



GAI-TRONICS® CORPORATION
A HUBBELL COMPANY

Model 69254-006

Master Control Unit PCBA

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NOTE: A copy of “End User’s License Agreement for Microsoft® Software” is attached to this manual and must be strictly observed.

General Information

Product Overview

The Model 69254-006 Master Control Unit (MCU) printed circuit board assembly (PCBA) is the central component of system operations, processing all operations through its associated system software. It is installed in the 10457 Card Rack Assembly and maintains constant communication with all other PCBAs in the card rack and the system. The MCU constantly supervises operations to ensure proper working condition.

Application

The MCU (PCBA 69254-006) is the main control point and communicates with all interface plug-in PCBA cards used in your SmartSeries system. Each system may include some or all of the following interfaces: Page/Party® Interface, Access Panel Interface, Amplifier Zone Interface, and Audio Generator Interface.

The MCU contains a high density read/write solid state disk (SSD) DiskOnChip™. The SSD device operates as a normal, bootable hard disk drive and holds the system software as well as the system configuration files. The MCU provides a Serial Output Port COM2. The unit also supports a keyboard interface (AT compatible), one parallel port, and a 10BaseT Ethernet LAN port located on the rear of the card rack assembly.

System Requirements and Limitations

The 69254-006 Master Control Unit is exclusively designed for use in a SmartSeries system. This assembly is not intended for use with other types of equipment.

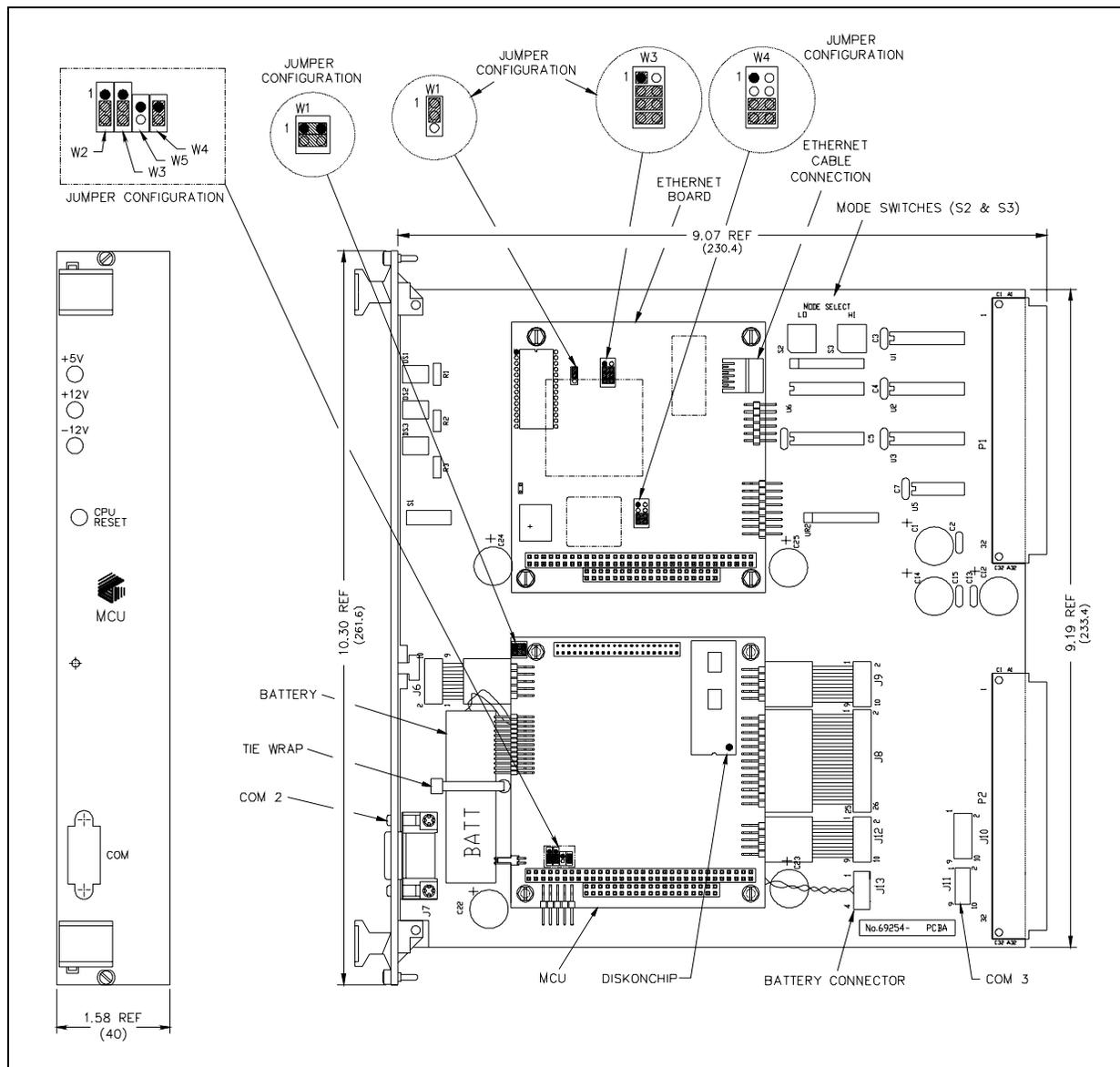


Figure 1. Model 69254-006 Master Control Unit PCBA

Description of Major Components

Serial Port 2 (COM2) is located on the front of the MCU bezel. COM2 allows connection to an external PC for transferring the system configuration software.

Parallel port support is provided on the MCU. The parallel port is located on the rear of the card rack assembly, directly behind the MCU slot and provides printer output from the MCU to a logging printer.

Keyboard support is provided by the MCU. The keyboard interface is located on the rear of the card rack assembly control panel directly behind the MCU slot. Connection to this port is made through a standard keyboard connector.



Keyboard is not a user connection. Reserved for use by authorized factory personnel.

The **Ethernet port** is located on the rear connector panel (directly behind the MCU slot in the card rack). Connection to this port is made through a standard RJ-45, 8-pin connector.

Installation

Warnings: **Please observe the following warnings, or damage to the equipment may result.**

 **WARNING**  **Disconnect power to the card rack before performing any maintenance.**



Warning: Observe precautions for handling electrostatic sensitive devices.

General Installation Notes

Refer to Figure 1 for component location and installation details.

1. Remove the MCU from its carton.
2. Verify that power is disconnected to the card rack prior to installation.
3. Verify the MODE switch settings. (S2 = 1; S3 = 0)
4. Connect battery connector to J13.
5. Find the slot located on the farthest left side of the card rack.
6. Align the MCU into the upper and lower tracks for the slot.
7. Connect the RJ45 connector cable inside the card rack to the mating connector on the Ethernet PCBA.
8. Slide the MCU toward the rear of the card rack until it comes in contact with the connector on the backplane. Use caution to avoid pinching the Ethernet cable.
9. Firmly press on the front bezel until the MCU is seated in the backplane connector, and tighten the two screws located on the front bezel to secure it to the card rack.

Operation

After the MCU has been installed into the card rack, reconnect the power. There are three LEDs on the front bezel that indicate if power is on. They are +5 V, +12 V and -12 V. The green LEDs light when the voltages are present.

A manual reset button is located on the front bezel of the MCU. A slot labeled CPU RESET allows the operator to manually reset the CPU. See the system manual prepared for the custom equipment to learn how the MCU operates in your unique system.

The MCU's behavior for your system is controlled by a unique software configuration. The software configuration is transferred from another computer to the MCU by running the Talk2MCU application. The Talk2MCU application is also used to set the date and time on the MCU.

The MCU uses the Microsoft DOS operating system during system startup to allow communication with Talk2MCU. The Microsoft license agreement is included at the back of this manual. Once the system is started, the MCU uses another operating system and MS DOS is no longer in use.

The internal memory back-up battery pack, located on the MCU PCBA, will require replacement when the wrong date and time are displayed on the logging printer printouts or on the access panels' VFD display after an interruption of system power occurs. Refer to the Battery Pack Replacement section.

Maintenance

Warnings: **Please observe the following warnings, or damage to the equipment may result.**

 **WARNING**  **Disconnect power to the card rack before performing any maintenance.**



Warning: Observe precautions for handling electrostatic sensitive devices.

Battery Pack Replacement

 **CAUTION**  **Proper replacement of the battery pack, when needed, is critical to the operation of the system; therefore, only skilled technicians should perform this task.**

A screw driver is required to replace the battery pack, when necessary:

1. Verify that power to the card rack is disconnected.
2. Identify the correct location in the card rack. (The bezel is labeled MCU. The PCBA card is located on the left side of the card rack.)
3. Remove the 2 screws that secure the MCU to the card rack (located at the top and bottom of the bezel).
4. Remove the MCU from the card rack slowly using the ejection tabs on the bezel and remove the RJ-45 connector from the Ethernet PCBA.
5. Cut the tie wrap that secures the battery to the board during shipment. Refer to Figure 1.
6. Remove the battery connector at J13.
7. Remove the battery pack that is held in place by Velcro.
8. Install the new pack. Press firmly to allow the Velcro to seat.
9. Secure the battery pack using a similar type of tie wrap.
10. Route the battery cable under the printed circuit board. Refer to Figure 1.
11. Connect the battery cable to J13. The connector is polarized to ensure the correct polarity.
12. Find the MCU's original slot located on the farthest left side of the card rack. Align the MCU into the upper and lower tracks for the slot.
13. Reconnect the RJ-45 connector to the Ethernet PCBA. Refer to Figure 1. Slide the MCU card toward the rear of the card rack until it comes in contact with the connector on the backplane. Use caution to avoid pinching the Ethernet cable.
14. Firmly press on the front bezel until the MCU is seated in the connectors, and tighten the 2 screws located on the front bezel to secure it to the card rack.
15. Reapply power to card rack. Update the time and date settings using the Talk2MCU application. Refer to GAI-Tronics Pub. 42004-625L2, Talk2MCU User's Manual for instructions.

Troubleshooting

Symptom	Action
The LEDs on the front bezel do not illuminate.	Check to insure that the MCU is inserted correctly into the card rack. Check that power is applied to the associated card rack. Call for service of the MCU and/or card rack.
System does not boot up.	Call for service of the MCU.
Date and time settings do not stay current after a period of system power interruption.	Check that the battery connection of the MCU is connected to J13. MCU battery may need to be replaced. Refer to the Battery Replacement section.

Specifications

Electrical

Power Requirements..... +5 V dc, +12 V dc, -12 V dc from backplane

Current Draw 1.75 A @ +5 V dc
 10 mA @ +12 V dc
 10 mA @ -12 V dc

Connections 2 × 64 pin DIN connectors

Inputs/Outputs..... One serial port, RS232, DB-9P

Support for One parallel port, Centronics bi-directional, keyboard (AT-compatible), and one 10BaseT Ethernet, RJ-45 connection

LED Indicators (Green): +5 V
 +12 V
 -12 V

Controls CPU Reset

Battery Lithium 1.9 A.H. 3.6 V

Environmental

Temperature Range (Operating/Storage):..... +32° F to +120° F (0° C to +49° C)

Humidity:..... 5%-85% non-condensing relative humidity

Mechanical

Unit Dimensions: 10.30 H × 1.625 W × 9.07 D inches (262 × 41.3 × 230.4 mm)

Unit Weight..... 1.4 lbs. max.

Battery 2.42 L × 0.72 W × 0.70 H inches

Replacement Part

Model Number	Description
40005-004	Battery Memory Backup

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