

RAM-2644LCD

LCD Remote Annunciator



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1.0 Introduction

1.1 General Features

The RAM-2644LCD is a remote annunciator for use with FX-2200 Fire Alarm Control Panels with the following features:

- Designed to meet the requirements of NFPA 72, 2002 Edition, and UL864, Control Units for Fire Protective Systems, 1996 Edition
- 80-character Liquid Crystal Display (LCD)
- Six common system status lights for Alarm (red), Supervisory (yellow), Trouble (yellow), Monitor (yellow), AC On (green), and Ground Fault (yellow)
- Four system hotkeys for Ack, Silence, Reset, and Lamp Test
- Access-controlled Silence and Reset hotkeys – require the keyswitch to be in the "enable" position.
- Four sets of scroll keys for Alarm, Supervisory, Trouble and Monitor
- Up to eight RAM-2644LCD annunciators can be connected to the FX-2200 Fire Alarm Control Panels. The RAM-2644LCD has three programming jumpers located on the back of the module. They are used to select one of the 8 supervision addresses.
- All annunciators display the same information during normal system operation.

1.2 Ordering Information

Table 1 Ordering Information

Model	Description
RAM-2644LCD-R	RAM-2644LCD annunciator, flush mount, red
RAM-2644LCD-G	RAM-2644LCD annunciator, flush mount, grey
RAM-2644LCD-SMR	Surface mount back-box for RAM-2644LCD, red
RAM-2644LCD-SMG	Surface mount back-box for RAM-2644LCD, grey

1.3 Contact Us



For General Inquiries, Customer Service and Technical Support you can contact us Monday to Friday 8:00 A.M. to 5:00 P.M. E.S.T.

1.3.1 General Inquiries

Toll Free	1-888-660-4655 (North America Only)
Local	905-660-4655
Email	mail@mircom.com

1.3.2 Customer Service

Toll Free	1-888-MIRCOM5 (North America Only)
Local	905-695-3535
Toll Free Fax	1-888-660-4113 (North America Only)
Local Fax	905-660-4113
Email	salessupport@mircom.com

1.3.3 Technical Support

Toll Free	1-888-MIRCOM5 (North America Only)
	888-647-2665
International	905-647-2665
Email	techsupport@mircom.com

1.3.4 Website

www.mircom.com

2.0 RAM-2644LCD Install Preparation

2.1 Unpacking the RAM-2644LCD

- Flush mount annunciator assembly
 - Trim ring
 - Display plate with label and keyswitch
 - Main and sub printed circuit boards
- Installation Manual
- Hardware Pack
 - Keys to keyswitch
 - Four (4) mounting screws
 - Four (4) mounting screws for trim plate

3.0 Specifications

3.1 Environmental Specifications

Operating Temperature	0°C – 49°C / 32°F – 120°F
Humidity	85% RH non-condensing (maximum)

3.2 Electrical Specifications

Operating voltage (min – max)	16 to 28 VDC, power limited
Maximum input voltage ripple	3.0VP-P
Standby current draw	30mA
Alarm/active current draw	70mA (maximum)

3.3 Transmission Format

Multiplexed, supervised, power limited

3.4 Wiring Specifications

Table 2 Wiring Specifications

AWG	1 Module		2 Modules		3 Modules		4 Modules		5 Modules		6 Modules		7 Modules		8 Modules	
	m	ft.	m	ft.	m	ft.	m	ft.	m	ft.	m	ft.	m	ft.	m	ft.
12	2741	8994	1369	4492	913	2994	685	2246	547	1796	456	1497	391	1283	342	1123
14	1728	5668	864	2834	576	1889	432	1417	345	1133	288	944	247	809	216	708
16	1083	3553	541	1776	361	1184	271	888	216	710	180	592	155	507	135	444
18	681	2235	340	1117	227	745	170	558	136	447	113	372	97	319	85	279
20	431	1414	215	707	144	471	108	353	86	282	72	235	62	202	54	176
22	269	881	134	440	89	293	67	220	54	176	44	146	38	125	34	110



Notes: This above chart is relevant for both data and power wiring.

The lengths shown above are the maximum distances between the panel and annunciator per wire run.

The total maximum capacitance of the communication port is 80nF. The combined capacitance of all wire runs must not exceed this limit.

The recommended wire type is non-shielded twisted pair.

3.5 Physical Dimensions

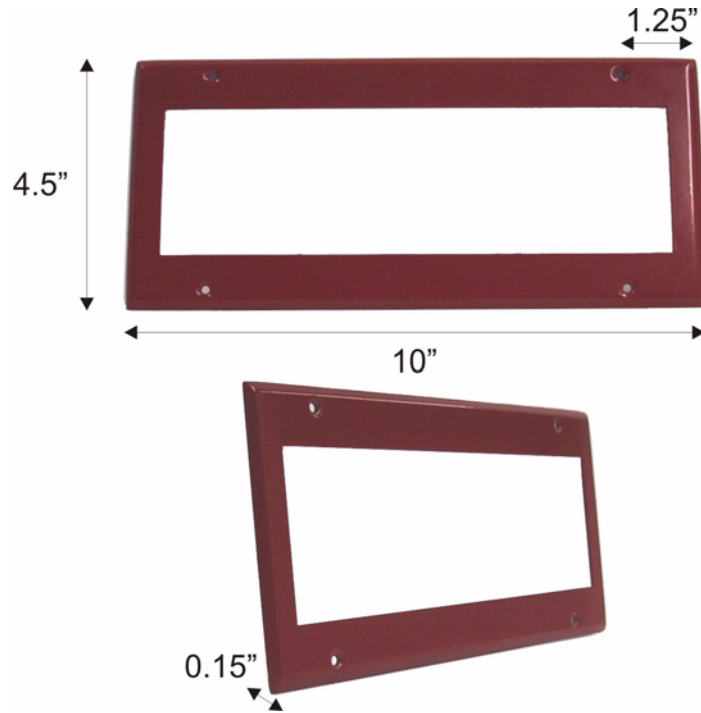


Figure 1 Trim Plate Dimensions



Figure 2 Control Panel Dimensions

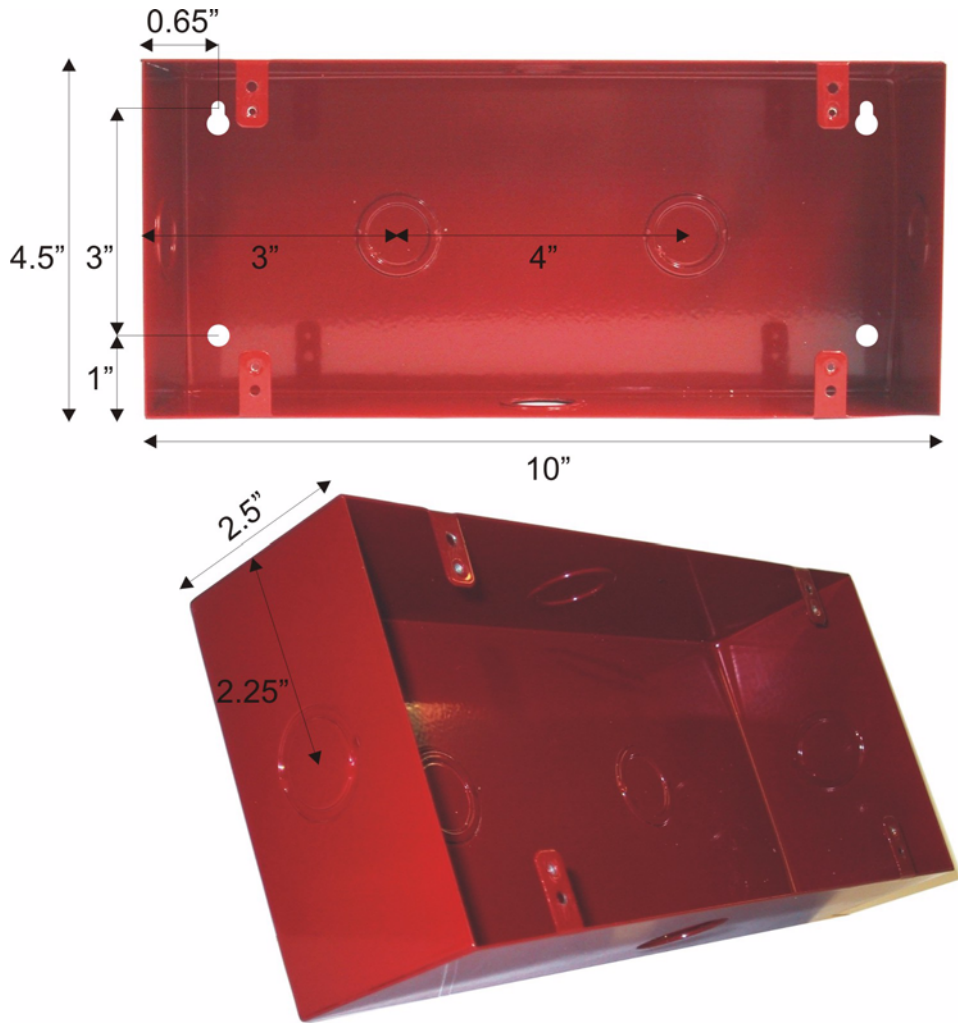


Figure 3 Surface Mount Backbox Dimensions

4.0 Installing the RAM-2644LCD

4.1 Wiring



Attention: All wiring must be in accordance with applicable codes and standards. An Earth ground connection must be provided to the back box for transient suppression. This connection must be made with an approved dedicated earth connection in accordance with NFPA 70, Article 250.

It is recommended that the RAM-2644LCD be powered from the fire panel. However, where an external power supply is required, the following conditions must be met:

- The power supply must be regulated, power limited and UL listed for Fire applications.
- To ensure proper communications, the negative of the power supply must be connected to the Aux Power negative of the fire panel.
- The external power supply must be mounted no further than 10ft (3m) from the FACP.

The following sections provide wiring diagrams for the various configurations. Refer to Section 3.4 for a chart of maximum wiring lengths.

4.1.1 FX-2200

The FX-2200 Control Unit is connected to the RAM-2644LCD Annunciator by four (4) wires, two (2) for communications and two (2) for power. The communications wiring is polarity sensitive. Refer to the following diagram:

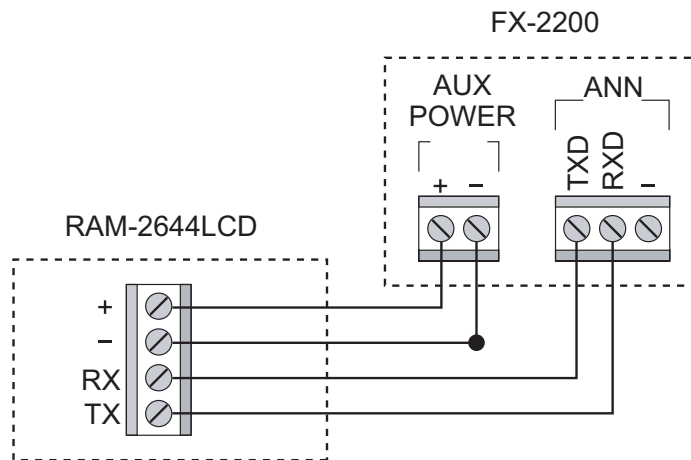


Figure 4 RAM-2644LCD connected to FX-2200 FACP, using FX-2200 Aux Power

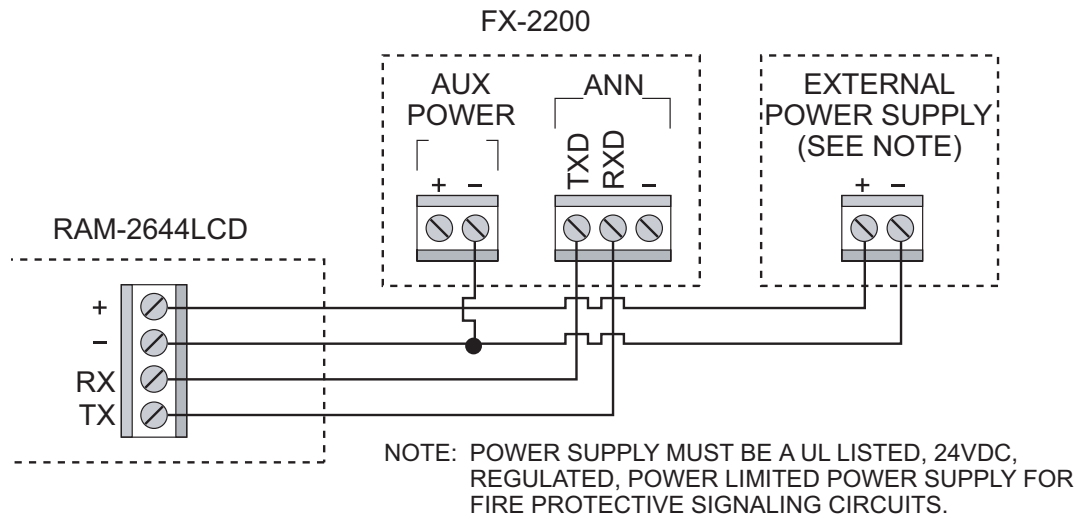


Figure 5: RAM-2644LCD connected to FX-2200 FACP, using external Power Supply

4.2 Connecting Multiple RAM-2644LCD Annunciators

Up to eight (8) RAM-2644LCD remote annunciators can be connected to a single Fire Alarm Control Panel.

If this is required, it can be done using either "daisy chain" or "home run" methods. Refer to the wiring specifications in this manual for the guidelines regarding maximum wire length.

4.3 RAM-2644 LCD Jumper Settings

There are three address jumpers on the back of the printed circuit board. These are labeled J1, J2 and J3. These are used to select one of eight (8) possible addresses on the fire alarm control panel's annunciator port.

The RAM-2644LCD addresses appear as 9-16 on the fire panel, as 1-8 are used for MR-3434 (LED) annunciators. The default value is 9, and will need to be changed only if there is more than one RAM-2644LCD connected to the panel.

Table 3 Jumper Settings

Address	J1 Setting	J2 Setting	J3 Setting
9	OFF	OFF	OFF
10	ON	OFF	OFF
11	OFF	ON	OFF
12	ON	ON	OFF
13	OFF	OFF	ON
14	ON	OFF	ON
15	OFF	ON	ON
16	ON	ON	ON

5.0 Mounting

5.1 Flush Mounting

Please refer to Section 1.3 for further details regarding the available ordering options.

1. Choose a suitable place for mounting, observing all applicable codes and standards.
2. Ensure that all power sources to the Fire Alarm Control Panel are disconnected. (This includes both AC *and* battery power.)
3. Install a standard 5-gang electrical backbox and run all applicable wiring in accordance with the wiring specifications described in this manual.
4. Set the addressing jumpers corresponding to the system programming and layout.
5. Connect the field wiring to the terminals on the back of the assembly.
6. Mount the assembly to the 5-gang electrical backbox using the provided screws.
7. Mount the trim-ring using the four painted screws included in the Hardware Pack.

5.2 Surface Mounting

These instructions apply specifically to the RAM-2644LCD when used in conjunction with the MR-2644-SMR surface mount backbox. Please refer to Section 1.3 for further details regarding the available ordering options.

1. Choose a suitable place for mounting, observing all applicable codes and standards.
2. Ensure that all power sources to the Fire Alarm Control Panel are disconnected. (This includes both AC *and* battery power.)
3. Install the surface-mount backbox using the four mounting holes along with the included hardware. Feed all applicable wiring through the most convenient knockout in accordance with the wiring specifications described in this manual.
4. Set the addressing jumpers corresponding to the system programming and layout.
5. Connect the field wiring to the terminals on the back of the assembly.
6. Mount the assembly to the surface-mount backbox using the provided screws.
7. Mount the trim-ring using the four painted screws included in the Hardware Pack.

6.0 Operating the RAM-2644LCD



Figure 5 RAM-2644LCD Display

6.1 Displays

- When the system is normal and AC power is present, the AC ON light is on and all other lights are off.
- The Alarm, Supervisory, Trouble, Monitor and Ground Fault lights will turn on and off as the corresponding conditions occur and restore.
- The LCD will show active events identical to the Fire Alarm Control Panel's display.
- The display's backlighting will be on when the annunciator is in use. It will time out after 1 minute without a keypress when AC is present on the system, and after 15 seconds if the system is running on standby batteries.

6.2 Controls

- The keyswitch enables the Silence and Reset keys. All other keys are available with or without the key in place.
- The ALM, SUP, TBL and MON scroll keys can be used to view all active events in the corresponding categories. If there is no event in the category of the key being pressed, it will scroll through the top level system status screen.
- The ACK key is used to acknowledge and silence Trouble or Supervisory conditions.
- The SILENCE key is used to silence the system's Notification Appliances.
- The RESET key is used to reset the system following off-normal conditions.
- The LAMP TEST key is used to test the annunciator. Pressing this key will cause all lights to flash and the display to show a test message.
- The user is warned of an illegal entry or function by three quick beeps.

6.3 Miscellaneous

- For more information on detailed menus, refer to the installation/operating guide for the applicable Fire Alarm Control Panel.
- The main display/keypad of the Fire Alarm Control Panel always takes priority over the remote annunciator. If the main display/keypad is in use, and a user presses a key at the annunciator, the remote display will read "System Busy, Please Wait". This will occur until 15 seconds after the last keypress at the main panel.

7.0 Warranty and Warning Information

7.1 Warning Please Read Carefully



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

7.2 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.

7.3 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:

7.3.1 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.

7.3.2 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.

7.3.3 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.

7.3.4 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.

7.3.5 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.

7.3.6 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.

7.3.7 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 out 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.

7.3.8 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.

7.3.9 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.

7.3.10 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.

7.3.11 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.

7.3.12 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.

7.3.13 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.

7.4 Limited Warranty

Mircom Technologies Ltd. together with its subsidiaries and affiliates (collectively, the “Mircom Group of Companies”) warrants the original purchaser that for a period of three years from the date of shipment, the product shall be free of defects in materials and workmanship under normal use. During the warranty period, Mircom 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 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.

7.4.1 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 shall not be responsible for any customs fees, taxes, or VAT that may be due.

7.4.2 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 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);
- 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.

7.5 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 must first obtain an authorization number. Mircom 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'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.

7.6 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 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.

7.7 Out of Warranty Repairs

Mircom 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 must first

obtain an authorization number. Mircom will not accept any shipment whatsoever for which prior authorization has not been obtained.

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

Products which Mircom 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.

The preceding information is accurate as of the date of publishing and is subject to change or revision without prior notice at the sole discretion of the Company.

WARNING: Mircom 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 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.



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