

Supplementary DECT Information

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This document is intended for use by dealers and installers. It is aimed to give more understanding with regards to DECT applications and assists in the siting of S0 Base units and repeaters. It is strongly suggested to follow this document before any DECT installation will commence.

DECT Base Unit

DECT S0-Base *plus*

The AGFEO DECT S0-Base *plus* is a DECT transceiver which can be installed away from the telephone system at the most suitable location to achieve maximum coverage. Connection between the DECT transceiver and the telephone system is via up to two internal S0 Busses. The maximum number of handsets registered to a DECT S0-Base *plus* is eight of which four can have a simultaneous conversation.



Note:

The DECT S0-Base *plus* **can not** be used on its own but only in connection with any AGFEO Telephone System with an internal S0-Bus from firmware 6.0.

Mobile Handset

Following handsets are available:

- DECT 30
- System Headset 9120



System Headset 9120 (from Firmware 6.2)

The System Headset will not be connected like a standard telephone, but directly registered to the DECT Base unit as a „DECT Headset“. It will have its own extension number and therefore can be treated and called like any other extension connected to the telephone system.

	Extn. No.	Phone Type
DECT Headset 1	DECT HeadSet (101)	DECT Headset

A call will be answered directly by pressing the button on the System Headset 9120. Outgoing calls can be dialled via the PC with CTI-Software (i. e. TK Suite Client or also via TAPI from Outlook). A number can also be dialled for the headset directly from a System Phone. However, a button „Remote Dial“ would have to be programmed for the relevant system phone.



Note:

From **Firmware 7.1** it is possible to allocate the System Headset 9120 directly to System Phone. Both devices will have the same extension number and be treated as one single extension within the telephone system. This will enable the user to switch between headset and system phone and vice versa. Therefore, a System Headset will no longer appear in the programming tool as a standalone extension. A call to the system phone will also ring the associated headset – without having been entered in the call distribution table.



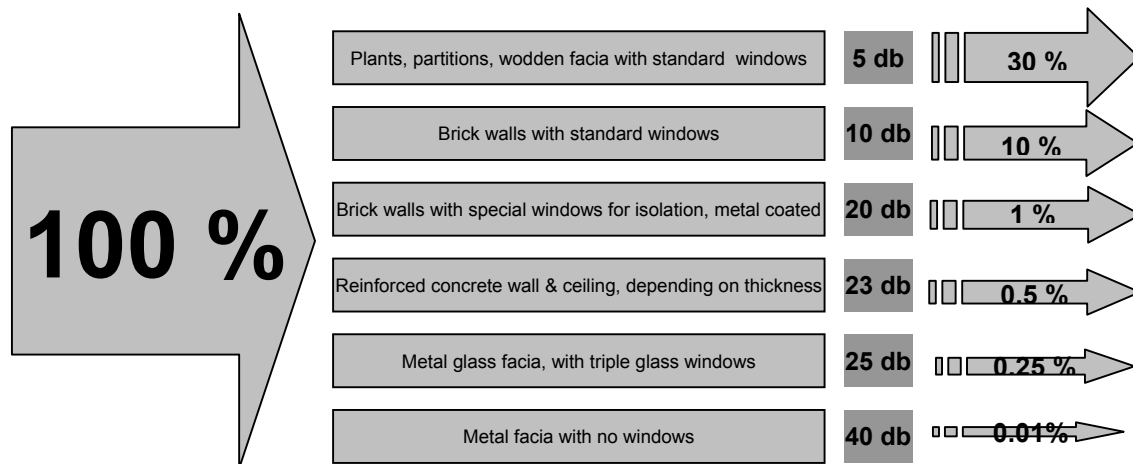
System Functions

The professional DECT 30 cordless handset will offer the following selected features:

- Easy access to the central Telephone Book
- Caller ID (CLIP) see who is calling before you answer
- Programmable Function Buttons
- CTI-Utilisation (TAPI, TK Suite Client etc.)
- Global Call Log
- Remote Dial without pressing Call Button
- BLF for Busy Lines and Extensions
- Message received notification from Answering Machine Module
- Missed Call Log
- Programmable Charging Cradle Event Manager
- Independent Phone Book
- Headset Connection
- Vibration Alert
- Auto Answer Mode
- *Signal Strength Metering Mode (Engineering)*

DECT Signal Suppression

The transmission of a radio signal is subject to physical factors and conditions of the surrounding area. Site specific conditions will greatly affect the DECT coverage of the installation.



The range will greatly depend on the siting of the DECT Base *plus* unit within its surrounding area. Obstacles between the transceiver and DECT handset will affect the overall performance and reduce the range of the unit. For this reason it is strongly suggested to carry out a site survey and a DECT transmission metering (see below) before commencing any installation. Only then can a satisfactory operation be guaranteed.

Radio waves will be affected by the following:

Reinforced Concrete, Plasterboard, Wooden Frameworks, Metal Coated Glass in Windows, Aluminium Foils use by insulation materials and underfloor heating.

It should also be taken into consideration that radio waves will be reflected as a direct result of the above materials.

Expanding the Coverage Area (using Repeaters)

The range of the DECT S0 Base can be expanded by using repeaters. The maximum number of repeaters which can be connected to a DECT S0 Base is six. Repeaters can not only be installed in a circular arrangement around the Base unit but also be cascaded in a line. In the latter and in theory distances of up to 1 km can be covered. For the cascading installation of repeaters a special „DECT-Cascade-Tool“ will be required which will contain special hard and software.

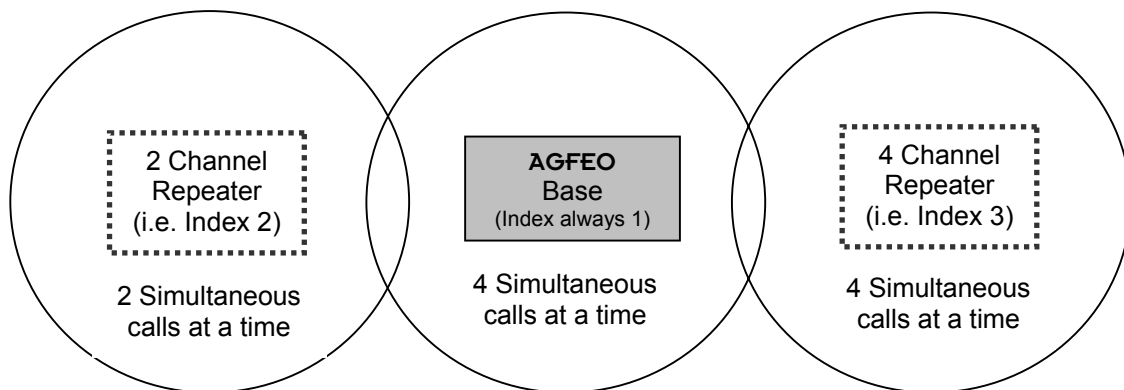
Repeater Information and Transmitter Index Numbers

There are two different versions of repeaters available. One is a two channel repeater. This means that 2 simultaneous conversation can be conducted when in range of this type of repeater. The other model is a 4 channel repeater and like the DECT S0-Base *plus* offers 4 simultaneous calls to take place when within range of this type of transmitter. Consideration should also be given to the distribution of incoming calls. This means that no other handset within the same 2 channel repeater coverage area can be called if 2 handsets are already engaged on a call.

Index Allocation

Every DECT transmitter (Base or Repeater) will be allocated an “INDEX” number. DECT Base transmitters will always have the Index Number “1”. On the installation of further transmitters (repeaters) an unused index number must be allocated to each repeater at the time of registration. As up to 6 repeaters may be registered to a base unit the index numbers which can be freely allocated are in the range from 2 to 7. The index “1” must not be used as this is exclusively for use by the base unit. Also identical index numbers must not be allocated to transmitters registered to the same base unit.

An ideal DECT installation should look like this.



The repeaters should be installed around the DECT Base transmitter with a minimum overlapping area. The DECT Base unit should be installed central to the covering area required.

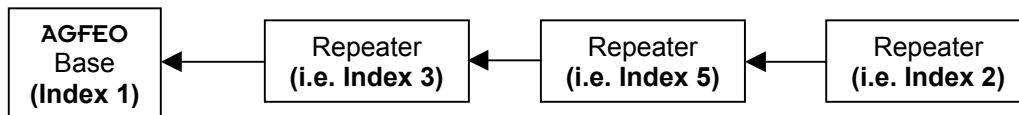
Call Handover

Calls which are started in one cell can still be continued when moving into another cell of a repeater which is registered to the same base unit at which the call started. The call will automatically be handed over to the other cell.

The handover of calls from one base unit to another (Multi Cell Operation) will be implemented with an upcoming new firmware release.

Cascading Repeaters

With the use of the optional available "DECT Cascade-Tool" which consists of hard- and software, it is possible to cascade repeaters to each other. Up to a maximum of three repeaters can be connected in this way. With this type of arrangement the last repeater will have to be registered to the immediate repeater in front. This will be achieved by the allocation of index numbers. Greater distances can be covered with this type of installation.

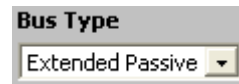


In the example above the repeater with the index 3 will be registered to the base with the index 1. The other repeaters must be programmed with the optional "DECT Cascade-Tool". With this the repeater 5 will be registered to the repeater 3 and the repeater 2 will be registered to the repeater 5.

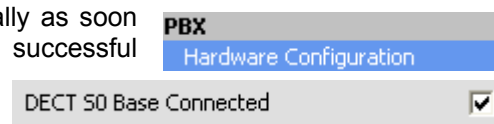
Installation and Commissioning

The DECT S0-Base *plus* can only be connected to AGFEO Telephone Systems from firmware 6.0 or higher. A DECT S0 Base will have an index "1" allocated to it.

Should the DECT S0 Base *plus* be connected to only one S0-Bus of the telephone system, then this must always be to the first port of the DECT S0 Base unit. Port one of the S0-Base unit is used for power and synchronisation with the telephone system. The DECT S0 Base unit can be installed of up to 800 metres away from the telephone system. However, in such cases the S0-Bus installation must be carried out in a Point-to-Point wiring. The external power supply is to be used for any S0-Bus installation which will exceed 130 metres.



The registration to the telephone system will be automatically as soon as one S0-Bus is connected to the DECT S0-Base. On successful registration the red LED on the DECT S0-Base will be lit and also appear in a new sub menu in the "System-Configuration-Tool".



	Connected to S0 Busses		Name	RFPI	Firmware
DECT S0 Base 1	2 S0 bus 3 Internal	Active	Main Office	000252156001	2.4b
	-	Inactive		Delete	

The above screenshot shows that the DECT S0-Base is connected to one S0-Bus of an AGFEO telephone system. The position of the Bus module is in Slot 2 of the telephone system of which the third S0 bus is connected to the base unit. You may want to enter a name in the name column by which the base unit can be identified.

The column RFPI (Radio Fixed Part Identity) displays the unique identification number of the base unit. This will be the same as printed on the product label of the unit itself. The base unit can be deregistered from the system by pressing the "Delete" button in the RFPI column. The DECT S0-Base *plus* has its own operating system of which the level of firmware will be shown in the column "Firmware".

Meter Mode DECT 30

As mentioned earlier it is strongly suggested to carry out a site survey and measure the signal strength of the DECT Base unit. This is the only way to find a suitable location for the installation of the base unit and to establish if any repeaters may be required. In addition measuring the signal strength will ensure a reliable radio connection to the relevant handsets.

DECT 30 handsets have an integrated signal strength meter which can be used to evaluate site conditions and establish signal quality in the required areas.

To display the meter mode on the DECT 30 enter *99989*OK on the handset.

The last line in the display area will contain the information required. This line will show the transmitter which the handset is currently logged onto and associated parameters. In the example (picture of DECT 30 display, right) the handset is logged onto a transmitter with the index "02". The radio signal is received with a quality of "64" and a strength of "98". A repeater must not be installed where the signal quality is below 60 (max. 64) and the signal strength below 80 (max. 100, displayed as :0). Values below this will impair signal quality and cause the handset trying to change channel or log onto another transmitter. The last value in the display is the currently used radio channel, in this example it is 94B.



RPN displays another but weaker transmitter received at the same time, whereby RSS shows the signal strength of this. In the above example another transmitter with the index "01" (a base unit) is also being received. The shown signal strength of 93 is more than sufficient. Therefore, the transmitter with the index "02" (repeater) would not be required at this location and should be moved further away from the base unit.

Warehouse	Workshop
02 64 88	03 64 95
01 50 67	02 60 80
	01 45 60
Repeater 02	Repeater 03
	Office
	03 60 90
	01 55 78
Base 01	

Measure all rooms in which communication by DECT is required and prepare a list giving information of the measured values and then install the transmitters accordingly.

To return the DECT 30 to normal operation, press the "<" button for more than 2 seconds, or switch the handset off and on again.

Meter Mode DECT S0 Base

The DECT S0 Base unit can also be switched to a test mode which will assist in finding the most appropriate location for the installation of the base unit.

It is suggested before the transmitter is finally connected to an S0 Bus and installed at the intended location to check that the required areas will be covered. This test does not require a permanent connection between base and telephone system. Initially the telephone system is required to switch the transmitter into test mode after which the S0 bus cable can be unplugged from the base unit. The supplied plug in power supply once connected will power up the unit into test mode. The base unit will remain in this mode every time the power supply is plugged in. All handsets will display the metered

values received. In addition a continuous test tone will be transmitted to check that the audible signal is stable.

Initialise this test by provisionally connecting the DECT S0 Base *plus* via an S0 Bus to the telephone system and register all required repeaters and at least one handset. The test mode can be enabled from any telephone connected to the telephone system by entering the following program command:

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*705
*73852 11 6   for the first DECT S0 Base (Displayed as "Base 1" in TK-Set Programming Tool)
*73852 12 6   for a second DECT S0 Base, if applicable
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The base unit can now be disconnected from the telephone system. As soon as power is applied to the S0 Base unit both of the outer LED's will start flashing after a few seconds, the unit is now in test mode. The base unit will stay in mode until it is reconnected to an internal S0 Bus of the telephone system. Use the DECT 30 handset, switch this to metering mode and find the most suitable location for the DECT S0 Base and associated repeaters to be installed. The transmitters should only be installed at their final intended location after this test has been successfully completed. The DECT S0 Base will return to normal operation as soon as this is reconnected to the telephone system.

DECT / GAP Compatibility:

The AGFEO DECT application is GAP compatible. Any GAP compatible handset from other manufacturers such as the Siemens GigaSet may also be registered but will not offer all systems features available. Most likely the Siemens GigaSet handset will only have access and display the central telephone book of the telephone system. The intern button will have to be pressed once for system status and twice for the system phone book.

Understandably AGFEO is unable to guarantee functions and features of third party equipment used. Should customers require all available features and function, then an AGFEO DECT 30 handset would have to be utilised. It is **not** recommended to operate the AGFEO DECT 15 or the AGFEO DECT 25 cordless phones with the DECT S0 Base unit.

Registration of DECT Handsets

A PIN number is required to register any DECT handset to the system. This ensures the correct allocation of handsets and offers additional security against unauthorised access or handset registration. AGFEO is using the system default PIN 2580. Please check the validity of this PIN before trying to register a handset to the system. The registration of a mobile handset will be initiated from the menu of a system phone (SET 9#7) or via a program sequence from an analogue extension (*7893 mm,n mm=11-14 = Base 1-4, n=0 off, n=1 mobile handset, n=2 Headset).

Service Code	2580
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CTI / TAPI Utilisation with DECT

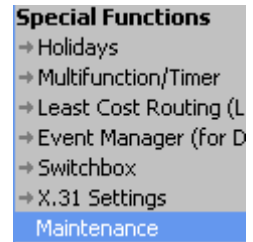
All registered handset can be operated from an associated PC via the supported CTI interface and TAPI utilisation. The setup is via the AGFEO TAPI Driver in exactly the same way as for any other standard device.

In connection with the above AGFEO DECT 30 handsets will support an automatic "call initialisation process" and therefore offer a comfortable cordless CTI work station.

Update of DECT S0 Bases

DECT Base units have their own firmware which can be flash updated. The currently installed version can be displayed at any time on any system phone via the system menu or pressing (SET 9# 7 3 1).

A firmware update can be initiated via the telephone by calling the "Update Server". Therefore firmware updates for base units are mostly an automated process. Before requesting an update please check via the "TK Suite Configuration Toll" that the service telephone number is entered correctly in the section "Maintenance".



Number Of Update Server

The firmware update of DECT Bases can be carried out via the system menu from any corded system phone. Start the firmware update by pressing "SET 9 # 7 3 2" from a connected system phone and follow the instructions as displayed.

On average the update will take approx. 2 – 3 minutes after which the base unit will restart with the new firmware.

Check again the current firmware level of the base unit by pressing "SET 9 # 7 3 1". Once the level of firmware is displayed, pressing the # button will give further information regarding the last upgrade.

DECT 30 Accessories

An optional belt clip and leather case are available.



Any compatible headset can be connected to the DECT 30 handset. For further information please contact the various headset manufacturers directly.

See also:

www.plantronics.com
www.gnnetcom.com