxes are selected.
7. The other options on this tab are not used for DECT R4 and should not be selected.
8. Select the **VoIP** tab.



9. In the **Gateway IP Address** field enter the IP address that will be used for the master base station.
10. Click **OK**.
11. Send the configuration back to the IP Office.

Chapter 4.
Base Station Installation

4. Base Station Installation

The base station installation process consists of the following stages:

1. **Basic Base Station Configuration**
    a. **Default the base station.**
    b. **Access the base station configuration.**
    c. **Update the base station firmware.**
    d. **Set the base station IP address.**
    e. **Set the time source.**
    f. **Set the QoS/ToS settings.**
    g. **Enable status logging by the AIWS.**
2. **Master Base Station Configuration**
    a. **Set the base station as the master base station.**
    b. **Select the PBX Switch mode.**
    c. **Configure the IP trunk.**
    d. **Enable the radio settings.**
    e. **Enter the PARI code.**
    f. **Enter the SARI/PARK code.**
    g. **Reset the base station.**
    h. **Check the base station.**
3. **Slave Base Station Configuration**
    a. **Set the base station to slave mode.**
    b. **Reset the base station.**
    c. **Check the base stations.**
4. **Base Station Mounting**

Pre-Requisites

- ☐ IP Office connected to the LAN with IP DECT line configured for master base station IP address.

Parts Required

- ☐ Base station
  Includes:
  - ☐ Base station.
  - ☐ Two 3.5mm screws and two 6mm wall plugs suitable for wall mounting onto a solid wall (brick or similar).
  - ☐ 1.2 metre (4 foot) LAN cable.
    If this is replaced with a longer cable the replacement should be a CAT5 Ethernet LAN cable.
- If using Power over Ethernet:
  - ☐ The base station supports Power over Ethernet, IEEE 802.3af, class 2.
- If not using Power over Ethernet:
  - ☐ Base station power supply unit.
    Required if not using Power over Ethernet to power the base station. Note that the base station power supply units include an 8 metre (26 feet) cable from the PSU to the base station. Check that you have the correct type of power supply unit for the locale.
    - ☐ BSX-0013: Europe (except United Kingdom).
    - ☐ BSX-0014: United Kingdom.
    - ☐ BSX-0015: USA/Canada..
    - ☐ BSX-0016: Australia.
  - ☐ Mains power outlet socket.
- ☐ LAN Socket.

Information

- ☐ DECT R4 SARI.
- ☐ Base Station IP Addresses.
- ☐ Detailed plans from the site survey indicating the intended base station locations, LAN sockets and if necessary power supply outlets.

Tools

- ☐ Programming PC with DECT R4 software 25.
- ☐ Web browser.
- ☐ Drill and drill bits suitable for the selected wall mounting position of the AIWS.
- ☐ Screwdrivers for use with the screws selected for AIWS wall mounting.

4.1 Basic Base Station Configuration

This section covers actions common to the configuration of both the master base station and all slave base stations.

4.1.1 Default the Base Station

In this stage of this process we will default the base station and also cause it to adopt a known IP address: 192.168.0.1. This will allow us to then access the base stations configuration.

1. With the base station not connected to anything else, connect the power supply and switch on.
2. Wait approximately 5 seconds.
3. Using a fine point, depress the base station's reset switch for at least 10 seconds and then release.
4. The base station will restart.
5. After approximately 5 seconds, having not received a response to its DHCP request, the base station will default to the address 192.168.0.1.

Alternate Method

If a base station has been defaulted and then connected to a network that has a DHCP server, the IP address can still be determined using its MAC address. The base station MAC address is on a label of the back of the base station.

1. Open a command window in windows by selecting **Start | Run** and enter ***cmd***.
2. Enter the following commands where *xx-xx-xx* should be replaced with the last 6 hexadecimal digits of the MAC-address.

```
C:\ nbtstat -R
C:\ nbtstat -a ipbs-xx-xx-xx
```

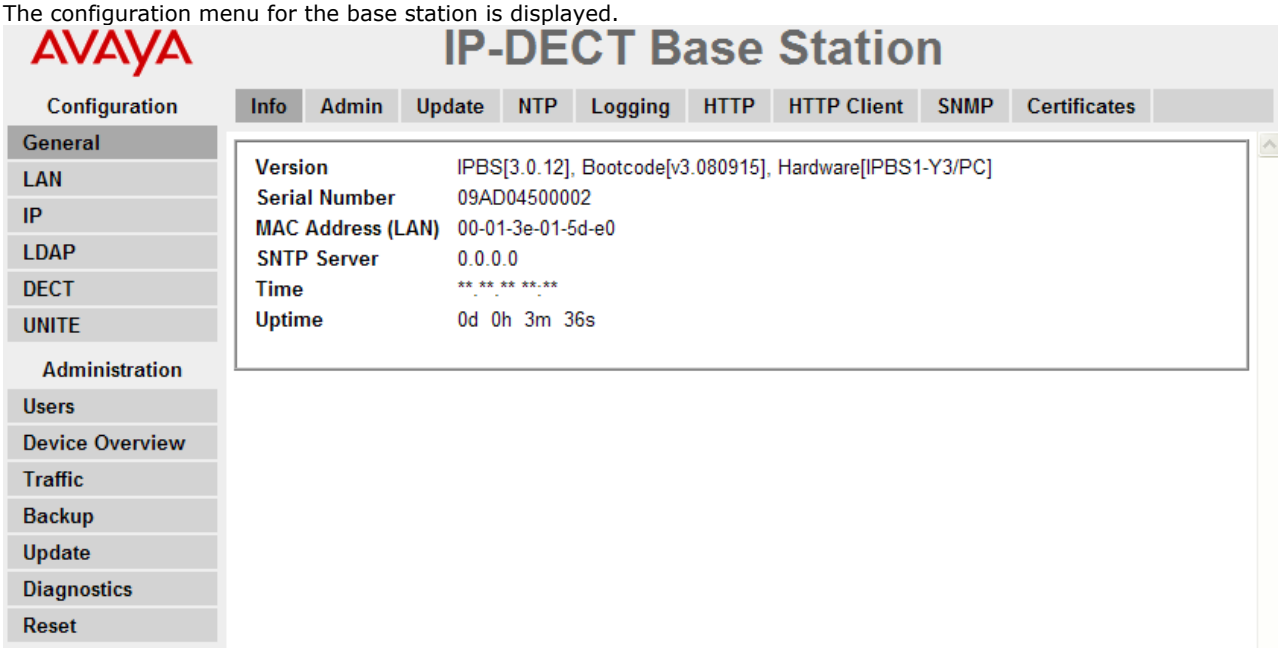
3. The IP address is displayed in the command window.
4. Use that address to access the base stations configuration and set it to a fixed address.

4.1.2 Access the Base Station's Configuration

1. On your programming PC, change its network address to 192.168.0.200 with subnet mask 255.255.255.0.
2. Connect the LAN cable from your PC to the base station.
3. Start your web browser and enter the address ***http://192.168.0.1***.
   - If a security certificate warning is displayed, select **Continue** to this website.
4. The base station should respond with its initial configuration menu.

5. Select System administration. A password entry dialog will be displayed. Enter the default user name (***admin***) and password (***changeme***).

6. The configuration menu for the base station is displayed.

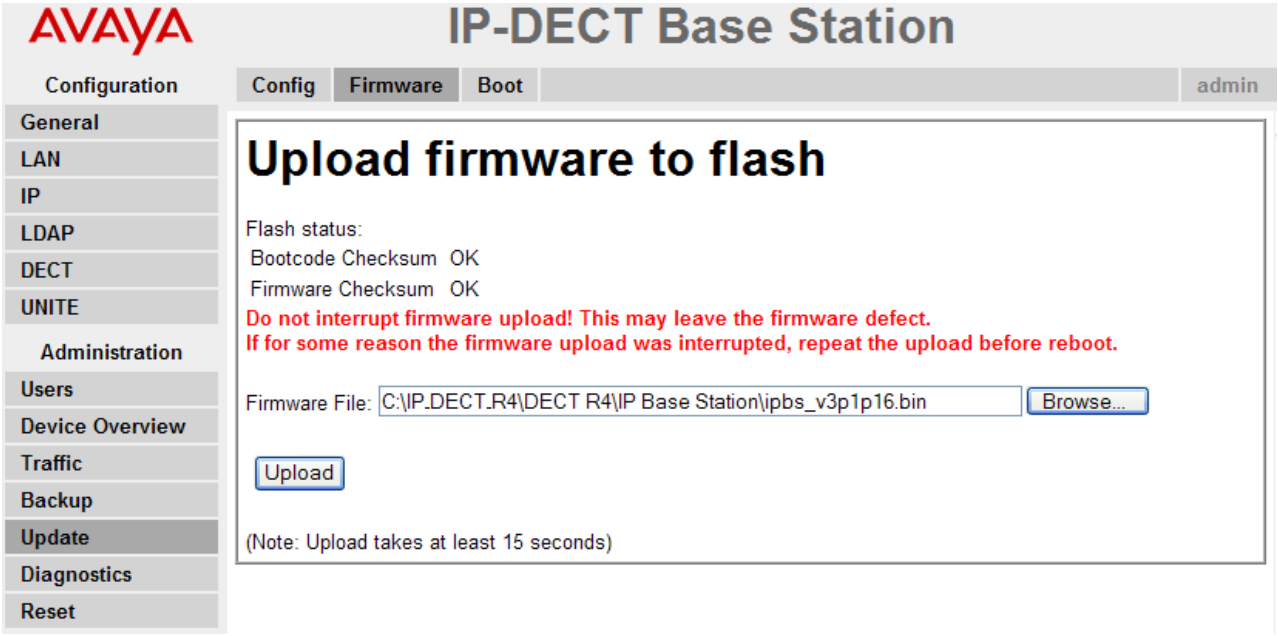


4.1.3 Update the Base Station Firmware

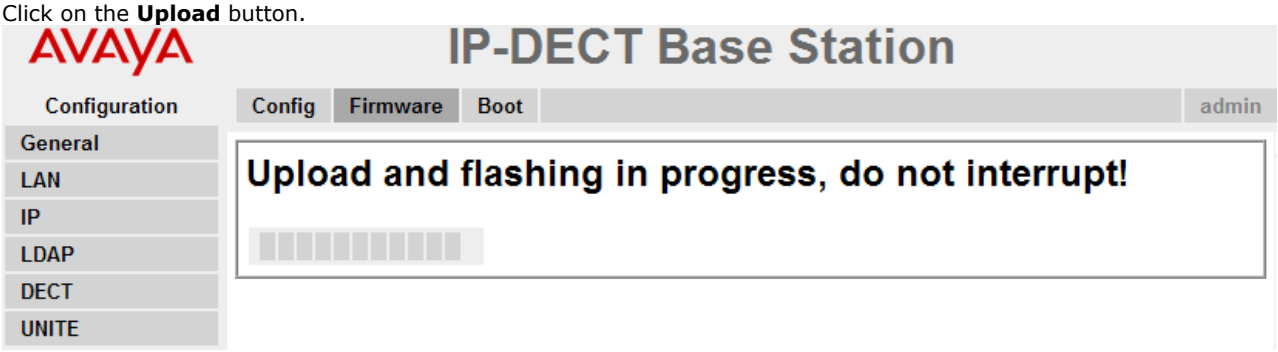
The base station needs to be upgraded to the firmware supplied [25] for use with IP Office.

1. Having browsed into the base station's configuration, in the left-hand column select **Update**.
2. Select the **Firmware** tab.

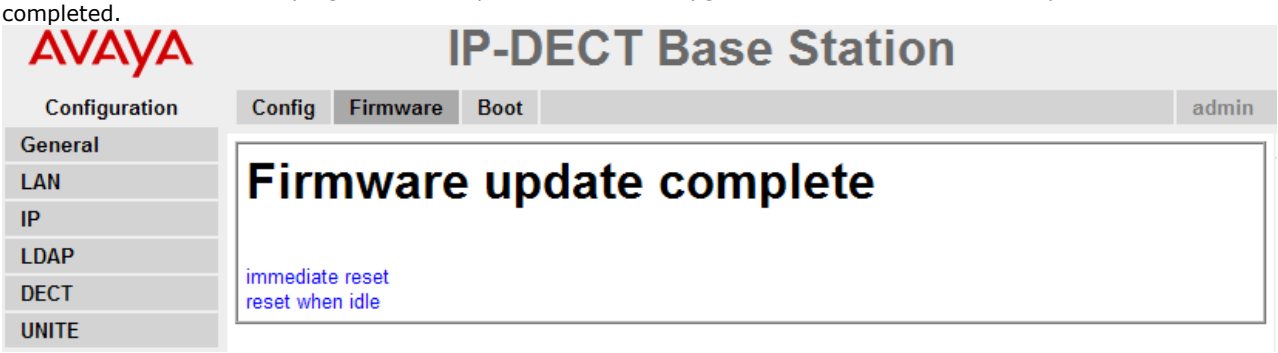
3. Click on the **Browse** button and browse to the ***IP Base Station*** sub-folder of the IP DECT R4 software you previously extracted [25] onto the programming PC.
4. Select the bin file in the folder and click on **OK**.



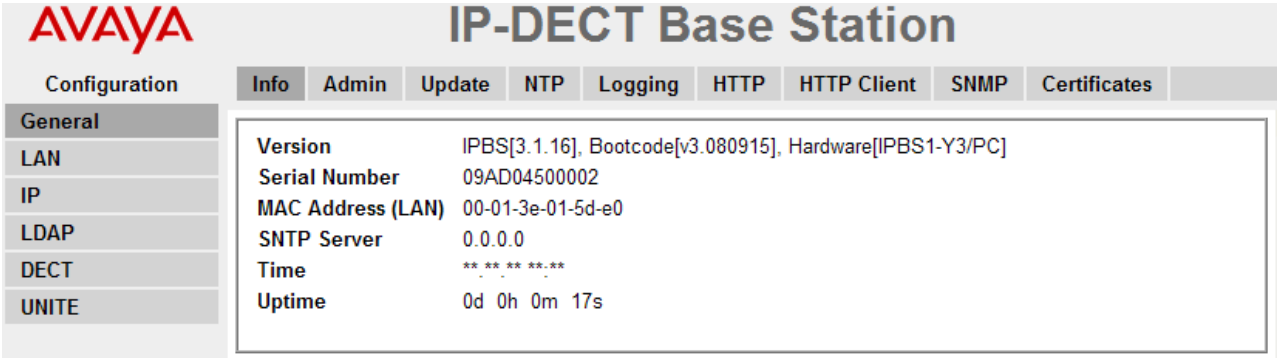
5. Click on the **Upload** button.



6. The browser will show the progress of the upload and firmare upgrade. It will indicate when the process has been completed.



7. Click on **immediate reset**.
8. In the left-hand column select **General**.
9. Select the **Info** tab.

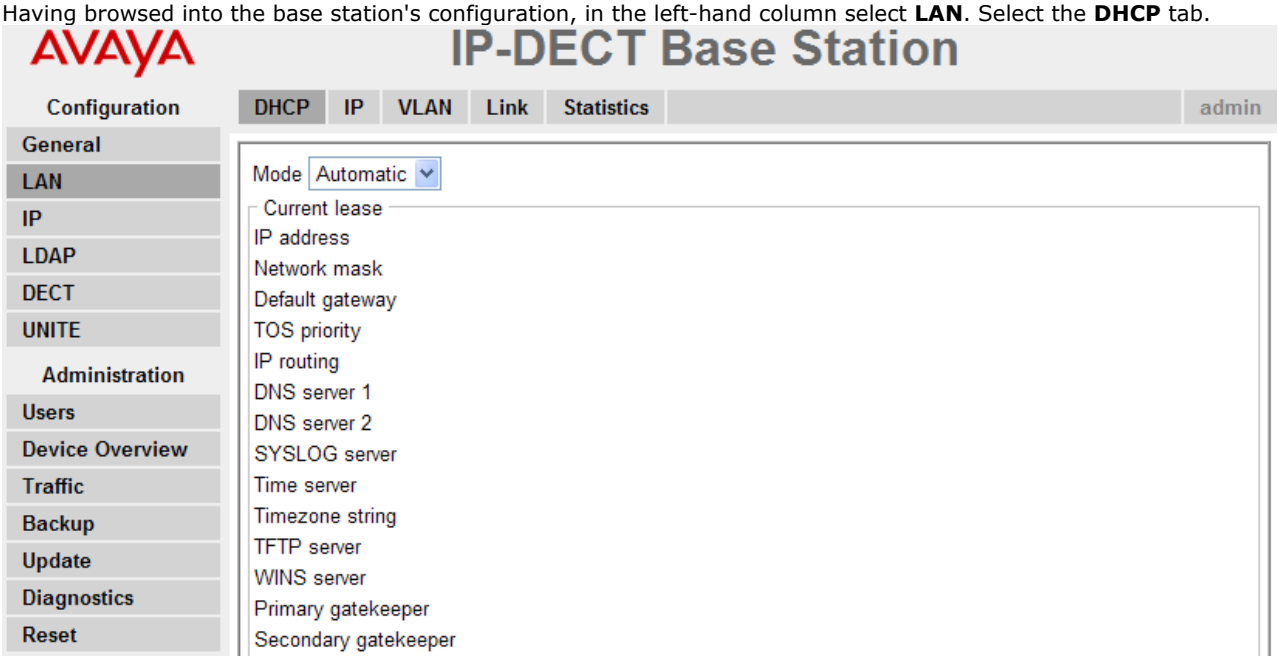


10. The details shown should indicate the new firmware.

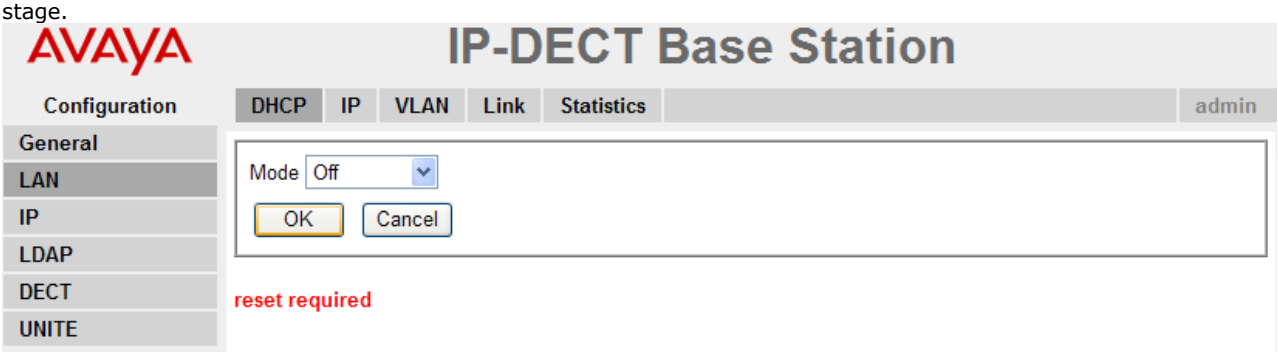
Repeat the steps above for any other base stations that are also being installed. All the base stations should use the same firmware.

4.1.4 Set the Base Station IP Address

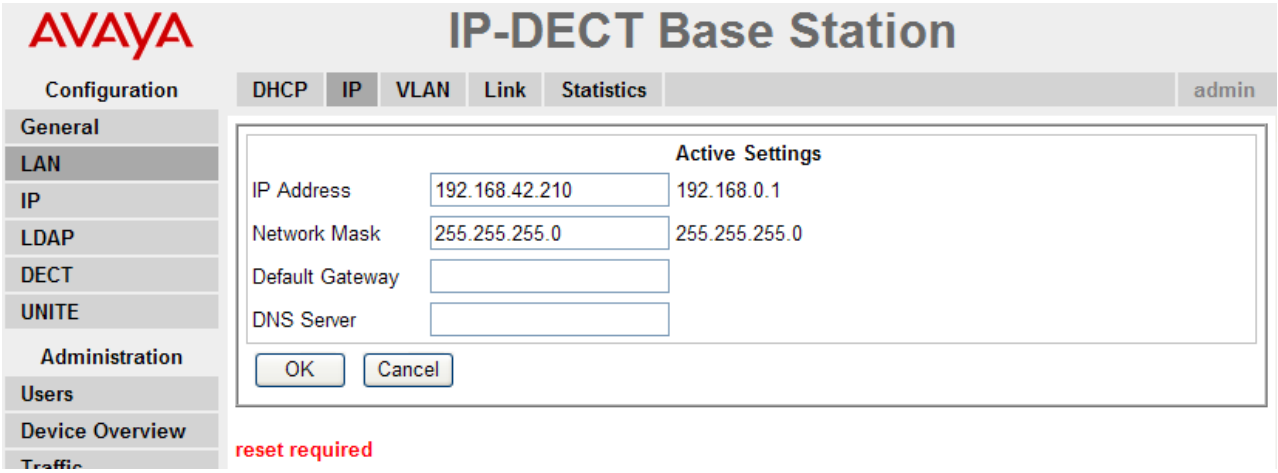
1. Having browsed into the base station's configuration, in the left-hand column select **LAN**. Select the **DHCP** tab.



2. Using the **Mode** drop-down, select ***Off***.
3. Click **OK**.
4. The menu will prompt you with the message **Reset Required**. Do not click this or reset the base station at this stage.

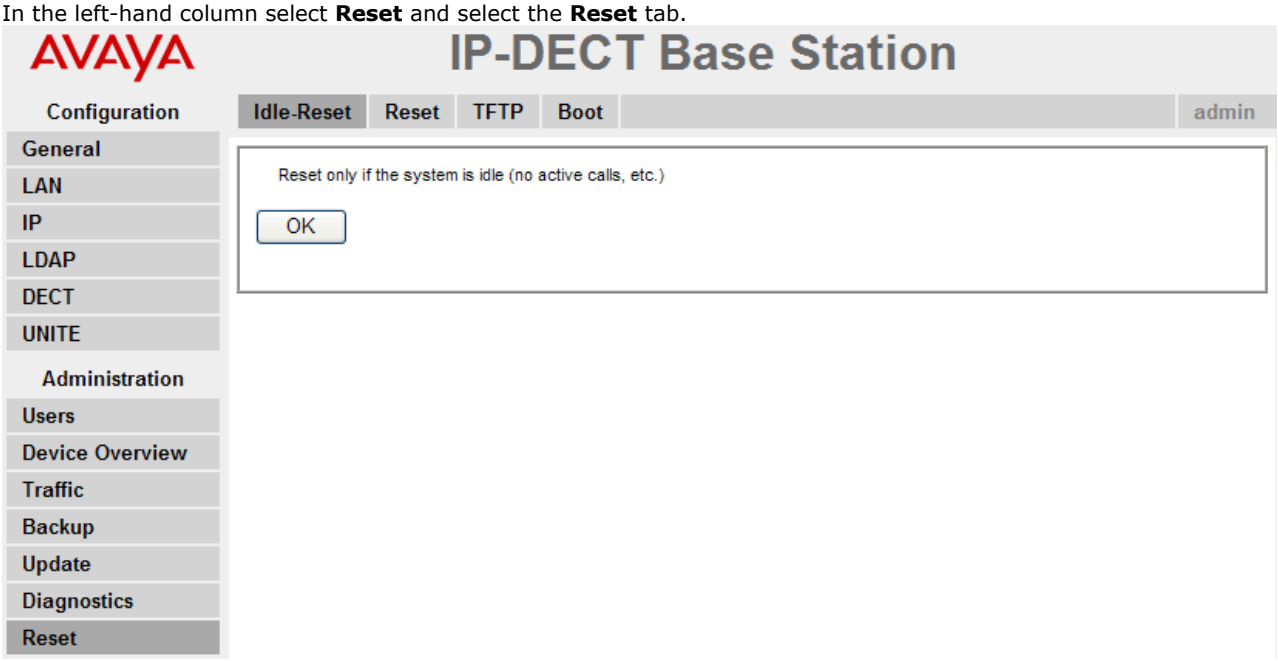


5. Select the **IP** tab.

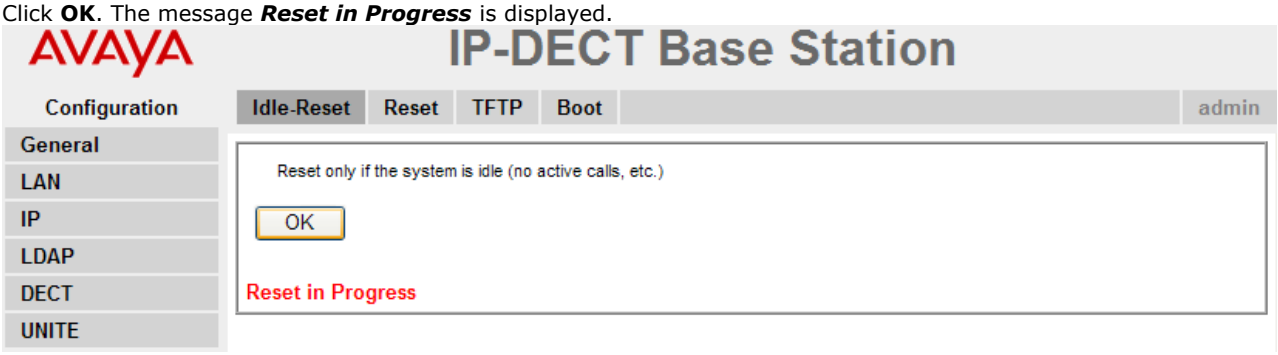


6. Enter the required **IP Address** and **Network Mask** for the base station. The other settings are optional.
7. Click **OK**.

8. In the left-hand column select **Reset** and select the **Reset** tab.



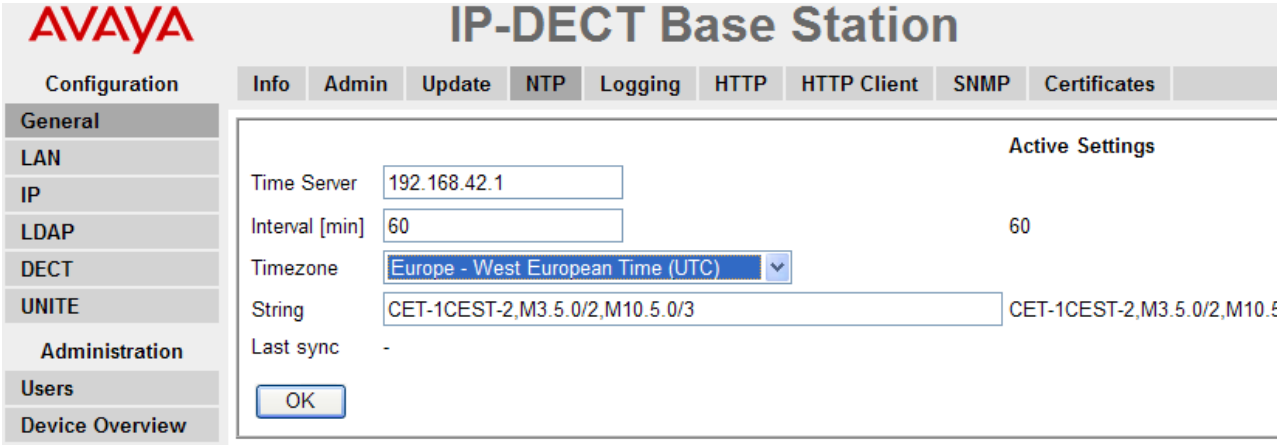
9. Click **OK**. The message ***Reset in Progress*** is displayed.



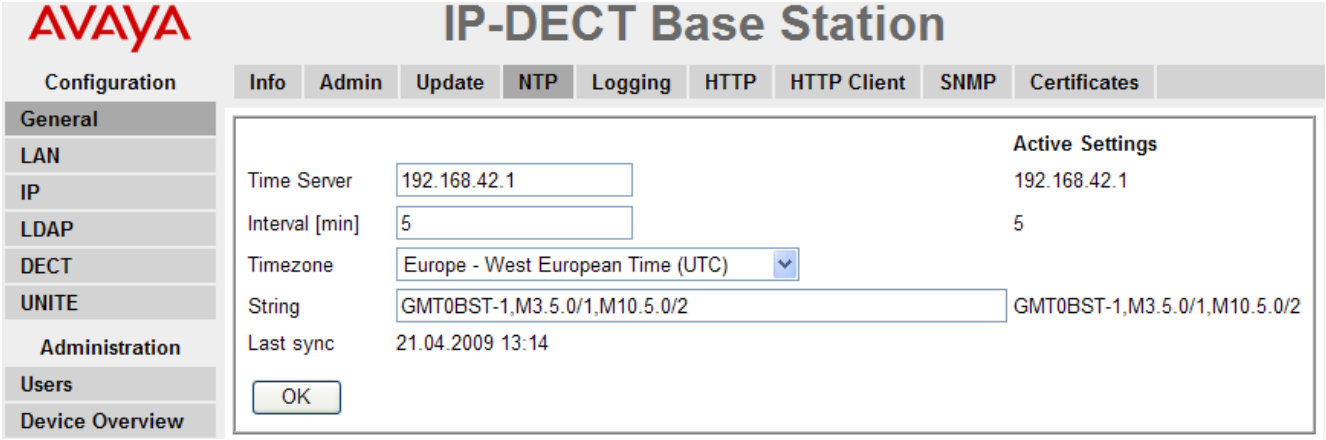
4.1.5 Set the Time Source

The base station can obtain its time from the IP Office control unit.

1. In the left-hand column select **General**. Select the **NTP** tab.



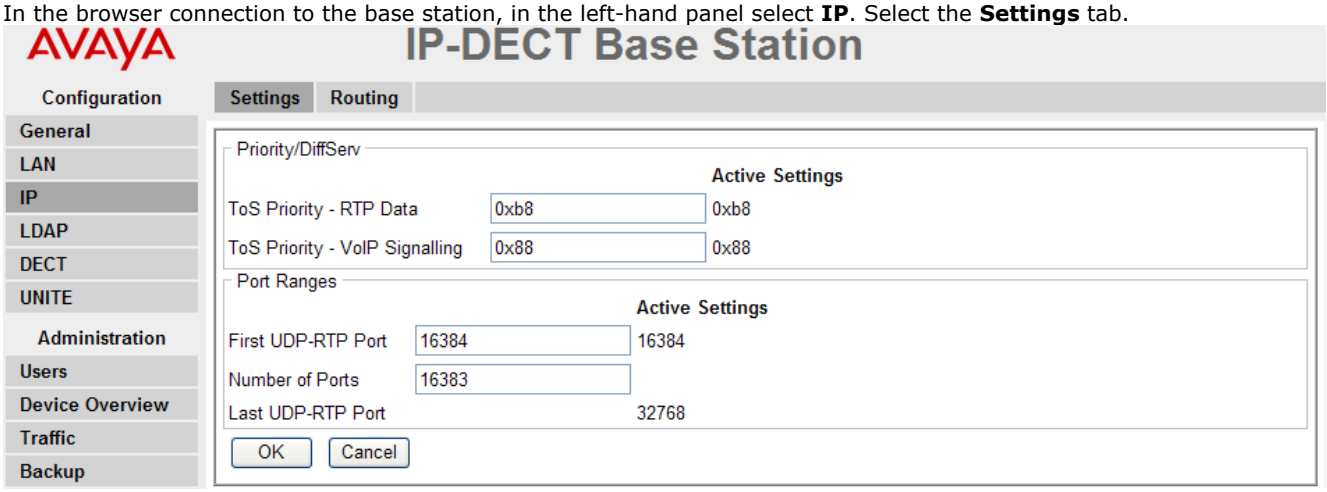
2. In the **Time Server** field enter the IP address of the IP Office.
3. Click **OK**.



4.1.6 QoS/ToS Settings

If the network uses QoS/ToS for VoIP traffic, the should be configured to use the same settings.

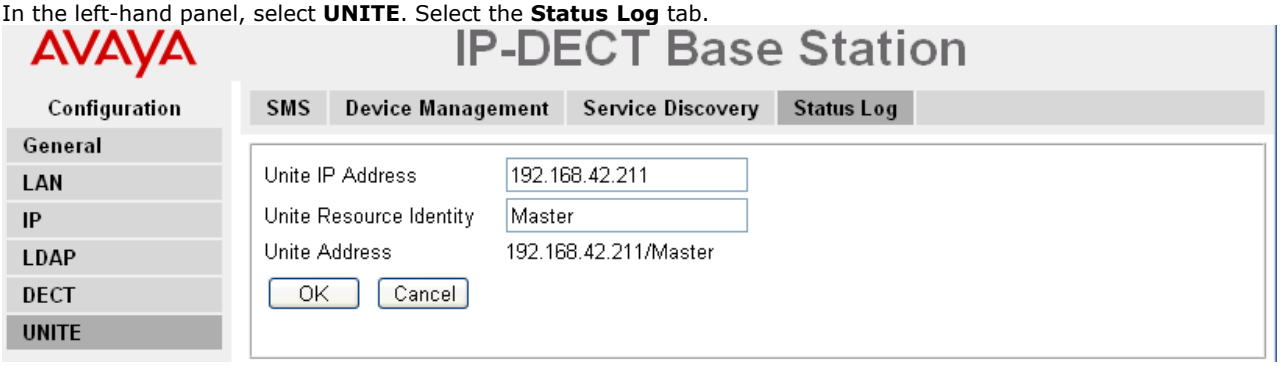
1. In the browser connection to the base station, in the left-hand panel select **IP**. Select the **Settings** tab.



2. Set the **ToS Priority - RTP Data** value to match the IP Office's **DSCP (Hex)** value.
3. Set the **ToS Priority - VoIP Signalling** value to match the IP Office's **SIG DSCP (Hex)** value.
4. Click **OK**.

4.1.7 Enable Status Logging

1. In the left-hand panel, select **UNITE**. Select the **Status Log** tab.



2. For the **Unite IP Address**, enter the IP address that will be assigned to the AIWS unit when installed in the DECT system.
3. For the **Unite Resource Identity** enter a unique name to be associated with the base station.
4. Click **OK**.

4.2 Master Base Station Configuration

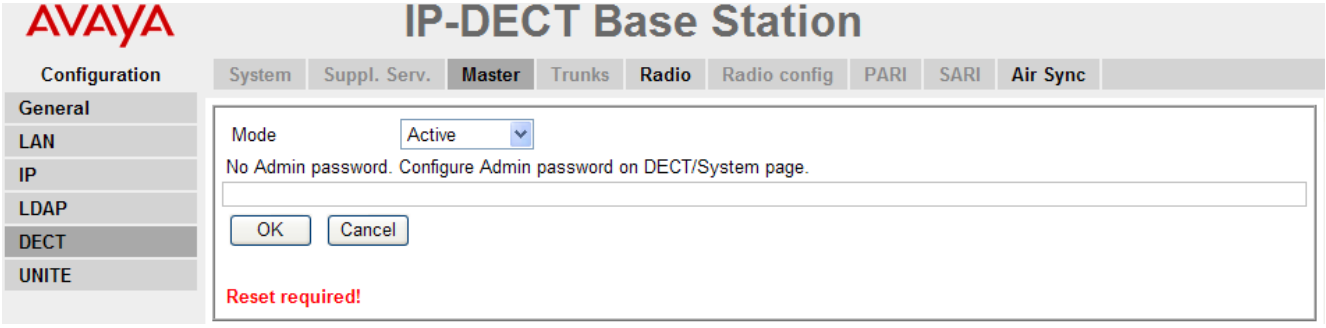
This section assumes that the basic base station configuration 30 has been completed first to give the slave base station a static IP address on the same network as the IP Office.

4.2.1 Set the Base Station as the Master

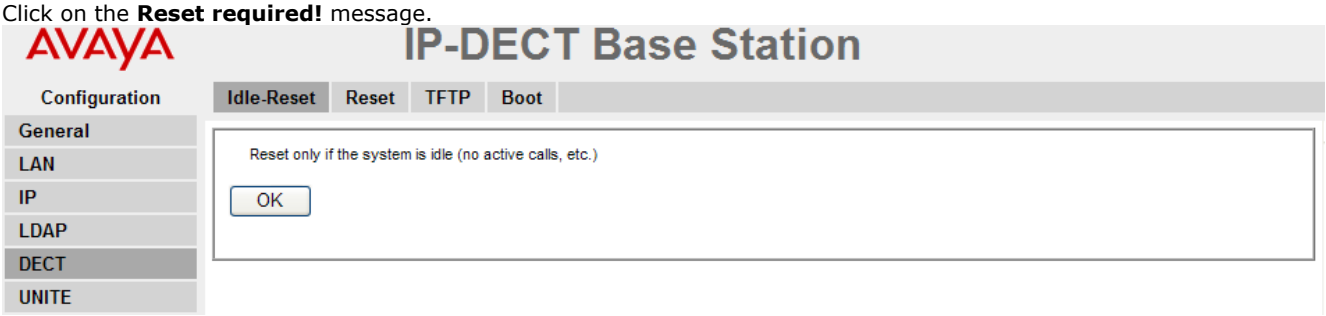
A number of menus are disabled until the base station has been set a being the master base station for the IP Office DECT R4 system.

1. In the left-hand panel select **DECT**. Select the **Master** tab.

2. Use the **Mode** drop-down box to select ***Active***.
3. Click **OK**.

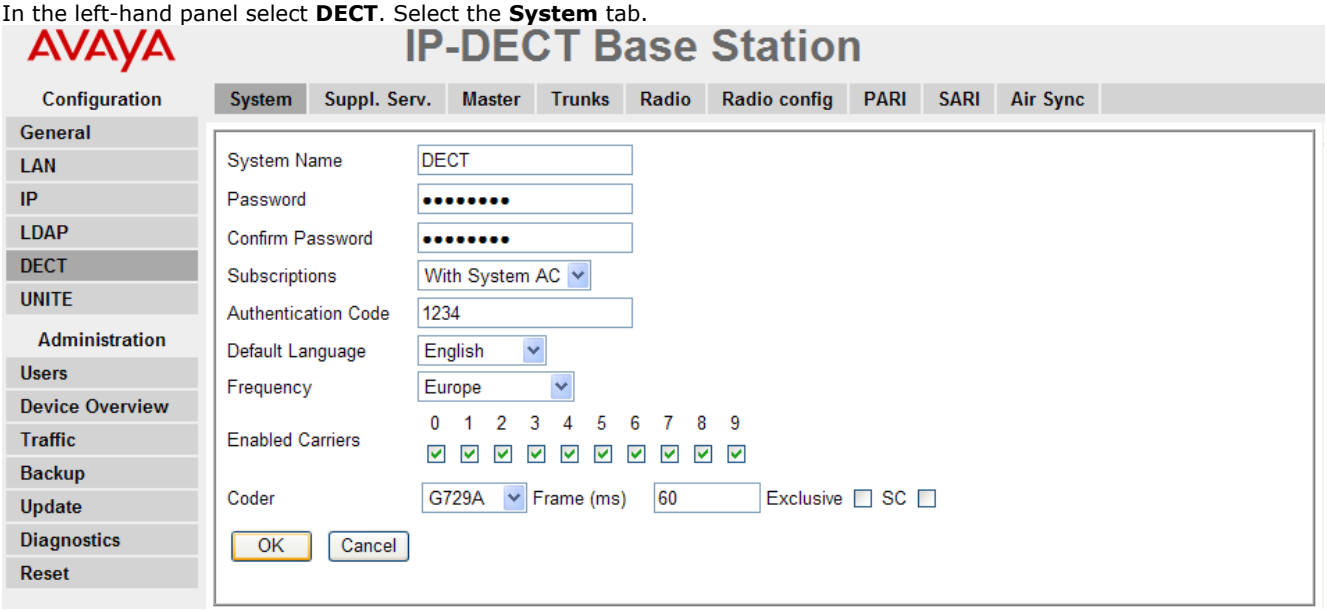


4. Click on the **Reset required!** message.



5. Click **OK**.

6. In the left-hand panel select **DECT**. Select the **System** tab.



7. Set and check the following values:

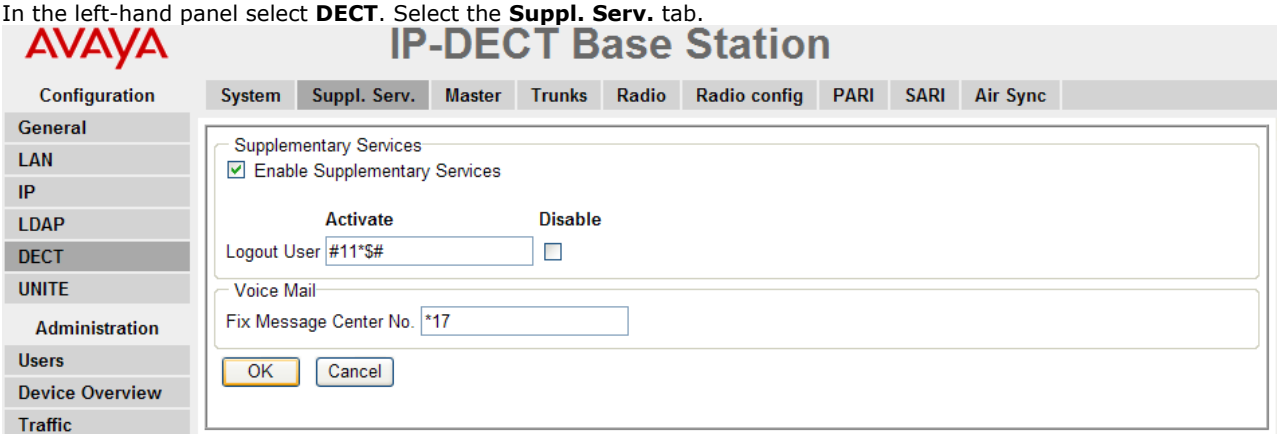
- **System Name**
  Enter name to identify the DECT system. This must be a unique name if there are other DECT systems in the same area.
- **Password**
  Enter the same password as being used for admin access to the base stations. The default is ***changeme***. Re-enter the password in the **Confirm Password** field.
- **Subscriptions**
  Select With System AC. This allows phones to be subscribed to the system using the system authentication code as set below.
- **Authentication Code**
  This code is required by phones during subscription to the DECT system.
- **Default Language**
  Select the language required by the customer.
- **Frequency**
  You must ensure that the correct region is selected. This affects the frequency used for DECT wireless signalling and other factors.

8. Click **OK**.

4.2.2 Enable Supplementary Services

Enabling supplementary services is required for IP Office operation.

1. In the left-hand panel select **DECT**. Select the **Suppl. Serv.** tab.

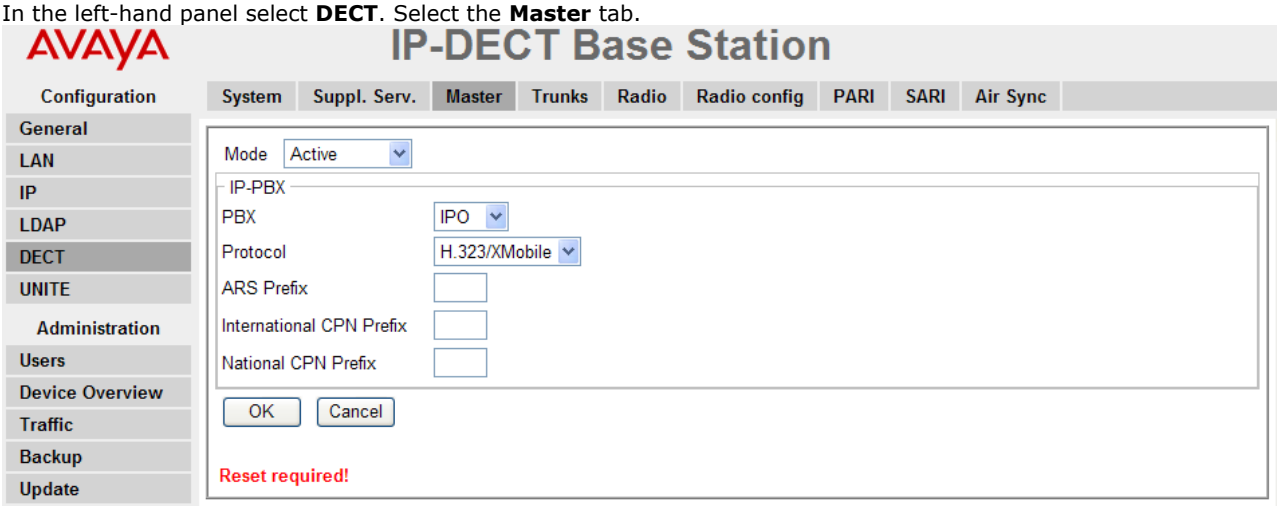


2. Select **Enable Supplementary Services**.
3. In the **Fix Message Center No.** field enter ***17***. This is the IP Office default short code for voicemail access. If the IP Office has been configured to use a different short code enter that short code.
4. Click **OK**.

4.2.3 Set the PBX Switch Mode

The master base station needs to be informed what type of PBX it is working with, ie. IP Office, and the protocol to use for communication.

1. In the left-hand panel select **DECT**. Select the **Master** tab.

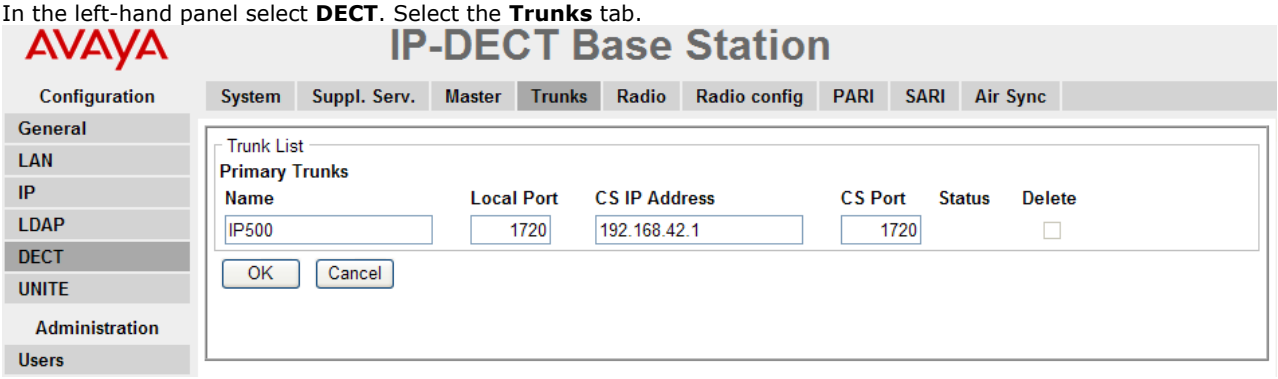


2. Using the **PBX** drop-down list, select ***IPO***.
3. Check that the **Protocol** is set to ***H.323/XMobile***.
4. Click **OK**.
   - The message ***Reset required!*** is displayed. At this stage further changes are required so do not reset the base station.

4.2.4 IP Trunk Configuration

An IP trunk to the IP Office must be configured. Only one trunk is supported.

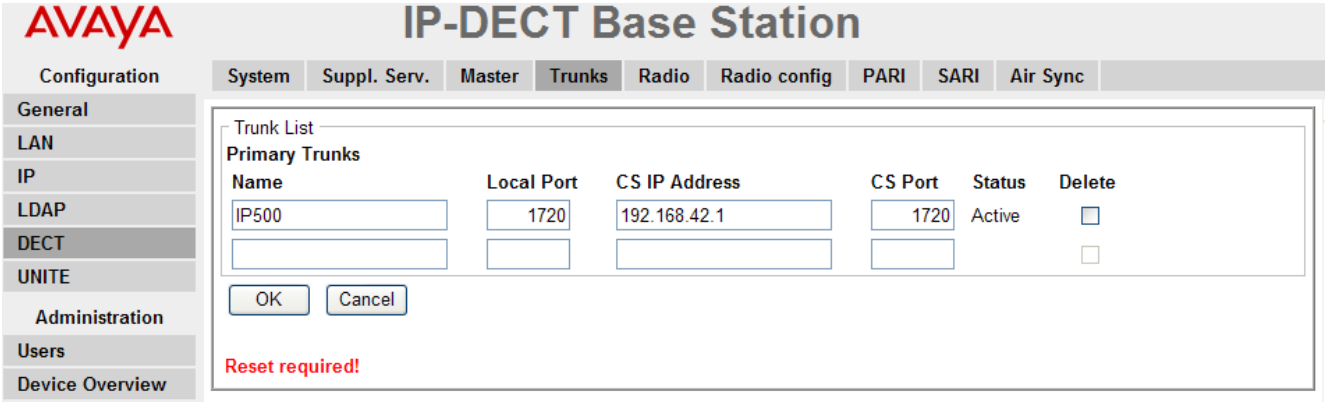
1. In the left-hand panel select **DECT**. Select the **Trunks** tab.



2. Enter the following settings:

- **Name**
  Set a name that identifies the IP Office system.
- **Local Port**
  set this to ***1720***.
- **CS IP Address**
  Set this field to the IP address of the IP Office system.
- **CS Port**
  Set this to ***1720***.

3. Click **OK**.

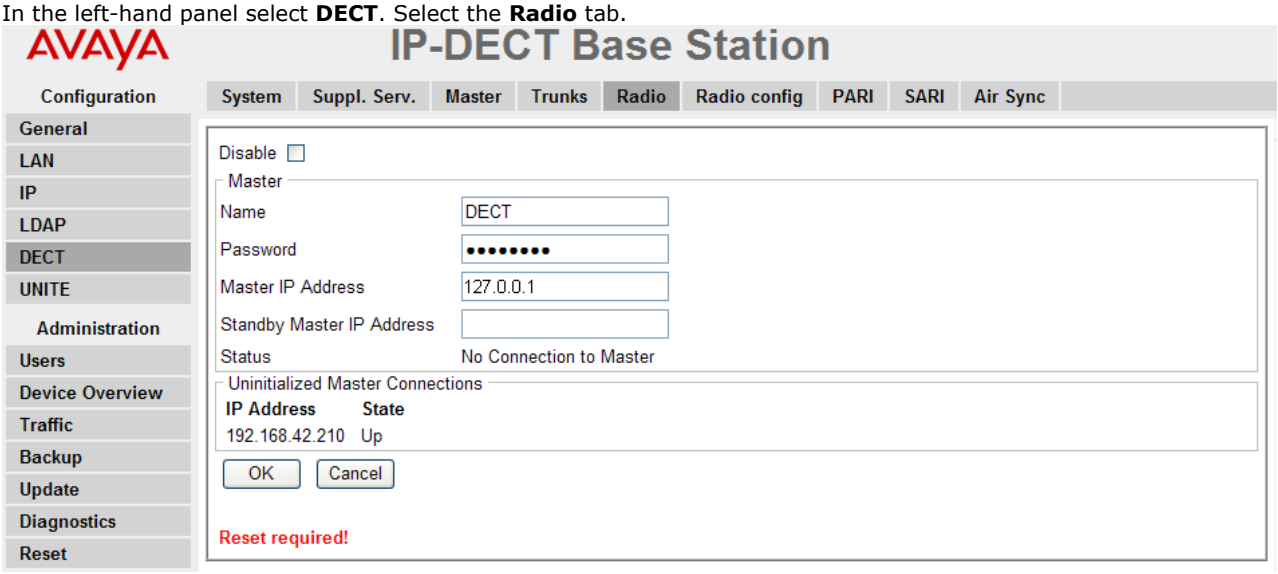


- The message ***Reset required!*** is displayed. At this stage further changes are required so do not reset the base station.

4.2.5 Enter the Radio Settings

Having been configured as the master base station, the radio aspect of the base station can be configured. Note that IP Office does not support use of a standby master base station.

1. In the left-hand panel select **DECT**. Select the **Radio** tab.



2. Set the following values:

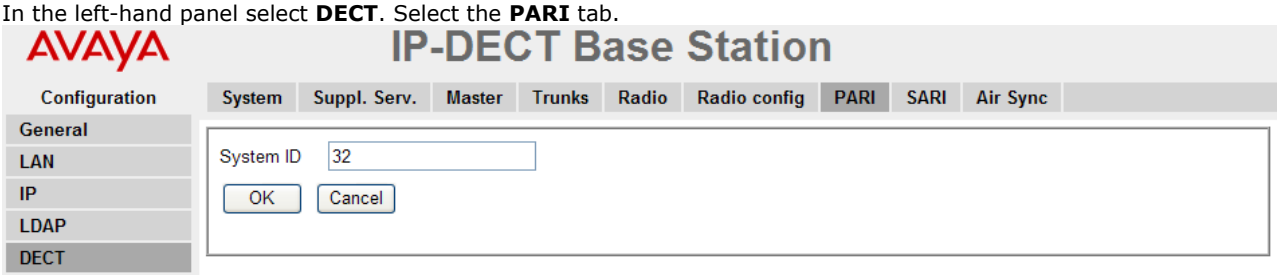
   - **Name**
     Set this to match the **System Name** set on the **DECT | System** tab.
   - **Password**
     Set this to match the **Password** set on the **DECT | System** tab.
   - **Master IP Address**
     Set the address 127.0.0.1 for the base station to refer to itself. (Alternatively set this to match the IP address assigned to the base station on the **LAN | IP** tab).

3. Click **OK**.

   - The message ***Reset required!*** is displayed. At this stage further changes are required so do not reset the base station.

4.2.6 Enter the PARI

1. In the left-hand panel select **DECT**. Select the **PARI** tab.



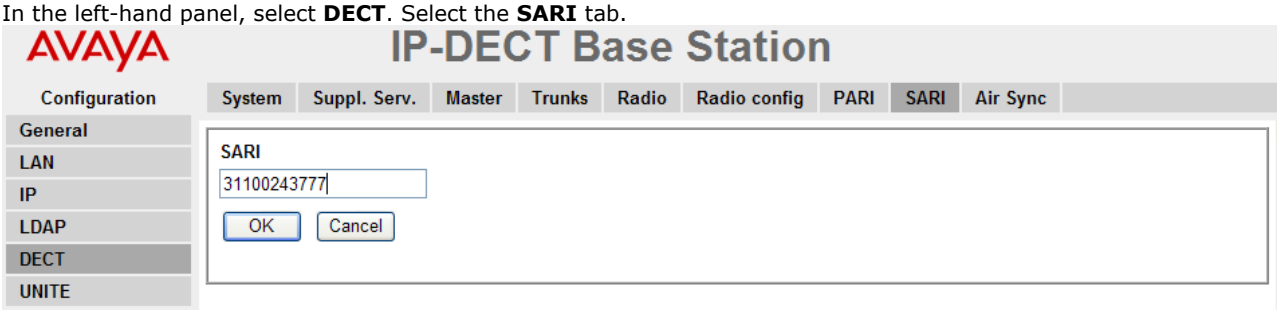
2. Enter a value between 1 and 35. This value must be unique from any other DECT R4 master base station in the area.

3. Click **OK**.

4.2.7 Enter the SARI/PARK

The SARI is the license for the DECT R4 system.

1. In the left-hand panel, select **DECT**. Select the **SARI** tab.



2. Enter the SARI code provided with the DECT R4 equipment.
3. Click **OK**.

4.2.8 Air Sync

Base stations in the DECT R4 system need to be synchronized with each other. This can be done with a signal as low as -90dB between base stations.

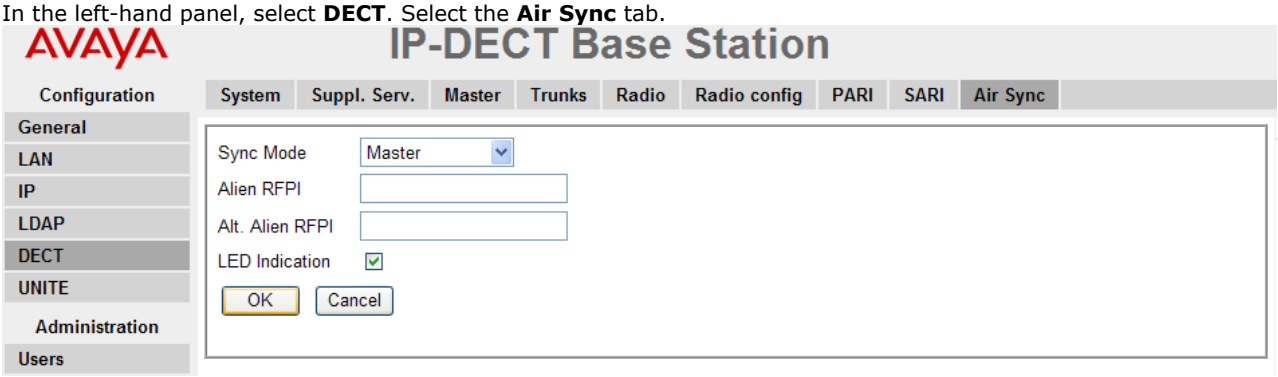
One base station is assigned as the 'air synch master', typically the master base station. Each other base station can synch directly with it or indirectly via a synchronization chain. However, it is preferable that the number of synchronization 'hops' between any particular base station and its air synch master base station is kept as low as possible. To help achieve this it is recommended that the air synch master is placed centrally within the set of base stations.

Where possible, each base station should be placed in synchronization range of more than one base station. That allows the base stations to maintain synchronization should one base station fail or be switched off for maintenance. The process of synchronizing by the shortest route to the air synch master when in synchronization range of multiple base stations is automatic.

Advanced Scenario: Separated Locations

In most scenarios, the master base station is used as the air synch master for all the other base stations and that is the scenario documented in this manual. However, in scenarios where you have base stations in separate locations that are not within synchronization range of each other, it is permissible to assign separate air synch masters in each location. However there must be absolutely no overlap (<-90dB) between the separate groups of base stations. Any overlap will cause frequent lose of synchronization.

1. In the left-hand panel, select **DECT**. Select the **Air Sync** tab.

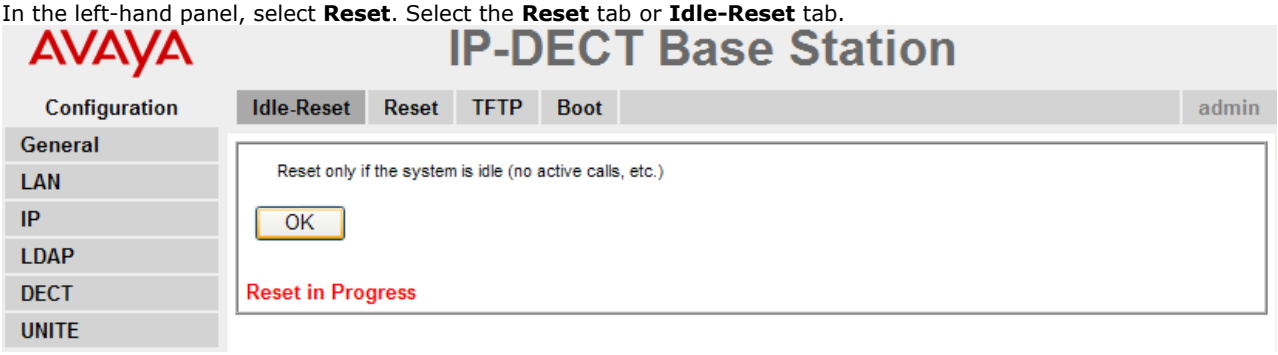


2. Set the **Sync Mode** to ***Master***.
3. Enable **LED Indication**. This enables the amber flashing mode of the base station's LED 2 which is used to indicate when the base station has no air synchronization signal but does have call traffic in progress.
4. Click **OK**.

4.2.9 Reset the Base Station

Having completed the configuration changes, the master base station should be reset.

1. In the left-hand panel, select **Reset**. Select the **Reset** tab or **Idle-Reset** tab.

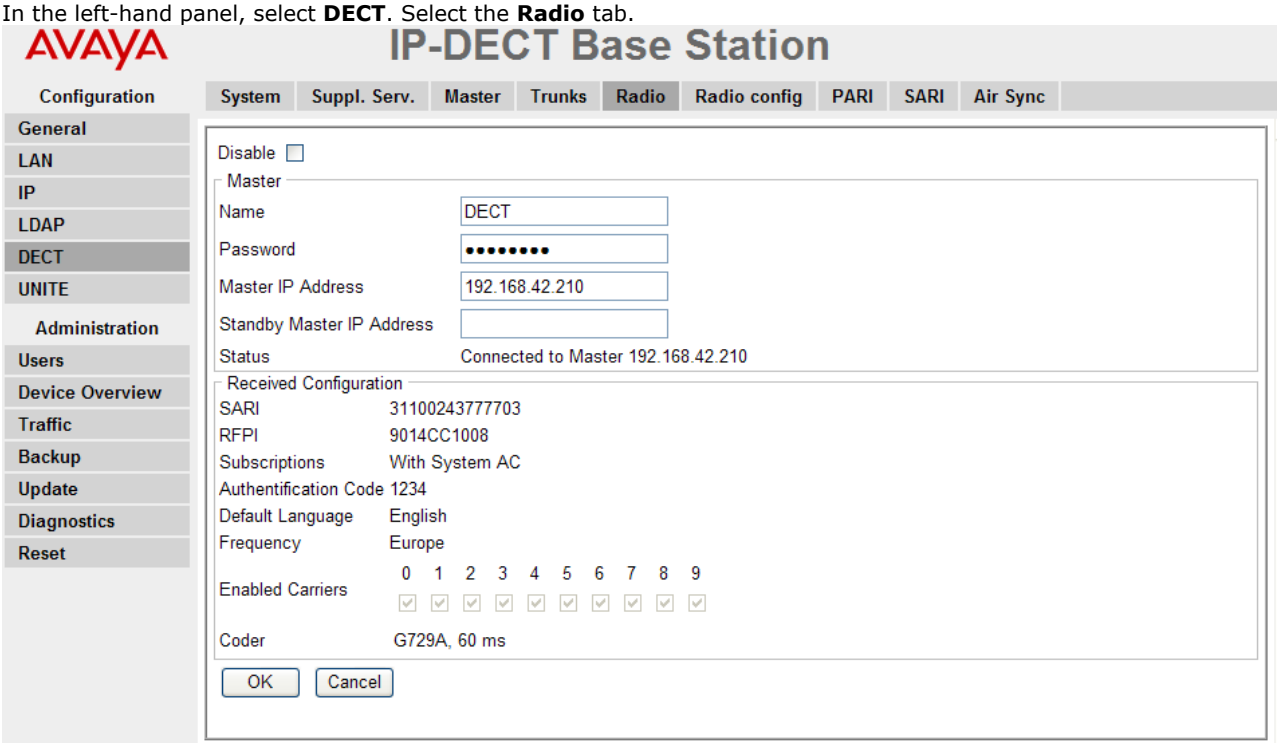


2. Click **OK**.

4.2.10 Check the Base Station

Following the reset, the operation of the radio part can be checked.

1. In the left-hand panel, select **DECT**. Select the **Radio** tab.



2. The **Status** should indicate ***Connected to Master***.
3. The **Received Configuration** settings should match the parameters entered during configuration.
4. On the base station, LED 2 should be off.

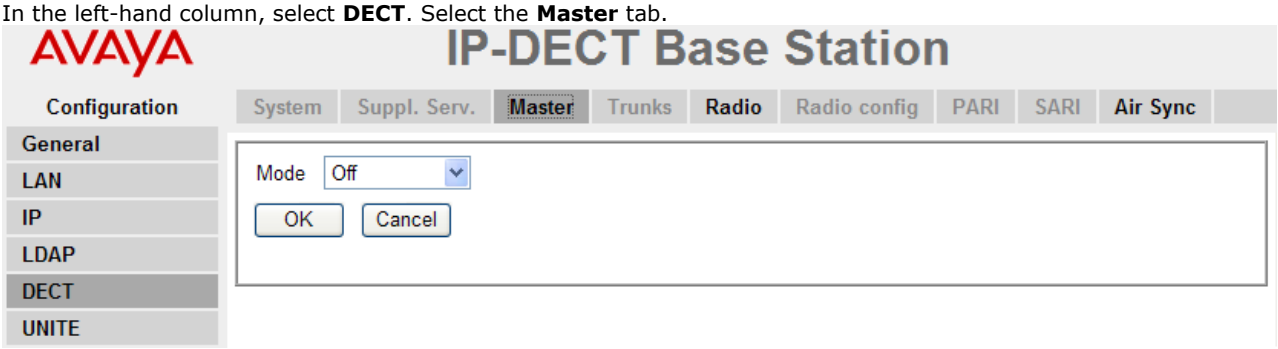
4.3 Slave Base Station Configuration

This section assumes that the basic base station configuration 30 has been completed first to give the slave base station a static IP address on the same network as the IP Office.

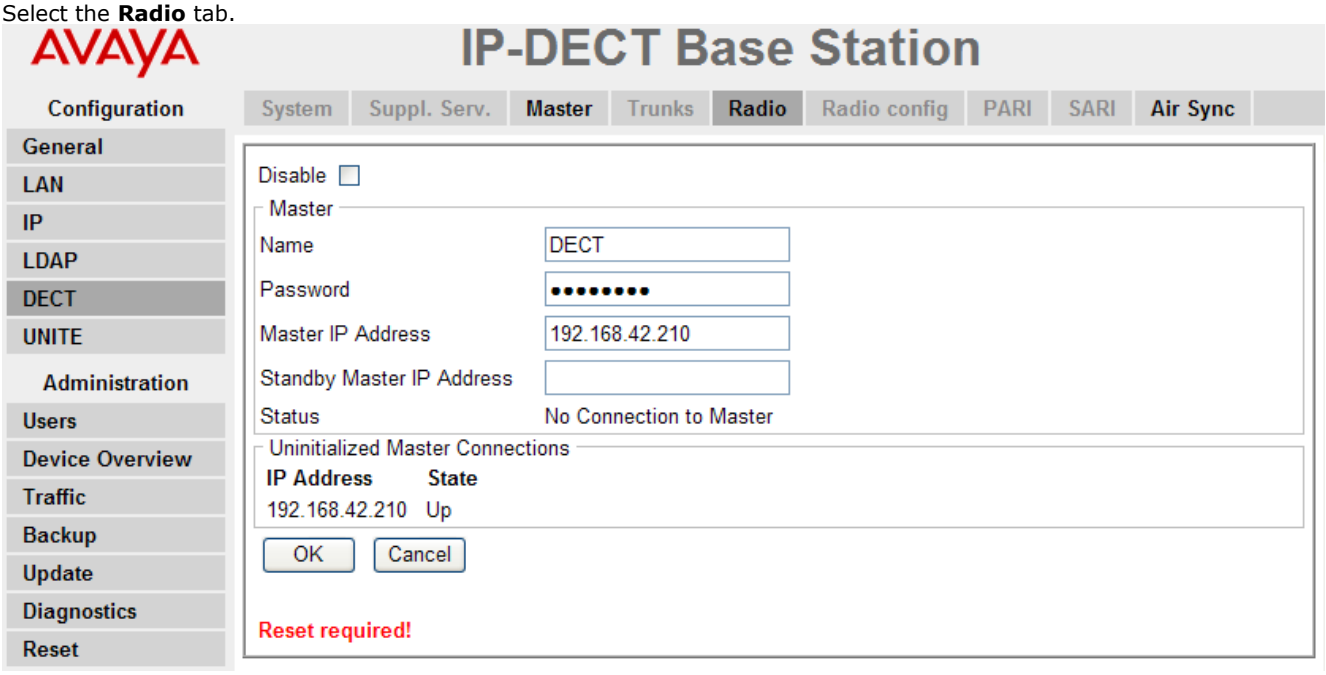
4.3.1 Set the Base Station to Slave Mode

There can be only 1 master base station in the IP Office DECT R4 system. in this process we check that the base station is not set to act as a master and then configure its radio settings to access the master base station.

1. In the left-hand column, select **DECT**. Select the **Master** tab.

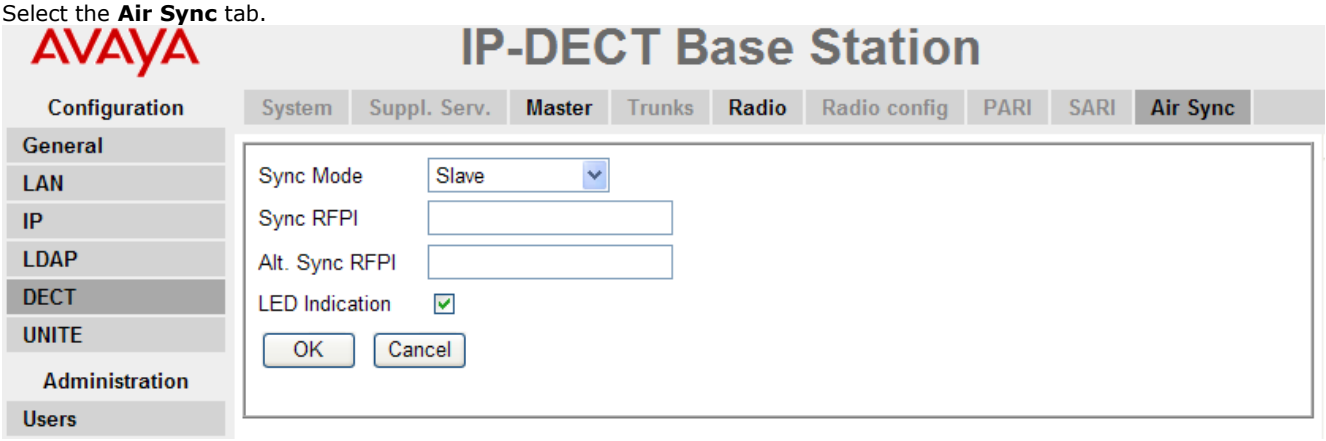


2. Check that the **Mode** is set to ***Off***.
3. Click **OK**.
4. Select the **Radio** tab.



5. Set the following details:
   - **Name**
     Set this to match the **System Name** set on the master base station's **DECT | System** tab.
   - **Password**
     Set this to match the **Password** set on the master base station's **DECT | System** tab.
   - **Master IP Address**
     Enter the IP address of the master base station set on its **LAN | IP** tab.
6. Click **OK**.

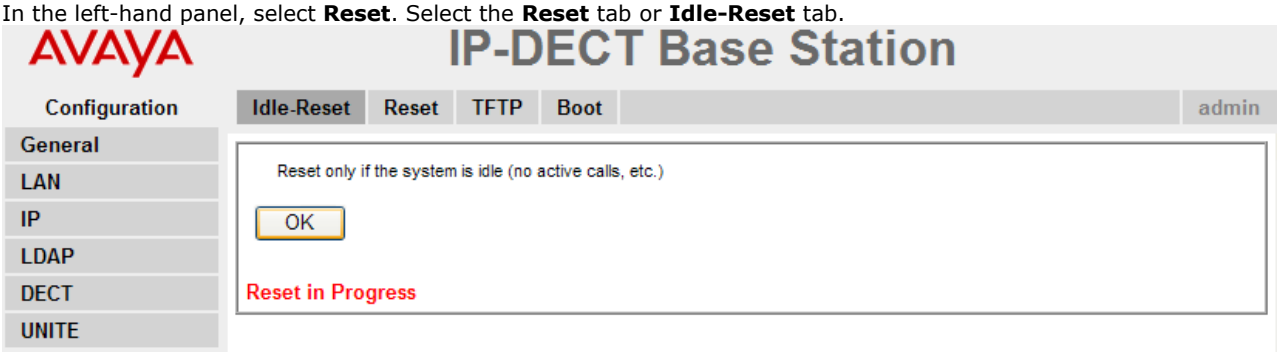
7. Select the **Air Sync** tab.



8. Set the **Sync Mode** to ***Slave***.
9. Enable **LED Indication**. This enables the amber flashing mode of the base station's LED 2 which is used to indicate when the base station has no air synchronization signal but does have call traffic in progress.
10. Click **OK**.

4.3.2 Reset the Base Station

1. In the left-hand panel, select **Reset**. Select the **Reset** tab or **Idle-Reset** tab.



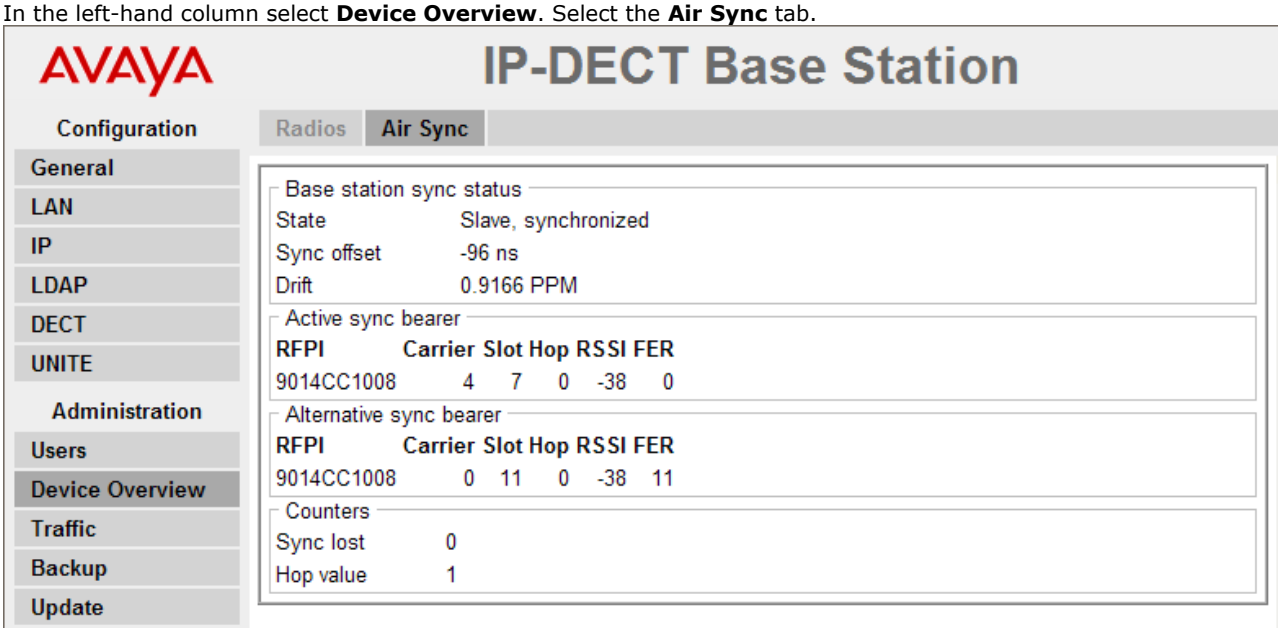
2. Click **OK**.

4.3.3 Check the Base Stations

Through the configuration of the slave and the master base status it is possible to check the signalling between the base stations.

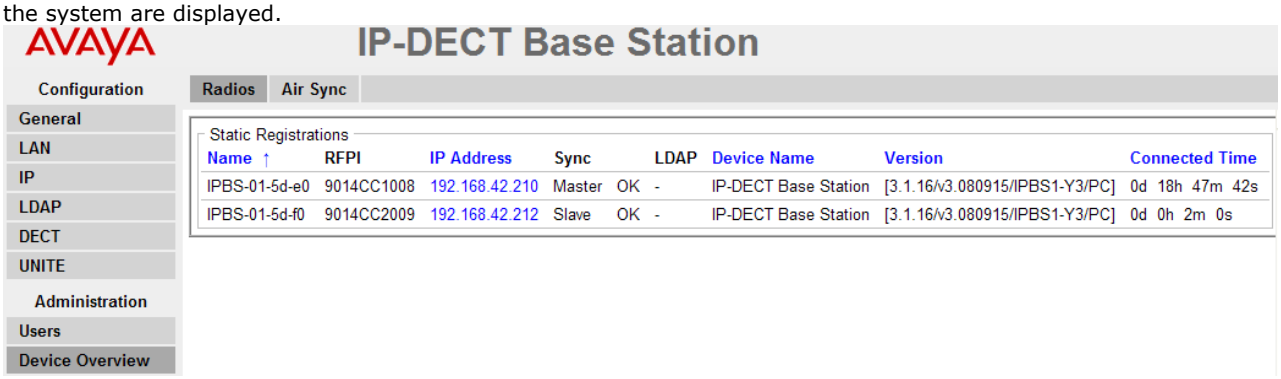
Slave Base Station

1. In the left-hand column select **Device Overview**. Select the **Air Sync** tab.

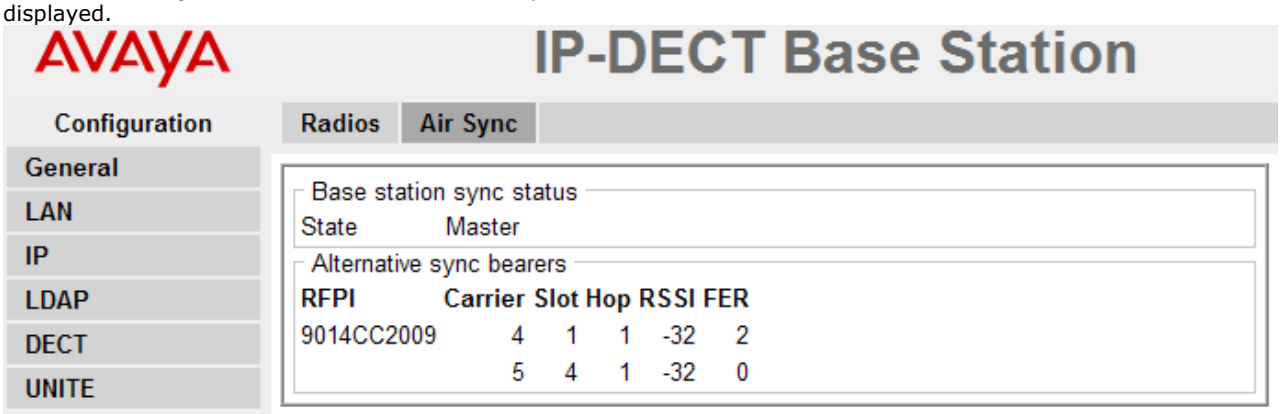


Master Base Station

1. In the left-hand column select **Device Overview**. Select the **Radios** tab. The details of the base stations within the system are displayed.



2. Select the **Air Sync** tab. The status of wireless synchronization between the master and other base stations is displayed.

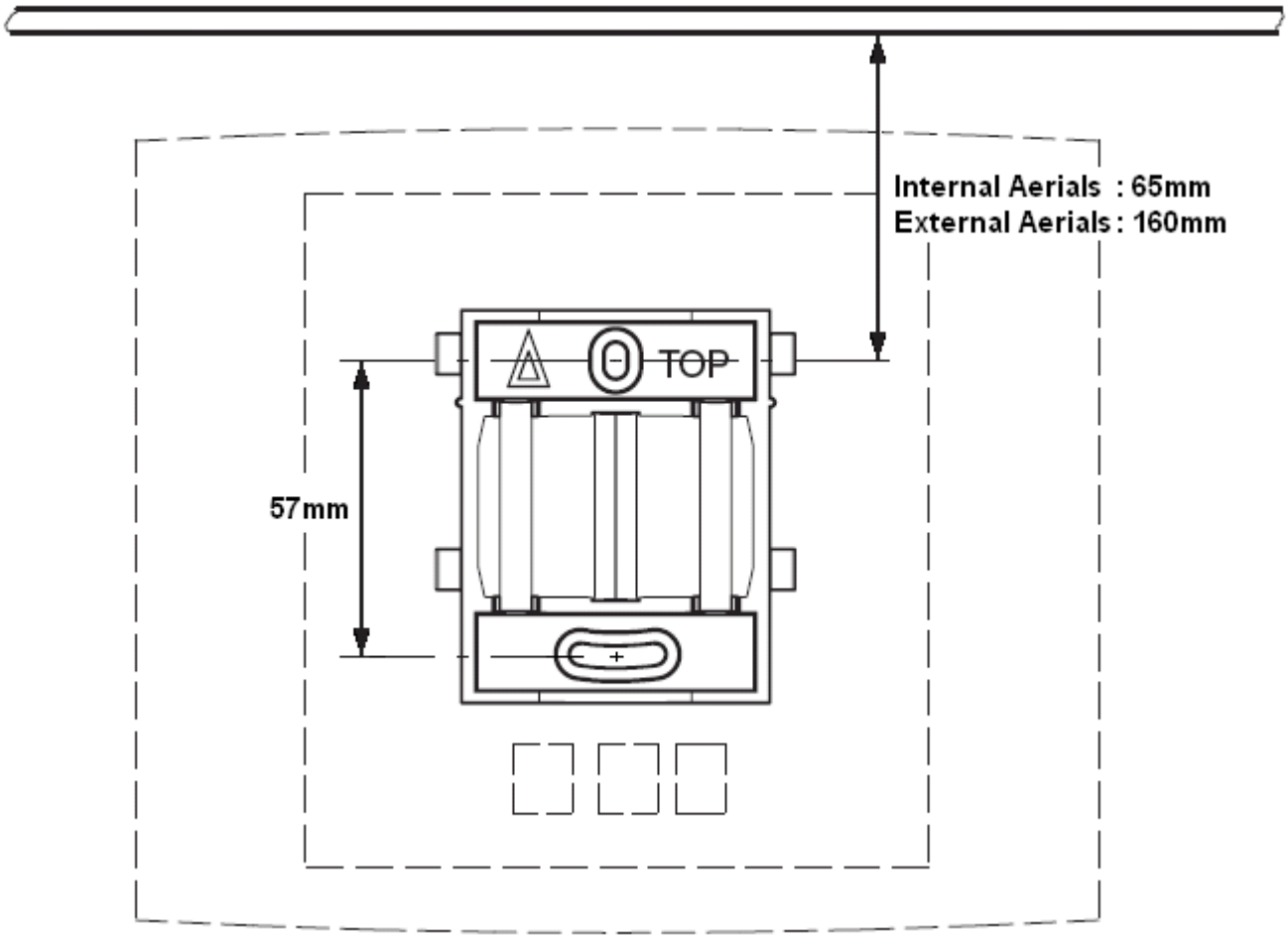


4.4 Base Station Mounting

The base station can now be powered down and mounted in its intended operating position. The removable bracket on the back of the base stations can be used for either wall mounting using two screws suitable for the surface or for mounting on columns using two metal bands.

Wall Mounting

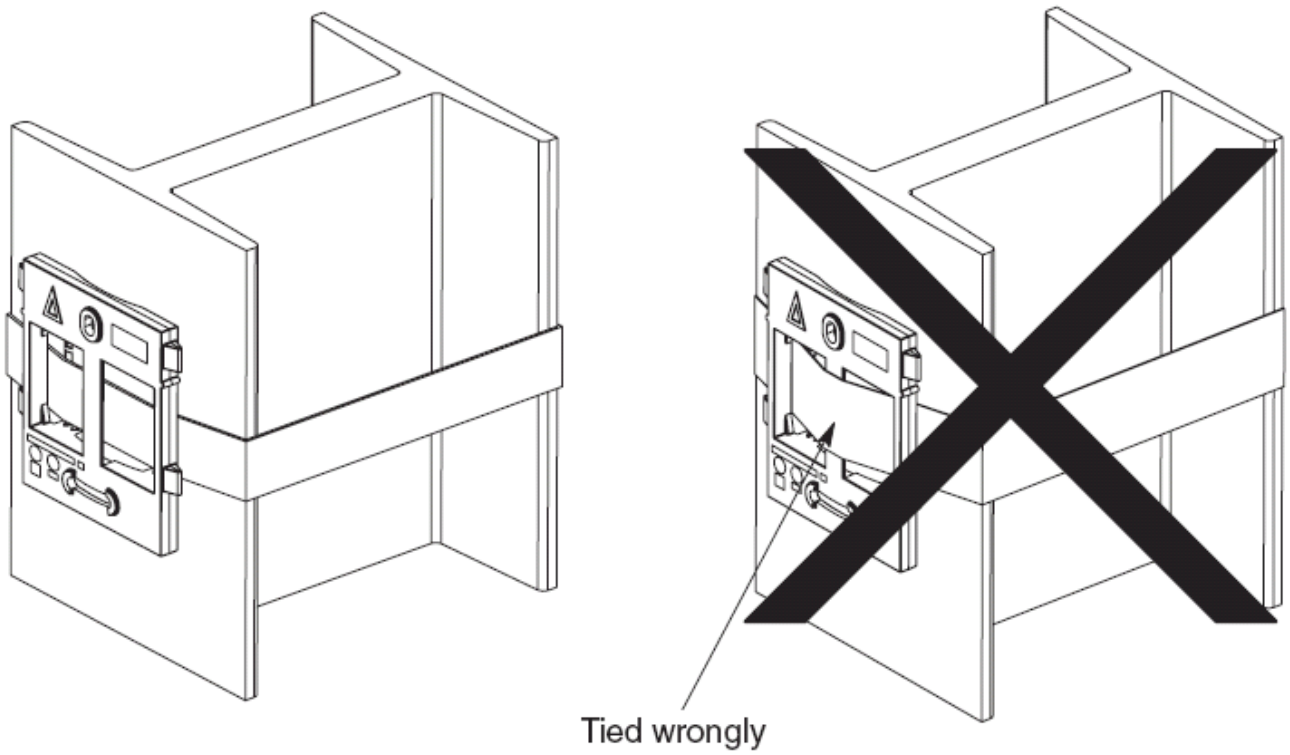
Remove the mounting bracket from the base station. Use it as a template for marking the screw fixing holes. Note the diagram below indicating the required clearance for getting the base station onto the mounting bracket.



1. Hold the mounting bracket with its flat side against the wall with the text 'TOP' upwards and mark the two holes. Observe the minimum distance between the top screw hole and the ceiling as indicated in the diagram above.
2. Drill the two holes using a 6mm diameter drill and insert the included wall plugs.
3. Position the mounting bracket with its flat side to the wall and fasten it with the two included 3.5mm diameter screws.

Column/Pillar Mounting

The mounting bracket can be fixed to a pole of 45mm diameter or greater, or a beam of 50mm width minimum by using a strap or flexible metal band less than 30 mm wide. A suitable strap or flexible metal band is not included with the base station.



Chapter 5.
Phone Subscription

5. Phone Subscription

Once the master base station has been configured and is connected to the IP Office, you can begin phone subscription.

There are two methods of subscription; anonymous phone subscription and known phone subscription. Both methods require the DECT users to be pre-configured in the master base station configuration. However anonymous phone subscription allows the user pre-configuration to be done without knowing the IPEI of the DECT phone the user will actually use.

The anonymous phone installation process consists of the following stages:

1. **Allow Subscription.**
2. **Create User Entries in the Master Base Station Configuration.**
3. **Subscribe the Phones.**
4. **Complete Anonymous Login.**
5. **Disable Subscription.**

Pre-Requisites

- ☐ Master base station installed and connected to the network.
- ☐ IP Office connected to the network.

Information

- ☐ Service user name and password for IP Office configuration.
- ☐ Master base station IP address.
- ☐ User name and password for master base station configuration.
- ☐ User names and extension numbers for the DECT phones.

Tools

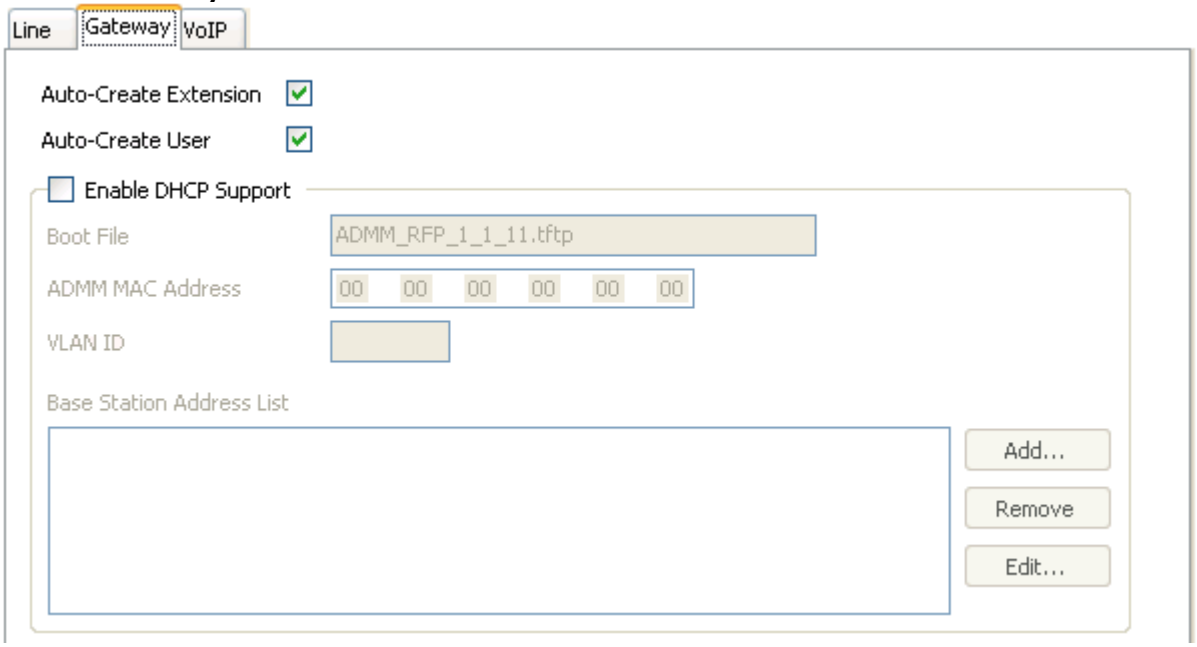
- ☐ IP Office Manager.
- ☐ Web browser.

5.1 Allow Subscription

Before phones are subscribed subscription needs to be allowed by both the IP Office and the DECT R4 system.

IP Office

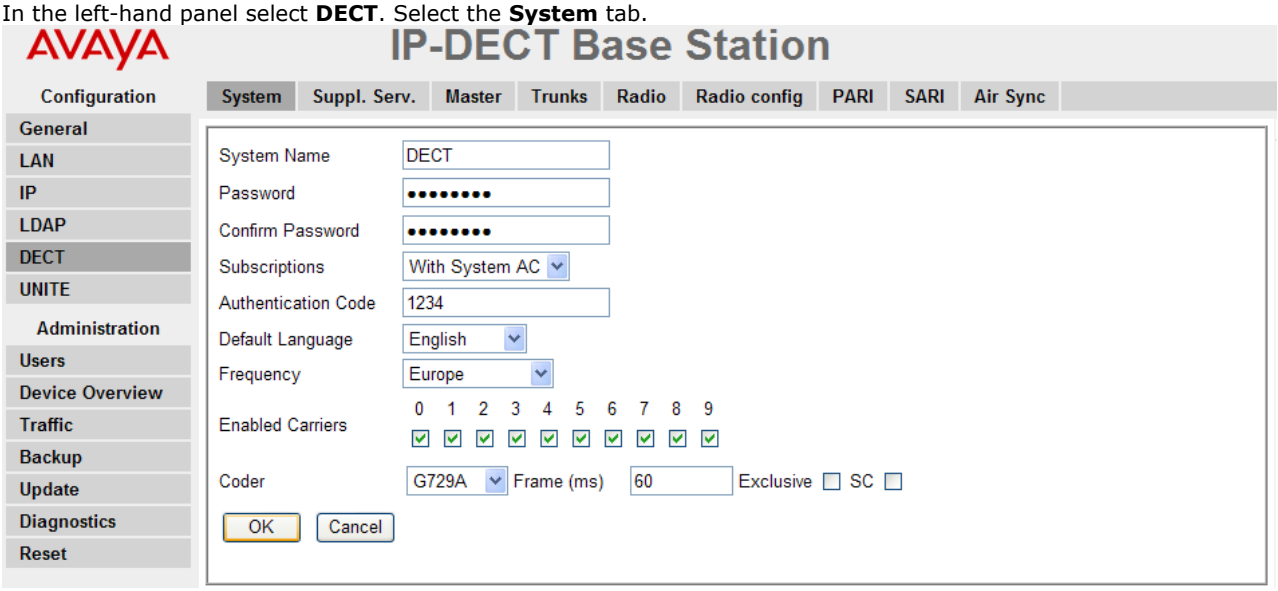
1. Start IP Office Manager and receive the configuration from the IP Office system.
2. In the left-hand navigation pane, click on  **Line** icon.
3. Select the  **IP DECT Line**.
4. Select the **Gateway** tab.



5. Check that the **Auto-Create Extension** and **Auto-Create User** options are selected.
6. Click **OK**.
7. Send the configuration back to the IP Office.

Master Base Station

1. Access the master base stations configuration.
2. In the left-hand panel select **DECT**. Select the **System** tab.



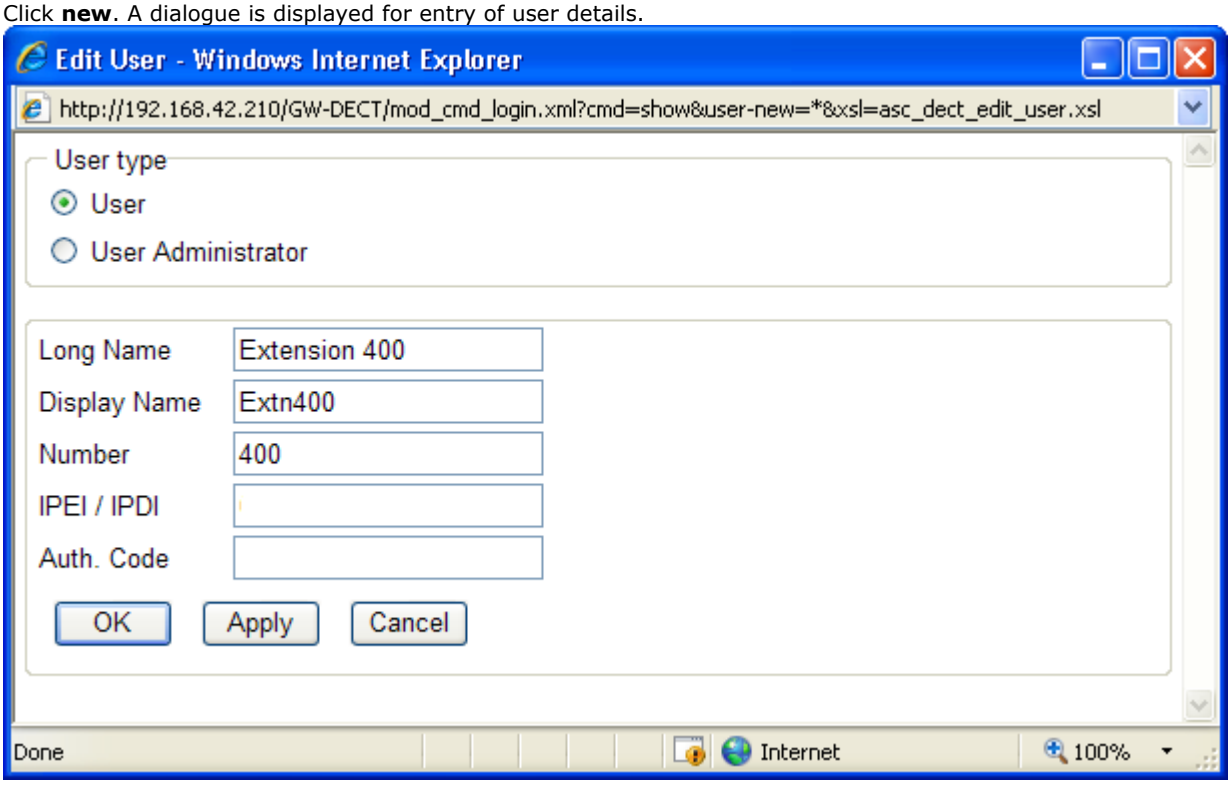
3. Check that the **Subscriptions** field:
   - **With System AC**
     Select this option to allow anonymous subscription of phones.
   - **With User AC**
     Select this option to allow subscription against user entries.
4. Note the number set in the **Authentication Code** field. This number is used as part of the anonymous subscription.

5.2 Create User Entries

Subscription requires a user entry within the master base station configuration. On completion of subscription, matching extension and user entries are automatically created in the IP Office configuration.

1. In the left-hand panel, select **Users**. Select the **Users** tab.

2. Click **new**. A dialogue is displayed for entry of user details.



3. Enter the user details:

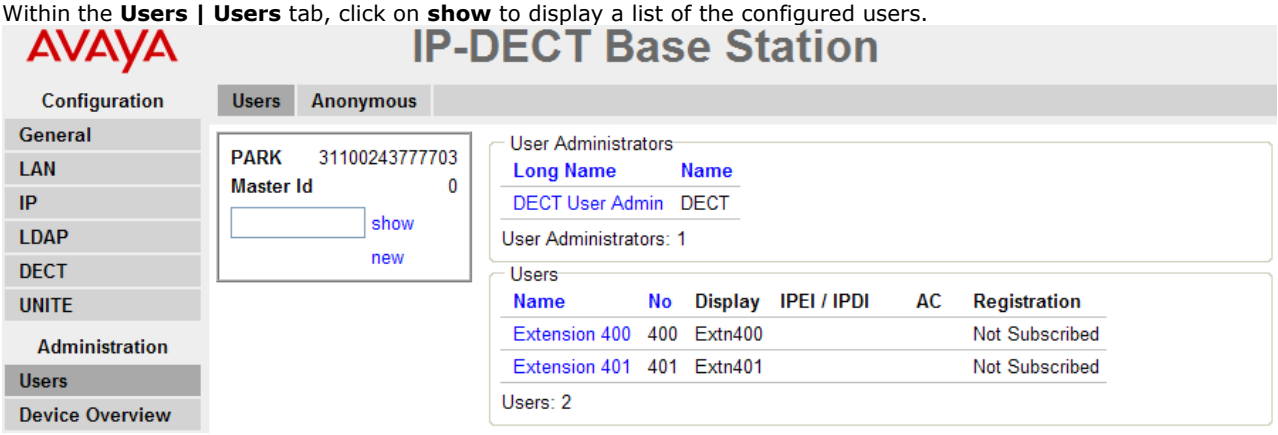
- **Long Name**
  This name is used for information within the DECT R4 system settings.
- **Display Name**
  This name displayed on the phone when idle. It is also the name used for the user created in the IP Office configuration. The name must be unique.
- **Number**
  This will be the extension number of the phone on both the IP Office and DECT R4 systems. The number must be unique.

The remaining two fields should not be completed if you want to use anonymous subscription. This removes the requirement of knowing the phone IPEI numbers during installation.

- **IPEI/IPDI**
  Enter the phones IPEI number. For 3720/3725 phones this is printed on the label inside the phones battery compartment.
- **Auth. Code**
  Enter the account code that should be used when the phone is subscribed.

4. Click **OK**.
5. Repeat the process for any other phones that you want to subscribe.

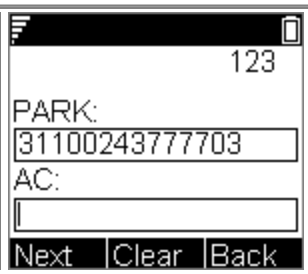
6. Within the **Users | Users** tab, click on **show** to display a list of the configured users.



7. The phones configured will be displayed. You can now begin subscribing the phones.

5.3 Phone Subscription

3720/3725 Phone Subscription

Display	Actions
	Switch on the phone: • If the phone is new, it will display its **IPDI** number. This is the same as its IPEI. The System name is a name that will be displayed on the phone once it has subscribed to the DECT system. • If the phone has been previously used, select **Menu | Settings | System | Subscribe**. Enter any name and select **Next**.
 	The phone will display the different options for its PBX integration. Scroll the selected option to **IP-DECT** and select **Next**. When the **Protection on**? prompt is displayed, select **Yes**.
 	The phone now requires the **PARK** and **AC** (authentication code) set in the master base stations configuration. Enter the **PARK** and then scroll to the **AC** field. Enter the **AC** and select **Next**.
 	Select **OK**. The phone will go through the subscription process, showing the status of that process until completed.
 	The next screen will depend on the subscription method being used. • If using known phone subscription, the phone is now fully subscribed and useable. • If using anonymous subscription, the phone will display **Please Login**. You can now complete the anonymous login 58.

3701/3711 Phone Subscription

1. Switch on the phone.
2. Select **Menu | System | Subscription | Subscribe HS**.
3. Select **PABX-PIN**.
4. Enter the authentication code set in the master base station configuration.
5. The phone is subscribed anonymously and should display ***Please Login***.

5.4 Completing Anonymous Login

In the master base station configuration select the **Users | Anonymous** tab. This tab shows those phones currently anonymously subscribed to the DECT system. The DECT system will allow up to 8 anonymous devices to be subscribed at the same time.

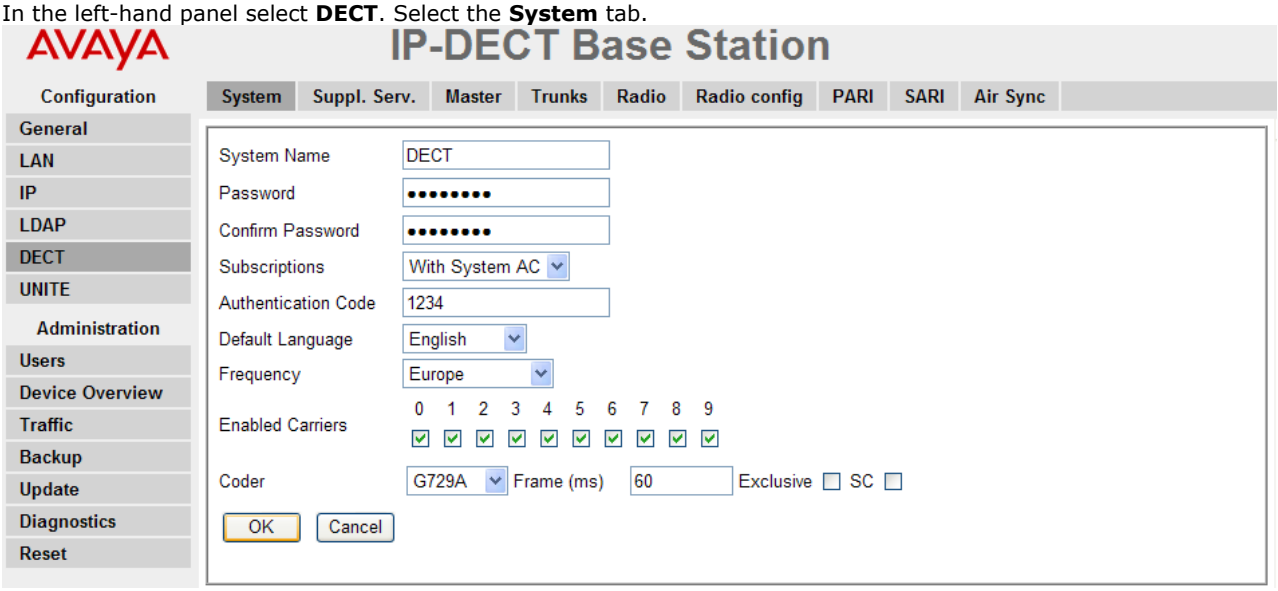
This process changes the 3720/3725 anonymous subscription 58 to a known subscription. While a phone is in anonymous subscription state it displays a screen showing **Please login**.

1. To login, dial ***M*N#** where:
    - ***M*** is the DECT system's **Master Id**. This is shown on the base station's **Users | Users** tab.
    - ***N*** is the extension number required. This must match an existing unsubscribed user entry on the **Users | Users** tab in the master base station configuration.
2. For example, on a system with master ID 0, to register an anonymously subscribed device as extension 403, dial *0*403#.

5.5 Disable Subscription

When all the DECT phones have been subscribed, it is recommended that you disable any further subscriptions.

1. Access the master base stations configuration.
2. In the left-hand panel select **DECT**. Select the **System** tab.



3. Check that the **Subscriptions** field to ***Disabled***.
4. Click **OK**.

Chapter 6.
AIWS Installation

6. AIWS Installation

The AIWS *(Avaya In-Built Wireless Server)* provides a range of services for the DECT R4 system. It hosts an integrated version of the Device Manager 82 application for managing DECT devices such as phones and chargers. It also provides directory integration between the IP Office system and the DECT phones.

The AIWS connects to the same LAN as the IP Office and DECT base stations and needs to be given a fixed IP address during installation.

The AIWS installation consists of the following stages:

1. **Remove the AIWS Cover.**
2. **Connect the RTC Battery.**
3. **Connect the LAN and Power Cables.**
4. **Browse to the AIWS.**
5. **Run the Setup Wizard.**
6. **Enable Base Station/AIWS Connections.**
7. **Upgrade the AIWS Firmware.**
8. **Switch off the AIWS.**
9. **Wall Mount the AIWS.**
10. **Replace the AIWS Cover.**

Pre-Requisites

- ☐ Master base station installed and connected to the network.
- ☐ IP Office connected to the network.
- ☐ Phones subscribed.

Parts Required

- ☐ AIWS Unit which includes:
  - ☐ AIWS Unit
  - ☐ AIWS Power Supply unit and selection of IEC60320 C7 power leads (CEE7/16 (Europlug), BS1363, NEMA1-15 and AS/NZS 3112).
  - ☐ 1.2 metre (4 foot) LAN cable.
    If this is replaced with a longer cable the replacement should be a CAT5 Ethernet LAN cable.
  - ☐ AIWS License sheet.
- ☐ 3 x 3.5mm Screws and suitable wall plugs for the wall mounting of the AIWS.
- ☐ LAN Socket
- ☐ Mains power outlet socket.

Information

- ☐ IP Address for the AIWS
- ☐ Other standard network settings (Default Gateway, DNS, WINS)
- ☐ AIWS License Key (this should have been supplied with the AIWS)
- ☐ IP Address of the DECT Master base station.
- ☐ IP Address of the IP Office
- ☐ Preferred time settings (date format, time format)
- ☐ Wall mounting location selected for the AIWS
- ☐ Access information (name and password) for configuring the base stations.

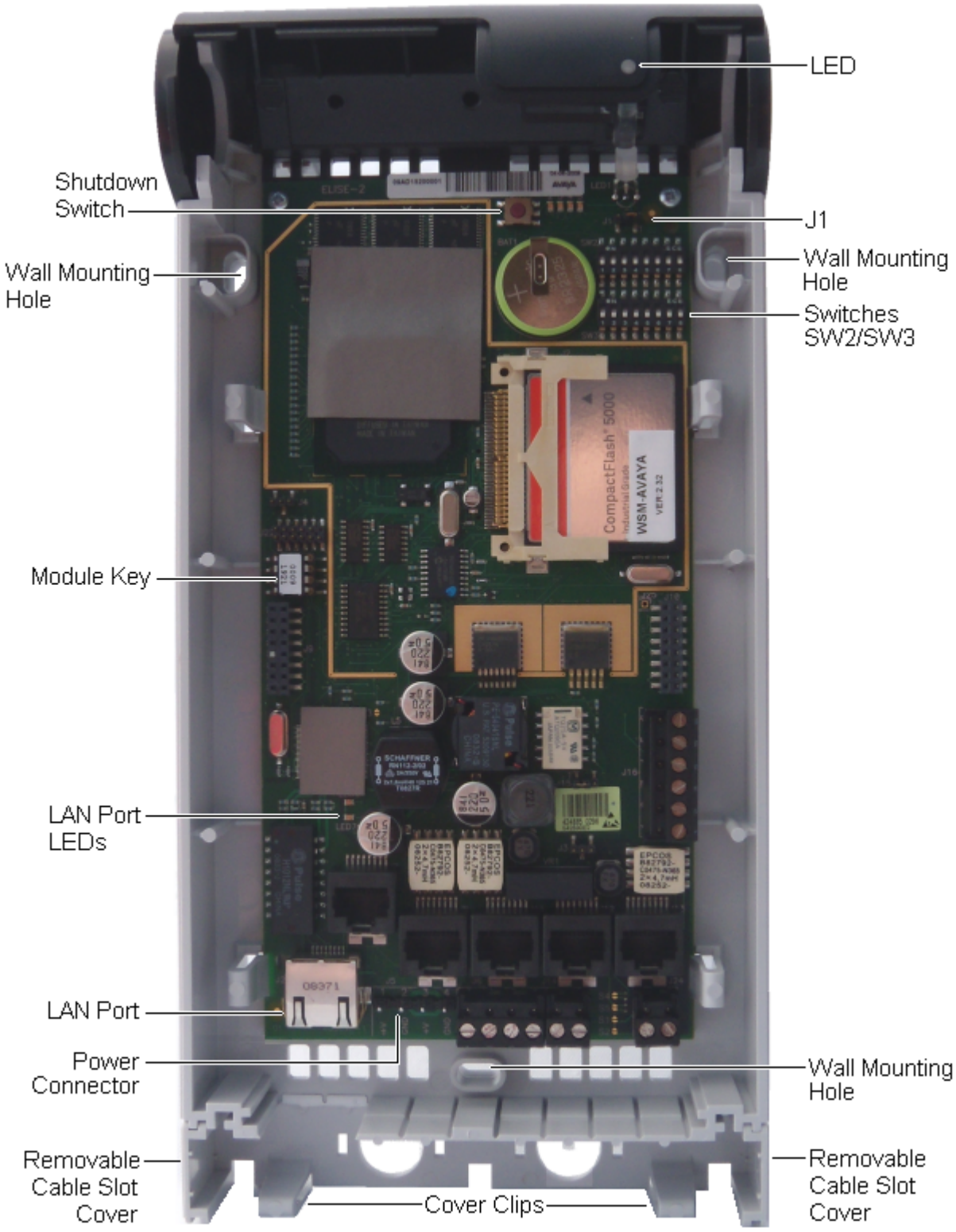
Tools

- ☐ Programming PC with DECT R4 software 25.
- ☐ Web browser.
- ☐ Pliers and sharp knife for removal of plastic cable cut-outs from AIWS case.
- ☐ Drill and drill bits suitable for the selected wall mounting position of the AIWS.
- ☐ Screwdrivers for use with the screws selected for AIWS wall mounting.

6.1 Remove the AIWS Cover

The AIWS cover can be removed without using any tools.

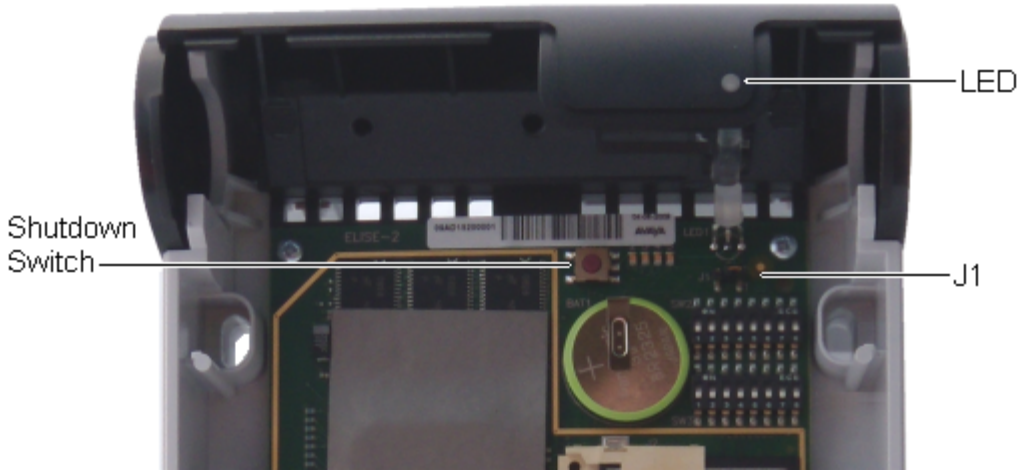
1. On the base of the unit (opposite the rounded end) are two depressible clips. Depress these while lifting the cover.
2. It should be possible to lift the cover off the unit.



3. With the cover removed, familiarize yourself with the various features labeled above. These will be referred to during other parts of the installation process.

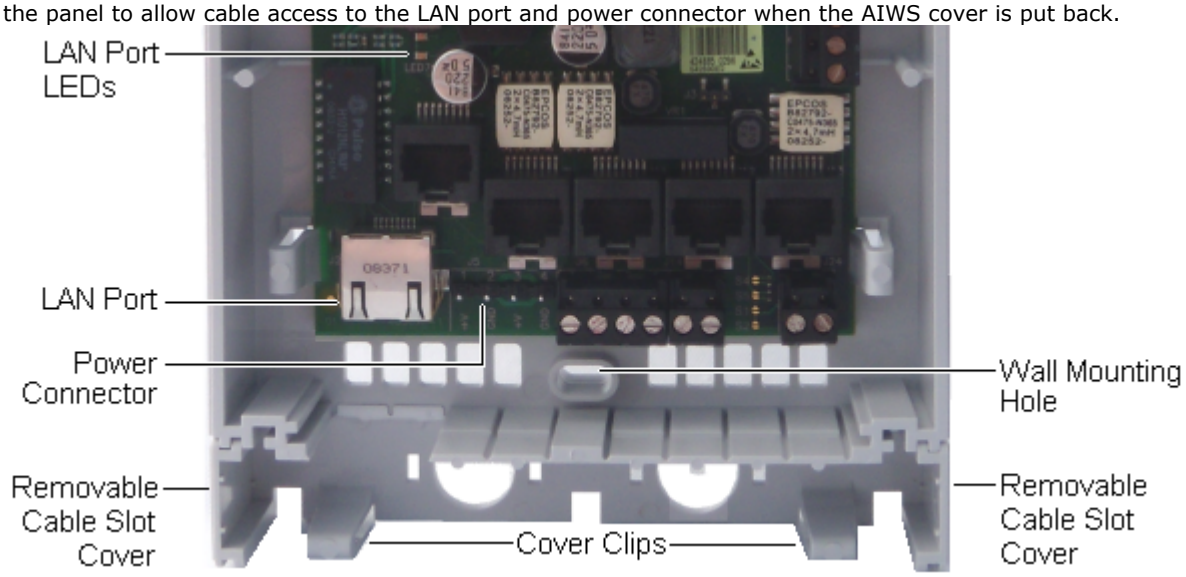
6.2 Connect the RTC Battery

The AIWS circuit board includes a 3V lithium battery which will keep the boards real time clock (RTC) running when power to the AIWS is off. The AIWS is shipped with the battery disconnected. To connect the battery, locate the switch **J1** at the top right of the board. Move the switch jumper to position 2-3.



6.3 Cable Connections

1. Locate the switch sets **SW2** and **SW3** at the top-right of the AIWS circuit board. Ensure that all the switches are set to ***Off***.
2. Locate the LAN port and the J5 power connector. Just below these is a plastic panel. With care remove sufficient of the panel to allow cable access to the LAN port and power connector when the AIWS cover is put back.

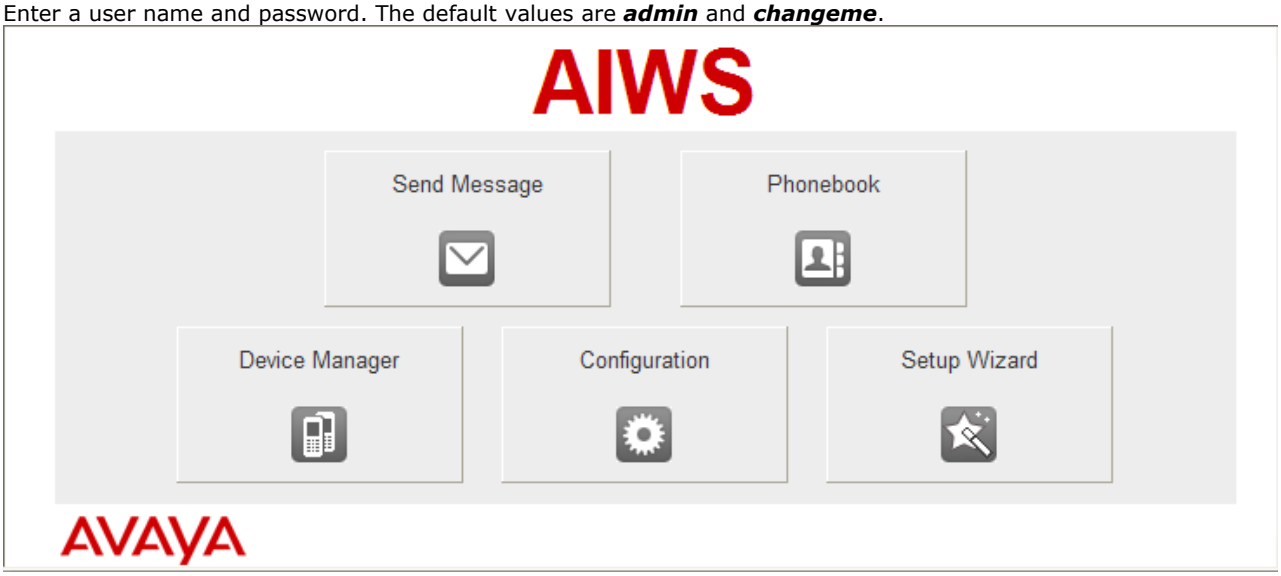


3. Connect the LAN cable from the IP Office to the AIWS.
4. Connect the power supply cable to the J5 power connector next to the AIWS LAN port.
5. Switch on power to the AIWS unit.

6.4 Browse the AIWS

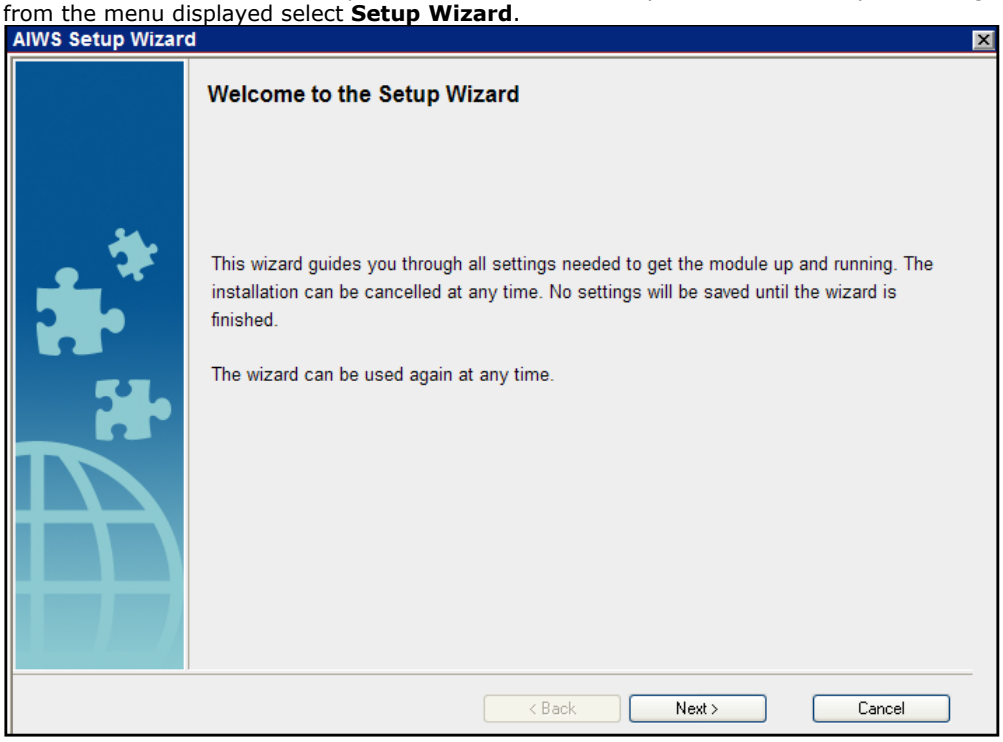
The AIWS can be accessed using a web browser.

1. Enter the IP address of the AIWS into the browser address field.
   - Alternatively enter ***http://Elise-0091921*** as the address, replacing the digits with the AIWS unit's Module Key. The Module Key is printed on the AIWS circuit board 64.
2. If a security certificate warning appears, select to continue.
3. Enter a user name and password. The default values are ***admin*** and ***changeme***.

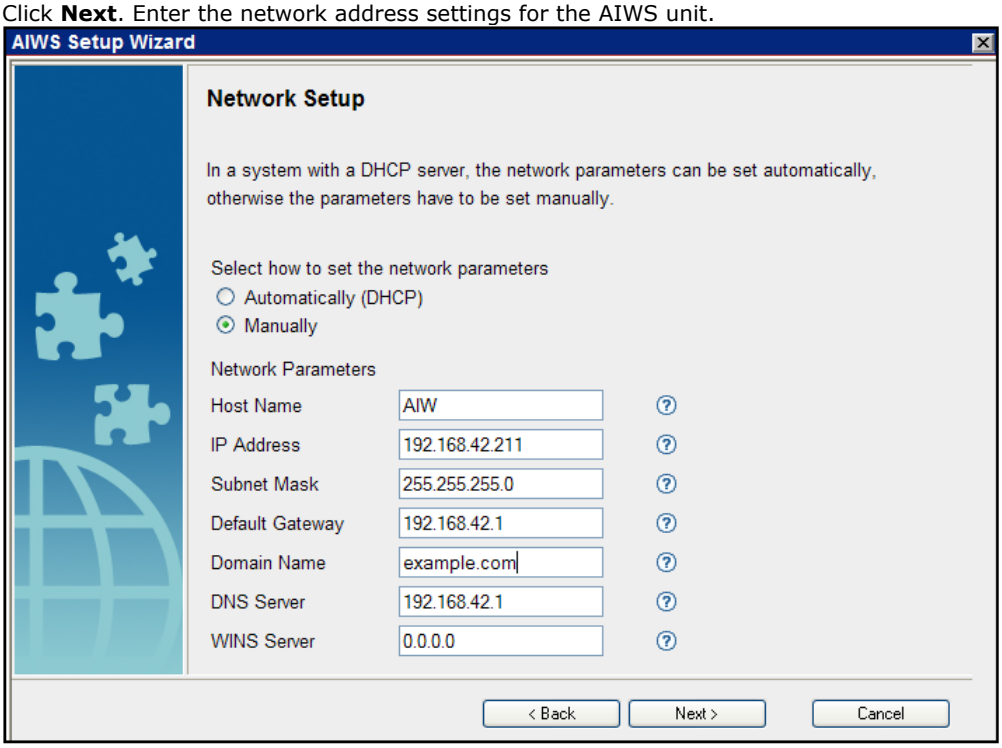


6.5 Run the Setup Wizard

1. Access the AIWS using your browser.
2. If the unit is defaulted, the setup wizard is run automatically. If the unit already has configuration settings, then from the menu displayed select **Setup Wizard**.

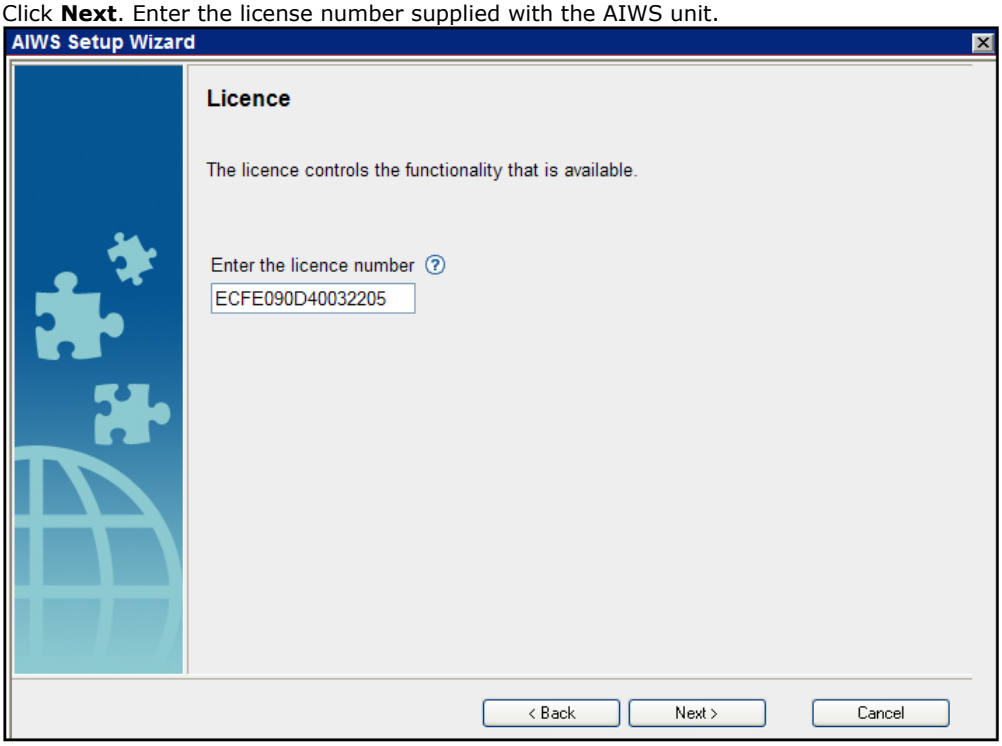


3. Click **Next**. Enter the network address settings for the AIWS unit.

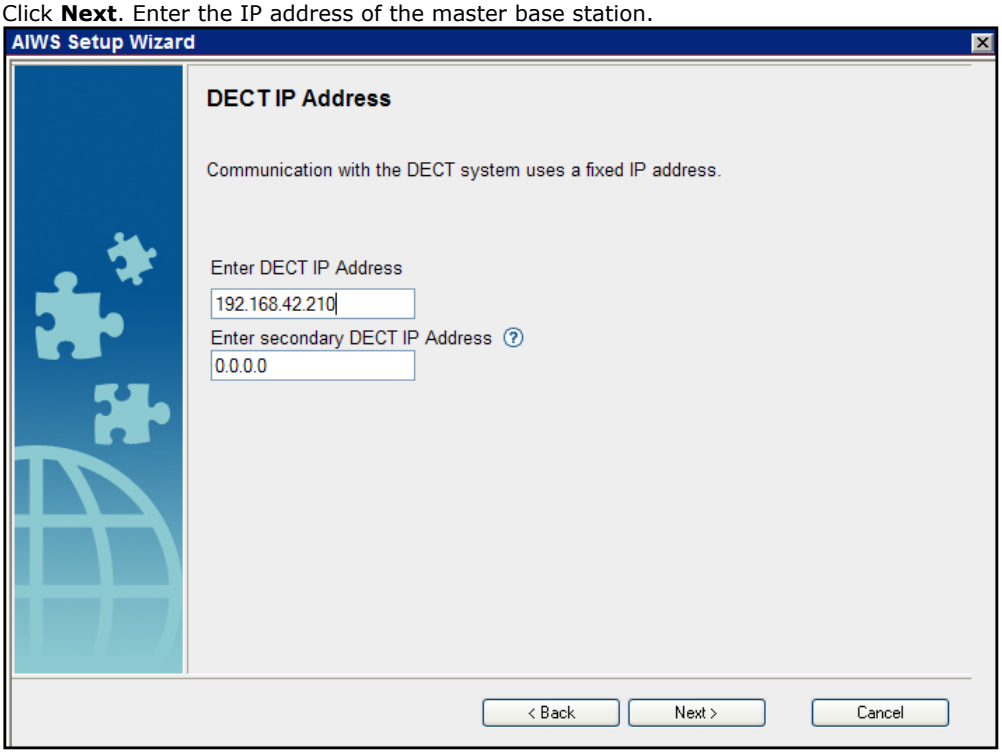


- Set the network parameters mode to ***Manually***.
- **Host Name**
  Enter a name to help identify the AIWS on the network.
- **IP Address/Subnet Mask**
  Enter the static IP address details that the AIWS should use.
- Set the remaining details to match those being used by other devices on the network.

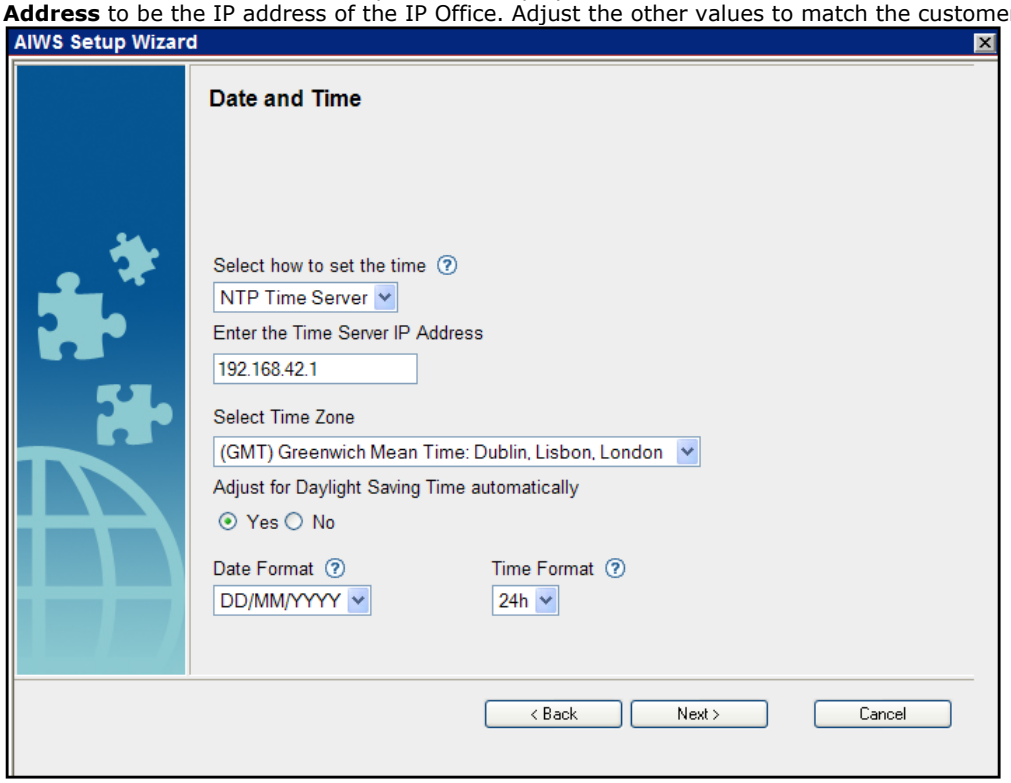
4. Click **Next**. Enter the license number supplied with the AIWS unit.



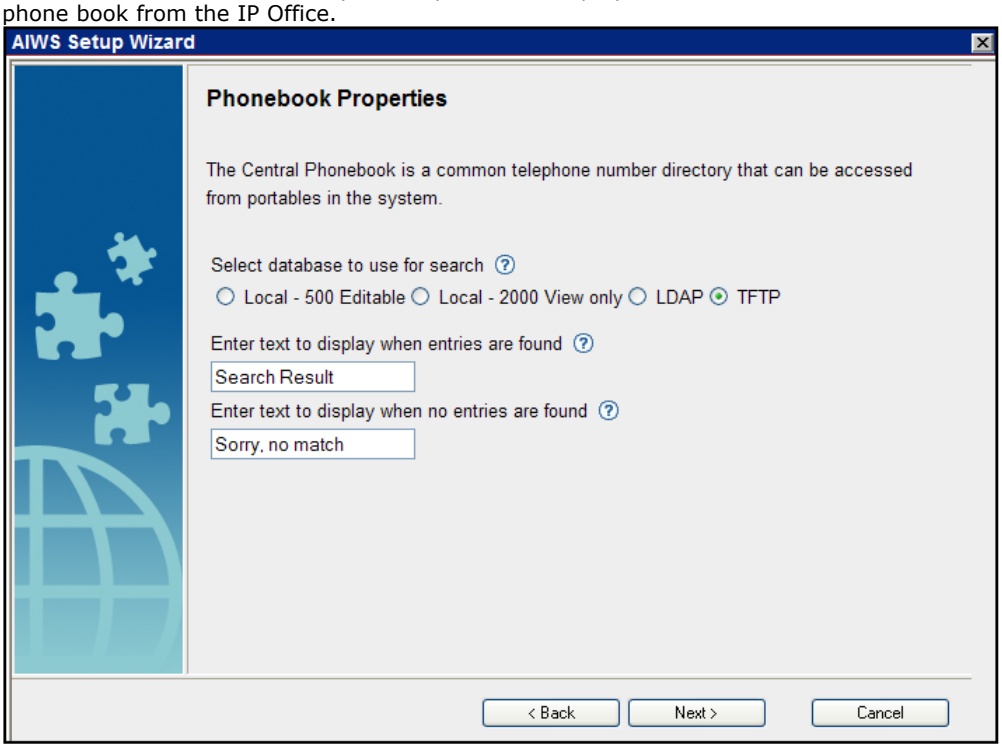
5. Click **Next**. Enter the IP address of the master base station.



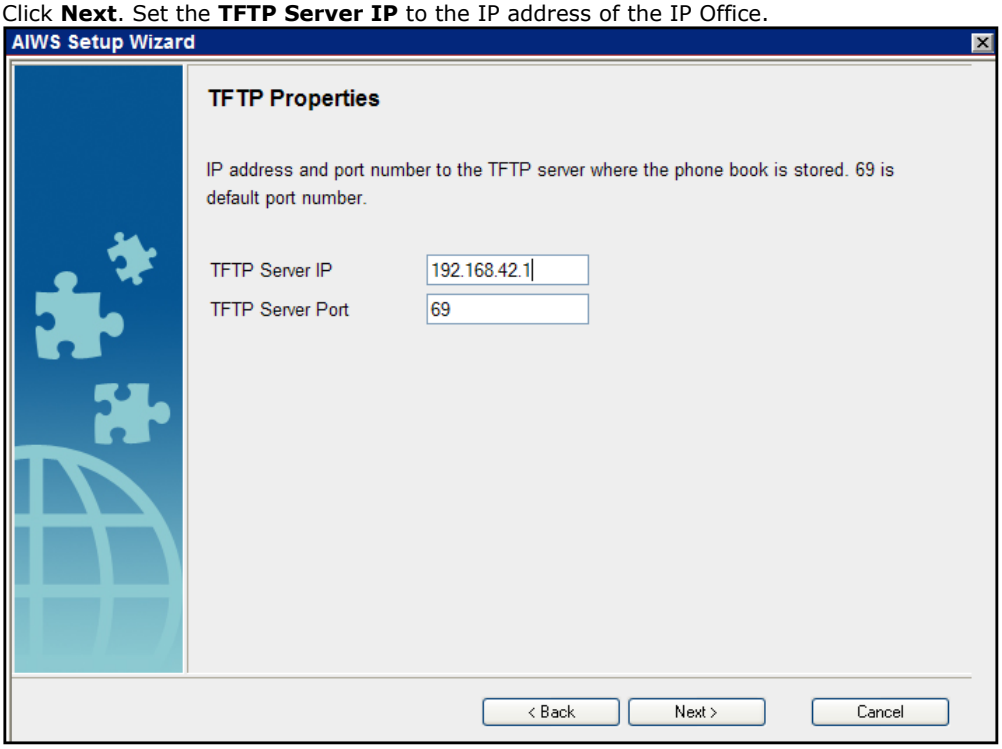
6. Click **Next**. The **Date and Time** options are displayed. Select ***NTP Time Server*** and set the **Time Server IP Address** to be the IP address of the IP Office. Adjust the other values to match the customer site.



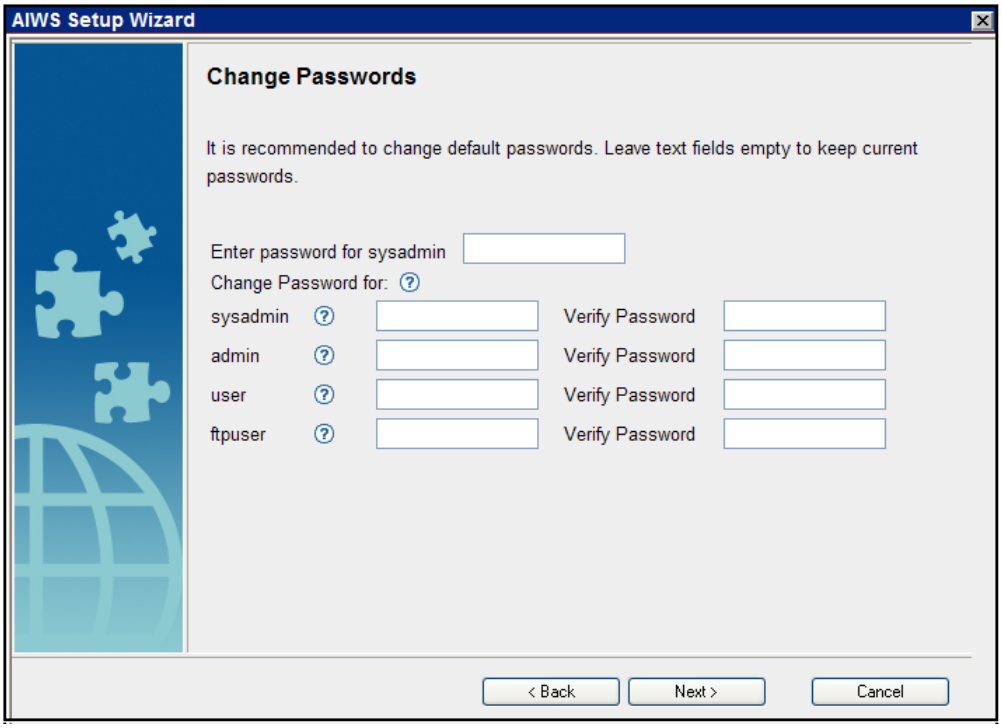
7. Click **Next**. The Phonebook Properties options are displayed. Select ***TFTP*** in order to have the AIWS obtain the phone book from the IP Office.



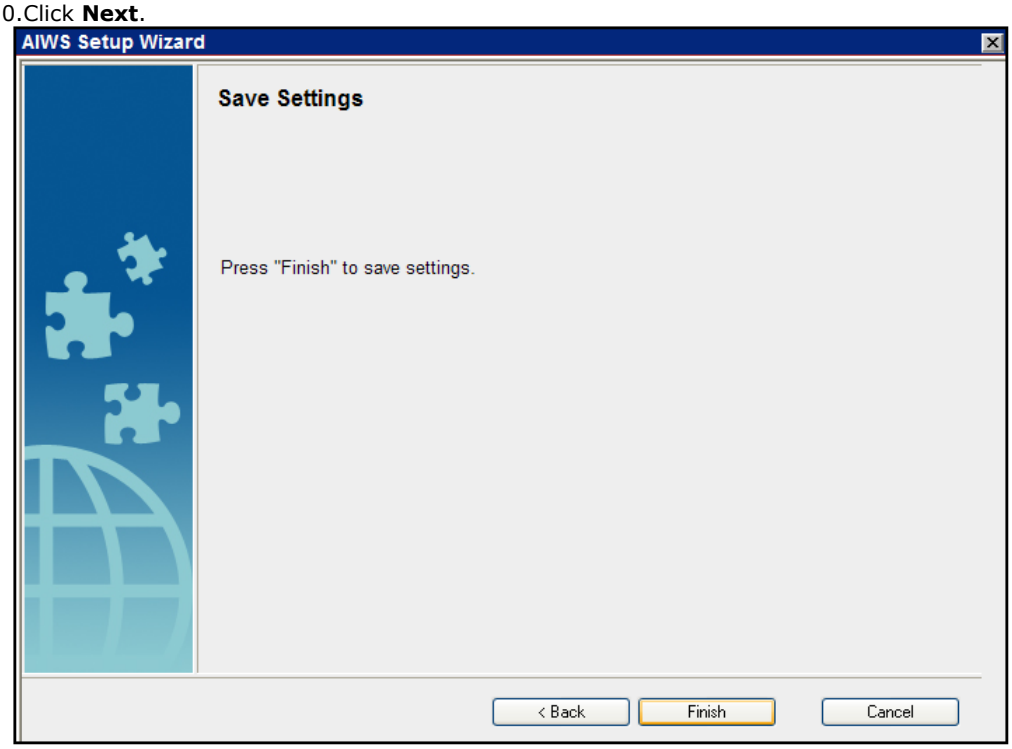
8. Click **Next**. Set the **TFTP Server IP** to the IP address of the IP Office.



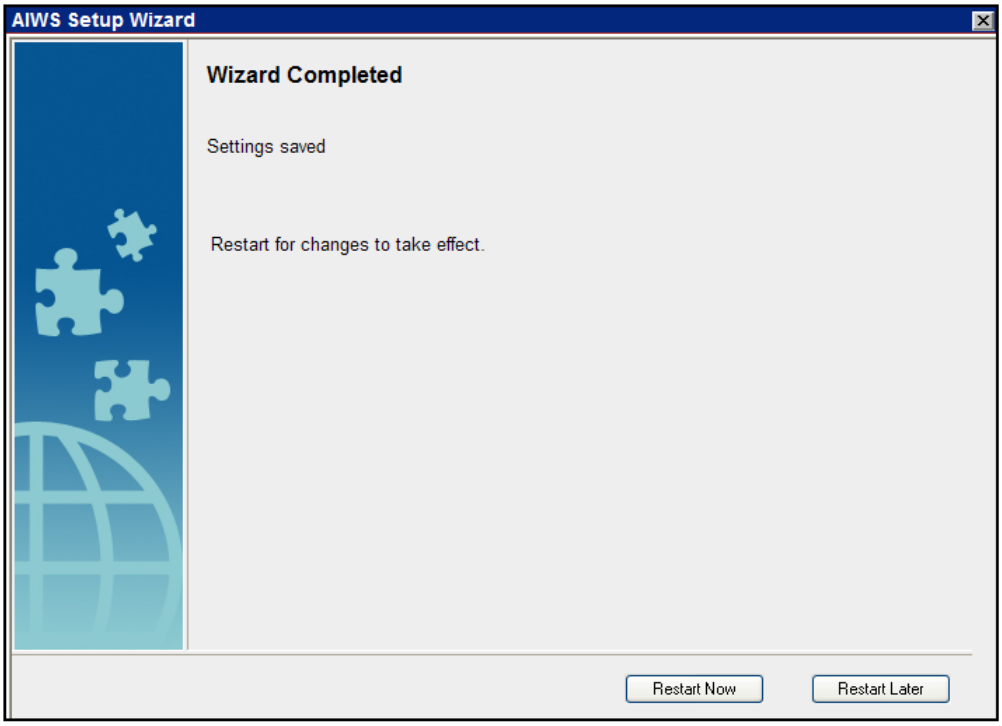
9. Click **Next**.



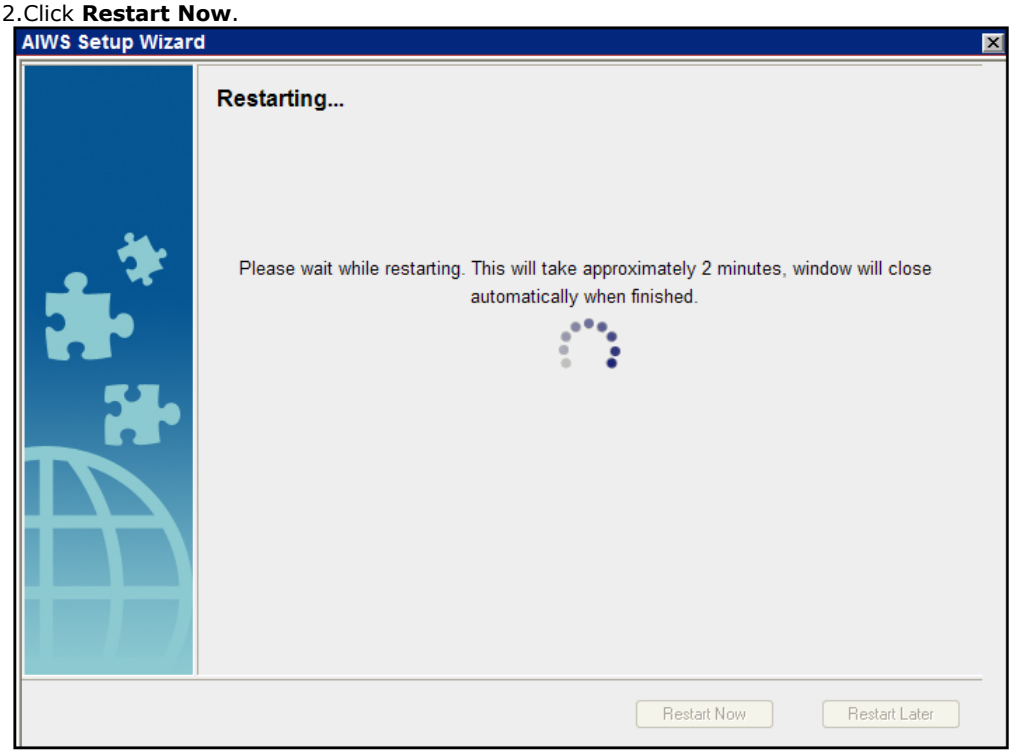
10.Click **Next**.



11.Click **Finish**.



12. Click **Restart Now**.



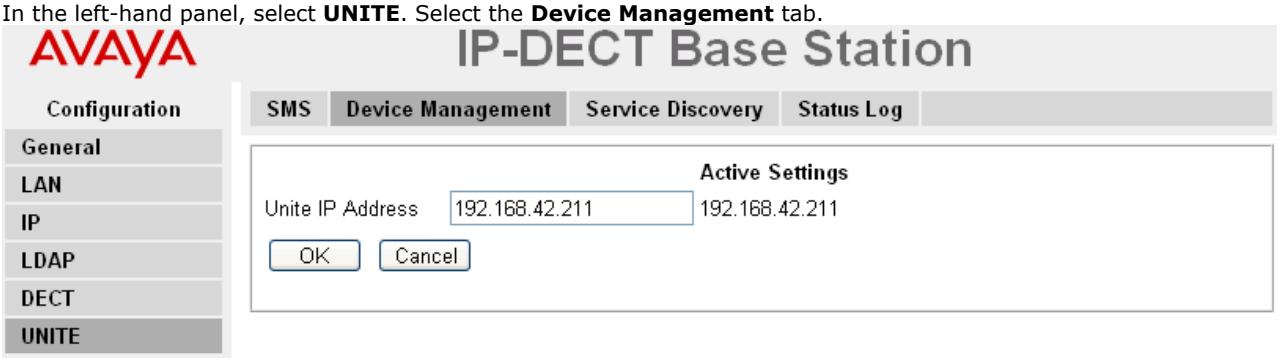
13. Close the browser access session. Start a new session using the new IP address.

6.6 Enable Base Station/AIWS Connection

The IP address of the AIWS needs to be entered into the configuration of the base stations.

Master Only

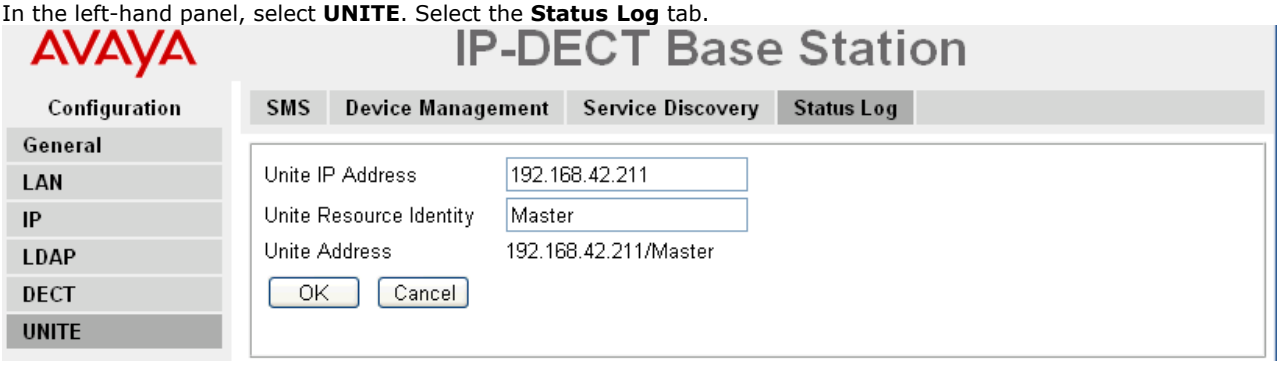
1. In the left-hand panel, select **UNITE**. Select the **Device Management** tab.



2. For the **Unite IP Address**, enter the IP address that will be assigned to the AIWS unit when installed in the DECT system.
3. Click **OK**.

Master and Slave

1. In the left-hand panel, select **UNITE**. Select the **Status Log** tab.



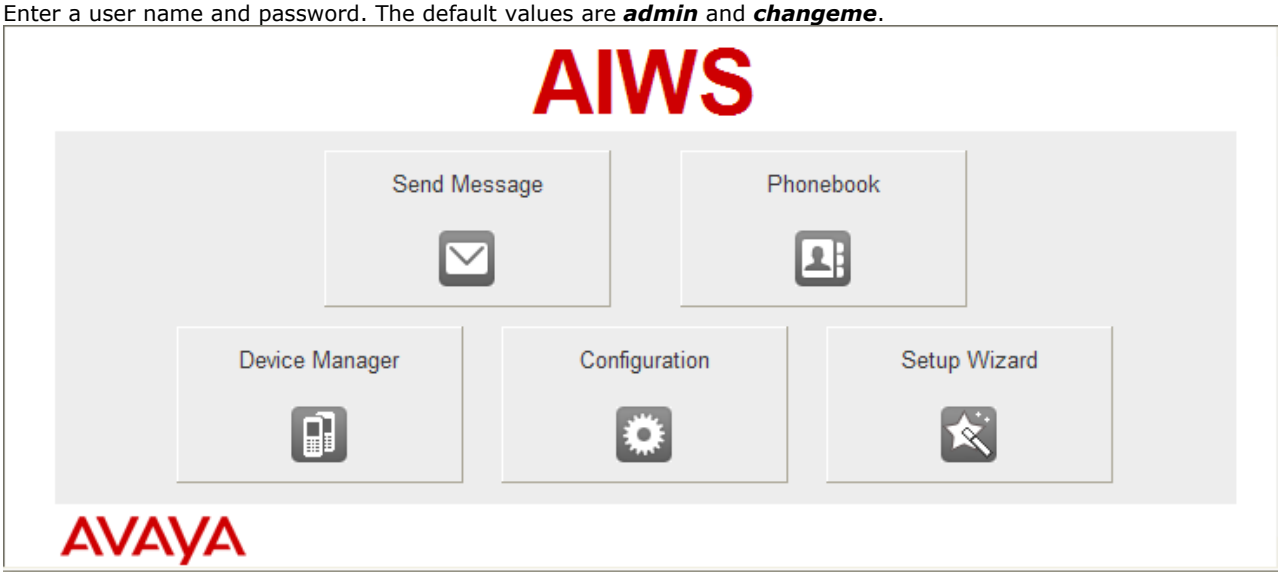
2. For the **Unite IP Address**, enter the IP address that will be assigned to the AIWS unit when installed in the DECT system.
3. For the **Unite Resource Identity** enter a unique name to be associated with the base station.
4. Click **OK**.

6.7 Upgrade the AIWS Firmware

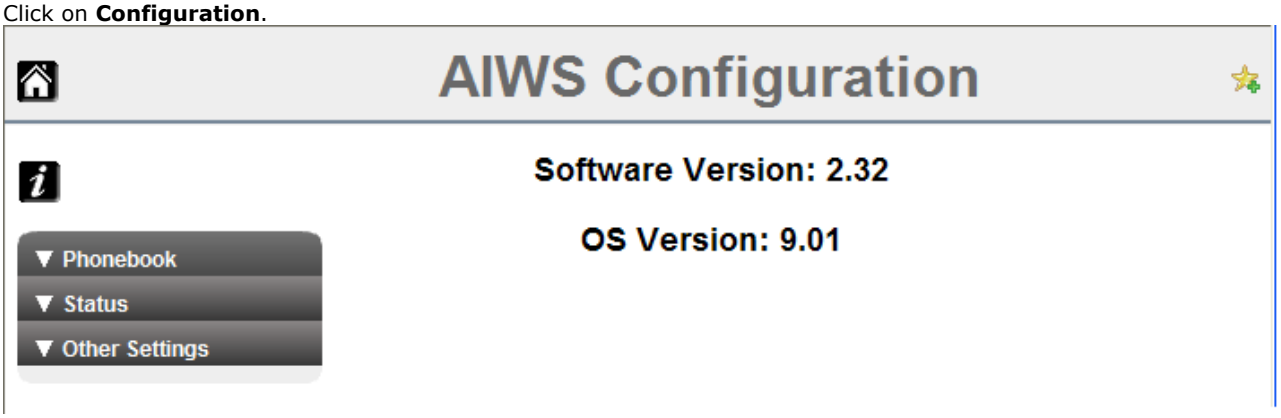
The AIWS will have been supplied with a default set of firmware. This must be upgraded to the firmware provided with the IP Office application software. Only the firmware supplied with the IP Office application software or indicated in IP Office Technical Bulletin should be used with AIWS units on IP Office DECT R4 systems.

- **Important:** This process can take between up to 40 minutes.

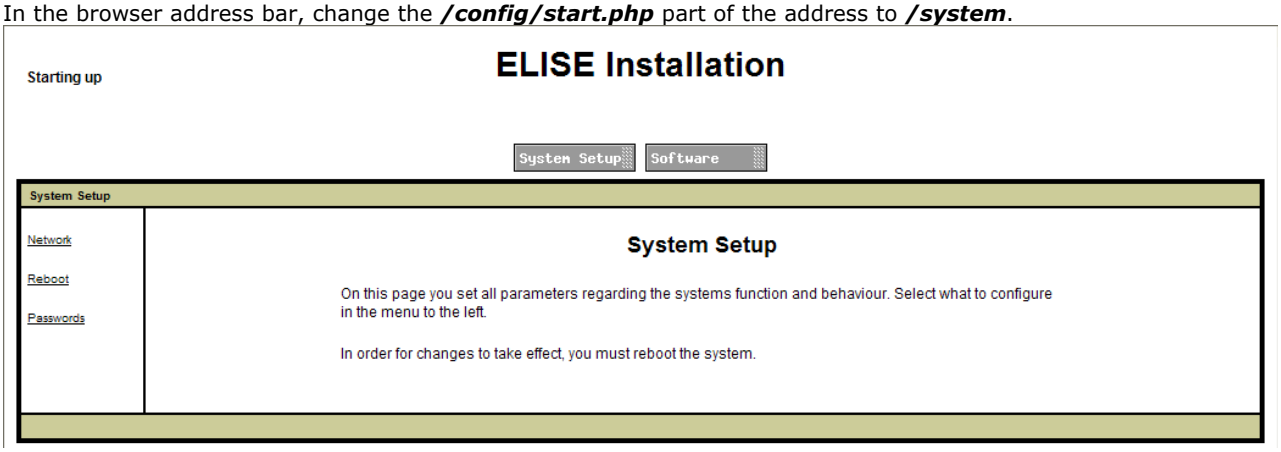
1. Enter the IP address of the AIWS into the browser address field.
   - Alternatively enter ***http://Elise-0091921*** as the address, replacing the digits with the AIWS unit's Module Key. The Module Key is printed on the AIWS circuit board 64.
2. If a security certificate warning appears, select to continue.
3. Enter a user name and password. The default values are ***admin*** and ***changeme***.



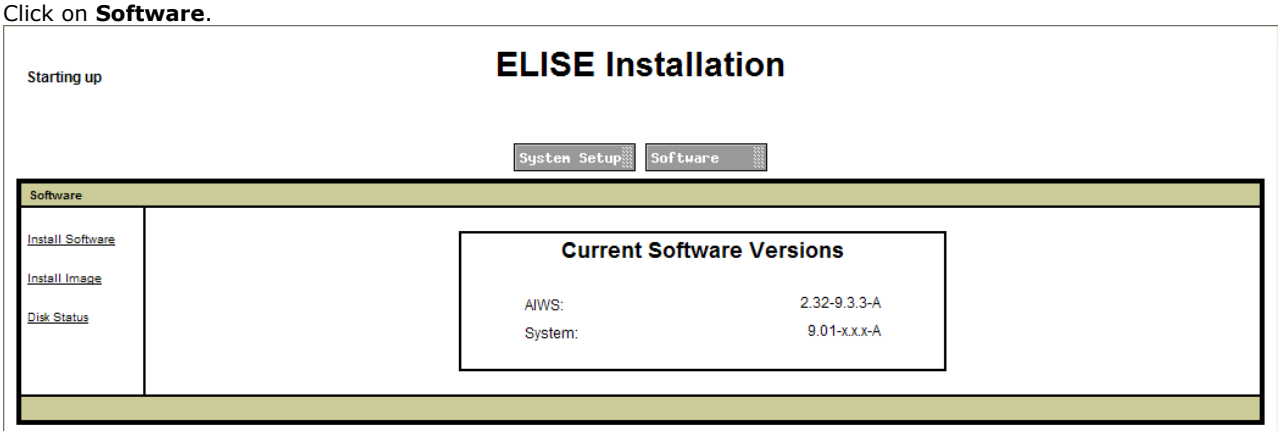
4. Click on **Configuration**.



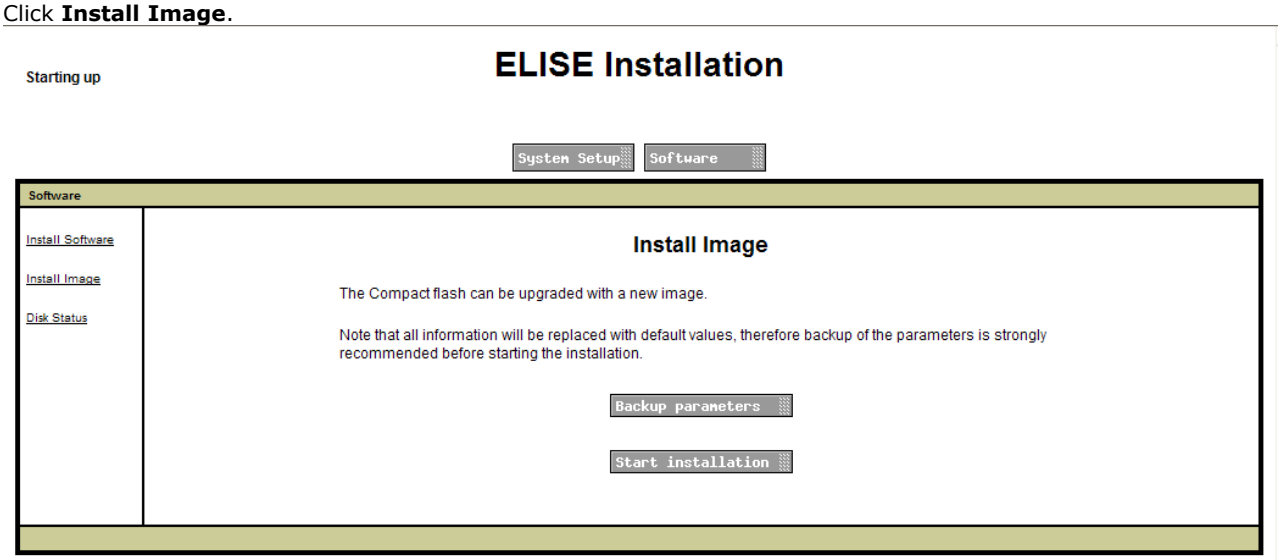
5. Note the software version. Check whether this already matches the firmware detailed as supported by the level of software on the IP Office system.
6. In the browser address bar, change the ***/config/start.php*** part of the address to ***/system***.



7. Click on **Software**.



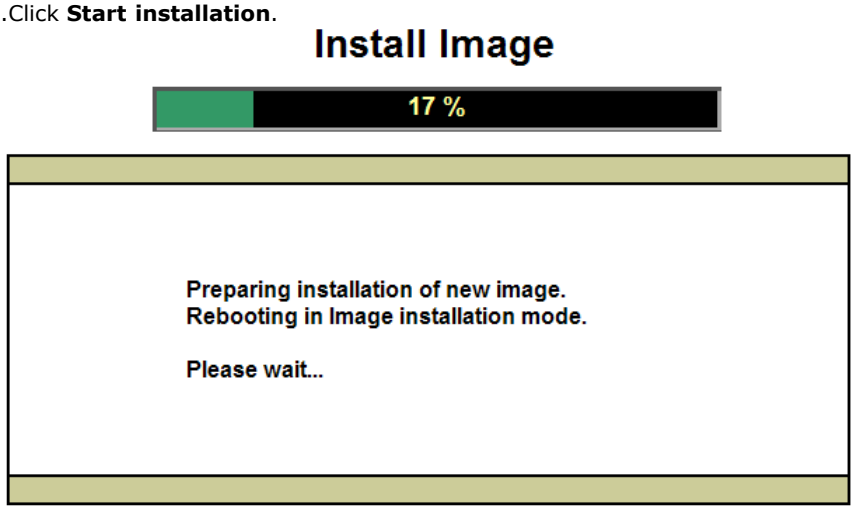
8. Click **Install Image**.



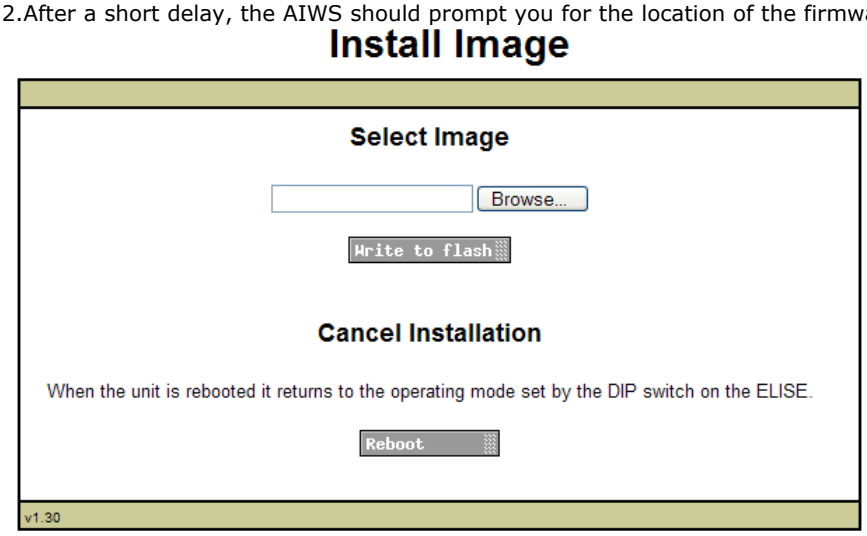
9. Click **Backup parameters**.

10. The browser will show it dialog for downloading a file called aiws-backup from the AIWS unit. Select the option to save the file and select a location to which it should be saved. Note the location as the file needs to be reloaded after the firmware upgrade.

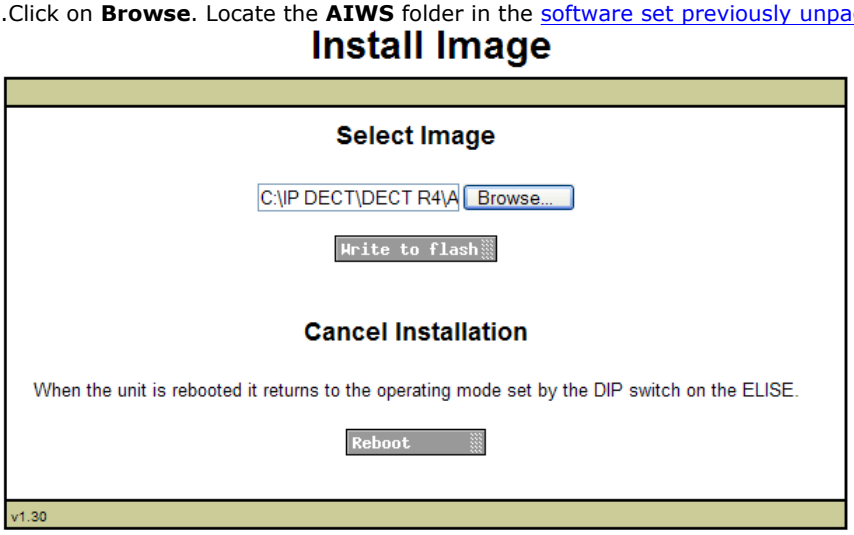
11. Click **Start installation**.



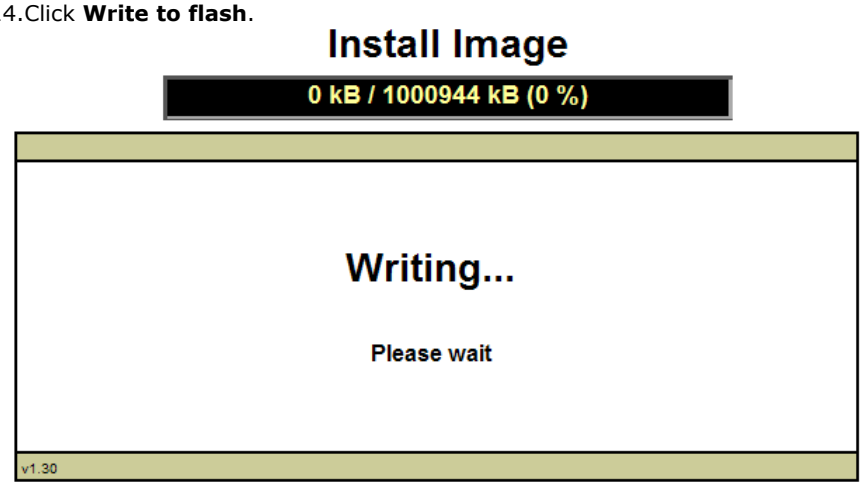
12. After a short delay, the AIWS should prompt you for the location of the firmware file for the upload.



13. Click on **Browse**. Locate the **AIWS** folder in the software set previously unpacked 25. Select the ***.img*** file.

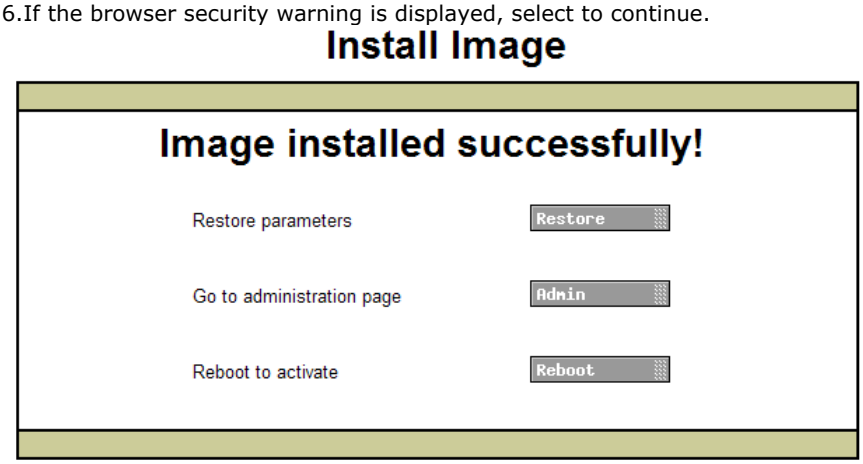


14. Click **Write to flash**.

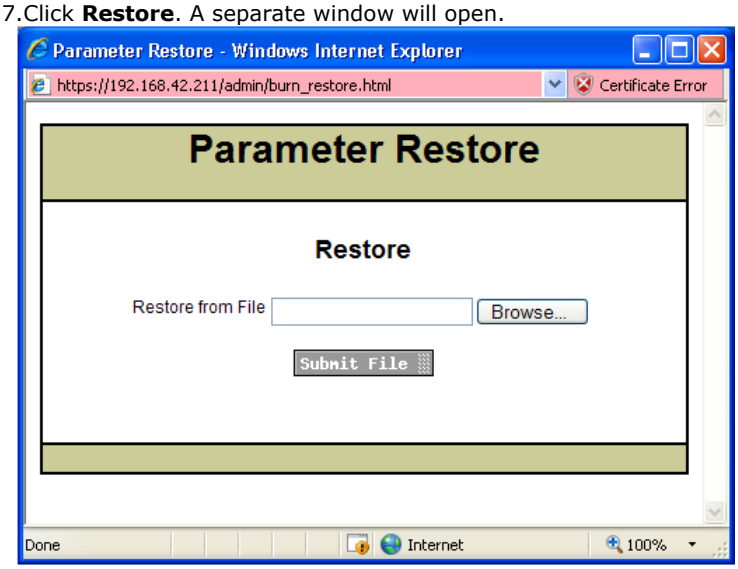


15.Now go make a cup of tea and maybe read a book - Its not fast.

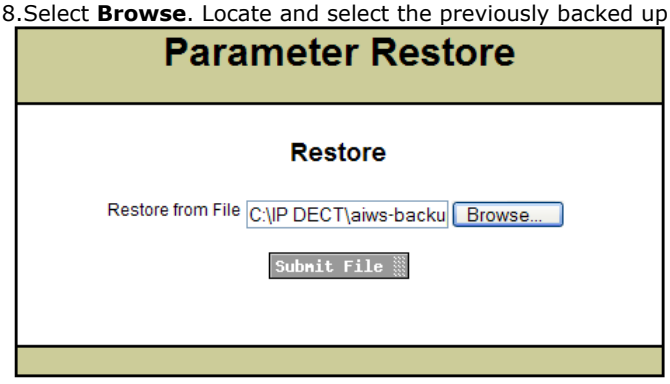
16.If the browser security warning is displayed, select to continue.



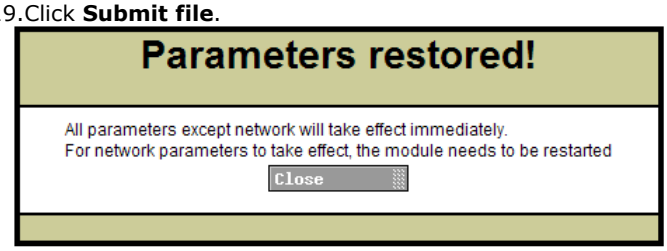
17.Click **Restore**. A separate window will open.



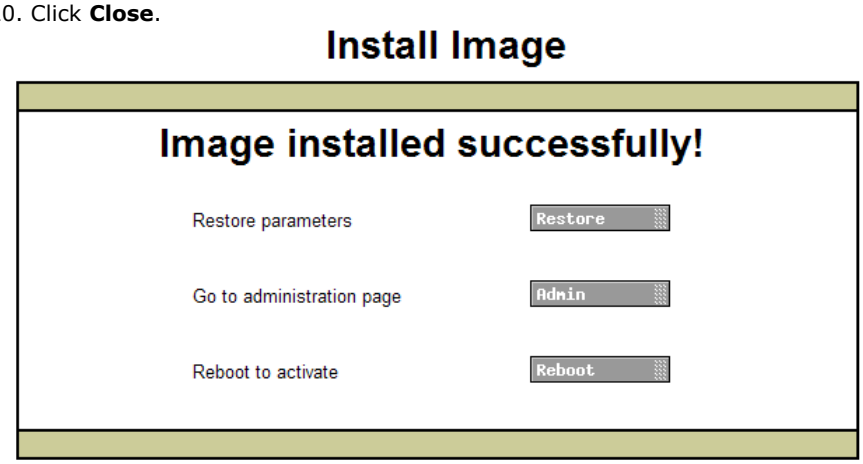
18.Select **Browse**. Locate and select the previously backed up ***aiws-backup*** file.



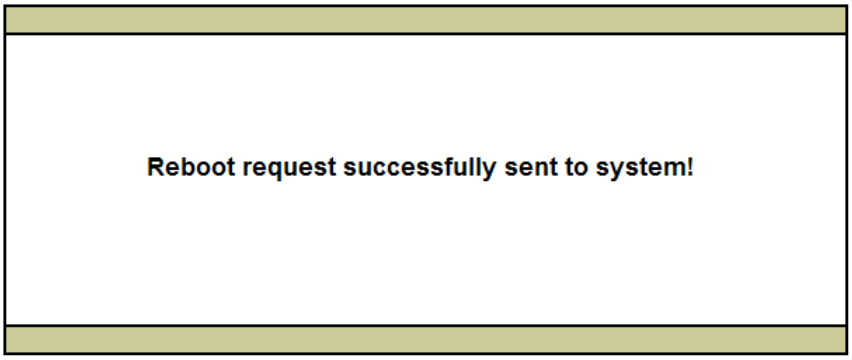
19.Click **Submit file**.



20. Click **Close**.



21.Select **Reboot**.



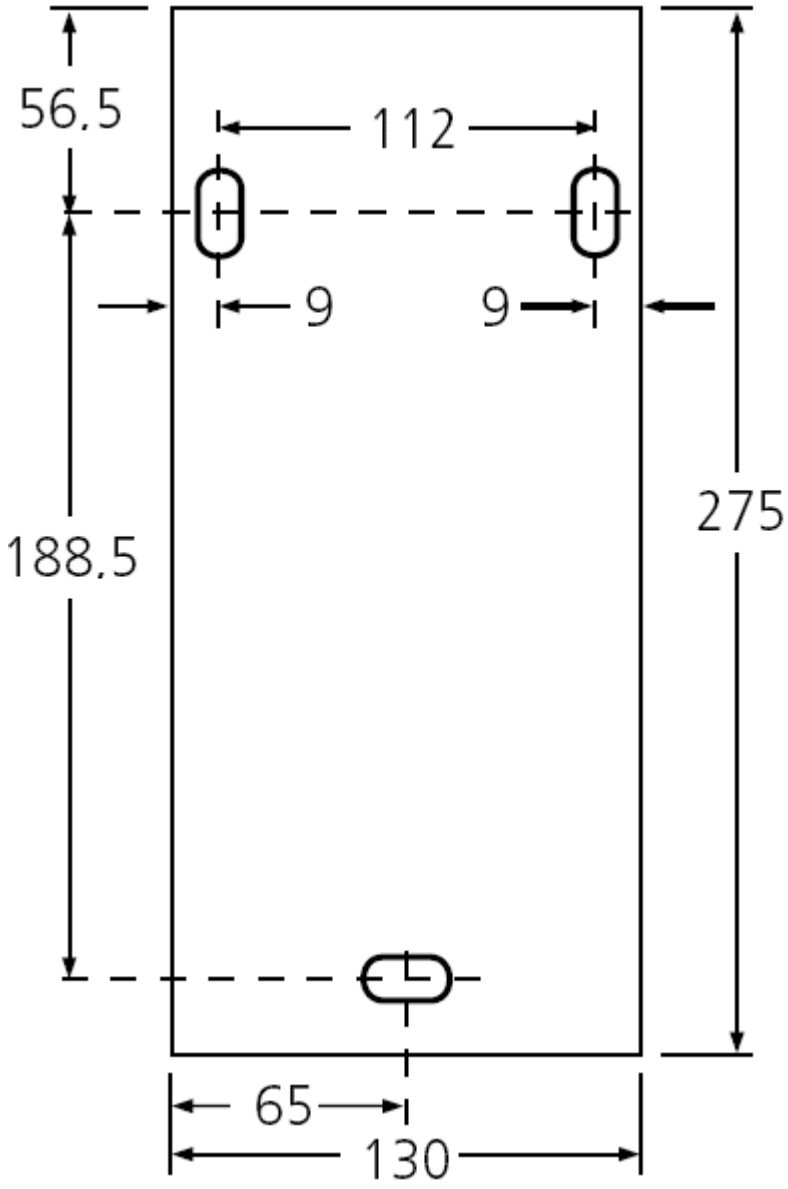
6.8 Switch Off the AIWS

Having now configured and upgraded the AIWS, it should be switched off and disconnected prior to being wall mounted

1. At the top right of the AIWS circuit board 64, locate the SW4 push button.
2. Press the button until the AIWS lamp starts to flash orange.
3. Remove the power cable. The power must be removed within 10 minutes or the AIWS will restart. If the AIWS restarts, wait until the Function Indicator is not indicating starting up (flashing orange) before pressing the SW4 button again.

6.9 Wall Mount the AIWS

The AIWS can be wall mounted. To facilitate service after the unit is installed, we recommend a free space of about 150 mm above and 50 mm below the unit.



6.10 Replace the AIWS Cover

The AIWS cover can be clipped back into place without using any tools.

1. Check that the AIWS is fully operating (green lamp) and can be browsed from the network.
2. Check that the cables are routed such that they will not be trapped when the cover is replaced.
3. Engage the cover with the top edge of the AIWS. Pivot the cover back into position, checking that the various plastic edges are in their original positions.
4. The cover clips will spring into position.

6.11 AIWS Status Lamp

Colour	State	Description
Green	On	Running.
Orange	On	Failsafe or Network setup mode.
	Flashing (1 second on/off)	Image installation mode.
	Fast flash (100ms on/off)	Starting.
	Intermittent flash (100ms on/1 second off)	Restart.
	Slow flash (2 seconds on/3 seconds off)	Halted (auto restart after 10 minutes).
	Wink (5 seconds on/100ms off)	Unlicensed.
Red	On	Low voltage.
	Intermittent flash (100ms on/1 second off)	License error.
	Flashing (1 second on/off)	Watch dog reset.
	Slow flash (2 seconds on/3 seconds off)	Shutdown.
	Very slow flash (3 seconds on/3 seconds off)	Memory error
	Wink (5 seconds on/100ms off)	Network error/Module key error.

Chapter 7.
Device Management

7. Device Management

This section covers the use of the Device Management application to update the firmware on the phones and to apply customized features templates to the phones.

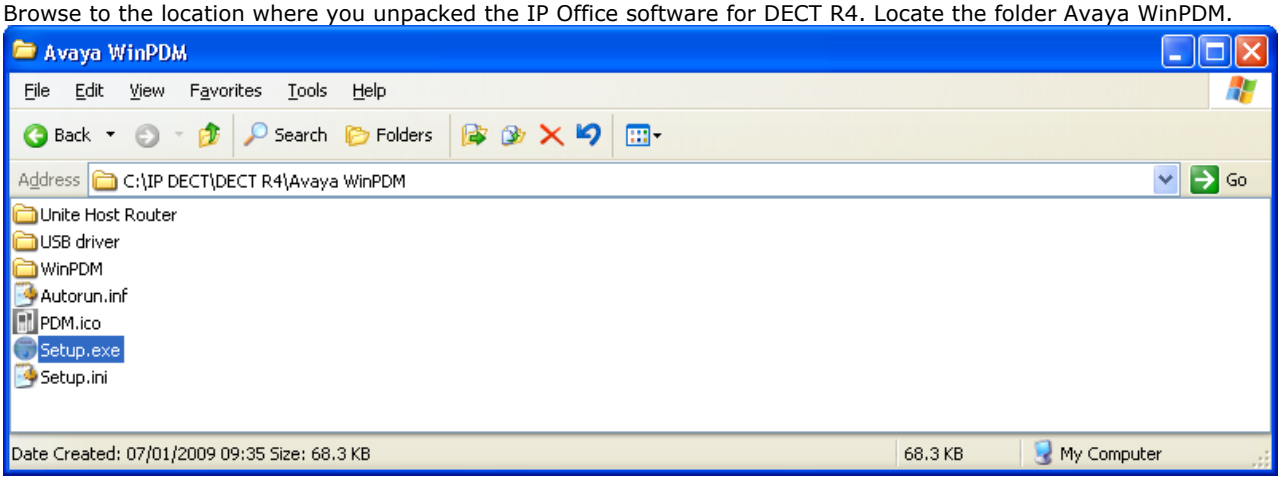
There are two variants of the device management application that can be used. They look similar and offer the similar features but operate differently:

- **AIWS Device Manager**
  This is a version of the device manager application embedded into the AIWS unit. It can be started via browser access to the AIWS unit rather than having to be installed on a particular PC.
- **Win PDM (Windows Portable Device Manager)**
  This is a version of the device manager application that can be installed onto a Windows PC.

7.1 Installing Windows Device Manager

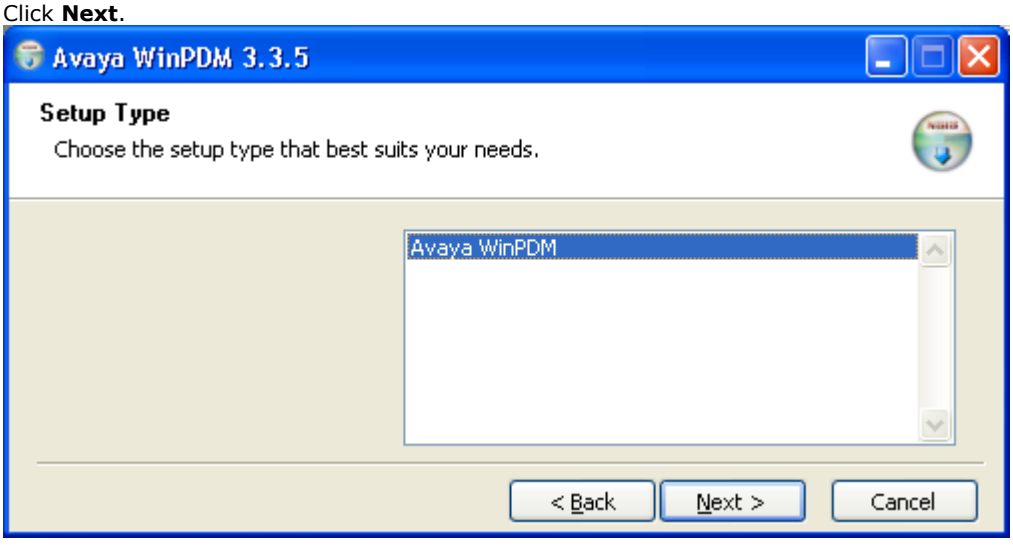
As an alternative to the Device Manager application integrated into the AIWS unit, a copy of Windows Device Manager can be installed onto a Windows PC (Windows XP or Vista).

1. Browse to the location where you unpacked the IP Office software for DECT R4. Locate the folder Avaya WinPDM.

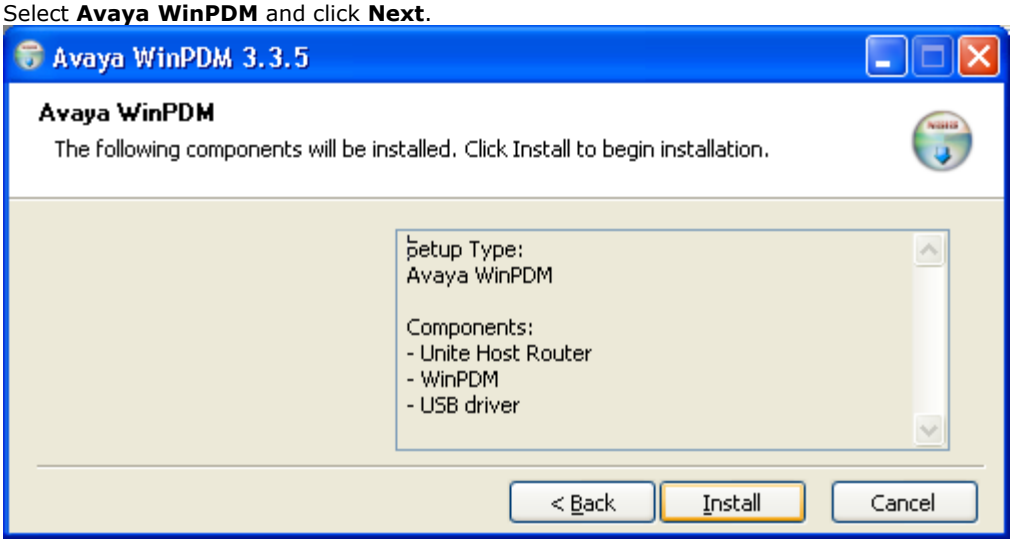


2. Double-click on **Setup.exe**.

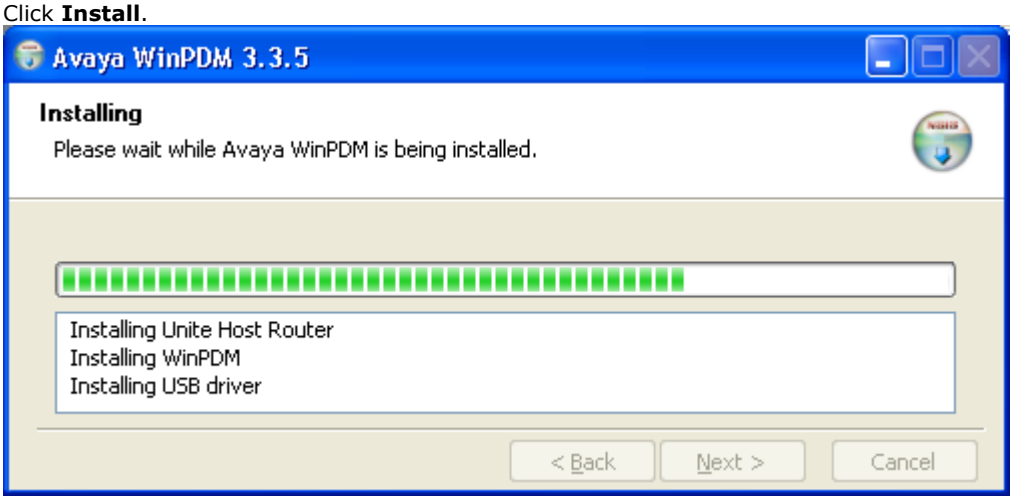
3. Click **Next**.



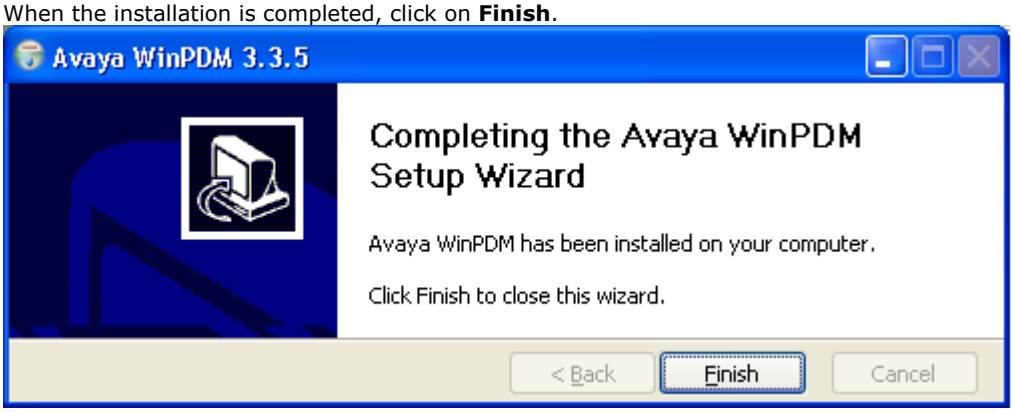
4. Select **Avaya WinPDM** and click **Next**.



5. Click **Install**.

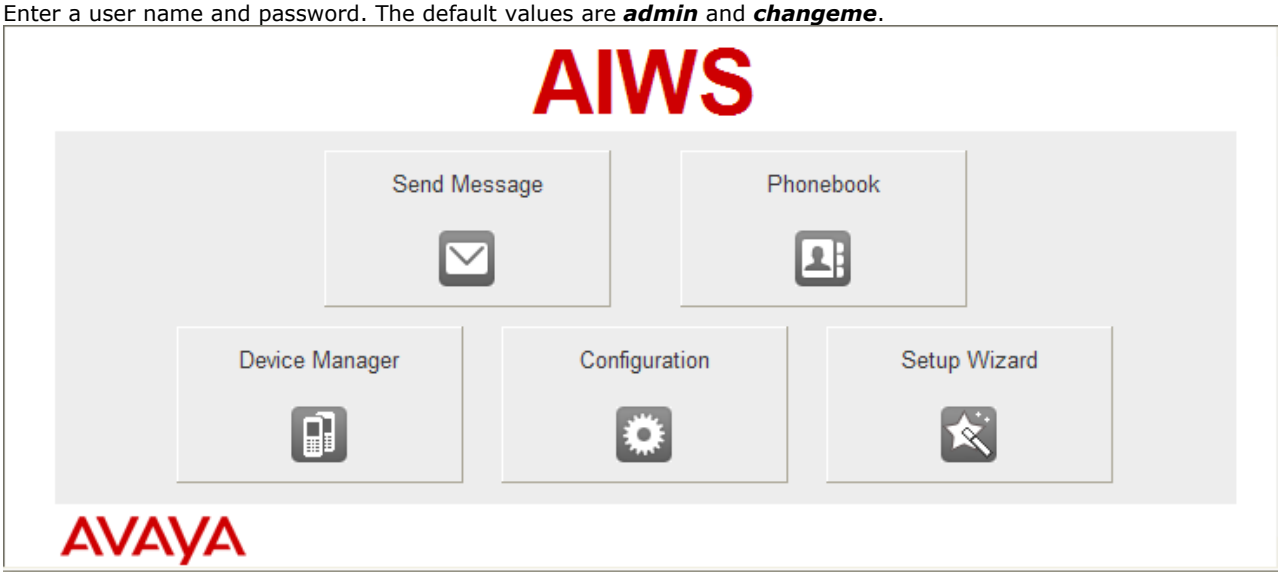


6. When the installation is completed, click on **Finish**.



7.2 Starting AIWS Device Manager

1. Enter the IP address of the AIWS into the browser address field.
   - Alternatively enter ***http://Elise-0091921*** as the address, replacing the digits with the AIWS unit's Module Key. The Module Key is printed on the AIWS circuit board 64.
2. If a security certificate warning appears, select to continue.
3. Enter a user name and password. The default values are ***admin*** and ***changeme***.



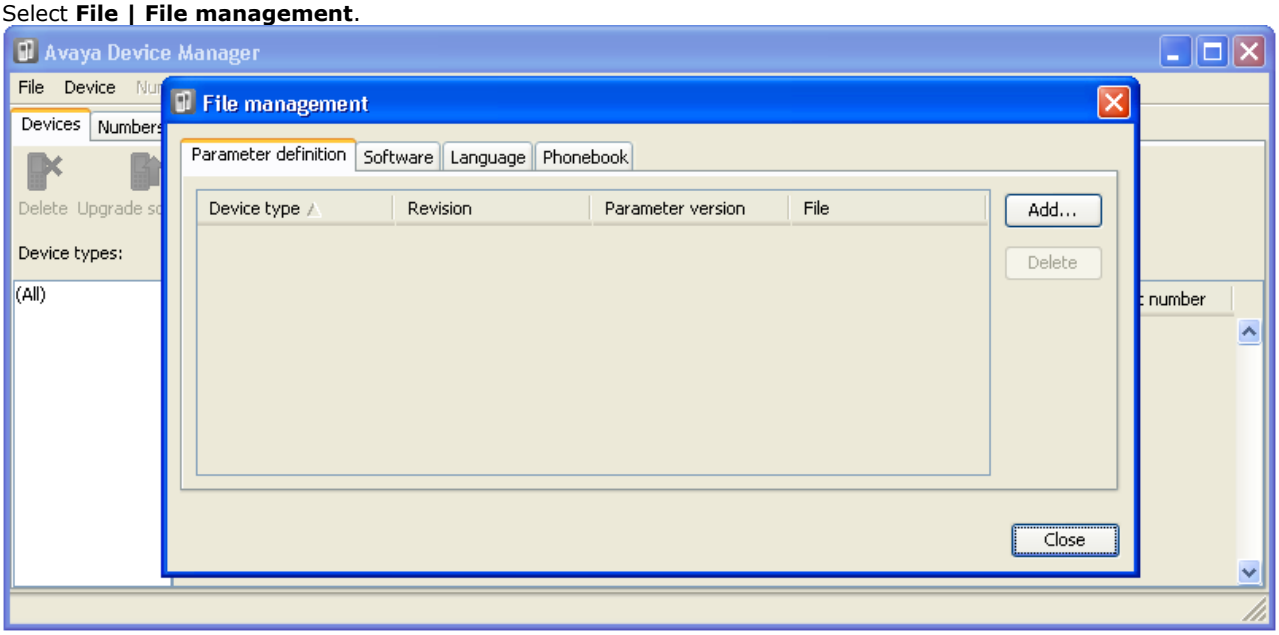
4. Select **Device Manager**.
5. If a web site certificate warning is displayed select to continue.
6. The Avaya Device Manager application is started.
   - If this is the first time that it has been started, it will prompt that no parameter definition files have been imported. Select **Yes**.

7.3 Starting Windows Device Manager

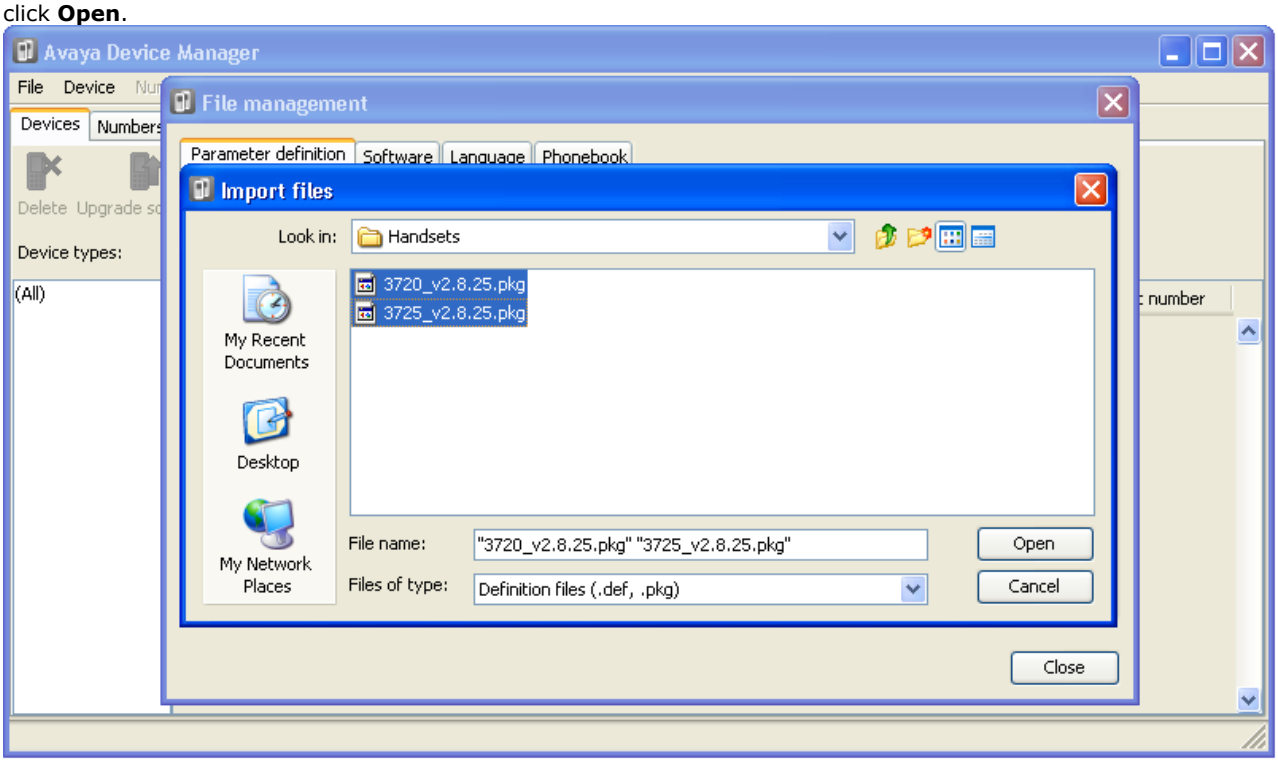
1. Select **Start | All Programs | Avaya WinPDM**.
2. Click on the **Avaya WinPDM** icon.
   - If this is the first time that Avaya WinPDM has been run, you will be asked to create a site. Enter a name for the site that you have been installing and click **OK**.
   - If this is the first time that Avaya WinPDM has been run, you will be prompted to import parameter definition files 87.

7.4 Loading Parameter Defintion Files

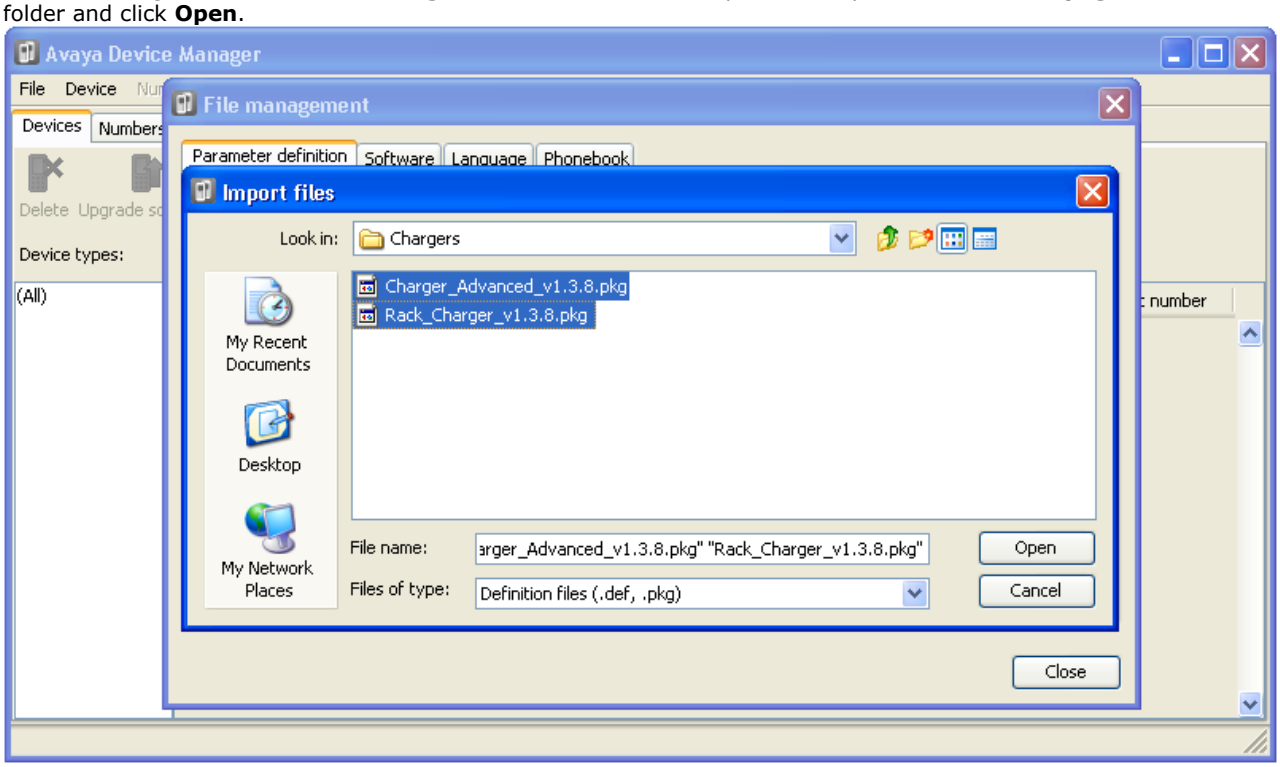
1. Start the AIWS Device Manager 85 or Windows Device Manager 86.
2. Select **File | File management**.



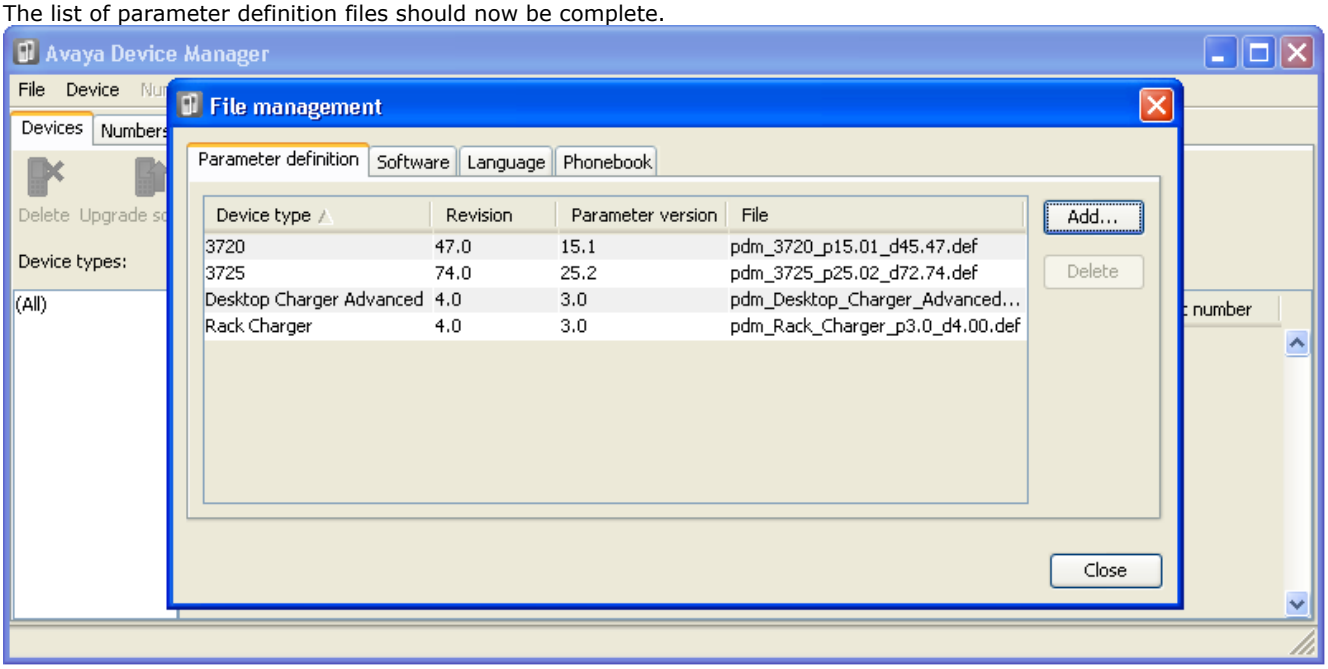
3. Select the **Parameter definition** tab.
4. Click **Add...**. Browse to the **Phone** folder in the software previous unpacked. Select the ***.pkg*** files in the folder and click **Open**.



5. Click **Add...** again. Browse to the **Chargers** folder in the software previous unpacked. Select the ***.pkg*** files in the folder and click **Open**.



6. The list of parameter definition files should now be complete.

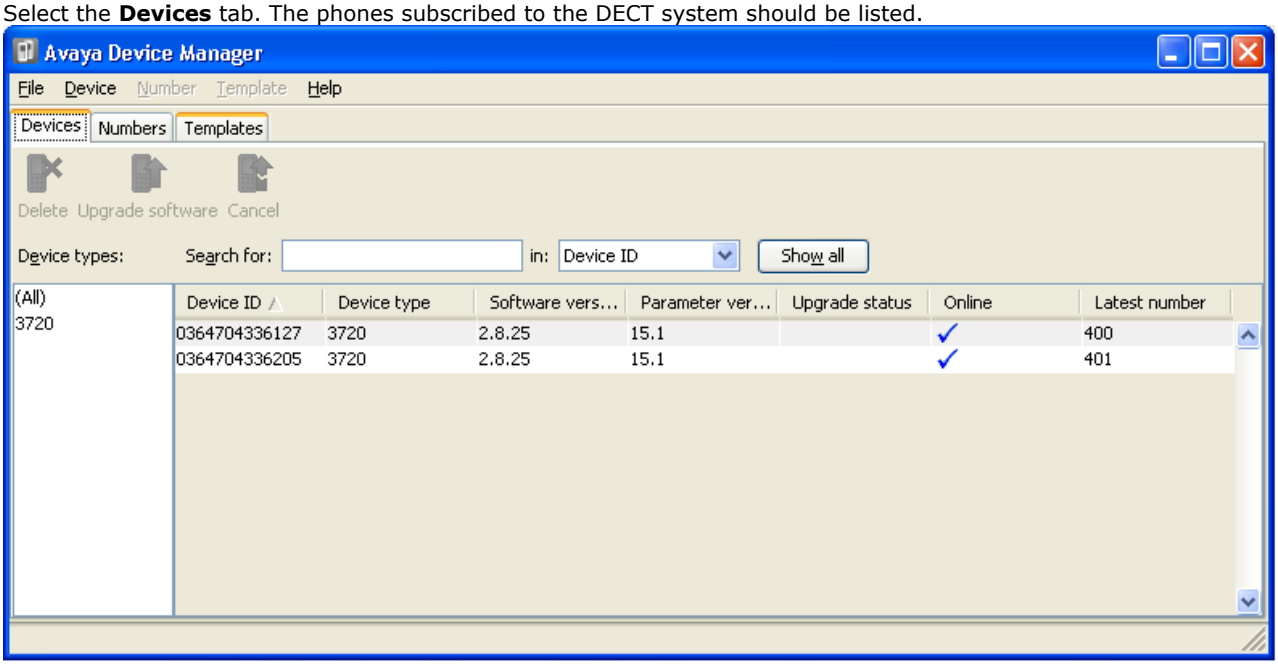


7. Select **Close**.

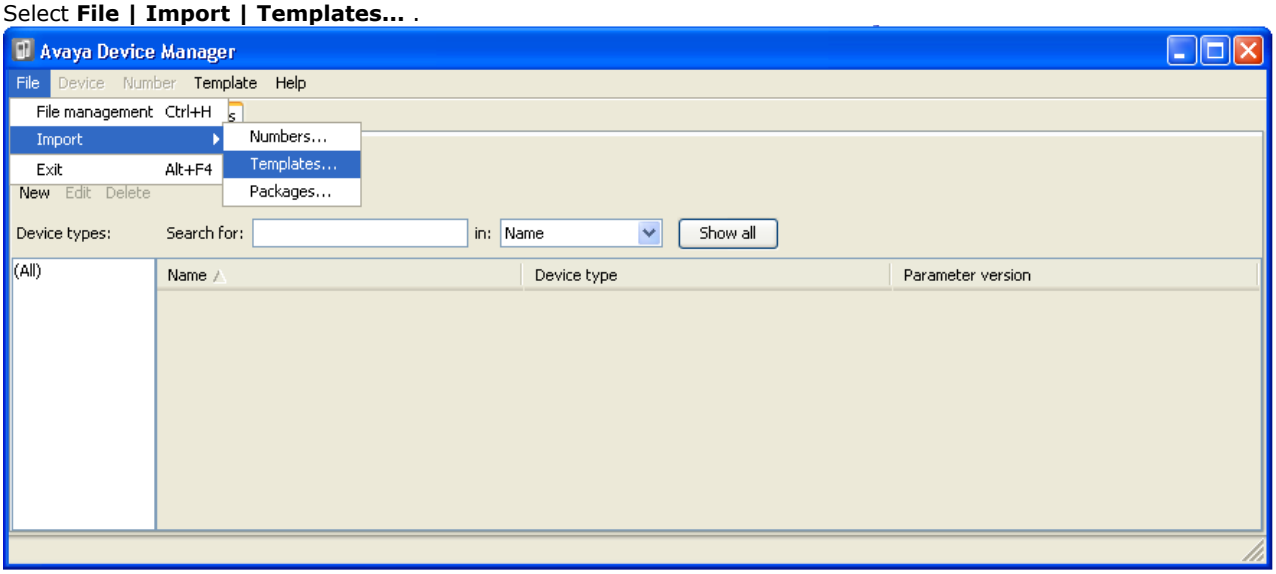
7.5 Loading Phone Templates into Device Manager

Templates allow you to apply common settings to phones and chargers. The IP Office DECT R4 software set includes default templates for 3720 and 3725 phones that allow those phones to access IP Office functions through the phone menus.

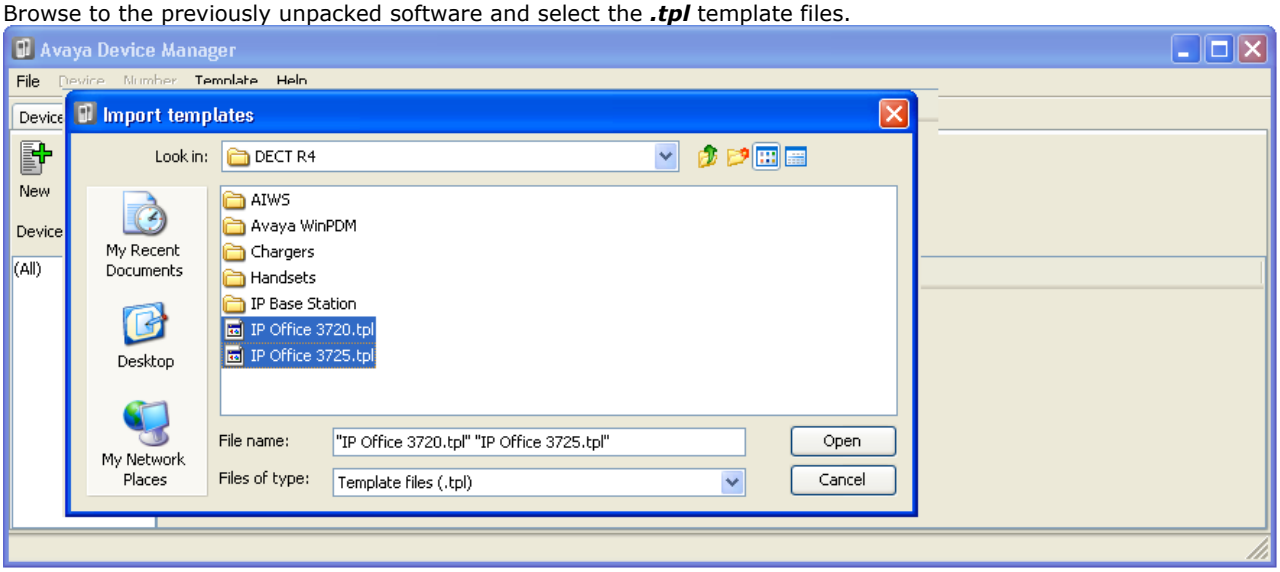
1. Start the AIWS Device Manager 85 or Windows Device Manager 86.
2. Select the **Devices** tab. The phones subscribed to the DECT system should be listed.



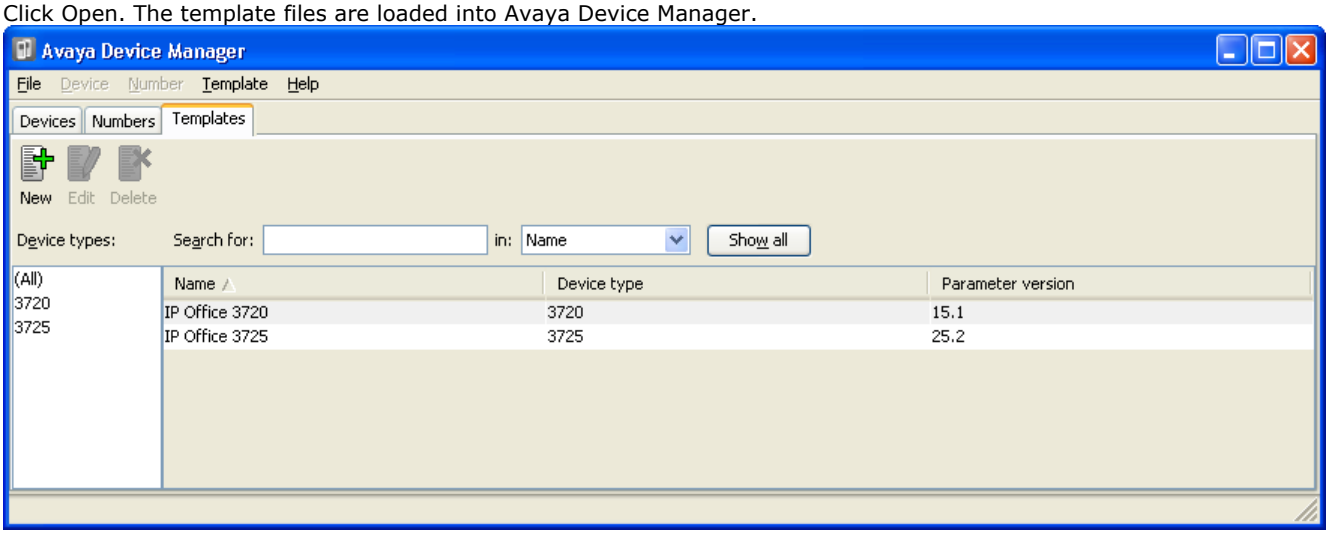
3. Select **File | Import | Templates...** .



4. Browse to the previously unpacked software and select the ***.tpl*** template files.

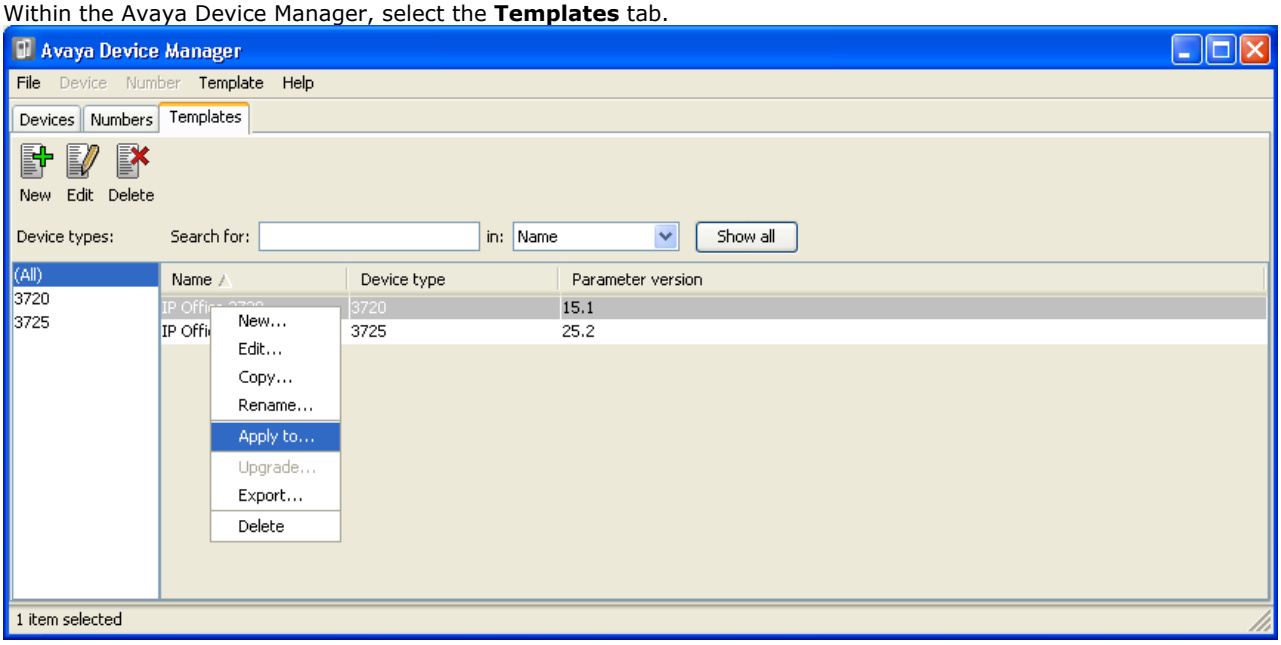


5. Click Open. The template files are loaded into Avaya Device Manager.

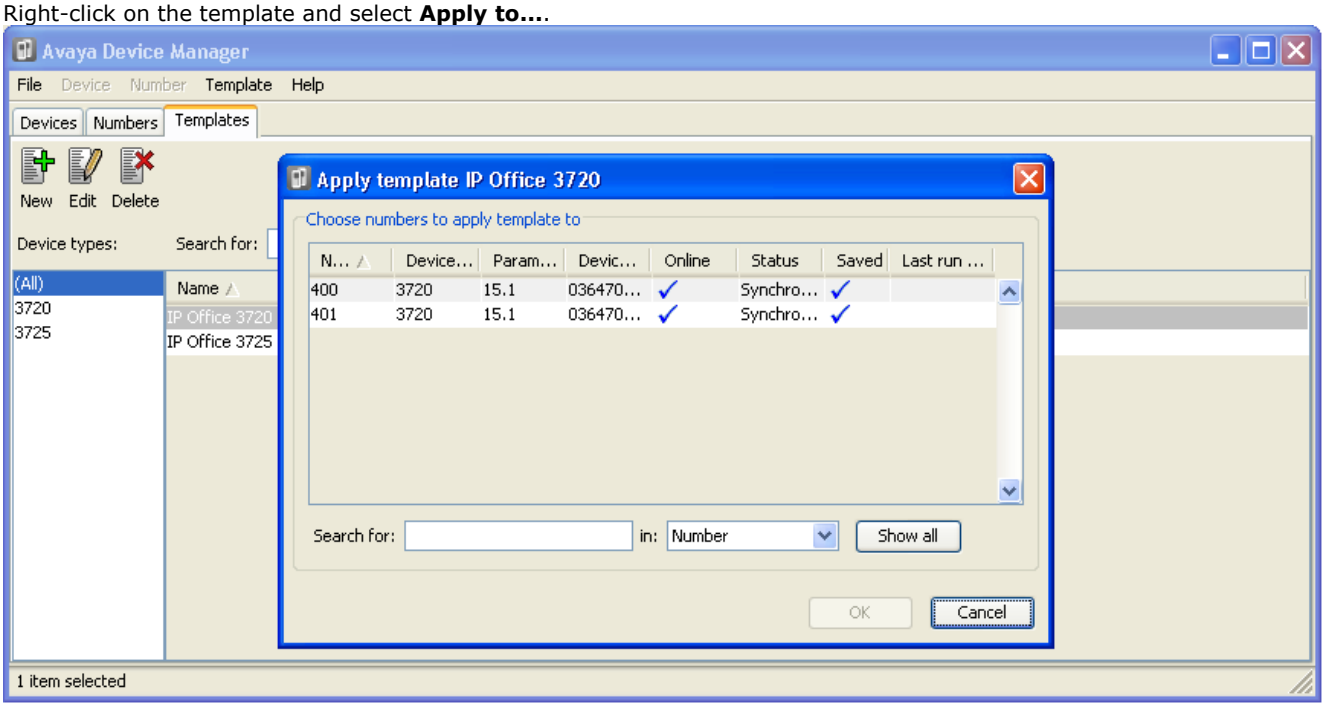


7.6 Applying Templates to Phones

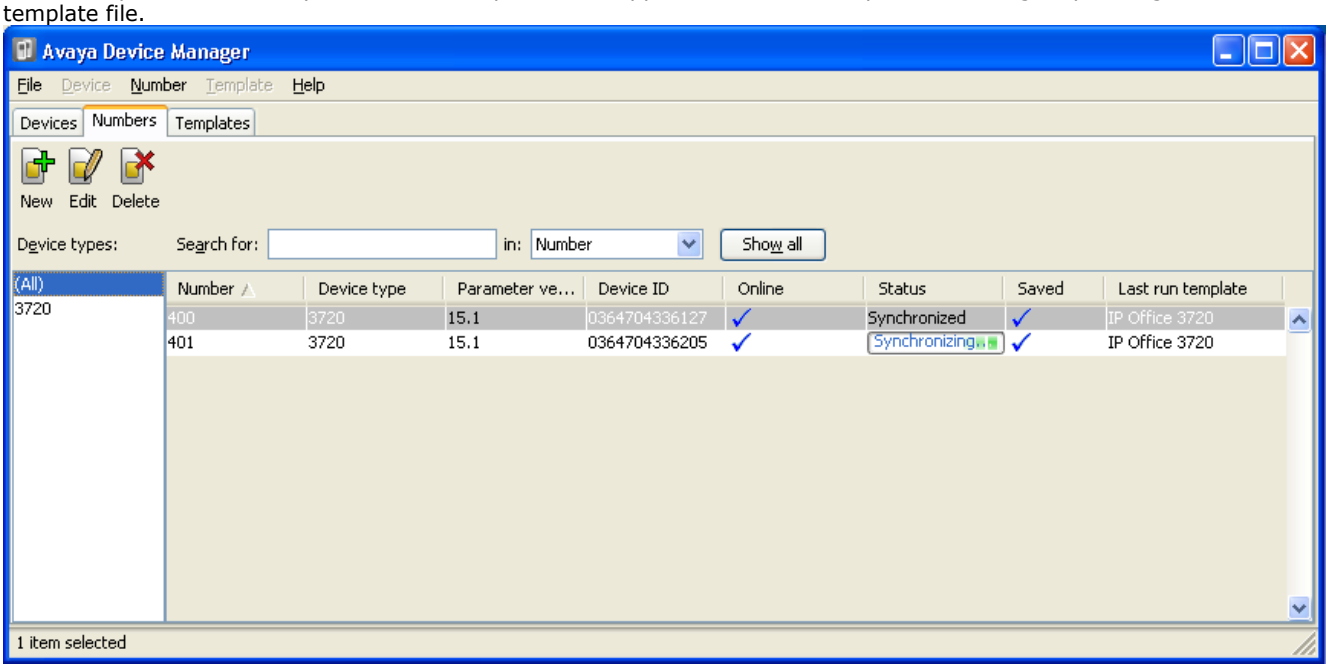
1. Start the AIWS Device Manager 85 or Windows Device Manager 86.
2. Within the Avaya Device Manager, select the **Templates** tab.



3. Right-click on the template and select **Apply to...**.

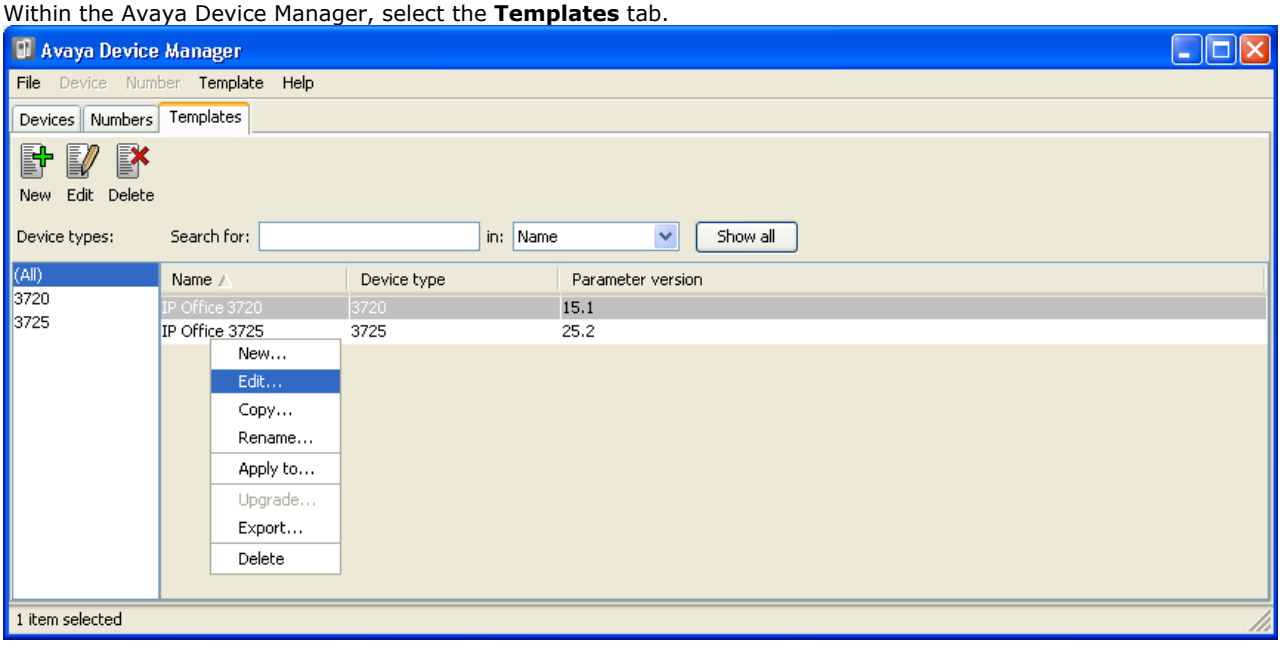


4. Select the phones to which you want the template to be applied. Click **OK**. The phones will begin uploading the template file.

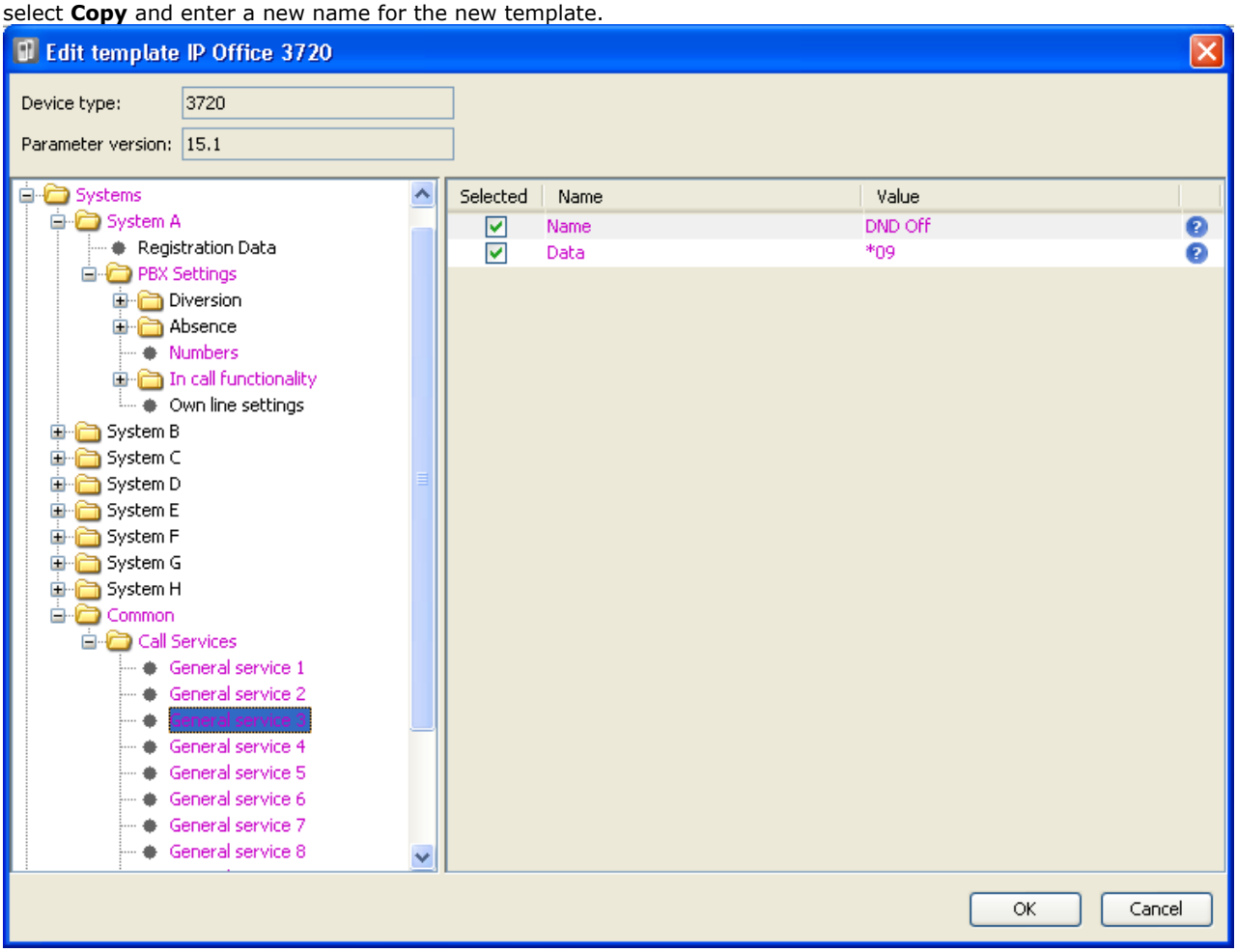


7.7 Editing Templates

1. Start the AIWS Device Manager 85 or Windows Device Manager 86.
2. Within the Avaya Device Manager, select the **Templates** tab.



3. Right click on the template and select **Edit**. Alternatively to create a new template, right-click on the template and select **Copy** and enter a new name for the new template.



- **Systems | System A | PBX Settings | In call functionality**
  Defines the options shown on the **More** menu shown on 3720/3725 phones when on a call. This can be used to enter the IP Office short codes for functions such as call park, conference and transfer.

- **Systems | Common | Call Services**
  Defines the options shown on the 3720/3725 phone Call services menu. This can be used to enter the IP Office short codes for functions such as call pickup, DND on/off.

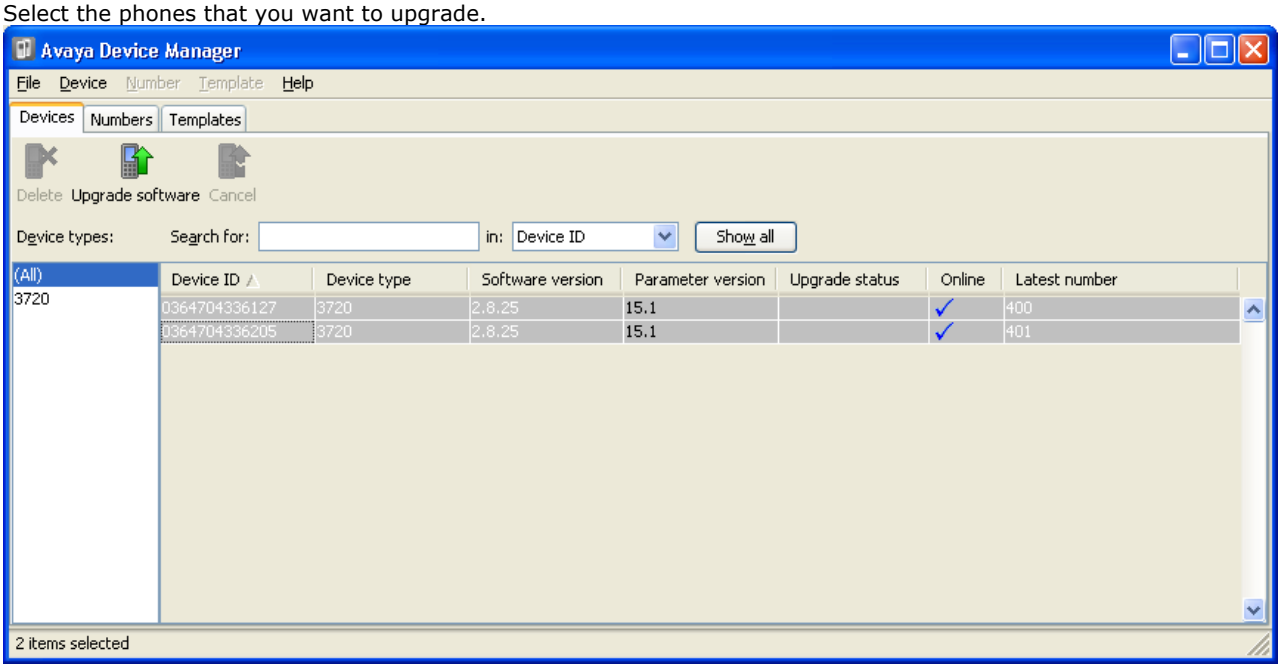
4. This items shown in pink indicate areas of the template that contains settings selected to be applied to the device when the template is uploaded to the device. Items shown in blue have been changed during this editing session.
   - **Black:** Normal
   - **Dark Blue:** Parameter has been edited during the current session.
   - **Purple:** The parameter is enabled in the template.
   - **Red:** Value not valid.
   - **Turqoise:** The value differs from the default value
5. Each item within the template consists of 3 parts:
   - **Selected** - If selected, the template value will be applied to devices to which the template is uploaded.
   - **Name** - The non-editable name for the template item.
   - **Value** - The value for the template item. This may be a drop-down list from which selection can be made.
6. Click **OK**.

7.8 Upgrading Phone Software

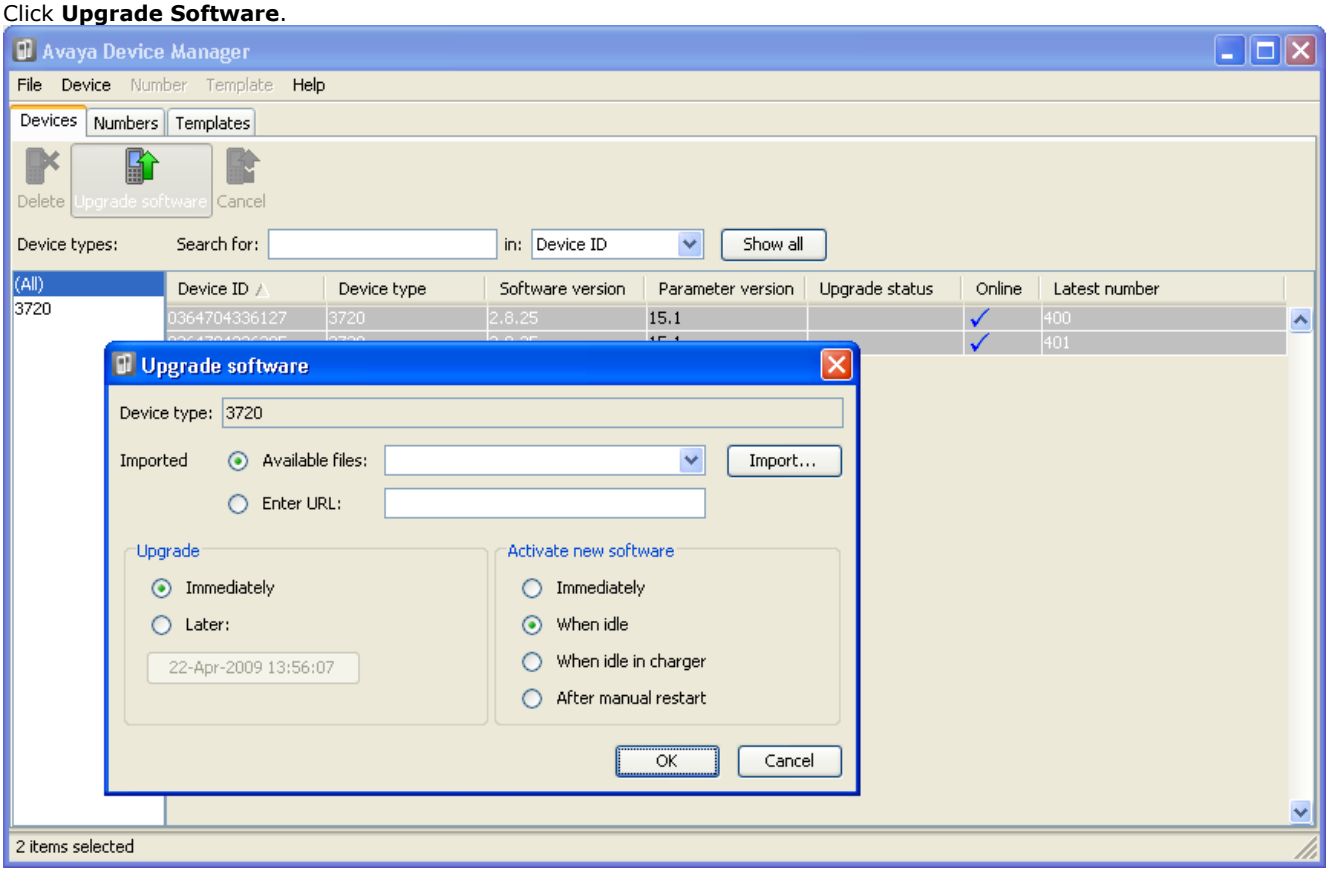
The phone firmware should be checked and, if necessary, upgraded to the version supported for IP Office operation.

DECT R4 is supported on a range of Avaya systems. However, for IP Office operation, only firmware specifically documented as having been tested and supported with IP Office should be used. Details of supported firmware will be included in IP Office Technical Bulletins and Technical Tips.

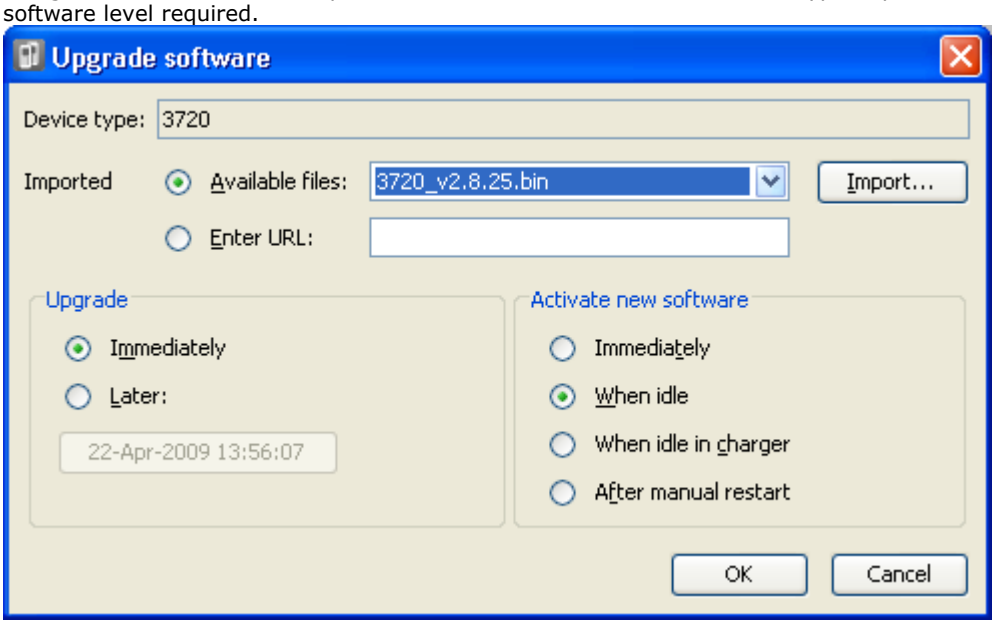
1. Start the AIWS Device Manager 85 or Windows Device Manager 86.
2. Within the Avaya Device Manager, select the **Devices** tab.
3. Select the phones that you want to upgrade.



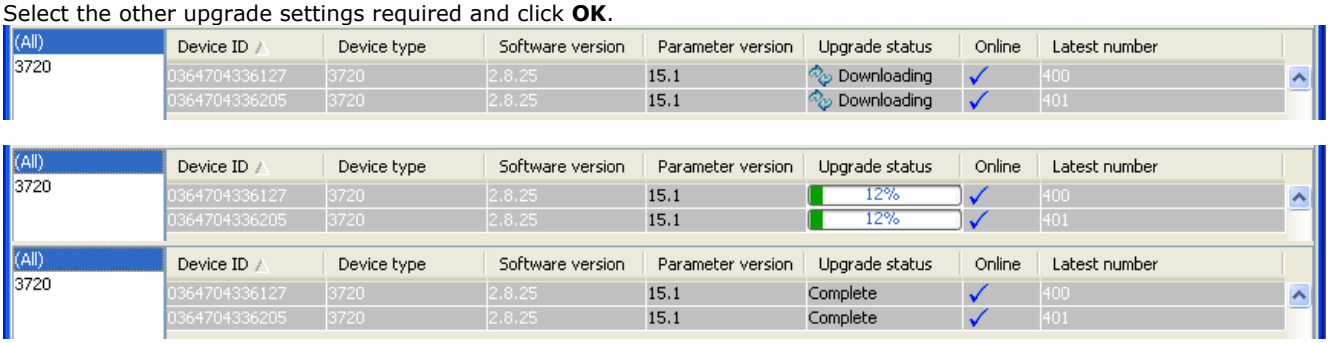
4. Click **Upgrade Software**.



5. Using the **Available Files** drop-down, select the software bin file for the type of phones being upgraded and the software level required.



6. Select the other upgrade settings required and click **OK**.



Chapter 8. Miscellaneous

8. Miscellaneous

8.1 Base Station Reset Switch

The base station reset switch is located on the rear of the base station. To press it requires a fine point. How long the switch is depressed affects the type of reset.

Action	Duration	Effect
Short press	Less than 1 second	Restart
Medium press	Approximately 3 seconds	Restart in TFTP mode. This mode is intended for support and development departments only.
Long press	Approximately 10 seconds	Factory reset - all configuration parameters will be set to default values.

8.2 Base Stations Status Lamps

Each base station has two LED lamps. These are used to indicate the status and activity of the base station.

LED	Color	Description
LED 1 - Status This is the lower LED on the bottom edge of the base station.	**Green**	Operational
	Amber	TFTP Mode
	Alternating Red/Green	No Ethernet connection.
LED 2 - Activity	**Off**	Idle (no calls in progress).
	Green	Calls in progress.
	Green Flashing	Maximum calls (8) in progress.
	Amber	Downloading software.
	Amber Flashing	Air synchronization insufficient and no calls in progress (This LED state can be disabled using the **DECT | Air Sync | LED Indication** option in the base station's configuration).
	Alternating Red/Green	Air synchronization insufficient and calls in progress.
	Red Flashing	No air synchronization. Searching for synchronization signal.

8.3 AIWS Status Lamp

Colour	State	Description
Green	On	Running.
Orange	On	Failsafe or Network setup mode.
	Flashing (1 second on/off)	Image installation mode.
	Fast flash (100ms on/off)	Starting.
	Intermittent flash (100ms on/1 second off)	Restart.
	Slow flash (2 seconds on/3 seconds off)	Halted (auto restart after 10 minutes).
	Wink (5 seconds on/100ms off)	Unlicensed.
Red	On	Low voltage.
	Intermittent flash (100ms on/1 second off)	License error.
	Flashing (1 second on/off)	Watch dog reset.
	Slow flash (2 seconds on/3 seconds off)	Shutdown.
	Very slow flash (3 seconds on/3 seconds off)	Memory error

	Wink (5 seconds on/100ms off)	Network error/Module key error.

Chapter 9.
Glossary

9. Glossary

The following are definitions for common abbreviations used within the DECT R4 system applications.

9.1 AIWS

Avaya In-Built Wireless Server

9.2 IPBS

IP-DECT Base Station

9.3 SS

Signal Strength

9.4 SARI

An alternate name for the **PARK** 102.

9.5 PARI

Primary Access Right Identity

9.6 PARK

Portable Access Rights Key

9.7 FER

Frame Error Rate

9.8 DECT

Digital Enhanced Cordless Telecommunications - Global standard for cordless telephony.

9.9 CAP

Common Access Profile

9.10 GAP

Generic Access Profile - Standard used for DECT.

9.11 IPDI

At delivery of the telephone, IPEI and IPDI are the same and either can be used for network subscription. If one telephone is replaced with another using the Easy replacement procedure the IPDI will be exchanged and IPEI and IPDI will no longer be the same. If the IPEI and the IPDI differ, the IPDI shall be used for network subscription.

9.12 IPEI

International Portable Equipment Identity - The unique global GAP identity number for the phone. This code is needed for the system administrator to enable network subscription.

9.13 PBX

PBX Private Branch Exchange - Telephone system within an enterprise that switches calls between local lines and allows all users to share a certain number of external lines.

9.14 PDM

Portable Device Manager

9.15 WSM

Wireless Services and Message -Module that enables wireless services like central phone book and messaging to and from the portable devices. An alternate term for the AIWS 102.

9.16 ELISE

Embedded LInux SErver - A term for the AIWS 102.

9.17 SST

Site Survey Tool

9.18 PP

Portable Part - A term for DECT phones.

9.19 RFP

Radio Fixed Part - A term for DECT base-stations.

9.20 RFPI

Radio Fixed Part Identity.

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