

TITLE	VT3921 Internal Product Specification
MODEL	VT3921

# VT3921

## Internal Product Specification

**NOT FOR EXTERNAL RELEASE**

Document ID: SPE-6500.DOC  
PRC #:

*Note: All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means. The only controlled copy of this document is kept in electronic form on the VTECH computer network. All printed copies are uncontrolled documents and are not updated. This Procedure is the property of VTECH Engineering Canada Ltd., and shall be returned upon request*

Prepared By	Lance Fujioka
Title	Project Assistant
Approved By	Jack Minney
Title	Product Manager

Reference:	Revision: 1.0	Page: 1 of 98
------------	---------------	---------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

**Revision History**

<b>Revision No</b>	<b>Description</b>	<b>Page</b>	<b>Effective Date</b>
Preliminary			JUN-99
1	First Release		15-JUN-99

## Table of Contents

<b>1.</b>	<b>Overview.....</b>	<b>10</b>
1.1	General Description.....	10
1.2	System Components .....	10
1.3	System Supports Add – On Components.....	10
1.4	Feature List .....	10
1.4.1	System Features.....	10
1.4.2	Controller Features .....	10
1.4.3	Cordless Phone Features .....	11
1.4.4	Speaker Phone Features.....	11
<b>2.</b>	<b>Speaker Phone .....</b>	<b>12</b>
2.1	General Description.....	12
2.2	Product Overview .....	12
<b>3.</b>	<b>User Features.....</b>	<b>13</b>
3.1	User Feature Overview .....	13
3.2	Installing The Speaker Phone.....	14
3.3	Using The Speaker Phone .....	16
	Speaker Phone Keys .....	18
3.5	Making Internal (COM) Calls .....	19
3.6	Making Outside Calls .....	20
3.7	SPEAKER Button .....	20

Reference:	Revision: 1.0	Page: 2 of 98
------------	---------------	---------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

<b>3.8</b>	<b>Global Hold.....</b>	<b>20</b>
<b>3.9</b>	<b>Private Hold.....</b>	<b>21</b>
<b>3.10</b>	<b>Call Transfer.....</b>	<b>21</b>
<b>3.11</b>	<b>Call Waiting.....</b>	<b>22</b>
<b>3.12</b>	<b>Automatic Answer.....</b>	<b>23</b>
<b>3.13</b>	<b>Redial.....</b>	<b>23</b>
<b>3.14</b>	<b>Call Connect/Pick Up.....</b>	<b>23</b>
<b>3.15</b>	<b>Store Last Number Dialed.....</b>	<b>24</b>
<b>3.16</b>	<b>'One Touch' Storing.....</b>	<b>24</b>
<b>3.17</b>	<b>'One Touch' Dialing.....</b>	<b>25</b>
<b>3.18</b>	<b>Uses Of System - Wide Directory.....</b>	<b>25</b>
<b>3.19</b>	<b>Dialing System - Wide Directory.....</b>	<b>25</b>
<b>3.20</b>	<b>Ring Paging.....</b>	<b>26</b>
<b>3.21</b>	<b>Page All.....</b>	<b>26</b>
<b>3.22</b>	<b>Extension Paging.....</b>	<b>26</b>
<b>3.23</b>	<b>Conference Calls.....</b>	<b>27</b>
<b>3.24</b>	<b>Call Forwarding.....</b>	<b>28</b>
<b>3.25</b>	<b>Callback/Camp - On.....</b>	<b>28</b>
<b>3.26</b>	<b>COM Callback/Camp - On.....</b>	<b>29</b>
<b>3.27</b>	<b>Mute</b>	<b>29</b>
<b>3.28</b>	<b>Release Line Privacy.....</b>	<b>29</b>
<b>3.29</b>	<b>Do Not Disturb (DND).....</b>	<b>29</b>
<b>3.30</b>	<b>Ring Blocking.....</b>	<b>30</b>

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 3 of 98</b>
-------------------	----------------------	----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

<b>3.31</b>	<b>Voice Mail Mode</b> .....	<b>30</b>
<b>3.32</b>	<b>Voice Mail Message Retrieving</b> .....	<b>30</b>
<b>3.33</b>	<b>Set Up - Line Ring Preference</b> .....	<b>30</b>
<b>3.34</b>	<b>Set Up - Line Select Order</b> .....	<b>31</b>
<b>4.</b>	<b>Cordless System Phone With CID</b> .....	<b>32</b>
<b>4.1</b>	<b>Product Overview</b> .....	<b>32</b>
<b>4.2</b>	<b>Specifications</b> .....	<b>32</b>
<b>4.2.1</b>	<b>RF Specifications</b> .....	<b>32</b>
<b>4.2.2</b>	<b>Audio Specifications</b> .....	<b>33</b>
<b>4.2.3</b>	<b>Digital Specifications</b> .....	<b>33</b>
<b>4.2.4</b>	<b>Caller ID specifications</b> .....	<b>33</b>
<b>4.3</b>	<b>General Features</b> .....	<b>33</b>
<b>4.4</b>	<b>Unique Features</b> .....	<b>34</b>
<b>4.5</b>	<b>Features Not Provided</b> .....	<b>34</b>
<b>4.6</b>	<b>System User Features</b> .....	<b>34</b>
<b>4.6.1</b>	<b>Line Selection</b> .....	<b>34</b>
<b>4.6.2</b>	<b>Internal Calls</b> .....	<b>34</b>
<b>4.6.3</b>	<b>Transferring Calls</b> .....	<b>34</b>
<b>4.6.3.1</b>	<b>Method 1</b> .....	<b>35</b>
<b>4.6.3.2</b>	<b>Method 2</b> .....	<b>35</b>
<b>4.6.4</b>	<b>Global Hold Pick-Up</b> .....	<b>35</b>
<b>4.6.5</b>	<b>Connect</b> .....	<b>35</b>
<b>4.6.6</b>	<b>Broadcast</b> .....	<b>35</b>
<b>4.6.7</b>	<b>Call Forwarding</b> .....	<b>35</b>
<b>4.6.8</b>	<b>Callback</b> .....	<b>35</b>
<b>4.6.8.1</b>	<b>Extension Callback</b> .....	<b>35</b>
<b>4.6.8.2</b>	<b>Com Callback</b> .....	<b>36</b>
<b>4.6.9</b>	<b>Do Not Disturb (DND)</b> .....	<b>36</b>
<b>4.6.10</b>	<b>Redial</b> 36	
<b>4.6.11</b>	<b>Memory Features</b> .....	<b>36</b>
<b>4.6.11.1</b>	<b>Two Touch Memory Dialing</b> .....	<b>36</b>
<b>4.6.11.2</b>	<b>Two Touch Memory Programming</b> .....	<b>36</b>
<b>4.6.11.3</b>	<b>Four Touch Memory Dialing</b> .....	<b>36</b>
<b>4.6.11.4</b>	<b>Four Touch Memory Programming</b> .....	<b>36</b>
<b>4.6.12</b>	<b>Voice Mail Features</b> .....	<b>36</b>
<b>4.6.12.1</b>	<b>VMS Enable</b> .....	<b>37</b>
<b>4.6.12.2</b>	<b>Retrieving VMS Messages</b> .....	<b>37</b>
<b>4.6.12.3</b>	<b>Transferring A Call To A Voice Mail Box</b> .....	<b>37</b>

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 4 of 98</b>
-------------------	----------------------	----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

4.6.13	Call Waiting .....	37
4.6.14	Ring Page .....	37
<b>4.7</b>	<b>Functional Layout For Handset .....</b>	<b>37</b>
<b>4.8</b>	<b>Handset Function Key Description .....</b>	<b>37</b>
4.8.1	Phone Key .....	37
4.8.2	Hold Key .....	38
4.8.3	Off Key .....	38
4.8.4	Prog Key .....	39
4.8.5	Caller ID Key .....	39
4.8.6	Mute Key .....	39
4.8.7	Mem Key .....	39
4.8.8	Clear/Del Key .....	40
4.8.9	Redial Key .....	40
4.8.10	Volume ▲ Key .....	40
4.8.11	Volume ▼ Key .....	40
<b>4.9</b>	<b>Special Handset Function Keys .....</b>	<b>41</b>
4.9.1	Tone / ◀ / * Key .....	41
4.9.2	# / ▶ Key .....	41
4.9.3	7 / ⌚ (Time) Key .....	41
4.9.4	9 / ⌘ (View) Key .....	41
<b>5.</b>	<b>LCD Display .....</b>	<b>41</b>
5.1	LCD Display Characters .....	42
5.2	General (Non Mode Specific) LCD Messages .....	42
5.2.1	Low Battery Warning .....	42
5.2.2	Mute Modes .....	43
5.2.3	Volume Setting .....	43
5.2.4	Phone Off-Hook Indicator .....	44
<b>6.</b>	<b>Special Features .....</b>	<b>44</b>
6.1	Battery .....	44
6.2	In The Dark (Easy-Answer) .....	44
6.2.1	Easy-Answer .....	44
6.2.2	Automatic Keypad And LCD Illumination .....	44
6.3	Channel Searching (Out-Of-Range) .....	45
6.4	Fast Charge For Handset Battery .....	45
6.5	Auto Hang-Up .....	46

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 5 of 98</b>
-------------------	----------------------	----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

<b>6.6</b>	<b>Line (Extension) In Use Indication .....</b>	<b>46</b>
<b>7.</b>	<b>Dialing.....</b>	<b>46</b>
<b>7.1</b>	<b>Accessing The Line Prior To Dialing .....</b>	<b>46</b>
7.1.1	Digit Keys .....	46
7.1.2	Memory Location Dialing.....	47
7.1.3	Caller ID Memory Dialing .....	47
7.1.4	Redial 47	
<b>7.2</b>	<b>Number Entry Before Line Access .....</b>	<b>48</b>
7.2.1	Digit keys.....	48
7.2.2	Memory Location Dialing.....	48
7.2.3	Caller ID Memory Dialing .....	49
7.2.4	Redial 50	
<b>8.</b>	<b>Programming .....</b>	<b>50</b>
<b>8.1</b>	<b>Programming Speed Dial Number.....</b>	<b>50</b>
8.1.1	Unsuccessful Programming.....	50
8.1.2	Special Conditions .....	51
8.1.3	Programming Ringer Types .....	52
<b>9.</b>	<b>Caller ID Display.....</b>	<b>52</b>
<b>9.1</b>	<b>Caller ID Memory Viewing .....</b>	<b>52</b>
<b>9.2</b>	<b>Caller ID Memory Clearing .....</b>	<b>54</b>
9.2.1	Deleting Caller ID Memory Locations.....	54
9.2.2	Caller ID Memory Overflow.....	55
<b>9.3</b>	<b>Caller ID With Call Waiting.....</b>	<b>55</b>
9.3.1	Basic Operation .....	55
9.3.2	Switching Calls .....	55
<b>9.4</b>	<b>Caller ID Messages .....</b>	<b>56</b>
Test 1	56	
9.4.1	Message: UNAVAILABLE.....	57
9.4.2	Message: PRIVATE.....	58
9.4.3	Message: TRANSMISSION ERROR.....	58
9.4.4	Message: ## NEW CALLS.....	58
<b>9.5</b>	<b>Receiving Caller ID While In Other Modes.....</b>	<b>59</b>
9.5.1	MEM (Memory Dialing) MODE.....	59
9.5.2	Caller ID Mode.....	59
9.5.3	Program Mode .....	59

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 6 of 98</b>
-------------------	----------------------	----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

9.5.4 Predial 60

<b>10. Controller.....</b>	<b>61</b>
10.1 General Description.....	61
10.2 Product Overview .....	61
<b>11. Operator Features.....</b>	<b>62</b>
11.1 Operator Feature Overview.....	63
Feature.....	63
Description .....	63
11.2 Record Voice Messages.....	64
11.2.1 Examples of Voice Messages: .....	65
11.3 Receptionist Mode.....	65
11.4 Voice Message .....	66
11.5 Fax Message .....	66
11.6 Set Up – Hold Time .....	66
11.7 Set Up – Hold Message Time .....	67
11.8 Call Ring Through.....	67
11.9 Line Privacy Override .....	67
11.10 Music On Wait.....	68
11.11 Night Mode .....	68
11.12 System – Wide Directory.....	69
11.13 Call Screening.....	69
11.14 Call Screening – Security Code.....	70
11.15 Set Up – Optional Mailbox.....	70
11.16 Dedicated Fax Line .....	71
11.17 Line Termination.....	72

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 7 of 98</b>
-------------------	----------------------	----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

<b>11.18</b>	<b>Program Handset Security Code</b> .....	<b>72</b>
<b>11.19</b>	<b>Reset Feature</b> .....	<b>73</b>
<b>11.20</b>	<b>Operation for Pulse Dialing</b> .....	<b>73</b>
<b>12.</b>	<b>Adapter Box</b> .....	<b>75</b>
<b>12.1</b>	<b>General Description</b> .....	<b>75</b>
<b>12.2</b>	<b>Product Overview</b> .....	<b>75</b>
<b>13.</b>	<b>User Features</b> .....	<b>75</b>
<b>13.1</b>	<b>User Feature Overview</b> .....	<b>75</b>
<b>13.2</b>	<b>Installing The Adapter Box</b> .....	<b>76</b>
<b>13.3</b>	<b>Using Standard Telephone Equipment With The Adapter Box</b> .....	<b>81</b>
<b>13.4</b>	<b>Selecting Line</b> .....	<b>81</b>
<b>13.5</b>	<b>Making Internal (COM) Calls</b> .....	<b>81</b>
<b>13.6</b>	<b>Making Outside Calls</b> .....	<b>82</b>
<b>13.7</b>	<b>Global Hold</b> .....	<b>82</b>
<b>13.8</b>	<b>Private Hold</b> .....	<b>82</b>
<b>13.9</b>	<b>Global Hold Pickup</b> .....	<b>83</b>
<b>13.10</b>	<b>Call Transfer</b> .....	<b>83</b>
<b>13.11</b>	<b>Call Waiting</b> .....	<b>84</b>
<b>13.12</b>	<b>Redial</b> .....	<b>84</b>
<b>13.13</b>	<b>Call Connect/Pickup</b> .....	<b>85</b>
<b>13.14</b>	<b>Pulse/Tone Selection For Programmable Numbers</b> .....	<b>85</b>
<b>13.15</b>	<b>Speed Dialing And Storing</b> .....	<b>85</b>
<b>13.16</b>	<b>Uses Of System – Wide Directory</b> .....	<b>86</b>

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 8 of 98</b>
-------------------	----------------------	----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

<b>13.17 Dialing System – Wide Directory .....</b>	<b>87</b>
<b>13.18 Ring Paging.....</b>	<b>87</b>
<b>13.19 Broadcast .....</b>	<b>87</b>
<b>13.20 Conference Calls .....</b>	<b>87</b>
<b>13.21 Call Forwarding.....</b>	<b>88</b>
<b>13.22 Callback/Camp – On .....</b>	<b>88</b>
<b>13.23 Do Not Disturb (DND) .....</b>	<b>89</b>
<b>13.24 Voice Mail Mode.....</b>	<b>89</b>
<b>13.25 Flash Time Adjust.....</b>	<b>89</b>
<b>13.26 Set Up – Line Ring Preference.....</b>	<b>90</b>
<b>13.27 Set Up – Line Select Order.....</b>	<b>90</b>
<b>13.28 Using Faxes And Modems .....</b>	<b>91</b>
<b>13.28.1 Fax Operations .....</b>	<b>91</b>
<b>13.28.2 Receiving A Fax.....</b>	<b>91</b>
<b>13.28.3 Sending A Fax.....</b>	<b>93</b>
<b>13.28.4 Modem Operations.....</b>	<b>94</b>
<b>13.29 Adapter Box Feature Flow Chart.....</b>	<b>95</b>

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 1. Overview

### 1.1 General Description

The VT3921 System is a three line, fourteen extension PBX system that supports up to thirteen 3 line Cordless System Phones and one desktop system phone or combination of any 14 devices of Cordless Phones, Speaker Phones, Door Phone, fax, PC modems, etc. The VT3921 System is installed on any in house one pair existing telephone wire and allows simultaneous 4 voice connections on the same existing in house one pair telephone wire (3 outside lines and one internal intercom between extensions).

### 1.2 System Components

The VT3921 System Includes:

- 1 Controller
- 3 Cordless Handsets
- 3 Cordless Charging Cradles
- 1 System Speaker Phone
- 1 Adapter Box

### 1.3 System Supports Add – On Components

- The VT3921 System can support various combinations of the following additional devices on up to 14 total stations.
- Additional Adapter Boxes (to connect to any off the shelf devices such as fax machines, PC modems, answering machines, single line telephones, etc. and converts them into full PBX 3 line system devices)
- Additional 3 line Cordless System Phones
- Speaker Phones
- Door Phones
- Voice Mail

### 1.4 Feature List

#### 1.4.1 System Features

- 3 CO Lines, 14 Stations, 1 COM (intercom) Line
- 3 Cordless System Phones built into the Controller
- Single twisted pair connection to all other stations
- Complete business telephone features
- Automatic fax switching on all lines
- Type 1 & Type 2 Caller ID
- Auto Attendant
- Voice Mail ready
- Existing in-house wiring can be used either for CO line connections or adopted for connection to remote stations

#### 1.4.2 Controller Features

- 3 CO lines
- Auto Attendant, user recordable on all 3 lines

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 10 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

- User recordable announcements during Hold on all 3 lines
- Music On Hold interface (to connect to any FM radio, CD player, etc.)
- Fax switch on all 3 lines
- Power fail interface
- 3 built in Cordless System Phone base units in Controller
- Memory and feature backup in EPROM
- Voice Mail or answering machine support
- Night Mode on Auto Attendant
- Parallel set detect (see Controller product overview, section 10.2)
- RS232 connection for attachment to computers (future)
- Internal electronic Music On Hold (for markets other than U.S. and Canada)
- Electrical termination of unused lines

#### **1.4.3 Cordless Phone Features**

- Complete System Phone features on all 3 lines (Hold, Transfer, Page, etc.)
- 2 LCD line display
- Caller ID Type 1 & 2
- System line status on display
- Individual detached charging cradles (for remote use)
- 900 MHz digital cordless technology
- Voice Mail or Caller ID message display on all 3 lines

#### **1.4.4 Speaker Phone Features**

- 3 CO Lines & Com Line
- Distinctive/Differentiated Rings
- Line Privacy/Extension privacy
- Private Hold
- Handsfree Dialing and Paging. Full speaker phone features
- Automatic Line Select Order
- Global Hold (accessed from any extension)
- Global Conferencing (with 2 or all extensions with an outside line)
- Line Privacy Override
- Call Connect Pick Up
- Call Waiting
- Mute/Do Not Disturb
- Tone/ Pulse and Flash
- Group or Individual Speaker Paging
- Handsfree Answer on InterCOM
- Hold Reminder
- Distinctive Message Light
- Line Status Indicator Light
- System Speed Dialing accessed from all extensions (40 numbers)
- Personal Speed Dialing per Extension (30 numbers)
- Transfer (one touch/manual)
- Headset Compatible
- Call Back-Camp On
- Move Phones/Extensions to different rooms without rewiring
- Special Door Phone "Answer", "Lock", or Release Lock keys

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 11 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 2. Speaker Phone

### 2.1 General Description

The Speaker Phone is a full function 3 line system phone for use with the VT3921 system. One Speaker Phone is included with the VT3921 and is used as the Operator Phone (ext.0). The Operator Phone is used to program all of the Operator Features shown in the Controller Section

### 2.2 Product Overview

The Speaker Phone has a speaker for hands free dialing, listening to calls on hold, paging, and full Speaker Phone for hands free conferencing.

The Speaker Phone supplied with the VT3921 system is set to station "0" which is the operator phone and receptionist phone. Station "0" must always be a system Speaker Phone. Additional Speaker Phones can be added to the system if needed. All additional Speaker Phones must be set to unique station numbers, Station 4 or higher (stations 1,2, & 3 are established for the three cordless phones, included with the VT3921.

The Speaker Phone is a special system phone that works only with this system and has most of the features of any large PBX system.

There are buttons on the phone for selecting Line 1, Line 2, Line 3, or COM (intercom) with lights under the keys that are on when the line is in use. When the handset is taken off-hook or the speaker button is pressed, the first available outside line is selected in line selection preference. The default line selection order is Line 1, Line 2, Line 3, and then COM. The line select order can be changed using the keyboard.

When the phone is ringing and the handset is taken off-hook or the speaker button is pressed, the line that is ringing is automatically selected. Ringing can be delayed 0, 2, 4, 6, or never ring by programming it from the keyboard. The default is 0 ring delay. The ring volume can be adjusted using the switch in the back of the phone. To turn off the ring, the ring blocking mode can be turned on using the keyboard (refer to users manual).

The phone can be taken off hook or placed back on hook in the speaker mode by pressing the speaker button at any time. There is a light next to the speaker to indicate if the phone is off hook in the speaker mode and a volume adjustment near by.

The PAGE button is used to page an individual station or all stations with speakers.

Many features can be programmed using the keyboard as described in the "USER FEATURES" section.

There are 15 one touch memories and 15 two touch memories that are dedicated to each Speaker Phone. The numbers are stored into memory as described in the "USER FEATURES" section. The PROGRAM light is on when programming the memory is in progress and has not been completed. Going off-hook resets all programming modes. System memories can be accessed by the Speaker Phone but can only be stored by the operator phone.

The MESSAGE light and MESSAGE button are set up to work with Voice Mail Systems.

Each station has two extension numbers with distinct rings. The 8XX extension rings twice for an extension ring and the 9XX extension rings three times. The Controller is programmed to assign a mailbox to each extension when Voice Mail is installed.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 12 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

When the Auto-Answer mode is turned on, the SPEAKER button light will blink and all COM calls will be answered automatically by going off hook and turning on the speaker. There is an AUTO-ANS button to toggle this mode.

There are DOOR and LOCK buttons on the phone for easy use with the optional Door Phone.

The TONE/PULSE switch determines the format that the Controller presents to the CO line and does not affect the internal system operation.

There are buttons to control most of the ordinary PBX functions such as CONNECT, REDIAL, HOLD, MUTE/DND, FORWARD, PAUSE, FLASH, and CALL BACK. The use of these buttons is explained in the "USER FEATURES" section.

### 3. User Features

#### 3.1 User Feature Overview

<b>Feature</b>	<b>Description</b>
<i>SELECTING LINES</i>	Selects the line number.
<i>MAKING INTERNAL (COM) CALLS</i>	Places a call to another extension (internal).
<i>MAKING OUTSIDE CALLS</i>	Places a call to an outside number.
<i>SPEAKER PHONE</i>	Used for hands-free dialing, and hands-free waiting when put on hold.
<i>PRIVATE HOLD</i>	Places a call on hold that can only be retrieved from that station.
<i>GLOBAL HOLD</i>	Places a call on hold that can be retrieved from any station.
<i>CALL TRANSFER</i>	Transfers an incoming call to another extension.
<i>CALL WAITING</i>	Receives calls while you are on another line.
<i>AUTOMATIC ANSWER</i>	Automatically answers the call, hands-free.
<i>REDIAL</i>	Dials the last number called.
<i>CALL CONNECT/PICK UP</i>	Connects/picks up other ringing extensions.
<i>STORE LAST NUMBER DIALED</i>	Stores the last number dialed.
<i>'ONE TOUCH' STORING</i>	Stores frequently called numbers.
<i>'ONE TOUCH' DIALING</i>	Dials frequently called numbers.
<i>SYSTEM-WIDE DIRECTORY</i>	Dials frequently used numbers from any station.
<i>RING PAGING</i>	Causes all non-busy phones to ring.
<i>PAGE ALL</i>	Broadcasts on the COM line to all Speaker Phones.
<i>EXTENSION PAGING</i>	Allows a phone to broadcast a message over another extension's speaker.
<i>CONFERENCE CALLS</i>	Connects multiple parties together in a phone conversation.
<i>CALL FORWARDING</i>	Redirects calls to another station's extension.
<i>CALLBACK/CAMP-ON</i>	Rings back when the busy extension number becomes free.
<i>COM CALLBACK/CAMP-ON</i>	Rings back when the COM line becomes free.
<i>MUTE</i>	Prevents conversation from going to the outside caller.
<i>RELEASE LINE PRIVACY</i>	Temporarily allows any other extension to join the conversation
<i>DO NOT DISTUR (DND)</i>	Turns off all rings to a particular station.
<i>RING BLOCKING</i>	Turns off all rings to the Speaker Phone's speaker.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 13 of 98</b>
-------------------	----------------------	-----------------------


<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

<b>VOICE MAIL MODE</b>	Directs calls to the optional Voice Mail System (VMS)
<b>VOICE MAIL MESSAGE RETRIEVING</b>	Allows extensions to check any voice mail messages left for them.
<b>SET UP - LINE RING PREFERENCE</b>	Selects which telephone lines will ring at a particular station.
<b>SET UP - LINE SELECT ORDER</b>	Sets up order of available line selection.

### 3.2 Installing The Speaker Phone

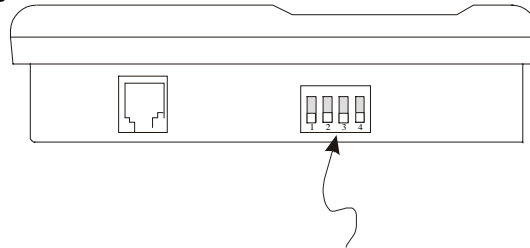
Carefully follow the instructions described in this section to ensure proper operation of the Speaker Phone.

Install the Controller BEFORE installing the Speaker Phone or you may damage the Speaker Phone. **WARNING:** Do not connect Speaker Phones to the telephone company lines or the equipment may be damaged.

 The Speaker Phone is for use with the Vtech 3921 Series Controller. It is not to be connected directly to telephone company line.

#### Coil Cord Connection

1. Insert the coil cord into the modular jack located on the side of the housing.
2. Connect the other end into the modular jack located on the receiver.
3. Assign a station number to each Speaker Phone (note: the main speaker phone should be set on ext.'0').  
To set the station number for the Speaker Phone, use a small tool (i.e. a small screwdriver, or a straightened paper clip) to slide the four station switches located on the side of the phone case (see diagram below). The configuration of the four switches sets the station number for the Speaker Phone.



**Station Switches**

#### **READ IMPORTANT NOTE BELOW!**

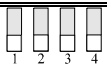

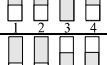


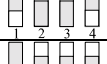
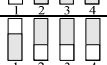
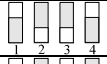
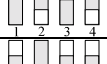

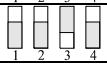
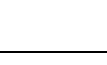

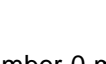
**EVERY STATION NUMBER ON SPEAKER PHONES AND ADAPTER BOXES MUST BE DIFFERENT.**  
Devices with the same station number will not operate properly.

Refer to *Table 1- Assigning Station Numbers* on the next page.

The station switches can be decoded as follows:

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 14 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

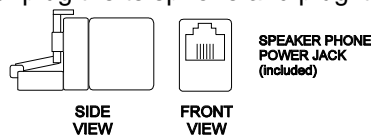
Station Number	Station Switch Positions				Extension Number	Extension Number	Switch Positions
	SW1	SW2	SW3	SW4	Primary	Secondary	
0 <sup>1</sup>	DWN	DWN	DWN	DWN	800 <sup>1</sup>	900 <sup>1</sup>	
1	DWN	DWN	DWN	UP	801	901	
2	DWN	DWN	UP	DWN	802	902	
3	DWN	DWN	UP	UP	803	903	
4	DWN	UP	DWN	DWN	804	904	
5	DWN	UP	DWN	UP	805	905	
6	DWN	UP	UP	DWN	806	906	
7	DWN	UP	UP	UP	807	907	
8	UP	DWN	DWN	DWN	808	908	
9	UP	DWN	DWN	UP	809	909	
10	UP	DWN	UP	DWN	810	910	
11	UP	DWN	UP	UP	811	911	
12	UP	UP	DWN	DWN	812	912	
13	UP	UP	DWN	UP	813	913	
NOT USED	UP	UP	UP	DWN	not used	not used	
NOT USED	UP	UP	UP	UP	not used	not used	

**Table 1 - Assigning Station Numbers**

<sup>1</sup>A single 0 will also dial station number 0. In order to access operator features, station number 0 must be a Speaker Phone, not an Adapter Box

4. Plug the Speaker Phone Power Jack (figure 1) in any telephone jack in the building (figure 2). (The Controller must be installed BEFORE the Speaker Phone is plugged into the Power Jack.)

Test each telephone before plugging in the next telephone. If it does not work, first check that every station number is unique and then unplug the telephone and plug it in again.



**Figure 1**

The Power Jack is a special jack that provides AC power to the Speaker Phone. **Important Note:** The Speaker Phone will not operate without the Power Jack.

5. Plug the AC Transformer into an AC outlet.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 15 of 98</b>
-------------------	----------------------	-----------------------

TITLE	VT3921 Internal Product Specification
MODEL	VT3921

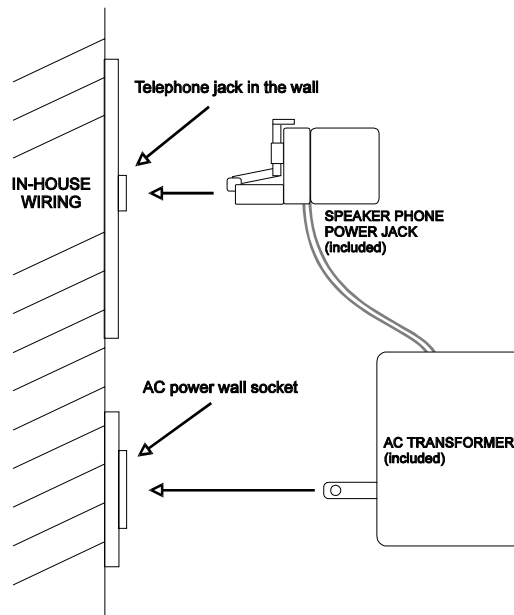


Figure 2

6. Plug one end of the Speaker Phone Wire (included) into the Power Jack (figure 3).

**Note:** The Speaker Phone Wire is a special telephone cable with six conductors. You may purchase additional six conductor cables of various sizes from electronics stores such as Radio Shack.

7. Plug the other end of the Speaker Phone Wire into the Speaker Phone (figure 3).

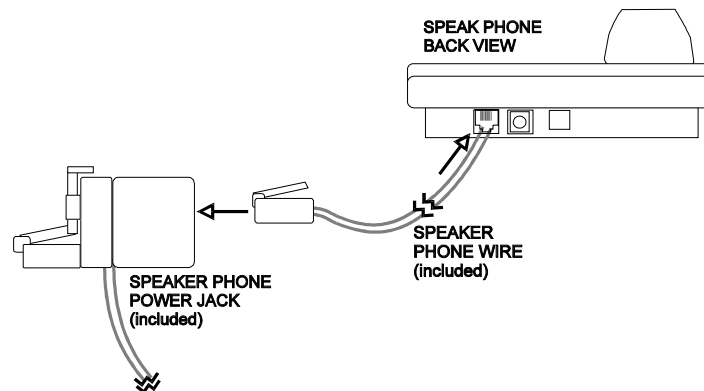


Figure 3

**Note:** Every time the Controller is turned on, all the red lights on the Speaker Phone will flash until the system completes its self-configuration. (This may take up to five minutes.) Every time the Speaker Phone is plugged into the system, the red lights on the Speaker Phone will blink sequentially once.

### 3.3 Using The Speaker Phone

This phone is capable of quickly accessing all of the advanced business telephone features that are usually only associated with larger systems.

Speaker Phone features include:

Reference:	Revision: 1.0	Page: 16 of 98
------------	---------------	----------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

- Private and Global Hold
- Call Transfer
- Call Waiting
- Automatic Answer
- Redial
- Call Connect/Pick-Up
- One Touch Memories
- System Wide Directory
- Ring Paging
- Page All
- Extension Paging
- Line Privacy
- Conference Calls
- Call Forwarding
- Callback/Camp-On
- COM Callback/Camp-On
- Mute
- Do Not Disturb
- Ring Blocking
- Voice Mail Mode
- Voice Mail Message Retrieving
- Line Ring Preference
- Line Select Order
- Full Speaker Phone Communication

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

### 3.4 • Speaker Phone Keys

<b>Phone Key</b>	<b>Function</b>
<i>SHIFT</i>	Used to access an additional fourteen memory locations.
<i>CALLBACK</i>	Used to toggle Callback/Camp - on and COM Callback/Camp - on features.
<i>MEMORY</i>	Stores and retrieves telephone numbers from the System - Wide Directory. Also used to store 'one touch' memories.
<i>FLASH</i>	Provides a half - second "on hook" to the telephone company.
<i>AUTO - ANS</i>	Used to toggle the Automatic Answer feature.
<i>PAUSE</i>	second pause into a memory location.
<i>FORWARD</i>	Used to forward (redirect) calls to a desired extension.
<i>MUTE/DND</i>	Mute and Do Not Disturb (DND).
<i>HOLD</i>	Places current call on hold.
<i>COM</i>	Selects internal line.
<i>LINE 1</i>	Selects outside line one.
<i>LINE 2</i>	Selects outside line two.
<i>LINE 3</i>	Selects outside line three.
<i>MESSAGE</i>	Used to toggle the Voice Mail Mode feature, and to retrieve voice mail messages sent to an extension.
<i>FEATURE</i>	Used to access features.
<i>REDIAL</i>	Dials previously dialed number.
<i>CONNECT</i>	Answers calls ringing on other stations.
<i>PAGE</i>	Used to Page All (broadcast paging), and to page a specific extension.
<i>SPEAKER</i>	Used to activate the speaker for hands - free dialing and for hands - free waiting while on hold and for hands-free communication.

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

### 3.5 Making Internal (COM) Calls

Places a call to another extension (internal).

1. Go off hook.
2. Press COM Line Select Key.  
You should hear a different higher pitched dial tone.
3. Press 'one touch' extension number or press SHIFT, followed by the 'one touch' extension number.  
You can also enter an extension number on the touch-tone keypad.

<b>One Touch Key</b>	<b>Ext. Number</b>
0	800
SHIFT, 0	900
1	801
SHIFT, 1	901
2	802
SHIFT, 2	902
3	803
SHIFT, 3	903
4	804
SHIFT, 4	904
5	805
SHIFT, 5	905
6	806
SHIFT, 6	906
7	807
SHIFT, 7	907
8	808
SHIFT, 8	908
9	809
SHIFT, 9	909
10	810
SHIFT, 10	910
11	811
SHIFT, 11	911
12	812
SHIFT, 12	912
13	813
SHIFT, 13	913

On Speaker Phones you can dial another extension number by pressing the COM Line Select Key and then entering an extension number without hanging up. If you receive a fast busy signal after a valid extension number, then the extension number you are calling is in the Do Not Disturb mode. See *Do Not Disturb* for details.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 19 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

### 3.6 Making Outside Calls

Places a call to an outside number.

1. Go off hook and dial.

OR

1. Before dialing, select a specific line by pressing an available Line Select Key.  
You will hear dial tone. If the red line light is on, then that particular line is not available.
2. Either pick up the handset and dial, or dial then pick up the handset.

The system will automatically select an available line for you. To adjust which line is selected first, refer to *Set Up - Line Select Order*.

### 3.7 SPEAKER Button

Enabling the Speaker is useful for hands-free dialing, or to receive a voice page call from another extension (hands-free waiting while on hold) or to make conference calls without the use of the handset.

#### For Hands-Free Dialing

1. Press the SPEAKER button.  
The SPEAKER light will turn on to notify you that the Speaker is enabled. The system will automatically select an available line, and a dial tone should be heard on the speaker.
2. Dial out, hands free.

OR

1. Before dialing, select a specific line by pressing an available Line Select Key.  
If the red line light is on, then that particular line is not available. When an available Line Key is pressed, then the selected line light will turn on, and the SPEAKER light will turn on to notify you that the Speaker is enabled. A dial tone should be heard on the speaker.
2. Dial out, hands free.

**NOTE:** To talk to the other party when they answer, you may use the Speaker mode or for privacy you may pick up the handset and speak into the handset's microphone.

#### For Waiting While on Hold

1. When you are placed on hold, press the SPEAKER button, and hang up the handset.  
The SPEAKER light will turn on to notify you that the Speaker is enabled. The speaker will now monitor the call on which you are holding. For example, if the other party is a company that plays music for callers on hold, then the music will be heard over the Phone's Speaker, and you can listen, hands free, for the company to return to your call.
2. When you hear the other party return to your call, you may speak directly to the phone or pick up the handset to resume the conversation privately.

### 3.8 Global Hold

Places a call on hold that can be retrieved from any station.

1. Press HOLD.  
The red line light will blink slowly on all stations to indicate that the call has been placed on Global Hold.

#### Retrieve a Global Hold Call

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 20 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

1. Press the Line Select Key of the held line on any station.

### 3.9 Private Hold

Places a call on hold that can only be retrieved from that station.

1. Press HOLD.
2. Press HOLD again.  
The red line light will blink quickly only on your phone to indicate that the call has been placed on Private Hold. All other stations will have a solid red line light.

#### Retrieve a Private Hold Call

1. Press the Line Select Key of the held line.

### 3.10 Call Transfer

Transfers an incoming call to another extension.

1. Press HOLD.
  2. Press the appropriate 'one touch' memory key, which allows you to enter extensions with a single key press.  
You can also enter an extension number on the touch-tone keypad, if you desire.
- OR
2. Press SHIFT, followed by the 'one touch' extension number

<b>One Touch Key</b>	<b>Extension Number</b>
0	800
SHIFT, 0	900
1	801
SHIFT, 1	901
2	802
SHIFT, 2	902
3	803
SHIFT, 3	903
4	804
SHIFT, 4	904
5	805
SHIFT, 5	905
6	806
SHIFT, 6	906
7	807
SHIFT, 7	907
8	808
SHIFT, 8	908
9	809
SHIFT, 9	909
10	810
SHIFT, 10	910
11	811
SHIFT, 11	911

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 21 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

12	812
SHIFT, 12	912
13	813
SHIFT, 13	913

3.

Option 1

Hang up.

If the transferred call is not answered, the call will ring back at your extension.

OR

Option 2

Stay on the line, announce the transfer, and hang up.

When you hang up, the caller will automatically be connected to the extension you entered.

OR

Option 3

Stay on the line and announce the transfer. If the person at the extension is not able to talk, when the extension hangs up, a beep in the earpiece notifies you that you are reconnected to the caller to take a message.

OR

Option 4

If the extension is busy, reconnect to the caller by pressing the appropriate Line Select Key.

OR

Option 5

If the extension is busy, press HOLD and perform step 2 again.

### 3.11 Call Waiting

Allows you to receive calls while you are on another line.

1. If you hear two or three beeps\* in the earpiece while on another line, you can do one of the following:

Option 1

2. Ignore the beep and continue your conversation.

If you ignore the beep, then the system will handle the call differently depending on which features are enabled.

a) If no features are enabled, then the system will ring all phones followed by the answering machine (if available).

b) If Night Mode is enabled and an answering machine is available, then the system will ring the answering machine directly.

c) If Receptionist Mode is enabled, then the system will ring the operator's extension, station 0.

d) If a Voice Mail System (VMS) is available and VMS mode is enabled for that station, then the system will ring the VMS directly.

OR

Option 2

2. Press HOLD to place the first call on hold.

3. Press the Line Select Key of the line that was ringing your extension (the red line light will be blinking quickly).

OR

Option 3

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 22 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

2. Press HOLD to place the first call on hold.
3. Hold down the hook switch until the phone rings. Then release the hook switch to connect to the second call.

To return to the original call, press the Line Select Key of the held line.

\*Two beeps indicate a primary extension ring, 8XX.

Three beeps indicate a secondary extension ring, 9XX.

This feature is ideal if two people are sharing one phone by assigning an 8XX or 9XX extension for each.

### 3.12 Automatic Answer

Allows you to communicate hands-free on the COM line automatically.

#### Enable Automatic Answer

1. While the receiver is hung up ("on hook"), press AUTO-ANS.

The phone will beep once and the SPEAKER light blinks slowly to indicate that Automatic Answer is enabled.

#### Disable Automatic Answer

1. While on hook, press AUTO-ANS.

The phone will beep twice and the SPEAKER light will turn off to indicate that Automatic Answer is disabled.

If Automatic Answer is enabled, all COM line calls will be automatically answered. When a person dials your phone, you will be notified by a tone. Without any intervention on your part, the speaker will be activated and you will be able to hear the calling party. In order for the calling party to hear your response, you must pick up and use the handset.

### 3.13 Redial

Dials the last number called.

1. Go off hook.
2. Press REDIAL.

Note: The Redial button does not redial 'One Touch' or System-Wide Directory. numbers.

### 3.14 Call Connect/Pick Up

Allows you to connect to another ringing station. Also known as "Call Pick Up".

#### Global Connect

1. Go off hook.
2. Press CONNECT key, then CONNECT key once again.

#### Extension Connect

1. Go off hook.
2. Press CONNECT key.
3. Using the touch tone keypad, enter the ringing station's extension number or press the 'one touch' memory key corresponding to the last digits of the extension number.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 23 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

<b>One Touch Key</b>	<b>Extension Number</b>
0	800/900
1	801/901
2	802/902
3	803/903
4	804/904
5	805/905
6	806/906
7	807/907
8	808/908
9	809/909
10	810/910
11	811/911
12	812/912
13	813/913

NOTE: You cannot Call Connect to calls ringing back either from a hold or calls ringing back after an unsuccessful transfer. You cannot Global Connect to COM calls or transferred calls.

### 3.15 Store Last Number Dialed

Stores the last number dialed.

- While on hook, press MEMORY key.  
The phone will beep once and the red PROGRAM light will turn on.
  - Press 'one touch' memory key (0-14).  
The telephone number is stored in memory locations 0-14. Proceed to step 3.
- OR
- Press SHIFT key, followed by 'one touch' memory key.  
The telephone number is stored in memory locations 15-29 (0 for 15, 1 for 16, 2 for 17...14 for 29).
  - Press REDIAL key.  
The phone will beep twice and the red PROGRAM light will turn off to confirm that the number was stored correctly.

### 3.16 'One Touch' Storing

Stores frequently called numbers.

- While on hook, press MEMORY key.  
The phone will beep once and the red PROGRAM light will turn on.
  - Press 'one touch' memory key (0-14).  
The phone will beep once. The telephone number is stored in memory locations 0-14.
- OR
- Press SHIFT key, followed by 'one touch' memory key.  
The phone will beep once after SHIFT, and once again after 'one touch.' The telephone number is stored in memory locations 15-29.
  - Using the touch-tone keypad, enter the telephone number (up to 16 numbers and pauses).  
The PAUSE key puts a four-second pause into the number.

To enter multiple telephone numbers repeat steps 2 and 3.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 24 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

4. Press MEMORY key.

The phone will beep twice and the red PROGRAM light will turn off.

Additional 'one touch' memory keys can be pressed at any time while you are still off hook, e.g. you may store your bank account number in a different memory location. A pull out card on the side of the phone is provided to list the directory of 'one touch' memory keys.

### 3.17 'One Touch' Dialing

Dials frequently called numbers.

1. Go off hook.
2. Press 'one touch' memory key.  
This dials the telephone number in memory locations 0-14.

OR

2. Press SHIFT key, followed by 'one touch' memory key.  
This dials the telephone number in memory locations 15-29.

### 3.18 Uses Of System - Wide Directory

The System- Wide Directory can be accessed or used by everyone who uses the system from any extension phone.

There are two general methods to use the System-Wide Directory.

#### Method 1

A list of all commonly called numbers can be compiled and stored in directory storage locations. The directory location list can be given to everyone who uses the system.

#### Method 1 Example:

- 01 - Building Maintenance
- 02 - Pizza Delivery
- 03 - Major Customer No. 1
- 04 - Major Customer No. 2
- 05 - Off-site office

#### Method 2

Individuals can be assigned directory locations. Then users can access their own stored directory locations from any station in the system.

#### Method 2 Example:

- 00-09 Jim's numbers
- 10-19 Scott's numbers
- 20-29 Tara's numbers

Jim could go to any station in the system and dial his System-Wide Directory numbers.

ONLY THE OPERATOR, Phone Station 0, can store numbers in the System-Wide Directory. Refer to the Operator's Manual for details on storing numbers in the System-Wide Directory.

### 3.19 Dialing System - Wide Directory

Dials frequently used numbers from any station.

1. Go off hook and listen for dial tone.
2. Press MEMORY key.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 25 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

3. Using the touch-tone keypad, enter 2-digit directory storage location.

Valid numbers for the System-Wide Directory are from 00 to 29.

ONLY THE OPERATOR, Phone Station 0, can store numbers in the System-Wide Directory. Refer to the Operator's Manual for details on storing numbers in the System-Wide Directory.

### 3.20 Ring Paging

Causes all non-busy phones on the system to ring.

1. Select the COM line by pressing the COM Line Select Key.  
The dial tone will be heard on the speaker.
2. Press FEATURE key.
3. Press 1.  
A ring tone will be heard on the speaker.
4. Pick up the handset.  
When another person answers the call, pick up the handset to respond.

Ringling stops when any station answers the call. This feature can be used to see if you are the only person in the building

### 3.21 Page All

Broadcasts on the COM line to all Speaker Phones.

1. Go off hook.  
You will hear a dial tone in the earpiece.
2. Press the PAGE, then PAGE once again.  
The dial tone will stop when paging is ready. All Speaker Phones not in use will emit a tone.
3. Speak into the handset.  
Your voice will be broadcast through the speaker of all Speaker Phones.

If anyone picks up their handset, the speakers on all Speaker Phones are turned off and the person who picked up is immediately connected to the broadcaster directly.

### 3.22 Extension Paging

Allows a phone to broadcast a message over another extension's speaker.

1. Go off hook, and press the COM key.
2. Press the PAGE key.
3. Press the 'one touch' key corresponding to the extension to which you would like to broadcast a message.

<b>One Touch Key</b>	<b>Ext. Number</b>
----------------------	--------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

0	800/900
1	801/901
2	802/902
3	803/903
4	804/904
5	805/905
6	806/906
7	807/907
8	808/908
9	809/909
10	810/910
11	811/911
12	812/912
13	813/913

4. Speak into the handset.  
Your voice will be broadcast through the speaker of the extension you paged.

### 3.23 Conference Calls

Connects multiple parties together in a telephone conversation.

1. While connected to an outside line, press HOLD key.
2. Press the 'one touch' extension number of the station you wish to add to the conversation.  
You can also enter an extension number from the touch-tone keypad, if you desire.

OR

2. Press SHIFT key, followed by the 'one touch' extension number (0-13).

<b>One Touch Key</b>	<b>Ext. Number</b>
0	800
SHIFT, 0	900
1	801
SHIFT, 1	901
2	802
SHIFT, 2	902
3	803
SHIFT, 3	903
4	804
SHIFT, 4	904
5	805
SHIFT, 5	905
6	806
SHIFT, 6	906
7	807
SHIFT, 7	907
8	808
SHIFT, 8	908
9	809
SHIFT, 9	909
10	810

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 27 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

<i>SHIFT, 10</i>	910
<i>11</i>	811
<i>SHIFT, 11</i>	911
<i>12</i>	812
<i>SHIFT, 12</i>	912
<i>13</i>	813
<i>SHIFT, 13</i>	913

Only one outside line can be conferenced at a time. Multiple stations can be conferenced by repeating steps 1-3.

- After the extension answers, press the Line Select Key of the held line (Line 1, Line 2, or Line 3). Conference is now active.

If the extension number is busy, then the system will turn off the busy signal when you reselect the held line. If the extension does not answer, then when you select the held line the ringing will stop.

### 3.24 Call Forwarding

Redirects calls so that in addition to the user's phone ringing, another station's extension will also ring. Call Forwarding is selectable for 8XX and/or 9XX extensions.

#### Enable Call Forwarding

- While on hook, press FORWARD key.
- Using the touch tone keypad, enter the 8XX extension number of the station you want your calls forwarded to, or enter the 9XX extension number of the station you want you 9XX calls forwarded to. The phone will beep once to notify you that Call Forwarding is enabled. for example, if you are extension 905 and you want your calls forwarded to station 13, enter 913.

#### Disable Call Forwarding

- While on hook, press FORWARD key.
- Press 8 for 8XX extension forward disable, or 9 for 9XX extension forward disable. The phone will beep twice to notify you that Call Forwarding is disabled.

If the phone is on hook and the extension number is invalid, then the phone will beep three times. If the phone is off hook and the extension number is invalid, then you will hear a busy signal in the earpiece.

### 3.25 Callback/Camp - On

Rings back when the busy internal (COM) extension number or extension becomes free.

#### Enable Callback/Camp-On

- While receiving the busy signal in the earpiece, press CALLBACK key. The phone will beep once and the red COM light will blink quickly to notify you that Callback/Camp-On is enabled.
- Hang up. The phone will ring back when the extension becomes free. When you go off hook the extension will ring.

#### Disable Callback/Camp-On

- Press the CALLBACK key.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 28 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

The phone will beep twice and the red COM light will stop blinking to notify you that Callback/Camp-On is disabled.

Note: Only one extension can be camped-on at one time.

### 3.26 COM Callback/Camp - On

Rings back when the busy COM line becomes free.

#### Enable COM Callback/Camp-On

1. When the COM line is in use, press CALLBACK key while on hook.  
The phone will beep once and the red COM light will blink quickly to notify you that COM Callback/Camp-On is enabled.
2. Hang up.  
The phone will ring back when the COM line becomes free. Then you can go off hook (you will hear a dial tone) and dial the extension number.

#### Disable COM Callback/Camp-On

1. Press the CALLBACK button.  
The phone will beep twice and the red COM light will stop blinking to notify you that COM Callback/Camp-On is disabled.

### 3.27 Mute

Prevents the conversation from going to the outside caller.

#### Enable Mute

1. During the conversation, press MUTE/DND key.  
The MUTE/DND key light will blink to notify you that MUTE is enabled.

#### Disable Mute

1. Press MUTE/DND key.  
The MUTE/DND key light will stop blinking to notify you that MUTE is disabled.

### 3.28 Release Line Privacy

Temporarily allows any other station to join the conversation.

1. Press the Line Select Key of the line that you are currently on.  
The phone will beep once in the earpiece to notify you that you have Released Line Privacy for that particular call.

The system will default to the Line Privacy mode which keeps other people or devices from breaking into your conversation.

### 3.29 Do Not Disturb (DND)

Turns off all rings to a particular station. This will affect both primary and secondary extensions.

#### Enable Do Not Disturb

1. While on hook, press MUTE/DND key.  
The phone will beep once and the MUTE/DND key light will blink to notify you that DND is enabled.

#### Disable Do Not Disturb

1. While on hook, press MUTE/DND key.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 29 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

The phone will beep twice and the MUTE/DND key light will stop blinking to notify you that DND is disabled.

### 3.30 Ring Blocking

Turns off all rings to the Speaker Phone's speaker, but still allows broadcasts or paging through the speaker phone's. This will affect both primary and secondary extensions.

#### Enable Ring Blocking

1. While on hook, press FEATURE key.
2. Press 6.  
The phone will beep once to notify you that Ring Blocking is enabled.

#### Disable Ring Blocking

1. While on hook, press FEATURE key.
2. Press 6.  
The phone will beep twice to notify you that Ring Blocking is disabled.

### 3.31 Voice Mail Mode

Directs unanswered extension calls to the optional Voice Mail System (VMS) instead of ringing all phones. This will affect both primary and secondary extensions.

#### Enable VMS Mode

1. While on hook, press the MESSAGE key.  
The phone will beep once to notify you that VMS mode is enabled.

#### Disable VMS Mode

1. While on hook, press the MESSAGE key.  
The phone will beep twice to notify you that VMS mode is disabled.

This feature will transfer all unanswered extension calls to the VMS.

### 3.32 Voice Mail Message Retrieving

Telephone extensions, both primary (8XX) and secondary (9XX), can access any voice mail messages on the Voice Mail System (VMS).

**YOU MUST GO OFF HOOK TO RETRIEVE VOICE MAIL MESSAGES.**

#### Retrieving Messages From the VMS

1. Go off hook and press the MESSAGE key.
2. Press 8 for messages to the 8XX extension, and 9 for messages to the 9XX extension.  
The VMS will be accessed through the COM line automatically. If COM is busy, then you will receive a busy signal.

NOTE: The MESSAGE light will blink continuously in a pattern to indicate which extensions (8XX, 9XX, or both) have messages. The pattern is one blink for 8XX messages, two blinks for 9XX messages, and three blinks for 8XX and 9XX messages.

### 3.33 Set Up - Line Ring Preference

Selects which telephone lines will ring at a particular station. Ring delay is useful when you want certain phones to ring before other phones. The Speaker Phones are shipped with Default "0".

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 30 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

1. While on hook, press FEATURE key.
2. Press 4.  
The red light over Line 1 key will blink.
3. Using the touch-tone keypad, enter the number of rings to delay for Line 1.  
The number key corresponds to the number of rings to delay before ringing your phone on Line 1 (see table). After this key is pressed, the red light over Line 2 key will blink.
4. Using the touch-tone keypad, enter the number of rings to delay for Line 2.  
After this key is pressed, the red light over Line 3 key will blink.
5. Using the touch-tone keypad, enter the number of rings to delay for Line 3.  
After this key is pressed, the set up is completed.

<b>Number Key</b>	<b>Ring Delay</b>
0	Ring immediately
2	2 ring delay
4	4 ring delay
6	6 ring delay
9	Never rings

Ring delay does not affect outside calls when an extension number is dialed, transferred calls, and COM line calls.

### **3.34 Set Up - Line Select Order**

Sets up order of available line selection. This feature is useful when you want certain phones to select specific lines. For example, in home installations where there is a residence (Line 1) and a business (Line 2) telephone line, the business telephone station can be set up to select Line 2 first.

1. While on hook, press FEATURE.
2. Press 5.  
All the red line lights will blink.
3. Press the Line Select Keys in the order that you want them selected.  
For example, to set the following order: Line 1, Line 3, COM, Line 2, press the Line 1, Line 3, COM, and Line 2 keys subsequently.

By default the system will select in the following order: Line 1, Line 2, Line 3, COM.

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 4. Cordless System Phone With CID

### 4.1 Product Overview

The VT3921 cordless phone is a 3 line system phone with an alpha-numeric LCD display in the handset. Both LCD and keypad backlighting is provided. *However, for reasons of cost and ease of implementation, this backlighting is intended only to provide sufficient luminosity to illuminate the keypad and LCD in low light and no light conditions.*

The handset LCD will display numbers entered manually onto the keypad as well as all numbers programmed into and recalled from the quick dial memory. You can enter the phone number in the LCD display, place the line off hook, and the number in the LCD display will be dialed out automatically. The quick dial memory will have a capacity of 20 phone numbers with a maximum of 20 digits for each number.

The alpha-numeric display will show both the name and number of the calling party. Up to 15 name characters or 11 phone number digits can be displayed on the LCD, see section 25.1. The LCD display will show the callers name and will store both the caller's name and number when an incoming call with multiple message CID information is received.

The user can easily answer a call on the handset by simply pressing any key other than the OFF, MUTE and volume control keys. This is very useful in a dark environment so that the person does not have to fumble around looking for the PHONE key to answer the call. This is only valid if the phone is in the standby state. If the user presses the MUTE key, then the handset ringer will not ring for the duration of the call. This allows the user to easily disable the ringer if he/she does not want to answer a particular call. Pressing either volume key will activate the backlighting without answering the call.

An E<sup>2</sup>PROM is used in both base and handset to provide non-volatile storage of all speed dial numbers, Caller ID name and numbers as well as the base and handset security code.

### 4.2 Specifications

#### 4.2.1 RF Specifications

<i>RF RADIATED FIELD STRENGTH</i>	<50 mV/meter @ 3m
<i>RF CHANNEL SPACING</i>	300 kHz
<i>CHANNEL BANDWIDTH</i>	150 kHz (20dB bandwidth)
<i>RECEIVE IF FREQUENCY</i>	10.7MHz
<i>OPERATING TEMPERATURE RANGE</i>	0 to +50°C
<i>HANDSET TRANSMISSION FREQUENCY</i>	925.05 - 927.75 MHz
<i>BASE TRANSMISSION FREQUENCY</i>	902.3 - 905.0 MHz
<i>TRANSMITTER FREQUENCY STABILITY</i>	±5 kHz, 0 to +50°C
<i>RECEIVER NOISE FIGURE</i>	< 5.5dB
<i>SENSITIVITY FOR 30DB SINAD</i>	< -106 dBm at duplexer
<i>IMAGE REJECTION (RF)</i>	> 60 dB
<i>ADJACENT CHANNEL REJECTION</i>	> 60 dB
<i>RECEIVER MUTING LEVEL</i>	Between -109 dBm and -107 dBm

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 32 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

#### 4.2.2 Audio Specifications

<i>FREQUENCY RESPONSE</i>	300Hz - 3kHz (+/- 1dB)
<i>SINAD @ 1KHZ</i>	>40dB
<i>MAXIMUM SNR</i>	
<i>AUDIO ENCODING</i>	32kbps ADPCM

#### 4.2.3 Digital Specifications

<i>AGGREGATE DATA RATE</i>	48kbps
----------------------------	--------

#### 4.2.4 Caller ID specifications

The caller ID display module meets protocol requirements specified in the following standards documents:

- Bellcore TR-NWT-000030 Issue 2  
"Voiceband Data Transmission Interface Generic Requirements"
- Bellcore TR-NWT-000031 Issue 4  
"CLASS Feature: Calling Number Delivery"
- Bellcore TR-NWT-001188 Issue 1  
"CLASS Feature: Calling Name Delivery Generic Requirements"

### 4.3 General Features

The following is a general description of the features and functions:

- Name / Number Caller ID display with 50 call storage capacity
- 32kbps ADPCM voice coding
- 2 row by 12 character 5x7 dot matrix alpha-numeric LCD display on Handset
- 10 Channel Operation with auto channel selection
- 900 MHz Operation
- 24 Bit Digital Security Code for 16.8 million combinations
- DTMF and Pulse Dialing
- 20 Number/location Programmable Memory for 20 Digit Phone Number
- Automatic Search for Best Available Channel
- Low Battery Detect and Warning indicator
- \*Handset Power Saving (minimum 7 days Standby Mode, less during out-of-range)
- \*7.0 Hours minimum continuous talk time (8 hours target)
- Volume Adjust on Handset
- REDIAL, HOLD, PAGE and MUTE
- Hearing-Aid Compatible Receiver
- Provisions for spare handset battery pack in the charger/cradle unit
- Backlit LCD on the handset with green illumination
- Backlit handset keypad for operation in low light conditions with green illumination.
- Auto hang up when returning the handset to the cradle.

① Note that this is only when masked ROM is used. Use of external ROM will diminish the talk/standby time.

② Although the CID circuit is powered in POT's mode, it is operating below its specified minimum guaranteed operating voltage and is therefore not guaranteed to operate properly in POTs mode.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 33 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

#### 4.4 Unique Features

- Use of E<sup>2</sup>PROM in base unit for permanent memory storage of security code
- Use of E<sup>2</sup>PROM in the handset for nonvolatile storage of the security code, CID messages and speed dial numbers - also allows for on-the-fly battery replacement
- Fully Digital Link between Handset and Base
- Digitally-Scrambled Voice Communication between Handset and Base has extremely high immunity to noise and interfering signals
- Out-of-Range indication while the handset is in use and in standby mode
- Removable battery pack
- Compatibility with remote charger
- Easy answer - When the phone rings simply press any key on the handset to answer.
- A faster charge (.2C) capability will be provided on the base for the handset battery. The unit will automatically switch over to regular trickle charge (.1C) when required.
- Flash can be programmed into speed dial sequences
- Line in use indicator
- The electrical design will support charging in either the handset in the face up or face down position. Whether or not the unit does, depends on the mechanical design.
- Ringer muting

#### 4.5 Features Not Provided

- Automatic line drop is not provided
- Name dialing is not provided
- Multi handset capability is not provided.
- Manual channel change has been deleted as the auto channel change algorithm takes care of this function.
- Automatic security code updating when the handset is cradled has been eliminated. The base and handset security codes are now factory preset and stored in E<sup>2</sup>PROM for the life of the unit. New security codes are therefore not generated every time the unit is recradled.

#### 4.6 System User Features

##### 4.6.1 Line Selection

To select an outside line, just press *PHONE* to go off hook and the first available outside line will be connected in the line select order. To select the COM line or another outside line, press *#FUNCTION* followed by *COM*, *LINE 1*, *LINE 2*, or *LINE 3*. If all of the outside lines are busy when you go off hook, the COM line will be selected if it is available and the dial tone will be different. The default line select order is line 1, line 2, line 3, and then COM. To hang up, press *OFF*.

##### 4.6.2 Internal Calls

To make an internal call, press *PHONE* to go off hook, then press *#FUNCTION* followed by *COM* to get the internal line, then enter the extension number (800-813,900-913) of the party you wish to reach. If the internal line is busy, you will get a busy signal after pressing COM. If the party you are calling is busy on an outside line, you will get a busy signal after entering the extension number.

##### 4.6.3 Transferring Calls

Several methods can be used to transfer an outside call to another extension. When placing a call on private hold, press *HOLD* once and the "H" will display after the selected line symbol on bottom line of display. To place the call on global hold, press *HOLD* again and the inverted "H" will be displayed. On private hold, only you or a party that you transfer a call to can reconnect to the outside party. On global

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 34 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

hold, any extension can pick up the call. Two of the most commonly used methods of transferring calls are shown below.

#### 4.6.3.1 Method 1

If you know the other parties extension and you want to transfer the call to his/her phone, press *HOLD* once to place the call on private hold, then the extension number (800-813,900-913). If you stay on the line, you will be connected to the new extension and the outside party is still on hold. When you go on hook by pressing *OFF*, the new extension is then connected to the outside party being transferred. If you hang up before the new extension answers, the person answering will immediately be connected to the outside party. So if you stay on the line and you wish to reconnect to the outside party after the new extension does not answer, then press *PHONE* to be reconnected.

#### 4.6.3.2 Method 2

If you do not know the other party's extension that you wish to transfer to, or you believe they are away from their phone, you can place the call on global hold by pressing *HOLD* twice. You can then inform the other person that they have a call on global hold and they can retrieve the call from any phone. One way to inform the person is to broadcast a message if there are speaker phones on the system. To broadcast, press *OFF* to hang up, press *PHONE* to get another line, then press *\*FUNCTION* followed by *B. PAGE* and speak into the mouthpiece.

#### 4.6.4 Global Hold Pick-Up

To connect to a call on global hold determine which call is on hold by observing the display, press *PHONE* to go off - hook, then *#FUNCTION* followed by the line number on hold (*LINE 1, LINE 2, or LINE 3*). Another method is to use the pick up global hold feature. To use the pick up global hold feature, press *PHONE* to go off hook, then *\*FUNCTION* followed by *HLD P/U* to pick up the held call. If there is more than one call on global hold and you get the wrong one, place that caller back on global hold, go on - hook (*OFF*), off - hook (*PHONE*), then *\*FUNCTION*, followed by *HLD P/U* again to pick-up the next line on global hold.

#### 4.6.5 Connect

To connect to another extension that is ringing, go off hook by pressing *PHONE*, then *\*FUNCTION* followed by *CONN*.

#### 4.6.6 Broadcast

To broadcast a message over all speaker phones, go off hook by pressing *PHONE*, then *\*FUNCTION* followed *B. PAGE* and speak into the mouthpiece.

#### 4.6.7 Call Forwarding

To forward your calls to another extension, go off hook by pressing *PHONE*, then *\*FUNCTION* followed by *FWD* and the extension number you wish to forward your calls to (800-813,900-913). There will be one beep in the earpiece to indicate that call forwarding is active. To remove the call forwarding, press *PHONE* to go off hook, then press *\*FUNCTION*, then *\*FUNCTION* again, then *FWD* and there will be two beeps in the earpiece to indicate the forwarding is released.

#### 4.6.8 Callback

This feature can be used to get a callback for a busy extension or a callback when the COM line is available.

##### 4.6.8.1 Extension Callback

When you are calling an extension on the COM line and you get a busy signal, you can use the *CALLBACK* feature to connect you to that extension when it is free. At the busy signal, press *\*FUNCTION* followed by *CALLBK* and *OFF* to hang up. When the extension is free, your phone will ring, and after you answer, the other extension will ring. When *CALLBACK* is enabled, there will be one beep in the earpiece and the COM light on the Adapter Box will blink quickly. The *CALLBACK* will be cancelled when the call is completed or by pressing *PHONE* to go off hook, followed by *\*FUNCTION* then *CALLBK* (there will be two

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 35 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

beeps in the earpiece and the COM light on the Adapter Box will stop blinking ) and *OFF* to hang up. The *CALLBACK* is also cancelled when the COM line is selected.

#### **4.6.8.2 Com Callback**

When the COM line is busy and you want to use it as soon as available, you can use the *CALLBACK* feature. Press *PHONE* to go off hook, then *\*FUNCTION* followed by *CALLBK* and *OFF* to hang up. There will be one beep in the earpiece and the COM light on the Adapter Box will blink quickly when *CALLBACK* is enabled. When the COM line is available, the phone will ring and there will be a COM dial tone when you answer, ready for you to dial your extension. The *CALLBACK* will be cancelled when the phone rings back or by pressing *PHONE* to go off hook, followed by *\*FUNCTION* then *CALLBK* (there will be two beeps in the earpiece and the COM light on the Adapter Box will stop blinking) and *OFF* to hang up.

#### **4.6.9 Do Not Disturb (DND)**

If you wish to turn the ringer off so you will not be disturbed, use the DND feature. To use this feature, go off hook by pressing *PHONE*, then press *\*FUNCTION* followed by *DND*. There will be one beep in the earpiece to indicate the feature is active. To disable the feature, go off hook by pressing *PHONE*, then *\*FUNCTION* followed by another *\*FUNCTION* then *DND*. There will be two beeps in the earpiece to verify the function has been released. When your phone is in the DND mode and you get an outside call, all other phones in the system will ring immediately.

#### **4.6.10 Redial**

To redial the last number dialed, press *PHONE* to go off hook, then *REDIAL*.

#### **4.6.11 Memory Features**

There are 3 levels of automatic dialing memories available; ten 2 touch , thirty 4 touch, and forty system-wide memories. The 2 touch and 4 touch memory operations are described below. The system-wide memory operations are described in the Adapter Box manual.

##### **4.6.11.1 Two Touch Memory Dialing**

To dial a stored memory, press *PHONE* to go off hook, then *MEM* followed by the memory location key (0-9).

##### **4.6.11.2 Two Touch Memory Programming**

With the handset off, press *PROG*, then the number of the memory location (0-9), followed by the number sequence to store and terminated by pressing *MEM*. A 2 second pause can be added by holding down the number key before the pause until it beeps twice. For longer pauses continue to hold the key down and an additional 2 seconds is added for each beep. The *REDIAL* can be used to insert the number sequence.

##### **4.6.11.3 Four Touch Memory Dialing**

To dial a stored memory, press *PHONE* to go off hook, then *#FUNCTION* followed by *DIAL* and the 2 digit memory location (00-29).

##### **4.6.11.4 Four Touch Memory Programming**

Press *PHONE* to go off hook, then *#FUNCTION* followed by *STORE* and the 2 digit memory location (00-29) then the number to be stored (*up to 16 numbers and pauses*), then *OFF*. A 4 second pause can be added by pressing *PHONE* while entering the number sequence. The *REDIAL* can be used to enter the number sequence.

#### **4.6.12 Voice Mail Features**

The Voice Mail (VMS) features are best used with the Teligent 2-port VMS system and the operation is described below. The features can also be used with other answering devices but is not described in this document.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 36 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

#### 4.6.12.1 VMS Enable

To enable the VMS feature, press *PHONE* to go off hook, then *#FUNCTION* followed by *VMS EN*. If there is one beep in the earpiece, the VMS is enabled, if two beeps, the VMS has been disabled. The system default is disabled.

#### 4.6.12.2 Retrieving VMS Messages

Press *PHONE* to go off hook, then *#FUNCTION* followed by *COM* to go to COM line, then *#FUNCTION* followed by *VMS 8XX* or *VMS 9XX*. Then just follow the instructions from the VMS system.

#### 4.6.12.3 Transferring A Call To A Voice Mail Box

If you are connected to an outside party and they wish to leave a message on another persons voice mailbox, use the following procedure. Press *PHONE* once to go on private hold, then press *#FUNCTION* followed by *VMS XFR* and the party's extension (*800-813,900-913*) and *OFF* to hang up.

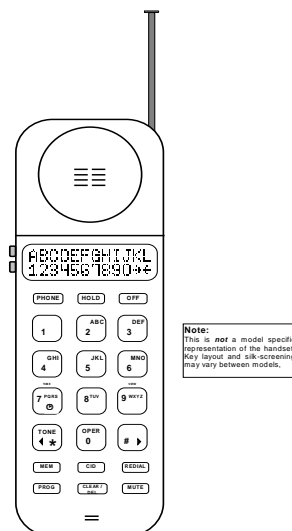
#### 4.6.13 Call Waiting

If you hear 2 beeps (8XX) or 3 beeps (9XX) in the earpiece while you are talking on the phone, it means another call has come in from outside for your phone. If you ignore it, the call will be transferred to voice mail if voice mail is enabled or will go to all ring if the voice mail is not enabled. If you wish to put the present call on hold and answer the incoming call, do the following. Press *HOLD* to put the present call on hold, then *OFF* to hang up. The phone will ring, then press *PHONE* to go off hook and you will be on line with the new call. After finishing with the new call, press *OFF* to hang up, then *PHONE* to reconnect to the original call you put on hold. If you are talking on the COM line when you hear the call waiting beeps, you must hang up on the present call if you want to take the new call because there is no hold for the COM line. In this case, just press *OFF* and the phone will ring.

#### 4.6.14 Ring Page

To internally ring all non-busy phones, go off hook by pressing *PHONE*, then *#FUNCTION* followed by *COM*. When the dial tone is heard, press *\*FUNCTION* followed by *R. PAGE*.

### 4.7 Functional Layout For Handset



### 4.8 Handset Function Key Description

#### 4.8.1 Phone Key

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 37 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

Press this key to select a LINE. If the handset has already accessed a line, pressing the PHONE key will flash the outside line. When a line is accessed without anything entered on the LCD, the LCD will display "PHONE ON" to show that the handset is active and off hook. As soon as a key is pressed, the message is replaced with a cursor on the top left of the LCD. See section 21.2.4.

Pressing the PHONE key will cause the unit to immediately access a line from any state or mode the phone is in except hold. Only pressing the HOLD key will cancel a hold condition and return the phone to an active line status.

If the unit is placed in MEM or CID mode when a line is active, subsequently pressing the PHONE key will cause the unit to exit the mode and dials the contents of the memory location under examination. A line flash is not generated. If the MEM or CID key is pressed a second time, then the units also exits the corresponding mode and dials the appropriate digits. See sections 20.8.5 and 20.8.7 for more information.

In a microphone mute condition, pressing PHONE will flash the line without canceling mute. This may or may not result in a dropped call depending on the local CO.

#### **4.8.2 Hold Key**

This key has two functions. Pressing this key when the handset is off hook it will place the call on Private Hold. Pressing HOLD a second time will place the call on Global Hold. Pressing OFF or PHONE will not cancel hold or end the call.

When the handset is *not* in PROGRAM, MEMORY or Caller ID mode and no line is active, pressing this key will display a pause digit on the LCD. This digit is used to add a 2 seconds pause into the dialing sequence when a phone number is dialed out.

When a 2 second pause is entered into a predial or memory dialing sequence, the character "P" is displayed on the LCD. Note that when a line is active and on HOLD, a pause cannot be entered on the display since the HOLD key by definition must function to cancel the hold condition while in this mode.

Any digits which are entered onto the LCD during a hold condition *and left on the display* when the hold condition is canceled, will be dialed out onto the active line. Digits entered onto the display that are properly dealt with (i.e. digits entered on the LCD for the purpose memory programming will be automatically cleared off the display upon successful completion of the programming sequence) are not dialed since the LCD was cleared prior to the hold condition being canceled.

#### **4.8.3 Off Key**

Press this key to exit all modes except HOLD. The OFF key will cause the unit to exit only the mode that the phone is in at the time. For example, if a line was accessed followed by live dialing and then the CID key was pressed, pressing the OFF key will cause the unit to exit CID mode without disconnecting the line. Pressing the OFF key a second time will then disconnect the line.

Note that if the OFF key is used to exit MEM or CID modes, the contents of the speed dial memory or CID memory under examination is not dialed (or appended onto the display in the case of predialing). However, if these modes are exited by pressing the corresponding key a second time, the memory contents under examination is dialed (or appended on the display for predialing). In this way the OFF key acts to exit MEM or CID modes without any subsequent action.

Pressing the OFF key during programming will cause the unit to exit program mode, generate a sad tone and display "PROGRAMMING INCOMPLETE". Pressing OFF during predial will clear the display. Pressing OFF during incoming ringing has no effect.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 38 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

#### 4.8.4 Prog Key

Beginning from handset idle mode, press this key to enter PROGRAM mode.

#### 4.8.5 Caller ID Key

Pressing this key will put the unit into Caller ID mode. While in Caller ID mode, Caller ID memory contents can be reviewed and messages (individually or all together) can be deleted.

Pressing the CID key a second time will cause the unit to exit CID mode and append onto the display the contents of the memory location under examination (last 7 digits only). In the case of live dialing, the digits will be immediately dialed out.

While in Caller ID mode, pressing PHONE will cause the unit to exit Caller ID mode and dial the last 7 digits of the memory location under examination. If any digits have been predialed, subsequently entering Caller ID mode and then exiting by pressing the PHONE key will result in both the predialed digits and the last 7 digits of the memory location under examination being dialed. Pressing the OFF key in this case will cause the unit to exit Caller ID mode without appending the contents of the Caller ID memory on the display, but will leave the predialed digits on the LCD. Pressing the OFF key a second time will completely clear the LCD or the LCD will automatically be cleared after 30 seconds of inactivity.

#### 4.8.6 Mute Key

Press this key to mute the handset microphone during a conversation. The receive path is still active, however, nothing will be heard by the other party. In this condition, the LCD will show "MICROPHONE MUTED". Press MUTE a second time to cancel the mute condition. Pressing PHONE during a mute condition will flash the line and leave the microphone muted. Pressing OFF during a mute condition will cancel mute and disconnect the call.

Pressing MUTE during incoming ringing will disable the ringer for the duration of the call. In this condition, the backlighting will still function as normal and the display will show "RINGER MUTED", but no ringing will be heard. The "RINGER MUTED" message will not supersede any CID messages. This means that if CID information is being displayed, the "RINGER MUTED" message will not be seen until after the 10 second time-out for the CID message has expired.

In predial mode (including line on hold condition), pressing the MUTE key will add a hook-switch flash into the speed-dial sequence. During predialing this will be represented on the display by the alpha character "F".

In pulse dialing mode, programming a flash into a redial sequence following a temporary tone command will not cancel the temporary tone function. When the temporary tone function has been activated, it will remain active until the OFF key is pressed. Flashing the line by pressing the PHONE key will not cancel the temporary tone function.

The MUTE key is inactive when the phone is on hold.

#### 4.8.7 Mem Key

Press this key to enter MEMORY dialing mode. Pressing the MEM key a second time will cause the unit to exit MEM mode and append onto the display the contents of the memory location under examination. In the case of live dialing, the digits will be immediately dialed out.

While in Mem mode, pressing PHONE will cause the unit to exit Mem mode and dial the contents of the memory location under examination. If any digits have been predialed, subsequently entering Mem mode and then exiting by pressing the PHONE key will result in both the predialed digits and the contents of the memory location under examination being dialed. Pressing the OFF key in this case will cause the unit to exit Mem mode without appending the contents of the Mem memory on the display, but will leave the

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 39 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

predialed digits on the LCD. Pressing the OFF key a second time will completely clear the LCD or the LCD will automatically be cleared after 30 seconds of inactivity.

#### 4.8.8 Clear/Del Key

This key has two functions. In idle mode, press this key for less than 1 second to clear off the last digit entered on the display. Press and hold this key down for more than 1 second to completely clear off the digit section of the LCD display. This key function can be used to clear off the LCD when the handset is idle or can also be used to erase speed dial memory locations, see section 24.1.2. In Caller ID mode, press this key for less than 1 second to delete the call currently being reviewed. Press and hold this key down for more than 1 second to completely delete the contents of all Caller ID memory. See section 25.2.

#### 4.8.9 Redial Key

Press this key to display the last number dialed. If a line is already active, pressing REDIAL will dial out the number in the redial buffer. The redial buffer size is 20 digits.

The redial buffer is filled up with digits dialed from any source including manual dialing, Mem dialing, Caller ID mem dialing or redial between the time the PHONE key is pressed and the OFF key is pressed. The redial buffer will only retain the digits that are actually dialed out onto the line; i.e. If a Mem dialing sequence is recalled and the dialing string is interrupted with the OFF key, only those digits actually dialed out onto the line will be retained in the redial buffer. Flashes are not stored in the redial buffer. Flashes are not considered a dialed digit. Only the first 20 digits entered are stored.

Redial sequences can preface or be appended to digits subsequently dialed by any means (i.e. manually, CID or Mem dialing). This is valid for both live dialing (line access prior to dialing), or predialing. During predialing, speed dial memory locations are recalled by pressing MEM, followed by the 2-digit location number and then MEM again to exit Mem mode and show the numeric contents only.

For example if digits 2223333 are manually dialed followed by MEM01 & MEM which then dials 9 P 9, followed by an entry and exit from CID mode which dials out 4445555, the contents of the redial buffer is now as follows:

2 2 2 3 3 3 3 9 P 9 4 4 4 5 5 5 5

If 6667777 is now predialed followed by the redial key, the following 20 digits will be displayed:

6 6 6 7 7 7 7 2 2 2 3 3 3 3 9 P 9 4 4 4

Only 20 digits can be predialed. Additional digits are not stored. The same would be true if the PHONE key was pressed first. Redial digits are stored in non-volatile memory (EEPROM).

#### 4.8.10 Volume ▲ Key

Press and hold this key increments the handset receiver volume at a rate of one level per half second. There are total of 4 volume level settings and the volume keys are active at all times. Pressing the volume up key during ringing will cause the backlighting to activate, but will not answer the call. Releasing the volume key within 1/2 second will not affect the volume setting. The volume will change only if the key is held down for more than 1 second.

Pressing a volume key will not generate a key beep. Pressing any other key while the volume level is being displayed will remove the volume level display and take action for that key.

#### 4.8.11 Volume ▼ Key

Press and hold these key decrements the handset receiver volume at a rate of one level per half second. There are total of 4 volume level settings and the volume keys are active at all times. Pressing the volume down key during ringing will cause the backlighting to activate, but will not answer the call. Releasing the

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 40 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

volume key within 1/2 second will not affect the volume setting. The volume will change only if the key is held down for more than 1 second.

Pressing a volume key will not generate a key beep. Pressing any other key while the volume level is being displayed will remove the volume level display and take action for that key.

## 4.9 Special Handset Function Keys

### 4.9.1 Tone / ◀ / \* Key

This key is used to scroll to the next lowest speed-dial memory location or Caller ID memory location depending on which mode the phone is in. Pressing and holding the key will cause the display to auto-scroll at a rate of twice per second.

In PULSE dialing mode, this key is used to switch to DTMF TONE dialing mode. In memory dialing mode, use this key to scroll to the next lowest speed-dial memory location.

When the temporary tone function has been activated, it will remain active until the OFF or HOLD key is pressed. Flashing the line by pressing the PHONE key will not cancel the temporary tone function. Pressing OFF and subsequently pressing the PHONE key will return the unit to pulse dialing operation.

### 4.9.2 # / ▶ Key

This key is used to scroll to the next highest speed-dial memory location or Caller ID memory location depending on which mode the phone is in. Pressing and holding the key will cause the display to auto-scroll at a rate of twice per second.

### 4.9.3 7 / ⌚ (Time) Key

While in CID mode, pressing this key will display the time/date stamp information for that call for the duration that the key is held down. See section 17 for details.

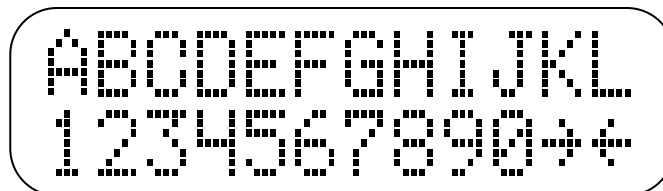
### 4.9.4 9 / 👁 (View) Key

The view key can be used in Caller ID mode to show the entire name field when the number of name characters exceeds 12. See section 25.1.

The view key can also be used in MEM mode to show the entire programmed phone number (up to 20 digits maximum) when the number of digits exceeds 11. See section 25.1

## 5. LCD Display

The LCD will be a 2 row by 12 character alpha-numeric type display. The display will show the name on the top row and the number on the bottom row. The basic LCD will look like:



For the sake of simplicity, these characters will be represented as follows in this document:

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 41 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921



Note: All LCD message are left justified to provide a consistency in message presentation for the user.

### 5.1 LCD Display Characters

Anything displayed on the LCD will be cleared off after 30 seconds of inactivity with the exception of the operation defined in section 25.1

Alpha characters shown on the display will be upper or lower case. The following symbols corresponding to a portion of those available in the standard ASCII character set can also be displayed. The characters and symbols that can be displayed are as follows:

Alpha Characters	Alpha Characters (cont'd)	Alpha Characters (cont'd)	Alpha Characters (cont'd)	Numeric characters	Symbols	Symbols (cont'd)
A	N	A	n	1		'
B	O	B	o	2	←	"
C	P	C	p	3	(	-
D	Q	D	q	4	)	.
E	R	E	r	5	*	,
F	S	F	s	6	&	;
G	T	G	t	7	/	:
H	U	H	u	8	%	=
I	V	I	v	9	\$	<
J	W	J	w	0	#	>
K	X	K	x		@	+
L	Y	L	y		!	
M	Z	M	z		?	

### 5.2 General (Non Mode Specific) LCD Messages

#### 5.2.1 Low Battery Warning

When the handset battery voltage drops below between 3.3[TBD] and 3.5[TBD] volts, the unit will show "LOW BATTERY" on the top line of the display.



A warning tone is emitted from the handset when the phone is first activated during a low battery condition. If the handset is being used for CID memory reviewing, Mem programming or Mem dialing, the

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 42 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

low battery warning tone and message is suppressed until the LCD is clear of other messages. 5 seconds after the LCD is cleared, the warning tone will be generated and the low battery warning is displayed on the LCD.

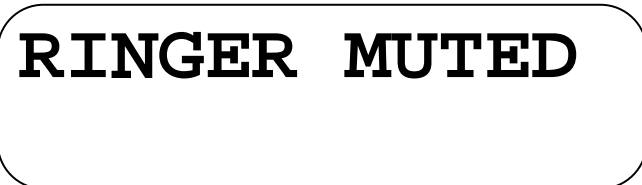
**5.2.2 Mute Modes**

When the handset microphone is muted, the display will show "MICROPHONE MUTED" until the mute condition is canceled by pressing the MUTE key again.



Pressing keys on the numeric keypad while the "MICROPHONE MUTED" message is being displayed will remove the message from the display and take action for that key. The "MICROPHONE MUTED" message is returned to the display after 5 seconds of keypad inactivity.

Pressing MUTE during incoming ringing will disable the ringer for the duration of the call. In this condition, the backlighting will still function as normal and the display will show "RINGER MUTED", but no ringing will be heard. The "RINGER MUTED" message will not supersede any CID messages. This means that if CID information is being displayed, the "RINGER MUTED" message will not be seen until after the 10 second time-out for the CID message has expired.

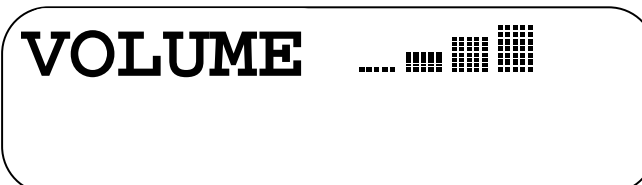


Also, the ringer mute function is only active when the handset is in idle mode and the dial buffer is empty. If the unit is in CID, MEM or PRG mode or there are predialed digits on the LCD, pressing the MUTE key will not mute the ringer. See section 25.1 for more information on the mute conditions.

**5.2.3 Volume Setting**

While the phone is in use or in standby mode, there is no indication of the current volume setting. When either the volume up or volume down is pressed, the top line of the display will immediately show "VOLUME" followed by a bar graph where each illuminated segment of the bar graph represents 1 volume setting with 1 being the quietest and 4 being the loudest.

Pressing and releasing the volume key within 1/2 second *will not* cause the volume to change. If the volume key is held down for more than 1 second, the volume will begin to automatically increment or decrement (depending on the key) the volume at a rate of twice per second. The volume indication will remain on the display for 5 seconds after the key is released.



<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

After pressing and releasing the volume key, providing the volume display is still active on the LCD, any subsequent press (and release within 1/2 second) of the volume up or volume down key will cause the volume to increment or decrement accordingly by one step.

Each subsequent key press will restart the 5 second display timer and will cause another single step change in the volume.

#### **5.2.4 Phone Off-Hook Indicator**

If the phone has gone off-hook without any digits on the LCD, the message "PHONE ON" will be displayed:



## **6. Special Features**

### **6.1 Battery**

The handset battery is in the form of an easily changeable pack. The user should be able to easily change one battery pack for another. Once the user has removed and replaced the handset battery pack, the handset will reload its security code from its E<sup>2</sup>PROM and will then enter idle mode or resume a call in progress.

### **6.2 In The Dark (Easy-Answer)**

There are two components to in the dark answering. The first is easy-answer and the second is automatic keypad and LCD illumination.

#### **6.2.1 Easy-Answer**

If a call comes in when the handset is out of the cradle and in standby mode, provided no digits have been manually entered on the LCD, then pressing any key except MUTE, VOLUME (up or dwn) or OFF will answer the call.

Pressing MUTE will disable the ringer for the duration of that call only; ringer is re-enabled for the next call. In the dark answering is active only in standby mode. Pressing either of the volumes keys will activate the backlighting without answering the call. So long as the volume key is not held down for more than 1/2 second, the volume setting itself is unaffected. The OFF key is ignored.

This feature is *not* active in PRG mode, when a call is on hold, during dialing (i.e. redial sequence) or if there are digits entered on the LCD.

#### **6.2.2 Automatic Keypad And LCD Illumination**

The keypad and backlit LCD will *always* illuminate together. Illumination will occur if any key is pressed on the handset whether the handset is in use or in standby mode. After a key is pressed, the illumination will remain on for 5 seconds and will then automatically turn off. Pressing any key during or after the 5 second interval will restart the 5 second timer.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 44 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

Illumination will also occur during handset ringing both for incoming ringing and for paging. In the case of handset ringing, *illumination will commence at the beginning of the first ring signal* and will remain on continuously until 5 seconds after the handset receives the CID information from the base. After the initial interval, the backlighting will follow the cadence of the ringing signal (i.e. ring on = illumination; ring off = no illumination). After termination of ringing, if the call was not answered, the illumination will be off and will remain off until a key is pressed or another call is received. If the call was answered, the illumination will remain on for 5 seconds (5 second timer restarted as a result of pressing the PHONE key) and then turn off automatically provided no other keys are pressed.

### 6.3 Channel Searching (Out-Of-Range)

With the handset active, when the RF link broken between the handset and base, the handset alerter will emit a beep signaling a "CHANNEL SEARCHING..." condition as the handset begins scanning for the base.

**CHANNEL  
SEARCHING...**

The "CHANNEL SEARCHING..." indication will remain on the LCD as the handset tries to reestablish communication with the base. If this is not done with 30 seconds, the unit will display "CALL DROPPED" for 3 seconds and will then enter standby mode. At intervals of 10 seconds, the handset will wake up, beep and display "CHANNEL SEARCHING..." again as it scans all 10 channels (channels 0 through 9) before blanking the display and reentering standby mode.

Note: Once entering standby mode while in an out-of-range condition, the handset will emit out-of-range tones at 10 second intervals until the battery dies or the handset is able to reestablish communication with the base. In this condition, the battery life will be greatly diminished.

If the PHONE key is pressed while the unit is in an out-of-range condition and in standby mode, a key beep will be generated and after two seconds the out-of-range warning beep is generated and the "CHANNEL SEARCHING..." message then appears on the display for 30 seconds. After 30 seconds the unit will display "CALL DROPPED" for 3 seconds and enter standby mode.

If the unit is within range of the base, the handset will automatically reestablish the link within 15 seconds. The unit will then display:

**FOUND  
CHANNEL X**

for 3 seconds and then blank the display and enter into standby mode.

### 6.4 Fast Charge For Handset Battery

There is circuitry in the base which will enable a .2C charge rate through MCU control when the battery voltage is below a certain voltage threshold. The .2C charge rate is reduced back to .1C when the battery voltage reaches a predetermined voltage threshold or a time-out period of 8 hours has expired.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 45 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

The purpose of the variable charge rate is to provide a better handset charging time without forcing the battery to absorb a higher continuous trickle charge current. This will enable us to provide a full battery charge in 8 hours while also providing for optimum battery longevity.

## 6.5 Auto Hang-Up

When a call has been completed, the line can be disconnected in one of two ways. Either the OFF key can be pressed or the handset can simply be returned to the base cradle. Upon returning the handset to the cradle, the call will be automatically disconnected. The call is also disconnected when the handset is cradled with a call on hold.

## 6.6 Line (Extension) In Use Indication

When another extension is off hook on the same phone line, when the unit is in standby mode only, it will detect this condition and inform the user.

## 7. Dialing

There are two basic ways that a number can be dialed out

### 7.1 Accessing The Line Prior To Dialing

In this mode, the PHONE key is pressed with nothing displayed on the LCD. After the PHONE key is pressed, the LCD will display a cursor on the top line one position to the right of the left most side of the LCD to signify that a line has been accessed. Numbers can now be dialed out from any of the following methods:

#### 7.1.1 Digit Keys

Enter digits 0-9, \* or # from the keypad. The corresponding DTMF tone (for tone dialing) or pulse sequence (for pulse dialing) will be dialed out immediately following the key press. For both tone and pulse dialing, digits will be buffered up to a maximum of 20 digits so that you can enter digits faster than the phone is dialing. For each digit entered there shall be an accompanying key beep. Digits are sequentially dialed out. Refer to section 20.9.1 for explanation of the temporary tone function of the \*/tone key.

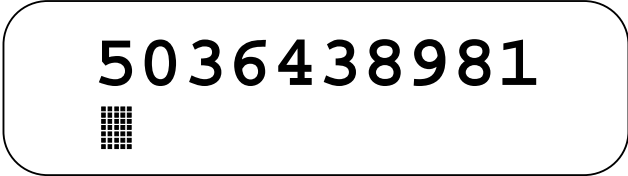
In the case of tone dialing the feedback DTMF in the ear piece shall be attenuated by {TBD}.

Note: Tone Dialing differs from pulse dialing in that if the buffered dialing has caught up to the current digit key being held down, the DTMF generation will be on for the duration of the digit key being pressed. The DTMF tone shall also terminate upon the release of the key. This behavior applies only when there are no buffered digits to be dialed (buffer empty) and that the current dialed digit is the one that is being held down by a key press. In the case of Pulse dialing no special action or logic is applied by the system if a key is held down.

For all dialing situations, the # key is ignored in pulse dialing mode unless it is preceded by the \* key to indicate the temporary tone function. A cursor will follow each digit entered to indicate where the next digit will appear.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 46 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921



If more than 10 digits are entered, the 11th digit will appear at the beginning of the second line and digits are entered up to a maximum of 20. When the 21st digit is entered, all digits shift left one position. Only the last 20 digits are displayed.

**7.1.2 Memory Location Dialing**

Press MEM to enter memory dialing mode.

When the phone is placed into memory dialing mode, the display will show "SPEED DIAL LOCATION" followed by two underscores and a cursor to prompt the user to enter a 2-digit memory location number between 01 and 20. The cursor will shift right one space as the first digit is entered (which must be a 0,1 or 2 otherwise a sad tone is generated), to prompt the user to enter the second digit.



For memory location entry:

- first digit: 0, 1 or 2 OK, all other digits will cause sad tone
- second digit: 0-9 OK, provided the number is within the range of 01 to 20.  
Invalid keys will cause a sad tone.

If the location entered has not been previously programmed, the handset will exit MEM mode. The line is still accessed. If the unit is in MEM mode and no key is pressed for 30 seconds, the unit will automatically exit MEM mode. The line is still accessed.

**7.1.3 Caller ID Memory Dialing**

Press CID to enter Caller ID mode.

When the phone is placed into Caller ID, the display will show the name corresponding to the most recent call received. See section 25.1. The scroll keys can be used to view other Caller ID memory locations. The VIEW (9) key can be used to view the phone number. When the right memory location is on the display, pressing PHONE or CID will cause the unit to exit Caller ID mode and dial the last 7 digits of the Caller ID memory location under examination. To exit without dialing, press OFF.

If the unit is in Caller ID mode and no key is pressed for 30 seconds, the unit will automatically exit Caller ID mode. The line is still accessed.

**7.1.4 Redial**

Press the REDIAL key to immediately display and dial out whatever the last digit sequence most recently dialed. The redial buffer size is 20 digits, so only the first 20 digits entered into the redial buffer will be redialed.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 47 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 7.2 Number Entry Before Line Access

In this mode, the number is entered on the LCD display before a PHONE key is pressed. This is also called predialing. When the PHONE key is pressed, there is a 2 second delay before the digits displayed on the LCD are dialed. The delay is to allow time for the CO to return a dial tone before dialing commences.

Any digits left on the display will be automatically cleared off after 30 seconds of inactivity.

Numbers can be dialed out from any of the following methods:

### 7.2.1 Digit keys

Enter digits 0-9, \* or # from the keypad. Each digit (up to a maximum of 20) will be displayed on the LCD. Pressing HOLD will display a "P" on the LCD and will provide a 2 second pause at the point in the sequence in which it was entered.

When the PHONE key is pressed, the corresponding DTMF tone (for tone dialing) or pulse sequence (for pulse dialing) will be dialed out immediately following a 2 second pause (to ensure dial tone acquisition).

The LCD display indication is the same as described in section 23.1.1. In the case where more than 10 digits are entered, the top line will "wrap around" starting with the 11th digit and continue until the second line is full (up to a maximum of 20 digits). In the case of predialing, the display is treated as 2 x 10 display with a maximum of 20 digits so that the length of a predial sequence cannot exceed the size of the redial buffer (as the same buffer is used for both functions).

### 7.2.2 Memory Location Dialing

Press MEM to enter memory dialing mode.

Enter a 2-digit memory location (01-20) to specify the number to be dialed. The memory location and the corresponding phone number are displayed on the LCD. The scroll keys can also be used to scroll up or down through the speed dial memory locations.

For memory location entry:

first digit: 0, 1 or 2 OK, all other digits will cause sad tone.  
 second digit: 0-9 OK, provided the number is within the range of 01 to 20.  
 \* and # keys function as scroll keys. Invalid keys will cause a sad tone.

When the phone is placed into memory dialing mode, the display will show "SPEED DIAL LOCATION" followed by two underscores and a cursor to prompt the user to enter a 2-digit memory location number between 01 and 20. The cursor will shift right one space as the first digit is entered (which must be a 0, 1 or 2 otherwise a sad tone is generated), to prompt the user to enter the second digit.



The display will then show:

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 48 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

**LOCATION 13**  
**5036438981**

If more than 10 digits are stored, the first 10 digits will be displayed followed by an arrow to indicate that there are more digits not currently on the display.

**LOCATION 14**  
**1P50364389→**

In this case pressing the View key can be used to scroll forward and view the entire number. The first part of the number is shifted to the top row of the display, and the remaining digits are displayed on the bottom row.

Press the PHONE key, the display will now show only the phone number and the phone number will be dialed out after a 2 second delay.

If any digits have been predialed, subsequently entering MEM mode and then exiting by pressing the PHONE key will result in both the predialed digits and the contents of the speed dial memory location under examination being dialed. Pressing the OFF key in this case will cause the unit to exit MEM mode without appending the contents of the speed dial memory on the display, but will leave the predialed digits on the LCD. Pressing the OFF key a second time will completely clear the LCD or the LCD will automatically be cleared after 30 seconds of inactivity.

If the unit is in MEM mode and no key is pressed for 30 seconds, the unit will automatically exit MEM mode and return the handset to idle mode.

**7.2.3 Caller ID Memory Dialing**

Press CID to enter Caller ID mode.

When the phone is placed into Caller ID mode, the display will show the name corresponding to the most recent call received. See section 25.1. The scroll keys can be used to view other Caller ID memory locations. The VIEW (9) key can be used to view the phone number. When the right memory location is on the display, pressing PHONE will cause the unit to exit Caller ID mode and dial the last 7 digits of the Caller ID memory location under examination after a 2 second delay. To exit without dialing, press OFF.

If any digits have been predialed, subsequently entering Caller ID mode and then exiting by pressing the PHONE key will result in both the predialed digits and the last 7 digits of the memory location under examination being dialed. Pressing the OFF key in this case will cause the unit to exit Caller ID mode without appending the contents of the Caller ID memory on the display, but will leave the predialed digits on the LCD. Pressing the OFF key a second time will completely clear the LCD or the LCD will automatically be cleared after 30 seconds of inactivity.

If the unit is in Caller ID mode and no key is pressed for 30 seconds, the unit will automatically exit Caller ID mode. The line is still accessed.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 49 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

#### 7.2.4 Redial

Press the REDIAL key to immediately display whatever the last digit sequence that was most recently dialed. Up to the first 20 digits *dialed* are stored into the redial buffer. Press the PHONE key and the number will be immediately dialed out following a 2 second pause for dial tone acquisition.

## 8. Programming

### 8.1 Programming Speed Dial Number

This section describes how a phone number can be programmed into a speed dial memory location. There are a total of 20 speed dial memory available. Each speed dial memory is referred as a memory location starting from 01-20. Each location can hold a 20-digit phone number. Each phone number programmed can be referenced / recalled by its memory location.

To program a phone number:

1. The handset must be in idle mode.
2. Enter the number so that it is displayed on the LCD by manually entering, using REDIAL, or MEM. (Example: 5551234) If there are more than 10 digits, the 11th through 20th digit will be displayed on the second line of the display.

To insert a pause in a phone number, press HOLD at the appropriate point when entering the phone number. This inserts a 2 seconds pause. For longer pauses, press HOLD two or more times. Each press makes the pause 2 seconds longer. A "P" will be displayed for each time a pause is inserted.

3. Press PROG. The display will change to "PROGRAM LOCATION" .

**PROGRAM  
LOCATION \_ \_**

4. Enter the memory location (01..20) i.e. 18. The unit will emit a HAPPY tone and clear the LCD display.

#### 8.1.1 Unsuccessful Programming

If an invalid numeric digit key is pressed for the memory location entry, a sad tone is generated, the display is unchanged and the unit remains in program mode awaiting a valid digit entry.

Pressing OFF or PROG will cause the unit to generate a sad tone and exit program mode. The following message is displayed for 3 seconds and then replaced with the digits originally entered on the display prior to entering program mode:

**PROGRAMMING  
INCOMPLETE**

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

If the PHONE key is pressed while in program mode, the unit will generate a sad tone, exit program mode, display "PROGRAMMING INCOMPLETE" and then access a line. The message will remain on the display for 3 seconds or until a digit key is pressed for live dialing.

All other function keys are inactive. Pressing an inactive function key will not give a key beep.

**8.1.2 Special Conditions**

1. To insert a pause in a phone number, press HOLD at the appropriate point when entering the phone number. This inserts a 2 second pause. For longer pauses, press HOLD two or more times. Each press makes the pause 2 seconds longer. A "P" will be displayed for each time a pause is inserted.
2. To change or replace a stored number, simply store a new number in its place.
3. Beginning from a handset idle state, you can clear a number from memory by:

Method 1

- a) Start with a clear display or press CLEAR/DEL until the display is cleared.
- b) Press PROG to enter PROGRAM mode.
- c) Enter the memory location (01..20).

OR

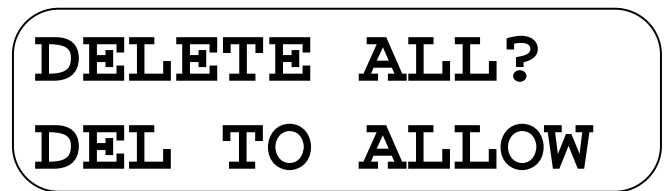
Method 2

- a) Enter into MEM mode from handset idle mode.
- b) Enter the memory location to be cleared. Scrolling function keys can be used at this step.
- c) Press CLEAR/DEL for less than 1 second. The LCD will then display the following:



- d) The handset is still in MEM mode and the user can now exit by pressing OFF or select another memory location by entering another memory location number or by using the scroll keys. Repeat step (c) to clear out subsequent memory locations. All memories can be cleared in this way.

Alternatively, press and hold the CLEAR/DEL key for more than 1 second to delete the entire contents of speed dial memory. The display will show the following for a final confirmation before the entire speed dial memory is erased:



Pressing any key other than CLEAR/DEL will cancel the operation. Pressing CLEAR will confirm the operation and the display will then show:

TITLE	VT3921 Internal Product Specification
MODEL	VT3921


**DELETING ALL LOCATIONS**

The unit remains in MEM mode.

- 4. After 30 seconds in MEM mode with no keys pressed, the unit will automatically exit MEM mode. This feature is also active when a line is accessed.
- 5. If more than 10 digits are programmed (maximum of 20 is allowed), then while reviewing the speed dial memory contents only the first 10 digits will be displayed on the second line of the display.

**8.1.3 Programming Ringer Types**

The handset ringer type may be programmed by the following sequence:

- 1. Enter PROGRAM mode by pressing PROG.
- 2. Press  key to select ringer program mode. The LCD will display "RINGER X SELECTED" where X is the current ringer selection between 1 and 5.

**RINGER 1  
SELECTED**

- 3. Press:
  - 1 to select ringer type 1
  - 2 to select ringer type 2
  - 3 to select ringer type 3
  - 4 to select ringer type 4
  - 0 to select ringer OFF


The LCD will display the new ringer type selected and will also generate one ring corresponding to the ring selected. Selecting ringer 0 will mute the ringer; the display will show "RINGER OFF". Press # to hear the ringer currently selected.

Pressing an invalid digit key (5,6,7,8,9 and \*) will result in an error tone with no subsequent action.

Press PRG or OFF to exit the PRG mode. Press the PHONE to exit and access the line. All other function keys are ignored.

**9. Caller ID Display**

**9.1 Caller ID Memory Viewing**

The CALLER ID mode can be activated any time except during dialing and PROG mode. To enter this mode, press  momentarily. The unit will go into caller ID mode and will show the name for the most recent call, call # 1.


Reference:	Revision: 1.0	Page: 52 of 98
------------	---------------	----------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

When a call is being received, the display will appear as shown below:



The display will display as much of the company name as it can on the first line. The second line will display as much of the phone number as it can.

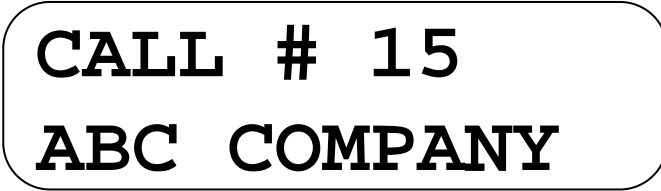
To view the phone number and time/date stamp information, press and hold the  key. The information will be displayed as followed for as long as the key is pressed.




If the first digit is a 1, then there is no hyphen between the area code and the main 7-digit number. A hyphen is only inserted when the entire number field is 10 digits in length and the first digit is not a 1. The top line of the display will show a maximum of 11 digits. If more than 11 digits are sent, only the last 11 digits are displayed.

The bottom line of the display will show the time followed by either “a” or “p” to indicate AM or PM, then followed by a 3 letter abbreviation for the month (in capital letters) and a 2 digit date. In the case where the time can be represented as a 3 digit number (all cases except 10:XX, 11:XX and 12:XX), only 3 digits are shown as in the example above.

When the contents of Caller ID memory is being manually reviewed, the name display is slightly different. The top line of the display is used to indicate the memory location number and the bottom line of the display shows the name.



Up to 12 name characters can be displayed. If the name field exceeds 12 characters in length, the 12th character will be replaced with an  to indicate that there are additional name characters not seen on the display.

To view the additional name field characters, press and hold the View key. This will overwrite the CID memory location number as well as the second line of the display to show up to a maximum of 15 name characters for the duration of the key press. The first 12 characters will be on the top line with up to 3 additional characters on the second line. Once the view key is released, the display returns back to normal.


<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 53 of 98</b>
-------------------	----------------------	-----------------------


TITLE	VT3921 Internal Product Specification
MODEL	VT3921

**ABC COMPANY  
LTD**

If no name information is sent in the CID packet, the name field is replaced with the number. All other key functions and operations remain the same. See below:


**CALL # 15  
503-6438981**

Pressing  goes to the previous stored number using the following sequence: 01→02→03→04 ... 48→49→50. Pressing and holding the key will cause the numbers to scroll continuously at a rate of twice per second until the key is released.

Pressing  goes to the next number stored using the following sequence: 01→50→49→48→47 ... 02→01. Pressing and holding the key will cause the numbers to scroll continuously at a rate of twice per second until the key is released.

If the phone is on-hook, pressing the PHONE key will exit CALLER ID mode and dial out the last 7 digits of the caller ID number displayed after a 2 second delay. If the phone is already off-hook (i.e. ready to dial) and in Caller ID mode, pressing PHONE or CID will cause the unit to exit Caller ID mode and dial the last 7 digits of the Caller ID number which was being reviewed. To exit Caller ID without dialing when off-hook, press OFF. The unit will also automatically exit CID without dialing after 30 seconds of inactivity.

## 9.2 Caller ID Memory Clearing

Pressing the  button deletes the caller ID number displayed (for example at location 15) from the caller ID memory. The older caller ID number will be moved forward by one location as shown in the following sequence.

15 ← 16 ← 17 ← 18 ← ... 48 ← 49 ← 50.

Caller ID memory location 50 is now empty. The new caller ID number at location 15 will be displayed.

### 9.2.1 Deleting Caller ID Memory Locations

While the phone is in CID mode, press the CLEAR/DEL key once to delete the current call and the display will show:

Reference:	Revision: 1.0	Page: 54 of 98
------------	---------------	----------------

TITLE	VT3921 Internal Product Specification
MODEL	VT3921

**DELETING  
SINGLE CALL**

Press and hold the CLEAR/DEL key for more than 1 second to delete the entire contents of CID memory. The display will show the following for a final confirmation before the entire CID memory is erased:

**DELETE ALL?  
DEL TO ALLOW**

Pressing any key other than CLEAR/DEL will cancel the operation. Pressing CLEAR will confirm the operation and the display will then show:

**DELETING  
ALL CALLS**

The messages will remain on the display for 2 seconds and are then automatically cleared.

### 9.2.2 Caller ID Memory Overflow

If the entire contents of CID memory is filled up (50 calls), the next call received will cause the oldest call to be automatically deleted.

### 9.3 Caller ID With Call Waiting

The ability to decode and properly respond to the Caller ID with call waiting function has been built into this unit.

#### 9.3.1 Basic Operation

If during a normal phone call another call comes in with CID information, alerting tones (subscriber alert signal tone or **SAS**) will be heard in the handset earpiece to inform the user. The phone will mute both audio paths, acknowledge back to the CO via a DTMF tone and then receive, decode and display the new CID information.

The new CID information will be displayed in the same manner as defined in section 25,1. The new CID information will be displayed for 10 seconds and will then be stored in E<sup>2</sup>PROM.

#### 9.3.2 Switching Calls

If the user wishes to switch over to the new call, pressing the phone key will cause a hook switch flash and will signal to the CO to place the original call on hold and then switch over to the new call. The new call will remain connected until the user activates another hook switch flash to switch back to the first call again.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 55 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

#### 9.4 Caller ID Messages

Caller ID messages in the various test conditions are displayed as follows:

Private:

Test Name	Test 1	Test 2	Test 3 * see note 3	Test 4	Test 5	Test 6
ICLID NO.	Blank	Blank	Blank	Blank	604-2785555	604-2785555
REASON FOR NO. ABSENCE	P	P	P	P	P	P
CALLER NAME	Blank	Blank	Blank	Blank	Blank	VTECHCANADA
REASON FOR NAME ABSENCE	P	P	P	P	P	P
CALL QUALIFIER						
TIME & DATE AVAILABLE	Available Or Not Available	Available Or Not Available	Not Available	Available	Available	Available
HANDSET DISPLAY	TRANSMISSION ERROR	TRANSMISSION ERROR	PRIVATE	PRIVATE	PRIVATE	VTECHCANADA
VIEW ALL			PRIVATE	PRIVATE	PRIVATE	VTECHCANADA
TIME STAMP				Time & Date	604-2785555 Time & Date	604-2785555 Time & Date

Out of Area:

Test Name	Test 1	Test 2	Test 3 * see note 3	Test 4	Test 5	Test 6
ICLID NO.	Blank	Blank	Blank	Blank	604-2785555	604-2785555
REASON FOR NO. ABSENCE	O	O	O	O	O	O
CALLER NAME	Blank	Blank	Blank	Blank	Blank	VTECHCANADA
REASON FOR NAME ABSENCE	O	O	O	O	O	O
CALL QUALIFIER						
TIME &	Available	Available	Not	Available	Available	Available

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 56 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

<i>DATE AVAILABLE</i>	Or Not Available	Or Not Available	Available			
<i>HANDSET DISPLAY</i>	TRANSMISSION ERROR	TRANSMISSION ERROR	UNAVAILABLE	UNAVAILABLE	UNAVAILABLE	
<i>VIEW ALL</i>			UNAVAILABLE	UNAVAILABLE	UNAVAILABLE	VTECHCANADA
<i>TIME STAMP</i>				Time & Date	604-2785555 Time & Date	VTECHCANADA
						604-2785555 Time & Date

Long Distance Call:

<b>Test Name</b>	<b>Test 1</b>	<b>Test 2</b>	<b>Test 3</b>	<b>Test 4</b>	<b>Test 5</b>	<b>Test 6</b>
			<i>* see note 3</i>			
<i>ICLID NO.</i>	Blank	Blank	Blank	Blank	1604-2785555	1604-2785555
<i>REASON FOR NO. ABSENCE</i>	O	P	O or P	Blank	Blank	Blank
<i>CALLER NAME</i>	Blank	Blank	Blank	Blank	Blank	VTECHCANADA
<i>REASON FOR NAME ABSENCE</i>	O	P	O or P	Blank	Blank	Blank
<i>CALL QUALIFIER</i>	L	L	L	L	L	L
<i>TIME &amp; DATE AVAILABLE</i>	Available	Available	Not Available	Available	Available	Available
<i>HANDSET DISPLAY</i>	UNAVAILABLE	PRIVATE	UNAVAILABLE OR PRIVATE	TRANSMISSION ERROR	1604-2785555	VTECHCANADA
<i>VIEW ALL</i>	UNAVAILABLE	PRIVATE	UNAVAILABLE OR PRIVATE		1604-2785555	VTECHCANADA
<i>TIME STAMP</i>	Time & Date	Time & Date			1604-2785555 Time & Date	1604-2785555 Time & Date

Notes: 1) Long Distance Call Qualifiers are ignored  
 2) Private Number without Name displays "Private" in the Name display modes and blank  
 3) Test 3 for all the above tables signifies that even if the time and date are not received, the CID will still be considered as valid. The name and phone number will be displayed appropriately without the time and date information.

**9.4.1 Message: UNAVAILABLE**

If a CID message is received where the number is unavailable for any reason, the message "UNAVAILABLE" is displayed in place of the missing information.

The following is seen when reviewing CID memory contents. When the call first comes in, the same information is displayed, but the CID memory location is not shown.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 57 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	VT3921 Internal Product Specification
<b>MODEL</b>	VT3921

**CALL # 01  
UNAVAILABLE**

**9.4.2 Message: PRIVATE**

For a caller ID number which is blocked by the caller, a 'private' message, the date and the time of the call will be transmitted. The LCD will display a "PRIVATE" message for this call. This information will be stored in the caller ID memory. When the call first comes in, the same information is displayed, but the CID memory location is not shown.

**CALL # 02  
PRIVATE**

**9.4.3 Message: TRANSMISSION ERROR**

The Caller ID data includes a checksum to determine if any errors occurred in the transmission. If the phone detects errors then the call will not be recorded but it will display an "TRANSMISSION ERROR" message on the LCD during the ringing.

**TRANSMISSION  
ERROR**

**9.4.4 Message: ## NEW CALLS**

When calls are not answered, the handset will display the number of calls with CID information that came in since the last time CALLER ID mode was enabled. This message is displayed when the handset is in IDLE mode.

**12 NEW CALLS**

If a call is answered when there are calls in CID memory that have not yet been viewed, even though the call was answered, it will be treated as new call and added to the total number of calls not already viewed.

If a call is answered while there are still unviewed Caller ID numbers in memory, this latest call will be treated as a new unanswered call in the message display of: "## NEW CALLS". For instance, The LCD displays "2 NEW CALLS" and the phone rings. The user answers the new call and then returns the

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

handset to idle state upon completion. Since the CID information from the previous 2 calls has not yet been viewed, the latest call is treated the same. The LCD will then display "3 NEW CALLS".

This is necessary since the number total of calls displayed is counted back from the most recent call received to the last time CID memory editing was active.

If the unit is in Caller ID mode and no key has been pressed for more than 30 seconds, the unit will automatically exit Caller ID mode. This feature is also active when a line is active.

## 9.5 Receiving Caller ID While In Other Modes

When the phone is on hold the audio paths are disabled. As a result, the Caller ID with call waiting notification tone (SAS tone) is not heard by the user. Since the SAS tone is the only audible indication to the user that new Caller ID information is coming and that there is a call waiting, in this condition the information is simply stored in E<sup>2</sup> for later review.

Also, in this condition (call on hold) the PHONE key is inactive so the user would first have to cancel hold before a line flash can be generated by pressing the PHONE key. If the user returns the phone to an active line status in time to hear the SAS tone, they may still flash the line to switch to new call. This is further defined for the various operating modes below.

### 9.5.1 MEM (Memory Dialing) MODE

With the phone on-hook, if the user is reviewing the contents of speed dial memory and a call is received, the unit will automatically exit mem mode, clear the display and then display the new Caller ID information as defined in section 8.1.

If the phone is off-hook, on hold and the user is reviewing the contents of speed dial memory when the Caller ID with call waiting notification is received, the Caller ID information is received, decoded and stored in E<sup>2</sup>PROM. The speed dial memory access is unaffected.

The "XX NEW CALLS" count is incremented as a result of the new, unviewed Caller ID information which was stored in E<sup>2</sup>PROM. The "XX NEW CALLS" message is displayed when the handset is returned to idle mode.

### 9.5.2 Caller ID Mode

With the phone on-hook, if the user is reviewing the contents of Caller ID memory and a call is received, the unit will automatically exit Caller ID mode, clear the display and then display the new Caller ID information as defined in section 25.1.

If the phone is off-hook, on hold and the user is reviewing the contents of Caller ID memory when the Caller ID with call waiting notification is received, the new Caller ID information is received, decoded and stored in E<sup>2</sup>PROM. The Caller ID memory access in progress is unaffected with the exception of the fact that the Caller ID memory location numbers will change when the new call is stored.

The "XX NEW CALLS" count is incremented as a result of the new, unviewed Caller ID information which was stored in E<sup>2</sup>PROM. The "XX NEW CALLS" message is displayed when the handset is returned to idle mode.

### 9.5.3 Program Mode

Whether the phone is on-hook or off-hook and on hold, if the user is in program mode and a call is received, the Caller ID information is received, decoded and stored in E<sup>2</sup>PROM. The programming operation is unaffected.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 59 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

The "XX NEW CALLS" count is incremented as a result of the new, unviewed Caller ID information which was stored in E<sup>2</sup>PROM. The "XX NEW CALLS" message is displayed when the handset is returned to idle mode.

#### **9.5.4 Predial**

When the phone is on-hook, if the user is manually entering digits on the LCD via the dia keypad (predialing) and a call is received, the display is cleared and the new Caller ID information is displayed as defined in section 25.1.

If the phone is off-hook and on hold when the Caller ID with call waiting notification is received, the Caller ID information is received, decoded and stored in E<sup>2</sup>PROM. Predialing is unaffected.

The "XX NEW CALLS" count is incremented as a result of the new, unviewed Caller ID information which was stored in E<sup>2</sup>PROM. The "XX NEW CALLS" message is displayed when the handset is returned to idle mode.

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 10. Controller

### 10.1 General Description

The Controller provides all of the control functions for VT3921 PBX system, the hardware interface to the CO lines, the electrical interface to other system devices through the expansion line, and the base communication for the remote cordless System Phones.

### 10.2 Product Overview

The Controller connects the system to the CO lines; serves as the base unit for 3 cordless System Phones; provides voice communication, control signaling, phase lock timing, and power to the system expansion line. It provides caller ID detection and distribution, auto attendant functions, fax switching, all of the control and timing of system functions, and RS232 connection for a computer.

The CO line interface provides for transmission and reception of voice and data signals, ring detection, off/on hook switch, caller ID detection, parallel set detection, forced disconnect detection, lightning protection, and large signal protection. The interface is a "dry" design (no DC current in the transformer) so a physical line termination must supply voltage as well as a load. There is a provision in the Controller that unused CO lines can be properly terminated by instruction from the Operator phone. The on/off hook switch goes off-hook after the second ring in the auto attendant mode and after a call is answered by a station in the call ring through mode. The Caller ID detection supports Type I and Type II caller ID. The parallel set detect circuit detects when another instrument that is hooked to CO line in parallel with the system goes off hook. This is convenient for tying other equipment such as fast modems, security system devices, etc in parallel with the system on CO line. The system detects the parallel equipment going off hook, considers the line busy, and prevents any system stations from accessing the line until the parallel equipment hangs up. The "forced disconnect" signal is a line current interruption provided by the CO to allow for immediate hang up of various equipment such as voice mail systems. The protection circuit against lightning and excess signal levels meets FCC and UL requirements. Fuses are included to prevent permanent damage from lightning strikes and allow for easy repair.

The Controller includes the base RF unit and system connection for three 900 MHz Digital System Cordless Phones. The Controller does not provide any handset cradles or any battery charging capability. The cradle with battery and spare battery charging capability are provided separately for remote usage.

The system expansion line, is referred to the MAN line (Multiband Analog Network) for system explanation. The MAN line contains four duplex voice channels, a 42KHz signal for phase lock timing, a digital signaling channel, and line power for several stations on a single twisted pair wire. The transmitting and receiving of multiple signals on the line is accomplished by the CIS1000 VLSI device, for documenting purposes it will be referred to as the MAN device. The digital signaling channel communicates between the stations and the Controller at all times and is independent of the voice channels. The 42KHz signal allows all stations to phase lock to the Controller, which is required before the digital signaling channel can be used. The power supplied to the MAN line from the Controller is 44 volts across the MAN line, which provides power for up to 14 devices on the same one pair in house telephone wire.

Caller ID Type I information is detected at CO line interface and stored in the Controller. If the Controller is in the auto attendant mode, the caller ID is distributed to all phones with LCD displays that will ring. In the ring through mode, the caller ID information will be distributed to all phones with caller ID displays.

Caller ID type II CAS signal is detected at the CO line interface and is passed onto all phones communicating with that CO line so the phone can properly treat the caller ID

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 61 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

All system functions are programmed by the software contained in one EPROM in the Controller. There is no processor for controlling system functions in any of the stations. Control inputs from stations and output to stations (LED light assignments, etc.) can be changed on a station device without changing any of the electronics in that station.

The electronics for a RS232 port to a computer is included on the Controller board. This part is presently not supported with software.

Electronic Music-On-Hold is supported on the board, but will not be installed on units for the U.S. and Canadian markets. An external Music-On-Hold jack is provided and when an external source is plugged in, the internal music is switched out.

Fax switching is provided. After the Auto Attendant answers the CO line by going off hook, it allows a small amount of time of quiet to determine if a fax signal is present. If a fax signal is detected, the call is immediately transferred to an Adapter Box connected to a fax machine. There is also a message built into the Auto Attendant that states, "to send a fax press the star key". This allows people to send a fax manually. This message can be turned on or off with the Operator phone.

The Auto Attendant voice circuitry is set up to support three 90-second nonvolatile Voice Chips. This allows complete flexibility for each CO line. The Outgoing Message (OGM) can be programmed to be the same for all lines or programmed individually for each line. The message on hold can be programmed to be the same for all three lines or different for each CO line. The system can be changed to just one 90 second voice chip to save on system cost, but sacrifices some response time capability and flexibility. To use just one 90 second voice chip does not require a PCB change but the PCB assembly is different and the software would change.

The Controller stores up to 30 individual numbers in memory for each station. In addition the Controller stores up to 30 system wide numbers in memory that can be programmed by the Operator Phone (station "0") and can be used by any station.

The Controller is programmed to work efficiently with Voice Mail Systems connected through Adapter Boxes.

## 11. Operator Features

The Operator's Features describes those features that can only be accessed by the Operator's extension (800, 900, or 0) at station 0. In general, "Operator's Features" are those features such as system configuration that you do not want all of the users to access or change.

This section describes only the operator specific features. In addition, the Operator's telephone has access to all of the standard features listed in the various System Phone Manuals.

Note: The Operator's station should be a VT3921 Series System Phone set to station number 0, NOT a standard telephone connected through an Adapter Box. A standard telephone connected through an Adapter Box will NOT have access to many of the advanced Operator Features listed in this manual.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 62 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

### 11.1 Operator Feature Overview

<b>Feature</b>	<b>Description</b>
<i>RECORD VOICE MESSAGE</i>	Records the outgoing and prompting messages.
<i>RECEPTIONIST MODE</i>	Directs calls to the operator's extension (800, 900 or 0) at station 0, without ringing all telephones.
<i>VOICE MESSAGE</i>	The electronic receptionist greets callers.
<i>FAX MESSAGE</i>	The electronic receptionist explains the procedure to send a fax.
<i>SET UP – HOLD TIME</i>	Sets the amount of time a call is placed on hold before it rings again.
<i>SET UP- HOLD MESSAGE TIME</i>	Sets the amount of time before Message 3 is played during Music on Hold.
<i>CALL RING THROUGH</i>	If Call Ring Through is enabled the system will not pick up ringing lines, instead it will ring all telephones and answering machines for as long as the ringing continues.
<i>LINE PRIVACY OVERRIDE</i>	Allows some or all stations to interrupt/join calls on other lines.
<i>MUSIC ON WAIT</i>	Plays music or an information message instead of ringing tones while a caller waits to be connected.
<i>NIGHT MODE</i>	Sends calls to the answering machine or voice mail system (if available) without ringing all telephones.
<i>SYSTEM-WIDE DIRECTORY</i>	Stores frequently dialed numbers accessible from all stations.
<i>CALL SCREENING</i>	Requires the caller to enter a three-digit security code before ringing through.
<i>CALL SCREENING-SECURITY CODE</i>	Defines the three-digit security code that is required if Call Screening is enabled.
<i>SET UP OPTIONAL MAILBOX</i>	Sets up mailbox numbers that are different from extension numbers.
<i>DEDICATED FAX LINE</i>	Sets the system to send Line 3 calls to the fax machine.
<i>LINE TERMINATION</i>	Terminates an unused line internally to prevent noise on other lines.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 63 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 11.2 Record Voice Messages

Records the outgoing and prompting messages. The System has prerecorded generic messages, for custom message recording follow the steps below.

Please note that different messages can be recorded on each line to be used for separate companies or residential use. If the system will be used for one company/one greeting, you must record the same message on all three lines.

You may rerecord your message at any time and the previous recording will be erased automatically.

1. Go off hook on Line 1.
2. Press FEATURE key.
3. Press 0, press 3, and then press 4.  
The telephone will beep once and the PROGRAM light will come on.
4. Press 1, 2, or 3 to select the line you want to record on.  
To record on Line 1, press 1, to record on Line 2, press 2; to record on Line 3, press 3.
5. Press 1, 2, 3, 4, or 5 on the touch tone keypad to select messages.

<b>Key</b>	<b>Message Selected</b>
1	Message 1 (50 sec. max.) "outgoing greeting"
2	Message 2 (20 sec. max.) "night mode message"
3	Message 3 (10 sec. max.) "music on hold or # key message"
4	Message 4 (5 sec. max.) "transfer message"
5	Message 5 (5 sec. max.) "fax message"

6. To Record:  
Press \*. After the beep, speak clearly into the handset. Press '0' when you have finished recording your message. The telephone will beep twice to denote the end of message. Go to step 4 to record or play messages. Proceed to step 6 to complete this feature.

**OR**

6. To Play:  
Press #, the message will play. Proceed to step 6 to complete this feature.
7. Go on hook.  
The telephone will beep twice and the PROGRAM light will go off.

Note: remember to repeat the same steps 4 through 6 above to record messages on each line (1, 2, 3).

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 64 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

### 11.2.1 Examples of Voice Messages:

#### Message 1

Message 1 is always used as an outgoing greeting.

For example, "Thank you for calling Jim's Life Insurance, please enter an extension number now, or stay on the line and your call will be answered in a moment".

#### Message 2

Message 2 is always used as the Night Mode greeting.

#### Message 3

Message 3 is used for two different purposes. One purpose is to have a short information message or apology played during the Music on Hold, and the other purpose can be to provide information such as store office hours and directions that can be played if the caller is instructed to press the # key.

Note: See Set Up – Hold Message Time to set the time that the message during Music on Hold is played. If you want to use the # information message, you must set the Hold Message Time to '0' (default).

#### Message 4

Message 4 is called the "transfer message". It is always played before a call is transferred by the system. This does not apply to calls transferred from extension to extension.

For example, "Please hold, while your call is being transferred", or "I'll transfer you now."

#### Message 5

Message 5 is called the "fax message". It can be enabled or disabled following the instructions described in the section titled *Fax Message*. Message 5 is always used to describe the manual fax transfer method.

For example, "To send a fax, press the star key".

Note: The operation of the voice prompting is affected by the system settings described in the sections titled *Voice Message*, and *Fax Message*.

## 11.3 Receptionist Mode

Directs calls to the operator's extension (800, 900, or 0) at station 0, without ringing all telephones.

#### Enable Receptionist Mode

1. While on hook, press FEATURE.
2. Press 0, press 1, then press 1 again.
3. Using the touch tone keypad, enter the line number by pressing 1, 2, or 3 to enable the Receptionist Mode for each line. To enable the Receptionist Mode for all 3 lines, press 4.  
The telephone will beep once to notify you that the Receptionist Mode is enabled.
4. To enable other lines, repeat steps 1-3.

#### Disable Receptionist Mode

1. Repeat the above steps 1-3. To disable the Receptionist Mode for all three lines, press 0.  
The telephone will beep twice to notify you that Receptionist Mode is disabled. All unanswered calls to a particular extension or undirected calls will ring at station 0.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 65 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 11.4 Voice Message

The electronic receptionist greets callers. The System comes configured with the Voice Message enabled on all three lines.

### Enable Voice Message

1. While on hook, press FEATURE.
2. Press 0, press 1, then press 4.
3. Using the touch tone keypad, enter the line number by pressing 1, 2, or 3 to enable the Voice Message for each line. To enable the Voice Message for all 3 lines, press 4.  
The telephone will beep once to notify you that the Voice Message is enabled.
4. To enable other lines, repeat steps 1-3.

### Disable Voice Message

1. Repeat the above steps 1-3. To disable the Voice Message for all three lines, press 0.  
The telephone will beep twice to notify you that the Voice Message is disabled. When the Voice Message is disabled, incoming callers to the system will immediately hear ringing or Music on Wait (if enabled). When the Voice Message (Messages 1-3) is disabled, the Fax Message (Message 5) will also be disabled.

## 11.5 Fax Message

The electronic receptionist explains the procedure to send a fax.

### Enable Fax Message

1. While on hook, press FEATURE.
2. Press 0, press 1, then press 3.  
The telephone will beep once to notify you that the Fax Message is enabled.

### Disable Fax Message

1. While on hook, press FEATURE.
2. Press 0, 1 then 3.  
The telephone will beep twice to notify you that the Fax Message is disabled.

Whenever an Adapter Box is plugged in with the Device Switches set to a fax machine, the Fax Message (Message 5) is automatically enabled.

## 11.6 Set Up – Hold Time

Sets the amount of time a call is placed on hold before it rings again. The System comes configured with the Hold Time set at one minute.

1. While on hook, press FEATURE.
2. Press 0, press 3, then press 2.  
The telephone will beep once, and the PROGRAM light will turn on.
3. Using the touch tone keypad, enter a single key, 1 - 9, for the amount of time (in minutes) a caller should be on hold.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 66 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

The telephone will beep once, and the PROGRAM light will turn off. If an invalid number is entered you will hear an error tone (one low tone).

### 11.7 Set Up – Hold Message Time

Sets the amount of time before Message 3 is played during Music on Hold. The System comes configured with the Hold Message Time disabled.

1. While on hook, press FEATURE.
2. Press 0, press 3, then press 5.  
The telephone will beep once, and the red PROGRAM light will turn on.
3. Using the touch tone keypad, enter a single key, 1 - 9, for the amount of time (in 10 second increments) before Message 3\* is played to the caller during Music on Hold.  
The telephone will beep once, and the red PROGRAM light will turn off. If an invalid number is entered you will hear an error tone (one low tone).  
Note: If '0' is entered, the message will be disabled.

\*The messaging mode must be properly set in order for Message 3 to play during Music on Hold. To record Message 3, see *Record Voice Messages*.

### 11.8 Call Ring Through

If Call Ring Through is enabled, the system will not pick up ringing lines, instead it will ring all telephones and answering machines for as long as the ringing continues. The System comes configured with Call Ring Through **disabled** on all three lines.

#### Enable Call Ring Through

1. While on hook, press FEATURE.
2. Press 0, press 1, then press 9.
3. Using the touch tone keypad, enter the line number by pressing 1, 2, or 3 to enable Call Ring Through for each line. To enable Call Ring Through for all 3 lines, press 4.  
The telephone will beep once to notify you that Call Ring Through is enabled.
4. To enable other lines, repeat steps 1-3.

#### Disable Call Ring Through

1. Repeat the above steps 1-3. To disable Call Ring Through for all 3 lines, press 0.  
The telephone will beep twice to notify you that Call Ring Through is disabled.

Note: To detect incoming faxes or allow extension dialing on any line, Call Ring Through must be **disabled**.

### 11.9 Line Privacy Override

Allows some or all stations to interrupt/join calls on other lines. The System comes configured with Line Privacy Override disabled for all stations. The Line Privacy Override feature will not allow FAX or modem calls to be interrupted.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 67 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

Enable Line Privacy Override

1. While on hook, press FEATURE.
2. Press 0, press 2, then press 5.  
The telephone will beep once.
3. Using the touch tone keypad, enter the station number (00 - 13) that you want to modify.  
The telephone will beep after a valid station number is entered.

Note: One digit station numbers are preceded by zero. To modify all telephones at the same time, enter '99'.

4. Press 1.  
The telephone will beep once to notify you that Line Privacy Override is enabled.

Disable Line Privacy Override

1. Repeat the above steps 1-3.
2. Press 0.  
The telephone will beep twice to notify you that Line Privacy Override is disabled.

### 11.10 Music On Wait

Plays music or an information message instead of ringing tones while a caller waits to be connected. The System comes configured with Music on Wait disabled on all three lines.

Enable Music on Wait

1. While on hook, press FEATURE.
2. Press 0, press 1, then press 5.
3. Using the touch tone keypad, enter the line number by pressing 1, 2, or 3 to enable the Music on Wait for each line. To enable the Music on Wait for all 3 lines, press 4.  
The telephone will beep once to notify you that Music on Wait is enabled.
4. To enable other lines, repeat steps 1-3.

Disable Music on Wait

1. Repeat the above steps 1-3. To disable the Music on Wait for all three lines, press 0.  
The telephone will beep twice to notify you that Music on Wait is disabled.

Note: Music on Wait requires a music source connected to the Controller. Refer to the System Manual.

### 11.11 Night Mode

Sends calls to the answering machine or voice mail system (if available) without ringing all telephones.

Enable Night Mode

1. While on hook, press FEATURE.
2. Press 0, press 1, then press 2.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 68 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

- Using the touch tone keypad, enter the line number by pressing 1, 2, or 3 to enable the Night Mode for each line. To enable the Night Mode for all 3 lines, press 4.  
The telephone will beep once to notify you that Night Mode is enabled.
- To enable other lines, repeat steps 1-3.

#### Disable Night Mode

- Repeat the above steps 1-3. To disable the Night Mode for all three lines, press 0.  
The telephone will beep twice. All undirected calls will immediately be sent to the answering machine or voice mail system (if available). Calls to a particular extension will ring through. Fax and modem stations are not affected by Night Mode.

## **11.12 System – Wide Directory**

Stores frequently used numbers that are accessible from all stations.

- While on hook, press MEMORY.  
The telephone will beep once and the PROGRAM light will turn on.
- Using the touch tone keypad, enter the two digit directory storage location between 00 - 29.  
The telephone will beep twice after the two digits are entered.
- Using the touch tone keypad, enter the telephone number (up to 16 numbers and pauses).  
The pause key puts a five-second pause into the number.

The telephone will NOT beep while the telephone number is being entered.

- Press MEMORY.  
The telephone will beep twice and the PROGRAM light will turn off.

### **Dialing System- Wide Directory**

Dials frequently used numbers from any station.

- Go off hook and listen for dial tone.
- Press \*5
- Using the touch tone keypad, enter the 2-digit directory storage location.

Valid numbers for the System-Wide Directory are from 00 to 29.

ONLY THE OPERATOR, System Phone Station 0, can store numbers in the System-Wide Directory. Refer to 11.13 for details on storing numbers in the System-Wide Directory.

## **11.13 Call Screening**

Requires the caller to enter a three-digit security code before ringing through.

#### Enable Call Screening

- While on hook, press FEATURE.
- Press 0, press 1, then press 7.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 69 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

3. Using the touch tone keypad, enter the line number by pressing 1, 2, or 3 to enable Call Screening for a particular line. If you want to enable Call Screening for all three lines, press 4.  
The telephone will beep once to notify you that Call Screening is enabled for the line(s).
4. To enable the other lines, repeat steps 1-3.

If the incoming caller fails to enter the correct Security Code, then all System Phones will beep two times to notify you that the call is being transferred to the answering machine or Voice Mail System (if available).

#### Disable Call Screening

1. While on hook, press FEATURE.
2. Press 0, press 1, then press 7.
3. Using the touch-tone keypad, enter the line number by pressing 1, 2, or 3 to disable Call Screening for a particular line. If you want to disable Call Screening for all three lines, press 0.  
The telephone will beep twice to notify you that Call Screening is disabled for the line(s).
4. To disable the other lines, repeat steps 1-3.

### **11.14 Call Screening – Security Code**

Defines the three-digit security code that is required if Call Screening is enabled.

1. While on hook, press MEMORY.  
The telephone will beep once and the PROGRAM light will turn on.
2. Press 3.
3. Press 0.  
The telephone will beep twice.
4. Using the touch-tone keypad, enter three digits. (This can also include the \* and # keys.)
5. Press MEMORY.  
The telephone will beep twice to notify you that the new security code has been entered, and the PROGRAM light will turn off.

### **11.15 Set Up – Optional Mailbox**

Sets up mailbox numbers on an optional Voice Mail System (VMS) that are different from extension numbers.

Note: Use this feature only if you desire a mailbox that is different from the extension number. Most VMS users will not have to use this feature.

1. While on hook, press FEATURE.
2. Press 0, press 3, then press 3 again.  
The telephone will beep once and the PROGRAM light will turn on.
3. Using the touch-tone keypad, enter the primary or secondary extension number.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 70 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

The telephone will beep once.

4. Using the touch-tone keypad, enter the new mailbox number, up to five digits.
5. Press FEATURE.  
The telephone will beep twice and the PROGRAM light will turn off.

The default mailbox number is the same as the extension number. For example, if extension 803 is not answered, then the system will automatically (VMS Mode must be enabled for that station.) dial mailbox 803 on the VMS. The general mailbox is used to record messages for calls that were not directed to specific extensions. The general mailbox number is 8XX, where XX is the station number of the Adapter Box that the VMS is connected to.

*Set Up - Optional Mailbox* allows you to assign a mailbox number that is different from the extension number. For example, using an optional mailbox, you may set the system to dial mailbox 9 if extension 803 is not answered.

In addition to setting up the voice mailboxes. There could be a need to set up additional features depending on your Voice Mail System. Ask your VMS vendor.

1. While on hook, press MEMORY.  
The telephone will beep once and the PROGRAM light will turn on.
2. Using the touch-tone keypad, enter the two-digit feature from the table below.  
The telephone will beep twice.
3. Using the touch-tone keypad, enter the required key sequence.
4. Press MEMORY.  
The telephone will beep twice to notify you that the new key sequence has been entered, and the PROGRAM light will turn off.

<b>2 Digit Feature</b>	<b>Description</b>	<b>Sequence</b>
31	Pre-fix code, some VMS require a special code before the mailbox number to tell the VMS that you wish to retrieve messages.	Any digit
32	Post-fix code, some VMS require a special code after the mailbox number to tell the VMS that you wish to retrieve messages.	Any digit
33	Night Mode mailbox number.	Any digit

### 11.16 Dedicated Fax Line

Sets the System to send Line 3 calls to the fax machine.

#### Enable Line 3 to Always Ring the Fax Machine

1. While on hook, press FEATURE.
2. Press 0, press 1 then press 6.  
The telephone will beep once to notify you that all calls on Line 3 will be directed to the fax machine.

#### Disable Line 3 to Always Ring the Fax Machine

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 71 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

1. While on hook, press FEATURE.
2. Press 0, press 1 then press 6.  
The telephone will beep twice to notify you that all calls on Line 3 will be directed as normal.

Although the System allows you to share your fax and voice telephone lines, some users desire an outside line that always rings the fax machine directly. You may still access Line 3 from any telephone to make outgoing calls if you wish. The system protects fax calls to safeguard against accidentally ruining a fax transmission.

For more details, see the System Manual *How to... Set Line 3 to Always Ring the Fax Machine.*

### 11.17 Line Termination

Terminates an unused line internally to prevent noise on other lines. If not all telephone lines are connected to the Controller, some lines might need to be terminated to prevent noise from filtering to other lines.

#### Enable Line Termination

1. While on hook, press FEATURE.
2. Press 0, press 3, then press 7.
3. Using the touch-tone keypad, enter the line number by pressing 1, 2, or 3 to enable the Line Termination for each line. To enable the Line Termination for all 3 lines, press 4.  
The telephone will beep once to notify you that the Line Termination is enabled.
4. To enable other lines, repeat steps 1-3.

#### Disable Line Termination

1. Repeat the above steps 1-3. To disable the Line Termination for all three lines, press 0.  
The telephone will beep twice to notify you that Line Termination is disabled.

### 11.18 Program Handset Security Code

Defines the security code for the VTECH handset.

1. While on hook, press FEATURE.
2. Press 0, press 3, press 8.  
The telephone will beep once and the PROGRAM light will go on
3. Using the touch tone keypad, enter the 2-digit station number.  
The telephone will beep once.
4. Using the memory keys, enter the new 6 character security code.  
For letters "A" through "F", use the following:

A	Memory key 10
B	Memory key 11
C	Memory key 12
D	Memory key 13
E	Memory key 14

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 72 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

F	Shift key
---	-----------

The telephone will beep twice and the PROGRAM light will go off.

### 11.19 Reset Feature

Reset the phone system back to factory defaults.

1. While on hook, press FEATURE key.

2. Press 0, press 2, press 7.

The telephone will beep once and the PROGRAM light will go on.

3. Using the touch tone keypad, enter the following:

2 digits	Description
00 to 13	Reset the specified station to factory defaults (Speed dial memory locations are not affected).
66	Reset the Operator Features to factory defaults.
99	Reset all stations and Operator Features to factory defaults including all speed-dial memory locations.

The telephone will beep twice and the PROGRAM light will go off.

### 11.20 Operation for Pulse Dialing

The way the VT3921 will handle pulse dialing is as follows:

1. The system will default to tone dialing.
2. To set the system to pulse dialing, the system is programmed to this mode by using the "0" station phone and will be explained in the Operators Manual.
3. For the cordless phones, when the system has been set to pulse dialing and DTMF tones are required for entering information requested by the external party (for bank transactions, etc.), the "\*" key is pressed, then the required DTMF tones are entered. After hanging up the phone, the mode for that individual instrument reverts to pulse mode. This is a popular method used by Panasonic and other manufacturers.
4. There will be no individual tone/pulse switches for the cordless phones.
5. If an individual needs to dial the CO line with tones when the system is in the pulse mode, the "\*" must be pressed prior to dialing. This would be used when some lines require pulse dialing and other lines require tone dialing.

### EEPROM Back Settings

Some system settings and memory numbers are stored in EEPROM. The following table shows which settings are backed in EEPROM and their default values the first time the system is powered up.

<b>Adapter Box / System Phones</b>		
Settings/Features	EEPROM Backed	Default
Call Forwarding	No	Off
Callback/Camp-on	No	Off

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 73 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

Do Not Disturb (DND)	No	Off
Voice Mail Mode	Yes	Off
Line Ring Preference	Yes	L1, L2, L3, COM
Line Select Order	Yes	L1, L2, L3, COM
Headset Mode	Yes	Off
Flash Time	Yes	Normal (0.5 Sec)
Tone/Pulse	No	Tone

<b>Operator Features</b>		
<b>Settings/Features</b>	<b>EEPROM backed</b>	<b>Default</b>
Receptionist Mode	Yes	On
Night Mode	Yes	Off
Fax Message	Yes	On
Voice Message	Yes	On
Music on Wait	Yes	Off
Dedicated Fax Line	Yes	Off
Messaging Method	Yes	Method 1
Security Code	Yes	None
Hold Time	Yes	1 Minute
Set Up Optional Mail Box	Yes	Same as Ext
Hold Message Time	Yes	30 Seconds
Call Ring Through	Yes	Off
Call Screening	Yes	Off
Line Termination	Yes	Off
Voice Mail System End Sequence Key	Yes	# Key
Line Privacy Override	Yes	None

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

## 12. Adapter Box

### 12.1 General Description

The Adapter Box interfaces and converts any standard telephone instrument to the VT3921 3 line system. The Adapter Box provides the power and ring to emulate the normal CO line. The Adapter Box converts any one line device to a three line system device. Standard telephone equipment can include telephones of any type, fax machines, modems, voice mail ports, etc.

### 12.2 Product Overview

The Adapter Box is designed to supply the power and ring voltage to support any one instrument that is designed to interface to the CO line. It can generally supply enough power and ring current for two modern instruments and is often used this way.

A wall powered (12V AC 830ma Class 2) transformer power module supplies power to the Adapter Box.

The station number for the adapter Box included with the VT3921 system is preset to station 4. For additional Adapter Boxes, the station number must be set to a unique number (higher than 4). The station numbers that are allowed for the system are 0 through 13, with 0 through 4 reserved for instruments supplied with the basic system. Up to 9 additional Adapter Boxes can be added to the system as long as the total of 14 stations is not exceeded.

There are lights on the front of the Adapter Box to indicate when lines are in use.

A high voltage is supplied to the connected instrument when on hook. This is required to interface with devices that are equipped with parallel set detects.

The Adapter Box also has switches to indicate what type of device is attached. The most commonly used device types are marked on the box for convenience. A full list is shown in the USER FEATURES section in this document.

Most of the PBX features offered by the system phones are available to any instrument attached to the Adapter Box using the key sequences defined in the USER FEATURES section. These key sequences are sent to the Controller as DTMF tones. Therefore, any instrument connected to the Adapter Box must be set to TONE to access the system features. To send pulses to the CO line, the instrument connected must be set to PULSE.

## 13. User Features

### 13.1 User Feature Overview

<b>Feature</b>	<b>Description</b>
<i>SELECTING LINE</i>	Selects the line number.
<i>MAKING CALL - INTERNAL (COM)</i>	Places a call to an inside extension number.
<i>MAKING CALL - OUTSIDE</i>	Places a call to an outside number.
<i>PRIVATE HOLD</i>	Places a call on hold that can only be retrieved from that station.
<i>GLOBAL HOLD</i>	Places a call on hold that can be retrieved from any station.
<i>GLOBAL HOLD PICK UP</i>	Allows you to connect to lines on Global Hold.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 75 of 98</b>
-------------------	----------------------	-----------------------

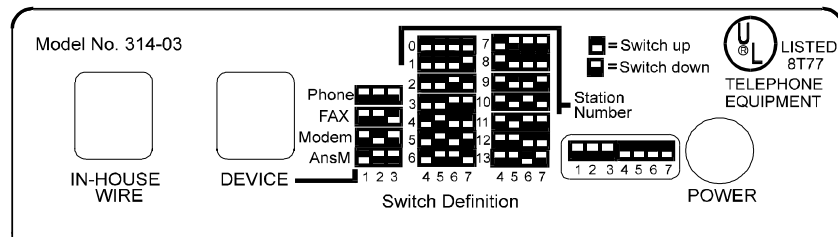
<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

<i>CALL TRANSFER</i>	Transfers an incoming call to another extension.
<i>CALL WAITING</i>	Receives calls while you are on another line.
<i>REDIAL</i>	Dials the last number called.
<i>CALL CONNECT/PICK UP</i>	Connects/picks up other ringing extensions.
<i>PULSE/TONE SELECTION FOR PROGRAMMABLE NUMBERS</i>	Determines whether the system dials the Speed Dial numbers and System-Wide Directory numbers as touch-tones or pulses.
<i>SPEED DIALING AND STORING</i>	Stores and dials frequently called numbers.
<i>SYSTEM-WIDE DIRECTORY</i>	Dials frequently used numbers from any station.
<i>RING PAGING</i>	Causes all non-busy telephones to ring.
<i>BROADCAST</i>	Broadcasts on the COM line to all System Speaker Phones.
<i>CONFERENCE CALLS</i>	Connects multiple parties together in a telephone conversation.
<i>CALL FORWARDING</i>	Redirects calls to another station's extension.
<i>CALLBACK/CAMP-ON</i>	Rings back when the busy extension number becomes free.
<i>COM CALLBACK/CAMP-ON</i>	Rings back when the COM line becomes free.
<i>DO NOT DISTURB (DND)</i>	Turns off all rings to a particular station.
<i>VOICE MAIL SYSTEM MODE</i>	Directs unanswered calls to the optional Voice Mail System (VMS).
<i>FLASH TIME ADJUST</i>	Adjusts FLASH timing when using your telephone's FLASH key (if applicable).
<i>SET UP - LINE RING PREFERENCE</i>	Selects which telephone lines will ring at a particular station.
<i>SET UP - LINE SELECT ORDER</i>	Sets up order of available line selection.
<i>RECEIVING A FAX</i>	Allows a particular station to receive a fax.
<i>SENDING A FAX</i>	Allows a particular station to send a fax.

## 13.2 Installing The Adapter Box

Install the Controller BEFORE installing the Adapter Box or you may damage the Adapter Box. **WARNING:** Do not connect Adapter Boxes to telephone company lines or the equipment may be damaged.

- Before plugging in the Adapter Box, assign a station number to each Adapter Box and System Phone. The last four of the seven switches on the Adapter Box are used to set the station number of the Adapter Box.



**READ IMPORTANT NOTE BELOW!**  
**EVERY STATION NUMBER ON ADAPTER BOXES AND SYSTEM PHONES MUST BE DIFFERENT.**  
 Devices with the same station number will not operate.

Station Numbers	Adapter Box Station Switches	Primary Extension	Secondary Extension
-----------------	------------------------------	-------------------	---------------------

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 76 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

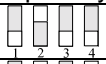


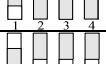
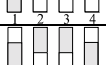

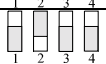

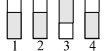
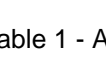
	(on back of box)	Numbers	Numbers
1	Note: The Adapter Box station numbers must be programmed starting from Station 4 since Station 0, 1, 2 and 3 are being occupied by a Speaker Phone and 3 Cordless Phones		
4		804	904
5		805	905
6		806	906
7		807	907
8		808	908
9		809	909
10		810	910
11		811	911
12		812	912
13		813	913

Table 1 - Assigning Station Numbers

<sup>1</sup> A single 0 will also dial station number 0. In order to access operator features, station number 0 must be a System Phone.

Refer to the section titled *Switch Setting For Station Numbers* for further information.

2. Adjust the Device Switches.

The first three of the seven switches are the Device Switches that set the type of equipment to which the Adapter Box will be connected - e.g., FAX, MODEM, ANSWERING MACHINE, TELEPHONE.

Device Type	Device DIP Switches			Extension Numbers	Description
	SW1	SW2	SW3		
TELEPHONE	UP	UP	UP	All	Telephone
FAX	UP	UP	DWN	All	Fax machine
MODEM	UP	DWN	UP	All	Modem
ANSWERING MACHINE	DWN	UP	UP	All	Answering machine
AUX1	UP	DWN	DWN	All	Phone and answering machine
AUX2	DWN	UP	DWN	All	Voice mail system
AUX3	DWN	DWN	UP	All	Phone, fax and answering machine
AUX4	DWN	DWN	DWN	0 to 10	Voice and fax system
				11 and up	Paging system

Table 2 - Assigning Device Switches

Telephone (UP, UP, UP)

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 77 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

This setting is used for all types of standard telephone equipment except fax machines, answering machines, modems, paging systems, and voice mail equipment. Standard telephone equipment includes standard telephones, speaker telephones and cordless telephones.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.
- Global ring of all telephones. To adjust the ring delay, refer to *Set Up - Line Ring Preference*.

#### Fax Machine (UP, UP, DWN)

This setting is for fax machines that are not combined with any other equipment, or a fax/modem personal computer board used as a standard system fax. Refer to Section III, *Using Faxes and Modems*, for details on how the fax machine works in this mode.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.
- A fax tone is detected on a line.
- A “star” key is detected during an incoming call.

#### Modem (UP, DWN, UP)

This setting is for modems and private fax machines. Refer to Section III, *Using Faxes and Modems*, for details on how the modem and private fax works in this mode.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.

#### Answering Machine (DWN, UP, UP)

This setting is for answering machines that service all extensions. The answering machine should be set to pick up on the first ring or the lowest number of rings available. The system treats the answering machine in two different modes:

Standard Mode - After all extensions ring four times, the system will ring the answering machine.

Night Mode - The system directs all calls that are not fax or extension calls directly to the answering machine. Extension calls ring three times on the dialed extension then ring the answering machine without ringing all telephones.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.
- Call is not answered after ringing an extension during Night Mode.
- After four global rings to all telephones.

#### AUX1 (UP, DWN, DWN) Telephone and Answering Machine

This setting is used when one Adapter Box shares both telephone and answering machine functions. For example, use this setting for a telephone answering machine or in cases when a separate standard telephone and answering machine are connected through a three-way adapter. When this station rings, the answering machine will pick up after the number of rings set on the answering machine. In Night Mode, all calls without specific extension numbers will ring this station only immediately. There should be only one station in a system that is set to AUX1 or Answering Machine Mode.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 78 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

- Global Rings at all telephones (refer to *Set-Up Ring Line Preference* to adjust the ring delay).
- Call is not answered after ringing an extension during Night Mode.
- No extension is dialed during Night Mode.

#### AUX2 (DWN, UP, DWN) Voice Mail System (VMS)

This setting is used when this Adapter Box connects the VT3921 system to a personal computer Voice Mail Card. The VMS should be set to pick up on the first ring on the lowest number of rings. The extension number should be set lower than the answering machine extension if the VMS is to pick up first.

<b>Message</b>	<b>Mail Box</b>
<i>DEFAULT MESSAGE</i>	8XX*
<i>INSTRUCTIONAL MESSAGE</i>	9XX**
<i>NIGHT MODE</i>	116

\* XX is the station number of the Adapter Box connected to the VMS.

\*\* This message will play when you dial or transfer calls to the VMS.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.
- Call is transferred to VMS using VMS transfer (#, 0, extension number).
- Call not answered and VMS Mode is enabled at the station.
- Call not answered and the system is in Night Mode.
- After four global rings to all telephones.

After the VMS picks up, the VT3921 System will dial the appropriate mailbox. Refer to *How To ... Install PC Based VMS* in the System Manual for further information.

#### AUX3 (DWN, DWN, UP) Telephone, Fax and Answering Machine

This setting is for using equipment that combines these three functions. The VT3921 system will ring this extension as a telephone extension. It will also ring this extension when it detects a fax tone or the "star" key is pressed from outside. It will also ring this extension when the system determines an answering machine is required. It is important to set the "number of rings before pick up" on the telephone/fax/answering machine. Refer to the users manual of the telephone/fax/answering machine to set this number properly. This setting should not be used if there is an answering machine setting also in the system.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.
- Global Rings at all telephones (refer to *Set-Up Ring Line Preference* to adjust the ring delay).
- A fax tone is detected on a line.
- A "star" key is detected during an incoming call.
- Call is not answered after the extension during Night Mode.
- No extension is dialed is dialed during Night Mode.

#### AUX4 (DWN, DWN, DWN) Voice Mail and Fax System or Paging System

##### Option 1, Station 0-10, Voice Mail and Fax

This setting is used when this station connects the VT3921 system to a Voice Mail/Fax card for a personal computer and both functions are to be used. When the system detects a fax tone, it will transfer the call to the station and the fax tone is detected by the computer board and accepts the fax data. When the system detects that voice mail is needed, it will also call this station and the voice mail will be activated as long as

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 79 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

no fax tone is detected. Only one voice mail or fax function can occur at one time, so this setting is not recommended for larger offices where a large fax could delay voice mail for extended periods.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.
- A fax tone is detected on a line.
- A “star” key is detected during an incoming call.
- Call is transferred to VMS using VMS transfer (#, 0, extension number).
- Call not answered and VMS Mode is enabled at station.
- Call not answered and the system is in Night Mode.
- After four global rings to all telephones.

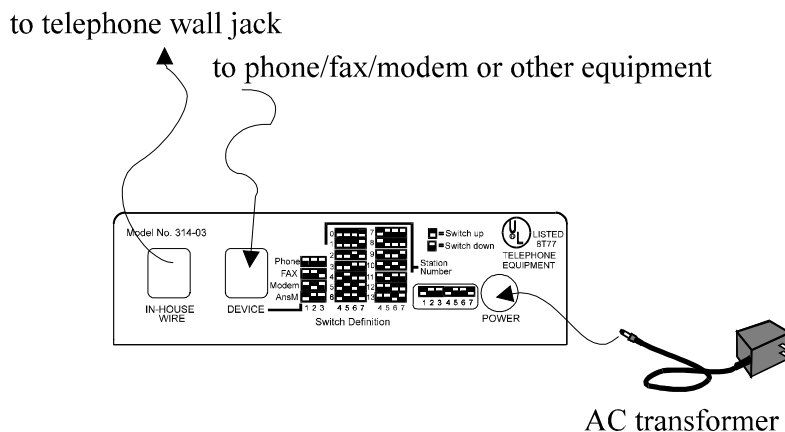
After the VMS picks up, the VT3921 System will dial the appropriate mailbox.

### Option 2, Station 11-13, Loud Speaker Paging

This setting is used when this station is connected to a loud speaker pager. The pager should be set to automatically hang up on as short a time as practical. In this mode, the system will hang up when the originator hangs up but will not put out a dial tone. Any telephone on the system can access this station by dialing this extension.

The Adapter Box will ring the equipment in the following cases:

- Extension is dialed.
3. Plug the device into the Adapter Box and plug in the AC transformer.  
Connect the fax, modem, answering machine, or telephone to the connector labeled “DEVICE” on the Adapter Box. Attach the AC transformer plug to the Adapter Box power connector, and then plug the AC transformer into the wall socket.
  4. Plug the Adapter Box “IN-HOUSE WIRE” connector into the telephone wall jack, which in turn connects to the in-house wiring.  
Using the cable furnished, connect the telephone jack to the connector labeled “IN-HOUSE WIRE” on the Adapter Box.



5. Test each device.

If the device connected to the Adapter Box does not work, then check all connections to the box. Make sure the DEVICE and IN-HOUSE WIRE connections are not reversed.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 80 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

Note: The first time the Controller is turned on, all the red lights on the Adapter Box will flash until the system completes its self-configuration.

### 13.3 Using Standard Telephone Equipment With The Adapter Box

All of the features of the VT3921 System are accessible to standard touch-tone telephone equipment installed using the Adapter Box except Mute and Release Line Privacy. This section of the manual describes how to access these features. A standard telephone with an Adapter Box cannot be used as station 0 to program operator features. The headset features also are not available except with a System Phone. When reading the instructions, the “flash key” can be substituted with an on hook for approximately half a second, then back off hook. On hook is when the handset is in the cradle and off hook is when the handset is picked up.

### 13.4 Selecting Line

Selects the line number.

1. Remove the receiver (go “off hook”) and listen for dial tone.
2. Press #.
3. Using the touch-tone keypad, enter the line number.

<b>Touch Tone Key</b>	<b>Line Number</b>
1	Line 1
2	Line 2
3	Line 3
4	COM

Note: If you don’t select a line, an available line will automatically be selected.

By default the system will select the following order: Line 1, Line 2, Line 3, COM. To program an alternate line select order refer to *Set Up - Line Select Order*.

### 13.5 Making Internal (COM) Calls

Places a call to an inside extension number

1. Check if the COM line is free.  
The red COM light will be off.
2. Go off hook.  
You should hear a dial tone.
3. Press #4.  
The red COM light on the Adapter Box will light up and you should hear a dial tone.
5. Using the touch-tone keypad, enter the extension number.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 81 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

If you receive a fast busy signal after dialing a valid extension number, then the extension you are calling is in the "Do Not Disturb" mode. See *Do Not Disturb* for details.

### 13.6 Making Outside Calls

Places a call to an outside number.

1. Go off hook and dial.

OR

1. Before dialing, select a specific line by pressing on the touch-tone keypad # 1, # 2, or # 3 to select line 1, 2, or 3 respectively.  
If the red line light is on, then that line is not available.
2. Go off hook and dial.

The system will automatically select an available line for you. To adjust which line is selected first, refer to *Set Up - Line Select Order*.

### 13.7 Global Hold

Places a call on hold that can be retrieved from any station

1. Press FLASH. (If your telephone is not equipped with a FLASH key then hold down the hook switch in the receiver cradle for approximately half a second.)  
The red line light will blink slowly on all stations to indicate that the call has been placed on Global Hold.

#### Retrieve Global Hold Call

1. Go off hook.
2. Press #.
3. Select the line number that the call is held on.

### 13.8 Private Hold

Places a call on hold that can only be retrieved from that station.

1. Press FLASH. (If your telephone is not equipped with the FLASH key then hold down the hook switch in the receiver cradle for approximately half a second.)  
To verify that you are placing a call on Private Hold, check that the red line light is blinking quickly before pressing the FLASH key or pressing down the hook switch the second time.
2. Wait approximately 2 seconds, then press FLASH slowly again.  
Verify that the call has been placed on Private Hold by checking to make sure that the red line light is blinking quickly. All other stations will have a solid red line light.

#### Retrieve Private Hold Call

1. Go on hook, then go off hook.  
When you go back off hook you will automatically be connected.

Only one line can be placed on Private Hold at a time. To place additional lines on hold, use Global Hold.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 82 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

### 13.9 Global Hold Pickup

Allows you to connect to lines on Global Hold.

1. Go off hook and listen for dial tone.
2. Press \*1.  
The system will connect you to a line on Global Hold.

This feature allows you to connect to a line on Global Hold without having to know which particular line is on hold. If there are several lines on Global Hold, then each time this feature is executed, the system will select Line 1, 2, and 3 respectively. If the line retrieved is not the line you want, be sure to place the call on Global Hold again, then go on hook and off hook before executing this feature again.

This feature is particularly useful with cordless phones when you cannot see the Adapter Box. If all lines are occupied, when you go off hook, the system will automatically pick up the first line on Global Hold.

### 13.10 Call Transfer

Transfers an incoming call to another extension.

1. Press FLASH. (If your telephone is not equipped with a FLASH key then hold down the hook switch in the receiver cradle for approximately half a second.)  
The red line light above the line will blink quickly to indicate that the call has been placed on Private Hold.
2. Using the touch-tone keypad, enter the extension number.

#### Option 1

3. Hang up.  
If the call is not picked up, the call will ring back at your extension after five rings.

OR

#### Option 2

3. Stay on the line, announce the transfer and hang up.  
When you hang up, the caller will automatically be connected to the extension you entered.

OR

#### Option 3

3. If the extension is busy, reconnect to the caller by pressing on the touch-tone keypad # 1, # 2, or # 3 to retrieve line 1, 2, or 3 respectively.

OR

#### Option 4

3. Stay on the line and announce the transfer. If the person at the extension is not able to talk, then when the extension hangs up, a beep in the earpiece notifies you that you are reconnected to the caller to take a message.

#### Option 5

3. If the extension is busy, press FLASH and perform step 2 again.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 83 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

OR

Option 6

3. If the extension is busy, press FLASH twice to place the call on Global Hold.

### 13.11 Call Waiting

Allows you to receive calls while you are on another line.

1. If you hear two or three beeps\* in the earpiece while on another line, you can do one of the following:

Option 1

2. Ignore the beeps and continue your conversation.

If you ignore the beep, then the system will handle the call differently depending on which features are enabled.

- a) If no features are enabled, then the system will ring all phones followed by the answering machine (if available).
- b) If Night Mode is enabled and an answering machine is available, then the system will ring the answering machine directly.
- c) If Receptionist Mode is enabled, then the system will ring the operator's extension, station 0.
- d) If a Voice Mail System is available and the VMS is enabled for that station, then the system will ring the VMS directly.

\* Two beeps indicate a primary extension ring, 8XX.  
Three beeps indicate a secondary extension ring, 9XX.

OR

Option 2

2. Press FLASH. (If your telephone is not equipped with a FLASH key then hold down the hook switch in the receiver cradle for approximately half a second.)

3. Press #.

4. Press 1, 2, or 3, depending on which line was ringing your extension.

OR

Option 3

2. Press FLASH. (If your telephone is not equipped with a FLASH key then hold down the hook switch in the receiver cradle for approximately half a second.)

3. Hold down the hook switch until the telephone rings. Then release the hook switch to connect to the second call.

To return to the original call, go on hook, then off hook.

### 13.12 Redial

Dials the last number called.

1. Go off hook.

2. Press \*4.

The system will pause for a moment and then dial the number.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 84 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

### 13.13 Call Connect/Pickup

Allows you to connect to another ringing station. Also known as "Call Pick Up".

Extension Connect

1. Go off hook.
2. Press \*\*3.
3. Using the touch-tone keypad, enter the ringing station's extension number.

Global Connect

1. Go off hook.
2. Press \*3.

You cannot Call Connect to calls ringing back either from a hold or calls ringing back after an unsuccessful transfer. You cannot Global Connect to COM calls or transferred calls

### 13.14 Pulse/Tone Selection For Programmable Numbers

Determines whether the system dials the Speed Dial numbers and System-Wide Directory numbers as touch-tones or pulses.

Enables the System to Dial Stored Numbers as Pulses

1. Go off hook.
  2. Press \*\*1.
- The telephone will beep twice in the earpiece to notify you that the system will dial stored numbers as pulses.

Enables the System to Dial Stored Numbers as Touch Tones

1. Go off hook.
2. Press \*\*1.

The telephone will beep once in the earpiece to notify you that the system will dial stored numbers as touch-tones.

The selection between touch-tone or pulse dialing is made by a switch setting on the standard telephone equipment. The pulse/tone selection described only affects the Speed Dial numbers and System-Wide Directory.

Some areas may require pulse dialing. In these areas you should set the pulse/tone selection as pulse.

### 13.15 Speed Dialing And Storing

Stores and dials frequently called numbers.

Store a Speed Dial Number

1. Go off hook and listen for dial tone.
2. Press #6.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 85 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

3. Using the touch-tone keypad, enter the 2-digit Speed Dial Memory Location.  
The telephone will beep twice in the earpiece to confirm that a valid location has been entered. If you enter an invalid memory location, you will receive a busy signal in the earpiece.
4. Using the touch-tone keypad, enter the telephone number (up to 16 numbers and pauses). To enter a 'pause', press FLASH. (If your telephone is not equipped with the FLASH key then hold down the hook switch for approximately half a second.)  
The pause will be four seconds long.
5. Go on hook.

The 2-digit Speed Dial Memory Location number must be between 00 and 29.

Adapter Box telephones can program only one telephone number at a time.

#### Dial a Speed Dial Number

1. Go off hook and listen for dial tone.
2. Press #5.
4. Using the touch-tone keypad, enter the 2-digit Speed Dial Memory Location.

The 2-digit Speed Dial Memory Location number must be between 00 and 29.

### **13.16 Uses Of System – Wide Directory**

There are two general methods to use the System-Wide Directory.

#### Method 1

A list of all commonly called numbers can be compiled and stored in directory storage locations. The directory location list can be given to everyone who uses the system.

#### Method 2

Individuals can be assigned their own directory locations. Then each person can access their own stored directory locations from any station in the system.

#### Method 1 Example:

- 01 - Building Maintenance
- 02 - Pizza Delivery
- 03 - Major Customer No. 1
- 04 - Major Customer No. 2
- 05 - Off-site office

#### Method 2 Example:

- 00 -09 Jim's numbers
- 10 - 19 Scott's numbers
- 20 - 29 Tara's numbers

Jim could go to any station in the system and dial his System-Wide Directory numbers.

ONLY THE OPERATOR, System Phone Station 0, can store numbers in the System-Wide Directory. Refer to the Operator's Manual for details in storing numbers in the System-Wide Directory.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 86 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

### **13.17 Dialing System – Wide Directory**

Dials frequently used numbers from any station.

1. Go off hook and listen for dial tone.
2. Press \*5.
3. Using the touch-tone keypad, enter the 2-digit directory storage location.

Valid numbers for the System-Wide Directory are from 00 to 29.

ONLY THE OPERATOR, System Phone Station 0, can store numbers in the System-Wide Directory. Refer to the Operator's Manual for details on storing numbers in the System-Wide Directory.

### **13.18 Ring Paging**

Causes all non-busy telephones on the system to ring.

1. Select the COM line by pressing # 4.
2. Press \*2.  
If no telephones are available, then a busy signal will sound in the earpiece.

Ringling stops when any station answers the call. This feature can be used to see if you are the only person in the building.

### **13.19 Broadcast**

Broadcasts on the COM line to all System Speaker Phones.

1. Go off hook and listen for dial tone.  
If all lines and COM are in use, then a busy tone will be heard, and this feature cannot be performed. Hang up and try again later.
2. Press \*6.  
If the COM line is available, the system will select it. All System Speaker Phones will emit a tone, then your voice will be broadcast through the speakers of all System Speaker Phones.

If anyone picks up the handset, the speakers on all System Speaker Phones are turned off and the person who picked up the handset is immediately connected to the broadcaster directly.

### **13.20 Conference Calls**

Connects multiple parties together in a telephone conversation.

1. While connected to an outside line, press the FLASH key. (If your telephone is not equipped with a FLASH key then hold down the hook switch in the receiver cradle for approximately half a second.)
2. Using the touch-tone keypad, enter the extension number of the station you wish to add to the conversation.
3. After the extension answers, press the FLASH key.  
Conference is now active.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 87 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

If the extension is busy, then the system will turn off the busy signal when you reselect the held line by pressing the FLASH key. If the extension does not answer, then when you select the held line by pressing the FLASH key, the ringing will stop. Only one outside line can be conferenced at a time. Multiple stations can be conferenced by repeating steps 1-3.

### 13.21 Call Forwarding

Redirects calls to another station's extension. This will affect both primary and secondary extensions.

#### Enable Call Forwarding

1. Go off hook and listen for dial tone.
2. Press \*7.
3. Using the touch tone keypad, enter the 8XX extension number of the station you want your calls forwarded to, or enter the 9XX extension number of the station you want your calls forwarded to. The telephone will beep once in the earpiece to notify you that Call Forwarding is enabled. For example, if you are extension 905 and you want your calls forwarded to station 13, enter 913.

#### Disable Call Forwarding

1. Go off hook and listen for dial tone.
2. Press \*\*7.
3. Press 8 for 8XX extension forward disable, or 9 for 9XX extension forward disable. The telephone will beep twice in the earpiece to notify you that Call Forwarding is disabled.

If the extension number is invalid you will hear a busy signal in the earpiece. The Adapter Box will not indicate that you are in the Call Forwarding mode.

### 13.22 Callback/Camp – On

Rings back when the busy extension number becomes free.

#### Enable Callback/Camp-On

1. While receiving the busy signal in the earpiece, Press \*8. The telephone will beep once in the earpiece and the red COM light will blink quickly to notify you that Callback/Camp-On is enabled.
2. Go on hook. The telephone will ring back when the extension becomes free. When you go off hook the extension will ring.

#### Disable Callback/Camp-On

1. Go off hook.
2. Press \*8. The telephone will beep twice in the earpiece and the red COM light will stop blinking to notify you that Callback/Camp-On is disabled.

Selecting the COM line also cancels Callback/Camp-On.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 88 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

Note: only one extension can be camped-on at one time.

### **13.23 Do Not Disturb (DND)**

Turns off all rings at a particular station. This will affect both primary and secondary extensions.

#### Enable Do Not Disturb

1. Go off hook and listen for dial tone.
2. Press \*9.  
The telephone will beep once in the earpiece to notify you that DND is enabled.
3. Go on hook.

#### Disable Do Not Disturb

1. Go off hook and listen for dial tone.
2. Press \*\*9.  
The telephone will beep twice in the earpiece to notify you that DND is disabled.

The Adapter Box will not indicate that you are in DND mode.

### **13.24 Voice Mail Mode**

Directs unanswered extension calls to the optional Voice Mail System (VMS) instead of ringing all telephones. This will affect both primary and secondary extensions. Flash Time Adjust

#### Enable VMS Mode

1. Go off hook and listen for dial tone.
2. Press #7.  
The telephone will beep once to notify you that VMS mode is enabled.

#### Disable VMS Mode

1. Go off hook and listen for dial tone.
2. Press #7.  
The telephone will beep twice to notify you that VMS mode is disabled.

This feature will transfer all unanswered extension calls to the VMS and dial the appropriate mailbox for that extension.

### **13.25 Flash Time Adjust**

Adjusts FLASH timing when using your telephone's FLASH key (if applicable).

1. Go off hook and listen for dial tone.
2. Press \*\*6.  
The telephone will beep once in the earpiece to notify you that a shorter FLASH time has been programmed. The telephone will beep twice in the earpiece to notify you that a longer FLASH time has been programmed. To change the current setting, repeat steps 2-4.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 89 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

3. Go on hook.

This feature is used to adjust the length of the FLASH time on your telephone when the VT3921 System is not responding properly. Due to the manufacturer definition of the FLASH function for their product, the FLASH key on some telephones may not work when used with the Teligent System. FLASH is used to perform certain system features, such as putting calls on hold. The Teligent System comes configured with the shorter FLASH time.

In rare instances, neither FLASH time setting will help your telephone's FLASH key to work with this system. This means that your particular telephone's FLASH function is incompatible with the VT3921 System. In this case, you can "flash" manually by using your telephone's hook switch (see the Adapter Box Manual, Rev. 2.10, CIS00142, pages 23-24).

### 13.26 Set Up – Line Ring Preference

Selects which telephone lines will ring at a particular station.

- Go off hook.
- Press \*\*4.  
The red line light will blink over Line 1.
- Using the touch-tone keypad, enter the number of rings to delay.  
The number key corresponds to the number of rings to delay before ringing your telephone on Line 1 (see table). After this key is pressed, the red line light over Line 2 will blink.
- Using the touch-tone keypad, enter the number of rings to delay for Line 2.  
After this key is pressed, the red line light over Line 3 will blink.
- Using the touch-tone keypad, enter the number of rings to delay for Line 3 .  
After this key is pressed, the set up is complete.

<b>Number Key</b>	<b>Ring Delay</b>
0	Ring immediately
2	2 ring delay
4	4 ring delay
6	6 ring delay
9	Never rings

Ring delay does not affect outside calls when an extension number is dialed, transferred calls, and COM line calls.

Ring delay is useful when you want certain telephones to ring before other telephones.

### 13.27 Set Up – Line Select Order

Sets up order of available line selection.

- Go off hook.
- Press \*\*5.  
All red line lights will blink on the Adapter Box.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 90 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

3. Using the touch-tone keypad, enter the line numbers in the order that you want them to be selected. For example, to set the following order: Line 1, Line 3, COM, Line 2 - using the touch tone keypad, enter - 1,3,4,2. Notice that the number 4 represents the COM line.

By default the system will select in the following order: Line 1, Line 2, Line 3, COM.

This feature is useful when you want certain telephones to select specific lines. For example, in home installations where there is a residential line (Line 1) and a business line (Line 2), the business telephone station can be set up to select Line 2 first.

## 13.28 Using Faxes And Modems

The VT3921 System includes fax detect and extension dialing which allows fax and modem features without requiring dedicated lines. The line privacy feature of the system prevents other stations from interfering with fax and modem data transmissions.

All fax machine and modem equipment must be connected to the VT3921 System through an Adapter Box. Installation instructions are included in Section 41.2, *Installing the Adapter Box*. Multiple faxes and modems can be installed on the system up to the limit of extensions. When multiple faxes are used, the system will transfer automatic or "star" directed fax calls to the fax with the lowest extension number (default fax). If that fax is busy, not functioning, out of paper, or off hook; the system will ring the next highest fax extension. For example, if you had 3 fax machines connected to the system set as fax stations 9, 11, and 13, then fax station 9 would be the default fax station. When a fax machine is out of paper or not functioning, the extension will ring twice before rolling over to the next extension. All modem connections are accessed by extension number.

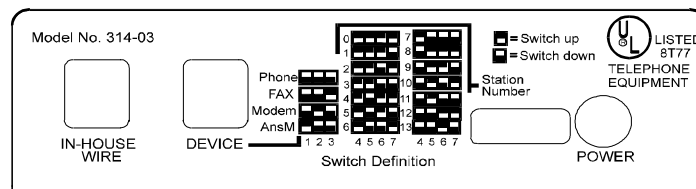
### 13.28.1 Fax Operations

Make sure that the station number on the Adapter Box is different from all other devices on the system.

Set the Device Switches located on the back of the Adapter Box to a fax as shown below.

#### Defining Default Fax Station

Fax receive priority is determined by the fax station numbers. The lowest fax station is the default fax station. For example, if you had 3 fax machines connected to the system set as fax stations 9, 11, and 13, then fax station 9 would be the default fax station. If fax station 9 is busy and the system receives another fax, then fax station 11 will receive the fax. If both fax stations 9 and 11 are busy, then fax station number 13 will receive the fax. Refer to *Installing The Adapter Box* - for further information.



### 13.28.2 Receiving A Fax

The VT3921 Series system is optimized for handling faxes. There are several options that can be used for receiving faxes.

Option	Allowed Device Type Settings
1	FAX, AUX3, AUX4 (Station numbers 0-10)
2	FAX, AUX3, AUX4 (Station numbers 0-10)

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 91 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>
3	FAX, AUX3, AUX4 (Station numbers 0-10), Telephone, Modem
4	Telephone
5	FAX, AUX3, AUX4 (Station numbers 0-10), Telephone, Modem
6	FAX, AUX3, AUX4 (Station numbers 0-10)

Option 1 - Automatic

The system automatically detects the “CNG tone” or “fax tone” on any of the outside telephone lines and rings the default fax extension number. All other extensions do not ring. If more than one fax machine is connected and the default fax is busy, the system will automatically “roll-over” to the next available fax.

Option 2 - Voice Prompted

The system’s Fax Message instructs the caller to press the “star” (\*) key to automatically direct the fax to the fax station.

Note: If there is no fax station then the Fax Message does not play

Option 3 - Extension Dialed

The caller can enter an extension number of an Adapter Box connected to a fax machine after the system answers. After the fax machine answers, it will send a “CED” tone and the caller can then start sending the fax. If the caller has a fax machine with an auto-dialer, the same thing can be accomplished by inserting pauses (generally 3 pauses) after the telephone number, followed by the extension number. If the receiving fax machine is off or out of paper, the extension will ring for 90 seconds then hang up on the outside lines and stop ringing the extension. Extension dialed calls do not rollover to the next available fax machine.

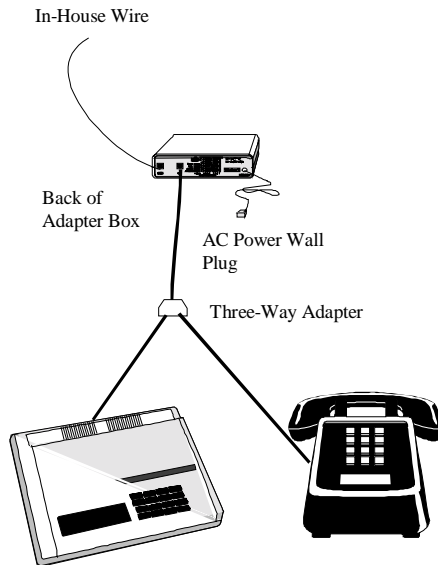
Extension dialing allows a private fax, other than the default fax, to be accessed by the caller

Option 4 - Full Manual Fax Connected to a Telephone Extension

This operation requires attaching a fax machine to an Adapter Box with device switch settings that the system will not recognize as a fax extension (not FAX, not AUX3, and not AUX4).

Generally the fax machine should be set so it does not ever answer automatically. During a conversation, a fax transmission can be initiated by both parties by switching their fax machines on line. This option applies to separate instruments (as shown below) or a combination fax/phone machine tied to an Adapter Box with device switches set to telephone.

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>



Option 5 - Manual Transfer to Fax Station

During a voice call the connection can be transferred to a fax machine. Transfer the call to the fax extension number using the standard transfer procedure then hang up.

Option 6 - Dedicated Fax Line

This option causes all calls received on Line 3 to be sent to the default fax. Refer to *Dedicated Fax Line* in the Operator's Manual for details.

**13.28.3 Sending A Fax**

Sending an External Fax

To send a fax over an outside line the procedure is the same as being tied directly to an outside line, except the system will switch to any unused extension unless restricted.

To send all your faxes from a particular telephone line, restrict all other lines except the line that you would like to send faxes from. Refer to the Operator's Manual to set up *Line Restriction*.

Sending an Internal Fax

The VT3921 System allows you to send a fax to another fax machine connected to the system, without accessing the telephone company lines. This also allows you to fax an image to your fax card equipped computer without using telephone company lines.

Note: If the COM light is lit, then the COM line is in use. Wait until the COM line is free before attempting to make an internal fax call.

There are two options for dialing internal faxes as shown below:

Option 1 - Manual Dialing

1. Select the COM line by pressing # 4.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 93 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

2. Using the touch-tone keypad, enter the extension number of the receiving fax.

Option 2 - Automatic Dialing

If you have a fax that allows you to enter the extension number directly into the fax machine, then do the following:

1. Using the touch tone keypad, enter the following as the telephone number: “#P4PPXPYPZ”

- #P4 - Selects the COM line.
- X- The first digit of the extension number.
- Y- The second digit of the extension number.
- Z - The third digit of the extension number.
- P - Pauses.

Note: Substitute whatever character your fax machine uses for pauses in place of the “P”s.

**13.28.4 Modem Operations**

Setting Up Modem Lines

The Adapter Box connected to the modem must be configured as described in *Installing The Adapter Box* and *Installing of Fax and Modem Equipment*.

To limit the lines that a modem can use, refer to *Set Up - Line Select Order* and in the Operator’s Manual, *Line Restriction*.

Since the modem is accessed by an extension number, outsiders cannot connect to computers unless they are given the modem extension numbers. This simple security keeps computer “hackers” from discovering a modem line.

You can keep the computer modem set to auto answer because unless the outside caller enters the extension number of the computer modem, the station will never ring. There is no system tone detect for modems. Modems connections can be initiated at the station or remotely.

Station Initiated Modem Connections

Station Initiated External Connections

The computer attached to the modem is programmed the same as if it were connected directly to an outside line.

Station Initiated Internal Connections

To connect to another modem on the system, the COM line is used.

Note: If the red COM light is lit, then the COM line is in use. Wait until the COM line is free before attempting to make an internal modem call.

Option 1

1. Make sure that the other computer with a modem is in the HOST mode.  
Your modem software package should have a key sequence that needs to be entered in order to set up the other computer as an auto answering HOST.
2. In your modem software find the menu where you enter the number to dial.

<b>Reference:</b>	<b>Revision: 1.0</b>	<b>Page: 94 of 98</b>
-------------------	----------------------	-----------------------

<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>

3. Enter the following in place of the telephone number: #P4PPXPYPZ

- #P4 - Selects the COM line.
- X- The first digit of the extension number.
- Y- The second digit of the extension number.
- Z - The third digit of the extension number.
- P - Pauses.

Note: In most modem software packages the “,” (comma) represents a pause. If your modem uses a different character for the pause, then substitute that character in place of the commas. You may need to adjust the number of pauses depending on the speed of your computer.

OR

Option 2

1. If you are using a standard “Hayes Compatible” modem, at the modem software prompt enter the following: ATDT #P4PPXPYPZ

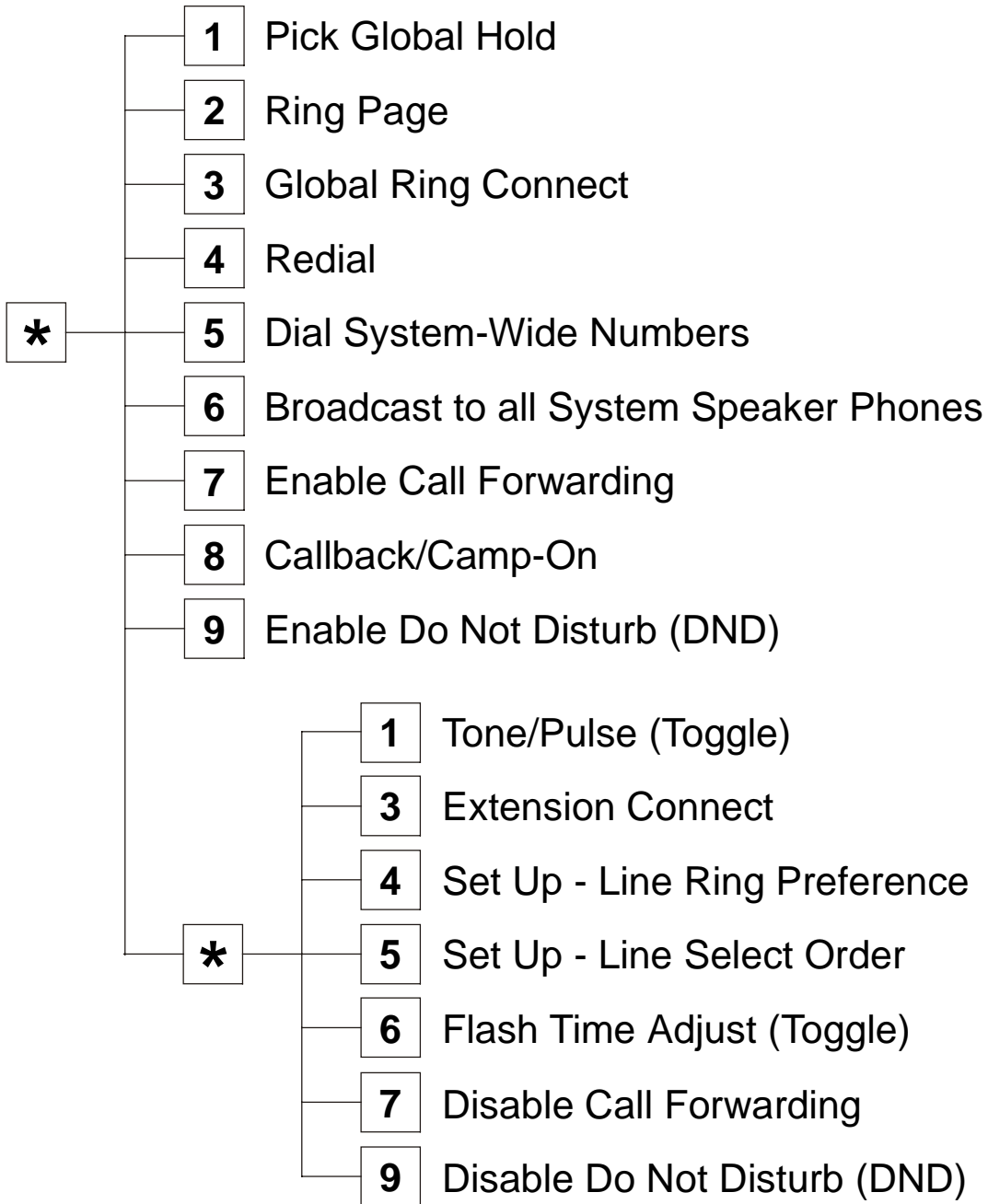
- #P4 - Selects the COM line.
- X- The first digit of the extension number.
- Y- The second digit of the extension number.
- Z - The third digit of the extension number.
- P - Pauses.

Remote Initiated Modem Connections

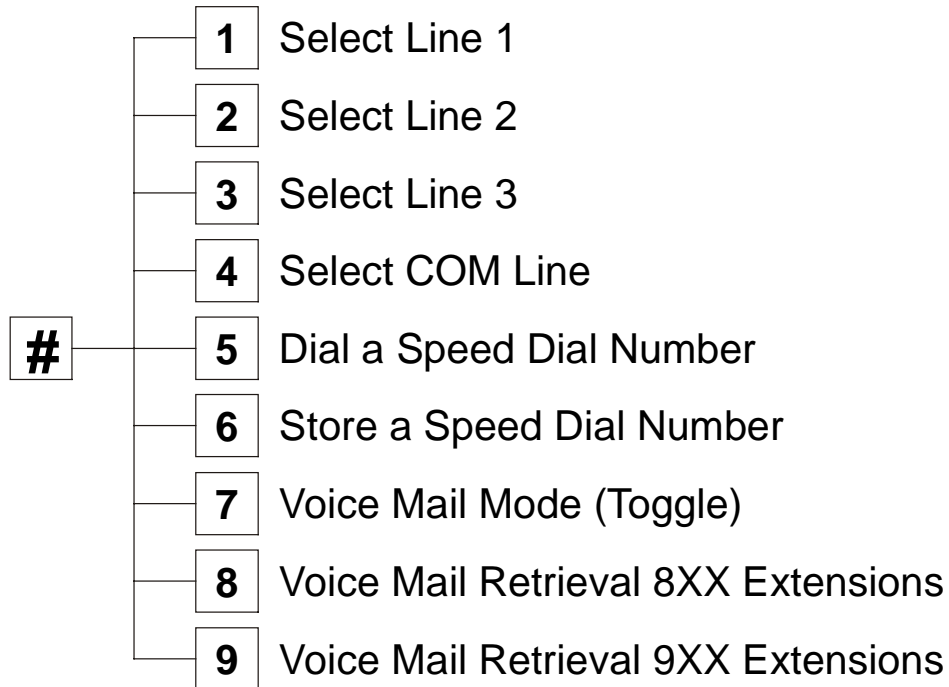
To prepare a station for allowing remote access through the modem, the modem and connected computer should be left on and in the HOST mode. The remote initiator needs to program the communication software to dial the telephone number, three pauses and the extension number of the desired modem.

### 13.29 Adapter Box Feature Flow Chart

TITLE	VT3921 Internal Product Specification
MODEL	VT3921



TITLE	VT3921 Internal Product Specification
MODEL	VT3921



<b>TITLE</b>	<b>VT3921 Internal Product Specification</b>
<b>MODEL</b>	<b>VT3921</b>