

**Lucent Technologies**  
Bell Labs Innovations



**INTUITY<sup>TM</sup> Messaging Solutions**  
Release 4.3  
Update

Comcode 108158080  
Issue 1  
October 1997

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Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

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**Part 68: Network Registration Number.** This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. It is identified by an FCC registration number.

**Part 68: Answer-Supervision Signaling.** Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 Rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

#### Canadian Department of Communications (DOC)

##### Interference Information

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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Issue 1, October 1997

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##### European Union Declaration of Conformity

Lucent Technologies Business Communications Systems declares that the equipment specified in this document conforms to the referenced European Union (EU) Directives and Harmonized Standards listed below:

EMC Directive 89/336/EEC  
Low-Voltage Directive 73/23/EEC



The "CE" mark affixed to the equipment means that it conforms to the above directives.

##### Comments

To comment on this document, return the comment card at the front of the document.

##### Acknowledgment

This document was prepared by Product Documentation, Lucent Technologies, Columbus, OH.

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## About This Document

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### Overview

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This chapter describes:

- Intended audiences
- Release history
- How to use this update
- Safety and security alert labels
- Trademarks and service marks
- Related resources

### Purpose

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This document, *Lucent INTUITY™ Messaging Solutions Release 4.3 Update, Issue 1*, contains supplemental instructions for Release 4.3 of the Lucent INTUITY voice messaging system.

## **Intended Audiences**

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This document is intended primarily as an update for the on-site technical personnel who are responsible for installing the Lucent INTUITY system or for integrating the system with a MERLIN LEGEND® switch. Secondary audiences include the following from Lucent Technologies:

- Field support
- Helpline personnel
- Sales support
- Design support
- Factory ALT personnel
- Provisioning project managers

We assume that the primary users of this book have completed the Lucent INTUITY hardware installation training course.

## **Release History**

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This is the first release of this update.

## **How to Use This Update**

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If you have received any of the following books, see Table 1 for the corresponding chapters in this update:

**Table 1. Books Impacted by This Update**

<b>If you received this book:</b>	<b>See this chapter:</b>
<i>Lucent INTUITY Messaging Solutions Release 4 MAP/5P System Installation</i> , 585-310-185, Issue 3	Chapter 1, "Update for MAP/5P System Installation"
<i>Lucent INTUITY Messaging Solutions Release 4 MAP/40P System Installation</i> , 585-310-196, Issue 1	Chapter 2, "Update for MAP/40P System Installation"
<i>Lucent INTUITY Messaging Solutions Release 4 MAP/100 System Installation</i> , 585-310-173, Issue 3	Chapter 3, "Update for MAP/100 System Installation"
<i>Lucent INTUITY Messaging Solutions Integration with MERLIN LEGEND Communications System</i> , 585-310-255	Chapter 4, "Update for Integration with MERLIN LEGEND Communications System"

## **Safety and Security Alert Labels**

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This update uses the following symbols to call your attention to potential problems that could cause personal injury, damage to equipment, loss of data, or service interruptions:



**CAUTION:**

*Indicates the presence of a hazard that if not avoided can or will cause minor personal injury or property damage, including loss of data.*



**WARNING:**

*Indicates the presence of a hazard that if not avoided can cause death or severe personal injury.*



**DANGER:**

*Indicates the presence of a hazard that if not avoided will cause death or severe personal injury.*

## **Trademarks and Service Marks**

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The following trademarked products are mentioned in this update:

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- DEFINITY is a registered trademark of Lucent Technologies.
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- Dterm is a trademark of NEC Telephones, Inc.
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- UNIX is a registered trademark of UNIX Systems Laboratories, Inc.
- Windows is a trademark of Microsoft Corporation.

## **Related Resources**

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This section describes additional documentation and technical assistance available for you to learn more about the installation of your Lucent INTUITY system.

### **Documentation**

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 **NOTE:**

See the appropriate book for specific information on planning, installing, administering, or maintaining a Lucent INTUITY system. See the Lucent INTUITY online catalog for more information on other books in the set.

Use the following books in conjunction with this update:

- *Lucent INTUITY Messaging Solutions Release 4* installation book specific to your platform for a detailed source of complete installation procedures and troubleshooting information
- *Lucent INTUITY Messaging Solutions Release 4* maintenance book specific to your platform for a detailed source of complete maintenance procedures and troubleshooting information
- *Lucent INTUITY Messaging Solutions Integration with MERLIN LEGEND Communications System*, 585-310-255, for more detailed instructions for integrating the MERLIN LEGEND with the Lucent INTUITY system

See the inside front cover for information on how to order Lucent INTUITY documentation.

### **Technical Assistance**

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The following numbers are available for technical assistance with Lucent Technologies products and services:

- Within the United States
  - For systems integrated with a MERLIN LEGEND switch, call 1-800-628-2888.
  - For systems integrated with any other switch, call 1-800-242-2121 x85474.
- Within Canada
  - For all systems, call 1-800-242-1234.
- Within any other country
  - For all systems, call your local distributor.

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# Update for MAP/5P System Installation

# 1

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## Overview

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This chapter is an update to Appendix C, "Troubleshooting Procedures", in *Lucent INTUITY™ Messaging Solutions Release 4 MAP/5P System Installation*, 585-310-185.

## Purpose

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The purpose of this chapter is to provide updated troubleshooting procedures for switch integration.

 **CAUTION:**

*Before you begin these troubleshooting procedures, you must have already completed all relevant procedures in Chapter 6, "Initial Administration for Switch Integration". See your switch administrator to verify the correct settings for your switch, if necessary, before beginning these troubleshooting procedures.*

You may need to complete the following procedures if:

- Outcalling functions, including fax outcalling, do not work
- Disconnect tone is not recognized
- Calls are not transferred
- Dialtone is not detected

Due to the frequency limitations of the Lucent INTUITY system, there may be some problems in detecting the far-end disconnect in some countries. Additional administration may be required on the switch to ensure that the far-end disconnect is recognized.

By default, most switches use U.S. parameter settings for different switch tones in all countries. Therefore, all dial tone, busy tone detection, and reorder tones are based on U.S. settings. These tones do not create any problems in the internal call answer function. Problems arise in countries where the disconnect (usually busy) tone is provided by the network.

Therefore, when the voice is being coded or recorded from an external call and the external caller disconnects the call, the Lucent INTUITY system might not be able to do call progress tone detection or to detect the disconnect tone. In this case, the disconnect tone is recorded with the message until Lucent INTUITY finally times out.

**⇒ NOTE:**

This problem does not occur if the public switch network gives a polarity disconnect or wink disconnect. The polarity disconnect or wink disconnect option needs to be ordered from the central office, if possible.

## **Setting Frequencies and Frequency Groups for Call Progress Tones**

---

Use this procedure to set the country-specific and switch-specific frequencies and frequency groups that the Lucent INTUITY system uses to recognize call progress tones that the switch sends.

Each call progress tone is made up of one or two frequencies. Accordingly, a frequency group is either a single frequency or a set of two frequencies that you define as a group so the group can then be assigned to a particular type of tone.

The frequencies and frequency groups set on this window are also displayed on the following windows used to set the parameters for call progress tones. See "Setting Parameters for Basic Call Progress Tones" and "Setting Additional Call Progress Tones".

- Windows for basic call progress tones:
  - Dial Tone window
  - Busy Tone window
  - Reorder Tone window
  - Ring Tone window
  - Stutter Tone window

- Windows for custom-specified call progress tones
  - First Additional Tone window
  - Second Additional Tone window
  - Third Additional Tone window

The required frequencies may differ for the five types of call progress tones, though in general each country (or switch) uses a small number of frequencies to define all tones. In some cases a single frequency is used for all tones.

**⇒ NOTE:**

Besides frequency, call progress tones are also distinguished by *cadence*, that is the number and duration of ON/OFF cycles that compose the tone. The cadence is set on the various tone windows. See "Setting Parameters for Basic Call Progress Tones" and below.

For ease of administration of the call progress tones, you can assign as many as three distinct frequency groups that contain appropriate sets of frequencies (one, two, or three frequencies) to cover all the types of tones your system uses.

This procedure also allows you to enable *dial tone training*. In dial tone training, the system analyzes the dial tone that the switch sends to determine its constituent frequencies. If the frequencies obtained from the analysis differ from the frequencies set in your Lucent INTUITY system, these settings are automatically overwritten with the values obtained from analysis. (See "" following Table 1-1 for more information.)

Complete the following procedure to set call frequencies and call frequency groups for call progress tones:

1. Start at the Lucent INTUITY main menu (Figure 1-1).

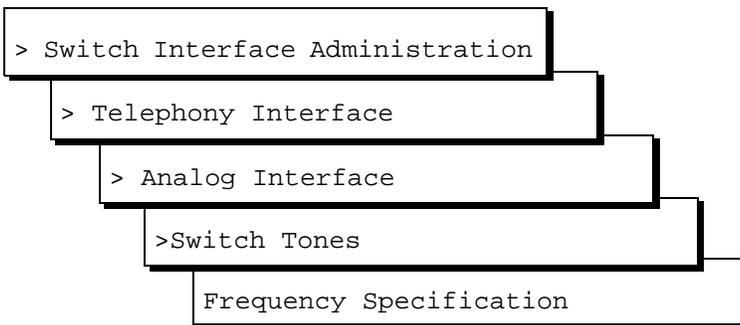
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```
INTUITY (TM) Administration
>AUDIX Administration
Country Parameter Administration
Customer/Services Administration
Lodging Administration
Networking Administration
Switch Interface Administration
Upgrade
Voice System Administration
```

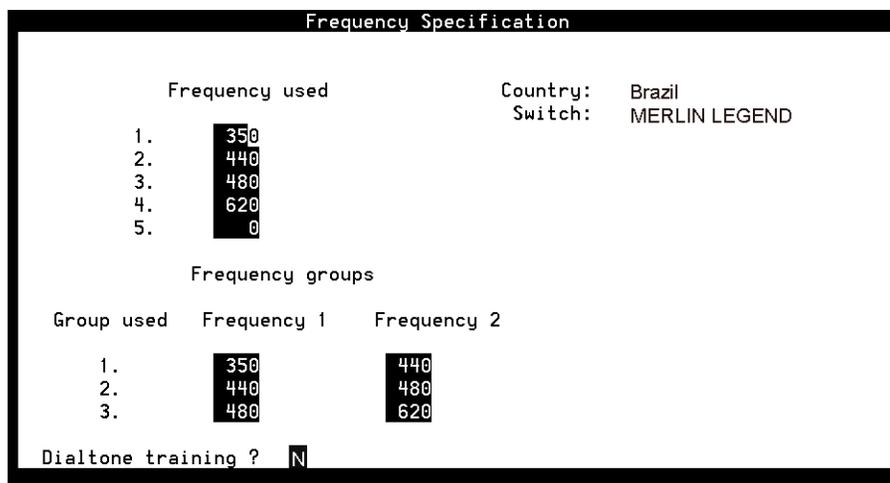
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**Figure 1-1. Lucent INTUITY Main Menu**

2. Select



The system displays the Frequency Specification window (Figure 1-2) with defaults for your integration. If the parameters have been previously administered, the system displays the current values instead.



**Figure 1-2. Frequency Specification Window**

3. Enter values in the **Frequency used** fields, as necessary to represent all the frequencies used for all the tones in your system (see Table 1-1).

**⇒ NOTE:**

You must enter disconnect tone frequencies first. If only one frequency is used for disconnect tone, enter it in the first **Frequency used** field. If two frequencies are used, enter them first and second.

If all the **Frequency used** fields are filled and there is no vacant field, the Ringtone frequency field can be deleted and replaced with some other field. If there is a field with no entry, then the disconnect tone entry should be placed in the first **Frequency Used** field and the ringtone frequency should be deleted.

**⇒ NOTE:**

If you have already completed a tone capture analysis, these values should match the values from the **Frequency 1** field and the **Frequency 2** field on the "Tone Capture and Analysis Window".

4. In the **Group used** row, enter frequencies in the **Frequency 1** and **Frequency 2** fields for frequency group 1 (see Table 1-1).
5. Repeat Step 4 for additional frequency groups that you want to set (see Table 1-1).
6. Enter **n** in the **Dialtone training?** field.
7. Press **F3** (Save).

The system displays the following message:

Your changes have been saved. You need to restart the Voice System to make these changes active.

8. Press **F1** (Acknowledge Message).
9. Press **F6** (Cancel) five times to return to the Lucent INTUITY main menu (Figure 1-1).

**Table 1-1. Frequency Specification Window — Field Descriptions**

<b>Field</b>	<b>Description</b>	<b>Values</b>
Country:	Displays the country set on the Switch Selection window.	Display only.
Switch:	Displays the switch type set on the Switch Selection window.	Display only.
Frequency used (five fields)	<p>Enables you to list up to five different frequencies used in the country for which you are setting tones. The values you enter here are displayed on the Busy Tone, Dial Tone, Reorder Tone, Ring Tone, Stutter Tone, First Additional Tone, Second Additional Tone, and Third Additional Tone windows.</p> <p><b>⇒ NOTE:</b> You <i>must</i> specify the frequencies used for disconnect as the first tones in this list.</p>	<p>Range 300-4000 Hz. Unused frequency fields are indicated by 0 (zero).</p> <p><b>⇒ NOTE:</b> The first frequency can <i>never</i> be 0. If a frequency is 0, the following frequencies on the list must also be 0. The system will treat them as 0 even if they are set to another value.</p>
Group used	Provides a reference number (1, 2, or 3) for each of the three frequency groups you can set.	1, 2, or 3. Display only.
Frequency 1	Defines the first frequency in a set of two (maximum) frequencies that can make up a tone.	<p>Frequencies used in these groups must be defined in the <b>Frequency used</b> fields. If a frequency group is unused, by default the values for both Frequency 1 and Frequency 2 are zero (0).</p> <p><b>⇒ NOTE:</b> If a group has only one frequency, enter that frequency in the <b>Frequency 1</b> field and enter zero (0) in the <b>Frequency 2</b> field.</p>
Frequency 2	Defines the second frequency in a set of two (maximum) frequencies that can make up a tone.	
Dialtone training?	Specifies whether your system uses dial tone training. Thus, if your system uses the same frequencies for other call progress tones besides dial tone, you can define two different groups using the same frequencies. One group can be used for dial tone and the other group for other call progress tones.	<ul style="list-style-type: none"> <li>■ y to enable dial tone training</li> <li>■ n to disable dial tone training</li> </ul> <p>If the dial tone on your system is not continuous, the dial tone training flag is internally set to N and the system ignores this field.</p>

## **Example**

---

Suppose dial tone is 440 Hz + 480 Hz, and you want to assign Group 1 for dial tone. To do so, enter 440 in the `Frequency 1` field and 480 in the `Frequency 2` field for Group 1. Later when defining dial tone on the Dial Tone window, you can simply specify that it uses Group 1 and the system will recognize the correct frequencies.

## **Special Considerations for Dial Tone Training**

---

If dial tone training is enabled, the system overwrites the frequencies assigned for dial tone with whatever frequencies dial tone training analysis detects. The system is configured to expect the first frequency or frequencies on the list on the `Frequency used` field to be for dial tone. If dial tone training detects only one frequency in the dial tone, the system overwrites the first frequency specified. If it detects two frequencies in the dial tone, the system overwrites the first two frequencies.



### **CAUTION:**

*Any changes to the frequencies made through dial tone training are not indicated on the windows in the user interface.*

Problems may arise, however, if the switch tones for in dial tone are not precisely tuned. For example, suppose your system is configured to expect the single frequency of 440 Hz for dial tone and all other tones and that 440 Hz is listed as the first and only frequency in the `Frequency Used` field. Suppose further that dial tone training detects 441 Hz as the actual frequency sent by the switch. The system overwrites 440 Hz with 441 Hz. In this case, the system will recognize dial tone but not any of the other switch tones.

To ensure that this sort of problem does not occur, it is recommended that you enter the frequency or frequencies used for dial tone more than once in the `Frequency used` field. In the example above, then entry would be:

<code>Frequency used</code>	
1.	440
2.	440

If your system uses 350 and 440 Hz, the recommended entry would be:

<code>Frequency used</code>	
1.	350
2.	440
3.	350
4.	440

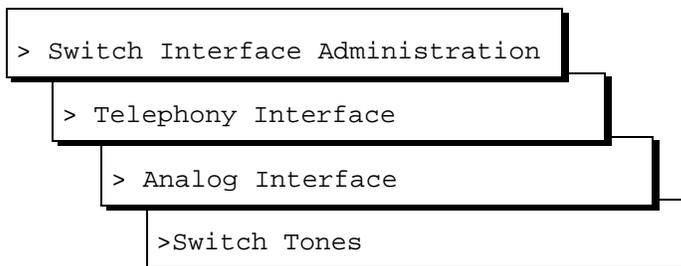
## Setting Parameters for Basic Call Progress Tones

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Use this procedure to set the frequencies and cadence your system recognizes for call progress tones that the switch sends. Parameters can be set for the five basic call progress tones — busy tone, dial tone, reorder tone, ring tone, and stutter tone. Each tone is made up of one or two frequencies and consists of a series of ON and OFF timing cycles, called the *cadence*.

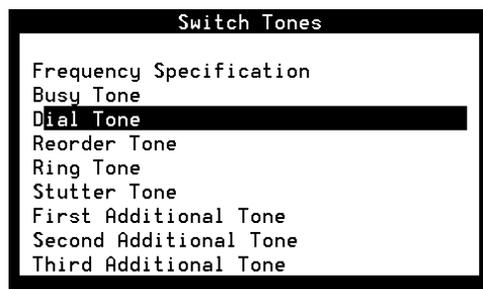
This procedure also allows you to specify whether the Lucent INTUITY system should interpret the tone you are setting as a disconnect signal (if call progress tones are used for disconnects in your system).

1. Starting at the Lucent INTUITY main menu (Figure 1-1), select



The system displays the Switch Tones menu (Figure 1-3).

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**Figure 1-3. Switch Tones Menu**

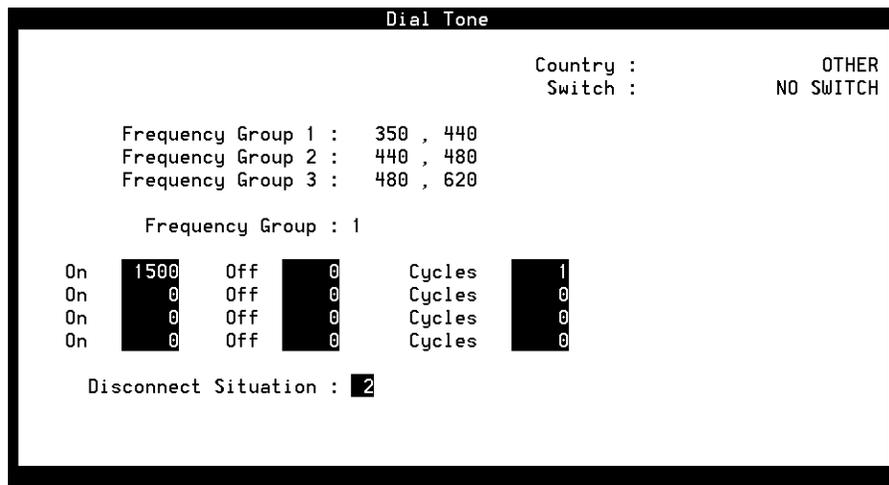
2. Select one of the following menu items corresponding to the tone you want to set:
  - Busy Tone
  - Dial Tone
  - Reorder Tone

- Ring Tone
- Stutter Tone

The system displays the appropriate window for the tone you selected with defaults for your integration. If the parameters have been previously administered, the system displays the current values instead. The window also displays the frequency groups set in the Frequency Specification window (Figure 1-2).

**⇒ NOTE:**

Figure 1-4 shows the Dial Tone window. Windows for the other basic tones are identical except for their titles.



**Figure 1-4. Example of Switch Tone Window — Dial Tone**

3. In the `Frequency` group field, select one of the frequency groups (1, 2, or 3) displayed at the top of the window for the system to use for this tone.

**⇒ NOTE:**

These groups are assigned on the Frequency Specification window.

4. Enter values in the `On`, `Off`, and `Cycles` fields (see Table 1-2), as necessary to represent the tone cadence. (See the examples following Table 1-2 for information on how to represent the cadence.)

**⇒ NOTE:**

If you set stutter tone, be sure the timing used for continuous tone (minimum on duration) matches the timing used for continuous tone on the dialtone screen. For example, if dialtone is set as continuous tone, minimum 2 seconds, then stutter tone might be 200 msec ON, 200 msec OFF (3 cycles) followed by continuous tone, minimum 2 seconds.

5. Enter the appropriate value in the `Disconnect Situation` field, depending on whether your system interprets this type of tone as a disconnect signal (see Table 1-2).

6. Press **F3** (Save).

The system displays the following message:

Do you wish to continue with this change (Y/N)?

7. Enter **y**

The system displays the following message:

Your changes been saved. You need to stop and start the Voice System to make these changes active.

8. Press **F1** (Acknowledge Message).

9. Do you want to set the frequency and cadence for another tone?

- If no, press **F6** (Cancel) five times to return to the Lucent INTUITY main menu (Figure 1-1). You have completed this procedure.
- If yes, do the following:
  - a. Press **F6** (Cancel) to return to the Switch Tones menu.
  - b. Repeat Steps 2 through 9 for the tone you select.

**Table 1-2. Basic Tone Windows – Field Descriptions**

<b>Field</b>	<b>Description</b>	<b>Values</b>
<p> <b>NOTE:</b> These field descriptions apply to all the windows used for setting the five basic call progress tones, including the Busy Tone, Dial Tone, Reorder Tone, Ring Tone, and Stutter Tone windows.</p>		
Country	Displays the country set on the Switch Selection window.	Display only.
Switch	Displays the switch type set on the Switch Selection window.	
Frequency Group 1:	These fields display the frequency groups set on the Frequency Specification window (Figure 1-2).	
Frequency Group 2:		
Frequency Group 3:		
Frequency Group:	Sets the group of frequencies the system uses to generate the selected tone (see Figure 1-2).	1, 2, or 3. You can specify only one frequency group per tone.
On	Sets the duration of the tone cadence ON cycle.	Range 0-6000 msec.
Off	Sets the duration of the tone cadence OFF cycle.	If an ON timing is 0, it is assumed that the row is blank, and that the OFF timing and cycles are also 0 (see the examples following Table 1-2).
Cycles	Sets the number of times an ON/OFF cycle repeats.	A cycle consists of an ON duration and an OFF duration of specified lengths (see the examples following Table 1-2).
Disconnect Situation:	<p>Specifies when the tone should be treated as a disconnect signal.</p> <p> <b>NOTE:</b> This parameter is significant only in countries where disconnect signaling is done using call progress tones.</p>	<ul style="list-style-type: none"> <li>■ 0 — Do not treat as disconnect.</li> <li>■ 1 — Treat as disconnect during voice coding only.</li> <li>■ 2 — Treat as disconnect at all times except outcalling.</li> </ul>
Report as	Specifies the type of tone you are defining.	<ul style="list-style-type: none"> <li>■ Busy</li> <li>■ Dial</li> <li>■ Ringback</li> <li>■ Reorder</li> <li>■ Stutter</li> </ul>

## Examples

The ON/OFF cycles that make up the cadence of a call progress tone must be specified in order. These examples illustrate how the cadence is set on the basic call progress tone windows.

- Four rows are needed to specify the following tone:

250 msec ON, 250 msec OFF  
 500 msec ON, 500 msec OFF  
 250 msec ON, 250 msec OFF  
 500 msec ON, 500 msec OFF

On	250	Off	250	Cycles	1
On	500	Off	500	Cycles	1
On	250	Off	250	Cycles	1
On	500	Off	500	Cycles	1

- Three rows are needed for the following tone. Since the first two cycles repeat exactly (250 msec ON, 250 msec OFF), their setting can be entered once and specified as repeating twice (2 cycles).

250 msec ON, 250 msec OFF  
 250 msec ON, 250 msec OFF  
 500 msec ON, 500 msec OFF  
 250 msec ON, 250 msec OFF

On	250	Off	250	Cycles	2
On	500	Off	500	Cycles	1
On	250	Off	250	Cycles	2

## Setting Additional Call Progress Tones

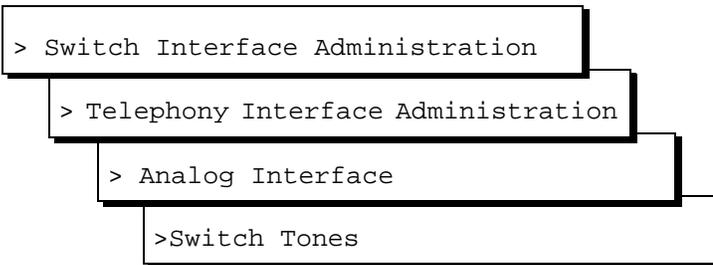
In some cases you may need to assign more than one set of parameters for a certain call progress tone. For example, if your switch and the switch at your public telephone network office use different dial tone parameters, you may need to set both in your INTUITY system.

Use this procedure to set the frequencies and cadence the INTUITY system recognizes for additional call progress tones. As many as three additional tones can be specified as either busy tone, dial tone, reorder tone, ring tone, or stutter tone. Like the basic tones (see "Setting Parameters for Basic Call Progress Tones"), each additional tone is made up of one or two frequencies and consists of a series of on and off timing cycles (cadence).

### NOTE:

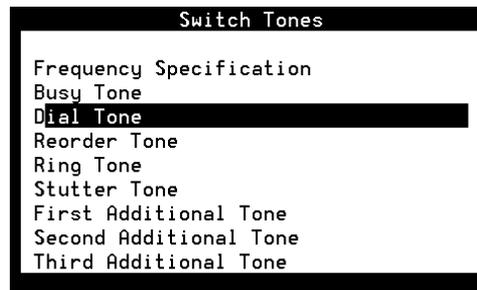
Unlike for basic tones, here you cannot enable any additional tone you set to be recognized as a disconnect signal.

1. Starting at the Lucent INTUITY main menu (Figure 1-1), select



The system displays the Switch Tones menu (Figure 1-5).

---



---

**Figure 1-5. Switch Tones Menu**

2. Select one of the following menu items corresponding to the additional tone you want to set:
  - First Additional Tone
  - Second Additional Tone
  - Third Additional Tone

The system displays the appropriate window for the tone you selected. If the parameters have been previously administered, the system displays the current values instead. If the parameters have not been previously administered, the value in the Report as field is unused. The window also displays the frequency groups set in the Frequency Specification window (Figure 1-2).

Figure 1-6 shows the First Additional Tone window. Windows for the other additional tones are identical except for their titles.

```

First Additional Tone
Country : Brazil
Switch : MERLIN LEGEND

Frequency Group 1 : 350 , 440
Frequency Group 2 : 440 , 480
Frequency Group 3 : 480 , 620

Frequency Group : 0

On  0 Off  0 Cycles 0
On  0 Off  0 Cycles 0
On  0 Off  0 Cycles 0
On  0 Off  0 Cycles 0

Report as : unused

```

**Figure 1-6. Example of Additional Tone Window — First Additional Tone**

- In the `Frequency Group:` field, select one of the frequency groups (1, 2, or 3) displayed at the top of the window for the system to use for this tone (See Table 1-2).

**⇒ NOTE:**

These groups are assigned on the Frequency Specification window.

- Enter values in the `on`, `off`, and `cycles` fields (see Table 1-2), as necessary to represent the tone cadence.

See the examples following Table 1-2 for information on how to represent the cadence.

**⇒ NOTE:**

If you set stutter tone, be sure the timing used for continuous tone (minimum on duration) matches the timing used for continuous tone on the dialtone screen. For example, if dialtone is set as continuous tone, minimum 2 seconds, then stutter tone might be 200 msec ON, 200 msec OFF (3 cycles) followed by continuous tone, minimum 2 seconds.

- Enter the appropriate tone name in the `Report as:` field (see Table 1-3), corresponding to the additional basic tone you are defining.

For example, if you are defining an additional dial tone, enter **dial**

- Press **F3** (Save).

The system displays the following message:

Do you wish to continue with this change (Y/N)?

7. Enter **y**

The system displays the following message:

Your changes been saved. You need to stop and start the Voice System to make these changes active.

8. Press **Ⓢ** (Acknowledge Message).

9. Do you want to define another additional tone?

- If no, press **Ⓢ** (Cancel) five times to return to the Lucent INTUITY main menu (Figure 1-1). You have completed this procedure.
- If yes, do the following:
  - a. Press **Ⓢ** (Cancel) to return to the Switch Tones menu.
  - b. Repeat Step 2 through Step 9 for the tone you selected.

**Table 1-3. Additional Tone Windows— Field Descriptions**

Field	Description	Values
<p> <b>NOTE:</b> These field descriptions apply to all windows used for setting the three additional call progress tones, including the First Additional Tone, Second Additional Tone, and Third Additional Tone windows.</p>		
Country	See Table 1-2.	
Switch		
Frequency Group 1:		
Frequency Group 2:		
Frequency Group 3:		
On		
Off		
Cycles		
Report as:	Specifies the type of tone you are defining.	<ul style="list-style-type: none"> <li>■ Busy</li> <li>■ Dial</li> <li>■ Ringback</li> <li>■ Reorder</li> <li>■ Stutter</li> </ul>

10. Press **Ⓢ** (Cancel) four times to return to the Lucent INTUITY main menu (Figure 1-1).

## Determining Call Progress Tones

Use the Tone Capture and Analysis Screen (Figure 1-7) to evaluate call progress tones on various switches in cases where the system defaults must be tuned.

This tool enables you to:

- Use a set of OPCODE commands to simulate a call scenario that makes the switch generate a tone
- Capture the tone
- Analyze the tone to determine its frequency and cadence

After analysis, you can tune the tone parameters set in the Lucent INTUITY system to match the actual switch parameters by accessing the appropriate window in the telephony interface: Dial Tone, Busy Tone, Reorder Tone, Ringback Tone or Stutter Tone window.

1. Starting at the Lucent INTUITY main menu (Figure 1-1), select

```
> Switch Interface Administration
```

```
> Telephony Interface
```

```
> Tone Capture and Analysis
```

The system displays the Tone Capture and Analysis window (Figure 1-7).

Tone Capture and Analysis						
TONE: dial						
<u>FREQUENCY</u>						
FREQUENCY 1: 350 Hz.		FREQUENCY 2: 440 Hz.				
ENERGY LEVEL: -3.84dBm.		ENERGY LEVEL: -2.73dBm.				
<u>CADENCE</u>						
	<u>ON TIME</u>		<u>OFF TIME</u>		<u>CYCLES</u>	
1.	2000 msec.		0 msec.		1	
2.	0 msec.		0 msec.		0	
3.	0 msec.		0 msec.		0	
4.	0 msec.		0 msec.		0	
<u>COMMANDS</u>						
	<u>OPCODE</u>		<u>CH</u>		<u>PARAMETER</u>	
			<u>No.</u>			
	OFFHK		16			
	WAIT		16	4		
	RECORD		16	10		
	ONHK		16			

Figure 1-7. Tone Capture and Analysis Window

2. Enter a name for the tone you are to capture (see Table 1-4).
3. Enter commands in the `OPCODE`, `CH No.`, and `PARAMETER` fields (see Table 1-5 and the examples following the table.)

**⇒ NOTE:**

Once the cursor is in the commands fields, you can press **F8** (Change Keys) to access keys that allow you to delete a command line **F4** (Delete Line), insert a command line **F5** (Insert Line), or move the cursor to the `Tone` field **F7** (Home).

Press **F8** (Change Keys) again to change to the original keys. Or, if you move the cursor out of the commands fields, the keys automatically change back.

4. Press **F4** (Capture).  
The system captures the tone generated by the `OPCODE` commands.
5. Press **F5** (Analyze).  
The system analyzes the captured tone and displays its frequency and cadence in the output fields on the window (see Table 1-4).
6. Do you want to save the commands for future use?
  - If no, go to Step 7.
  - If yes, do the following:
    - a. Press **F3** (Save).  
The system displays the following message:  

```
Do you wish to continue with this change
(y/n)?
```
    - b. Enter **y**

**⇒ NOTE:**

To delete a tone name and its associated commands, position the cursor in the `Tone` field and press **F8** (Delete Tone).

7. Press **F6** (Cancel) three times to return to the Lucent INTUITY main menu (Figure 1-1).

**Table 1-4. Tone Capture and Analysis Window — Input Fields**

<b>Field</b>	<b>Description</b>	<b>Values</b>
TONE	Allows you to enter a name for the tone. Commands for capturing the tone are read from a file using this name. All output files are also generated using this name.  If you save the OPCODE commands associated with this name, they are displayed whenever you enter the name in this field.	Maximum of 10 characters.
FREQUENCY 1 : FREQUENCY 2 :	These fields display the result of the tone frequency analysis, which can contain one or two frequency components. Frequency 1 is the lower frequency and Frequency 2 is the upper frequency.	<ul style="list-style-type: none"> <li>■ If only one component is present, the Frequency 2 field is blank.</li> <li>■ If no frequency is detected, both fields are blank. This may be a result of improper capturing of the tone.</li> </ul>
ENERGY LEVEL : (two fields)	These fields display the results of analysis of the energy level of each frequency component.	Displayed in dBm.
ON TIME (four fields)	These fields display the results of analysis of the tone cadence ON time.	Displayed in msec.
OFF TIME (four fields)	These fields display the results of analysis of the tone cadence OFF time in.	Displayed in msec.
CYCLES (four fields)	These fields display the results of analysis of the number of occurrences of the ON time/OFF time cycles.	Integer.
OPCODE	Allows you to enter the <b>OPCODE</b> portion of the OPCODE command syntax.	Specifies the operation to be performed on the channel (see Table 1-5).
CH. No .	Allows you to enter the required <b>&lt;CH_No.&gt;</b> portion of the OPCODE command syntax.	The port number on the Tip/Ring card.
PARAMETER	Allows you to enter the <b>&lt;PARAMETER&gt;</b> portion of the OPCODE command syntax.	<p>An OPCODE-dependent qualifier. Not required for all OPCODE commands (see Table 1-5). Possible values are:</p> <ul style="list-style-type: none"> <li>■ <b>&lt;duration&gt;</b> — Specifies the number of msec for the operation to be performed.</li> <li>■ <b>&lt;digit_string&gt;</b> — Specifies a dial string. Valid characters are 0-9, #, and *.</li> </ul>

The system recognizes the following OPCODE commands (Table 1-5).

**Table 1-5. OPCODE Commands**

<b>Command</b>	<b>Description</b>
<b>OFFHK</b> <CH_No.>	Seizes the specified line.
<b>ONKH</b> <CH_No.>	Emulates an on-hook condition on the specified line.
<b>DIAL</b> <CH_No.> <digit_string>	Dials out dual-tone multifrequency (DTMF) digits through the specified line.
<b>FLASH</b> <CH_No.> <duration>	Performs hook flash on the channel for the specified number of msec.
<b>RECORD</b> <CH_No.> <duration>	Captures the pulse code modulation (PCM) data of the voice on the line and stores it in a file. The duration is specified in seconds and should be suitably chosen to capture a sufficient number of on/off cycles of the tone.
<b>PLAY</b> <CH_No.>	Plays the stored tone on the specified channel.
<b>WAIT</b> <CH_No.> <duration>	Introduces a number of seconds of delay in execution of the next command. This command can be introduced anywhere in the command sequence.

### **Examples**

---

The command sequence shown in the window in Figure 1-7 captures dial tone.

The following command sequence captures a busy tone:

```

OFFHK   01   124   Make line 01 busy.
DIAL    01   1234  Dial extension number of line 01.
OFFHK   02   126   Cause the switch to inject busy tone on line 02.
DIAL    02   127   Dial extension number of line 02.
RECORD  02   3     Record the tone for 3 seconds.
ONHK    01                   Unbusy line 01.
    
```

Another way to capture busy tone is to do the following:

1. Identify a valid extension number (switch station).
2. Take the station offhook manually.

3. Use the following command sequence:

<b>OFFHK</b>	<b>01</b>		Make line 01 busy.
<b>DIAL</b>	<b>01</b>	<b>&lt;number that you busied out by taking offhook&gt;</b>	Dial extension <number>.
<b>RECORD</b>	<b>01</b>	<b>10</b>	Record the tone for 10 seconds.
<b>ONHK</b>	<b>01</b>		Unbusy line 01.

The following command sequence captures a stutter tone:

<b>OFFHK</b>	<b>01</b>		Make line 01 busy.
<b>RECORD</b>	<b>01</b>	<b>3</b>	Record the tone for 3 seconds.
<b>ONHK</b>	<b>01</b>		Unbusy line 01.

The following command sequence captures a ringback tone:

<b>OFFHK</b>	<b>01</b>		Make line 01 busy.
<b>DIAL</b>	<b>01</b>	<b>1234</b>	Dial extension 1234.
<b>RECORD</b>	<b>01</b>	<b>10</b>	Record the tone for 10 seconds.
<b>ONHK</b>	<b>01</b>		Unbusy line 01.

---

# Update for MAP/40P System Installation

# 2

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## Overview

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This chapter is an update to Appendix C, "Troubleshooting Procedures", in *Lucent INTUITY™ Messaging Solutions Release 4 MAP/40P System Installation*, 585-310-196.

## Purpose

---

The purpose of this chapter is to provide updated troubleshooting procedures for switch integration.

 **CAUTION:**

*Before you begin these troubleshooting procedures, you must have already completed all relevant procedures in Chapter 6, "Initial Administration for Switch Integration", in Lucent INTUITY Messaging Solutions Release 4 MAP/40P System Installation, 585-310-196. See your switch administrator to verify the correct settings for your switch, if necessary, before beginning troubleshooting procedures.*

## **Tone Customization Update**

---

Due to the frequency limitations of the Lucent INTUITY system, there may be some problems in detecting the far-end disconnect in some countries. Additional administration may be required on the switch to ensure that the far-end disconnect is recognized.

By default, most switches use U.S. parameter settings for different switch tones in all countries. Therefore, all dial tone, busy tone detection, and reorder tones are based on U.S. settings. These tones do not create any problems in the internal call answer function. Problems arise in countries where the disconnect (usually busy) tone is provided by the network.

Therefore, when the voice is being coded or recorded from an external call and the external caller disconnects the call, the Lucent INTUITY system might not be able to do call progress tone detection or to detect the disconnect tone. In this case, the disconnect tone is recorded with the message until Lucent INTUITY finally times out.

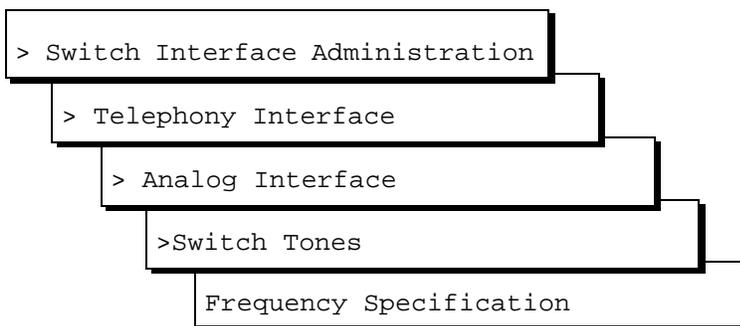
### **⇒ NOTE:**

This problem does not occur if the public switch network gives a polarity disconnect or wink disconnect. The polarity disconnect or wink disconnect option needs to be ordered from the central office, if possible.

## **Frequency Specification Update**

---

1. Starting at the Lucent INTUITY main menu (Figure 1-1), select



The system displays the Frequency Specification window (Figure 1-2) with defaults for your integration. If the parameters have been previously administered, the system displays the current values instead.

2. Enter values in the **Frequency used** fields, as necessary to represent all the frequencies used for all the tones in your system (see Table 1-1).

**⇒ NOTE:**

You must enter disconnect tone frequencies first. If only one frequency is used for disconnect tone, enter it in the first **Frequency used** field. If two frequencies are used, enter them first and second.

If all the **Frequency used** fields are filled and there is no vacant field, the Ringtone frequency field can be deleted and replaced with some other field. If there is a field with no entry, then the disconnect tone entry should be placed in the first **Frequency Used** field and the ringtone frequency should be deleted.

**⇒ NOTE:**

If you have already completed a tone capture analysis, these values should match the values from the **Frequency 1** field and the **Frequency 2** field on the "Tone Capture and Analysis Window" in Appendix C, "Troubleshooting Procedures", in *Lucent INTUITY Messaging Solutions Release 4 MAP/40P System Installation*, 585-310-196.

---

# Update for MAP/100 System Installation

# 3

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## Overview

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This chapter is an update to Appendix C, "Troubleshooting Procedures", in *Lucent INTUITY™ Messaging Solutions Release 4 MAP/100 System Installation*, 585-310-173.

## Purpose

---

The purpose of this chapter is to provide updated troubleshooting procedures for switch integration.

 **CAUTION:**

*Before you begin these troubleshooting procedures, you must have already completed all relevant procedures in Chapter 6, "Initial Administration for Switch Integration", in Lucent INTUITY Messaging Solutions Release 4 MAP/100 System Installation, 585-310-173. See your switch administrator to verify the correct settings for your switch, if necessary, before beginning troubleshooting procedures.*

## **Tone Customization Update**

---

Due to the frequency limitations of the Lucent INTUITY system, there may be some problems in detecting the far-end disconnect in some countries. Additional administration may be required on the switch to ensure that the far-end disconnect is recognized.

By default, most switches use U.S. parameter settings for different switch tones in all countries. Therefore, all dial tone, busy tone detection, and reorder tones are based on U.S. settings. These tones do not create any problems in the internal call answer function. Problems arise in countries where the disconnect (usually busy) tone is provided by the network.

Therefore, when the voice is being coded or recorded from an external call and the external caller disconnects the call, the Lucent INTUITY system might not be able to do call progress tone detection or to detect the disconnect tone. In this case, the disconnect tone is recorded with the message until Lucent INTUITY finally times out.

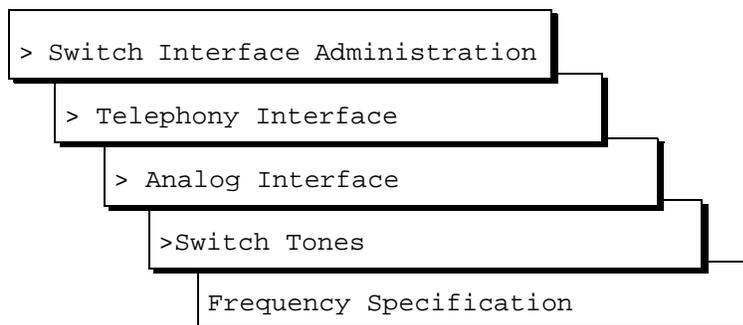
### **⇒ NOTE:**

This problem does not occur if the public switch network gives a polarity disconnect or wink disconnect. The polarity disconnect or wink disconnect option needs to be ordered from the central office, if possible.

## **Frequency Specification Update**

---

1. Starting at the Lucent INTUITY INTUITY main menu (Figure 1-1), select



The system displays the Frequency Specification window (Figure 1-2) with defaults for your integration. If the parameters have been previously administered, the system displays the current values instead.

2. Enter values in the **Frequency used** fields, as necessary to represent all the frequencies used for all the tones in your system (see Table 1-1).

**⇒ NOTE:**

You must enter disconnect tone frequencies first. If only one frequency is used for disconnect tone, enter it in the first **Frequency used** field. If two frequencies are used, enter them first and second.

If all the **Frequency used** fields are filled and there is no vacant field, the Ringtone frequency field can be deleted and replaced with some other field. If there is a field with no entry, then the disconnect tone entry should be placed in the first **Frequency Used** field and the ringtone frequency should be deleted.

**⇒ NOTE:**

If you have already completed a tone capture analysis, these values should match the values from the **Frequency 1** field and the **Frequency 2** field on the "Tone Capture and Analysis Window" in Appendix C, "Troubleshooting Procedures", in the *Lucent INTUITY Messaging Solutions Release 4 MAP/100 System Installation* book.

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# Update for Integration with MERLIN LEGEND Communications System

# 4

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## Overview

This chapter contains additional troubleshooting procedures for switch integration with the MERLIN LEGEND® outside of the U.S. You may need to complete the following procedures if:

- Disconnect tone is not recognized
- Dial tone is not detected
- Outcalling functions, including fax outcalling, do not work
- Calls are not transferred

**NOTE:**

See your switch administrator to verify the correct settings for your switch if necessary.

---

## Purpose

The purpose of this chapter is to ensure proper integration of the MERLIN LEGEND Communications system with the Lucent INTUITY™ system in markets outside of the U.S.

## **Disconnect Tone Is Not Recognized**

Due to the frequency limitations of the Lucent INTUITY system, there may be some problems in detecting the far-end disconnect in some countries. Additional administration may be required on the switch to ensure that the far-end disconnect is recognized.

By default, the MERLIN LEGEND uses U.S. parameter settings for different switch tones in all countries. Therefore, all dial tone, busy tone detection, and reorder tones are based on U.S. settings. These tones do not create any problems in the internal call answer function. Problems arise in countries where the disconnect (usually busy) tone is provided by the network.

Therefore, when the voice is being coded or recorded from an external call and the external caller disconnects the call, the Lucent INTUITY system might not be able to do call progress tone detection or to detect the disconnect tone. In this case, the disconnect tone is recorded with the message until Lucent INTUITY system finally times out.

### **⇒ NOTE:**

This problem does not occur if the public switch network gives a polarity disconnect or wink disconnect. The polarity disconnect or wink disconnect option needs to be ordered from the central office, if possible.

Additional administration of the switch tones is required for the central office-based disconnect recognition. This administration can be done on-site for specific cases. This work around could involve a trade-off between detecting MERLIN LEGEND ring tones versus the network disconnects.

The following procedures need to be completed if calls are not disconnected:

- Tone capture and analysis
- Frequency specification
- Tone specification
- First additional tone specification

## **Tone Capture and Analysis**

There are two methods for Tone Capture and Analysis. These methods are:

- External call
- Call through INTUITY AUDIX®

### External Call Method

Under this method, a call is made from an outside number to a number on INTUITY AUDIX. This call is received on the channel selected for tone capture. The caller then disconnects and the disconnect tone frequency and cadence is recorded on the Tone Capture and Analysis Screen.

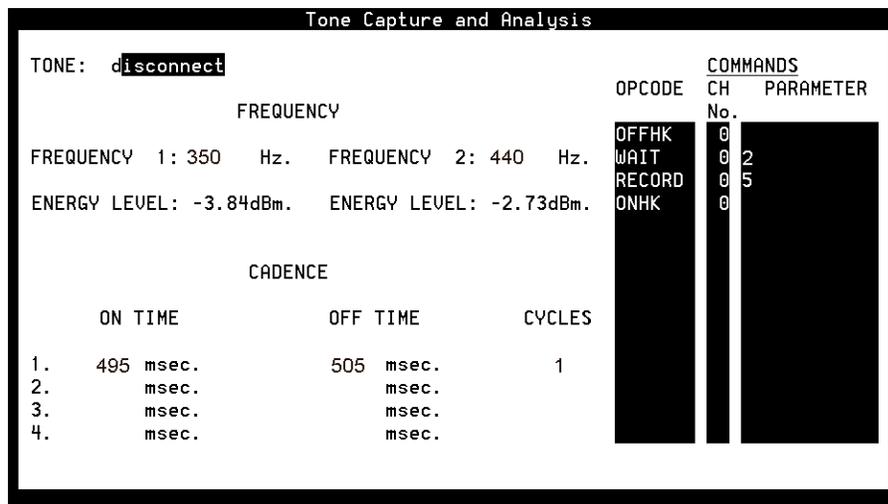
Complete the following procedures for the external call method:

1. Speak to the telephone service providers and get information about the disconnect tone and disconnect frequencies.
2. Starting at the Lucent INTUITY main menu (Figure 1-1), select

```

> Switch Interface Administration
> Telephony Interface
> Tone Capture and Analysis
    
```

The system displays the Tone Capture and Analysis window (Figure 4-1).



**Figure 4-1. Tone Capture and Analysis Window**

3. Enter a name for the tone you want to capture in the Tone : field. For example, for disconnect not recognized enter **disconnect** or for dial tone not recognized, enter **dial**.

4. Under the Commands section enter **OFFHK** under the `OPCODE` column. In the Channel Number column enter the channel for which the tone capture and analysis test is to be conducted, example 0.
5. In the next row enter **WAIT** under the `OPCODE` column and the same channel number specified in the previous line. Under the parameter column, enter an approximate amount of waiting time, example 2 seconds.

**⇒ NOTE:**

For Dial tone capture and analysis do not enter the Wait `OPCODE` command.

6. In the consecutive row, enter **RECORD** under the `OPCODE` column and the same channel number specified in the previous line. Under the parameter column enter an approximate amount of recording time, example 5 seconds.
7. In the next row, enter **ONHK** under the `OPCODE` column and the same channel number specified in the previous line.
8. Get connected to an external telephone line and dial into INTUITY AUDIX. Ensure that the call is received on the channel number on which the tone capture is to be done.
9. Press **F4** (Capture). Hang-up on the external call. The system captures the public switch network disconnect tone generated by the central office. The steps that are followed are in the order of the defined `OPCODE` commands.
10. Press **F5** (Analyze). The system analyzes the captured tone and displays its frequency and cadence in the output fields of the window. (See Table 4-1).

**⇒ NOTE:**

If the frequency and the cadence displayed in the output fields match those given by your telephone service provider, save the commands. If the frequency and cadence displayed in the output fields do not match those of your telephone service provider, contact your telephone service provider for additional assistance.

If you do not want to save the commands go to Step 11. If you want to save the commands for future use, do the following:

- a. Press **F3** (Save).

The system displays the following message:

Do you wish to continue with this change (y/n)?

- b. Enter **y**

**⇒ NOTE:**

To delete a tone name and its associated commands, position the cursor in the **Tone** field and press **F8** (Delete Tone).

11. Press **F6** (Cancel) three times to return to the Lucent INTUITY main menu (Figure 1-1).

### **Call Through INTUITY AUDIX**

Under this method, a call is made from one INTUITY AUDIX channel to another. An external link is established from the specified channel and a call is placed to a number on INTUITY AUDIX. This call is received on the channel selected for tone capture. The caller then disconnects and the disconnect tone frequency and cadence is recorded on the Tone Capture and Analysis Screen.

Complete the following procedures for the calls through INTUITY AUDIX method:

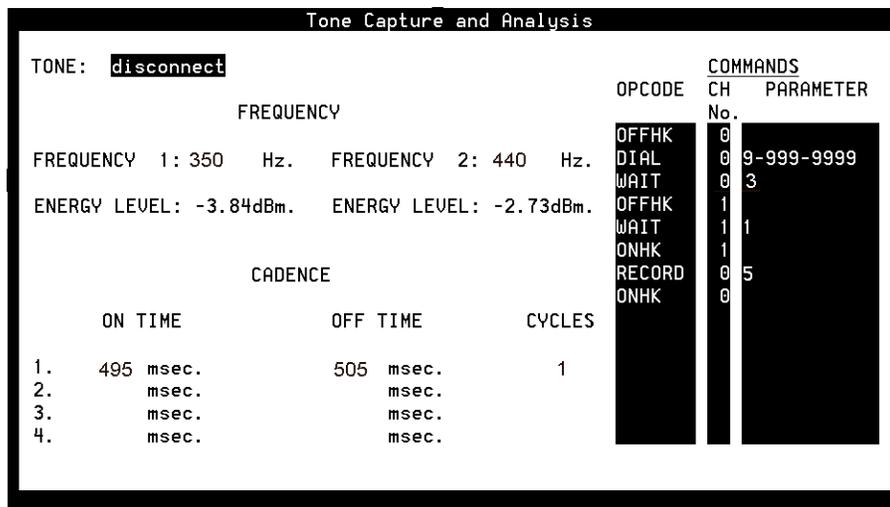
1. Speak to the telephone service providers and get information about the disconnect tone and disconnect frequencies.
2. Starting at the Lucent INTUITY main menu (Figure 1-1), select

```
> Switch Interface Administration
```

```
> Telephony Interface
```

```
> Tone Capture and Analysis
```

The system displays the Tone Capture and Analysis window (Figure 4-2).



**Figure 4-2. Tone Capture and Analysis Window for Call Through INTUITY AUDIX Method**

3. Enter a name for the tone you want to capture in the **Tone:** field. For example, for disconnect not recognized enter **disconnect** or for dial tone not recognized, enter **dial**.
4. Under the Commands section enter **OFFHK** under the **OPCODE** column. In the Channel Number column enter the channel for which the tone capture and analysis test is to be conducted, example 0.
5. In the next row enter **DIAL** under the **OPCODE** column and the same channel number specified in the previous line. In the parameter column enter a telephone number which is connected to an INTUITY AUDIX group. Ensure that the digit which is required to connect the user to the external line is also entered, example 9-999 (city code) - 999 (area code) - 9999 (INTUITY AUDIX number). This call should be received on Channel 1 as per example.
6. In the following row enter **WAIT** under the **OPCODE** column and the same channel number specified in the previous line, that is 0. Under the parameter column enter an approximate amount of waiting time, example 3 seconds.

**⇒ NOTE:**

For Dial tone capture and analysis do not enter the Wait OPCODE command.

7. In the consecutive row, enter **OFFHK** under the **OPCODE** column. In the Channel Number column, enter the number of the channel that is being called.

8. In the following row enter **WAIT** under the **OPCODE** column and the same channel number specified in the previous line, that is 1. Under the parameter column enter an approximate amount of waiting time, example 1 second.

**⇒ NOTE:**

For dial tone capture and analysis do not enter the Wait OPCODE command.

9. In the next row, enter **ONHK** under the **OPCODE** column and the same channel number specified in the previous line.
10. In the consecutive row, enter **RECORD** under the **OPCODE** column and the same channel number specified for the tone capture and analysis which in this case is 0. Under the parameter column enter an approximate amount of recording time, example 5 seconds.
11. In the next row, enter **ONHK** under the **OPCODE** column and the same channel number specified in the previous line which, in the example, is 0.
12. Press **F4** (Capture).

The system captures the public switch network disconnect tone generated by the central office. The steps that are followed are in the order of the defined OPCODE commands.

13. Press **F5** (Analyze).
14. The system analyzes the captured tone and displays its frequency and cadence in the output fields of the window. (See Table 4-1).

**⇒ NOTE:**

If the frequency and the cadence displayed in the output fields match those given by your telephone service provider, save the commands. If the frequency and cadence displayed in the output fields do not match those of your telephone service provider, contact your telephone service provider for additional assistance.

- a. If you do not want to save the commands, go to Step 18. If you want to save the commands for future, do the following: Press **F3** (Save).

The system displays the following message:

Do you wish to continue with this change (y/n)?

- b. Enter **y**

**⇒ NOTE:**

To delete a tone name and its associated commands, position the cursor in the **Tone** field and press **F8** (Delete Tone).

15. Press **F3** (Save).  
The system displays the following message:  
Do you wish to continue with this change (y/n)?
16. Enter **y**
17. To delete a tone name and its associated commands, position the cursor in the **Tone** field and press **F8** (Delete Tone).
18. Press **F6** (Cancel) three times to return to the Lucent INTUITY main menu (Figure 1-1).

**Table 4-1. Tone Capture and Analysis Window**

<b>Field</b>	<b>Description</b>	<b>Values</b>
TONE	Allows you to enter a name for the tone. Commands for capturing the tone are read from a file using this name. All output files are also generated using this name.  If you save the OPCODE commands associated with this name, they are displayed whenever you enter the name in this field.	Maximum of 10 characters.
FREQUENCY 1 : FREQUENCY 2 :	These fields display the result of the tone frequency analysis, which can contain one or two frequency components. Frequency 1 is the lower frequency and Frequency 2 is the upper frequency.	<ul style="list-style-type: none"> <li>■ If only one component is present, the Frequency 2 field is blank.</li> <li>■ If no frequency is detected, both fields are blank. This may be a result of improper capturing of the tone.</li> </ul>
ENERGY LEVEL : (two fields)	These fields display the results of analysis of the energy level of each frequency component.	Displayed in dBm.
ON TIME (four fields)	These fields display the results of analysis of the tone cadence ON time.	Displayed in msec.
OFF TIME (four fields)	These fields display the results of analysis of the tone cadence OFF time in.	Displayed in msec.
CYCLES (four fields)	These fields display the results of analysis of the number of occurrences of the ON time/OFF time cycles.	Integer.

***Continued on next page***

**Table 4-1. Tone Capture and Analysis Window — Continued**

Field	Description	Values
OPCODE	Allows you to enter the <b>OPCODE</b> portion of the OPCODE command syntax.	Specifies the operation to be performed on the channel (see Table 4-2).
CH. No.	Allows you to enter the required <b>&lt;CH_No.&gt;</b> portion of the OPCODE command syntax.	The port number on the Tip/Ring card.
PARAMETER	Allows you to enter the <b>&lt;PARAMETER&gt;</b> portion of the OPCODE command syntax.	An OPCODE-dependent qualifier. Not required for all OPCODE commands (see Table 4-2). Possible values are: <ul style="list-style-type: none"> <li>■ <b>&lt;duration&gt;</b> — Specifies the number of msec for the operation to be performed.</li> <li>■ <b>&lt;digit_string&gt;</b> — Specifies a dial string. Valid characters are 0-9, #, and *.</li> </ul>

The system recognizes the following OPCODE commands (Table 4-2).

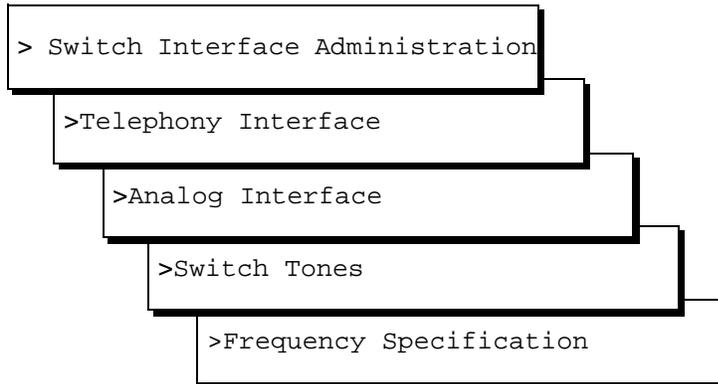
**Table 4-2. OPCODE Commands**

Command	Description
<b>OFFHK &lt;CH_No.&gt;</b>	Seizes the specified line.
<b>ONKH &lt;CH_No.&gt;</b>	Emulates an on-hook condition on the specified line.
<b>DIAL &lt;CH_No.&gt; &lt;digit_string&gt;</b>	Dials out dual-tone multifrequency (DTMF) digits through the specified line.
<b>FLASH &lt;CH_No.&gt; &lt;duration&gt;</b>	Performs hook flash on the channel for the specified number of msec.
<b>RECORD &lt;CH_No.&gt; &lt;duration&gt;</b>	Captures the pulse code modulation (PCM) data of the voice on the line and stores it in a file. The duration is specified in seconds and should be suitably chosen to capture a sufficient number of on/off cycles of the tone.
<b>PLAY &lt;CH_No.&gt;</b>	Plays the stored tone on the specified channel.
<b>WAIT &lt;CH_No.&gt; &lt;duration&gt;</b>	Introduces a number of seconds of delay in execution of the next command. This command can be introduced anywhere in the command sequence.

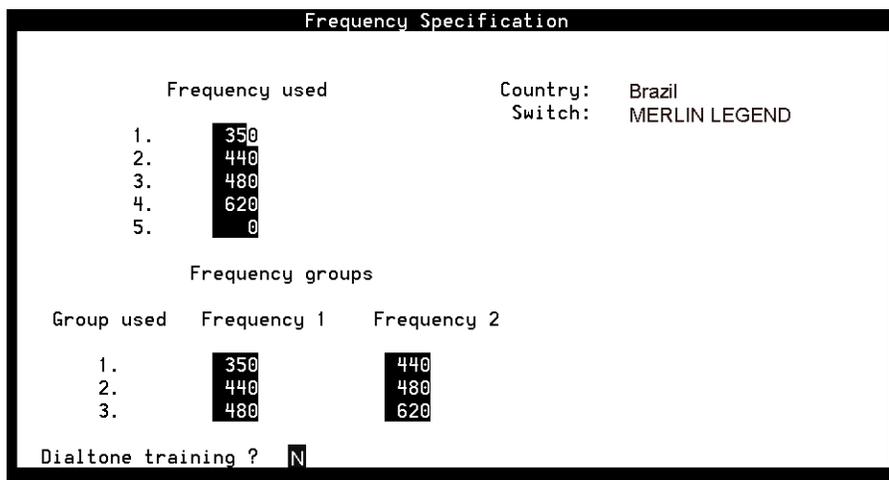
## Frequency Specification

Complete the following procedure for frequency specification administration:

1. Starting at the Lucent INTUITY main menu (Figure 1-1), select



The system displays the Frequency Specification window (Figure 4-3)



**Figure 4-3. Frequency Specification Window**

2. Enter values in the **Frequency used** fields, as necessary to represent all the frequencies used for all the tones in your system (see Table 4-3). These values should be the values from the **Frequency 1** and **Frequency 2** fields in Figure 4-1.

If all the **Frequency used** fields are filled and there is no vacant field, the **Ringtone** frequency field can be deleted and replaced with some other field. If there is a field without an entry, then the disconnect tone entry should be made in the first **Frequency used** field and the ringtone frequency should be deleted.

**⇒ NOTE:**

You must enter disconnect frequencies first. If the disconnect tone is same as the dial tone, then the dial tone can be entered first. If only one frequency is used for the disconnect tone, enter it in the first **Frequency used** field. If two frequencies are used, enter them first and second. You can enter the other frequencies your system uses in any order. (See "Example" following Table 4-3 for more information.)

3. In the **Group used** row, enter frequencies in the **Frequency 1** and **Frequency 2** fields for frequency group 1 (see Table 4-3).

Repeat Step 3 for and more frequency groups that you want to set (see Table 4-3).

**⇒ NOTE:**

No more than two frequencies can be specified for disconnect. If more than two frequencies are required, the disconnect tone will not be recognized by the MERLIN LEGEND.

4. The entry in the **dialtone training** field should be **n**.
5. Press **F3** (Save).

The system displays the following message:

Your changes have been saved. You need to restart the Voice System to make these changes active.

6. Press **F1** (Acknowledge Message).
7. Press **F6** (Cancel) five times to return to the Lucent INTUITY main menu (Figure 1-1).

**Table 4-3. Frequency Specification Window — Field Descriptionse**

<b>Field</b>	<b>Description</b>	<b>Values</b>
Country:	Displays the country set on the Switch Selection window.	Display only.
Switch:	Displays the switch type set on the Switch Selection window.	Display only.
Frequency used (five fields)	<p>Enables you to list up to five different frequencies used in the country for which you are setting tones. The values you enter here are displayed on the Busy Tone, Dial Tone, Reorder Tone, Ring Tone, Stutter Tone, First Additional Tone, Second Additional Tone, and Third Additional Tone windows.</p> <p><b>⇒ NOTE:</b>                      You <i>must</i> specify the frequencies used for disconnect as the first two tones in this list. However, if the dial tone frequencies and the disconnect frequencies are the same, then the dial tone frequencies can be placed first.</p>	<p>Range 300-4000 Hz. Unused frequency fields are indicated by 0 (zero).</p> <p><b>⇒ NOTE:</b>                      The first frequency can <i>never</i> be 0. If a frequency is 0, the following frequencies on the list must also be 0. The system will treat them as 0 even if they are set to another value.</p>
Group used	Provides a reference number (1, 2, or 3) for each of the three frequency groups you can set.	1, 2, or 3. Display only.

*Continued on next page*

**Table 4-3. Frequency Specification Window — Field Descriptionse — Continued**

Field	Description	Values
Frequency 1	Defines the first frequency in a set of two (maximum) frequencies that can make up a tone.	Frequencies used in these groups must be defined in the <b>Frequency used</b> fields. If a frequency group is unused, by default the values for both Frequency 1 and Frequency 2 are zero (0).  <b>⇒ NOTE:</b> If a group has only one frequency, enter that frequency in the <b>Frequency 1</b> field and enter zero (0) in the <b>Frequency 2</b> field.
Frequency 2	Defines the second frequency in a set of two (maximum) frequencies that can make up a tone.	
Dialtone training?	Specifies whether your system uses dial tone training. Thus, if your system uses the same frequencies for other call progress tones besides dial tone, you can define two different groups using the same frequencies. One group can be used for dial tone and the other group for other call progress tones.	<ul style="list-style-type: none"> <li>■ y to enable dial tone training</li> <li>■ n to disable dial tone training</li> </ul> If the dial tone on your system is not continuous, the dial tone training flag is internally set to N and the system ignores this field.

**Example**

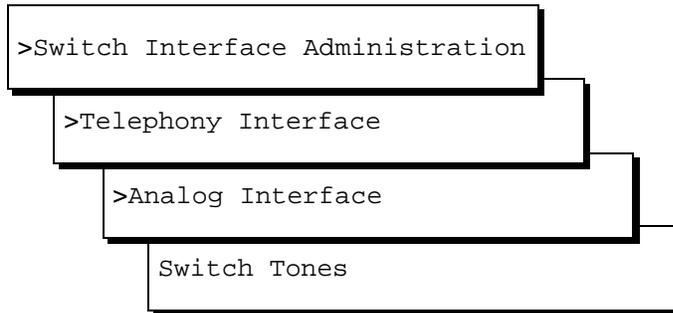
Suppose dial tone is 440 Hz + 480 Hz, and you want to assign Group 1 for dial tone. To do so, enter 440 in the **Frequency 1** field and 480 in the **Frequency 2** field for Group 1. Later when you define dial tone on the Dial Tone window, you can simply specify that it uses Group 1 and the system will recognize the correct frequencies.

## **Tone Specification**

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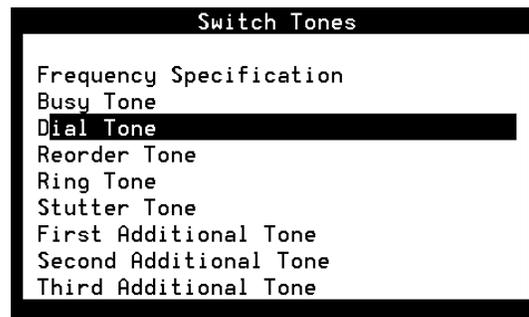
Complete the following procedure for dial tone, busy tone, or re-order specification:

1. Starting at the Lucent INTUITY main menu (Figure 1-1), select



The system displays the Switch Tone options menu (Figure 4-4).

---

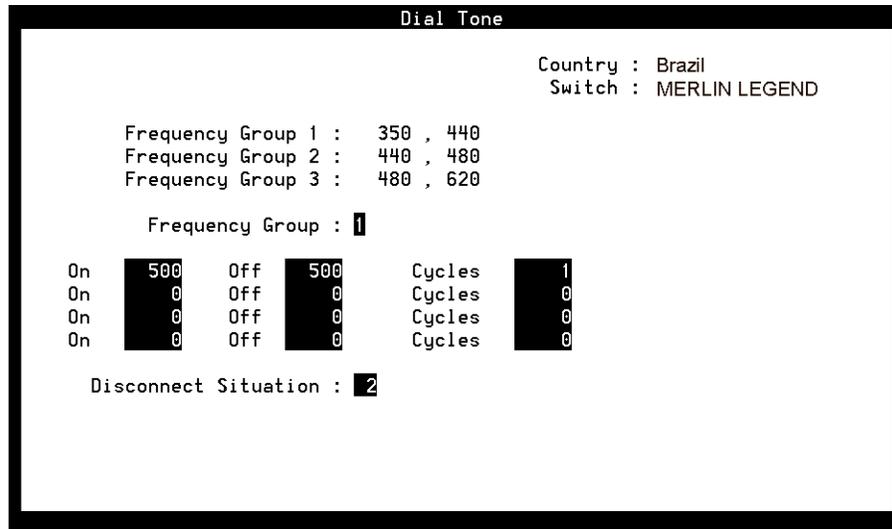


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**Figure 4-4. Switch Tones Menu**

From the above menu, select dial tone, busy tone, or reorder tone as required to set the disconnect frequency and cadence. If none of the above options are suitable to set the disconnect frequency cadence, the first additional tone screen can be used.

All of the tone specification screens follow the same format as the Dial Tone screen (Figure 4-5).



**Figure 4-5. Example of Switch Tone Window, Dial Tone**

2. In the `Frequency group` field, select one of the frequency groups (1, 2, or 3) displayed at the top of the window for the system to use for this tone. See Table 4-4 for more information.



**NOTE:**

These groups are assigned on the Frequency Specification window. See "Frequency Specification".

3. Enter values in the `on`, `off`, and `cycles` fields (see Table 4-4) with the values in the "Tone Capture and Analysis Window". The figures need to be rounded off to ensure that if there are minor differences between the frequencies recorded and the frequencies used, the system does not ignore them because the figures are not a perfect match. (See the examples following Table 4-4 for information on how to represent the cadence.)



**NOTE:**

If you set stutter tone, be sure the timing used for continuous tone (minimum on duration) matches the timing used for continuous tone on the Dial Tone screen. For example, if dial tone is set as continuous tone, minimum 2 seconds, then stutter tone might be 200 msec ON, 200 msec OFF (3 cycles) followed by continuous tone, minimum 2 seconds.

4. Enter the appropriate value in the `Disconnect Situation` field, depending on whether your system interprets this type of tone as a disconnect signal (see Table 4-4).
5. Press `F3` (Save).  
The system displays the following message:  
`Do you wish to continue with this change (Y/N)?`
6. Enter **y**  
The system displays the following message:  
`Your changes been saved. You need to stop and start the Voice System to make these changes active.`
7. Press `F1` (Acknowledge Message).
8. Do you want to set the frequency and cadence for another tone?
  - If no, press `F6` (Cancel) five times to return to the Lucent INTUITY main menu (Figure 1-1). You have completed this procedure.
  - If yes, do the following:
    - a. Press `F6` (Cancel) to return to the Switch Tones menu.
    - b. Repeat Step 2 through Step 6 for each tone you select.

**Table 4-4. Basic Tone Windows – Field Descriptions**

<b>Field</b>	<b>Description</b>	<b>Values</b>
<p> <b>NOTE:</b> These field descriptions apply to all the windows used for setting the five basic call progress tones, including the Busy Tone, Dial Tone, Reorder Tone, Ring Tone, and Stutter Tone windows.</p>		
Country	Displays the country set on the Switch Selection window.	Display only.
Switch	Displays the switch type set on the Switch Selection window.	
Frequency Group 1:	These fields display the frequency groups set on the Frequency Specification window (Figure 4-3).	
Frequency Group 2:		
Frequency Group 3:		
Frequency Group:	Sets the group of frequencies the system uses to generate the selected tone (see Figure 4-3).	1, 2, or 3. You can specify only one frequency group per tone.
On	Sets the duration of the tone cadence ON cycle.	Range 0-6000 msec.
Off	Sets the duration of the tone cadence OFF cycle.	If an ON timing is 0, it is assumed that the row is blank, and that the OFF timing and cycles are also 0 (see the examples following Table 4-4).
Cycles	Sets the number of times an ON/OFF cycle repeats.	A cycle consists of an ON duration and an OFF duration of specified lengths (see the examples following Table 4-4).
Disconnect Situation:	<p>Specifies when the tone should be treated as a disconnect signal.</p> <p> <b>NOTE:</b> This parameter is significant only in countries where disconnect signaling is done using call progress tones.</p>	<ul style="list-style-type: none"> <li>■ 0 — Do not treat as disconnect.</li> <li>■ 1 — Treat as disconnect during voice coding only.</li> <li>■ 2 — Treat as disconnect at all times except outcalling.</li> </ul>
Report as	Specifies the type of tone you are defining.	<ul style="list-style-type: none"> <li>■ Busy</li> <li>■ Dial</li> <li>■ Ringback</li> <li>■ Reorder</li> <li>■ Stutter</li> </ul>

## Examples

The ON/OFF cycles that make up the cadence of a call progress tone must be specified in order. These examples illustrate how the cadence is set on the basic call progress tone windows.

- Four rows are needed to specify the following tone:

250 msec ON, 250 msec OFF  
500 msec ON, 500 msec OFF  
250 msec ON, 250 msec OFF  
500 msec ON, 500 msec OFF

On	250	Off	250	Cycles	1
On	500	Off	500	Cycles	1
On	250	Off	250	Cycles	1
On	500	Off	500	Cycles	1

- Three rows are needed for the following tone. Since the first two cycles repeat exactly (250 msec ON, 250 msec OFF), their setting can be entered once and specified as repeating twice (2 cycles).

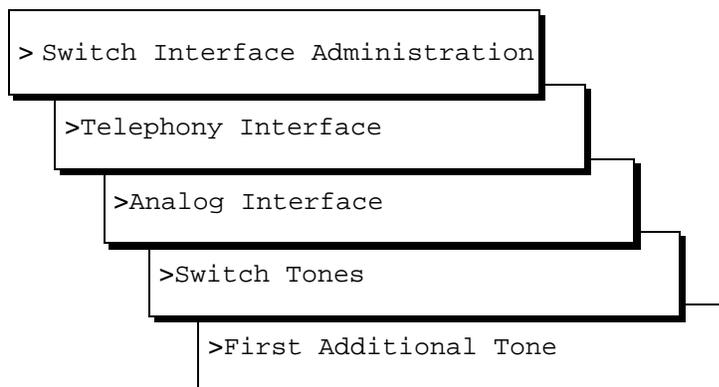
250 msec ON, 250 msec OFF  
250 msec ON, 250 msec OFF  
500 msec ON, 500 msec OFF  
250 msec ON, 250 msec OFF

On	250	Off	250	Cycles	2
On	500	Off	500	Cycles	1
On	250	Off	250	Cycles	2

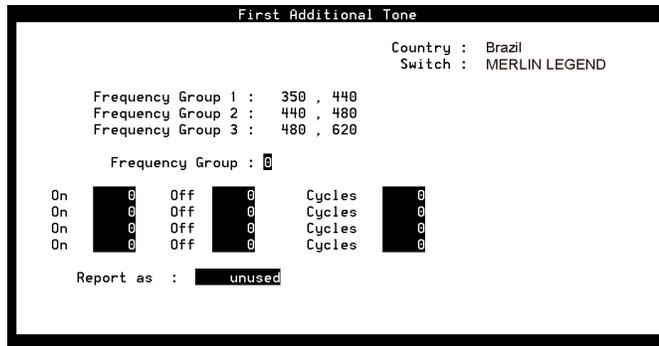
## First Additional Tone Screen

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1. Start at the Lucent INTUITY main menu (Figure 1-1) and select



The system displays the First Additional Tone window (Figure 4-6).



**Figure 4-6. Example of Additional Tone Window, First Additional Tone**

2. In the `Frequency Group:` field, select one of the frequency groups (1, 2, or 3) displayed at the top of the window for the system to use for this tone (See Table 4-4).

**⇒ NOTE:**

These groups are assigned on the Frequency Specification window (see "Frequency Specification Window" above).

3. Enter values in the `On`, `Off`, and `Cycles` fields (see Table 4-4), as necessary to represent the tone cadence.

See the examples following Table 4-4 for information on how to represent the cadence.

**⇒ NOTE:**

If you set stutter tone, be sure the timing used for continuous tone (minimum on duration) matches the timing used for continuous tone on the dial tone screen. For example, if dial tone is set as continuous tone, minimum 2 seconds, then stutter tone might be 200 msec ON, 200 msec OFF (3 cycles) followed by continuous tone, minimum 2 seconds.

4. Enter the appropriate tone name in the `Report as:` field (see Table 4-5), corresponding to the additional basic tone you are defining.

For example, if you are defining an additional dial tone, enter **dial**

5. Press **F3** (Save).

The system displays the following message:

Do you wish to continue with this change (Y/N)?

6. Enter **y**  
 The system displays the following message:  
 Your changes been saved. You need to stop and start the Voice System to make these changes active.
7. Press **(F1)** (Acknowledge Message).
8. Do you want to define another additional tone?
  - If no, press **(F6)** (Cancel) five times to return to the Lucent INTUITY main menu (Figure 1-1). You have completed this procedure.
  - If yes, do the following:
    - a. Press **(F6)** (Cancel) to return to the Switch Tones menu.
    - b. Repeat Step 2 through Step 7 for the tone you selected.

**Table 4-5. Additional Tone Windows— Field Descriptions**

Field	Description	Values
 <b>NOTE:</b> These field descriptions apply to all windows used for setting the three additional call progress tones, including the First Additional Tone, Second Additional Tone, and Third Additional Tone windows.		
Country	See Table 4-4.	
Switch		
Frequency Group 1:		
Frequency Group 2:		
Frequency Group 3:		
On		
Off		
Cycles		
Report as:	Specifies the type of tone you are defining.	<ul style="list-style-type: none"> <li>■ Busy</li> <li>■ Dial</li> <li>■ Ringback</li> <li>■ Reorder</li> <li>■ Stutter</li> </ul>

9. Press **Ⓢ** (Cancel) four times to return to the Lucent INTUITY main menu (Figure 1-1).

**⇒ NOTE:**

If the central office-based dial tone needs to be detected then the above process can be repeated to administer the "Second Additional Tone" window. This can only be possible if the dial tone frequency and the central office-based disconnect frequency are of the same value. However, the On and Off time would vary in each case.

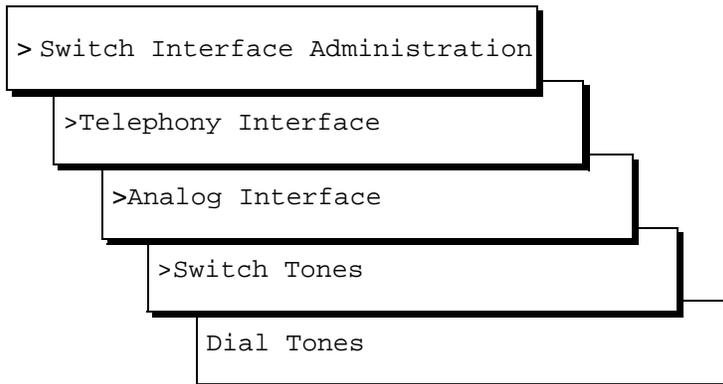
## **Dial Tone Is Not Detected**

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If the dial tone is not detected then additional administration may be required on the switch.

Additional administration of the switch tones is required for the central office-based dial tone detection. This administration can be done on site for specific cases. To administer central office-based dial tone detection, complete the following procedures:

1. Complete the procedure specified in "Tone Capture and Analysis".
2. Complete the procedure specified in "Frequency Specification".
3. Complete the following procedure:
  - a. Starting at the Lucent INTUITY main menu (Figure 1-1), select



The system displays the Dial Tone Specification window (Figure 4-4).

- b. Follow Step 2 to Step 7 defined under "Tone Specification".
- c. Follow the table "Basic Tone Windows – Field Descriptions".

## **Outcalling Functions Do Not Work**

Outcalling for external numbers does not work with the MERLIN LEGEND switch. This limitation stems from the lesser number of frequencies available and the MERLIN LEGEND using U.S. tone defaults in all countries.

Outcalling will work for internal numbers or for all the numbers behind the MERLIN LEGEND switch. This is possible because the MERLIN LEGEND can detect the internal U.S.-based dial tone.

If outcalling does not work for the internal numbers, complete the following procedures:

1. Verify that the outcalling settings are correct on the Lucent INTUITY system. See Appendix C, "Troubleshooting Procedures", in the installation book specific to your platform.
2. Complete the dial tone detection procedure in the section, "First Additional Tone Screen".

## **Calls Are Not Transferred**

If calls are not transferred, complete the following procedures:

1. Verify that the dial tone settings are correct on the Lucent INTUITY system. See Appendix C, "Troubleshooting Procedures", in the installation book specific to your platform.
2. Complete the dial tone detection procedure in the section, "Additional Administration for Dialtone Detection".

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