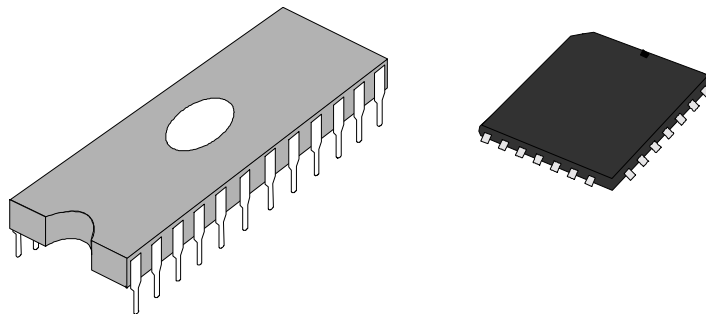




Security Services Inc.

One Town Center Road
Boca Raton, FL 33431
(561) 988-3600
FAX: (561) 988-3675

Field Change Procedure



Software (ROM) Upgrade

This procedure outlines the mechanical installation steps required to install various Integrated Circuits.

CAUTION

System Reacceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices, must also be tested and proper system operation verified.

Fire Alarm System Limitations

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets.
- Smoke detectors may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

While a fire alarm system may lower insurance rates, it is not a substitute for fire insurance!

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. *Heat detectors are designed to protect property, not life.*

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication. Please note that:

- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of fire alarm malfunction is inadequate maintenance. To keep the entire fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of Chapter 7 of NFPA 72 shall be followed. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspections should be kept.

Installation Precautions

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.

CAUTION - *System Reacceptance Test after Software Changes.* To ensure proper system operation, this product must be tested in accordance with NFPA 72 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49° C/32-120° F and at a relative humidity of 85% RH (non-condensing) at 30° C/86° F. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15-27° C/60-80° F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Adherence to the following will aid in problem-free installation with long-term reliability:

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning-induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

Though designed to last many years, system components can fail at any time. This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static-suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation by authorized personnel.

FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

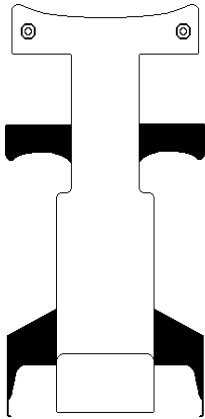
Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Installation Guidelines

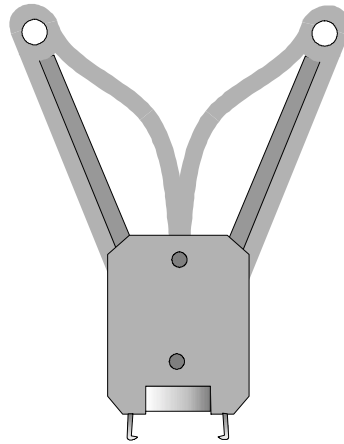
Handling Precautions for Integrated Circuits

Static electricity can destroy Integrated Circuits (ICs)!

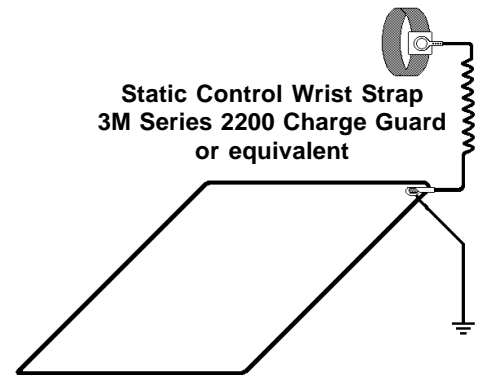
To prevent damage to the ROMs being changed in this procedure, a wrist strap and a static-free IC insertion/extraction tool is highly recommended. ADT cannot be responsible for damage to ROMs or other integrated circuitry in the system as a result of improper handling techniques. Always keep ROMs on a static-free mat or surface.



**Static-Free IC
Insertion/Extraction Tool**
(select size & type suitable for use with
the IC(s) which require extraction)



**Static-Free PLCC
Extraction Tool**
(select size & type suitable for use with
the PLCCs which require extraction)



**Static Control Wrist Strap
3M Series 2200 Charge Guard
or equivalent**
**Static-Dissipative Work Surface
3M Series 8300 Charge Guard
(or equivalent)
connected to Earth Ground**

System Power Sources

Always remove primary and secondary power before working on the system!

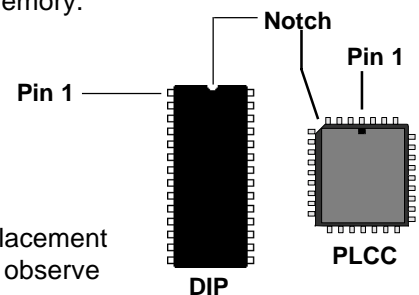
- 1) Disconnect battery backup power first by removing the Battery Interconnect Cable.
- 2) Proceed by disconnecting AC power to the panel at the main service circuit breaker (not the circuit breaker at the fire alarm control panel's power supply).
- 3) Wait 60 seconds to allow for capacitive discharge before touching any of the system's components.
- 4) Reverse the procedure for powering up the system — AC first, then batteries.

WARNING! Failure to follow this procedure can result in a loss of program memory.

Integrated Circuit Pin Convention

Observe proper orientation of any IC removed or installed!

Note location of pin 1 with respect to the notch in the body of the IC. The replacement ROM must be installed in the same manner as the ROM removed. Failure to observe this orientation will result in destruction of the ROM.



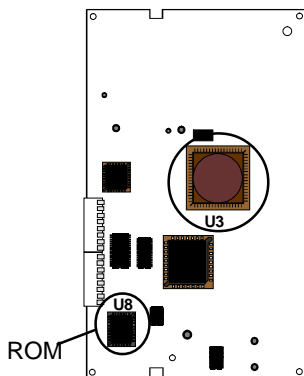
ROM Replacement

Compatibility Warning

To ensure complete compatibility between the Fire Alarm Control Panel boards and Multi-Net system boards, all ROMs in the system(s) must be changed at the same time. The control panel will not function properly with a mix of ROMs from different software levels. In addition, all ROMs from the same software level are not necessarily compatible. They must comprise a valid software combination. Consult the factory to determine whether or not your particular software part numbers will function as a group.

ROM Installation

- 1) Disconnect secondary (DC) power.
- 2) Disconnect primary (AC) power. **CAUTION! Remove AC power at the main service circuit breaker (not the circuit on the Main Power Supply) or all the programming information may be lost!**
- 3) Replace each ROM as outlined in the respective sections.
- 4) Connect primary (AC) power.
- 5) Connect secondary (DC) power.
- 6) After all replacement ROMs have been installed, the entire system must be completely tested. **Note:** *With the exception of new features, replacing the ROMs does not usually require re-entry of the system application program.*
- 7) Please place all ROMs removed from the system into the static-protected boxes (provided with the replacement ROMs) and return them to the factory.



ADT-NAM-232W
ADT-NAM-232F

NAM-232 Network Adapter Modules

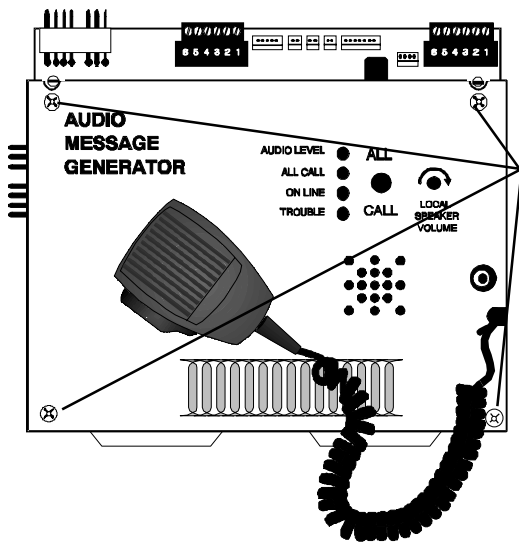
ROM for ADT-NAM-232F and ADT-NAM-232W

- Locate and gain access to the ADT-NAM-232W/F in the cabinet.
- Using an IC insertion/extraction tool for Style A or a PLCC extraction tool for Style C, carefully remove **ROM U8** from the ADT-NAM-232W/F and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **replacement ROM** into the socket for **U8** on the ADT-NAM-232W/F.
- Reassemble the control panel.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.

FPGA for ADT-NAM-232W/F

- Locate and gain access to the NAM-232 in the cabinet.
- Using a PLCC extraction tool, carefully remove **FPGA U3** from the NAM-232 and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are misaligned. Insert the supplied **replacement FPGA** into the socket for **U3** on the NAM-232.
- Reassemble the control panel.

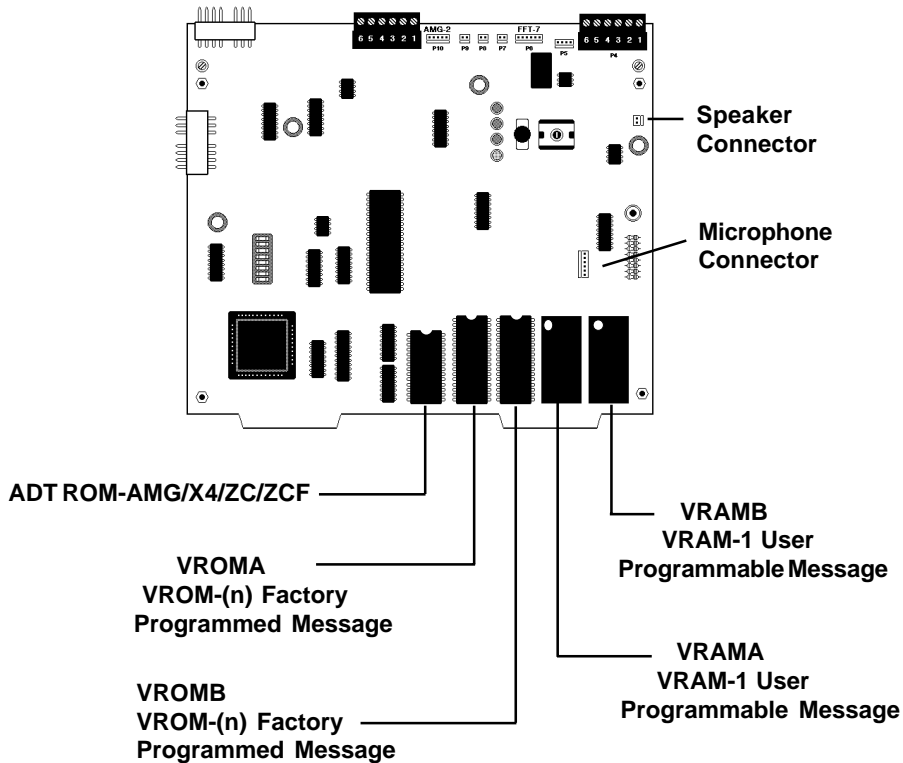


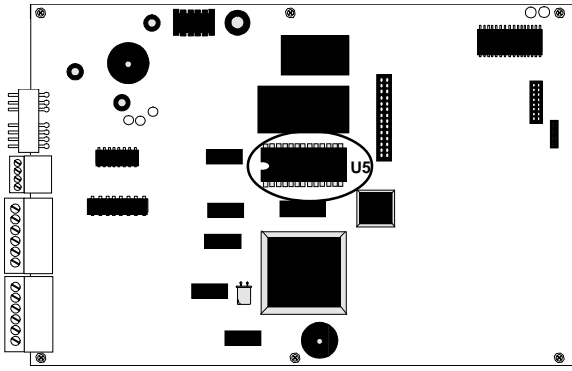
AMG-1 Audio Message Generator

ROM and VRAM-1 for AMG-1

- Remove dress panel covering the AMG-1.
- Remove the four screws that affix the AMG-1's dress plate to the component board as illustrated at left. Remove the dress plate and disconnect the microphone and speaker connectors.
- If replacing ROMs, carefully remove affected chips from the AMG-1 using an IC insertion/extraction tool and place them on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Install the new AROM(n)-AMG/X4/ZC/ZCF, VROM-(n) or VRAM-1 chips in their respective positions as illustrated below.
- Assembly of the AMG-1 is the reverse of removal.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.





MNNA Intelligent Network Annunciator

ROM for MNNA

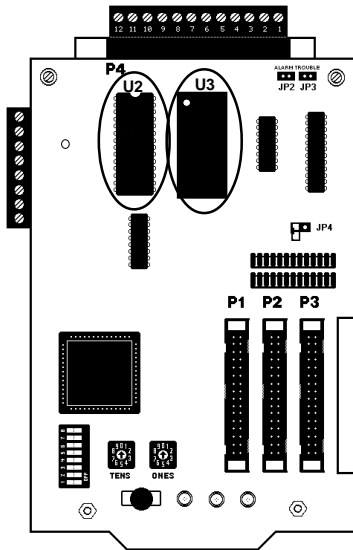
- Open the Multi-Net Network Annunciator (MNNA) door.
- Using an IC insertion/extraction tool, carefully remove **ROM U5** from the MNNA and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **replacement ROM** into the socket for **U5** on the MNNA.
- Close the MNNA door.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.

ADT-XRAM-1 for XPP-1

- Remove the XP Transponder Dress Panel.
- Using an IC insertion/extraction tool, carefully remove **RAM U3** from the XPP-1 and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **ADT-XRAM-1** into the socket for **U3** on the XPP-1.
- Replace the XP Transponder Dress Panel.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.

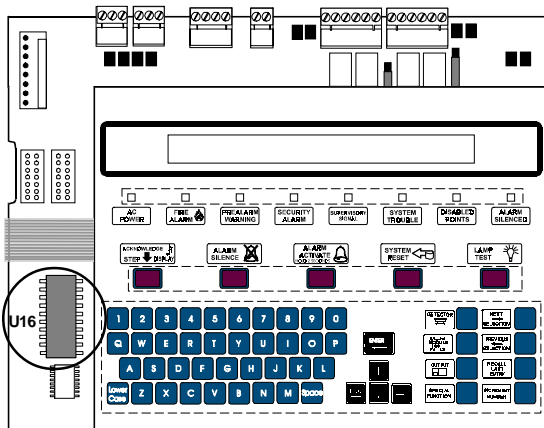


XPP-1 Transponder Processor Module

ROM for XPP-1

- Remove the XP Transponder Dress Panel.
- Using an IC insertion/extraction tool, carefully remove **ROM U2** from the XPP-1 and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **replacement ROM** into the socket for **U2** on the XPP-1.
- Replace the XP Transponder Dress Panel.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.

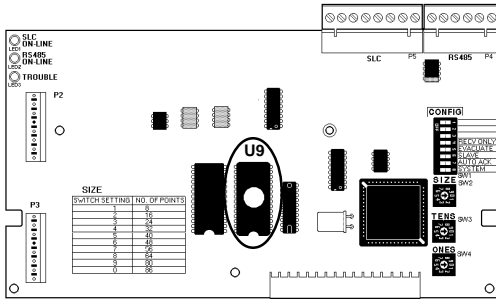


Unimode 300/400 Analog Fire Panel

ROM for Unimode 300/400

- Locate and gain access to the Unimode 300/400 in the cabinet.
- Using an IC insertion/extraction tool, carefully remove **ROM U16** from the Unimode 300/400 and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **replacement ROM** into the socket for **U16** on the Unimode 300/400.
- Reassemble the control panel.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.

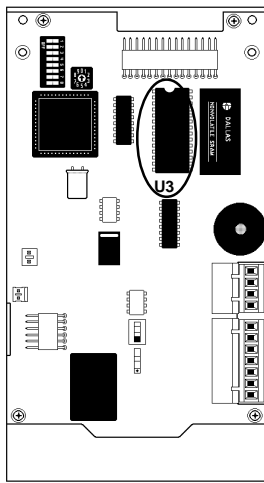


ADT-NIB-96
Network Interface Board

ROM for ADT-NIB-96

- Locate and gain access to the ADT-NIB-96 (NIB) in the cabinet.
- Using an IC insertion/extraction tool, carefully remove **ROM U9** from the NIB and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **replacement ROM** into the socket for **U9** on the NIB.
- Reassemble the control panel.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.

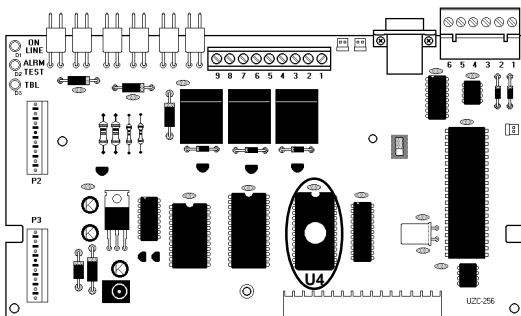


ADT-LCD-80
Liquid Crystal Display

ROM for ADT-LCD-80

- Locate and gain access to the ADT-LCD-80 (LCD) in the cabinet.
- Using an IC insertion/extraction tool, carefully remove **ROM U3** from the LCD board and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **replacement ROM** into the socket for **U3** on the LCD board.
- Reassemble the control panel.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.

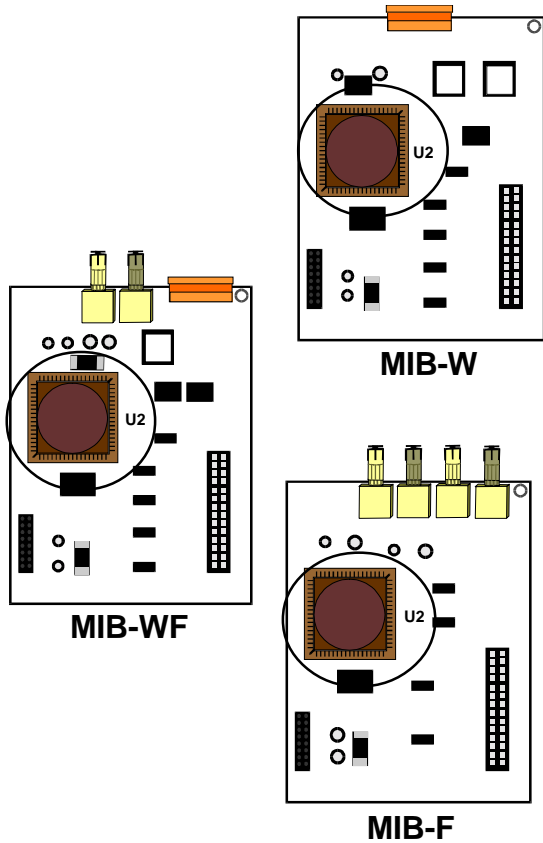


ADT-UZC-256 Universal Zone Coder

ROM for ADT-UZC-256

- Locate and gain access to the ADT-UZC-256 (UZC) in the cabinet.
- Using an IC insertion/extraction tool, carefully remove **ROM U4** from the UZC and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are bent. Insert the supplied **replacement ROM** into the socket for **U4** on the UZC.
- Reassemble the control panel.

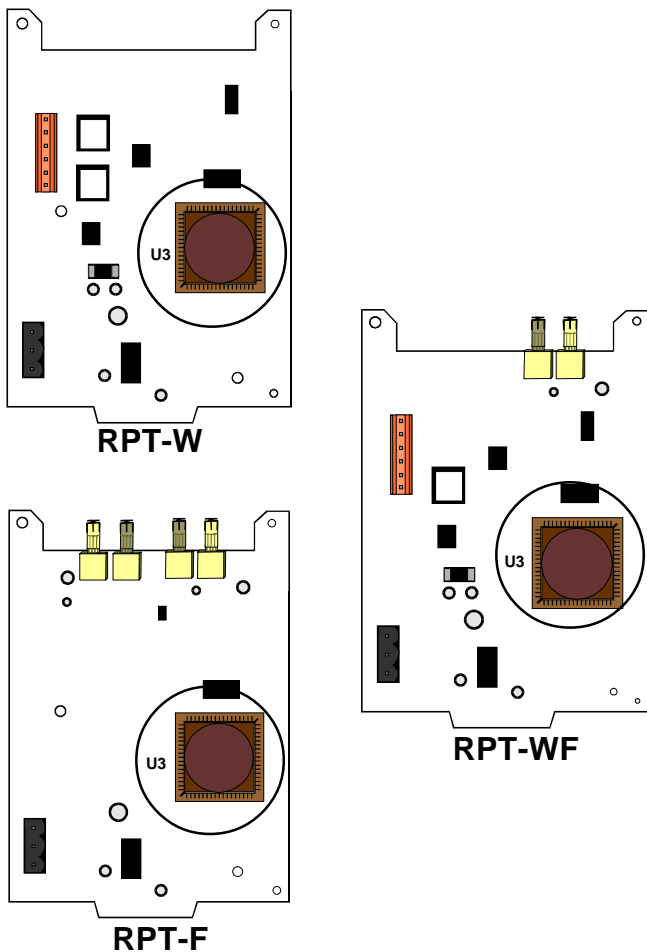
WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.



FPGA for MIB-W/WF/F

- Locate and gain access to the MIB-W/WF/F.
- Using a PLCC extraction tool, carefully remove **FPGA U2** from the MIB and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are misaligned. Insert the supplied **replacement FPGA** into the socket for **U2** on the MIB-W/WF/F.
- Reassemble the MIB.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.



FPGA for RPT-W/WF/F

- Locate and gain access to the RPT-W/WF/F.
- Using a PLCC extraction tool, carefully remove **FPGA U3** from the RPT and place it on an antistatic surface.
- Observe proper orientation and ensure that none of the pins are misaligned. Insert the supplied **replacement FPGA** into the socket for **U3** on the RPT-W/WF/F.
- Reassemble the RPT.

WARNING: Software must be compatible system-wide. When not completely sure about compatibility, consult the factory before changing ROMs.