
Meridian 1 and Succession Communication Server for Enterprise 1000

DECT

Overview

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Revision history

July 2002

Standard, Release 5.00. This document has been up-issued to include content changes and to reflect support for Succession Communication Server for Enterprise (CSE) 1000.

June 2001

Standard, Release 4.00. This version introduces information about DMC8, and OTM DECT Manager. This version excludes retired DMC equipment, associated parts, and DECT Manager (for Windows) in compliance with Product Bulletin PBME484, and Product Bulletin PBCE71. This version introduces a new document title *Meridian/Succession Companion DECT* and the NTP number 553-3601-103.

March 2000

Standard, Release 3.00. This version introduces information about: Companion Alarms Response System, Concentration traffic, DECT C4010 handset, C4010 Ex handset, C4020 handset, DECT, and MSMN description.

July 1999

Standard, Release 2.00. This version introduces information about: DECT Manager enhancements to the DECT Manager Connections, User Administration, Login Module, System Parameter files, and DMC addressing; the C4610 base station, and the C4010 handset. This version also introduces changes that improve the on-line and printed document.

June 1998

Standard, Release 1.00. The first release of the *Meridian Companion DECT Overview*.

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About this guide

This document is a global document. Contact your system supplier or your Nortel Networks representative to verify that the hardware and software described are supported in your area.

Target audience

The Meridian Companion DECT Overview guide provides information for sales representatives, planners, installers, site maintenance personnel and administrators.

Identifying Nortel Networks PBX systems

The following systems are referred to in this guide as large systems:

- Option 51
- Option 61
- Option 71
- Option 81
- Option 51C
- Option 61C
- Option 81C

The following systems are referred to as small systems.

- Option 11
- Option 11E
- Option 11C

- Option 11C Mini
- Succession Communication Server for Enterprise 1000

Call out boxes



CAUTION: Data loss

This symbol alerts you to a procedure that can result in a loss of data.



CAUTION: Equipment damage

This symbol alerts you to a procedure that can result in equipment damage.



CAUTION: Electrostatic sensitive device

This symbol alerts you to a procedure that can result in equipment damage due to ElectroStatic Discharge (ESD).



CAUTION: Service interruption

This symbol alerts you to a procedure that can result in an interruption of service.



DANGER: Electric shock

This symbol alerts you to the risk of a serious injury, or death, caused by an electric shock.



DANGER: Serious injury

This symbol alerts you to the risk of a serious injury, or death, caused by an immediate hazard.



WARNING: Personal injury

This symbol warns you to the risk of a minor or moderate injury caused by an immediate hazard.

DECT

Contents

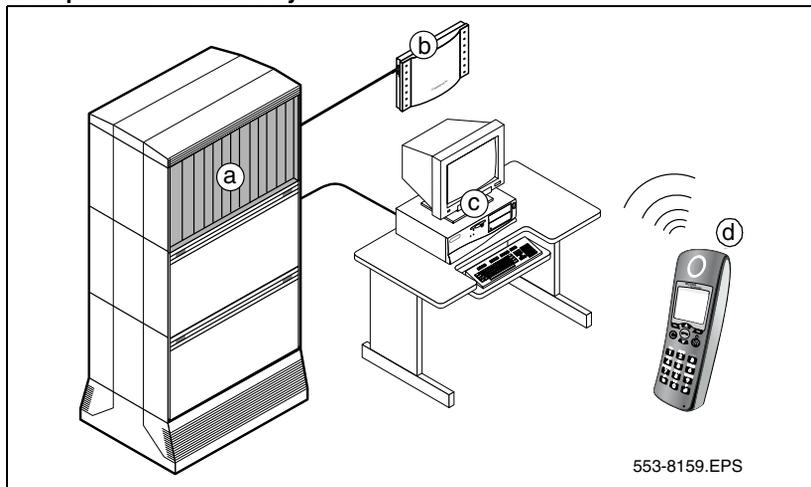
This chapter contains information on the following topics:

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Introduction

The DECT system allows users to move freely about their work sites while conducting telephone conversations using wireless handsets. DECT is an acronym for Digital Enhanced Cordless Telecommunications.

Figure 1
Main parts of the DECT system

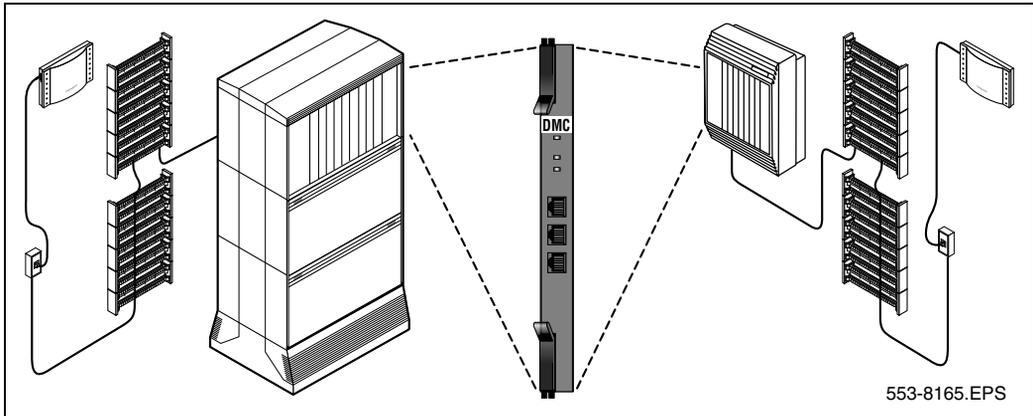


The DECT system is in a large system IPE shelf or a small system cabinet/chassis. The DECT system has four main components:

- a. DECT mobility cards
- b. base station
- c. Optivity Telephony Manager (OTM) with DECT application
- d. handsets

DECT Mobility Card (DMC8)

Figure 2
DECT Mobility Card



The NTCW00AB DMC8 DECT Mobility Card provides an interface between the large system or small system and the base stations.

A DMC8 card supports up to eight base stations.

The DECT system supports a mix of DMC and DMC8 cards. (The DMC card is a retired card that is no longer available.)

All DMC8s support a Point-to-Point Protocol (PPP) connection to the DECT Manager with an NTCW12DA cable. The DMC8 card requires a NTCW25AA DECT Manager Ethernet (DME) daughterboard installed to support an Ethernet connection.

Each DMC8 card is programmed in the large system and small system database using LD 10.

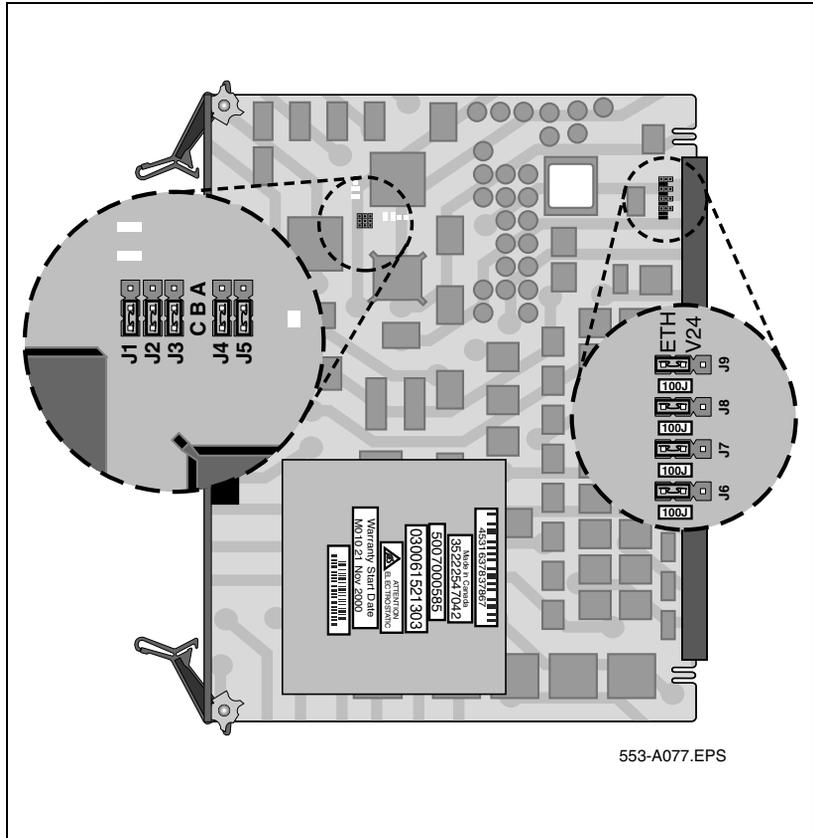
The DMC8s are interconnected by faceplate cables, allowing them to pass information to each other.

DMC8s must be in an IPE shelf in a large system or in a small system cabinet/chassis.

There is no call switching in the DMC8 card. All call switching occurs within the large system and small system.

DECT Mobility Card options

Figure 3
DMC8 options



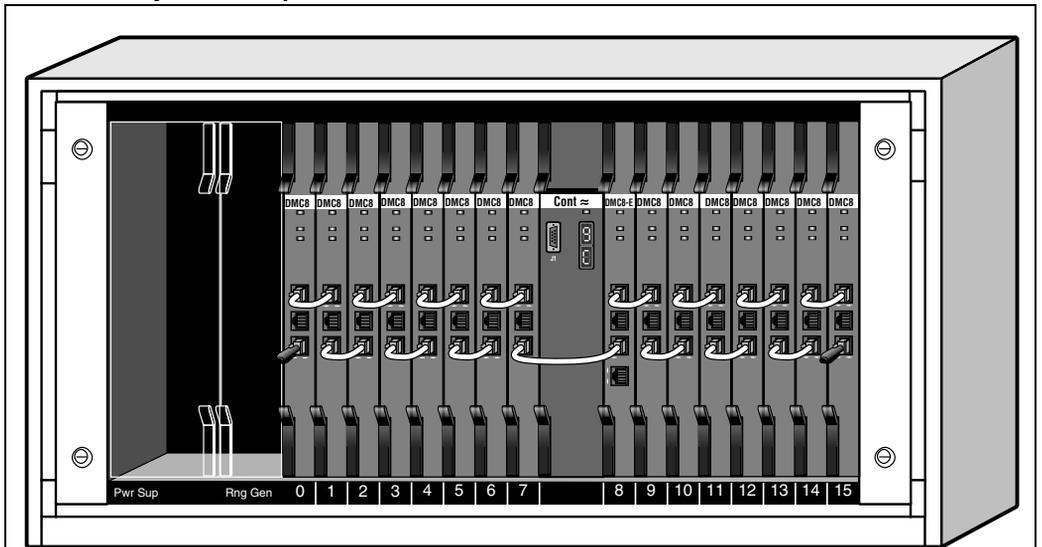
The component side of the DMC8 contains jumpers J1, J2, and J3. The jumpers indicate card status as follows:

- J1 for pre Release 23 software or post Release 23 software

- J2 for a card installed in either a small system or large system
- J3 for a card installed in either DECT shelf 0 or DECT shelf 1
- J6 to J9 which select either a V.24 connection or an Ethernet connection for the OTM DECT Manager. This allows I/O panel connections to support eight signals (four V.24 or four Ethernet).

DECT Mobility Card – Expander (DMC8-E)

Figure 4
DECT Mobility Card – Expander



The NTCW01AB DMC8-E DECT Mobility Card-Expander provides the same functions as a DMC card.

The DMC8-E has additional circuitry required to regenerate faceplate cable signals when a system contains more than eight DMC8s. The DMC8-E connects two shelves or cabinets in a DECT system.

If the DMC8-E is used in an IPE module, it must be located in card slot 8. If the DMC-E is used in an small system cabinet/chassis, it must be located in card slot 9, 19 or 29.

Do not install a DMC8 in slot 8 of an IPE module. Do not install a DMC8 in slot 9, 19 or 29 of a small system cabinet/chassis.

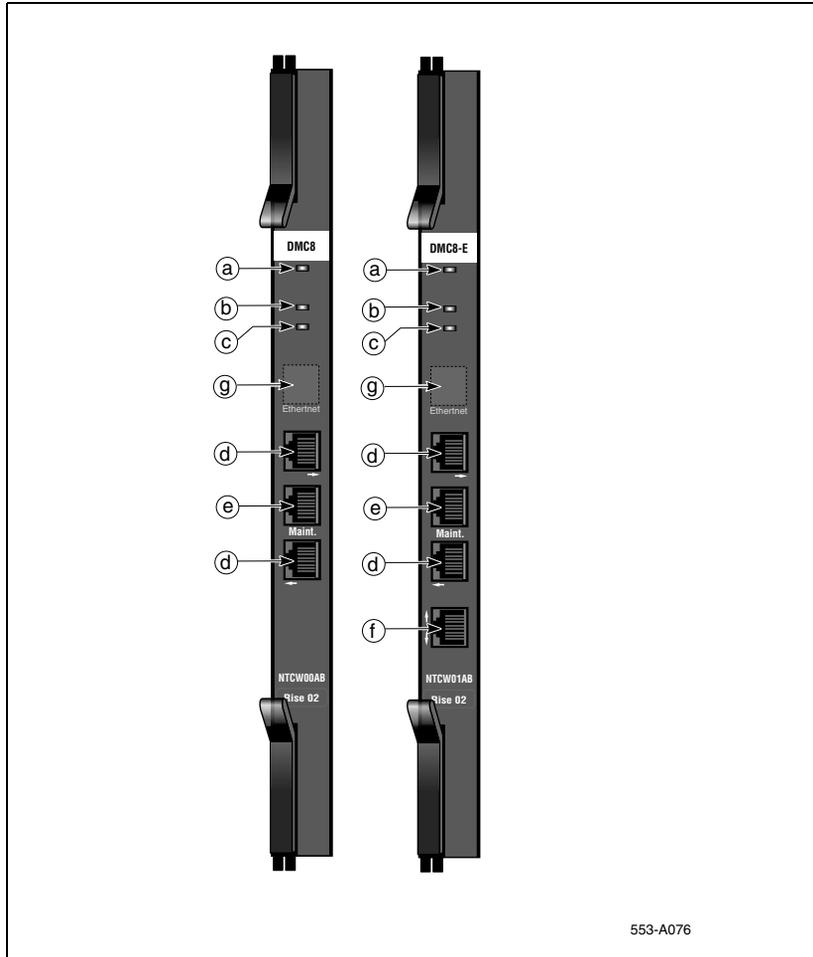
An NTCW25AA DME daughterboard is required to provide Ethernet OTM access. The daughterboard is also required to enable DECT Messaging. The DME daughterboard is not required for serial OTM access. Only one DME daughterboard is required per system.

DMC8 and DMC8-E faceplate features

Figure 5 on page 21 shows the following DMC8 and DMC8-E faceplate features:

- a.** red LED (indicates the same status as all IPE cards)
- b.** yellow LED (indicates DECT sub-system status)
- c.** green LED (indicates DECT sub-system status)
- d.** DMC8 to DMC8 faceplate cable port
- e.** DMC8 bypass faceplate cable port
- f.** DMC8-E to DMC8-E faceplate cable port
- g.** for future use

Figure 5
DMC8 and DMC8-E faceplate features



Faceplate cables

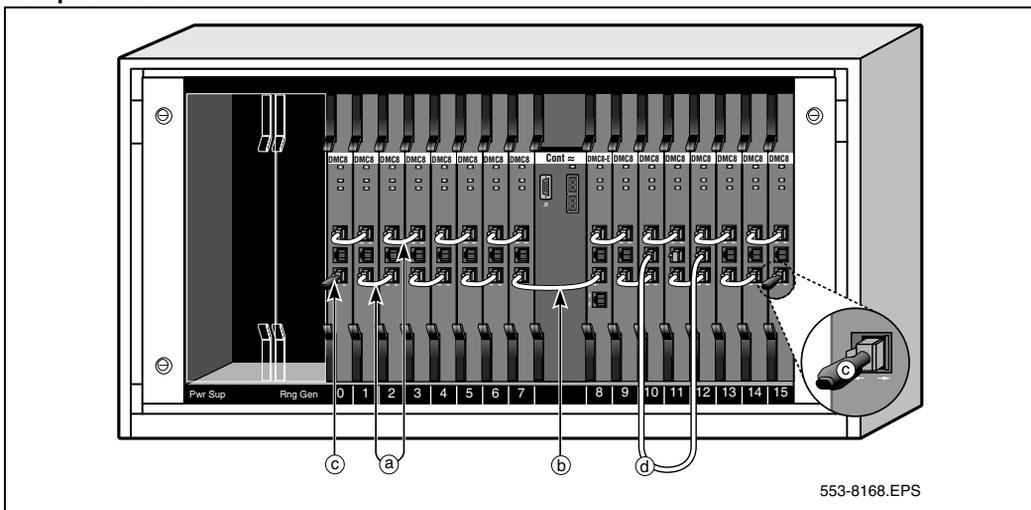
The faceplate cables form the 20 Mb/s bus that connects all DMCs. The faceplate cables meet the standard for Unshielded Twisted-Pair category of performance 5 (UTP Cat 5).

Signalling and PCM are sent to all DMCs over the faceplate cables, allowing a DMC8 to pass a call to another DMC8.

The cables shown in Figure 6 on page 22 are as follows:

- a. DMC8 to DMC8 faceplate cable
- b. DMC8 to DMC8-E faceplate cable
- c. DMC8 faceplate termination
- d. DMC8 bypass faceplate cable

Figure 6
Faceplate cables



The DMC8 to DMC8 cable extends the 20Mb/s bus to all DMCs.

The DMC8 to DMC8-E cable extends the 20Mb/s bus past the XPEC card. A small system does not require the DMC8 to DMC8-E cable.

The DMC8 faceplate termination balances the impedance at either end of the 20Mb/s bus.

The DMC8 bypass faceplate cable bypasses DMC8s to be inserted in or removed from an operational system. The DMC8 bypass faceplate cable is shown in Figure 6 on cards 10 and 12.

The DMC8-E to DMC8-E faceplate cable connects two shelves or two cabinets. The DMC8-E to DMC8-E faceplate cable is shown in Figure 8 on page 25.

The faceplate cabling layout plan must specify that the DMC8 to DMC8-E cable connects into the ports as shown in Figure 6 on page 22.

**CAUTION: Service interruption**

Customers must use UTP Cat 5 faceplate cables supplied by Nortel Networks. Faceplate termination must be used on the DMCs at both ends of the faceplate cabling.

Inter-shelf or cabinet faceplate connections

**CAUTION: Service interruption**

The DMC8-E to DMC8-E faceplate cable has four sets of movable ferrites. The position of the ferrites on the cable is important. See Figure 7 on page 24. Each end of the cable must have a group of 20 ferrites. One quarter the distance from each end of the cable must have a group of 10 ferrites. The maximum length of the cable is 1.5 meters, limiting the position of DECT shelves 0 and 1 to adjacent IPE modules or small system cabinets/chassis.

Figure 7
Cable ferrites

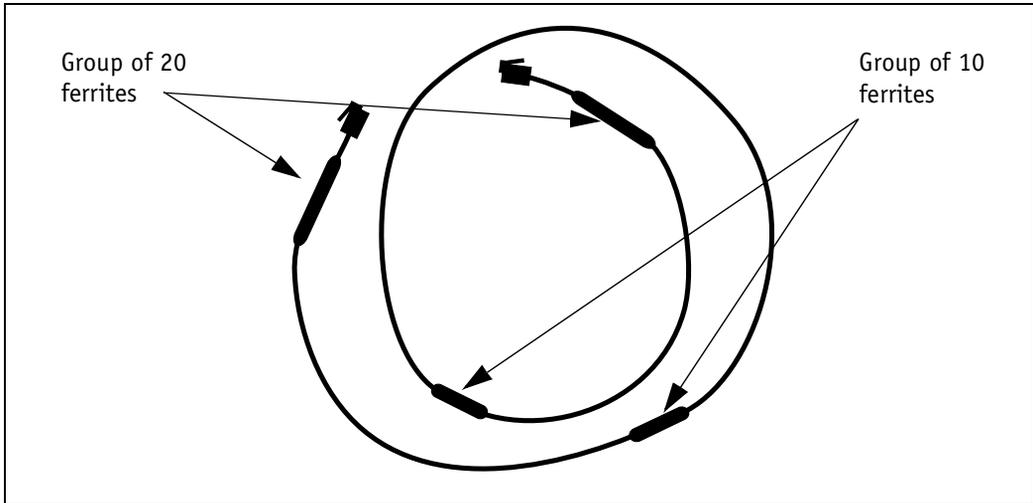
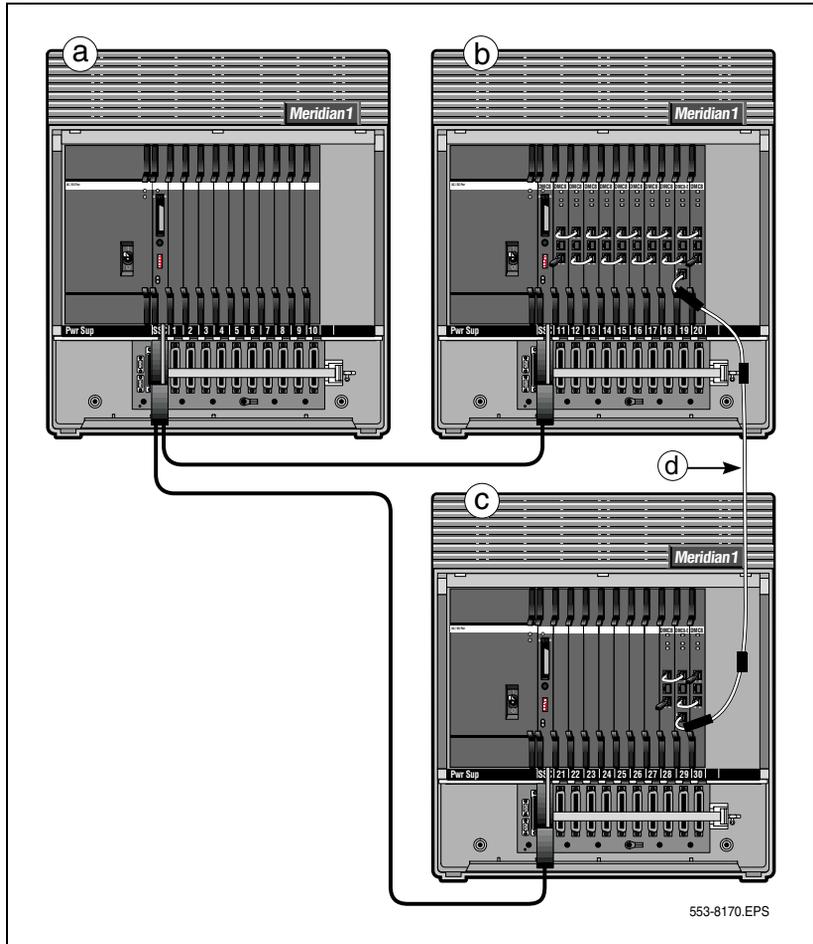


Figure 9 shows the following:

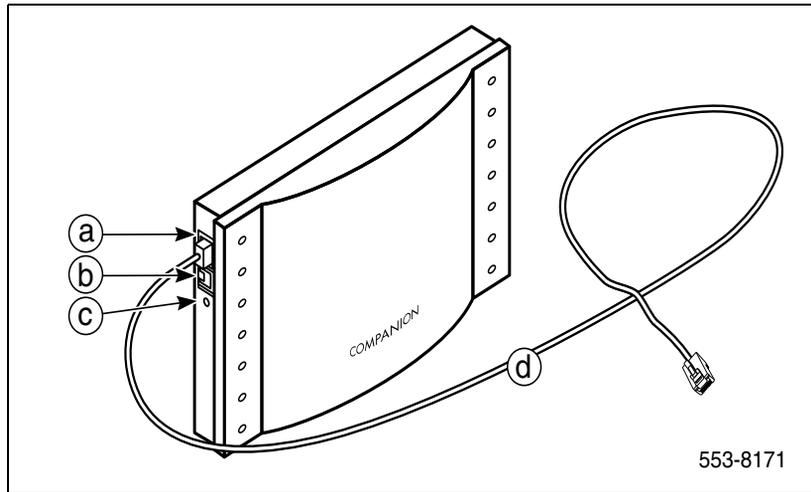
- a. Option 11C main cabinet
- b. Option 11C expansion cabinet
- c. Option 11C second expansion cabinet
- d. the DMC8-E to DMC8-E faceplate cable connection between the DMC8-Es on the first and second Option 11C cabinets

Figure 9
Option 11C inter-cabinet faceplate connections



Base Stations

Figure 10
Base Station



There are three base station models available:

- the C4600 which supports six active call radio links
- the C4610 base station which supports 12 active call radio links
- the C4610E base station (with external antenna) which supports 12 active call radio links

The base stations are IP40-compliant wall-mounted transceivers that provide digital radio links to handsets.



CAUTION: Service interruption

For maximum line length before signal degradation occurs, use UTP Cat 5 cabling between the base station and the shelf or cabinet. If the line length exceeds 100 ohms for the 4610 base station, an external power supply must be used. The maximum distance when using external power with UTP Cat 5 cabling is approximately 1.7 km.

The base station has the following features:

- an RJ-45 socket connection to a one meter UTP Cat 5 cable
- an RJ-45 socket connection to an external or local power supply
- a green LED (C4600) or a yellow LED (C4610), which when lit, indicates synchronization to its DMC8
- a one meter UTP Cat 5 cable connected through an RJ-45 wall socket and MDF to an IPE I/O panel or small system cabinet I/O panel

Two sources can power the base station:

- the DMC8 and DMC8-E feeding phantom power over the UTP Cat 5 cable signaling pairs, connected to (a) in Figure 10 on page 27
- a local power supply, connected to (b) in Figure 10 on page 27

Base stations connected to a DMC8 or DMC8-E card can use phantom power in some conditions, and must use local power in other conditions. An application on the Optivity Telephony Manager (OTM) can enable or disable phantom power.

Note: The maximum line length for a twelve-channel base station using phantom power is 1.0 km. The maximum line length for a six-channel base station, regardless of power, or a twelve-channel base station using external power, is 1.7 km.

DMC8 card engineering guidelines

This section describes the recommended engineering guidelines for the installation of phantom powered base stations.

The optimum capacity mix of 6-channel and 12-channel base stations is six 6-channel and two 12-channel base stations. Using three or more 12-channel base stations per DMC8 card is possible, but is not an efficient use of the 32 channels on the DMC8 card.

Nortel Networks recommends that the 12-channel base stations be distributed over the DMC8 cards.

Table 1 lists engineering guidelines for various deployments of phantom-powered base stations.

Table 1
DMC8 engineering guidelines for 6-channel RFP (base station) and 12-channel RFP (base station)

System	Number of base stations that can be phantom powered per shelf or cabinet	Total
Meridian 1	eight 6-channel or six 6-channel + two 12-channel @ 0.5 km	128
	seven 6-channel or five 6-channel + two 12-channel @ 1.0 km	112
	seven 6-channel @ 1.7 km	112
	new base stations – any mix at 1.7 km	128
Option 11C	seven 6-channel or five 6-channel + two 12-channel @ 0.5 km	70
	six 6-channel or four 6-channel + two 12-channel @ 1.0 km	60
	six 6-channel @ 1.7 km	60
	new base stations – any mix at 1.7 km	80
Option 11C Mini	eight 6-channel or six 6-channel + two 12-channel @ 0.5 km	32
	eight 6-channel or six 6-channel + two 12-channel @ 1.0 km	32
	eight 6-channel @ 1.7 km	32
	new base stations – any mix at 1.7 km	32
Succession CSE 1000	eight 6-channel or six 6-channel + two 12-channel @ 0.5 km	32
	eight 6-channel or six 6-channel + two 12-channel @ 1.0 km	32
	eight 6-channel @ 1.7 km	32
	new base stations – any mix at 1.7 km	32

Using the maximum of eight base stations on a DMC8 card imposes engineering restrictions on the remaining slots, as listed in Table 2

Table 2
DMC8 card Ordering Tool – system slot restrictions for different base station lengths

System	Base station average line length	Number of unoccupied slots required
Meridian 1	0.5 km	no restrictions
	1.0 km	for every 1 – 15 slots, one slot must be unoccupied
	1.7km	for every 1 – 6 slots, one slot must be unoccupied
Option 11C	0.5 km	for every 1 – 9 slots, one slot must be unoccupied
	1.0 km	for every 1 – 8 slots, one slot must be unoccupied
	1.7km	for every 1 – 15 slots, one slot must be unoccupied
Option 11C Mini	0.5 km	no restrictions
	1.0 km	no restrictions
	1.7km	no restrictions
Succession CSE 1000	0.5 km	no restrictions
	1.0 km	no restrictions
	1.7km	no restrictions

Netprice Order Tool

The Netprice Order Tool makes certain approximations in provisioning DMC8 cards. This provides a simplified configuration that meets the needs of most sites.

DECT on Meridian 1

The Order Tool allows the first 80 base stations to be phantom powered. When more than 80 base stations are requested, the extra base stations are assumed to be local powered. Power adapters are provided as follows:

- C4610 ac adapters
= (sum of 6-channel and 12-channel base stations) – 80
- adapters must be purchased separately

Note: Because it is not possible to determine how the cards are spread over the two shelves, it is assumed that there are 80 phantom powered base stations per system.

DECT on Option 11C

The Order Tool allows the first 40 base stations to be phantom powered. When more than 40 base stations are requested, the extra base stations are assumed to be local powered. Power adapters are provided as follows:

- C4610 ac adapters
= (sum of 6-channel and 12-channel base stations) – 80
- adapters must be purchased separately

DECT on Option 11C Mini

All base stations can be powered from the cabinet power supply.

DECT on Succession CSE 1000

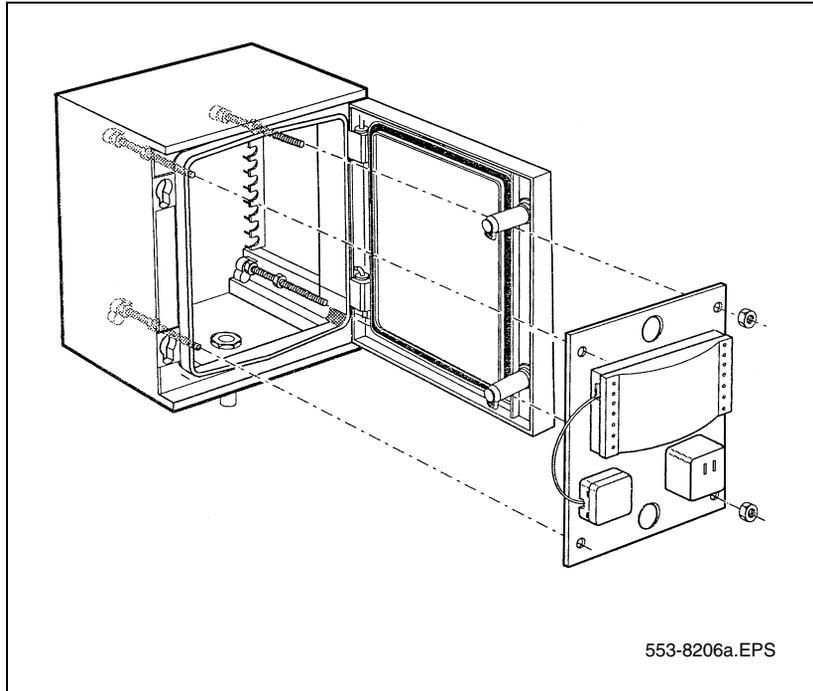
All base stations can be powered from the Media Gateway power supply.

Rules with new base stations

With the new base stations, the provisioning rules are relaxed to allow the maximum number of base stations to be provisioned for each shelf, without the requirements.

Base station housing

Figure 11
Base station environmental housing



The environmental housing is IP66 compliant.

The housing must be used indoors if a base station is subject to conductive pollution, or outdoors if base stations are mounted externally.

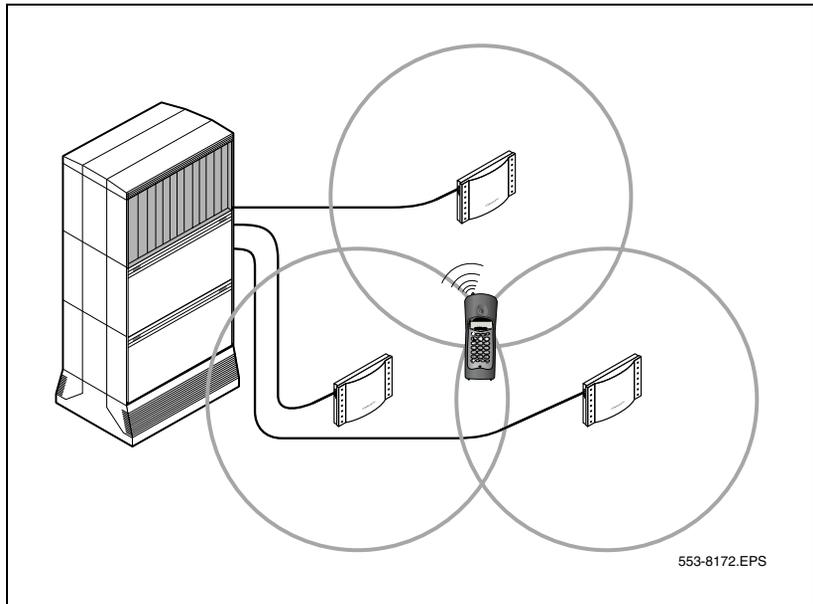
The environmental housing kit includes all of the relevant cables and installation material.

The environmental housing mounts to existing walls.

Signaling lines provide power to the external base stations.

Base Station cell

Figure 12
Base Station cell



A base station cell is the radio signal area covered by a single base station. The base stations are positioned so the cells overlap. A DECT handset can make and receive calls when it is within a base station cell. When the handset moves from one cell to another, the cell overlap allows the handset to move without interruptions.

The cell radius varies from 20m to 100m.

The number of base stations required to cover a certain area depends on many factors, such as the following:

- size of the area of coverage
- radio propagation characteristics of the buildings
- materials used for walls, floors, lift shafts, reinforced glass, doors

- strong magnetic fields from radar, welding equipment, manufacturing equipment, and high energy electronic devices
- density of telephone users in an area and amount of telephone traffic

DECT handsets

Four handset models are available:

- C4010
- C4010 Ex
- C4020
- C4050

The handsets are battery-powered, pocket-sized, portable telephones.

Subscription and De-subscription

Subscription is the process of adding a handset to a DECT system. The handset can then make and receive calls.

A user can subscribe a handset to more than one DECT system. This feature is useful for a company that has multiple DECT sites. See [“Multi-Site Mobility Networking” on page 147](#).

De-subscription is the process of removing a handset from a DECT system. The handset user is then prevented from making and receiving calls.

Note: Refer to the C4010/C4020 Cordless Handset User Guide, and the C4050 Handset User Guide for a detailed description of how to use handset features and the features available from the large systems and small systems.

The DECT C4010 handset, C4010 Ex handset, and C4020 handset

The C4010 is the base model. The C4010 Ex and C4020 handsets have additional features or features that are different from the C4010 model. The C4010 Ex design lets it operate safely in an explosive atmosphere. The C4020 accepts a headset and has a vibrate alert feature.

Figure 13
DECT C4010 handset and C4010 Ex handset



Handset attributes

- up to 8 hours talk time
- up to 60 hours standby mode
- up to 8 days power-save standby mode (cannot receive calls in this mode)
- subscribe to a maximum of 8 DECT systems
- directory dialling from a 20-name phone book
- off-hook number preparation with correction option
- last number re-dial
- recall
- automatic encryption
- adjustable alerter volume
- adjustable ear-piece volume in 5 steps
- six ringing melodies
- manual ringer mute on incoming calls
- handsfree operation

Power supply

- 3.6V/600mAh NiMh rechargeable battery pack

Dimensions

- handset 135 x 58 x 19 mm
- charger 85 x 75 x 50 mm

Color and finish

- the C4010 and C4020 handset color is charcoal grey, with a non-gloss finish
- the C4010Ex handset is yellow

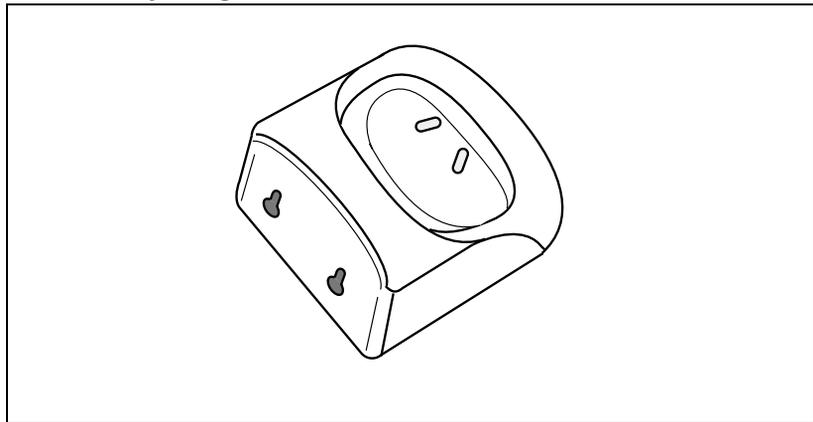
Weight

- handset 135 g

Accessories

- belt clip
- headset for the C4020 only

Figure 14
C4010 battery charger



C4010 battery charger

- desktop or wall mounted battery charger
- mains supply required is 230V/50 Hz
- power consumption

The C4050 handset

Figure 15
C4050 handset



Handset attributes

- up to nine hours speech time
- standby time of up to 130 hours
- subscribe to a maximum of 10 DECT systems
- local directory with alpha search function for 100 entries
- incoming call indication LED light-ring (red)
- charging indication LED light-ring (green)

- visual and audible incoming call signal
- volume control during a call
- name display (16 characters) and number display (32 digits)
- last number redial for up to 20 entries
- caller list of 20 calls
- caller filter for 10 entries with on/off settings
- re-dial function for up to 20 entries
- on-hook number preparation
- microphone mute
- prompts in ten languages
- Calling Line Identification (CLID)
- key click on or off
- automatic off-hook on an incoming call, selectable
- keypad lock
- headset option
- ringer, 30 melody selectable
- ringer volume control, off, plus seven steps
- tone ringing through the headset in normal speech volume
- ringer mute while charging, selectable

Power supply

- two standard AAA 650 mAh NiMh rechargeable batteries

Dimensions

- handset 140 x 51 x 25.5 mm
- charger 130 x 82 x 65 mm

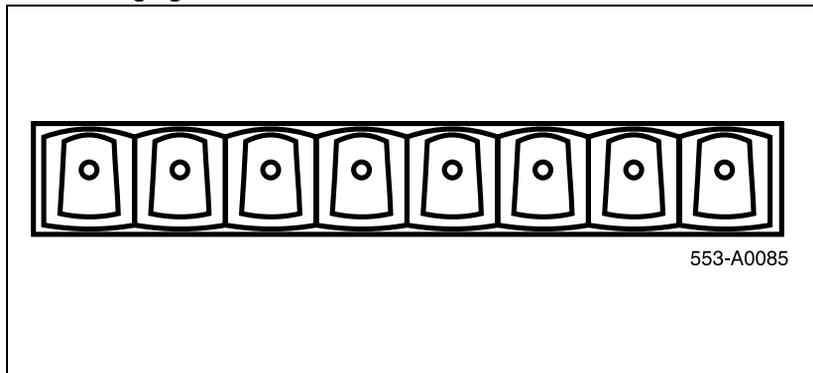
Color and finish

- the handset color is dark grey and silver with a non-gloss finish

Accessories

- belt clip
- carry case
- headset
- desktop charger
- data charger and data cable

Figure 16
C4050 charging rack



C4050 battery charger

- charging time maximum eight hours
- spare batteries have a 24 hour charging time

System synchronization

Clock requirements

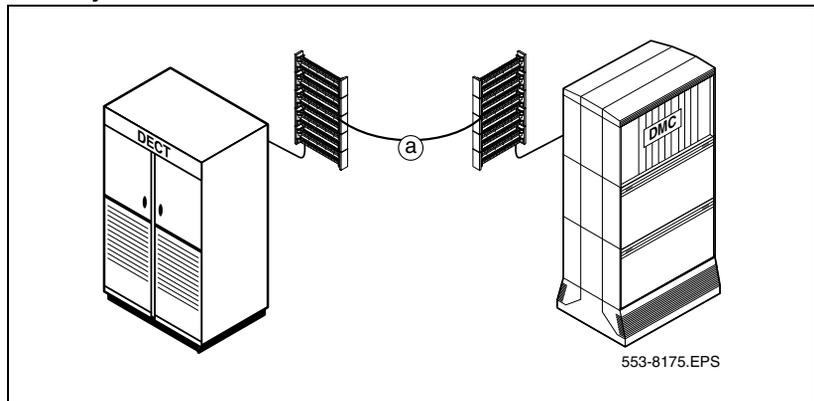
The following clock controller cards are mandatory:

- QPC775 Clock Controller card for a large system
- NTAK20BC Clock Controller Daughter-board or NTAK79AA card with a built-in clock controller for a small system

If there is no digital connection to the network, the appropriate clock controller must be installed and operated in free run mode.

Note: On EMC-hardened Option 11C systems, the clock controller must be in one of the first three slots of the CPU cabinet.

Figure 17
DECT synchronization



DECT synchronization port

Where multiple DECT systems share the same radio coverage area, the DECT synchronization port must be used. The DECT synchronization port is accessed through an MDF connection. Failure to connect the DECT synchronization ports of each system can lead to service interruptions.

System hardware parameters

Tables 3, 4, 5, and 6 detail the minimum and maximum configurations for the DECT system with the Concentration feature.

Table 3
Minimum configuration

System type	Shelves or cabinets	DMC8	DMC8-E	Base station	Handset
All systems	1	1	0	1 to 8 [†]	1 to 510 [†]

[†]Due to number of Virtual TNs available. Subject to engineering rules and constraints.

Table 4
Maximum large system configuration

System type	Shelves	DMC8	DMC8-E	Base station	Handset
Large system	2	30	2	256 [†]	16,320 [†]

[†]Due to number of Virtual TNs available. Subject to engineering rules and constraints.

Table 5
Maximum Option 11 configuration

System type	Cabinets	DMC8	DMC8-E	Base station	Handset
Option 11E, 11C not using CPU cabinet	2	18	2	160 [†]	640 [†]
Option 11 or 11E, 11C if CPU cabinet is used	2	17*	2	152 [†]	640 [†]
Option 11C Mini (Main cabinet)	1**	3*	0	16 [†]	640 [†]
Option 11C Mini (Expansion cabinet)	1**	3*	1	32 [†]	640 [†]

*One of the DMC8 positions in the CPU cabinet is required by the NTAK20 Clock Controller Daughterboard.

** DECT can only exist in one cabinet. The cabinets cannot be joined.

†Due to number of Virtual TNs available. Subject to engineering rules and constraints.

Table 6
Maximum Succession CSE 1000 configuration

System type	Cabinets	DMC8	DMC8-E	Base station	Handset
the first Media Gateway	1***	3	1	32 [†]	640 [†]
all other Media Gateways	1***	4	0	32 [†]	640 [†]

† Due to number of Virtual TNs available. Subject to engineering rules and constraints.

*** DECT can only exist in one Media Gateway. The Media Gateways cannot be joined.

If a cabinet or Media Gateway has a “9th slot”, the slot must be provisioned with a DMC8-E card. All other cards are DMC8s.

The DECT system components have the following capacities:

- one NTCW00AB DMC8 or one NTCW01AB DMC8-E can support up to 8 base stations
- one C4600 base station can support 6 active calls
- one C4610 base station can support 12 active calls
- one C4610E base station can support 12 active calls

Multiple DECT systems can co-exist in the same PBX system if they are synchronized to the same clock source. However, from a user's perspective, the DECT systems are separate.

System software parameters

The software that operates the DECT system resides as firmware in the DMCs. The firmware consists of an operating program and a system database configuration. The operating program controls base station and handset functions. The operating program also communicates with the Meridian 1 and the DECT Manager. The system data defines hardware and hardware addressing.

The DECT system is compatible with Meridian PBX systems running Release 23 and later software.

The DMC8/DMC8-E with the ensuing software releases supports the following:

- Release 23 can support basic configuration, CLID and CPND, DECT card addressing within OA&M, and 16 users on each card.
- Release 24.2x can support up to 32 handsets on each card.
- Release 25.xx can support up to 510 handsets with Concentration and MSMN.

Site planning

Contents

This section contains information on the following topics:

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Customer requirements.	46
On-site contact.	46
Site plans.	46
Building details.	46
Position and use of available cabling.	47
Radio coverage.	47
Number of handset users.	48
Number of cells required to support traffic.	48
Customer review.	48
Deployment.	48
The DECT deployment tool.	50
The deployment process.	51
Identifying initial critical points on the floor plan.	52
Locating cell centers.	53
Determining cell boundaries.	54
Identifying additional critical points and cell boundaries.	55
Marking the points, centers, and boundaries on the floor plan.	56

Site survey

A site survey determines customer requirements, and the number of cells required to support traffic. After a site survey is completed, a customer review is required.

Customer requirements

The customer must provide the following:

- a site contact name and telephone number
- site plans
- building details
- information on available house cabling
- radio coverage requirements
- number of users

On-site contact

The on-site contact provides the following:

- time and date scheduling
- access to restricted or locked areas
- additional information when required

Site plans

A complete set of site plans are required. Dimensions must be clearly stated on the plans.

Building details

System deployment and installation depends upon the following building details:

- building identification
- construction materials, such as walls, floors, ceilings
- type of use, such as an office, hotel, factory, or store
- dimensions

- number of floors
- height of floors
- partitioning of floors

Position and use of available cabling

Cables that connect the base station to the DECT System must meet or exceed the UTP Cat 3 standard. UTP Cat 5 is recommended as it provides a greater line length before signal degradation occurs. New cabling is required if the existing cabling does not meet the standard.

Radio coverage

A base station coverage list is required to indicate the following:

- areas where radio coverage is required
- areas excluded from radio coverage due to the proximity of sensitive electronic equipment
- areas where radio coverage is not required
- areas where radio coverage is not feasible or requires specific base stations
- objects inside buildings
- details of furniture, cupboards, and machinery on every floor of the building's interior

Base station installations can be required to be out of sight. A customer could request base stations to be mounted in unsuitable locations, such as stone columns, air ducts or horizontally on the ceiling. Radio coverage cannot be guaranteed when base stations are mounted in unsuitable locations.

Know in advance where coverage is required. Some examples of coverage areas are:

- elevators
- stairwells
- toilets
- outdoor areas

Number of handset users

The following information must be available:

- the number of handset users
- the potential growth of handset users
- the areas of above average and below average traffic density

Number of cells required to support traffic

Traffic requirements are determined for each cell. The deployer will calculate system requirements to support user traffic.

Customer review

After the site survey and before the deployment process, the person deploying the site must review coverage requirements with the customer representative. The person deploying the site must explain to the customer representative how the survey is conducted. The customer representative must tell fellow employees that a person deploying the site will be taking measurements in their work place.

Deployment

A deployment determines the locations of base stations and cells. The deployment process consists of the following activities:

- identifying initial critical points on the floor plan
- locating cell centers
- determining cell boundaries
- identifying additional critical points and cell boundaries
- marking the points, centers, and boundaries on the floor plan

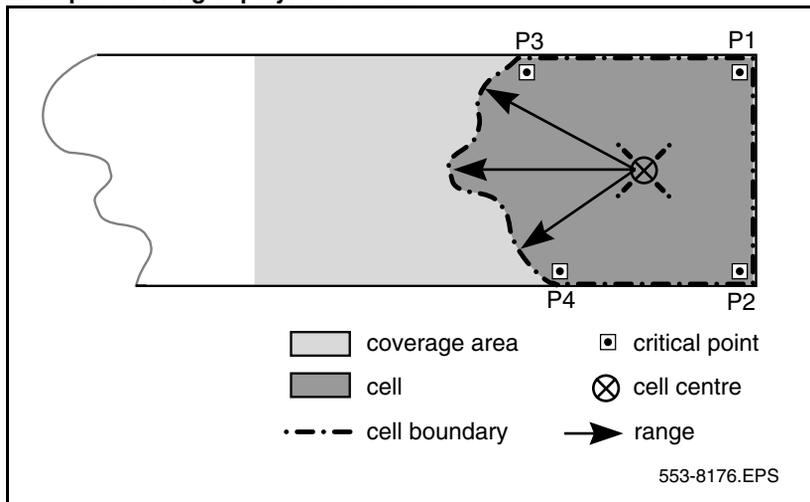
Deployment terms are as follows:

- **coverage area** – an area where a handset can be used to make and receive calls
- **cell** – the coverage area provided by the base station antennas

- **cell boundary** – the parameter of a cell coverage area
- **critical point** – a point or location defined as the extreme corner of a coverage area, that can be difficult for the radio signal to reach
- **cell center** – the installation point of the base station serving the cell
- **range** – the distance from a cell centre to its cell boundary

Figure 18 on page 49 illustrates these terms.

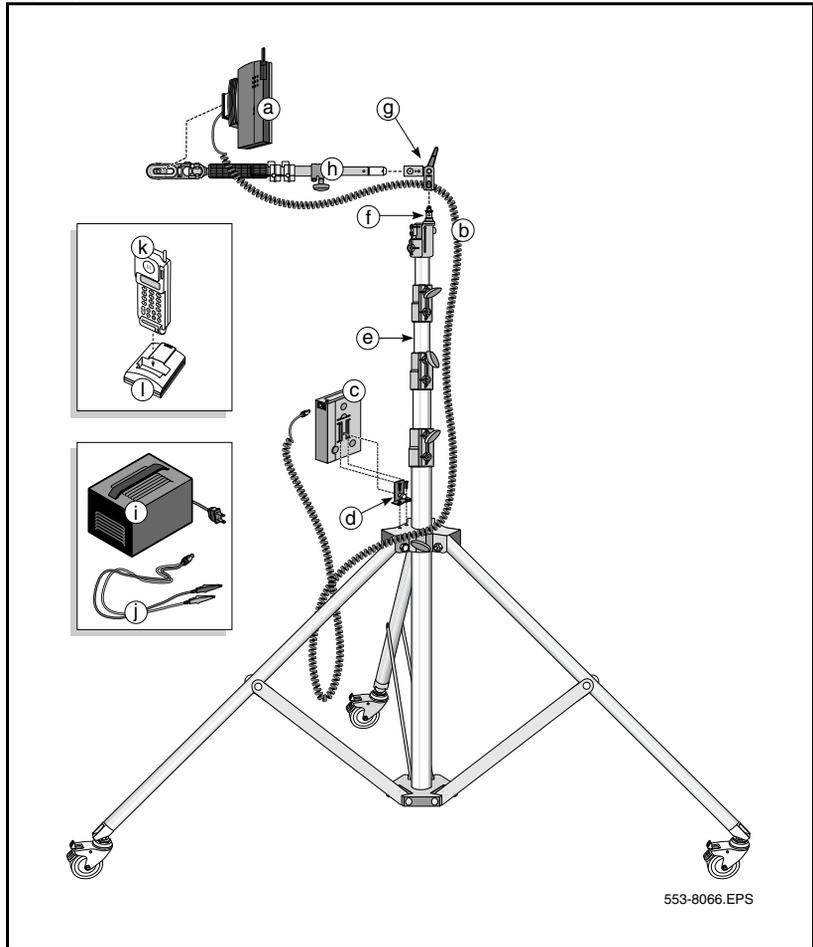
Figure 18
Example showing deployment terms



The DECT deployment tool

The DECT deployment tool is used to locate cell centers and determine cell boundaries.

Figure 19
Deployment tool



The deployment tool is stored and transported in a yellow protective case. The deployment tool consists of the following components:

- a. base station
- b. power cord
- c. battery
- d. battery mount
- e. adjustable tripod
- f. extender arm connector
- g. extender arm swivel and clamp
- h. extender arm
- i. battery charger (separately ordered)
- j. battery charger cable
- k. deployment handset
- l. deployment handset battery charger

The deployment process

The deployment process consists of the following steps:

- Identifying initial critical points on the floor plan (page 52)
- Locating cell centers (page 53)
- Determining cell boundaries (page 54)
- Identifying additional critical points and cell boundaries (page 55)
- Marking the points, centers, and boundaries on the floor plan (page 56)

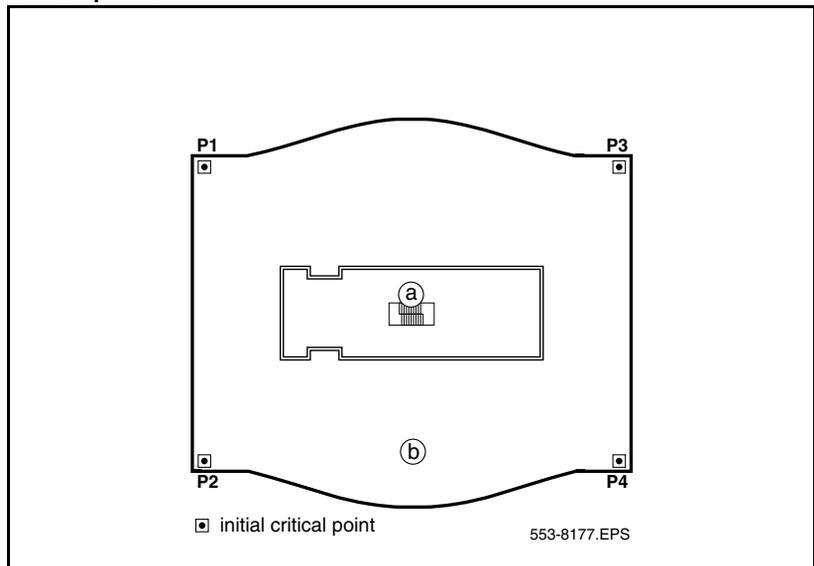
Identifying initial critical points on the floor plan

A critical point is a place that can be difficult for the radio signal to reach, such as a corner of a room, lifts and stairwells. Initial critical points are shown in [Figure 20](#) as P1, P2, P3, and P4.

[Figure 20](#) shows the following:

- a. stairwell
- b. second floor plan

Figure 20
Critical points



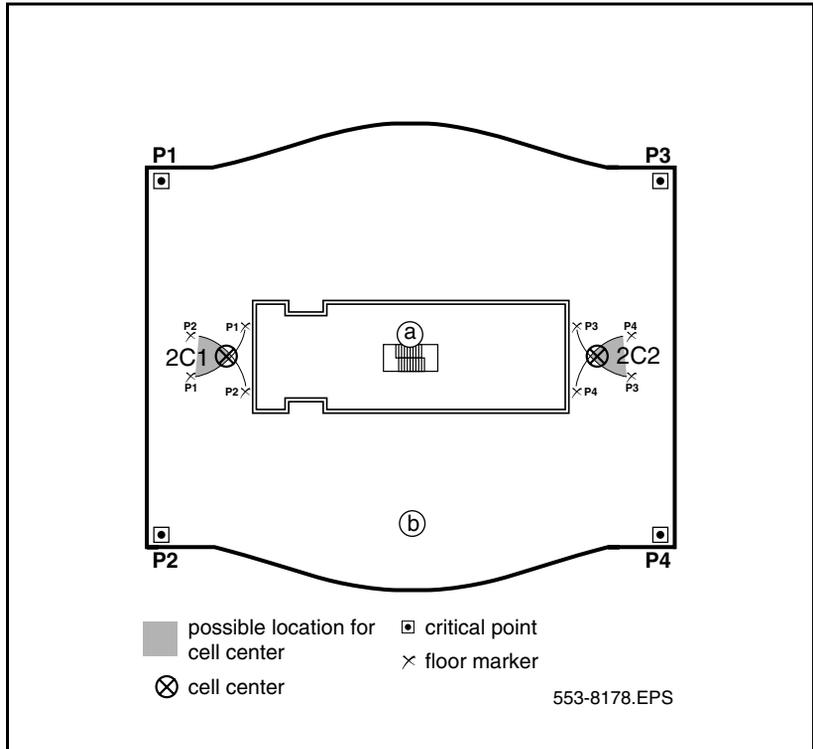
Locating cell centers

Figure 21 shows the following:

- a. stairwell
- b. second floor plan

A cell center is located by placing the deployment tool at one critical point, for example P1, then using the deployment handset to obtain a change in audio quality. The audio quality change determines the cell boundary contour. This process is repeated at an adjacent critical point, for example P2. Where the cell boundaries of both critical points meet is the cell center. The cell center position is marked on a floor plan. The cell center determines the location of a base station, shown in Figure 21, as arc 2C1.

Figure 21
Cell centers



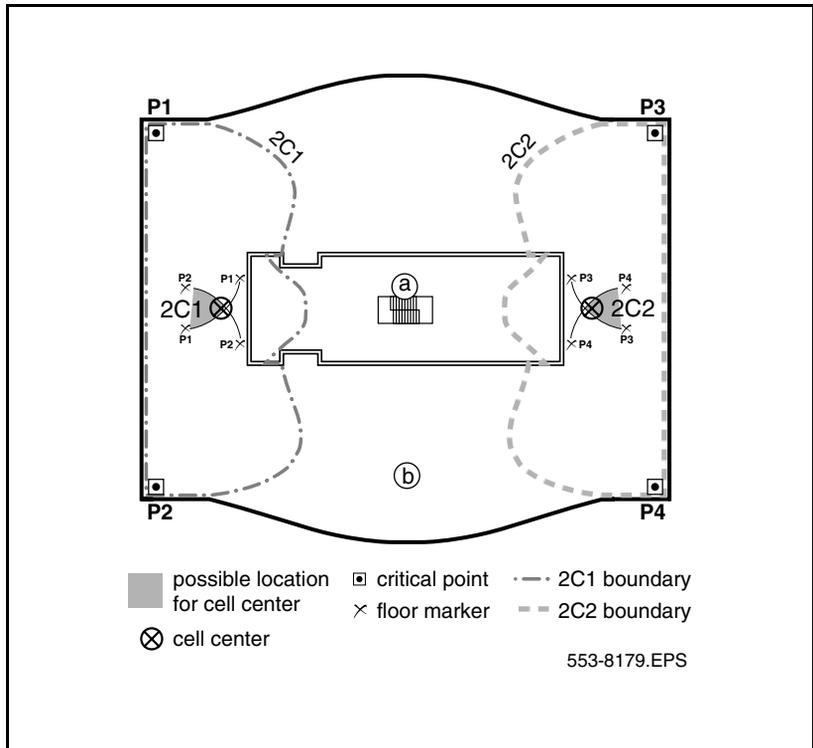
Determining cell boundaries

Figure 22 shows the following:

- a. stairwell
- b. second floor plan

A cell boundary for the cell center is determined by placing the deployment tool at the cell center, for example 2C1, and using the deployment handset to establish the cell boundary. The cell boundary contour is marked on the floor plan, and shown in Figure 22 by a dash-dot line.

Figure 22
Cell boundaries



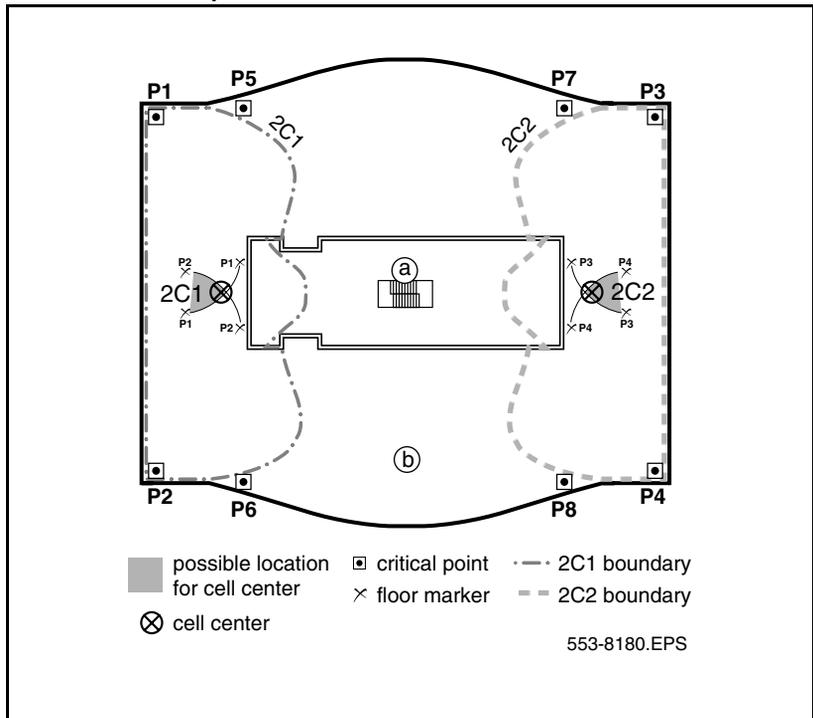
Identifying additional critical points and cell boundaries

Figure 23 shows the following:

- a. stairwell
- b. second floor plan

Additional critical points, shown in Figure 23 as P5, P6, P7, and P8, are identified to ensure base station radio coverage for the entire area.

Figure 23
Additional critical points and cell boundaries



Marking the points, centers, and boundaries on the floor plan

Figure 24
Points, centers, and boundaries on the floor plan

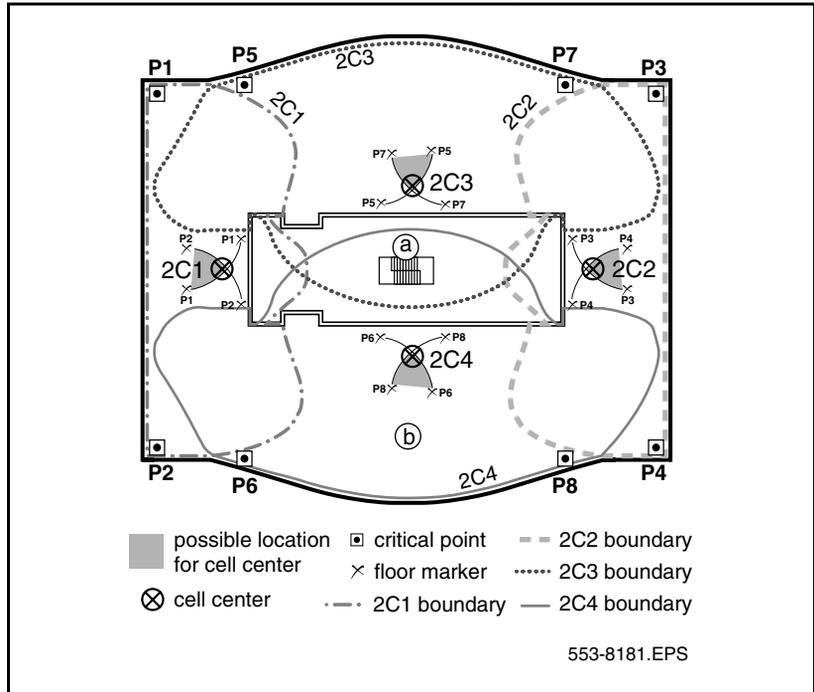


Figure 24 shows a typical floor plan marked-up after determining subsequent cell boundaries. The completed floor plan would appear as follows:

- Initial critical points are shown at P1, P2, P3, and P4.
- Cell centers are located where arcs from P1/P2, P3/P4 intersect.
- 2C1 and 2C2 show cell centers or base station locations.
- Dashed and dotted lines show cell boundaries.
- Additional critical points are shown at P5 P6 P7 P8.
- 2C3 and 2C4 cell centers provide full coverage of the floor.

Two copies of the floor plan are required. One copy is used during the site planning. The second copy is marked with the information from the site planning copy and attached to *DECT Provisioning Records* (553-3601-102) for the installer.

System installation

Contents

This chapter contains information on the following topics:

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Install DMC8 cards and faceplate cables.	60
Install OTM DECT application.	60
Configure the DECT system on the OTM server.	61
Configure handsets and retrieve subscription data.	61
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Base Station Power and Muting.	63
Add a V.24 serial connection.	63
Multi-Site Mobility Networking.	64

Reference list

The following are the references in this section:

- *DECT Installation Guide (553-3601-203)*

Using the Provisioning Records, marked-up floor plans, and the site work order, the installation proceeds in the following order:

Hardware Installation

- Before you begin
- Unpack and examine the equipment

Install Base Station

- Follow the DECT base station rules.
- Install C4600 and C4610 base stations.
 - Install Base Station wiring to the MDF.
 - Install the C4610 base station external power supply.
- Install base station in the external housing.
- Attach the external housing to a wall.
- Connect the external housing wiring to the MDF.

Install additional IPE shelves or cabinets

- Install additional IPE modules.
- Install additional cabinets.
 - Install IPE module wiring to the MDF.
 - Install cabinet wiring to the MDF.

Install DMC8 cards and faceplate cables

- Cross-connect base stations to the DMC8 card positions.
- Cross-connect base stations to the DMC8 Relay card.
- Install DMC8 and DMC8-E cards in an IPE shelf (Option 51 to 81).
- Install DMC8-E in an Option 11 or Succession CSE 1000 cabinet.
- Install faceplate cables and inter-shelf/cabinet cable.

Install OTM DECT application

- Ensure the DECT application is on the OTM server.
 - Ensure a communications profile is associated with the DECT application.

- Add a communications profile for the DECT application.
- Add an Ethernet profile.

Configure the DECT system on the OTM server

- Install the DME on the DMC8 Relay card.
- Change the DMC8 Relay card default IP address.
 - Connect the DMC8 Relay card to a configuring PC.
 - Reset the DMC8 Relay card default IP address to the LAN IP address.
- Connect the DMC8 Relay card to the OTM server.
- Launch the DECT application.
- Add the DECT system.
 - Add General System Properties.
 - Set the DECT system IP address to match the DMC8 Relay card.
 - Add the Upstream Manager IP address, if required.
- Synchronize data with the DECT system.
 - Synchronize DECT PARI and SARI.
 - Synchronize DECT Parameters.
 - Synchronize DECT Upstream Manager IP Address.

Configure handsets and retrieve subscription data

- Configure non-concentrated handsets on a Meridian 1 PBX.
 - Open the Station Administration window.
 - Access Add Station dialog.
 - Add 500 analog standard.
 - Access features.
 - Access the wireless type.

- Select the wireless type.
- Select the DECT wireless set.
- Accept changes.
- Configure concentrated handsets on a Meridian 1 PBX (Release 25.15 or later).
 - Open the Station Administration window.
 - Access the Add Station dialog.
 - Select Digital Cordless Set.
 - Select Features.
 - Select the wireless type.
 - Select Visit or Local.
 - Select an index.
 - Provision hardware.
 - Accept changes.
 - Enable Single line features.
- Retrieve subscription data for handsets.
 - Enable subscription.
 - Activate the PIN on the handsets.

Handset subscription

- C4010, C4010 Ex, C4020 handset subscription
 - Distribute C4010, C4010 Ex, C4020 handsets and install battery chargers.
 - Subscribe the C4010, C4010 Ex, C4020 handset.

- C4050 handset subscription
 - Distribute C4050 handsets and install battery chargers.
 - Subscribe the C4050 handset.

Base Station Power and Muting

- Open RFP (base station) window.
 - Set alarm muting, line power, and comments for base station.

Add a V.24 serial connection

DMC8 to OTM server serial connections:

- Connect the DMC8 Relay card to a local OTM server.
- Connect the DMC8 Relay card to a remote OTM server with modems.
- Install a virtual modem on the PC.
 - Configure modem properties.
 - Set modem speed.
 - Set connection preferences.
 - Disable flow control.
- Configure Remote Access Service (RAS).
 - Set RAS modem and port usage.
 - Configure RAS setup and network.
 - Configure RAS services.
- Set up and configure a RAS Phone book entry.
 - Open the Dial-up Networking dialog.
 - Set up the phone book entry name.
 - Set up the server dialog.
 - Go to the next dialog.

- Set up is complete.
- Configure the networking dial-up.
- Configure the Dial using entry.
- Configure the Dial-up server type.
- Configure the IP address.
- Accept the configuration changes.
- Establish the RAS connection.
- Establish a connection to the DECT system.
- Establish connection complete.
- Set the IP address through Telnet.
- Configure the IP address.
- Hang-up the RAS connection.

Multi-Site Mobility Networking

For information on Multi-site Mobility Networking (MSMN) subscriptions, see “Multi Site Mobility Networking subscriptions” on page 118.

For information on MSMN feature description, feature interaction, feature packaging, and operating parameters, see “Multi-Site Mobility Networking” on page 147.

For information on MSMN feature implementation and operation, refer to “Multi-site Mobility Networking” in *DECT Installation Guide* (553-3601-203).

Optivity Telephony Manager for DECT systems

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Reference list

The following are the references in this section:

- *Using Optivity Telephony Manager (553-3001-330)*

Introduction

The Optivity Telephony Manager (OTM) provides a single point of access and control for many Meridian 1 applications.

OTM provides a DECT Application and OTM Common Services to manage a DECT system. OTM runs on Windows NT 4.0, Windows 98, and Windows 2000 as a server, plus Windows 95 as client.

Note: For an overview of OTM, see *Using Optivity Telephony Manager* (553-3001-330).

DECT Application features

The DECT Application provides the following DECT management features and is used to:

- launch the Application from OTM using Windows and Web navigators
- view the DECT System provisioning using the DECT Systems window
- view the DMC8 configuration using the Boards window
- view base station configuration using the Radio Fixed Part window
- view subscription information using the Subscriptions window
- upgrade firmware using the DECT Systems window
- subscribe handsets using the Subscription window
- support DMC-8 and DMC (serial only) cards
- synchronize (update) the DECT Application database to the DECT system configuration when the OTM connects to the DECT system
- collect performance data using the Performance Collection window
- view On-line Help

Common Services features

The following DECT management features are provided by OTM Common Services:

- OTM Alarm Management provides alarm collection and alarm processing, as well as the following:
 - a web-based alarm browser to view alarms, past alarms and occurring alarms
 - a Windows-based alarm browser to view alarms that occur while the browser is open

- an Alarm Notification application to notify personnel of an alarm occurrence by pager or E-mail. This application can forward the alarm to an upstream processor
- a PC Event log and Viewer to view events and alarms generated from the DECT Application in a report layout
- backup and restore to create and restore an OTM backup file of the DECT application data.
- user profiles to enable configuration of different types of DECT users
- on-line help to provide help for common services features

For more information about the Common Services features, see *Using Optivity Telephony Manager (553-3001-330)*.

OTM navigators

The DECT application uses two navigators to manage a DECT system:

- a Windows-based navigator
- a web-based navigator

A Windows based navigator, with the Microsoft Windows interface, can access all DECT application features. A web-based navigator, with the Web (http) interface, can access most, but not all, DECT application features.

Use the Windows-based navigator to manage a DECT system at the keyboard and mouse of an OTM server. See [Figure 25](#) on page 71 and [Figure 26](#) on page 72.

Use a web-based navigator to manage a DECT system from a client PC. See [Figure 25](#) on page 71 and [Figure 26](#) on page 72.

Features available to Windows-based navigators

The following features are only available at an OTM server using the Windows-based navigator. The OTM server enables the following:

- define DECT system sites
- define PBX system
- configure handsets with the Station Administration feature of OTM

- OTM Alarm Notification
- PC Event log and Viewer
- backup and restore the DECT Manager database to and from a file
- define a user profile for Windows based applications
- define user management for Windows based applications

Features common to Windows- and web-based navigators

Provisioning features

The following are provisioning features common to Windows-based and web-based navigators:

- define DECT system
- DECT system names
- DECT Concentration mode
- DECT system Access Right
- transmission parameters
- DMC8 provisioning
- firmware provisioning
- base Station provisioning

Operation features

The following are operation features common to Windows-based and web-based navigators:

- DECT system connectivity
- DECT system connection control
- read data from a DECT system on demand
- define handsets with the overlays in the OTM database
- define handsets in the DECT database
- subscribe handsets

Maintenance features

The following are maintenance features common to Windows-based and web-based navigators:

- operational status monitoring
- alarm management
- date and time
- Upstream Manager IP address
- basic browser
- DECT system data synchronization with the DECT Manager database
- performance
- PC Event Log

Security features

For information about the Security features, see *Using Optivity Telephony Manager* (553-3001-330).

OTM server connections to DECT

[Figure 25](#) on page 71 shows an overview of an OTM server connected to a DECT system over a V.24 interface.

Web clients access the OTM server over a LAN or WAN and over the Public Switched Telephone Network, using modems. For the OTM to communicate over PPP with the DECT system, configure Remote Access Service (RAS) for modem dial out. See “[Access the DECT application with a web-based navigator](#)” on page 140. For more information about OTM access, see *Using Optivity Telephony Manager* (553-3001-330).

A client, in this context, is a DECT application that runs on a personal computer or workstation, and depends on an OTM server to perform some operations. For example, a DECT application client is an application that enables personnel to manage a DECT system.

[Figure 26](#) on page 72 shows an overview of an OTM server connected to a DECT system, over a dedicated LAN interface.

Remote Access Service (RAS)

A computer in a network provides access to remote users through analog modem or ISDN connections. It includes the dial-up protocols and access control (authentication), and can be a regular file server with remote access software or a proprietary system. The modems can be internal or external to the device.

ISDN is an international telecommunications standard for providing a digital service from the customer's premises to the dial-up telephone network.

Figure 25
Local OTM server access to a DECT system by V.24

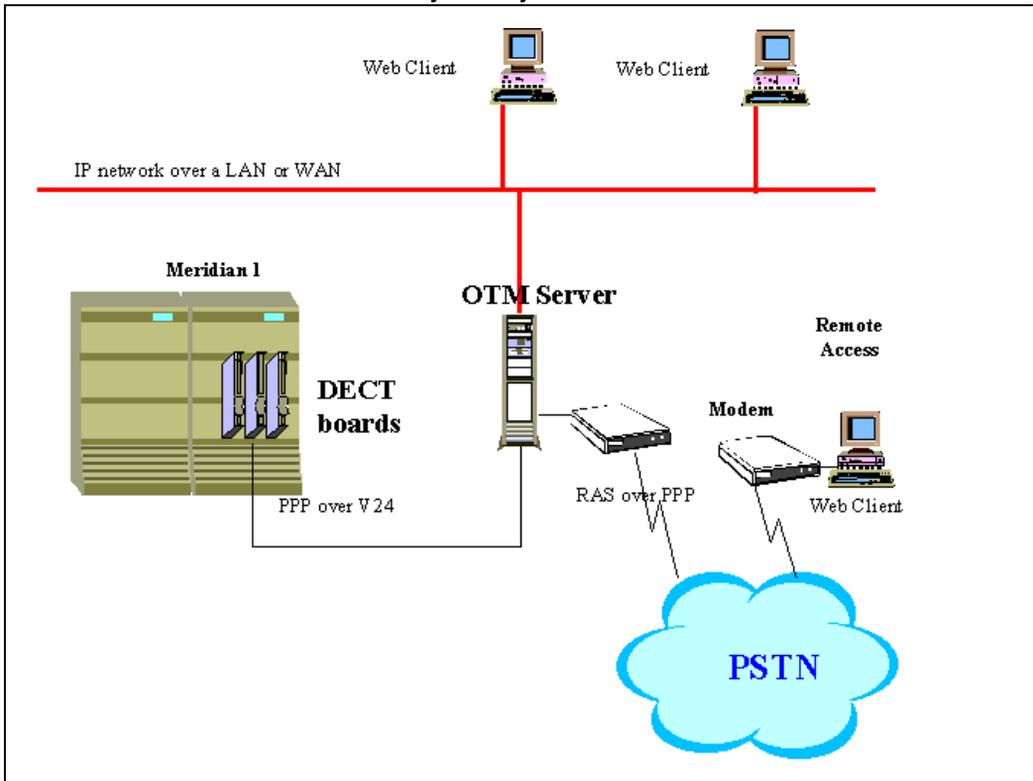
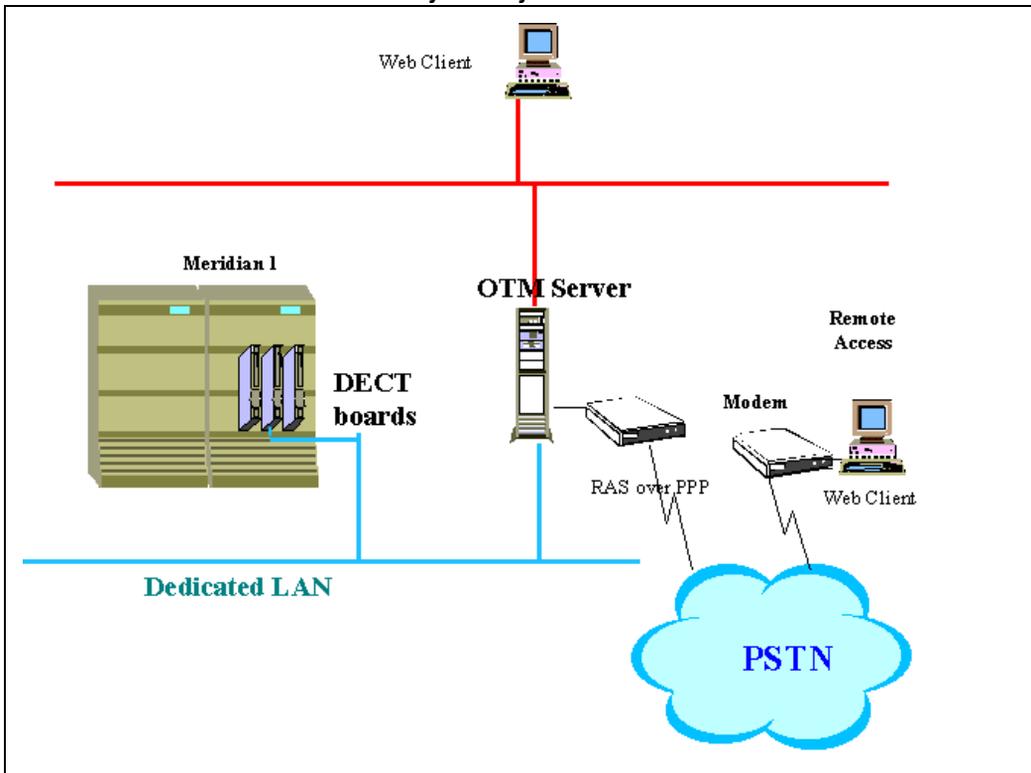


Figure 26
Local OTM server access to a DECT system by dedicated LAN

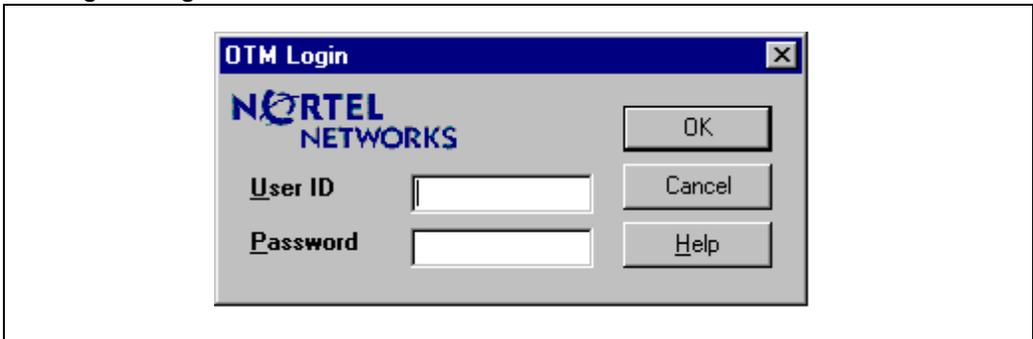


Access the DECT application with a Windows-based navigator

For access from a web-based navigator, see the section “[Access the DECT application with a web-based navigator](#)” on page 140.

Login to the OTM

Figure 27
OTM login dialog box

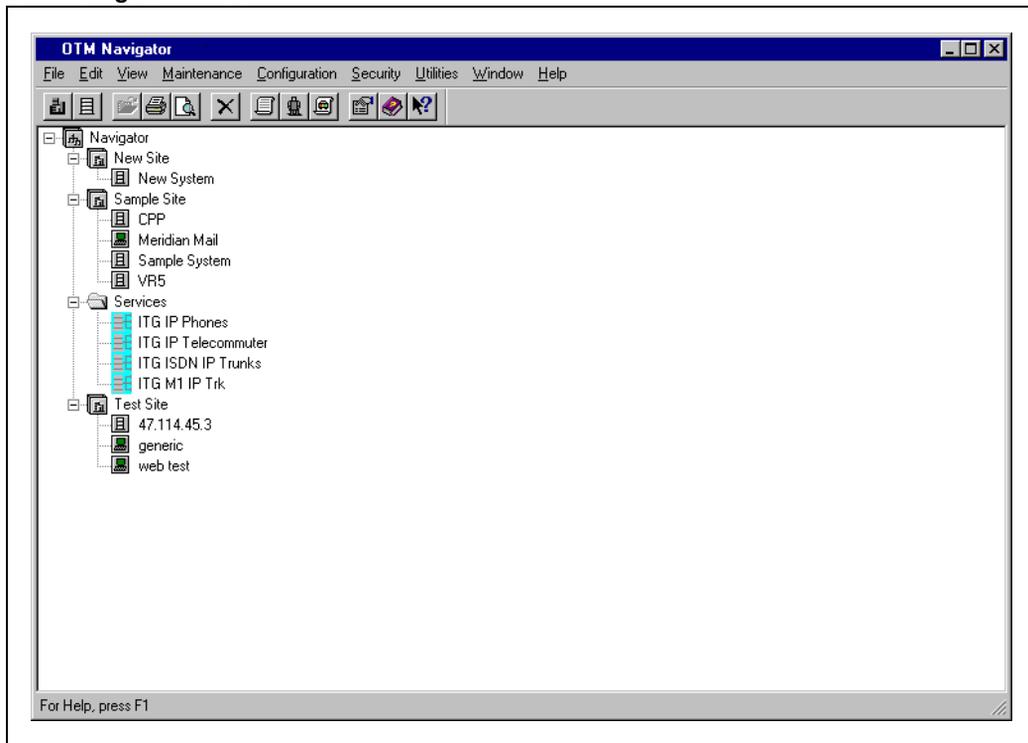


Access the OTM Login dialog box using the Start menu, under Programs, **OTM**. The login dialog appears as shown in [Figure 27](#). After entering a User ID and Password, the OTM Windows Navigator window appears, as shown in [Figure 28](#).

Note: See *Using Optivity Telephony Manager* (553-3001-330) for details about the OTM login dialog box.

Select the Meridian 1 PBX that supports the DECT system

Figure 28
OTM Navigator window

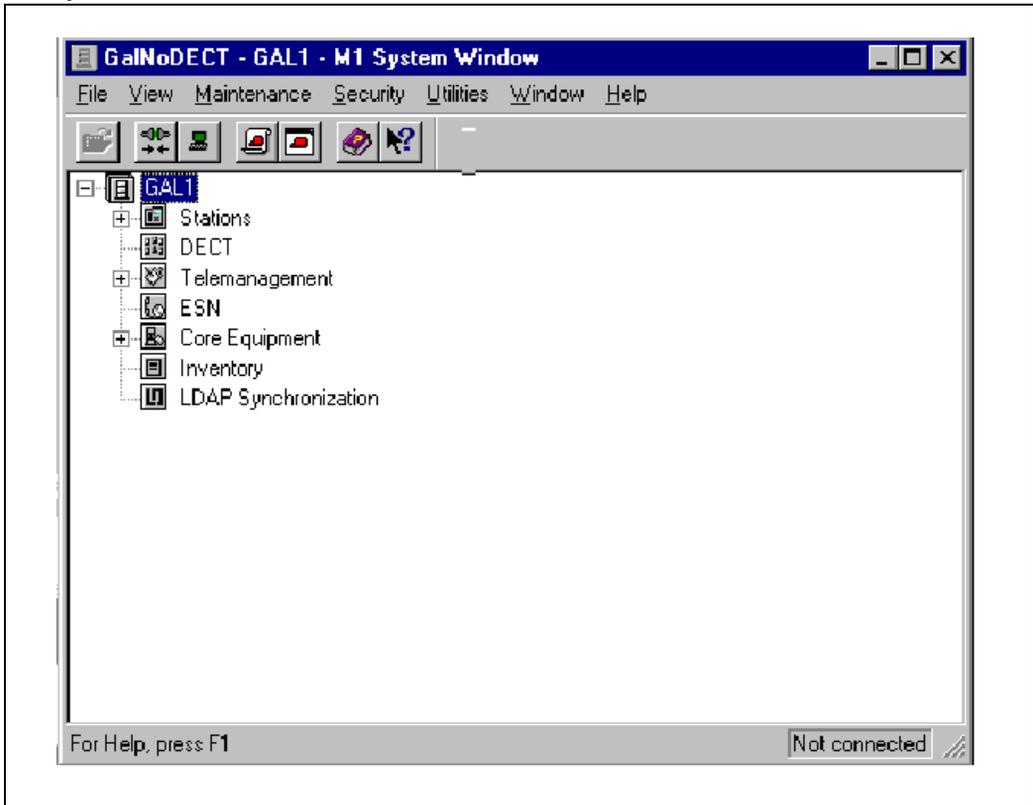


In the OTM Navigator window, select the Meridian 1 system that supports the DECT system to be administered. Double-click on the Meridian 1 system (shown as *Sample Site* in [Figure 28](#)), and the M1 System Window appears. See [Figure 29](#) on page 75.

Note: See *Using Optivity Telephony Manager (553-3001-330)* for details about the OTM Navigator window.

Open DECT Application

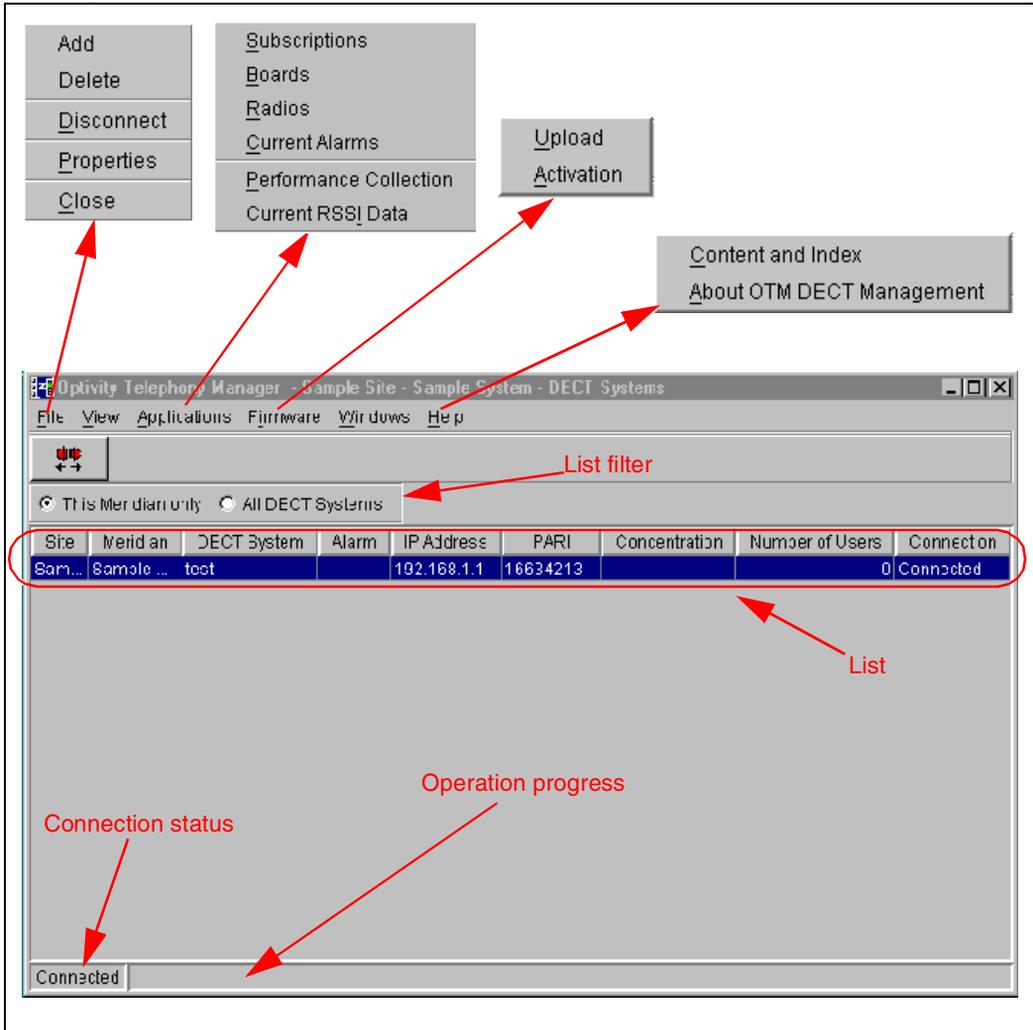
Figure 29
M 1 System Window



Open the DECT application by double clicking on DECT (shown in [Figure 29](#)), or open through the **F**ile menu. This action displays the DECT System window, shown in [Figure 30](#) on page 76.

DECT Systems window

Figure 30
DECT Systems window



Use the DECT Systems window to enable the following features:

- select a DECT system to view database details, or select all DECT systems to view database details.

- add a DECT system
- delete a DECT system
- connect to, disconnect from, lock or unlock a connection between the OTM server and a DECT system. See [“Connecting to a DECT system” on page 80.](#)
- open the following windows for the selected DECT systems
 - Subscriptions
 - DMC Boards
 - Base station Radio Fixed Parts
 - Active Alarm Snapshot
 - Performance Collection
 - Current RSSI data

Menu options

The DECT Systems window displays the following:

- **F**ile – contains a pull-down menu that allows one of the following to be selected:
 - **A**dd – creates a new DECT system with default values and opens the DECT System Properties window
 - **D**elete – removes a DECT system from the OTM server/OTM client
 - **C**onnect / **L**ock / **D**isconnect – the same functions as the Connect/Disconnect tool. See [“Connecting to a DECT system” on page 80.](#)
 - **P**roperties – opens the DECT System Properties window ([Figure 38](#) to [Figure 49](#))
 - **C**lose – closes the client application and all DECT windows opened by that client

- **View** – contains a pull-down menu that allows the following bars to be shown or hidden:
 - Tool bar
 - Status bar

- **Applications** – contains a pull-down menu that allows the following windows to be opened:
 - Subscriptions (Figure 55 on page 103)
 - Boards (DMC) (Figure 69 on page 124)
 - Radios (base stations) (Figure 71 on page 128)
 - Current Alarms
 - Performance Collection (Figure 75 on page 136)
 - Current RSSI data (Figure 77 on page 139)

- **Firmware** – contains a pull-down menu that allows the following windows to be opened:
 - Upload – loads firmware to DMC (Figure 50)
 - Activation – makes firmware active

- **Help** – contains a pull-down menu used to select the following:
 - Content and Index
 - About OTM DECT Management application

- **Tool bar icon** – used to click a tool button to do the following:
 -  – opens a connection to a DECT system selected in the List, when the Connection status shows *Disconnected*. When opened, the icon turns red. See “Connecting to a DECT system” on page 80.

 -  – locks the connection to a DECT system when the Connection status is *Connected*. This prevents another user from closing the connection.

-  – disconnects from a DECT system when the Connection status is *Connected*
-  – unlocks the connection from a DECT system when the Connection status is *Connected/Locked*

Note: While the Connection status is *Connecting* or *Disconnecting*, the Connect/Disconnect tool is disabled. The status bar shows the connection progress.

- **List filter** – select one of the following:
 - **This Meridian only** – lists the DECT System data selected from the M1 System Window. See [Figure 29](#) on page 75.
 - **All DECT Systems** – lists every DECT Systems data managed by the OTM server
- **List field** – shows the following for the DECT system or systems selected from the M 1 System Window ([Figure 29](#) on page 75):
 - site name/location ([Figure 38](#) on page 76)
 - Meridian 1 PBX name ([Figure 38](#))
 - DECT system name ([Figure 38](#))
 - presence of an alarm ([Figure 48](#) on page 97)
 - IP address, for the DECT system ([Figure 44](#) on page 93)
 - Primary Access Rights Identifier ([Figure 46](#) on page 95)
 - Concentration mode ([Figure 38](#))
 - number of subscribed handsets ([Figure 38](#))
 - connection status
- **Connection status field** – shows the current state of the connection, where:

- **Disconnected** – indicates no communication between the OTM server and a DECT system.
- **Connected** – indicates communication between the OTM server and a DECT system for an operation initiated by a user. The connection disconnects when the operation is finished.
- **Operation progress field** – shows the last received event associated with the connection, such as the following:
 - Disconnecting
 - Connecting
 - Modem Busy
 - Dialing

Additional information

Connecting to a DECT system

When the first connection to a new, installed DECT system is opened, the OTM DECT Application retrieves the DMC configuration from the OTM database. The OTM DECT Application reads the parameters from the DECT system for the manager database.

Perform one of the following actions to open a connection to a DECT system from an OTM DECT Application:

- Check the Permanent Connection box, allowing the connection to open when the OTM server starts. See [Figure 42](#) on page 91.
- Select a DECT system in the list and click the Connect icon.
- Select an action on the menu bar that requires a system connection. For example, when **Firmware > Upload** is chosen, the connection opens to carry out the upload and then closes.

Note: Do not use this type of connection for subscription actions. When using this type, the subscription status is not refreshed when an on-air subscription or de-subscription occurs.

The status bar of the application provides progress feedback while the connection opens.

Synchronization when the DECT Application connects to a DECT system

When the DECT manager connects to the DECT system, synchronization occurs. Synchronization compares the database on the manager to that of the DECT system. Database mismatches are flagged by dialogs. The opportunity is then given to change either the DECT system data or manager data.

A number of synchronization steps occur during connection. The Synchronization process flags changes made to a DECT system database by other managers.

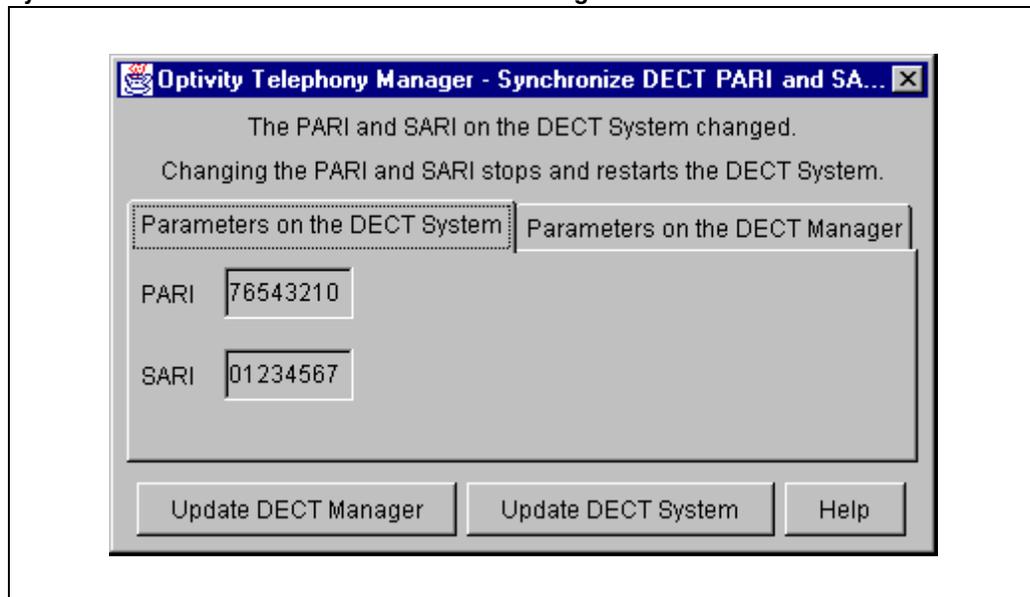
Two types of synchronization occur when the connection state goes from **Disconnected** to **Connected**:

- when the File menu or tool button is used to connect. The synchronization can be controlled through dialogs.
- when the OTM re-establishes a permanent connection to the DECT system. A synchronization report is available in the Event log on the OTM server.

When connecting to a DECT system that has data that does not match the OTM DECT Application data, do one of the following:

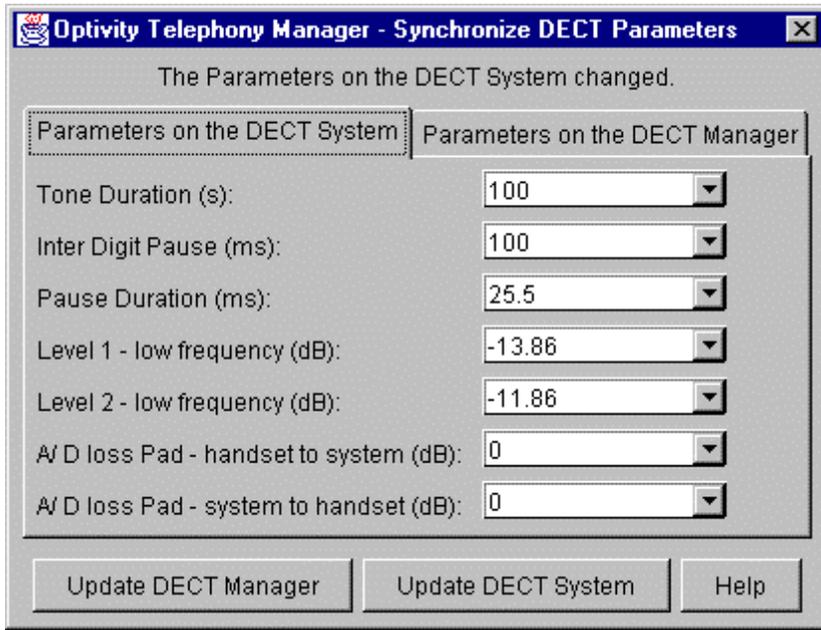
- Update the OTM DECT Application database from the DECT system data
- Update the DECT system data with the OTM DECT Application database

Figure 31
Synchronize DECT PARI and SARI Mismatch dialog



If there is a PARI or SARI mismatch between the OTM DECT Application database, and the DECT system database, the mismatch dialog enables the update of PARI and SARI parameters on both the connected DECT system and the OTM DECT Application. See Figure 31.

Figure 32
Synchronize DECT Parameters Mismatch dialog



If there is a Parameter mismatch between the OTM DECT Application database, and the DECT system database, the mismatch dialog enables the update of Parameters on both the connected DECT system and the OTM DECT Application. See Figure 32.

Figure 33
Synchronize DECT Board Configuration Mismatch dialog

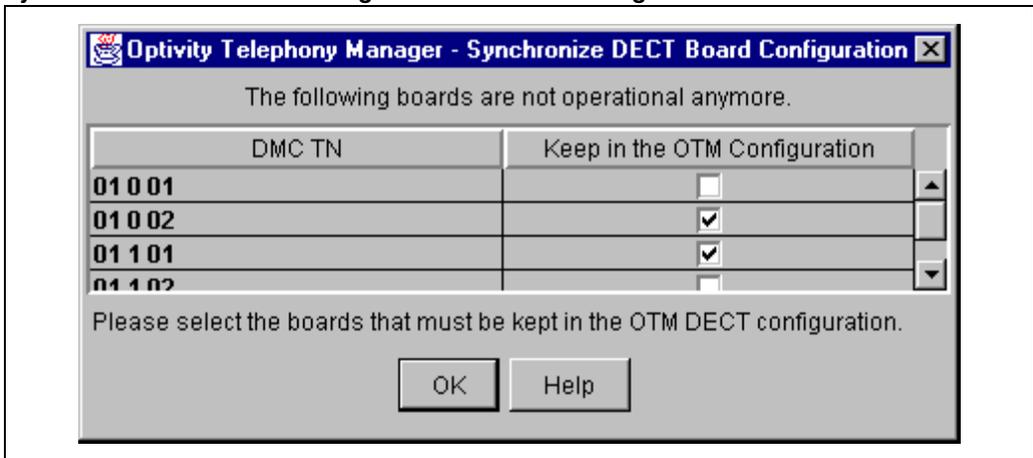


Figure 33 shows DMC TNs (Boards) listed in the OTM DECT Application database that are not operational on the DECT system. Delete the check in the check boxes. This allows the DMCs that are no longer required in the OTM DECT Application database to be removed.

Figure 34
Synchronize DECT Radio Fixed Part Configuration Mismatch dialog

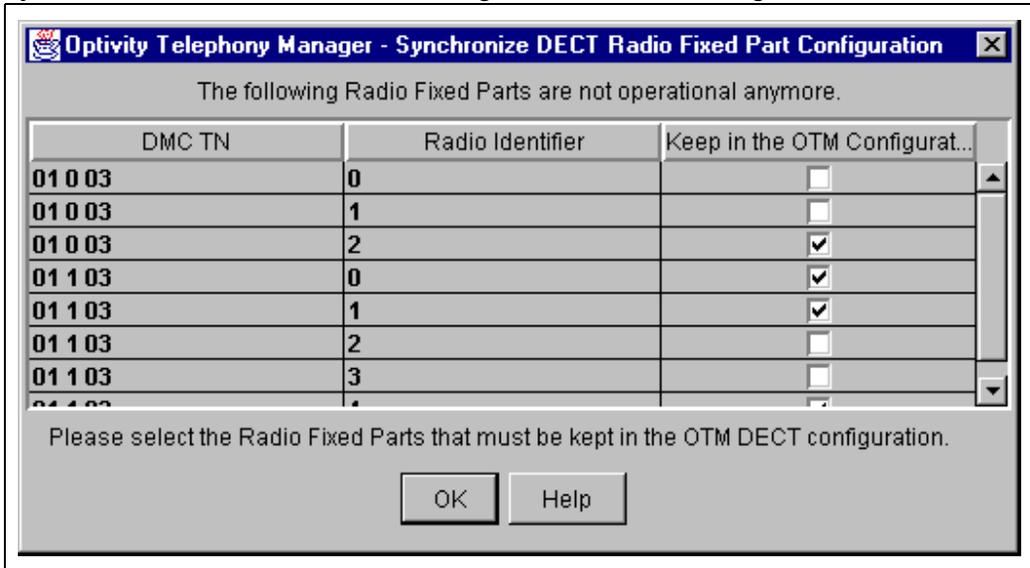


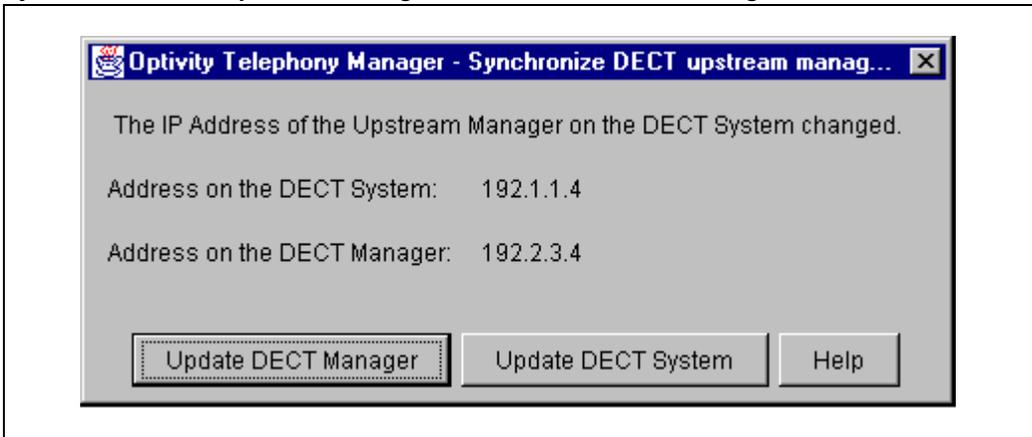
Figure 34 shows Radio Fixed Parts (base stations) listed in the OTM DECT Application database that are not operational on the DECT system. Delete the check in the check boxes. This allows the base stations no longer required in the OTM DECT Application database to be removed.

Figure 35
Synchronize Radio Fixed Part Settings Mismatch dialog



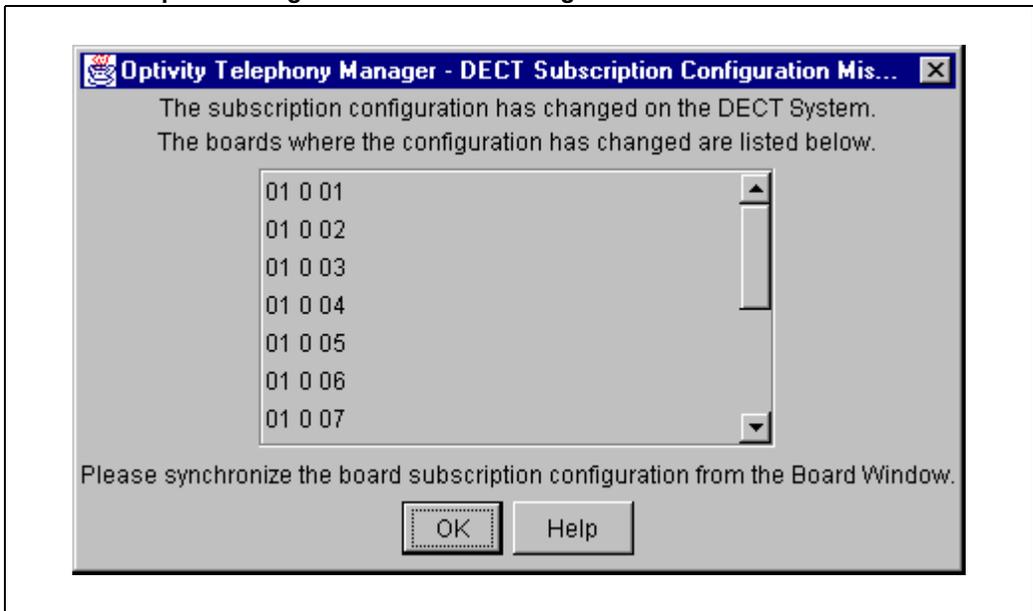
A Power Source/Alarm Muting setting was changed by another manager. Figure 35 says that the OTM DECT Application database automatically updates to match the changed settings.

Figure 36
Synchronize DECT Upstream Manager IP Address Mismatch dialog



If there is an Upstream Manager IP address mismatch between the OTM DECT Application database and the DECT system database, the mismatch dialog enables an update of the Upstream Manager IP address on both the connected DECT system and the OTM DECT Application. See Figure 36.

Figure 37
DECT Subscription Configuration Mismatch dialog



The dialog warns of a DMC mismatch between the DECT system and the OTM server database. The manager cannot automatically solve the mismatch. The mismatch must be solved manually.

DECT System Properties dialog

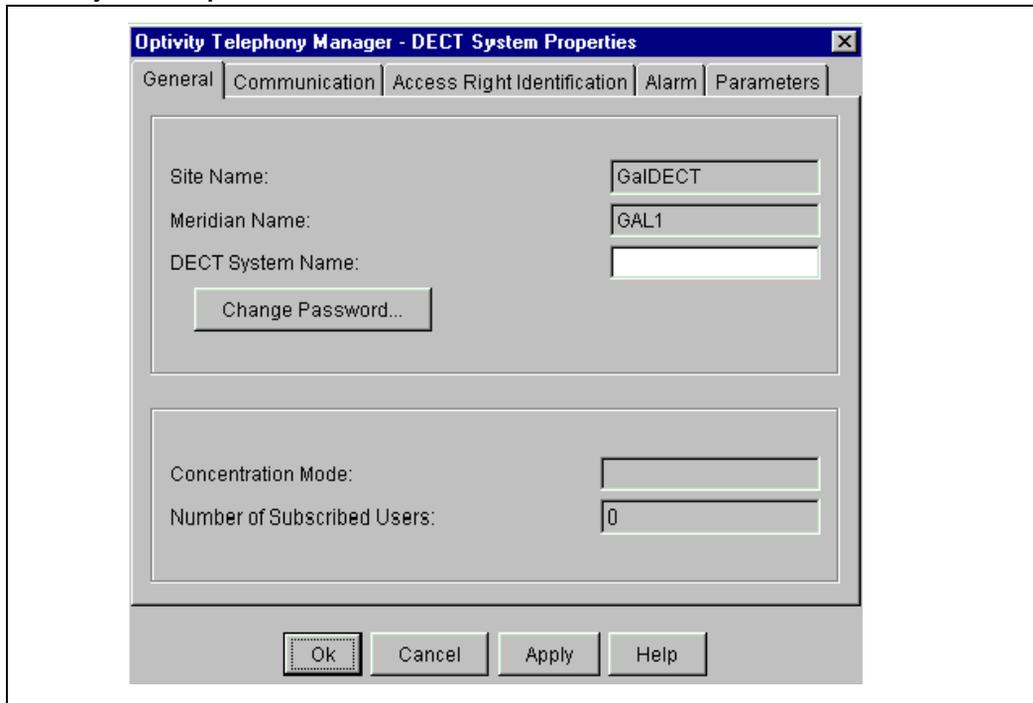
The DECT System Properties dialog is selected from the File menu. The DECT System Properties window has five tabs:

- General
- Communication
- Access Right Identification
- Alarm
- Parameters

See [Figure 38 on page 88](#).

DECT System Properties dialog – General tab

Figure 38
DECT System Properties – General tab

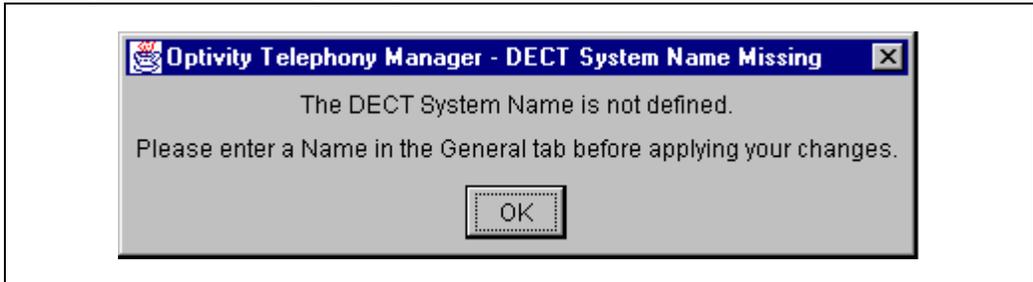


The General tab enables the following options:

- View the site name.
- View the Meridian 1 PBX name.
- View or change the DECT System name ([Figure 39](#) on page 89 and [Figure 40](#) on page 89).
- Change the password ([Figure 41](#) on page 90).
- View if Concentration mode is active or not active.
- View the number of subscribed handsets.

The **DECT System Name Missing** window appears when a DECT System name is not entered. See Figure 39.

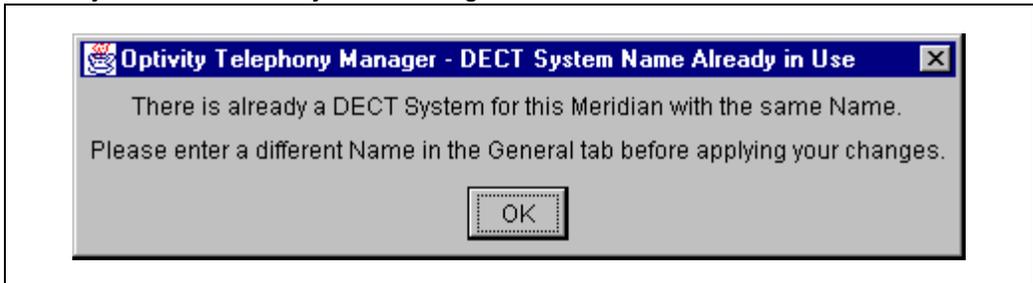
Figure 39
DECT System Name Missing dialog



The application will not save a system unless a unique name has been provided.

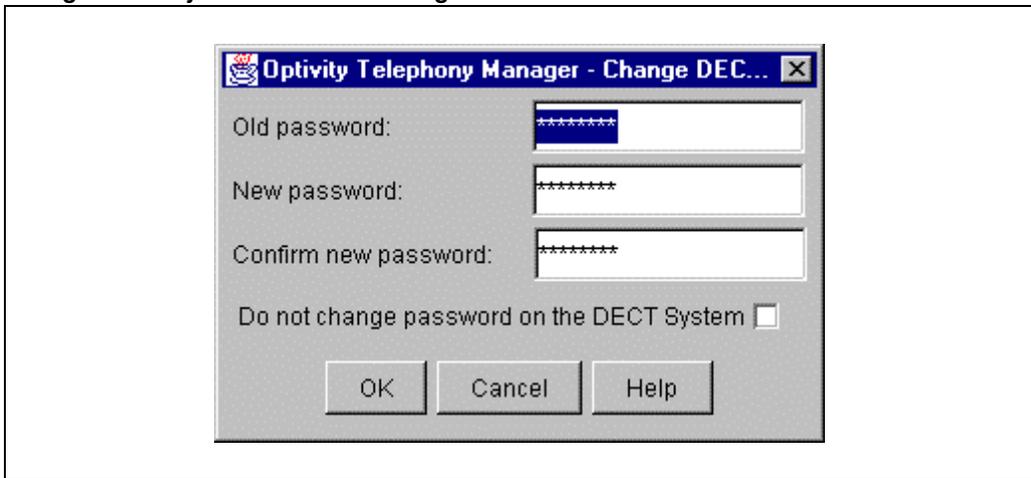
The **DECT System Name Already in Use** window appears when a DECT System name is the same as the name of another system. See Figure 40.

Figure 40
DECT System Name Already in Use dialog



The **Change DECT System Password** window is selected from the **DECT System Properties – General** tab. See Figure 41.

Figure 41
Change DECT System Password dialog

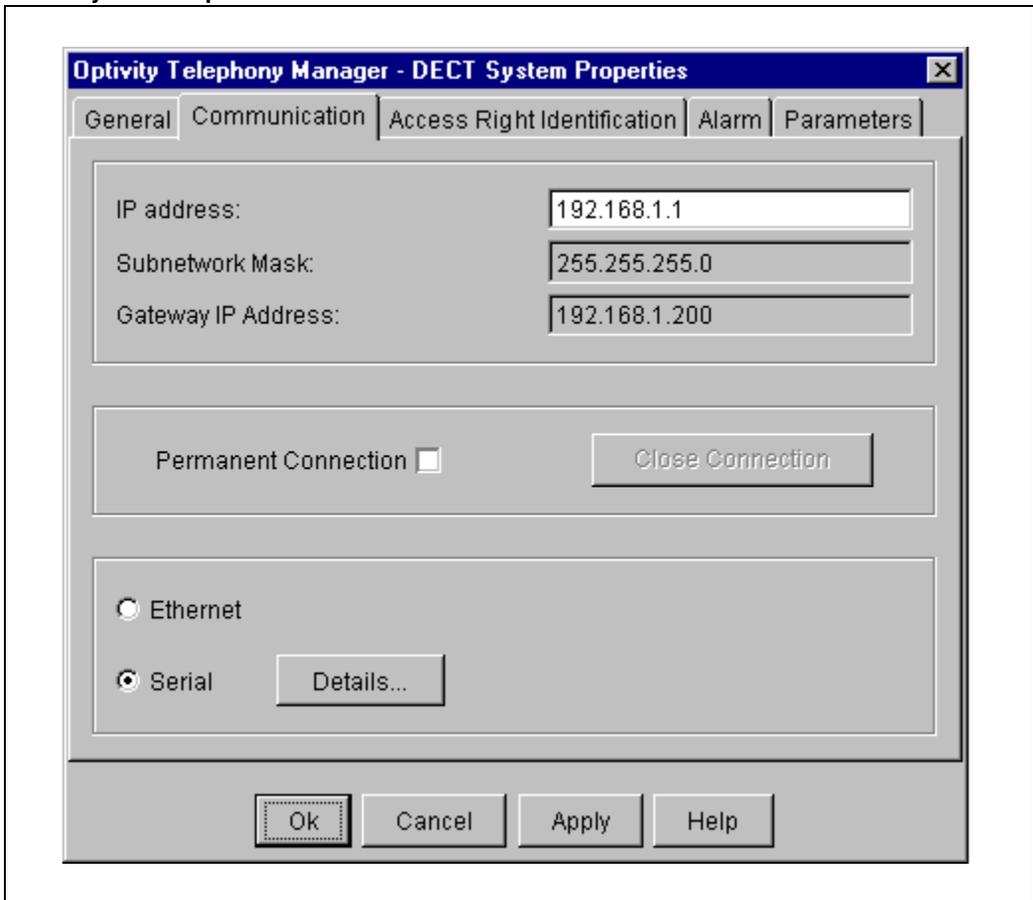


If the new password does not match the confirmed password, a dialog box opens and warns that the passwords do not match and allows the passwords to be changed.

DECT System Properties dialog – Communication tab

The DECT System Properties dialog is selected from the **File** menu. See [Figure 42 on page 91](#).

Figure 42
DECT System Properties – Communication tab



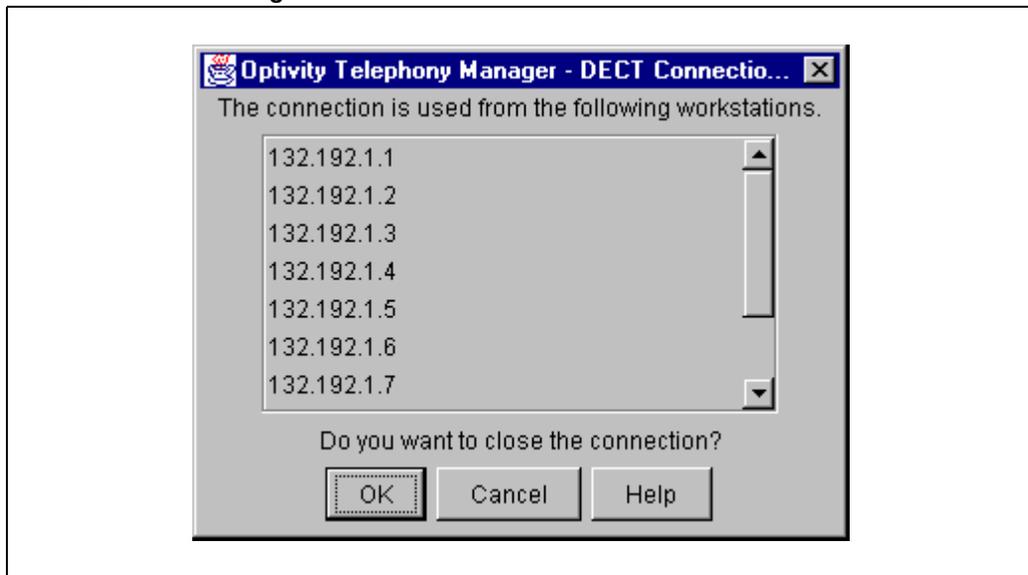
The **Communication** tab enables the following features:

- View or change the unique IP address; used if the connection is Serial or Ethernet.
- View the Subnetwork Mask.
- View the Gateway IP address.
- Check a Permanent Connection to keep the connection open and open the connection when the OTM starts.

- Select Close Connection (see [Figure 43](#) on page 92)
- Select Ethernet or Serial connection
- Select Details for the Serial connection (see [Figure 44](#) on page 93)
- Select a new DECT system definition by pressing the OK button. This causes the manager to try to connect to a new DECT system and write the system name in MIB2, after the following is done:
 - Enter the new system IP address.
 - Specify the new system name.

The **Close Connection** dialog opens when the **Close Connection** button on the DECT System Properties – Communication tab is clicked. See [Figure 43](#).

Figure 43
Close Connection dialog



DECT System Detailed Connection settings properties is selected from the **Details** button of the **DECT System Properties – Communication** tab. See Figure 44.

Figure 44
DECT System Detailed Connection settings properties

The screenshot shows a dialog box titled "OTM - DECT System Detailed Connection settings properties". The dialog contains the following fields and controls:

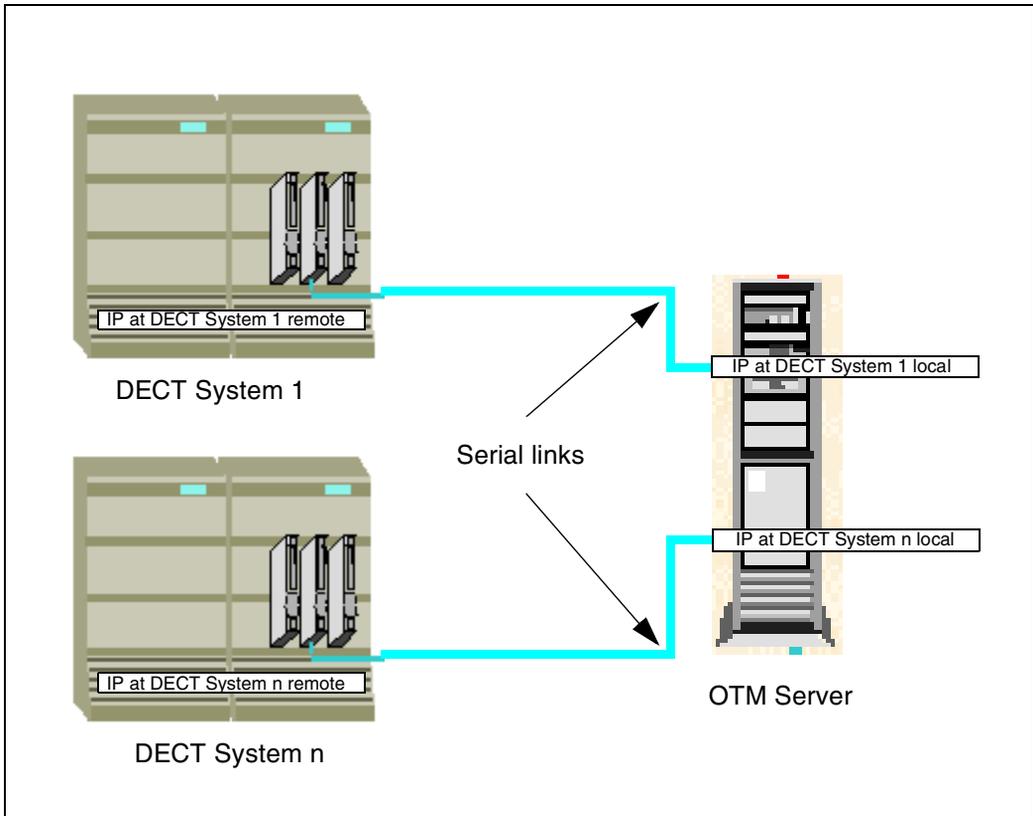
- OTM Server IP Interface:** Text input field containing "192.168.1.200".
- COM Port:** Dropdown menu showing "COM2".
- Modem:** Checkable box, currently unchecked.
- Phone Number:** Empty text input field.
- Data Rate:** Text input field containing "38 400".
- Stop Bits:** Text input field containing "1".
- Parity:** Text input field containing "none".
- Data Bits:** Text input field containing "8".
- Delay (s):** Text input field containing "0".
- Buttons:** "Ok", "Cancel", and "Help" buttons at the bottom.

DECT System Detailed Connection settings properties enables the following options:

- View or change the OTM Server IP interface assigned to the PC RAS port interface on the same network as the DECT system.

- View or select the COM Port attached to either the DECT system or the modem.
- Select a modem mode.
- View or change the Phone Number that dials the modem.

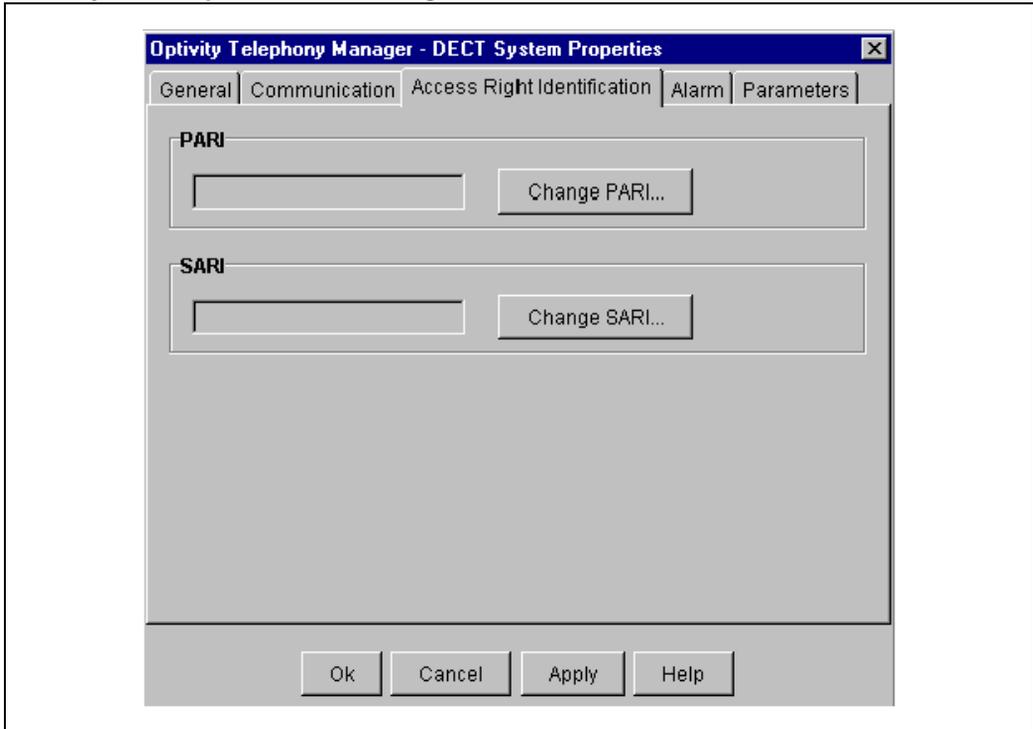
Figure 45
Local and remote IP address for serial connections



Supply an IP address for local and remote ends of the serial link, so the OTM can route IP traffic to the correct DECT system. See Figure 45.

DECT System Properties dialog – Access Right Identification tab

The DECT System Properties dialog is selected from the File menu. See Figure 46.

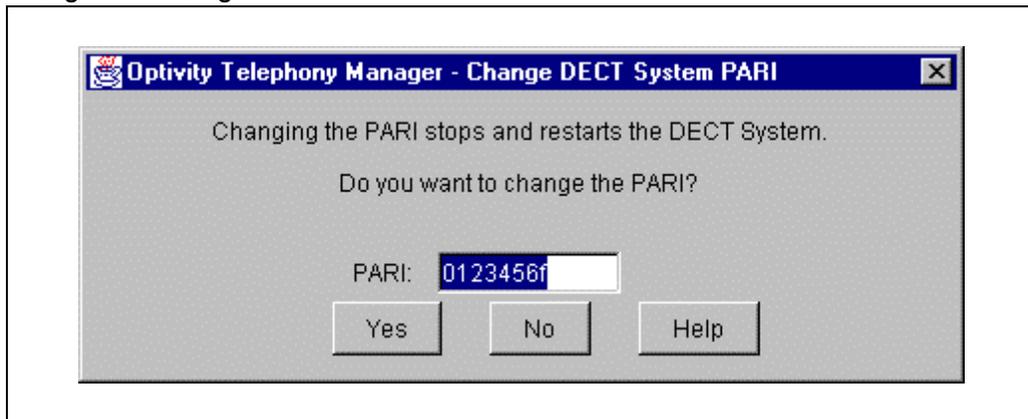
Figure 46**DECT System Properties – Access Right Identification tab**

There are two Access Right Identifications, a Primary Access Right Identification (PARI) and a Secondary Access Right Identification (SARI), which identify each DECT system. The Access Right Identification enables the following:

- View or change the PARI. See [Figure 47](#) on page 96.
- View or change the SARI. (A SARI dialog box is similar to that shown in [Figure 47](#).)

The **Change DECT System PARI** window appears when the **Change PARI...** button on the **Access Right Identification** tab is pressed. See Figure 47.

Figure 47
Change PARI dialog



Do not change the PARI or SARI until connected to the DECT system requiring the new PARI or SARI.

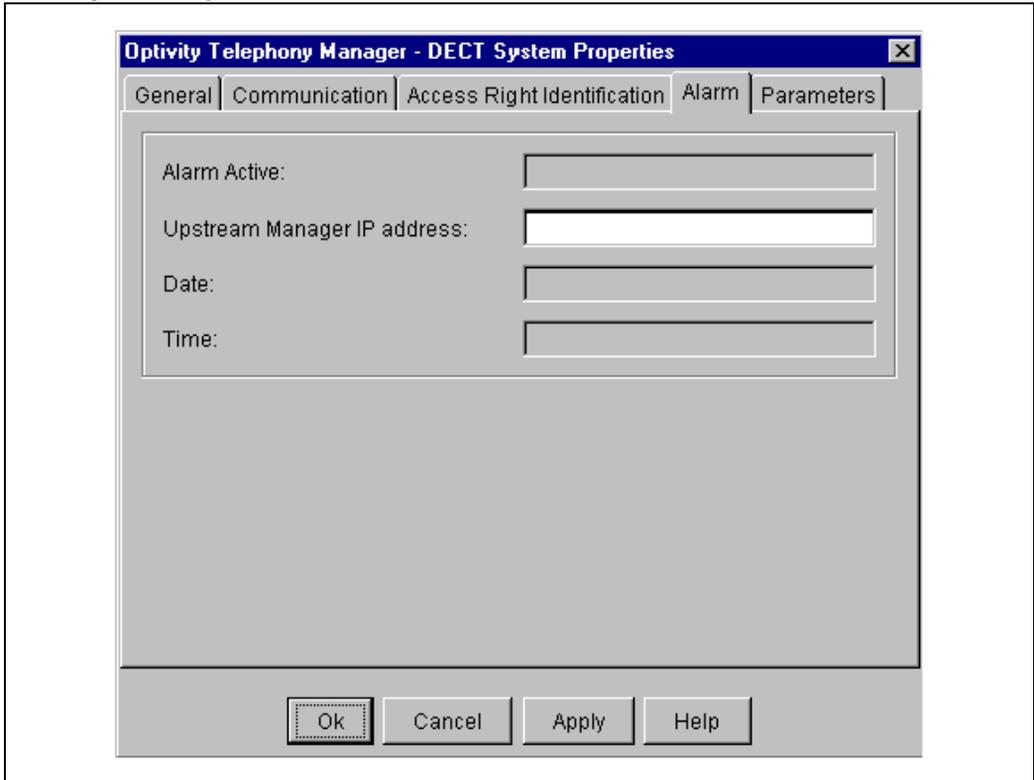
During synchronization, a dialog warns if a DECT system has a different PARI or SARI than the OTM DECT manager.

See [“Multi Site Mobility Networking subscriptions” on page 118](#) for additional information about changing the PARI and SARI.

DECT System Properties dialog – Alarm tab

The DECT System Properties dialog is selected from the File menu. See Figure 48.

Figure 48
DECT System Properties – Alarm tab



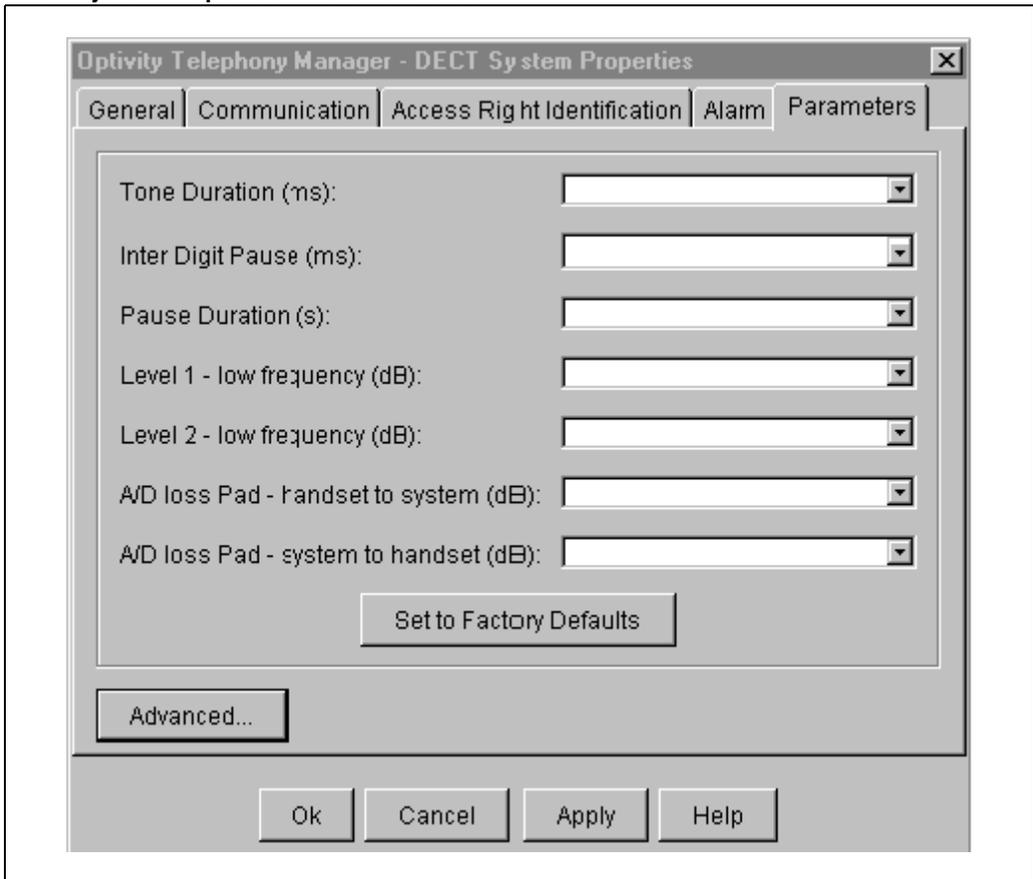
The Alarm enables the following options:

- View a **Yes** or **NO** in the active alarm when the manager is connected to a DECT system with an active alarm.
- View or change the Upstream Manager IP address. The DECT system can send alarms to an upstream manager.
- View or change the Date and Time, used to timestamp alarms. When not connected, the Date and Time fields are blank. When the DECT system is reset, the time and date are not updated.

DECT System Properties dialog – Parameters tab

The DECT System Properties dialog is selected from the File menu. See Figure 49.

Figure 49
DECT System Properties – Parameters tab



The Parameters tab enables the following options:

- View or change Tone Duration in milliseconds.
- View or change Inter Digit Pulse width in milliseconds.
- View or change Level 1 - low frequency in decibels.

- View or change Level 2 - low frequency in decibels.
- View or change Analog/Digital loss pad- handset to system in decibels.
- View or change Analog/Digital loss pad- system to handset in decibels.
- Set all parameters to Factory Default values.

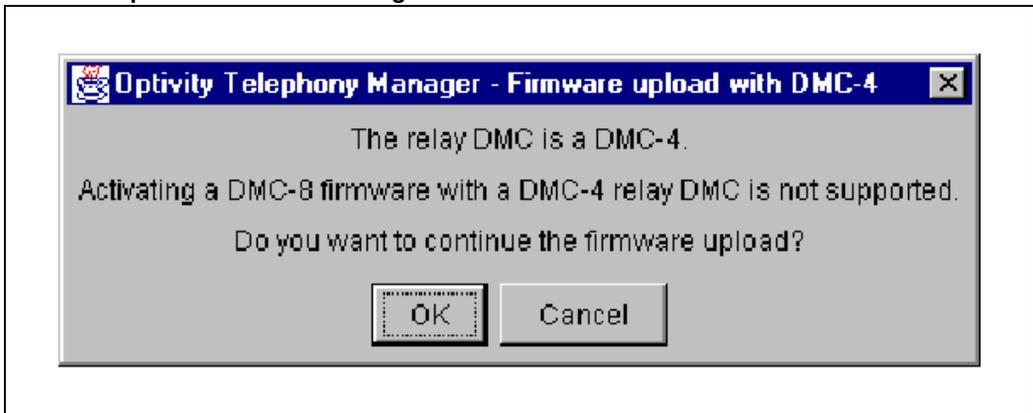
	<p>WARNING System Failure</p> <p>Do not use the Advanced.... button. It can cause the system to fail.</p>
---	--

The DECT System Properties Parameters are read from the DECT system on synchronization.

Firmware upload and activation

The Firmware upload dialog is selected from the Firmware menu.

Figure 50
Firmware upload with DMC-4 dialog



The designator DMC is used to differentiate between the NTCW00AA DMC card and the NTCW00AB DMC8 card.

This dialog alerts that a DMC card cannot support a firmware upload. If **OK** is selected, a file chooser allows a firmware file to be selected from the Client or from the OTM server. See [Figure 52](#) on page 101. When **OK** is selected, the existing standby firmware can be replaced with new firmware.

Do one of the following:

- Accept the firmware for the DECT system.
- Cancel the firmware upload for the DECT system.

See [Figure 50](#) on page 99.

Figure 51
Firmware upload dialog

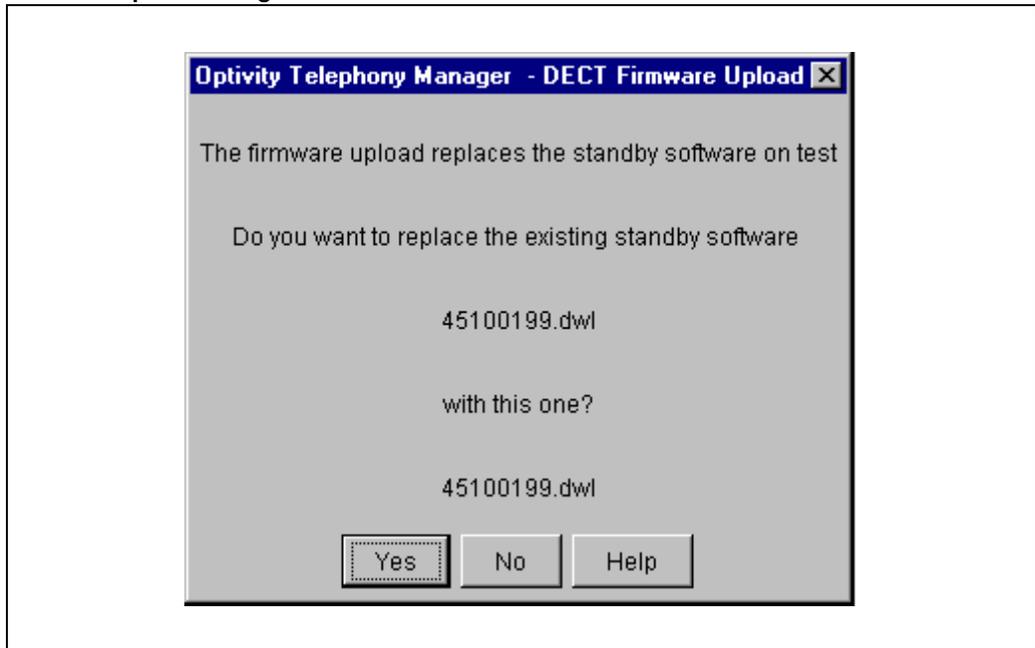
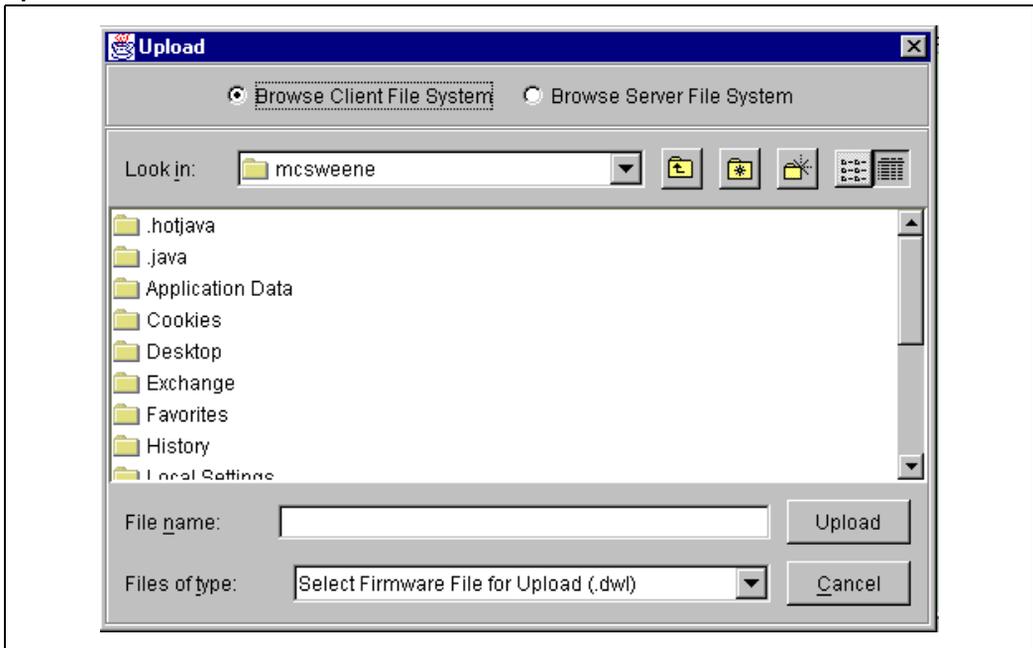


Figure 52
Firmware activation dialog



Figure 53
Upload file chooser



The **Upload** radio buttons enable the following options:

- Browse files on the Client PC.
- Browse files on the OTM Server.

Select a file from either the client or the server to upload to the DECT system.

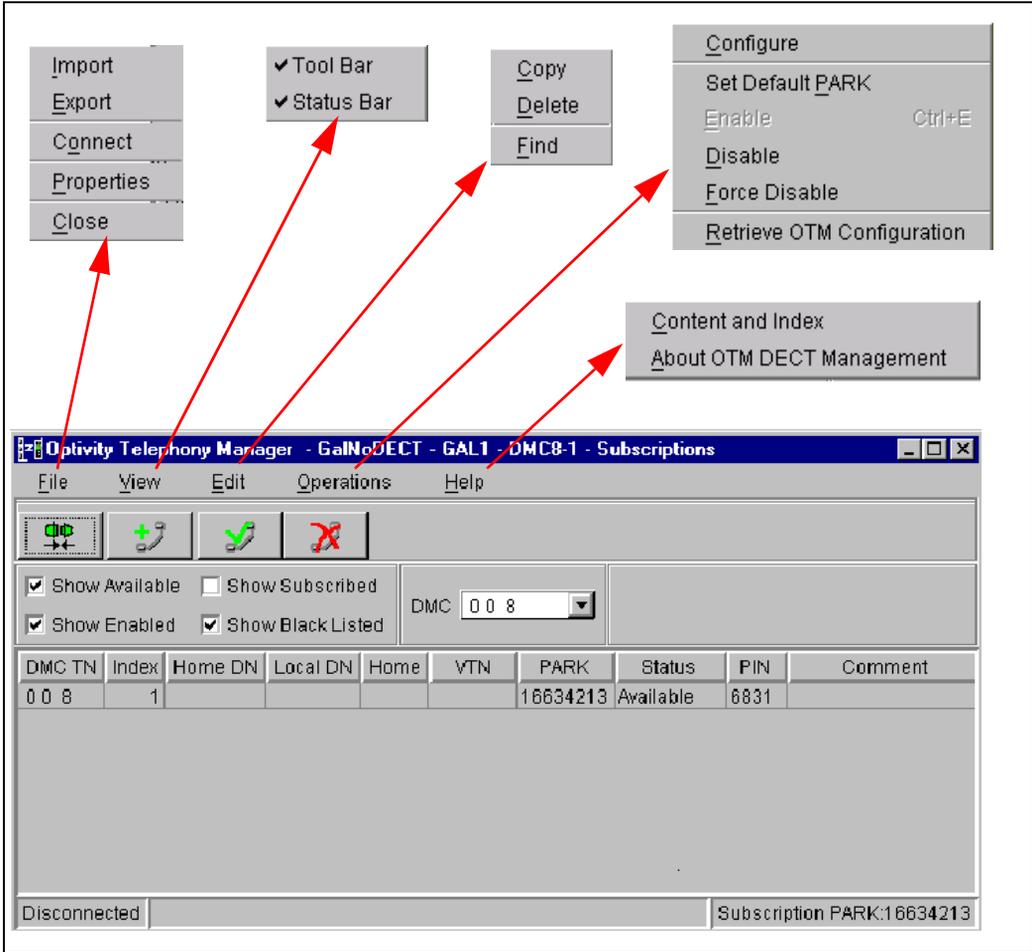
Figure 54
Progress indicator



Subscriptions window

The Subscriptions window is selected from the DECT Systems window Applications menu. See Figure 55.

Figure 55
Subscriptions window



Features

The Subscriptions window enables the following:

- Connect to, disconnect from, lock or unlock a connection between the OTM server and a DECT system.
- Choose to show, in any combination, (see [Figure 57](#) on page 109 and [Figure 58](#) on page 110) handsets that are:
 - Available
 - Subscribed
 - Enabled
 - Blacklisted
 - configured on one DMC8 or all DMC8s
- Subscribe (configure) handsets.
- De-subscribe handsets.
- Copy subscription data.
- Move subscription data.
- Delete subscription data.
- Find subscription data.
- Export subscription data.
- Import subscription data.

Note: To use a handset, the handset must first be programmed on the Meridian 1 PBX using LD 10.

Menu options

The Subscriptions window displays the following:

- **F**ile – contains a pull-down menu allowing one of the following to be selected:
 - I mport – a subscription from a file (see [Figure 61](#) on page 114)
 - E xport – a subscription to a file (see [Figure 62](#) on page 115)

- Connect – Lock, Unlock, Disconnect
- Properties – includes data in the subscription list and International Portable User Identifier (IPUI) (see [Figure 68](#) on page 122)
- Close – close the Subscriptions window
- **View** – contains a pull-down menu that shows or hides the following:
 - Tool bar
 - Status bar
- **Edit** – contains a pull-down menu to open the following dialog boxes:
 - Copy (see [Figure 59](#) on page 112)
 - Delete (see [Figure 58](#) on page 110)
 - Find (see [Figure 63](#) on page 116)
- **Operations** – contains a pull-down menu to open the following windows:
 - Configure – to program a handset on the Meridian 1 system. See [Figure 56](#) on page 108.
 - Set Default PARK – enter the default Portable Access Rights Key. See [Figure 65](#) on.)
 - Enable – to subscribe a handset
 - Disable – to de-subscribe a handset from one DECT system (see [Figure 66](#) on page 120) or de-subscribe a handset from all DECT systems, for example, Multi Site Mobility Networking. See the section “Multi Site Mobility Networking subscriptions” on page 118.
 - Force Disable – to return the subscription to the available state, and requests the system to disable the subscription. However, there is no interaction between the system and handset. See [Figure 67](#) on page 121.

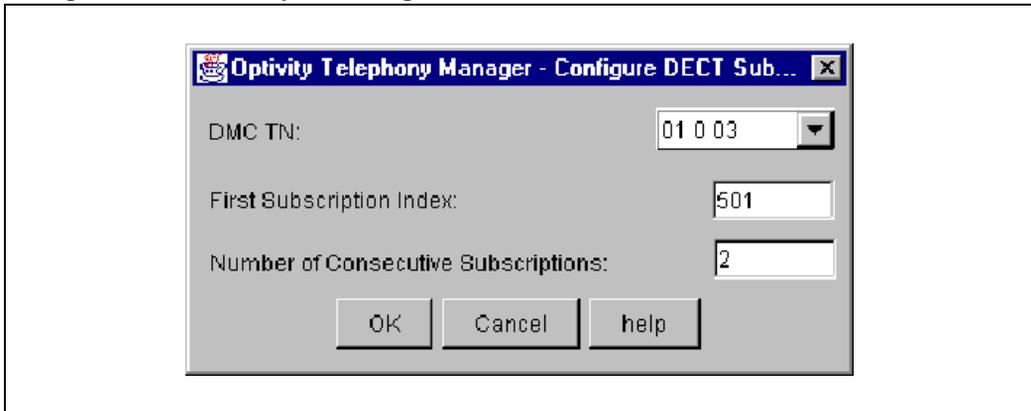
- Retrieve OTM Configuration – to retrieve the Meridian 1 handset configuration from the OTM Station Administration database. If there is a mismatch between the Station Administration configuration and the DECT application configuration, see [Figure 64](#) on page 117.
- **H**elp – contains a pull-down menu to select the following:
 - Content and Index
 - About DECT application
- **T**ool bar – click the appropriate tool button to do the following:
 -  connect,  lock,  unlock,  disconnect – performs the same functions as the “DECT Systems window” on page 76
 -  enable – to subscribe a handset
 -  disable – to de-subscribe a handset
 -  configure – to program a handset
- **L**ist filter – to show or hide details of handsets that are:
 - available (see [Figure 57](#) on page 109 and [Figure 58](#) on page 110)
 - subscribed ([Figure 57](#) and [Figure 58](#))
 - enabled ([Figure 57](#) and [Figure 58](#))
 - black-listed ([Figure 57](#) and [Figure 58](#))

Note: DMC restricts the list to subscription data for one DMC or lists subscription data for all DMC
- **L**ist – to show the following subscription details for handsets assigned to a <sitename>, a <PBX name>, a <DECT system name>. See the [Figure 55](#) title bar on page 103.
 - DMC TN
 - index – 32 units or 510 virtual units for concentration on a DMC

- concentrated handset Home DN
- concentrated handset Local DN – different than Home DN for visitor concentrated handset
- virtual TN for concentration handsets
- subscription PARK
- subscription status – updated by SNMP traps from the DECT system
- PIN code appears during subscription activation
- an 80-character comment
- **Pop up menu** – available when at least one subscription is selected. The pop-up menu contains the following items:
 - Configure
 - Enable
 - Disable
 - Copy
 - Move
 - Delete
 - Export
 - Properties
 - Help
- **Status bar** – shows the following:
 - connection status
 - operation status
 - current subscription PARK

Configure and enable a subscription

Figure 56
Configure DECT Subscription dialog



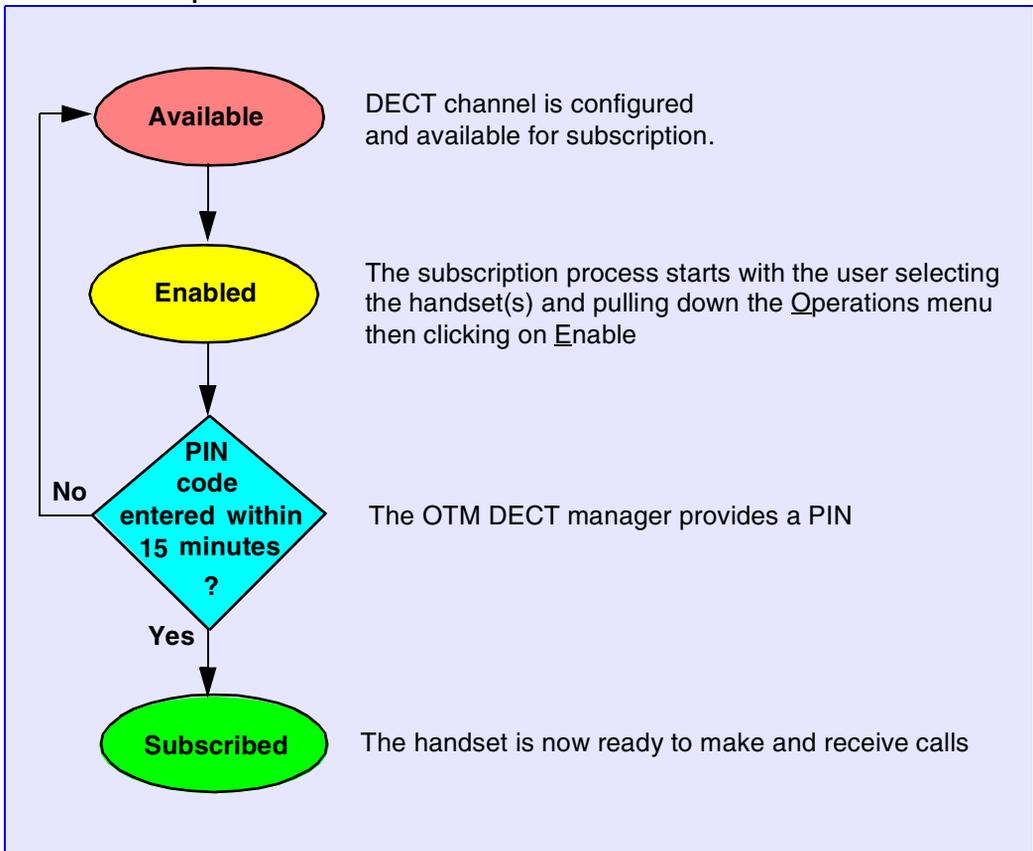
Configure DECT Subscription enables the following:

- Select a DMC TN.
- Enter the first subscription index (unit, as in l s c u).
- Select a number of consecutive subscriptions.

See Figure 56.

When configured, the subscription becomes available and the subscription can be enabled. During the enable process, the DECT manager generates a PIN code for the subscription. See [Figure 57](#) on page 109.

Figure 57
Enable a subscription

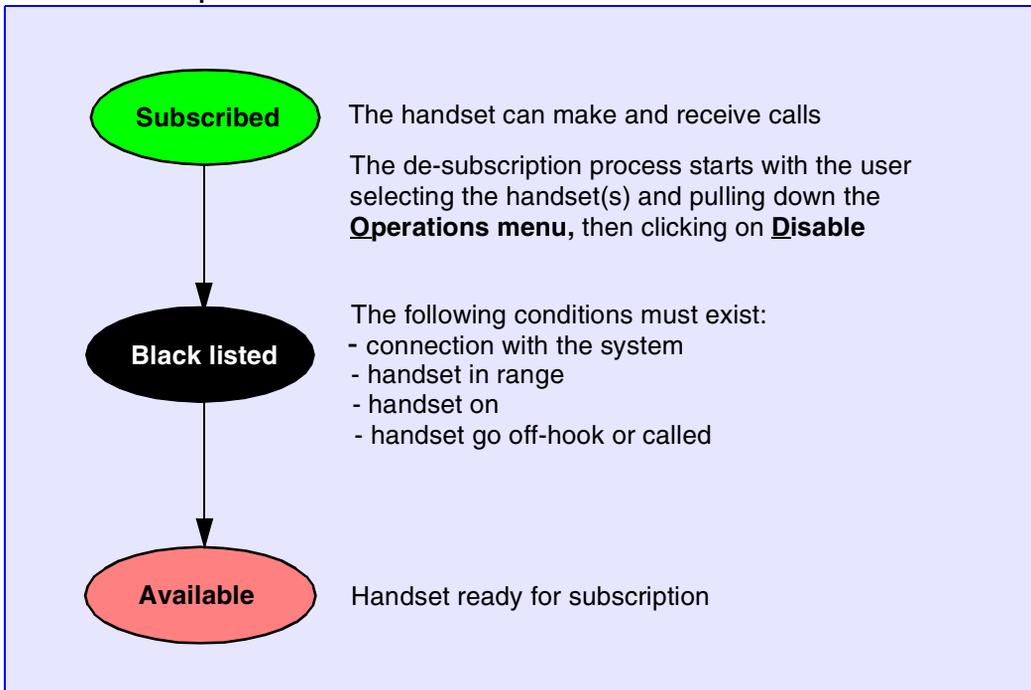


Disable subscriptions

A subscription can be de-subscribed in the following ways:

- as a single handset
- in a list of selected handsets
- for all handsets on a DMC

Figure 58
Disable a subscription



Launching an on-air de-subscription requires an open connection to the DECT system.

When the DECT Manager starts the de-subscription, the DECT system holds the de-subscription until one of the following occurs:

- The handset makes or receives a call.
- The DECT Manager removes the subscription.

The DECT system notifies the DECT Manager that the handset is de-subscribed.

The DECT manager can stop a handset from operating on all the DECT systems where the handset is subscribed with a given International Portable User Identifier (IPUI).

To stop a handset from operating, the handset must be within radio range and ready for on-air de-subscription. The process removes handset subscription data from the following:

- the DECT system DMCs
- the handset
- the DECT managers handset and DECT system files

When the handset's subscription data is removed, the handset no longer works on any DECT system.

Delete subscriptions

The Delete operation allows handset information to be removed from the manager and the DECT system, but not the handset. The Delete operation does not require the handset to be available for on-air de-subscription. The Delete operation does the following:

- removes the DECT system handset subscription data
- retains the handsets subscription data, if the handset had subscription data. (As the handset does not remove its subscription data, it continues operating on all the DECT systems where this subscription is relevant.)
- removes the DECT manager handsets subscription data including comments and Meridian 1 PBX Station Administration data

The DECT Manager can be used to remove subscription records from the following:

- a single handset subscription
- a list of selected subscriptions
- a DMC or from all DMCs at once

The subscription removal requires an open connection to the DECT system.

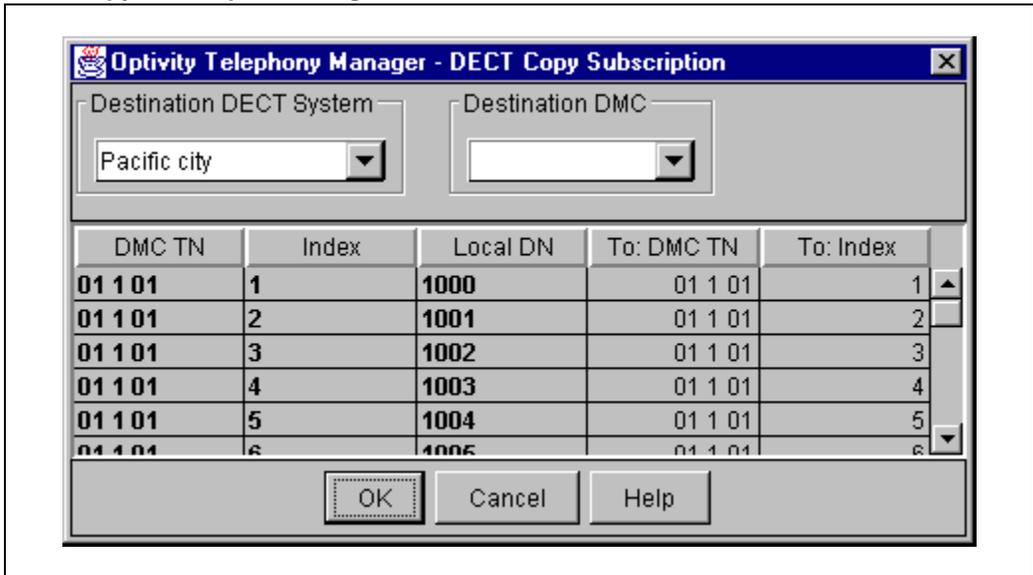
Remove subscription records for the following reasons:

- to clean a Multi Site Mobility Networking DECT system subscriptions on the distributors premises
- to move a DMC from one DECT system to another

Copy subscriptions

The **DECT Copy Subscription** dialog is selected from the Edit menu.

Figure 59
DECT Copy Subscription dialog



The **DECT Copy Subscription** dialog allows subscriptions to be copied from a DMC on DECT system A and then pasted into a DMC on DECT system B. The subscriptions must have a *Subscribed* status.

Ensure the connection to the destination system is open. Select the Destination DECT system and the Destination DMC from the DECT Copy Subscription dialog.

Subscriptions can be copied from the following:

- a single handset subscription
- a list of selected subscriptions
- a DMC

Note: Subscriptions cannot be copied within the same DECT system. When a subscription is copied, only the DECT system data is copied, not the Meridian 1 PBX data.

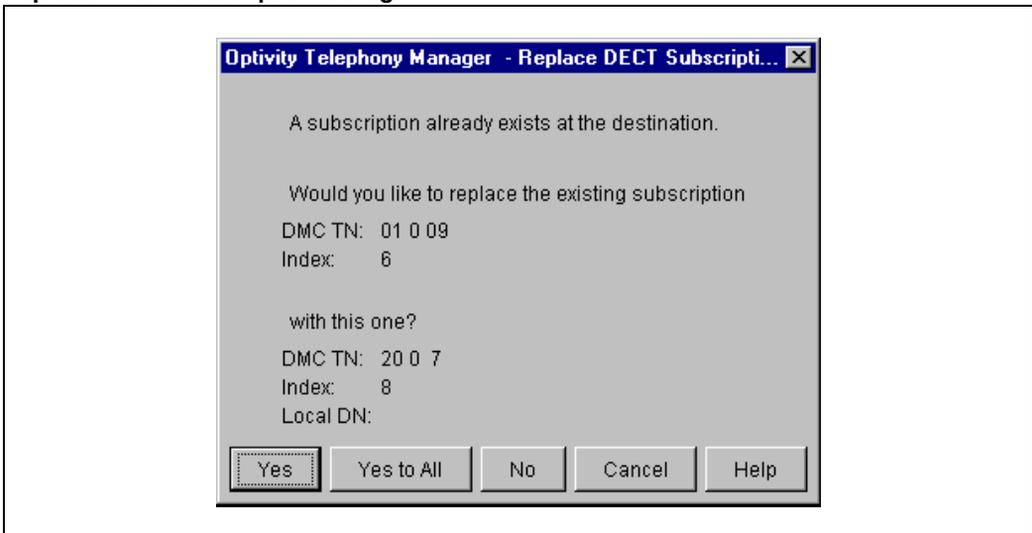
In [Figure 59](#) on page 112, the source subscription data appears in the three left columns; DMC TN, Index, and Local DN. View the source subscription from the Subscription window. The destination subscription data is in columns **To: DMC TN**, and **To: Index**. Index is the Unit on the DMC. When the dialog opens, the source DMCs and destination DMCs are the same.

When copying subscription data, ensure a connection exists between the source DECT system and the destination DECT system.

The Copy Subscription feature provides a way to support Multi-site Mobility Networking, by allowing handsets to be subscribed without being on the Distributor Premises.

The **Replace DECT Subscription** dialog allows an action to be confirmed if more than one subscription will be overwritten at the destination. See [Figure 60](#).

Figure 60
Replace DECT Subscription dialog



Move Subscriptions

The **Move Subscriptions** dialog is selected from the **Edit** menu.

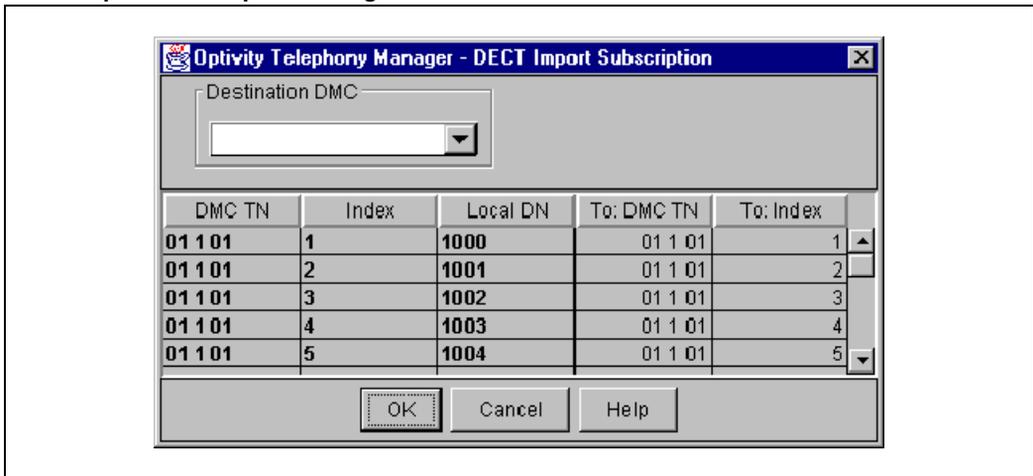
Move Subscriptions is similar to Copy, except for the following. The Move Subscriptions dialog allows subscriptions to be cut/removed from a DMC on DECT system A, and the subscriptions pasted into a DMC on the same DECT system, or on DECT system B.

When using Move, the source DECT system and the destination DECT system must be connected.

Import Subscriptions

The **DECT Import Subscriptions** dialog is selected from the File menu. See Figure 61.

Figure 61
DECT Import Subscription dialog



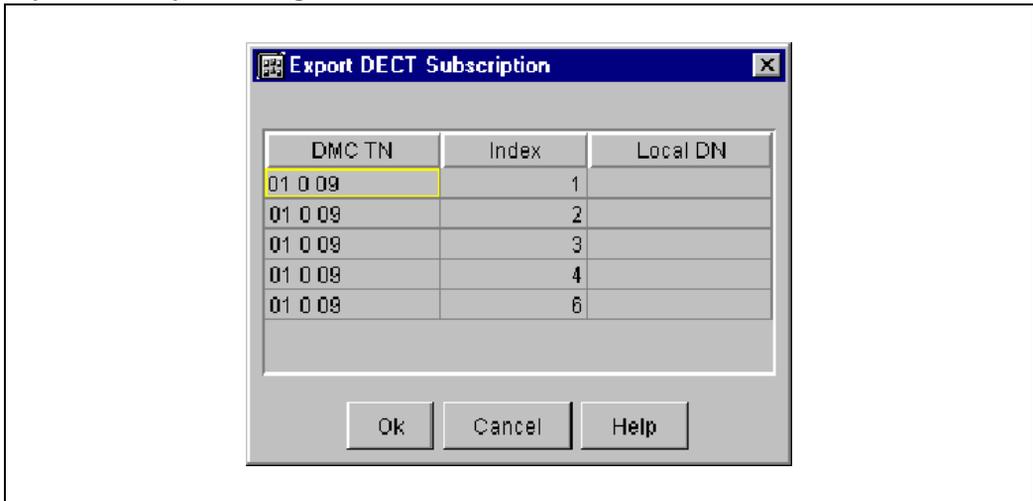
Import Subscriptions is similar to Copy, except for the following. The import dialog allows subscriptions to be copied from an import file and the subscriptions pasted into a DMC on a DECT system.

To paste a subscription, ensure a connection to the destination DECT system.

Export DECT Subscriptions

The **Export DECT Subscriptions** dialog is selected from the File menu.

Figure 62
Export Subscription dialog



Export Subscriptions is similar to Copy, except for the following. The export dialog copies subscriptions from a DECT system and pastes them into a file. See Figure 62.

Note: Import and Export support Multi Site Mobility Networking and Subscription on the Distributor Premises to a DECT system normally managed by OTM “B”, not OTM “A”.

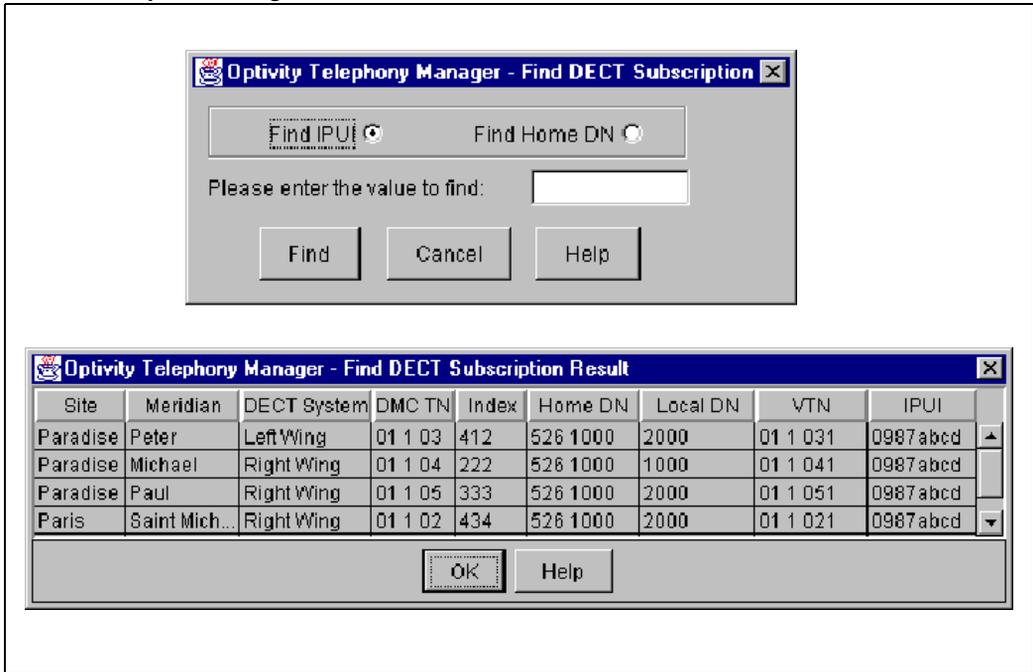
Find DECT Subscriptions

The **Find DECT Subscriptions** dialog is selected from the **Edit** menu.

The Find operation allows subscription information to be located by searching for an IPUI or a Home DN, using the Find DECT Subscription dialog. See [Figure 63](#) on page 116.

The Find action displays the subscription information in the **Find DECT Subscription Result** dialog box.

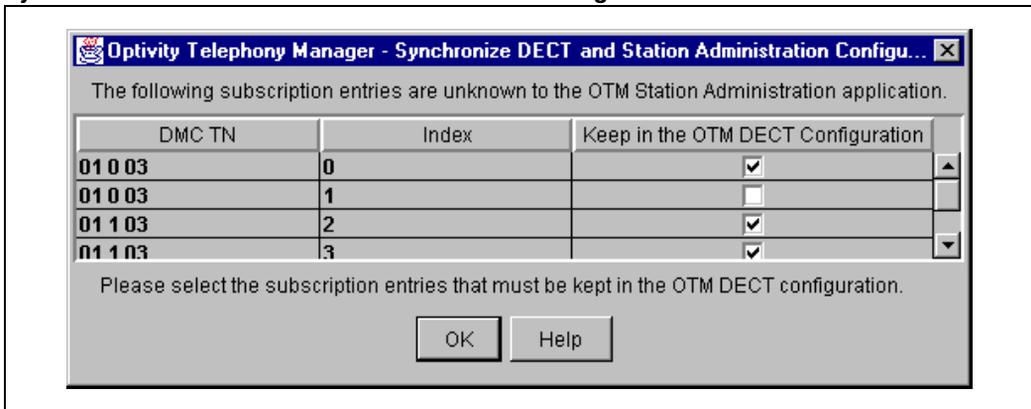
Figure 63
Find Subscription dialog



Synchronize DECT and Station Administration Configuration

The **Synchronize DECT and Station Administration Configuration** dialog is selected from the Operations menu (**Retrieve OTM Configuration**) if there is a mismatch. If there is no mismatch, synchronization occurs and [Figure 64](#) on page 117 does not appear.

Figure 64
Synchronize DECT and Station Administration Configuration Mismatch



DECT systems support configured and subscribed handsets as TNs. The Meridian 1 PBXs have matching TN handsets configured in LD 10.

Meridian PBX to DECT system synchronization

If the Meridian PBX configuration data is available through the OTM Station Administration database, then a synchronization facility is available to import the data into the DECT manager. Synchronization is subject to the following rules:

- A handset not listed in the DECT Manager, but present in the OTM database, is added in the DECT Manager list.
- If the DECT Manager lists a handset, but the OTM database does not, the DECT Manager prompts to either keep or remove the handset.

To add handsets to the DECT manager, select **Configure** from the **Operations** menu. See “Synchronize DECT and Station Administration Configuration” on page 116.

The **Synchronize DECT and Station Administration Mismatch** dialog box highlights DMC TNs in the DECT manager that are not configured in the OTM Station Administration. Those subscriptions must be kept in the DECT manager so they can be checked. See [Figure 64](#) on page 117.

If there is no mismatch that OTM cannot resolve automatically, the Synchronize DECT and Station Administration dialog does not appear.

Two examples of mismatches that OTM cannot resolve automatically are as follows:

- There are no entries in the Station Administration database, or
- the DECT Manager does not have a DMC configured in a Meridian 1 PBX TN location, but an entry exists in the Station Administration database.

Multi-site Mobility Networking subscriptions

In Multi-site Mobility Networking (MSMN), users can take their DECT handsets to other sites in the network, and make and receive calls as if they were at their home location. A handset is subscribed in a given DECT system and can be used in one or many DECT systems.

For information on MSMN feature description, feature interaction, feature packaging, and operating parameters, see “Multi-Site Mobility Networking” on page 147. For information on MSMN feature implementation and operation, refer to “Multi-site Mobility Networking” in *DECT Installation Guide* (553-3601-203).

Every handset has a Portable Access Rights Key (PARK). Every DECT system has a Primary Access Rights Identifier (PARI), and can have a Secondary Access Rights Identifier (SARI).

The handset PARK and DECT system PARI and SARI are used by the handset and DECT system to identify each other. The PARK and PARI/SARI match allow the handset to work with a DECT system.

In an MSMN network, for example, DECT system “A” has a PARI matching a handset PARK while DECT systems “B”, “C”, and “D” have a SARI matching the handset PARK.

The DECT Manager user programs the SARI in the DECT system. The DECT Manager provides the PARK during the on-air subscription, and the PARK is programmed into the handset at subscription time. See [Figure 46](#) on page 95 and [Figure 47](#) on page 96.

For example, a handset can be subscribed to a DECT system on a distributor's premises, where the handset is not to be in operation. Then the subscription data is downloaded to a DECT system where the handset is to be in operation. The PARI of the DECT system where the handset is subscribed and the SARI of the DECT system where the handset is used are not always the same. The PARK matching the destination DECT system to the handset is provided during the on-air subscription.

Figure 65
DECT Default Subscription PARK dialog



The DECT Manager provides the ability to specify the PARK given to the handset, to support Multi Site Mobility Networking and Subscription on the distributor premises. See [Figure 47](#) on page 96. The PARK normally defaults to the PARI of the system where the on-air subscription occurs. For MSMN, the default PARK must be equal to the network SARI value for any subscription activity to take place.

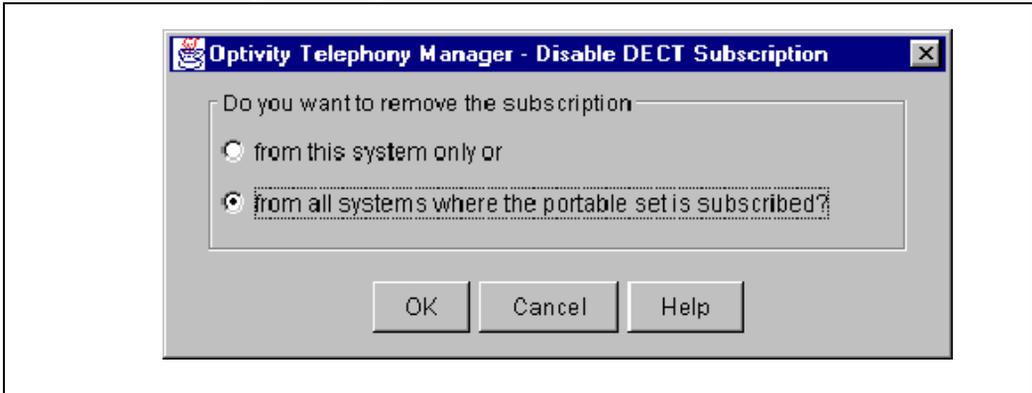
The PARK used by the OTM DECT subscription application is subject to the following conditions:

- PARK is limited to the lifetime of the subscription application.
- Two users can use a different PARK on the same DECT system at the same time.
- PARK is not recorded in persistent storage.

Disable DECT Subscriptions

The **Disable DECT Subscriptions** dialog is selected from the Operations menu.

Figure 66
Disable DECT Subscription dialog



Use the **Disable DECT Subscriptions** window to disable a handset from all DECT systems used in Multi Site Mobility Networking systems. See [Figure 66](#).

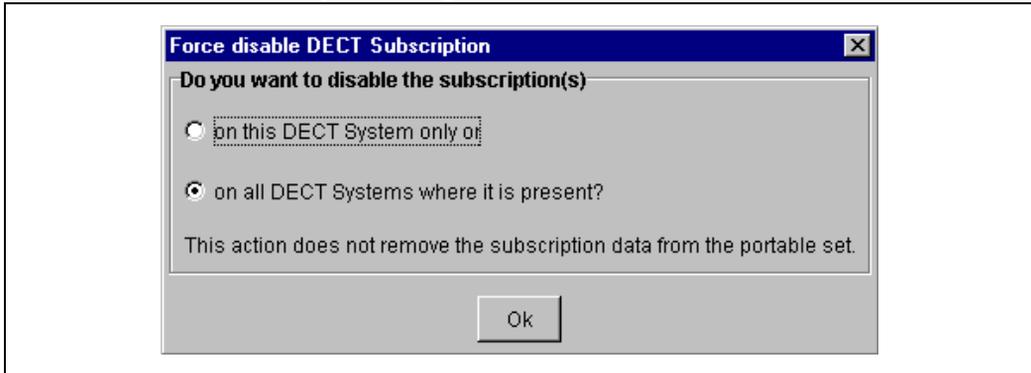
Use **from this system only or** if the handset is on-air on this DECT system. This DECT system contacts the handset. When contact is established, the subscription is removed from the handset. The subscription is removed from both the system database and the OTM server database. The other DECT systems remove subscription data in the background, and the OTM server updates its database for these systems.

If **from all systems where the portable set is subscribed** is used, all DECT systems are asked to contact the handset. The first DECT system to contact the handset removes the handset's subscription. The subscription is removed from the first DECT system database, and the OTM server database. The other DECT systems remove subscription data in the background and the OTM server updates its database for these systems.

Force disable DECT Subscription

The **Force disable DECT Subscriptions** dialog is selected from the **Operations** menu.

Figure 67
Force disable DECT Subscription dialog



Force disable returns the subscription to the available state and requests the system to disable the subscription. However, there is no interaction between the system and handset.

Force disable can be used when the handset is not in range or on-air.

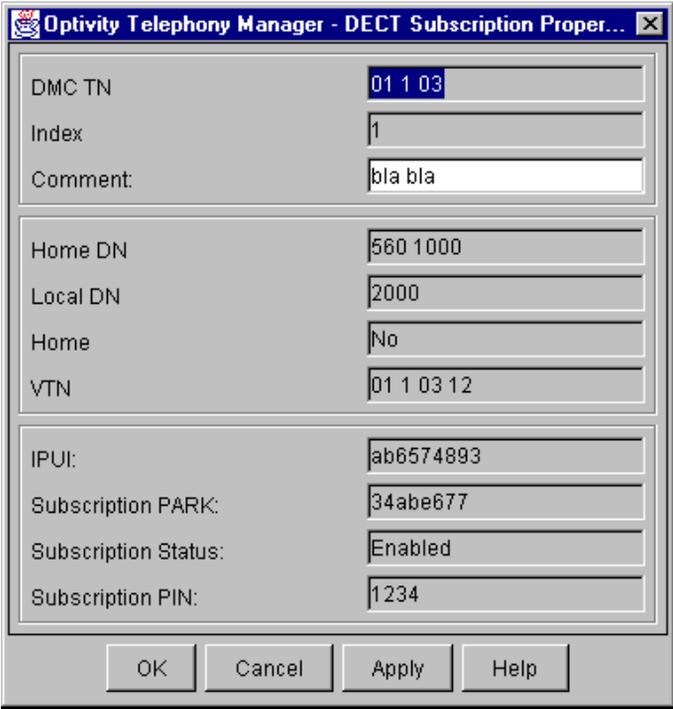
Select **on this DECT System only or** to remove the handset subscription from only this DECT system and remove the handset subscription from all other DECT systems in the background. See [Figure 67](#).

Select **on all DECT Systems where it is present?** to remove the handset subscription from all systems at the same time. See [Figure 67](#).

DECT Subscription Properties

The **DECT Subscription Properties** sheet is selected from the **File** menu.
The **DECT Subscription Properties** sheet is shown in Figure 68.

Figure 68
DECT Subscription Properties



DMC TN	01 1 03
Index	1
Comment:	bla bla
Home DN	560 1000
Local DN	2000
Home	No
VTN	01 1 03 12
IPUI:	ab6574893
Subscription PARK:	34abe677
Subscription Status:	Enabled
Subscription PIN:	1234

OK Cancel Apply Help

Features

The DECT Subscription properties sheet enables the following:

- View the DMC Terminal Number.
- View the Index. Index is the TN unit, as programmed in LD 10 in a non-concentrated system, and a virtual TN unit in a concentrated system.
- Change and apply Comments, up to 80 characters.

- View Home Directory Number (where the handset is configured on the Meridian PBX as the home location).
- View Local Directory Number.
- View Home handset only.
- View handset Virtual Terminal Number.
- View the International Portable User Identifier (IPUI).
- View the subscription PARK.
- View the subscription status.
- View the subscription PIN.

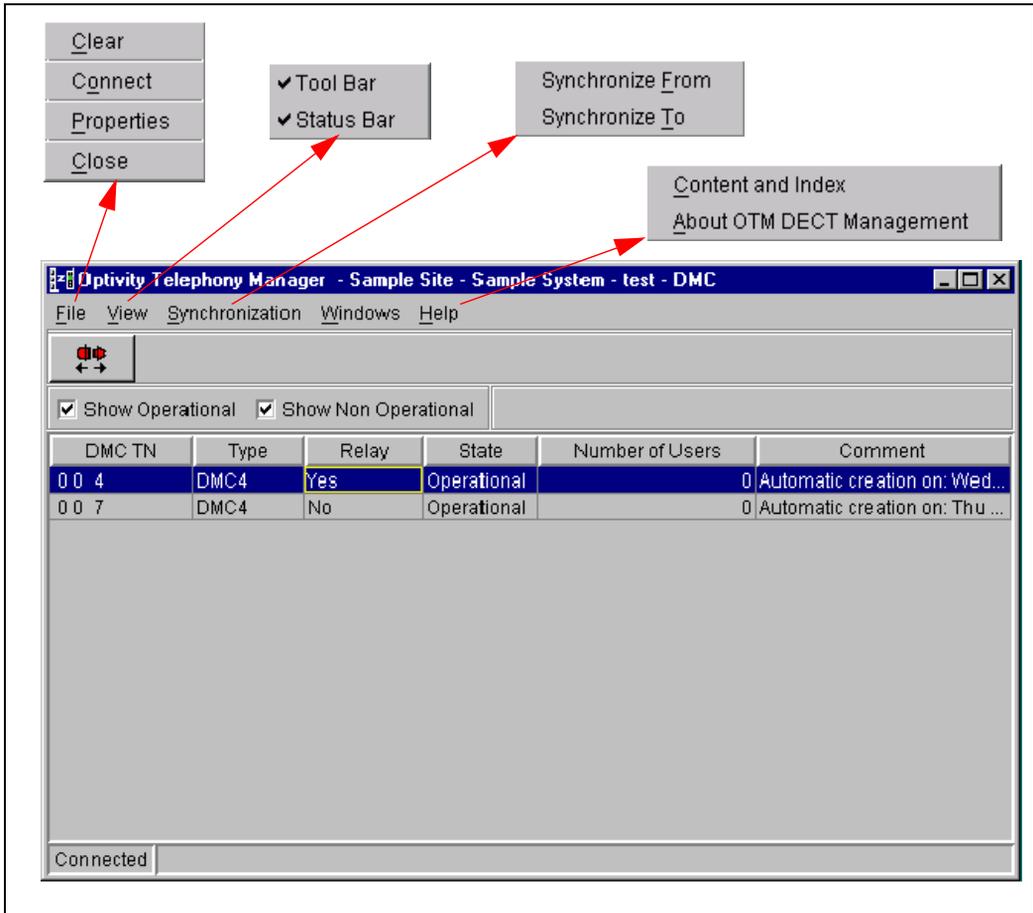
DECT Subscription Properties sheet definition

The Subscription properties sheet displays the same subscription data as the Subscriptions window list items.

DMC boards window

The DMC **B**oards window, seen in Figure 69, is selected from the DECT Systems window **A**pplications menu, seen in Figure 30 on page 76.

Figure 69
DMC Boards window



Features

The Boards (DMC) window enables the following options:

- Examine DMC details.
- Connect to, disconnect from, lock or unlock a connection between the OTM manager and a DECT system.
- Show Operational DMC, Non-operational DMC, or both.
- Open a properties sheet.

DMC Boards window definition

The Boards window displays the following DMC data:

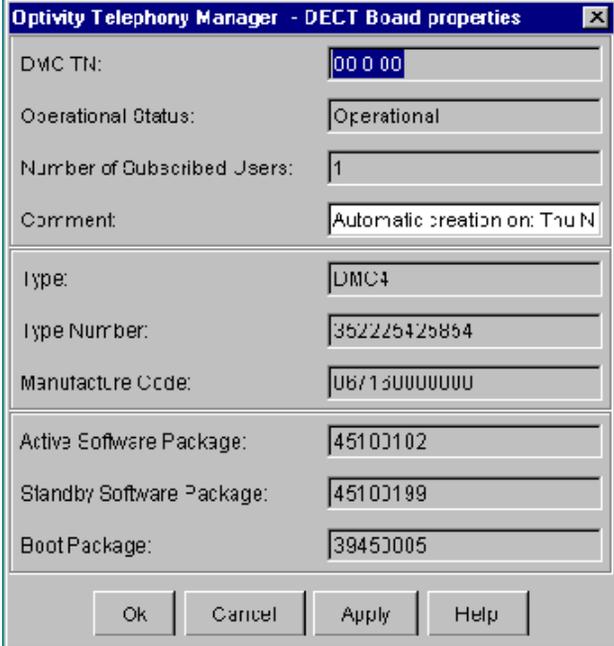
- **File** – contains a pull-down menu to select one of the following:
 - **C**lear – erases all subscriptions, sets all base stations to installed status and line powered, allows the DMC to be programmed in a new DECT system
 - **C**onnect – **L**ock, **U**nlock, **D**isconnect, works the same as the Connect/Disconnect tool
 - **P**roperties – see [Figure 70](#) on page 127
 - **C**lose – closes the DMC window
- **View** – contains a pull-down menu to show or hide the following:
 - **T**ool bar
 - **S**tatus bar
- **Synchronization** – contains a pull-down menu to enable the following:
 - **S**ynchronize **F**rom – subscription and base station alarm muting/power source configuration data from a DMC to the OTM server
 - **S**ynchronize **T**o – subscription and base station alarm muting/power source configuration data from the OTM server to a DMC

- **Help** – contains a pull-down menu to select the following:
 - Content and Index
 - About DECT application
- **Tool bar** – click the tool button to  connect,  lock,  unlock,  disconnect
- **List filter** – to show list details of only the operational DMC or non-operational DMC or both
- **List** – shows the following DMC details:
 - DMC TN
 - DMC type
 - relay DMC
 - operational state – when DMC operational status changes, the OTM server updates the status
 - Number of handsets on a DMC
 - an 80-character comment
- **Pop up menu** – supports the following actions:
 - Synchronize from DMC
 - Synchronize to DMC
 - Properties
 - Help
- **Properties** – displays additional information about DMC. Only the comment can be modified. See [Figure 70](#) on page 127.

DECT Board properties sheet

The **DECT Board properties** sheet (see Figure 70) is selected from the **File** menu.

Figure 70
Board (DMC) properties sheet



Optivity Telephony Manager - DECT Board properties	
DMC TN:	00 0 00
Operational Status:	Operational
Number of Subscribed Users:	1
Comment:	Automatic creation on: TRUE
Type:	DMC4
Type Number:	352225425854
Manufacture Code:	U6715000000
Active Software Package:	45103102
Standby Software Package:	45103199
Boot Package:	39453005
Ok Cancel Apply Help	

Options

The DECT Board properties sheet enables the following options:

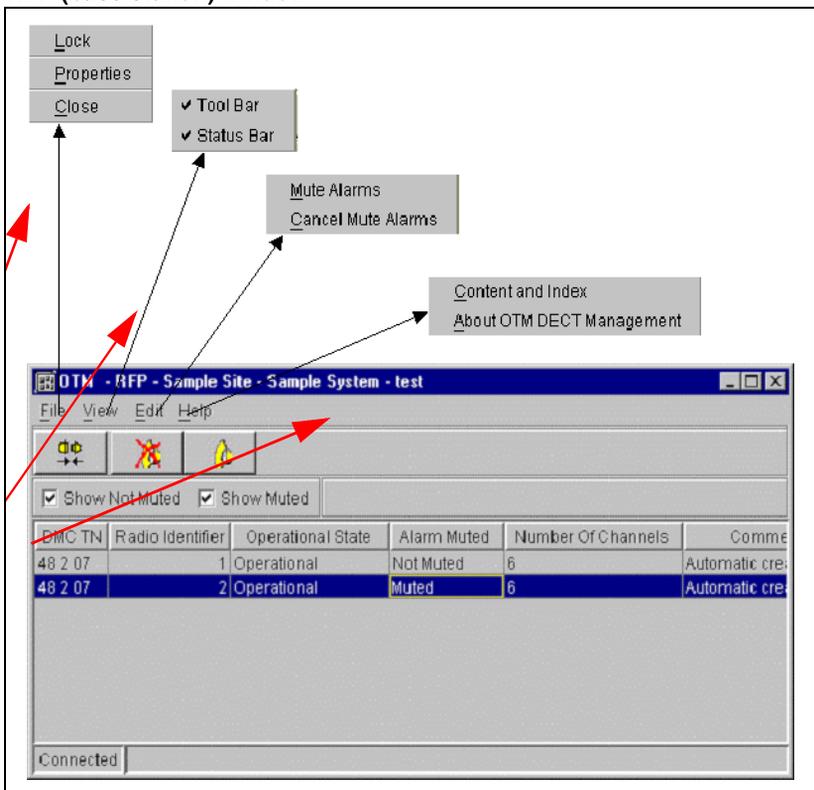
- View DMC details.
- View operational status. When the DMC operational status changes on the DECT system, the OTM updates the status.
- Change and apply comments, up to 80 characters.
- View DMC Type Number.
- View DMC Manufacture Code.

- View DMC Standby Software Package.
- View DMC Boot Package.
- View DMC Protocol Version.
- Open the help file.
- Close the properties sheet.

Radio Fixed Part (base station) window

The Radio Fixed Part (RFP) window (see Figure 71) is selected from the DECT Systems window **A**pplications menu. See Figure 30.

Figure 71
RFP (base station) window



The **RFP** window enables the following:

- Examine base station details.
- Connect to, disconnect from, lock or unlock a connection between the OTM server and a DECT system.
- Choose to show Muted base stations, or Not Muted base stations, or both.
- **Cancel mute**  allows a base station to generate alarm messages. **Mute**  keeps a base station from generating alarm messages.
- Open a properties sheet.

The **RFP** window displays the following base station data:

- **File** – contains a pull-down menu to select one of the following:
 - Connect / Lock / Unlock / Disconnect, works the same as the Connect/Disconnect tool
 - Properties, opens the Radio Fixed Part properties sheet
 - Close, closes the Radio Fixed Part window
- **View** – contains a pull-down menu to show or hide the following:
 - Tool bar
 - Status bar
- **Edit** – contains a pull-down menu to do the following:
 - Mute Alarms – keeps a selected base station from generating alarms
 - Cancel Mute Alarms – allows a selected base station to generate alarms

Note: View alarms on the OTM Alarm browsers (common services) or on the Active Alarm Snapshot window. See [Figure 73](#) on page 132.

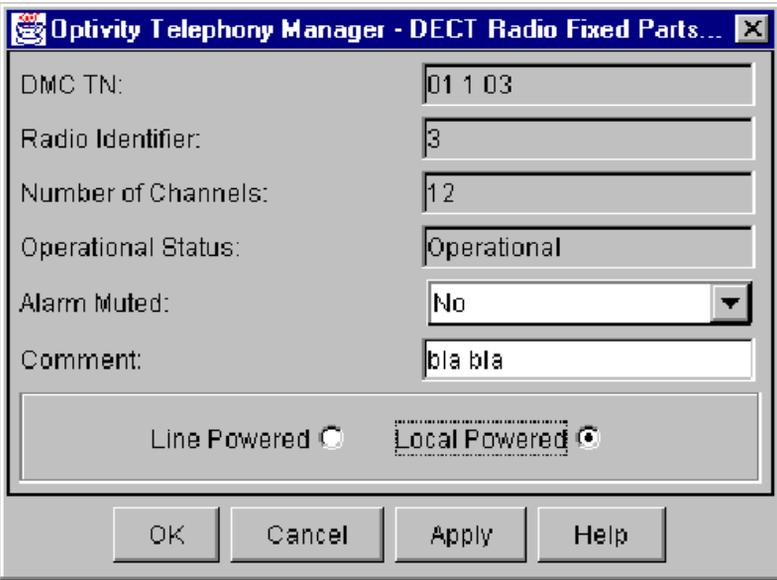
- **Help** – contains a pull-down menu to select the following:
 - Content and Index
 - About DECT application
- **Tool bar icon** – click the tool button to do the following:

-  connect,  lock,  unlock,  disconnect
-  Mute Alarms – keeps a selected base station from generating alarms
-  Cancel Mute Alarms – allows a selected base station to generate alarms
- **List filter** – to select a list showing base stations allowed to generate alarms, or base stations not allowed to generate alarms, or both
- **List** – displays the following:
 - DMC TN – connected to a base station
 - Radio Identifier – identifies the base station (1 to 4) connected to the DMC and the base station (1 to 8) connected to the DMC8
 - Operational State – indicates if a base station is operational or is not operational
 - Alarm Muted – indicates if a base station is allowed to generate alarms or not
 - Number of Channels – identifies the base station as either a 6-channel or a 12-channel base station
 - Comment – an 80-character comment field in the DECT application
- **Pop-up menu** – appears when at least one base station, also known as a Radio Fixed Part (RFP), is selected and right-clicked. Selecting one or more base stations by clicking/double-clicking on a Radio Identifier, or highlighting a row in the list, displays a Properties sheet. See [Figure 72](#) on page 131.
- **Help** – select **C**ontent and Index or **A**bout DECT application

DECT Radio Fixed Parts (base station) properties sheet

The DECT Radio Fixed Parts properties sheet is selected from the pop-up menu.

Figure 72
Radio Fixed Part (base station) properties sheet



The screenshot shows a dialog box titled "Optivity Telephony Manager - DECT Radio Fixed Parts...". It contains the following fields and controls:

- DMC TN: 01 1 03
- Radio Identifier: 3
- Number of Channels: 12
- Operational Status: Operational
- Alarm Muted: No (dropdown menu)
- Comment: bla bla
- Line Powered Local Powered
- Buttons: OK, Cancel, Apply, Help

The DECT Radio Fixed Parts properties sheet options

The RFP properties sheet enables the following:

- View base station details.
- View Operational Status. When the base station operational status changes, the OTM server updates the status.
- Change and apply Alarm Muting.
- Change and apply comments – up to 80 characters.
- Select Line Power (powered by the DMC card) or Local Powered.

- Open the help file.
- Close the properties sheet.

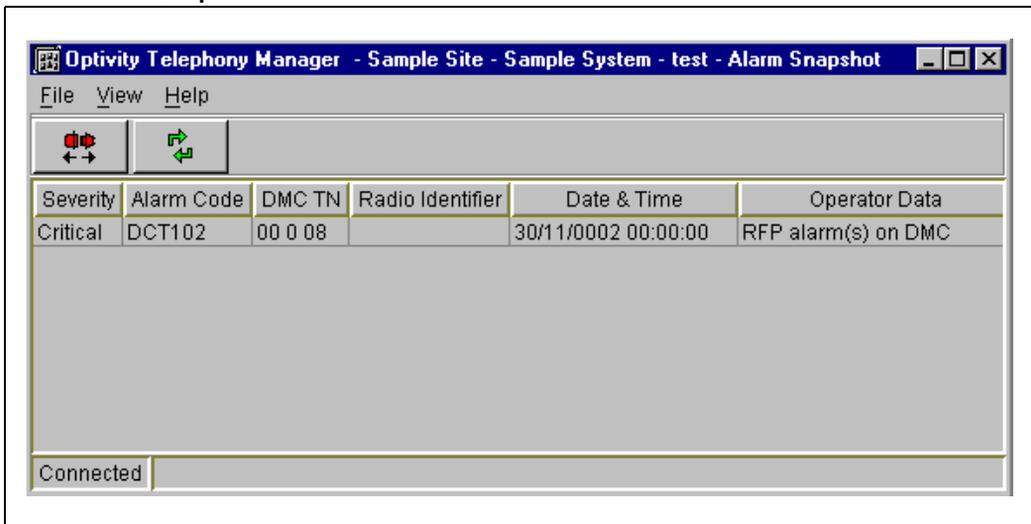
RFP properties sheet definition

The Radio Fixed Part properties sheet displays the same base station data as the Radio Fixed Part window list items. The properties sheet also shows the power source for the selected base station.

Active Alarm Snapshot window

The Active Alarm Snapshot window is selected from the DECT Systems window Applications menu.

Figure 73
Active Alarm Snapshot window



Features

The Active Alarm Snapshot window enables the following:

- Connect to the Active Alarm Snapshot window.

- Refresh the window.
- Open a properties sheet.

Menu options

The Active Alarm Snapshot window displays the alarm data stored in the DMC. The alarm data displayed does not change or update until manually refreshed.

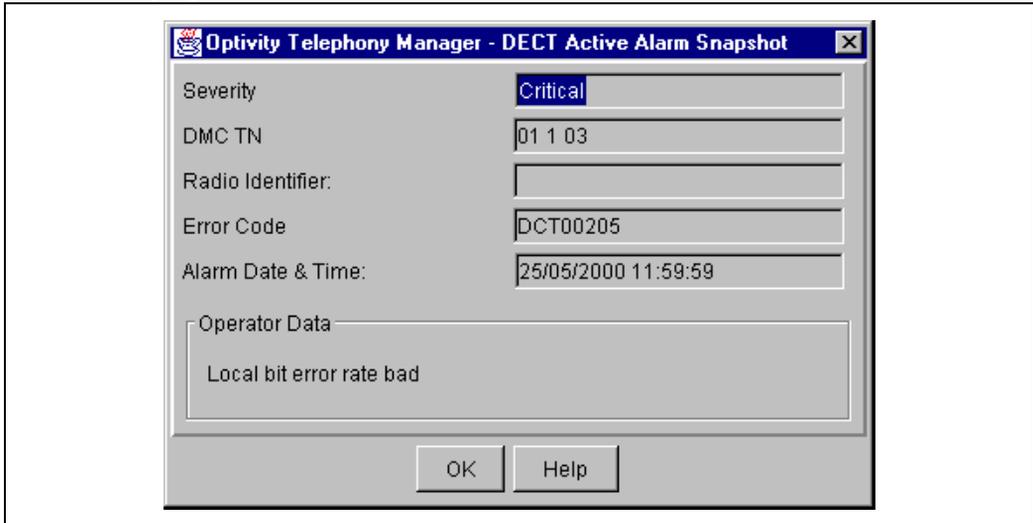
- **File** – contains a pull-down menu to select one of the following:
 - Connect / Lock / Unlock / Disconnect – the same functions as the Connect/Disconnect tool
 - Properties – opens the Active Alarm Snapshot, [Figure 74](#)
 - Close – closes the Active Alarm Snapshot window
- **View** – contains a pull-down menu to select the following:
 - Tool bar – to show or hide
 - Status bar – to show or hide
 - Refresh – updates the Active Alarm Snapshot window with the latest alarm data from the DECT system selected in the title bar. A separate DMC TN cannot be selected to refresh.
- **Help** – contains a pull-down menu to select the following:
 - Content and Index
 - About DECT application
- **Tool bar** – click the tool button to do the following:
 -  connect,  lock,  unlock,  disconnect
 -  Refresh – updates the Active Alarm Snapshot window with the latest alarm data from the DECT system selected in the title bar. A separate DMC TN cannot be selected to refresh.
- **List** – shows read-only data about the following:
 - Severity – always labeled as Critical

- Error Code – a three digit code. Refer to the Meridian DECT Operation Administration and Maintenance NTP for the meaning of the Error Codes
- DMC TN – indicates the location of the card that originated the alarm
- Radio Identifier (base station identifier) – indicates the base station that is the source of an alarm
- Date and Time – when the alarm occurred
- Operator Data – describes the alarm and the faulty component, if applicable
- **Pop-up menu** – appears when at least one RFP (base station) is selected, and right clicked. The **DECT Active Alarm Snapshot** window opens. See [Figure 74 on page 135](#)
- **Help** – displays Content and Index, and About DECT application

DECT Active Alarm Snapshot properties sheet

The **DECT Active Alarm Snapshot** properties sheet, shown in Figure 74, is selected from the pop-up menu.

Figure 74
Active alarm properties sheet



The Active Alarm Snapshot properties sheet enables the following:

- View alarm (DECT system message) details.
- Close the properties sheet.
- Open the help file.

Active Alarm Snapshot properties sheet definition

The Active Alarm Snapshot properties sheet displays the same alarm data as the Active Alarm Snapshot window list items.

Performance Collection window

The Performance Collection window, as seen in [Figure 75](#), is selected from the DECT Systems window Applications menu.

Figure 75
Performance Collection window

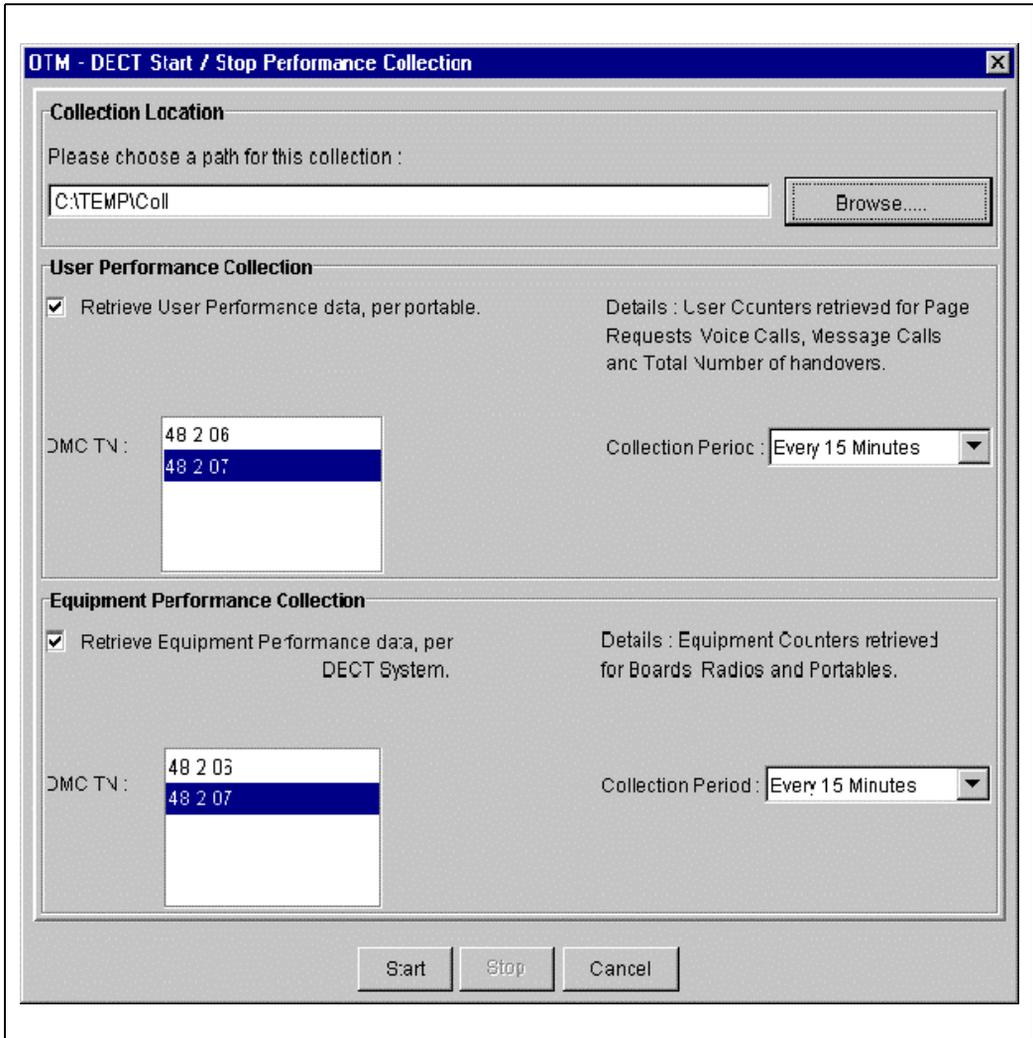
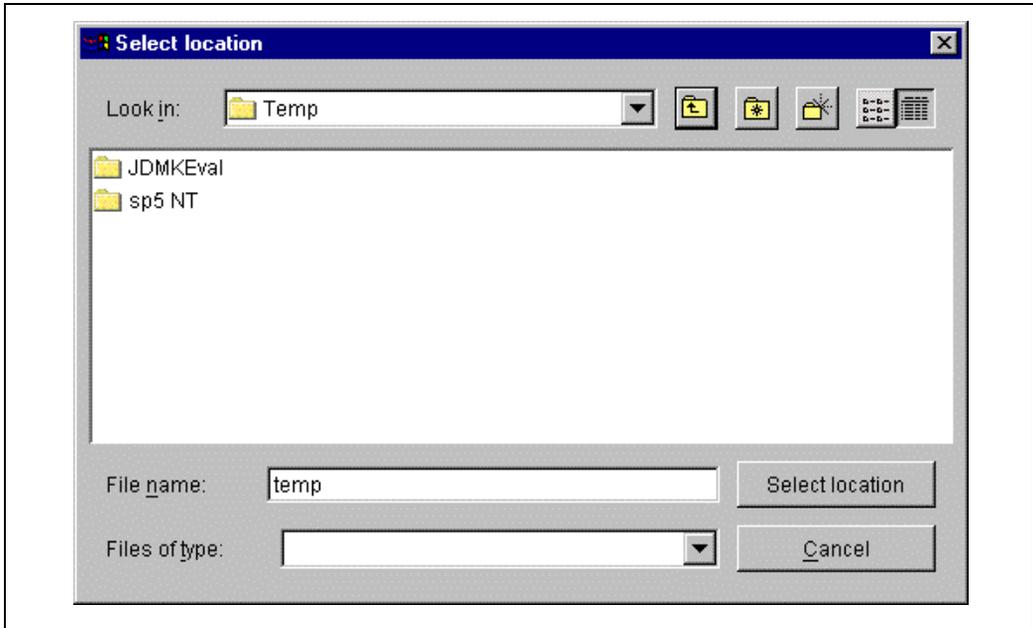


Figure 76
Select location



The Performance Collection window enables the following:

- Start and stop User Performance Collection counters.
- Start and stop Equipment Performance Collection counters.

The Performance Collection window displays the following:

- **Name** – to select the directory to store the Performance Collection file.
- **User Performance Collection** – collects counter data on handset user related activities.
- **Equipment Performance Collection** – collects counter data on DMC related activities.

Performance Collection additional information

The OTM DECT Manager user starts and stops performance counter collection. Performance collection cannot be scheduled. The collection begins when it is manually started, and ceases when manually stopped.

The collection period can be set for 15 minutes, 30 minutes, one hour, or one day. The performance counters are on the DMCs. DMC TNs can be selected.

User (handset) data and Equipment (DECT system) data can be collected separately. User (handset) data and Equipment (DECT system) data collection periods can be set separately.

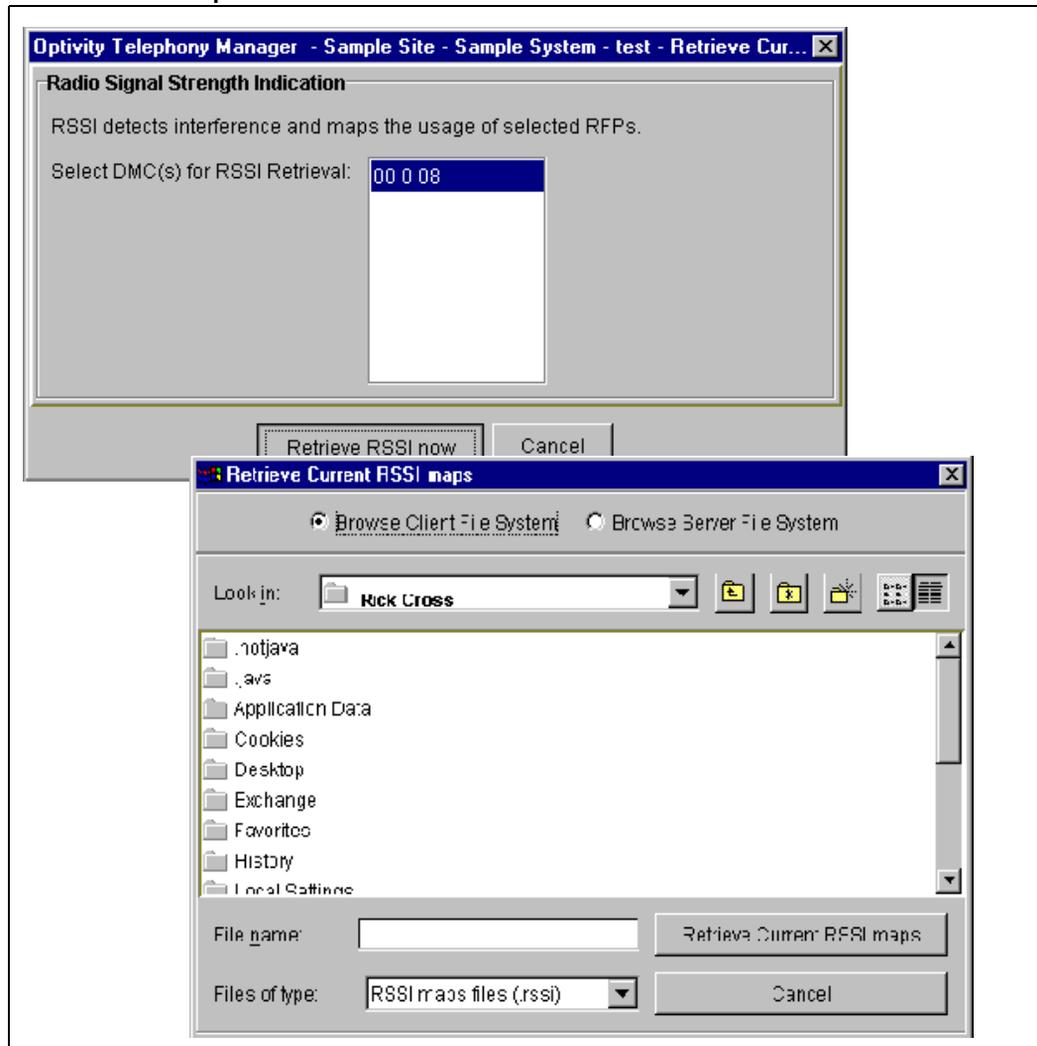
The OTM DECT Manager stores the performance files. Rebooting the OTM DECT Manager does not destroy the files.

The back up and restore application on the OTM DECT Manager does not back up and restore the performance files.

Retrieve RSSI Snapshot window

The Retrieve Radio Signal Strength Indication (RSSI) Snapshot window, shown in [Figure 77 on page 139](#), is selected from the DECT Systems window Applications menu.

Figure 77
Retrieve RSSI Snapshot window



The Retrieve RSSI window enables the following:

- View Radio Signal Strength Indication details.
- Scroll and select a DMC card for RSSI information retrieval.

The Retrieve RSSI Snapshot window collects, on request, the RSSI for a selected DMC card.

Retrieve RSSI Snapshot attributes

The OTM server collects the RSSI as an ASCII file. The OTM server user must indicate where to store the RSSI file.

Access the DECT application with a web-based navigator

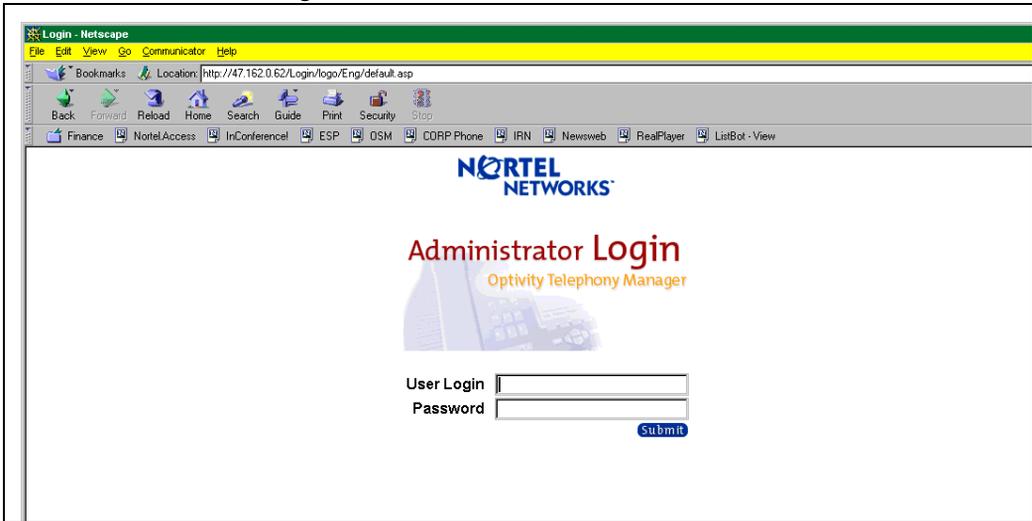
For more detailed information on web-based navigators, see *Using Optivity Telephony Manager* (553-3001-330).

Administrator Login

To open the OTM web Administrator login screen, seen in [Figure 78 on page 141](#), enter the URL `http:otm_server_name` or use the `ip_address`, in either the Microsoft Internet Explorer web browser or the Netscape Navigator web browser.

To launch the Administrator Login, click on the applet launch logo. See [Figure 78 on page 141](#).

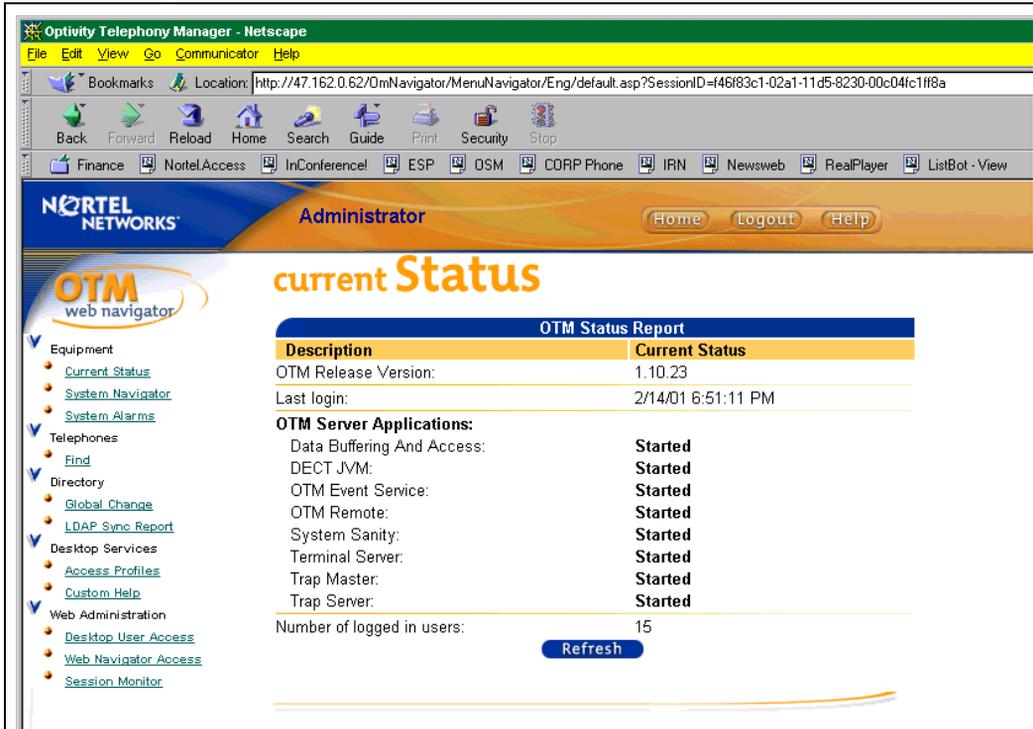
Figure 78
OTM web Administrator login



Current Status

The Current Status screen appears after logging in through the Administrator Login screen. See Figure 79.

Figure 79
OTM web navigator current Status



The screen in Figure 79 displays the current status of:

- OTM software release version
- time and date of the last login
- OTM server applications

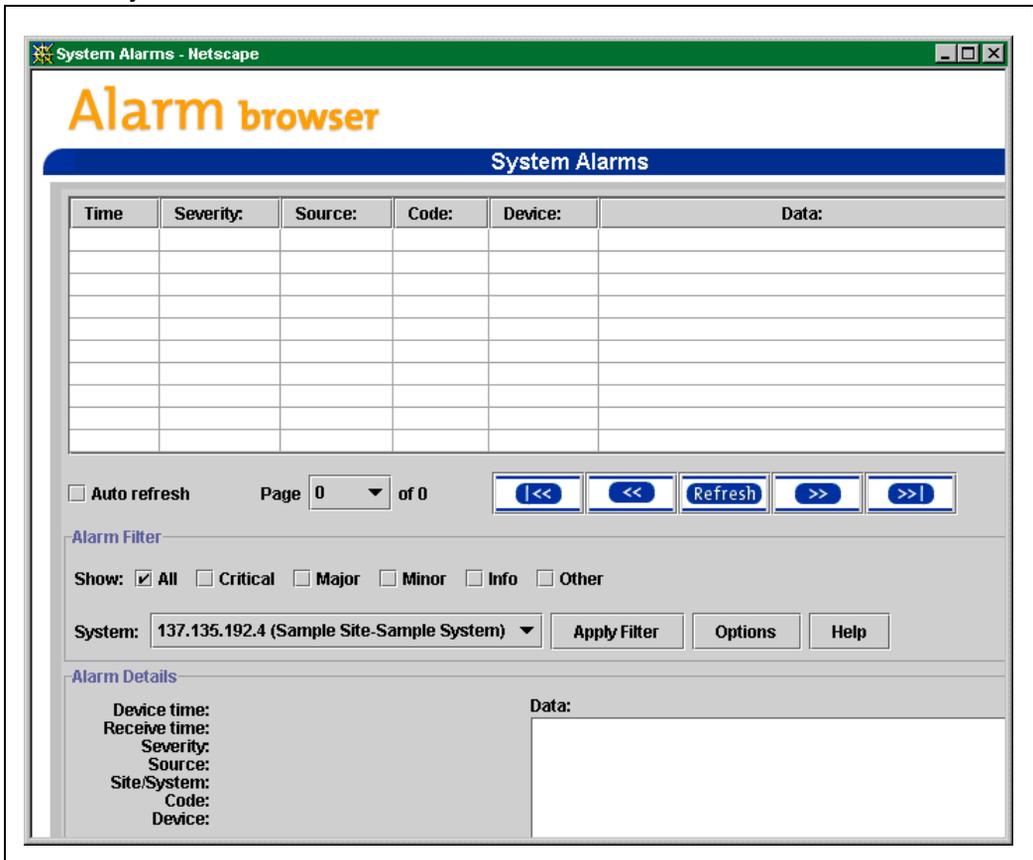
The Current Status screen allows web navigator access to the items listed on the left side of the screen.

Alarm browser

The Alarm browser, seen in Figure 81, can be opened from the System navigator window in one of two ways:

- by clicking on **System Alarms** in the list on the left of the screen
- by selecting **Alarms** in the gray box on the right of the screen

Figure 81
OTM web system Alarm browser



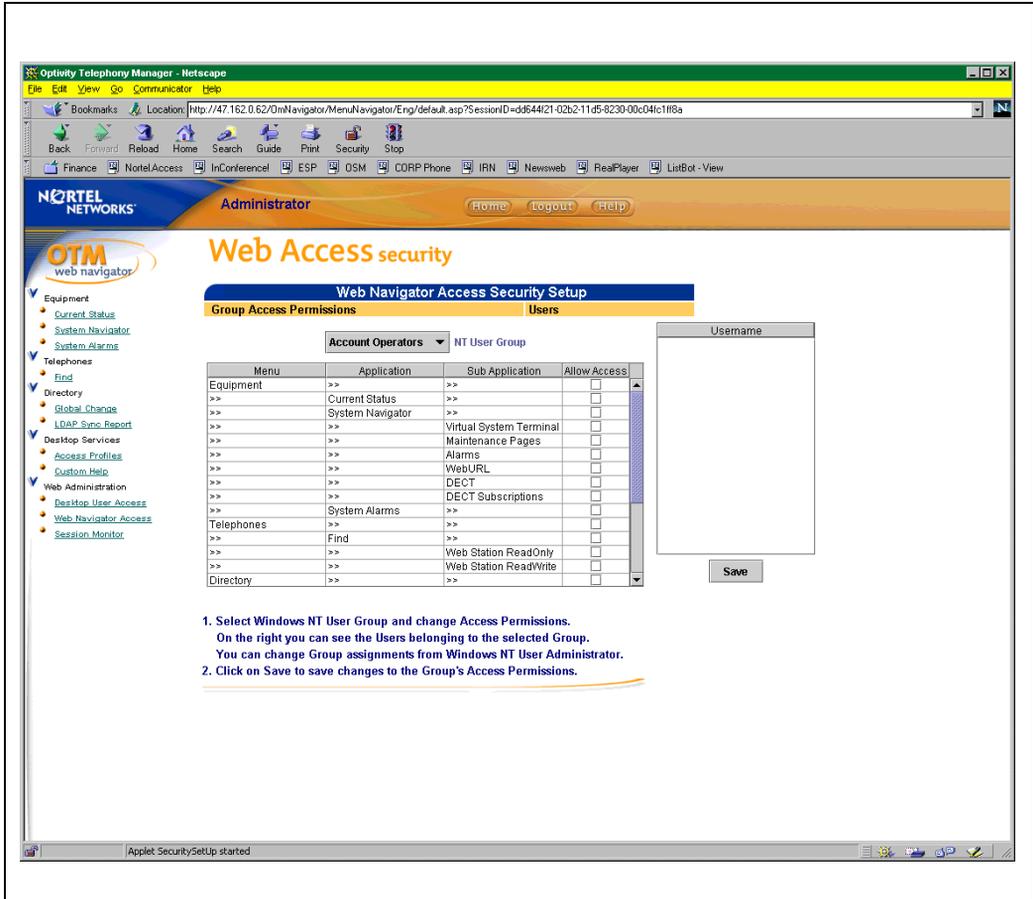
The Alarm Browser enables the system alarms to be examined.

Web Access security

To open the Web Access security screen, click on Web Navigator Access from the list on the left in the System Navigator window, as seen in [Figure 80 on page 143](#).

The Web Access security window opens. See Figure 82.

Figure 82
Web Access security



Group and individual access permissions can be changed by the Windows NT User Administrator.

Multi-site Mobility Networking

Contents

This section contains information on the following topics:

Operating parameters.	148
Feature interactions.	148
Call forward from a MADN handset.	148
Card audit.	149
Network Message Service.	149
Feature packaging.	149
Installation and operation	149

Reference list

The following are the references in this section:

- *DECT Installation Guide (553-3601-203)*

Introduction

Multi-site Mobility Networking (MSMN) allows a Meridian DECT handset user to make and receive calls at any MCDN node. When the handset user visits a MCDN node, the MSMN feature automatically performs the following actions:

- detects the visiting handset when it is on
- forwards calls to the visiting handset from the users home node

The Call Forward dial tone indicates when MSMN activation was not successful. Turn the handset off and on again to re-activate the MSMN feature.

The MSMN feature requires concentrated DMCs.

A non-concentrated system has each handset configured to a DMC8 TN. A non-concentrated DMC8 has 32 handset TNs assigned to 32 time slots and is non-blocking.

A concentrated system has each handset configured to a Virtual TN (VTN) on phantom loops. Concentration allows up to 510 handsets to share the DMCs 32 time slots and is a blocking system. See “DECT Concentration Traffic” on page 151.

Separate DECT systems on a Meridian PBX can be concentrated or non-concentrated.

Operating parameters

The MSMN feature can not support a mix of concentrated DMCs and non-concentrated DMCs within the same DECT system.

All DMCs, either new, empty for redundancy, or used for base station coverage, must have at least one handset configured to ensure system operation.

The C4010/C4020 handset can subscribe to a maximum of eight DECT systems.

The C4050 handset can subscribe to a maximum of eight DECT systems.

Feature interactions

Call forward from a MADN handset

A MADN handset at a remote node can activate Call Forward (CFW) at the home node. When the handset shares a DN with another set(s), the CFW lamp lights on the shared DN set(s). If the handset is not the MARP, the shared DN MARP set can cancel call forward. If the handset is the MARP, the handset overrides any call forward which is setup from other shared DN set(s).

Card audit

Card audit does not work with VTNs.

Network Message Service

The MSMN feature does not change the handling of unanswered network calls. The Meridian Mail or Call Pilot network mail service does not change with multiple DNs configured against a single mailbox. The visiting DN receives the Message Waiting Indication (MWI) at the visited site.

Feature packaging

The MSMN feature requires the following packages:

- Multi-site Mobility Networking (MSMN) package 370
- Meridian 1 Companion Option (MCMO) package 240
- Phantom TN (PHTN) package 254
- Meridian Companion Enhanced Capacity (MC32) package 350
- Flexible Feature Codes (FFC) package 139

Installation and operation

For details on installing and operating the MSMN feature, refer to *DECT Installation Guide (553-3601-203)*.

DECT Concentration Traffic

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System concentration

A Meridian DECT system without concentration supports a maximum number of 1024 handsets. With the concentration feature, in theory, the handset limit is 510 per DECT Mobility Card x 32 cards = 16320 handsets. However, in practice, traffic limits the number of handsets per card.

Each IPE card slot supports 32 channels of voice and data at the same time through the DS30X interface. Concentration removes the existing fixed ratio of 32 handsets per DMC.

System capabilities and limits

Blocking

Calls in the DECT system can be blocked at many stages, including the following:

- At the base station – when all channels (6 or 12) of an base station are in use, calls through that base station (both to and from a PP) are rejected.
- At the Backbone interface – when the base stations of one DMC together have 32 radio connections, calls through those base stations (both to and from a handset) are rejected.
- At the IPE backplane Interface – when all 32 speech channels to the DS30X interface on the a DMC8 are occupied, calls to and from handsets which have that specific DMC8 as their home DMC8 are rejected.
- At the Network interface – usually the IPE shelf connectivity is a blocking configuration, where the number of network timeslots provided for a shelf is less than the actual number of terminals configured on that shelf.

Traffic definitions

Busy hour traffic – Busy hour traffic is the hour of the day during which a telephone system carries the most calls, voice or data. The unit for busy hour traffic is the Erlang or Centi Call Second (CCS).

Erlang – One Erlang is equal to the continuous use of a circuit for one hour.

CCS – One hundred Call Seconds (CCS) or 100 seconds of continuous use of a circuit. Normally referred to as CCS per hour. For example, a call on a circuit for one hour is equal to 36 CCS.

$(60 \text{ minutes} \times 60 \text{ seconds} = 3600/100 = 36 \text{ CCS})$

Blocking – Blocking is a condition when a telephone call does not complete, and the calling party normally hears a busy signal.

Grade of Service – Grade of Service, given as a decimal fraction, indicates the probability of call blocking. For most applications, acceptable figures for blocking are between 0.01 and 0.03.

Traffic assumptions used for table calculations

The following are traffic assumptions used for table calculations:

- A handset that always has good radio contact with a base station assumes that the radio deployment is acceptable.
- The Grade of Service used in all calculations is 1%.
- There is little or no overlap between base stations. (In practice, there is overlap, but to apply standard traffic calculations, it is necessary to simplify the calculation). For example, where there are two 6-channel base stations in the same cell, they will deliver a higher traffic flow.
- Ignore radio channels for handover. The traffic calculations allocate a slightly higher traffic capability to a base station than it can have in practice.
- Blocking occurs at three main areas: the base stations, the backplane, and the network loops. The traffic calculations only use the Erlang values where blocking occurs. For example, if there are three areas each delivering 10 Erlangs, traffic calculations take the total traffic capability as 10 Erlangs, not as 30 Erlangs. Real traffic capacity in this example is possibly more than 10 Erlangs.
- Handset handover continues without interruption.
- Handsets are distributed equally between the system DMC cards.
- All calculations are based on resident handset users. Visiting handset users have a negligible effect on traffic. In unusual circumstances where a site has a large number of visiting handset users, traffic capacity can require adjustments.

Base station combinations for handsets on a DMC8 card

Low traffic for a 0.1 Erlang capacity

Table 7 shows the 6-channel and 12-channel base station combinations required to support a maximum number of handsets on a DMC card. The calculations are based on each handset generating 0.1 Erlangs of traffic.

Table 7
Number of handsets for a 0.1 Erlang capacity

	Number of 12-channel base stations									
	0	1	2	3	4	5	6	7	8	
	Number of 6-channel base stations	0	58	117	176	176	220	220	220	220
1	19	77	136	195	220	220	220	220		
2	38	97	155	214	220	220	220			
3	57	116	174	220	220	220				
4	76	135	194	220	220					
5	95	154	213	220						
6	114	173	220							
7	133	192								
8	152									

Medium traffic for a 0.15 Erlang capacity

Table 8 shows the 6-channel and 12-channel base station combinations required to support a maximum number of handsets on a DMC card. The calculations are based on each handset generating 0.15 Erlangs of traffic.

Table 8
Number of handsets for a 0.15 Erlang capacity

Number of 6-channel base stations	Number of 12-channel base stations									
	0	1	2	3	4	5	6	7	8	
	0	0	39	78	117	146	146	146	146	146
1	12	51	91	130	146	146	146	146		
2	25	64	103	143	146	146	146			
3	38	77	116	146	146	146				
4	50	90	129	146	146					
5	30	102	146	146						
6	76	115								
7	89	128								
8	101									

High traffic for a 0.2 Erlang capacity

Table 9 shows the 6-channel and 12-channel base station combinations required to support a maximum number of handsets on a DMC card. The calculations are based on each handset generating 0.2 Erlangs of traffic.

Table 9
Number of handsets for a 0.2 Erlang capacity

	Number of 12-channel base stations									
	0	1	2	3	4	5	6	7	8	
	0	0	29	58	88	110	110	110	110	110
1	9	38	68	97	110	110	110	110		
2	19	48	77	107	110	110	110			
3	28	58	87	110	110	110				
4	38	67	97	110	110					
5	47	77	106	110						
6	57	86	110							
7	66	96								
8	76									

Superloop and IPE shelf calculations

Table 10 shows the maximum number of handset users on a DMC8 card for varying traffic levels. This table includes the Option 11, with its non-blocking system architecture.

Table 10
Handset capacity/DMC8 for Superloop/IPE

Superloops for each IPE shelf	Low traffic 0.1 Erlang	Medium traffic 0.15 Erlang	High traffic 0.2 Erlang
2	138 handsets/DMC	92 handsets/DMC	69 handsets/DMC
1	69 handsets/DMC	46 handsets/DMC	34 handsets/DMC
0.5	34 handsets/DMC	23 handsets/DMC	17 handsets/DMC
Option 11	220 handsets/DMC	146 handsets/DMC	110 handsets/DMC

Note: Superloops do not apply to the Option 11C Mini or Succession CSE 1000 systems.

Simplified guidelines

Use Table 10 to calculate the superloop capacity.

Low traffic example of one superloop on each IPE shelf

69 handsets per DMC8 card x 16 DMC8 cards per shelf = 1104 (1000)

Medium traffic example of one superloop on each IPE shelf

46 handsets per DMC8 card x 16 DMC8 cards per shelf = 736 (750)

High traffic example of one superloop on each IPE shelf

34 handsets per DMC8 card x 16 DMC8 cards per shelf = 544 (500)

DECT Messaging and alarm notification

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Reference list

The following are the references in this section:

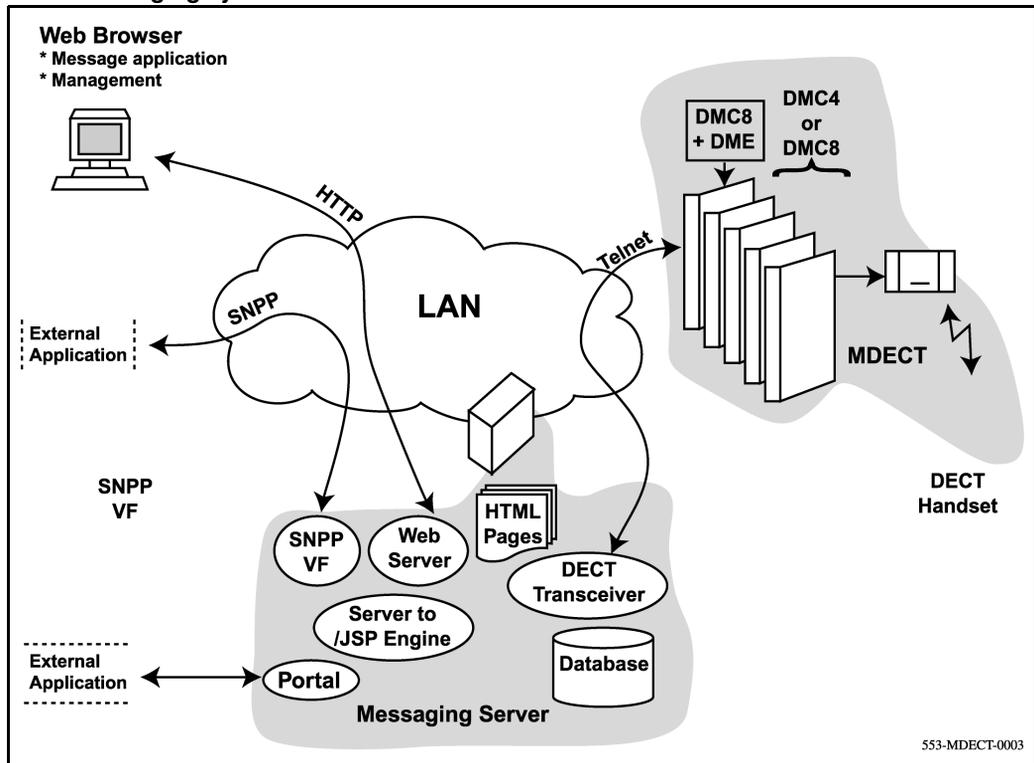
- *DECT Messaging* (P0989045)

DECT Messaging overview

The DECT Messaging system allows text messages to be sent to and from C4040 and C4050 handsets. When there is an incoming message, the handset alerts the user in various ways, depending on the message's priority.

DECT Messaging is a data system. It operates independently of the voice system. Text messages can be received even if the handset is in use. (The only exception is if the handset is ringing.)

Figure 83
DECT Messaging system overview



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Messaging Server

The DECT Messaging system uses a Messaging Server that interfaces to the DECT system through a DMC8 card. The Messaging Server acts as an interface between the DECT system to external systems and applications, such as alarms.

The Messaging Server supports two standard interfaces to connect to external systems:

- Telelocator Alphanumeric Protocol (TAP) over a serial link
- Simple Network Paging Protocol (SNPP) over IP

The Messaging Server provides the following functionality:

- the ability to send messages to a DECT handset from a standard web browser
- connection from external paging systems into the DECT system using standard protocols and interfaces. It supports both hard-wired serial connections and dial-up over modems.
- handset-to-handset messaging
- connection over the IP network to the DECT system
- standard interfaces to allow external applications to be built
- web management of subscriber information and configuration data
- an audit trail of all messages and responses kept by the system. These can be time-stamped to allow administrators to see what has happened at particular times, and to allow statistics to be generated.

Alarms

External applications, such as alarms and radio paging replacement, are supported by DECT Messaging. When an external alarm is triggered from the alarm system, the alarm sends a text message to the DECT Messaging system. The DECT Messaging system forwards the text message to the DECT handset.

External systems can be connected using TAP and SNPP protocols. The supported protocols are as follows:

- SNPP RFC1861 – for LAN access
- TAP v1.8 – for external paging systems

Handsets

DECT Messaging supports the Nortel Networks C4040 handset with software Version 11 (and later), and the C4050 handset. Both handsets support text messaging for messages to a maximum of 48 characters in length.

The handsets are subscribed to the DECT system using OTM.

For more detailed information on DECT Messaging, refer to *DECT Messaging* (P0989045).

DECT provisioning records

The DECT provisioning records include the following:

- a System information record
- a Provisioning information record
- an Installation record
- a System programming record
- a Portable user information record

Keep a copy of these records at the customer site. Vendors maintaining the DECT system also need a copy of the records.

See *DECT Provisioning Records* (553-3601-102).

DECT

Overview

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