



ACM5504-5-LA-I, ACM5504-5-LR-I ACM5504-5-LV-I Quick Start Guide

Thank you for purchasing the ACM5504-5-LA/LR/LV-I management gateway (referred to herein as *ACM5504-5-L*). This Quick Start walks you through installation and configuration. More details are available in the *User Manual* which can be downloaded from <http://opengear.com/documentation>.

Step 1 Check kit contents



ACM5504-5-L device. External rack and DIN rail mount tabs. External green connector block and two 7-band 4G LTE antennas. UTP cables. Straight (319014) & crossover (319015) DB9F-RJ45S. Straight (319016) DB9M-RJ45. Quick Start. 12VDC power pack..

Step 2 Connect the hardware pieces

- Attach rubber feet to base. Also attach the desired mounting tab and screw the 4G LTE antennas onto the main *Cell (M)* and diversity *Cell(A)* connectors

Note: *If you have purchased a GPS antenna, screw it on to GPS connector*

- Your carrier will provide a Mini-SIM card for activating your data plan. Unscrew the SIM card access panel and **insert the SIM card in the bottom SIM slot with contacts facing downward** and the notch to RHS. Then replace the SIM card access panel. Refer to the *User Manual* for multiple SIM installation

Note: *The ACM5504-5-L family works with 4G LTE carriers globally. The ACM5504-5-LA-I works with AT&T's 4G LTE 700 / HSPA service (USA). The ACM5504-5-LV-I works with Verizon's 4G LTE 700 / 3G EVDO service (USA). The ACM5504-5-LR-I works with 4G LTE 800-2600 / HSPA+ carrier services globally*

- Connect the Ethernet *LAN* port to your network. Connect your management LAN devices to the *ETHERNET 1-4* ports
- Plug your serial console devices into *SERIAL 1-4* (all Cisco RJ45 pin-out). Connect your 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 RS422/485 and DIO details*

- Apply power. The *ACM5504-5-L* can now be powered externally by either:
 - connecting the provided external power pack to the *12VDC* barrel socket or
 - connecting an external 9 to 24 VAC source to the *12VDC* barrel socket or
 - connecting +9V to 30 VDC to *DC PWR* and *GND* on the green terminal block

Note: *If you ordered the -SDC option you'll have an external DC-DC power converter (input voltage +/- 36V DC to 72V DC. The converter power cable/ connector plugs into the 12VDC socket*



The *ACM5504-5-L* is ready for activation when the PWR status LED on the front panel of the unit is lit steady, and the H/B (heartbeat) LED is flashing.

Step 3 Set up the appliance

The default IP Address is *192.168.0.1* (subnet mask *255.255.255.0*). With a web browser on any computer that is network connected to the *ACM5504-5-G-I*:

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

Note: *The LAN connected computer must have an IP address in the same network range (192.168.0.xxx) as the ACM5504-5-L. If this is not convenient, you can use the ARP Ping command to set the IP address. Refer to the User Manual or online FAQ for details. The ACM5504-5-L also has DHCP enabled by default, so it will automatically accept any network IP address assigned by any DHCP server on your network. It will then respond at both 192.168.0.1 and its DHCP address*

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

It is recommended that you set up a new Administrator user (in the *admin* group with full access privileges) and login as this new user for all ongoing administration functions (rather than continuing as *root*).

- Select **System: Administration**. Enter and confirm a new **System Password** and click **Apply**
- To assign your *ACM5504-5-L* a static IP address or to permanently enable DHCP on the primary Ethernet network, select **System: IP** then **Network Interface** and check **DHCP** or **Static** for **Configuration Method**. Leave the **Failover Interface** set to *None*

Configure the appliance connectivity:

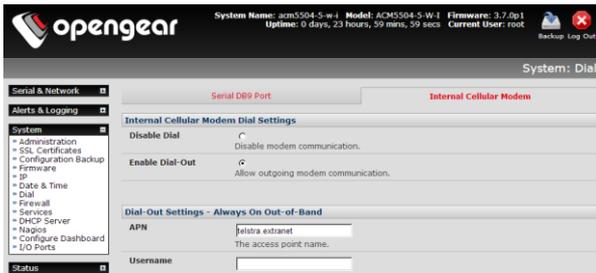
- Configure the serial port settings and enable the desired protocols and logging levels via **Serial & Network: Serial Port**
- Attached USB devices are auto-configured so you can access to USB console ports, modems or external USB flash (the *ACM5504-5-L* also has an internal 4GB flash)
- You may also enable SSH tunneled access through the *ACM5504-5-L* to locally networked devices (*hosts*) using **Serial & Network: Network Hosts**
- Configure user access to ports via **Serial & Network: Users & Groups**

Step 4 Connect the cellular modem

- Select the **Internal Cellular Modem** tab on the **System: Dial** menu
- Check **Enable** for **Dial-Out Settings-OOB** and enter the carrier's **APN**

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

- Enable **Override DNS**. Then check the **Override returned DNS Servers** box and enter the IP of the DNS servers into the spaces provided.



Note: Your 4G LTE carrier may have provided you with connection details. However, you generally will only need to enter your provider's APN and leave the other fields blank. If provided a Pin Code you may need to use it to unlock the SIM card.

- Check **Apply** and a radio connection will be established with your cellular carrier. *Out-of-band access* is enabled, so the cellular modem connection is always ON
- Verify the *Connection Status* in the **Statistics - Failover& Out-of-Band** tab is shown as *Connected*. You can also check your allocated *IP address*
- You can measure the received signal strength *RSSI* from the **Cellular Statistics** page on the **Status: Statistics** screen. -99 dbm to -90 dbm = Weak Coverage, -89 dbm to -70 dbm = Medium, -69 dbm or greater = Strong

Note: You can also see the connection status from the *WWAN LED*. *OFF* is shown when in reset mode or not powered. When powered, it will go ON and while searching for service it will flash off briefly every 5sec. Once a radio connection has been established with your cellular carrier (ie, after an APN has been properly configured) the *WWAN LED* will blink rapidly

Step 5 Configure cellular routing features

The *ACM5504-5-L* is enabled by default in **cellular routing mode**. So the connection to the carrier cellular network is always on, and IP traffic is selectively routed between the cellular connected network and the local Ethernet network. Also in this mode *Network Forwarding* allows devices on the local private LAN to IP connect through to the public network, and *IP Masquerading (SNAT)* allows devices on the LAN to hide behind and share the one public IP address when cellular connecting to the public network.

- Care must be taken to control access to connected devices. So configure **Port Forwarding** and set **Port Rules** so external users can selectively initiate connections to the masqueraded devices on the LAN



- Then configure the devices on the LAN with new *Gateway* and *DNS* settings

- Go to **System: Services** and set **Service Access** rules for routed connections to the *ACM5504-5-L* itself. We recommend HTTPS and SSH access only
- Care should also be taken to control traffic levels. It is recommended that Cellular Data usage logging and alerts be enabled (in **Alerts & Logging : Auto Response**). This way you can monitor cellular traffic and be notified if traffic levels look to go beyond those you have provided for in your cellular plan with your carrier

To directly access the *ACM5504-5-L* over the cellular network it needs a publically accessible IP address i.e.

- a Public IP address allocated by the carrier
- a dynamic Public IP address from the carrier with a dynamic DNS (DDNS) service
- a private IP address with an overlay VPN or Call Home service

Almost all carriers offer corporate mobile data service/plans with a Public (static or dynamic) IP address. These plans often have a service fee attached.

- If you have such a plan, you can now try accessing the *ACM5504-5-L* using the Public IP Address provided by the carrier (or using the allocated domain name – once you have configured the DDNS service on **System:Dial**)

However by default most providers only provide dynamic Private IP address assignments. This IP address is not visible across the Internet.

- The **Failover & Out-of-Band** tab on the **Status: Statistics** page, will show your carrier allocated a Private *IP Address* (i.e. in the range 10.0.x.x, 172.16.x.x or 192.168.x.x)
- With such a plan, you will need to use Call Home with a Lighthouse, or set up a VPN connection. Refer to the *User Manual* for details

Step 6 Other functions

The cellular connection can alternately be configured **out of band access mode** (where the connection to the carrier cellular network is always on - awaiting any incoming access to the *ACM5504-5-L*) or in **failover mode** (where the internal cellular connection remains idle in a low power state and only when primary and secondary probes are not successful will it connect to the cellular carrier). Refer to the *User Manual*.

The *ACM5504-5-L* also offers many more advanced functions including *an Automated Response, Alerts & Logging* facility, management of third party UPSs with *Manage: Power, Serial Port Cascading, Authentication, Trusted Networks, Secure Tunneling, Distributed Monitoring, Custom Scripting* and a *Command Line* interface. Refer to the *User Manual*.



Please register your product to activate the warranty and to automatically receive advice of future firmware updates. Go to: <http://opengear.com/product-registration.html>