



# DigiCall™ System Installation and Operation

World Class Security Solutions



## Copyright

Information in this document is subject to change without notice. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or any means electronic or mechanical, including photocopying and recording, for any purpose other than the purchaser's personal use, without the written permission of Digitech International, Inc.

## Published By

Digitech International, Inc.  
Copyright© 2004  
All Rights Reserved.

## Trademarks

Digitech, DigiGate, DigiGraphics, DigiView, DigiCall, DigiPort, DigiGate-700 and DigiGate-700 for Windows are trademarks of Digitech International, Inc. Microsoft, MS-DOS, and Windows are registered trademarks of Microsoft Corporation. Other brands and their products are trademarks or registered trademarks of their respective holders and should be noted as such.

**“Acrobat® Reader Copyright© 1987-2004 Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, Acrobat, and the Acrobat logo are trademarks of Adobe Systems Incorporated.”**

## Acknowledgments

Document design and layout by Jim Barnette  
Special Site Rendered Graphics by Jeff McCoy  
Other graphics by Jim Barnette and Jeff McCoy  
Photography by Jim Barnette and Jim Bristol

## Electronic Document and Acrobat® Reader

An electronic version of this document is available. Please call **Digitech International, Inc.** to receive a CD containing a PDF version viewable with **Adobe® Acrobat® Reader**.

See **Appendix A - “Adobe® Acrobat® Reader”** for complete instructions.

**Table of Contents**

Copyright ..... II

Trademarks ..... II

Acknowledgments ..... II

Table of Contents ..... i

Conventions used in this Guide ..... iv

Symbols Used In This Guide ..... v

    Tip or Note ..... v

    Caution ..... v

    Danger ..... v

Terms and Conditions of Purchase ..... vi

Written Limited Warranty ..... vii

System Hardware Repair Policy ..... viii

    RMA's ..... viii

    In Warranty Repairs ..... viii

    Non-Warranty Repairs ..... viii

        Repair Costs ..... viii

            Bench Repair Charges: ..... viii

            Replacement Parts & Sub-Assemblies: ..... viii

    Terms ..... viii

Chapter 1 Introduction ..... 1-1

    How to Reach Digitech International, Inc. .... 1-1

    Introduction ..... 1-2

    System Overview ..... 1-2

        DigiCall™ System Features ..... 1-3

        DigiCall™ System Limitations ..... 1-3

    Theory of Operation and Setup Settings ..... 1-4

        Stations and Zones (Pairs) and Their Functions ..... 1-4

        Relay Operation, Normally Open (<N/O>)-Normally Closed (<N/C>) Jumper ..... 1-4

        Speaker and Control Relay Selection <SPKR-C> Jumper ..... 1-5

        Control Relay Activation <AUTO-DIGIT> Jumper ..... 1-5

        Latched-Momentary <L-M> Settings ..... 1-5

        All Call <IN-OUT> Jumpers ..... 1-6

        Call Button Selection <DB-NDB> Jumper ..... 1-6

        Telephone <TELCO-UNUSED PORT> Switch ..... 1-6

        Initiation Tone Switches ..... 1-7

            Selection Key <\*> or <#> Switches ..... 1-7

            Number of Pushes <1-2> Switch to Select (\* or \*\*; # or ##) ..... 1-7

        Ring Count <2, 4, 6, 8> Jumper Wire ..... 1-8

        Ring Length <LONG-SHORT> Jumper ..... 1-8

        Remote Jumper ..... 1-8

        Relay Out <L-M> Jumper ..... 1-8

        Sensitivity and Volume Controls ..... 1-8

Chapter 2 Two Station Master Installation ..... 2-1

    Pre-Installation Considerations ..... 2-2

        Equipment Location ..... 2-2

        Telephone Line Requirements ..... 2-2

        Power Supply Requirements ..... 2-2

        Keypad Intercom/Substation Connection ..... 2-2

Installation .....	2-3
Master Intercom Board Setup .....	2-3
Substation/Relay Setup .....	2-4
Intercom Settings .....	2-4
Control Relay Settings .....	2-4
DigiGate Keypad Modification .....	2-5
Intercom Substation Connections .....	2-6
Keypad Transformer Connections .....	2-7
Substation Transformer Connections .....	2-7
Remote Module Connections (Optional) .....	2-8
Telephone Line Connections .....	2-9
Setting Output Relay .....	2-10
Power Connections .....	2-11
Adjustments .....	2-11
Remote Module Setup .....	2-12
Remote Module Programming .....	2-13
Chapter 3 Four and Eight Station Master Installation .....	3-1
Pre-Installation Considerations .....	3-2
Equipment Location .....	3-2
Telephone Line Requirements .....	3-2
Power Supply Requirements .....	3-2
Keypad Intercom/Substation Connection .....	3-2
Installation .....	3-3
Four and Eight Station Master Intercom Board Setup .....	3-3
Substation/Relay Setup .....	3-4
Intercom Settings .....	3-4
Control Relay Settings .....	3-4
DigiGate Keypad Modification .....	3-5
Intercom Substation Connections .....	3-6
Connecting the Surge Suppressors to the Board .....	3-6
Connecting to the Surge Suppressors .....	3-6
Keypad Transformer Connections .....	3-7
Substation Transformer Connections .....	3-7
Remote Module Connections (Optional) .....	3-8
Telephone Connections .....	3-9
Setting Output Relay .....	3-10
Power Connections .....	3-11
Adjustments .....	3-11
Remote Module Setup .....	3-12
Testing .....	3-13
Local Mode .....	3-13
Remote Mode .....	3-13
Remote Module Programming .....	3-13
Chapter 4 Eight Station Expansion Board Installation .....	4-1
Installation .....	4-2
Substation/Relay Setup .....	4-2
Intercom Settings .....	4-2
Control Relay Settings .....	4-2

Mounting the Expansion Board .....	4-3
Intercom Substation Connections .....	4-5
Connecting the Surge Suppressors .....	4-5
Connecting to the Surge Suppressors .....	4-5
Keypad Transformer Connections .....	4-6
Substation Transformer Connections .....	4-6
Chapter 5 Operation and Diagnostics .....	5-1
DigiCall™ Operation .....	5-2
Local Mode .....	5-2
Initiating a Call From an Intercom/Substation .....	5-2
Calling to an Intercom/Substation .....	5-3
Programming the Remote Number .....	5-3
ALL CALL .....	5-3
Remote Mode .....	5-3
Using the Telephone to Activate a Device .....	5-3
Answering the Remote Telephone .....	5-3
Diagnostics (What Do I Do When...?) .....	5-4
The conversation is cut off without hanging up or disconnecting the call .....	5-4
It is hard to hear the person at the substation or the manager .....	5-4
Part of the conversation is cut off .....	5-4
I get chatter in the speaker .....	5-4
I cannot hear any sound at the substation or on the telephone .....	5-5
When I use “0” or “##0” for an All Call, it fires a control relay .....	5-6
When I press the keys to fire the control relay (#9 or #station number), it does not work .....	5-6
The control relay does not fire long enough or too long .....	5-6
The telephone line is dead when I try to make a call from the telephone connected to DigiCall™ .....	5-6
The substation rings the phone without anyone pushing the button .....	5-6
Appendix A Adobe® Acrobat® Reader .....	A-1
The Electronic Document .....	A-2
Adobe® Acrobat® Reader .....	A-2
Appendix B DigiCall™ Substation Installation .....	B-1
DigiCall™ Interior Substation Installation .....	B-2
Mounting .....	B-3
Surface Mount .....	B-3
Flush Mount .....	B-3
Speaker Connections .....	B-4
DigiCall™ Exterior Substation Installation .....	B-5
Appendix C Using with PBX or Other Telephone Systems .....	C-1
Introduction .....	C-2
Setup 1 – Connecting through the PBX System .....	C-2
Installing the DigiCall™ System .....	C-2
Programming the PBX .....	C-3
Using the System .....	C-3
Setup 2 – Connecting through a Dedicated Telephone Line .....	C-3

## Conventions used in this Guide

<u>Format/Symbol</u>	<u>Definition</u>	<u>Example</u>
<b><i>Bold Arial Italic</i></b>	Represents Menu selections or Screen objects to select.	Move the cursor to the <b>Set</b> button.
< <b>Bold Arial</b> > text in braces	In the Software - represents a key on the PC Keyboard.  On hardware items, this will represent a device (i.e. plug, chip, jumper, cable, etc) on a board or a control device.	Press the < <b>Enter</b> > key.  Remove the < <b>J3</b> > jumper.
"Courier Regular"	Actual text the user is to enter or text displayed on the screen.	Type "CD\DIGI" and press < <b>Enter</b> >. Do Not type the Quotation marks!
<b>Bold Times text</b>	Bold text in the Guide's normal font means to perform a task.	Select the <b>Unit Setup</b> tab.
" "	Quotations around the Guide's normal font will be used to represent other sections in the guide or to emphasize the text enclosed in quotes.	(See the "System Setup" section on page ...)
• •	Used to indicate an item in a list or one step in a procedure. Numbers will also be used for this.	<ul style="list-style-type: none"> <li>• Select <b>Unit Setup</b> tab.</li> <li>• Click on <b>Unit Type</b>.</li> </ul>
1. 2.	Also used to indicate an item in a list or a step in a procedure. Bullets will also be used for this.	<ol style="list-style-type: none"> <li>1. Select the <b>Unit Setup</b> tab.</li> <li>2. Click on <b>Unit Type</b>.</li> </ol>
< <b>Key1</b> >< <b>Key2</b> >	Multiple keyboard keys indicate that you should push the first key and hold it down while pressing the second key.	Press < <b>Ctrl</b> >< <b>C</b> > to copy the contents.
{c1   c2}	Indicates a User Choice from the items. Each choice is separated by a vertical bar.	Select { <b>OK</b>   <b>Cancel</b> } based on the situation.



Figure 1



Figure 2



Figure 3

## Symbols Used In This Guide

### Tip or Note



The **TIP** or **NOTE** icon marks a paragraph or text block that is important to the reader because it gives additional clarification or notifies of a way to simplify the process being described. These notifications come from experience and are designed to speed your installation and/or help you avoid costly and time consuming mistakes. **Figure 1**

### Caution



The **CAUTION** icon highlights instructions that are expected to be followed exactly. Nonadherence to the procedure or instructions may result in damage to the equipment. Damage of this type is **NOT** covered by warranty since it is caused by failure to follow stated practices and procedures. Damage caused by ignoring these instructions are considered to be outside of normal practice and may void the warranty. **Figure 2**

### Danger



The **DANGER** icon signifies instructions that are specifically included to protect you. Nonadherence to these procedures and instructions may result in injury to you or to death. We cannot caution you enough about following these instructions precisely. **Figure 3**



## Terms and Conditions of Purchase

PURCHASER understands that unless otherwise specified on a Digitech Sales Order Copy, or other contractual agreement, neither installation nor the warranty thereof, is included in this agreement.

The PURCHASER hereby recognizes and agrees that the system is a custom integrated system that may include both hardware and software, designed particularly for the premises, and the PURCHASER recognizes and agrees that it shall have no subjective right to refuse the system. PURCHASER understands that the materials specified on the reverse side of this agreement, on a signed Digitech Sales Order Copy, or in executed contractual agreements, properly installed, are sufficient to complete the installation as required. Should additional materials be necessary, they may be purchased at current catalog prices.

Should any part of the system be lost, stolen, damaged or destroyed by fire, water, or extraneous causes, whether or not subject to the PURCHASER's control; the repair, replacement work, and reinstallation shall be carried out at the expense of the PURCHASER. PURCHASER agrees that the SELLER's obligation hereunder relates solely to the system as provided by the SELLER, and the SELLER shall not be liable for any loss or damage incurred by the PURCHASER caused by PURCHASER's installation, alteration to, removal of, or tampering with the system. Otherwise, this purchase is subject to the Digitech Written Limited Warranty, the details of which are available on request.

PURCHASER agrees to pay the purchase price indicated on the stated terms reflected on a Digitech Sales Order Copy or in contractual agreements. Thereafter, interest shall be charged on any due and unpaid balance at a rate equal to one and one-half percent (1 1/2%) per month from the due date until paid in full.

In no event shall the interest be greater than the maximum permitted by applicable law. If the SELLER deems it necessary to employ an attorney or collection agency to collect this account, or any part thereof, the PURCHASER agrees to pay actual, reasonable attorney fees or collection costs.

By installing or using Software provided with this purchase, PURCHASER indicates acceptance that the software is part of a system consisting of the software and the hardware it controls, that the software is meant to be installed on only one computer (including Network Terminals, if so noted), and that software may be supplied to PURCHASER with a temporary activation code. Once all purchase terms have been complied with, including all payments as agreed, a Software Registration will be issued with a permanent activation code.

This agreement shall be interpreted and governed by the laws of the State of North Carolina.

The PURCHASER represents that this Agreement constitutes the entire agreement between PURCHASER and SELLER and that no other agreements, promises, representation, undertakings, warranties, express or implied, except those expressly set forth herein have been relied upon by PURCHASER, or have been made to PURCHASER by SELLER, its agents, or employees, and that no modification of this AGREEMENT shall be claimed by PURCHASER subsequent to the execution hereof unless first reduced to writing and executed by the parties hereto.

Further, the PURCHASER acknowledges and agrees that the SELLER has not made, and the PURCHASER is not relying upon any representation or warranties, express or implied, except as contained herein, and any and all implied warranties are hereby expressly waived by PURCHASER.

### **Written Limited Warranty**

Effective with products delivered on or after July 1, 2003: Digitech International, Inc. (Seller) warrants to you, the original purchaser, that for the stated warranty term, Digitech will, at no extra charge, repair or replace with new or reconditioned parts, any of its manufactured components, which is defective in material or workmanship, provided the original part has been installed and maintained properly and is returned for inspection and verification of warranty coverage. The decision to repair or replace will be at the discretion of the manufacturer. The warranty period shall be two years on all Digitech manufactured equipment, with the exception of video surveillance equipment and vertical gate operators, which carry a one-year warranty. Original equipment manufacturer's warranties will apply to all other equipment supplied by Digitech, acting as a value-added reseller. All returned parts and products become the property of Digitech International, Inc. Labor and incidental costs to uninstall original parts and re-install replacement parts provided under this Limited Warranty shall be the responsibility of the PURCHASER. This Limited Warranty does not include service, replacement, or repair of damage to the product resulting from accident, disaster, misuse, or abuse; extraneous causes including lightning and transient currents; or modifications of the product not specifically approved by Digitech.

Limited Warranty service may be obtained by pre-paid delivery of the product to the warranty service location during the warranty period, providing a Return of Materials Authorization Number (RMA) has been issued. Claimant agrees to insure the product or assume the risk of loss or damage in transit, to prepay shipping charges, and to use the original shipping container or equivalent. If a product is defective as described above, PURCHASER'S sole remedy shall be repair or replacement as provided herein. In no event shall SELLER be liable for any damages, including any lost profits, lost savings, or other incidental or consequential damages arising out of the use of, or inability to use such product, or for any claim by any other party, even if SELLER has been advised of the possibility of such damages. PURCHASER acknowledges and it is agreed between the parties hereto that the SELLER is not an insurer and that the SELLER's exclusive liability is contained in this statement. To the maximum extent permitted by applicable law, SELLER and its suppliers disclaim all other warranties, either express or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with regard to the software, hardware, and accompanying written materials. This limited warranty gives you specific legal rights that may vary from jurisdiction to jurisdiction.

## System Hardware Repair Policy

### RMA's

Equipment to be repaired may be sent to Digitech International, Inc. after a Return Material Authorization number has been issued by the Customer Service Department. The items should be shipped prepaid to:

**Digitech International, Inc.**  
**Attn: RMA/Repair**  
**409 New Leicester Highway**  
**Asheville, NC 28806**

**Service & Repair Telephone/Fax Numbers**  
**Phone: (828) 250-9767 Fax: (828) 250-0799**

A detailed packing list showing the Return Material Authorization Number, quantity, product, purchase order number for any out-of-warranty repairs, return address, telephone number and any special instructions must be included with the shipment. Equipment shipments made on a COD basis will be refused.

Each returned item shall have a written description of the defect on the packing list.

Upon receipt by Digitech International, Inc., each shipment will be inspected to verify all items are received as listed, and that defects are due to failure under normal usage, not user negligence. Damaged or defective items which are not covered by warranty will be handled according to the non-warranty repair policy.

### In Warranty Repairs

Each DigiGate system and major sub-assembly bears a warranty expiration date.

Defective units still under warranty will be repaired as stated in the original warranty agreement.

The warranty period for repaired items shall be 90 days or the remainder of the original warranty period, whichever is greater.

### Non-Warranty Repairs

Defective items not covered under warranty will be repaired and charged based on the current charges in effect at the time of the repair.

The warranty period for repaired items shall be 90 days from the date of shipment from Digitech International, Inc.

### Repair Costs

These published service and repair costs are subject to change without notice.

### Bench Repair Charges:

Hourly rate ..... \$65.00  
 Minimum charge ..... 1 hour

### Replacement Parts & Sub-Assemblies:

Subject to the prices in effect at the time of repair.

### Terms

All shipments to Digitech International, Inc. are to be prepaid. Freight shipments to Digitech International, Inc. on a COD basis will be refused.

Digitech International, Inc. will pay surface freight charges on the return of repaired units under warranty. Air freight charges will be added to the repair fee. All freight, shipping and handling charges will be billed to the customer on units out of warranty.

Repair and air freight charges will be invoiced to customers who have established credit lines with Digitech International, Inc. Repaired items returned to companies doing business on a COD basis will be subject to the COD fee, which will be added to the repair charge.

Included in this Chapter

**How to Reach Digitech International, Inc.** ..... Corporate Address  
Internet and E-Mail  
Telephone and Fax

**Introduction** ..... Scope of Manual

**System Overview** ..... DigiCall™ Features  
DigiCall™ Limitations

**Theory of Operation and Setup Settings** ..... Stations and Zones (Pairs)  
Relay Operation N/O - N/C Jumper  
SPKR-C Jumper  
AUTO-DIGIT Jumper  
L-M Jumper  
All Call IN-OUT Jumper  
Call Button (DB-NDB) Jumper  
Telephone TELCO-UNUSED  
PORT Switch  
Initiation Tone Switches  
    Selection Key Switches  
    Number of Pushes Switch  
Ring Count Jumper Wire  
Ring Length Jumper  
Remote Jumper  
Relay Out Jumper  
Sensitivity and Volume Controls

**How to Reach Digitech International, Inc.**

**CORPORATE ADDRESS**

Digitech International, Inc.  
409 New Leicester Highway  
Asheville, NC 28806

**INTERNET AND E-MAIL**

Our Web site is  
[www.digitech-intl.com](http://www.digitech-intl.com)  
E-Mail to Sales at  
[sales@digitech-intl.com](mailto:sales@digitech-intl.com)  
E-Mail to Service at  
[techsupport@digitech-intl.com](mailto:techsupport@digitech-intl.com)  
Submit drawings by E-Mail to  
[drawings@digitech-intl.com](mailto:drawings@digitech-intl.com)

**TELEPHONE AND FAX**

Main Office (828) 250-9767  
Fax Line (828) 250-0799  
Technical Support (800) 523-9504

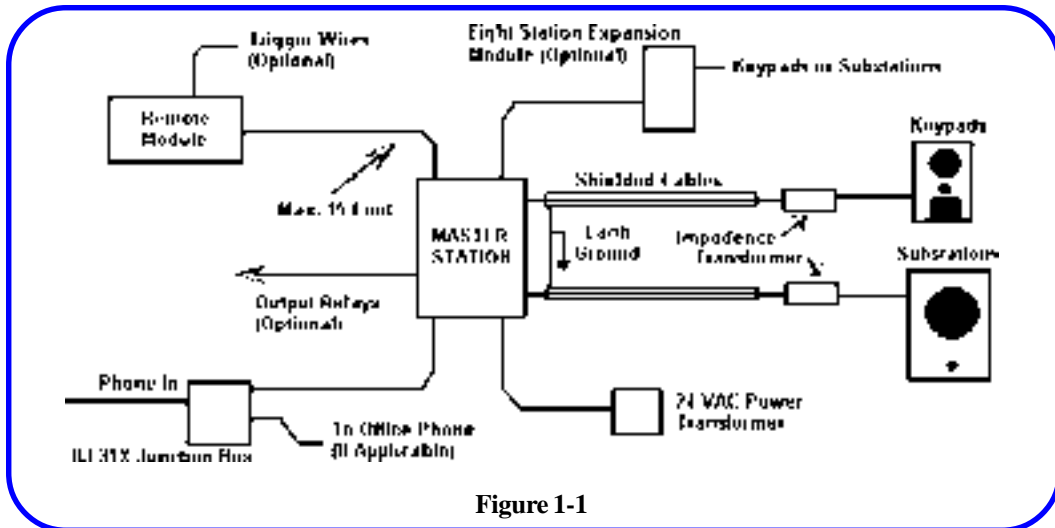


Figure 1-1

## Introduction

This manual provides instructions for installing and operating the DigiCall™ System. Digitech International, Inc. encourages reading this entire guide before installation and operation of the DigiCall™ System. This will ensure that the installer has all components, parts, tools, and information to perform the installation successfully.

## System Overview

The DigiCall™ System enables communication between keypad intercoms, substations, and the site office, local or remote, through use of a telephone. There are two modes of operation, LOCAL and REMOTE. If the facility has on-site management, DigiCall™ can be used in both LOCAL and REMOTE modes. If the facility does not have on-site management, DigiCall™ can be configured for REMOTE operation only. Let the sales agent know that a remote only Call Unit, (P/N 9001-055LR), is needed.

The DigiCall™ System configuration, **Figure 1-1**, consists of a Master Intercom designed for two, (P/N 9001-052), four (P/N 9001-054), or eight stations (P/N 9001-058), a 24 VAC power transformer, an RJ-31X phone jack, and a remote Call Unit (P/N 9001-055). Other components can include DigiGate™ keypad(s) and/or intercom substations (P/N 9001-051, 9001-053, and 9100-061), both with 8/16-ohm intercom transformer (P/N 9001-050) and 22-gauge six-wire shielded cable (3 twisted pairs). Eight-Station Expansion Modules (P/N 9001-056) are optional.

Communication through DigiCall™ is conducted in one direction at a time (half-duplex). When the system is in the REMOTE mode, a call from a keypad intercom or substation is sent through telephone lines to an off-site telephone. The telephone number is programmed into the Remote Module with a telephone connected to the unit. In LOCAL mode, keypad intercoms or substations communicate with the office telephone through the intercom system. A call from an intercom to an office telephone is initiated by pressing the call button on the substation.



Figure 1-2

### DigiCall™ System Features

1. **Figure 1-2** shows a Master Intercom and the smaller Remote Call Module.
2. Choose from a series of Master Stations that provide connectivity to 2, 4, or 8 intercom speakers. Additional stations may be added to the 4 and 8 station systems with the addition of 8 station expansion modules. Contact a Digitech Sales Representative for details on large systems.
3. Half of the relays can be used as control relays to control the operation of door strikes, lights, cameras, or other devices.
4. Conversation is voice-activated.
5. When the office telephone is on an outside call, intercom calls are announced by a series of “beeps”.
6. The system is programmed to dial an optional telephone number, including an emergency call center or cellular phone.



**NOTE:** Portable telephones will operate with the DigiCall™ System. However, the signal of some portable telephones can be obstructed by metal buildings at the site.

### DigiCall™ System Limitations

1. Digitech keypads require field modifications to be used with the DigiCall™ system.
2. The system can only have one remote number programmed into it at a time.
3. The system cannot be used with Aiphone Intercom equipment, DigiCaster™ messages or background music systems.
4. A separate telephone line is necessary for DigiCall™ at remote sites. When using the same phone line for DigiCall™ and the modem connection to the System Controller, pressing the “#” key to disconnect the DigiCall™ connection will also take the modem out of AutoAnswer. This will prevent calls to the System Controller.
5. Cable runs between substations and the Master Intercom are limited to 2,500 feet.
6. Answering machines and automated voice mail systems cannot respond to intercom/substation calls while DigiCall™ is in the Remote mode.

## Theory of Operation and Setup Settings

There are several different sets of jumpers, wires, and switches that are used to set up and operate the DigiCall™ system. The following explanation will detail these functions and settings which will clarify the operation, simplify installation, and assist with troubleshooting.

### Stations and Zones (Pairs) and Their Functions

Each relay in a DigiCall™ system is called a station. In each system master unit there is also one extra relay that activates whenever another station is activated. It is labeled **<RELAY OUT>**. With this one exception, the stations in all DigiCall™ systems are setup in pairs with the odd numbered stations designed for use with intercom substations only. The even numbered stations may also be used as intercom substations, or may be used as control relay outputs.

The term Zone is used to mean an adjacent odd/even pair of stations (i.e. 1 & 2, 3 & 4, 5 & 6, 7, & 8). The odd station is used for the intercom. The even station is used as an intercom or as a control relay that can be activated from the office while the call is in progress. Therefore, a Two-Station system has one zone, a Four-Station system has two zones, and an Eight-Station system has four zones. One zone, (two stations), is required for each intercom location requiring relay control of a device.

Each substation should connect with a 22 gauge, shielded, 6 conductor (3 twisted pair) cable, with a bare drain wire. This provides one wire pair for the speaker connection, one for the push-button connection, and one additional pair if a control relay is needed at this location.

If the station is used as a control relay, one station of the DigiCall™ unit is used and one of the twisted pairs is used for connecting the relay. If a location requires only an intercom substation, one station of the DigiCall™ unit is used and two of the twisted wire pairs are used for connection of the speaker and the push-button. If the location requires both a substation and a control relay, two station positions (one zone) are used. All three of the twisted pairs are used for connection, two pairs for the intercom substation and one pair for the relay control.

### Relay Operation, Normally Open (<N/O>)-Normally Closed (<N/C>) Jumper

Each of the even numbered stations can be used as a control relay to activate a **<N/O>** type device or a **<N/C>** type device. Each of these stations can be configured individually for the state it controls. Check the devices used to determine which state is appropriate.

“Normally Open” means that the relay contacts are open in its idle state. When the relay is activated, the contacts close allowing current to flow through them. This is the state used for an intercom substation, or to activate some device during a call.

“Normally Closed” is just the opposite. The relay contacts are closed when the relay is in its idle state. When the relay is activated, the contacts open and break the circuit. This is normally used to temporarily deactivate an alarm device.

### Speaker and Control Relay Selection <SPKR-C> Jumper

A <SPKR-C> jumper is located on each side of each even numbered station relay. The jumpers should both be set to the <SPKR> side if the station is used as a substation, or to the <C> side for a station used as a Control Relay. When this jumper pair is on the <C> side, the connection is taken off the audio bus, allowing use as a control relay for even numbered stations.



**WARNING:** ALL ODD numbered stations **MUST** be set to **SPKR** and should only be connected to a substation. **Connecting an odd numbered station to a control relay device will damage the audio bus circuits on the board.**

### Control Relay Activation <AUTO-DIGIT> Jumper

This pair of jumpers determines how the control relays are activated from the Master Intercom's telephone keypad. Both jumpers in the pair must be in the same position or the feature will not work. When the jumpers are set to <DIGIT>, the control relay is activated by pressing the Initiation Tone Key(s) sequence (explained on **Page 1-7**), and the station number of the control relay (an even numbered relay).

When the jumpers are set to <AUTO> (use this setting **only** when the even relay of the zone is a control relay), the control relay in the zone (the even numbered station) is activated by pressing the <9> key on the telephone connected to the <TELCO OUT> terminal while a call is connected to the odd number substation (speaker) in the zone. For example, while connected to the Station 1 substation, the control relay on Station 2 can be activated by pressing the <9> key on the telephone. The <AUTO> setting only works within the zone where it is connected. To activate any control relay set to <AUTO>, the zoned substation must be connected first. See **Page 1-4, Stations and Zones**. This feature allows an attendant to activate the associated control relay for any intercom station without knowing the origin (the station) of the call.

### Latched-Momentary <L-M> Settings

Each even numbered station on the board (those that can be used as control relays and the Relay Out) has a corresponding jumper to set how the relay acts. The <L> (Latched) position activates the relay for the duration of the call. The <M> (Momentary) position activates the relay for 2 to 12 seconds, depending on the adjustment of the small, blue, square potentiometer just to the left of the jumper labeled <TIME>.

When in the <L> (Latched) position, the relay will stay activated for the entire time the call is in progress. This setting is also used to turn on a light for the duration of a call (a Normally Open device) or to disable a motion sensor, beam or alarm device (a Normally Closed device).

When the jumper is in the <M> (Momentary) position, the relay will activate for the time programmed, then go idle. This type of setting works for vending a gate or activating a door strike. **DO NOT** use the momentary position for an intercom substation. The call will be terminated when the time (designated by the <TIME> potentiometer) has elapsed.



### All Call <IN-OUT> Jumpers

The **ALL CALL** feature is designed to allow connection to a set of selected stations with the **<ALL CALL>** jumper set to **<IN>**. This includes tasks like announcing to all intercom substations at a site, activating all door strikes to a climate controlled building, or any other task that is performed on a specific set of stations while the system is in Local Mode. All stations in the system have the ability to be included or excluded. This feature is activated by connecting to Station 0, the default for **ALL** stations. Station 0 is accessed by pressing the Initiation Tone Key(s), then the **<0>** key. The method for connecting to a station is explained in the “Initiation Tone Switches” on Page 1-7. Control Relay Stations are normally set to **<OUT>** so that the relay is not activated with an **ALL CALL**, although some needs may arise for activating a group of control relays.

### Call Button Selection <DB-NDB> Jumper


The **<DB-NDB>** jumpers are located near the push-button inputs. When connecting to a DigiGate keypad, the jumper should be on the **<DB>** side. When connected to one of the DigiCall™ substations, the jumper should be set to the **<NDB>** side.

The **<DB>** setting puts 10K ohms resistance on the line to help cover long distances. The **<NDB>** setting puts 47 ohms on the line for the call buttons and light bulbs found in the substations.

### Telephone <TELCO-UNUSED PORT> Switch


When set to **<TELCO>**, the line uses the telephone system’s power to operate. When set to **<UNUSED PORT>**, the **<TELCO IN>** terminals are deactivated and a 36v talk battery is activated on the **<TELCO OUT>** terminals.

This switch can be set to **<UNUSED PORT>** when programming the remote telephone number, (to avoid the telephone company’s intercept messages) or when the system is not connected to the phone line. It should then be reset to **<TELCO>** for normal operation on a telephone system.

 **NOTE:** The DigiCall™ system is designed to be used with an individual telephone line. Telephone systems that handle multiple lines and provide programmable features such as PBX systems can present conflicts with the features of the DigiCall™ system. See Appendix C for details on using DigiCall™ with a telephone switchboard or PBX system.

### Initiation Tone Switches


There are three switches next to the <EXPANSION MODULE> plug that are used to set the tones. These switches connect or disconnect the master station (telephone handset) to the substations. The tone choices are \*, \*\*, #, or ##. The selected tone is used to connect to the substations and the unselected tone disconnects the substation.


 **WARNING:** Using the <\*> key may interfere with telephone features that use the <\*> key. The three switches set the <\*>, the <#>, and the number of pushes to activate; 1 or 2.

### Selection Key <\*> or <#> Switches

The <\*> and <#> switches are set to <ON> or <OFF>. To select <\*> as the connect signal, set the <\*> switch to <ON>, and the <#> switch to <OFF>. The <#> key will then be used to disconnect the Master Station from the substations.

To select <#> as the connect signal, set the <#> switch to <ON>, and the <\*> switch to <OFF>. The the <\*> key will then be used to disconnect the Master Station from the substations.

 **NOTE:** Throughout this text, we assume a setting of <\*> as the **Selection Key** and **Number of Pushes** to be <1>. When <\*> is used to turn on a station, <#> is used to turn it off. When <#> is used to turn a station on, <\*> is used to turn it off.

 **WARNING:** The Selection Key switch in the Master unit and the selection key switch in the Remote Module must be set opposite each other. I.E. If the Master Module is set to <\*>, the switch in the Remote Module must be set to <#>, or if the Master Module is set to <#>, the switch in the Remote Module must be set to <\*>.

### Number of Pushes <1-2> Switch to Select (\* or \*\*; # or ##)

This switch determines how many times the **Selection Key** should be pushed to connect or disconnect the substations. When <1> is selected, the Selection Keys are pressed once to connect or disconnect to a substation. When <2> is selected, the Selection Keys are pressed twice to connect or disconnect to a substation.

To access the Expansion Board use one additional push of the **Selection Key**. I.E. When the **Number of Pushes** is <1>, press twice to activate the Expansion board. When the **Number of Pushes** is set on <2>, push three times to activate the expansion board.

### **Ring Count <2, 4, 6, 8> Jumper Wire**

This setting determines how many times the telephone will ring when the sub-station button is pushed while the system is in Local Mode. Ringing stops when the phone is answered or the ring count is reached.

### **Ring Length <LONG-SHORT> Jumper**

This setting determines the length of a ring when the sub-station button is pushed while the system is in Local Mode. The long duration is approximately the same length as a regular telephone ring. The short duration is approximately half that of a normal telephone ring.



**NOTE:** The short ring will not activate most cordless telephones. For this reason, Digitech International, Inc. recommends this setting be placed on the **<LONG>** selection.

### **Remote Jumper**

There are two, 2-pin jumpers, labeled **<REMOTE>**, on the Master board. In addition, there is a two wire jumper, supplied with the Remote Call Unit (P/N 9002-055). This jumper supplies power to the **<EXPANSION MODULE>** plug and the **<REMOTE CALL MODULE>**. Therefore, the **<REMOTE CALL MODULE>** board will not operate unless this jumper is installed.

### **Relay Out <L-M> Jumper**

The **<RELAY OUT>** terminal is activated when a call is initiated and remains active until the call is terminated. There is one **<L-M>** jumper for this relay which works in the same manner as the Station's **<L-M>** jumper, described above.

### **Sensitivity and Volume Controls**

Three blue potentiometers located near the **<TELCO>** switch are labeled **<R3 TALK SENS>**, **<R6 TALK>**, and **<R23 LISTEN>**.

**<R3>** adjusts the VOX (voice activated) amplifier sensitivity. If the **<R3>** adjustment is set too high it will cause the voice transmission to chatter, switching too quickly. If it is set too low, the amplifier will switch too slowly, dropping out part of the conversation.

**<R6>** adjusts the **<TALK>** volume to the substation speaker. The substation speaker volume is adjusted by this potentiometer.

**<R23>** adjusts the **<LISTEN>** volume from the speaker at the substation. The volume in the telephone handset at the Master Intercom is adjusted by this potentiometer.

## Chapter 2

# Two Station Master Installation

### Included in this Chapter

<b>Pre-Installation Considerations .....</b>	Equipment Location Telephone Line Requirements Power Supply Requirements Keypad Intercom/Substation Connection
<b>Installation .....</b>	Master Intercom Board Setup DigiGate Keypad Modification Intercom Substation Connections Keypad Transformer Connections Substation Transformer Connections Remote Module Connections  Telephone Line Connections Setting Output Relay Power Connections Adjustments Remote Module Setup Remote Module Programming

## Pre-Installation Considerations

### Equipment Location

The Master Intercom and the Remote Call Module are connected by an 18" cable. The Master Intercom must be located in an easily accessible location.

### Telephone Line Requirements

The office telephone line must be routed to allow connection of the telephone line to the Master Intercom. The Master Intercom should be located in the office. Facilities requiring off-site management should consider equipment placement in maintenance rooms or other enclosures. The telephone line must have standard TIP and RING connections. Telephone systems such as switchboards, PBX systems, or other systems that are beyond a basic telephone line, require different instructions. Before installing a DigiCall™ system, discuss your telephone system with your Digitech representative. See **Appendix C** for more details.

The Master Intercom can be remotely powered by a transformer, but an electrical ground must be provided at the location of the Master Intercom for connection of the shield wires.

The DigiCall™ System and the Digitech-700™ System Controller must be connected on different telephone lines for remote sites or the headquarters of a dual site. The RJ-31X jack is used to connect the DigiCall™ system to the phone line and allows the system to be easily disconnected from the line.

**⚠ WARNING:** If a dedicated telephone line is **NOT** used for the DigiCall™, pressing the <#> key to terminate a call may take the modem out of AutoAnswer mode at the remote site. This situation denies access to the System Controller while talking to a customer. The manager therefore loses all communication with the remote site.

If a facility has more than one telephone line, modification at the telephone jack is required (contact the site telephone service provider). A special telephone jack (RJ-31X) is included for this purpose.

### Power Supply Requirements

The system uses a 24 VAC power transformer. Use of an AC power backup device (UPS) is recommended for remote site installations.

### Keypad Intercom/Substation Connection

Intercoms/substations must be connected to the Master Intercom through a 22-gauge cable with three color coded twisted pair (P/N 6122-226) supplied from Digitech. The maximum cable length is 2,500 feet. An impedance matching transformer is required for each substation. (P/N 9001-050)

All conduits and wiring for connection of intercoms and substations to the Master Intercom must be installed prior to the installation of the DigiCall™ System. Electrical boxes for flush mounted substations along with conduit and wiring for surface mounted substations, must be designed and

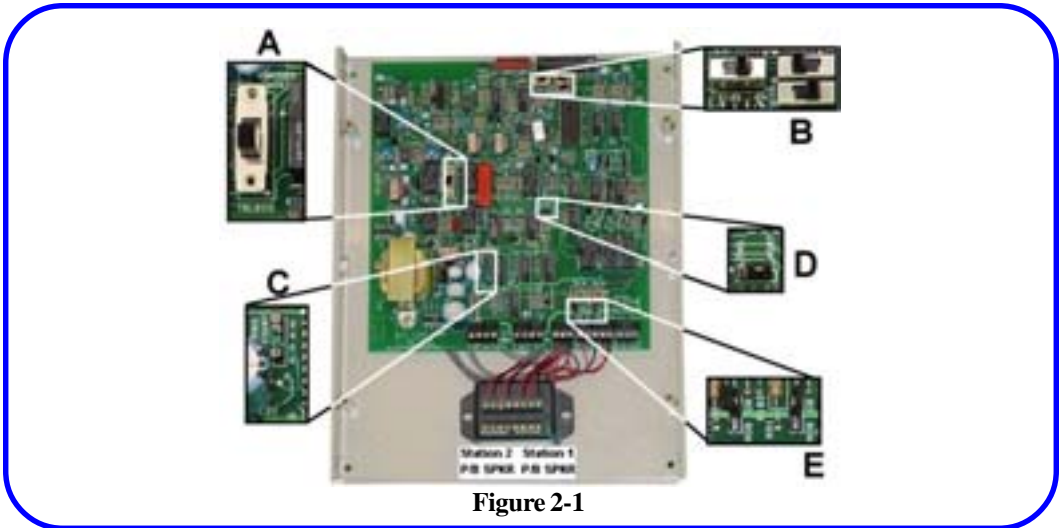



Figure 2-1

## Installation


### Master Intercom Board Setup

 **NOTE:** Complete all setup steps, wiring connections, and modifications before applying power to the DigiCall™ system.

1. Remove the four screws that secure the Master Intercom cover. Set the screws and cover aside.
2. Set the **<UNUSED PORT/TELCO>** switch to the **<TELCO>** position.

#### Figure 2-1A

3. The three switches shown in **Figure 2-1B** are used to select the activation tones used when answering or ending remote calls. Set the switches as follows: top left to **<1>**, top right **<\*>** to **<ON>**, bottom right **<#>** to **<OFF>**.

 **NOTE:** Steps 4 and 5 apply to facilities with on-site management.

4. Set the number of telephone rings (2, 4, 6, 8) by installing the jumper wire located below the **<RING COUNT>** terminals, to the desired **<RING COUNT>** terminal. **Figure 2-1C**

5. The **<LONG/SHORT>** ring jumper controls the type of ring, long or short as labeled. Set the jumper to **<LONG>**. Many portable phones will not recognize the **<SHORT>** ring.

#### Figure 2-1D

6. The **<DOOR BELL/NO DOOR BELL>** jumpers are set according to the type of substation used. Set the **<NDB>** position for all DigiCall™ substations. Set the **<DB>** position for DigiGate keypads. **Figure 2-1E**


 **NOTE:** For DigiCall™ sub-stations (P/N 9001-051, 9001-053, 9001-061, or 9001-063), set the **<DOOR BELL/NO DOOR BELL>** jumpers across the **<NDB>** contacts. **Figure 2-1E**



Figure 2-2

### Substation/Relay Setup

All odd numbered stations are used as substations, even numbered stations may be used as substations or control relays. See Pages 1-4 through 1-7, Theory of Operation and Setup Settings.

**WARNING:** Setting a station for substation use when it is connected to a relay controlled device will damage the audio circuit on the board.

### Intercom Settings

- For an even numbered Station, set <SPKR/C> jumpers to the <SPKR> position. **Figure 2-2A and B**
- Set the <ALL CALL> jumper <IN> to include the relay in All Call, or to <OUT> to exclude it.
- Set both <DIGIT/AUTO> jumpers to <DIGIT> if both relays are used for Intercom stations. Set them both to <AUTO> for an intercom-control relay pair. **Figure 2-2D**

### Control Relay Settings

- Set the even Station's <SPKR/C> jumpers to the <C> position. **Figure 2-2A and B**
- Set the <L/M> jumper in **Figure 2-2C** to the <L> (latched) position for continuous closure or to <M> for momentary closure.
- Set the <ALL CALL> jumper to <IN> to include the relay in an All Call situation or to the <OUT> position to exclude it. This prevents activating the relay during an All Call situation. **Figure 2-2E** Activate <ALL CALL> with the Activation Tone Key(s) and the <0> key.
- Set the jumpers labeled <DIGIT/AUTO> to the <DIGIT> setting for direct addressing of the relay. The relay is then activated by pressing the Initiation Tone Key(s) then the station number key. Set the jumper to <AUTO> for an intercom-control relay pair. The relay is activated by pressing the <9> key. **Figure 2-2D**
- To use the third <Out> relay to control a device, set the jumper to the appropriate setting for that device. **Figure 2-2F**

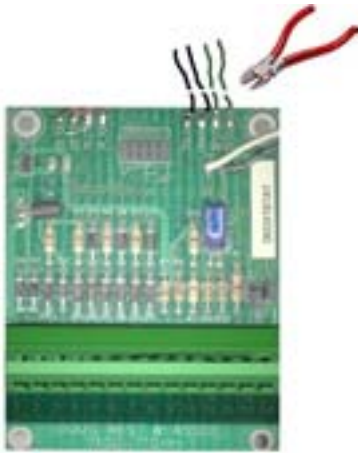


Figure 2-3

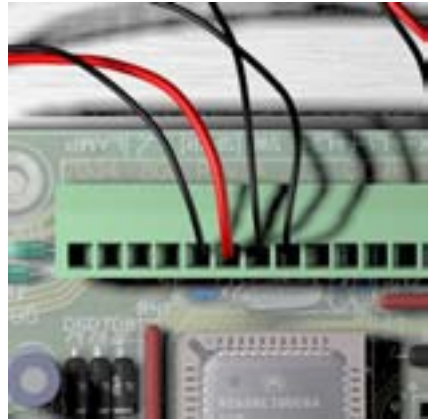



Figure 2-4

### DigiGate Keypad Modification

-  **NOTE:** DigiGate keypads require modification to operate with DigiCall™. The procedures for connecting the keypads to the DigiCall™ are provided in the next section.
1. Modification of standard DigiGate-700™ keypads requires removal of the four wires soldered to the circuit board on the back of the keypad as shown in **Figure 2-3**.
  2. DigiGate-700LX™, 700LC™, and 700LS™ keypads require the removal of four wires connected to the speaker and push button terminals on the <P4> connector. The wires are located on the keypad circuit board. **Figure 2-4**



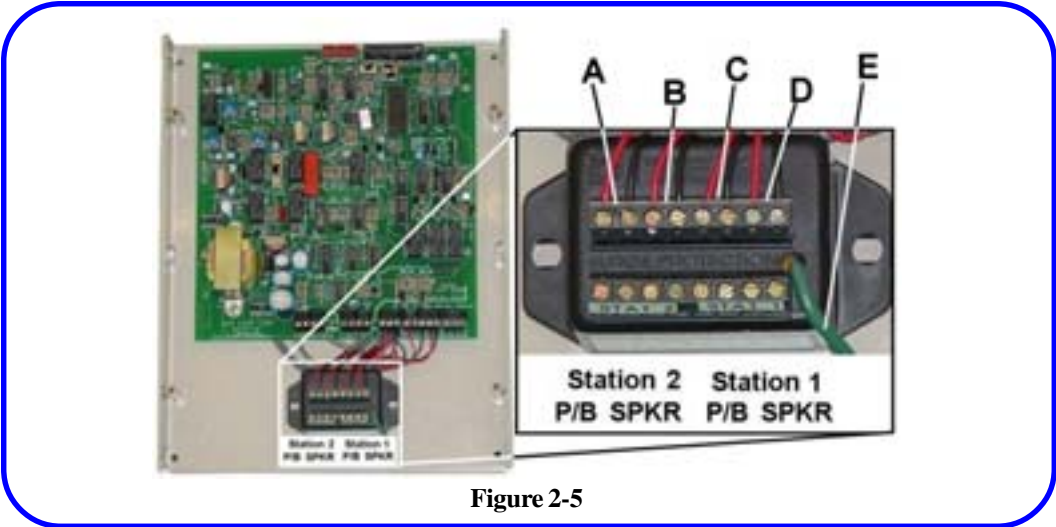
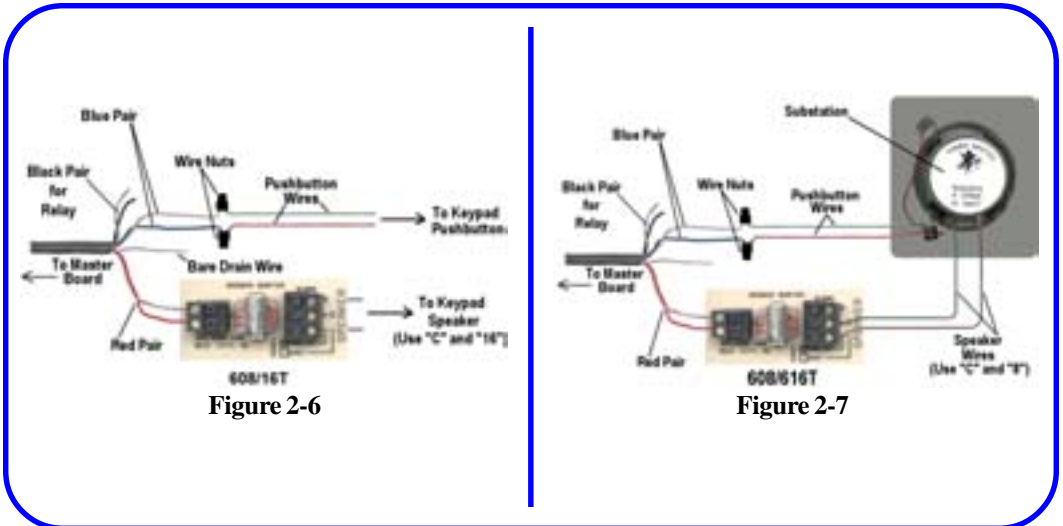


Figure 2-5

### Intercom Substation Connections


- NOTE:** The suppressor is pre-wired on the Master Intercom before shipment. The suppressor connections are labeled Station #1 and Station #2. Each station has four terminals.
1. To use the stations as intercoms, connect the Blue pair of wires from the intercom push button to the two terminals <P/B> on the suppressor. **Figure 2-5A** or **C**
  2. Connect the Red pair of wires from the intercom speakers to the two terminals <SPKR> on the suppressor. **Figure 2-5B** or **D**  
 These connect to the <COM>, common, and <N/O>, normally open, terminals on the Master Intercom board.

3. Connect the bare drain wires from the shielded cables and the ground leads from the surge suppressors, **Figure 2-5E**, to the earth ground at the Master Intercom. Insulate the other end of the drain wires with electrical tape.
4. If the Station #2 output is used as a relay, connect the wires from the device to be controlled to the <SPKR> terminals on the Station #2 suppressor using the Black twisted pair of wires. **Figure 2-5B**  
 Based on the device connected to the black twisted pair, adjust the connection of the wires on the main board to the correct <N/O> or <N/C> terminal of Station #2.




### Keypad Transformer Connections

1. Connect the two <SPKR> wires disconnected from the keypad circuit board <SPKR> terminals to the impedance matching transformer (608/16T) terminals labeled <C> and <16> on the Speaker side of the transformer. **Figure 2-6**
2. Connect the two <P/B> wires that were disconnected from the keypad circuit board <SW> terminals to the Blue twisted pair of the intercom cable. **Figure 2-6**
3. Connect the other end of the Blue twisted pair to the <P/B> terminals on the surge suppressor.
4. Connect the Red twisted pair to the transformer terminals labeled <PAIR>.
5. Connect the other end of the Red twisted pair to the speaker inputs on the surge suppressor.
6. The drain wire is connected to earth ground. Do not connect the drain wire at the keypad. Insulate the wire by wrapping it with electrical tape.

 **NOTE:** Use wire nuts for the wire splices and insulate the splice connections.

### Substation Transformer Connections

1. Connect the two <SPKR> wires from the substation terminals to the impedance matching transformer (608/16T) terminals labeled <C> and <8> on the Speaker side of the transformer. **Figure 2-7**
2. Connect the two <P/B> wires from the substation terminals to Blue twisted pair of the shielded cable. **Figure 2-7**
3. The other end of the Blue twisted pair connects to the <P/B> terminals on the surge suppressor.
4. Connect the Red twisted pair to the transformer (608/16T) terminals labeled <PAIR>.
5. Connect the other end of the Red twisted pair to the speaker inputs on the surge suppressor.
6. The drain wire is connected to earth ground. Do not connect the drain wire at the keypad. Insulate the wire by wrapping it with electrical tape.

 **NOTE:** Use wire nuts for the wire splices and insulate the splice connections.

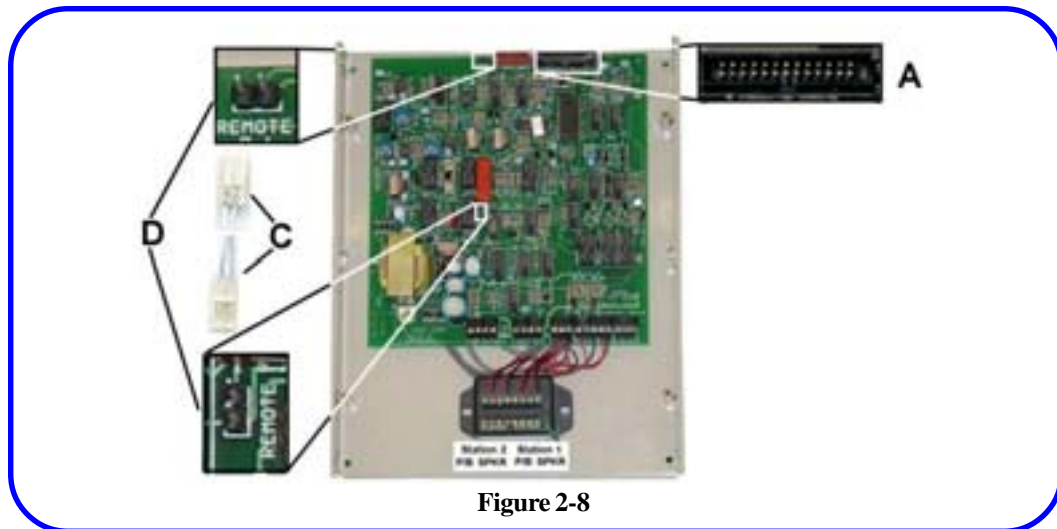




Figure 2-8

### Remote Module Connections (Optional)

The Remote Module allows the DigiCall™ system to dial a telephone other than the one connected to the Master Intercom unit. Without this module, the system will operate as a standard intercom system without the remote calling feature.

1. Route the twenty-six conductor ribbon cable from the Remote Module to the Master Intercom and insert the cable in the **<EXPANSION MODULE>** connector.  
Figure 2-8A
2. Connect the two-conductor cable, provided with the Remote Module, **Figure 2-8C**, to the Remote connectors, **Figure 2-8D**.

 **NOTE:** The red strip should be on the left side of the plug, Pin 1.

 **NOTE:** Polarity is not important on this connection.

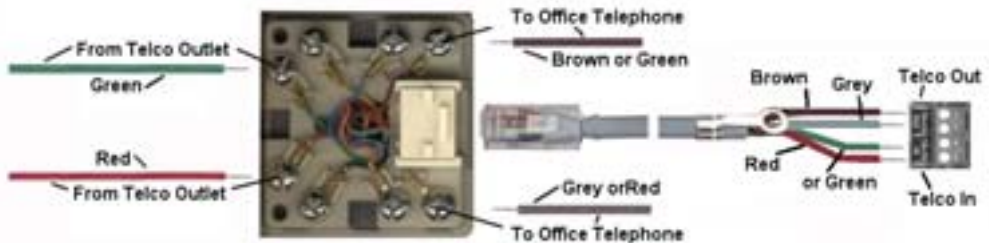


Figure 2-9

### Telephone Line Connections



**NOTE:** The incoming telephone line should be connected to the RJ-31X jack on the Master Intercom before connections are made to the office telephone system, and after the Master Intercom is connected to an alarm panel (if applicable).

1. Connect the incoming telephone line to the Master Intercom using the RJ-31X jack.

**Figure 2-9**

2. Insert the short cable plug into the RJ-31X jack and connect the other end of the cable to the <TELCO> terminals. **Figure 2-9**



**WARNING:** Make sure the <TELCO IN> and <TELCO OUT> terminals are connected to the correct leads. Reversing these connections will damage <R42> on the main board. The phone will not ring if the board is damaged.

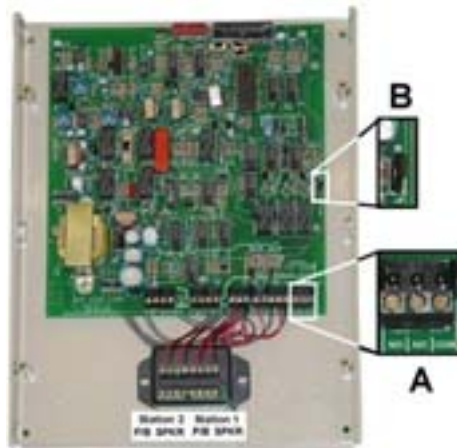


Figure 2-10

### Setting Output Relay

1. The Master Intercom board contains a relay which is automatically activated when any substation calls the Master Intercom. Site devices, such as a light or camera, can be controlled through this relay.
  2. The relay contacts (<N/O> / <N/C> / <COM>) in **Figure 2-10A** are connected according to documentation supplied with specific devices. The contacts allow the relay to be wired for <N/O>, Normally Open, or <N/C>, Normally Closed, operation.
  3. To use the relay output, set the relay jumper to <L>, Latched, for a continuous firing of the relay or to <M> for a Momentary firing.
- NOTE:** Use the settings suggested by the device being controlling for <N/O>, Normally Open or <N/C>, Normally Closed and <L/M>, Latched/Momentary.

**Figure 2-10B**



Figure 2-11



Figure 2-12

### Power Connections



**NOTE:** Do not plug the power transformer into the surge suppressor until all connections have been made with the keypads and/or substations. When using a UPS, it will be connected between the surge suppressor and the power transformer.

1. On the board, connect the 24 VAC power transformer to the two terminals marked **<24VAC>**. **Figure 2-11**
2. An optional 115 VAC surge protector (P/N 4311-117) is available for the transformer at the power outlet.  
To install:
  - a. Remove the screw securing the faceplate to the outlet.
  - b. Secure the surge protector to the faceplate using the screw on the surge suppressor.
  - c. Connect the ground leads and shield wires to the surge suppressor using the wing nut.

### Adjustments



1. The **<TALK SENS>** control, in the upper left corner of the Master Intercom board, is used for adjusting the switching speed of the voice detection circuit. **Figure 2-12**



**NOTE:** The **<TALK SENS>** setting is adjusted at the factory and should not be adjusted unless required to correct a system problem. Contact Digitech Technical Support for assistance.

2. The audio level at the telephone handset can be adjusted with the **<LISTEN>** control. **Figure 2-12**
3. The audio level at the intercom/substation speaker can be adjusted with the **<TALK>** control. **Figure 2-12**.



**NOTE:** The adjustments described in this section affect all site intercoms/substations. Audio levels may vary between intercom/substations due to differences in cable lengths. Adjustments are: Clockwise to increase volume and Counterclockwise to decrease it.



Figure 2-13

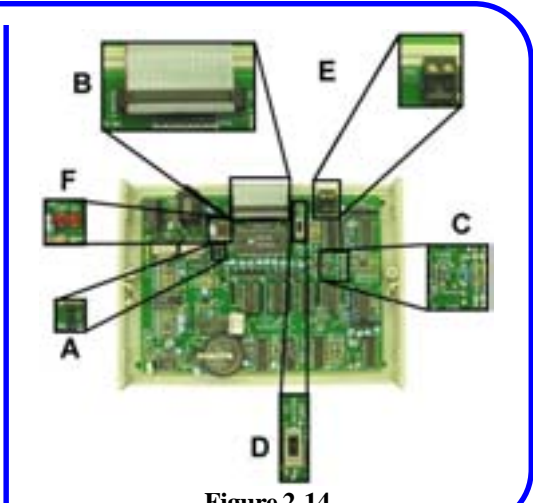


Figure 2-14

### Remote Module Setup

The DigiCall™ Remote Module comes in three configurations: The standard (P/N 9001-055), which switches from local to remote mode from the telephone handset; the Locked Remote (P/N 9001-055LR), which remains in remote mode for unattended locations, or the European (P/N 9001-055EU), which is also locked in remote mode and does not redial on a busy signal.

1. Remove the two screws located on each side of the cover. **Figure 2-13**
2. Carefully remove the cover. The Remote LED wire is connected to a plug on the board and may be damaged if the cover is hastily removed from the unit.
3. Remove the LED wire from the **<REMOTE>** Plug. **Figure 2-14A**
4. Connect the 26-conductor ribbon cable from the Master Intercom to the **<J1>** connector. **Figure 2-14B** The red stripe goes to the left, on Pin 1.

5. Connect the jumper wire to one of the 3 settings on the **<TIME>** call duration plug. These are 1.5, 3, and 6 minutes. A setting of 3 minutes is recommended.

**Figure 2-14C**

**NOTE:** The **<TIME>** call duration setting controls the maximum duration of a call from a substation or keypad.

6. Set the **<ACCESS CODE>** switch in the up position to **<#>**. **Figure 2-14D**
7. If there is a jumper wire connecting the two terminals of **<TS1>**, disconnect it.

**NOTE:** If the unit is located at a remote site, use Remote Module P/N 9001-055LR which remains in Remote mode on power loss and restoration.

8. After installation is complete and the Master Intercom is powered up, check that the two red LEDs on the Remote board are lit.

**Figure 2-14F**

9. Replace the LED wire on the **<REMOTE>** plug and replace the cover.

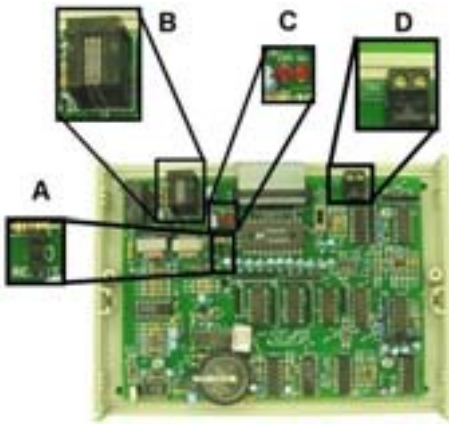



Figure 2-15




Figure 2-16

### Remote Module Programming

1. With the telephone connected to the Master Intercom or a telephone connected to the RJ45 telephone jack on the Remote Module board, **Figure 2-15B**, press **<#>** twice to turn on Remote mode. (Model 9001-055 only, omit for other models.)
2. The LED on the cover will light and a long beep will be heard in the handset. This indicates that the unit is in Remote mode.

 **NOTE:** There may be other beeps or intercepts from the phone company because they do not recognize the access code. Ignore these and continue programming the unit. Do not hang up the phone until this process is complete. Setting the **<TELCO/UNUSED>** switch to **<UNUSED>** will eliminate the intercepts from the phone company. The switch must be reset to **<TELCO>** after programming the unit.

 **NOTE:** **Figure 2-16** shows the Master Intercom and Remote Module connected.

3. Enter the telephone number the unit is to dial when in Remote mode. Include "1" and the area code if needed.
4. Press the **<\*>** key followed by the number **<1>**.
5. Press the **<#>** key twice.
6. There will be three short beeps in the handset and the LED on the cover will go out.
7. The number becomes automatically stored in the unit's memory.
8. Press the **<#>** key twice to put the unit back into Remote mode. The LED should be lit in the remote mode.
9. Hang up the phone, or unplug phone from the RJ45 jack on the Remote Module.

**Figure 2-15B**



This Page Left Blank Intentionally

## Chapter 3

# Four and Eight Station Master Installation

### Included in this Chapter

<b>Pre-Installation Considerations .....</b>	Equipment Location Telephone Line Requirements Power Supply Requirements Keypad Intercom/Substation Connection
<b>Installation .....</b>	Four & Eight Station Master Intercom Board Setup DigiGate Keypad Modification Intercom Substation Connections Connecting the Surge Suppressors to the Board Connecting to the Surge Suppressors Keypad Transformer Connections Substation Transformer Connections Remote Module Connections Telephone Connections Setting Output Relay Power Connections Adjustments Remote Module Setup Remote Module Programming

## Pre-Installation Considerations

### Equipment Location

The Master Intercom and Remote Call Module are connected by an 18” cable. The Master Intercom must be located in an easily accessible location.

### Telephone Line Requirements

The office telephone line must be routed to allow connection of the telephone line to the Master Intercom. The Master Intercom should be located in the office. Facilities requiring off-site management should consider equipment placement in maintenance rooms or other enclosures. The telephone line must have standard TIP and RING connections. Telephone systems such as switchboards, PBX systems, or other systems that are beyond a basic telephone line, require different instructions. Before installing a DigiCall™ system, discuss the telephone system with a Digitech representative. See **Appendix C** for more details.

The Master Intercom can be remotely powered by a transformer, but an electrical ground must be provided at the location of the Master Intercom for connection of the shield wires.

The DigiCall™ System and the Digitech-700™ System Controller must be connected on different telephone lines for remote sites or the headquarters of a dual site. The RJ-31X jack is used to connect the DigiCall™ system to the phone line and allows the system to be easily disconnected from the line.

**⚠ WARNING:** If a dedicated telephone line is **NOT** used for the DigiCall™, pressing the <#> key to terminate a call may take the modem out of Auto-Answer mode at the remote site. This situation denies access to the System Controller while talking to a customer. The manager therefore loses all communication with the remote site.

If a facility has more than one telephone line, modification at the telephone jack is required (contact the site telephone service provider). A special telephone jack (RJ-31X) is included for this purpose.

### Power Supply Requirements

The system uses a 24 VAC power transformer. Use of an AC power backup device (UPS) is recommended for remote site installations.

### Keypad Intercom/Substation Connection

Intercoms/substations must be connected to the Master Intercom through a 22-gauge cable with three color coded twisted pair (P/N 6122-226) supplied from Digitech. The maximum cable length is 2,500 feet. An impedance matching transformer is required for each substation. (P/N 9001-050)

All conduits and wiring for connection of intercoms and substations to the Master Intercom must be installed prior to the installation of the DigiCall™ System. Electrical boxes for flush mounted substations along with conduit and wiring for surface mounted substations, must be designed and

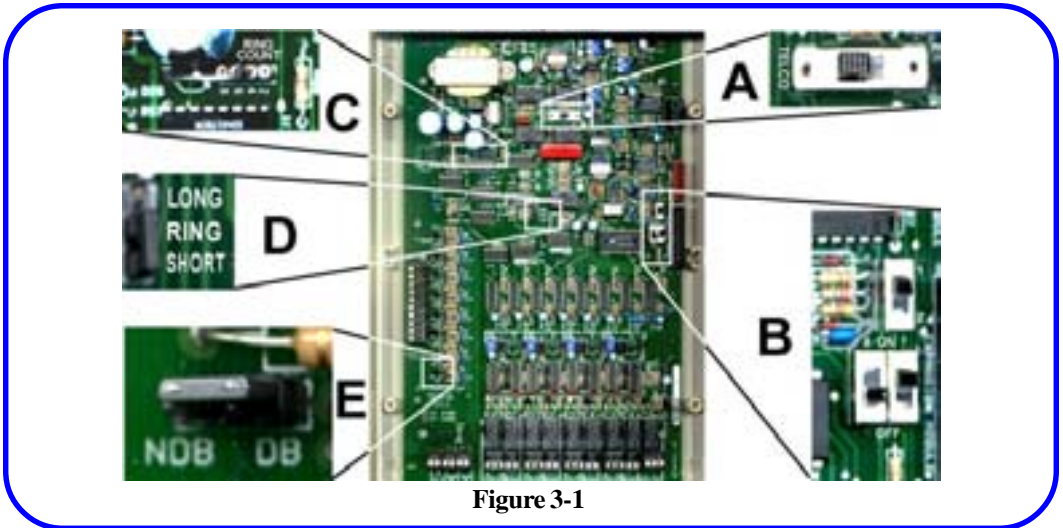


Figure 3-1

## Installation

### Four and Eight Station Master Intercom Board Setup

**NOTE:** The pictures shown will alternate from Four Station to Eight Station Master boards. They are the same except for component population. Complete all setup steps, wiring connections, and modifications before applying power to the DigiCall™ system.

1. Remove the four screws that secure the Master Intercom cover. Set the screws and cover aside.
2. Set the **<UNUSED PORT/TELCO>** switch to the **<TELCO>** position.  
**Figure 3-1A**
3. The three switches shown in **Figure 3-1B** are used to select the activation tones used when answering or ending remote calls. Set the switches as follows: top right to **<1>**, bottom right **<\*>** to **<ON>**, bottom left **<#>** to **<OFF>**.

**NOTE:** Steps 4 and 5 apply to facilities while they operate in local mode.

4. Set the number of telephone rings (2, 4, 6, 8) by installing the jumper wire located below the **<RING COUNT>** terminals, to the desired **<RING COUNT>** terminal.

#### Figure 3-1C

5. The **<LONG/SHORT>** ring jumper controls the type of ring; short or long, that announces an intercom call. Set the jumper to **<LONG>**. Many portable phones will not recognize the short ring.

#### Figure 3-1D

6. The **<DB/NDB>** jumpers are set according to the type of substation used. Set the **<NDB>** position for all DigiCall™ substations. Set the **<DB>** position for DigiGate keypads.

#### Figure 3-1E

**NOTE:** For DigiCall™ substations (P/N 9001-051, 9001-053, 9001-061, or 9001-063), set the **<DOOR BELL/NO DOOR BELL>** jumpers across the **<NDB>** contacts. **Figure 3-1E**

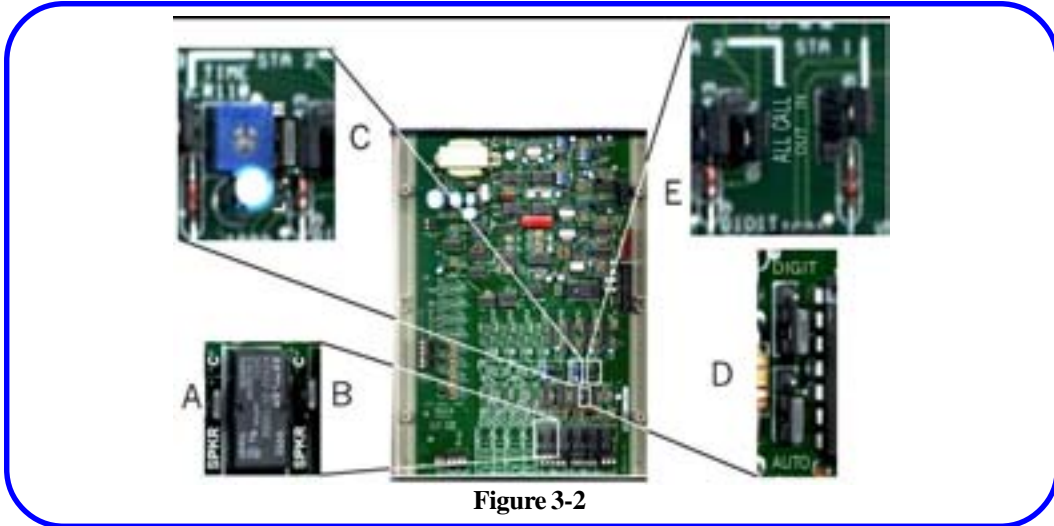


Figure 3-2

### Substation/Relay Setup

All odd numbered stations are used as substations, even numbered stations may be used as substations or control relays. See Pages 1-4 through 1-7, Theory of Operation and Setup Settings.

**⚠ WARNING:** Setting a station for substation use when it is connected to a relay controlled device will damage the audio circuit on the board.

#### Intercom Settings

1. For an even numbered Station, set <SPKR/C> jumpers to the <SPKR> position. **Figure 2-2A and B**
2. Set the <ALL CALL> jumper <IN> to include the relay in All Call, or to <OUT> to exclude it.
3. Set both <DIGIT/AUTO> jumpers to <DIGIT> if both relays are used for Intercom stations. Set them both to <AUTO> for an intercom-control relay pair. **Figure 3-2D**

#### Control Relay Settings

1. Set the even Station's <SPKR/C> jumpers to the <C> position. **Figure 3-2A and B**
2. Set the <L/M> jumper in **Figure 3-2C** to the <L> (latched) position for continuous closure or to <M> for momentary closure.
3. Set the <ALL CALL> jumper to <IN> to include the relay in an All Call situation or to the <OUT> position to exclude it. This prevents activating the relay during an All Call situation. **Figure 3-2E**  
Activate <ALL CALL> with the Activation Tone Key(s) and the <0> key.
4. Set the jumpers labeled <DIGIT/AUTO> to the <DIGIT> setting for direct addressing of the relay. The relay is then activated by pressing the Initiation Tone Key(s) then the station number key. Set the jumper to <AUTO> for an intercom-control relay pair. The relay is activated by pressing the <9> key. **Figure 3-2D**
5. To use the <Out> relay to control a device, set the jumper to the appropriate setting for that device.

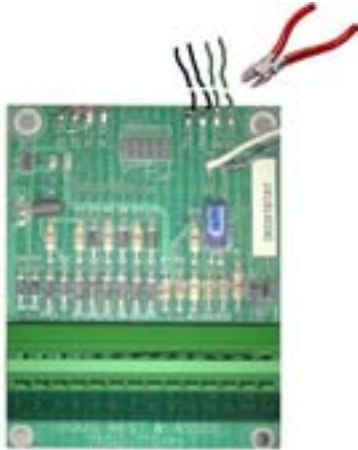


Figure 3-3

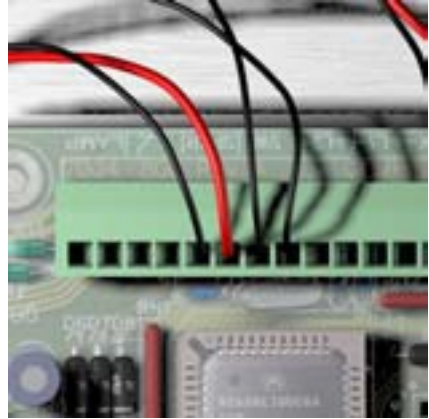


Figure 3-4

### DigiGate Keypad Modification



**NOTE:** DigiGate keypads require modification to operate with DigiCall™. The procedures for connecting the keypads to the DigiCall™ are provided in the next section.

1. Modification of standard DigiGate-700™ keypads requires removal of the four wires soldered to the circuit board on the back of the keypad as shown in **Figure 3-3**.
2. DigiGate-700LX™, 700LC™, and 700LS™ keypads require the removal of four wires connected to the speaker and push button terminals on the **<P4>** connector. The wires are located on the keypad circuit board. **Figure 3-4**



Figure 3-5

### Intercom Substation Connections

The Main Board is shown in **Figure 3-5** wired with surge suppressors. If the surge suppressors are used, leave four feet of wire between the board and the suppressors for maximum protection. If surge suppressors are not used, the substations are wired directly to the board.

#### Connecting the Surge Suppressors to the Board

1. One sixteen terminal surge suppressor connects four stations on the Master Board.
2. For odd numbered stations, two surge suppressor terminals connect to the two **<SPEAKER>** terminals on the Master Intercom Board. **Figure 3-5B or D**
3. For even numbered stations, connect the surge suppressor terminals to the two **<SP>** terminals, for speaker or normally open relay operation; or to the **<COM>** and **<N/C>** for normally closed.
4. For push buttons, connect the solid color lead from the surge suppressor, **Figure 3-5A or C**, to the station number terminal. **Figure 3-5F**
5. Connect the striped lead from the surge suppressor, **Figure 3-5A or C**, to the corresponding **<COM>** terminal. **Figure 3-5F**

#### Connecting to the Surge Suppressors

1. To use a station as an intercom, connect the Blue Twisted pair from the intercom push-button to the two **<PB>** terminals on the station's suppressor. **Figure 3-5A or C**
2. Connect the Red twisted pair from the intercom speakers to the two terminals **<SPKR>** on the station's suppressor. **Figure 3-5B or D**
3. Connect the bare drain wires from the shielded cables, and the ground leads from the surge suppressors, **Figure 3-5E**, to the earth ground at the Master Intercom. Insulate the other end of the drain wires with electrical tape.
4. To use a station as a relay, connect the Black pair from the device to be controlled to the **<SPKR>** terminals on the even station suppressor. **Figure 3-5B or D**



**NOTE:** See **Page 3-7** for transformer install.

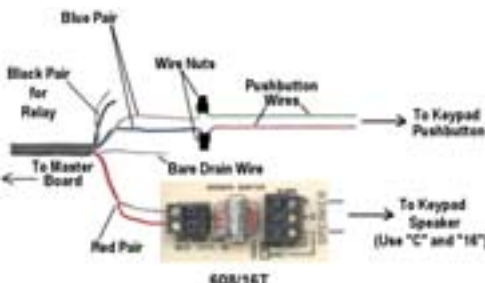


Figure 3-6

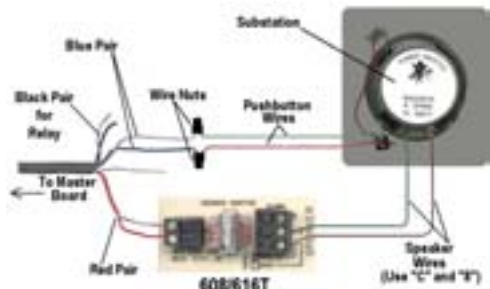


Figure 3-7

### Keypad Transformer Connections

1. Connect the two speaker wires disconnected from the keypad circuit board <SPKR> terminals to the matching transformer (608/16T) terminals labeled <C> and <16> on the <SPEAKER> side of the transformer. **Figure 3-6**
2. Connect the two <P/B> wires that were disconnected from the keypad circuit board <SW> terminals to the Blue twisted pair of the intercom cable. **Figure 3-6**
3. The other end of the Blue twisted pair connects to the <P/B> terminals on the surge suppressor.
4. Connect the Red twisted pair to the transformer terminals labeled <PAIR>.
5. Connect the other end of the Red twisted pair to the speaker inputs on the surge suppressor.
6. The drain wire is connected to earth ground. Do not connect the drain wire at the keypad, insulate the wire by wrapping it with electrical tape.



**NOTE:** Use wire nuts for the wire splices and insulate the splice connection.

### Substation Transformer Connections

1. Connect the two speaker wires from the substation terminals to the impedance matching transformer (608/16T) terminals labeled <C> and <8> on the <SPEAKER> side of the transformer. **Figure 3-7**
2. Connect the two <P/B> wires from the substation terminals to Blue twisted pair of the shielded cable. **Figure 3-7**
3. The other end of the Blue twisted pair connects to the <P/B> terminals on the surge suppressor.
4. Connect a second twisted pair to the transformer (608/16T) terminals labeled <PAIR>.
5. Connect the other end of the Red twisted pair to the speaker inputs on the surge suppressor.
6. The drain wire is connected to earth ground. Do not connect the drain wire at the keypad, insulate the wire by wrapping it with electrical tape.



**NOTE:** Use wire nuts for the wire splices and insulate the splice connection.



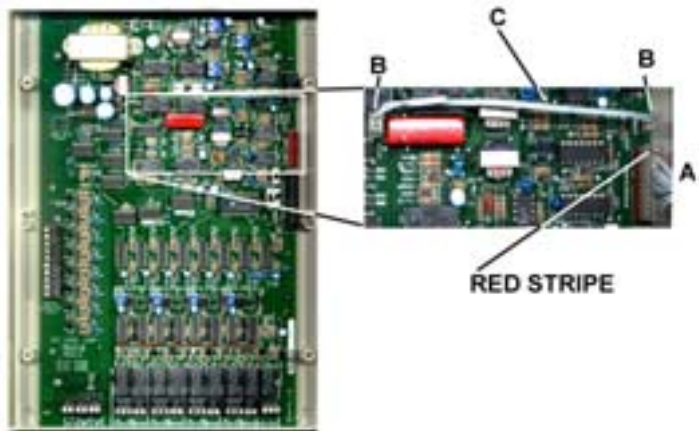


Figure 3-8

### Remote Module Connections (Optional)

The Remote Module allows the DigiCall™ system to dial a telephone other than the one connected to the Master Intercom. Without this module, the system will operate as a standard intercom system without the remote calling feature.

1. Plug the twenty-six conductor ribbon cable into the **<EXPANSION MODULE>** connector. **Figure 3-8A**
2. Connect the two-conductor cable, provided with the Remote Module, **Figure 3-8C**, to the Remote connectors, **Figure 3-8B**.



**NOTE:** The red strip should be on the top side of the plug, Pin 1.



**NOTE:** Polarity is not important on this connection.

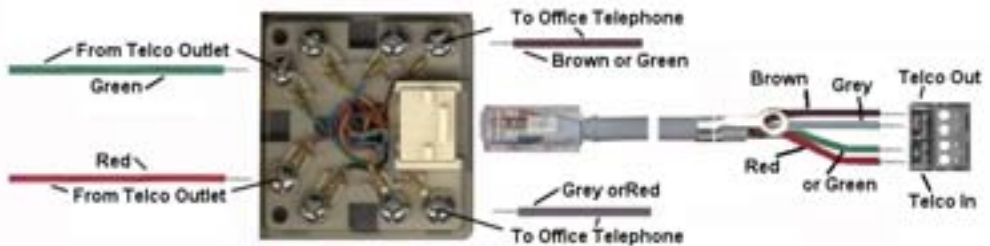


Figure 3-9

### Telephone Connections

**NOTE:** The incoming telephone line should be connected to the RJ-31X jack on the Master Intercom before connections are made to the office telephone system, and after the Master Intercom is connected to an alarm panel (if applicable).

1. Connect the incoming telephone line to the Master Intercom using the RJ-31X jack.  
**Figure 3-9**
2. Insert the short cable into the RJ-31X

jack and connect the other end of the cable to the <TELCO> terminals on the Master Intercom. **Figure 3-9**



**WARNING:** Make sure the <TELCO IN> and <TELCO OUT> terminals are connected to the correct leads. Reversing these connections will damage <R42> on the main board. The phone will not ring if the board is damaged.



Figure 3-10

### Setting Output Relay

1. The Master Intercom board contains a relay which is automatically activated when any substation calls the Master Intercom. Site devices, such as a light or camera, can be controlled by this relay.
2. The relay terminals, **<N/O>**, **<N/C>**, and **<COM>**, **Figure 3-10A**, are connected according to the documentation supplied with the specific device.
3. To use the relay output, set the relay jumper to **<L>**, latched, for a continuous firing of the relay. Set it to **<M>** for a momentary firing. **Figure 3-10B**

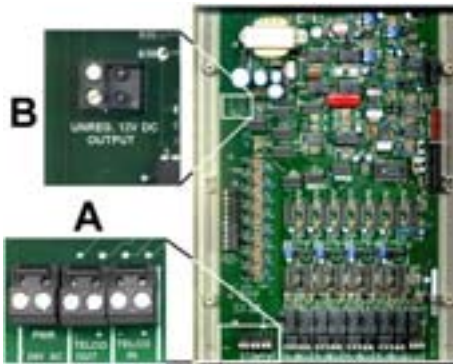


Figure 3-11



Figure 3-12

### Power Connections



**NOTE:** Do not plug the power transformer into the surge suppressor until all connections have been made with the keypads and/or substations. When using a UPS, it will be connected between the surge suppressor and the power transformer.

1. Connect the 24 VAC power transformer to the two terminals marked **<24VAC>**.  
**Figure 3-11A**
2. An optional 115 VAC surge protector (P/N 4311-117) is available for the transformer at the power outlet as an option.  
To install:
  - a. Remove the screw securing the faceplate to the outlet.
  - b. Secure the surge protector to the faceplate using the screw on the surge suppressor.
  - c. Connect the ground leads and shield wires to the surge suppressor using the wing nut.

### Adjustments



1. The **<TALK SENS>** control, in the upper left corner of the Master Intercom board, is used for adjusting the switching speed of the voice detection circuit. **Figure 3-12**



**NOTE:** The setting is adjusted at the factory and should not be adjusted unless required to correct a system problem. Contact Digatech Technical Support for assistance.

2. The audio level at the telephone handset can be adjusted with the **<LISTEN>** control shown in **Figure 3-12**.
3. The audio level at the intercom/substation speaker can be adjusted with the **<TALK>** control shown in **Figure 3-12**.



**NOTE:** The adjustments described in this section affect all site intercoms/substations. Audio levels may vary between intercom/substations due to differences in cable lengths. Adjustments are: Clockwise to increase volume and Counterclockwise to decrease it.

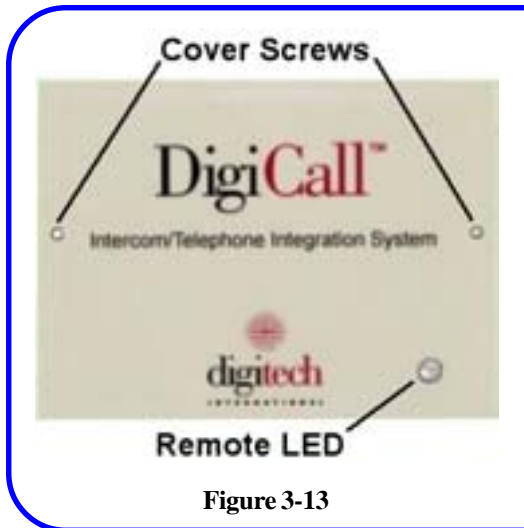


Figure 3-13

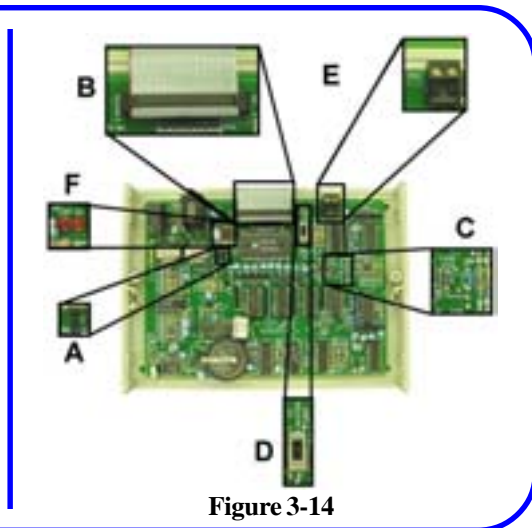


Figure 3-14


### Remote Module Setup

The DigiCall™ Remote Module comes in three configurations: The Standard (P/N 9001-055), which switches from local to remote mode from the telephone handset; the Locked Remote (P/N 9001-055LR), which remains in remote mode for unattended locations; and the European (P/N 9001-055EU), which is also locked in remote mode and does not redial on a busy signal.


1. Remove the two screws located on each side of the cover. **Figure 3-13**
2. Carefully remove the cover. The Remote LED wire is connected to a plug on the board and may be damaged if the cover is hastily removed from the unit.
3. Remove the LED wire from the **<REMOTE>** Plug. **Figure 3-14A**
4. Connect the 26-conductor ribbon cable from the Master Intercom to the **<J1>** connector. **Figure 3-14B** The red stripe goes to the left, on Pin 1.

5. Connect the jumper wire to one of the 3 settings on the **<Time>** call duration plug. These are 1.5, 3, and 6 minutes. A setting of 3 minutes is recommended.

#### Figure 3-14C

 **NOTE:** The **<Time>** call duration setting controls the maximum duration of a call from a substation or keypad.

6. Set the **<Access Code>** switch in the up position to **<#>**. **Figure 3-14D**
7. If there is a jumper wire connecting the two terminals of **<TS1>**, **Figure 3-14E**, disconnect it.

 **NOTE:** If the unit is located at a remote site, use Remote Module P/N 9001-055LR which remains in Remote mode on power loss and restoration.

8. After installation is complete and the Master Intercom is powered up, check that the two red LEDs on the Remote board are lit. **Figure 3-14F**
9. Replace the LED wire on the **<REMOTE>** plug and replace the cover.

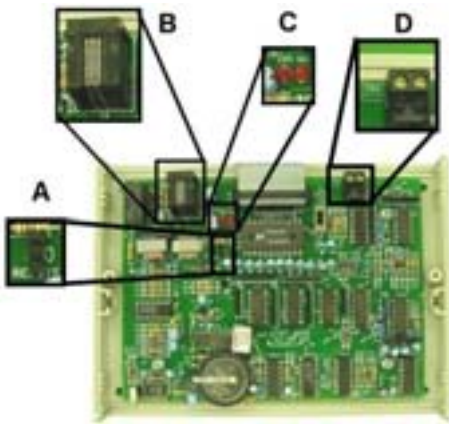


Figure 3-15



Figure 3-16

### Remote Module Programming

1. With the telephone connected to the Master Intercom or a telephone connected to the RJ-45 telephone jack on the Remote Module board, **Figure 3-15B**, press **<#>** twice to turn on Remote mode. (Model 9001-055 only, omit for other models)
2. The LED on the cover will light and a long beep will be heard in the handset. This indicates that the unit is in Remote mode.
 

**NOTE:** Other beeps or intercepts from the phone company may be heard because it does not recognize the access code. Ignore these and continue programming the unit. Do not hang up the phone until this process is complete. Setting the **<TELCO/UNUSED>** switch to **<UNUSED>** will eliminate the intercepts from the phone company. Reset this switch to **<TELCO>** after programming the unit.

**NOTE:** **Figure 3-16** shows the Master
3. Enter the telephone number the unit is to dial when in Remote mode, including "1" and the area code, if needed.
4. Press the **<\*>** key followed by the number **<1>**.
5. Press the **<#>** key twice.
6. There will be three short beeps in the handset and the LED on the cover will go out.
7. The number is stored in the memory of the unit.
8. Press the **<#>** key twice to put the unit back into Remote mode. The LED should be lit.
9. Hang up the phone, or unplug the phone from the RJ45 jack on the Remote Module. **Figure 3-15B**



This Page Left Blank Intentionally

# Chapter 4

## Eight Station Expansion Board Installation

### Included in this Chapter

<b>Installation .....</b>	Board Setup
	Mounting the Expansion Board
	Intercom Substation Connections
	Connecting the Surge Supressors
	Connecting to the Surge Supressors
	Keypad Transformer Connections
	Substation Transformer Connections



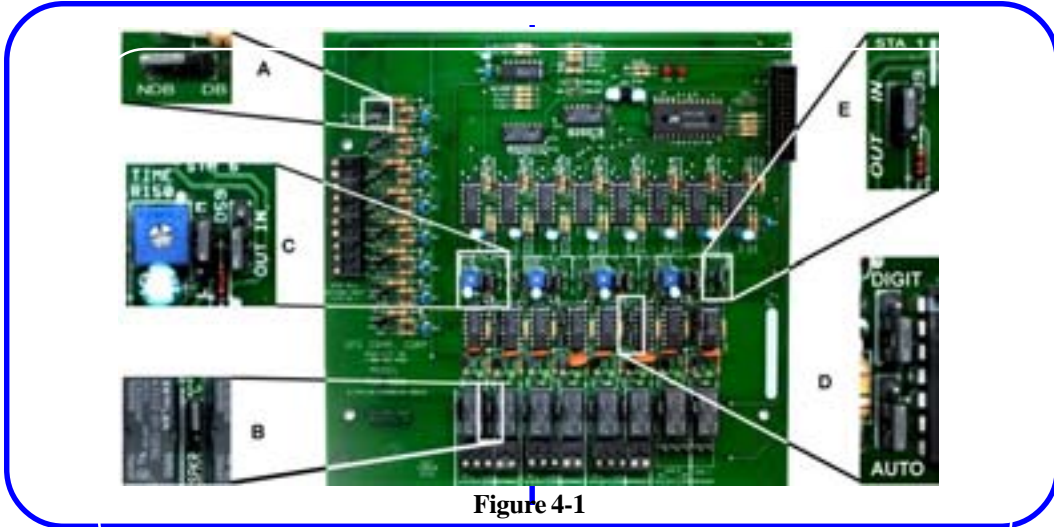


Figure 4-1

### Installation Substation/Relay Setup

All odd numbered stations are used as substations, even numbered stations may be used as substations or control relays. See Pages 1-4 through 1-7, Theory of Operation and Setup Settings.

**⚠ WARNING:** Setting a station for substation use when it is connected to a relay controlled device will damage the audio circuit on the board.

#### Intercom Settings

1. Set the <DB/NDB> jumpers to the <NDB> position for all DigiCall™ substations and to the <DB> position for DigiGate keypads. **Figure 4-1A**
2. Set the stations <ALL CALL> jumper to <IN> to include it or to the <OUT> position to exclude it. **Figure 4-1E**
3. For an even numbered Station, set both <SPKR/C> jumpers to <SPKR>. **Figure 4-1B**
4. Set both <DIGIT/AUTO> jumpers to <DIGIT> if both relays are used for Intercoms. Set both to <AUTO> for an intercom-control relay pair. **Figure 4-2D**

#### Control Relay Settings

1. Set both even Station's <SPKR/C> jumpers to the <C> position. **Figure 4-1B**
2. Set the jumpers labeled <DIGIT/AUTO> to the <DIGIT> setting for direct addressing of the relay. The relay is then activated by pressing the Initiation Tone Key(s) then the station number key. Set the jumper to <AUTO> for an intercom-control relay pair. The relay is activated by pressing the <9> key. **Figure 4-1D**
3. Set the <ALL CALL> jumper to <IN> to include the relay in an All Call situation or to the <OUT> position to exclude it. This prevents activating the relay during an All Call situation. **Figure 4-1E**  
Activate <ALL CALL> with the Activation Tone Key(s) and the <0> key.
4. Set the <L/M> jumper in **Figure 4-1C** to the <L> (latched) position for continuous closure or to <M> for momentary closure.



Figure 4-2



Figure 4-3A

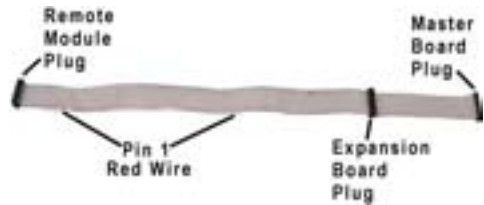


Figure 4-3B

### Mounting the Expansion Board

1. Start by removing the four screws that secure the Master Intercom cover. Retain the screws and set the cover aside.
2. Insert the three stand-offs, **Figure 4-3A**, with the wide portion of the tab on the main board. **Figure 4-2B** Press the stand-off firmly until the tab is fully seated.
3. Remove the existing ribbon cable from the Master Intercom socket, if connected.
4. Insert the 26 pin bus cable connector of the ribbon cable supplied with the Remote Module, **Figure 4-3B**, into the socket on the Master Intercom. **Figure 4-2A** Use the connector shown as **Master Board Plug**.



**NOTE:** **Figure 4-3B** shows the ribbon cable supplied with the Expansion Board. This cable replaces the cable supplied with the Remote Module to connect the Remote Module. The new cable has 3 connectors; one for the Master Intercom, one for the Expansion Board (these are the closest together), and one for the Remote Module.

The side with the red wire goes to Pin 1 at the top of the connector.

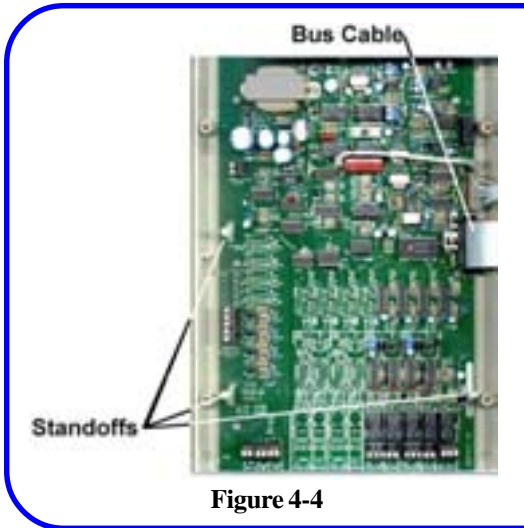


Figure 4-4



Figure 4-5

5. Align the three mounting holes in the Expansion Board, **Figure 4-5B**, with the three stand-offs in the Master Intercom, **Figure 4-4**, and press the board until it is seated on the standoffs.
6. Insert the **Expansion Board Plug** on the Bus Cable, **Figure 4-3B**, into the plug on the Expansion Board, **Figure 4-5A**, so that the red wire (Pin 1) on the connector corresponds to the Pin 1 mark on the board at the top of the connector.
7. Check that the 26-pin bus cable is free from twists and kinks.
8. Extend the **Remote Module Plug** on the other end of the cable out of the bottom of the case to connect to the Remote Module.



Figure 4-6



Figure 4-7

### Intercom Substation Connections

The installed Expansion Board is shown in **Figure 4-6**. **Figure 4-7** shows the expansion Board wired with surge suppressors. If the surge suppressors are used, four feet of wire must be left between the board and the suppressors for maximum protection. If surge suppressors are not used, the substations are wired directly to the board.

#### Connecting the Surge Suppressors

1. One sixteen-terminal surge suppressor connects to four stations on the Board.
2. For odd numbered stations, the two surge suppressor terminals connect to the two **<SPEAKER>** terminals on the Expansion Board. **Figures 4-7B or D**
3. For even numbered stations, connect the surge suppressor terminals to the two **<SP>** terminals, for speaker or normally open relay operation; or to terminals, **<COM>** and **<N/C>** for normally closed relay operation.
4. For push buttons, connect the solid color lead from the surge suppressor, **Figure 4-7A or C**, to the station numbered terminal. **Figure 4-7F**
5. Connect the striped lead from the surge suppressor, **Figure 4-7A or C**, to the corresponding **<COM>** terminal. **Figure 4-7F**

#### Connecting to the Surge Suppressors

1. To use a station as an intercom, connect the Blue Twisted pair from the intercom push-button to the two **<PB>** terminals on the station's suppressor. **Figure 4-7A or C**
2. Connect the Red twisted pair from the intercom speakers to the two terminals **<SPKR>** on the station's suppressor. **Figure 4-7B or D**
3. Connect the bare drain wires from the shielded cables, and the ground leads from the surge suppressors, **Figure 4-7E**, to the earth ground at the Master Intercom. Insulate the other end of the drain wires with electrical tape.
4. To use a station as a relay, connect the Black pair from the device to be controlled to the **<SPKR>** terminals on the even station suppressor. **Figure 4-7B or D**



**NOTE:** See **Page 4-6** for transformer installation.

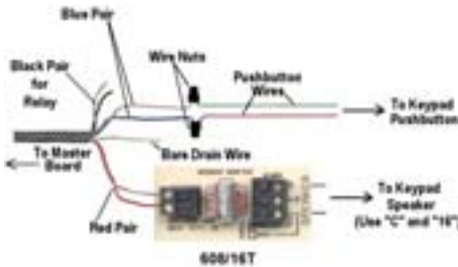


Figure 4-8

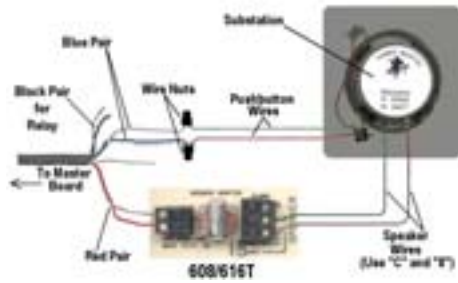



Figure 4-9


### Keypad Transformer Connections

1. Connect the two speaker wires disconnected from the keypad <SPKR> terminals to the impedance matching transformer (608/16T) terminals labeled <C> and <8> on the speaker side of the transformer. **Figure 4-8**
2. Connect the two pushbutton wires that were disconnected from the keypad <SW> terminals to one end of a twisted pair in the intercom cable. **Figure 4-8**
3. Connect the other end of this twisted pair to the <P/B> terminals on the surge suppressor.
4. Connect another twisted pair to the transformer terminals labeled <PAIR>.
5. Connect the other end of the same twisted pair to the <SPKR> inputs on the surge suppressor.
6. The drain wire is connected to earth ground. Do not connect the drain wire at the keypad, insulate the wire by wrapping it with electrical tape.

 **NOTE:** Use wire nuts for the wire splices and insulate the splice connection.

### Substation Transformer Connections

1. Connect the two speaker wires from the substation to the impedance matching transformer (608/16T) terminals labeled <C> and <8> on the speaker side of the transformer. **Figure 4-9**
2. Connect the two pushbutton wires from the substation to one end of a twisted pair in the intercom cable. **Figure 4-9** The other end of this twisted pair connects to the <P/B> terminals on the surge suppressor.
3. Connect the other twisted pair to the transformer (608/16T) terminals labeled <PAIR>.
4. Connect the other end of the same twisted pair to the <SPKR> inputs on the surge suppressor.
5. The drain wire is connected to earth ground. Do not connect the drain wire at the keypad, insulate the wire by wrapping it with electrical tape.

 **NOTE:** Use wire nuts for the wire splices and insulate the splice connection.

Included in this Chapter

**DigiCall™ Operation** ..... Local Mode  
Initiating a Call From an Intercom/ Substation  
Calling to an Intercom/Substation Using the Telephone to Activate a Device  
Remote Mode  
Programming the Remote Number  
Answering the Remote Telephone  
All Call

**Diagnostics** ..... What do I do when?  
The conversation is cut off without hanging up or disconnecting the call  
It is hard to hear the person at the substation or the manager  
Part of the conversation is cut off  
I get chatter in the speaker  
I cannot hear any sound at the substation or on the telephone  
When I use “0” or “##0” for an All Call, it fires a control relay  
When I press the keys to fire the control relay (#9 or #station number), it does not work  
The control relay does not fire long enough or too long  
The telephone line is dead when I try to make a call from the telephone connected to the DigiCall™  
The substation rings the phone without anyone pushing the button



Figure 5-1



Figure 5-2

### DigiCall™ Operation

DigiCall™ has two modes of operation, Local and Remote. This chapter describes the operation of the DigiCall™ System in both modes. The mode is selected by pressing the <#> button on the telephone connected to the Master Intercom or the Remote Module. **Figure 5-1** When in remote mode, the <REMOTE> status indicator on the Remote Module will light. **Figure 5-2**

#### Local Mode

##### Initiating a Call From an Intercom/Substation

1. To initiate a call from an intercom/substation, the caller presses the call button on the intercom/substation. If the telephone in the office is answered within 30 seconds, the office telephone will be automatically connect to the calling intercom/substation.
2. The system is voice activated. Only one person may speak at any time. When, they are finished, the other party may speak and be heard.
3. When a call is made from a substation while the office telephone is in use, a short series of “beeps” is heard in the telephone headset. Pressing the Initiation Tone Key(s) on the office telephone places the outside call on hold and the substation call is connected to the office telephone.
4. At the conclusion of an intercom/substation call, pressing <#> on the office telephone keypad resumes the on-hold call.
5. When an office (with DigiCall™ installed) receives an outside telephone call while engaged in communication with an intercom/substation, a busy signal is sent to the outside caller.
6. The volume adjustment for DigiCall™ is located on the Master Intercom and is set when the system is installed.
7. Intercom/substation calls are terminated by replacing the handset on the telephone cradle, or pressing <#> on the telephone keypad.

### Calling to an Intercom/Substation

1. Lift telephone handset from cradle.
2. Press the Initiation Tone Key(s) on the telephone keypad.  
To call an intercom substation that is on the Expansion Board, press the Initiation Tone Key(s) one extra time. i.e. if the Tone Key is <\*>, press <\*\*\*> for the expansion board. If the tone key is <\*\*\*>, press <\*\*\*> for the expansion board.
3. Enter the number of the substation being called.
4. Terminate the call by pressing <#> on the telephone keypad, or replacing the telephone handset.

### Using the Telephone to Activate a Device

1. If one of the substations is used as a relay output, the manager can activate the relay with key presses on the telephone handset. These are determined by the setting of the <AUTO/DIGIT> jumper for the Zone.
2. When set to <DIGIT>, pressing the substation number on the telephone keypad will activate the relay.
3. When in <AUTO> mode, pressing <9> while a call is connected to the speaker, will activate the relay in the same Zone.

## Remote Mode

### Programming the Remote Number

1. Programming is done with the phone connected to the master unit, or a phone plugged into the Remote Module.
2. **Press <#>** twice to activate the programming mode. (Model 9001-055 only, omit for other models.)
3. **Dial** the number to be called. Include the number 1 and the area code, if needed.
4. Press the <\*> key followed by the number <1>.
5. Press the <#> key twice.
6. There will be three short beeps in the handset and the LED on the cover will go out.
7. The number is stored in the memory of the unit.
8. Press the <#> key twice to put the unit back into Remote mode. The LED should be lit for remote mode.
9. Hang up the phone, or unplug phone from the RJ45 jack on the Remote Module.
10. **Press** a substation call button to test for connection.

### Answering the Remote Telephone

1. A remote telephone call is initiated by pressing the call button on the intercom/substation. The number programmed in the Remote Module will be dialed.
2. The phone will ring and there will be a short tone in the telephone, when answered, indicating a remote call is being received from the site. Pressing the <\*> key on the telephone keypad connects the incoming call.
3. Terminate a remote telephone call by pressing <#> on the telephone keypad.



**NOTE:** Just hanging up without pressing the <#> key, will not terminate the call at the DigiCall™ master. The call will have to timeout and may cause the intercom to appear inactive.

4. An intercom/substation cannot be called from a remote telephone.

## ALL CALL

1. Pressing the Initiation Tone Key(s) and the <0> key connects all substations with the <ALL CALL> jumper set to <IN>.



## Diagnostics (What Do I Do When...?)

### The conversation is cut off without hanging up or disconnecting the call

1. If the intercom speaker is on an even numbered station, there is a jumper for <L> (latched) or <M> (momentary). Make sure the jumper is set to <L>. Setting it to <M> will cause the relay to time out in 2 to 12 seconds.
2. If the remote module is being used, there is a jumper for setting the length of the call. This setting can be set to 1.5, 3, or 6 minutes. Digitech International, Inc. recommends setting this to 3 minutes.
3. The female voice sometimes falls into the frequency harmonics of the <#> tone on telephones. If you have selected the <#> key as the activation code, the problem can be corrected by switching the activation code from <#> to <##>. This is done by setting the switch described in Item 3 on Page 2-3, **Figure 2-1B** for a Two Station System, or Item 3 on Page 3-3, **Figure 3-1B** for a Four or Eight Station System from <1> to <2>.

### It is hard to hear the person at the substation or the manager

Three trim potentiometers on the Master Intercom control volume and switching.

1. <TALK> controls the volume at the substation speaker. The potentiometer works like a volume control on a home stereo. Turning it clockwise increases the volume. Turning it counterclockwise decreases the volume.
2. <LISTEN> controls the volume in the telephone handset. Turning it clockwise increases the volume. Turning it counterclockwise decreases the volume.
3. <TALK SENS> controls the switching between the two speakers. The DigiCall™ audio bus is not bi-directional. When the manager speaks, it cuts out the other speaker. This is because the speaker at the substation is used as both a microphone and a speaker.
  - a) If the sensitivity is set too high, the system may never switch back to the substation.
  - b) If the sensitivity is set too low, the manager will have to shout to be heard.

### Part of the conversation is cut off

1. The <TALK SENS> is set too low.
2. Adjust it higher. (Clockwise)

### I get chatter in the speaker

1. The <TALK SENS> is too high.
2. Adjust it lower. (Counterclockwise)


**⚠ WARNING: If an even numbered relay is being used for a control relay, always change the jumper to “C”. Failure to use this setting will damage the audio bus and result in the intercoms not working.**




Figure 5-3

### I cannot hear any sound at the substation or on the telephone

1. If one of the even-numbered relays is being used for a control relay, and the jumper is set to <SPKR>, the audio bus has been blown and the unit needs to be replaced.
2. It could be a defective, improperly wired, or mismatched transformer at the speaker.
3. Check the wires for shorts, opens, or loose wires.
4. The speaker wire coming from the DigiCall™ unit should be wired to the side of the matching transformer labeled <PAIR>. **Figure 5-3**
5. For Digitech International, Inc. keypads, the speaker wire should be connected to the <SPEAKER> side of the matching transformer on <C> and <16>.
6. For DigiCall™ substations, the speaker wire should be connected to <C> and <8> on the <SPEAKER> side of the matching transformer. **Figure 5-3**
7. If an even numbered station is being used, check the <AUTO/DIGIT> jumper. It should be set to <DIGIT>.

 **NOTE:** If the matching transformer is wired correctly, try substituting another transformer.

 **WARNING:** Each station relay has a jumper for a setting of <C> (control relay) or <SPKR> (speaker). Odd numbered relays should ALWAYS be set to <SPKR>. NEVER use an odd number relay as a control relay. Using odd numbered relays as a control relay will result in damage to the audio circuit.

### When I use “0” or “##0” for an All Call, it fires a control relay

1. Check the <ALL CALL> jumpers for any control relay outputs.
2. Change the jumpers to <OUT> for those control relays.

### When I press the keys to fire the control relay (#9 or #station number), it does not work

1. Make sure that the relay is wired correctly. They can be wired for <N/O> (Normally Open) or <N/C> (Normally Closed) operation.
2. Check for broken or shorted wires.
3. Check the setting of the <AUTO/DIGIT> jumper. If <AUTO> is on, <9> fires the second relay of the zone. If set to <DIGIT>, the relay is fired by pressing <#> and the station number of the relay being fired.

### The control relay does not fire long enough or too long


1. There is a trim potentiometer associated with each of the even numbered relays. This potentiometer controls how long the relay fires.
2. Adjust the potentiometer clockwise to increase the time the relay fires. Adjust the potentiometer counterclockwise to decrease the time the relay fires. The relay can be adjusted from 2 to 12 seconds.
3. Make sure the <M/L> jumper is set to <M>. If set to <L>, it will latch until the conversation is terminated.

### The telephone line is dead when I try to make a call from the telephone connected to DigiCall™

1. Make sure the <TELECO> switch is on <TELECO> and not <UNUSED PORT>.
2. Double check the wiring to the telephone line. See Page 2-2.

### The substation rings the phone without anyone pushing the button

1. If it is a DigiCall™ substation, check the doorbell jumper. For DigiCall™ substations, the doorbell jumper should be set to <NDB>.
2. A short in the push button wire can cause the system to think the push button is always closed. Check the wiring for shorts and replace as necessary.

 **NOTE:** Digitech International, Inc. keypads should have the doorbell jumper set to <DB>.

Included in this Chapter

**The Electronic Document** ..... Where and How?

**Adobe® Acrobat® Reader** ..... Installing or Updating the Reader

## The Electronic Document

An electronic version of this document is available. Please call Digitech International, Inc. to receive a CD containing a PDF version viewable with **Adobe® Acrobat® Reader**. For those that do not have the **Acrobat® Reader** installed, or would like to upgrade to version 5.x, an installation program has been provided.

## Adobe® Acrobat® Reader

**If upgrading to Acrobat® version 5.x from a 3.x or 4.x version, the old version MUST be uninstalled first, then install the 5.x version. Un-installing the old version AFTER installing version 5.x will erase some necessary files and cause problems when running Acrobat® Reader.**

To install and set up the electronic manual reader, **Acrobat® Reader**

1. Place the CD into the CD-ROM drive.
2. On the **Windows®** Task Bar, **Click** on the **Start** button, then select **Run**.
3. **Click** on the **Browse** button.
4. Navigate to the CD-ROM drive {d: }, then to the “Acrobat” directory.
5. **Double Click** on “Setup.exe”.
6. This will start the **Acrobat® Reader** installation program. Follow the instructions on the screen. When completed, there will be an “**Acrobat Reader 5.x**” icon on the desktop.

### Running Acrobat® Reader

1. If this document file was received on a CD, it may be copied to any location on the hard drive or run it directly from the CD by double clicking on the file name.
2. The Electronic Document will open in the **Acrobat® Reader**.
3. If a “No program associated with: {d:} \{path}\{document}.pdf” error occurs, install the **Acrobat® Reader** program as described above.

The **Acrobat® Reader** Manual is available from the Help menu in the **Acrobat® Reader** program and is also included on the CD in the “Acrobat” directory and may be viewed as described above and printed from the **Acrobat® Reader** program.

**“Acrobat® Reader Copyright © 1987-2003 Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, Acrobat, and the Acrobat logo are trademarks of Adobe Systems Incorporated.”**

DigiCall™ Substation Installation

Included in this Chapter

**DigiCall™ Interior Substation Installation** ..... Introduction  
Mounting  
    Surface Mount  
    Flush Mount  
Speaker Connections

**DigiCall™ Exterior Substation Installation** ..... Installation Instructions



Figure B-1



Figure B-2

### DigiCall™ Interior Substation Installation

The DigiCall™ Interior Speaker Assembly (Speaker and Back Box, P/N 9001-051), **Figure B-1**, provides intercom substation capability in locations which do not have a Digitech keypad or Digitech Intercom Substation installed. The speaker is connected to the DigiCall™ System through a 608/16T impedance matching transformer, **Figure B-2**, which is provided with the speaker assembly. Instructions for connecting the speaker to the impedance matching transformer and the impedance matching transformer to the surge suppressors are included in this appendix. The surge suppressors are pre-wired to the Master Intercom circuit board.

The speaker can be surface mounted or flush mounted. A back box is provided for surface mounting. A standard electrical box is required for flush mounting.



Figure B-3

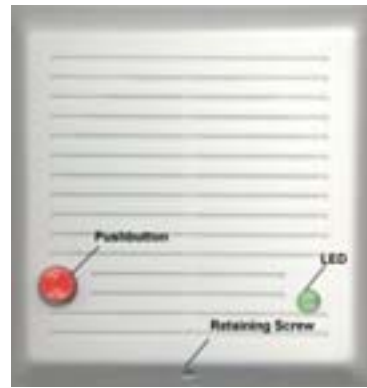


Figure B-4

## Mounting

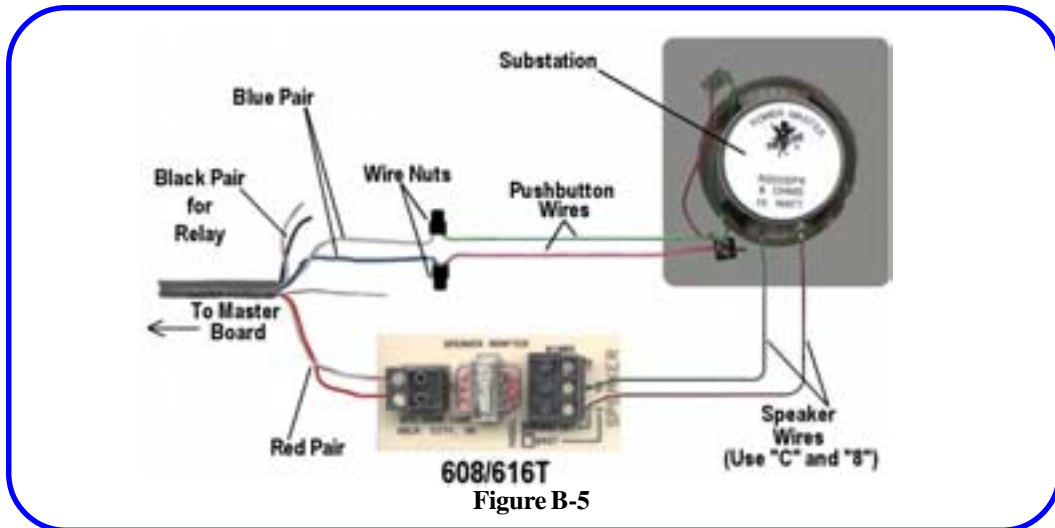
### Surface Mount

1. Remove speaker and grill from the back box. **Figure B-3**
2. Remove the knockout on the back box and use it as a template for routing the speaker wires.
3. Drill holes in mounting surface for the four screws using the back box as a template.
4. Mount the back box to the mounting surface using the screws and anchors provided with the speaker assembly.
5. Connect the speaker to the 8-ohm impedance matching transformer according to instructions in the “**Speaker Connections**” section on **Page B-4**.
6. Mount the speaker to the back box using the screws provided with the speaker.

### Flush Mount

1. Remove the back box from the speaker and grill. **Figure B-4**
2. Cut holes in the mounting surface. Mounting hardware is provided for sheetrock or siding installations.
3. Mount an electrical box in the speaker location.
4. Remove the retaining screw from the bottom of the grill.
5. Remove the speaker from the grill using a small screw driver to lift the speaker from the grill.
6. Connect the speaker to the 8-ohm impedance matching transformer according to instructions in the “**Speaker Connections**” section on **Page B-4**.
7. Mount the speaker to the electrical box using the screws supplied with the speaker.
8. Secure the speaker to the grill with the retaining screw.





### Speaker Connections

- NOTE:** Use wire nuts to connect the wires and insulate the connection.
1. Connect the two pushbutton wires from the speaker terminals to one end of a twisted pair in the shielded intercom cable. **Figure B-5**
  2. Connect the other end of the same twisted pair to the <P/B> terminals on the Master Intercom surge suppressor.
  3. Connect the two speaker wires from the speaker terminals to the impedance matching transformer (608/16T) terminals labeled <C> and <8> on the <SPEAKER> side of the transformer. **Figure B-5.**
  4. Connect the other twisted pair to the transformer (608/16T) terminals labeled <PAIR>.
  5. Connect the other end of the same twisted pair to the <SPKR> inputs on the surge suppressor.
  6. The drain wire is connected to earth ground. Do not connect the drain wire to the keypad. Insulate the wire by wrapping it with electrical tape. **Figure B-5**

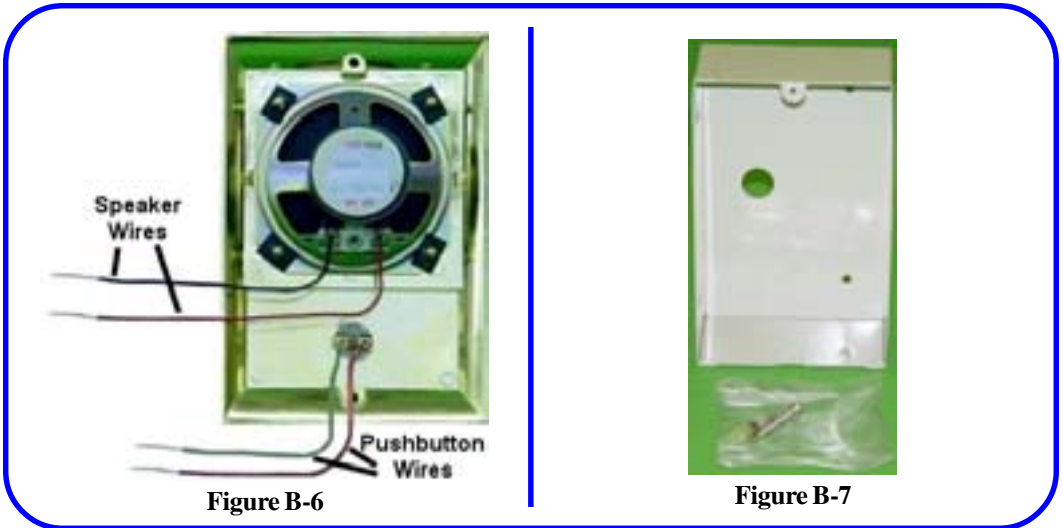


Figure B-6

Figure B-7

### DigiCall™ Exterior Substation Installation

The DigiCall™ Exterior Speaker Assembly (P/N 9001-053 or 9001-061), **Figure B-6**, and back box, **Figure B-7**, provide intercom substation capability in locations which do not have a Digi-tech keypad or Digi-tech Intercom Substation installed.

1. The speaker is connected to the DigiCall™ System through a 608/16T impedance matching transformer, **Figure B-5, Page B-4**, which is provided with the speaker assembly.
2. Mounting and connection instructions for the exterior speaker are identical to those for the interior model on **Page B-2 to B-4**.
3. The back box is mounted the same as an electrical box recessed into the surface.
4. The speaker is flush mounted on the back box, flush with the mounting surface.

This Page Left Blank Intentionally

# Appendix C

## Using with PBX or Other Telephone Systems

### Included in this Chapter

<b>Introduction</b> .....	Limitations
<b>Setup 1 - Connecting through a PBX System</b> .....	Installing the DigiCall™ System
<b>Setup 2 - Connecting through a Dedicated Telephone Line</b>	Use instructions in this Guide

### Introduction

If using the DigiCall™ System in conjunction with a PBX telephone system, please note the following suggestions.

There are many different PBX telephone systems with diverse features and capabilities.

Digitech is unable to give instructions on the programming of your PBX system, or the specific integration of the DigiCall™ System into a PBX.

The following presents a theory of operation that will allow a telecom specialist to successfully install DigiCall™.

Digitech strongly recommends consulting a telephone system specialist on the features, benefits and feasibility of using the DigiCall™ system. Also, request their assistance during the DigiCall™ installation. It is the owner's responsibility to determine suitability, PBX system capability, PBX system capacity, and PBX programming requirements.

When using the following setup, DigiCall's remote capability is disabled. The remote module is not necessary. Any remote features must be features of the PBX.

### Setup 1 – Connecting through the PBX System

(Remote capability is programmed in the PBX)

#### Installing the DigiCall™ System

1. Connect the DigiCall's™ **<TELCO OUT>** terminals to an unused PBX port. This should be an unused port for an incoming trunk, not an existing extension or trunk.
2. Set the **<TELCO/UNUSED PORT>** switch on the DigiCall™ main board to **<UNUSED PORT>**.
3. Complete all other connections as instructed in the User's Guide. The DigiCall's™ **<TELCO IN>** terminals are left open.

When an incoming call is answered, the phone and the substation/keypad will automatically connect.

### Programming the PBX

1. The telephone system technician needs to program the extensions to ring with an incoming call from the port connected to DigiCall™.
2. The technician also needs to create a new Trunk Group of only the port connected to the DigiCall™. This Trunk Group should be given an access number. i.e. 7 or 8. (Example: dialing 9 to get an outside line) When this access number is dialed by one of the extensions programmed to the port, the extension is connected to the DigiCall™ unit and the operator can use DigiCall™ codes to control relays or access specific substations.
3. If the PBX has the capability, the technician can program the PBX to call remote numbers after a predetermined number of rings, or during specific time periods.



**WARNING:** Remote call forwarding must be a capability of the PBX system and should be programmed as one of its features.

### Using the System

1. Answering one of the extensions programmed to receive sub-station calls will connect to the intercom speaker of the sub-station and allow conversation in the same manner as a single line system.
2. With a call initiated at a sub-station and the DigiCall™ set for **<AUTO>** on that station, the associated control relay can be activated by pressing **<9>** on the telephone keypad.
3. In order to initiate a call to a substation or initiate activation of a control relay on the system. (if this feature is able to be programmed)

With the **<AUTO/DIGIT>** jumpers set to **<DIGIT>**:

- a. Dial the number for the new Trunk Group. (i.e. 7 or 8, etc. assigned in the PBX programming phase)
- b. Dial the Initiation Tone Keys, followed by the station number key.
- c. The control device should activate.

With the **<AUTO/DIGIT>** jumpers set to **<AUTO>**:

- a. Dial the number for the new Trunk Group. (i.e. 7 or 8, etc. assigned in the PBX programming phase)
- b. The system should work as in #2 above. The associated control relay can be activated by pressing **<9>** on the telephone keypad.
- c. The control device should activate.

## Setup 2 – Connecting through a Dedicated Telephone Line

(DigiCall™ operates normally as stated in the User's Guide)

Use the instructions in this Guide to install and set up the DigiCall™ system. All features should work as described in the documentation.

This Page Left Blank Intentionally



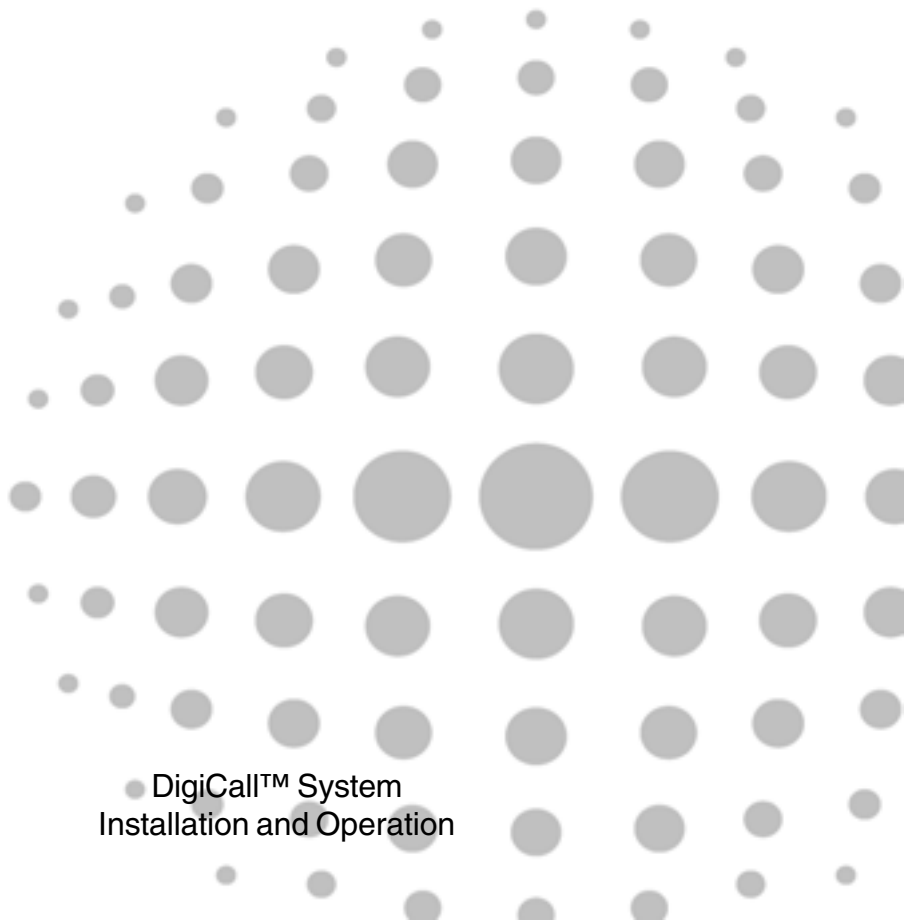
digitech

INTERNATIONAL





*Digitech International, Inc.*  
800 523 9504 toll free  
[www.digitech-intl.com](http://www.digitech-intl.com)



P/N: 1200-181 Rev. 1.7

DigiCall™ System  
Installation and Operation