MIRCOM®
Advanced Life Safety Solutions

UDACT-2200

Dual Line Dialer

Installation Manual

LT-2021MIR Rev.1
March 2008

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1.0 Introduction

The UDACT-2200 is a dual line dialer that will communicate all alarms, supervisory and trouble conditions to a Central Station using Contact ID or SIA communication formats. The UDACT-2200 will support the FX-2200 Fire Panel. The FX_V21 or greater programmer must be used to program the UDACT-2200 Dialer.

1.1 General Features of the UDACT-2200

- Supports all zone alarm, supervisory, and trouble conditions
- Supports all panel troubles
- Programmable through FX_V21 or greater programmer
- Supports SIA, Contact ID, and Pager Formats
- Three telephone numbers
- Fully programmable test transmission
- Automatic reporting codes for SIA and Contact ID formats
- 128 Event buffer with date and time stamp
- Communicator call directions by group
- Swinger shutdown options available for all events
- Module current rating: 40mA standby / 65mA when dialing
- Module voltage rating: 19 VDC to 27.5 VDC

1.2 Codes, Standards and Installation Requirements

Relevant Codes and Standards

The UDACT-2200 Dual-Line Digital Dialer is designed to meet the DACT requirements of NFPA 72, UL 864 Rev.9, Control Units for fire Protective Systems.

General Installation Requirements

Manufacturer's Documents
When installing the UDACT-2200, refer to this manual and the manual for the control panel into which this module is being installed. This dialer requires programming. Programming is done using the FX_V21 or greater programming.

Field Wiring
Field wiring recommendations in these documents are intended as guidelines. All field wiring must be installed in accordance with NFPA 70 National Electrical Code and with all relevant local codes and standards and the Authority Having Jurisdiction.

1.3 Technical Support and General Information

For technical support call 905-660-4655 or toll free at 1-888-660-4655.

For general product information visit our web site: **www.mircom.com.**

1.4 System Verification

The complete fire alarm system must be verified for proper installation and operation when:

- the initial installation is ready for inspection by the Local Authority Having Jurisdiction;
- any system component is added, changed or deleted;
- any programming changes are made;
- system wiring has been altered or repaired;
- system failure due to external influences such as lightning, water damage or extended power outages has occurred.

1.5 Standby Power

The FX-2200 Fire Panel provides standby battery support for lead-acid rechargeable batteries. The required capacity of the standby batteries must be calculated using the charts and tables within the *FX-2200 Installation Manual (LT-2000MIR)* for the period as required by national or local codes and standards. Even though the calculation table within the *FX-2200 Installation Manual (LT-2000MIR)* includes a safety margin, lead-acid batteries commonly used for standby can have variable capacity as a result of age and ambient conditions. Periodic inspection for damage and the batteries' ability to support the attached equipment is highly recommended.

2.0 Installing and Wiring the UDACT-2200

2.1 Unpacking the UDACT-2200

The basic UDACT-2200 package includes the following components:

- Dialer
- 4-pin polarized locking cable assembly
- Four #4 mounting screws
- Installation manual

2.2 Mounting & Wiring the UDACT-2200

Note: Ensure that standby calculations are done before installing the dialer. See the FX-2200 Fire Panel Installation Manual for all power information and calculation charts. The current rating for the UDACT-2200 is:

- 40 mA standby current
- 65 mA alarm current (when dialing)

Mounting & Wiring the UDACT-2200

The UDACT-2200 is mounted in the upper right corner of the back box, in the main panel. Route the wiring harness under the plastic shield before mounting the DACT. Attach the harness to the connector labeled DACT/CITY on the main board. Orient the dialer so that the mounting hole with the metal plating is located on the upper right. Position the dialer on the back box and secure with four #4 mounting screws (included). Attach the unconnected end of the wiring harness to the UDACT-2200. The UDACT-2200 requires connection of the Secur-bus from the dialer to the main panel using the provided 4-pin polarized locking cable assembly. Two telephone lines are connected to the Tip/Ring terminals.

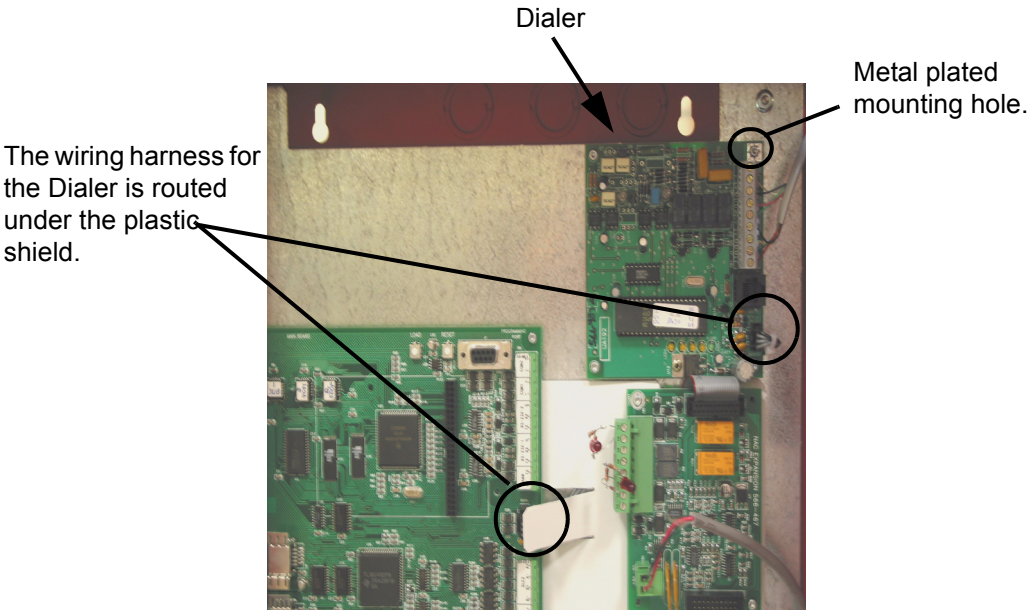

Figure 1: UDACT-2200 Install Location

UDACT-2200Operation

3.1 LED Indicators

The dialer's operating status is visible from its five LED indicators. These indicators are located on the dialer. Each indicator is described in the following table:

#	Indicator	LED Color	Activates when...
1	Secur-bus Fault	Yellow	the Secur-bus connection to the main panel has failed
2	TLM2 Trouble	Yellow	there is a trouble on telephone line #2
3	TLM1 Trouble	Yellow	there is a trouble on telephone line #1
4	FTC Trouble	Yellow	the dialer is unable to communicate
5	Watchdog	Green	the dialer is functioning normally; LED flashes ½ second on, ½ second off

3.2 Communication with the Fire Alarm Control Panel

When connected to the FACP properly, the Watchdog LED will flash at a rate of ½ second on/off when power is applied to the FACP. The dedicated dialer will transmit all events that occur on the FACP if programmed to do so. Any troubles that occur on the dedicated dialer will be shown on the appropriate LED and communicated (if enabled) as well as causing a common trouble condition on the FACP. If the FACP should lose communication with the dialer a common trouble condition will also be generated.

3.3 Phone Line Communication

The dedicated dialer is equipped with two phone line connections. When an event occurs that initiates communications, the first attempt at dialing will be on the programmed telephone line.

Refer to "Dialer Configuration" later in this manual for dialing attempts and operation.

4.0 Programming the UDACT-2200

4.1 Accessing the Dialer Settings

1. At the initial programming screen (Figure 2), do the following:

   a. Check the Enforce Group Associations Checking box.
   b. Click on the Alarm List Mode list box and select the Local option.
   c. Click on the Panels button to access the Panels screen (Figure 3).

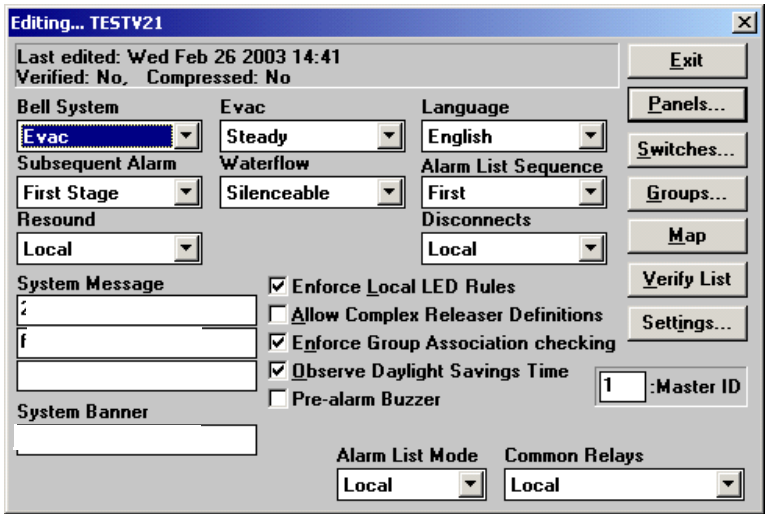

Figure 2: Initial Programmer Screen

2. In the Panels screen (Figure 3), click on the IDs button to access the IDs dialog (Figure4). In the IDs dialog (Figure 4), check the UDACT-2200 check box and click on the Dialer

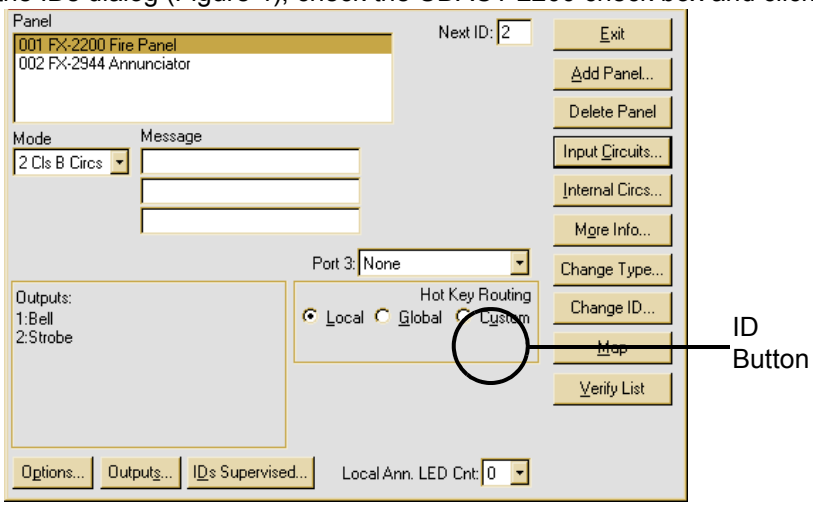

Figure 3: Panels Screen

Settings button.

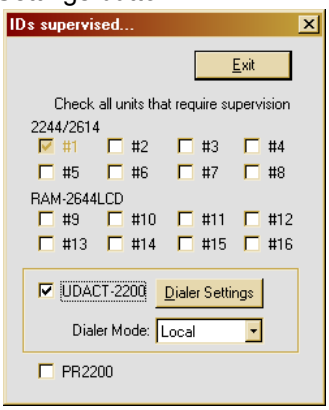

Figure 4: Dialer Settings Button

4.2 Dialer Settings

The Dialer Settings dialog allows for the programming of various communications options.

The *1st, 2nd and 3rd Telephone Numbers* can be up to 32 digits. Special digits may be used to perform the following functions:

- HEX (B)-simulates the [*] key
- HEX (C)-simulates the [#] key
- HEX (D)-forces the panel to search for dial tone
- HEX (E)-forces the panel to pause for 2 seconds
- HEX (F)-end of telephone number marker

Note: A Hex D is required before the number, example: D9054704070

The *1st and 2nd Account Codes* identify the system to the central station when a communication is sent. The code can be programmed for up to four digits. The first and third telephone number transmit the first account code. The second telephone number transmits the second account code.

The *1st and 2nd Format* setting affects the type of communication that the dialer sends to the central station. The formats available include Contact ID, SIA and a pager format.

The Dialer Settings window has the following push buttons along the right side:

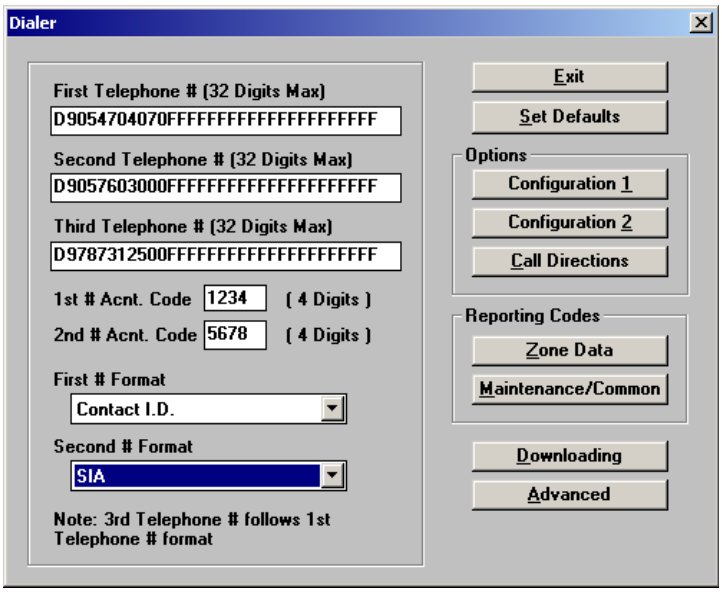

Figure 5: Initial Dialer Screen

- **Exit:** Close the Dialer Settings window and return to the IDs window.
- **Configuration 1:** Display the Dialer Configuration 1 screen.
- **Configuration 2:** Display the Dialer Configuration 2 screen.
- **Zone Data:** Display the Zone Data screen.
- **Maintenance/Common:** Display the Dialer Maintenance and Common Reporting Codes screen.

Dialer Configuration 1

The *Dialer Configuration 1* dialog contains the First Communicator Options, Second Communicator Options and International Options. The *Communications* option determines if the dialer will communicate to the central station. When Enabled is selected, the dialer will communicate all events as programmed. When Disabled is selected, the dialer will not communicate any events.

The *TLM One/Two Check* options determine whether the dialer will test for telephone line faults on line one and line two respectively.

The *Third Phone #* can be programmed for two different modes of operation. When Alternate Dialing Enabled is selected, the dialer switches between the first and third numbers after each dialing attempt, until the maximum number of dialing attempts have been made to each number. When Third Number Backup is enabled, the dialer will use the third number only if all attempts to communicate to the first number fail. If all attempts to communicate to the third number also fail, a failure to communicate trouble will be generated. When Disabled is selected, the third telephone number is not used.

The *Dialing* option has three different options for pulse or DTMF dialing. If All attempts Pulse is selected, the dialer will always use pulse (rotary) dialing. If All attempts DTMF Dialing is selected, the dialer will always use DTMF dialing. If 4 attempts DTMF then Pulse is selected, the dialer will use DTMF dialing for the first four attempts. If unsuccessful, the dialer will switch to pulse dialing for the remaining attempts.

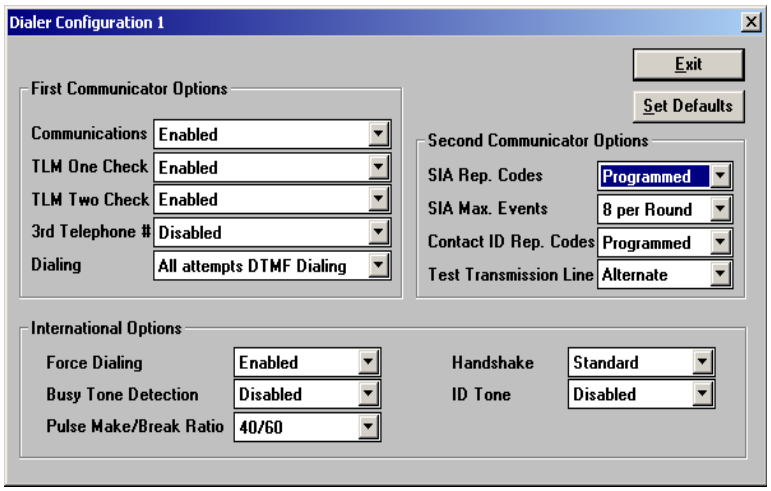

Figure 6: Dialer Configuration 1

The *SIA Rep. Codes* option determines whether the dialer will send automatic reporting codes, or use the reporting codes that are programmed in the *Zone Data* and *Maintenance/ Common* reporting codes sections. See *"5.0 Appendix A: Table of Reporting Codes" on page 11* for a list of the automatic SIA Reporting Codes.

The *SIA Max Events* option sets the maximum number of events the dialer will send for one SIA transmission. When 20 per Round is selected, SIA sends a maximum of 20 events per round. When 8 per Round is selected, SIA sends maximum of 8 events per round.

The *Contact ID Rep. Codes* option determines whether the dialer will send automatic reporting codes, or use the values that are programmed in the Zone Data and Maintenance/Common reporting codes sections. See *"5.0 Appendix A: Table of Reporting Codes" on page 11* for a list of the automatic Contact ID Reporting Codes.

Pager Format. Events will be communicated to a pager when using this format. When programming a pager telephone number, extra digits must be used in order for the feature to function properly. Program two hexadecimal digits 'E' at the end of the number (4 second pause). The panel will attempt to call the pager one time. After dialing the digits in the telephone number the panel will send the account number and reporting code followed by the [#] key (Hex [C]). There is no ringback when using Pager format. The panel has no way of confirming if the paging attempt was successful. Do not use hexadecimal C in a reporting code when using pager format. In most cases the digit C will be interpreted as a [*], which will terminate the page before it has finished. Example: D19787319876EE

The *Test Transmission Line* option determines how the dialer chooses a telephone line to send the automatic test transmission. If Alternate is selected, the dialer will alternate between using lines 1 and 2 for transmissions, regardless of telephone line troubles. If Available is selected, the dialer will use Line 1 for test transmissions. If a trouble exists on Line 1, the dialer will switch to Line 2.

When the *Force Dialing* option is set to enabled, if the first attempt by the panel to call the monitoring station fails, on every subsequent attempt the panel will dial regardless of the presence of dial tone. When Disabled is selected, the panel will not dial the programmed telephone number if dial tone is not present.

When the *Busy Tone Detection* option is enabled, if busy tone is detected, the dialer will disengage the phone line and try to place the call again following the delay between dialing attempts. When Disabled is selected, the dialer will use the standard dialing procedure for every attempt. The *Pulse Make/Break Ratio* option is for panels in international applications. When 40/60 is selected, the pulse dialing make/break ratio is the 40/60, and when 33/67 is selected it is 33/67.

The *ID Tone* can be set to 1300Hz or 2100 Hz. The panel will emit a tone at the selected frequency for 500 ms every 2 seconds when it places a call to indicate that it is a digital equipment call, not voice. When Disabled is selected, this feature will not be used.

Dialer Configuration 2

The Dialer Configuration 2 screen contains the Swinger Shutdown Variables, Other Options and Test Transmission options. The *Swinger Shutdown* options determine the maximum number of zone and trouble events that the dialer will transmit in one day. The alarm or trouble will still be displayed on the panel and logged in the archive, but the dialer will not transmit the event. There are individual counters for Zone Alarm and Restore, Zone Supervisory and Restore, Zone Trouble and Restore and Maintenance Trouble and Restore. This feature will be reset at midnight. To disable the feature, program 000.

The *Test Transmission Time of Day* determines when the automatic test transmission will occur. The entry is four digits, military 24 hour format (HH:MM). To disable the feature, program the time as [9999]. The *Test Transmission Cycle* determines the number of days between test transmissions.

The *TLM Trouble Delay* controls the number of telephone line monitoring checks required before a telephone line trouble is generated. The dialer checks the telephone connection at 10-second intervals. The *Maximum Dialing Attempts to Each Phone Number* is the number of attempts that the dialer will make to each telephone number before generating a fail to communicate trouble. *Post Dial Wait for Handshake* is the amount of time the dialer will wait for a valid initial handshake from the receiver after dialing the programmed telephone number.

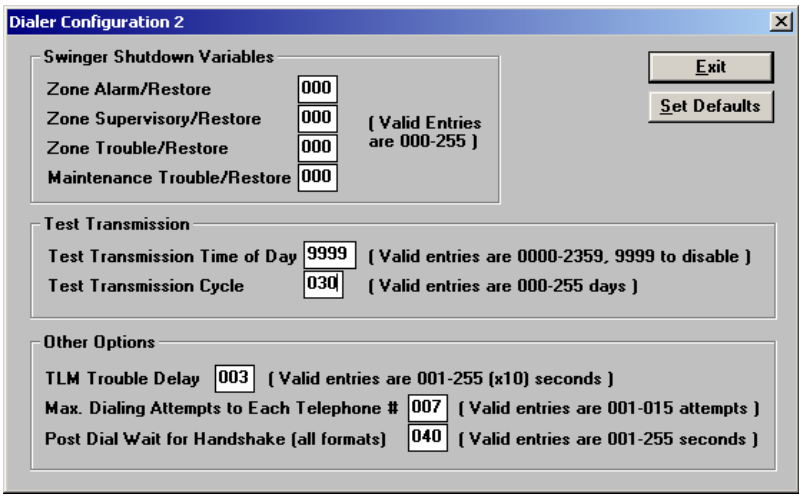

Figure 7: Dialer Configuration 2

The *Call Directions* dialog contains the options that determine which telephone numbers will be used to communicate events. There are five different types of events that can each be sent to telephone number one or telephone number two. The event types are Fire Zone Alarm/Restore, Supervisory Zone Alarm/ Restore, Zone Trouble/Restore, Maintenance Trouble/Restore and Test Transmissions.

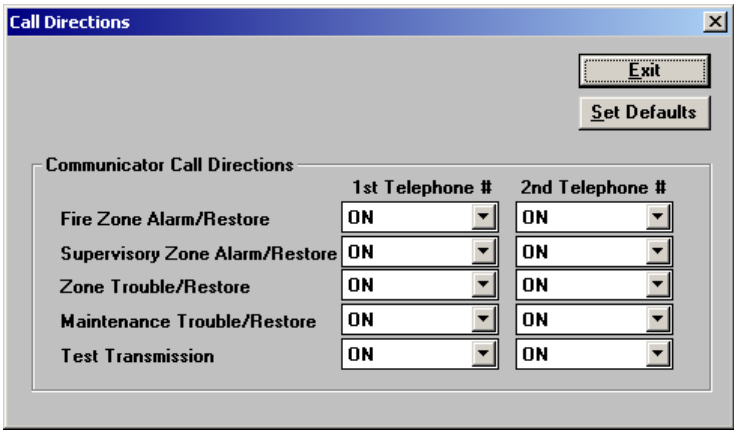

Figure 8: Call Directions

The *Zone Data* dialog (Figure 9) contains zone definitions and reporting codes that the dialer will use to communicate events.

The *Groups List* is a list of all currently defined groups. Each line entry includes the Group ID and its message/description. Click on the desired group in order to program it.

The *Definition* specifies the identifier of the alarm or trouble being sent to the central station. The zone types that are available are Fire, Sprinkler, Heat, Water and Untyped.

The *Reporting Codes* are used when SIA or Contact ID is set to Programmed, or when using BPS formats. There are six reporting codes for each group. They are:

- Zone Alarm Reporting Code
- Zone Alarm Restoral Reporting Code
- Trouble Reporting Code
- Trouble Restoral Reporting Code
- Supervisory Reporting Code
- Supervisory Restoral Reporting Code

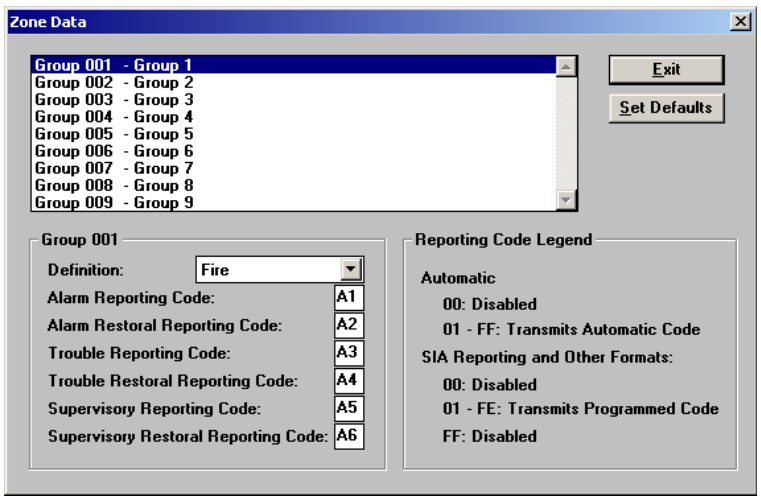

Figure 9: Zone Data

Dialer Maintenance and Common Reporting Codes

The *Dialer Maintenance and Common Reporting Codes* dialog contains maintenance and common reporting codes that the dialer will use to communicate those events.

The *Reporting Codes List* is a list of all available maintenance and common reporting codes. Select one to program its reporting code. The Reporting Codes are used when SIA or Contact ID is set to Programmed, or when using BPS formats. There are many different reporting codes in this group.

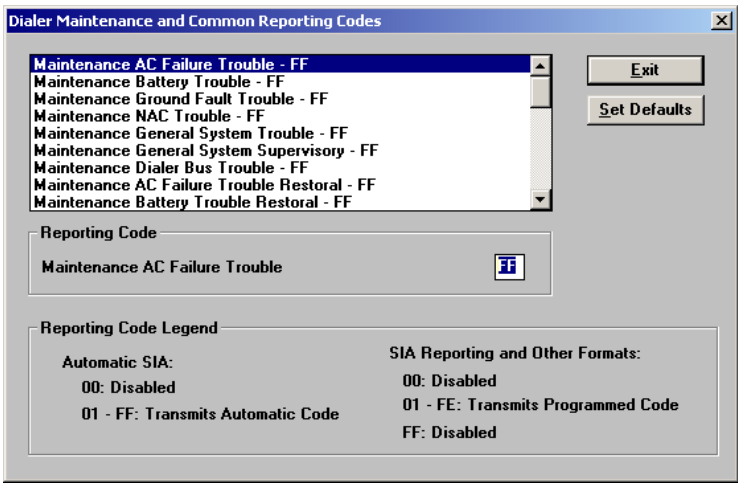

Figure 10: Reporting Codes

5.0 Appendix A: Table of Reporting Codes

The following tables contain automatic Contact ID and SIA format reporting codes. For more information on reporting formats.

5.1 Contact ID

The first digit (in parentheses) will automatically be sent by the control. The second two digits are programmed to indicate specific information about the signal.
For example, if zone 1 is an fire zone point, you could program the event code as [1A]. The central station would receive the following:
FIRE - FIRE ALARM - 1

where the “1” indicates which zone went into alarm.

5.2 SIA Format – Level 2 (Hardcoded)

The SIA communication format used in this product follows the Level 2 specifications of the SIA Digital Communication Standard – October 1997. This format will send the account code along with its data transmission. The transmission would look similar to the following at the receiver:

N Ri00 FA 01
N = New Event
Ri00 = System Event
FA = Fire Alarm
01 = Zone 1

Table 1: Automatic Contact ID/SIA Reporting Codes

Reporting Code	Code Sent When…	Dialer Direction*	Contact ID Auto Rep Codes	Sia Auto Rep Codes
Zone Supv./ Rest.	zone goes into supervisory/ restore	S/R	(2) AA	See Table 3
Zone Alarms/ Rest.	zone goes into alarm/ alarm condition has been restored	A/R	(1) 3A	See Table 3
Zone Trouble/ Rest.	zone exhibits a trouble condition/ zone trouble condition has been restored	T/R	(3) 73	See Table 3
AC Fail Trouble/ Rest.	AC power to control panel is disconnected or interrupted/AC power restored; both codes follow the AC Trouble Delay	MA/R	(3) A1	AT-00/AR-00
Battery Trouble/ Rest.	control panel battery is low/battery restored	MA/R	(3) A2	YT-00/YR-00
Ground Fault Trouble/Rest.	Earth Ground Fault is detected/restored	MA/R	(3) 1A	UT-OO/UJ-00
NAC Trouble/ Rest.	NAC circuit is opened/restored	MA/R	(3) 21	YA-99/YH-99
General System Trouble/Rest.	module trouble is detected/restored	MA/R	(3) 3A	YX-00/YZ-00
Gen. System Supervisory/ Rest.	control panel loses/restores communications to enrolled modules	MA/R	(3) 33	ET-00/ER-00
Secur-bus Trouble/Rest.	Secur-bus connection is lost/restored	MA/R	(3) 33	NT-00/NR-00
Line 1 or 2 TLM Trouble/Rest.	connection via Telephone Numbers 1 or 2 is lost/restored	MA/R	(3) 51	LT-XX/LR-XX**
Phone # 1 or 2 FTC Trouble/ Rest.	communication is restored after a failure to communicate trouble has occurred; events not communicated during lapse will also be sent	MA/R	(3) 54	YC-XX/YK-XX**
Walk Test Start/ Stop	control panel has entered/exited walk test mode; no events will be communicated	MA/R	(6) A7	TS-00/TE-00
Installer Lead In/ Out	control panel enters/exits programming mode	MA/R	(6) 27/28	LB-00/LX-00
Test Transmission Normal/Off-Normal	test transmission reports system normal or off-normal (alarm, supervisory or trouble) control panel condition	T	(6) A2	RP-00/RY-00

* Call directions: A/R = alarm/restoral; T/R = trouble/restoral; MA/R = maintenance alarm/restoral; S/R = supervisory/restore; T = test transmission

** Line number/telephone number is identified (XX)

Table 2: Contact ID Zone Alarm/Restoral Event Codes

Program any of these codes for zone alarms/restorals when using the standard (i.e. not automatic) Contact ID reporting format:

Medical Alarms
(1)A1 Emergency
(1)A2 Fail to Report In
Fire Alarms
(1)1A Fire Alarm
(1)11 Smoke
(1)12 Combustion
(1)13 Water Flow
(1)14 Heat
(1)15 Pull Station
(1)16 Duct
(1)17 Flame
(1)18 Near Alarm
Panic Alarms
(1)2A Panic
(1)21 Duress
(1)22 Silent
(1)23 Audible
General Alarms
(1)4A General Alarm
(1)4A General Alarm
(1)43 Expansion module failure
(1)44 Sensor tamper
(1)45 Module Tamper
24 Hour Non-Fire
(1)51 Gas Detected
(1)52 Refrigeration
(1)53 Loss of Heat
(1)54 Water Leakage
(1)55 Foil Break
(1)56 Day Trouble
(1)57 Low Bottled Gas Level
(1)58 High Temp
(1)59 Low Temp
(1)61 Loss of Air Flow

Table 3: SIA Format Automatic Zone Alarm/Restoral Codes

Zone Definition	Alarm/Rest. Rep Codes*	Trouble/ Rest. Rep Codes	Zone Definition	SIA Auto Rep Codes*	Trouble/ Rest. Rep Codes
[00] Null Zone	No transm.	No transm.	[09] Gas	GA-ZZ/GH-ZZ	GT-ZZ/GJ-ZZ
[01] Fire	FA-ZZ/FH-ZZ	FT-ZZ/FJ-ZZ	[10] Freeze	ZA-ZZ/ZH-ZZ	ZT-ZZ/ZJ-ZZ
[02] Fire Supervisory	FS-ZZ/FR-ZZ	FT-ZZ/FJ-ZZ	[11] Heat	KA-ZZ/KH-ZZ	KT-ZZ/KJ-ZZ
[03] Sprinkler	SA-ZZ/SH-ZZ	ST-ZZ/SJ-ZZ	[12] Water	WA-ZZ/WH-ZZ	WT-ZZ/WJ-ZZ
[06] Panic	PA-ZZ/PH-ZZ	PT-ZZ/PJ-ZZ	[13] Untyped	UA-ZZ/UH-ZZ	UT-ZZ/UJ-ZZ
[07] Emergency	QA-ZZ/QH/ZZ	QT-ZZ/QJ/ZZ			

ZZ = zones 01-05

6.0 Appendix B: Table of Compatible Receivers

Format/ Receiver	Sur-Gard SLR	Sur-Gard MLR	Sur-Gard MLR2000	Osbourne Hoffman Quick Alert II	Silent Knight	Ademco 685	Radionics 6500	Bell Mobility Pager
SIA (level 2)	Yes	Yes	Yes	Yes	Yes			
Contact ID	Yes	Yes	Yes	Yes		Yes		
Pager	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes
Version	V1.00	V1.83	V1.2	2/20/96	SIA-9004I-960626	Rev4.4d	D6500 L/C 1993	

Pager format is to be used for backup troubles only.

7.0 Warranty & Warning Information

Warning Please Read Carefully

Note to End Users: This equipment is subject to terms and conditions of sale as follows:

Note to Installers

This warning contains vital information. As the only individual in contact with system users, it is your responsibility to bring each item in this warning to the attention of the users of this system. Failure to properly inform system end-users of the circumstances in which the system might fail may result in over-reliance upon the system. As a result, it is imperative that you properly inform each customer for whom you install the system of the possible forms of failure.

System Failures

This system has been carefully designed to be as effective as possible. There are circumstances, such as fire or other types of emergencies where it may not provide protection. Alarm systems of any type may be compromised deliberately or may fail to operate as expected for a variety of reasons. Some reasons for system failure include:

•*Inadequate Installation*

A Fire Alarm system must be installed in accordance with all the applicable codes and standards in order to provide adequate protection. An inspection and approval of the initial installation, or, after any changes to the system, must be conducted by the Local Authority Having Jurisdiction. Such inspections ensure installation has been carried out properly.

•*Power Failure*

Control units, smoke detectors and many other connected devices require an adequate power supply for proper operation. If the system or any device connected to the system operates from batteries, it is possible for the batteries to fail. Even if the batteries have not failed, they must be fully charged, in good condition and installed correctly. If a device operates only by AC power, any interruption, however brief, will render that device inoperative while it does not have power. Power interruptions of any length are often accompanied by voltage fluctuations which may damage electronic equipment such as a fire alarm system. After a power interruption has occurred, immediately conduct a complete system test to ensure that the system operates as intended.

•*Failure of Replaceable Batteries*

Systems with wireless transmitters have been designed to provide several years of battery life under normal conditions. The expected battery life is a function of the device environment, usage and type. Ambient conditions such as high humidity, high or low temperatures, or large temperature fluctuations may reduce the expected battery life. While each transmitting device has a low battery monitor which identifies when the batteries need to be replaced, this monitor may fail to operate as expected. Regular testing and maintenance will keep the system in good operating condition.

•*Compromise of Radio Frequency (Wireless) Devices*

Signals may not reach the receiver under all circumstances which could include metal objects placed on or near the radio path or deliberate jamming or other inadvertent radio signal interference.

•*System Users*

A user may not be able to operate a panic or emergency switch possibly due to permanent or temporary physical disability, inability to reach the device in time, or unfamiliarity with the correct operation. It is important that all system users be trained in the correct operation of the alarm system and that they know how to respond when the system indicates an alarm.

•*Automatic Alarm Initiating Devices*

Smoke detectors, heat detectors and other alarm initiating devices that are a part of this system may not properly detect a fire condition or signal the control panel to alert occupants of a fire condition for a number of reasons, such as: the smoke detectors or heat detector may have been improperly installed or positioned; smoke or heat may not be able to reach the alarm initiating device, such as when the fire is in a chimney, walls or roofs, or on the other side of closed doors; and, smoke and heat detectors may not detect smoke or heat from fires on another level of the residence or building.

•*Software*

Most Mircom products contain software. With respect to those products, Mircom does not warranty that the operation of the software will be uninterrupted or error-free or that the software will meet any other standard of performance, or that the functions or performance of the software will meet the user’s requirements. Mircom shall not be liable for any delays, breakdowns, interruptions, loss, destruction, alteration or other problems in the use of a product arising our of, or caused by,

the software.

Every fire is different in the amount and rate at which smoke and heat are generated. Smoke detectors cannot sense all types of fires equally well. Smoke detectors may not provide timely warning of fires caused by carelessness or safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches or arson.

Even if the smoke detector or heat detector operates as intended, there may be circumstances when there is insufficient warning to allow all occupants to escape in time to avoid injury or death.

•*Alarm Notification Appliances*

Alarm Notification Appliances such as sirens, bells, horns, or strobes may not warn people or waken someone sleeping if there is an intervening wall or door. If notification appliances are located on a different level of the residence or premise, then it is less likely that the occupants will be alerted or awakened. Audible notification appliances may be interfered with by other noise sources such as stereos, radios, televisions, air conditioners or other appliances, or passing traffic. Audible notification appliances, however loud, may not be heard by a hearing-impaired person.

•*Telephone Lines*

If telephone lines are used to transmit alarms, they may be out of service or busy for certain periods of time. Also the telephone lines may be compromised by such things as criminal tampering, local construction, storms or earthquakes.

•*Insufficient Time*

There may be circumstances when the system will operate as intended, yet the occupants will not be protected from the emergency due to their inability to respond to the warnings in a timely manner. If the system is monitored, the response may not occur in time enough to protect the occupants or their belongings.

•*Component Failure*

Although every effort has been made to make this system as reliable as possible, the system may fail to function as intended due to the failure of a component.

•*Inadequate Testing*

Most problems that would prevent an alarm system from operating as intended can be discovered by regular testing and maintenance. The complete system should be tested as required by national standards and the Local Authority Having Jurisdiction and immediately after a fire, storm, earthquake, accident, or any kind of construction activity inside or outside the premises. The testing should include all sensing devices, keypads, consoles, alarm indicating devices and any other operational devices that are part of the system.

•*Security and Insurance*

Regardless of its capabilities, an alarm system is not a substitute for property or life insurance. An alarm system also is not a substitute for property owners, renters, or other occupants to act prudently to prevent or minimize the harmful effects of an emergency situation.

IMPORTANT NOTE: End-users of the system must take care to ensure that the system, batteries, telephone lines, etc. are tested and examined on a regular basis to ensure the minimization of system failure.

Limited Warranty

Mircom Technologies Ltd. warrants the original purchaser that for a period of two years from the date of manufacture, the product shall be free of defects in materials and workmanship under normal use. During the warranty period, Mircom Technologies Ltd. shall, at its option, repair or replace any defective product upon return of the product to its factory, at no charge for labor and materials. Any replacement and/or repaired parts are warranted for the remainder of the original warranty or ninety (90) days, whichever is longer. The original owner must promptly notify Mircom Technologies Ltd. in writing that there is defect in material or workmanship, such written notice to be received in all events prior to expiration of the warranty period.

International Warranty

The warranty for international customers is the same as for any customer within Canada and the United States, with the exception that Mircom Technologies Ltd. shall not be responsible for any customs fees, taxes, or VAT that may be due.

Conditions to Void Warranty

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

•damage incurred in shipping or handling;

•damage caused by disaster such as fire, flood, wind, earthquake or lightning;

•damage due to causes beyond the control of Mircom Technologies Ltd. such as excessive voltage, mechanical shock or

•water damage;

•damage caused by unauthorized attachment, alterations, modifications or foreign objects;

•damage caused by peripherals (unless such peripherals were supplied by Mircom Technologies Ltd.);

•defects caused by failure to provide a suitable installation environment for the products;

•damage caused by use of the products for purposes other than those for which it was designed;

•damage from improper maintenance;

•damage arising out of any other abuse, mishandling or improper application of the products.

Warranty Procedure

To obtain service under this warranty, please return the item(s) in question to the point of purchase. All authorized distributors and dealers have a warranty program. Anyone returning goods to Mircom Technologies Ltd. must first obtain an authorization number. Mircom Technologies Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained. NOTE: Unless specific pre-authorization in writing is obtained from Mircom management, no credits will be issued for custom fabricated products or parts or for complete fire alarm system. Mircom will at its sole option, repair or replace parts under warranty. Advance replacements for such items must be purchased.

Note: Mircom Technologies Ltd.'s liability for failure to repair the product under this warranty after a reasonable number of attempts will be limited to a replacement of the product, as the exclusive remedy for breach of warranty.

Disclaimer of Warranties

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose) And of all other obligations or liabilities on the part of Mircom Technologies Ltd. neither assumes nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

This disclaimer of warranties and limited warranty are governed by the laws of the province of Ontario, Canada.

Out of Warranty Repairs

Mircom Technologies Ltd. will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions. Anyone returning goods to Mircom Technologies Ltd.Mircom Technologies Ltd. must first obtain an authorization number. Mircom Technologies Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained.

Products whichMircom Technologies Ltd. determines to be repairable will be repaired and returned. A set fee which Mircom Technologies Ltd. has predetermined and which may be revised from time to time, will be charged for each unit repaired.

Products which Mircom Technologies Ltd. determines not to be repairable will be replaced by the nearest equivalent product available at that time. The current market price of the replacement product will be charged for each replacement unit.

WARNING: Mircom Technologies Ltd. recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

NOTE: Under no circumstances shall Mircom Technologies Ltd. be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, but are not limited to, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

MIRCOM MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS GOODS DELIVERED, NOR IS THERE ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, EXCEPT FOR THE WARRANTY CONTAINED HEREIN.

8.0 FCC Compliance Statement

CAUTION: Changes or modifications not expressly approved by the manufacturer could void your authority to use this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

The user may find the following booklet prepared by the FCC useful: “How to Identify and Resolve Radio/Television Interference Problems”. This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402, Stock # 004-000-00345-4.

The user may find the following booklet prepared by the FCC useful: “How to Identify and Resolve Radio/Television Interference Problems”. This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402, Stock # 004-000-00345-4.

important information

This equipment complies with Part 68 of the FCC Rules. On the side of this equipment is a label that contains, among other information, the FCC registration number of this equipment.

NOTIFICATION TO TELEPHONE COMPANY The customer shall notify the telephone company of the particular line to which the connection will be made, and provide the FCC registration number and the ringer equivalence of the protective circuit.

FCC Registration Number: Ringer Equivalence Number: 0.1BUSOC Jack: RJ-31X

TELEPHONE CONNECTION REQUIREMENTS Except for the telephone company provided ringers, all connections to the telephone network shall be made through standard plugs and telephone company provided jacks, or equivalent, in such a manner as to allow for easy, immediate disconnection of the terminal equipment. Standard jacks shall be so arranged that, if the plug connected thereto is withdrawn, no interference to the operation of the equipment at the customer’s premises which remains connected to the telephone network shall occur by reason of such withdrawal.

INCIDENCE OF HARM Should terminal equipment or protective circuitry cause harm to the telephone network, the telephone company shall, where practicable, notify the customer that temporary disconnection of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service if such action is deemed reasonable in the circumstances. In the case of such temporary discontinuance, the telephone company shall promptly notify the customer and will be given the opportunity to correct the situation.

ADDITIONAL TELEPHONE COMPANY INFORMATION The security control panel must be properly connected to the telephone line with a USOC RJ-31X telephone jack.

The FCC prohibits customer-provided terminal equipment be connected to party lines or to be used in conjunction with coin telephone service. Interconnect rules may vary from state to state.

CHANGES IN TELEPHONE COMPANY EQUIPMENT OR FACILITIES The telephone company may make changes in its communications facilities, equipment, operations or procedures, where such actions are reasonably required and proper in its business. Should any such changes render the customer's terminal equipment incompatible with the telephone company facilities the customer shall be given adequate notice to the effect modifications to maintain uninterrupted service.

RINGER EQUIVALENCE NUMBER (REN) The REN is useful to determine the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the RENs of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company.

EQUIPMENT MAINTENANCE FACILITY If you experience trouble with this telephone equipment, please contact the facility indicated below for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning

MIRCOM®
Advanced Life Safety Solutions

Canada
25 Interchange Way
Vaughan, ON L4K 5W3
Tel: 905-660-4655 Fax: 905-660-4113

U.S.A.
60 Industrial Parkway PMB 278
Cheektowaga, NY 14227
Tel: 1-888-660-4655 Fax: 1-888-660-4113

Printed in Canada

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