

## DECT Deployment and demonstration Tool

*User guide version 1.0*

1. The suitcase with the DECT deployment and demonstration tool is used for two purposes: sales presentation as well as testing when measuring the system's area of coverage. You will find all the necessary units in the suitcase when using the kit for demonstration and deployment. You will have the possibility to present subscription and cancellation of the handset and establish a conversation between the two handsets. When the deployment and demonstration tool is delivered both of the enclosed handsets is subscribed. If the handsets have been cancelled subsequently you must subscribe them again before using the system. Subscription procedure is described later in this user guide.

2. Before setting up the kit you have to ensure that the suitcase contains all necessary parts. The suitcase contains:

- 1 Base station
- 2 Handsets
- 2 Handset desk chargers
- 1 Handset user guide
- 1 Audio Cable
- 1 Wall cord wire
- 1 Headset
- 1 Battery pack for the base station
- 1 CD player
- 1 User guide (this guide)
- 2 Mains adapter for the handsets
- 1 Mains adapter for the base station
- 1 Mains adapter for the battery pack

Power

Before using the handset it is of great importance that you charge the batteries completely. For information regarding charging the handsets, please see the handset user guide.

3. If using the base station for presentation purpose it will only be necessary to connect the power supply. Having the base station used for measuring the area of coverage it would be desirable to connect

an audio signal from the CD player and the battery pack for easy movement of the base station.

Connections to the base station and registration button are shown in figure 1.

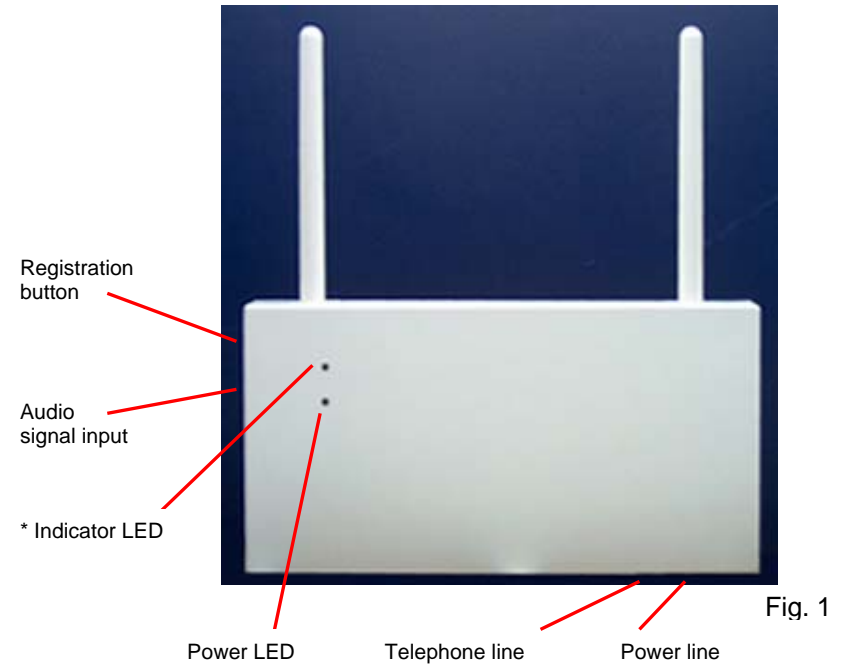


Fig. 1

\* Slow Flash: No telephone line connection  
 Quick flash: pageing  
 Off: On hook  
 On: Off hook

### Telephone line

By use of the enclosed telephone wire you can connect the base station to an ordinary analogue telephone line connection. The line is connected to the jack at the bottom of the base station (connected to the two pins in the middle of the connector)

### Power supply

The power supply is connected to the jack at the bottom of the base station (connected to the pins 6 (-, yellow) and 5 (+, green) within the 6 pins connection – consumption approximately 120 mA).

### Audio signal input

The audio signal input is the audio signal from e.g. a CD player. The signal is forwarded to a handset on off-hook.

### Registration button

If pressed for 3 sec. the base station will send out its park number for 1 minute and subscription will be allowed within this period by giving the right AC key (AC = 12345678). For further information concerning registration, please refer to the handset user guide. Please note that the handsets are registered to the base from the factory.

## 4. Handset operation

Operation of the basic function of the handset is described in the enclosed handset user guide.

Using the kit it is possible to make calls between handsets.

- Press "INT" and you will hear the dialing tone
- Press the number of the other handset (1-8)

## 5. Testing the area of coverage

In order to find the best place for the base stations in the system, the kit is used for measuring the area of coverage of one base station within the building in question.

Start placing the base station at the most desirable place. See fig.3 and fig. 4.

After having placed the base station, you measure the area of coverage. If the test is unsatisfactory you choose another place and

re-start the testing.

### 5.1 Preparation of the base station

Place the base station in the wanted area. Connect the base station to the electrical supply and a telephone line or an audio input from the CD player.

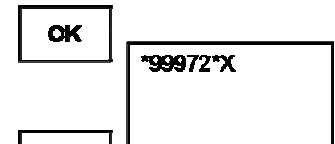
### 5.2 Subscription of handset

The handsets are subscribed to the base station from the factory. If the handsets are not subscribed to the base station follow these instructions:

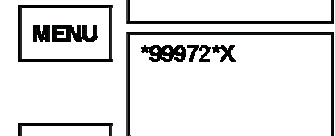
- a. Connect the base station to the electric supply
- b. Switch on the handset

- c. Press \*99972\*x where x corresponds to the wanted handset number (1 – 8)

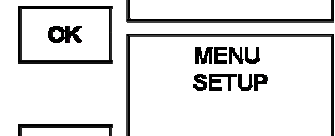
Press **OK**



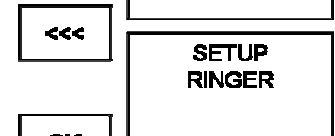
Press **MENU**



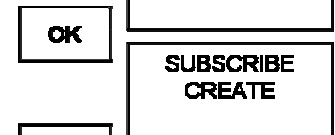
Press **OK**



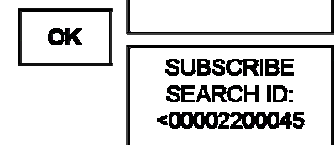
Press **<<<** three times



Press **OK**



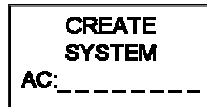
Press **OK**



The handset is now searching for the systems allowing subscription.

Press the registration button of the base station for 3 seconds. The base station sends out its park number for 1 minute to allow subscription. In case there are other systems in the area use the < and > keys for scrolling between the systems IDs. When the system ID (written on the back of the base station) is found, press **OK**

The display shows:



When you select which one of the four different subscription memories this particular handset may be subscribed to you use the < and > keys. Press the AC key (AC = 12345678)

Then press **OK**

If subscription was successful the radio signal symbol (📶) appears in the display, meaning that the handset is subscribed. The symbol is shown as long as the handset is subscribed to a system and there is radio contact.

**Attention!** A short press on the registration button of the base station will start a broadcast ringing on the handset connected to the base station, and the indicator LED will flash quickly.

## 6. Measuring signal strength

Place the base station in the wanted area. Connect the base station to the power supply and the audio source. If the handset is not subscribed to the base station, please refer to the relevant paragraph. If the handset is subscribed it is possible to have information about which base station the handset has been subscribed to and how well the strength and quality of the signal is. For this purpose is used the so-called RSSI menu (Receiving Strength Signal Indication).

Press: **\*99989\* ENTER**

The RSSI menu is shown in the display with information as follows: see fig. 2.

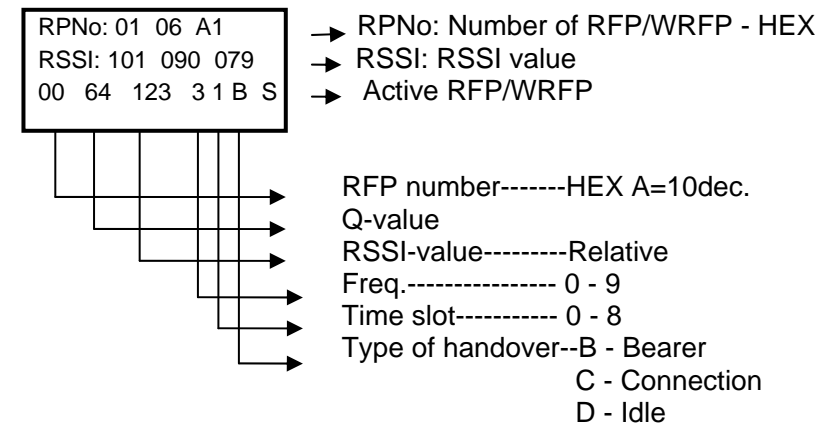


Fig. 2

Alternative base stations are listed according to RSSI values. Measuring radio coverage is done in OFF-HOOK mode.

## 7. Guidelines for deployment

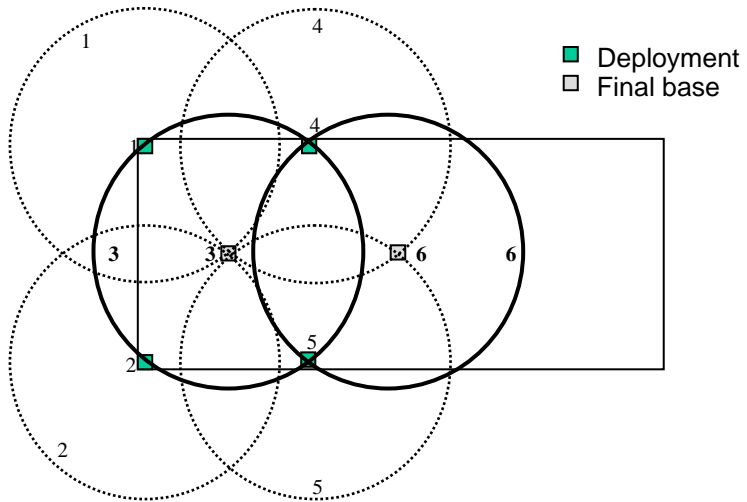


Fig.3

The deployment RFP is used for measuring the placing of the permanent RFP. The permanent RFP should be placed (position 3) in the position in which RSSI 65 is measured and a stable Q52 value, higher than 52, from the deployment RFP in position 1 and 2.

Then the deployment RFP is moved to position 4 and 5, the measuring procedure is repeated and the final RFP is placed in position 6.

If the system is to be expanded later on this can be done according to the same principles.

## 8. Placement in buildings

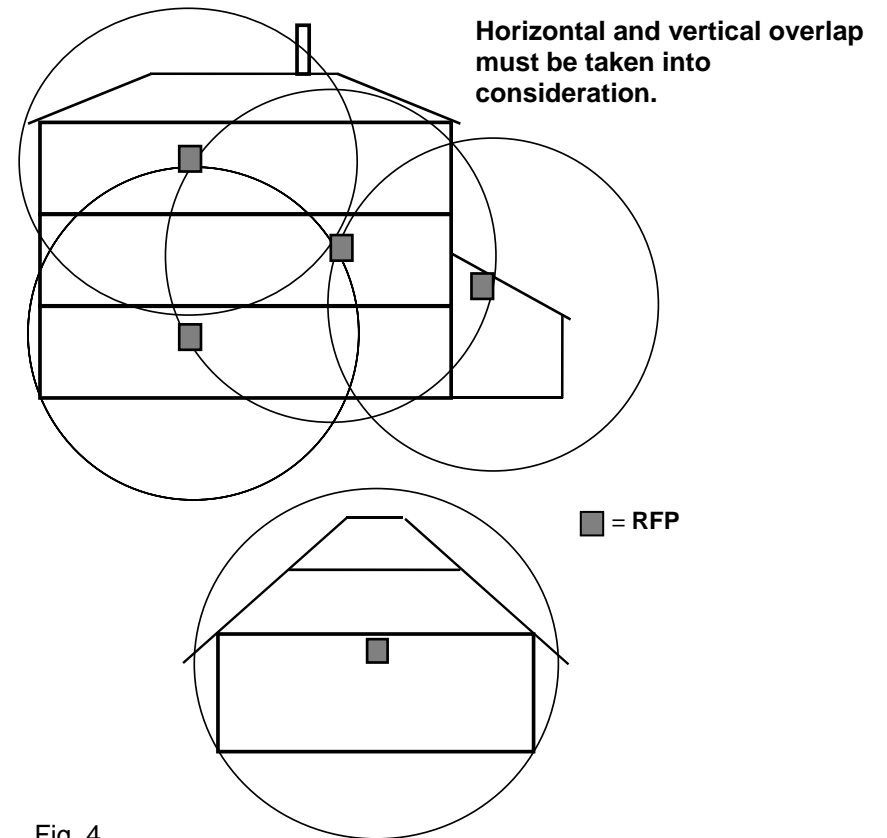


Fig. 4

## 9. Explanation – Overlap

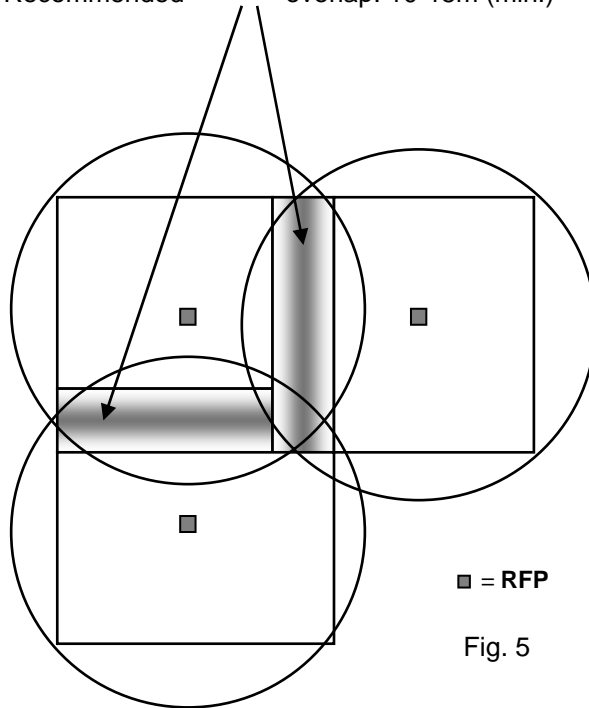
If overlap is not enough – less than 10 m – 15 m there is a risk of losing connection while moving from one area (radio coverage) to another. This is because the handset needs time to scan for an alternative base. If the alternative RFP/WRFP is not found while crossing overlap into another area, handover cannot take place and the connection to the system will be disconnected – ON-HOOK. This situation is similar to – Out of range.

The calculation regarding overlap is based on:  
Walking speed = 3.5 km per hour  
Scanning time = 10 sec.

$$\text{Overlap} = \frac{3500 \text{ m (walking speed)} \times 10 \text{ sec. (scanning time)}}{3600 \text{ (sec. per hour)}}$$

### Overlap between RFP's

Recommended overlap: 10-15m (min.)



## 10. Radio coverage

Measuring radio coverage can be done the following way:

Look at the Q-value and the RSSI-value while moving away from the RFP/WRFP. As soon as the Q-value goes down to 52 or the RSSI-value goes down to 65 the limit of the radio coverage has been reached. During measurement of radio coverage it is important to simulate the influence of the human body. This can be done either by shielding the antenna by the hand or by turning the handset and the body in a way to achieve a “worst case” situation for reception of the radio signal from a given base station. In both situations it is important that the Q-value and the RSSI-value is stable and not fluctuating. Measuring radio coverage is done in Off-Hook mode.

### Q-52

The Q-value is a relative expression for the bit failure rate in the communication between the RFP and the handset. As soon as the Q-value goes down to 52 the handset will ask for handover to the alternative RFP.

### RSSI

The RSSI-value is a relative expression for the field strength – signal from the RFP. The RSSI-value is only used for the choice of the alternative RFP. The handset will choose the RFP in the area from which the strongest RSSI signal is received as the alternative RFP.

### Shadows

Be aware that “shadows” created by parts of the building can cause spots where no radio signals can be received at all.

### Weather conditions and seasons of the year

Different weather conditions may have influence regarding radio coverage. When parts of the building gets wet these part can act as a shield.

Different seasons of the year can also have an influence regarding radio coverage. As soon as leaves on trees etc. are present, the radio coverage changes as a result of shielding created by growth of trees.

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