RADIUS CLIENT INTERFACE MODULE

For OmniOn Power NE843E Pulsar Plus Controller

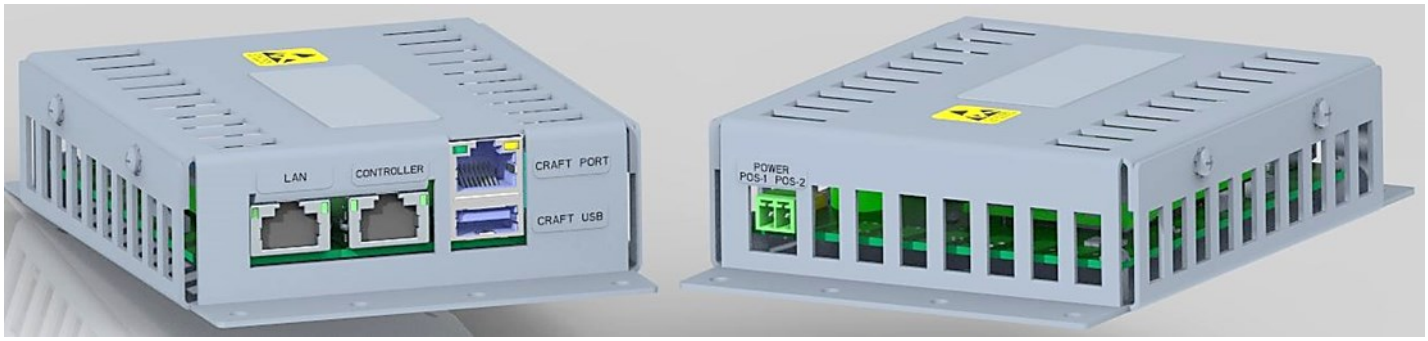

Figure 1: 1600482623A RADIUS Client Module

This Quick Start Guide provides installation information for the RADIUS Client (RC) product option that can be added to an existing Infinity NES-M Systems to allow it to participate in a company's RADIUS Authentication process. The new device is a RADIUS Client module which will be used by the OmniOn Power NE843E Pulsar Plus controller to obtain defined system user credentials to allow access to the power system controller over the network. This new RADIUS Client will connect to the RADIUS Server over the network and authenticate whether a specific user can access the OmniOn Power controller. The permission results will be shared with the OmniOn Power controller so that the user desiring connection will be managed appropriately.

The RADIUS Client module mounts onto the door when operating with a Pulsar Plus in an Infinity M system. There are two basic configurations for the Infinity M system. The H5692448G222, G212 and H5692448G223, G213. Both groups will utilize the same RADIUS Client module and basic connections and configuration to mount the module onto its respective distribution door.

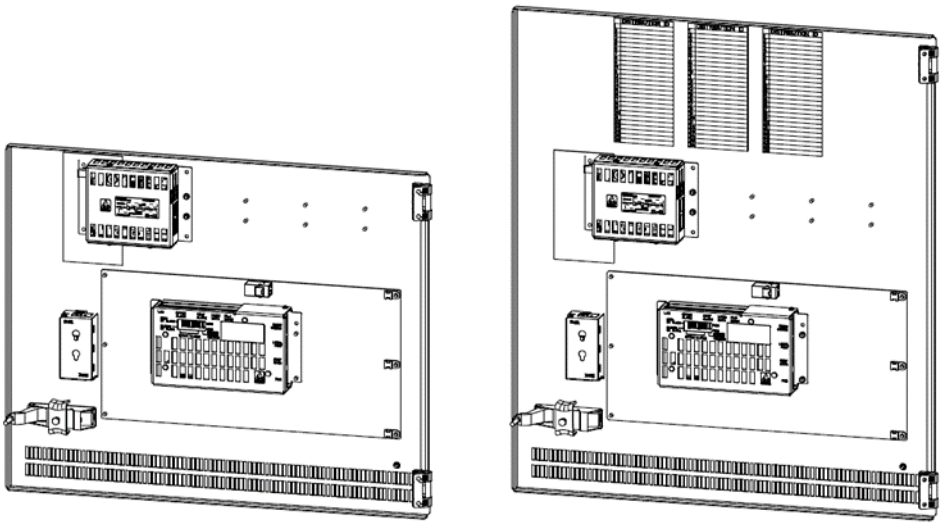

Figure 2: H5692448G222, 212 and H5692448G223, 213

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Tools Required:

- Calibrated torque wrench (0-10 in-lbs.)
- Wire cutters and strippers
- Screwdriver (#1 Phillips)
- Screwdriver (#1 Flat)
- Tools should be insulated

Kit Required:

The following are the items in the 1600483856A INFINITY NE-M RADIUS Kit

No.	Ordering code	Name	Quantity
	1600483856A	Infinity NE-M RADIUS Kit	
1	1600482623A	GCS5 RADIUS Module (box)	1
2	402244081	WP91717 L1 Cable Tie	5
3	450048379	TB 1850660 Front-MC 1,5/2-ST-3,81 Pluggable 8A 300V 2-POS	1
4	4600481536P	Coupler Modular Jack RJ45 8P8C CAT5E Unshielded	1
5	8600482600P	GCS5 RADIUS Network Cable	2
6	8600483852P	RADIUS Client Pulsar Plus Quick Start Guide	1
7	8600483855P	Infinity NE RADIUS Client Power Wire set	1
8	900633504	Nut Hex Lock #6-32 Steel Zinc-Clear	2
9	CC408577571	Screw Tap #12-24 Hex WSH Hex SL STEEL Zinc-Clear	4

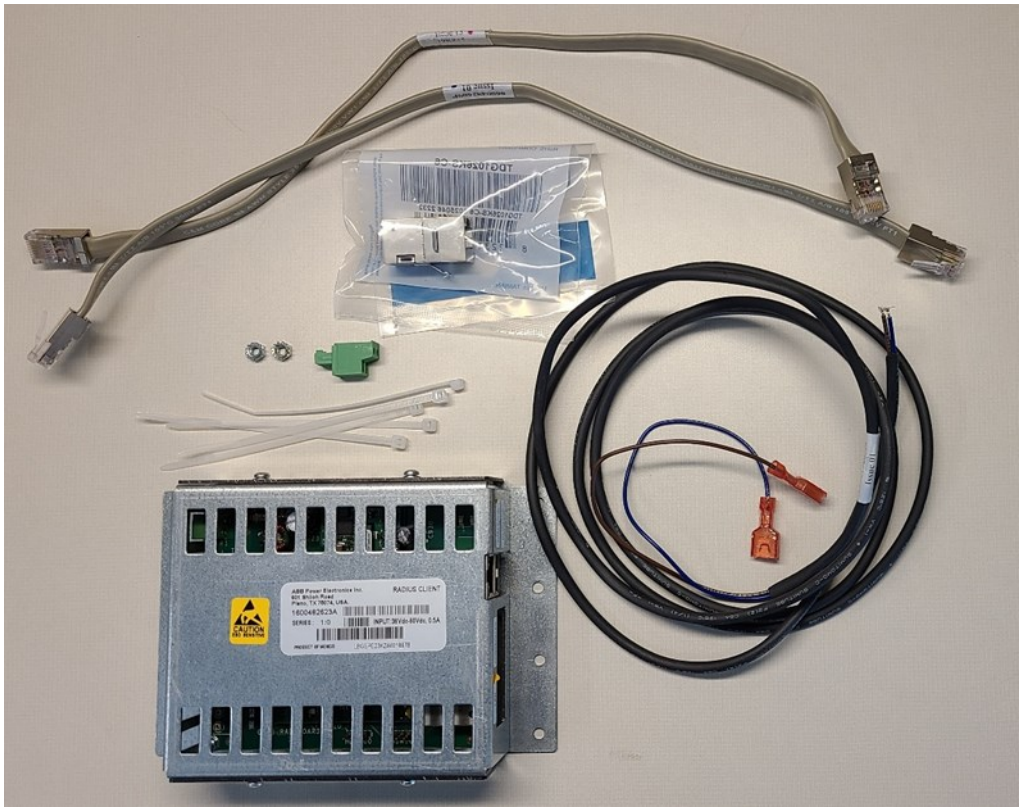

Figure 3: Pulsar Plus RADIUS Client Kit For Infinity Systems

Network Information Required:

The following are the network parameters required by the customer's administrator or appropriate person to complete the configuration of the Pulsar Plus NE843E and RADIUS Client.

- Pulsar Plus NE843E: Static IP Address, Network Mask, RADIUS Client IP Address.
- RADIUS Client: RADIUS Client IP Address, Network Mask, RADIUS Server IP Address, RADIUS Server Communication Port Number, and RADIUS Server Secret.

Step 1 – Install The RADIUS Client Into The Infinity NES- M Systems Using The Last Option Space For The RPM Shunt Monitoring Module (G600A)

There are a variety of Infinity NE-M systems with different configurations and features that house the NE843E Pulsar Plus. The RADIUS Client module will attach to the Infinity NE-M distribution door using locations reserved for the Remote Peripheral Modules that are utilized with the Millennium 2 controller and not the Pulsar Plus. DC input power for the RADIUS Client is required and will be provided from locations in the Infinity System. Although there are other options or methods of applying power to this module that can be used, this document describes using components in the provided kit and the available Faston on locations located in the system's DC bus work for this power connection.

These Faston locations are in two primary areas on these different vintages of Infinity NE-M systems. They are located on the primary internal busbars. Some of these Fastons can be accessed from the front of the system while others are available are located at the rear of the system and must be accessed from that position. Examples of both common locations will be shown in the following instructions. It is assumed there is user accessibility to the front or rear of these systems. If access is not available to the Fastons located to the rear of the cabinet, then an alternate location for obtaining this power will have to be pursed. This may include using an available breaker positions or bolting directly to the buswork from the front of the cabinet. Contact the 24/7 technical support line if assistance is required in using an alternative connection route.

1. If the Pulsar Plus NE843E controller is already installed and powered in the field, follow all standard and appropriate installation protocols for working with the controller in a live power system. This should include the added steps of covering any exposed connector pins and exposed busway or contacts with non-conductive material for additional safety or working in the maintenance window when deemed necessary.
2. The Infinity NE-M systems have mounting standoffs integrated into its distribution door. Locate the last two chassis standoffs located on the top left side of the door or any other position that may be available or convenient. Position the chassis of the RADIUS Client module such that Input Power (Terminal Block) is facing to the left. In Infinity systems with larger doors, it may be better to install in a vertical position to optimize cabling. Either way is acceptable. Align the two mounting holes of RADIUS Client Module to the standoffs and secure the chassis in place with the (2) 900633504 Nuts. Torque to 10 In-Lbs.

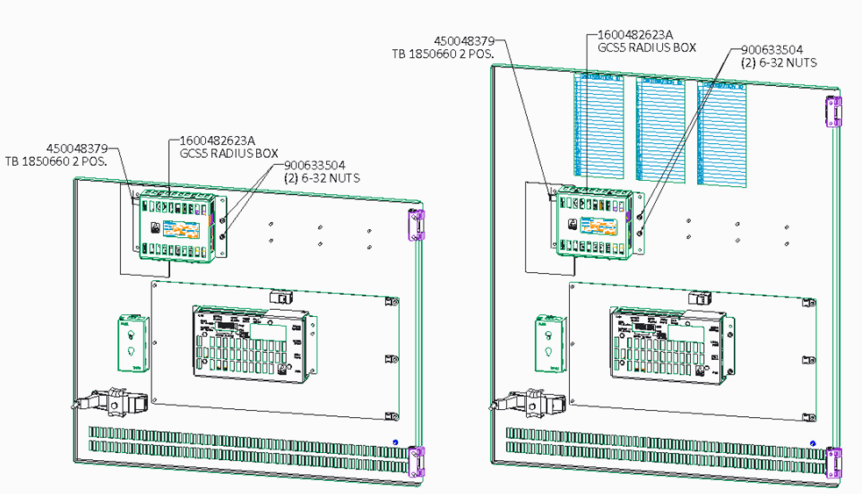

Figure 4: RADIUS Client Installed with Pulsar Plus Controller on Different Infinity-M Distribution Doors

Step 2 – Connecting Power And Network Cables To RADIUS Client Module

1. Obtain the two-position Terminal Block 1850660 mate from the kit.
2. The input power for the RADIUS Client module is brought into the module through this 1850660 2-position terminal block connection. Power can be conveniently obtained by connecting cable assembly 8600483855P to an appropriate and available power connection. The brown wire is the more positive lead and is connected to +48V/ 48V DC +, Return DC bus, and the blue wire is the more negative leads and is connected to the to -48V/ 48V DC -, negative/hot DC bus. These power cable wires will want to be carefully routed towards the distribution and rear of the Infinity NE-M and secured.
    a. Remove the brown wired insulation and secure the (+48V/ 48V DC + , Return) connection into terminal block position 1 of the input power terminal block. Position 1 is the position closest to the side of the module.
    b. Remove the blue wired insulation and secure the (-48V/ 48V DC -, negative/hot DC bus) connection into Terminal block position 2 of the input power terminal block. Position 2 is the position furthest from the side of the module.
    c. Temporarily secure in place somewhere on the door the terminal block to be plugged in later once the power connections are made to the DC bus.
    d. Locate the appropriate Faston locations on the system bus work that will be used to obtain power from the system to power the RADIUS Client. Front accessible Fastons are located towards the bottom of the distribution. Rear accessible Fastons are located at the rear near the bottom of the distribution. See Figures 5 and 7 for examples. Locations on the rear of the system will require removing panel covers to gain access to the connections. Carefully remove the panel covers as required. See figure 6.
    e. Using an appropriate meter, identify the correct polarity of the Faston locations.

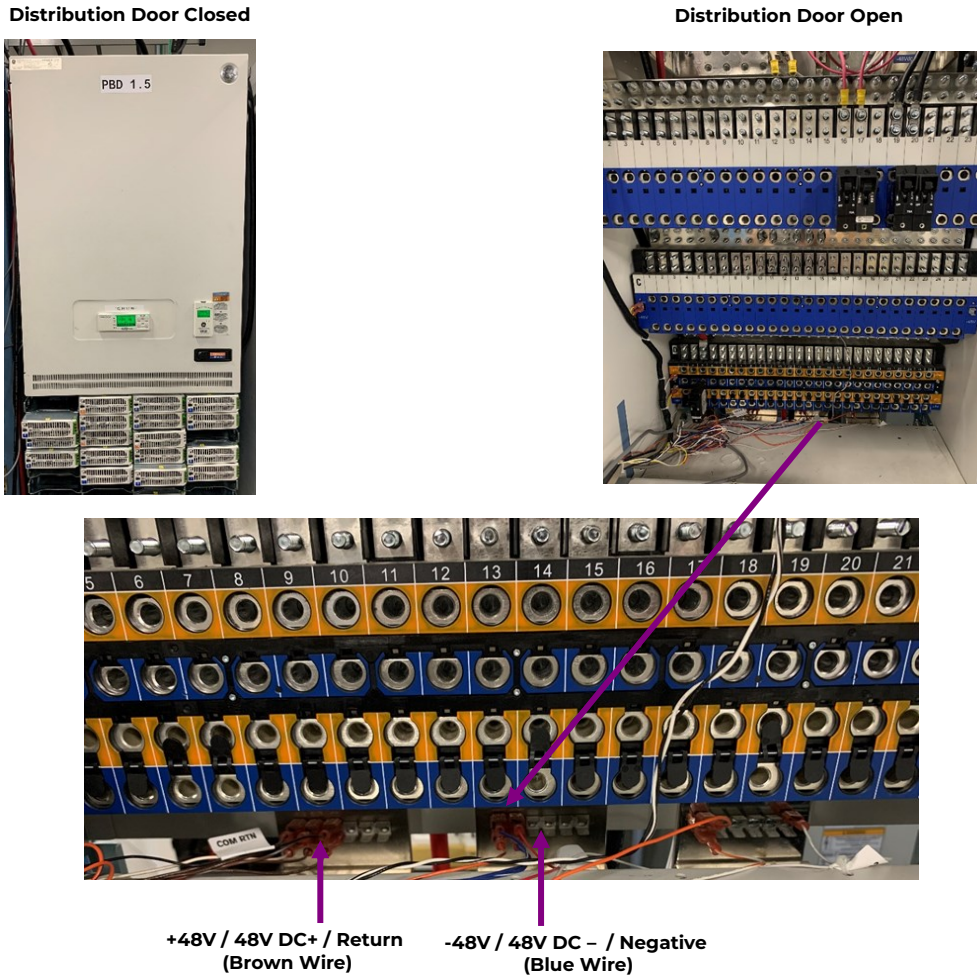

Figure 5: NE-M System With Front Accessible Fastons Example

Figure 6: NE-M System With Rear Accessible Fastons Examples

f. Carefully dress the power cable from the front side of the system and route it back towards the distribution Faston connections. The length of the power wires provided with the kit should be adequate to make the connection either to the front of the system or at the rear. The wires have the Fastons pre-attached to the end of the cable not inserted into the terminal block.

g. Plug-in the brown wire (+48V/ 48V DC + , Return) Faston to the appropriate power bus. Utilize insulated tools and appropriate technique and caution when making this connection.

h. Plug-in the blue wire (-48V/ 48V DC -, negative/hot DC bus) Faston to the appropriate power bus. Utilize insulated tools and appropriate technique and caution when making this connection.

i. Once both power wires are connected insert the terminal block mate back into the RADIUS Client. The RADIUS Client should now be receiving power and should be on. The unit should have its status LED illuminated red.

j. Dress and secure the power cabling.

k. Replace the rear covers, as necessary.

3. The RADIUS Client must now be physically connected to the NE843E Pulsar Plus. The Pulsar Plus software must be upgraded to account for the RADIUS Client. In addition, a couple of basic configurations are required.

a. Physical Connection

Connect the network cable 8600482600P provided from the RJ45 port labeled CONTROLLER of RADIUS Client to the J5 RJ45 LAN port of the Pulsar Plus controller as shown in Figure 7. If the Pulsar Plus controller is already connected to the site's internal network, remove the cable connection. The cable will be used in the next step.

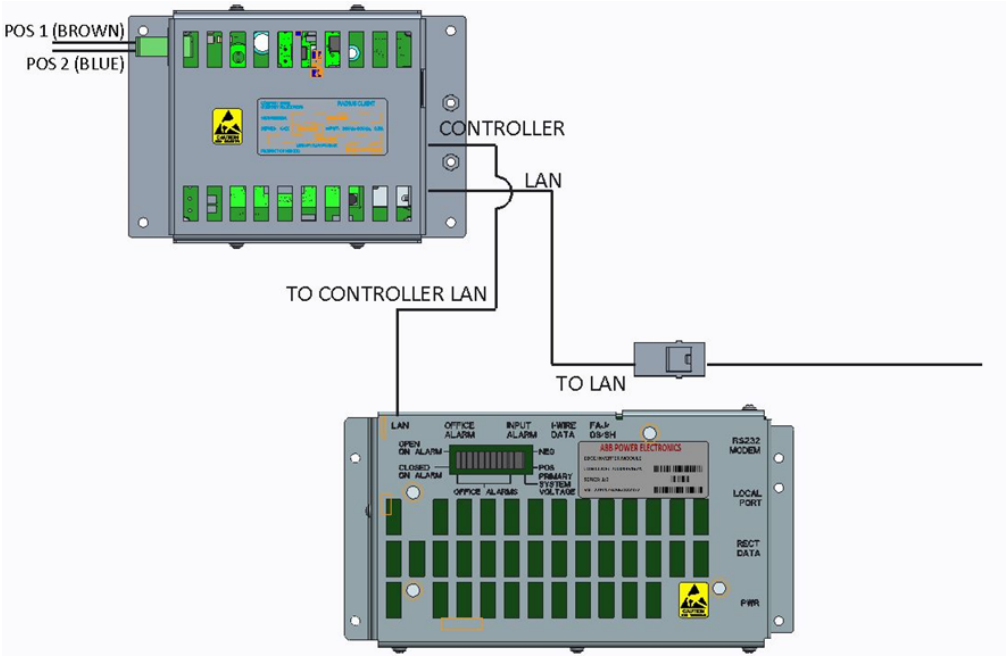

Figure 7: RADIUS Client Network Cable Connections With NE843E Pulsar Plus Controller

b. Software Upgrade And Configuration

The Pulsar Plus requires a small software enhancement to account for its interconnection with the RADIUS Client. Load the appropriate software 4.5.49 web and 4.5.47 application or later into the Galaxy NE843E Pulsar Plus controller. Once the software is loaded verify the code has been updated by looking at the screen (see below). Refresh the screen if necessary (CTRL F5). Contact 24/7 technical support to obtain the latest software or if there are any questions in this process.

Figure 8: Software Versions In Web

Once the new software is loaded into the NE843E Pulsar Plus the RADIUS Client IP Address must be set and the password must be configured to be of the “Username and Password” format.

Go to Settings > Communication and click on “Network”-. Enter the RADIUS Client IP Address provided into the field shown and save.

Note: The NE843E Pulsar Plus controller must be in “Static” network mode of operation and connected to the customer network to complete this step.

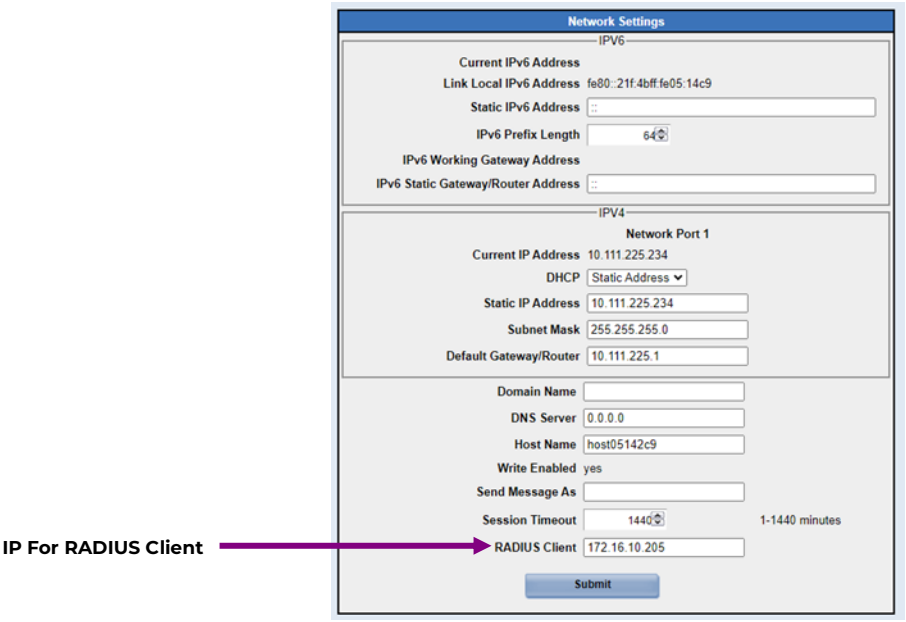

Figure 9: Configure RADIUS Client NE843E Pulsar Plus

Go to Settings > Communication and click on “Passwords”-. Select the “User Name” and Password” Login Method and save.

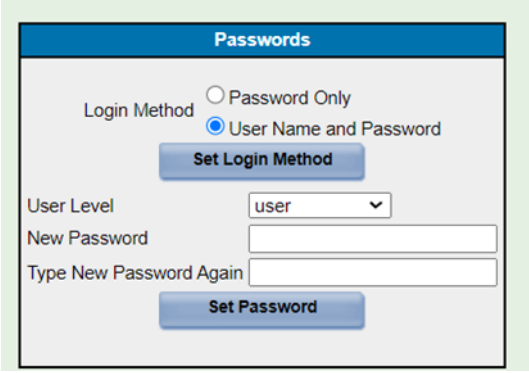

Figure 10: User Name And Password Login Method

4. Once the NE843E Pulsar Plus connections and configuration are complete, the RADIUS Client requires physical connection to the sites' network and configuration of specific parameters for the RADIUS Server connectivity.
    a. Physical Connection

If a site network connection was removed from the NE843E Pulsar Plus controller in step 2 check to see if the cable is long enough to extend back into NE843E Pulsar Plus and connect directly to the RJ45 LAN port on the RADIUS Client as shown in Figure 7. If it is, feel free to use this cable connection and bypass the use of the second network cable 8600482600P. If the cable is not long enough or does not exist, connect the second network cable 8600482600P to the RJ45 port marked LAN on the RADIUS Client and bring it out of the chassis as shown in Figure 7. The supplied 4600481536P coupler can be used to join a previous network cable if it was too short. If a new cable connection is available then the second 8600482600P can also be bypassed.

    b. Software Configuration

The RADIUS Client requires configuration for its specific IP address as well as the RADIUS Server. This configuration can be achieved by connecting your laptop directly to the Craft port of the RADIUS Client and using your standard web browser to access the configuration page supported by the RADIUS Client.

To access the RADIUS Client configuration page, enter **192.168.1.1** into the web browser. A screen like that below will appear. Fill out the RADIUS Client (IP Address, Network Mask) and RADIUS Server (IP Address, Port Number, Secret) information fields shown. Note: The RADIUS Client can have two RADIUS Server locations. Configuration items for only one RADIUS Server is required.

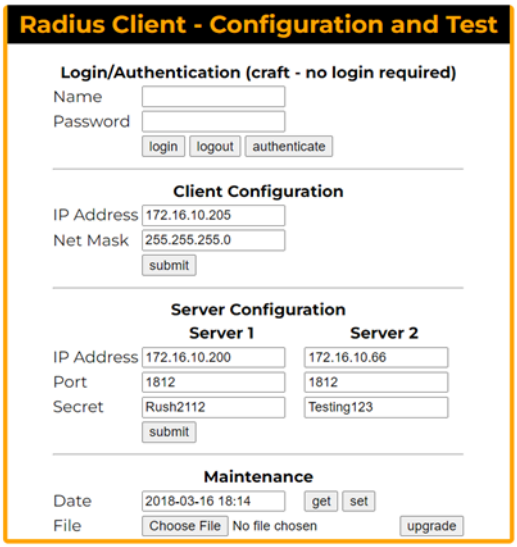

Figure 11: RADIUS Client Configuration Page

Specifications and Application

1. Specifications and ordering information are available at https://www.omnionpower.com/.
2. Equipment and subassembly ports:
    a. Are suitable for connection to intra-building or unexposed wiring or cabling.
    b. Can be connected to shielded intra-building cabling grounded at both ends.
3. Grounding / Bonding Network – Connect to an Isolated Ground Plane (Isolated Bonding Network) or an Integrated Ground Plane (Mesh-Bonding Network or Common Bonding Network).
4. Installation Environment - Install in Network Telecommunication Facilities, OSP, or where NEC applies.
5. Return may be either Isolated DC return (DC-I) or Common DC return (DC-C).

Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
1.0	02/26/2024	Initial Release for test and review.
2.0	03/08/2024	Enhancements made after RTAC install.
2.1	04/03/2024	Updated as per OmniOn template.

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