Compact DECT

Installation Manual

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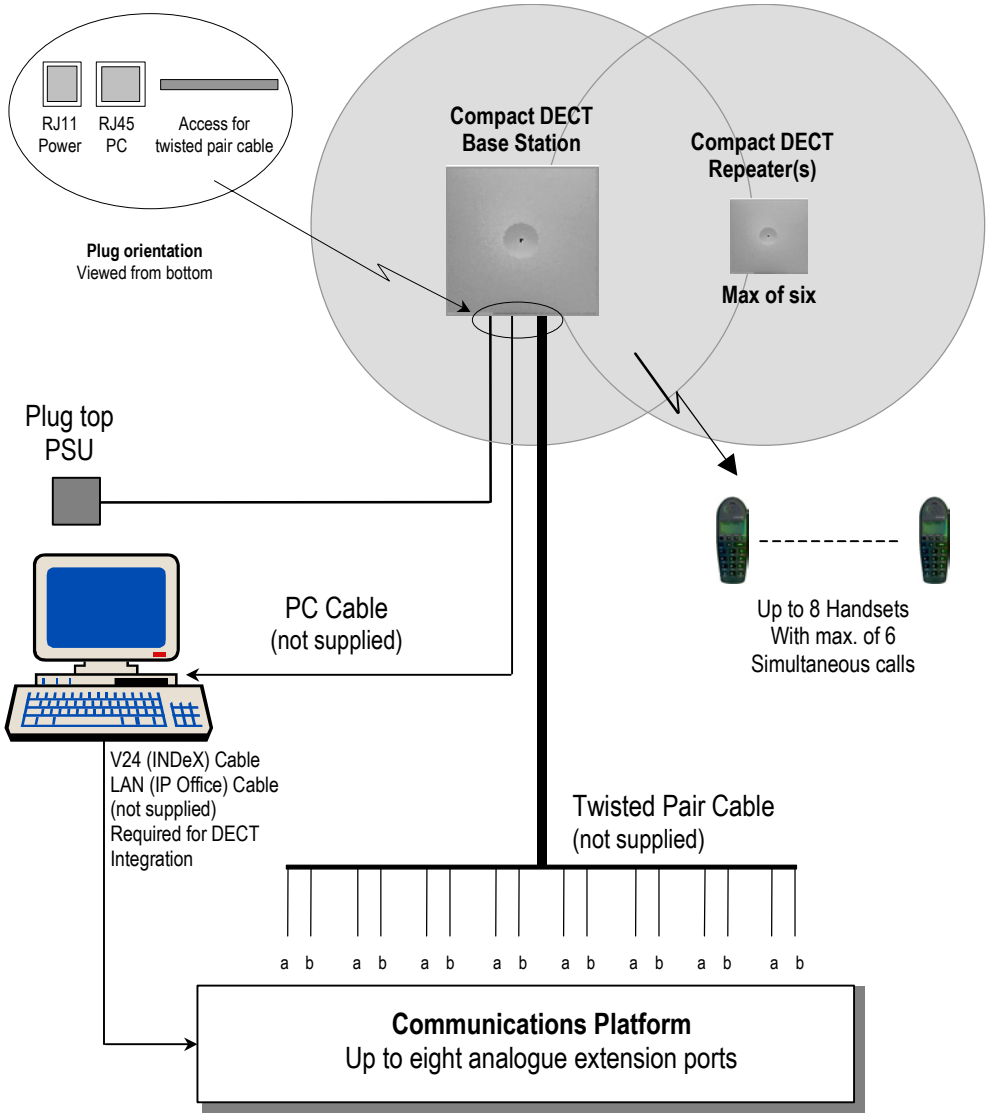
Contents

Introduction

General

This manual covers the installation, maintenance and programming of an Compact DECT system. It is intended for use by installers and maintainers who have successfully completed an appropriate Compact DECT training course.

The Compact DECT is a cordless telephone system designed to work with most PABX switch systems. It provides the PABX with integrated support for cordless handsets.



A Compact DECT Base Station (CDBS) can support up to six simultaneous calls and up to eight 20DT handsets. Each handset requires a dedicated two-wire link between the CDBS and the Coms. Platform.

Compact DECT conforms to the DECT Generic Access Profile (GAP) requirements. This allows other GAP handsets to be used on the system. It also allows the Compact DECT handsets to be used on other GAP compatible DECT systems.

Approvals:

- **Electric:** TBR 6 (DECT RF).
- **Access Profile:** TBR22 (GAP) Layer 1.
- **EMC:** ETS 300 329 (CE Labelling).

Compact DECT in Detail

The Compact DECT (Digital Enhanced Cordless Telecommunications*) uses cellular radio methods to handle multiple handsets on the same system at the same time. It is designed for high density local area usage.

The Compact DECT system uses the frequency band of 1.88 to 1.9GHz. It employs FDMA (Frequency Division Multiple Access) to divide each band into ten separate carrier frequencies. TDMA (Time Division Multiple Access) further sub-divides each carrier frequency into 24 time slots. 12 slots are used for send and 12 for receive, i.e. two slots are required per conversation on the carrier frequency, this is called TDD (Time Division Duplex).

The above method gives 120 call channels available to a DECT system (10 x 24 channels, 2 channels per call).

During a conversation, a handset continuously compares the speech quality obtained in its time slot to that in the same time slot on another carrier frequency. If the current signal falls below acceptable limits and the other band is better, the handset will change over to that band.

The Compact DECT systems use DCS/DCA (Dynamic Channel Selection/Allocation) to resolve availability of channels between handsets and base stations. These processes allow a high density of handsets (on the same or different DECT systems) to operate in the same area (provided sufficient base station channels are available).

Speech within DECT is digitised using ADPCM (Adaptive Differential Pulse Code Modulation). Traditional PCM digitises speech by sampling at time intervals and assigning a value to the amplitude at each time interval. This sequence of amplitude values is then sent as a digital signal. In ADPCM information is only sent when their is a difference in amplitude. This requires more processing electronics but allows lower signal rates to be used for the same speech quality.

*Originally DECT stood for "Digital European Cordless Telephony" but this was changed as use of the standard spread beyond the European market.

The Compact DECT System

This sections gives a brief overview of the elements within the Compact DECT system.

Compact DECT Base Station (CDBS)

A CDBS unit supports up to six simultaneous handset calls. Using standard telephony cable (not supplied) a CDBS can be placed up to 1Km from the Communications Platform. The CDBS is designed for wall mounting and is supplied with a plug top PSU fitted with 2 mtrs of cable.

- **Size:** 165mm wide x 165 high x 50mm deep.
- **Power:** Power from a 230V, 50Hz plug top PSU, (9VDC, 0.6A).

Repeater

A Repeater works in conjunction with a CDBS to extend that CDBS's area of coverage. Two versions are available; a standard repeater and one that can have an optional directional aerial fitted to increase the distance from the associated CDBS (up to 1km line of sight).

Each Repeater is programmed to associate with a particular CDBS using a Repeater Setup program. The Repeater can handle up to two simultaneous calls. These calls are 'borrowed' from the CDBS. Hence, each call routed via the Repeater reduces the number of calls that the CDBS can handle.

The Repeater does not need any wiring connection to the CDBS. The Repeater is designed for wall mounting and is supplied with a plug top PSU fitted with 2 mtrs of cable.

Size: 100mm wide x 100 high x 40mm deep (inc. wall mounting bracket).
Power: Power from a 230V, 50Hz plug top PSU, (9VDC, 300mA).

20DT Handset

Each handset is supplied with a battery.

- **Weight:** 121g ±10g (including battery).
- **Size:** 143mm x 48mm x 26mm.
- **Power:** Fully charged battery; 10 hours speech, 90 hours standby. Full battery recharge, 3.5 hours in handset charging slot.

Note: A label, located beneath the battery pack, provides both the handset registration number and the software level (at time of manufacture). Alternatively, on latter models, you do not have to remove the back cover. Simply key *999*84* and press ✓. Handsets are supplied with the battery disconnected. Ensure that the battery is connected before use.

Single Chargers

The single chargers are designed as a free-standing desk units.

The single chargers are supplied with a mains power supply unit appropriate to the ordering country.

Site Surveys

Introduction

A site survey is performed using a separately supplied Site Survey Kit.

A site survey is the most crucial part of any Compact DECT installation. It is the stage at which future success or failure of the installation will probably occur.

Most issues of customer satisfaction will stem from the site survey and the resultant positioning of the base station and the Repeater(s) (*see page 20*).

From the customer's point of view, two keys factors must be assessed:

- **The area of coverage required:**
- **The number of simultaneous users within different areas**:
  A CDBS can support 6 simultaneous calls. Where Repeaters are used, they support two simultaneous calls, but these are 'borrowed' from the CDBS. Hence, each call routed via Repeaters reduces the number of calls that the CDBS can handle.

During the site survey, you will be attempting to determine three factors to achieve the customers requirements:

- **The best positioning of the CDBS**
- **The number of Repeaters required.**
- **The best positioning of the repeaters.**

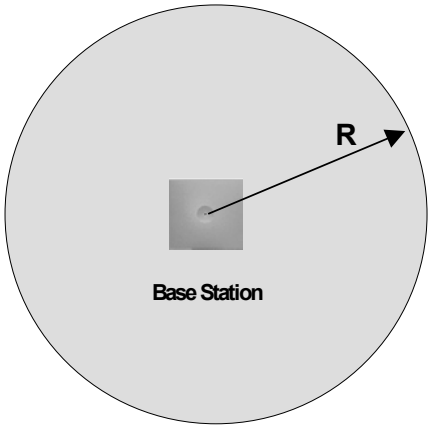
To fulfill this you need to obtain the following details:

- **Building Measurements:**
  Accurate building plans are an essential aid to both the site survey and also for later fault analysis.
- **Signal Strength: (RSSI - Radio Signal Strength Indication)**
  From potential base station positions, what is the range of the base station signal at sufficient signal strength for reliable operation.
- **Speech Quality: (Q52)**
  Interference, weak signals and reflected signals lead to errors in the digital signal that cannot be corrected. From potential base station position, what is the range before the bit error rate becomes unacceptable.

Base Station Coverage: In Theory

Given ideal open field conditions, the range between a handset and base station can be up to 600 metres. Within a building, with signal strength being absorbed and reflected signals giving increased error rates, the effective range (R) is more realistically between 50 metres and 150 metres.

A single base station's area of coverage is $\Pi x R^2$.



Be aware that the following is assumed:

– The building structure is even and so the CDBS has the same range in all directions.
– That a CDBS does not only operate in 2-dimensions. In reality the signal forms a sphere rather than a circle.

Base Station Coverage: In Practice

In practice, no rules can be given for base station coverage. Coverage is affected by too many factors that are unique to each site. We can only guide you as to those things that are likely to affect base station coverage.

Obvious causes of signals problems:

Metal surfaces.

Concrete thickness greater than one metre.

Beware of:

Windows with reflective film or specialised glass: (e.g. Pilkington 'K')

These produce increased signal reflection and reduced signal pass-through.

Wire Meshes and Grills with apertures of less than 4cm:

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.

Opportunities to be aware of:

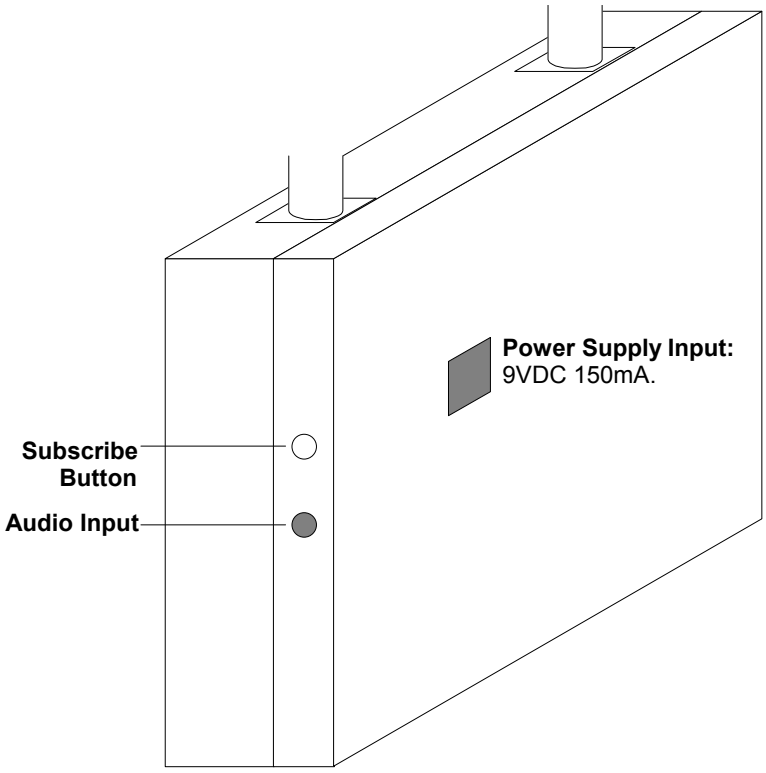
In multi-storey buildings, if the building construction allows, a base station on one floor can also serve the floor above or below.

Using the Site Survey Kit

Guidance on where to start the survey and order in which to do a survey is difficult, each case is unique and much relies on experience. Ensure that conditions are as near to normal as possible, i.e. if possible do the survey on a normal working day when the building is in use. Check which areas you can enter and when.

The Survey Base Station

The Survey Base Station is a DECT Base Station is able to transmit without requiring connection to a Coms. Platform. It is supplied with a suitable mains power supply unit. As well as providing an RSSI/Q52 signal it can accept audio input via a 3.5mm audio-jack input for a manual audio quality check.



- **Power Socket:**
  The Survey Base Station is supplied with a suitable power supply terminated with an RJ11 connector. The connector uses Pin 6 (-ve) and Pin 5 (+ve) to provide a 9V dc, 150mA supply.
- **Audio In Socket:**
  Standard 3.5 mono jack socket input.
- **Subscribe Button:**
  If pressed and held for 3 seconds, puts the Survey Base Station in subscribe mode for the following minute. The base stations system ID is printed on its back. Its account number is 1234 (on older versions this may be 12345678).

Site surveys may also be carried out using an Compact DECT Base Station. In which case an extension cable should be used to provide a movable power source. The survey process is the same except handset subscription *(see Subscribing Handsets on page 16)*.

Subscribing to the Survey Base Station

Up to eight handsets can be subscribed to the Survey Base Station. All these handsets can display the RSSI signal quality simultaneously but only one can receive the audio input at any time. Normally only one handset is subscribed to the Survey Base Station.

1. Connect the Survey Base Station to it's power supply and switch on.
2. Turn the handset on. Assign it a number between 1 and 8 by dialling ***99972*x** where ***x*** is the number between 1 and 8 (each handset must have a discrete number). Then press ✓**.**
3. Press **MENU** and the **>** key until ***LOGIN*** appears and then press ✓**.** ***SELECT LOGIN*** appears. Before subscribing to system, you are recommended to remove all other subscriptions (steps 4-6).
4. Press **>** until **SUBSCRIPTION REMOVE** appears and then press ✓**.**
5. Enter the password (default 0000) and press ✓ to display **SUBSCRIPTION REMOVE?** Press ✓ to display any previously entered System ID (appears below **SYSTEM X,** where X = 1 to 4). Press ✓ to remove.
6. You are returned to **SUBSCRIPTION CREATE.** Press **>** until **SUBSCRIPTION REMOVE** appears. Repeat from step 4 for all previously entered System IDs.
7. When completed, press **MENU** twice and then press **>** until **LOGIN** appears. Press ✓ to display **SELECT LOGIN** and press ✓ again to display **SYSTEM X,** where X = 1 to 4). Use **>** to select required system number and press ✓**.**
8. Press **>** to display **SUBSCRIPTION CREATE** and the press ✓ to begin subscription. The handset is searches for a system to which it can subscribe. Press and hold the subscribe button on the Survey Base Station for 3 seconds. The Survey Base Station will then stay in subscribe mode for one minute.
9. Use the **<** and **>** buttons to display the ID numbers of available DECT systems found by the handset. Look for the ID number of the Survey Base Station (printed on the back of the Survey Base Station) and then press ✓**.**
10. Use the **<** and **>** to select which system number you want the Survey Base Station assigned to and then, at the **AC:** prompt, enter ***1234*** (or on older systems 12345678) and press ✓**.**
11. **SUBSCRIPTION WAIT** appears. When successfully subscribed, the handset bleeps. Should **SUBSCRIPTION FAILED** appear, repeat from step 8.

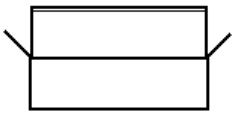
Performing the Survey

Position the Survey Base Station in the potential position for a base station installation. Connect the power supply. If possible, also connect an audio source via either the telephone line or audio jack sockets.

1. With a subscribed handset on-hook, dial ***99981*** and press **ENTER**.
2. The handset display shows the signal quality.
   RPN: 01 <*Base station number.*
   Q52: 52 <*Speech quality.*
   RSSI: 64 <*Signal strength.*
3. Take the handset off-hook as this will ensure more realistic figures.
   – If you have connected an audio source you will hear it whilst off-hook. Use this facility to check the audio quality (only one handset can be off-hook and receive the audio source at any time).
4. Check the boundaries of the Survey Base Stations coverage where **Q52 is greater than 52** and **RSSI is greater than 64**. Mark this area on the building plans for all areas that the CDBS might have to serve.
5. Where Repeaters are to be used, repeat the above process (*see page 19 for CDBS/Repeater overlap*).
6. To return the handset to normal operation, press and hold **<** until you hear a short bleep.

Preparing for Installation

Unpacking



1. Do not start unpacking until the equipment is at the site of installation.
2. Before unpacking check for any signs of damage that has occurred during transit. If any damage exists bring it to the attention of the carrier.
3. Check all cartons against the packing slip. Report any errors or omissions to the dealer who supplied the equipment.
4. Whilst unpacking the equipment, retain all the packaging material. Fault returns are only accepted if repackaged in the original packaging.
5. Visually inspect each item and check that all the necessary documentation and accessory items have been included. Report any errors or omissions to the dealer who supplied the equipment.
6. Ensure you read and understand any documentation included with any item.

Tools Required

General:

– 0.5mm flat blade screwdriver.
– No.1 Phillips Crosspoint.
– Cutter/knife for cable ties.
– Cable ties - 3mm x 50mm.
– Drill and masonry drill bits
– Tape measure (up to 500mm).
– Spirit level.
– Digital voltmeter (DVM).

Programming:

– Windows 3.x/95/2000 or NT PC with serial port supporting 19.2K baud minimum.

Additional Parts Required

The following items are required in addition to those supplied by Avaya.

Compact DECT Base Station:

– Single-twisted pair cable (Type CW1308) from Coms. Platform/MDF to CDBS.
– 1 x DCU Programming/Integration cable as required (*see page 44*)

Compact DECT Repeater:

– No additional parts are required.

PBX Restrictions

- **Collective Ringing Groups:**
  Including a large number of Compact DECT handsets in a collective ringing group can cause unpredictable results.
- **Power Fail Circuits:**
  Compact DECT DAB circuits are not approved for direct connection to PSTN analogue trunks. This is not a problem when connected via a PBX except if a PBX directly connects some analogue extensions to analogue trunks during PBX power failures. *See Power Fail Circuits on page 14.*

Environmental requirements

The planned locations for all parts of the system must meet the following requirements:

- Check that the area is a well ventilated area, having a temperature range of 0°C to +40°C and a humidity range of 10% to 90% non-condensing.
- Check there are no flammable materials in the area.
- Check there is no possibility of flooding.
- Check that no other machinery or equipment needs to be moved first.
- Check that it is not an excessively dusty atmosphere.
- Check that the area is unlikely to suffer rapid changes in temperature and humidity.
- Check for the proximity of strong magnetic fields, sources of radio frequency and other electrical interference.
- Check there are no corrosive chemicals or gasses.
- Check there is no excessive vibration or potential of excessive vibration, especially on the cabinet mounting surface.

Power Supply Requirements

Both the Compact DECT Base Station and Repeater(s) are designed to operate from a standard 230V (±10%), 50Hz single-phase main supply. The Base Station is rated at 5.4VA and each Repeater is rated at 2.7VA for power consumption.

The use of a UPS to support the system during mains power failure is highly recommended. This equipment also provides mains conditioning for the system. Contact Avaya for details of preferred and tested suppliers and models.

Cabling & Trunking Requirements

All cables and wires should be run through protective trunking or ducts wherever possible.

Unless otherwise stated, all devices connect using standard telephone cable (type CW1308). This can be single or multiple pair cable.

EMC Requirements

The Compact DECT system is EMC approved and carries CE mark approval. For a particular installation to be EMC compliant, it must meet the following requirements at all times:

- Only EMC approved equipment must be used.
- You must install all units with their covers in place.

Base Station Installation

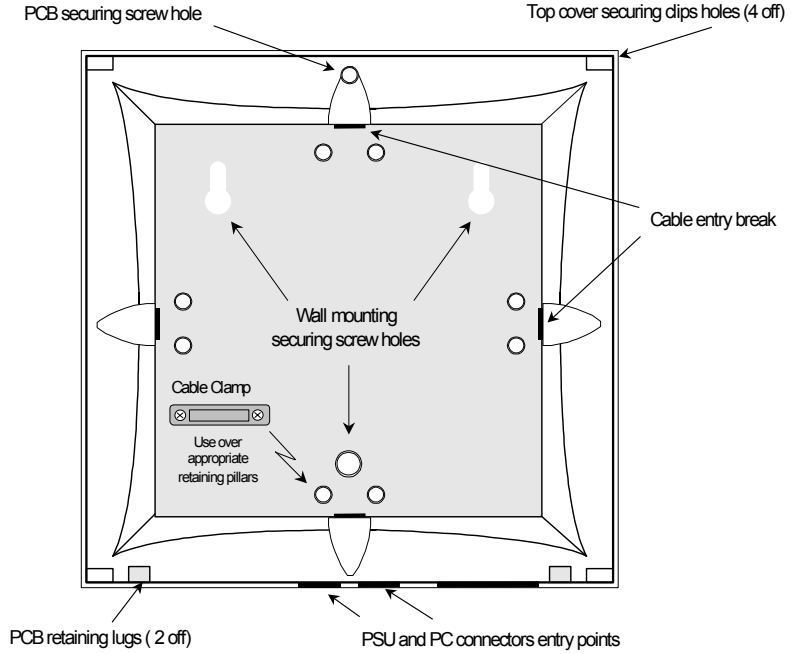
Mounting the Base Station

The Compact DECT Base Station (CDBS) is supplied with a plug top PSU fitted with 2mtrs of cable that terminates in a modular plug. Screws and fixings, for wall mounting the CDBS, are also supplied. A CDBS can be placed up to 1Km from the MDF.

Correct positioning of the Base Station is vital to the performance of the whole system. Before installing the CDBS, ensure that you have accurate plans for its location (*see Site Surveys on page 6*).

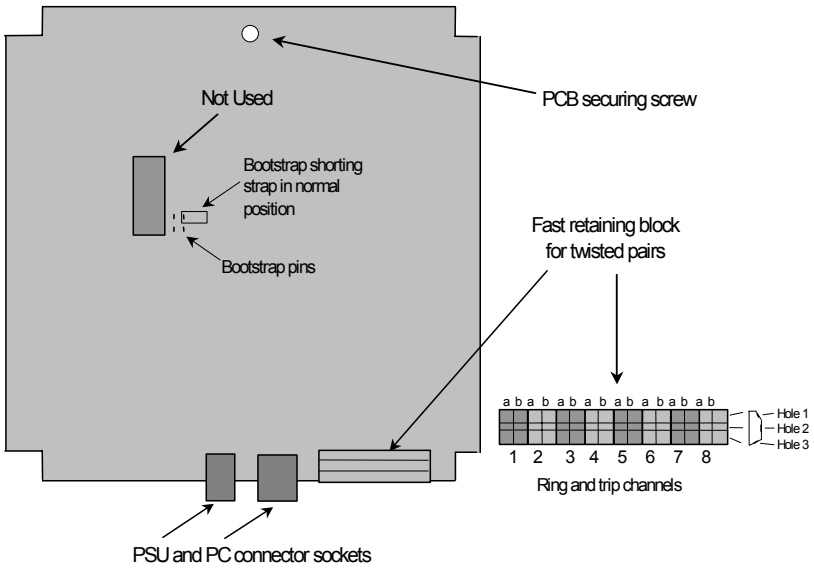
To mount the CDBS, perform the following:

1. Check the proposed position of the CDBS and ensure that:
   – A mains power supply is within 2 metres.
   – The distance between the Coms. Platform and the CDBS is within 1Km.
   – There is a minimum of 200mm's clearance on all sides of the CDBS.
2. Turn the CDBS over onto it's back and remove the top cover by releasing the four retaining tags clips (one in each corner).



3. Remove the PCB by removing the securing screw and sliding the PCB up and out from the retaining lugs. Put the PCB in a secure place.
4. Use the CDBS base as a template to mark the required holes. Ensure that the CDBS is level. Drill and insert the wall fixings for the No.6 round-head screws for all three holes. Insert the top two screws only, leaving the heads 5mm from the wall surface. Do not secure the CDBS to the wall (using another No. 6 screw in the third hole) until all cabling has been completed.
5. Break-out the appropriate cable entry point and run a sufficient length (to reach retaining block with a minimum of 5cm spare) of twisted pair cable into the CDBS base. Secure cable, using clear plastic cable clamp and screws provided, to appropriate retaining pillars.
6. Mount the CDBS onto the screw heads, using the key-slots at the back of the base station, and secure with a No. 6 screw in the third hole.

7. Replace the PCB and secure with the securing screw.
8. Remove minimum of 5cm outer sheath from cable. Connect the twisted pairs (see below) to the fast connector block as follows:
   – Strip 5mm from the ends of the eight (max.) twisted pairs.
   – Starting at channel 1, socket 'a'; push the 0.5mm screwdriver into hole 1 to release the internal spring on the fast connector and simultaneously insert the stripped end of the a-side of the first pair into hole 3. Release the screwdriver and test connection by gently tugging on wire.
   – Repeat for with the b-side wire of the first pair; e.g. channel 1, socket 'b' using hole 3.
   – Repeat for the next seven twisted pairs.



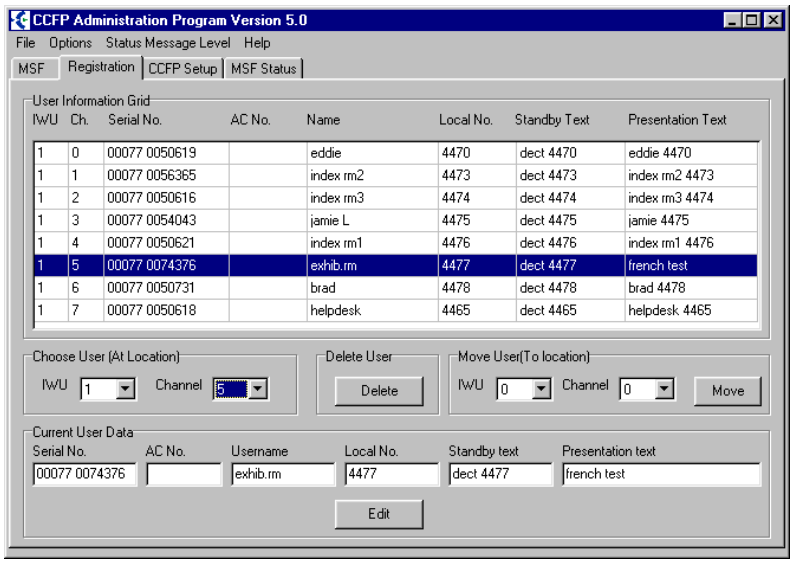
9. Feed the surplus twisted pair cable back out of the CDBS housing.
10. Ensure that the bootstrap shorting strap is in the 'normal' position and clip the front cover back on.
11. Connect the other ends of the twisted pair cables to the Coms. Platform analogue ports.
12. Connect the CDBS to the PC, either directly or via a modem.
    See page 44 for cable details.
13. Push the PSU modular plug into it's socket on the CDBS and connect the plug top PSU to the mains power supply.
14. The lamp in centre of the front of the CDBS will light green.
    Other lamp statuses are:
    - Red followed by green = flash programming mode or fault
    - Fast blinking red = empty system with master handset subscription not allowed
    - Fast blinking green = empty system with master handset subscription allowed
    - Slow blinking red = in operation with maximum active connections (busy)
    - Slow blinking green = in operation with active connections (busy).

Power Fail Circuits

Compact DECT DAB channels are not approved for direct connection to the PSTN (this is not due to any technical restrictions). As a result, DAB channels must not be connected to analogue PBX extensions which connect directly to analogue trunks during PBX power failures.

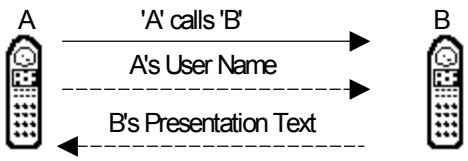
Registering Handsets

The **Registration** page of CCFP Administration displays all the settings for handsets (*see The CCFP Administration Program on page 23*). The top section of the screen shows all the available channels and the handset settings. The lower part of the screen shows the settings for an individual channel. This menu also provides options to **Delete** or **Move** users.



Editing User Settings:

1. In the **Choose User (At Location)** section select the **IWU** and **Channel**.
2. In the **Current User Data** section select:
   - **Serial No.:**
     The handset serial number.
     - This is found on a label covered by the handset battery. It consists of a 5 digit handset type and then a 7 digit handset number separated by a space.
     - For other GAP compatible DECT handsets it is possible to discover the serial number *(see page 18)*.
   - **AC No.:**
     An option account code of up to 7 digits. If set then the account code is entered by the handset as part of the subscription process.
   - **User Name*:**
     Up to 10 characters. Shown on the DECT handset called by the user.
   - **Local No.:**
     The handsets extension number on the attached PBX (must be the same number as the 2-wire/SLT user's number).
   - **Standby Text*:**
     Up to 10 characters. Shown when idle but in range of a base station.
   - **Presentation Text*:**
     Up to 10 characters. Shown on the DECT handset calling the user.



*Though overridden by Compact DECT Integration, it is still sensible to set these options.

Subscribing Handsets

Once a handsets details have been entered into the Registration screen of CCFP Administration, the handset can be subscribed to the system.

Enabling Subscription

1. Run CCFP Administration (see page 23).
2. Check that the handset details have been correctly entered on the CCFP Registration screen (see page 15).
3. Select **Options** and then **Preferences**. Click on the **Advanced Options** tab. Click on **Allow Subscription** (a tick mark appears when allowed).
4. Use the appropriate process below to subscribe the handset.
5. After subscribing the handset(s), switch **Allow Subscription** off (no tick mark).

To subscribe a 20DT Handset

It is recommended to only subscribe one handset at a time and that all previously subscribed System IDs are removed prior to subscribing for the first time (see page 17).

1. Press **MENU** and then **>** until ***LOGIN*** appears, then press ✓. ***SELECT LOGIN*** appears
2. Press **>** until ***SUBSCRIPTION CREATE*** appears, then press ✓.
3. ***SEARCH ID*** appears. Press **>** until required system **ID** number appears. (The system ID is printed on the back of the Compact DECT Base Station).
   The handset displays the ID's of any systems in range. If there are several systems locally, use **<** *and* **>** *to display the different ID numbers found.*
4 When the required system ID is displayed, press ✓
5. Press **>** until ***CREATE SYSTEM 1*** appears, press **>** until required **SYSTEM** number appears.
6. When the required **SYSTEM** number appears.
7. ***AC:*** **_ _ _ _ _ _** also appears.
   If required enter an Account Code and/or press ✓.
8. ***SUBSCRIPTION WAIT*** appears. If for some reason your handset cannot subscribe it displays ***FAILED***. Press ✓ to try again from step 2 above or press **MENU** to stop.
9. When successfully subscribed, your handset bleeps and your extension number is displayed.

Auto Subscribing Handsets

When moving between two locations, both equipped with IP Office and Compact DECT systems, you can set a handset to automatically subscribe to the other DECT system provided that the handset at been registered on **both** systems (see page 15).

To set auto subscription on a 20DT Handset

1. Press **MENU** and then **>** until ***LOGIN*** appears, then press ✓. ***SELECT LOGIN*** appears
2. Press ✓ ***CURRENT SYSTEM*** and the ***ID*** of that system appears.
3. Press **>** to select ***AUTO LOGIN*** and then press ✓ to finish.

Removing a Subscription

If necessary, you can remove a subscription from the handset. **Do not do this lightly** as you may not be able to re-subscribe without assistance from your System Maintainer.

1. Press **MENU** and then **>** until ***LOGIN*** appears, then press ✓.
2. ***SELECT LOGIN*** appears.
3. Press **>** until required ***SUBSCRIPTION REMOVE*** appears, then press ✓.
4. Enter your password and press ✓.
5. ***SUBSCRIPTION REMOVE*** appears, press ✓and then press **>** until the system you wish to remove appears
6. Press ✓ again to remove the system.
   – If the system removed was the one currently in use, you need to **LOGIN** again (see page 16).
7. Press **MENU** to finish.

Subscribing GAP Compatible DECT Handsets

GAP compatible DECT handsets can be subscribed to the Compact DECT system. To do this you will require the original handset manufacturers instructions for subscribing that handset.

A difficulty may arise in determining the serial number of the handset so that it can registered on the Compact DECT systems prior to subscription.

To determine a handsets serial number

1. Set the Compact DECT system to allow subscription (*see Subscribing Handsets on page 16*).
2. Go to the CCFP programs **Status** page and set the **Status Level** to **Level 2** (*see MSF Status on page 26*).
3. From the non-Compact DECT handset attempt to subscribe to the Compact DECT system using the handset manufacturer's instructions. The subscription will fail as the handset is not registered in the Compact DECT database but during the attempt its serial number will be displayed in the **Receive Status** display.
4. Note the serial number and add the handset to the registered handsets (*see Registering Handsets on page 15*). You should now be able to subscribe the handset.

System Testing & Handover

After completing installation, including any Repeaters (*see page 19*) and handset subscription, perform the following checks:

– Make test calls from all handsets.
– With a call connected, move through the areas that should be covered by the Base Station. Check that no unexpected 'black spots' exist.
– With a call connected, move through the areas that should be covered by the Repeaters. Check that no unexpected 'black spots' exist.

Ensure that the customer is satisfied with the installation. Make sure they are aware of the following:

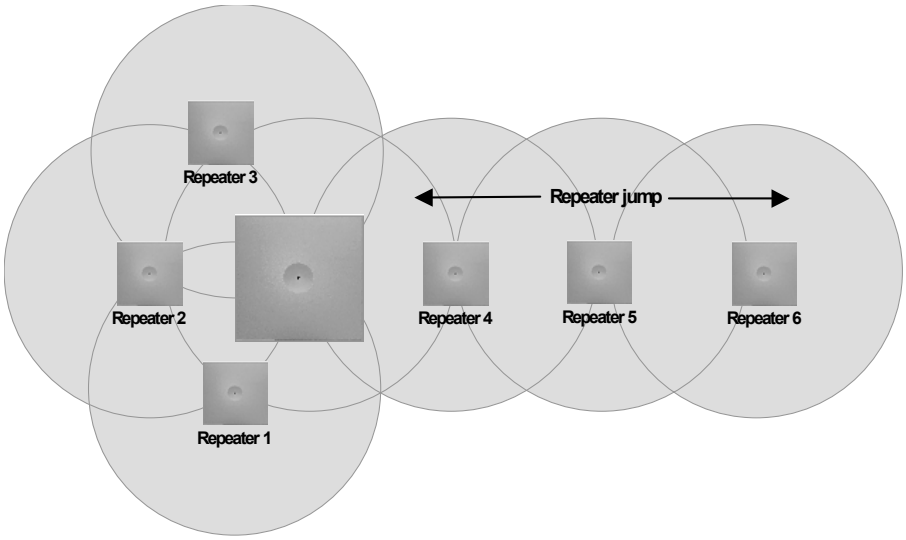
– **Reporting Faults:**
  Make the customer aware of the details required when reporting any faults. Since this a cordless system, details of the handset user's location at the time of a fault is crucial. Maintaining a record of the location of faults may reveal black spots or high usage areas.
– **Hearing Aids:**
  Make the customer aware that all cordless and mobile telephone systems can cause background noise on some hearing aids.
– **Safety Areas:**
  Make sure the customer is aware of their responsibility to indicate to handset users any areas where handsets should not be used and should be switched off for reasons of safety. The 20DT handsets are not classified as 'intrinsically safe electrical equipment' (a special classification for electrical equipment for use in hazardous areas).

Repeater Installation

Introduction

The Compact DECT Repeater allows you to extend the range of coverage of a Compact DECT Base Station (CDBS) without requiring more wiring to the system. The only physical connection required for each Repeater is a mains supply. Two versions of the Repeater are available; a standard Repeater and a Repeater that can have an optional directional aerial fitted (see below).

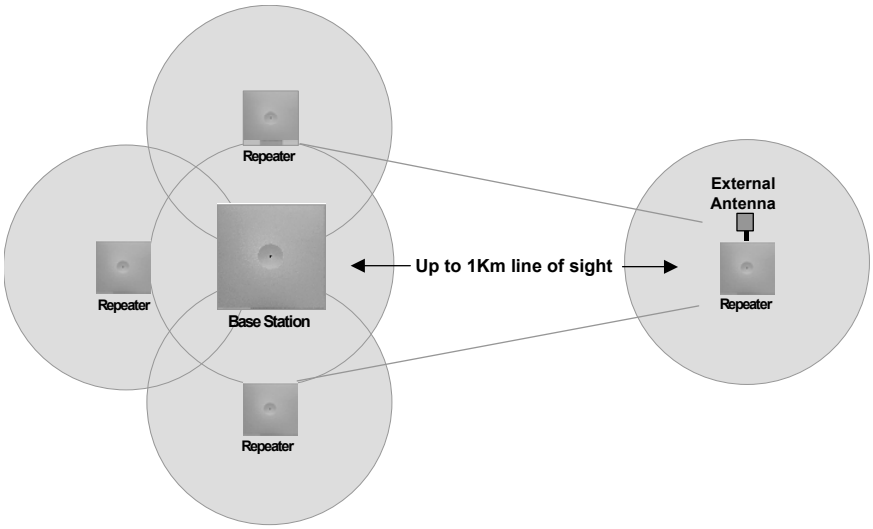
Up to six Repeaters can be added to an existing CDBS as shown below.



Note: When programming for Repeater Jumps, you must start with Repeater 4 to CDBS, followed by Repeater 5 to 4 and finally Repeater 6 to 5.
E.g. Repeater 4 acts as a base station for Repeater 5, which in turn acts as a base station to Repeater 6.

The range at which a Repeater can work will typically be between 50 and 150m within a building. Each Repeater works in conjunction with an existing parent DECT Base Station. These calls are 'borrowed' from the CDBS. Hence, each call using a Repeater reduces by one the capacity of its parent CDBS (capacity of 6 calls). A Repeater jump link can only handle two simultaneous call at any one time.

The use of a directional aerial allows the Repeater to be placed up to 1000m from its parent base station (subject to intervening structures) as follows.



Locating Repeater Base Stations

Repeater base stations are subject to the same positioning requirements as a CDBS *(see Site Surveys on page 6)*. Currently the only method for doing a site survey for a Repeater is in conjunction with an installed CDBS.

As for a CDBS, the correct performance and functioning of a Repeater requires an accurate site survey. Make sure you include sufficient overlap between CDBS and Repeater(s).

Installing a Repeater

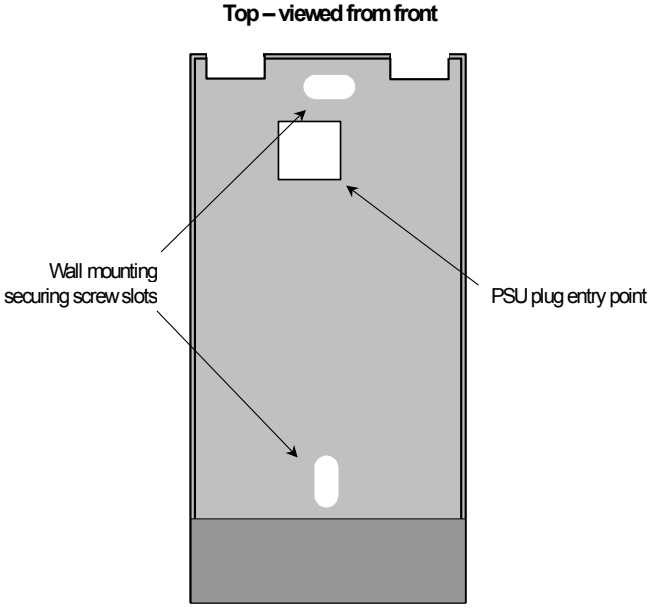
To install a Repeater, it must be wall mounted and configured. Use the procedures below to mount and configure a Repeater.

Mounting the Repeater(s)

Each Repeater is supplied with a plug top PSU fitted with 2mtrs of cable that terminates in a modular plug. Screws and wall plugs for mounting the CDBS are also supplied.

To mount a Repeater, perform the following:

1. Check the proposed position of the Repeater and ensure that:
   – A mains power supply is within 2 metres.
   – There is a minimum of 200mm clearance on all sides of the Repeater.
2. Use the Repeater Wall Mounting Bracket (see figure below) as a template to mark the required holes. Ensure that the Repeater is level. Drill and insert the wall fixings for the No.6 round-head screws.
3. Run the PSU modular plug through the access hole before fixing the bracket to the wall with the two No. 6 round head screws.
4. Push the PSU modular plug in to it's socket on the Repeater.
5. Slide the Repeater onto the mounting bracket (a firm push is required to slide the Repeater lugs over the pins on the wall mounting bracket).
6. Connect the plug top PSU to the mains power supply.
7. The lamp in centre of the front of the Repeater will light as follows:
   - a steady red when in idle state
   - will flash red when Repeater is not synchronized with CDBS
   - two short flashes whenever a connection is made via Repeater.



Attaching an Directional Aerial

The directional aerial is supplied with a wall mounting plate, screws and wall fixings. It also includes a 0.9m lead for connection to the directional aerial socket on the back of the Repeater.

The face of the aerial should be mounted perpendicular to the parent CDBS. The DECT system should be installed and the position of the Repeater plus directional aerial tested by making calls before finally fixing the wall mounting plate into place. The directional aerial then clicks into the wall mounting plate.

The Repeater Setup Program

Before a Repeater can be used, it must be setup with various settings; e.g. the base station number, system number, etc. The Repeater Setup program runs on a Windows based PC and require the serial lead and adaptor from a DECT Repeater Programming kit.

Installing the Repeater Setup Program

The Repeater Setup program is supplied on floppy disks as a self-installing program. It is also available from the web site (https://emea-businesspartner.avaya.com/index.asp) as a self-extracting file.

Windows 3.x

1. Insert the first disk.
2. In program Manager, select **File** and then **Run**.
3. Type **a:\setup.exe** and then click on **OK**.
4. Follow the on-screen instructions for installing the Kirktool program.

Windows 95/NT

1. Insert the first floppy disk.
2. Click on **Start**. Select **Settings** and then **Control Panel**.
3. Select **Add/Remove Programs**.
4. In the **Add/Remove Programs Properties** menu click on the **Install/Uninstall** tab. Click on the **Install** button.
5. Windows will scan the floppy disk for a suitable installation file.
6. When it has located the file ***setup.exe*** on the floppy disk, click on **Finish**.
7. Follow the on-screen instructions for installing the Kirktool program.

Connecting a Repeater for Programming

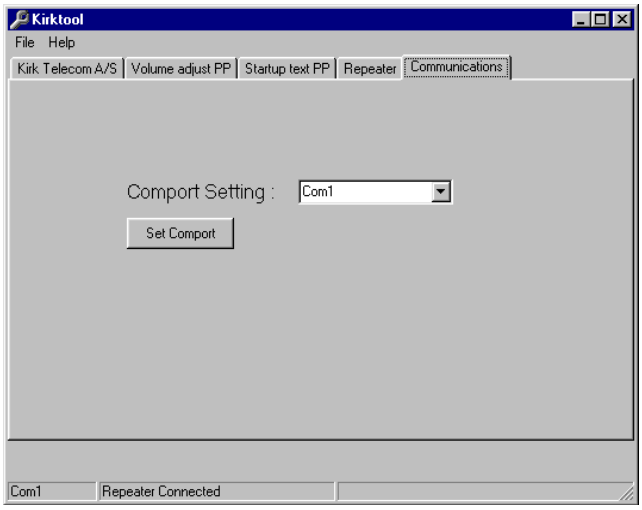
The Repeater Setup kit includes an adaptor and a programming lead.

WARNING:
The programming lead incorporates special components, do not use any other serial lead.

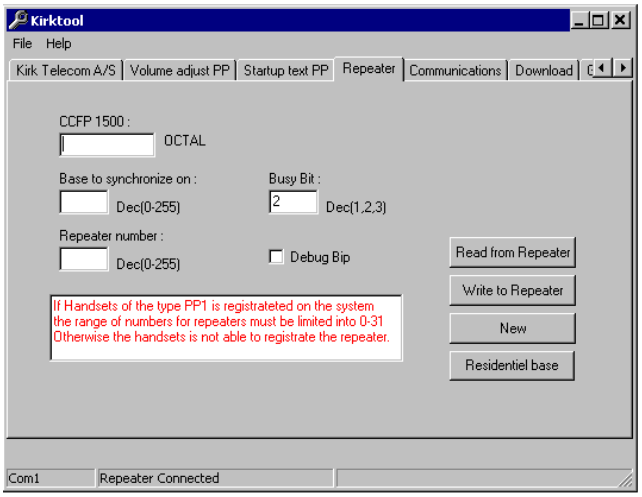
1. Use the doubler to connect the serial lead to the Repeater in parallel with the power supply connector. Ensure that the power supply is on.
2. Connect the serial lead to the PC on which the Repeater Setup program is installed.

Configuring a Repeater

1. Locate and click on the **Kirktool** icon.
   – **Windows 3.x:** Located in the desktop group **Kirktool**.
   – **Windows 95/NT:** Located in **Start** | **Programs** | **Kirktool**.
2. Click on **Communication** and set this to the **Comport Setting** (serial port) connected to the Repeater.



3. Select the **Repeater** tab and click on ***Residential base***. This will change to ***CCFP base***. Click on ***Read from Repeater*** to load the connected Repeater's current settings. These may be empty.



   – **CCFP:** This is the number of the CDBS. Also ensure that ***Allow Subscription*** has been set to ***yes*** (*see page 16*).
   – **Base to synchronize on:** The base station number (default 1) of the CDBS with which the Repeater should synchronize or, for repeater jumps (*see page 19*), the number of the next repeater nearest to the CDBS.
   – **Repeater number:** The number for the Repeater.
4. Click on **New** and enter the required values (only if the Repeater's current settings are empty – see previous step)
5. Click on **Write to Repeater**.
   – Error messages appear if any values are not correctly set.
6. Click on **Read from Repeater** and check that the values are as required. *You are strongly recommended not to change any other settings*
7. Click on **Exit**. You can now use the Repeater.

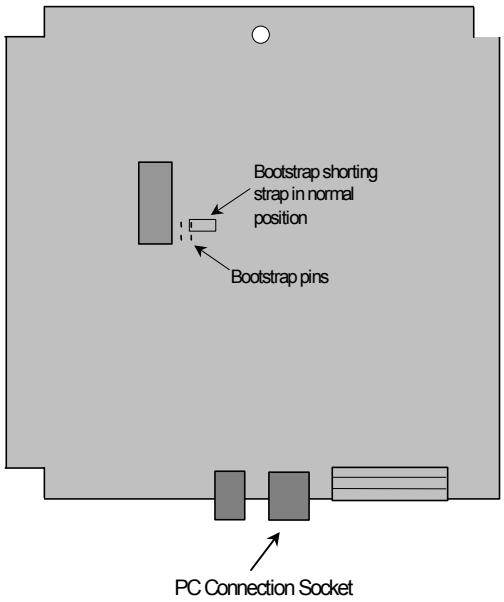
Using Windows CCFP Administration

The CCFP Administration Program

The CCFP Administration program is Version 8. The CCFP Administration program (*see Uploading Flash Software on page 26*) is a Windows program for the on-line editing and management of the live DECT system database.

Programming Connection

Programming requires a PC with a 9-pin D-type serial port or a suitable adapter. For direct PC connection a PC-DCU cable is supplied with each DCU *(see Compact DECT Base Station to PC Programming Cable on page 44)*. Alternatively modems can be used for remote connection *(see Compact DECT Base Station to Modem Programming Cable on page 44)*. Both cable are plugged in to the PC Connection Socket (see below).



For normal CCFP programming, ensure that the bootstrap shorting strap is in the 'normal' position. For flash software uploads (*see page 26*) the shortening strap must be across the two right hand vertical pins, i.e. in the diagram above, remove the strap, turn it clockwise through 90° and replace.

Installing CCFP Admin

The CCFP Admin program is supplied on the IP Office Administration CD, within the DECT folder, as a self-installing program. It is also available from the web site (http://emea-businesspartner.avaya.com.) as a self-extracting file.

Insert the IP Office Administration CD and halt the Autorun. Manually open the CD and, from the DECT folder, open the CCFP Admin. 8.0 folder. Select **Setup** and follow the instruction provided by the Installation Wizard.

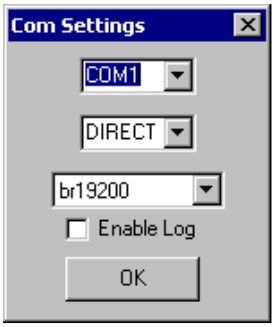
Starting CCFP Admin - Direct Connection

Starting CCFP Administration

1. Ensure that the DECT system is on and that the serial cable is connected to it (*see page 44*).
2. Locate and click on the CCFP Administration icon.
   – Located in **Start | Programs | CCFP Administration.**
   If you receive a message stating that communication between the CCFP and the PC failed, then check the cabling and/or change the COM port settings (see pages 23 and 24 respectively).
3. A start-up display appears. The base of the display shows the current communications settings that will be used to connect with the DECT system.
4. The moving bar across the display allows approximately 10 seconds to change the communication settings (see Changing the Communications Configuration on page 24) before it attempts to make the connection with the DECT system.
5. A configuration display momentarily appears. It will state:
   - 500 system detected
   Ensure that the correct system configuration has been selected.
6. After a caution message, the main **CCFP Administration** screen appears.
   – If the connection is okay, the screen shows handset **Registration** page. The progress indicator at the top-right of the screen shows the progress in copying down the DECT system's settings.
   – If the connection is not okay, the screen shows the **Status** page with a sequence of **---TIMEOUT---** messages. Use **File** | **Exit** to close the program and then check the serial port, serial cable and DECT system.
   – If **Error 5** appears, then another device is using the COM port.

Changing the Communications Configuration

1. Whilst the start-up display is shown, clicking on **Change communications configuration** pauses the startup and display the **Communications Setup** menu.

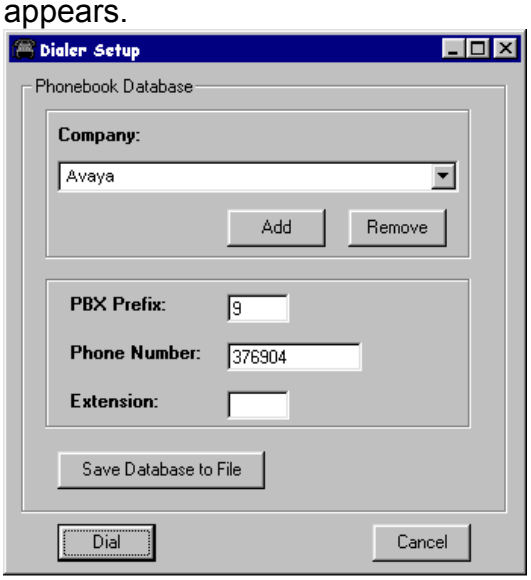


2. Set the **Com.** port to match the serial port of your PC connected to your DECT system (for direct serial cable connection) or modem (for remote modem connection to the DECT system).
3. Set the **Connection:** to the type of connection required, i.e. **Direct**.
4. If you wish to keep a log on communication between the CCFP and the PC, tick the **Enable Log** box.
5. Either accept the default bit rate (19200) or change it to 9600.
6. Click on **OK** to return to the CCFP Administration startup display.
7. If the communication between the DECT and the PC fails, check the cable connection (see 23).

Starting CCFP Admin - Modem Connection

Starting CCFP Administration

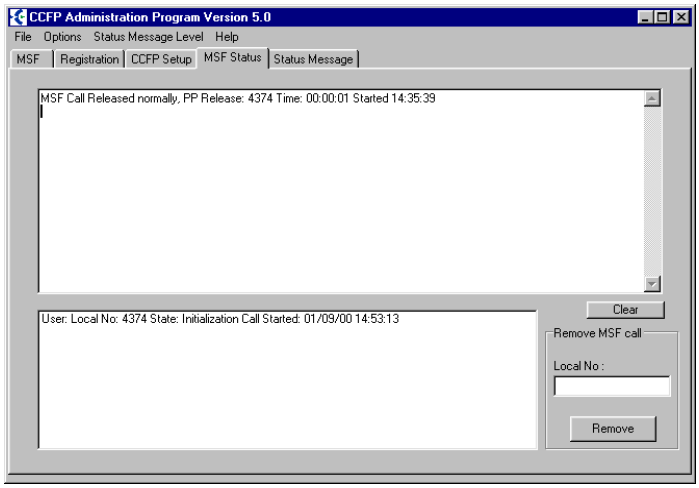
1. Check that your modem is on and connected.
2. Locate and click on the CCFP Administration icon.
   – **Windows 95/NT:** Located in **Start** | **Programs** | **CCFP Administration**.
3. A start-up display appears. The base of the display shows the current communications settings that will be used to connect with the DECT system.
4. The moving bar across the display allows approximately 10 seconds to change the communication settings *(see Changing the Communications Configuration on page 24)* before it attempts to make the connection with the DECT system.
5. A configuration display appears. It will state:
   - 500 System Configuration Detected
   Ensure that the correct system configuration has been selected *(see Changing the Communications Configuration on page 24).*
6. After a caution message, the main **CCFP Administration** screen appears with the Status page displayed.
7. In the Modem control section, select **Dial Number**. **Dialer Setup** appears.



   – Use this menu to select the DECT system you want to dial. Use the **Add** and **Remove** buttons to create and delete entries. If you do make any changes ensure that you select **Save Database to File** to save them.
   – With the Company to which you want to connect displayed, click on **Dial**. The Dialer Setup menu will close.
8. Watch the Receive Status display to check on the modem connection progress.
   – If ***CONNECT*** appears then the modem link has been established and you can start DECT programming by clicking on **Proceed**.
   – If ***CONNECT*** does not appear there is a problem with establishing a modem link that must be checked. Use **File** | **Exit** to close the program and then check the serial port, serial cable and DECT system.
9. After clicking on **Proceed** the screen shows handset **Registration** page. The progress indicator at the top-right of the screen shows the progress in copying down the DECT system's settings.

MSF Status

The **MSF Status** page shows messages coming from the DECT system to handsets. The level of status messages can be altered to show more or less information.



Checking & changing the Status Level

1. Select Status Message Level.
2. To see the current status level select View Curent Status Level.
3. To change the status level select from one of the levels (0-3) displayed.
4. Note that the level resets to Level 0 at the end of any CCFP Administration session.

Status Message

The **Status Message** page will display, in real time, the system activities. E.g. handset subscription, base station handovers and handset connection options, etc. selected previously in MSF Status on page 26.

Uploading Flash Software

Occasionally upgrade software for the Compact DECT may be supplied in the form of a "flash.ktb" file or similar for upload to the system. This upgrade file requires specific 'upload' software. Both of theses are available from the web site (https://emea-businesspartner.avaya.com/index.asp) as a self-extracting files.

To upload software, disconnect the power supply, remove the top cover from the CDBS and set the bootstrap shorting strap to the 'upload' position (*see diagram on page 23*). Restore the power supply and connect, using the serial cable, the CDBS to the PC (*see page 23*).

Note: Uploading new software will cause the system to restart and end any current calls. You must also ensure that any pre-requisites for the new software (such as appropriate hardware and software PCS levels) have been met.

1. From the CCFP menu bar select **Options** and then **Preferences**.
2. Select the **Advanced Options** tab.
   Click on the **Transfer Flash Program to CCFP**.
3. Use the file menu to select the .ktb file to upload.
4. On completion, return the bootstrap shorting strap to the 'normal' position and replace the top cover.

Saving and Loading Files

It is possible to save and load files using the CCFP Administration program. This section details saving settings in plain text file format (.dat and .msf files).

The CCFP program also provides options for saving and loading binary files (.ktb). These are not detailed and should only be used under the guidance of Avaya.

Saving Current Settings (.dat and .msf text files)

1. To save the current system settings select either the **Registration** or **CCFP Status** pages. To save the MSF Messages select the MSF page.
2. Select **File** and then either **Save** or **Save as**.
3. The current settings will be saved in the form of a '.dat' file, the MSF messages as a '.msf' file.

Loading Settings (.dat and .msf text files)

WARNING:
As CCFP Administration is used to edit the live DECT system database, opening a system settings file on the PC will immediately upload those settings to the connected system. Therefore use this option with caution and ensure that the file being opened is correct for that system.

1. To open current system settings select either the **Registration** or **CCFP Status** pages. To open a set of MSF Messages select the **MSF** page.
2. Select **File** and then **Open**.

Printing the Setting

You can use the CCFP program to print a copy of the system settings. The results is a printed copy of the system's .dat file.

1. Select either the **Registration** or **CCFP Status** pages.
2. Select **File** and then **Print** to print or **Print Setup** to select the printer options.

Exiting CCFP Administration

It is important that you exit and close CCFP Administration by using the **File** | **Exit** option from the menu bar only. This ensures proper closing of the serial link, especially on modem connections.

CCFP Options Menus

Introduction

Options has three available choices-

- Preferences
- Debug
- Phonebook
- Impedance Set-up

The last two options are not relevant to IP Office integration and hence are not discussed in this manual.

Preferences

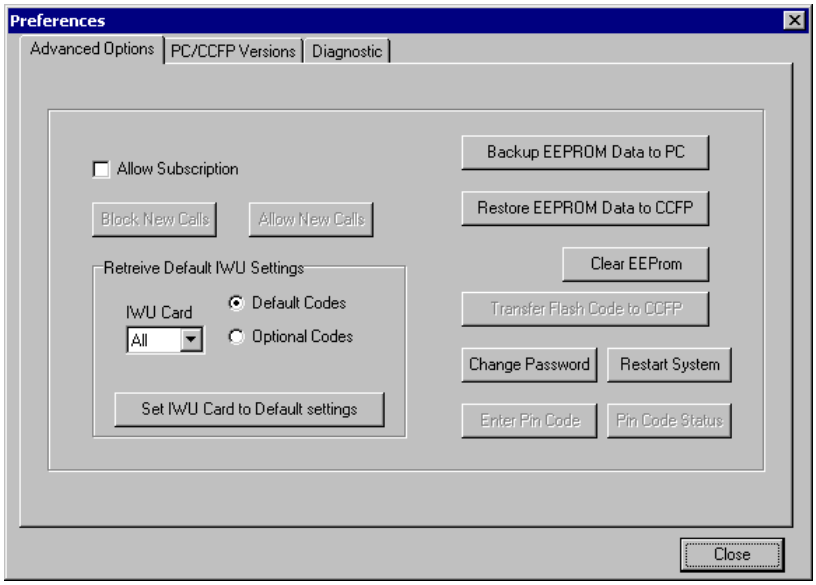
Several functions exist in **Preferences** as follows:

- Advanced Options
- PC/CCFP Version
- Diagnostics.

Advanced Options

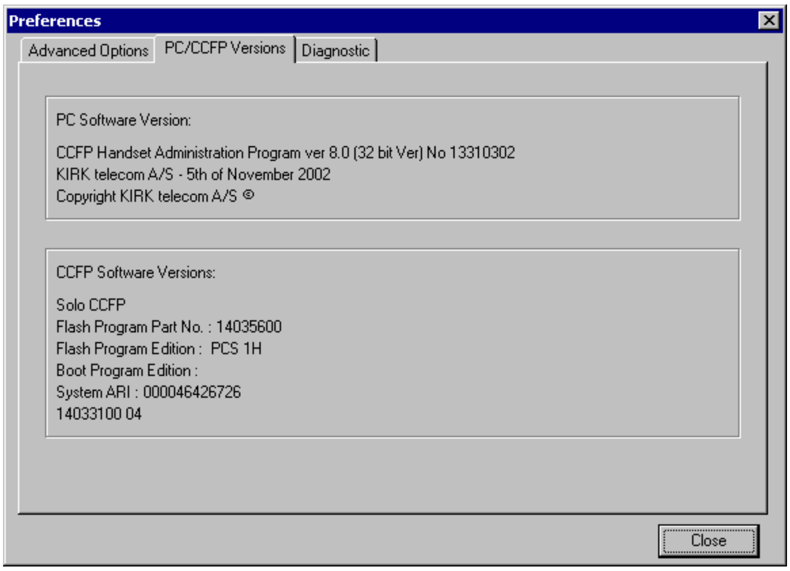
The following options area are available:

- Backup and transfer of the system database and configuration setup.
- Flash software upload.
- Blocking and allowing all calls.
- Password protection for remote access.
- Subscription Request.



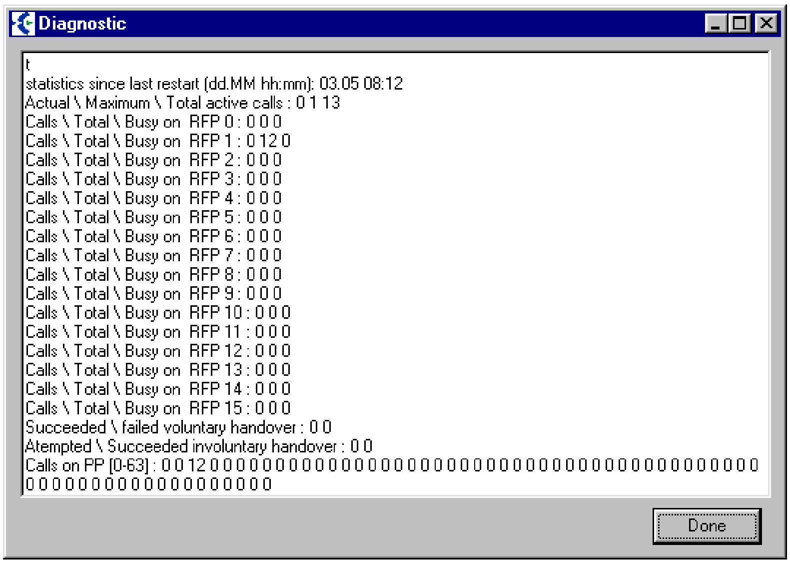
PC/CCFP Version.

This page can show the D.C.U. current operational flash and boot program editions and systems ARI.



Diagnostics.

The CCFP Administration Program V5 has the ability to show as a real time 'snap-shot' of the Base Station Activity. Statistics are built from the last power up or CDBS restart. The CDBS requires the input of the time and date when first fitting on company premises to ensure correct time scales are seen in the event of investigating any problems on site.



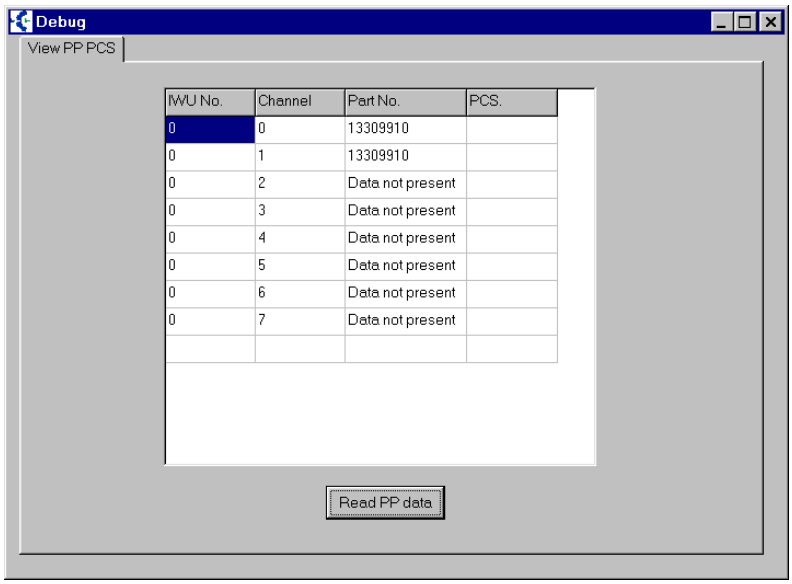
The activity log will be seen in three parts –

- **Calls:** A 'snap-shot' of the real amount of calls associated against the Base Station number.
- **Total:** A 'snap-shot' of the amount of calls that have been received against that Base Station. This will increment by one for every new call AND every Hand-over to that Base Station from another Base Station.
- **Busy on:** A 'snap-shot' if any Base Station has had all Four Channels Busy.

Debug

The Debug Screen offers-

- View DECT Handset PCS tab.
- The PCS of all the connected DECT Handsets.
- View Base Station PCS tab.



INDeX Integration

Overview

The Compact DECT system can be used with most PBX's that provide analogue extension connections. However, when used with the INDeX PBX, the DECT system is able to access a range of additional features.

– **Mobile Twin Numbers:**
Allows DECT handsets to be associated with switch terminals for parallel ringing and diverts.
– **DECT Integration:**
Allows 20DT handsets to display CLI/alpha tagging information from the INDeX PBX and to access the INDeX's directory of system speed dials/extensions.

Mobile Twin Numbers

INDeX Level 7.2+ provides a **Mobile Twin Number** option. This option allows the directory number of a DECT handset to be associated with the directory number of another terminal (e.g. a fixed desk telephone).

The use of **Mobile Twin Number** requires entry of a **Mobile numbers** switch licence on the INDeX.

When used, having a mobile twin number has the following effects:

– Calls to the fixed terminal also cause the DECT handset to ring.
– If either the fixed terminal or DECT handset are busy callers receive busy tone (or follow the fixed terminal's divert on busy if set).

To enable mobile number use:

1. From the **Main Menu** select **System** and then **Switch Licences**.
2. Select **Mobile numbers** and enter the licence key.

To associate a DECT handset with a fixed terminal:

1. From the **Main Menu** select **Terminal** *(Level 7.2+)* or **User** *(Level 8.0+)* and enter the directory number of the fixed extension.
2. Select **Extended functions**.
3. Select **Mobile twin number** and enter the directory number of the DECT handset (this automatically sets the **Mobile twin number** setting of the DECT extension to the fixed terminals directory number).

DECT Integration

Compact DECT Integration works with INDeX Level 8.0+. It allows 20DT handsets (S/W PCS4E) to receive CLI or alpha tagging information from the INDeX (overriding the name entries in the DECT database).

20DT handsets can also access the switch directory index for system speed dials and extensions in a similar fashion to display terminals.

DECT Integration requires entry of a **Mobile Numbers** switch licence with ***Option 1***. It also requires the INDeX and Compact DECT Base Station (CDBS) to be linked via a DECT Integration cable (*see page 44*).

Note: With DECT Integration operating the handsets uses directory names supplied by the INDeX. It is a sensible precaution to still have a User Name, Standby Text, and Presentation Text set in the DECT handset database.

All the programming shown below is performed on the INDeX switch.

A. Enable mobile numbers use with DECT integration:

1. From the **Main Menu** select **System** and then **Switch Licences**.
2. Select **Mobile numbers** and enter the licence key. Ensure that the option field displays ***1***, indicating it is the licence for Mobile Numbers with DECT Integration.

B. Set the two-wire port to DECT operation:

1. From the **Main Menu** select **Terminal** and enter the directory number for a two-wire port connected to the DECT.
2. Select **Port/Type** and set this to **DECT**.
3. Repeat this process for all the INDeX two-wire ports connected to the CDBS.

C. Set the INDeX port speed to 19200:

1. From the **Main Menu** select **System** and then **Ports**.
2. Press **tab** to select the serial port which will be connected to the CDBS.
3. Set the ports speed to **19200**.
4. Connect the integration cable between the CDBS and the INDeX (*see page 44*).

D. Start the DECT Log output:

1. From the **Main Menu** select **Reports** and then **Start/stop Smdr, fault, event logging and DECT**.
2. Press **tab** to select the serial port connected to the CDBS.
3. Select **Start DECT** to start DECT integration. The port shows **DECT (Running)** when operating correctly (you may have to leave and then re-enter the menu).

E. Ensure that the DECT directory numbers are named:

1. Give each DECT extension number a directory name on the INDeX.

IP Office Integration

DECT Integration

The Compact DECT system can be used with most PBX's that provide analogue extension connections. However, when used with IP Office, the Compact DECT system is able to access a range of additional features.

- When a DECT handset is called it will show caller's name (or CLI)*
- When a call is made from a DECT handset (by dialling a number) it will show called name (or CLI)*.
- A DECT handset will display the name only in cases where the calling or called extension/number is in internal/external directory.*
- Call waiting indication is given (both audible and visual) of a call made to a busy DECT handset.*
- The DECT will display a message when a Voicemail is waiting to be collected.*
- A menu is provided on the DECT handset that allows the user to look up entries in the internal and external directories. Entries can be identified by their first letter and entries can be browsed using the > and < DECT handset buttons. You can make a call from the internal or external directory by pressing DECT handset's off hook button. Selected person will be called.
- You can configure the program to make a DECT handset operate as a slave* of an IP Office desktop phone. If you do so, when the desktop telephone is called the associated DECT handset will also ring and show the caller's name. It is possible to answer the call on either phone.
- With a DECT handset as a slave* of a desktop phone you can program the link to share the same mailbox*. Hence, you can pick up the Voice Mail of the master desktop phone from the DECT handset (with or without passcode access).

* **Notes:**
1. A licence key is required for the above functions to be available on IP Office.
2. DECT handsets **must** be sequentially numbered.

Installation Overview

To install DECT Integration software with IP Office the following steps must be performed in sequence:

1. Perform the Site Survey (*see page 6*) and install Compact DECT Base Station (*see page 13*). The Compact DECT Base Station must be permanently connected to the PC.
2. Register each DECT handset using the CCFP Administration program (*see page 15*). The *Local No.* must be the extension number allocated to the analogue port of the IP Office (*see page 35*).
3. Install DECT Configuration software on the PC running IP Office Administration (*see page 35*).
4. DECT configuration must be licenced (*see page 35*) to utilize IP Office integration.
5. Configure, within the IP Office Manager program, each **User** (analogue port allocated to a DECT handset, (*see page 35*).
6. Options:
   - Slave a DECT handset with an IP Office desktop phone (*see page 36*)
   - Set Voicemail pick-up from a DECT handset operating as a slave of a desktop phone (*see page 39*) with or without password protection.
7. On completion, the Voice Mail server **must** be switched on (Programs/IP Office/VoiceMail).

DECT Configuration Software

With the Site Survey performed (*see page 6*), the Base Station installed and all DECT handsets Registered (*see pages 13 and 15*), the IP Office DECT Configuration software can be installed.

DECT Software Installation

The DECT Configuration software is installed from the IP Office Administration CD and can be installed onto any Windows 95 or higher PC. Perform the following:

1. On the PC running on the same TCP/IP LAN as the IP Office control unit, insert the IP Office Administration CD.
2. If the CD Autoruns click **Cancel** and manually open the CD. Select the DECT folder and click on **Setup.**
3. Follow the installation Wizard and when installation is completed, click **Finish.**

IP Office Licences

To install the DECT licence, perform the following:

1. From Start | Programs | IP Office, open the **Manager** application. The default password for Administrator is *Administrator*, however this **must** be changed as early as possible.
2. Open the Configuration Tree (File/Open). The default password for the IP Office configuration is *password*, however this password **must** changed as early as possible.
3. Click on the *Licence* icon and, in the right hand field, right click and select **New**
4. Enter a valid Licence string for the Compact DECT (obtained from your supplier). The DECT Configuration Licences are for 8, 16 or 64 extensions.

IP Office User Configuration

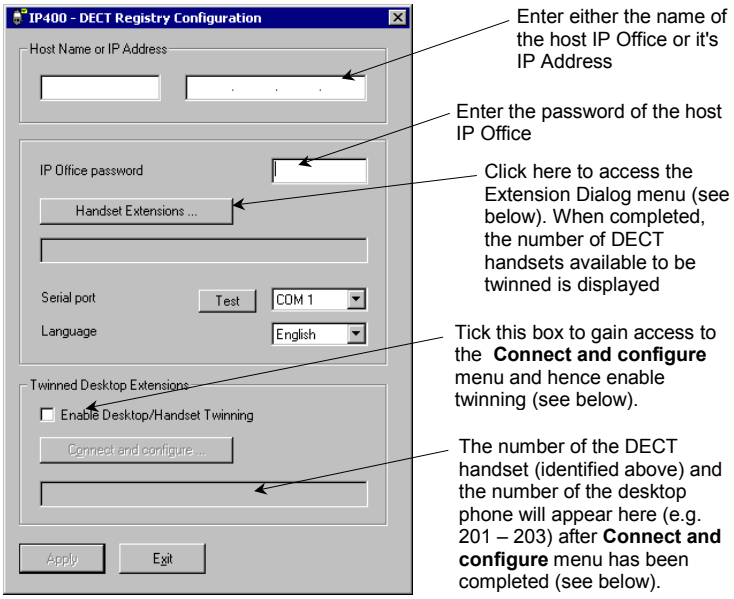
A fixed range of analogue extensions (**Users**) must be allocated to DECT handsets. Each **User** assigned to a DECT handset must be configured and the **Internal** directory set up. Perform the following:

1. From Start | Programs | IP Office, open the **Manager** application. The default password for Administrator is *Administrator*, however this **must** be changed as early as possible.
2. Open the Configuration Tree (File/Open). The default password for the IP Office configuration is *password*, however this password **must** changed as early as possible.
   CAUTION: This password **must always be** entered into the DECT Configuration menu regardless of whether or not the DECT is slaved to a desktop phone (*see page 36*).
3. In the Configuration Tree, open **User** to display all available Users.
4. For each analogue port assigned to a DECT handset, right click in the *User* icon and select **Edit.**
5. In the *User* tab enter both a *Name* and *Full Name.* These names should be unique to each DECT handset and will represent the **Internal** directory.
6. Select the Voicemail tab and ensure that:- When voicemail for the DECT is required that the *Voicemail On* box is ticked.
   - Where voicemail for the DECT or the DECT is to be slave of a desktop phone (*see page 36*), that the *Voicemail On* box is empty.

DECT Handset as a Slave of a Desktop Phone

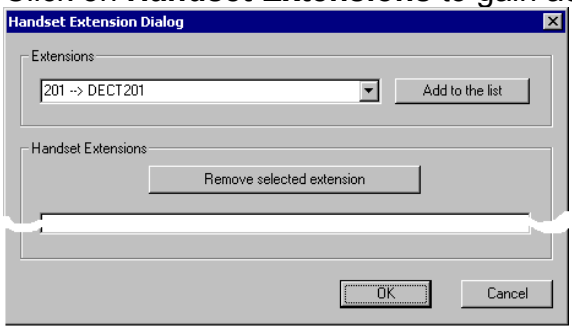
A DECT handset can be made a slave of an IP Office desktop handset. Perform the following:

1. From Start | Programs | IP Office select **DECT Configuration** (the CCFP application must not be runniing).
2. You will be given the option to switch off the DECT service. Select **Yes**.
3. The IP Office DECT Configuration menu is displayed.



The password must be that of the IP Office connected to the DECT.

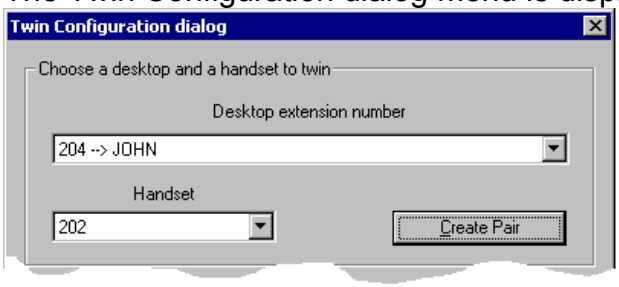
4. Check that either the *Host Name* or *IP Address* is displayed. If not, enter the IP address of the IP Office.
5. Click on **Test**. If communication with the DECT has not been established, check the connection between the PC and the DECT (see pages 23 and 24 respectively).
6. Click on **Handset Extensions** to gain access to:



From the pull down list, select the extensions allocated to DECT (see page 35). Click on **Add to the list** for each entry selected. These will appear in the box below. If you wish to delete an extension from this list, then highlight entry and click **Remove selected extension**. Click **OK** on

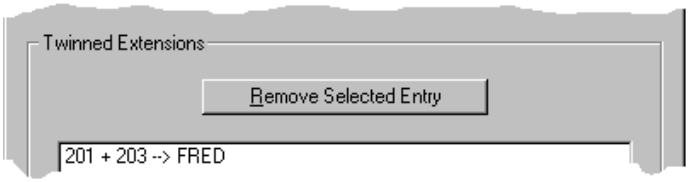
7. Ensure that the *Enable Desktop/Handset Twinning* box is ticked and click on **Connect and configure**.

8. The Twin Configuration dialog menu is displayed.

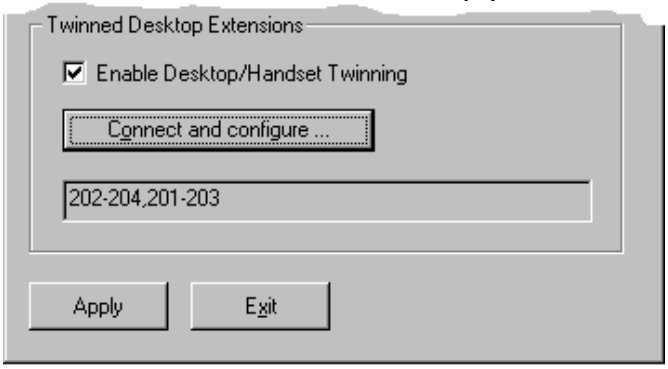


From the *Desktop extension number* pull down options list select the extension number of the master desktop phone. The number of the DECT handset you entered previously in the **Handset Extensions** menu box is displayed first.

9. Click on **Create Pair** and the twinned extensions are displayed.



10. You have the option to **Remove Selected Entry**. Highlight the entry and click on **Remove Selected Entry**.
11. Repeat the procedure for all the master desktop phones that you wish to slave with DECT handsets (remember that the DECT handset numbers will appear in sequential order starting from the numbers entered previously in the **Handset Extension** menu). Click on **OK** when finished.
12. The **Configuration** menu will now look as follows (with DECT handsets 201 and 202 as slaves of desktop phones 203 and 204 respectively):



13. On completion, click **Apply** and then **Exit.**
14. Select **Yes** to start the DECT service.
15. A small icon may appear in the task bar to indicate that the DECT configuration is active.

Call Waiting Indication

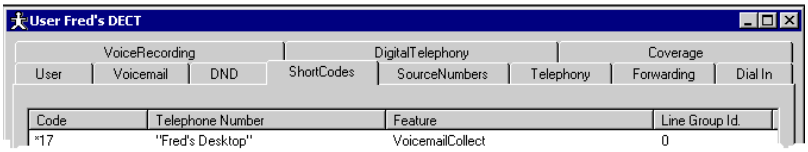
When Call Waiting Indication is required, then **both** the master or slave handsets must have the facility selected. Perform the following:

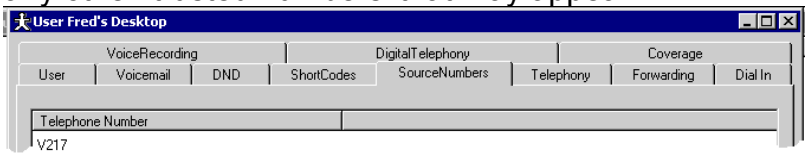
1. On **both** the master and slave handsets, dial ***15**.
   Alternatively, you can set up IP Office remotely by:
2. From Programs/IP Office, open the **Manager** application. The default password for Administrator is *Administrator*, however this **must** be changed as early as possible.
3. Open the Configuration Tree (File/Open). The default password for the IP Office configuration is *password*, however this password **must** changed as early as possible.
4. In the Configuration Tree, open **User** to display all available users.
5. For the analogue port extension number assigned to the slave DECT handset, right click in the *User* icon and select **Edit.**
6. Select the *Telephony* tab and click the **Call Waiting** box. Click **OK**.
7. For the master handset, right click in the *User* icon and select **Edit.**
8. Select the *Telephony* tab and click the **Call Waiting** box. Click **OK**.

Voicemail Pick-up

DECT handsets can be programmed such that the DECT handset can pick-up and listen to a desktop phone's Voicemail. These DECT handset are normally set to be a slave of a desktop phone *(see page 36)*.

Perform the following:

1. Where appropriate, check that the DECT handset is set as a slave of a desktop phone.
2. From Programs/IP Office, open the **Manager** application. The default password for Administrator is *Administrator*, however this **must** be changed as early as possible.
3. Open the Configuration Tree (File/Open). The default password for the IP Office configuration is *password*, however this password **must** changed as early as possible.
4. In the Configuration Tree, open **User** to display all available users.
5. For the analogue port extension number assigned to the slave DECT handset, right click in the *User* icon and select **Edit.**
6. Select the *ShortCodes* tab, right click in the box and select **Add**.
7. Enter *17 (VoiceMail pick-up code) in **Code**,
8. Enter "*name"* (where *name* is the **Name** given to the Desktop phone) in **Telephone Number**).
9. Set **Feature** to *VoicemailCollect* as shown below
10. 

11. Select the *SourceNumbers* tab, right click in the box and select **Delete** (this tab **must not** contain any entries).
12. Click **OK** to finish.
13. For the *User* assigned to the Desktop phone, right click in the *User* icon and select **Edit** and select the *SourceNumber* tab.
14. Where the Desktop phone has been allocated **password protection** for it's voice mailbox, you can either:
15. Permit a 'trusted location' to access the Desktop phone's voice mailbox **without a password.**
    OR
16. Ensure that slaved DECT handsets must **enter a passcode** to access the Desktop phone's voice mailbox.
17. To make the DECT handset a 'trusted location' (e.g. where **no is password required**) right click in the *SourceNumber* box and add Vxxx (where xxx is the extension number of the DECT handset). Do not edit any other 'trusted numbers' that may appear.
    

18. To ensure that the DECT handset **must enter** the Desktop's **password** to access the Desktop's voicemail box, check that the *SourceNumber* box **does not** contain Vxxx (where xxx is the extension number of the DECT handset). Do not edit any other 'trusted numbers' that may appear.
19. Save the configuration by clicking on the disc icon in the menu bar.
20. Ensure that the Voice Mail Server is running; Programs/IP Office/VoiceMail.

System Diagnostics and Testing

Base Stations Signal Checks

The 20DT handsets can be used to check the signal strength and quality being received.

1. With the handset on-hook, dial ***99981*** and press **ENTER**.
2. The handset display should be similar to that shown below.

   RPN: 01 03
   Q52: 52
   RSSI: 64

   – **RPN** is the Base Station number.
   – **Q52** refers to the speech quality (error rate) of the signal received from a Base Station. Only the speech quality of the first available base station is displayed. A value of 52 or greater is acceptable.
   – **RSSI** refers to the signal strength from each base station. A value of 64 or greater is acceptable.
3. Put the handset off-hook, this gives more accurate and realistic survey figures.
4. To clear the display press **<** until you hear a short bleep.

Handset Software Version

The handset can provide details of its internal software version. It is unlikely that you will need these details except if requested by the handset supplier.

1. With the handset on-hook, dial ***99982*** and press **ENTER**.
2. The handset display should be similar to that shown below.

   1329 8100
   SW PCS: 4
3. To clear the display press **MENU** twice.

Battery Condition

The handset can display its battery charge. This appears as a set of eight blocks across the display. Solid blocks indicate charge and empty blocks indicate discharged. If three blocks or less appear then the handset should be recharged.

The battery state can be checked via the **MENU** key options.

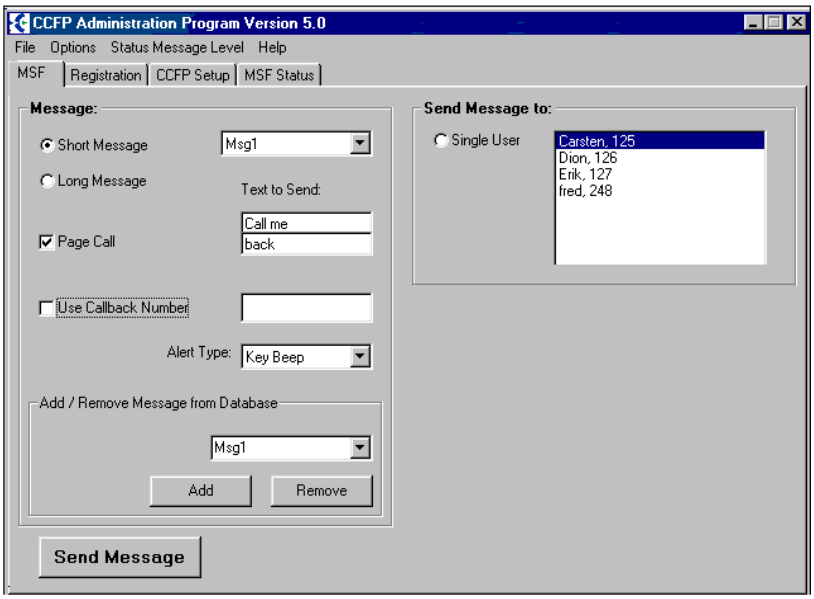
MSF Messages

Overview

Compact DECT systems support the sending of text messages to handsets. This can be done during voice calls without breaking the call and can include page and callback options.

The process of composing and sending messages is controlled by the **MSF** page of CCFP Administration. This page allows you to setup a library of messages. Use the **Message** panel to set up the message(s) and the **Send message to** panel to allocate handsets. On completion click on **Send Message.**

When **MSF** is first accessed a prompt is given which provides the option to download all the DAB user data available to the DECT.



The set of messages are stored as a file on the PC and not on the DECT system on the Compact DECT *(see Saving and Loading Files on page 27)*.

The activity of messages set up on the **MSF** page can be viewed, in real time using the **MSF Status** page (*see MSF Status on page 26*).

Composing Messages

You can use the right-hand side of the MSF page to compose messages.

Adding or removing messages

1. Select either Short Message or Long Message.
2. Use the text box at the base of the page to select an existing message or enter a new message name.
3. Click on Add or Remove.

Editing a message's settings

1. Select either Short Message or Long Message.
2. Use the text box next to the message type to select the message to alter.
3. Change the settings as required.
   - **Text to send**
     This is the text message to display on the handset.
   - **Page Call** *(short messages only)*
     With this option off, the handset user must press Enter after the alert to see the message. When this option is on the message is displayed immediately after the alert.
   - **Use Callback Number** *(short messages with page call on only)*
     When on, the message includes a callback number and when the handset user presses the key, that number is dialled.
   - **Alert Type**
     This option set the ringing/tone used by handsets to indicate the message. Note that the Vibrator option does not work with normal handsets.

Sending Messages

You can use the left-hand side of the MSF page to select the message required and alter its settings if necessary *(see Composing Messages on page 42)*. Once a message has been 'sent', you can check its progress in the Status page *(see MSF Status on page 26)*.

Sending to a single handset

1. Click on **Single user** and in the user list highlight the user name.
2. Click on **Send Message**.

Sending to a group

1. Click on **Group** and select the group name.
2. Click on **Send Message**.

Message Groups

You can use the MSF page to create groups of users to which you can then send the same message.

Creating a group

1. Click on **Group**.
2. In the text box enter a name for the group and then click on the **Add** button below the text box. You can now add and remove members from the group.

Adding members to a group

1. Highlight the user name you want to add in the list at the top of the page.
2. Click on the **Add** button below the list of current member in the group.

Removing members from a group

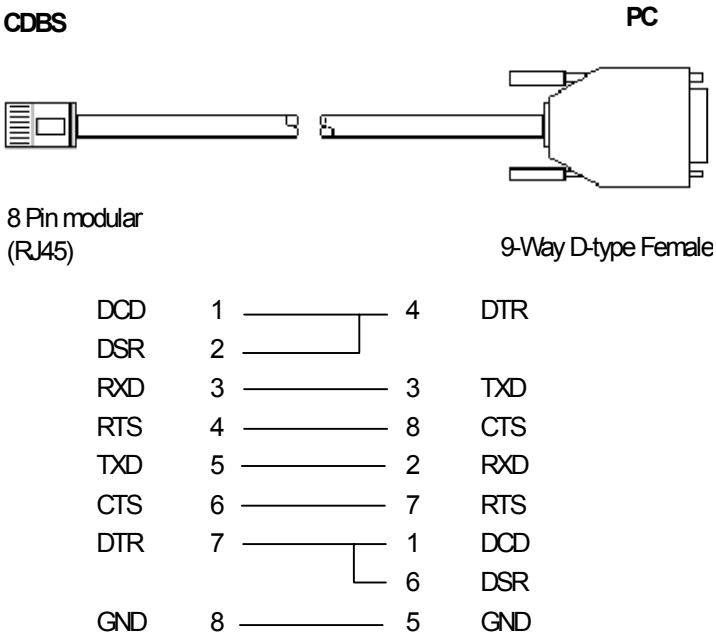
1. Highlight the user name to remove in the list of current group members.
2. Click on the **Remove** button below the list of current members in the group.

Removing a group

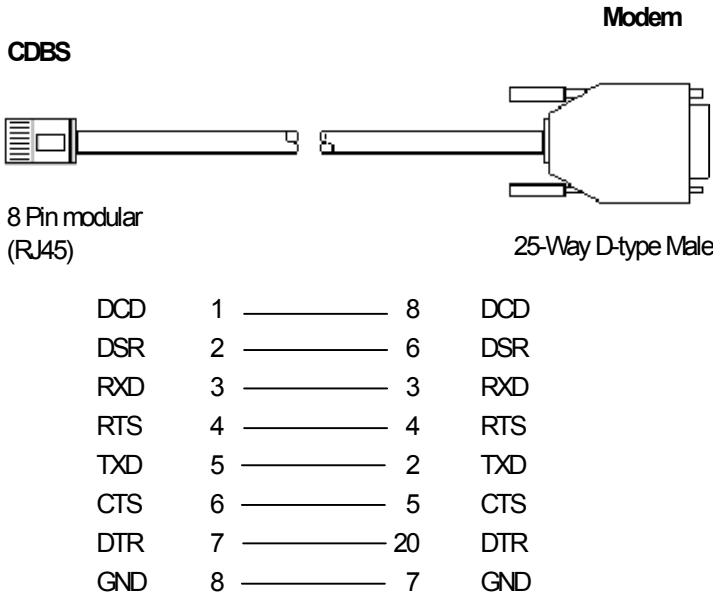
1. Click on **Group** and select the group name.
2. Click on the **Remove** button below the group name.

Compact DECT Cables

Compact DECT Base Station to PC Programming Cable



Compact DECT Base Station to Modem Programming Cable



When using a modem connection, both modem should use the settings below:

- **Baudrate:** 19.2K.
- **Data:** 8 bits.
- **Parity:** None.
- **Stop Bits:** 1.

The remote modem (connected to the cdbs) must be set to Auto-Answer (AT S0=1). The local modem (connected to the PC) must be set to DSR active (AT &S0).

Index

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