ACM5508-2-L-I Quick Start Guide

The *ACM5508-2-L-I Quick Start Guide* documents installation, configuration and local operation of the ACM5508-2-LA-I, ACM5508-2-LR-I, ACM5508-2-LV-I, and ACM5508-2-LC-I managment gateways. More details are available in the *Opengear User Manual*, which can be downloaded from http://opengear.com/documentation.

1. Check the kit's contents are complete

 ACM5508-2-L-I appliance. External rack and DIN rail mount tabs. Green terminal block and two 7-band 4G LTE antennas. UTP cables. Straight (319014) & crossover (319015) DB9F-RJ45s. Straight (319016) DB9M-RJ45. This Quick Start guide. 12VDC power pack.

2. Assemble the hardware

▶ Attach rubber feet to base and/or attach the desired mounting tab.

▶ Screw the antennas on to the main *Cell (M)* and diversity *Cell (A)* connectors

▶ If you purchased a GPS antenna, screw it on to *GPS*.

▶ Your carrier will provide a Mini-SIM card for activating your data plan. Unscrew the SIM card access panel. Insert the SIM card with contacts facing upwards and the notch to the right-hand side (the side closest to the antenna ports). Reattach the access panel.

Note: The ACM5508-2-LA-I model supports AT&T USA. The ACM5508-2-LV-I supports Verizon USA. The ACM5508-2-LC-I supports most carriers in Canada including Telus, Bell Mobility and Rogers. The ACM5508-2-LR-I supports most other carriers globally, including major carriers in EMEA, APAC and ANZ regions.

▶ Connect the ethernet LAN1 port to your primary network, connect LAN2 to a secondary network (for example, an external management switch or a VLAN).

▶ Connect any serial devices to the serial 1-8 ports.

▶ Connect any USB devices to the two USB ports.

▶ Plug in the green screw terminal block and attach external sensors and DIO.

Note: Refer to the *ACM5500-I Addendum* for details on RS422/485 and DIO.

▶ Apply power. The ACM5508-2-L-I can be powered by connecting:

  ▶ the included power pack to the 12VDC barrel socket.

  ▶ an external 9 – 24V AC source to the 12VDC barrel socket.

  ▶ an external +9 – 30V DC source to DC PWR and GND on the green terminal block.

  ▶ the optional DC power converter input to +/-36V – 72V DC, and output to the 12VDC barrel socket.

  ▶ the optional C13/C14 power adapter to the 12VDC barrel socket.

Note: When the PWR status LED is lit steadily and the H/B (heartbeat) is flashing, the appliance is ready for activation.

3. Set up appliance networking

The appliance's default IP address is 192.168.0.1 (subnet mask 255.255.255.0). With a web browser on any computer that can connect to the appliance via your primary LAN:

‣ Enter *https://192.168.0.1* into the address bar

‣ Log in using the default system user name *root* and the default password *default*, a Welcome screen listing the basic configuration steps is displayed.

Note: The computer must have an IP address in the same network range (192.168.0.x) as the appliance. Alternatively, you can use the *arping* command to set the IP address (refer to the *Opengear User Manual* or online *Knowledge Base FAQ* for details). The appliance also has DHCP client enabled by default. It will automatically accept any network IP address assigned by any DHCP server on your network, and will then respond at both 192.168.0.1 and its DHCP address.

‣ Select *Serial & Network: Users & Groups* and *Edit* the *Root User*.

‣ Enter and confirm a new *Password* and click *Apply*.

‣ Select *System: IP* then *Network Interface (LAN 1)* and check *DHCP* or *Static* for *Configuration Method*.
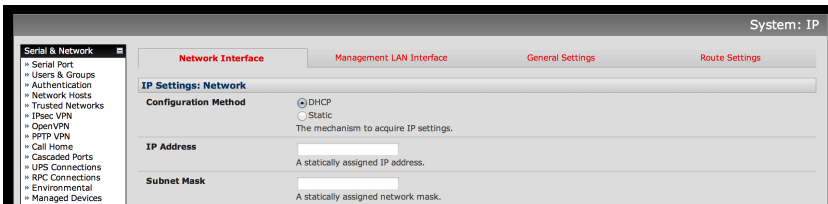
The appliance's second Ethernet port is inactive by default. To activate:

‣ Select *Management LAN Interface (LAN 2)* and uncheck *Disable*.

‣ Enter the IP Address and Subnet Mask for this segment of the Management LAN (leaving Gateway and DNS fields blank)/ Refer to the *Opengear User Manual* if you wish to enable the DHCP server or change default firewall/router settings.

Note: The appliance's firewall determines which protocols and services can be used to access which ports and devices. By default only HTTPS and SSH access is enabled to the appliance itself. Use the *Service Access* menu on *System: Services* to change settings for the appliance itself (and for connected serial ports). Similarly using the *Forwarding & Network* menu on *System > Firewall* you can permit IP access between devices on Network Interface and Management LAN.
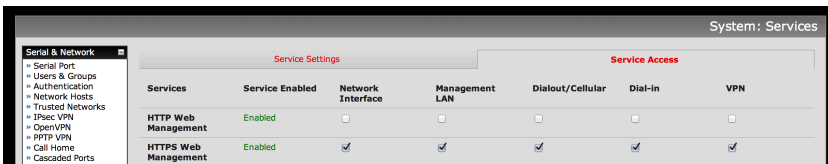
4. Connect the cellular modem

To set up an *Always-on Out-of-Band* cellular connection:
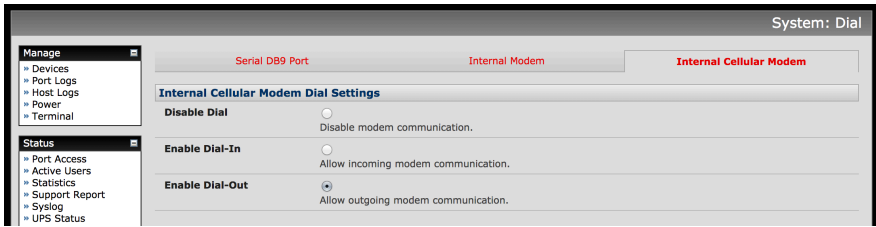
▶ Select **System > Dial** then the **Internal Cellular Modem** tab.

▶ Select **Enable Dial-Out**, enter the carrier's **APN** and, optionally. a **Username** and **Password**.

You may also need to use alternate DNS servers from those provided by your carrier:

▶ Check the **Override Returned DNS Servers** box and enter the IP of the DNS servers into the fields provided

   Note: Your cellular carrier may have provided you with connection details. However, you generally will only need to enter the APN and leave the other fields blank. If provided a PIN code you may need to use it to unlock the SIM card.

▶ Click **Apply** and a radio connection will be established with your cellular carrier

▶ Select **Status > Statistics** then the **Failover & Out-of-Band** tab

▶ Verify the **Connection Status** of **Internal Cellular Modem** is **Connected** and note your allocated **IP Address** (take note if it's a private IP address)

▶ At any time you may view the cellular signal strength (**RSSI**) from the **Cellular** tab of the **Status > Statistics** page. An RSSI of -100 dBm and less is *unacceptable* coverage, -99 to -90 is *weak* coverage, -89 to -70 is *medium to high* coverage, -69 and greater is *very strong* coverage

   Note: Cellular modem status is also shown by the WWAN LED. The LED is off when the modem is not powered or being reset. When powered, the LED turns on and flashes briefly every 5 sec while searching for service. Once configured and connected, the WWAN LED blinks more rapidly.

If you have been allocated a *public* IP address, you can now access the appliance's HTTPS and SSH services directly. The public IP may be static or dynamic, depending on your plan options. If you have a dynamic public IP address that changes each time the appliance connects. You can configure the appliance's **Dynamic DNS** client in **System > Dial, Internal Cellular Modem**.

If you have been allocated a *private* IP address (in the 10.x.x.x, 172.16-31.x.x or 192.168.x.x range), direct remote access may not be possible. Instead, use *Call Home* or a VPN to establish an outbound tunnel to an Opengear Lighthouse or VPN server, to enable remote access over the tunnel.

For a detailed overview of remote access alternatives to an appliance with a private IP address, refer to the *Knowledge Base FAQ* article 'Does my site need a public IP address for OOB or Failover access?'

5. Configure managed devices

▶ Select **Serial & Network > Serial Port** to display the labels, modes and protocol options currently set for each serial port. To configure a port for remote access to the managed device's serial console (refer to the *Opengear User Manual* if other modes are required):

- ▸ Configure the **Common Settings** (Baud Rate, Parity, Data Bits, Stop Bits and Flow Control) to match those of the device being controlled.
- ▸ Select the **Console Server** protocols (e.g. SSH, Telnet, Web Terminal) that are to be used for the network connection to this console.
- ▸ A **Logging Level** may also be set to specify the direction and level of information to be logged for that port.
- ▸ Click **Apply**. Device consoles can now be accessed using your preferred client (for example, *PuTTY*, *SecureCRT*, or *OpenSSH*) and in **Manage > Devices**.

▸ Network managed devices connected via the Management LAN (LAN 2) can be accessed in a number of ways:
- ▸ Select **System > Firewall** and define a **Port/Protocol Forward** rule.
- ▸ Use a VPN client to connect to the appliance's **Serial & Network > OpenVPN**, **IPsec VPN** or **PPTP VPN** server.
- ▸ Add **Serial & Network > Network Hosts** to permit your preferred SSH client or SDT Connector to establish an SSH port forward to the device.

▸ The appliance's default firewall policy is a *NAT gateway* configuration, so network devices are permitted outbound WAN access via the masqueraded cellular connection.

▸ User access policies may be configured locally in **Serial & Network > Users & Groups** and/or remotely with a AAA server. Refer to the *Opengear User Manual* for details.

6. Other modes and functions

This guide sets up the cellular connection in *Always-on* mode. An alternative is *Failover* mode, where cellular is used as an automatic backup connection. Please refer to the *Opengear User Manual* for details on this and other advanced features, such as PDU (RPC) and UPS power management, environmental monitoring, *Auto-Response* alerting and more.

7. Register your ACM5508-2

▸ Visit https://opengear.com/product-registration.

▸ Fill out the form to activate your warranty and automatically receive firmware updates advice.