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Module 1: Hardware Components

MapIT G2 - Intelligent Cabling Solution

Introduction:

MapIT G2 intelligent hardware is used in conjunction with Siemon’s EagleEye software and provides a complete Automated Infrastructure Management (AIM) system.

The objective of this manual is to provide information on how to properly install, configure and use the MapIT G2 hardware. It does not provide a comprehensive overview of the EagleEye software. Separate manual and training class are available for EagleEye software. This manual covers these 5 key topics:

Module One; Hardware Components,
Module Two; System Design and Installation,
Module Three; Navigating the MapIT G2 Menus
Module Four; Troubleshooting
Module Five; Documentation

MapIT G2 Overview

Siemon’s MapIT G2 solution helps you better manage and protect your IT infrastructure. The system tracks physical layer connections and IP enabled network devices in real-time. While other software solutions may detect IP devices on the network, they cannot track them to their exact physical location. The MapIT solution provides a detailed view of your infrastructure, whether it is in your headquarters or at a remote office on the other side of the world. This powerful combination of Siemon intelligent cabling products and advanced software takes management of complex data/telecommunications networks and critical applications to a new level.

This manual provides instruction on the MapIT G2 hardware. A separate EEC software training program is available. Please contact Siemon if you would like to arrange software training.

MapIT System Features

MapIT G2 Hardware is designed to work with Siemon’s EagleEye Connect and EagleEye Enterprise software. This combination provides a comprehensive set of network management capabilities.
Key features include:
Infrastructure Documentation

- Navigation Tree with hierarchical view of the infrastructure
- Graphical view of racks and cabinets
- Import floor images and overlay database items
- View complete circuit diagrams, including network devices
- Show network and power connections
- Real-time updates to the database
- Extensive search functionality
- Store virtually any asset in the infrastructure database

Physical Layer Monitoring

- Monitors and updates all MapIT patch panel/fiber enclosure connections in real-time
- Provides a complete end-to-end circuit trace
- Quickly identifies the root cause of network troubles
- Maps active devices to their physical layer connection and location
- Automates the process of discovering, documenting, monitoring, and managing the physical network’s connections and its devices

Asset Management

- Discovers and documents all IP enabled devices and ties them to a physical location
- Reports switch port utilization and availability
- Reports physical Layer port utilization and availability
- Rack space reports, including available u space, available contiguous u space
- Tracks and reports on assets by type and/or location

Remote Site Management

- Automated database updates ensures accuracy of remote site infrastructure documentation
- Views end-to-end circuit status remotely
- Work order status updated automatically
- Automated alerts on unauthorized activity
- View database from any compatible web browser

Improve Work Order Process

- Advanced work order capabilities allow you to create and manage tasks
- Technicians can view work orders on MapIT G2 equipment and get immediate feedback on accuracy
• Automatic updates when work orders are completed
• Track costs for work orders by department
• Email/text alerts on email status
• SNMP traps alert 3rd party software of work order status
• Auto routing feature helps design the best path for new circuits or location in a rack
• Greater efficiency reduces the cost of moves, adds and changes

Enhanced Security

• Detects when unauthorized devices connect to the network
• Monitors network for unauthorized activity such as patching changes, device movement or device disconnection
• Wide variety of responses to unauthorized activity include email and text alerts, snmp commands to disable switch ports, IP camera pictures
• Maintains an audit log of all network events
• EagleEye database can be backed up remotely and used for disaster recovery

How the MapIT G2 System Works

Smart Patch Panels (SPP) and Smart Fiber Enclosures (SFE) have the built in ability to track patch connections. This connection information is transmitted to the Master Control Panel (MCP) supporting the patch zone. The MCP relays this patch connection information via TCP/IP over the customer’s LAN/WAN to the EagleEye database. It is also possible to expand the capability of a given patching zone by installing Distribution Control Panels (DCP) to support large numbers of SPPs and/or SFEs.

Panel to Panel Communication

• Each port on a SPP or SFE has unique port ID. When two ports are connected with a MapIT G2 Patch Cable or Fiber Jumper, the panels will sense the ID of the connected ports and transmit that information back to the MCP/DCP
• The initial setup of the system will detect all ports within 2 minutes or less
• Subsequent changes are detected within 3 seconds
• Each SPP/SFE is connected to the MCP or DCP via a Control Bus Cable

Master Control Panel (MCP) Functions

• The MCP tracks new items that are connected in the Patch Zone (DCPs, SPPs and SFEs)
• The MCP collects connection data from the panels in the Patch Zone
• It communicates via TCP/IP with the EagleEye database
• The MCP supplies power to SPPs and SFEs when connected directly to these items. It does not supply power to DCPs.

**Distribution Control Panel (DCP) Functions**

• The DCP relays information on connected SPP/SFEs to the MCP
• Relays information on patch connections between SPPs/SFEs to the MCP
• Communicates with the MCP via a Control Bus Cable
• Supplies power to SPPs/SFEs
• The DCP has its own power supply. It is not powered from the MCP via the Control Bus Cable

**Patch Cord Connections Example:**

When a MapIT G2 Patch Cable is inserted into a monitored port, the probe located in the boot of the MapIT G2 Patch Cable touches the sensor pad on the SPP.

When the other end of the MapIT G2 Patch Cable is inserted into another monitored port, a connection is created between the two sensors via a 9th wire that connects the two probes inside the MapIT G2 Patch Cable.

The MapIT G2 Smart Panel detects the connection and port ID information is passed between the two panels. This information is passed to the Master Control Panel (MCP).
The MCP relays the connection information to the EagleEye database over a TCP/IP network connection. The database is also updated when a connection or disconnection is detected.

**Note:** Detection of sensor connectivity is only possible between sensors connected in the same Patch Zone. A Patch Zone is a group of panels all connected to the same MCP.

The EagleEye software, upon receiving the data from the MCP, immediately updates its database and then may trigger predefined "events".

---

### MapIT G2 System Components

#### Master Control Panel (MCP)

The MCP is the interface between the EagleEye software and all the Smart Panels/Enclosures in the Patch Zone. The MCP has two Ethernet ports on the rear of the unit for connecting to the TCP/IP network. It has 24 ports to connect either directly to Smart Patch Panels/Fiber Enclosures (SPP/SFE) or to Distribution Control Panels (DCP).

**MCP Dimensions**

<table>
<thead>
<tr>
<th>Component</th>
<th>Width</th>
<th>Height</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCP</td>
<td>483 mm</td>
<td>45 mm</td>
<td>170 mm</td>
</tr>
<tr>
<td></td>
<td>19 inches</td>
<td>1.75 in</td>
<td>7.0 in</td>
</tr>
</tbody>
</table>

**Supplied Components**

- MCP
- 24 S310 stuffer caps
- Sensor pen
- Rear cable manager & cable ties
- DC power supply
- Installation instructions
The Front of the MapIT G2 Master Control Panel

1. **24 RJ45 I/O Control Bus Outlets** – For connections to lower level components (either directly to SPPs/SFPs or DCPs). Use either the RJ45s or the S310s (on rear of panel). **DO NOT connect both the RJ45 and S310 of a single port simultaneously.**

2. **LCD** - 4 Line LCD used to view the MCP Menu

3. **Alphanumeric Keypad** - Use to input information into the MCP

4. **Scroll and Enter Buttons** - Used to navigate the MCP menu. The Enter button is in the center.

5. **Sensor Pen RJ45 Port** - The pen is used for system diagnostics, circuit trace, mapping and more.

The Rear of the MapIT G2 MCP
1. **Twenty Four S310 I/O Bus Connections** – For connections to lower level components (either directly to SPPs/SFPs or to DCPs). Use either S310 connections on the rear of MCP or the RJ45 ports on the front. **DO NOT** connect both the RJ45 and the S310 of a single port simultaneously. If the RJ45 ports are used, Siemon recommends putting the supplied S310 stuffer caps on the S310 ports on the rear of the panel. If S310s are used, use the Siemon RJ45 port blockers (p/n LL-05, sold separately) to prevent access to the RJ45 ports on the front of the MCP.

2. **Twelve Ground Termination Points** – terminate the drain wire of the cat 5e Control Bus Cables on these (two drain wires per ground termination point)

3. **Two Ethernet RJ45s** – The MCP has two 10BASE-T Ethernet ports. Both ports can be connected to the network for a redundant connection, however only one connection is operational at a time. If both Ethernet ports are connected, the MCP will attempt to connect to the network on port #1. If successful it will establish the connection and will not attempt to connect on port #2. If not successful on port #1, it will attempt to connect on port #2. The same logic will apply in the event a connection is lost. The MCP will continue to alternately attempt connections on both ports until a connection is established. Connect the Ethernet port(s) to the TCP/IP network via RJ45 Patch Cables (T568A or B wired, Cat 5e Shielded or higher).

4. **Two Ethernet Status LEDs** – There are LEDs on either side of the Ethernet RJ45s. When the LED is not lit there is no connection. When an LED is green it indicates the port has an active Ethernet connection

5. **Two Power Connections** – The MCP features two ports for redundant power. The MCP is sold with one power supply. If redundant power is required, purchase a second power supply (P/N M-PS). Use of a non-Siemon power supply will void the product warranty and may damage the unit. Connect the power supply(s) to the power port(s). Secure the power supply cable(s) to the rear manager of the MCP with a cable tie.

6. **Rear Manager** – A rear manager is provided to secure Control Bus cables (if the S310 termination style is used). Secure cables with cable ties (supplied) or Velcro (optional) to the rear manager.

8. **Panel Grounding** – A ground lug is provided on the rear of the MCP to ground it to the rack or telecommunications ground. The MCP must be properly grounded for the system to function properly.

**Distribution Control Panel (DCP)**

The DCP is used to create larger Patch Zones. MCP can support up to 2880 ports in a single Patch Zone when used as a standalone device connected directly to SPPs/SFEs. DCPs can be used to increase the size of the Patch Zone up to 65,000 ports (more details on Patch Zone design guidelines below). You will notice that the
DCP is almost exactly the same as the MCP with two key exceptions – 1) it does not have Ethernet ports and 2) it has an S110 and RJ45 for connection to the MCP.

### Distribution Control Panel Dimensions

<table>
<thead>
<tr>
<th>Component</th>
<th>Width</th>
<th>Height</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCP</td>
<td>483 mm</td>
<td>45 mm</td>
<td>170 mm</td>
</tr>
<tr>
<td></td>
<td>19 inches</td>
<td>1.75 in</td>
<td>7.0 in</td>
</tr>
</tbody>
</table>

### Supplied Components

- DCP
- 24 S310 stuffer caps
- Sensor pen
- Rear cable manager & cable ties
- DC power supply
- Installation instructions

### The Front of the Distribution Control Panel (DCP)

1. **24 RJ45 I/O Control Bus** – For connections to SPP/SFEs. Use either these RJ45s or the S310s (on rear of panel). **DO NOT** connect both the RJ45 and S310 of a single port simultaneously. If the RJ45s are used, Siemon recommends putting the supplied S310 stuffer caps on the S310 ports on the rear of the panel. If S310s are used, use the Siemon RJ45 port blockers (p/n LL-05, sold separately). Always use T568A wiring scheme for all cables connected to these ports.

2. **LCD** – 4 Line LCD used to view the DCP menu

3. **Alphanumeric Keypad** – Use to input information to the Distribution Panel

4. **Scroll and Enter Buttons** – Used to navigate the DCP menus and input data

5. **Sensor Pen Port** – Insert supplied probe pen here. Pen can be used for system diagnostics, circuit trace, mapping and more
The Rear of the MapIT G2 Distribution Control Panel

1. **Twenty Four S310 I/O Bus Cable Connections** – For connections to SPPs/SFEs, Terminate the Control Bus Cable to the S3110s using T568A wiring scheme. Use either these RJ45s or the S310s (on rear of panel) connections. DO NOT connect both the RJ45 and S310 of a single port simultaneously. If the RJ45s are used, Siemon recommends putting the supplied S310 stuffer caps on the S310 ports on the rear of the panel. If S310s are used, use the Siemon RJ45 port blockers (p/n LL-05, sold separately).

2. **Twelve Ground Termination Points** – terminate the drain wire of the cat 5e Control Bus Cables on these (two drain wires per ground termination point)

3. **RJ45 & S110** – Terminate the cable coming from the MCP to either of these ports. Use cat 5e solid, shielded cable. Terminate using T568A wiring scheme

4. **Two Power Connections** – The DCP features two ports for redundant power. The DCP is sold with one power supply. If redundant power is required, purchase a second power supply (M-PS). Use of a non-Siemon power supply will void the product warranty and may damage the unit. Connect the power supply(s) to the power port(s). Secure the power supply cable(s) to the rear manager of the DCP with a cable tie.

5. **Rear Manager** – A rear manager is provided to secure Control Bus Cables (if the S310 termination style is used). Secure cables with cable ties or Velcro to the manager.

6. **Panel Grounding** – A ground lug is provided on the rear of the DCP to ground it to the rack or telecommunications ground. The DCP must be grounded for the system to function properly

**MCP and DCP Power Requirements**

- One supplied, additional may be purchased separately for redundant power (p/n M-PS)
- Input 100-240v
- 50-60Hz, 0.6A
- 6v DV, 3.3 Amp
- Use two per MCP or DCP if redundant power is desired
- Use of a non-Siemon power supply will void the system warranty
- Power supply comes with adapters for US, UK, Australia, Europe and China
- SPPs and SFEs do not have their own power supplies. Power is provided to them via the Control Bus Cable

**Smart Patch Panels (SPP/SPPA/TPPA)**

MapIT G2 smart patch panels and fiber enclosures SFPs have capabilities beyond any other product in our industry today. The ability to track connections is built into the panel. This reduces rack space required for monitoring equipment by up to 89%. The system also uses much less power than competing systems. Finally, it does not require proprietary cables to devices in the system. The use of standard 5e solid shielded cable reduces cost and speeds installation time. Also, fewer cables are used to connect items in the system, so less space is required for pathways. The Smart Panels/Enclosures also feature two LEDs and an LCD which provide a local user interface, which can save significant time during diagnostics and work order provisioning.

The SPP (flat smart patch panel) and SPPA (angled smart patch panel) are typically sold empty and accept Siemon keystone ZMAX outlets. The TPPA (angled TERA smart panel) accepts Siemon TERA outlets.

**Smart Panel Dimensions**

<table>
<thead>
<tr>
<th>Component</th>
<th>Width</th>
<th>Height</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPP (Flat)</td>
<td>483 mm</td>
<td>45 mm</td>
<td>170 mm</td>
</tr>
<tr>
<td></td>
<td>19 in</td>
<td>1.75 in</td>
<td>7.0 in</td>
</tr>
<tr>
<td>SPPA (Angled)</td>
<td>483 mm</td>
<td>45 mm</td>
<td>225 mm</td>
</tr>
<tr>
<td></td>
<td>19 in</td>
<td>1.75 in</td>
<td>8.86 in</td>
</tr>
<tr>
<td>TPPA (TERA Angled)</td>
<td>483 mm</td>
<td>45 mm</td>
<td>225 mm</td>
</tr>
<tr>
<td></td>
<td>19 in</td>
<td>1.75 in</td>
<td>8.86 in</td>
</tr>
</tbody>
</table>

**The Front of the MapIT G2 Smart Patch Panels**

Flat Panel
1. **Panel Design** - 24 ports, 1U modular design accepts UTP or F/UTP connectors

2. **LCD** – Displays Patch Cable trace information, port and panel diagnostics and work order instructions (future capability). Display is backlit for best viewing in a variety of lighting conditions

3. **LEDs** – One green and one red LED for guidance on work orders instructions

4. **Probe Pads** – Gold pad above each port. This is the landing area for the pogo pin built into MapIT G2 Patch Cables. This pad can also be used for circuit traces and diagnostics via the Pen Probe

5. **Port Labeling Space** – Space provided for labeling of ports

6. **Mounting** – mounts on standard 19” racks and cabinets

7. **Power** – The Smart Panel gets its power from its connection to the MCP or DCP
When a MapIT G2 Patch Cable is inserted or removed from a port, the Smart Panel discovers the connection and communicates the port ID information to the MCP via the Control Bus cable. The MCP relays the information to the EEC software over a TCP/IP connection. Any changes in connectivity are immediately updated in the EEC database. This provides network administrators with vital up-to-the minute information about the status of their network, from the hardware layer and up... anytime, anywhere.

The Rear of the MapIT G2 SPP

1. Flat Panels – have two S110 Control Bus Cable Connections. Terminate the control bus cables routed from the MCP or DCP to the IN port. Daisy chain Control Bus Cables from the OUT port of one panel to the IN port of the next panel (adjacent or below). Up to five SPPs can be daisy chained on a single connection. A redundant daisy chain path can be created by connecting the OUT ports of the last panels of two separate daisy chains. Important Note: If the redundant daisy
chain is used, the two Daisy chained links must be served from the same MCP or DCP. Do not attempt to span the redundant link between different MCPs or DCPs.

2. Angled Panels – have two RJ45 Control Bus Cable Connections. The top RJ45 is the IN port. The bottom is the OUT port. Connect the IN port to a port on the MCP, connect the OUT port to the IN port of the next SPP in the daisy chain (if applicable). A maximum of five panels can be connected in each daisy chain. **Important Note:** If the redundant daisy chain is used, the two Daisy chained links must be served from the same MCP or DCP. Do not attempt to span the redundant link between different MCPs or DCPs.

3. Flat Panel Ground Termination Points – terminate the drain wire of the cat 5e bus/daisy chain cables on these (one drain wire per connector). Not required for angled panels

4. Rear Manager – A rear manager is integrated into the panel. Secure cables with Velcro or cable ties securely to the manager.

4. Panel Grounding – A ground lug is provided on the rear of the SPP for grounding to the rack or telecommunications ground (TGBB). The Smart Panel must be properly grounded for the system to function properly

**Smart Fiber Enclosures (SFE & SMTP)**

The Front of the MapIT G2 Smart Fiber Enclosure (SFE & SMTP)

1. **Panel Design** – 48 LC fiber (24 managed duplex connections) 1U, compatible with either multimode or single mode fiber

2. **LCD** – Displays Patch Cable trace information, port and panel diagnostics and work order instructions (future capability). Display is backlit for best viewing in a variety of lighting conditions

3. **LEDs** – Provide guidance for work order instructions

4. **Probe Pads** – Used for diagnostics and is the landing area for the pogo pin built into MapIT G2 Fiber Jumpers

5. **Port Labeling Space** – Space provided for labeling of ports and panel

6. **Mounting** – mounts on standard 19” racks and cabinets
7. **Power** – The Smart Enclosure gets its power from its connection to the MCP or DCP via the Control Bus Cable

8. **Integrated Front Cable Manager (SMTP version only)** – Provide management of LC fiber jumpers connected to the front of the SMPT enclosure

Front view of the MapIT G2 Smart Fiber Enclosures

SFE

SMTP

Rear of SFE

1. **2 RJ45 Control Bus Cable Connections** – Connect the Control Bus cable routed from the MCP or DCP to the IN port on the inside of the SFE. Daisy chain control bus cables from the OUT port of the SFE to the IN port of the SFE adjacent or below. Up to 5 SFEs can be daisy chained together. A redundant daisy chain path can be created by connecting the OUT ports of the last panels of two separate daisy chains. **Important**
**Note:** If the redundant daisy chain is used, the two daisy chained links must be served from the same MCP or DCP. Do not attempt to span the redundant link between different MCPs or DCPs.

2. **Enclosure Grounding** – A ground lug is provided on the rear of the SFE to ground it to the rack or telecommunications ground. The SFE must be properly grounded for the system to function properly.

3. **SFE vs. SMTP** – The SFE is used for direct termination LC, fusion splicing and LC trunks. The SMTP is prepopulated with LC to MTP cassettes. Use the SMTP when using MTP fiber trunks.
Module 2: System Design and Installation

System Design Guidelines

The center of the design is the Master Control Panel (MCP). A Master Control Panel can support a single patch zone. A patch zone is a collection of SPPs and SFEs that can be connected by patching between them using MapIT G2 Patch Cables or Fiber Jumpers. This is typically a single telecommunications room.

Patch zones with less than 2880 monitored ports (120 panels x 24 ports each) can be served by a single MCP. To create larger Patch Zones we add one or more DCPs to the system.

Therefore, to design a system, patch zones must be clearly planned and installed with an MCP and lower level components.

Note: Detection of SPP/SFP port connectivity is only possible between panels connected to the same MapIT G2 MCP.

How to Configure a Patch Zone of less than 120 Patch Panels

Each MCP can support up to 120 patch panels/fiber enclosures. If you are installing a patch zone with less than 120 patch panels and do not plan on any expansion beyond this number, you can use the following topology:

Note: Up to 24 groups of 5 panels can be connected to the MCP. Only four groups are shown in this illustration.
Small Patch Zone Topology Rules

1. Use one MCP (supports from 1 up to 120 panels/enclosures (5x24))
2. Each of the 24 Control Bus Cable ports on the MCP can have up to 5 panels/enclosures connected to it via a daisy chain
3. Maximum length a MapIT G2 Patch Cable/Fiber Jumper can be 75’ (24m)
4. Panels do not have to be in the same rack/cabinet as the MCP
5. A redundant daisy chain can be used as an option for greater system reliability.

In the example above the OUT port of the last panel in Group 1 is connected via Control Bus Cable to the OUT port of the last panel in Group 2. In the event that the chain is broken at any point, the panels in the daisy chain will still track connections and communicate with the MCP. The system can also provide an alert in the event that the redundant daisy chain is broken. The fault should be repaired at the earliest possible convenience to ensure greatest system reliability

Control Bus Cable Length Limitations (per Small Patch Zone Diagram shown above)

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Color Code</th>
<th>Connects</th>
<th>Maximum Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCP Control Bus</td>
<td></td>
<td>MCP to First Smart Panel in a Daisy Chain</td>
<td>50’ per cable (15m)</td>
</tr>
<tr>
<td>Smart Panel Daisy Chain</td>
<td></td>
<td>Panels in the Daisy Chain</td>
<td>3’ per cable (1m)</td>
</tr>
<tr>
<td>Optional Redundant Path</td>
<td></td>
<td>Connects last Panels in a Daisy Chain</td>
<td>25’ per cable (7.6m)</td>
</tr>
<tr>
<td>Connection</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(See the Control Bus Installation section below)
How to Configure Large Patch Zones (Greater than 120 Panels/Enclosures)

Use a combination of one MCP and up to 24 DCPs to create a Patch Zone with up to 65,000 ports. The topology for this type of Patch Zone is shown below (Only DCP #1 and connections for three of its ports are shown for clarity).

Large Patch Zone Topology Rules

Note: Up to 24 groups of 5 panels can be connected to the MCP. Only four groups are shown in this illustration. Also, each DCP can have up to 24 panels connected.
1. Use one MCP and up to 24 DCPs for patch zones with 121+ panels/enclosures
2. Each port on the MCP can have one DCP connected to it
3. SPPs and SFEs can be daisy chained to DCP ports (up to 5 per DCP port).
4. SPPs and SFEs can also be connected to unused MCP ports
5. A redundant daisy chain can be created by connecting the last panels in two daisy chains for greater system reliability. In the above example the last panel in Group 1 is connected to the last panel in Group 2. In the event that the chain is broken at any point, the system will still work and it will provide an alert of the fault. The fault should be fixed at the earliest possible convenience.
6. If you are using a redundant daisy chain both groups of panels must be connected to the same MCP or DCP. You cannot span the redundant link between DCPs or MCP to DCP
7. Maximum length of a MapIT G2 Patch can be 75’ (25m)

Control Bus Cable Length Limitations (for Large Patch Zone Diagram shown above)

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Color Code</th>
<th>Connects</th>
<th>Maximum Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Master Control Bus</td>
<td>[Blue]</td>
<td>Bus Master to Distribution Panel</td>
<td>200’ each (61m)</td>
</tr>
<tr>
<td>Distribution Panel Control Bus</td>
<td>[Gray]</td>
<td>Distribution Panel to First Smart Panel in a daisy chain</td>
<td>50’ each (15m)</td>
</tr>
<tr>
<td>Smart Panel Daisy Chain</td>
<td>[Purple]</td>
<td>Connect Smart Panels in the daisy chain</td>
<td>3’ each (1m)</td>
</tr>
<tr>
<td>Optional Redundant Daisy Chain</td>
<td>[Green]</td>
<td>Connects last panels in daisy chain</td>
<td>25’ (7.6m)</td>
</tr>
</tbody>
</table>

(See the Control Bus Installation section below)
MapIT G2 System Configuration Examples

Example 1:

In this small Patch Zone we have 50 panels connected to the MCP. Each group of 5 panels is connected to a single port on the MCP. In this case the 50 panels would occupy 10 of the 24 available ports in the MCP. Note that a single MCP can connect to panels in adjacent racks as well as the same rack as the MCP.

![Diagram of Patch Panel Configuration]
Example 2:

The number of panels and port count is exactly the same as in example #1 above. However, in this example DCPs are used in four racks and an MCP is used in one rack. This configuration can be used if better visibility of LCD screens is desired. The MCP is connected to each of the DCPs. The SPPs/SFEs on the same rack as the MCP can be connected directly to the MCP if desired. Panels can be daisy chained as describe above, however since there are very few panels in this example, each of the 10 panels in each rack can be connected directly to individual ports on the MCP and DCPs.
Example 3:

In the example below each rack has 40 24-port Patch panels. In this scenario each DCP (in light blue) can support 3 racks (a total of 120 panels). There are a total of 18 racks (total of 66 panels). You would need 6 DCPs to accommodate all the panels in this patch zone. The MCP can be located anywhere in this patch zone as long as any individual cable connecting it to a DCP is no longer than 200’. The MCP could support up to 18 more DCPs, so there is plenty of room for expansion in this example.

MapIT G2 Patch Zone Sizing and Capacity Planning

When creating a design from your site survey, there are many decisions to be made based on customer specifications and needs. The type and number of units used can vary depending upon the following criteria:

- **Real-estate space** available in the rack or cabinet
- The **number of panels** to be monitored initially in each patch zone
- The **expected port growth** in each patch zone
- The **maximum length of MapIT G2 Control Bus cables and MapIT G2 Patch Cables**
MapIT G2 Site Survey

This section provides the recommended procedure and forms to complete a Site Survey for a new MapIT G2 installation.

The MapIT G2 Site Survey is an information-gathering activity used to survey the client’s existing network infrastructure, to determine the necessary MapIT G2 components for completing a successful installation.

The survey forms will help outline the proper placement of MapIT G2 components based on the number, distribution and location of MapIT G2 Panels to be monitored. The survey forms include a general summary of the project, a MapIT G2 Patch Panel/Equipment Profile form, a Rack Configuration form and a general Bill of Materials (Cables) form.

Survey Information

The information found at the site survey is the foundation upon which all future design plans and the final design solution will be based. If additional information is needed, the site administrator should be contacted to gather this information before proceeding.

At a minimum, the following should be obtained:

- Physical layout of the site (Floor Plans, Map, etc.)
- Type of MapIT G2 equipment to be used
- Placement of MapIT G2 MCP and (if required) DCPs within each Patch Zone
- MapIT G2 Control Bus cables and maximum MapIT G2 Patch Cable lengths

Defining the Client Needs

The demands to tailor different systems and configurations will vary dramatically from client to client. For this reason, it is essential to determine the specific needs and requirements of each client to create a specific design to meet their needs/expectations. Defining client needs encompasses all aspects of the design and project management processes. Below is a suggested list of items that should be defined at the site survey:

1. Is there enough room on the rack(s) for MapIT G2 MCP and (if required) DCPs?

2. Does the client provide rack space for the MCP and DCPs near the SPPs/SFEs or will they need to be placed away from the rack? If so, how far away will they be installed?
3. What is to be tracked? Voice, Data, or both?

4. It is important to know the client’s operating system and how the network operates to determine whether the system meets specifications and to determine what part of the network the client is going to want MapIT G2 enabled and monitored by EEC software. Many clients focus on enabling essential equipment that is necessary to be up and running 99.9% of the time.

5. Determining the client’s network layout will also allow us to accurately gauge the Patch Zone configuration.

6. System documentation is important in any system. Knowing where all the cables begin and where they terminate is essential in creating an effective end-to-end system. With the client, determine whether the existing documentation is satisfactory or whether the cables will need to be toned out (for an existing installation).

**NOTE:** A digital camera is useful to document existing conditions for future reference.

**Rack/Cabinet Configuration**

Rack/Cabinet Configuration identifies the location of the existing equipment as well as placement of the MapIT G2 MCP/DCPs in the racks. This allows the installer to visualize the configuration of the installation and provides equipment information including: floors, TRs, racks, Patch Zones, etc. Within the depicted racks, the Equipment IDs are displayed. Distances between racks and associated floors should be indicated. Control Bus Cable requirements are identified and a Notes section for additional information is provided.
### Example #1

#### Rack Configuration

<table>
<thead>
<tr>
<th>Floor:</th>
<th>2</th>
<th>Floor:</th>
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<th>Floor:</th>
<th>2</th>
<th>Floor:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rack:</td>
<td>1</td>
<td>Rack:</td>
<td>2</td>
<td>Rack:</td>
<td>2</td>
<td>Rack:</td>
<td>1</td>
<td>Rack:</td>
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<tr>
<td>Patch Zone: 1</td>
<td>Patch Zone: 1</td>
<td>Patch Zone: 1</td>
<td>Patch Zone: 2</td>
<td>Patch Zone:</td>
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<p>| | | | | | | | | |</p>
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</table>

#### Distance

- 4 feet
- 4 feet
- 37 feet

**Notes:**

- Patch zone 1 consists of three racks on the second floor.
- Patch zone 2 consists of one rack on the fourth floor.
Site and Requirement Survey Forms

Siemon will provide the following documents to collect data required to configure the MCPs and build the database. These must be completed and returned to Siemon in order to build the EEC database.

- MCP Network Settings and Locations
- Database Build
- Discovery Questionnaire
- Email Server and Events
- Floor Graphics
- Rack/Cabinet/Faceplate Locations
- Rack Elevations

MapIT G2 Hardware Installation

The following steps for the hardware installation of the MapIT G2 Components can be used as a basic checklist to insure that all of the steps have been accounted for during installation.

Step 1.

Mount the MapIT G2 MCP, DCPs (if applicable) and SPPs/SFEs in the equipment rack(s) as specified on the drawings. These components may be stacked above or below other components. Since all MapIT G2 components generate virtually no heat, there is no need for additional spacing for cooling. Use all of the installation hardware supplied with each unit.

Step 2.

Make sure that all components are powered down before beginning terminations. Disconnect all power supplies from the panels and the electric power outlets.

Step 3.

Connect the Control Bus Cables from the MCP to the DCPs (if applicable) or SPPs/SFEs using the proper cable and termination practices. Connect the daisy chain Control Bus cables between the Patch panels. If desired, connect the last panel in each daisy chain to another panel to create a redundant daisy chain. The redundant cable connection must connect 2 daisy chains on the same MCP or DCP. Do not span across MCPs and/or DCPs. Siemon recommends that the daisy chained ports be connected between panels on adjacent ports on a MCP or DCP (for example, create a
redundant connection between the panels connected from port 1 and port 2 on an MCP or DCP).

**Step 4.**

Connect a ground wire from the back of all components (MCP, DCPs, SPPs, SFEs) to the telecommunications ground. Proper grounding is critical to proper functioning of the MapIT G2 system.

**Step 5.**

Install the provided power supply cords in each MCP and DCP (if used), then plug each of them into the electrical power outlets.

**Step 6.**

Check the power connections: There are two methods of doing this:

1. When power is connected to the MCP and DCPs, power will be supplied to the SPPs/SFEs in the Patch Zone. If firmware has not be loaded on the MCP, the LCDs on the SPP/SFEs will display UNLICENSED. This is an indicator that the panels have power and are communicating with the MCP. If firmware is loaded in the MCP, then the starting assigned port number will be displayed on the SPP. If the LCD on a panel is blank, check the power connections to that panel.

![Unlicensed V01.09](image)

2. You can also look in the MCP or DCP menu to view connections. See the Diagnostics section below for more information.

**Step 7.**

Run Diagnostics for all components in the system to ensure all components are functioning properly (see Diagnostics instructions below).

**Step 8.**

Terminate all of the horizontal cables that are to be monitored. Install the terminated connectors in the SPPs and/or SFEs.

**Step 9.**

Install the MapIT G2 Patch Cables and/or Fiber Jumpers as required.
Installing MapIT G2 Control Bus Cables

The Control Bus Cables provide connectivity to the MCP, DCPs, SPPs and SFEs installed in the system. The installation of the cabling should follow the installation practices found in the Siemon Cabling System Training Manual.

Control Bus Cable Construction:

- Category 5e, 24 AWG, shielded, solid. Use Siemon Premium 5e F/UTP. Use of UTP or stranded shielded cable is not permitted. All terminations (S110, S310 and RJ45) should be done using the T568A wiring scheme.
- If double-ended shielded Patch Cable cables are used they must be constructed with Siemon Premium 5e F/UTP 24 AWG, shielded, solid cable and PS-8-8 plugs. Cables must be wired using T586A wiring scheme. Stranded cable is not acceptable.
- If single-ended Patch Cable cables are used, they must be wired T568A and use Siemon Premium Category 5e, 24 AWG, shielded, solid cable.

Rule for Termination of Control Bus Cable in a Small Patch Zone with a Single MCP:

If using the S310 and S110 blocks to terminate control bus cables…
- Only use the S310 on the rear of the MCP. Do not use the RJ45s on the front of the MCP. Use optional RJ45 port blockers (LL-05) to prevent use of RJ45s.
- Terminate cable to S310 blocks on the MCP using T568A wiring scheme. Connect the drain wires to the ground termination points. Maximum length of each cable is 50’ when connected to the first SPP/SFE as a daisy chain.
- Terminate the Control Bus Cable coming from the MCP to the "IN" S110 block on the first SPP in the daisy chain. Use T568A wiring scheme. Connect the drain wire to the ground termination point on the rear of the SPP.
- Terminate the SPP Daisy Chain cable to the OUT S110 block of the first SPP to the IN S110 port on the next SPP/SFE in the daisy chain. Repeat for up to 5.
panels in a single daisy chain. The maximum length of each SPP/SFE daisy chain segment between panels is 3’ (1m). Terminate the drain wire on the ground termination points on the rear of the SPP/SFE.

- If the redundant daisy chain is desired, connect the “OUT” of each of the last panels in the daisy chain. Max length of this cable is 25’ (11m). Redundant daisy chain connections can only be made between panels served by the same DCP or MCP.
- Another termination option is to terminate the Control Bus Cable using S110 P4 plugs (for connections to SPPs or between SPPs). Leave enough drain wire out the back of the P4 plug to connect it to the ground termination point.

If using the MCP RJ45s and SPP S110 Blocks to Terminate Control Bus Cables…

- Only use the RJ45s on the front of the MCP. Do not use the S310s on the rear of the panel. You can use the supplied S310 stuffer caps to cover the unused S310 to prevent connections to these ports.
- Plug in RJ45 plug end of the Control Bus Cable into RJ45 outlet on the front of the MCP.
- Terminate other end of the Control Bus cable to the “IN” S110 port on the first Patch panel in the daisy chain. Use T568A wiring scheme. Terminate drain wire to ground termination point. Maximum cable length is 50’ (14m).
- Terminate cable to “OUT” S110 block of the first panel in the daisy chain. Terminate the other end of this cable to “IN” S110 block on the second Patch panel in the daisy chain. The max length of this cable is 3’ (1m). Terminate the drain wire on the ground termination point.
- Continue this daisy chain termination method for remaining panels (max 5 panels per single daisy chain, up to 10 for the redundant daisy chain).
- If the redundant daisy chain is desired, connect the “OUT” S110 blocks of each of the last panels in the daisy chain. Max length of this cable is 25’ (7.6m).

If using the MCP RJ45s an Angled Panel or Fiber Enclosure RJ45 Bus Connections

- Use a shielded patch cord to connect the MCP RJ45 port to the IN port of the panel.
- Do not reuse the S310 ports on the back of the MCP.
- Daisy chain an additional 4 panels (Connect OUT port from one panel to IN port on the next panel).
- If the redundant daisy chain is desired, connect the OUT port of the last panel in a group to the OUT port of the last panel in the next group.

Rule for Termination of Control Bus Cable in a Large Patch Zone:
If using the S310 and S110 blocks to terminate control bus cables…

- If using this configuration, only use the S310 on the rear of the MCP and DCP(s). Do not use the RJ45s on the front. Option RJ45 port blockers (LL-05) can be purchased to block these ports.
- Terminate cable to S310 blocks on MCP using T568A wiring scheme. Connect drain wire to ground termination point. Max length of each MCP to DCP Control Bus Cable is 200’
- Terminate the Control Bus Cables coming from the MCP to the vertical S110 block on the rear of each DCP. Use T568A wiring scheme. Connect drain wires to ground termination point
- Terminate the DCP Control Bus Cables to the S310 blocks on the rear of the DCP. Use T568A wiring scheme. Terminate the drain wire to ground termination point. The maximum length of each DCP Control Bus Cable is 50’.
- Terminate the other end of the DCP Control Bus Cable to the “IN” S110 block on the first SPP in a daisy chain. Terminate the drain wire to the ground termination point.
- Terminate the SPP Daisy Chain cable to the “OUT” S110 block of the first panel in the daisy chain. Terminate the other end of this cable to “IN” S110 block on the second Patch panel in the daisy chain. Terminate drain wires to ground termination points. The max length of each SPP Daisy Chain Cable is 3’ (1m).
- Continue this daisy chain termination method for remaining panels (max 5 panels per single daisy chain, up to 10 for the redundant daisy chain).
- If the redundant daisy chain is used, connect the “OUT” S110 blocks of each of the last panels in the daisy chain. Max length of this cable is 25’
- Redundant daisy chain can only be used for panels served by the same DCP or connected directly to the same MCP. Do not create redundant daisy chains between panels served by different DCPs or MCPS.

If using Solid, Shielded Cat 5e Patch Cables to connect MCP to DCP and Single-ended Solid, Shielded Cat 5e IC Cables to connect the DCP to SPP…

- Only use the RJ45s on the front of the MCP and DCPs. Do not use the S310s on the rear of the panels. Use option supplied S310 stuffer caps to prevent access to S310s on the rear of the panel
- Patch Cables used in the Control Bus may be terminated in the field, however you must always 1) use approved Siemon components, 2) terminate cables using T568A wiring and 3) test Cables for continuity prior to installation in the system
- Plug Patch Cable into RJ45 ports on front of the MCP
- Plug the other end of the Cable into the RJ45 control bus cable port on the rear of the DCP. The maximum length of this cable is 200’
- Use a single-ended Cable to connect the DCP to the first SPP in a daisy chain. Plug one end into the RJ45 port on the front of the Distribution panel. The maximum length of this cable is 50’
• Terminate the open end of the cable to the “IN” port of the first SPP in a daisy chain. Use T568A wiring scheme. Terminate the drain wire on the ground termination point.

• Terminate cable to “OUT” S110 block of the first SPP in the daisy chain. Terminate the other end of this cable to “IN” S110 block on the second SPP in the daisy chain. The max length of this cable is 3’ (1m).

• Continue this daisy chain termination method for remaining panels (max 5 panels per single daisy chain, up to 10 for the redundant daisy chain).

• If the redundant daisy chain is desired, connect the “OUT” S110 blocks of each of the last panels in the daisy chain. Max length of this cable is 25’.

• Redundant daisy chain can only be used for panels served by the same DCP or connected directly to the same MCP. Do not create redundant daisy chains between panels served by different DCPs or MCPs.

If using the RJ45 Patch Cable cables for Control Bus connections throughout the system (for Angled, TERA and Fiber Enclosures)...

• If using this configuration, only use the RJ45s on the front of the MCP and Distribution Panel. Do not use the S310s on the rear of the panels. Siemon recommends using the supplied S310 stuffer caps to prevent access to the S310s.

• All RJ45 outlets used in the system are grounded.

• Patch Cables used in the Control Bus may be terminated in the field, however you must always 1) use approved Siemon components, 2) terminate cables using T568A wiring and 3) test Cables for continuity prior to installation in the system.

• Plug Patch Cable into RJ45 ports on front of the MCP.

• Plug the other end of the Cable into the RJ45 bus cable port on the rear of the DCP. The maximum length of this cable is 200’.

• Use the next cable to connect the DCP to the first SFE in a daisy chain. Plug one end into an RJ45 port on the front of the DCP. Plug the other end into the “IN” RJ45 on the first SFE in a daisy chain. The maximum length of this Patch is 50’.

• Plug another Patch Cable for the Daisy Chain into the “OUT” port on the first SFP. Plug the other end into the “IN” port on the next SFE. The maximum length for this type of Cable is 3’.

• Continue this daisy chain termination method for remaining panels (max 5 panels per single daisy chain, up to 10 for the redundant daisy chain).

• If the redundant daisy chain is desired, connect the “OUT” RJ45s of each of the last enclosures in the daisy chain. Max length of this Patch Cable is 25’.

• Redundant daisy chain can only be used for panels served by the same DCP or connected directly to the same MCP. Do not create redundant daisy chains between panels served by different DCPs or MCPs.

This completes the hardware installation.
Module 4: Navigating the MapIT G2 Menus

Main Menu

Insure that the MCP is properly connected to a power source. The LCD backlight will illuminate as soon as power is supplied. The LCD screen will timeout (i.e., go blank) after a preset period of time. The default timeout period is 5 minutes. The time out period can be changed (details below). If the screen has timed out, press any key to reactive the screen.

When power is applied to the MCP, the unit will go through a power on self test. In the unlikely even you see error codes listed on the screen, contact Siemon Technical Support. Otherwise, the MCP will show the Main Menu screen. See example below:

<table>
<thead>
<tr>
<th>MAIN MENU</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostics</td>
<td>MCP</td>
</tr>
<tr>
<td>Circuit Trace</td>
<td>A01001001827</td>
</tr>
<tr>
<td>Work Orders</td>
<td>Mapping</td>
</tr>
</tbody>
</table>

After the MCP is properly setup and working, the Main Menu will show Mapping to indicate the system is communicating with the EEC software and tracking connections. If it is not connected it will display Waiting. Note that the EEC software must be running and the MCP service started in order to successfully connect.
Each MCP has a 12 character serial number. This serial number is displayed on the Main Menu. In the example above the serial number is A01001001827.

**Menu Navigation**

**Scrolling within a menu:** Use the scroll arrows on the keypad to the right-hand side of the LCD to scroll to items within a menu screen. You can scroll left/right and up/down. The LCD screen will display four lines at a time. You can use the down arrow to scroll to additional lines that may be hidden below the initial 4 lines of display.

**Alphanumeric Data Entry:** Use the number keypad at the right of the LCD to enter numbers and letters. To scroll to additional letters, continue to press the key until the desired letter appears.

**Entering Data:** Once you have scrolled to an item or have entered data press the Enter key to input your selection/data.

**Previous Page/Next:** Use the prev and next buttons to move to the previous menu or forward to the next menu.

**Multiple Users:** Multiple users can access the system in a single Patch Zone at the same time. Access is available from any MCP or DCP in the Patch Zone.

**Diagnostics Menu**

The Diagnostics Menu can be used to check the status of ports and components in the MapIT G2 system as well as connections between components.

To enter the Diagnostics menu scroll to Diagnostics from the Main Menu and press Enter. The following screen will appear:
Port Diagnostics

Port Diagnostics allows you to test individual ports or trace Patch Cable connections between panels/enclosures by using the pen probe to touch a sensor pad or the metal contact on the back of a Patch cable/Fiber Jumper.

Note that Port Diagnostics works differently for interconnect mode. The instructions here pertain to cross-connect mode. Instructions for interconnect mode are provide in the Interconnect Mode section later in this manual.

To enter the Port Diagnostics mode, scroll to **Port Diagnostics** and press **Enter**. The following screen will appear:

![Port Diagnostics Screen](image)

Use the pen probe to touch a smart panel/enclosure port pad for diagnostics. Touch the probe pen to a sensor pad/point and press the button on the pen. The LED on the back of the probe pen will flash green after a few seconds and the port information will display. If a Patch Cable is connected between panels/enclosures, the screen will look like this:

![Port Information Screen](image)

The second line has the port icon, port number, panel icon and the panel name pulled from the MapIT software database. If the panel is not connected to the MapIT EEC software or there is no panel name available, the panel serial number will be displayed. The fourth line has information for the second port/panel.
If no patch cable is connected to the port, only one line of information is displayed showing the panel/port information.

If a port is probed and no information appears, begin troubleshooting sequence described later in this document.

Port Diagnostics information is also displayed on the Smart Patch Panels and Fiber Enclosures. Once the port is probed, the port number and panel ID will display on the panel LCD. The green LED will also illuminate to help identify the panel(s).

The screens will show the port icon and port number on the first line and a panel icon and panel ID on the second line. The LCD screens will then alternate between showing this information for the connected panels. An example is shown below:

If no Patch Cable is present, only the LCD and LED on the probed panel will illuminate and display the port and panel information.

If a port is probed and the LCD/LED does not illuminate and doesn’t display any information, begin the troubleshooting procedure described later in this document.

This information will continue to display until one of the following events occurs:

1. You press the **prev** button
2. The components times out (see component time out in the Settings section)

To conduct port diagnostics on another port, hit the **prev** button and probe the next port.
Component Diagnostics

The Component Check menu allows you to check components for errors. To access this menu, scroll to Component Diagnostics and press Enter. The following screen will appear:

<table>
<thead>
<tr>
<th>COMPONENT DIAGNOSTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check All</td>
</tr>
<tr>
<td>Check MCP</td>
</tr>
<tr>
<td>Check DCP</td>
</tr>
</tbody>
</table>

Please note that there is another option called Check SPP which is below the Check DCP line. You can use the scroll down button to navigate to this option.

You can run diagnostics for all components in the system by selecting Check All and pressing Enter. Please note that the system will suspend port tracking during the test.

If no errors are found the system will report All Components Passed Test. If errors are found, the system will list the problem components. You can scroll to Reboot below the component and press enter. The system will try a reboot of the component to attempt to clear the error. An example is shown below:

<table>
<thead>
<tr>
<th>COMPONENT ERRORS</th>
</tr>
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<tbody>
<tr>
<td>SPP24 HQSPP-A102</td>
</tr>
<tr>
<td>Error Code 128</td>
</tr>
<tr>
<td>Reboot</td>
</tr>
</tbody>
</table>

If the reboot of the component reboots, the following will display:
Depending on the type of error, the reboot may or may not clear the error code. You can recheck the component to see if the error was cleared with the reboot. If not, please see the troubleshooting section of this document for further guidance.

If the component reboots and the error does not clear, the field will show **Failed**. See the troubleshooting section for procedures to resolve these issues.

Please note that a component may not be connected correctly or may not be recognized by the MCP or DCP. In this case the component will not appear in the menu. If this occurs, check the Control Bus cable connections. For the MCP and DCP, check the power cable to make sure it is plugged in properly. The LCD should have the Main Menu displayed. If the unit still doesn’t power up, try a different power supply. If these steps fail to repair the problem, see the Troubleshooting section or contact Siemon Technical Support.

You can also run diagnostics on individual components. Scroll to the desired option (Check MCP, DCP or SPP) from the **Component Diagnostics** screen and press **Enter**.

The Check MCP screen will look like this:

If errors appeared on this screen you could attempt to clear them by rebooting the MCP. To Reboot; simply scroll down to the **Reboot** icon and press **Enter**. If rebooting does not resolve the issue, see the troubleshooting section later in this document.

To check DCPs, scroll to the **Check DCP** option and press **Enter**. The following screen will appear:
The number to the left indicates the port the DCP is connected to on the MCP. If no DCP is connected to a port, then **DCP None** is displayed. If a DCP is connected, you will see DCP and the serial number of the unit. You can scroll down to see additional DCPs (up to 24).

To run DCP diagnostics, scroll to the desired **DCP** and press **Enter**. You can try to clear errors on DCPs by selecting **REBOOT** and pressing **Enter**. If rebooting does not resolve the issue, see the troubleshooting section later in this document.

### Check SPP
To check an individual SPP, scroll down to the **Check SPP** option (below Check DCP option) and press **Enter**. The following screen will appear:

Use the probe pen to touch any port on the SPP you want to run diagnostics on. If a patch cord is plugged into the port being probed, diagnostics will run on for both panels. Press the button on the probe pen and wait for the LED to flash once. The following screen will appear:
If the MCP is connected to the server and the panel is mapped, the second line will show the type icon (e.g., Patch Panel) and its name. If the MCP is not connected to the database and/or the item is not mapped, it will show the SPP serial number.

The third line will display error codes (if any). If no errors or detected it will display No Error. For a list of error codes and troubleshooting, see the Troubleshooting section of this document.

The fourth line will display the Reboot option. Scroll to this line and press enter if you wish to attempt to reboot the SPP. In some cases reboot of an SPP via this method may not be possible (for example, if the SPP is not properly connected to the DCP or MCP). If rebooting does not resolve the issue, see the Troubleshooting section later in this document.

If the probed port has a patch cord connection, diagnostics will run on both panels. Scroll down below the first panel information to see the second panel info.

Connections

This menu shows what is connected to the MCP or DCPs. To go to the Connections menu, select Connections from the Diagnostics menu and press Enter. An example of what this screen looks like is pasted below:

<table>
<thead>
<tr>
<th>CONNECTIONS – MCP A10000000001</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. SPP24 HQSPP-A102</td>
<td>01</td>
<td>abc</td>
<td>def</td>
</tr>
<tr>
<td>02. SPP24 HQSPP-B205</td>
<td>02</td>
<td>ghi</td>
<td>jkl</td>
</tr>
<tr>
<td>03. NONE</td>
<td>03</td>
<td>mn</td>
<td>pqr</td>
</tr>
</tbody>
</table>

The numbers 01 through 24 on the left of the screen are the ports of the MCP. Only the first 3 ports are shown. You can scroll down to see additional ports.

Moving from left to right, the next item over will be the device type (SPP24 or DCP).

Next over is the item name or serial number. If the item is a smart panel and the MCP is connected to the MapIT software, the panel name will display. If the MCP is not connected to the MapIT software, the panel serial number will display. If the item is a DCP, the DPC serial number will display.

Finally on the far right is the number of additional items connected to the device. In the example shown above SPP24 HQSPP-A102 has +02 next to it. This indicates that there are two additional panels connected to it.
You can scroll to this line and press **Enter** to see those panels. An example of this screen is shown below:

<table>
<thead>
<tr>
<th>MCP A01011000840</th>
<th>01</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. SPP AD2567JH</td>
<td></td>
</tr>
<tr>
<td>02. SPP AD2567JI</td>
<td></td>
</tr>
<tr>
<td>03. None</td>
<td></td>
</tr>
</tbody>
</table>

The first line shows the type of device (MCP in this example), the device’s serial number and the port number that the SPP or DCP is connected to. Below the top line are the items that are connected to that port.

If there is a redundant daisy chain link connecting the last two panels, you will see Link to chain on DCP or MCP port XX below the last panel.

If you are not seeing devices connected that should be connected, check control bus cable connections.

**Unlicensed Panels**

Previous versions of the MapIT software required a license for each patch panel. EEC no longer requires this. There is no panel specific license required by the EEC software. This screen is only kept for older legacy systems.

This screen provides a quick view of licensed and unlicensed panels/ports in the patch zone. An example of the screen is shown below:
The MCP will allocate available port licenses on a first come, first serve basis. If additional panels are added to the system and the MCP does not have additional port licenses available for them, the panels will not be licensed.

There are two methods to determine unlicensed panels/enclosures in a Patch Zone.

1. Any unlicensed Smart Panel/Enclosure connected to the MCP will display **Unlicensed** on its LCD (no backlight). Once the MCP has enough licensed ports, this message will go away and the smart panel will begin to monitor port connections.

2. You can also go to the **Unlicensed Panels** menu to view details on unlicensed panels. To access this information scroll down below the **Unlicensed Panels** line and any unlicensed panels will be listed here (device type and serial number)

**Reflash All**

Firmware for all items in the MapIT G2 system can be upgraded via the firmware upgrade process described in the EEC software manual. Once new firmware is downloaded to the MCP items connected to the MCP will receive their new firmware (if available) and upgrade themselves. We do provide the option to manually reflash SPPs and DCPs in the system with the Reflash All option. Reflash All will only work if there is a pending new SPP and/or DCP firmware loaded on the MCP.

To reflash components, go to **Reflash All** in the **Diagnostics** screen and press **Enter**.

You will see the following screen:

**Update firmware in all devices.**

**This may take a while.**

**Are you sure?**

**UPDATE ALL**
Scroll down to **UPDATE ALL** and press **Enter**. This will download firmware to SPPs and DCP in the patch zone.

**Circuit Trace**

Note that Circuit Trace works differently for interconnect mode. The instructions here pertain to cross-connect mode. Instructions for interconnect mode are provided in the Interconnect Mode section later in this manual.

Circuit Trace lets you see an end-to-end circuit on the MCP or DCP screen. To enter the Circuit Trace menu, scroll to **Circuit Trace** on the **Main Menu** and press **Enter**. The following screen will appear:

![Circuit Trace Menu](image)

Use the probe pen to probe a port. Touch a sensor pad or contact point on a Patch Cable/Fiber Jumper. Hold the button down on the probe pen and wait for the LED to flash green. An example of the type of screen that will appear is shown below:

![Circuit Trace Example](image)

A graphical representation of the circuit is displayed on the top line. The icons associated with the Class of the device are shown in the circuit. In the example above there are: (from left to right) a Switch, Patch Panel, Patch Panel, Faceplate and Work Station.

You can use the left/right scroll buttons to highlight items in the circuit. A highlighted item will have blinking > < symbols pointing to the device. In the example above the first patch panel is highlighted. The three lines below will show additional details about the highlighted item.
The first line of information is usually a port or NIC. In the example above it shows the position where the patch cord is connected in the panel.

The second line provides information on the device, in this case the patch panel name.

Finally, the last line provides location information. In this case the name of the enclosure where the panel is located.

Even if a Patch Cable is not connected between smart panels/enclosures you can still get a circuit trace for any connections to the Patch panel port.

Up to 8 items in a circuit will display at a time. If there are more than 8 items in a circuit you can use the left/right scroll buttons to navigate and display the additional items.

**Setup**
The Setup Menu allows you to set network, product and language settings. You can also clear unused panels that have been removed from the Patch Zone.

Scroll to **Setup** from the **Main Menu** (this is off screen below the **Work Order** option) and press **Enter**. The following screen will appear:

![SETUP MENU](image)

Enter the password. The default password is SIEMON. Type in **SIEMON** and press enter. If the incorrect password is entered **Invalid Password, Please Try Again** will appear on the screen. You can change the password if desired once you are in the Setup menu. If you forget your password, contact Siemon Technical Support for the procedure on how to reset the MCP password.

Once the correct Password is entered, the following screen appears. Scroll to the desired option and press **Enter**.
Network Settings

Scroll to **Network Settings** and press **Enter**. The following screen will appear:

![Network Settings Diagram](image)

Scroll to the input fields and use the alphanumeric keypad to enter information. When a line is complete, press **Enter**. If an invalid number is entered (higher than 255) the MCP will default to 255. Check with your network administrator if you are having trouble with correct values for input.

Product Settings

You can set the inactivity timeout period for all devices (up to 999 minutes for MCP and DCP, 30 seconds for SPP). Scroll to the entry field and enter the desired timeout period for each type of device. Once the data is entered, press **Enter** to store the new settings. An example of this screen is shown below:

![Product Settings Diagram](image)
The default setting for the MCP and DPC timeout is 5 minutes. For the SPP it is 30 seconds. Minimum time for the MCP and DCP is 2 minutes and 3 seconds for the SPP.

Below the timeout section there is an option for Connection Type. This is where you will select cross-connect or interconnect mode. Details on the interconnect mode are in the Interconnect Mode section of this manual.

**Language Selection**

This menu allows the user to select what language is displayed on the MCP, DCPs and SPPs. Input is always in English characters via the keypad. The default language is English. To select a language, scroll to the desired language and press **Enter**. An example of the Language screen is shown on the next page:

![Language Screen](image)

**Product Information**

From the **Setup** Menu scroll to **Product Information** (below language settings), press **Enter**. The following screen will display:

![Product Information Screen](image)

Scroll down to see additional information (MAC, Date Code, Licensed Ports, Ports Used and Ports Free). An example of the next four items is shown below:
Change Password

To change the MCP password from the Setup Menu scroll to Change Password and press Enter. The following screen will appear:

1. Enter the new password, press enter.
2. Confirm the new password, press enter.

If there is a mismatch between the New Password and the second entry of the New Password, the following error code will appear – Password Mismatch, Please Try again. Reenter the New Password on both lines and press enter.

The password must be a minimum of 4 characters with no spaces.

Clear Unused Panels
The MapIT G2 system assigns port numbers to each panel connected in the MCP Patch Zone. The port assignments are retained by the MCP even if a panel is disconnected. The clear unused panels feature allows you to clear any panels which are no longer used in the Patch Zone. This will free unused port licenses for new panels. This is primarily a legacy software feature since EEC has no license requirement for panels.

Some examples of when you would use this feature are:

- Remove a panel from the Patch Zone
- Replace a defective panel board

To clear unused panels, scroll to the Clear Unused Panels option in the Setup Menu and press Enter. The following screen will appear:

![Clear Unused Panels from Memory](image)

Make sure that the panels are disconnected from the MCP and/or DCP.

Scroll down to CLEAR MEMORY and press Enter to clear unused panels.

**Update Panel IDs**

This feature can be used to force an update of the panel IDs displayed on the SPP LCD screens. The MCP will request the latest panel name information from the MapIT EEC software and will update the panel displays. Scroll down to Update Panel IDs and press Enter. The following screen will appear:

![ID update process started](image)
Once the update process is complete the MCP will show the Setup Menu screen. It is important to note that the panel update process is not a required step. The MCP will automatically request the panel ID information every time it is connected to the EEC software. You can also force a manual update from the EEC software by pressing the Sync button in the Monitor tab.

**Important Note:** Panel names will not be displayed until the MCP is connected to the EEC software and the panels have been mapped to the panels in the EEC database. See mapping section below for details on how to map panels.

### Mapping

The mapping feature allows the user to associate physical panels/enclosures with their virtual counterparts in the EEC software.

Prior to mapping panels, you will have to create your database, setup you MCP, etc… Complete instructions for this process can be found in the EEC software training manual.

To perform port mapping go to the Tree Builder page in the EEC software. Then go to the Mapping sub tab. The screen will look like this:
Please note that the MCP assigns pin positions to all monitored SPP ports. The ports start at 0 and go up to 64,999. So, the first panel in a Patch Zone would be assigned ports 0 through 23, the next would get 24 through 47, etc…. The respective starting pin assignment for each SPP is shown on the bottom left of the SPP LCD. An example of a panel with a starting port assignment of 24 is shown below:

![Panel Example](image)

To map items following the following steps:

1. Select you MCP from the MCP pull down box. If your MCP is not shown go to the MCP page and setup the MCP
2. Select a panel you want to map from the Navigation Tree to the left of the screen
3. Enter the port number of the patch panel. The port number can be found on the 2nd line of the patch panel LCD
4. Click on the Save button. The panel and its port mapping will now be shown in the box below
5. If you make a mistake you can click on a panel and change the port mapping. You can also remove a panel from port mapping by clicking on the panel and the Remove button
MapIT G2 Interconnect Training

Description of how the MapIT G2 Interconnect System Works

The MapIT G2 interconnect system allows for direct patching from the switch to a smart patch panel. It eliminates the need for a cross-connect typology (i.e., using an extra patch panel to represent the switch ports. The interconnect typology requires less rack space, less time to install and test and ultimately less cost.

The interconnect system requires a new component, called the Ethernet Module, which discovers the switch and port a MapIT patch cord is connected to. To make a connection, first connect the MapIT patch cord into the switch. Then connect the other end to the Ethernet Module. The Ethernet Module (EM) queries the switch to determine which switch and port it is connected to. Then the EM sends this information to the MCP while connected to the switch. The technician then disconnects the EM and connects that end of the patch cord into an SPP. The SPP port detects it has a connection since the 9th wire pogo pin is now grounded out to the switch. This information is also sent to the MCP. The MCP now has both ends of the patch cord connection and sends this information to the EEC database.

There is no need to use the EM for disconnects. Simply remove the patch cord from the SPP or switch side and the system will detect the disconnection.

Install the Battery, Power On, Power Off

The EM is shipped with a 9v battery (not installed). To install the battery, remove the black battery cover and connect the battery to the terminals. Reinstall cover. Press the black button to power on the EM. The EM will power off after 30 seconds of non-use. To turn the unit off, press and hold the black power button for 5 seconds.

When the battery is low, Low Batt will display on the display. Install a new 9v battery,

Install the latest Ethernet Module (EM) Firmware
The EM's default IP address is 169.254.1.1. Prior to use you should install the latest EM firmware and set the IP address you will use (or DHCP enabled).

1. Get the latest firmware file (HEX file) for the EM at siemon.com
2. Save the new Hex file to a known location on your hard drive
3. Connect the EM directly to your PC
4. You need to set your computer IP to 169.254.1.2
   1. Start > Control Panel > Network Connections > Local Area Connection
   2. In the status window click the "Properties" button
   3. Highlight "Internet Protocol (TCP/IP)" and click the "Properties" button
   4. If the radio button for "Use the following IP address" is not selected, select it (if it is already selected, remember the IP address and Subnet Mask as you will need to change them back)
   5. Set the IP address to 169.254.1.2 and the Subnet Mask to 255.255.0.0
   6. Click OK and then Click OK in the next window.
5. Open a windows command prompt (start > Run... then type "cmd" and click "Run")
6. Ping the EM to make sure you have a good connection – ping 169.254.1.1. If successful, continue to next step, if not, troubleshoot IP settings.
7. At the command prompt type: tftp 169.254.1.1 put "c:\path\filename.hex"
8. After about 15 seconds you should get a transfer successful message

**Using the MapIT G2 PC Software to Configure Network the EM**

You will need the latest copy of the MapIT G2 PC software to properly configure your EM unit. The latest version of the software is available at siemon.com.

Once you have the software, unzip the folder. Contained in the folder is a file called SiemonMapIT.exe. Click on this file to start the application. You can also create a shortcut for this file on your desktop.

A User Account login screen will appear, just press OK.

Once the software is open you will see this screen:
Click on the Ethernet Module option at the top of the screen. Four options will be shown – EM Settings, EM VLAN Settings, EM Switch Info Settings and EM Data Exchange Information. Click on EM Settings. You will see the following screen:
To configure the EM, enter the following information:

1. Enter the default IP address of the EM (169.254.1.1) in the Current EM IP Address box
2. If using DHCP, click on the Enable DHCP box. If not, leave this blank.
3. If using DHCP, make sure the network administrator is aware that the EM will be using DHCP. You may need to provide the MAC address of the EM (located on the underside of the unit)
4. If not using DHCP, enter the EM IP address, subnet and gateway information in the appropriate boxes.
5. Enter the community string for the switches
6. Leave the VLAN information blank
7. Enter the MCP IP address. This should be the same MCP that is in the same TR that the EM is used in
8. Press Send Settings to EM. If successful, Send OK will appear. If not, Send Failed will appear. If failed, make sure you can ping the EM. If you can, try to resend the data again
9. Once complete, press Exit to leave the PC software

Resetting the EM to Default Configuration
The situation may occur where you have forgotten the IP settings for the EM and cannot connect to the unit. In this case you may have to reset the unit to its default configuration and then reset. To reset the unit:
1. Make sure it is powered off.
2. Press the black power button and hold it down for 10 seconds.
This will reset the unit. Now you can reconnect to the unit with IP address 169.254.1.1 and subnet 255.255.0.0.

Configuring Switch Information in the EM
From the G2 Management software, go to Ethernet Module and select EM Switch Info Settings. The following screen will appear:

To configure the switches that the EM will be used with, complete the following steps:

6. Enter the IP address of each switch. There is no need to enter the MAC address
7. Once an IP address is typed in, press Add
8. If you make a mistake you can retype over the address and press Update
9. If you are no longer using a switch and can select it and press Delete
10. Enter the IP address of the EM
11. Enter the MCP IP address
12. Press Send to Ethernet Module
13. If successful, Send OK will appear. If Send Failed, check IP setting on EM and PC software
14. Press Exit when complete

Configuring the EM to work with VLANs

Most networks will have VLANs configured on the switches. If your network is not using VLANs, you can skip this section of the EM setup.

To configure your EM to work with the VLANs on your network, go to the EM VLAN Settings tab in the G2 Management software. The following screen will appear:

![EM VLAN Settings](image)

Complete the following steps:
1. Enter the VLAN starting and ending IP addresses
2. Enter the VLAN name or number
3. Press ADD
4. Repeat steps for all VLANs
5. Once complete, enter the IP address of the EM and press send to Ethernet Module. If successful it will say Send OK.
6. You also have the option to import the VLAN information from a spreadsheet. See example xls file for proper format
7. Manually entered VLAN information can be saved to xls file as well.

A Note about the EM Data Exchange Information Option
This is a diagnostics tool used to examine communication between the EM and MCP. Contact Siemon technical support department if you are having trouble establishing communication between the devices. The technical support department will provide details on how to use this tool.

Configuring the MCP for Interconnect Mode
The default configuration of the MCP is for use in a cross-connect typology. To enable the interconnect mode, following the following steps:

1. Go to Setup, enter password and go to Product Settings
2. Scroll down to Connection Settings, press Enter
3. Interconnect and Cross Connect are displayed. The enabled mode has a * next to it.
4. Scroll to Interconnect and press enter. Interconnect mode is now enabled.

EagleEye Database Check List for Interconnect Mode
To use the G2 Interconnect Mode and EM, please ensure the following things are done in the EEC database prior to use:

1. Make sure all switches are discovered and moved to their proper position on the rack
2. Make sure the MCPs are configured and mapping
3. Make sure all SPPs are mapped
4. If prior patch connections were made but not documented in the database, enter patch connections via csv file import
5. Make sure 2161 update (or higher) is applied to the database

Connecting Patch Cords (Independent of Work Order Module)

1. Press the black power button on the EM to power up the unit. The LCD on EM will say Start Port. The LED will blink red, indicating the EM is waiting for a connection
2. Connect patch cord to switch. Connect other end to EM. EM will say CONNECTED, then will show the switch name and port number and then DONE. The LED will blink green, indicating it is OK to disconnect the patch cord from the EM.
3. Connect the patch cord to the port on the SPP
4. Connection information will be sent to the EEC database

Disconnecting patch cords from switch to SPP

1. Unplug the patch cord from the SPP or switch
2. Disconnect information will be sent to the EEC database. Note that there is no need to use the EM for disconnects

Important Notes for Proper Interconnection

1. Only one connection should be made at a time. Attempts to make multiple simultaneous connections will confuse the system and result in incorrect connection information in the database
2. Only make connections and disconnections when the MCP is showing MAPPING on the main menu. If the MCP is powered down or has a connection status of WAITING, connection/disconnection information will not be sent to the EEC database
3. If you plug into the wrong SPP port, disconnect the patch cord from the SPP, reconnect to the EM, then follow the procedures above for a proper connection.
4. If you mistakenly disconnect a patch cord from the switch or SPP, you will need to connect the follow the connection procedure above to reestablish the patch connection (i.e. connect to EM, detect switch and switch port, connect patch cord to SPP)
5. If many connections are made prior to the EEC database being setup, patch connections will have to be entered manually. You can create these in the Build/Modify/Connect screen or you can put them in a CSV file and import via the Build/Import screen
6. If a patch cord is already connected but not documented you can use the MCP to document the connection without disconnecting the patch cord. To do this, go to the Interconnect option on the Main Menu. Select Create Manual Connections. Use the Pen Probe to touch the SPP. Hold the black button down on the pen and touch the metal tip to the round pad between ports 18 & 19 on the SPP. Next the MCP will ask for the SPP port number. Enter the 2 digit port number. Then the MCP will ask for the switch. Scroll down until the cursor is blinking on the correct switch. Press enter. The MCP will ask for the switch port. Enter the 2 or 3 digit switch port number (what if the blade says port 35, but it really is another port number in EEC, maybe go switch, blade, port?) and press enter. The MCP will send the connection information to the EEC database

TERA MapIT Instructions

Siemon now offers an intelligent MapIT G2 TERA patch panel and patch cords. Due to the unique port sharing capabilities of the TERA outlet there are some new features specific to these panels. This section of the manual provides instructions specific to the installation and use of TERA MapIT G2 panels.

TERA MapIT Panel Installation Instructions
TERA MapIT panels are installed the same way as MapIT angled panels. Use RJ45 patch cords to connect the MCP to the IN port on the back of the TERA panel (top RJ45 port). If you are connecting additional panels below, use the OUT port to connect to the IN port of the panel below. Same as other MapIT panels, you can connect up to five panels in a daisy chain. Also, redundant links are connected the same as other MapIT panels.

TERA MapIT Panel Configuration Options
There are three different configuration options for TERA MapIT panels. Depending on if you are using 4-pair or 2-pair patch cords and if you are using cross-connect or interconnect. The different options and an explanation of each is provided below:

- 24-port cross-connect mode. In this mode you will use 4-pair TERA to TERA MapIT patch cords. All connections will be made from TERA MapIT panel to TERA MapIT panel.
- 24-port interconnect mode. In this mode patching will be done from TERA MapIT panel to switch ports. The MapIT patch cords used in this configuration will have the TERA plug on one end and RJ45 on the other. TERA plugs connect to the TERA panel and RJ45 plugs connect to switch ports
- 48-port interconnect mode. This mode requires TERA 2-pair to RJ45 MapIT patch cords. Each TERA outlet in the MapIT panel can support up to 2 TERA plugs. The 2-pair plugs will connect to the TERA outlets in the panel. The RJ45 end of the patch cords will connect to switch ports.
Because there can be up to 48 2-pair plugs connected to the TERA MapIT panel this mode is called 48-port interconnect mode

Notes:
1. There is no need for 2-pair to 2-pair cross-connects so it is not provided as an option
2. Siemon does not offer a 1-pair TERA patch cord option

Configuring the MCP for the required connection mode.
Follow the appropriate steps for the configuration option used in your installation:

- 24-port cross-connect. Go to Setup/Product Settings and scroll down until you see Connection Settings and press Enter. Select Cross-Connect
- 24-port interconnect. Go to Setup/Product Settings and scroll down until you see Connection Settings and press Enter. Select Interconnect
- 48-port interconnect. Go to Setup/Product Settings and scroll down until you see Connection Settings and press Enter. Select 48-Port Interconnect

Mapping TERA panels in EEC.
24-port Mapping
When panels are used in the 24-port cross-connect or 24-port interconnect mode you will use the normal panel mapping procedure. Create TERA MapIT panels in EEC using model M-SPPA-T24K. This will create a panel with 24 ports. Mapping is done using the normal panel mapping procedure.

48-port Mapping
When you select the 48-port interconnect mode the TERA panel will slip each outlet into two ports. Consequently the panel will have 48 ports. Use model M-SPPA-T24K(48) model to create TERA MapIT panels with 48 ports. Once the panels are created you can use the normal mapping procedure to map the panels. Note that panels will be mapped with 48 ports. For example, if you map a panel with starting port 0 then the panel will be assigned mappings 0-47.

Making horizontal cable connections in EEC for TERA MapIT panels

- For 24-port modes, just use the normal connection method
- For 48-port interconnect mode, use 2-pair cable to connect the back of each TERA outlet to the work area outlet. Use TERA 2-pair outlet type for work area outlets in this case
**Module 5: Troubleshooting the MapIT G2 Hardware Installation**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Causes/Suggestions</th>
</tr>
</thead>
</table>
| MCP or DCP LCD screen is off, unit appears to be turned off          | 1. MCP and DCP LCDs have a built-in timeout feature. Press any button to see if the display turns on. If not, try other options below  
   2. Check that power source is properly connected  
   3. Try another power source  
   4. If unit still does not power on, contact Siemon technical support |
| MCP and/or DCP status does not change from Waiting to Mapping         | 1. Ping the MCP from the server. If you cannot ping, check MCP and server network settings. MCP and server must be on the same subnet and in the same IP range  
   2. Check event log for connection status/feedback  
   3. Restart analyzer agent  
   4. Run imanalyzer debug for further details |
| No power on SPP                                                      | 1. Check connections to SPP  
   2. If SPP is connected to DCP, DCP must be connected to MCP before SPP displays will work |
| SPP has power, MCP has enough licenses, but SPP still says “unlicensed” | 1. Check connections to SPP  
   2. It may take up to 3 minutes for a new panel to be recognized  
   3. Check the number of licenses available in the diagnostics menu. If not enough licenses available, you will need to increase licensed port count  
   4. Clear unused panels in setup menu  
   5. Reboot MCP and see if panel is recognized |
| DCP not recognized by MCP                                            | 1. Check connections from MCP to DCP  
   2. Restart agent, see if DCP is recognized |
<table>
<thead>
<tr>
<th>Error Codes</th>
<th>Description</th>
</tr>
</thead>
</table>
| MCP Error Codes | 1- channel is shorted  
32- checksum failure |
| DCP Error Codes | 1- channel is shorted  
32- checksum failure  
64- firmware version mismatch |
| SPP Error Codes | 1- port on the panel is shorted  
8- the primary bus connection is missing, panel is working on redundant link  
128 - panel is unlicensed  
64 - firmware version mismatch |
| Password reset | Contact Siemon Technical Support |
| Panel Names do not display | 1. Make sure you are connected to the database. Sync the MCP  
2. Go to Setup, Update Panel IDs. Press enter. This will force the MCP to collect the panel names from the software (if available) |
| No information is displayed when I do a circuit trace | 1. Make sure MCP is connected to the database server  
2. Reboot or sync MCP if required |
| I have enough licenses to add panels, but the MCP will not recognize them. | Go to Setup/Clear Unused Panels, press enter. This will clear any panels that are no longer in the patch zone and free up licenses for new panels. |
Certification Information

**Section 1: USA**


2. **EMC** – FCC Part 15 (47CFR15) Class A

\[ \text{This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.} \]

Changes or modifications not expressly approved by Siemon could void the user’s FCC granted authority to operate the equipment.

\[ \text{Note: this equipment has been tested and found to comply with the limits for a Class A digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates uses} \]

\[ \text{and can radiate radio frequency energy and}\]

\[ \text{if not installed and used in accordance with the instruction manual}\]

\[ \text{may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.} \]

**Section 2: Canada**


2. **EMC** – ICES-003 Class A

\[ \text{This Class A digital apparatus complies with Canadian ICES-003.}\]

\[ \text{Cet appareil numerique de la classe A est conforme a la norme NMB-003 du Canada.}\]
**Section 3: Europe (EU)**

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, the Netherlands, Portugal, Spain, Sweden, United Kingdom, Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Slovenia, Malta, Cyprus, Bulgaria, Rumania, Turkey, Iceland, Liechtenstein, & Norway.

1. SAFETY - EN60950 2nd edition
2. EMC – EN55022/CISPR 22 Class A

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**Warning**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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**Section 4: Australia/NZ**

1. SAFETY - ACA TS 001, AS/NZS

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**Section 5: EMC Immunity**

EN/IEC61000-4-2 (Electostatic Discharge Immunity)

EN/IEC61000-4-3 (Radiated Radio Frequency Immunity)

EN/IEC61000-4-4 (Electrical Fast Transient/Burst Immunity)

EN/IEC61000-4-5 (Surge Immunity)

EN/IEC61000-4-6 (Immunity to Conducted Disturbances)

EN/IEC61000-4-11 (Voltage DIPS, Short Interruptions, and Voltage Variations Immunity)
## Technical Specifications

### MCP & DCP Specifications

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Form Factor</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Required</td>
<td>50-60Hz</td>
<td></td>
</tr>
<tr>
<td>Nominal Voltage</td>
<td>AC 100-240V</td>
<td></td>
</tr>
<tr>
<td>Power Consumption Operational</td>
<td>6V, 3.3A</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Power Adapter</td>
<td></td>
</tr>
<tr>
<td>Supplied Interfaces</td>
<td>US, UK, Europe, Japan, China, Australia</td>
<td></td>
</tr>
<tr>
<td>Number of Power Inputs</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network (MCP only)</th>
<th>Network</th>
<th>Ethernet, 10BASE-T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Ethernet Ports</td>
<td>2 (switching) with LED status indicators</td>
<td></td>
</tr>
<tr>
<td>Protocol</td>
<td>TCP/IP</td>
<td></td>
</tr>
<tr>
<td>SNMP</td>
<td>SNMPv1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LCD Display</th>
<th>Size</th>
<th>256 x 64 pixels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Graphic</td>
<td></td>
</tr>
<tr>
<td>Backlight</td>
<td>White LED</td>
<td></td>
</tr>
<tr>
<td>Timeout</td>
<td>User programmable 2 to 999 minutes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight and Dimensions</th>
<th>Height</th>
<th>44.45mm (1.75 inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>482.6mm (19 inches)</td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>101.6mm (4 inches)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>2.27kgm (5lbs)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Operating Temperature</th>
<th>0° to 45°C (32° to 113°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Humidity</td>
<td>Up to 90%, non-condensing</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40° to 70°C (40° to 158°F)</td>
<td></td>
</tr>
<tr>
<td>Storage Humidity</td>
<td>Up to 90%, non-condensing</td>
<td></td>
</tr>
</tbody>
</table>
## SPP Specifications

<table>
<thead>
<tr>
<th>Weight and Dimensions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>44.45mm (1.75 inches)</td>
</tr>
<tr>
<td>Width</td>
<td>482.6mm (19 inches)</td>
</tr>
<tr>
<td>Depth</td>
<td>101.6mm (4 inches)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.27kgm (5lbs)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outlet Compatibility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Type</td>
<td>Modular</td>
</tr>
<tr>
<td>Number of Ports</td>
<td>24 (sold separately)</td>
</tr>
<tr>
<td>Outlets Type</td>
<td>Keystone</td>
</tr>
<tr>
<td>Compatible Outlets</td>
<td>Siemon keystone Z-MAX UTP and F/UTP outlets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LCD Display</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>128 x 32 pixels</td>
</tr>
<tr>
<td>Type</td>
<td>Graphic</td>
</tr>
<tr>
<td>Backlight</td>
<td>White LED</td>
</tr>
<tr>
<td>Timeout</td>
<td>User programmable 3 to 30 seconds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bus Connections</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection type</td>
<td>S110</td>
</tr>
<tr>
<td>Ports</td>
<td>1 IN, 1 OUT</td>
</tr>
<tr>
<td>Protocol</td>
<td>RS485</td>
</tr>
<tr>
<td>Bus Cable Type</td>
<td>Category 5e solid, shielded</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>0° to 45°C (32° to 113° F)</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>Up to 90%, non-condensing</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40° to 70°C (40° to 158°F)</td>
</tr>
<tr>
<td>Storage Humidity</td>
<td>Up to 90%, non-condensing</td>
</tr>
</tbody>
</table>
SFE Specifications

<table>
<thead>
<tr>
<th>Weight and Dimensions</th>
<th>Height</th>
<th>44.45mm (1.75 inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Width</td>
<td>482.6mm (19 inches)</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>273.05mm (10.75 inches)</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>2.72kgm (6lbs)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outlet Compatibility</th>
<th>Panel Type</th>
<th>Modular</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Ports</td>
<td>48 fiber</td>
</tr>
<tr>
<td></td>
<td>Outlets Type</td>
<td>LC</td>
</tr>
<tr>
<td></td>
<td>Compatible Connectors</td>
<td>Siemon multimode and singlemode fiber connectors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LCD Display</th>
<th>Size</th>
<th>128 x 32 pixels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>Backlight</td>
<td>White LED</td>
</tr>
<tr>
<td></td>
<td>Timeout</td>
<td>User programmable 3 to 30 seconds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bus Connections</th>
<th>Connection type</th>
<th>RJ45</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ports</td>
<td>1 IN, 1 OUT</td>
</tr>
<tr>
<td></td>
<td>Protocol</td>
<td>RS485</td>
</tr>
<tr>
<td></td>
<td>Bus Cable Type</td>
<td>Category 5e solid, shielded</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Environmental</th>
<th>Operating Temperature</th>
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<tr>
<td></td>
<td>Operating Humidity</td>
<td>Up to 90%, non-condensing</td>
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<tr>
<td></td>
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<td>-40° to 70°C (40° to 158°F)</td>
</tr>
<tr>
<td></td>
<td>Storage Humidity</td>
<td>Up to 90%, non-condensing</td>
</tr>
</tbody>
</table>

Warranty Information

All active components in the Siemon MapIT G2 system are covered by a 1-year product warranty.