



*MeshSentry II
Supervised Power Supply / Charger*

*Installation & Operation
Manual*



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Part Number: 700291-0002
Revision: A
Issue Date: 2/20

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P/N 770120 Rev C

Table of Contents

1 Introduction.....	1-1
1.1 Purpose.....	1-1
1.2 Scope.....	1-1
1.3 System Organization.....	1-1
2 Describing the System	2-1
2.1 Description of MeshSentry II Radio System.....	2-1
2.2 Compatibility with the older MeshSentry Panels.....	2-2
2.3 Description of MeshSentry II Power Supply	2-3
2.4 Optional Equipment	2-6
2.4.1 Optional Qnode Controller Board:.....	2-6
2.4.2 Octal RS-485 Interface Board.....	2-7
2.5 Specifications.....	2-9
3 Installation.....	3-1
3.1 Handling.....	3-1
3.1.1 Unpacking and Inspection	3-1
3.2 Components that make up the Power Supply / Charger.....	3-1
3.3 Assembling the MeshSentry II Power Supply Panel.....	3-2
3.4 Wiring	3-2
4 Setting up the System	4-1
4.1 Power Supply	4-1
4.2 PoE Surge Protection Bd Setup.....	4-3
4.3 VersAlarm Bd Setup	4-4
4.3.1 Understanding Ethernet Connections and IP Addresses	4-5
4.3.2 Set Computer IP Address.....	4-5
4.3.3 Connect to the VersAlarm Bd.....	4-5
4.3.4 Login into VersAlarm Bd.	4-5
4.3.5 Updating Network Options.....	4-7
4.3.6 Updating Group Text	4-8
4.3.7 Receiving Hosts	4-9
4.3.8 On Board Zone Configurations.....	4-10
4.3.9 On Board Zone Status.....	4-11
4.3.10 Link Fail Options	4-12
4.3.11 QMux Enable / Set Channel	4-14
4.3.12 QMux Status	4-15
4.3.13 QMux Link Alarms.....	4-16
4.3.14 Filter Settings.....	4-17
4.3.15 Upload Programs	4-19
4.3.16 IDM Configurations.....	4-20
5 Operation.....	5-1
5.1 Normal Operation	5-1
5.2 Off-Normal Operation.....	5-2
5.2.1 Zones	5-2
5.2.2 AC Failure	5-2
5.2.3 Battery Faults.....	5-2
5.2.4 Tamper.....	5-3
6 Testing the System.....	6-1

7 Maintenance	7-1
7.1 Recommended Maintenance	7-1
7.2 Battery Maintenance and Replacement	7-1

List of Figures

Figure 2-1, Digitize MeshSentry II Radio System	2-1
Figure 2-2, Digitize MeshSentry Transceiver	2-2
Figure 2-3, MeshSentry Transceiver with antennas.	2-3
Figure 2-4, MeshSentry Supervised Power Supply / Charger	2-3
Figure 2-5, Typical MeshSentry II Power Supply Configuration	2-4
Figure 2-6, Inputs and Outputs for MeshSentry Power Supply	2-5
Figure 2-7, Optional Qnode Controller	2-6
Figure 2-8, MeshSentry II Power Supply with Optional Qnode Controller installed.	2-7
Figure 2-9, Octal RS-485 Interface Board	2-7
Figure 2-10, MeshSentry II Power Supply w/ Optional Octal RS-485 Interface installed.	2-8
Figure 4-1, PoE Surge Protector Board	4-3
Figure 4-2, VersAlarm Controller Board	4-4
Figure 4-3, VersAlarm Login Screen	4-6
Figure 4-4, Opening Screen	4-6
Figure 4-5, Network Options Page	4-7
Figure 4-6, Group Text	4-8
Figure 4-7, Receiving Hosts	4-9
Figure 4-8, On Board Zone Configurations	4-10
Figure 4-9, On Board Zone Status	4-11
Figure 4-10, Link Fail Options	4-12
Figure 4-11, QMux Enable / Set Channel	4-14
Figure 4-12, QMux Status Page	4-15
Figure 4-13, QMux Link Alarms	4-16
Figure 4-14, Filter Settings	4-17
Figure 4-15, Upload Programs	4-19
Figure 4-16, Q-EOL & Q-IR connected to a MeshSentry II Panel via the T-Buss.	4-20
Figure 4-17, IDM Configuration	4-21

1 Introduction

1.1 Purpose

The purpose of this manual is to inform the user on how to install, test, operate, and maintain the **MeshSentry II Supervised Power Supply / Charger**.

Although the primary subject of this manual will be the **MeshSentry II Supervised Power Supply / Charger**, the manual will also provide some information on the System 3505 Prism Lx, Qnodes, MicroMux Interface and the entire Mesh Radio System.

To completely install a Digitize MeshSentry II Transceiver with antenna and the MeshSentry II Power Supply / Charger, the user may require the following additional manuals:

800356-0001 MeshSentry II System Installation Drawings

FireTide Installation Guide 7010(W) Mesh Node

FireTide HotPort Accessory and Antenna Install Guide

1.2 Scope

This document is intended as an introduction and tutorial on the installation and use of **MeshSentry II Supervised Power Supply / Charger**. The **MeshSentry II Supervised Power Supply / Charger** was designed specifically for Fire and Security applications, therefore most of the examples and exercises here also deal with these applications.

This manual assumes the reader has a background in electronics. Furthermore, this manual assumes the reader is familiar with Mesh Radio Systems, Fire panels, Ethernet interfaces and networks, and the Digitize System 3505 Prism Lx.

1.3 System Organization

The manual is broken down into seven major areas of discussion for the **MeshSentry II Supervised Power Supply / Charger** and other components of the MeshSentry System. They are:

- Introduction
- System Description
- Installation.
- Setup
- Operation
- Testing
- Maintenance

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2 Describing the System

Chapter 2, Describing the System will explain what a **MeshSentry II Supervised Power Supply / Charger** is, how it is connected, setup, and what type of information it reports.

2.1 Description of MeshSentry II Radio System

Digitize Wireless Mesh Ethernet Networks provide supervised wireless Ethernet communication between the System 3505 Prism Lx, Muxpad IIs, DGMs, QMux Qnodes, Remote Annunciators, other Digitize and non-Digitize IT products (such as CCTV Cameras and other IT devices), via a high-performance, encrypted, self-forming, self-healing, dual radio, wireless mesh network of Digitize MeshSentry II Alarm Transceivers. MeshSentry II Alarm Transceivers are comprised of a Wireless MeshSentry II Dual Radio Transceiver, Antennas and a MeshSentry II Supervised Power Supply / Charger.

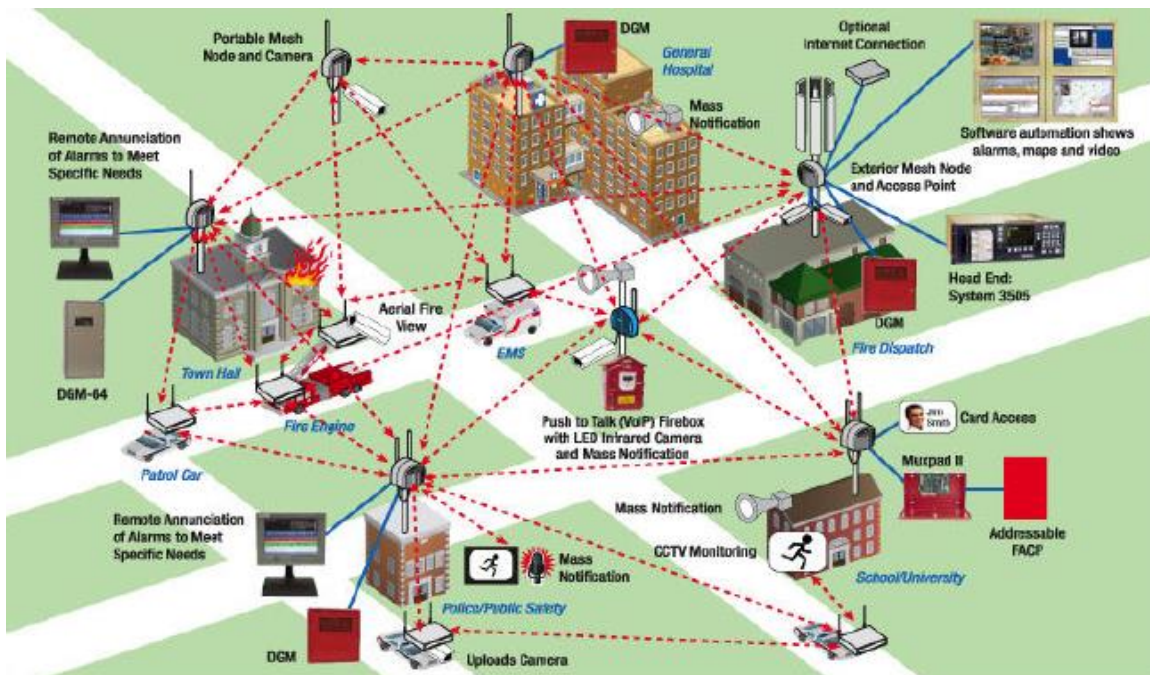


Figure 2-1, Digitize MeshSentry II Radio System

MeshSentry II Alarm Transceivers can be placed outdoors or onboard moving vehicles to provide reliable wireless Ethernet conductivity in most locations. All Digitize MeshSentry II Alarm Transceivers have multiple Ethernet ports for connecting IT network devices or other networks to a wireless mesh.

Digitize MeshSentry II Alarm Transceivers provide up to 54 Mbps throughput and operate at 2.4 GHz, 4.9 GHz (U.S. public safety licensed band), or 5 GHz. Nodes are equipped with dual radios, operating at 400 mW. Digitize Mesh Network networks provide end-to-end traffic encryption using 256 bit Advanced Encryption Standard.



Figure 2-2, Digitize MeshSentry Transceiver

The Digitize Mesh Network securely handles concurrent alarm, CCTV video, voice, and other data applications, making it ideal for military, government, municipal, public safety, campus and industrial networks. The mesh's self-forming and self-healing properties enable rapid deployment and dependable operation. Digitize Mesh Network routing protocol manages network load and traffic congestion to optimize mesh-wide performance and capacity.

2.2 Compatibility with the older MeshSentry Panels

The MeshSentry II Mesh Radio System is the 2nd generation of equipment for the Digitize Mesh Network. They are compatible and can communicate with all existing MeshSentry panels. The equipment components though (radios and panels) are not interchangeable because of the following items:

- The MeshSentry II Supervised Power Supply / Charger only interfaces with the Mesh Sentry II Mesh Radio. It cannot be connected to old mesh radios. The types of connections for power are different and not interchangeable. This will be explained in the next item in more detail.
- The MeshSentry II Mesh Radios are powered via PoE (Power over Ethernet). Port 1 on the radio not only transfers data via ethernet, it simultaneously carries power for the radio. The MeshSentry II Supervised Power Supply / Charger has been updated to provide this PoE power.

- Internal power in the MeshSentry II Supervised Power Supply / Charger, power to the VersAlarm and the PoE Ethernet Surge Protection Bd., is 24 vdc. In the 1st generation of panels, it was 12 vdc.



Figure 2-3, MeshSentry Transceiver with antennas.

2.3 Description of MeshSentry II Power Supply

The MeshSentry II Supervised Power Supply / Charger is a supervised power supply / battery backup designed to interface to and power the Digitize MeshSentry II

Alarm Transceivers. The MeshSentry II Supervised Power Supply / Charger is soon to be ETL approved and is ANSI 864 compliant. It comes with PoE Surge Suppression for 4 Ethernet connections for the external Mesh radio. Additionally, the panel also includes 5 EOL input zones available to be connected to equipment located in the same room.

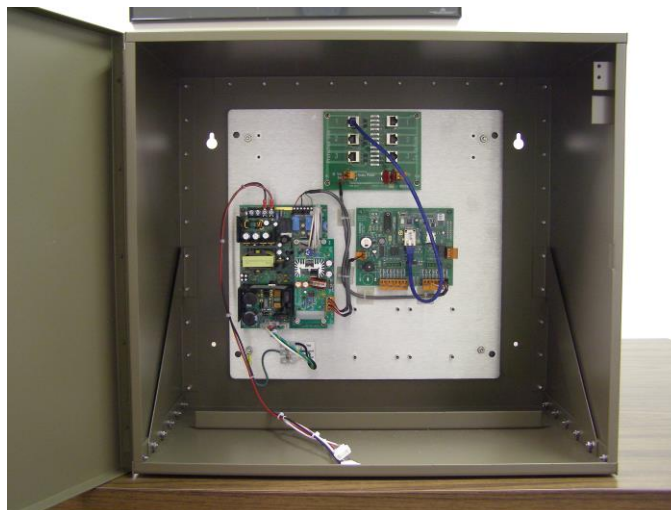


Figure 2-4, MeshSentry Supervised Power Supply / Charger

The Power Supply operates from 115/230 vac., 50/60 Hz. The output voltage from the power supply is 24 vdc. It operates and charges the batteries at 24vdc. Backup power is supplied from two 12-volt 75 amp hour sealed lead acid batteries, which connected in series, that provide up to 72 hours of backup operation. The batteries are stored in the power supply enclosure.

The MeshSentry II Power Supply is housed in a locking steel and aluminum enclosure measuring 22" wide x 12" deep x 20" high. The enclosure is painted brown.

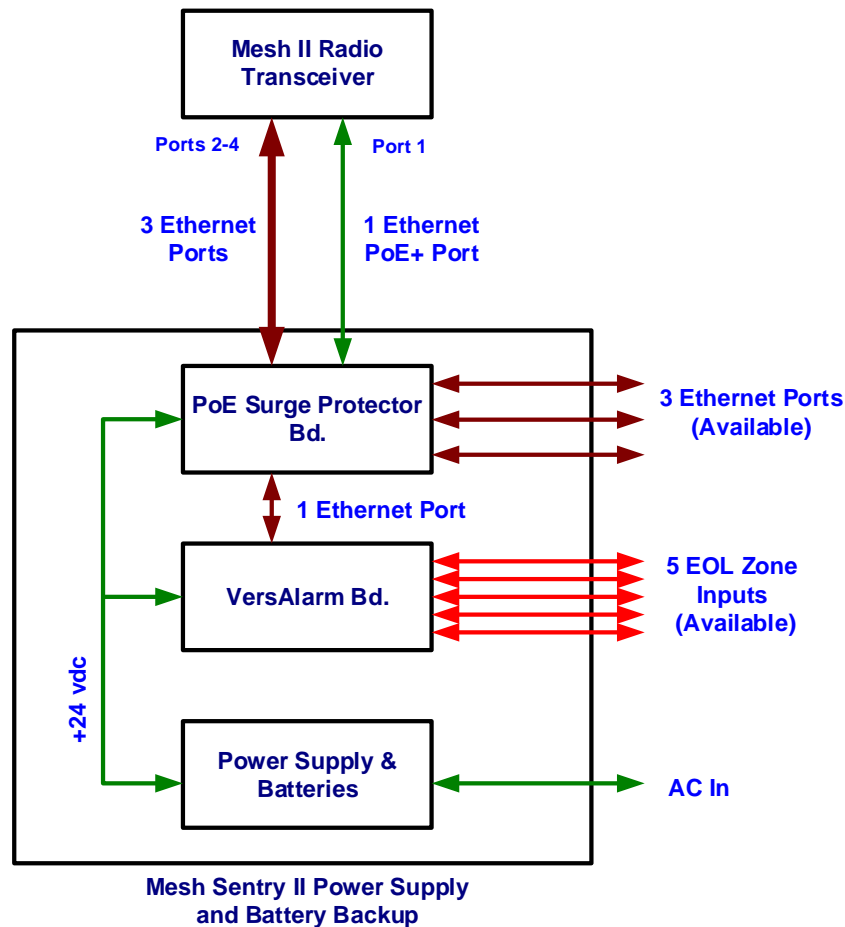


Figure 2-5, Typical MeshSentry II Power Supply Configuration

The MeshSentry II Supervised Power Supply / Charger can interface to a Digitize System 3505 Prism Lx or Digitize Remote Annunciator via the Digitize ALAN. The System 3505 Prism Lx or Remote Annunciator supervise the following signals from the MeshSentry II Power Supply:

- Ac Power Fail
- Low Battery or Missing Battery
- Tamper (or Door open)
- Link Failure

The panel reports the troubles via an Ethernet connection to the Mesh radio.

Four Ethernet connections from the Mesh Radio are routed through the PoE Ethernet Surge protector board inside the MeshSentry II Power Supply cabinet. The VersAlarm board in the Power Supply cabinet use one of the Ethernet connections and is connected to Port 1. Port 1 of the PoE Surge Ethernet Protection Board must be connected to Port 1 on the MeshSentry II radio as this connection also provides Power over Ethernet power to the MeshSentry II radio. The three remaining Ethernet connections are available for the user.

The standard configuration includes a power supply, VersAlarm pcb and PoE Ethernet Surge Protection board.

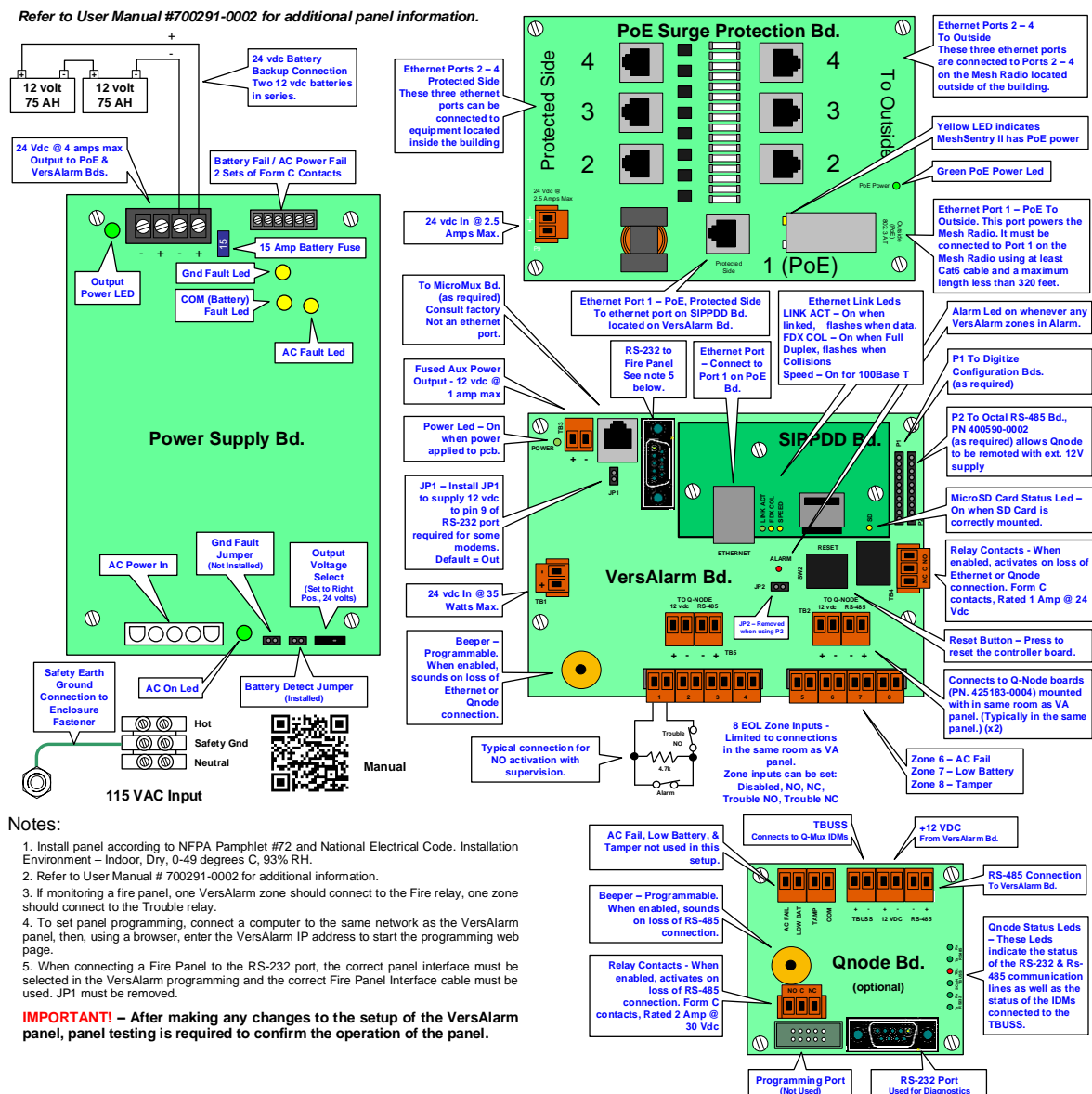


Figure 2-6, Inputs and Outputs for MeshSentry Power Supply

2.4 Optional Equipment

Optional equipment available for the MeshSentry II Supervised Power Supply / Charger include Qnode Controller Board, and Octal RS-485 Interface. Although each of the optional boards are described separately below, any combination can be added to a MeshSentry II Panel at one time.

2.4.1 Optional Qnode Controller Board:

The Qnode Controller Board can be installed inside the panel adding up to 99 input and relay output IDMs up to 5000 feet from the panel. The IDMs communicate with the Qnode controller via a pair of copper wires.



Figure 2-7, Optional Qnode Controller

Up to 32 additional external Qnode Controllers can be connected to the VersAlarm Board each capable of 99 IDM inputs and outputs.

For more information on the Qnode Controller and IDMs, see cut sheet 750273-0001 and manual 700226-0001.

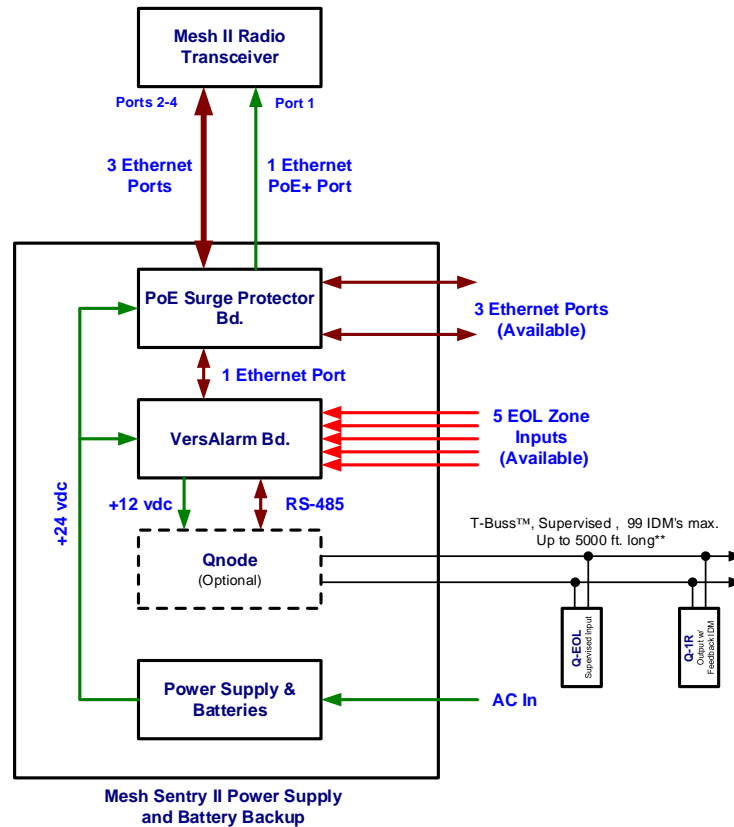


Figure 2-8, MeshSentry II Power Supply with Optional Qnode Controller installed.

2.4.2 Octal RS-485 Interface Board

One Octal RS-485 Interface board can be added to a Mesh Panel. The Octal board provides 8 isolated RS-485 channels for connection to external Qnode Controller Panels (see above). The benefit of the Octal RS-485 board is that an interruption of data on one channel (wire short for example) will not effect the remaining 7 seven channels.

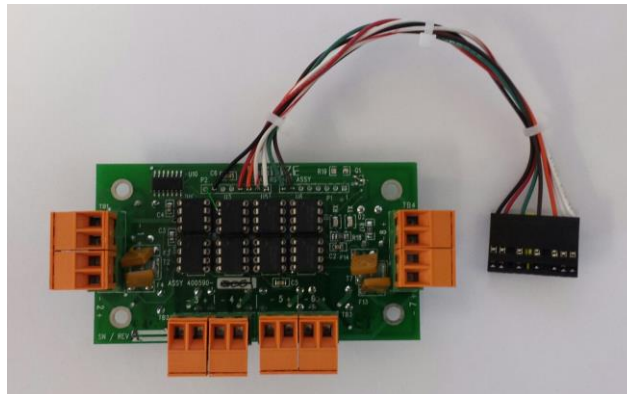


Figure 2-9, Octal RS-485 Interface Board

For more information on the Octal RS-485 Interface Board, see 750611-0001.

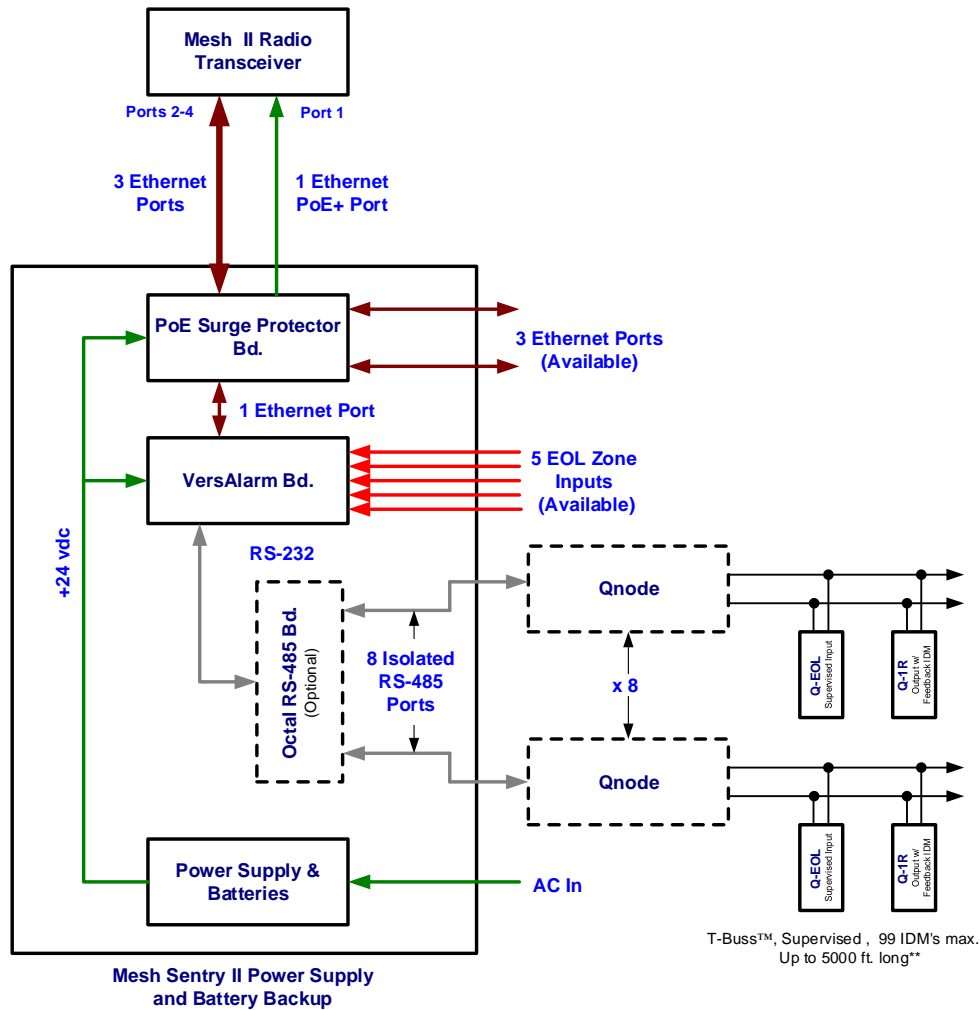


Figure 2-10, MeshSentry II Power Supply w/ Optional Octal RS-485 Interface installed.

2.5 Specifications

ELECTRICAL INPUTS

Input Voltage:	120 VAC or 230 VAC Nominal @ 50-60 Hz
Input Power:	170W Maximum
Input Current:	1.3 A maximum
Standby Load:	80 mA Maximum (plus output load including accessory boards)
Min. Battery Charger Capacity:	7 Amp hours (4-hour charge)
Max. Battery Charger Capacity:	80 Amp hours (48-hour charge)
Max. Battery Charge Current:	2A max at 24 VDC nominal
Standby Battery (BATT):	Two 12 Volt Sealed Lead Acid (Two connected in series for 24 vdc)
Standby Capacity:	Two 75 AMP Hour batteries connect in series for 24 vdc operation.

ELECTRICAL OUTPUTS

Output voltage:	24 VDC
Output power:	100 Watts total, 4 A @ 24 VDC
Fuse Ratings:	Battery: 15 A FAI Main Output: 10 A ATM: 7.5 A
Power Fault Detection:	Loss of AC or brownout Power supply output > 10% Over temperature condition Low battery voltage Blown battery or AC fuse No battery present
Power Supply Fault Reporting	AC Fault: Form C Contact, monitored by Zone 7 on VersAlarm Bd. Common Fault: Form C Contact, monitored by Zone 6 on VersAlarm Bd.

VISUAL INDICATORS

Power Supply Bd.	AC presence: Green LED, on when AC is connected to Panel. DC OK: Green LED, on when DC voltage at terminals. AC fault: Yellow LED, on when ac is absent from panel and panel is running in battery backup mode, Common fault Yellow LED, on when power supply detects a low or missing battery. Earth ground fault Yellow LED, on when the power supply detects a connection to earth ground.
VersAlarm Bd.	Power: Green LED, D1, on when board is powered. Alarm: Red LED, D12, on when any of the 8 EOL zone inputs is in Alarm.
VersAlarm Embedded Microcontroller Board (mounted on VersAlarm Board)	LINK/ACT: Green LED, displays Ethernet port link status. On when connected, flashes with Ethernet activity. FDX/COL: Yellow LED, Ethernet Port status, on for full-duplex connection, flashes if there are packet collisions. SPEED: Yellow LED, on for 100Base-T Ethernet connection. SD Card Status: Yellow Led, on when card is installed.
PoE Ethernet Surge Protection Bd.	PoE Power: Green LED, D6, on when connected to power supply. Mesh Radio Powered: Yellow LED, P8, on when radio connected and powered.

OUTPUTS

Relay:	Form C Contact rated 1 amp @ 24 volts dc, on the VersAlarm board, can be programmed to actuate on the loss of communication with System 3505 Prism Lx or Remote Annunciator.
Audible Indicator:	Audible indicator on the VersAlarm board can be programmed to annunciate (locally) the loss of communication with System 3505 Prism Lx or Remote Annunciator.

CONSTRUCTION

Dimensions:	Height: 20.0" Width: 22" Depth: 12.0"
Material:	Steel and Aluminum Enclosure, "Piano" style door hinge, and a baked enamel finish.

TEMPERATURE

Ambient Temperature Range:	0°C to 49°C (32°F to 120°F)
Ambient Humidity:	93% at 32°C (90°F) Maximum

3 Installation

Chapter 3, Installation will explain the steps to physically install a **MeshSentry II Supervised Power Supply / Charger**.

3.1 Handling

3.1.1 Unpacking and Inspection

Before opening, inspect the shipping container for unusual damage. Unpack the unit and inspect it for broken component leads and bent pins. Make sure each component is tight in its socket. If your inspection reveals any physical damage, retain the packing material and contact the carrier immediately. Each unit has been thoroughly inspected prior to shipment.



CAUTION!! DO NOT TOUCH the circuitry on the board during installation as static discharge may damage components.

3.2 Components that make up the Power Supply / Charger.

The following items are included with the MeshSentry II Supervised Power Supply / Charger:

1. Enclosure (Drop Shipped)
2. Electronics Panel
3. Tamper switch harness
4. Door Label
5. Enclosure door lock
6. Manual
7. Batteries (Drop Shipped)

3.3 Assembling the MeshSentry II Power Supply Panel.

Enclosure and batteries are shipped separate from the electronics panel and other items. The following steps are required to install the MeshSentry II Power Supply Panel:

1. Install the panel enclosure on a wall in close vicinity to the Mesh Radio transceiver. The installation area should be: well lit, clean, easily accessible and free from extremes of temperature and humidity. Installers, please refer to Section 2, under "TEMPERATURE AND HUMIDITY" for the maximum operating conditions. This product is intended for installation in a dry, indoor environment.
2. Install door lock on the enclosure door.
3. Install electronics panel inside the enclosure. Connect Earth Ground Strap from electronics panel to the enclosure.
4. Install tamper switch wire harness and connect to zone 8 on VersAlarm bd.
5. Adhere the door label to the enclosure door.

3.4 Wiring

CONDUIT CONNECTIONS

Connect all wiring conduit to the cabinet in accordance with applicable National Electric Code, State and Local building code requirements.

FIELD WIRING

Pull all power feeds and field wiring through separate conduit and into the cabinet. Never place the power feeds and field wiring in the same conduit. All field wiring must be tested for grounds, induced voltages, open and shorted circuits. All field wiring must be free of these conditions prior to connecting them to peripheral devices or the VersAlarm Bd.

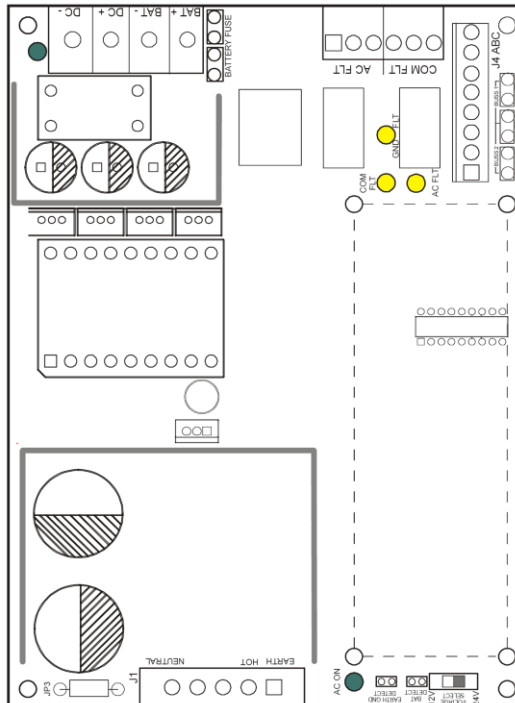
4 Setting up the System

Chapter 4, Setup will explain how to configure the options on the **MeshSentry II Supervised Power Supply / Charger**.

The standard **MeshSentry II Supervised Power Supply / Charger** is composed of three circuit boards. The Power Supply, the VersAlarm Bd, and the PoE Ethernet Surge Protection bd.

The PoE Ethernet Surge Protection Board does not require setting up. The Power Supply has some presetting of several jumpers and switches. Setting up the VersAlarm Bd requires a computer with an Ethernet connection and a web browser. The user should have administrative rights to the computer as it will probably require reassigning the IP address of the computer in order to connect to the VersAlarm board.

4.1 Power Supply



The Power Supply powers the Mesh Radio and the VersAlarm board. It also charges and maintains the batteries.

The power supply board is preset to the settings when assembled with a MeshSentry II Power Supply panel. The settings are:

120VAC Jumper (JP3) - JP3 sets the input voltage for the PS5-M. This jumper **MUST** be cut if a 230VAC input is to be used or damage **WILL** occur to the PS5-M

Default value: JP3 Installed

Earth Ground Detect (JP9) - JP9 selects whether Earth Ground Detection is enabled or disabled. Remove the jumper to disable Earth Ground Detection.

Default value: JP9 Removed

Bat Detect (JP10) - JP10 selects whether Battery Presence Detection is enabled or disabled. Remove the jumper to disable Battery Presence Detection

Default value: JP10 Installed

BUSS1 / BUSS2 (JP5 / 6 / 7) - Positioning of the fuse in this location determines whether the voltage from the PS5-M is applied to Buss 1 of the ABC connector, or Buss 2 of the ABC connector.

Default value: Fuse placed over BUSS1

Voltage Select (SW1) - This switch selects the output voltage. Setting the switch UP sets the output for 12VDC. Setting the switch DOWN sets the output for 24VDC. **REMOVE ALL POWER FROM THE PS5-M BEFORE CHANGING THIS SWITCH.**

Default value: Switch is in DOWN position for 24 vdc.

4.2 PoE Surge Protection Bd Setup

The PoE Surge Protection Bd is mounted at the top of the power supply enclosure. Its function is to protect the equipment inside the building that will be interfacing with the mesh radio installed outside the building. It has four protected Ethernet interface ports. Port #1 is special as it also provides PoE power to the Mesh radio mounted external to the building. It has a green LED (D6) to indicate that it is powered. A yellow LED located on P8 (the PoE connector to the mesh radio) will light to indicate the mesh radio is correctly being supplied with power.

The “Protected Side” of the PoE Surge Protection Bd is on the left side and should be connected to equipment installed inside the building. The “To Outside” side is on the right side of the pcb and connects to the mesh radio mounted external to the building.

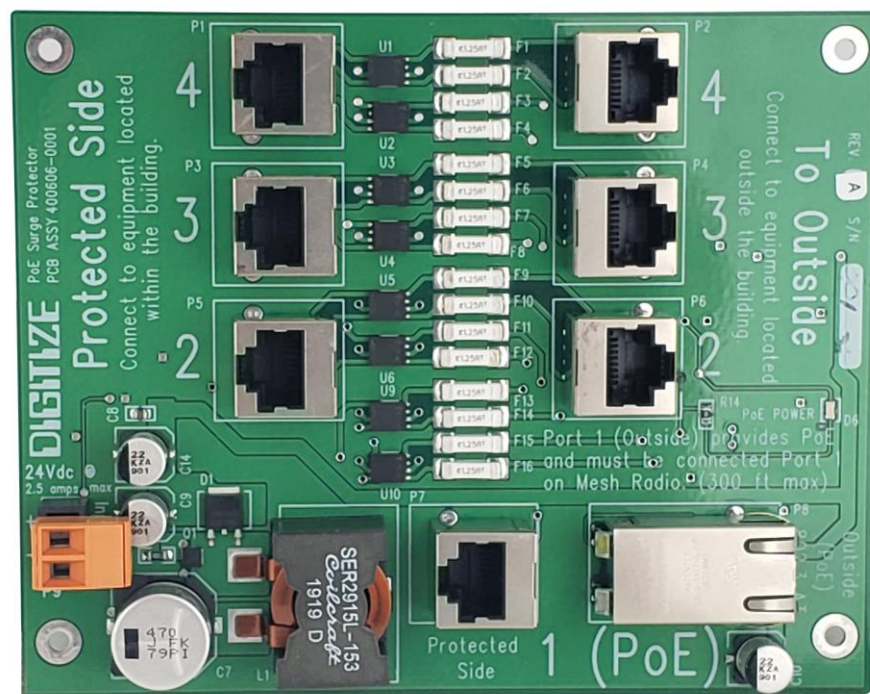


Figure 4-1, PoE Surge Protector Board

4.3 VersAlarm Bd Setup

Setting up the VersAlarm Bd requires a computer with an Ethernet connection and a web browser. The user should have administrative rights to the computer as it will probably require reassigning the IP address of the computer in order to connect to the VersAlarm board. Changing the settings on the VersAlarm Bd. can be performed in the presence of the panel or from some remote location that has access to the same network that the VersAlarm board is connected to.

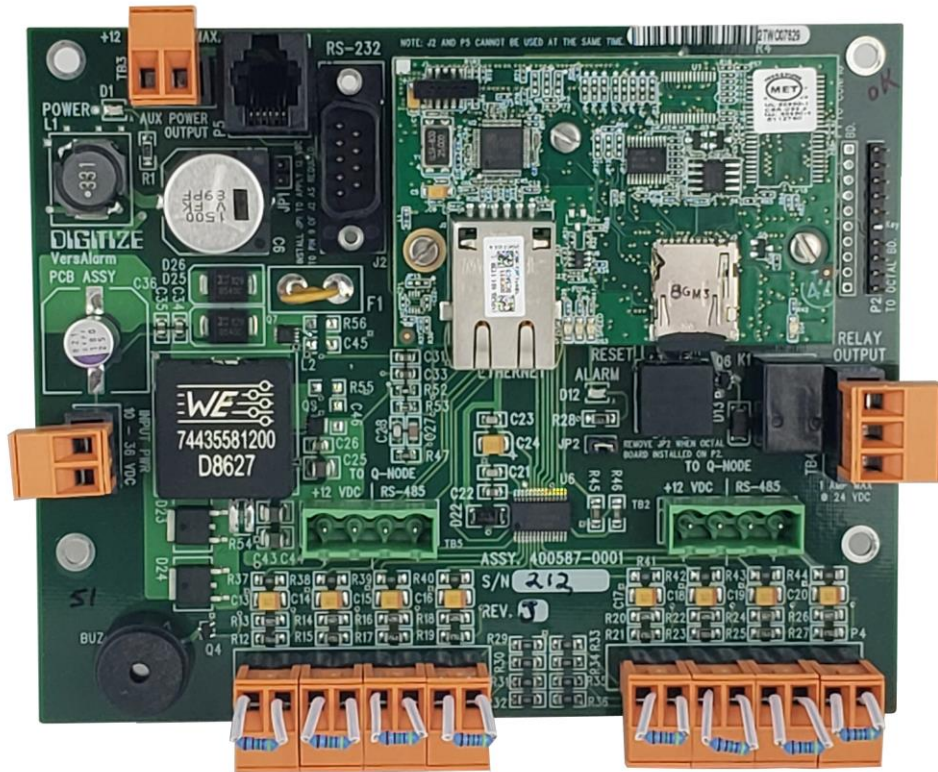


Figure 4-2, VersAlarm Controller Board

The following lists outlines the steps required to connect to and setup the VersAlarm Bd.:

1. Need to understand Ethernet connections and IP addresses.
2. Set computer to IP address on the same subnet as the VersAlarm board being programmed.
3. Connect to the network via a switch or connect directly to the VersAlarm panel by removing the Ethernet connector in the panel and replacing it with a crossover cable connected directly to your computer.
4. Connect to the VersAlarm Bd. via a web browser.
5. Login into the VersAlarm Bd.
6. Modify the settings in the VersAlarm.

4.3.1 Understanding Ethernet Connections and IP Addresses

It is paramount that you have a fundamental understanding of computer networks in order to perform the tasks outlined further in the chapter. You need to understand such terms as IP address, subnet mask, Ethernet switch, Cross Over cables, etc. You may also require the help of the IT personal or network administrator at the site for passwords and admission on to their networks.

4.3.2 Set Computer IP Address

1. The computer that is being used to program the VersAlarm panel must have an IP address that is on the same subnet as the VersAlarm panel. For example, the default IP address for the VersAlarm panel is 192.168.1.21. For the computer to communicate with the VersAlarm board it must have an IP address from 192.168.1.1 to 192.168.1.254, excluding 21 (already used by the VersAlarm board).
2. The computer that is being used to program the VersAlarm panel should have the same subnet mask as the VersAlarm panel. For example, the default subnet mask for the VersAlarm panel is 255.255.255.0. For the computer to communicate with the VersAlarm board it must have the same subnet mask.

4.3.3 Connect to the VersAlarm Bd.

There are two ways to connect your computer to the VersAlarm panel.

1. In person. Remove the Ethernet cable from the VersAlarm panel and connect a ethernet cable from the panel directly to your computer.
2. Remotely. You are going to connect to a network that has a connection to the VersAlarm panel and program the panel from a remote location. This one may be more involved and may require the assistance of the local network managers for gateway information, etc. This can be very beneficial when changing a large quantity of panels. Best if you confirm connections locally first, then try connecting remotely (At least for the first time).

4.3.4 Login into VersAlarm Bd.

Run your internet browser, then enter 192.168.1.21, then press Enter. Note: 192.168.1.21 is the typical default IP address. The IP address could also be set to some other value.

This will bring up the VersAlarm Board's login page. The factory default username is DIGI (all caps), and the default password is 2222.

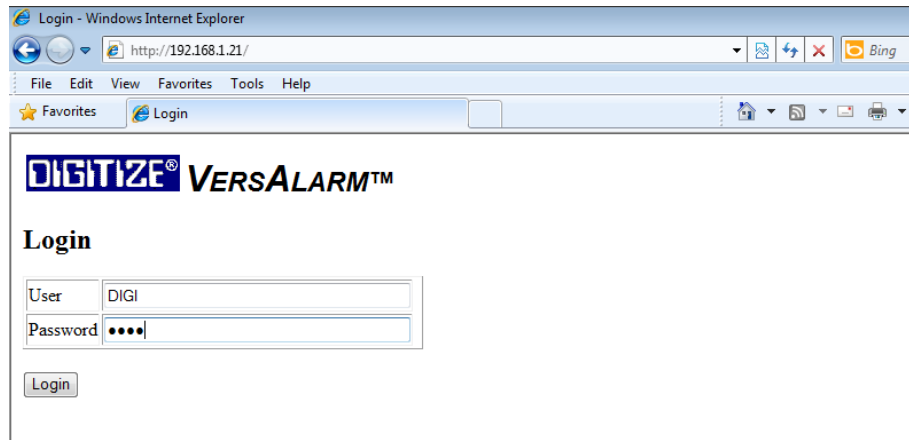


Figure 4-3, VersAlarm Login Screen

The screen should now open with the Index in the left column and the Network Options on the Main Screen as shown below.

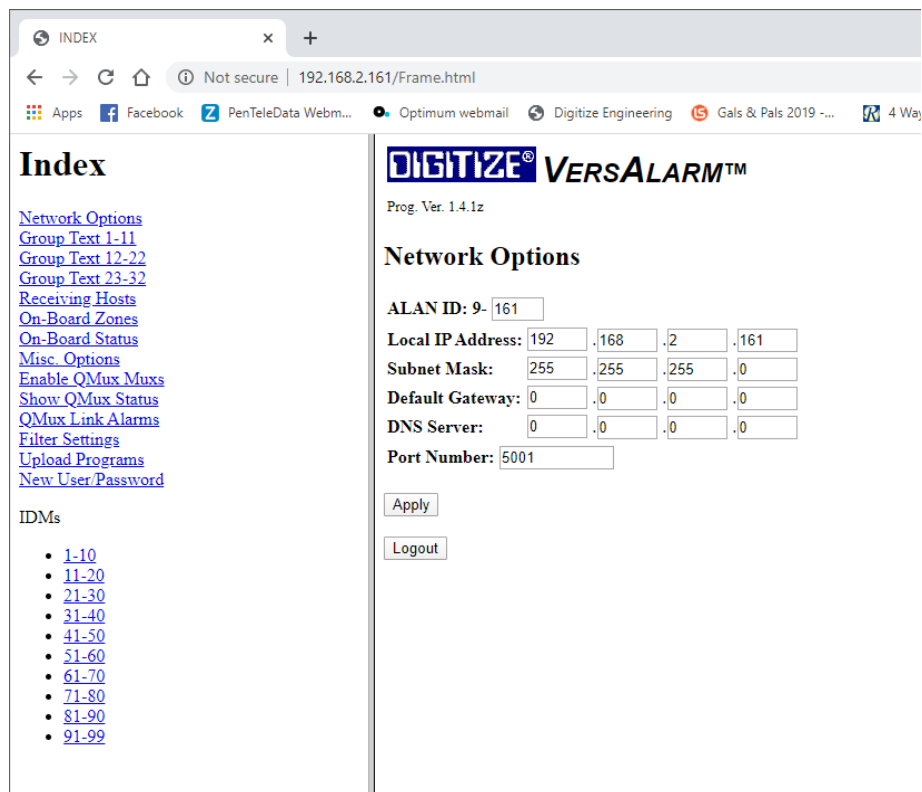


Figure 4-4, Opening Screen

The Index on the Left of the screen shows the list Topics that can be modified on the VersAlarm board. The following sections will cover these topics in detail.



Important! You need to know what the IP address is on the VersAlarm in order to connect and change and view settings. A tag is connected to the VersAlarm board when delivered from the factory with the IP address. If you do not know what the existing IP address is, contact the factory for the procedure to scan the IP number from the VersAlarm card.

4.3.5 Updating Network Options

The first selection on the Index is Network Options. Click on the link in the index and the following page will appear.

Figure 4-5, Network Options Page

As the title suggests, this page deals with all Ethernet settings necessary to get the VersAlarm communicating properly over the network it is connected to.



CAUTION!! You need to understand Ethernet networks in order to correctly program these settings correctly.

Local IP Address: This is the IP address for the VersAlarm panel.

Subnet Mask: This is the subnet mask for the VersAlarm panel.

Default Gateway: This is the Default gateway for the VersAlarm panel.

DNS Server: The DNS Server is not utilized for the VersAlarm panel as all IP addresses are static. This must be 0.0.0.0.

Port Number: All Digitize devices uses port 5001 as default. It should only be changed if this creates a conflict with the network being used. If it is modified, all of the Digitize devices on that network will have to have the new port number to communicate.

When all settings are complete, be sure to hit the **Apply** button before moving away from this page.

4.3.6 Updating Group Text

Group Text allows a user to enter messages that are used over and over in the panel into just one location and later when programming zone or IDM specific information to use a pull-down tab to point to the group text that applies, saving time and typing.

This is especially useful if the panel is monitoring several locations. Each of the location's information can be entered in a group text position, then be used over and over as zone specific information is entered in to the VersAlarm panel.

The screenshot shows the Digitize VersAlarm web interface. On the left is a sidebar with navigation links: [Index](#), [Network Options](#), [Group Text 1-11](#), [Group Text 12-22](#), [Group Text 23-32](#), [Receiving Hosts](#), [On-Board Zones](#), [On-Board Status](#), [Misc. Options](#), [Enable QMux Muxs](#), [Show QMux Status](#), [QMux Link Alarms](#), [Filter Settings](#), [Upload Programs](#), and [New User/Password](#). Below these are links for [IDMs](#) with ranges: 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, and 91-99.

The main content area is titled "DIGITIZE VERSALARM™". It features a "Panel Location Text" field with the value "VersAlarm Panel 3401 Walnut". Below this is the "Group Text" section, which contains a table with 11 rows. Each row has a "No." column and a "Text" column. The text entries are as follows:

No.	Text
1	Q-Node 9001 3401 Walnut 1st Floor
2	Q-Node 9002 3401 Walnut 2nd Floor
3	Q-Node 9003 3401 Walnut 3rd Floor
4	Q-Node 9004 3401 Walnut 4th Floor
5	Q-Node 9005 3401 Walnut 5th Floor
6	Q-Node 9006 3401 Walnut 6th Floor
7	Q-Node 9007 3401 Walnut 7th Floor
8	Q-Node 9008 3401 Walnut 8th Floor
9	Q-Node 9009 3401 Walnut 9th Floor
10	Q-Node 9010 3401 Walnut 10th Floor
11	Q-Node 9011 3401 Walnut 11th Floor

At the bottom of the form are "Apply" and "Logout" buttons.

Figure 4-6, Group Text

Panel Location Text: Enter the name of the location for the MeshSentry Panel. This will be included with any of the messages reported from the MeshSentry Panel when reporting to the System 3505 Prism Lx or Remote Annunciator.

Group Text: Enter up to 32 different Group Text messages.

When all settings are complete, be sure to hit the **Apply** button before moving away from this page.

Note: The 4-digit LAN ID 9xxx and Panel Text are populated in the Prism 41 Set menu.

4.3.7 Receiving Hosts

Any time the VersAlarm card has information to send out; it checks the list of Receiving Hosts. It can be setup that it sends the information out to all hosts on the list or programmed that it sends the information to the #1 position. If that host is down, it would then search down through the list looking for a host available to accept the information.

The screenshot shows a web browser window with the URL 192.168.2.161/Frame.html. The page title is "Index". On the left, there is a navigation menu with links: Network Options, Group Text 1-11, Group Text 12-22, Receiving Hosts, On-Board Zones, On-Board Status, Misc. Options, Enable QMux Mux, Show QMux Status, QMux Link Alarms, Filter Settings, Upload Programs, and New User/Password. Below these are "IDMs" with a list of ranges: 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, and 91-99. The main content area is titled "DIGITIZE® VERSALARM™" and "Recipients". It contains a table with 4 columns: No., IP Address/Host Name, Text ID, and A-LAN ID. The table has 10 rows. The first three rows are populated with data: Row 1: 192.168.2.126, Operations Control Center, 1851; Row 2: 192.168.2.127, Police Dispatch, 1852; Row 3: 192.168.2.128, Environmental Health & Safety, 1853. Rows 4 through 10 are empty. Below the table, there is a checkbox labeled "Addresses 2-10 are fallback recipients." which is checked. There are "Apply" and "Logout" buttons at the bottom.

No.	IP Address/Host Name	Text ID	A-LAN ID
1	192.168.2.126	Operations Control Center	1851
2	192.168.2.127	Police Dispatch	1852
3	192.168.2.128	Environmental Health & Safety	1853
4			
5			
6			
7			
8			
9			
10			

☒ Addresses 2-10 are fallback recipients.

Apply Logout

Figure 4-7, Receiving Hosts

Up to 10 receiving Hosts can be entered.

1. Enter the IP address of each A-LAN device (Receive Host) monitored by the VersAlarm Card.
2. Text ID: enter text that identifies the host associated with the IP address previously entered.
3. Check the box labeled "Addresses 2-10 are fallback recipients" to limit transmission to simply the first host on the list. The remaining Hosts will be fallbacks if the first Host is unavailable. Unchecked, all of the hosts will receive all of the messages sent from the VersAlarm board.
4. Click the Apply button to save the information entered.

4.3.8 On Board Zone Configurations

This page pertains to the 8 zones located on the VersAlarm board. Three of the zones (6, 7, & 8) are used to report AC Power Fault, Battery Fault and Tamper. Zones 1 to 5 are unused and available.

Config.	Text
01 Norm. Open	Fire Pull Station
02 Priority	Generic Text
FIRE	VersAlarm Panel 3401 Walnut
03 Norm. Open	Supervisory
FA SUPV.	VersAlarm Panel 3401 Walnut
Trouble N/O	NONE
04 FA SUPV.	VersAlarm Panel 3401 Walnut
Norm. Open	WATERFLOW
FIRE	Q-Node 9001 3401 Walnut 1st Floor
05 Disabled	Q-Node 9002 3401 Walnut 2nd Floor
FIRE	Q-Node 9003 3401 Walnut 3rd Floor
Trouble N/C	Q-Node 9004 3401 Walnut 4th Floor
FA SUPV.	Q-Node 9005 3401 Walnut 5th Floor
06 TROUBLE BATTERY	Q-Node 9006 3401 Walnut 6th Floor
Trouble N/C	Q-Node 9007 3401 Walnut 7th Floor
FA SUPV.	Q-Node 9008 3401 Walnut 8th Floor
07 TROUBLE AC FAIL	Q-Node 9009 3401 Walnut 9th Floor
Trouble N/C	Q-Node 9010 3401 Walnut 10th Floor
FA SUPV.	Q-Node 9011 3401 Walnut 11th Floor
08 TAMPER	Q-Node 9012 3401 Walnut 13th Floor
Trouble N/C	Q-Node 9013 3401 Walnut 13th Floor
FA SUPV.	Q-Node 9014 3401 Walnut 14th Floor
Trouble N/C	Q-Node 9015 3401 Walnut 15th Floor
FA SUPV.	Q-Node 9016 3401 Walnut 16th Floor
Trouble N/C	Q-Node 9017 3401 Walnut 17th Floor
FA SUPV.	Q-Node 9018 3401 Walnut 18th Floor

Figure 4-8, On Board Zone Configurations

Config - Zones are preset to be Disabled (except 6, 7, & 8). Use the pull-down tab to select if the zone is Disabled, Normally Open, or Normally Closed. Zones 6 (Battery Fault), Zone 7 (AC Power Fault), and Zone 8 (Tamper) are preset to Normally Closed.

Normally Open: The contacts that are being monitored are normally open and close when in an Alarm state.

Normally Closed: The contacts that are being monitored are normally closed and open when in an Alarm state

Text – Enter zone specific text information. This will be displayed on the System 3505 Prism Lx or Remote Annunciator when the zone is active.

Priority – There are 4 selections for the Zone Inputs. Normally Open, Normally Closed, Trouble Normally Open, and Trouble Normally closed.

Normally Open:	4.7K ohm Restore,	0 Ohm Alarm,	Open Trouble
Normally Closed	4.7K ohm Alarm,	0 Ohm Restore,	Open Trouble.
Trouble N/O	4.7K ohm Restore,	0 Ohm Trouble,	Open Trouble.
Trouble N/C	4.7K ohm Trouble,	0 Ohm Restore,	Open Trouble

Use the pull-down tab to select the Priority setting for the Zone. Zones with higher Priority settings will be annunciated at the Head End first over zones with lower Priorities.

Generic Text – Each On Board Zone can have any Generic Text message from the 32 Group Text or Panel Text messages. Use the pull-down tab to select Generic Zone Text (see section 4.3.6). When all settings are complete, be sure to hit the **Apply** button before moving away from this page.

4.3.9 On Board Zone Status

Show the current status on 8 zones on the VersAlarm board. Green indicates secure. Red indicates alarm. Yellow indicates trouble. Gray indicates the zone is Disabled.

This is a static page and will not automatically update the zone status. Click **Refresh** to update the page and zone status.

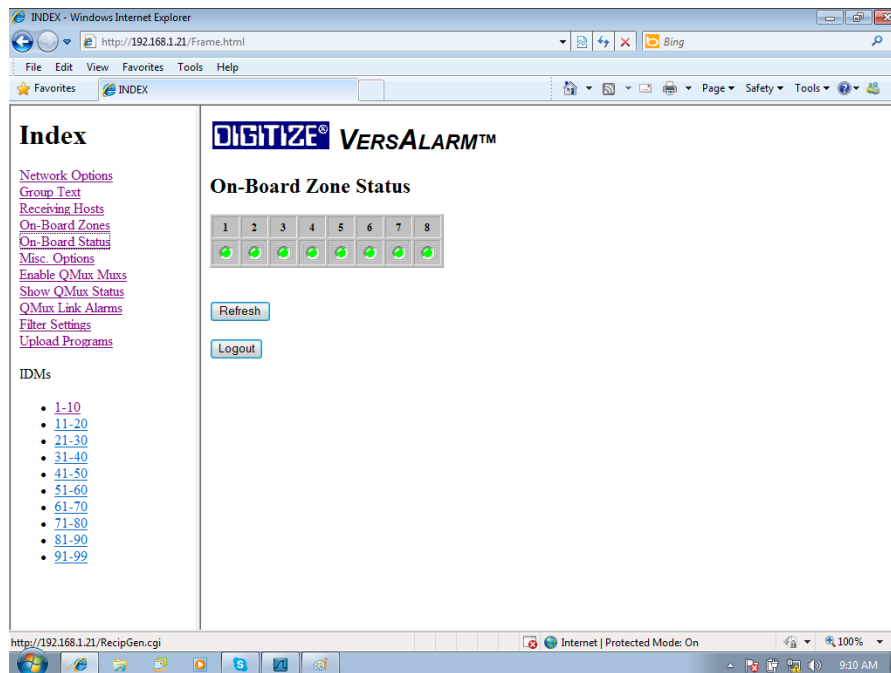


Figure 4-9, On Board Zone Status

4.3.10 Link Fail Options

This page programs how the VersAlarm board will react if communications with the System 3505 Prism Lx (or Remote Annunciator) is interrupted.

The screenshot shows a web browser window with the address bar displaying '192.168.2.161/Frame.html'. The page title is 'Index'. The left sidebar contains a menu with the following links: [Network Options](#), [Group Text 1-11](#), [Group Text 12-22](#), [Group Text 23-32](#), [Receiving Hosts](#), [On-Board Zones](#), [On-Board Status](#), [Misc. Options](#), [Enable QMux Muxs](#), [Show QMux Status](#), [QMux Link Alarms](#), [Filter Settings](#), [Upload Programs](#), and [New User/Password](#). Below these links is a section titled 'IDMs' with a list of links: [1-10](#), [11-20](#), [21-30](#), [31-40](#), [41-50](#), [51-60](#), [61-70](#), [71-80](#), [81-90](#), and [91-99](#). The main content area is titled 'DIGITIZE VERSALARM™' and 'Link Fail Options'. It contains the following settings:
☐ **Enable Buzzer**
☐ **Enable Relay**
Network Link Timeout (seconds):
QMux Link Timeout (seconds):
☒ **Break text into 24 character blocks on entry**
☐ **Enable MicroMux Connection**
☒ **Do updates at reset and reconnect**

Figure 4-10, Link Fail Options

Enable Buzzer: When selected, the buzzer will sound when communications have been interrupted longer than the Link Timeout.

Enable Relay: When selected, the relay will activate when communications have been interrupted longer than the Link Timeout.

Link Timeout: The time (in seconds) that must elapse with no communications before the panel declares a Communication Failure.

Enable MicroMux Connection: This is selected when an optional MicroMux board is installed in the MeshSentry Panel.

When all settings are complete, be sure to hit the **Apply** button before moving away from this page.

QMux Link Timeout is now in seconds.

If comm. is lost to a QNode, the VersAlarm will report the QNode link down to the Prism at the time specified.

Break text into 24 character blocks on entry

When checked, the VersAlarm breaks text entries into 24 character widths so as to fit better in the Prism 24 x 2 display format.

Do updates at reset and reconnect. When checked, the VersAlarm will resend all active conditions to the Prism when it is reset or when communication has been down and is restored.

4.3.11 QMux Enable / Set Channel

This page is used to enable QMux nodes connected to the MeshSentry Panel and select how they will communicate with the VersAlarm card. This list includes all QMux Nodes connected to the VersAlarm card both inside the MeshSentry panel and external panels.

The screenshot shows a web browser window titled "INDEX - Windows Internet Explorer" with the address bar showing "http://192.168.1.21/Frame.html". The page has a navigation menu on the left with links: [Network Options](#), [Group Text](#), [Receiving Hosts](#), [On-Board Zones](#), [On-Board Status](#), [Misc. Options](#), [Enable QMux Muxs](#), [Show QMux Status](#), [QMux Link Alarms](#), [Filter Settings](#), and [Upload Programs](#). Below these is a section for "IDMs" with a list of ranges: 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, and 91-99. The main content area is titled "DIGITIZE® VERSALARM™" and "QMux Enable/Set Channel". It contains a 4x8 grid of 32 dropdown menus, each labeled with a number from 1 to 32 and currently set to "NONE". Below the grid are "Apply" and "Logout" buttons.

1	NONE	2	NONE	3	NONE	4	NONE
5	NONE	6	NONE	7	NONE	8	NONE
9	NONE	10	NONE	11	NONE	12	NONE
13	NONE	14	NONE	15	NONE	16	NONE
17	NONE	18	NONE	19	NONE	20	NONE
21	NONE	22	NONE	23	NONE	24	NONE
25	NONE	26	NONE	27	NONE	28	NONE
29	NONE	30	NONE	31	NONE	32	NONE

Apply

Logout

Figure 4-11, QMux Enable / Set Channel

Default setting for all is None. Select the pull-down handle for the QMux installed.

None – QMux not installed.

Port 0 – Selected if Octal RS-485 Interface card not installed.

Channel 1 - 8 – Selected when Octal RS-485 Interface card installed. Select which channel the QMux Node is connected through.

When all settings are complete, be sure to hit the **Apply** button before moving away from this page.

4.3.12 QMux Status

This page displays the current status of a QMux Node.

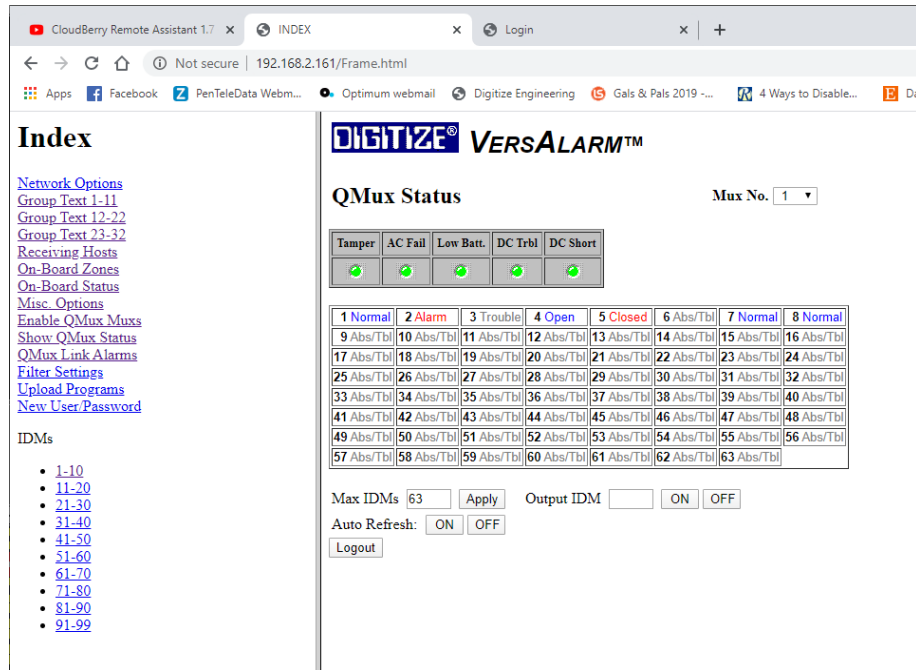


Figure 4-12, QMux Status Page

Select the QMux Node that you wish to view using the “Mux No.” pull down tab. This display will show the status of the selected Node. Green indicates OK (Secure), Yellow indicates Trouble.

DC Trbl – Indicates a low voltage situation detected on the TBUSS, possibly wires to long or too many IDM devices on the wire. The IDMs may still be communicating.

DC Short – Indicates a short has been detected on the TBUSS and must be corrected for the IDMs to communicate.

Max IDMs – Enter the highest number assigned to a IDM connected to the QMux Node, then hit Apply. The page will then display the status of the IDMs connected to the QMux. Figure 4-12 shows the status of 63 IDMs.

Output IDM – Enter the number of an IDM that is installed and has output capability, then select On or OFF to turn that output on and off.

Normal is secure. Closed means the contacts being monitored are closed. Trouble indicates the IDMs are in trouble and require attention. Abs/Tbl means the IDM is not installed.

Normal = IDM Enabled and EOL installed
Alarm = IDM Enabled and input shorted.

Trouble = IDM Enabled and EOL missing
 Open = IDM Disabled but IDM installed and EOL installed.
 Closed = IDM Disabled but IDM installed and input shorted.
 Abs/Tbl = IDM Disabled and no IDM installed.

There is a new selection “Auto Refresh” with 2 buttons [On] and [Off].

If you select On, this VersAlarm web page continues to refresh about every 1.5 seconds. If you are testing changing states on any input, it will reflect a change in state. When done, suggest turning it Off.

Alternately you can select another screen in the left column and return to this page to display changes in states

4.3.13 QMux Link Alarms

This page describes how a QMux Node will react locally to Communication Link failures with the VersAlarm panel. If an interruption to communication to the VersAlarm panel exceeds the time programmed in the Link Timeout, the QMux may enable a local beeper or relay contact, if selected.

Note: IDMs that are programmed to flash an Led will stop flashing when the communication between the Qnode and the VersAlarm panel is interrupted.

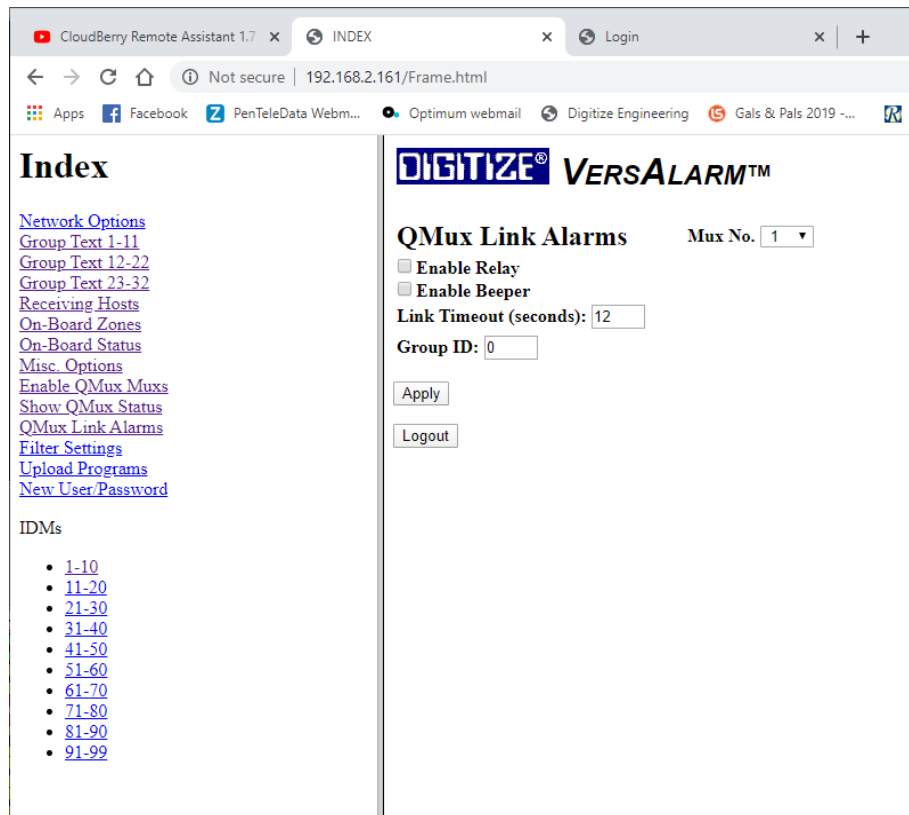


Figure 4-13, QMux Link Alarms

Select the QMux Node that you wish to view using the “Mux No.” pull down tab.

Enable Relay: When selected the relay will activate when communications have been interrupted longer than the Link Timeout.

Enable Beeper: When selected the beeper will sound when communications have been interrupted longer than the Link Timeout.

Link Timeout: The time (in seconds) that must elapse with no communications before the panel declares a Communication Failure.

Group ID: Used for special applications. Leave it set to 0.

When all settings are complete, be sure to hit the **Apply** button before moving away from this page.

4.3.14 Filter Settings

This page displays the filter settings for the IDMs attached to a QMux Node. In some cases, an IDM could be monitoring a noisy contact or the TBUSS could be installed in an area with a large amount of induced noise. By adjusting the filter settings for a specific IDM, you can add extra “reads” that is required from that IDM before allowing it to report to the System 3505 Prism Lx.

INDEX - Windows Internet Explorer
http://192.168.1.21/Frame.html

INDEX

Index

- [Network Options](#)
- [Group Text](#)
- [Receiving Hosts](#)
- [On-Board Zones](#)
- [On-Board Status](#)
- [Misc. Options](#)
- [Enable QMux Muxs](#)
- [Show QMux Status](#)
- [QMux Link Alarms](#)
- [Filter Settings](#)
- [Upload Programs](#)

IDMs

- [1-10](#)
- [11-20](#)
- [21-30](#)
- [31-40](#)
- [41-50](#)
- [51-60](#)
- [61-70](#)
- [71-80](#)
- [81-90](#)
- [91-99](#)

DIGITIZE® VERSALARM™

Filter Settings Mux No.

1	0	2	0	3	0	4	0	5	0	6	0	7	0	8	0
9	0	10	0	11	0	12	0	13	0	14	0	15	0	16	0
17	0	18	0	19	0	20	0	21	0	22	0	23	0	24	0
25	0	26	0	27	0	28	0	29	0	30	0	31	0	32	0
33	0	34	0	35	0	36	0	37	0	38	0	39	0	40	0
41	0	42	0	43	0	44	0	45	0	46	0	47	0	48	0
49	0	50	0	51	0	52	0	53	0	54	0	55	0	56	0
57	0	58	0	59	0	60	0	61	0	62	0	63	0		

Max IDMs

Figure 4-14, Filter Settings

Select the QMux Node that you wish to view using the “Mux No.” pull down tab.

Max IDMs – Enter the highest number assigned to a IDM connected to the QMux Node, then hit Apply. The page will then display the Filter Setting status of the IDMs connected to the QMux.

Each IDM is polled and controlled in 1.6 mSec, however it takes a minimum of three polls to detect a change of state or to activate a relay. Thus allowing some dead time at the end of each poll cycle, if you have 60 IDM devices in a poll, you can poll and control each IDM connected to the node ten times in one second. More IDMs will poll less times in one second and fewer IDM will poll more times per second. You should keep this in mind when setting the filter selection. The factory default of “0” actually requires that the Qnode poll the IDM three times with the same state prior to changing the state of the device. Likewise turning a relay ON, requires three polls in the same desired state. Relay activation is not affected by the filter setting. The ON or OFF command always takes three consistent polls to change the relay or O.C Transistor output. A filter setting of 1 requires 8 polls, 2 equals 16 polls and so on to a maximum setting of 15 for 120 polls.

The default value for all IDMs is 0. Enter a number from 0 to 15. 0 represents the least number of reads and the quickest response to a change in the IDM status. 15 represents the highest number of reads (guaranteeing a true status change), but the slowest response to the change in IDM status.

When all settings are complete, be sure to hit the **Apply Filters** button before moving away from this page.

4.3.15 Upload Programs

This section explains the procedure for uploading new firmware into the VersAlarm board.

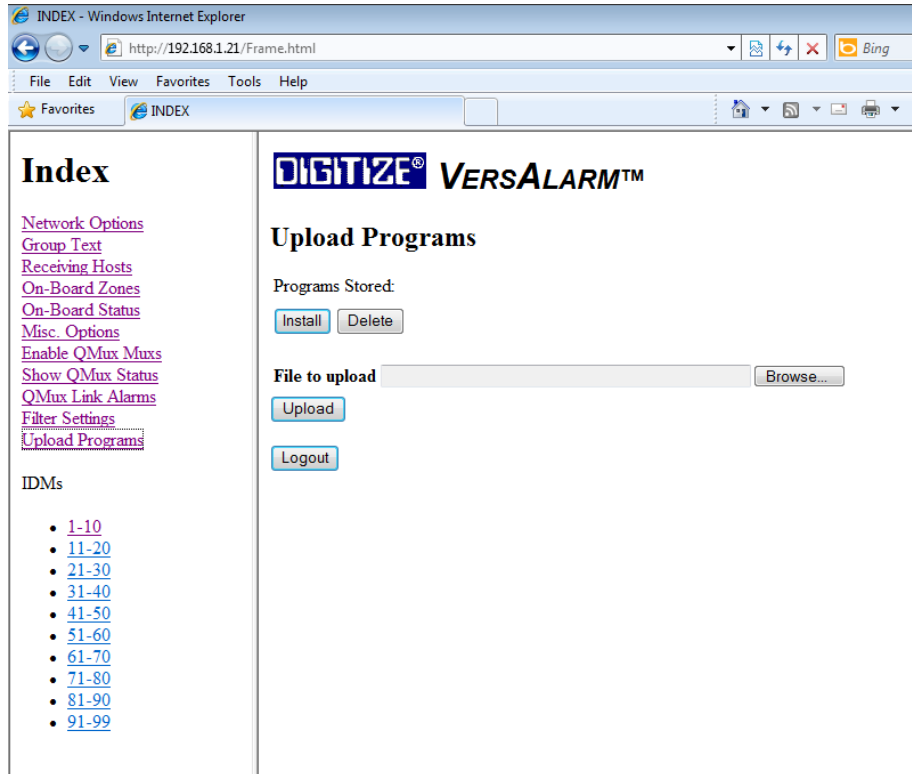


Figure 4-15, Upload Programs

As with most all computer operated devices, there may come a time that a new version of the firmware that runs the VersAlarm card is released by Digitize. The following procedure explains how to successfully update the firmware:

1. Load the firmware file received from Digitize onto the computer that will be connected to the VersAlarm card.
2. Connect to the VersAlarm via the Ethernet, login and navigate to the Upload programs page.
3. Click on Browse and point to the new firmware file, then click on Upload. The new file will be transferred to the VersAlarm card and displayed in the section titled "Programs Stored".
4. Select the new file and click on Install. The VersAlarm card will go offline for up to 30 seconds as it installs the firmware and reboots.

5. After the VersAlarm card reboots, the user will be required to re-login into the VersAlarm card to continue to configure the panel.

4.3.16 IDM Configurations

The IDMs configurations are maintained on this page. All of the IDMs connected to all of the QMux Nodes are maintained and updated on this page. When an IDM is added to the system, it needs to be configured as the default setting for IDMs is disabled.

Some background on IDMs, TBUSS, and Qnodes:

IDMs – ID modules are placed remotely in the field and communicate over a pair of wires (TBUSS) with a Q-Mux Node controller. The IDM's are powered by the same wires it uses to communicate. Many different types of ID modules are available with both input and output capabilities. The Q-Mux system is designed so that as many 99 IDM's can be connected on the same pair of wires (TBUSS).

For more information and details concerning the QMux components that be connected to a MeshSentry panel, see manual #700226-000, Q-Mux System Manual.

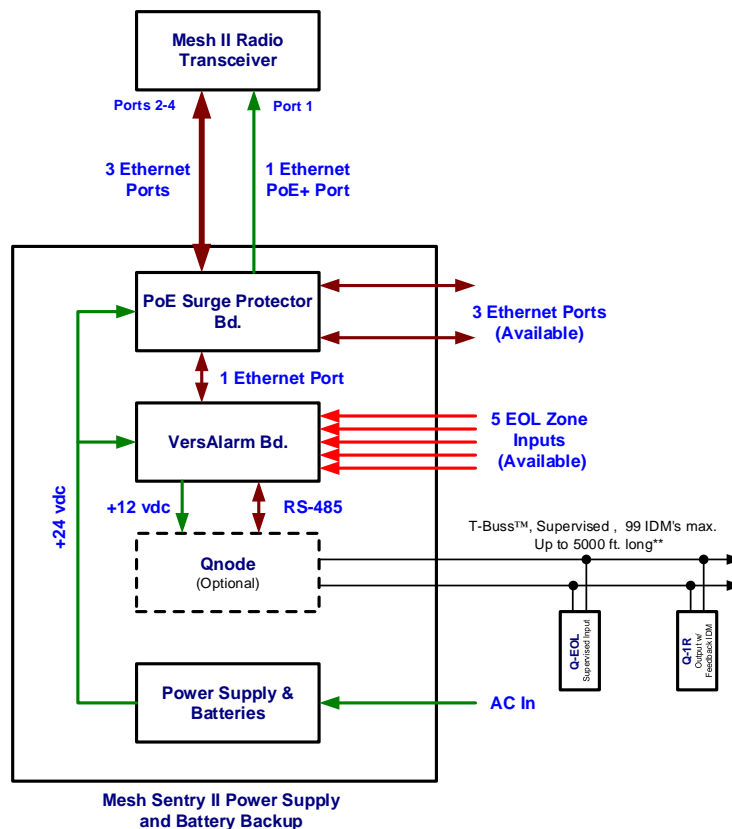


Figure 4-16, Q-EOL & Q-1R connected to a MeshSentry II Panel via the T-Buss.

Index

[Network Options](#)
[Group Text 1-11](#)
[Group Text 12-22](#)
[Group Text 23-32](#)
[Receiving Hosts](#)
[On-Board Zones](#)
[On-Board Status](#)
[Misc. Options](#)
[Enable QMux Muxs](#)
[Show QMux Status](#)
[QMux Link Alarms](#)
[Filter Settings](#)
[Upload Programs](#)
[New User/Password](#)

IDMs

- 1-10
- 11-20
- 21-30
- 31-40
- 41-50
- 51-60
- 61-70
- 71-80
- 81-90
- 91-99

DIGITIZE® VERSALARM™

IDM Configuration Mux No. 1

Config.	Text
01 Norm. Open ▼	General Fire Alarm
01 Priority ▼	Generic Text
01 FIRE ▼	Q-Node 9001 3401 Walnut 1st Floor
02 Norm. Open ▼	Pull Station
02 FIRE ▼	NONE
03 Disabled ▼	NONE
03 FIRE ▼	VersAlarm Panel 3401 Walnut
04 Disabled ▼	Q-Node 9001 3401 Walnut 1st Floor
04 FIRE ▼	Q-Node 9002 3401 Walnut 2nd Floor
05 Disabled ▼	Q-Node 9003 3401 Walnut 3rd Floor
05 FIRE ▼	Q-Node 9004 3401 Walnut 4th Floor
06 Disabled ▼	Q-Node 9005 3401 Walnut 5th Floor
06 FIRE ▼	Q-Node 9006 3401 Walnut 6th Floor
07 Disabled ▼	Q-Node 9007 3401 Walnut 7th Floor
07 FIRE ▼	Q-Node 9008 3401 Walnut 8th Floor
08 Disabled ▼	Q-Node 9009 3401 Walnut 9th Floor
08 FIRE ▼	Q-Node 9010 3401 Walnut 10th Floor
09 Disabled ▼	Q-Node 9011 3401 Walnut 11th Floor
09 FIRE ▼	Q-Node 9012 3401 Walnut 13th Floor
10 Disabled ▼	Q-Node 9013 3401 Walnut 13th Floor
10 FIRE ▼	Q-Node 9014 3401 Walnut 14th Floor
	Q-Node 9015 3401 Walnut 15th Floor
	Q-Node 9016 3401 Walnut 16th Floor
	Q-Node 9017 3401 Walnut 17th Floor
	Q-Node 9018 3401 Walnut 18th Floor
	NONE
	NONE
	NONE

Apply
Logout

Figure 4-17, IDM Configuration

The default setting for all IDMs is Disabled. Any IDM installed on the system will require the following setup.

Select the QMux Node that you wish to view using the “Mux No.” pull down tab.

Config - IDMs are preset to be Disabled. Use the pull-down tab to select if the IDM is Disabled, Normally Open, Normally Closed, Trouble N/O, Trouble N/C, Relay, or latching IDM.

Text – Enter IDM specific text information. This will be displayed on the System 3505 Prism Lx or Remote Annunciator when the IDM is active.

Priority – Use the pull-down tab to select the Priority setting for the IDM. IDMs with higher Priority settings will be annunciated at the Head End first over IDMs with lower Priorities.

Generic Text – Use the pull-down tab to select Generic Zone Text (see section 4.3.6).

When all settings are complete, be sure to hit the **Apply** button before moving away from this page.

This page is intentionally blank.

5 Operation

Chapter 6, Operation covers how the MeshSentry II Panel operates during normal and non-normal situations.

5.1 Normal Operation

During normal quiescent operation, the MeshSentry II Power Supply will be operating on AC Power. The Power Supply will provide the power for the mesh radio and simultaneously provide power for maintaining the charge on the batteries.

The Ethernet port on the VersAlarm bd. will be connected to the mesh radio through the PoE Ethernet Surge Protector bd. The VersAlarm will maintain continuous supervised communication with the Remote Annunciator or System 3505 Prism Lx.

The following leds will be on:

AC ON (Power Supply, D19, lower middle) Indicates that AC Power is connected to the power supply.

DC OK (Power Supply, D15, upper left corner)

POWER (VersAlarm Bd., D1, Green)

LINK/ACT (VersAlarm Embedded Controller bd., Green, Should flash when data being transferred.)

FDX/COL (VersAlarm Embedded Controller bd., Yellow)

SPEED (VersAlarm Embedded Controller bd., Yellow, Depends on Ethernet connection.)

SD Card Status (VersAlarm Embedded Controller bd., Yellow)

PoE Power (PoE Ethernet Surge Protection Bd, D6, Green)

Mesh Radio Powered (PoE Ethernet Surge Protection Bd., P8, Yellow)

5.2 Off-Normal Operation

5.2.1 Zones

Zones 1 through 5 on the VersAlarm card are available to the end user. Each of the zones is supervised through a 4.7k ohm EOL resistor. If any of these zones are enabled and are placed in Alarm (shorted) condition, the VersAlarm bd will turn on the red Alarm LED and report the Alarm condition to the Remote Annunciator or System 3505 Prism Lx. If the zone is placed in a Trouble (open) condition, the VersAlarm will report the Trouble.

The Alarm or Trouble will remain on the Remote Annunciator or System 3505 Prism Lx until the condition is cleared and the zone restored to a Secure (Normal) Condition.

5.2.2 AC Failure

During an AC power failure, the Power supply panel will power the mesh radio from the pair of 75 Amp Hour batteries for a minimum of 72 hours. (This depends on the condition and age of the batteries.) The panel will send an AC Failure signal to the Remote Annunciator via the Ethernet connection.

The AC ON LED will be turned off and the AC FLT LED will be on.

When AC Power is restored, the panel will begin to recharge the batteries and send a restoral signal to the Remote Annunciator that that AC Failure no longer exists.

5.2.3 Battery Faults

The following conditions will signal the panel to send a battery fault condition to the Remote Annunciator:

- Low or Missing battery

- High Battery voltage

- Blown Battery Fuse

- Reversed Battery

- Internal Power Supply Fault.

The panel will send a Battery Fault signal to the Remote Annunciator via the Ethernet connection.

The Com FLT LED will be on.

When Battery Fault is corrected, the panel will send a restoral signal to the Remote Annunciator that that Battery Fault no longer exists.

5.2.4 Tamper

The Tamper switch is located on the upper right corner of the enclosure.

When the enclosure door is opened, the panel will send a Tamper Signal to the Remote Annunciator.

When the enclosure door is closed, the panel will send a Tamper Restoral Signal.

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6 Testing the System

Chapter 6, Testing the System covers the steps for testing the MeshSentry II Power Supply to confirm it is functioning properly.

It is recommended that the entire system should be completely tested after the MeshSentry Power Supply is installed and placed into service. This test should at a minimum include:

- Confirm that the MeshSentry cabinet and electronics are properly connected to earth (safety) ground.
- Confirm the MeshSentry Power Supply and the Mesh Radio are connected correctly.
- Confirming all wire connections are proper and tight.
- Confirm the MeshSentry II Power Supply and the System 3505 Prism Lx or Remote Annunciator is communicating properly, and the System 3505 Prism Lx or RA is clear of all trouble messages.
- Confirm that the System 3505 Prism Lx is displaying the Alarm or Trouble Messages properly by manually activating each condition.
- Confirm that the MeshSentry II Power Supply properly switches to battery backup when AC Power is removed.
- Confirm that disconnecting the VersAlarm panel from the System 3505 Prism Lx or RA causes the 3505 or RA to report a "Connection Down" condition.



The User must verify that the System 3505 Prism Lx provides the proper display of the Alarm and Trouble events. If an automation system is used, proper operation should be verified at the automation system as well.

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7 Maintenance

Chapter 7, Maintenance covers the issues for maintaining the MeshSentry II Power Supply.

7.1 Recommended Maintenance

The MeshSentry II Power Supply should be tested periodically per the local codes.

It is recommended that at a minimum, the panel should be visited at least once a year to confirm its proper operation which would include:

- Confirming the leds are all functioning.
- Confirming all wire connections are proper and tight.
- The panel is locked and secured properly.

No other maintenance is required.

7.2 Battery Maintenance and Replacement

The MeshSentry Power Supply is shipped with two 12-volt, 75 Amp Hour sealed Lead Acid batteries.

Expected life of the MeshSentry batteries can be as long as five years. The life of a battery is dependant on a number of criteria which include but are not limited to:

- The temperature where the battery is located.
- The number of times the battery has discharged then recharged.
- Whether the battery was allowed to completely discharge (deep discharge) and how long it was allowed to remain that way before it is recharged.
- Whether the battery was ever overcharged.

Digitize recommends that the batteries be replaced every four years.

Batteries should be tested per the battery manufacturer's specification to confirm that it has sufficient capacity to operate the MeshSentry Power Supply for a minimum of 72 hours of Standby.

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