# BlueTOAD External Modem Integration

This document outlines and describes the process of integrating an external modem with an existing Ethernet BlueTOAD. This will allow BlueTOAD utilization with any cellular provider. For cases where solar power is required, an Ethernet BlueTOAD would be installed in a traditional cellular BlueTOAD NEMA enclosure and existing hardware - solar charge controller, 50W Solar Panel and 44AH deep cycle battery would be included.

### Hardware Required:

1. Cellular Gateway (Sierra Wireless LS300, CloudGate 3G)
   1. Ethernet cable
   2. DC power connector
   3. Cellular antenna
2. Mounting Hardware (e.g. Velcro, double sided adhesive, etc)

For Solar Powered Applications , The gateways listed above can utilize the 12 volts coming directly from the solar charge controller included with the current, standard Cellular BlueTOAD. Many vendors will provide a DC power supply with the gateway but it must be requested.

### Installation:

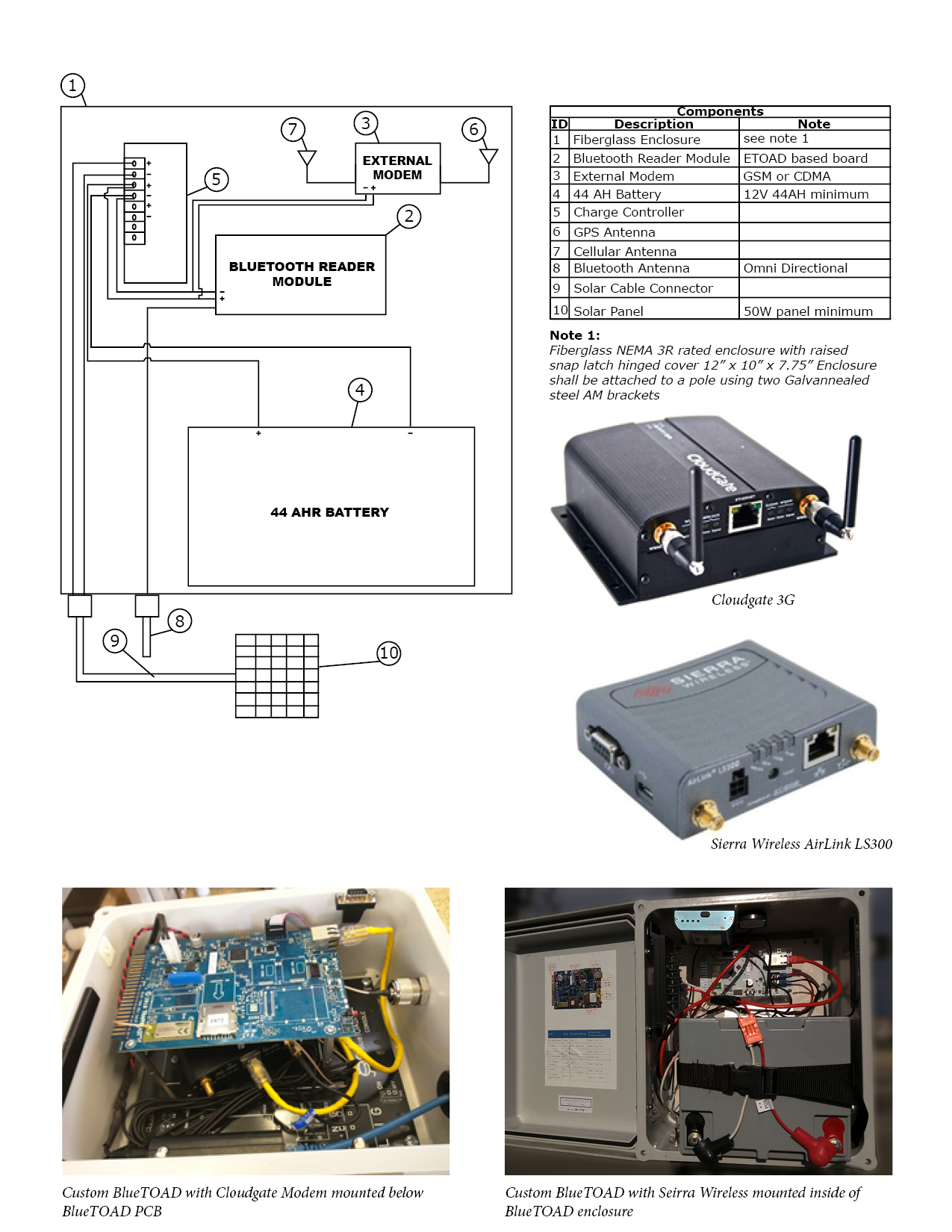
1. Mount cellular gateway to inside of case:
   1. Be creative! Side of case near (or opposite of) charge controller and inside of cover are viable mounting locations. Make sure lights on the gateway are visible. Velcro allows for removability and easier troubleshooting.
2. Wire DC power supply in conjunction with the existing BlueTOAD wiring to the charge controller.
   1. Most devices have reverse polarity protection, but be mindful of the polarity when installing power supply! Do not switch the leads.
3. Run Ethernet cable from gateway to the BlueTOAD's RJ45 port

### Gateway Configuration/Networking:

A static IP address for the BlueTOAD and the Gateway (LAN and WAN) is highly recommended. Request a cellular plan with your provider for a static IP address. Set the gateway to forward port 8080 to the BlueTOADs static IP address that you have created. This will allow you to remotely access the BlueTOAD via the web configuration tool.

### PoE/Cabinet Installation:

In a location where PoE is can be utilized, the modem can be placed inside the cabinet. An AC power supply can take advantage of the 110v AC from inside of the traffic cabinet. The Ethernet will run from the Modem to the "Data" side of the PoE Injector.

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