



**Nortel Networks Business Series
T7406 Cordless
Mobility Solution for Norstar and
Business Communications
Manager**

**Technical Information Session
VANCE LETCHER – Sept 21/01**

T7406 Cordless Telephone

The T7406 is a multiple handset, single base cordless telephone system with full mobility integration into your Norstar key system. The T7406 offers the following features;

Range

The effective operating radio range depends on the building construction and internal layout of the facility. A typical office or warehouse environment has an effective operating range of 95 meters(300 feet) from the base station.

Audio Performance

T7406 uses advanced digital frequency hopping spread spectrum (DFHSS) technology to provide a quality audio path and security over a 900 MHz radio link.

Security of Conversation

Each Base Station on the system must have its own unique 6 digit Security Code (S.S. Code). All handsets registered to that particular base station must share the same **6 digit** Security Code. Each handset must also have a unique set identification (Set I.D.#s 1 to 3). A maximum of three handsets can be registered to one base.

When viewing the base station from the rear, the TCM jacks running from left to right correspond to the Set I.D.#s 1 to 3. The Set I.D.'s map to the Port/DN on the system.

T7406 Cordless Telephone

Density and Interference

Each base can support up to 3 handsets. Each base can have up to 3 independent time compression multiplexing (TCM) line connections to ports on the KSU / system. To avoid T7406 to T7406 interference, install ONLY 2 bases and 6 handsets per location.

Each base uses half the of the Industrial Scientific Medical (ISM) band for its frequency hopping channels. The dip switches on the base allow you to assign the base to use either the lower half (902-915MHz) or upper half (915.1- 928Mhz). Each base must use a separate half of the ISM band.

If other devices operating in this particular range (902-915MHz) (915.1- 928Mhz) of the ISM band interfere with the T7406 base, the other half of the band may be used to minimize interference. In this situation, install only 1 base station and 3 handsets per location.

In rare instances where interference is still encountered, even after changing the upper or lower ISM band(via base dipswitch settings), there may still be other 900MHz devices in the area which are causing some interference.

T7406 Hardware

T7406 Base Dimensions

Length: 150mm or 6 inches

Width: 160mm or 6.4 inches

Height (front): 28mm or 1.12 inches

Height (rear): 34mm or 1.36 inches

Power

Input: 110 VAC, 60 Hz

Output: 9 VDC, 500 mA

T7406 Handset Dimensions

Length: 170mm or 6.8 inches(without antenna)

Width: 58mm or 2.32 inches

Overall Thickness: 40mm or 1.6 inches

Weight: 280 grams or 9.38 ounces(with battery)

Battery Pack

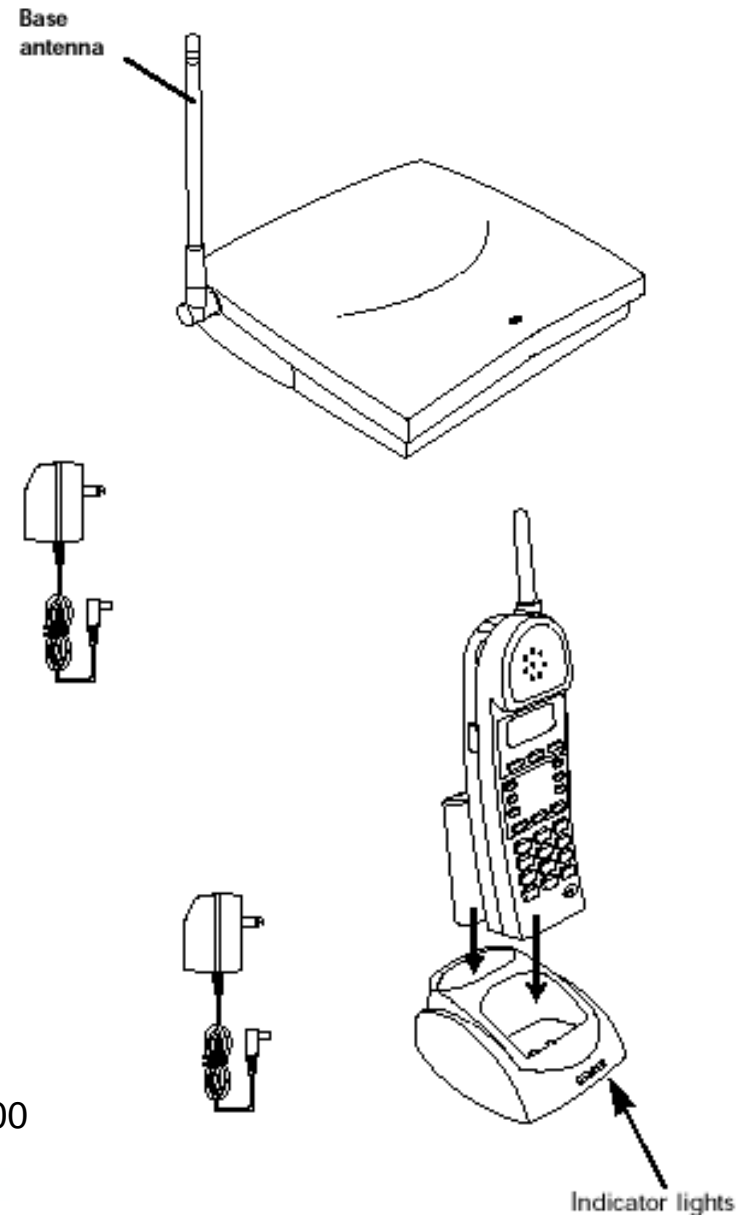
Capacity: 1,400 mAh, 3.6 V

Talk Mode: up to five hours (with backlight OFF)

Standby Mode: up to 72 hours

Charge Time: Approximately 3 hours to charge standard 1,400 mAh battery pack.

It takes approximately 12 hours to trickle charge the spare battery in the charging cradle.



T7406 Hardware

The first thing a customer would need to buy is a cordless set with Base Station(NT8B45AAAA), and then purchase two more handsets(NT8B45AAAB) if needed. However, If they need 4 - 6 sets on a system, they would need to buy two of the handset/base units(NT8B45AAAA) and then buy a maximum of 4 of the handsets units(NT8B45AAAB).

Each base/handset(**NT8B45AAAA**) box comes with:

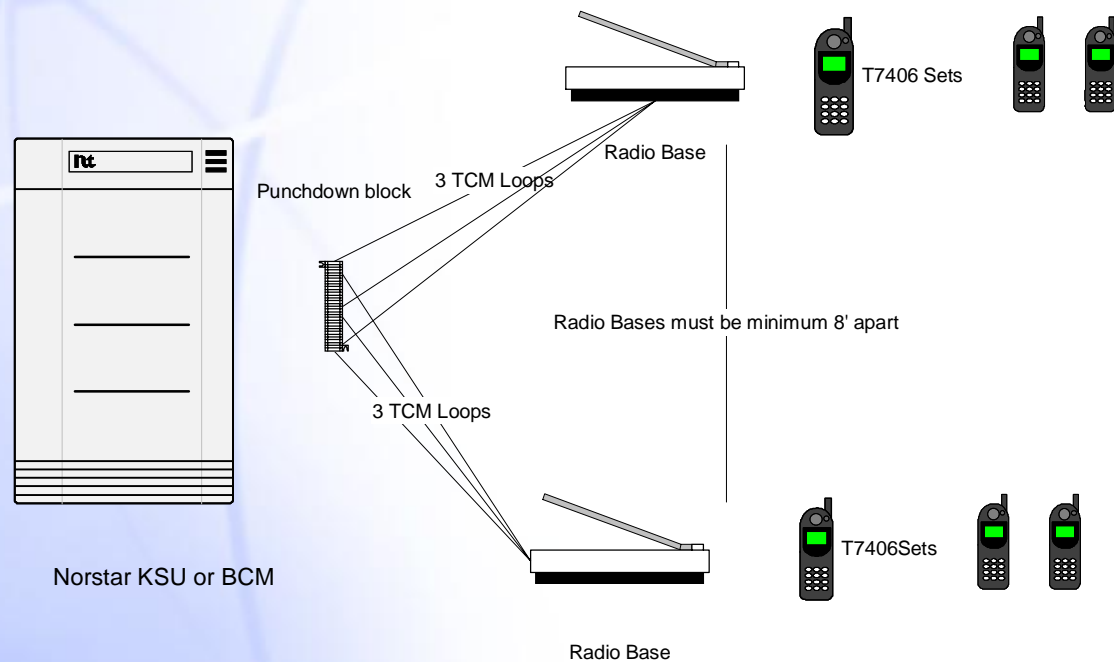
- 1 Base Station
- 1 Base Station wall/ceiling mount bracket
- 1 Base Station power supply
- 3 line cords(5 feet in length)
- 1 T7406 handset
- 2 rechargeable batteries
- 1 handset charger stand
- 1 charger power supply
- 1 belt clip
- 1 wrist strap
- 2 handset paper inserts and 1 plastic lens
- 1 Installation Guide and 1 User Card documentation

Each handset(**NT8B45AAAB**) box comes with:

- 1 T7406 handset
- 2 rechargeable batteries
- 1 handset charger stand
- 1 charger power supply
- 1 belt clip
- 1 wrist strap
- 2 handset paper inserts and 1 plastic lens
- 1 User Card documentation

Installation

The following is an example of an installation of the T7406 solution. There are 3 TCM loops going to each Base. The bases should be a minimum of 10 feet apart as well as 8 feet off the ground for optimum performance (the height that a base is off the ground is critical). The T7406 solution will operate on any Norstar KSU (DR-3 – up), and all BCM systems.



Installation

Before beginning installation, make sure that each T7406 set has one fully charged battery to operate.

Begin the installation by locating an area where your radio will have optimal performance. **The base station should not be installed where radio waves are blocked or reflected, such as next to a filing cabinet.** You can test this by installing a base station in a central location and in the proximity of the users and then testing the range available from that location. For best results, locate the base station within line of sight of the users, and at least eight feet off the ground or ceiling mounted(hanging).

Once your optimal location has been located, you can begin the installation. You have the option of installing the Radio Base Station horizontally on a surface in the workspace, or wall or ceiling mount the Base Station. In either case, keep the Base Station a minimum of 8 feet off the floor and the antenna must be at a 90 degree angle to the base station.

Note: You will need to drop a maximum of 3 TCM loops to the location of each Radio Base. You will also be required to run power to each Base Station.

Installation

Connect the Line Cord(s) into the telephone jacks on the Base. Connect the other end into the a telephone port on the KSU

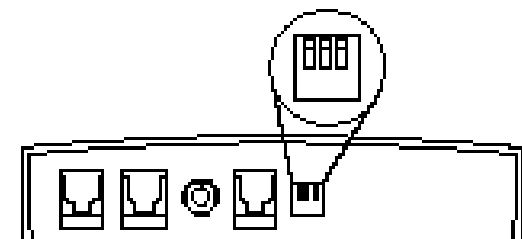
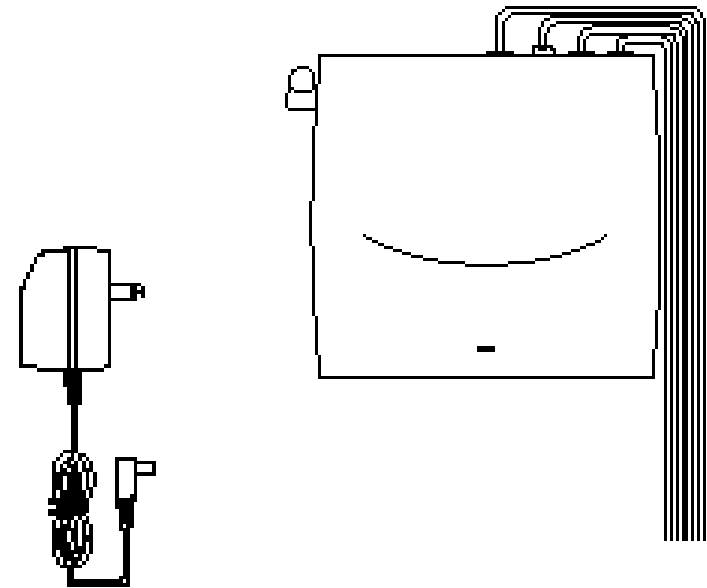
Note: Connect one line cord for each handset. Maximum of 3 per base.

Plug the small end of the power adapter into the back of the base. Plug the power adapter into an AC outlet.

Setting the Dip Switches

On the first base, set the dip switches to operate in the **upper** half of the ISM band. From left to right, the dip switch settings are **Down-Up-Down**.

On the second Base, set the dip switches to operate in the **lower** half of the ISM band. From left to right the dip switch settings are **Down-Down-Up**.



Installation

KSU Pre-installation Programming needed before using the T7406

Before connecting the T7406 base station to your system, you must set up system programming for the handset DN and/or lines.

Have the system administrator set up this programming :

1. Program "Handsfree" to "Auto". This MUST be done so that intercom keys will be available on the T7406 set. Handset Button Mapping will be explained later.
2. Program a maximum of three lines to each handset.
3. Assign Ring & Appear on the lines you assign to the handset.

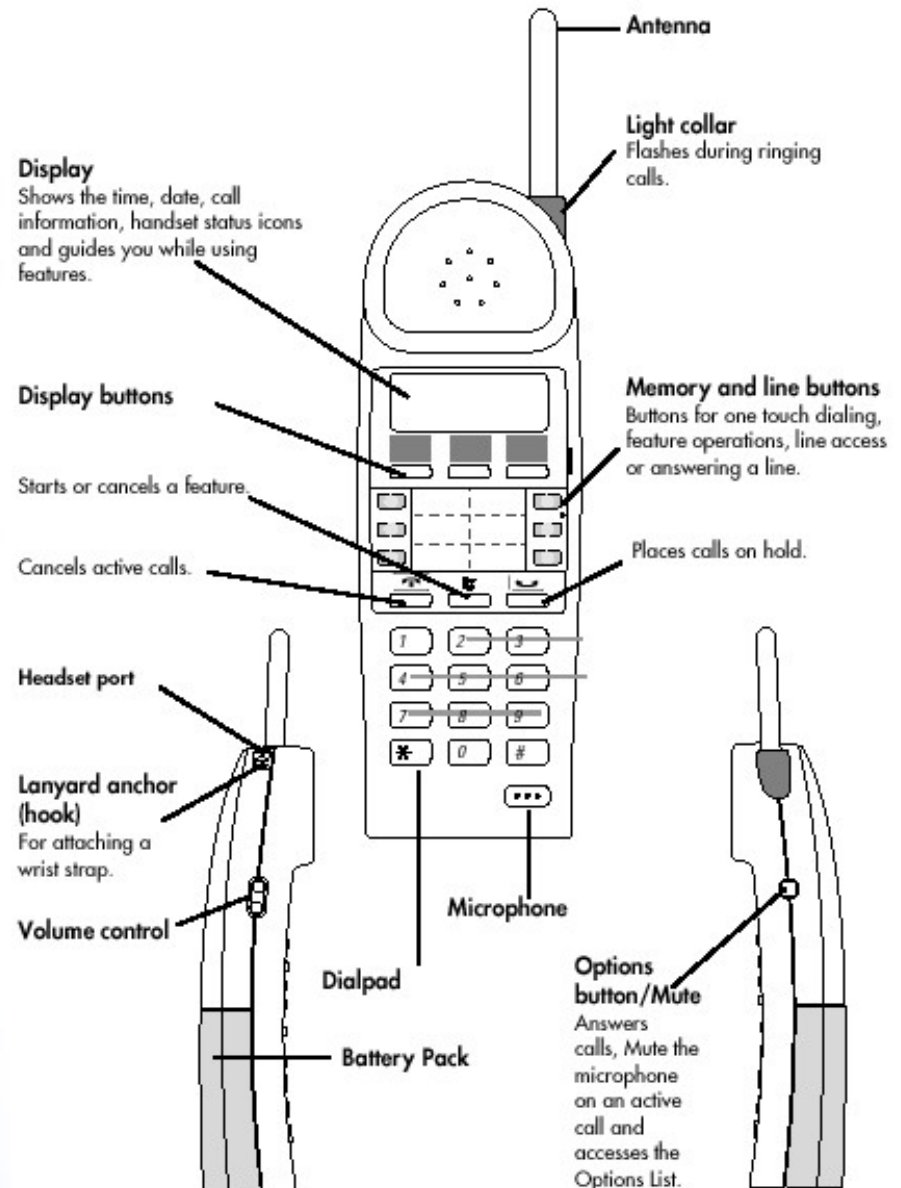
Note: Appear only does not allow the handset to wake from Handset Asleep mode.

4. Set the Page zone to None.

Note: T7406 handsets can send Page announcements, but they cannot receive them.

5. Other telephone programming is the same as for the M7310 telephone, with the exception of the memory key locations.

Note: Set DND on Busy to Yes, ONLY if you do not want your calls interrupted with a ring tone when a second call comes in. Instead, the line button flashes, indicating an incoming call.



Installation

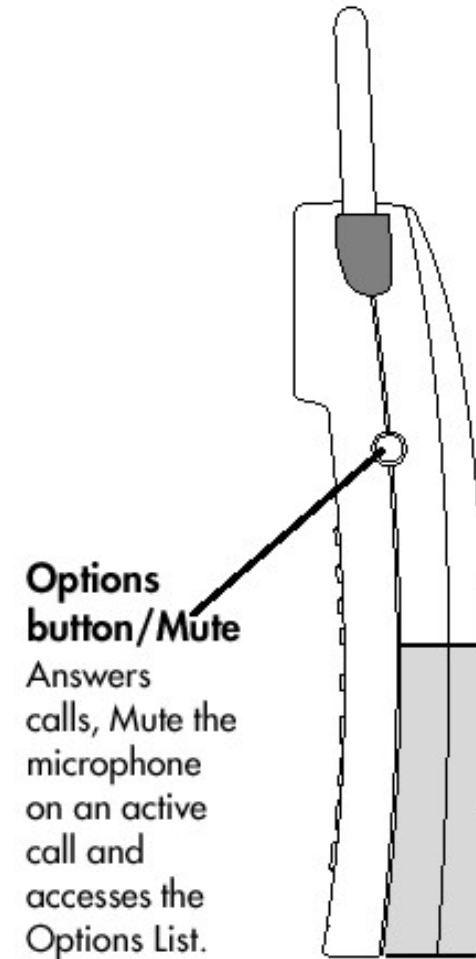
Assigning the first Handset to the Base Station

When you assign the first handset to a base station, you must assign and then send the security code to the base station.

Note: For subsequent handsets, you only need to assign the security code to the handset.

Below is a general overview of the correct procedure for setting up a T7406 handset:

- 1) Identify the handset with a unique Handset ID # (use 1, 2, or 3)
Note: The handset ID #, which gets assigned to each handset, matches up to TCM/RJ-11 jack on the back of the base unit. Ask your system administrator which handset ID maps to which set DN on the system.
- 2) Change the default password for selecting a handset ID (default: 000000). This will ensure that no one changes their handset ID by mistake.
- 3) Assign a Security code (S.S. code) to the handset.
- 4) Send the Security code from the handset to the base
Note: Sending the security code to the base station, is ONLY performed for the first handset configured to a base station. For subsequent handsets, you need only assign the security code / "S.S. Code" to the handsets.
- 5) Assign the ring type
- 6) Assign the ringer volume
- 7) Assign the language that appears on the handset display



Installation

Configuring the Handset ID Number

Each of the three handsets registered to a base share an identical Security code(**S.S. Code**), but each handset has a unique Set ID of 1, 2, or 3.

Follow these steps to set the handset ID and new handset ID password:

1. Press the Options button.
2. Press SHOW .
3. Press NEXT until the display shows 6.Handset ID .
4. Press SHOW .

The display shows the current Handset ID #. If this is the correct number, press OK and continue with the next section.

If you want to change the number, follow these steps:

5. Press CHANGE .

The display shows “Enter Password”.

6. Enter the default six digit password of six zeroes(000000).

7. Press OK to accept the code.

The display shows “Press Digit 1 –3”.

Note: The current Handset ID # is displayed on the bottom left of the LCD.

8. Press the digit that you want to assign to this handset(only 1, 2, or 3 can be used).

9. Press OK .

The display shows “6.Handset ID”.

Installation

Changing the Handset ID Password

After you enter the handset ID, if you want to change the password for the ID access, follow these steps:

1. Press NEXT until the display shows “7.Chg Password”.

Note: This password is used to access the Handset ID option. If you decide not to change the password, press the Option button to exit the menu.

2. Press SHOW .

The display shows “Enter Old PWD”.

3. Enter the default six-digit password of six zeroes (000000) or the last password entered on this set.

4. Press OK .

The display shows Enter New PWD .

5. Enter a new six-digit password.

Note: For ease of administration, it is recommended that you use the same password as the one you used for the Security code/S.S. Code.

6. Press OK .

The display shows Confirm New PWD .

7. Re-enter the password.

8. Press OK .

The display shows “PWD Changed!”.

9. Press the Options button to exit the Option menu

The display changes to show the date and time.

Password errors – If you an incorrect password is entered and the display then shows “Password Error!”, return to the Option menu titled “7.Chg Password” and re-do the steps shown above.

Installation

Lost the password for changing the “Handset ID #”

If you forget or lose your password for changing your T7406 handset ID #, you will need to contact your local Distributor for help on resetting the password.

Distributors will need to go to the following ITAS web page for an ITAS tip with information on how to reset the password on a T7406 handset.

The dealer recovery password should only be used by the Distributor to reset the password for changing the T7406 Handset ID. The dealer recovery password should NOT be given to the customer or customer administrator.

<http://www97.nortelnetworks.com/itas/index.html>

Installation

Assigning the Security Code

After you assign the handset ID # to a handset, you need to configure the handset to a base station.

Follow the steps shown below to assign a Security code(S.S. Code) to the handset.

1. Press NEXT until:

The display shows 4.Set S.S. Code:.

2. Press SHOW.

The display shows Press 6 digits.

3. Enter a six-digit Security code.

The display changes to show the code as entered.

4. Press OK to accept the code.

The display shows "4.Set S.S. Code:".

Note: Steps 5 to 7 are only required for the first handset configured on a new base station (which has no security code installed).

5. Press NEXT.

The display shows "5.Send S.S. Code".

6. Unplug the AC power adapter connected to the base station, and plug it back in again.

7. Within 15 seconds, press and hold the OK button for five seconds.

This sends the Security Code to the base station. Hold until the transfer is complete.

The display shows "Send OK!" and you hear a beep when the transfer is successful.

Note: If sending the Security Code from the handset to the base station fails, the display shows "Send Error" . To correct this, repeat steps 6 and 7.

Installation

After you identify the handsets to the base station, you can set up the handset features:

Ring Type

To assign the ring type:

1. Press the Options button.
2. Press SHOW.

The display shows 1.Ring Type.

3. Press SHOW. The display shows Ring Type: 1.

Note: There is also a Ringer Off setting.

4. Press CHANGE to listen to the four different ring types available on your handset.
5. Press OK to accept the ring type of your choice.
6. Press the Options button to exit the Option menu.

The display changes to show the date and time.

Note: Ring Type can only be set through the Option menu on the handset. This feature cannot be set in system programming.

Installation

Ringer Volume

You can assign the ringer volume level for the handset. The ringer volume level assignment also affects the listening volume level.

To assign the ringer volume:

1. Press the Options button.
2. Press SHOW.
3. Press NEXT until the display shows 2.Ringer Volume.
4. Press SHOW. The display shows Press Volume Bar.
5. Press the volume bar on the left side of the handset. There are three ring volume levels available.
6. Press OK. The display shows 2.Ringer Volume.
7. Press the Options button to exit the Option menu.
The display changes to show the date and time.

Installation

Lock Handset

You can lock the buttons on the handset to prevent unintentional dialpad button presses.

To assign the Lock Handset feature:

1. Press the Options button.
2. Press SHOW.
3. Press NEXT until the display shows 3.Lock Handset.
4. Press OK to lock the handset.

The display shows Handset Locked.

5. Press the Options button to exit the Option menu.

The display changes to show the date and time.



Note: To release the Handset Locked state, press the release button, then press the star key.

Lock Handset notes:

- An incoming call will automatically release the handset from the “Handset Lock mode”.
- The handset cannot be locked while you are on a call.

Installation

Handset System Feature Notes

The following section provides some notes about normal system features and behavior, which the T7406 handset has specific application with.

Ring Notification: If the set is idle and you press a line or intercom button, and then the hold button, the set will NOT get ring notification of an incoming call.



To release the held line, press the line or intercom button, and then press the release key.



Priority call: If a Priority call is made to your T7406 telephone that does not have DND active, and the call is answered but the originating caller then releases the call, you must still press an intercom line and the release button before the line is actually released. If you choose not to do this, the handset stops providing ring notification of incoming calls.

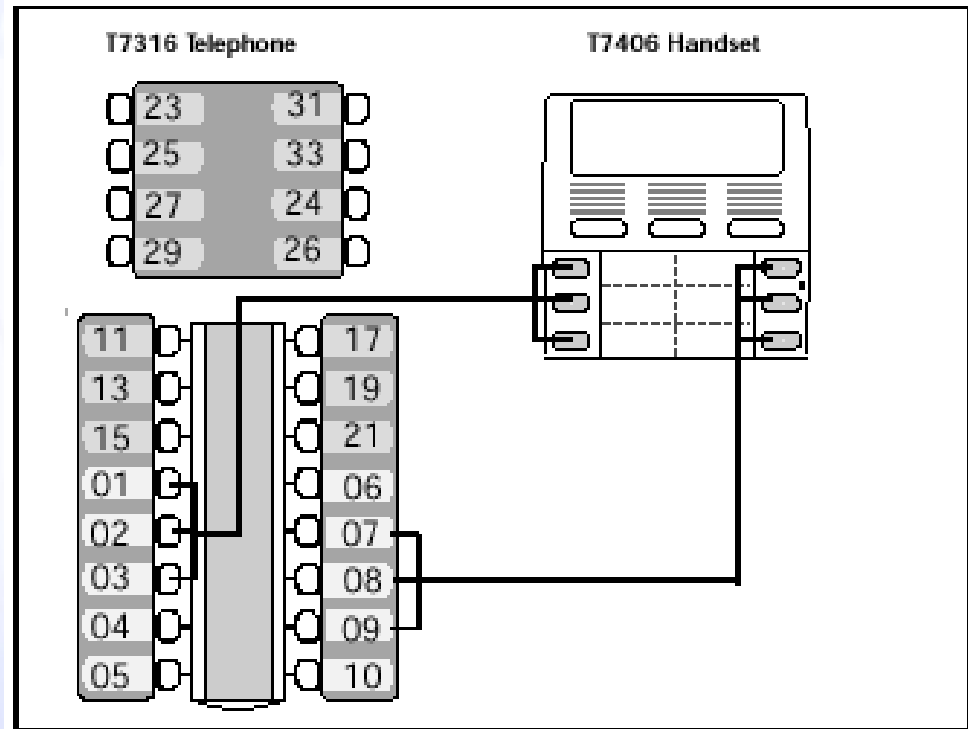
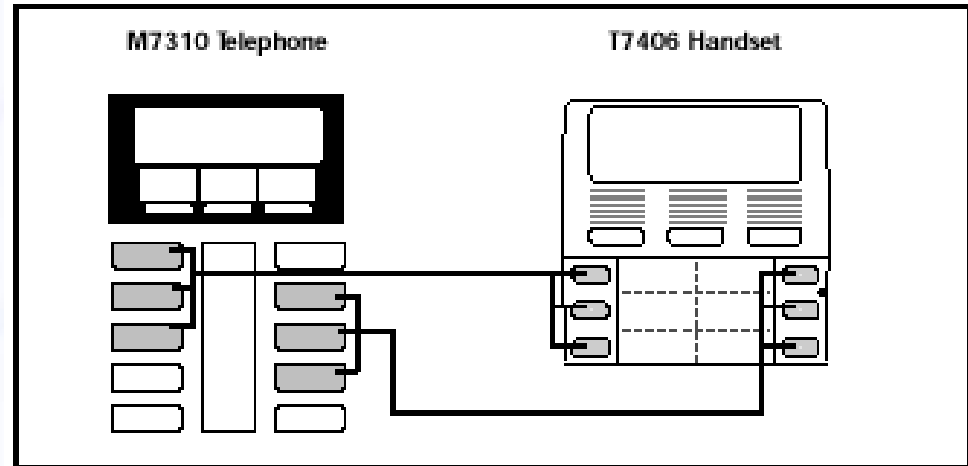
Voice Call Deny (F88): This feature has been purposely set as the default for the handset, since voice calls cannot be made to the T7406 handset. If this setting inadvertently gets turned off by the system administrator or the user, someone attempting to make a voice call to the handset may not receive the “No Voice Call” display on their telephone. As well, the call will continue as a normal call to the T7406 set.

LCD Contrast Level: This feature is not adjustable, either through the handset or through system programming. Contrast has been automatically set to an optimum level.

T7406 and M7410 interaction: If there are any M7410 telephones installed on the Norstar or BCM system, you can attach only one base station and three handsets in the same area. In this case, the T7406 base station MUST be set to the upper ISMband/upper dip switch setting. Refer to the T7406 Installation Guide for a correct description of the dip switch settings.

Button Mapping

The following two illustrations show the correlation between the T7406 handset buttons and the M7310 and T7316 telephones, which are the standard telephones used for the MICS, CICS and Business Communications Manager systems.



Handset Power

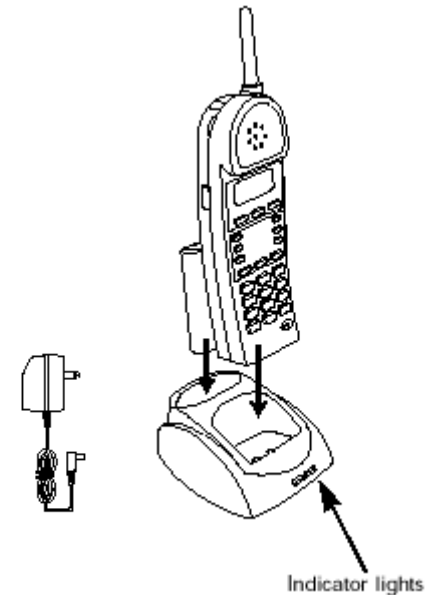
Power to the handset comes from the battery pack. When the battery pack power level is low it must be recharged.

Recharge

Recharging begins as soon as you put the handset in the charger.

Low Battery

A tone sounds every 45 seconds indicating you need to recharge the battery soon. Your call is automatically put on hold when the battery pack runs out. To recharge the battery pack, put the handset in the charger. Be sure that the handset and the charger contacts touch. To fully charge the battery pack, leave the handset in the charger until indicator turns green.



Battery Indicator Lights

On the Charger

A red light indicates the battery is charging

A green light indicates the battery is fully charged.

Battery levels

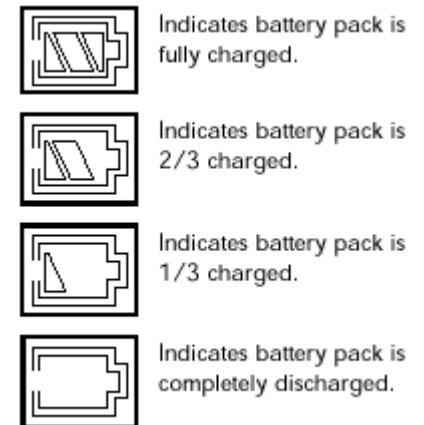
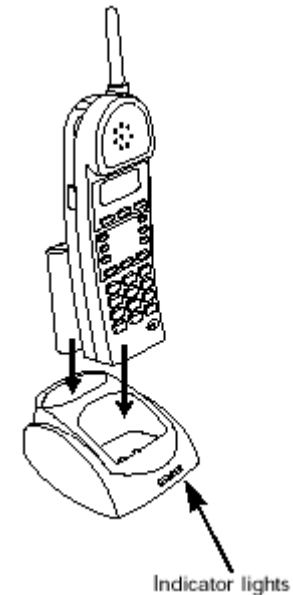
You can talk continuously for up to five hours on the handset with a fully charged 1,400 mAh battery pack. A fully charged battery pack has a standby time of up to 72 hours.

Using the backlit shortens talk and standby time. The backlight is helpful in low light conditions. To active the backlight press on any button on the dial pad. The backlight automatically turns off if the handset is idle for more than five seconds.

Battery Save Mode

The handset automatically goes into sleep mode to conserve the battery when it is idle for longer than 45 seconds. Incoming calls automatically wake up the handset from the sleep mode.

Pressing any button on the dial pad also wakes up the handset.



Handset Asleep (Battery Save Mode)

Handset Asleep Mode Feature Conditions


If the handset is in Handset Asleep mode, the following features are affected:

To receive Message Waiting Indication (MWI) when the handset is in Handset Asleep mode, press any button on the dialpad to wake up the handset.

If the Ring Again feature is active, and the handset goes into Handset Asleep mode, there is no indication of the Ring Again feature until you press a button on the dialpad to wake up the handset. To use the Ring Again feature, press any button on the dialpad to wake up the handset.

Note: When the handset is awake, the Ring Again feature provides both an audio and a visual indication that the feature is active.

If the Do not disturb (DND) feature is active when the handset is in Handset Asleep mode, there will be no visual or Audible notification of incoming calls, including Priority calls.

Priority calls when DND is active: When the handset is in Handset Asleep mode and a Priority call is made to the T7406, it appears to the caller that the Priority Call was successfully connected, even though you receive no indication on your T7406 handset. As soon as you wake the handset, whenever you have DND set, you must always press the line or intercom button and the release button . This ensures that your handset provides proper audible and visual Ring Notification.

Handset Signal Detection

You can monitor the handset signal strength while moving to different locations. The antenna/signal strength and battery icons appear on the handset display.

When you move too far from the base station, the following occurs on the handset:

- the antenna/signal strength icon disappears
- “Out of range.....” message appears
- handset produces an intermittent beep(when on an active call)
- handset may go into scanning mode

If the signal strength is weak, move back into range to stop the handset display messages and warning tones.

If you go completely out of range during an active call, the call is automatically placed on hold.

Retrieve a held call by selecting the flashing red line button when you are back in range.

Note: In cases where the line button does not light when you move back into range of the base station, press the intercom/line button that the call came in on, to take the call off hold.

Installation and Upgrade - Documentation

- Location of product installation procedures

A complete installation guide is packaged with all shipped Base Station units. These include the Base Station with Handset/Charger units.

The T7406 Installation Guide and User Card documentation package is also found on the ITAS Web Page at <http://www97.nortelnetworks.com/itas>.

T7406 Main Components

- Radio Base Station

- Supports 3 Cordless sets. Can affect which part of radio bandwidth the Base Station uses by manipulating the dip switches on the back. TCM loops need to be centrally located.

- Handset/Charger

- Smaller footprint to the desktop. Requires only power to the charger, no TCM loops set.

Installation and Upgrade - Required Tools

- **Hardware**

Radio Base Station

Handset, charger, and batteries

Telephony Requirements

BIC's tool for punching down TCM loops

- **Software**

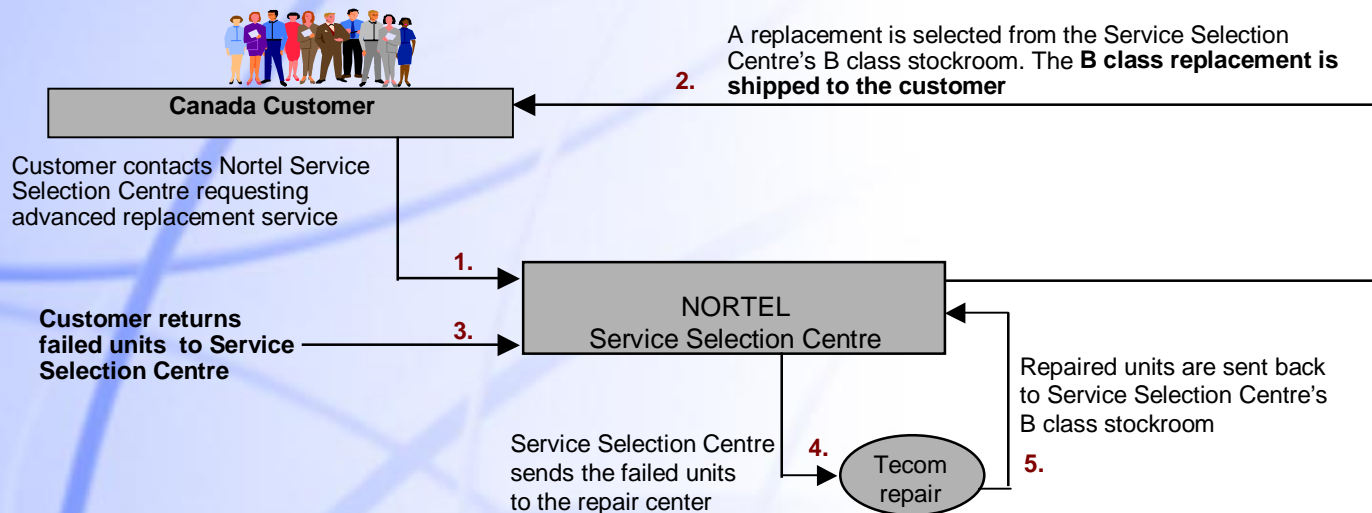
T7406 operates on any Norstar KSU software DR-3 or newer and any release of the Business Communications Manager.

Installation and Upgrade - Safety Considerations

- **Electric Shock – do not place base station, charger, or handset in a location that could be susceptible to moisture/water.**

CANADA REPAIR AND SERVICE STRATEGY

B CLASS REPAIRS for Canada Customers



Information required to initiate an RMA order:

- Ordering code
- Quantity
- Item description
- Nature of problem
- Purchase Order number
- Name of originator /contact (Telephone Number)
- Ship to address
- Bill to address

Advanced Replacement (process used for “service affecting” outage, special handling requirements, tracking number desired):

1. Customer contacts Nortel Service Selection Centre (1-888-977-9444) with repair service request. Return Material Authorization (RMA) number issued by Service Selection Centre.
2. A replacement is selected from Nortel Service Selection Centre's B class stockroom and the replacement is shipped to the customer. Lead time for shipment of advance replacement equipment varies from different service levels.
3. Customer returns failed units to Service Selection Centre within 21 calendar days to avoid being invoiced for Material on Loan (MOL) at a non-return billing price. The RMA number must appear on the outside of the defective return packaging. Repair Tags must be attached to the returned equipment. All shipments must include a packing slip with the following information: Customer address, RMA number, Quantity being returned, Ordering code of items being returned, Purchase Order number, Contact Name and Phone #
4. Nortel Service Selection Centre sends Defective Product to Repair Source
5. Repair Source will repair product and send the repaired product to Nortel Service Selection Centre for B class stock replenishment

Mail In (standard process):

In the Mail In process, an RMA number is not required. The customer returns the failed unit, including Purchase order and packing list to the NORTEL Service Selection Centre. The packing slip should include the following information: Customer ship to address, Quantity and Ordering code of items being returned, Purchase Order number, Contact Name and Phone Number

A replacement is sent to the customer when the defective hardware is received at the NORTEL Service Selection Centre.

Standard repair turnaround time is 15 working days in Canada from receipt of equipment at the Nortel Service Selection Centre warehouse.

Steps 3 -> 2 -> 4 -> 5 represent the flow for the Mail In process.

All slides are based on the fact that:

- 1) Shipper pays freight/transportation and shipping charges
- 2) NORTEL NETWORKS GRS services only Telcos and Distributors

NORTEL SERVICE SELECTION CENTRE:

DEFECTIVE H/W RETURNS ORDER DESK# :

1-888-977-9444

7:30 am -7:00 pm EST, Monday to Thursday; 7:30 am - 5:00 pm EST, Friday

After hours Emergency repair 1-888-977-9444

Option 1 for English, 2 for French;option 3 for Emergency

ADDRESS TO SEND DEFECTIVE PRODUCT:

Nortel Networks
Service Selection Centre
30 Norelco Drive
Weston, Ontario, Canada
M9L 2X6

SERVICE LEVELS FOR CANADA:

Mail In : Repair turnaround time is 15 working days from receipt of equipment at the NORTEL Service Selection Centre warehouse.

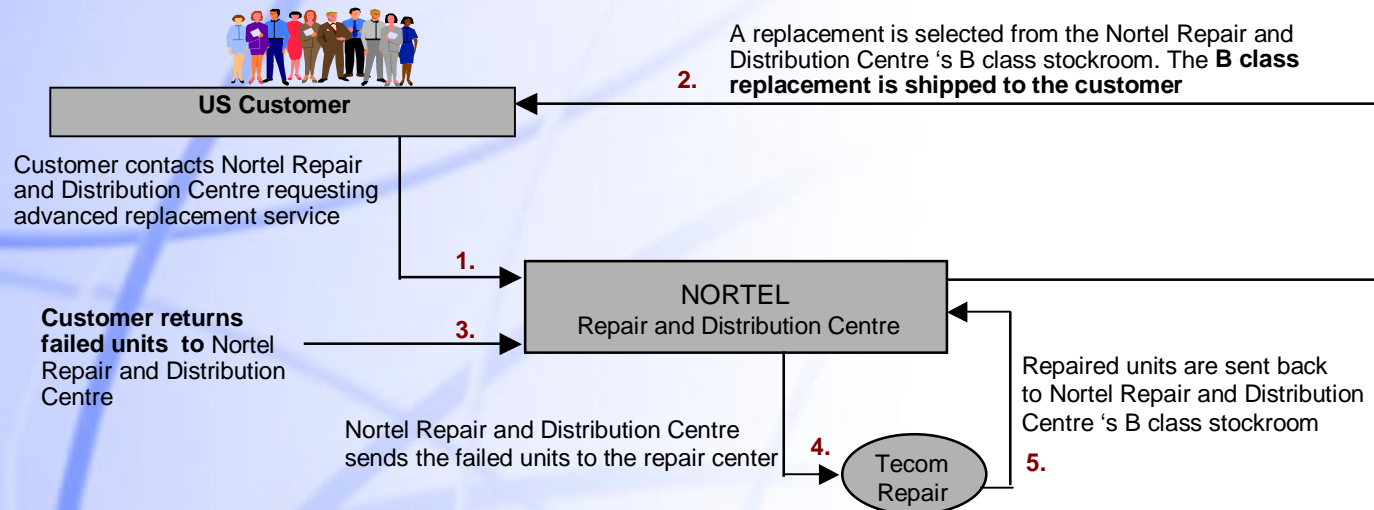
Advanced Replacement: Lead time varies for different service levels:

1. Emergency: lead time for shipment is 24 hours, subject to C\$250 surcharge, Meridian 1 Portfolio only.
2. Express: Lead time 48 Hours, no surcharge, limited to certain products for Meridan 1, .Norstar and companion portfolio.
3. Direct2Tech: 4--8 Hours to site. For Bell and Norstar Voicemail only.
4. Retrofit: Lead time 7days.

Remanufacturing: Lead time will be 7 days.

US REPAIR AND SERVICE STRATEGY

B CLASS REPAIRS for US Customers



Information required to initiate an RMA order:

- Ordering code
- Quantity
- Item description
- Nature of problem
- Purchase Order number
- Name of originator /contact (Telephone Number)
- Ship to address
- Bill to address

Advanced Replacement (process used for "service affecting" outage, special handling requirements, tracking number desired):

1. Customer contacts Nortel Repair and Distribution Centre (1-800-321-2649 choice 5) with repair service request. Return Material Authorization (RMA) number issued by Nortel Repair and Distribution Center.
2. A replacement is selected from Nortel Repair and Distribution Centre 's B class stockroom and the replacement is shipped to the customer. Lead time for shipment of advance replacement equipment is 24 hours.
3. Customer returns failed units to Nortel Repair and Distribution Centre within 30 calendar days to avoid being invoiced for Material on Loan (MOL) at a non-return billing price. The RMA number must appear on the outside of the defective return packaging. Repair Tags must be attached to the returned equipment. All shipments must include a packing slip with the following information: Customer address, RMA number, Quantity and Ordering code of items being returned, Purchase Order number, Contact Name and Phone #.
4. Nortel Repair and Distribution Centre sends Defective Product to Repair Source
5. Repair Source will repair product and send the repaired product to Nortel Repair and Distribution Centre for B class stock replenishment

Mail In (standard process):

In the Mail In process, an RMA number is not required. The customer returns the failed unit, including Purchase order and packing list to the Nortel Repair and Distribution Centre. The packing slip should include the following information: Customer ship to address, Quantity and Ordering code of items being returned, Purchase Order number, Contact Name and Phone Number

A replacement is sent to the customer when the defective hardware is received at the Nortel Repair and Distribution Centre.

Standard repair turnaround time is 10 working days from receipt of equipment at the Nortel Repair and Distribution Centre warehouse.

Steps 3 -> 2 -> 4 -> 5 represent the flow for the Mail In process.

All slides are based on the fact that:

- 1) Shipper pays freight/transportation and shipping charges
- 2) NORTEL NETWORKS GRS services only Telcos and Distributors

NORTEL REPAIR AND DISTRIBUTION CENTER :

DEFECTIVE H/W RETURNS **ORDER DESK# :**

1-800-321-2649 choice 5 7:30 am -5:30 pm CST, Monday to Friday

After hours Emergency repair 1-800-251-1758

Select voice prompt for emergency

ADDRESS TO SEND DEFECTIVE PRODUCT:

Nortel Networks
Repair and Distribution Center
640 Massman Drive
Nashville, TN, USA
37210

SERVICE LEVELS FOR US:

Mail In : Repair turnaround time is 10 working days from receipt of equipment at the NORTEL Service Selection Centre warehouse.

Mail In Emergency (surcharge for this service level) : Repair turnaround time is 2 working days from receipt of equipment at the NORTEL Repair and Distribution Center warehouse.

Advanced Replacement : Lead time for shipment of advance replacement equipment is 24 hours from placement of repair order.

The logo for Nortel Networks, featuring the word "NORTEL" in a bold, blue, sans-serif font with a stylized globe icon integrated into the letter "O". Below it, the word "NETWORKS" is written in a similar bold, blue, sans-serif font, followed by a trademark symbol (TM).

NORTEL
NETWORKS™

Thank You!