

**Allegro® Photocell Repeater
Installation Manual**

Category: System Infrastructure

Type: Allegro Photocell Repeater

Issue: Installation

Version: 0612.20F



Introduction

System Integrity Recommendation – Surge Protector



WARNING: To prevent damage due to power network surges.

Safety Instructions

- Only qualified personnel should perform the installation.
- Follow all local electrical codes during installation.
- Although it is not necessary to disconnect power to the pole during installation, one should always be aware of possible exposure to electrical elements.
- When working from heights, it is important to follow standard safety precautions to avoid any danger of potential injury.
- Use appropriate work tools.

Installation Overview

Note: Read the Installation Guide in its entirety prior to beginning the installation process.

The following is the NEMA installation process;

1. Physical installation of:
 - NEMA in previously installed NEMA receptable.
2. Obtaining GPS coordinates of Allegro Photocell Repeater and either writing electronically or recording manually.

Preparing for Installation

It is assumed that the luminaire cover has had a NEMA ANSI C136.10-2010 and C136.41-2013 compliant receptacle installed.

Installation

To install an Allegro Photocell Repeater:

1. Prior to physically installing the Allegro Photocell Repeater
 - (a) Record the NEMA serial number and pole number, if any.
 - (b) Stand as close as possible to the pole and obtain GPS coordinates in decimal degrees.
 - (c) Record the coordinates for the NEMA serial number.
 - (d) If you are sending the NEMA information entries one by one, please record the information in a Microsoft® Excel spreadsheet and send to a Master Meter AMI Technician.

2. Remove the existing photocell repeater by twisting counterclockwise, unlocking the plug from the receptacle (*see figure 1*).



Figure 1

3. Align the tallest and widest prong (*neutral*) at the center of the photocell repeater plug with the widest socket in the receptacle. Firmly insert the plug into the receptacle (see *figure 2*).



Figure 2



WARNING: Attempting to insert the NEMA prongs into the wrong sockets in the receptacle can damage the Allegro Photocell Repeater.

4. Twist the Allegro Photocell Repeater clockwise, until the Allegro Photocell Repeater stops moving and is securely locked and the bottom of the NEMA is even with the top of the receptacle (see *figure 3 below*).



Figure 3

5. Once the photocell repeater is installed, the light fixture will turn **ON** (*light on*). After initial turn ON, the light fixture will run an 'Auto Detection and Verification' procedure which identifies the lamp driver type and executes the following light on/off sequence:
- After approximately 25 seconds of being **ON** the light fixture will dim to about 5%, if dimming is configured.
 - After approximately 10 seconds, the light fixture will return to 100%.
 - After approximately 7 seconds, the light fixture will turn **OFF** (*light off*).
 - After approximately 11 seconds, the light fixture will return **ON** or to operational state the internal photocell repeater schedule determines.

Activation

To activate the Allegro Photocell Repeater:

Record the serial number located on the side of the photocell repeater in Allegro Technician NET. Determine what frequency you will be programming the unit for by choosing the nearest base station (see *figure 4*).



Figure 4

1. Connect **2w-MMR** to your laptop “**USB Comm**” (*USB – Micro USB Cable*) and switch to **ON**.
2. Be sure to choose the correct “**Comm Port**” inside the software as shown in *figure 5* below;

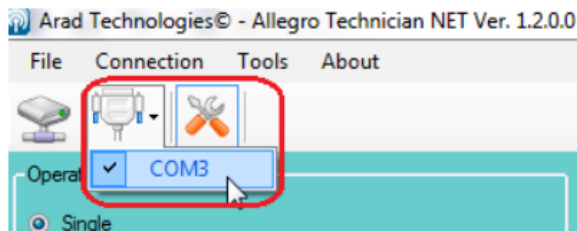


Figure 5

3. Once the **2w-MMR** is connected you will see “**Connected**” in green letters on the lower left corner of the application window (see figure 6).

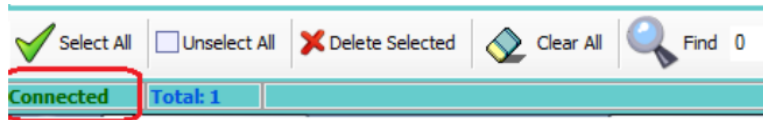


Figure 6

4. Select the “**Settings**” icon (see figure 7).

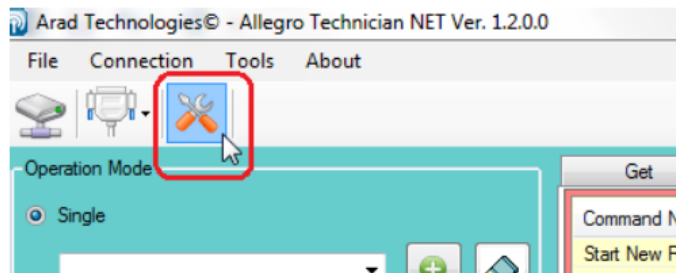


Figure 7

5. In the “**Settings**” window ensure the following (see figure 8);
- (1) Both **Downlink** and **Uplink** frequencies are set to default.
 - (2) **Long Sync** is selected within the *Wake Up Sequence* menu and **26** is entered within the sec. entry field.
 - (3) The **Save** icon is selected.

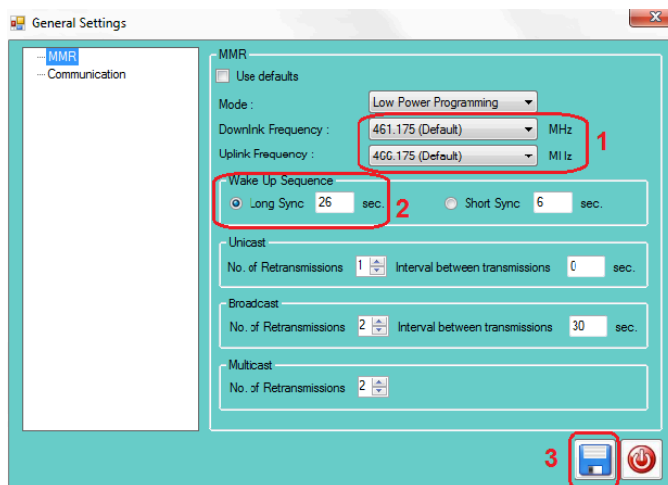


Figure 8

6. In the “**Operation Mode**” window ensure the following (see figure 9);
- (1) The last 7 digits of the Allegro Photocell Repeater’s serial number are entered into the **Single** entry field.
 - (2) The **+** icon is selected.
 - (3) Once the **+** icon button has been selected, click the **Get** tab.
 - (4) Double-click the **Get Comm Status** command from the **Get** menu.

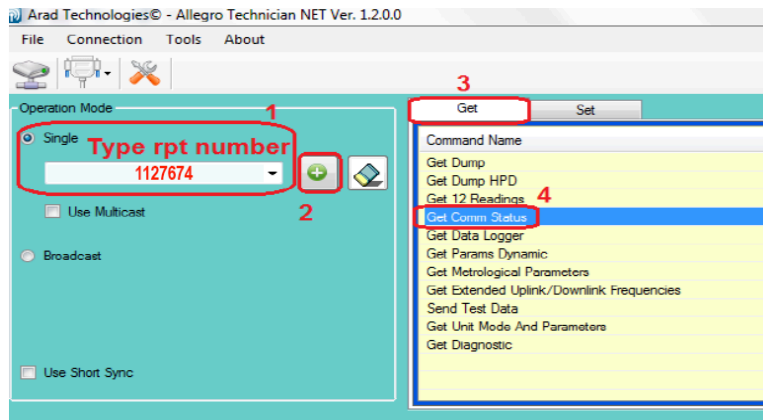


Figure 9

After the **Get Comm Status** command has been selected, a new **.exe** window will appear (see figure 9.1).

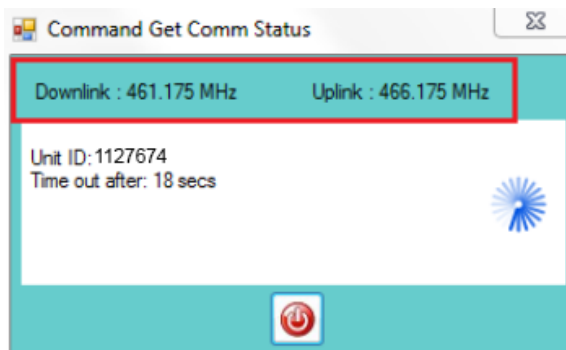


Figure 9.1

- At the bottom of Allegro Tech NET you will see a gray window, which shows the current **DN/UP Frequencies** (see figure 10). The results show that the photocell repeater is communicating! The repeater is now ready to be set to a new frequency.

<input checked="" type="checkbox"/>	Unit ID	Unit Type	Dn Frequency	Up Frequency	Normal Rx2Rx
<input checked="" type="checkbox"/>	1127674	40	461.1750 MHz	466.1750 MHz	23 sec.

Figure 10

Frequency

To set the Allegro Photocell Repeater to a new frequency:

The new frequency will be according to destination base station frequency. The below example (see figure 11) shows how to change repeater frequencies for a specific city, in this case City of XYZ.

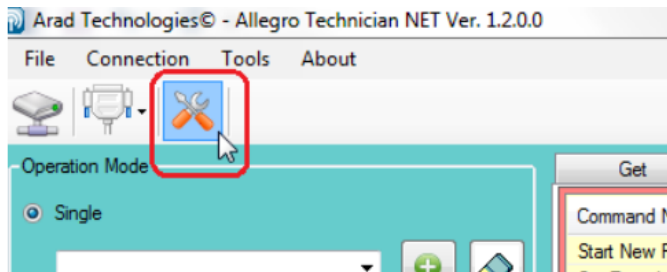


Figure 11

- Click on the **“Settings”** icon (see figure 11).
- Ensure both the **Downlink** and **Uplink** frequencies as well as the *Wake Up Sequence* are set to default on the **2w-MMR** (see figure 12)
- Select the **Save** icon (see figure 12).

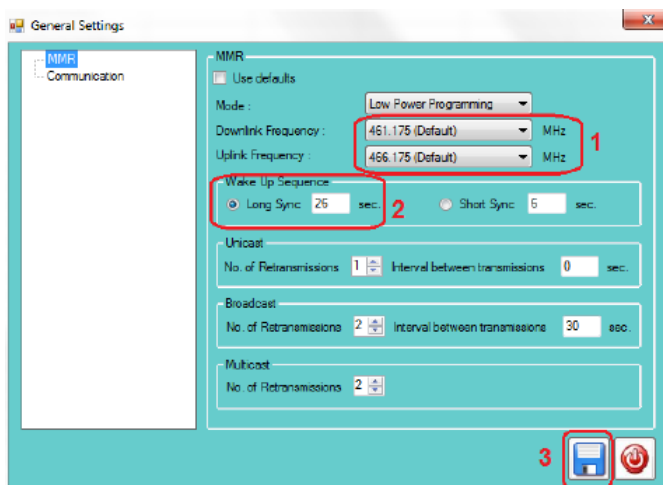


Figure 12

4. Ensure the Allegro Photocell Repeater is marked as shown below (see figure 13).

	Unit ID	Unit Type
<input checked="" type="checkbox"/>	1127674	40

Figure 13

5. In the “Operation Mode” window ensure the following (see figure 14).

- (1) The **Set** tab is selected.
- (2) The **Set Uplink/Downlink Frequency** is selected.

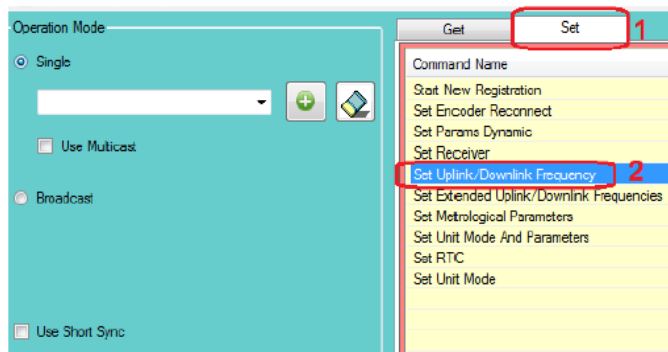


Figure 14

6. From the **Setup Uplink/Downlink Frequency** window (see figure 15) ensure the following;

- (1) The correct frequency (i.e. “City of XYZ”) is selected.
- (2) The **Play** icon is selected.

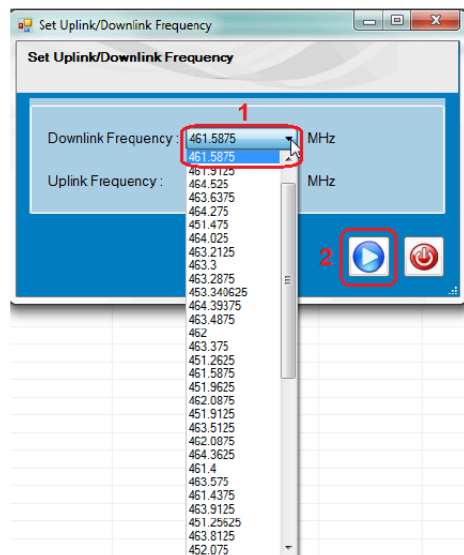


Figure 15

Once the **Play** icon is selected, this will begin writing new frequency to the photocell repeater (see figure 15.1).

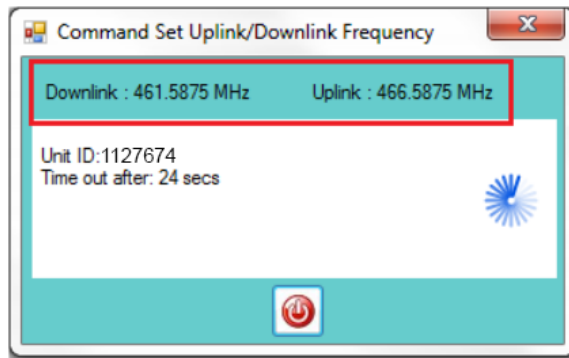


Figure 15.1

When the new frequency writing is complete, a check mark will appear on the results (see figure 15.2).

Unit ID	Voltage @ 10mW	Config Corrupted	Low Temperature	Sys Changed By...	HPD To Unit RS...
<input checked="" type="checkbox"/> 1127674	2.95 <= V < 3.00				-69 dBm

Figure 15.2

7. Check and confirm the photocell repeater has been programmed with the new frequency (in this case, **City of XYZ** frequency). To do so, the **2w-MMR** frequency will need to be updated.
8. Select the **Settings** icon (see figure 16).

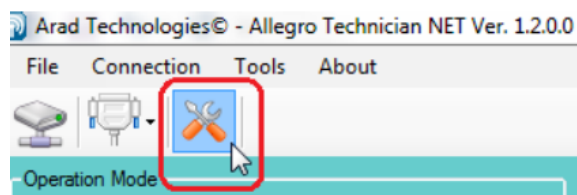


Figure 16

9. In the **Settings** window ensure the following (see figure 17);
 - (1) The **City of XYZ** frequency is selected in the **Downlink Frequency** and **Uplink Frequency** drop-down menus.
 - (2) **Long Sync** is selected within the *Wake Up Sequence* menu and **26** is entered within the sec. entry field.
 - (3) The **Save** icon is selected.

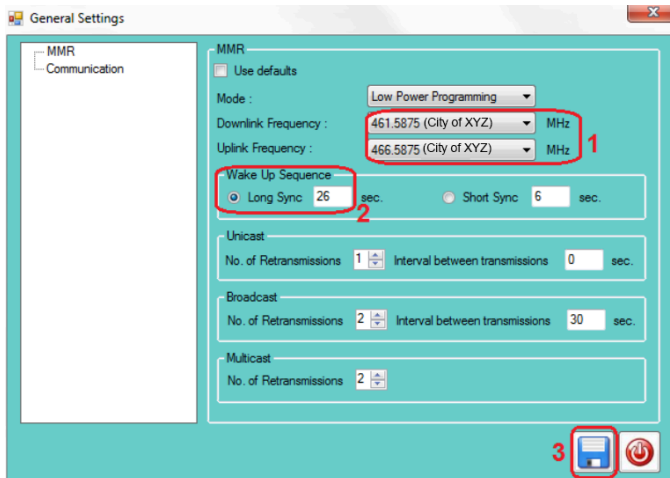


Figure 17

The **2w-MMR** is now set with **City of XYZ's** frequency.

10. Confirm the photocell repeater is selected, as shown below in *figure 18*.

Unit ID	Voltage @ 10mW	Config Computed	Low Temperature	Sys Changed By...	HPD To Unit RS...
<input checked="" type="checkbox"/> 1127674	2.95 <= V < 3.00				-69 dBm

Figure 18

11. In the “**Operation Mode**” window, double-click the **Get Comm Status** in the **Get** tab (see figure 19).

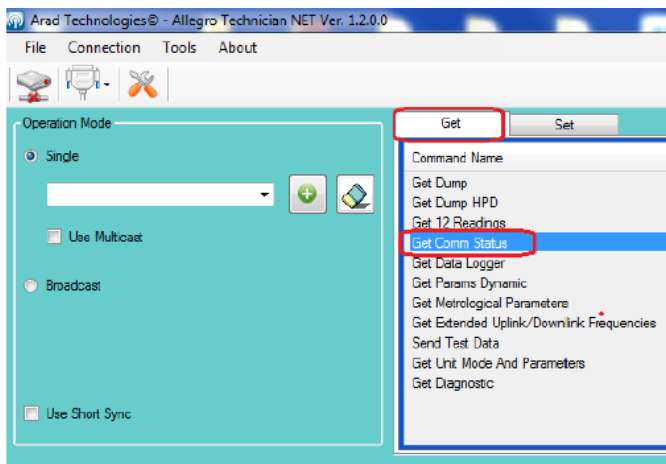


Figure 19

After the **Get Comm Status** command has been selected, a new **.exe** window will appear (see figure 19.1).

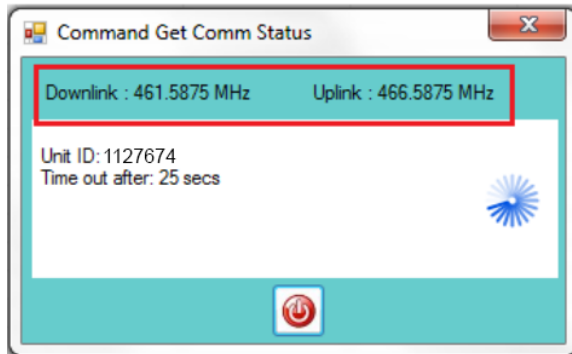


Figure 19.1

- The results shown at the bottom of the application window happily confirm the Allegro Photocell Repeater is programmed to the **City of XYZ's** frequency (see figure 20).

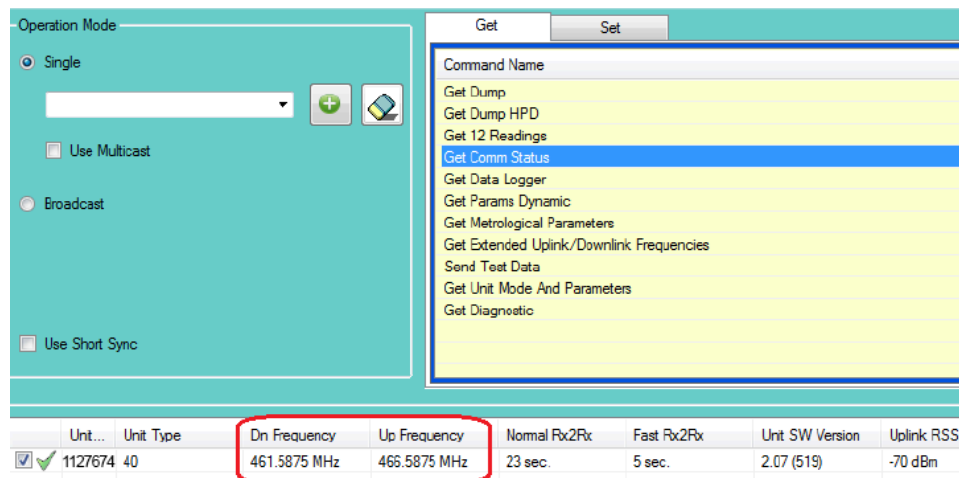


Figure 20

Sync

To sync the Allegro Photocell Repeater:

The photocell repeater must first be enabled. To enable, ensure the following (see figure 21);

- The **Set** tab is selected.
- The corresponding photocell repeater (*Unit ID*) is selected.
- Double-click the **Set Receiver** command from the **Set** tab.

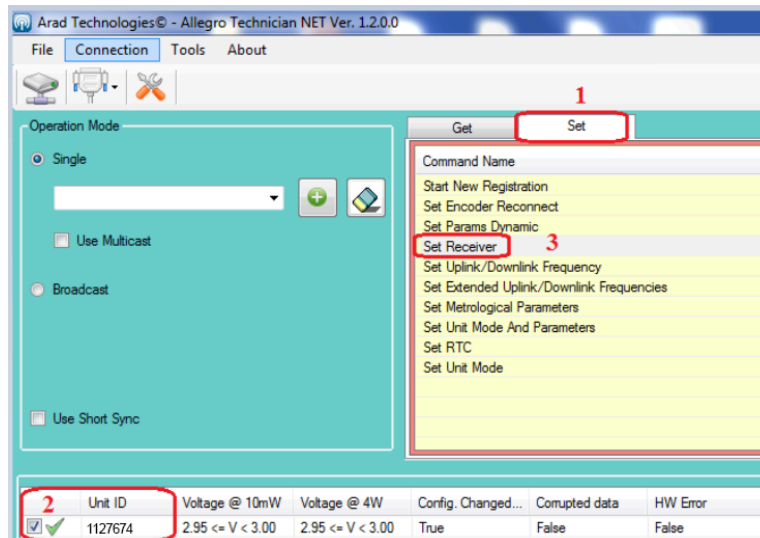


Figure 21

4. After the **Set Receiver** command has been selected, a new window will pop-up. Ensure the following (see figure 22);

- (1) The **Enable** option is selected in the **BS Communication** window.
- (2) The **Play** icon is selected.

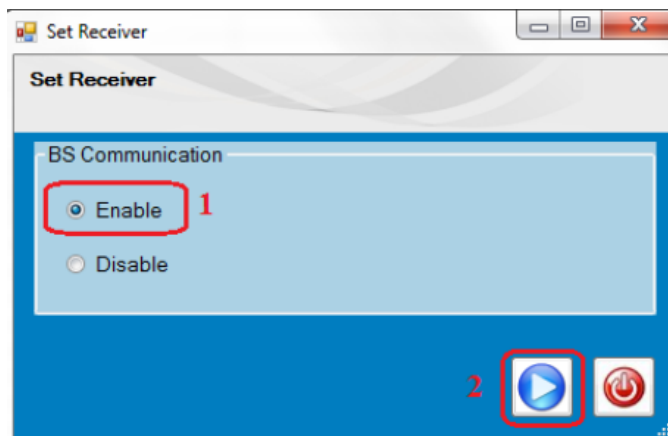


Figure 22

After the **Play** icon is selected, a new **exe.** window will appear (see figure 22.1).

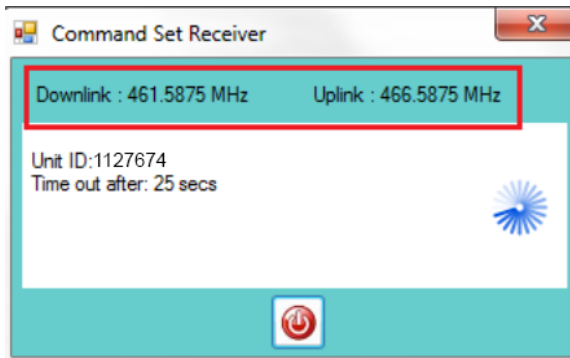


Figure 22.1

5. The results will confirm the photocell repeater has been enabled and configured correctly (see figure 23).

	Unit ID	Voltage @ 10mW	Voltage @ 4W	Config. Changed By HPD	Corrupted data	HW Error
<input checked="" type="checkbox"/>	1127674	2.95 <= V < 3.00	3.35 <= V	True	False	False

Figure 23

The Allegro Photocell Repeater is now synced. Please send the following data to a Master Meter AMI Technician to add to the system;

- (1) Latitude and Longitude
- (2) Serial Number of photocell repeater
- (3) Address
- (4) Height of repeater
- (5) Frequency used

Once the above data has been reviewed and approved by a Master Meter AMI Technician, you are free to begin magnetizing nearby registers or use Allegro Tech NET to manually connect units in the field to the repeater(s).